



QAD Enterprise Applications 2009
Enterprise Edition

User Guide

QAD Service/Support Management B

Using Pending Calls
Call Quotes
Call Activity Recording
Call Invoice Recording
Call Escalation
Engineers and Scheduling
Area Maintenance
Service Requests
Material Orders
Service Structures and Routings
Return Material Authorizations
Returns to Suppliers
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Reference

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Using Pending Calls

This chapter introduces pending calls and describes how to configure and use functions related to them.

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Introduction to Pending Calls

The features associated with pending calls enable an administrator to design a custom data-entry system for call data and later transfer this data to a standard call.

Since Call Maintenance is designed to meet the needs of a broad spectrum of users and types of organizations, a particular organization may need to use only a subset of features to model their business processes. However, users of Call Maintenance must still navigate through every field and frame even when the features they represent are not being used.

The extra navigation may become a critical issue in a busy help desk environment, where users of the system are responding to requests in real time. In addition, calls for product update information and calls with available solutions are often opened and closed with no further action needed. For these types of calls, the complex validations of Call Maintenance can be an unnecessary overhead. While it is important to record the contact data, there may be no need to take further action.

Using the functions on the Pending Call Menu, service administrators can design their own call-entry systems, selecting which fields display and in what order. These systems can be as simple or complex as needed. Administrators can design a set of frames that always display or include conditional branching based on the values of key fields. Field validations can be included during call entry, or validations can occur later.

Administrators can design multiple paths through the call-entry process by creating various profiles, which are then associated with users or user roles as needed. In this way, a help desk clerk can be prompted for one set of information, while a help desk supervisor can be prompted for another.

Data associated with call fields can be loaded with a setup utility, and the development of profiles can begin with demonstration profiles provided with the system. Administrators can create their own fields as needed to support processing of pending calls.

Important Designing a pending call system requires in-depth understanding of Call Maintenance and some understanding of the underlying Progress database. You may want to request the help of QAD Global Services to implement a system that meets your needs.

Pending calls can be transferred to Call Maintenance as part of the call-entry process or transferred as a group later using a batch program. The transfer activity can be executed in a simulated mode so that any errors and warnings can be reviewed and corrected before the actual transfer is attempted. If necessary, a pending call can be canceled without ever becoming a call in the call master.

Once pending calls have been transferred, the call life cycle can continue without users having to update the call in Call Maintenance. Engineer scheduling can occur, calls can be escalated, and service activity can be recorded for the call and invoiced, as needed.

Pending Call Programs

Table 12.1 lists programs on the Pending Call Menu (11.1.3).

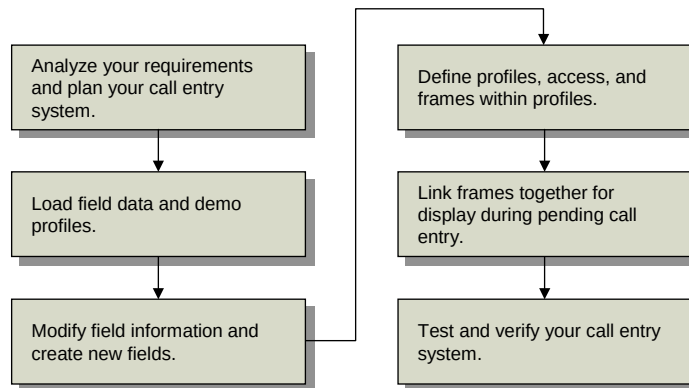
Menu Number	Description	Program Name
11.1.3.1	Pending Call Maintenance	fspcmt.p
11.1.3.3	Pending Call Inquiry	fspciq1.p
11.1.3.5	Pending Call Data Report	fspcrp2.p
11.1.3.7	Pending Call Transfer	fspcup1.p
11.1.3.11	Pending Call Delete/Archive	fspcarc.p
11.1.3.13	Pending Call Field Maintenance	fspcflmt.p
11.1.3.15	Pending Call Frame Maintenance	fspcfrmt.p
11.1.3.17	Pending Call Frame Sequence Maintenance	fspcfsmnt.p
11.1.3.19	Pending Call User/Role Default	fspcugmt.p
11.1.3.21	Pending Call Profile Report	fspcrp1.p
11.1.3.23	Pending Call Setup Utility	fspcutil.p

Table 12.1
Pending Call
Programs

Overview of Pending Calls

Figure 12.1 illustrates a basic workflow for designing a pending call system.

Fig. 12.1
Pending Call
Design Workflow



To design a pending call system, follow these steps:

- 1** Plan your system by analyzing your business needs and the features of Call Maintenance that support them. For details, see “Planning a Pending Call System” on page 462.
- 2** Load system data about fields you can use and load demonstration profiles. For details, see “Load System Data” on page 466.
- 3** Modify field information if needed and add your own local variables for managing call entry. For details, see “Update Field Data” on page 469.
- 4** Define profiles, give users access to them, and specify the frames and the fields on the frames within each profile. For details, see “Create Profiles” on page 475.
- 5** Specify the sequence in which frames display for users in Pending Call Maintenance. For details, see “Link Frames for Display” on page 483.
- 6** Test your call-entry system before releasing it to production use.

Pending Call Status

The call status is an important attribute of a call that indicates its position in the call life cycle. See “Setting Up Call Status Codes” on page 365 for details. Call statuses can be modified automatically if you are using call escalation.

The call status field can be updated as part of the pending call data entry. This field then applies to the call after the pending call is transferred.

Pending calls have their own statuses that are managed internally by the system and can be viewed on various reports. A pending call can have one of the following statuses:

Entered. This status is assigned automatically when a pending call is created.

Transferred. This status is assigned automatically when a pending call is transferred. A transferred pending call can no longer be updated in Pending Call Maintenance.

A final status exists when you manually cancel a pending call rather than transferring it in Pending Call Maintenance:

Canceled. When Cancel Pending Call is Yes in the Pending Call Validation frame, the status of the pending call is set to Canceled. Pending calls with this status cannot be updated, transferred, or deleted.

▶ See “Cancel Pending Call” on page 502.

Scope of Pending Calls

Call management supports a robust set of features for managing and resolving calls. In contrast, the pending call system is intended to help you quickly record data related to a customer contact before creating a call. To use many call-management features, you must transfer the pending call to Call Maintenance.

Table 12.2 lists features associated with standard calls and indicates for each feature whether it is available with pending calls.

Table 12.2
Contrast of Calls
and Pending Calls

Call Maintenance Feature	Pending Call Maintenance Feature
Escalate call.	No. Can set defaults used after the pending call is transferred to a call.
Schedule engineer.	No. Can set defaults used after the pending call is transferred to a call.
Page engineer.	No
Implement user exits.	No
Update call history.	No
Print call during record creation.	No
Select a serial number from the installed base.	Yes. This is implemented through a preconfigured frame that displays when Search ISB is Yes. See Table 12.3 on page 461.
Select items from the installed base using classification codes.	Yes. This is implemented through a preconfigured frame that displays with Search ISB is Yes. See Table 12.3 on page 461.
Display existing calls for end user and choose one to update.	Yes. This is implemented through preconfigured browse frames that display when either Search Calls or Search Call Items is Yes. See Table 12.3 on page 461.
View times from end-user perspective.	Yes. When Multiple Time Zones (MTZ) is active, dates and times are affected the same way they are in Call Maintenance.
Close a pending call.	No. Before transfer, you can cancel a pending call. During transfer, you can transfer and delete. After transfer, pending calls can be deleted or archived.
Calculate total time spent.	No. This feature applies only to Call Maintenance.
Select an end user by ID, sort name, zip code, or phone number.	Yes. This is implemented through a preconfigured frame that displays when Search End User is Yes. See Table 12.3 on page 461.
Create end users during data entry.	Yes. You can do this from the End User Selection frame by leaving end user blank.
Calculate response time, next status date, and next status time based on service coverage.	Yes

Call Maintenance Feature	Pending Call Maintenance Feature
Display service coverage details.	Yes. This is implemented through a preconfigured frame that displays when Coverage is Yes. See Table 12.3 on page 461.
Choose which coverage to use when multiple sources exist.	Yes. This is implemented through a preconfigured frame that displays when Search Coverage is Yes. See Table 12.3 on page 461.
Reference call on a material order.	No
Reference call on an RMA.	No
Update the installed base.	No. While you can add the Update ISB field to Pending Call Maintenance, its value is checked only in Call Maintenance (11.1.1.1) and Call Activity Recording (11.1.1.13).

Design of Pending Call Maintenance Frames

The frames that display in Pending Call Maintenance are similar to frames in other functions, but have some special attributes. Unlike standard frames, a static definition is not used for pending call frames since they are configured for each user. When a user enters Pending Call Maintenance, the frames are built dynamically from the information entered in Pending Call Frame Maintenance and Pending Call Frame Sequence Maintenance.

These frames have the following attributes:

- Only one column of fields displays on a frame. You cannot have multiple columns. Since a frame has 18 active rows, you cannot add more than 18 fields to a frame. (This number is smaller if you use other options, such as adding blank lines to create logical groups of fields.)
- Only one frame displays at a time. In other functions, multiple frames may display, including pop-ups. A frame in Pending Call Maintenance always replaces the one that displayed before.
- Next/previous processing is not supported on fields.
- Field labels are limited to 20 characters. Because you cannot vary where the fields display, all fields start at the same position in the frame. As a result, room for labels cannot vary in length.

- Some scrolling windows are implemented with filtered search. Call Maintenance (11.1.1.1) includes lookups on some fields that use information previously entered to filter the values that display in the lookup. In Pending Call Maintenance, the order of field entry may not be the same as in Call Maintenance, so there is no guarantee that these lookups will work correctly. The same functionality is provided using a filtered search mechanism. See the following section for details.
- Clicking Next does not always display another frame. When you click Next in Pending Call Maintenance, the system searches for defaults based on the current field input. If new data is found that updates fields in the current frame, the current frame redisplay.

Using Preconfigured Frames

When a user creates a call in Call Maintenance, certain frames display based on conditions defined in the program's business logic. When you design a pending call system, you must explicitly define each frame, the fields that display on it, and the frame sequence based on your own business logic.

However, a subset of predefined frames can be used in Pending Call Maintenance. These are similar to frames that display in Call Maintenance. You invoke these frames by specifying the name of the program that displays them.

The display of these frames in Call Maintenance is typically conditional. You can make the display of these preconfigured frames conditional in Pending Call Maintenance based on the value of a logical field, or have them always display.

♦ See “Define Conditions within a Condition Set” on page 489.

♦ See “Load System Data” on page 466.

Table 12.3 lists the programs you use to display preconfigured frames and describes what each frame lets you do. The Condition column indicates a logical variable you can place on a frame to conditionally invoke these programs.

Note All of these features are implemented in the DEMO profile provided with the system. You can review the setup of the DEMO profile to see how the conditions are defined and the programs specified.

Table 12.3
Preconfigured
Frames

Program	Frame Displayed	Condition	Description
fsclsfdr.p	Classification Codes	l-header-clsf_filter l-detail-clsf_filter	Displays the classification lookup for selecting a classification code for filtering installed base items. When a code is selected, any fields that display ISB records—such as item, lot/serial number, or reference—are filtered using the code. See “Classifying ISB Records” on page 46 for details.
fseusel.p	End User Selection	l-search-enduser	Displays a frame that lets you search for an end user based on end user number, sort name, postal code, and telephone number. See Figure 12.13 on page 494. You can also create an end user from this frame by leaving End User blank. If you respond Yes when prompted to create the end user, the same frames that display in Call Maintenance display in Pending Call Maintenance to let you specify end user address information and the customer associated with the new end user. See Figure 11.18, “End User Creation Frame,” on page 398.
fspcsr1.p	Installed Base Items	l-search-isb	You can add this program to follow a field that prompts for the serial number of the item requiring service. The call-entry clerk can verify that the item exists in the end user’s installed base, if needed. See Figure 12.14 on page 494.
fspcsr2.p	Coverage for Item	l-search-coverage	Displays multiple sources of coverage for an item and lets you select the one you want to use for this call. Multiple sources of coverage exist, for example, when an item is under warranty and on a contract at the same time. When this frame is not displayed and multiple sources of coverage exist, the system selects the most specific coverage, starting with a warranty; a contract for the item, lot/serial, and reference number; or a blanket contract.

Program	Frame Displayed	Condition	Description
fscpcsr3.p	Open Calls for End User Call Line Items for End User	l-search-call l-search-call-item	Displays existing calls or call line-item detail for the end user specified. The user can then choose an existing call to update and go directly into Call Maintenance, depending on how the profile is defined. See Figure 12.16 on page 495.
fscamtm.p	Call Maintenance	l-call-exists	Use this to go directly to Call Maintenance when other calls exist for the end user.
fscammt.p	Call Comments	l-header-comments l-call-info-comments l-item-comments	Displays the standard transaction comments frames for entering comments and indicating where they should print. Comments are associated with the call header or line depending on where this program is executed. See Figure 12.21 on page 497.
fscarmtx.p	Coverage Information and Coverage Limits	l-coverage	Displays coverage information and limit details for an item, if applicable. This is the same frame that displays in Call Maintenance and Call Activity Recording when Coverage is Yes. See Figure 12.26 on page 499.
fscup2.p	Call Validation		Lets you validate a pending call from Pending Call Maintenance and optionally transfer it to a call. See Figure 12.28 on page 502. Otherwise, you can use a batch utility.

Planning a Pending Call System

Pending calls support a flexible approach to the way you design a call-entry system. However, the final destination of the pending call is to become part of the call system. To make the most effective use of the pending call-entry tools, you need to understand other call management functions of SSM and how those features apply to pending calls.

You also need to spend time modeling your own business processes carefully so that you understand how to map call-entry features to your requirements.

This section discusses some of the issues you should consider in designing a call-entry system. Topics covered include:

- Modeling your business requirements
- Understanding how to design pending calls to make effective use of call defaulting logic

Modeling Your Business Requirements

Before building a pending call-entry system, you must consider the specific requirements of your service environment. Here are some of the kinds of questions you should think about.

Types of Users

How many different types of users are involved in recording call information? Do the individuals that handle the phones record only basic data that is then followed up by a more experienced customer service representative? Or do you try to determine all aspects of the customer's issue in the initial call? The answer to this question will determine how many call profiles you need to create.

Call Management

How many of the features of call management do you plan to use? For example, if you do not use escalations, you do not need to prompt for values related to escalations. If you do not use field engineers, you do not need to prompt for travel time and distance. You should review the way the system uses each field in the call record to determine if it is required for your business activity.

Using Call Defaulting Logic Effectively

SSM offers many ways to streamline call entry by setting up default values for most fields in Call Maintenance. Call Maintenance is designed to prompt first for the fields that have the most significant impact on defaulting logic for other fields. You should consider these relationships between fields carefully when you design your pending call-entry process.

A default DEMO profile is provided with the system that closely parallels the flow of control used in Call Maintenance. It is expected that most users can start with the DEMO profile as a model and remove and rearrange fields as needed. If you preserve the basic frame sequence supplied in the default model, the standard defaulting logic of Call Maintenance should also be preserved.

Defaulting in Pending Call Maintenance

Pending Call Maintenance uses these rules for determining defaults for related fields:

- 1 It uses the same rules that Call Maintenance uses for determining defaults, including the default search order, described in “Call Default Precedence” on page 375.
- 2 It searches for a default only when all the fields needed to find the default have been displayed to the user. For example, if only two of three fields required to find a default have been prompted for or displayed, no defaulting occurs. See “Effect of Work Code, Model, and Service Group” on page 465 for an example.
- 3 If one of the fields that would be populated by a default already has a value because the user specified it, the existing value is retained; it is not updated.
- 4 The system searches for default values for fields even when the target fields are not displayed to the user in Pending Call Maintenance (as long as rule 2 has been met).

Understanding Critical Fields for Defaulting

In Call Maintenance, a few critical fields determine default values for many other fields in the call record. In most cases, it is important to prompt for these fields first so that the related information is available.

Effect of Item and End User

In Call Maintenance, many defaults are set by the combination of item and end user. The end-user record can provide defaults for the following fields:

- Area
- Escalation
- Caller
- Travel Distance
- Phone
- Travel Time
- Priority
- Time Zone (if MTZ is active)
- Assigned

In addition, the end user:

- Determines points assigned to engineers during call scheduling (based on area, primary and secondary engineer, and time zone)
- Determines the customer and default bill-to addresses for Call Activity Recording and Call Invoice Recording

The fully qualified item (item, lot/serial number, and ISB reference number) is used to retrieve information about the installed base and service coverage. For example, the Contract, Service Type, Start Date, Install Date, End Date, Warranty End, and Response fields default from any contract or warranty associated with the specific item referenced on the call.

If you design a call-entry profile that prompts for fields related to item and end user before prompting for these elements, the system retains the values that the users specify and ignores values that would have defaulted. As a result, it is very important to understand the sequence in which you want to prompt users for data.

Effect of Work Code, Model, and Service Group

A pop-up frame displays in Call Maintenance after you complete the first frame. This pop-up prompts for the three key fields—Work Code, Model, and Service Group—that are used when defining call defaults in Call Default Maintenance.

If an appropriate call default record is found, many fields in the next frame are populated, including:

- Call Severity
- Call Status
- Call Type
- Call Next Status
- Call Problem
- Call Queue
- Call Duration
- Escalation
- Call Description

When you design a pending call system, you should consider the impact of call defaults. If you plan to use defaults, you need to prompt for the work code, model, and service group before prompting for any of the other fields listed here.

Important Pending Call Maintenance does not search for defaults until it has values for all three fields.

You must add all three of these fields to a frame before Pending Call Maintenance searches for call default records. If you do not use model or service group when setting up defaults, you still must add them to a frame for the defaults to be found. In Pending Call Frame Maintenance (11.1.3.15), you can specify that these fields are not updateable, but they must exist in the frame.

Creating a Pending Call System

▶ See Figure 12.1, “Pending Call Design Workflow,” on page 456.

This section describes the various programs that you use when setting up a pending call system. Refer to the work-flow diagram for a high-level overview of these steps.

Load System Data

You can use Pending Call Field Maintenance (11.1.3.13) to create information about the fields you are going to place on frames for display in Pending Call Maintenance. However, since a call record includes many fields and also updates fields in related tables, this process can be very tedious.

A utility is provided to make setting up and maintaining profiles easier. Use Pending Call Setup Utility (11.1.3.23) to:

- Load or delete data about fields that can be added to pending call profiles.
- Load or remove demonstration profiles.
- Renumber records in a profile.

Loading data includes information about fields in the following tables:

- Call master (ca_mstr)
- Call lines (itm_det)
- Call fault codes (ccd_mstr)

Some other fields from tables related to calls also are available, such as fields from pt_mstr, isb_mstr, sa_mstr, and ad_mstr. In addition to database fields, records for some local variables that affect processing of calls are also loaded.

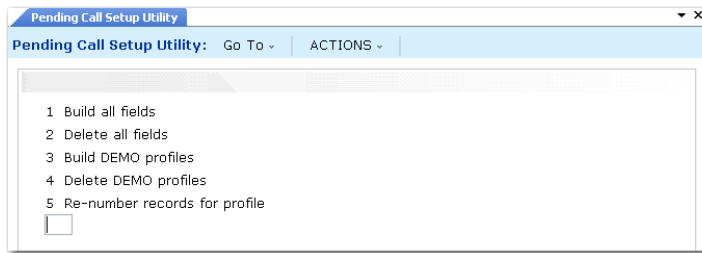


Fig. 12.2
Pending Call Setup
Utility (11.1.3.23)

Load Field Data

Enter 1 to load the default information about fields that can be used for building pending call profiles. The load includes information for fields from ca_mstr, itm_det, and ccd_mstr, as well as some local variables that affect processing of calls. You can review this information using Pending Call Field Maintenance.

Note Reloading field data after you loaded it previously and made changes replaces the changed records with the default system data. However, any user-created fields are not affected.

Most of the information that you load this way cannot be modified, since it reflects the underlying definition of the database tables that store call data, as well as the requirements of the business logic that is part of Call Maintenance.

Delete All Fields

Enter 2 to delete all the information about fields currently in the database. Use this option to clear out old information if you decide not to use pending calls. You might also use this function during a testing sequence when you have added new fields and do not want to retain them. You can then use option 1 to reload system data.

Important This function deletes all fields related to pending calls, both those loaded by this utility and those you create in Pending Call Field Maintenance.

Load Demonstration Profiles

Enter 3 to load system-supplied demonstration profiles. You can use these profiles as the basis for creating your own by copying and then modifying them. Using demonstration profiles as templates may speed up the development of your own call-entry profiles. You can also use them for training and learning.

Use this option both for an initial load or after you have changed demo profiles and now want to revert to the system default information. Reloading demo profiles deletes any records found and then refreshes them. Normally, you should use this option if you want to continue testing with demo profiles.

Currently, two demo profiles are provided:

- DEMO includes all of the fields that display in Call Maintenance.
- DEMOMIN includes a minimum subset of Call Maintenance fields.

Note To use the demo profiles, you must also load the default field information since the demo profiles depend on this data. If you delete fields (option 2) and do not delete demo profiles (option 4), the demos will be unusable until you reload fields (option 1).

Delete Demonstration Profiles

Enter 4 to remove the demonstration profile data from your database. Typically you would only use this option if you no longer wanted to use the pending call system.

Note Option 4 updates any users or roles that currently have the demo profiles associated in Pending Call User/Role Default (11.1.3.19) and sets the profile to blank.

▶ See “Create Profiles” on page 475.

Renumber Records

Enter 5 to renumber the sequences in a specified profile. This function affects the sequence numbers associated with frames, fields, condition sets, and conditions that you define in Pending Call Frame Sequence Maintenance.

Executing this function resequences these numbers in increments of 10. This makes it easy to add new records between existing records. When you enter option 5, you must supply a valid profile ID.

Note Executing option 5 has no effect on the way a profile functions; it simply updates sequence numbers in the specified profile and in other profiles that refer to it.

Update Field Data

Use Pending Call Field Maintenance (11.1.3.13) to review field information loaded with Pending Call Setup Utility or to create new field information.

When a field that is loaded by the setup utility is used in Call Maintenance, it is marked as not maintainable. In this case, you cannot update the following fields: Type, Active, and Temporary. These field attributes reflect the underlying definition of the database tables that store call data, as well as the requirements of the business logic that is part of Call Maintenance.

The default value for many of the attributes of a field depends on:

- Whether the field is a database field or a local variable
- Whether the field is used in Call Maintenance and affects the business logic related to calls
- Whether the field is loaded by the setup utility or created in Pending Field Maintenance

Table 12.4 indicates how the default for five field attributes is set based on these conditions.

Table 12.4
Default Values for
Fields

Field Name	Loaded DB Fields Used by Call Maint	Loaded DB Fields not Used by Call Maint	Loaded Local Variables	Fields Created in Field Maint
Maintainable	No	Yes	No	Yes
Active	Yes	No	Yes	Yes
Temporary	No	No	Yes	Yes
Updateable	Yes	No	Yes	No
Required	Yes/No	No	Yes/No	No

See “Define
Frame Contents”
on page 478.

Some field attributes default to Pending Call Frame Maintenance (11.1.3.15) when you add the field to a frame. Attributes such as required, updateable, and default value can be modified for particular frames.

Typically, you use this program to:

- Add your own local variables to use in managing the pending call-entry process. When you create your own fields and mark them as active, you can then add them to frames using Pending Call Frame Maintenance.
- Update call fields that are not currently updated in Call Maintenance. For example, you can display any of the user fields in the call master table for update in Pending Call Maintenance and create user-defined labels for them. When you transfer the pending call, the system copies this data from the pending call to the call master.

Fig. 12.3
Pending Call Field
Maintenance
(11.1.3.13)

Field Name. Enter the name of the field (maximum 24 characters) you want to modify or create. This field is required.

Note You cannot modify or delete any fields with Maintainable set to No. Many of the fields loaded with Pending Call Setup Utility are not maintainable.

By default, any new fields you create are considered temporary. While the value can affect processing in Pending Call Maintenance, the value is not stored in the database.

♦ See “Temporary” on page 472.

Label Term. Optionally specify a label term. When a term is specified, the first 20 characters of the label associated with this term display as the label for this field in Pending Call Maintenance.

If you leave Label Term blank, the system retrieves the label associated with the term and field as defined in the label maintenance functions (36.7) on the System Administration menu. If no term exists for the field, the system uses the field name in uppercase letters as the label.

♦ See *User Guide: QAD System Administration*.

For an existing field, specify a label term only if you want to override the standard label.

Extension. This field displays the type of document being updated in this program. For pending calls, Extension is always Call, and cannot be updated.

Type. Specify the data type of the associated field using standard Progress syntax. Valid values include character, integer, decimal, logical, date.

This field cannot be blank. You cannot update the data type of fields loaded using Pending Call Setup Utility with Maintainable set to No.

Format. Specify the format of the field being added using standard Progress syntax. For example, enter x(24) for a character field that contains 24 characters or >>9 for a three-digit integer field.

This field cannot be blank. You cannot update the format of fields loaded using Pending Call Setup Utility with Maintainable set to No.

Maintainable. This field is set by the system and determines whether the following fields of the associated record can be manually edited: Type, Format, Active, and Temporary. You cannot modify the value determined by the system. The system sets the default as follows:

- Database fields and local variables that are used in Call Maintenance and loaded by Pending Call Setup Utility are set to No. Information about these fields reflects the structure of the tables that support call records and cannot be modified.
- Database fields loaded by Pending Call Setup Utility that are not used in Call Maintenance are set to Yes. You can change values associated with these fields since they do not affect processing of call records.
- Database fields and local variables that you create in Pending Call Field Maintenance are set to Yes. Since these fields are user defined, you can always edit them.

Active. Indicate whether this field can be included on a frame.

No: The field is not included in the lookup browse. If you enter the field name manually, an error displays.

Yes: The field is displayed in the lookup browse of available fields in Pending Call Frame Maintenance and can be selected for inclusion on a frame.

The system sets the default for this field as follows:

- Database fields and local variables that are used in Call Maintenance and loaded by Pending Call Setup Utility are set to Yes. This value cannot be modified.
- Database fields loaded by Pending Call Setup Utility that are not used in Call Maintenance are set to No, and can be changed.
- Database fields and local variables that you create in Pending Call Field Maintenance are set to Yes and can be changed.

Note If you have placed a field on a frame and then change it to inactive, it no longer displays in Pending Call Maintenance.

Temporary. Indicate whether this field is temporary.

No: The value entered in the field is saved as part of the pending call record. No is the default for database fields loaded using Pending Call Setup Utility.

Yes: The field is used only during the data-entry process and is not saved as part of the pending call record. Yes is the default for new fields that you create in this function, since typically they are not database table fields.

The system sets the default value for this field as follows:

- All database fields loaded by Pending Call Setup Utility are set to No, both those that are used and those that are not used.
- All local variables are set to Yes, both those loaded by Pending Call Setup Utility and those you create with Pending Call Field Maintenance.

You can change the value of Temporary only for fields with Maintainable set to Yes. These are database fields that are not used in Call Maintenance and fields created in Pending Call Field Maintenance.

Note This field provides flexibility if you add custom database fields and want to save data or if you create your own field data rather than loading it with the setup utility. However, typically you should not change the default values. Setting Temporary to No for a non-database field has no effect, since the system has nowhere to save the value. Setting Temporary to Yes for a database field means data is not saved that may be needed to create a valid call. In this case, errors are generated when you attempt to transfer the pending call to Call Maintenance.

Updateable. Indicate if this field is typically updated by users. The value you specify here sets the default value for the Updateable field when it is added to a frame in Pending Call Frame Maintenance.

No: When you add this field to a frame in Pending Call Frame Maintenance, Updateable defaults to No. If you do not change it in that program, users cannot update the value of the field on the associated frame when they create a pending call.

Yes: When you add this field to a frame in Pending Call Frame Maintenance, Updateable defaults to Yes. If you do not change it, users can update the value of the field when they create a pending call.

When you design frames, you may want some information to display for the user's information, but not be modified. You also may want to prompt for information on one frame and display it on another. This attribute is controlled by the setting of Updateable in the frame, which defaults from this setting for this field.

The system sets the default value for this field as follows:

- Database fields and local variables that are used in Call Maintenance and loaded by Pending Call Setup Utility are set to Yes.
- Database fields loaded by Pending Call Setup Utility that are not used in Call Maintenance are set to No.
- Database fields and local variables that you create in Pending Call Field Maintenance are set to No.

Note The item line number and fault code line number cannot be updated in Pending Call Maintenance regardless of the value defined here.

Required. Indicate whether this field is required when a call is created.

No: The pending call transfer function does not generate an error when this field is blank.

Yes: When you transfer a pending call, a value must be specified for this field or the transfer is not completed.

The value you specify here defaults to Pending Call Frame Maintenance when you add this field to a frame. However, you can change it. This lets users leave the field blank during initial call entry, even though a value must be specified before the call can be transferred.

The system sets the default value for this field as follows:

- Database fields and local variables that are used in Call Maintenance and loaded by Pending Call Setup Utility are set to Yes if Call Maintenance requires a value. Otherwise, they are set to No.
- Database fields loaded by Pending Call Setup Utility that are not used in Call Maintenance are set to No.
- Database fields and local variables that you create in Pending Call Field Maintenance are set to No.

Note You can set Required to Yes for a field you create in this program. You can use this to control whether users must enter a value in Pending Call Maintenance. During transfer, however, the system validates only fields that Call Maintenance requires.

Default Value. Optionally specify a default value to display in this field when this field is added to a frame in Pending Call Frame Maintenance. You can change the default if needed when adding the field to a frame.

The value specified in Pending Call Frame Maintenance sets the default when users create new pending calls in Pending Call Maintenance.

Leave this field blank if you want the system to use the same logic as Call Maintenance to search for a default value for the field.

This field is not validated. You must ensure that the value you specify is consistent with the type and format of the associated field; otherwise, errors are generated during pending call entry or transfer.

For example, for a logical field, specify Yes if you want the field to default to Yes. If you specify a string such as OK, errors are generated either in Pending Call Maintenance or when the call is transferred.

Note In non-English environments, specify the English Yes or No as the default value for logical fields. These are then displayed to the user in the correct language.

Create Profiles

Pending Call Frame Maintenance (11.1.3.15) lets you complete a number of setup tasks related to pending calls. You can:

- Create, modify, or delete a pending call profile, which identifies a specific method for entering data in Pending Call Maintenance. When you are creating a new profile, you can start with an existing one as a template to reduce data entry.
- Specify a default profile that applies to all users and user roles without an assigned profile in Pending Call User/Role Default (11.1.3.19).
- Assign user and role access to a profile.
- Create frames associated with a profile and specify which fields display on them.

You can delete a profile only when:

- It is not referenced as part of a frame sequence by another profile.
- It is not the default profile of any user or role.

See “Link Frames for Display” on page 483.

After creating profiles and frames, use Pending Call Frame Sequence Maintenance (11.1.3.17) to specify the order in which frames display during pending call entry.

Figure 12.4 illustrates the first frame of Pending Call Frame Maintenance.

Fig. 12.4
Pending Call Frame Maintenance (11.1.3.15), Profile Frame

Profile. Enter a value (maximum 16 characters) identifying the profile you want to edit, create, or delete.

See “Load Demonstration Profiles” on page 468.

When you are creating a new profile, you can start with an existing profile, such as the system-supplied DEMO, by specifying a value in the Copy From field. This minimizes data entry for similar profiles.

Copy From. If you are creating a new profile, specify an existing profile ID in this field to begin with a copy of it. The system creates a new record based on the one you specify, including frame details, frame field details, frame sequence details, and frame sequence condition details.

Description. Enter a brief (maximum 40 character) description of this profile.

Default. Indicate whether this profile should be used as the default profile for any users or roles without an associated profile.

No: This profile applies only to the specific users and roles with which it is associated.

Yes: This profile applies to all users without an assigned profile, as well as to any users or roles assigned to it.

Only one profile can be designated as the default. When you enter Yes, the system determines if another default profile exists. If it does, a warning displays and you are prompted to continue. If you choose to continue, the current profile becomes the default.

Use Pending Call User/Role Default (11.1.3.19) to assign profiles to users and roles.

◆ See “Assign Default Profiles to Users and Roles” on page 490.

Assign Access to Profiles

Before a user can execute the frames defined in a profile, they must have security access. If you do not want to implement security for profiles, do not assign any users or roles. This has the same effect as assigning all users and roles.

◆ See *User Guide: QAD Security and Controls* for details on users and security.

Note Assigning security access to a profile is a separate task from assigning a default profile. A user must have both to be able to execute Pending Call Maintenance.

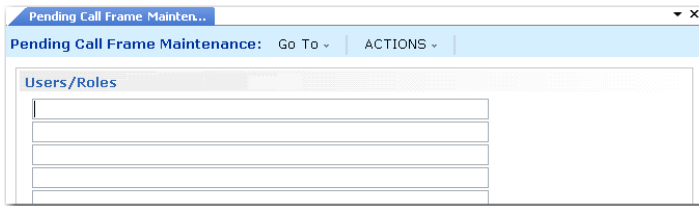


Fig. 12.5
Pending Call Frame Maintenance (11.1.3.15), Users/Roles

Users/Roles. Enter a list of user IDs or role names that can access the associated profile. Leave blank if you do not want to restrict access to the profile.

Create user IDs and in User Maintenance (36.3.1). Create user roles in Role Create (36.3.6.1) and associate them with users in Role Membership Maintain (36.3.6.6).

Separate user IDs and role names with commas. Spaces are eliminated upon entry. An asterisk indicates all user IDs or roles. The exclamation point is used to restrict specific users by user ID or role.

For example, the string ap,sales means only users associated with role ap or sales have security access. The string !user1,* means all users except user1 have access. Exclusions must be entered first. Specifying *,!user1 is the same as * (all roles).

Define Frames

Use the next frame in Pending Call Frame Maintenance—illustrated in Figure 12.6—to add, modify, or delete frames associated with the current profile. You can delete a frame after specifying its number only when it is not referenced by any frame sequence in this or any other profile.

Fig. 12.6
Pending Call Frame
Maintenance
(11.1.3.15), Frame
Frame

Pending Call Frame Maintenance: Go To ACTIONS	
Frame	
Frame Number: 10	Frame Title Term: Header

Frame Number. Enter a value from 1 to 999 identifying this frame in this profile.

Note This number is used strictly to identify the frame and its contents. The sequence in which frames display is determined by the information you enter in Pending Call Frame Sequence Maintenance (11.1.3.17).

Number frames by 10's or 100's, so you can add new frames without renumbering existing ones. For example, if you define frames 10, 20, and 30 and want to add another frame between 20 and 30, you can enter it as frame 25. You can also use Pending Call Setup Utility to renumber frames.

▶ See *User Guide: QAD System Administration* for details on labels.

Frame Title Term. Optionally specify a label term identifying the translated title for this frame. When a term is specified, the long label associated with this term in Label Master Maintenance (36.4.17.1) displays as the label for this frame in Pending Call Maintenance.

If you leave this field blank, the system creates a frame label based on the profile ID and frame sequence number, with the following form:

Profile xxxxxxxx Frame nnn

Define Frame Contents

Figure 12.7 illustrates the frame you use to add, modify, or delete fields from the current frame definition. After you specify a field number, you can use Delete to remove the field from the frame.

The fields you add to frames must be defined in Pending Call Field Maintenance and marked as active. Field values such as Updateable, Required, and Default Value default from settings in Pending Call Field Maintenance. The term used to find the field label is also defined here.

See “Update Field Data” on page 469.

Each field you specify displays on a separate line on the associated frame, with or without a label based on the value of Hide Label. You can place a field on more than one frame, and specify different options for each frame where it displays. For example, you can add a field for update on one frame and then display it without allowing update on another.

When you add a field to a frame, the system ensures that sufficient room exists on the frame to display it; if not, an error displays. A frame can contain up to 18 lines. The system calculates the number of lines already used by adding:

- The total number of fields specified on the frame
- The total number of skip lines specified for all fields in the frame
- The total number of related fields (Display Related Field is Yes) specified

The screenshot shows the 'Pending Call Frame Maintenance' window with the 'Frame Field' tab selected. The window has a title bar 'Pending Call Frame Mainten...' and a menu bar with 'Pending Call Frame Maintenance: Go To' and 'ACTIONS'. The 'Frame' section shows 'Frame Number: 10' and 'Frame Title Term: Header'. The 'Frame Field' section shows 'Field Number: 10', 'Field Name: ca_nbr' with a search icon, and several checkboxes: 'Updateable', 'Required', 'Validated', 'Hide Label', 'Skip Lines: 0', 'Default Value', and 'Display Related Field'. A 'Validation Exists' checkbox is also present.

Fig. 12.7
Pending Call Frame Maintenance (11.1.3.15), Frame Fields

Field Number. Enter a value from 1 to 999 indicating the display sequence for this field on the specified frame when it is used during the creation of pending calls.

Number fields by 10's or 100's, so you can add new fields without renumbering existing ones. For example, if you define fields 10, 20, and 30 and want to add another field to display between 20 and 30, you can enter it as field 25. You can also use Pending Call Setup Utility to renumber frames.

Field Name. Enter the name of an active field to display on this frame. You can specify only fields marked as active in Pending Call Field Maintenance.

The system displays up to 20 characters of the field label below the field name. The term for finding the appropriate label is specified in Pending Call Field Maintenance.

Updateable. This field defaults from the same field in Pending Call Field Maintenance. Enter Yes if you want users to be able to update the value of this field on this frame when it displays in Pending Call Maintenance. Otherwise, enter No.

Required. Enter Yes if users must enter a value in this field when it displays in Pending Call Maintenance. Otherwise, enter No.

When Yes, an error displays in Pending Call Maintenance when the field is left blank.

This field defaults from Pending Call Field Maintenance. Even though a field is required to create a call in the call master, you can set required to No when it displays on this frame. Do this if you want to let users leave the field blank during initial call entry.

For example, the customer service representative has a call profile that lets fields be blank. Later the supervisor reviews the pending call with a different profile and fills in required fields before transferring it to Call Maintenance. An error is generated during call transfer when required fields do not have a value.

Validated. You can modify this field only when Validation Exists is Yes.

No: Do not validate the field during data entry.

Yes: Use the existing validation to validate the user's entry in Pending Call Maintenance.

Note A non-blank field validation is managed with the Required field. When you set Validated to Yes, the system performs all validations but still lets the user leave the field blank unless Required is also Yes.

Field values must be valid before a pending call can be transferred to Call Maintenance. However, if you want to record data quickly, you can delay verification by setting this field to No. After initial data entry, you can modify the pending call later to ensure data is correct.

You can generate a report indicating any errors or warnings that would be generated during transfer before you transfer the pending call to Call Maintenance.

Validation Exists. This display-only field indicates whether a validation is available for this field. When setting this field to Yes, the system looks for both validations built into the database schema and code validations.

No: The Validated field cannot be updated. No validations occur in Pending Call Maintenance.

Yes: You can specify whether you want this validation to occur by setting the Validated field to Yes or No.

Hide Label. Indicate whether to include the label for this field.

No: The label associated with the label term specified in Pending Call Field Maintenance displays next to this field in this frame in Pending Call Maintenance.

Yes: The label for this field does not display on this frame.

Skip Lines. Optionally enter an integer representing the number of blank lines to be allocated on the frame before this field. Leave the default 0 (zero) to place this field on the next available line.

Use this field to organize fields into logical groups in the presentation of the frame.

Default Value. Optionally specify a default value to display in this field when a new pending call is created in Pending Call Maintenance. This field defaults from a value specified in Pending Call Field Maintenance.

Leave this field blank if you want the system to use the same logic as Call Maintenance uses to search for a default value for the field in Pending Call Maintenance.

This field is not validated. You must ensure that the value you specify is consistent with the type and format of the associated field; otherwise, errors will be generated during pending call entry or transfer.

For example, for a logical field, specify Yes if you want the field to default to Yes. If you specify a string such as OK, errors are generated either in Pending Call Maintenance or when the call is transferred.

Note In non-English environments, specify the English Yes or No as the default value for logical fields. These are then displayed to the user in the correct language.

Display Related Field. You can modify this field only when a related field currently displays next to this field.

No: The related field does not display on this frame in Pending Call Maintenance.

Yes: The field related to this field displays below it on this frame in Pending Call Maintenance.

Related fields provide more information that helps users identify a record. For example, the sort name is often displayed next to the Customer ID field, letting you associate a meaningful name with a shorter ID.

Related Field. This field displays the name of the field that is related to the field specified in Field Name. When a value displays, you can update the value of Display Related Field.

Note You can choose your own related fields to display by adding a field to a frame and setting Updateable to No. When the user clicks Next and the value is found through defaulting logic, the screen redisplay so the user can see the related value. You can use this method for any field that is generated by defaulting logic.

Link Frames for Display

Use Pending Call Frame Sequence Maintenance (11.1.3.17) to specify the order in which frames display for a profile in Pending Call Maintenance. For every combination of profile ID and frame number, you can create a separate sequence for moving forward (click Next) through the frame and exiting (click Back) the frame.

You can link frames together in a number of ways:

- Link frames within a single profile by number.
- Link to a frame in a different profile by profile ID and number.
- Specify a program to run as well as a next frame to display when that program completes execution.
- Specify one or more sets of conditions with alternate frames to display based on whether the condition or conditions are true.
- Specify a default frame sequence when no conditions are true.

You perform three tasks in this program:

- Define a default sequence for frames to display in Pending Call Maintenance. You can define different default sequences based on whether the user is moving forward through the frame or is exiting the frame.
- Add one or more condition sets to support alternate frame display.
- Specify one or more conditions for each condition set that must be true for that display sequence to be used.

You can design simple or complex sequences using Pending Call Frame Sequence Maintenance. You should carefully analyze your business requirements to determine how you want users to enter data in Pending Call Maintenance.

Much of the information associated with a call defaults from other related data. You should carefully consider this defaulting logic as you determine the order in which fields and frames display.

▶ See “Using Call Defaulting Logic Effectively” on page 463.

Define Basic Sequence Elements

Figure 12.8 illustrates the first frame of Pending Call Frame Sequence Maintenance, where you define the basic elements of a sequence, including the direction, an optional next program to run, the next frame number to display, and the profile the frame is associated with.

When you define frame sequences, you can start with frames in one profile and then link to a frame in another profile. You might use this feature to give a user an expanded view of the pending call fields based on a certain condition.

Note Once you link to another profile, the user stays in that profile unless it also invokes a different profile.

Example User CSR1 typically enters only high-level call data, and SupRep1 adds details later. However, occasionally CSR1 may need to add details. You create a logical variable labeled Create Call Detail and add it to the last frame of CSR1's default profile. When CSR1 responds Yes to this field, you branch to a second profile that contains detailed fields.

▶ See “Assign Access to Profiles” on page 477.

You can also use access to control which frames display. However, access cannot be set up to be conditional as frame sequences can. With this approach, CSR1 is assigned PROFILE1 that includes a subset of basic fields. You then create PROFILE2 with more detailed fields. You give CSR1 access to PROFILE1 and SupRep1 access to PROFILE1 and PROFILE2 using Pending Call Frame Maintenance.

You link the last frame of PROFILE1 to the first frame of PROFILE2 and assign PROFILE 1 to both CSR1 and SupRep1. When SupRep1 executes Pending Call Maintenance, the frames from both profiles display. When CSR1 executes Pending Call Maintenance, only the set of frames that are part of PROFILE1 display.

▶ See “Using Preconfigured Frames” on page 460.

In addition to specifying the next frame to display when the user clicks Next or Back, you can optionally specify a program to run. You must choose from one of a set of predefined programs that display preconfigured frames such as comments or installed base records.

Figure 12.8 illustrates the first frame of Pending Call Frame Sequence Maintenance.

The screenshot shows a software window titled "Pending Call Frame Seq Maint". It has a menu bar with "Go To" and "ACTIONS". The main content area contains several input fields and labels: "Profile: DEMO" with a search icon, "Frame Number: 10", "Direction: Forward", "Default Next Program:", "Default Next Profile:", "Next Frame Number:", and "Description:".

Fig. 12.8
Pending Call Frame
Sequence
Maintenance
(11.1.3.17), Frame
Sequence
Configuration

Profile. Enter the ID of an existing profile defined with Pending Call Frame Maintenance.

Frame Number. Enter the number identifying a frame within this profile to be linked to another frame. The frame number must exist in this profile or an error is generated.

A frame sequence is uniquely identified by a combination of profile ID, frame number, and direction. Thus, every frame within a profile can have at least two alternate sequences associated with it depending on whether the user is entering or exiting the frame.

Direction. Enter the navigation direction associated with this frame sequence. Valid values are:

Forward. This sequence applies when the user clicks Next.

Backward. This sequence applies when the user clicks End.

Default Next Program. Optionally enter the name of next program to run when no condition sets apply. Each of these programs displays a non-configurable frame. When users complete the frame (or sequence of frames, as in the case of Call Maintenance) displayed by the program, the next frame specified in the frame sequence displays for input.

A default next program always executes before the next frame in the next profile displays.

Specify one of the following programs:

- `fscslfdr.p` executes the Classification code lookup.
- `fscamtm.p` executes Call Maintenance.
- `fscammt.p` executes the call comments sequence.
- `fspcup2.p` executes the call validation and transfer function.
- `fspcsr1.p` lets you search for a record in the installed base.

See “Using Preconfigured Frames” on page 460 for details about these programs.

- `fspcsr2.p` displays multiple sources of coverage for an item and lets you select the one you want to use for this call.
- `fspcsr3.p` displays existing calls or call line item detail for the end user specified.
- `fseusel.p` displays an End User Selection frame that lets you search for an end user or create a new one.
- `fscarmtx.p` displays coverage information and limit details for an item.

Default Next Profile. Enter the ID of a valid profile containing the next frame to display in Pending Call Maintenance when no condition sets apply. This is typically the profile you are currently maintaining but can be any other valid profile.

Leave this field blank and Next Frame Number set to 0 if you want to terminate the display sequence or implement conditional branching. The system then evaluates the next sequential condition set to determine which profile and frame to use. If none exists, the first frame in the profile then redisplay in Pending Call Maintenance.

Note If you specify a different profile, the user executing this sequence in Pending Call Maintenance must have access to both profiles or the frames do not display.

Next Frame Number. Enter the number of an existing frame to use next within the next profile when no condition sets apply. Leave Next Profile blank and the default 0 if:

- You do not want another frame to display. This indicates the end of the sequence in Pending Call Maintenance and the first frame of the profile redisplay.
- You want to implement conditional branching. The system evaluates the next sequential condition set to determine which profile and frame to use.

If you are switching profiles (Default Next Profile is not the same as the current profile), you can:

- Enter a specific number to start with that frame.
- Leave the default 0 and the system will display the first frame in the frame sequence.

Description. Enter a brief (maximum 40 characters) description of this frame sequence to help identify its purpose.

Define Condition Sets

Use condition sets to implement conditional branching in the display of frames. For example, you can design a sequence where the user is always prompted to enter call comments. Or you can add a logical field to a frame so the user can specify Yes or No to entering comments. You then set up a condition based on the value of the logical field so that the comments frame displays only when the value of the Comment field is Yes.

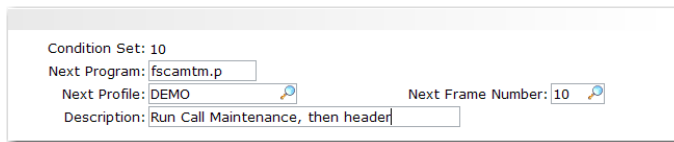
Each frame sequence can be associated with multiple condition sets, which are evaluated in order based on the condition sequence number. This lets you link together a sequence of events, such as running one program, followed by another, and then followed by a frame. Within a condition set, programs are always executed first; then the system looks for the next profile and frame.

To implement options that do not already exist in Call Maintenance, create your own fields in Pending Call Field Maintenance (11.1.3.13) and add them to frames in Pending Call Frame Maintenance (11.1.3.15).

Multiple conditions can belong to a condition set. All of the conditions must be true for the next action to be taken.

Note Review the condition sets in the DEMO profile loaded with Pending Call Setup Utility for examples of how to implement conditional branching.

Figure 12.9 illustrates the frame in Pending Call Frame Sequence Maintenance for defining condition sets.



The screenshot shows a window titled 'Pending Call Frame Sequence Maintenance'. It contains the following fields:

- Condition Set: 10
- Next Program: fscamtm.p
- Next Profile: DEMO
- Next Frame Number: 10
- Description: Run Call Maintenance, then header

Fig. 12.9
Pending Call Frame
Sequence
Maintenance
(11.1.3.17),
Condition Sets

Condition Set. Enter a number (from 1 to 999) identifying this condition set. Leave the default 0 if no conditions apply. In this case, the default behavior always occurs, since it is unconditional.

When all conditions within the set are true, the next program, next profile ID, and next frame number associated with the condition set determine the configuration of Pending Call Maintenance. The next program is always executed before the next frame displays.

If any condition within the set is false, the entire set is bypassed. The system then evaluates the next condition set (determined by sequence number). If none of the condition sets is true, the default next program is run or next frame within the next profile displays in Pending Call Maintenance. If multiple condition sets are true, they are all processed sequentially.

Number condition sets by 10's or 100's, so you can add new sets without renumbering existing ones. For example, if you define condition sets 10, 20, and 30 and want to add another between 20 and 30, you can enter it as 25. Use Pending Call Setup Utility to renumber condition sets.

◆ See “Default Next Program” on page 485.

Next Program. Optionally enter the name of the next program to run when this condition set applies. This field is the same as the Default Next Program field, but applies only when this condition set is true.

◆ See “Default Next Profile” on page 486.

Next Profile. Enter the ID of a valid profile containing the next frame to display in Pending Call Maintenance when this condition set applies. This field is the same as the Default Next Profile field, but applies only when this condition set is true.

Next Frame Number. Enter the number of an existing frame to use next within the next profile when this condition set applies. Leave Next Profile blank and the default 0 if you do not want another frame to display. This indicates the end of the sequence in Pending Call Maintenance and the first frame of the profile redisplay.

If you are switching profiles (Next Profile is not the same as the current profile), you can:

- Enter a specific number to start with that frame.
- Leave the default 0 and the system will display the first frame in the frame sequence.

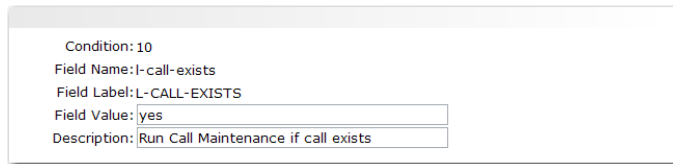
Define Conditions within a Condition Set

If you are using conditional branching, you first define condition sets and then define the conditions that are part of the set. The condition identifies a field name and value (or range of values) that must be true. When all conditions within the set are true, the next program, next profile ID, and next frame number associated with the condition set determine the configuration of Pending Call Maintenance.

If any condition within the set is false, the entire set is bypassed.

You can define complex conditions using Boolean operators such as less than, greater than, and equal to.

Figure 12.10 illustrates the frame in Pending Call Frame Sequence Maintenance for defining conditions.



Condition:	10
Field Name:	l-call-exists
Field Label:	L-CALL-EXISTS
Field Value:	yes
Description:	Run Call Maintenance if call exists

Fig. 12.10
Pending Call Frame
Sequence
Maintenance
(11.1.3.17),
Conditions

Condition. Enter a number (from 1 to 999) identifying a condition within this condition set. Each condition set can include multiple conditions. These are evaluated in order based on the sequence number specified in this field.

Number conditions by 10's or 100's, so you can add new conditions without renumbering existing ones. For example, if you define conditions 10, 20, and 30 and want to add another between 20 and 30, you can enter it as 25. Use Pending Call Setup Utility to renumber condition sets.

Field Name. Enter the name of an active field to be evaluated as part of this condition. You can specify only fields marked as active in Pending Call Field Maintenance.

When this profile is used to determine the sequence of frames in Pending Call Maintenance, the system compares the value entered in this field with the list of values specified for the condition to determine the program to run or next profile and next frame to display.

The system displays up to 20 characters of the field label (as specified in Label Master Maintenance) below the field name.

Field Value. Enter the string that must match the string specified for Field Name for this condition to be true. You can enter:

- A specific value
- A comma-separated list of specific values using any of the following operators: =, >, <, <>, >=, <=
- A comma-separated list of ranges (separated with a hyphen) using either the = operator for values within the range or the <> operator for values outside the range

The system performs the matching using OR logic; when the first match is found, the condition is considered true.

For example, to match the value of *string*, you can enter any of the following:

- string or =string, for equal comparison
- >string, for greater than comparison
- <string, for less than comparison
- <>string, for not equal to comparison
- >=string, for greater than or equal to comparison
- <=string, for less than or equal to comparison
- string1-string2 or =string1-string2, for values within a range
- <>string1-string2, for values outside a range

Description. Enter a brief (maximum 40 characters) description of this frame sequence condition or its effect.

Assign Default Profiles to Users and Roles

Use Pending Call User/Role Default (11.1.3.19) to assign a default profile to specific users or user roles. This function is optional. If you do not assign profiles with this program, the profile ID designated as the default profile in Pending Call Frame Maintenance applies to all users.

The sequence of frames that displays in Pending Call Maintenance is determined by the default profile associated with a user. Make sure that you have also given users appropriate security access to the default profile in Pending Call Frame Maintenance.

Be careful when assigning default profiles to user roles if your users typically belong to more than one role. In this case, the system assigns them the first profile associated with the first role it finds, which may not be what you want.

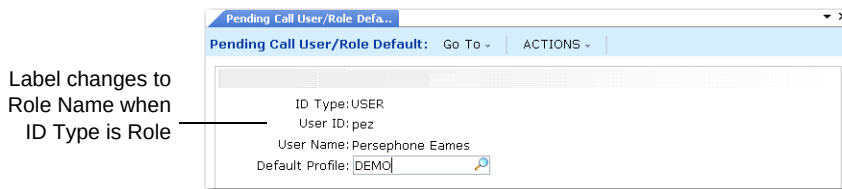


Fig. 12.11
Pending Call
User/Role Default
(11.1.3.19)

ID Type. Indicate the type of default being defined. Valid values are:

User: This default applies to a specific user ID.

Role: This default applies to a user role.

Based on your selection for ID type, you are prompted to enter either a user ID or user role.

User ID. If ID Type is User, enter a valid ID of a user defined with User Maintenance (36.3.1). The full name of the user displays in the User Name field.

Role Name. If ID Type is Role, enter a role defined with Role Create (36.3.6.1). The description displays in the Role Description field.

Default Profile. Specify the ID of the default profile for this user or role. Define profiles with Pending Call Frame Maintenance (11.1.3.15).

Creating a Pending Call

Use Pending Call Maintenance (11.1.3.1) to create and modify pending calls. The configuration of the frames in this program is based on the profile associated with the user who is executing it. This can be as simple or as complex as is required to accommodate a particular set of business requirements.

This section illustrates how to create a call using the DEMO profile loaded using Pending Call Setup Utility. The DEMO profile creates a sequence of frames similar to Call Maintenance.

Review the information in “Design of Pending Call Maintenance Frames” on page 459 to understand the special attributes of frames in this program.

For information about the fields in Pending Call Maintenance, review the corresponding field description for Call Maintenance in “Using Call Maintenance” on page 390.

Processing in Pending Call Maintenance

When a user executes Pending Call Maintenance, the system:

- Determines any default values.
- Builds the first frame based on details specified in Pending Call Frame Maintenance and Pending Call Sequence Maintenance and displays the frame to the user.

When the user enters data in applicable fields and clicks Next (or presses Enter on last field), data is collected from the screen. The system:

- Validates any fields with Validated set to Yes in Pending Call Frame Maintenance and displays the first error found
- Verifies that a value is entered in any fields with Required set to Yes in Pending Call Frame Maintenance and displays the label of the first missing field, if any
- Generates default values for fields without data based on the values the user entered in other fields in the frame
- Redisplays the same frame if any field on the frame has a generated value

Sample Pending Call

This section illustrates how the sequence of frames works using the DEMO profile supplied with the system. This profile closely emulates the flow of control in Call Maintenance, and illustrates most of the features you can implement. You can use it as the basis for developing your own custom profiles by removing fields and frames that you do not use.

Figure 12.12 illustrates the first frame of Pending Call Maintenance. Some of the features of Call Maintenance that occur based on user input are triggered in this frame by specifying Yes to a field used as a condition. In Figure 12.12, the following fields are used like this:

- Search ISB
- Search End User
- Search Coverage

These three fields display conditional frames.

Fig. 12.12
Pending Call Maintenance (11.1.3.1), User Selection

Figure 12.13 illustrates the frame that displays when you enter Yes to Search End User and `fseusel.p` is defined as the program to execute when `l-search-enduser` is true. This frame is similar to the pop-up that displays in Call Maintenance (see “End User Selection Frame” on page 397) when you leave the End User field blank and click Next or press Enter. You can find an end-user record by number, sort name, postal code, and telephone number.

If you leave End User blank and click Next in the frame illustrated in Figure 12.13, an additional frame displays where you can create a new end user. This is just like the frame in Call Maintenance, and not illustrated here. See “End User Frame” on page 398.

Fig. 12.13
Pending Call
Maintenance
Example, End User
Selection

The screenshot shows a window titled "Pending Call Maintenance" with a sub-header "Pending Call Maintenance: Go To Actions". The main content area is titled "User Selection" and contains the following fields:

- End User: Endsm102
- End User Address: Anywhere CA
- Call Date: 07/04/2007 (dropdown)
- Time: 13:18 (text input)
- Time Zone: GMT-8
- Service Area:
- Item Number: CP300
- Item Description: Finished Configured good
- Location:
- Install Date: 06/26/2007
- Warranty End: 09/24/2007
- Contract:
- Start Date:
- End Date:

Figure 12.14 illustrates the frame that displays when you enter Yes to Search ISB and `fspcsr1.p` is the program to execute when `l-search-isb` is true. This search must occur after the user has entered a serial number to search for.

Fig. 12.14
Pending Call
Maintenance
Example, Installed
Base Items

The screenshot shows a window titled "Pending Call Maintenance" with a sub-header "Pending Call Maintenance: Go To Actions". The main content area is titled "Installed Base Items" and contains a table with the following data:

Serial	Item Number	Description	End User
Serial-22	CP300	Finished Configured good	Endsm102

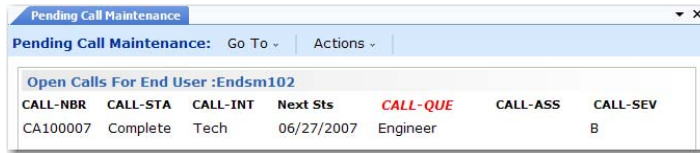
The frame in Figure 12.15 displays when you add a condition to check for other calls for the specified end user.

Fig. 12.15
Pending Call
Maintenance
Example, Other
Calls Exist for This
End User

The screenshot shows a window titled "Pending Call Maintenance" with a sub-header "Pending Call Maintenance: Go To Actions". The main content area is titled "Other Calls Exist for This End User" and contains the following fields:

- End User: Endsm102
- Search Calls: ☒
- Search Call Items: ☐

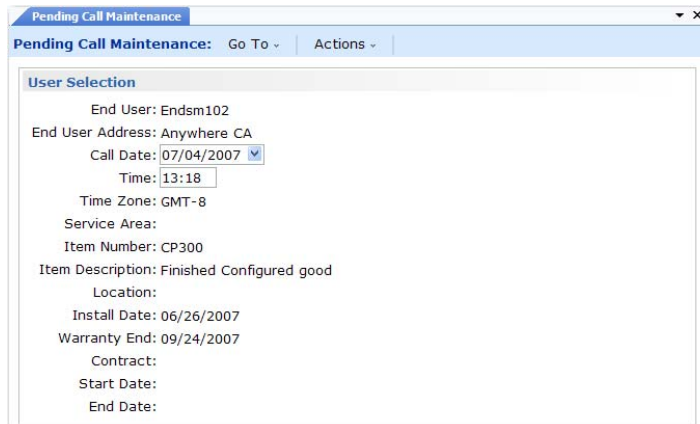
When `fscpcsr3.p` is defined as the program to execute based on the condition that Search Calls is Yes (`l-search-call` is true), the frame in Figure 12.16 displays. A slightly different frame displays when Search Call Items is Yes.



CALL-NBR	CALL-STA	CALL-INT	Next Sts	CALL-QUE	CALL-ASS	CALL-SEV
CA100007	Complete	Tech	06/27/2007	Engineer		B

Fig. 12.16
Pending Call
Maintenance
Example, Open
Calls for End User

Figure 12.17 illustrates the second User Selection frame that lets you modify the call open date and time if necessary.

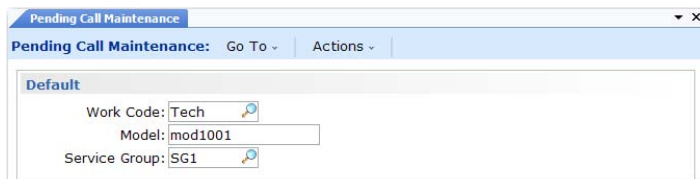


User Selection

End User: Endsm102
 End User Address: Anywhere CA
 Call Date: 07/04/2007
 Time: 13:18
 Time Zone: GMT-8
 Service Area:
 Item Number: CP300
 Item Description: Finished Configured good
 Location:
 Install Date: 06/26/2007
 Warranty End: 09/24/2007
 Contract:
 Start Date:
 End Date:

Fig. 12.17
Pending Call
Maintenance
Example, Second
User Selection
Frame

Figure 12.18 illustrates the Default frame in the DEMO profile. This frame is similar to the pop-up in Call Maintenance that prompts for the same three fields, which comprise the key for call default records defined in Call Default Maintenance. Pending Call Maintenance does not search for call defaults until these three fields have all appeared on a frame, either together or separately.



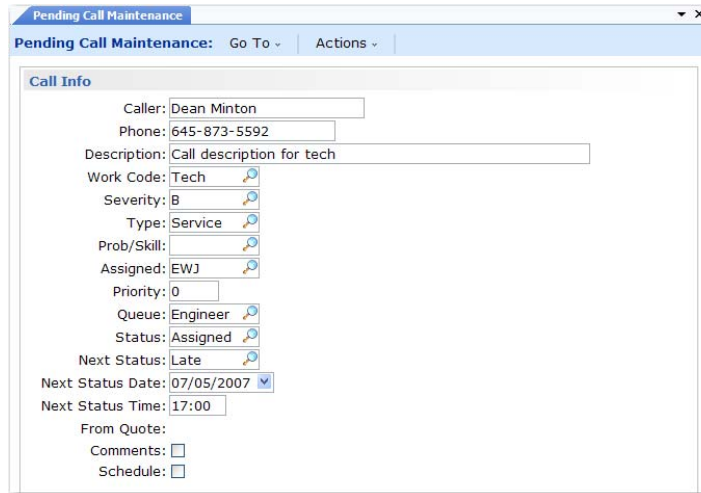
Default

Work Code: Tech
 Model: mod1001
 Service Group: SG1

Fig. 12.18
Pending Call
Maintenance
Example, Default

Figure 12.19 illustrates the Call Info frame in the DEMO profile. This frame is similar to the Call Info frame in Call Maintenance, where most of the key fields related to a call are updated.

Fig. 12.19
Pending Call
Maintenance
Example, Call Info



Pending Call Maintenance

Pending Call Maintenance: Go To Actions

Call Info

Caller: Dean Minton

Phone: 645-873-5592

Description: Call description for tech

Work Code: Tech

Severity: B

Type: Service

Prob/Skill:

Assigned: EWJ

Priority: 0

Queue: Engineer

Status: Assigned

Next Status: Late

Next Status Date: 07/05/2007

Next Status Time: 17:00

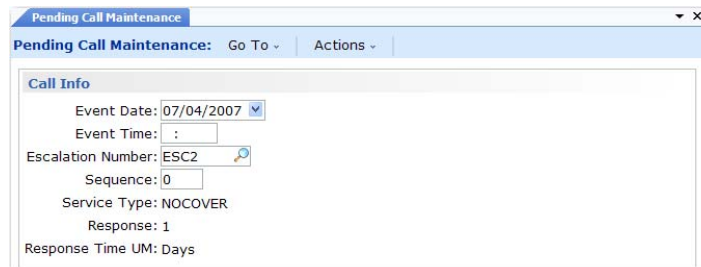
From Quote:

Comments: ☐

Schedule: ☐

Because frames in Pending Call Maintenance can include at the most 18 fields, a second frame is needed to accommodate all the fields that display in one frame in Call Maintenance. Figure 12.20 illustrates this frame.

Fig. 12.20
Pending Call
Maintenance
Example, Second
Call Info



Pending Call Maintenance

Pending Call Maintenance: Go To Actions

Call Info

Event Date: 07/04/2007

Event Time: :

Escalation Number: ESC2

Sequence: 0

Service Type: NOCOVER

Response: 1

Response Time UM: Days

When `fscammt.p` is defined as the program to execute based on the condition that Comments is Yes (l-call-info-comments is true), the frame in Figure 12.21 displays.

The screenshot shows a window titled "Pending Call Maintenance" with a sub-header "Pending Call Maintenance: Go To Actions". The main section is titled "Call Comments" and contains the following fields:

- Page: 1
- Master Reference:
- Type: CL
- Language:
- Page:

Below these fields is a table with a header row containing the text "<<07/04/2007 13:39 mfg>>". The table has three empty rows below the header.

Fig. 12.21
Pending Call
Maintenance
Example,
Comments

Figure 12.22 illustrates the Travel and Estimated Time frame in the DEMO profile.

Note Even if this frame is part of a profile, it displays only when Call Time Window is Yes for the user in Service/Support User Preferences (11.21.23) or for the system in Call Management Control (11.1.24).

If you are using escalations, the default values for some of the fields in this frame are updated based on the escalation and sequence specified in the previous frames. While pending calls are not escalated when the Escalation Monitor runs, the default next event date and time are affected by an escalation associated with them. Once the pending call is transferred, the next sequence of the escalation will be executed.

The first four fields in this frame always display in Call Maintenance. The remaining fields display only when Multiple Time Zones (MTZ) is enabled in Service Management Control (11.24). These fields will not have values in Pending Call Maintenance when MTZ is not enabled. If you base your profiles on the DEMO profile and do not use MTZ, use Pending Call Frame Maintenance to remove these fields.

The screenshot shows a window titled "Pending Call Maintenance" with a sub-header "Pending Call Maintenance: Go To Actions". The main section is titled "Travel And Estimated Time" and contains the following fields:

- Estimated Length: 001:00
- Travel Distance: 0
- Travel UM: M
- Travel Time: 000:00
- Event Date: 07/04/2007
- Event Time: 10:45
- Current Date: 07/04/2007
- Time: 13:43
- Current TZ:

Fig. 12.22
Pending Call
Maintenance
Example, Travel
and Estimated Time

Figure 12.23 illustrates the Item Service Structure Detail frame in the DEMO profile. The fields in this frame all apply to the first line item on the call.

Note Even if this frame is part of a profile, it displays only when Call Structure Window is Yes for the user in Service/Support User Preferences or for the system in Call Management Control.

Fig. 12.23
Pending Call
Maintenance
Example, Item
Service Structure
Detail

The screenshot shows a window titled "Pending Call Maintenance" with a sub-header "Pending Call Maintenance: Go To Actions". The main frame is titled "Item Service Structure Detail" and contains the following fields:

- Engineer: EWJ
- Engineer Area: Westcst
- Work Code: Tech
- Item Number: CP300
- Service Area:
- Site: [text field]
- BOM Code: [text field]
- Routing: [text field]

Figure 12.24 illustrates the Call Update frame in the DEMO profile, which is similar to the same frame in Call Maintenance. The fields in this frame apply to the call record, not line items. You can add more lines to the call by setting Multi Items to Yes.

Fig. 12.24
Pending Call
Maintenance
Example, Call
Update

The screenshot shows the same "Pending Call Maintenance" window, but the main frame is titled "Call Update" and contains the following fields:

- Page Engineer: ☐
- Multi Items: ☒
- Fault Codes: ☐
- Resolution: [text field]
- Service Request: [text field]
- Time Spent: 0.00
- Service Type: STANDARD
- Entered By: mfg
- Print Call: ☐
- Call Printed: ☐

Figure 12.25 illustrates the Call Item frame in the DEMO profile, which displays when Multi Items is Yes in the previous frame. The fields in this frame apply to the indicated call line item. The line number begins with 1 and automatically increments through existing lines each time you click Next. After all existing lines display, clicking Next adds the next line. You cannot use Next/Previous directly in the line number field.

Pending Call Maintenance

Pending Call Maintenance: Go To Actions

Call Item

Line: 1

Item Number: CP300

Serial: Serial-22

Reference: 0

Search Coverage: ☐

Work Code: Tech

Service Type: STANDARD

Item Description: Finished Configured good

Engineer: EWJ

Site: 12000

BOM Code: REPCP

Routing: REPCP

Quantity: 1

Status: New

Update ISB: ☐

Fault Codes: ☒

Comments: ☐

Coverage: ☒

Fig. 12.25
Pending Call
Maintenance
Example, Call Item

The Coverage Information frame illustrated in Figure 12.26 displays when `fscarmtx.p` is specified as the next program to execute when Coverage is Yes (l-coverage is true).

The fields in this frame are display only, like the similar frame in Call Maintenance and Call Activity Recording and for informational purposes only. A second frame is included when coverage limits exist.

Pending Call Maintenance

Pending Call Maintenance: Go To Actions

Coverage Information

Contract: Contract Line: 0

Contract Svc Type: Warranty Service Type:

Start Date: Install Date:

End Date: Warranty Expiration:

Service Type Used: STANDARD Currency: USD

Fig. 12.26
Pending Call
Maintenance
Example, Coverage
Information

Figure 12.27 illustrates the Fault Code frame in the DEMO profile that displays when Fault Codes is Yes in the previous Call Item frame. The line number is like the item line number field (see Figure 12.25). It begins with 1 and automatically increments through existing lines each time you click Next. After all existing lines display, clicking Next adds the next line. You cannot use Next/Previous directly in the line number field.

Fig. 12.27
Pending Call
Maintenance
Example, Fault
Code

The screenshot shows a window titled "Pending Call Maintenance". Below the title bar is a header area with "Pending Call Maintenance:" followed by "Go To" and "Actions" dropdown menus. The main content area is titled "Fault Code" and contains a form for "Line: 1". The form has four input fields: "Problem:", "Cause:", "Resolution:", and "Hours: 0.00". Each of the first three fields has a small magnifying glass icon to its right.

See Figure 12.28 on page 502.

A final frame displays when `fspcup2.p` is specified as the next program to execute. This frame is used to validate and transfer the pending call to Call Maintenance. This frame is discussed in the following section.

In Call Maintenance, clicking Back at this point returns the cursor to the first call header frame. The DEMO profile has been configured with backward frame sequences, which let you navigate backwards through all frames, except for the second call info and user selection frames. You can modify this design by changing the frame sequence records.

Transferring Pending Calls

Pending calls are typically a preliminary step before creating an actual call record. The system supports two ways of transferring pending calls to call master records:

- Use Pending Call Transfer (11.1.3.7) to create active calls for a range of pending calls. This program takes the data specified for one or more calls in Pending Call Maintenance and creates corresponding call records that can be maintained in Call Maintenance.
- Transfer calls one at a time in Pending Call Maintenance by specifying `fspcup2.p` as the next program to run in a pending call profile. This method provides some additional options that do not exist in Pending Call Transfer.

The system validates the data for each call before it is transferred. You can optionally ignore warnings but errors prevent a call from being successfully transferred.

Transferring a pending call:

- Copies all data from the pending call table to appropriate call-related tables, including comments, call lines, and fault codes.

- Automatically changes the pending call status from Entered to Transferred. A transferred pending call can no longer be updated in Pending Call Maintenance.

Status displays on various reports such as Pending Call Data Report (11.1.3.5). Use this report to view pending calls by date transferred. You can also archive and delete pending call records by transfer date in Pending Call Delete/Archive (11.1.3.11).

Transferring Calls One At a Time

When `fspcup2.p` is part of the profile being used in Pending Call Maintenance, the frame illustrated in Figure 12.28 displays.

Note This is the way the DEMO profile is configured.

Before the frame displays, the system:

- Processes all data for the current pending call ID
- Validates all fields, generating one error message or warning message per field

If any errors or warnings are found, the Call Validation frame redisplay with the error and warning count and the system sets defaults for various fields as follows:

- Show Detail is set to Yes and Temporary Fields is set to No.
- Transfer Call is set to No and can be updated only if all messages generated during validation are warnings. If errors are found, the call cannot be transferred.
- Cancel and Delete Pending Call are both set to No by default and can be changed.

When no errors or warnings are found, Show Detail is set to No and Transfer Call is set to Yes.

Fig. 12.28
Pending Call
Maintenance
Example, Call
Validation Frame

Show Detail. Enter Yes to display a report listing the pending call field values and any related error or warning messages.

Temporary Fields. When Show Detail is Yes, indicate if you want to include the value of temporary fields in the report output:

No: Only data for fields that are transferred to the call are shown in the report.

Yes: In addition to pending call data that is transferred to Call Maintenance, the report displays the value of temporary fields associated with the pending call, such as data from control programs, the end user record, item record, or contract.

Use this option when you initially design and test pending call profiles to verify that call defaulting occurs the way you expect.

Transfer Call. Enter Yes to transfer the pending call record and create a valid call record in the call master table.

Enter No to run the transfer program in report-only mode without updating the database. If Show Detail is Yes, a report prints for review with SIMULATION displayed at the top of each page.

This field defaults to No if any errors or warnings were generated during validation (either Validation Errors or Validation Warnings is not 0). You can modify this field when warnings exist; when errors exist, the field is set to No and cannot be modified. Errors must be corrected before the pending call can be transferred.

Set Show Details to Yes to see which fields generated errors or warnings.

Cancel Pending Call. Enter Yes if you want to cancel this pending call; otherwise, enter No.

You cannot set Cancel Pending Call to Yes if either Transfer Call or Delete Pending Call is Yes.

When Cancel Pending Call is Yes, the status of the pending call is set to Canceled. Pending calls with this status cannot be updated, transferred, or deleted.

Status displays on various reports such as Pending Call Data Report. Use this report to view pending calls by date canceled. You can also delete/archive pending calls by cancel date using Pending Call Delete/Archive.

Note The status change does not occur until you click Back in this frame.

Delete Pending Call. Enter Yes if you want to delete this pending call; otherwise, enter No.

You cannot set Delete Pending Call to Yes if Cancel Pending Call is Yes. However, you can set both Delete Pending Call and Transfer Call to Yes at the same time. This lets you transfer the pending call to the call master and remove the pending call record from the database in one operation.

Note The record is not deleted until you click Back in this frame.

Transferring Calls in Batch

Use Pending Call Transfer (11.1.3.7) to create active calls for a range of pending calls. Set Transfer Calls to No and Show Detail to Yes to view a report of any errors the system detects regarding the pending call data. This option generates a report listing each field in the pending call and any associated error. The report is marked as a simulation, since the database is not actually updated. Correct any errors using Pending Call Maintenance before attempting to transfer the call since errors prevent the transfer from completing successfully.

When you are sure that the range of pending calls you are specifying will not generate any errors, set Transfer Calls to Yes to update the call master table with the new call data.

Fig. 12.29
Pending Call
Transfer (11.1.3.7)

Call ID. Enter a range of IDs for pending calls to be transferred. Only pending calls with a status of Entered are selected for transfer.

Show Detail. Indicate whether to display details for all the fields in the pending call record.

No: The report shows one line for each call transferred, including the call ID and status.

Yes: Information is listed for each field in the pending call record, including the field name, field label, and field value. Fields are listed in order for the call header, followed by each call line, followed by each line of fault code information.

See “Temporary Fields” on page 502.

Note You cannot display temporary fields when you use this program to transfer calls. This is possible only with the frame that displays in Pending Call Maintenance.

Any error or warning messages generated are only included on the report if Show Detail is Yes, since they are associated with specific fields. Unless you are sure that no errors will be generated, set Show Detail to Yes so that you can identify fields that must be modified for the transfer to succeed.

Transfer Calls. Enter Yes to transfer pending call records and create valid call records in the call master table.

Enter No to run this program in report-only mode without updating the database. A report prints for review with SIMULATION displayed at the top of each page.

Ignore Warnings. If Transfer Calls is Yes, indicate whether any warnings generated during the transfer should be ignored.

No: When Transfer Calls is Yes, a call generating a warning is not transferred. The appropriate warning is written to the report.

Yes: When Transfer Calls is Yes, a call is transferred even when it generates one or more warning messages.

Viewing Pending Call Data

Table 12.5 summarizes pending call reports.

Report	Menu Number	Description
Pending Call Data Inquiry	11.1.3.3	Displays summary information about a specific pending call.
Pending Call Data Report	11.1.3.5	Displays summary or detailed information about pending calls, based on various selection criteria such as ID, customer, or end user; item and serial number; date created, transferred, or canceled; and existence of a field or range of field values. The summary displays one line for each call, including the call ID and status; the creation date, time, and user ID; and the last modification date, time, and user ID. The detailed report lists information for each field in the pending call record, including the field name, field label, and field value. Fields are listed in order for the call header, followed by each call line, followed by each line of fault code information.
Pending Call Profile Report	11.1.3.21	Displays information about the user IDs and groups associated with a profile, as well as its frames, fields, and frame sequences.

Table 12.5
Pending Call
Reports

Removing Obsolete Pending Call Records

Use Pending Call Delete/Archive (11.1.3.11) to delete and archive pending call records and associated data such as comments and fault codes when online history is no longer needed. You can select records by status change date and by the ID of the user who created them.

This program is like other delete/archive programs in. Run a report first by setting Delete and Archive to No. When you are sure only appropriate records are selected, change Delete to Yes.

Fig. 12.30
Pending Call
Delete/Archive
(11.1.3.11)

Pending Call Delete/Archive

Pending Call Delete/Archive: Go To ACTIONS

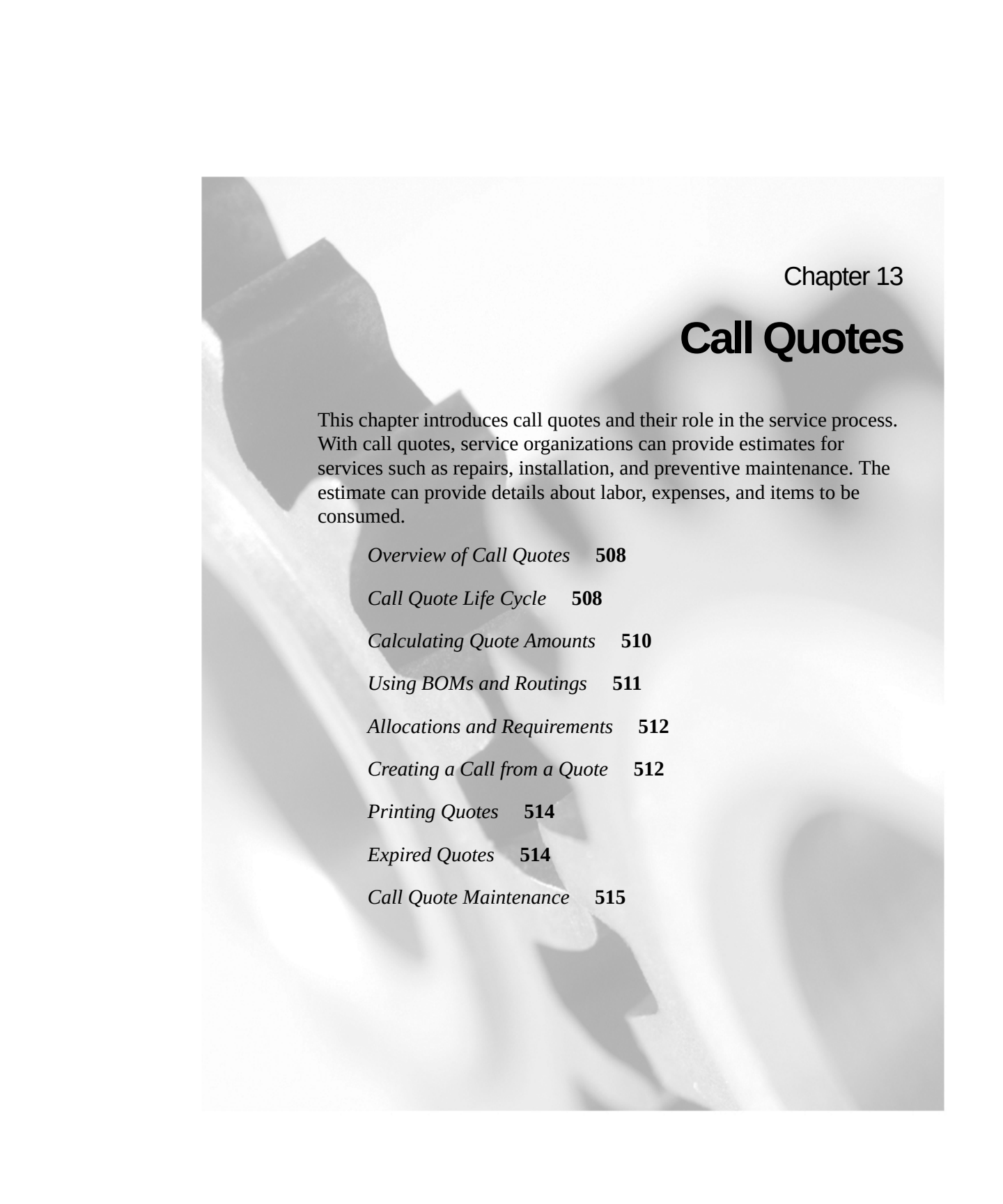
Call ID: To:

Entered Status To Date: Transferred Status To Date: Cancelled Status To Date:

Entered By:

Delete: Archive:

Archive File: Output:



Chapter 13

Call Quotes

This chapter introduces call quotes and their role in the service process. With call quotes, service organizations can provide estimates for services such as repairs, installation, and preventive maintenance. The estimate can provide details about labor, expenses, and items to be consumed.

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Using BOMs and Routings **511**

Allocations and Requirements **512**

Creating a Call from a Quote **512**

Printing Quotes **514**

Expired Quotes **514**

Call Quote Maintenance **515**

Overview of Call Quotes

To sell services to prospective customers, many service organizations provide quotations, which outline the labor, expenses, and replacement items (components) required for service or repair work. Quotations include the terms and conditions for the detailed services.

In Service/Support Management, call quotes are based on user-defined codes such as invoice sort, charge code, and service category. This enables a service organization to structure service proposals the same way it invoices service activities. To maintain this structure, call quotes are similar to Call Activity Recording (CAR).

▶ See Chapter 25, “Control Programs,” on page 881 for details of control program settings.

Fields in Call Management Control that affect call quotes include Next Quote ID, Quote Prefix, Days Until Expire, and Default Quote Queue.

Call Quote Life Cycle

Some service organizations let customers review the cost of repairs before they are made, especially for expensive items. The customer sends the item to the service center, or a field engineer reviews the item at the customer’s site. The engineer estimates the labor, expenses, and parts required to repair the item.

This detailed estimate is a *call quote*. Call Quote Maintenance is an entry point to the same frames used in Call Activity Recording (CAR). In CAR, the engineer records the labor, expenses, and parts consumed during a repair. In Call Quote Maintenance, the engineer uses the same frames to record estimates before the repair is done.

After you enter the details of a quote, Call Quote Maintenance displays a summary similar to the summary frame of Call Invoice Recording (CIR). This frame summarizes the pending invoice amounts, based on the engineer’s estimates. CIR generates a pending invoice. Call Quote Maintenance creates a simulated invoice. Both use the same method to summarize costs and display them by invoice sort.

Two limitations exist for a call quote's simulated invoice amount:

- Call Quote Maintenance uses service type just as Call Maintenance does, to determine product line, price list, response time, priority, and coverage days. However, instead of using the limits and levels of coverage, it calculates all quantities as 100% billable.
- Call Quote Maintenance does not calculate taxes. When you create a sales order and generate an invoice in Call Invoice Recording, the system calculates taxes in the sales order trailer.

▶ See “Calculating Quote Amounts” on page 510.

Other differences between Call Quote Maintenance and Call Activity Recording include:

- You can open only one report for each call quote line. In CAR, you can open multiple reports.
- The status of call quote reports is always Quote. The status determines whether a report can be invoiced. Quote reports cannot be invoiced.

Figure 13.1 illustrates the life cycle of a call quote.

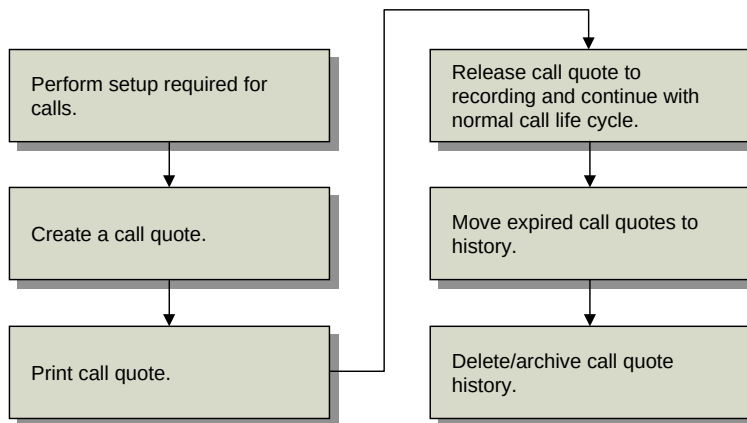


Fig. 13.1
Call Quote
Workflow

The call quote life cycle has the following steps:

- 1 Because a call quote can become a call, call quotes require the setup normally used for Call Maintenance: end-user information, service BOMs and routings, engineers, status codes, queues, and service

▶ See “Setting Up Call Defaults” on page 370.

types and contracts. Because a call quote’s input process is the same as Call Activity Recording, call quotes need the same setup as Call Activity Recording, including charge codes and charge product lines.

To minimize data entry when creating call quotes, create sets of quote defaults in Call Default Maintenance (11.1.21.10) by setting category to Quote. You can access defaults you created in Call Quote Maintenance.

- 2 Create quotes in Call Quote Maintenance (11.1.1.7). To simplify data entry for similar repair operations, copy an existing quote in Copy Call Quote (11.1.1.12).
- 3 Print call quotes using Call Quote Print (11.1.1.10).
- 4 If the customer accepts the quote and decides to proceed with the repair, use Call Quote Release to Recording (11.1.1.11) to create a call based on the quote. The quote number that initiated the call displays in the Call Info frame of Call Maintenance.
Releasing a quote sets a closed date so it cannot be released again.
- 5 Use Expired Quote Move to History (11.1.1.22) to move expired or released quotes to a history table and delete them from the call master table.
- 6 From the history table, you can archive and delete quotes with Call/Quote History Delete/Archive (11.1.1.23).

Calculating Quote Amounts

When creating a quote, you prepare a detailed estimate of the labor, expenses, and parts required to repair the item. If the item to be serviced has no contract or warranty coverage, you can simply use current list prices for items and service categories to calculate the billable amount.

Call Quote Maintenance uses service type information to identify the product line, repair and cost price lists, response time, and hours of coverage. However, even if the item is under contract or warranty, the levels and limits of coverage are not considered. The quoted repair is estimated at the full list price for items, expenses, and labor.

This approach to estimating is used because there is no way to be sure that coverage in effect on the quote open date will still be in effect on the call open date.

- Coverage may expire before you perform the repair because the end date of the warranty or contract is reached.
- Coverage terms may have been defined with effective dates so that the same terms are no longer in effect when the call is created.
- If you are using contract limits, coverage can also expire if other calls consume the amount before you release the quote.

As a result, the actual amount billed for the call may be less than the quote. To indicate this, create master comments explaining that the prices are subject to coverage terms in effect when the quote is released.

Using BOMs and Routings

When you create a quote for items defined in Service Item Maintenance (11.3.7), you can use the repair, PM, and installation BOM and routing for labor and item details. Operations defined in the routing can be loaded in the Labor/Expenses detail. Items specified on the BOM can be loaded into the Item Usage frame.

◆ See Chapter 21, “Service Structures and Routings,” on page 763.

Using service BOMs and routings streamlines data entry for standard repair sequences. You can customize the sequence for the quote.

When the quote is released to a call, you can decide if you want item usage records copied into Call Activity Recording. If you copy the detail, the engineer can simply adjust the existing records to reflect the work performed during the repair. However, if you plan to order items for the call with material orders and load them as item usage, you can choose not to copy the usage records during the release process.

Important You should either copy the item usage to the call or load item usage from material orders associated with the call, but not do both. If you do, item usage records will be doubled.

Allocations and Requirements

When creating a quote, you can also create general allocation records. Do this when:

- The quote is likely to become a call.
- Inventory is limited.

Note No MRP requirements are associated with call quotes.

You cannot perform detail allocations (picking) in Call Activity Recording or Call Quote Maintenance. In CAR, you can identify the specific inventory you used for the call—for example, by item number, site, location, serial number, and inventory reference number. For call quotes, you can create general allocations only. The detail about specific items used must be recorded in CAR. For this reason, the Multi-Item frame does not display in Call Quote Maintenance.

When you create a call from the quote, Call Quote Release to Recording:

- Updates MRP and quantity required to reflect the call's requirements
- Sets the required date for MRP to the call's next status date

Creating a Call from a Quote

Use Call Quote Release to Recording (11.1.1.11) to create calls from selected call quotes. You can release a quote to a call only once. To be released, the quote must have the open status defined in Call Management Control.

Fig. 13.2
Call Quote Release
to Recording
(11.1.1.11)

Call Quote Release to Recording performs the following actions:

- Sets the quote number as the Reference field in the Call Info frame of Call Maintenance and in Call Activity Recording
- Sets the call number in the Reference field of Call Quote Maintenance
- Copies the quote data to the call including the quote comments
- Copies all usage records unless Copy Item Usage is No; then only labor and expense usage is copied
- Transfers the quote's engineer load to the call
- Creates MRP requirements
- Deletes the quote's allocations and re-creates them for the call
- Closes each quote report, so it cannot be updated
- Sets the quote's closed date to the release date

The first set of fields in Call Quote Release to Recording provides ways to select quotes for release. Call Date defaults from the system date, but you can modify it.

Note Leave Next Call Number blank to supply the next number from Call Management Control.

A released quote, like an expired quote, is closed. You can move it to history, delete, and archive it.

Calculating Coverage during Release

If a contract covers items on a quote, Call Quote Release to Recording calculates coverage based on the consumption of contract limits. Set Override Coverage Limits to Yes to apply coverage even to amounts over the limits. Set it to No to use the contract limits.

If a service type (warranty or generic) provides the coverage, Call Quote Release to Recording calculates the percentage of coverage without consideration of limit amounts.

The release report informs you of limits that were overridden. You can modify coverage amounts in Call Activity Recording.

◆ Refer to Chapter 4, “Multiple Time Zones,” for more information.

Note When Multiple Time Zones (MTZ) is active, the quote date range and call date are relative to the customer’s time zone, since Call Quote Release to Recording uses Call Date to find default charge codes and limit coverage.

Errors in Releasing Quotes

Call Quote Release to Recording generates errors if either of the following occurs:

- Credit Hold Option is 2 in SSM Accounting Control and the customer or end user on the quote is on credit hold.
- The customer on the quote requires a purchase order and you have not specified one on the quote.

Printing Quotes

Call Quote Print produces a document for the customer, showing the items to be serviced and details about labor, expenses, and items to be used. The quote document uses the company address specified in SSM Accounting Control.

The quote does not include information about applicable coverage or taxes. You can create master comments, printed on the report, explaining that the prices are subject to coverage amounts in effect when the quote is released.

Expired Quotes

Quotes remain in effect for a period controlled by Days to Expire in Call Management Control. The system adds the value in Days to Expire to the quote creation date to determine the quote’s expiration date.

When you access a quote in Call Quote Maintenance, a warning displays if the quote is expired. You cannot release an expired quote. Change the expiration date to reactivate the quote.

Move released or expired quotes to a history table with Expired Quote Move to History (11.1.1.22). Delete and archive quotes from the history table with Call/Quote History Delete/Archive (11.1.1.23).

Moving to History

Maintain quote history on line by moving expired and released (closed) quotes to a history table.

Fig. 13.3
Expired Quote
Move to History
(11.1.1.22)

Expired Quote Move to History has the following options:

- Select quotes by quote ID range, by end-user range, or by expiration or close date range. Releasing a quote sets the close date.
- Move closed quotes, expired quotes, or both using Move Closed and Move Expired.
- Produce a report of potentially affected quotes without moving them by setting both move fields to No and both audit fields to Yes.

Expired Quote Move to History copies quotes meeting the specified criteria from the call master (ca_mstr) to call history (chm_mstr), then deletes the quote from call master. You can save the quotes in the history table, or delete and archive them with Call/Quote History Delete/Archive (11.1.1.23).

Moving a quote to history removes any general allocations or engineer load associated with it.

Call Quote Maintenance

Define defaults for call quotes with Call Default Maintenance (11.1.21.10). See “Setting Up Call Defaults” on page 370 for details. Some defaults display in Call Quote Maintenance (11.1.1.7). Others appear when you create a call from the quote.

Fig. 13.4
Call Quote
Maintenance
(11.1.1.7)

Quote. Enter a number or let the system generate one from the quote prefix and next quote number in Call Management Control. You must distinguish call quotes from calls with a unique prefix.

Bill-To. Enter a customer bill-to address indicating the customer responsible for this quote.

End User. Enter the end user associated with the items to be serviced. To search for an end user or create a new one, leave this field blank. In this case, the End User Selection frame displays.

▶ See “End User Selection Frame” on page 397.

Contracts Pop-Up

When you enter an end user, a pop-up window displays the contracts that are in effect for the end user. When you select a contract, the call price list associated with the contract defaults into the Price List field, and the contract number defaults into the Contract field.

If you bypass this pop-up, you can enter the contract in the Contract field, and its price list displays. If there is no contract, the price list associated with the Default Call Service Type, defined in Call Management Control, displays.

The service type used for line-item coverage depends on whether you select a contract for coverage or if the item is in the installed base and covered by warranty:

- If a contract is specified, its service type is used.

- If an item in the installed base is covered by a warranty, this service type is used.
- Otherwise, the default call service type in Call Management Control is used.

Quote Defaults Pop-Up

When you create a quote and quote defaults exist, a pop-up window displays between the first and second frame of Call Quote Maintenance, like the one that displays in Call Maintenance.

See “Call Defaults Pop-Up” on page 400 for an example.

Enter values in the pop-up to find the most appropriate defaults. The work code initially defaults from the technical work code defined in Call Management Control.

If no defaults match the work code, model, and service group, the system looks for a match by work code and model, then work code alone. If no defaults match the work code, it uses defaults set up for call quotes, as opposed to calls.

See “Setting Up Call Defaults” on page 370 for more information on the search algorithm.

Quote Header Frame

If you are using quote defaults, many header fields have information when they display.

Call Quote Maintenance

Call Quote Maintenance: Go To ACTIONS

Quote: cq5701 Bill To: 10000 End User: 10000A TZone:

Status: Open Channel: Currency: USD Language: us

Priority: 35 Assigned: Taxable: Contract: Work Code: Tech Terms: BASE

Price List: SSM1 Queue: Manager Site: 2005

PO Number: Expire Date: 06/20/2007

Caller: From Quote: Phone: Comments: Detail: Daybook Set: mat1

Description:

Fig. 13.5
Call Quote Header

Status. Indicate where the quote is in its life cycle, which determines the status of the call created from it. Define statuses of quotes and calls in Call Status Code Maintenance (11.1.21.1). For a new quote, the status defaults first from Call Default Maintenance, then from the Open status in Call Management Control.

Priority. Enter a number indicating how important this call quote is. Lower numbers indicate higher priority. In order of precedence, the value defaults from:

- Call Priority in End User Data Maintenance
- If Call Priority is blank and you select a service contract, the Priority field in Contract Type Maintenance
- If no contract exists, the Priority field of the Default Call Service Type in Call Management Control
- Service/Support User Preferences

Contract. If you previously selected a contract, its number defaults into this field. If not, enter the contract now. The call price list associated with the contract type displays by default in the Price List field when the quote is created. If you change the contract later, you must enter the correct price list.

Price List. Use a repair price list. This field determines prices for service on this quote. If you previously selected a contract, the default is the call price list associated with the contract. If no contract is selected, the default is the price list associated with the Default Call Service Type in Call Management Control.

PO. Specify a purchase order number for the service activity associated with this quote. A warning displays if this field is blank and the end user requires a purchase order. Before you release the quote, you must supply a purchase order.

Caller. Defaults from the primary contact in the end-user record.

Phone. Defaults from the telephone number for the primary contact in the end-user record.

Description. Enter a brief description of the quote. The field defaults from Call Default Maintenance.

Channel. An optional code identifying the distribution channel originating this call quote. Use Channel to determine GL sales account and COGs accounts affected by inventory transactions in CAR and CIR. Set up optional sales accounts with Sales Account Maintenance (1.2.17) based on product line, site, customer type, and channel.

Assigned. If Assign Primary Engineer is Yes in Call Management Control, the Assigned field defaults from the primary engineer assigned to the end user. You can enter another engineer or leave the field blank.

Work Code. If you are not using quote defaults, this field defaults from the technical work code in Call Management Control (11.1.24). Set up work codes in Work Code Maintenance (11.21.1). The work code indicates the type of service performed and affects invoicing and service limits.

See “Work Codes” on page 94 for details.

Queue. Enter the queue to which this quote is assigned. Quotes use the same queues as calls, set up with Call Queue Maintenance (11.1.21.7). For a new quote, this field defaults from current quote defaults, then from the user’s default quote queue in Service/Support User Preferences, then from the default quote queue in Call Management Control.

Currency. Defaults from the currency of the customer bill-to record associated with this call. The first time through, you can select any currency, but after you move to the next frame, you cannot change the currency.

Taxable. Sets the default value for each line item, which you can mark individually as taxable or not. If Taxable is Yes, enter a tax class and effective date.

See Chapter 7, “Taxes in SSM,” on page 233.

Terms. Defaults from the credit terms associated with the bill-to address of the customer initiating the call.

Language. Defaults from the language associated with the end user, then the customer initiating the call. Use Language to select appropriate comments to print on an invoice.

Expire. Calculated by the system, this field is the current date plus the value in the Days to Expire field in Call Management Control. Expired quotes cannot be released to recording.

Note If MTZ is active, the expiration date displays with a value relative to the end user's time zone.

Site. The site on the header determines the default tax environment associated with the quote. Site for items can differ from the call site. For items, the site is the place where repairs are performed or where the assigned engineer gets parts for the service activity. This information is important in Call Activity Recording. The system follows these steps to assign a default site:

- Uses the site/location associated with the assigned engineer in Engineer Maintenance (11.13.1). If you leave the engineer site blank and specify a location, the system uses the area site. The engineer location takes precedence over the area location.
- Uses the site or location associated with the engineer's area if the engineer does not have a site or location.
- Uses the default spares site/location in Default Site Maintenance (11.21.13) if the above values are blank.
- Uses the site/location defined in the item master if a site still has not been found.
- Uses the site associated with the end user's customer in Customer Data Maintenance if a site still has not been found.

Reference. When you release this quote to recording, the number of the call created from the quote displays in this field as a reference.

Comments. If Yes, you can review or update comments associated with the quote. After you select or enter comments, you can specify where you want them to print.

Detail. Determines whether the Detail field for each line in the Labor/Expense and Item Usage frames defaults to Yes or No. Set this field in the header for more control over line item entry.

Item Selection Frame

After you enter an item requiring repair, the system fills in the item details, which you can modify. Frames display for recording labor, expenses, and items to be consumed during the repair.

If you attached a repair BOM and routing to the item in Service Item Maintenance (11.3.7), the items and operations load into the detail frames for this quote. You can modify the items and quantities.

See “Item Selection Frame” on page 571.

Note In CAR, you can use the Report field to open multiple reports for recording activity against a call line, so that progressive invoicing can take place. In Call Quote Maintenance, you cannot open multiple reports against an item.

The status of reports on quotes is Quote, indicating the system does not invoice these amounts.

Call Quote Maintenance

Call Quote Maintenance: Go To ACTIONS

Quote: cq5701 Bill To: 10000 End User: 10000A TZone:

Item Selection

Line	Serial	Item Number	Work Cd	Svc Type	Report
1			Tech	STANDARD	w-1

Item Detail

Engineer: MEW Fixed Price: ☐ Quantity: 1
 Site: 10000 Fixed Price: 0.00 Ref: 0
 Location: MEW Coverage: ☐
 Status: Q Quote Taxable: ☐
 BOM Code: PMCP100a Comments: ☐
 Routing: PMCP100 Fault Codes: ☐
 Sales Acct: 3000 0600 ☐
 Disc Acct: 3900 0600 ☐
 Project: Update Installed Base: ☐

Fig. 13.6
Item Selection
Frame

After costs are recorded, a summary frame displays.

Fig. 13.7
Call Quote
Maintenance
Summary

Call Quote Maintenance						
Call Quote Maintenance: Go To ▾ Actions ▾						
Charge Summary						
	Hours	Cost	Item Cost	Exp Cost	List Price	Det
Warranty	0		0	0	0	☐
Contract	0		0	0	0	☐
Covered	0		0	0	0	☐
Project	0		0	0	0	☐
Giveaway	0		0	0	0	☐
Fixed Bill	0		0	0	0	☐
Billable	83		0	0	481	☐
Billing Summary						
Labor	83		0	0	316	☒
Items	0		0	0	165	☒
Expenses	0		0	0	0	☒
Fixed Prices	0		0	0	0	☒
	0		0	0	0	☐
Total	83		0	0	481	☐
Quote Total	481.00	Cost	83.00	Margin	83%	

See
“Understanding
CIR Summaries”
on page 617.

These frames summarize the cost of the proposed service and the amount to bill to the customer. Unlike Call Invoice Recording, Call Quote Maintenance does not calculate taxes and all service is billable to the customer.

Call Activity Recording

With Call Activity Recording (CAR), you can record the parts, labor, and expenses used in servicing a call. This detail becomes the basis for generating an invoice either at the end of CAR or later in Call Invoice Recording (CIR). This chapter discusses the process of recording labor, expense, and item usage in CAR.

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Call Activity Recording **565**

Call Activity Recording in Depot Orders **601**

Introduction to CAR

Call Activity Recording (CAR) provides a flexible, comprehensive way to record labor, expenses, and items consumed during a call. CAR information supports other areas, including:

- *Call Invoicing.* Call Activity Recording helps create accurate call invoices, managed in Call Invoice Recording (CIR).
- *Engineer Reporting.* Call Activity Recording supports detailed engineer reporting. You can report the labor performed, the items consumed, and expenses encountered, even item by item, while servicing the call. Indicate charges as warranty, contract, covered, billable, fixed billable, project, or giveaway.
- *Cost Flow into GL.* CAR uses control codes to manage the cost flow into the general ledger. You can record costs in specific service accounts and control GL reporting.

♦ See Chapter 25, “Control Programs,” on page 881 for a description of control program settings.

Several fields in control programs affect processing in Call Activity Recording.

- In Call Management Control: Close on Recording, Exchange UM, Fixed Price UM, Item Svc Category, Labor Svc Category, Return Status, Scrap Status, and Service Work Center
- In SSM Accounting Control: Modify Sales Accounts and Invoice From Recording

CAR in the Call Life Cycle

Call Activity Recording is designed to support a wide variety of service contexts. Use it for field engineers who provide preventive maintenance or other services. Use it in a repair depot environment or for telephone support. With CAR, you can set work codes, charge codes, service categories, service types, and invoice sorts in a combination specific to your business.

Primary functions of CAR are:

- Recording parts, labor, and expenses used for a call
- Recording items returned for a call
- Producing invoices from the call data for customer billing

Note You can also generate invoices in Call Invoice Recording.

Figure 14.1 illustrates how Call Activity Recording fits into the call life cycle.

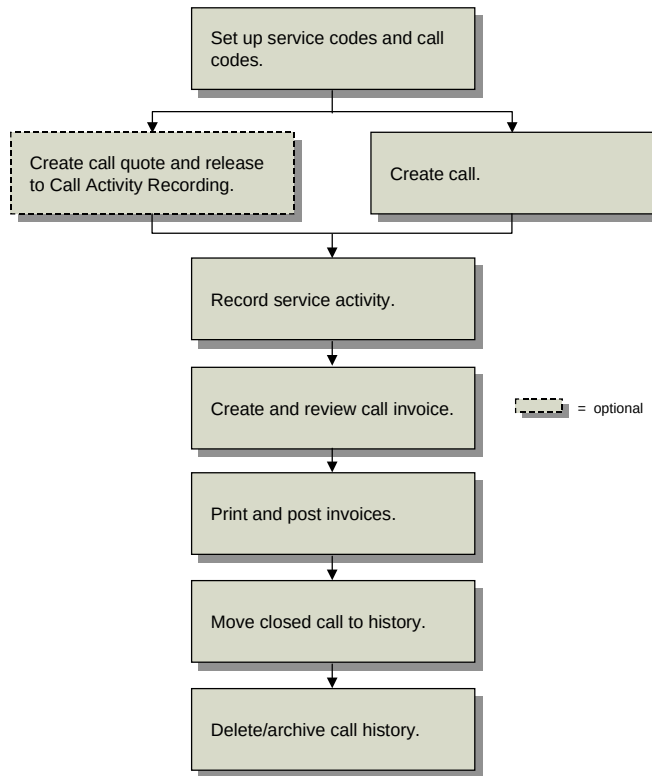


Fig. 14.1
Call Activity
Recording in the
Call Life Cycle

As shown in Figure 14.1, several activities precede Call Activity Recording and several follow.

- 1** First, perform service code and call setup. Settings in Call Management Control (11.1.24) affect processing in CAR, in particular the Call Statuses frame and Call Recording/Invoicing frame.
- 2** Create a call in Call Maintenance, or by using a background method for installation calls or PM scheduled calls. Or create a call quote and release it to a call.
- 3** Record labor, expenses, and items consumed in this call in Call Activity Recording. You can generate the invoice in CAR.

See Chapter 3,
“Service Setup,”
on page 91.

See Chapter 15, “Call Invoice Recording,” for details.

- 4 If you did not generate the invoice in CAR, generate it in Call Invoice Recording. Review the invoice in summary or detail format.
- 5 Post and print the invoice using Invoice Post and Print (7.13.4).
- 6 When all work is finished, close the call and move it to history.
- 7 Periodically delete and archive closed calls to regain space.

How Is CAR Used?

Use Call Activity Recording for calls with an open status. The end user must reference a valid customer unless Call Activity with Temp is Yes in Call Management Control. In this case, you can record a call for the temporary customer. Bill-to defaults from the end user’s customer. You can change the bill-to code in the Call Activity Recording header if you have not generated an invoice for the call. If a pending invoice exists, you cannot change the bill-to.

Sometimes a call remains open for several weeks—for example, during a lengthy installation project. You can generate several reports for the call in Call Activity Recording and invoice them separately.

Fig. 14.2
Changing Bill-To
in Call Activity
Recording

Bill-To can be changed.

The screenshot shows the 'Call Activity Recording' window for Call ID: CA100004. The 'Header' section contains the following fields:

Call ID: CA100004	Bill To: 4000	End User: 4001	TZone: GMT-8
Status: Assigned	Channel:	Currency: USD	Language: us
Priority: 25	Assigned:	Taxable: ☒	
Contract:	Work Code: Tech	Terms: BASE	
Price List:	Queue: Engineer	Site: 12000	
PO Number:		Expire Date:	
Caller:		Reference:	
Phone: 805 308-3098	Comments: ☐	Detail: ☐	
Description:			

The lower frame in Figure 14.2 displays information to define the call, such as call priority, status, price list, a description, the assigned engineer, and the first item’s work code. Most fields default from the call and cannot be changed.

In other fields, you enter new information not available in Call Maintenance, such as channel, currency, taxable status and class, terms, site, and detail level.

◆ See Chapter 7, “Taxes in SSM,” on page 233 for details about how the system applies tax defaults in CAR.

Specifying Currency

Billing information comes from the prices and costs of service you record in CAR. In some circumstances, you can modify the call currency in CAR. However, if the system set the currency in Call Maintenance, you cannot change it in CAR.

Effect of Contract Coverage

Because you can associate only one currency with a call, each call line references the same currency. Sales order processing, which forms the basis of call billing, imposes this limitation.

Each contract line also reference a currency, which defaults from the end user associated with the line. Any coverage limit amounts on the contract line are defined in terms of the contract-line currency. To apply those limits correctly, the call currency and the contract-line currency must be the same. For this reason, as soon as you add a call line that has contract coverage, the system sets the currency in Call Maintenance and it cannot be changed.

◆ See “Contract Currency in Calls” on page 263 for details.

Any other lines you add in Call Maintenance or CAR that derive coverage from a contract must reference the currency already defined for the call.

Currency for Other Coverage

If coverage comes from a warranty or the default call service type, you can edit the currency when you first access the call in CAR. The currency defaults from the bill-to address for the end user’s customer, or the customer if no separate bill-to address is defined.

You may need to modify currency when your support desk accepts calls from customers with offices in more than one country. For example, a support desk in Germany that covers a European region can change the currency on an incoming call to use an appropriate price list.

Example If the customer's base currency is Dutch guilders but the call comes from a Paris office, the service engineer can change the call's currency to French francs.

After you establish a call's currency, you cannot change it. Be careful when using multicurrency capabilities.

Currency and Price Lists

The price list in CAR can be updated as needed. It defaults either from:

- The Call Price List field of the contract providing coverage
- Or, if a contract is not available, the Call Price List field of the call's service type

The system uses currency in searching for prices. If you change the currency, ensure that the call price list supports the new currency.

Exchange Rate

When you enter a non-base currency, the system looks for a valid exchange rate defined in Exchange Rate Create (26.4.1), effective on the call open date. An exchange rate pop-up enables you to specify a spot rate, and to indicate if the exchange rate is fixed or not. By default, the system displays both components of the exchange rate relationship. One of these is the base currency and the other is the call currency.

This system uses this rate to convert limit amounts from the base currency to the contract currency. Prices and costs are converted from base to the call currency, and the exchange rate is maintained in transaction history.

When you post the call invoice, the system uses the exchange rate effective on the date of invoice post, unless you have indicated that the exchange rate is fixed.

◆ For details, see the Multiple Currency chapter in *User Guide: QAD Financials A*.

Tracking Purchase Orders

You can enter a purchase order number in Call Activity Recording. Some companies require purchase orders for service billings. You specify whether a customer requires a purchase order in Customer Data Maintenance. The customer value defaults to each end user associated with the customer.

If the end user requires a purchase order, you can enter a call, but you cannot record activity for it until you specify a purchase order.

If the end user does not require a purchase order, you can use the purchase order field for reference. If you specify a purchase order, it is printed on the call invoice.

Displaying Call Items in CAR

The Item Selection frame appears after the CAR header. It displays the items you recorded in Call Maintenance for this call.

Call Activity Recording

Go To Actions Copy Print Preview

Header Lines Status

Lines Item Detail Tax Info Comments Fault Codes Labor/Expenses Item Usage Call Line Status

Header

Call ID: CA100045 Bill To: 00010000 End User: 00010000 TZone: EST

Item Selection

Line	Serial	Item Number	Work Cd	Svc Type	Report
4		1-bb	Tech	default	3673

Item Detail

Engineer: ALH001	Fixed Price:	Quantity: 1
Site: 12000	Fixed Price:	ISB Ref: 72
Location: 100	Visit ID:	Coverage:
Status: I Invoiceable		Taxable:
BOM Code:		Comments:
Routing:		Fault Codes:
Sales Acct: 3000 0001 0001		
Disc Acct: 3900 0001		
Project:		Update Installed Base: ☒

Last line
of call
displays.

Fig. 14.3
Item Selection
Frame in Call
Activity Recording

When you access the Item Selection frame, the last item appears, as indicated by the number in the Line field. This way you know immediately how many items are on the call. Use Next/Previous to view other call items.

You can add items to a call using the CAR Item Selection frame. Use this feature if an end user wants more items repaired after the call is created. Instead of opening a new call, you can add lines to the existing one.

Select a line item on the call to record labor, expenses, and items used in detail frames.

Multiple Time Zones in CAR

♦ See Chapter 4, “Multiple Time Zones,” for details.

Activating Multiple Time Zones (MTZ) affects Call Activity Recording. Most call dates and times refer to the end user’s time zone. The exception is the tax date. It refers to the server time zone, like other system tax dates.

Generating Usage Records Automatically

You can enter details about a call manually or use one of several methods to streamline data entry and create usage records automatically. Two significant methods are using:

- Loading bills of materials (BOMs) and routings
- Ordering items for a call with material orders (MOs)

Using BOMs and Routings in Calls

When you define an item in Service Item Maintenance (11.3.7), you can specify a repair, installation, and preventive maintenance (PM) BOM and routing, which are used as follows:

- When the system generates a PM call for the item or you create a call with the PM work code in Call Maintenance, the system uses the PM BOM and routing.
- When the system generates an installation call during invoice post or you create a call with the install work code in Call Maintenance, the system uses the installation BOM and routing.
- When you specify other work codes in Call Maintenance, the system uses the repair BOM and routing.

You can change these defaults the first time you view the call in CAR.

Use BOMs and routings to streamline data entry for standard repair sequences in CAR. When you specify BOMs and routings, the system:

- Enters routing operations into the Labor/Expenses frame
- Enters any BOMs associated with specific operations as items for that operation in the Item Usage frame
- Enters items from the top-level service BOM into the first operation that has no items of its own

Figure 14.4 illustrates how service BOMs and routings are defined and then loaded into CAR.

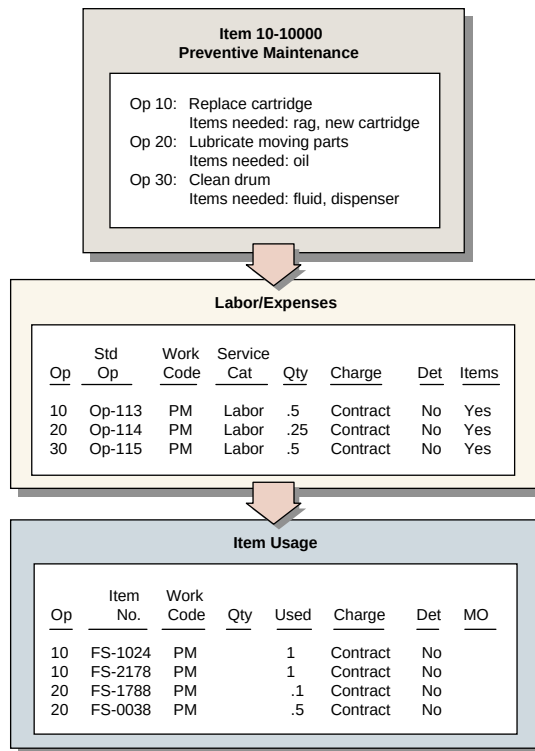


Fig. 14.4
Routing and BOMs
Loaded into CAR

In addition to providing labor/expense detail, routings can affect the cost of labor. Standard cost for labor is derived from the work centers associated with routing or standard operations. If you do not use these, the system calculates standard costs using the labor rate for the Service Work Center in Call Management Control.

♦ See Chapter 21 for information on service BOMs, routings, and standard operations.

Note If you do not use service BOMs and routings, you must manually enter the operations and items you used for the repair in CAR, unless you order items with a material order (MO).

When a BOM is initially loaded in CAR, the system does not check to determine if sufficient inventory exists in the default site and location. These checks are not done until you actually execute the item usage frames.

Connecting MOs to a Call

Engineers can obtain parts for service by ordering them with a material order (MO). The MO transfers the required inventory to the engineer's site and location.

▶ See “MO With Call” on page 718.

An MO can reference a call. Use MOs without a call to replenish general stock. If you specify a call on the MO, items must be used for that call or returned to general inventory.

▶ See “Material Order Selection Frame” on page 582 for details.

When MO items exist for a call line, the system displays a pop-up in CAR listing them. You can select some or all of these items and the system loads them into the Item Usage frame of CAR.

To close a call line, you must account for all MO items, either by using them or returning them. The same is true for the call itself.

Using MOs or BOMs to Load CAR Item Usage

The two ways of automatically entering items in CAR—through MOs or service BOMs—normally are separate alternatives. You can use them together, but you could enter more items than you intend.

If an engineer orders items with an MO for a call, they must be loaded and consumed in CAR. If you also attach a BOM to the item, the same items could be loaded again, resulting in duplicate items appearing in the usage frame. You might also get duplicates if you release a quote that has details about items needed, then order the items on an MO.

You must decide which method best fits your business practices and establish procedures to prevent overlaps.

To warn you of possible duplicates, the system checks the call when you create an MO for it. If the call line has items generated from a BOM, a warning displays.

Fixed Pricing in CAR

Some companies charge a fixed fee for repairing an item rather than basing the fee on the items used and the time spent for the repair. You can use fixed prices in Call Activity Recording.

Fixed pricing is an alternative to contracts and warranties. When you use fixed pricing, the system disregards all coverage details. When you complete a fixed price repair, you can record the details of the service to track service costs. However, the invoicing process uses the fixed price rather than the costs or prices of elements of the repair.

When you provide service for one line item at a fixed price, the system includes all details in the price. You cannot perform part of the service at a fixed price and charge regular prices for other items or services on the same line. To provide fixed and non-fixed service for the same item, create two lines for the item and record the fixed and non-fixed service separately.

Example A computer company charges a flat rate of \$150 to repair a monitor for a customer. When recording the activity, the company uses a fixed price work code and charge code. It invoices the customer \$150, but records the hours worked and items consumed in CAR, so it can review the service costs. The monitor repair might cost two hours of labor and five or six parts for a total of \$93, or it might cost \$1,000.

Recording the detail for fixed price repairs lets you review over time how closely the fixed price matches the repair cost.

Requirements

For fixed pricing, set up these codes:

- A work code with Fixed Price set to Yes
- A charge code with Fixed Billable set to Yes
- An invoice sort with Include Fixed Prices set to Yes

- Service repair price lists using the fixed price unit of measure

Note Define the fixed price unit of measure in Call Management Control.

When you specify a work code with Fixed Price set to Yes in CAR, the Fixed Price field in CAR defaults to Yes. The system searches for a price on the call price list with the fixed price unit of measure and uses this price as the repair price. The system also suggests a fixed billable charge code for each line of detail recorded.

Fig. 14.5
Specifying Fixed Pricing in CAR

For fixed price, the system ignores service type coverage .

Fixed price defaults to Yes.

System finds fixed price on price list.

The screenshot shows the 'Call Activity Recording' window with the 'Item Detail' tab selected. The 'Header' section displays 'Call ID: CA100150', 'Bill To: Pan105C', 'End User: PanEnd1', and 'TZone: EST'. The 'Item Selection' table shows one line with 'Line 1', 'Serial 3000', 'Item Number JN0007-1', 'Work Cd FKID', 'Svc Type FKID', and 'Report 6041'. The 'Item Detail' section includes fields for 'Engineer', 'Site' (JN1000-1), 'Location' (LCM01-1), 'Status' (Invoiceable), 'BOM Code', 'Routing', 'Sales Acct' (3000), 'Disc Acct' (3900), 'Project', 'Fixed Price' (checked), 'Fixed Price' (25.00), 'Visit ID' (0), 'Quantity' (1), 'ISB Ref' (0), 'Coverage' (checked), 'Taxable' (checked), 'Comments', 'Fault Codes', and 'Update Installed Base' (checked).

For fixed pricing, create one invoice sort with Include Fixed Price set to Yes. Do not associate service categories with this invoice sort. Use it exclusively for presenting fixed price amounts in Call Invoice Recording.

Note When fixed pricing applies, the price, covered amount, and extended price for each recorded detail are zero and cannot be changed.

Multiple Reports

For fixed pricing, you charge the customer a fixed amount regardless of how much work you do. Once you invoice and post the fixed amount, any further reports added to the call line create zero invoice amounts.

You can adjust fixed prices in CAR or CIR until you post an invoice.

Taxes for Fixed Price Services

Normally, the system calculates taxes for each detailed labor, expense, and item usage record. For fixed pricing, it applies the tax rate to the fixed price. It does not consider tax data elements associated with detailed usage records.

▶ See Chapter 7, “Taxes in SSM,” on page 233.

Calculating Coverage in CAR

The relationships among service types, charge codes, and product lines affect the financial impact of service activity in CAR. You can define and use charge codes in many ways. The system supplies defaults based on the service types and values defined in Default Charge Code Maintenance. You can change these defaults to redirect costs, but only within a set of rules. To record activity in CAR, you must understand the way the system applies these rules.

What Is the Source of Coverage?

When you access a call line in CAR, it already has a service type. This service type can be different for each item on a call. Using the item, serial number, and installed base reference, the system searches for a valid contract or warranty. If none is found, the default is the Default Call Service Type in Call Management Control. If both contract and warranty coverage exist, the system prompts you to choose either warranty or contract coverage for this item when you create a new call for the item or add the item to a call.

For any item, several conditions can be true:

- No coverage exists. The system uses the default call service type.
- Coverage exists only on a contract.
- Coverage exists only on a warranty.
- Coverage exists on both a warranty and contract and you select warranty.
- Coverage exists on both a warranty and contract and you select contract.

- A warranty is normally associated with the item in Service Item Maintenance, but this particular item does not have a warranty or it is expired.

Based on the coverage conditions, the system maintains three service types for each item on a call:

- *Warranty Code.* The warranty code can be blank. It comes from the installed base record first and can be either active or expired. If the item is not in the installed base but has a warranty code in Service Item Maintenance, that warranty is used. Warranty information is maintained even when a contract provides coverage.
- *Contract Type.* The contract service type can be blank. This information is only saved when a contract covers the item on the call open date. This is unlike the warranty code, which is kept for reference even if it is expired. The contract service type is saved even if it was not chosen as the source of coverage for the item.
- *Service Type Used.* This field always has a value. Service Type Used can be the warranty or contract saved in the previous two values. If there is no coverage, the value can come from the Call Default Service Type in Call Management Control. If you manually enter a service type on the call line, it is saved in this field.

You can change a call line's service type only before you record activity for the line. Once you open reports, the field is display only.

Calculating an Initial Charge Code

When you enter detail in the Labor/Expense or Item Usage frames of CAR, the system displays a default charge code. The system derives this default using:

- The service type of the call line
- The work code, service category, quantity, and price of the usage detail record

The system uses the work code and service category to search for applicable limits. It uses the quantity and price to determine if the amount on this line of detail is under or over the limits.

Note For fixed price repairs, no coverage checking takes place. The fixed price billable charge code defined in Default Charge Code Maintenance (11.21.21.13) is always used as the default. You can enter another charge code for the item, but only if it also has fixed price billable set to Yes.

The system uses work code and service category to find limits on W-1.

The system uses quantity and price to determine if the amount is over or under limit.

The screenshot shows a window titled 'Call Activity Recording' with a header bar containing 'Call ID: CA100004', 'Go To -', and 'Actions -'. Below the header, call details are displayed: 'Call ID: CA100004', 'Bill To: 4000', 'End User: 4001', and 'TZone: GMT-8'. The main content area is divided into two sections. The top section, 'Item Selection', contains a table with columns: Line, Serial, Item Number, Work Cd, Svc Type, and Report. The bottom section, 'Labor/Expenses', contains a table with columns: Op, Std Op, Work Code, Svc Cat, Quantity, Charge, Det, and Items. Arrows point from the 'Item Selection' table to the 'Labor/Expenses' table, indicating a relationship between the two.

Line	Serial	Item Number	Work Cd	Svc Type	Report
4	CP552	CP300	Tech	W901	138

Op	Std Op	Work Code	Svc Cat	Quantity	Charge	Det	Items
10		Tech	Labor	0.5	warranty		
20	REPINSP	Tech	Labor	0.5	warranty		
30	ROUT-OP3	Tech	Labor	1.0	warranty		

Fig. 14.6
Calculating a
Charge Code

For non-fixed price service, the system finds a default charge code using the following steps:

- 1 The system searches for applicable limits on the line item's service type. It first searches for limits based on the work code/service category, then based on the invoice sort for the service category, and then based on the total limit record.
 - If the service type is a warranty, the system examines the coverage record of the warranty type and uses the associated charge codes. If the warranty covers any amount, the system uses the under-limit charge code, which normally has Warranty set to Yes. If the warranty covers no amount, the system uses the over-limit charge code, which must have Billable set to Yes.
 - If a contract covers the call item, the system searches for coverage records at the contract line level, then at the header level, and finally at the contract type level. If a coverage record exists and has a charge code and over-limit charge code, the system uses these. The under-limit charge code normally has Contract set to Yes in Charge Code Maintenance. For the over-limit charge code, Billable must be Yes.
 - If you entered a service type for the line or used the default from Call Management Control, the system uses the charge code and over-limit charge code associated with its coverage records. For

service types that provide coverage separate from a contract or warranty, you normally have an under-limit charge code with Covered set to Yes. For the over-limit charge code, Billable must be Yes.

- 2 If the system does not find coverage records or charge codes are not associated with them, it searches for a default charge code set up with Default Charge Code Maintenance (11.21.21.13), using the service type of the call line; the work code and service category of the usage detail; and end-user type of the call.
 - If the service type is a warranty and it provides coverage, the default warranty charge code is displayed.
 - If the service type is a contract and the line item's price is within contract limits, the default contract charge code is displayed.
 - If coverage exists on the default call service type or a service type that you entered, the default covered charge code is displayed.
 - If the warranty, contract, or service type provides no coverage, or the item has exceeded limits, the system displays the default billable charge code.

Calculating a Charge Code for Items

The system follows the same steps to calculate a default charge code for item usage that it does for labor and expenses. It uses the work code and service category to search for applicable limits on the call line's service type.

However, for items, the service category is less important.

Fig. 14.7
Calculating Item
Usage Charge Code

You can specify work code for an item but cannot update service category.

Line	Serial	Item Number	Work Cd	Svc Type	Report
4	CP552	CP300	Tech	W90I	138

Op	Item Number	Work Code	Qty Used	Qty Ret	Charge	Det MO
10	SC2	Tech	2.0	0.0	warranty	☐

The item service category defaults from Service Item Maintenance or from the Item Service Category in Call Management Control and cannot be changed. The system uses it to determine a default charge code and then displays it for review.

Recalculating Charge Codes

Because the system applies limits to a line of detail based on the work code and service category, it recalculates the charge code whenever you change these fields.

Example You record a labor operation for a call with a work code of PM, service category of Labor2, and quantity of 1. Based on these values, the system defaults a contract charge code of PM_CON.

After saving this line, you realize this operation is not part of the standard PM procedure, but is an additional repair that the technician made. So you return to the line and change the PM work code to REPAIR.

The system now searches for limits again, using the REPAIR/Labor2 combination rather than the PM/Labor2 combination. This can result in a different default charge code, like REP_CON. Or perhaps the contract does not cover the repair work, so the charge code changes from contract to billable.

Important If you change the default charge code, then change the work code or service category, the system overrides your charge code when it recalculates the limits and coverage.

If you change the quantity on a line of detail, the system does not change the charge code unless an additional quantity exceeds coverage limits. In this case, the system uses the over-limit charge code.

Changing Charge Codes

The system suggests five of the seven types of charge codes as defaults in CAR: contract, warranty, billable, covered, and fixed billable. You can enter giveaway and project mandatory charge codes as manual overrides.

Within the limitations described in this section, you can change any default charge code. When you change the charge code, the system may also change the service type used. The system then applies the limits of the new service type and calculates a new covered amount.

The system applies these rules for changing charge codes:

- You cannot mix fixed and non-fixed pricing in a line. You can change a fixed charge code only to another fixed charge code and any non-fixed charge codes to another non-fixed charge code.
- You can change any charge code other than fixed to a giveaway charge code, which covers 100% of the price. The usage record consumes no limits, regardless of the service type's coverage levels.
- You can change any charge code other than fixed to a project mandatory charge code if you previously specified a project for the call item.
- You can change covered, contract, or warranty charge codes to a billable charge code. The system ignores coverage levels on the service type and enters a default of zero for the covered amount.
- You can change contract, warranty, or billable charge codes to a covered charge code. The system changes the service type to the Default Call Service Type in Call Management Control, and applies its levels of coverage.

The system also applies rules for the following special conditions:

- *Both warranty and contract coverage exist for an item.* When dual coverage exists for an item on a call, you must choose one source of coverage to use, but both sources are stored with the record. You can then switch between them on each usage detail.

If you chose warranty for the call item, you can change to contract for a specific usage detail. The system then uses the contract service type for that detail record and applies its limits and levels of coverage. If you chose contract for the call item, you can change to warranty for a usage detail and the system applies the warranty's coverage levels to the detail record.

- *A valid contract and an expired or unapplied warranty exist.* You can change a contract charge code to warranty even if the warranty is expired or was never associated with the item in the installed base record. This enables you to extend the warranty coverage, a requirement in some service contexts.

For example, if an item has been fixed twice under warranty and fails again for the same reason a week after the warranty expires, you can offer service at the normal warranty coverage as a goodwill gesture. The system applies the level of coverage from the warranty type.

- *No contract exists and you specify a contract charge code.* If the item has no associated contract and you specify a contract charge code, a warning displays. The system changes the service type to the Call Default Service Type and applies its level of coverage to the detail record.
- *No warranty exists and you specify a warranty charge code.* If the item has no associated warranty code and you specify a warranty charge code, a warning displays. The system changes the service type to the Call Default Service Type and applies its level of coverage to the detail usage record.

The flexibility in changing charge codes lets you make adjustments in a dynamic service environment. However, you should consider the defaults as the normal way to use the system. Modify charge codes only after carefully considering the appropriateness and consequences of the change.

Charge Codes and Product Lines

Charge codes play an important role in accounting through association with product lines in Charge Product Line Maintenance. Connecting particular charge codes to product lines lets you segregate the cost of warranty service, for example, from the cost of contract service.

Managing costs with distinct accounts simplifies reporting and provides information on the profitability of your service activities. When you use charge codes this way, you can direct the cost of each labor, expense, or item usage record to a different product line.

▶ “Detailed Accounting in CIR” on page 638 describes accounts affected.

▶ See “Search Order for Product Line” on page 125 for details on the search algorithm.

To simplify accounting, you can associate only one product line with the item being repaired. The system uses that product line’s WIP account for reports you generate for the call item. The system determines the product line by the setting of Use Item Prod Line in SSM Accounting Control.

To find the charge product line for a line of usage detail, the system uses the detail line’s charge code, work code, service category, and service type. The product line and service group come from the call item. If no charge product line exists, the system uses the product line of the call item or the service type, depending on the setting of Use Item Product Line in SSM Accounting Control.

The product line for each usage record displays if Detail is Yes. You cannot modify the product line directly. The only way to change it is to change the usage record’s charge code.

Consumption of Limits in CAR

When coverage comes from a warranty or service type, the system considers the level of coverage on the type, not any limit amounts. Warranty types have no limit amounts. The system considers limit amounts only for contracts.

When limits come from a contract line or contract header, the amounts recorded for the limits accumulate. As activity occurs, the system monitors the amounts you charge and compares them with the contract’s limits. When you exceed the limits, the system changes the default charge code from an under-limit to an over-limit code.

Example You have a contract coverage limit for labor of 100% up to \$100. On the first line of labor usage, you record \$85. The system supplies the under-limit charge code by default, and suggests a covered amount of \$85. On the second line, you record another \$25. The system again suggests the under-limit charge code because there is some coverage, and asks if you want to cover the over-limit amount. If you respond No to this prompt, the covered amount defaults to \$15 and the billable amount to \$10.

Limit amounts are actually consumed when the call invoice is posted. However, the system also tracks limit amounts used. If you take another call for this item before posting the invoice for the previous one, the system considers any labor usage over the limit, since it looks at both the used and consumed amounts.

Use the Limits Consumption Inquiry (11.5.13.21.4) and Limits Consumption Report (11.5.13.21.5) to review amounts consumed and used for a particular contract. In this context, *consumed* means the invoice for the activity has been posted. *Used* means the activity has been recorded, but not yet posted.

▶ See page 257 for details on these reports.

Line and Header Limits

If you define limits at the contract line level, the system monitors each line against its own limits. When you define limits at the header level, the system calculates consumption based on all contract lines.

Example You have a coverage limit for labor at 100% up to \$100. When this limit is at the contract line level, each line gets \$100 of labor coverage. When defined at the header, if the first line uses \$100 of labor, no coverage is available for other line items. The charge code in CAR defaults to the over-limit code.

Inventory Processing in CAR

The information you record in CAR initiates inventory transactions for items you have consumed or exchanged. The system uses site and location information to manage inventory issues.

Determining Site and Location Defaults

Site and location defaults support a variety of ways engineers work and obtain repair parts. The system searches for a site and location as follows.

- 1 The system searches for a site and location for the assigned engineer in Engineer Maintenance. If you leave the engineer site blank and specify a location, the default is the area site but the engineer location.
- 2 If the engineer does not have a site or location, the defaults are the site and location for the engineer's area.
- 3 If area site and location are blank, the system uses the default spares site and location defined in Default Site Maintenance.
- 4 If a default spares site and location are not defined, the defaults are the item's site and location in the item master.
- 5 If the item's site and location are blank, the default is the site associated with the end user's customer in Customer Data Maintenance.

If the engineer works at a repair center, designate it as his default site. The system issues items to the call from the repair center site. An engineer in this type of environment typically would not use material orders to obtain inventory.

MOs are typically used when an engineer works remotely—for example, out of a repair truck or in a local office that obtains repair parts from a regional center. The MO transfers inventory to the engineer's home site and location. In this type of environment, an inventory transaction is needed to move inventory from its current site to the engineer's site, where you can issue and consume it on the call.

If inventory does not exist in the default sites and locations in CAR, you must specify them manually or errors occur during transaction processing.

Processing Inventory

Inventory processing in CAR is similar to a backflush operation. You are entering into the system information about labor that you already performed and items and expenses that you already consumed. Therefore, the system assumes you want to issue the inventory when you record it.

When you exit the usage frames, you can view a confirmation frame, illustrated in Figure 14.29 on page 597, listing the items to be issued and returned. Review the summary information to ensure that the items, sites, and locations are correct.

To make a change, respond No to the prompt. The Item Selection frame displays so that you can proceed through the detailed usage frames and adjust the data.

If you respond Yes at the confirmation frame, the next frame prompts you for an output device. Processing activity generates a report to the output device you specify. This report includes information about items you issued and returned, labor/expense transactions, updates to the installed base, and inventory errors or warnings generated during processing.

Figure 14.8 shows a sample report.

fscarmt.p		1.1.1.13 Call Activity Recording		Date: 06/17/07	
Page: 1		Quality Products Corp		Time: 11:01:05	
Call	Line	Item Number	Serial	ISB Ref	Report
CA115	2	10-10000	1043888/A2	0	402313
Type	Item/Operation		Serial/Work Code	ISB Ref	Quantity
Items	44-1000				1.0 Processing
Items	44-3000				1.0 Processing
Items	44-4000				2.0 Processing
Items	44-4000				-2.0 Processing
Labor	10		Tech	LABOR	0.5 Processing
Labor	20		Tech	LABOR	1.0 Processing
Labor	30		Tech	LABOR	0.5 Processing
Expenses	40		Tech	Mileage	25.0 Processing

Fig. 14.8
CAR Processing
Report

The report first indicates the call line being processed, then details the items, labor, and expenses for the line. Errors print below the record they refer to.

The various columns include the following information:

- Type is the invoice sort code associated with the transaction.

- Item/Operation is an item number for item issues or the operation number for labor and expense transactions.
- Serial/Work Code displays the serial number for item transactions and the work code for labor and expense transactions.
- Ref displays the ISB reference number for items and the service category for labor and expense transactions.

Inventory in CAR uses the same rules that govern inventory throughout the system. The location status determines the overissue policy. If the system encounters errors while issuing inventory, it sets the report status to hold. To complete the call line, you must correct the errors, set the report status to invoiceable, and reprocess the inventory transactions in CAR.

Shipping Documents

▶ See the Shipping chapter in *User Guide: QAD Sales* for details.

Many countries require that formal shipping documents accompany any movement of goods. If you are using shipping groups, you can record shipping information and generate shipping documents from Call Activity Recording when the address associated with the issuing site and the end user address belong to a valid shipping group and the inventory movement codes associated with the shipping group allow transaction type ISS-TR.

Allocations and Requirements

You can create general allocations in the Item Usage Detail frame of CAR. Usually, you are recording items you already used and you issue the items immediately, so this step is not needed. Use it only if you are not issuing inventory immediately.

You can designate specific inventory to be issued, by site, location, lot/serial number, and reference. The system uses the information only for the inventory issue. CAR always performs general allocations. It does not detail allocate even if you enter inventory detail in the multi-items frame.

The system creates MRP requirements in CAR to reflect the quantity of items you specify. These requirements are deleted as soon as the inventory is issued. The required date for MRP is the call's next status date.

Issuing Inventory from Multiple Sites

When you create a call line in Call Maintenance, Call Quote Maintenance, or Call Activity Recording, the system displays a default line item site. When you open the first report for the line, you can change the site.

The default site determines other line item defaults, such as the BOM and routing if it was defined with Service Item by Site Maintenance. You can also change these defaults when you create the first report.

Important After you record activity, you cannot change the line item site. If you create new reports for the line item, they share the same site, BOM, and routing.

Even though you can associate only one site with a call line, you can still use inventory from multiple sites during a repair. When entering item usage detail, you can specify a different site for each item. During processing, CAR transfers the items to the line item's site, then issues the items from that site.

This approach affects GL transactions. Costs are typically set up for each site using Item-Site Cost Maintenance (1.4.18). When CAR transfers items to the call site, appropriate GL transactions are created for any variance in costs between the two sites.

▶ See “Determining Site and Location Defaults” on page 544 for details on the logic used to determine line item sites.

Using Multiple Reports

Service organizations often use prenumbered paper reports for engineers to record the items, labor, and expenses associated with servicing an item. Engineers can turn in these forms as they complete each job. For lengthy jobs, they may turn in the reports daily or weekly.

Call Activity Recording provides a similar report structure. You can record all activity for a line item on one CAR report, or create multiple reports for one line item. You can use the provided report IDs or enter IDs from your prenumbered report forms.

You can generate more than one invoice for activity that you record for a call or a call line. This is important, for example, if the call activity covers several weeks and you bill more frequently. Record expenses at the end of each day or week by creating multiple reports for a single line item.

You can modify a report unit the invoice is posted. After this, you can review the report, but you cannot update it.

Report Statuses

To indicate its position in the recording life cycle, each report you open for a line item has one of the following statuses:

- *Quote (Q)*. A report opened in Call Quote Maintenance to record the activity needed for a line item has a status of Q.
- *Invoiceable (I)*. The default status of a new report you open in Call Activity Recording is I, indicating that the report is ready for invoicing.
- *Hold (H)*. You can mark reports hold to delay invoicing them. The system sets reports to Hold if an error occurs during transaction processing.
- *Closed (C)*. When you post an invoice, the system sets the report status to C. You can also use this status to close a report with no detail. Once you close a report, you cannot reopen it. Only fault codes and comments can be updated.

In CAR, the report status indicates whether to include or exclude it from invoicing. The default report status is invoiceable. Report status offers you another level of control for call invoicing. Use the status to exclude a report from invoicing.

Example You enter a report in CAR but have not yet invoiced it. The engineer submits a second report that needs to be billed separately. Enter the second report and set its status to Hold. When you generate the call invoice, the system includes only the report with a status of invoiceable.

Multiple Reports and Generated BOMs

When you use a BOM and routing to generate item and labor usage records for an item, the system attaches all usage to the first report. If you open a second report to complete the service, the system does not move the remaining items and labor to the new report. Remove the unfinished steps from the first report and add them to the second one.

Correcting Report Errors

Use the call Status field to cancel a call if you have not opened any reports. You can also cancel or close individual lines on the call and continue processing the other lines. If reports exist, the call cannot be canceled.

Note Cancel status is defined in Call Management Control.

You cannot delete a call report opened by mistake. However, you can change its status to Closed if you have not recorded detail for the line. If you have recorded detail, delete each line of detail, then close the report.

If you have issued inventory or processed labor/expense transactions, you cannot delete the detail. You can adjust the price to prevent billing for the issued amounts or issue a credit memo if billing has already occurred.

To remove the cost of labor, expenses, or items issued by mistake, follow this process:

- 1 Enter a new operation for recording the correction in the Labor/Expenses or Item Usage frames.
- 2 For labor and expenses, enter a negative value in the Quantity field. For items, enter a negative quantity in the Qty Used field.
- 3 Process the new line to create reversing GL and inventory transactions.

Processing a correction has the following effects:

- For items, the system executes an inventory transaction to increase inventory at the site and location specified.
- The cost of the reversed item, labor, or expense is removed from the call record, so that margins and costs display correctly in Call Invoice Recording.

Note The system prevents you from entering a negative quantity when you are executing a swap. A swap occurs when the item being issued is the same as the item on the call line and you respond Yes that this is a swap.

Call and Call Line Statuses in CAR

Call statuses reflect the position of a call in its life cycle. In Call Activity Recording, you can assign a call status to individual lines on the call, so you have better control over calls with multiple line items.

Example You take a call for four items. One repair proves unnecessary, so you cancel the line without affecting the call status. You finish two repairs and can close those lines to prevent more processing. The last line you leave open while waiting for a part.

◆ See “Managing Call Status Changes” on page 427.

You can invoice only complete or closed call lines. Because recording activity is a preparation for invoicing, CAR always attempts to set the call and line status to complete or closed. These statuses are defined in the Complete Status and Closed Status in Call Management Control.

Complete or Closed?

A complete call or line is ready for invoicing. However, you can modify related data, order service items with an MO, and record new activity by updating a report or opening a new one. Use the complete status to invoice progressively during a lengthy service activity.

For closed calls or lines, you can create invoices, but you cannot order service items or record new activity. You also cannot add more lines to a closed call. To record activity for a closed call or line, you must reopen it by changing its status. When you have completely invoiced a closed call, closing all reports, you can move it to history and archive and delete it.

Note You can apply field security to Call Status.

Use Close on Recording in Call Management Control to indicate whether to set the call or line status to closed or complete. If Close on Recording is Yes, CAR sets the call status to closed if all conditions are met. If it cannot set the status to closed, it tries to set the status to complete. If Close on Recording is No, CAR attempts to set the status to complete.

Call Line Status

If the system can issue all inventory for a line in CAR and encounters no other errors, it sets the line's status to either complete or closed, depending on the value of Close on Recording. If the system detects errors, the line remains open and CAR displays a message indicating that it could not complete or close one or more lines.

CAR sets a line to complete when it meets two requirements.

- At least one report with item, labor, or expense detail has an invoiceable status.
- All inventory for the invoiceable reports was issued completely.

Set Invoice From Recording in SSM Accounting Control to Yes if you want to create invoices in CAR.

To record more activity for an item before you generate the invoice, prevent invoicing by:

- Changing the line item status to a status other than complete or closed.
- Answering No to the Generate Invoice prompt in the Call Status frame, if it displays.
- Changing the report status to hold so the item has no invoiceable reports.

Call Status

CAR's final processing step is to determine the call's status, based on Close on Recording in Call Management Control.

CAR sets the call status to closed only if:

- All lines are complete, closed, or canceled.
- All reports are invoiceable or closed and all transactions for the reports completed successfully. Invoiceable reports must have fully processed detail. If a report exists with no detail, set its status to closed.
- All items ordered on a material order for the call are used or returned.

CAR sets the call status to complete if at least one closed or complete line has an invoiceable report. Open MOs and reports on hold can exist.

♦ See "Managing Call Status Changes" on page 427.

If Close on Recording is Yes and conditions prevent CAR from changing the call status to closed, CAR attempts to set the status to complete. If conditions prevent this, CAR does not change the status. In this case, you cannot manually change the status to complete or closed. An error displays, explaining that incomplete lines or an open MO exists.

If you do not want to invoice the call or close it, change the closed or complete status manually. If you specify the hold status, defined in Call Management Control, an invoice cannot be generated in CAR. An error displays if you specify Yes to the Generate Invoice prompt for a call with the hold status.

Note Use field security on the Call Status field to control status changes.

However, in Call Invoice Recording, a call status of hold produces only a warning. This lets you invoice for service that has already been provided, but prevents you from recording more activity for the call.

Status Errors

The only changes CAR ever makes to the line or call status is to change it to closed or complete. It does not reverse this status change automatically. As a result, incompatible line and call statuses can sometimes occur.

Example You record activity for a call with one line and issue inventory without errors. CAR sets the line and call status to complete. Now you record two more items in the Item Usage frame, but this time when you issue inventory, errors occur. If you simply try to click Next through the Call Status frame, an error displays. Complete is no longer a valid status for the call, because it does not have any invoiceable reports. You must manually enter an appropriate status.

Deleting Call Lines

You can delete a call line if it has no associated reports. You cannot delete lines for which you have recorded activity.

If you have not issued inventory for the line, delete the detail on the open report, then close the report and the line.

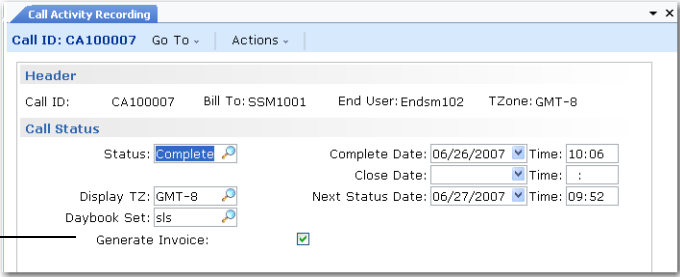
Generating an Invoice

Some businesses choose to have managers handle invoicing, not the engineers or clerks entering data into CAR. Other organizations prefer to complete call recording and invoicing in one process. Call Activity Recording can generate an invoice or simply track costs.

Invoice From Recording in SSM Accounting Control (36.9.10) determines where you create and update invoices. If Invoice From Recording is No, you process invoicing in Call Invoice Recording (11.1.1.15). Use standard system security to restrict access to these functions.

If Invoice From Recording is Yes, a Generate Invoice prompt displays in the Call Status frame of Call Activity Recording as in Figure 14.9.

Generate an invoice from Call Activity Recording.



The screenshot shows the 'Call Activity Recording' window. The 'Call ID' is CA100007. The 'Header' section displays 'Call ID: CA100007', 'Bill To: SSM1001', 'End User: Endsm102', and 'TZone: GMT-8'. The 'Call Status' section shows 'Status: Complete', 'Complete Date: 06/26/2007', 'Time: 10:06', 'Close Date: ', 'Time: ', 'Next Status Date: 06/27/2007', 'Time: 09:52', 'Display TZ: GMT-8', 'Daybook Set: sls', and a checked 'Generate Invoice' checkbox.

Fig. 14.9
Invoice From
Recording Set
to Yes

If you indicate Yes to the Generate Invoice prompt, the system creates a pending invoice for lines with a complete or closed status. If the status for the call is complete or closed, the system invoices all lines.

In CAR, you can generate an invoice for a call with any status except hold. You can generate an invoice for a call on hold in CIR, but a warning displays.

If a pending invoice for a call exists, the Generate Invoice prompt appears only if you make changes in CAR that affect the invoice. These changes include:

- Adding labor, expense, or item usage records
- Editing comments
- Changing invoice-related fields such as PO number, credit terms, language, channel, taxes, or fixed rate

Correcting an Invoice

You can correct an invoice that you have not posted. Modify pricing and covered amount in Call Invoice Recording when you review the invoice. Change inventory amounts or add labor in CAR.

To make changes to a closed call, change the call's status in Call Activity Recording. If the line you want to change is closed, reopen it. Then you can modify or add a report. The system regenerates invoice amounts only for changed call lines.

After you post the invoice, the status of all reports included on the invoice is closed. You can view, but not modify, these reports.

Modifying Lines in CAR with Generated Invoices

After you generate an invoice for a call line, you can add or modify reports in Call Activity Recording. The system regenerates the invoice for changed call lines, either when you exit CAR or when you access the call in CIR.

▶ See
“Coordinating
CAR and CIR”
on page 615.

A warning displays in CAR when you access a call line with an invoice. If you ignore the warning and make changes, the existing invoice is no longer valid. You must regenerate the invoice in CAR—if Invoice From Recording is Yes—or from CIR. Until the invoice is regenerated, the system sets the Ready to Invoice field in Call Invoice Recording to No. Invoice Post and Print ignores the invoice until you regenerate it to reflect the changes you made.

Invoicing by Report

If you use multiple reports to record service activity and want to invoice the reports separately, you have two choices:

- Post the invoice for the first report before creating another. This clears all quantities for the call line.
- Give the second report a status of hold so the system does not include it when you generate the pending invoice.

If you do not use one of these approaches, the system accumulates the charges on the two reports into one invoice amount.

Posting an Invoice

When you post an invoice, the status of all its reports is closed. You can view these reports, but you can change only the comments and fault codes. After posting, the system clears all amounts and the Call Invoice Recording summary frame displays zero amounts to be invoiced.

When viewing closed reports, enter the level of detail you want to review in the CAR header. You cannot change the Detail field at the line level.

Project Codes in CAR

Project code is one component of an account number defined in GL setup functions. You can use projects to track expenses and revenue for distinct activities. Other components of an account number are account, sub-account, and cost center.

Note Use Project Create (25.3.11.1.1) to define project codes.

Each account component must be valid on its own and in combination with other account number components.

Most orders generate either cost or revenue GL transactions. In work orders, project codes group costs. In sales orders, they group revenue. Call Activity Recording is unique because it tracks both labor, expense, and item costs *and* invoiceable amounts that generate service revenue.

As a result, up to three projects can be specified in Call Activity Recording, illustrated in Figure 14.10.

Fig. 14.10
Projects in Call
Activity Recording

Call Activity Recording

Go To Actions Copy Print Preview

Header Lines Status

Header

Call ID: CA100150 Bill To: Pan105C End User: PanEnd1 TZ: EST

Item Selection

Line	Serial	Item Number	Work Cd	Svc Type	Report
1	3000	JN10007-1	FV-ID	FV-ID	6041

Item Detail

Engineer: JN1000-1 Fixed Price: 25.00 Quantity: 1

Site: JN1000-1 Fixed Price: 25.00 ISO Ref: 0

Location: LCM01-1 Visit ID: 0 Coverage: Taxable: Fault Codes:

Status: Invoicable

BOM Code: Routing: Sales Acct: 3000 0001 0001 Disc Acct: 3000 0001 Update Installed Base:

Sales project

Sales discount project

Report project

- The sales project is associated with the Sales account for tracking call revenue. This project is validated with the other Sales account components that display on the screen.
- The sales discount project is associated with the Sales Discount account. This project is typically the same as the Sales account project. This project is validated with the other Sales Discount account components that display on the screen.
- The report project is associated with call line reports for tracking call costs. This project is not validated with other account components, since the Cost of Goods Sold accounts are not determined until later. However, it is validated during GL transaction post.

Project Code Handling

How projects are used and which project fields can be updated depends on the setting of Project Code Handling in SSM Accounting Control. This field has two values: Single Project per Line (S) and Project per Labor/Expense (P).

Single Project per Line (S)

When this option is active, one sales project and one sales discount project can be associated with each call line. The system sets the report project to the value entered for the sales project and it cannot be changed. The same project is used for both revenue and costs created by labor/expense transactions and material issues and receipts for this line.

Once you have specified a project, it cannot be changed. The sales project defaults to each report and each labor, expense, and item detail record.

When an invoice is created for the call line, either in CAR (if Invoice from Recording is Yes) or CIR, the sales and sales discount projects from CAR default to the call invoice. These values can be modified in CIR, if needed.

Project per Labor/Expense (P)

When this option is active, each labor and expense transaction created for a call line can have a different project associated with it.

- The sales and sales discount project default from the contract line providing coverage and can be modified.
- The report project also defaults from the contract-line sales project and can be modified.

Note Items always use the project on the call report header.

If a contract does not provide coverage or a project is not specified on the contract line, all call-line projects default to blank. Each time a new report is opened for a call line, the same defaulting logic is used.

The report project sets the default for each labor record. For expenses, the project defaults first from the employee (engineer), if one has been defined; otherwise, the report project is used. This is similar to the way work orders handle project codes. You can modify the report project even after other reports exist, and the new project defaults to new labor and expense transactions.

Note Associate a default project with an employee in Employee Create (36.1.7.1).

You can also modify the project on each labor and expense detail. The project associated with item consumption, however, defaults from the report project and cannot be changed.

The report project is used for costs only. When an invoice is generated, the sales and sales discount projects default to the invoice just as when Project Code Handling is set to S. The revenue projects (sales and sales discount) set the default for each line on the call invoice. The only difference in how revenue projects are handled when Project Code Handling is P is that the fields can be modified even after reports exist.

Returns and Exchanges in CAR

▶ See Chapter 23, “Return Material Authorizations,” on page 813.

You can handle simple returns in the Service/Support module through RMAs. Use RMAs when you do not need to record an engineer’s time and material. The customer returns an item, and you ship them a replacement. Or, you repair the item with a repair work order or by creating an RTS (Return to Supplier), and then return it to the customer.

CAR also provides support for returns and exchanges in the context of recording service activity, such as:

- Unused items ordered on an MO
- Exchanges for credit
- Swaps
- Other returns

▶ See “Return Status” on page 111.

You can combine some of these returns. For example, you can swap an item and return the old one for credit. You manage return processing with return statuses.

▶ See “Correcting Report Errors” on page 549.

You can also correct a mistake if the number of items used is recorded improperly and needs to be decreased. The difference between correcting a mistake and executing a return is that the first action removes the cost of the item from the call. In the second case, the cost of the item issued to the call is retained so that you can track cost variances.

MO Returns

You must account for all items that an engineer orders for a call before closing the call. You can return items directly in CAR if you do not need them. The system executes the return as an inventory transfer, since MO items remain in inventory and do not involve billing.

If the engineer will return MO items later, mark the items in CAR as a pending return. No inventory transactions take place until you complete the pending return in MO Direct/Pending Returns (11.11.8). You cannot close the call until the return is complete.

▶ See “Returning Items on MOs” on page 755.

Note With this kind of a return, the cost of the item issued is still associated with the call. This lets you track variances based on planned usage and actuals.

Exchanges

Engineers frequently replace a faulty or worn part with a new one. Sometimes, you discard the old part. In other cases, the used part has value and the customer receives credit. You can return the used part in CAR as part of an exchange by using a return status with Exchange set to Yes.

When you use an exchange return status, the system searches for an exchange price for the returned item on the service price list specified on the header in CAR. Define exchange prices using the exchange unit of measure in Call Management Control. If an exchange price exists, it displays by default during return processing. The customer is credited this amount when you generate the invoice for the call.

▶ See “Automatic Pricing” on page 211 for details.

Define items that you normally exchange as repairable in Service Item Maintenance (11.3.7). CAR assumes that when you issue a repairable item, you return one. The Quantity Returned field defaults to the Quantity Used in the Item Usage frame.

Swaps

Special processing occurs in Call Activity Recording when the call line item and the item issued to repair it are the same. This type of repair could occur in a number of scenarios, and each has different requirements related to updating the installed base.

Swaps. A swap occurs when you issue a new item to replace an existing one and return the existing one. This is similar to RMA processing. The customer returns a product, such as a defective computer monitor, and you ship them a new one. In this case, the installed base should be updated with the serial number of the new monitor.

Note Use an exchange return status to provide credit for a swapped item, just as any other exchanged item.

Other replacements. In other scenarios, the item issued may be used to repair the existing item, rather than replacing it, or for other reasons you may need to retain the original serial number in the installed base. This might be the case, for example, if the item is on a contract.

When the component you issue is the same as the call line item, CAR issues the following warning:

Component issued is same as parent. Continue?

If you respond No, the item is not issued. If you respond Yes, a further prompt displays:

Is this component being issued as a swap?

When you respond Yes to this prompt:

- The system automatically sets the quantity returned to the quantity being issued.
- The serial number and ISB reference of the call line item are replaced with the serial number associated with the issued item.
- The installed base is updated to reflect the new serial number and reference.

When you respond No to this prompt, none of these updates are made. You can manually modify the quantity returned if you want, but the original serial number is not replaced.

Note Normally, you cannot delete an installed base record if the item is referenced on a contract. However, in the case of a swap, this restriction does not apply. If you know the old serial number existed on a contract, you should update the contract with the new serial number, now that the item has been replaced.

Miscellaneous Returns

In addition to MO returns, exchanges, and swaps, you can register other returns in CAR.

Example While repairing a copier, the engineer picks up two empty toner cartridges from the customer. He registers these as an exchange for credit, even though he did not use a toner cartridge on the call.

Ambiguities in Return Processing

If you want to return an item ordered on an MO and the same item exists in the end user's installed base, the system may not be able to distinguish between the two items.

Example You order two of item 44-110 on an MO. This item does not have a serial or lot number. In CAR, you use one item 44-110 and indicate that you want to return one, leaving the installed base reference as 0. If an item exists in the installed base with reference 0, the system cannot tell whether you want to return the one from the MO or return the one from the installed base.

This situation also exists for lot-controlled items if the item on the MO matches the lot of an item in the installed base with a 0 reference number.

If this situation occurs, the system returns the item from the installed base first. To return the one on the MO, mark the return as pending. The system executes pending returns only for items on an MO.

Updating the Installed Base in CAR

In CAR, you can update the installed base by setting Update ISB to Yes for the call line. This setting lets you:

- Add the call line item to the installed base.
- Add items you issue as components of the call line item.
- Remove items that are returned.

Fig. 14.11
Update ISB Field
in CAR

Update ISB
controls how
you add
items to the
installed
base in
CAR.

Call Activity Recording

Go To Actions Copy Print Preview

Header Lines Status

Lines Item Detail Tax Info Comments Fault Codes Labor/Expenses Item Usage Call Line Status

Header

Call ID: CA100150 Bill To: Pan105C End User: PanEnd1 TZone: EST

Item Selection

Line	Serial	Item Number	Work Cd	Svc Type	Report
1	3000	JN0007-1	FIXD	FIXED	6041

Item Detail

Engineer: Site: JN1000-1 Location: LCM01-1 Status: Invoiceable BOM Code: Routing: Sales Acct: 3000 0001 0001 Disc Acct: 3900 0001 Project: Fixed Price: 25.00 Visit ID: 0 Quantity: 1 ISB Ref: 0 Coverage: Taxable: Comments: Fault Codes: Update Installed Base: ☒

Update ISB defaults to Yes under the following conditions:

- The item is in the installed base. Update ISB defaults to Yes regardless of other settings.
- Installed Base in Service Item Maintenance is Yes for the item *and* Create ISB is Yes for the end user in End User Data Maintenance.
- The item is not in the item master, but Create ISB is Yes for the end user in End User Data Maintenance.

If you do not enter an item number, Update ISB defaults to No. If you enter the item number of a lot/serial controlled item and do not specify a lot/serial number, the system sets Update ISB to No and does not let you change it. Lot/serial-controlled items must be added to the installed base with an appropriate number.

Note If the call item is in the installed base but the quantity specified in CAR does not match the ISB quantity, Update ISB defaults to No and cannot be changed.

Call Line Item

If the call line item is not in the installed base and Update ISB is Yes, a frame appears in CAR for recording installed base information. The system creates the ISB record immediately, so you can update the installed base when you issue inventory items. To add these records as components of the parent item, the record for the parent item must exist.

If you specify active warranty information for the new ISB item, the system prompts you whether you want to apply the coverage to the item.

Figure 14.12 illustrates the Installed Base Detail frame in Call Activity Recording.

Call line is covered by default call service type.

Item is added to ISB with active warranty coverage.

Fig. 14.12
Adding Item to ISB
with Warranty
Coverage

In this example, the Default Call Service Type in Call Management Control covers the line item. You can add the item to the installed base with warranty coverage if you specify an installation date that is within the warranty date range.

The Installed Base Detail frame displays only when the call line item is not in the installed base and Update ISB is Yes. To modify information for an item in the installed base, use Installed Base Item Maintenance (11.3.1).

Note Special processing occurs in CAR when the component item you issue is the same item number as the call line. Whether the installed base is updated in this case depends on whether the issue is considered a swap.

See “Swaps” on page 559 for details.

Repair Items Issued

You can create installed base records for items you issue during inventory transaction processing in CAR. Define the items with Installed Base set to Yes in Service Item Maintenance and set Load Available Structure to Yes in Service Management Control.

If the line item already has a product structure in the installed base, the system adds the items issued in CAR as top-level components.

Returned Items

If Update ISB is Yes for a call item, the system updates the installed base for returned items. For this to work, set Detail to Yes so you can access the Returned Items Detail frame and specify the returned item's serial number or installed base reference. During the inventory issue, the system deletes the record for the old ISB reference or serial number.

Note This update occurs regardless of the value of Load Available Structure.

If you specify a quantity to return and do not set Detail to Yes, the system displays a warning. To ensure that the installed base is updated correctly, you should supply the serial number or lot number and ISB reference.

Since lot-controlled items can be added to the installed base with a quantity greater than one, returning lot-controlled items can reduce the ISB quantity.

Example One installed base record exists for a quantity of five for a lot-controlled item. You return two of the five lot-controlled items, specifying the appropriate reference numbers. The ISB record now shows three of these items at the end-user site.

Call Activity Recording

This section gives field reference information for Call Activity Recording (11.1.1.13). Executing CAR follows a number of steps. Figure 14.13 illustrates the basic flow of information in CAR.

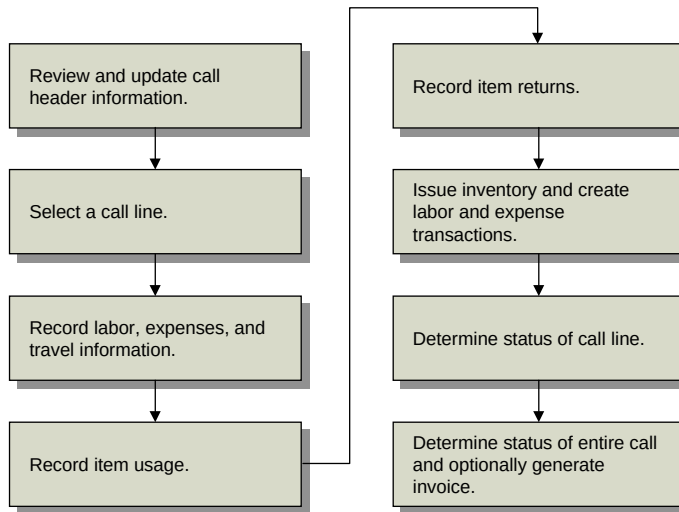


Fig. 14.13
Call Activity
Recording
(11.1.1.13)

Table 14.1 lists Call Activity Recording frames. Some frames display only when you set certain fields.

Frame	Req	Purpose
Header	Y	Select call and display-related information.
Exchange Rate	N	If currency is non-base, review and update exchange rate.
Taxes	N	If Taxes is Yes, review header tax defaults.
Comments	N	If Comments is Yes, view or update call header comments.
Item Selection	Y	Select call line.
Item Detail	Y	Display and update call line detail.
Close Visit	N	If the Visit ID field in Item Detail contains a value, the Close Visit pop-up lets you close the visit.
Taxes	N	If Taxes is Yes for this line, review line tax defaults.

Table 14.1
CAR Frames

Frame	Req	Purpose
Installed Base Detail	N	If Update ISB is Yes and the call line item is not in the ISB, specify ISB parameters and add it to the installed base.
WIP Product Line	Y	When you access a line for the first time, specify the product line for recording work in process.
Coverage Information	N	If Coverage is Yes, view applicable limits.
Comments	N	If Comments is Yes, view or update call line item comments.
Fault Codes	N	If Fault Codes is Yes, enter or review codes for this line item.
Material Order Selection	N	If items ordered on an MO exist for the current call line, select and load them as item usage.
Labor/Expenses	Y	Record operations, labor hours, and expenses for this activity.
Labor/Expenses Detail	N	If Det is Yes, view and update detailed information about this operation.
Comments	N	If Comments is Yes, view or update operation comments.
Item Usage	Y	Record items consumed or exchanged during service activity.
Item Usage Detail	N	If Det is Yes, view and update item details.
Multi	N	If Multi is Yes, change allocation details for each item.
Comments	N	If Comments is Yes, view or update item usage comments.
Returned Items Detail	N	If Qty Ret is not zero, specify data required for returns and exchanges.
Multi	N	If Multi is Yes, change return details for each item.
Fault Codes	N	If Fault Codes is Yes, enter codes for returned items.
Issue Confirmation	Y	Displays all items about to be issued or returned for your confirmation.
Output Device	Y	Specify output device for report.
Call Line Status	Y	Specify call line status.
Item Dates	N	If Dates is Yes, specify dates related to service activity.
Call Status	Y	Specify call status and optionally generate invoice.

Call Activity Recording Header

The Call Activity Recording header frames display when you select option 11.1.1.13 from the main menu.

The screenshot shows a window titled "Call Activity Recording" with a sub-header "Call ID: CA100004". Below this, there are three tabs: "Header", "Bill-To", and "End User". The "Header" tab is selected, displaying the following information:

Header	
Call ID: CA100004	Bill To: 4000
End User: 4001	TZone: GMT-8
Bill-To	
ABC Company 150 JFK Parkway Morristown, NJ 07960 X United States of	
End User	
ABC Distribution 35 La Playa Via Rosa, CA 98766 United States	
Details	
Status: Assigned	Channel: [dropdown]
Priority: 25	Assigned: [dropdown]
Contract: [dropdown]	Work Code: Tech
Price List: [dropdown]	Queue: Engineer
PO Number: [dropdown]	Expire Date: [dropdown]
Caller: [dropdown]	Comments: [checkbox]
Phone: 805 308-3098	Detail: [checkbox]
Description: [text area]	Reference: [text area]

At the bottom right, there are "Back" and "Next" buttons.

Fig. 14.14
Call Activity
Recording
(11.1.1.13)

Call ID. Enter a valid call ID. If the call has a status of complete, a warning displays. If the call has a status of closed or hold, the activity recording frames do not display. The Call Line Status frame displays immediately so you can modify the status of a line you want to change. The Call Status frame displays next so you can modify the call status.

Bill-To. Defaults from the bill-to address for the end user's customer. You can modify the default unless a pending invoice exists for the call. If the end user on the call is associated with the temporary customer and Call Activity with Temp is No, you cannot record activity for the call until you associate the end user with a valid customer.

Note Define the Temporary Customer in Call Management Control.

End User. An output-only field from the call.

Status. The call status and description display. You cannot modify the status here, but you can modify it when you complete CAR processing.

Priority. Output-only field from the priority assigned to the call.

Contract. Output-only field from the call.

Price List. Defaults from the call price list associated with the contract providing coverage for the call, if available. Otherwise, it defaults from the service type on the call. If you change it, specify a type R (repair) price list defined in Service Pricing Maintenance. If you change the price list after recording activity, the system does not recalculate existing records. It uses the new price list only for new activity on the call.

PO (Purchase Order) Number. Purchase order number for the service activity. The purchase order defaults from the call if you recorded a purchase order there. You must enter a value if PO Required is Yes for the end user in End User Data Maintenance. PO Required in End User Data Maintenance defaults from PO Required in Customer Data Maintenance.

Caller. Output-only field from the call.

Phone. Output-only field from the call.

Description. Output-only field from the call, briefly describing the problem.

Channel. Enter an optional code identifying the distribution channel originating this call. Use Channel to determine GL Sales account and Cost of Goods Sold accounts affected by inventory transactions in CAR and CIR. Set up optional sales accounts with Sales Account Maintenance (1.2.17) based on product line, site, customer type, and channel.

Note To standardize entries, set up codes for field so_channel in Generalized Codes Maintenance.

Assigned. Output-only field from the call. In CAR, you cannot change the engineer assigned to the call, but you can assign a different engineer to each call line and detail line.

Work Code. Output-only field from the call.

Queue. Defaults from the call and indicates the queue to which you assigned this call. Set up queues with Call Queue Maintenance (11.1.21.7). You can modify the queue here or by using escalations.

Currency. This field is output only if the system previously set the currency on the call. This occurs when a contract provides coverage for a call item. The contract currency determines the call currency.

If the currency is not already set, it defaults from the currency for the bill-to address. You can change it only before you move to the next frame. Monetary amounts (costs, prices, limits) display in the call currency. If you use a currency other than the base currency, an exchange rate pop-up displays.

Note Currency is a factor in the price list search, so if you record activity in multiple currencies, set up prices for each.

Language. Defaults from the end user's language. You can print comments on an invoice in the receiver's language.

Taxable. Enter Yes if activity for this call is subject to tax; otherwise, enter No. The tax status defaults from the end-user tax data.

Under Global Tax Management (GTM), taxes are based on the transaction tax environment, tax usage, and tax class. The tax environment represents the set of tax types that applies to the item issue site and end-user site and tax class.

Tax Class. Enter a tax class previously defined in Tax Class Maintenance (29.1.5). Tax class defaults from the end user. Tax classes group addresses taxed at specific rates or that are tax-exempt. GTM tax classes help determine the default tax environment (set of tax types) for the transaction.

The header tax class is not actually used in any tax calculation. For service detail, tax class for items defaults from Item Master Maintenance and tax class for labor and expenses from Service Category Maintenance.

Effective. Defaults from the system date. The system uses the effective date to determine the tax rate to use. The header value provides the default effective date for each line.

Terms. Defaults from the bill-to address.

▶ See Chapter 7, "Taxes in SSM," on page 233 for more details about taxes.

Site. For calls you create in Call Maintenance, the site defaults from the site specified for the first line item in the Item Service Structure Detail frame.

The system uses the call header site to determine the default tax environment. You can specify a different site at the item level. The item-level site is where the engineer performs repairs or obtains parts for the call.

Expire Date. An output-only field that applies only to call quotes, which use the same programs as CAR.

Reference. If this call originated from a quote, the quote number displays in this field as a reference.

Comments. Defaults to Yes if comments exist. If Yes, you can enter or review the header comments when you click Next. The system copies comments into Call Invoice Recording. You can print the comments on the invoice.

Detail. Determines whether the Detail field for each line in Labor/Expense and Item Usage frames defaults to Yes or No. Set this field in the header for more control over line-item entry.

When viewing closed reports, determine the level of detail you want to review in the CAR header. You cannot change the Detail field at the line item level.

Note The system closes reports when you post the related invoice.

Exchange Rate Pop-Up

If you enter a non-base currency, the exchange rate pop-up displays. The system uses the foreign currency to calculate prices and costs in Call Activity Recording and Call Invoice Recording.

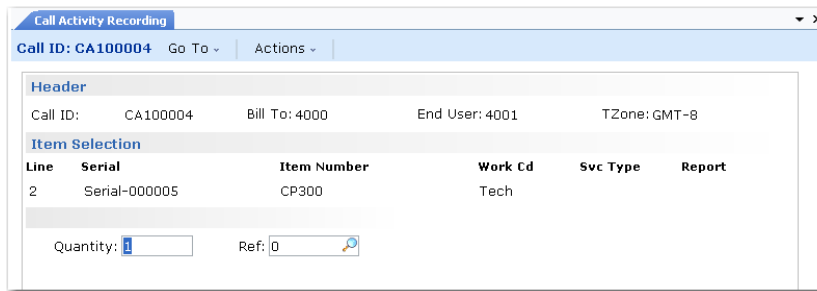
By default, the system displays both components of the exchange rate relationship for the call open date. You can modify the value if you have access through field security.

Specify Yes for Fixed Rate to indicate that the exchange rate will not change. If Yes, the system uses the displayed exchange rate when you post the invoice. If No, the system uses the exchange rate effective when you post the invoice.

Item Selection Frame

When you leave the first set of frames, the system determines the number of items in the call record's detail and displays the last line in the Item Selection frame. Use this frame to update existing lines or to add more lines to the call.

When your cursor passes the Item field, the pop-up window shown in Figure 14.15 displays so you can enter the quantity of the item you are repairing and an optional installed base reference number.



Header					
Call ID:	CA100004	Bill To:	4000	End User:	4001
		TZone: GMT-8			
Item Selection					
Line	Serial	Item Number	Work Cd	Svc Type	Report
2	Serial-000005	CP300	Tech		

Quantity: Ref:

Fig. 14.15
Item Selection
Frame

Line. The system increments the line number when you add a new line to the call. When you first access this frame, the last line on the call displays to show how many lines exist.

Serial. Specify the item's lot or serial number, used to identify installed base records. You cannot update this field after you open a report for the item. If you leave this field blank and the item is defined as lot- or serial-number controlled in Item Master Maintenance, a warning displays. You cannot update the installed base without a lot or serial number.

Item Number. Enter the identifier of an item requiring service activity. Two control program settings affect the validation of this field:

- If Items Must Exist in Service Management Control is Yes, the system checks this field against items in the item master.
- If Items in Installed Base is Yes, the item must exist in the installed base before you can take a call for it.

Quantity. This pop-up displays after you click Next from the Item Number field. Quantity defaults from the call record and indicates the quantity of items you are servicing. For installed base items, Quantity defaults from the quantity in the installed base record. If these two are not the same in CAR, a warning displays. If you are working with serialized items and managing the installed base, create separate lines for each item. You cannot update this field after you open a report for the item.

If you are using service BOMs and routings, the system multiplies the quantity required for each item and each operation run time by the quantity in this field.

Ref. The ISB reference number defaults from the line item; otherwise, it is zero. Reference numbers uniquely identify items in the installed base with the same serial/lot number or items without numbers. You cannot update this field after you open a report for the item.

Work Cd. For a new line, work code defaults from the call header. The value here defaults into the Labor/Expenses and Item Usage frames, indicating the type of work you performed for each labor operation, expense, and item you consumed. If you set up contract limits using work code/service category combinations, this work code determines the applicable limit.

If you define the work code with Fixed Price set to Yes in Work Code Maintenance, Fixed Price in Call Activity Recording is Yes and is display only. The system calculates the service price at the fixed rate regardless of the actual service cost. The system searches the call price list for a price with the fixed price unit of measure in Call Management Control.

Note When you use fixed prices, the system requires a charge code with Fixed Billable set to Yes.

Svc Type. Defaults from the service type in Call Maintenance for this line. For a new line, the service type defaults first from a warranty or a contract covering this particular item. If the item has no warranty or contract, this field defaults from Default Call Service Type in Call Management Control.

Service types identify terms and conditions of coverage, including response time, price lists, and days of coverage. They define coverage levels and charge codes for covered or over-limit amounts.

If Coverage is Yes in the Item Detail, a pop-up window displays the coverage limits for this service type and the amount you have already consumed.

You cannot update this field after you open a report for the item.

Report. To create a report, enter the new number or clear the existing one for the system to supply one. Use Next/Previous to scroll through reports that exist for the line item. The system-generated number defaults from the next work order lot ID.

Item Detail Frame

After you accept the Item Selection frame, the Item Detail frame appears. In this frame, you modify information for the displayed line item. Most fields default either from the call record, the information supplied on the header of Call Activity Recording, or settings in the Call Recording/Invoicing frame of Call Management Control.

The screenshot shows the 'Item Detail' frame with the following fields and values:

- Engineer: [Empty field]
- Site: 10000
- Location: [Empty field]
- Status: 1 Invoiceable
- BOM Code: rep
- Routing: [Empty field]
- Sales Acct: 3000 0001 0001
- Disc Acct: 3900 0001
- Project: [Empty field]
- Fixed Price: [Empty field]
- Fixed Price: 0.00
- Visit ID: 0
- Quantity: 1
- ISB Ref: 0
- Coverage: [Empty field]
- Taxable: [Empty field]
- Comments: [Empty field]
- Fault Codes: [Empty field]
- Update Installed Base: [Empty field]

Fig. 14.16
Item Detail Frame

Engineer. Engineer defaults from the engineer assigned to the item on this call. For a new line, it defaults from the engineer assigned to the call. When you create the first report for a call line, the engineer information helps determine the line-item site. This site can also affect the BOM and routing that the system suggests.

You must enter a value in this field. If you did not assign an engineer to the call, enter one here. Engineer provides the default for each line of detail, but you can edit it any time during the call. If a call involves

multiple engineers, record one engineer's detail, return to the Item Detail frame to change the engineer, and record the second engineer's detail. Alternately, you can open a separate report for each engineer.

Engineer scheduling in Call Maintenance considers only the engineer on the call header when calculating engineer load. If you specify other engineers for some line items or reports, their availability is not affected.

▶ See "Determining Site and Location Defaults" on page 544 for details.

Site. The site code identifies the facility that issues items you use to service the call line. This site code is the default for item usage records. Site defaults from the engineer record if the engineer has a designated site. Otherwise, the system searches for the site of the engineer's assigned area, then the default spares site in Default Site Maintenance, then the item's site in the item master, and finally the call customer site.

The system determines costs by site. After you create a report, you cannot change the site for the line.

Location. Location defaults from the engineer record. If blank, the system searches for the location for the engineer's assigned area, then the default spares location in Default Site Maintenance. Use locations to track inventory for items issued for the line item.

Status. Specify one of three values that indicates the report's status:

I (invoiceable). Indicates that this report is ready for invoicing. Invoiceable is the default status when you create a report. When you release a quote to CAR, the system gives its reports a status of I so that you can immediately invoice activity you record.

H (hold). Does not allow the system to invoice the report. The system sets reports to H if an error occurs during inventory processing. You can enter a status of H to delay invoicing a report.

C (closed). The system sets a report status to C when you post the invoice. You cannot modify closed reports. You can enter a status of C only if the report has no detail.

BOM Code. Use only service BOMs set up with Service Structure Maintenance. This field defaults from the BOM code in Call Maintenance.

When you add items in CAR, the system searches first for BOM codes you defined in Service Item by Site Maintenance (11.3.9). If no BOM exists for the call line site, the system searches for a BOM you defined in Service Item Maintenance. For the PM work code, the system uses the PM BOM code. For the install work code, the system uses the install BOM code. In all other cases, the system uses the repair BOM code.

When you execute this frame, the system enters the detail records for the BOM into the item usage frame for the first operation on the routing that does not have items. After the system generates the line item's BOM, the field becomes output only.

If you do not want usage records created automatically, clear this field before continuing.

Routing. Use only service routings from Service Routing Maintenance. This field defaults from the routing in Call Maintenance.

When you add items in CAR, the system uses the routing for the item's work code in Service Item by Site Maintenance (11.3.9). If no routing exists for the site, the system searches for a routing in Service Item Maintenance. For the PM work code, the system uses the PM routing. For the install work code, the system uses the install routing. In all other cases, the system uses the repair routing.

When you execute this frame, the system enters the routing steps into the Labor/Expenses frames. If BOM codes exist for a routing operation, the system enters these as items used for the operation. After the system generates the line item's routing, the field becomes output only.

If you do not want usage records created automatically, clear this field before continuing.

Sales and Discount Account, Sub-Account, Cost Center. The system displays the Sales and Sales Discount accounts from the revenue product line. You cannot update these fields here. After the invoice is created, update them in CIR as needed.

Sales and Discount Project. Enter an optional code identifying the general ledger (GL) project associated with the sales and sales discount amounts for this call line item. These fields default from the

sales and discount projects associated with the contract line providing coverage; otherwise, they are blank. The sales and discount project are typically the same.

The system verifies that the project exists and is active and that it is valid with the other Sales and Sales Discount account components.

Project. Enter an optional code identifying the general ledger (GL) project associated with the cost of labor, expenses, and items for this call line item.

▶ See “Project Codes in CAR” on page 555 for details.

You can update this field only when the value of Project Code Handling in SSM Accounting Control is set to Project per Labor/Expense (P). When Project Code Handling is Single Project per Line (S), the report project defaults from the sales project and cannot be changed.

This project is validated with other Cost of Goods Sold account components during GL transaction post.

Fixed Price. Displays the work code’s Fixed Price field value. You cannot change this field. If Fixed Price is Yes, you can specify a fixed price in the following field. Use fixed price repairs to charge customers a fixed amount for service regardless of the repair cost. When Fixed Price is Yes, use only a charge code with Fixed Price Billable set to Yes.

Fixed Price. If Fixed Price is Yes, the system searches the header’s price list for a price that has the fixed price unit of measure in Call Management Control. If none exists, the default price is zero.

Visit ID. Specify the QAD Field Service Scheduler (FSS) visit ID to record labor activity against. The lookup displays the list of open visits for the current call.

If you select a visit, you can consume labor time for both the travel time for the visit and for the estimated work time (or any combination of the two). This field is optional.

See *User Guide: QAD Field Service Scheduler* for more information on FSS.

Quantity, ISB Ref. Output-only fields showing values you entered in the previous pop-up.

Coverage. Defaults from Coverage Window in Call Management Control. If Coverage is Yes, a frame displays coverage information such as contract number, contract service type, start and end date, active service type, warranty service type, and install and expiration dates.

Coverage limits for the contract or service type also display. For a contract, this includes the contract number and the line number providing coverage. The system also displays the limits you defined by invoice sort or work code/service category, the percentage of coverage, and the coverage amounts for the defined conditions. The engineer servicing the call often examines this coverage information.

Taxable. Defaults from the header Taxable field. You can determine the tax status for each line item.

▶ See Chapter 7, “Taxes in SSM,” on page 233 for more details about taxes.

Comments. Defaults to Yes if comments exist. Specify Yes to enter or review call line comments. The system copies comments into Call Invoice Recording. You can print comments on the invoice.

Fault Codes. Defaults from Use Fault Codes in Call Management Control. Set Fault Codes to Yes to enter problem, cause, and resolved codes in a pop-up. Define these codes in Generalized Codes Maintenance. If you entered fault codes in Call Maintenance, those values display so you can adjust or add information.

Update Installed Base. Defaults to Yes when:

- The item is in the installed base, regardless of other settings.
- Installed Base in Service Item Maintenance is Yes for the item *and* Create ISB is Yes for the end user in End User Data Maintenance.
- The item is not in the item master, but Create ISB is Yes for the end user in End User Data Maintenance.

If Yes and the line item is not in the installed base, a pop-up displays so you can specify ISB parameters and add the item to the installed base. If the line item is in the installed base, no additional frames display.

If you do not enter an item number, Update ISB defaults to No. If you enter the item number of a lot/serial-controlled item and do not specify a lot/serial number, the system sets Update ISB to No and does not let you change it. A lot/serial controlled item can only be added to the installed base with a lot or serial number.

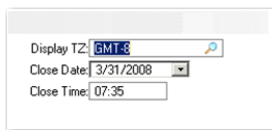
If Update ISB is Yes and Load Available Structure is Yes in Service Management Control, the system adds component items that you used to the installed base. You must mark these items as belonging in the installed base in Service Item Maintenance. The system removes returned items that exist in the installed base regardless of the setting of Load Available Structure.

Close Visit Pop-Up

If you associate a visit with a call in the Item Detail frame, you can optionally close the visit using the Close Visit pop-up.

If you close a visit in CAR, the status of the visit is also updated in FSS. You can also record the visit close date and time.

Fig. 14.17
Close Visit Pop-Up



The image shows a 'Close Visit Pop-Up' dialog box. It contains three input fields: 'Display TZ' with a dropdown menu showing 'GMT-8', 'Close Date' with a date picker showing '3/31/2008', and 'Close Time' with a time picker showing '07:35'. There is a small icon in the top right corner of the dialog box.

Display TZ. Specify the time zone in which the visit will be closed. When you close a visit in CAR, the system updates the status of the visit in FSS.

Close Date. Specify the date on which the visit is closed.

Close Time. Specify the time at which the visit is closed.

Installed Base Detail Frame

If Update ISB is Yes and the call line item is not in the installed base, enter information for the ISB record in a pop-up. If the line item is a component—for example, the disk drive of a computer—you can specify a parent item and serial number to update the installed base configuration.

Installed Base Detail

Description: Finished Configured good
3

Quantity: 1.0

Model: [empty]

Install Date: 06/26/2007

Warranty Code: W901

Warranty End: 09/24/2007

Parent Item: [empty]

Parent Serial: [empty]

Rev Level: [empty]

Ownership: [empty]

Location: [empty]

Parent ISB Ref: [empty]

Comments: [empty]

Fig. 14.18
Installed Base
Detail Frame

Description. The two-line item description from Item Master Maintenance displays. You can change this description as needed.

Quantity. An output-only field indicating the number of items you are adding to the installed base.

Model. The item's model number, which defaults from the value in Service Item Maintenance.

Install Date. Defaults from the system date and determines when warranty coverage begins.

Warranty Code. Defaults from the item's warranty in Service Item Maintenance. Warranty Code determines the coverage terms and conditions, including response time, price lists, and days of coverage. If you add an item to the installed base and specify a current warranty code, the system prompts whether you want to use this warranty coverage for the call.

Warranty End. Based on the warranty duration and the install date. If you are adding an item to the installed base with a warranty, specify an expiration date. Warranties cannot be open-ended.

Rev Level. Displays the item's revision level in the item master.

Ownership. A reference-only field indicating who possesses the item. If the end-user address code refers to a large company, you can enter the department or individual using the item. Define values for ownership with Generalized Codes Maintenance for field isb_owner.

Location. A reference-only field providing a 24-character description of the location of the installed base item at the end-user site. Location can be a building, suite number, or floor.

Parent Item, Serial, ISB Ref. You can track both products and components in the installed base. Use this especially if you have configured products. If you maintain the configuration in the installed base and the customer returns a component such as a PC disk drive, you can relate the new component you issue to the PC.

Use Parent Item to add the current item to the original purchase. Use the Parent Serial and ISB Reference fields to identify the parent item.

Comments. Defaults to Yes if comments exist. Specify Yes to enter or review ISB comments. The Installed Base Report displays comments.

WIP Product Line Pop-Up

Activity recorded in CAR can affect accounts from multiple product lines. These product lines fall into three categories:

- WIP product line, a holding area for CAR amounts
- Charge product lines, for costs in CAR
- Revenue product line, for service income in Call Invoice Recording

You can use the same product line for all three purposes, depending on how you want to separate accounts for reporting and analysis.

The default for the WIP product line is either the service type’s product line or the item’s product line, depending on Use Item Prod Line in SSM Accounting Control. You can change this only when you first access a line. All reports you create for the call line use this product line.

Figure 14.19 illustrates the product line pop-up in CAR.

See “Detailed Accounting in CIR” on page 638.

Fig. 14.19
WIP Product Line
Pop-Up

Product
line for
holding
GL
amounts
in CAR.

Call Activity Recording

Call ID: CA100004 Go To Actions

Header

Call ID: CA100004 Bill To: 4000 End User: 4001 TZone: GMT-8

Item Selection

Line	Serial	Item Number	Work Cd	Svc Type	Report
2	Serial-000005	CP300	Tech	W901	133

WIP Product Line: 3000

WIP Product Line. Accept the default or enter a product line. The product line determines the WIP account the system uses for activity for this line.

Coverage Information Frame

If Coverage is Yes, the Coverage Information frame displays.

Coverage Information

Contract: Contract Line: 0 Warranty Service Type: W90I

Contract Svc Type: Install Date: 06/26/2007

Start Date: Warranty End: 09/24/2007

End Date:

Service Type Used: W90I Currency: USD

Coverage Limits For: Service Type W90I				
Limit Qualifier	Limit Amount	Used/Consumed	List Price Limit	%Cv
INST consistem	0.00	0.00	50.00	50
INST exchitem	0.00	0.00	25.00	75
INST Item	0.00	0.00	25.00	100
Expense	0.00	0.00	0.00	50
Item	0.00	0.00	25.00	100
Labor	0.00	0.00	0.00	75

Fig. 14.20
Coverage
Information Frame

This frame displays detail about the line item's coverage limits, effective on the call open date. These limits come from a contract, service type, or warranty, as the frame header indicates. If the coverage limits come from a contract, the limits include the amount you have used in CAR and consumed by posting call invoices.

Note When MTZ is active, call open date/time are relative to the end user's time zone.

Limit Qualifier. You can set up limits in one of three ways: as a total record, by invoice sort, or by work/code service category combination. For total records, this column displays Total Limits. Otherwise, it displays the name of the invoice sort or work code/service category.

Amount. Displays the limit amount of the service type or contract. If the call does not use base currency, the system converts the amount to the currency displayed in the frame above.

See "Levels and Limits of Service" on page 182 for details on how service limits are defined and applied.

Used/Consumed. This field has a value only for contracts. As you record activity for an item that has a contract, the system accumulates quantity consumed against active limits. The amount in this column combines amounts used on open calls with amounts posted for call invoices. If the call is not using base currency, the system converts the amount to the currency displayed in the frame above.

List Price Limit. Displays the list price limit for the coverage record. When the price of an item recorded for the service activity exceeds this limit, it is not covered even when limits are not exceeded. If the call does not use base currency, the system converts the amount to the currency displayed in the frame above.

% Cv. Displays the level of coverage.

Fault Codes Frame

See “Fault Codes Pop-Up” on page 418 for details.

If Fault Codes is Yes, the same fault code pop-up that appears in Call Maintenance displays. If you entered fault code information for the call line in Call Maintenance, it displays here.

Material Order Selection Frame

See “Loading MO Lines into CAR” on page 753.

If you ordered items with an MO for the call line, the Material Order Selection frame displays open MOs for the associated call line. An open MO has a quantity shipped greater than the quantity consumed plus the quantity returned.

Fig. 14.21
Material Order
Selection Frame

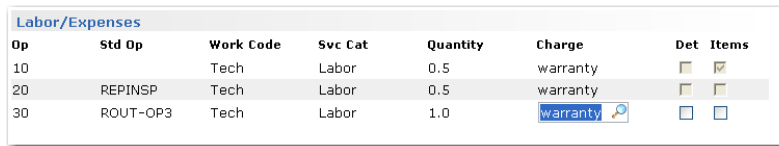
An item has
been
ordered for
this call line
on an MO.

Call Activity Recording								
Call ID: CA100011 Go To Actions								
Header								
Call ID:		CA100011	Bill To:	4000	End User:	4001	TZone:	GMT-8
Item Selection								
Line	Serial	Item Number	Work Cd	Svc Type	Report			
1	SS-11554	CP300	Tech	W90I	194			
Material Order Line Selection								
Order	Ln	Item Number	Lot/Serial Number	Engineer	Quantity Open	T		
SEO9	1	100A-01		MEW	3.00			

Select or deselect MO lines as needed. Selected lines display an asterisk (*). To exit the scrolling window and continue processing, click Next. After you finish the selection, the system loads the MO items into CAR item usage records. To exit the scrolling window without loading MO items into CAR, click Back.

Labor/Expenses Frame

Use the Labor/Expenses frame, shown in Figure 14.22, to record the operation steps and expenses of servicing the call line item.



Op	Std Op	Work Code	Svc Cat	Quantity	Charge	Det	Items
10		Tech	Labor	0.5	warranty	☐	☒
20	REPINS	Tech	Labor	0.5	warranty	☐	☒
30	ROUT-OP3	Tech	Labor	1.0	warranty	☐	☐

Fig. 14.22
Labor/Expenses
Frame

The fields in the Item Selection frame are display-only here. Information you record in the Labor/Expenses frame applies to the displayed item.

Op. Use the operation number to track the sequence of tasks for a service, much like a routing sequence. By default, operation numbers start with 10. If a routing is associated with the call line, its operations display for update.

You can record multiple items per operation but only one line of labor or expense. To specify several service categories, associate each with a separate operation number.

Std Op. Define standard operation codes with Service Std Operation Maint (11.19.21). If you enter a service standard operation code, the system displays the default service category and quantity. If the standard operation uses a BOM, the system prompts you to load the items on the BOM for this operation. To calculate labor costs, the system uses the labor rate of the work center for the operation.

After you record a line, you can change the operation only by deleting the line and reentering it.

Note You can also use manufacturing standard operations in CAR.

Work Code. Defaults from the Item Selection frame. The system uses the work code:

- To determine the applicable coverage limits
- To find a charge code
- To search for a price for labor and price and cost for expenses

If you change the work code, the system recalculates the default charge code.

Svc Cat. Enter a service category defined in Service Category Maintenance with one of the following fields set to Yes: Labor, Expense, Travel Labor, or Travel Expense. For standard operations and operations in service routings, the service category defaults from the operation. Otherwise, it defaults from Default Labor Svc Cat in Call Management Control.

The system uses the service category:

- To determine the applicable coverage limits
- To find a charge code
- To search for a price for labor and price and cost for expenses

If you change the service category, the system recalculates the default charge code.

After you save a labor or expense record, you can modify the service category only to one of the same type. You cannot switch a labor or travel labor category to expense or travel expense.

Quantity. Enter the number of units of the service category that you used. For labor, the units are hours. For expenses, the quantity is in units of the service category. If you use a standard operation or generate the operation from a routing, quantity defaults from the operation run time. The system uses quantity to calculate the extended price as follows:

*(Quantity * Price) – Covered Amount*

After labor and expenses have been processed, you can increase the quantity used for an operation but you cannot decrease it. To correct an overissue made by mistake, open a new operation and enter a negative quantity. Processing this new line creates reversing GL transactions.

▶ See “Correcting Report Errors” on page 549.

Charge. The default charge code is based on several factors. If you define the work code as fixed price, the Fixed Billable charge code from Default Charge Code Maintenance (11.21.21.13) displays.

If this is not a fixed repair, the system uses the under- or over-limit charge code for the coverage limits of the contract or service type. The default depends on the operation's extended price and, for contracts only, the amount you have previously applied to the limit.

If the limits have no associated charge codes, the system selects a default charge code depending on the source of coverage (contract, warranty, or call default service type) and whether the operation is over or under limit.

With some restrictions, you can change the displayed value, but you cannot change between a non-fixed and fixed repair charge code. The system uses the charge code to determine the charge product line and the GL accounts that this service activity affects.

See “Changing Charge Codes” on page 539 for details on changing system defaults.

Det. Defaults from the header's Detail setting. Set Det (Detail) to Yes to display the Detail frame, which shows more labor and expense data.

Items. Defaults to No unless the operation has items—for example, a BOM code for a routing operation. Set Items to Yes to display an Item Usage frame so you can record items you consumed in the operation.

Labor/Expenses Detail Frame

If Detail is Yes in the Labor/Expenses frame, the Labor/Expenses Detail frame appears. The system calculates and displays cost, price, and coverage limit details for the operation. Other fields default from call information or from information in related records.

Labor/Expenses Detail: Operation 30	
Engineer: JNC	Product Line: 7000
Start Date: 05/21/2007	Project:
Start: 9:30	Quantity: 1.0
End Time: 10:30	Price: 40.00
Standard Cost: 125.00	Covered Amount: 0.00
Comments:	Extended Price: 0.00
Svc Type Used: W90I	Currency: USD
Desc: Inspection Procedure	

Fig. 14.23
Labor/Expenses
Detail Frame

Engineer. Defaults from the Item Detail frame, which displays the call value. Each operation can have a distinct engineer, if needed.

Start Date. Defaults from the system date, which you can change only the first time through the frame. Start Date is the date when the engineer began the service activity.

Start. Reference field indicating the time of day that the engineer began work.

End Time. Reference field indicating the time when the engineer finished work.

Note When MTZ is active, these dates and times are relative to the end user's time zone.

Standard Cost. If this operation has a labor service category, the standard labor cost for the engineer for one hour displays, and cannot be modified. The system calculates the cost from the operation's work center, either from the service routing or a standard operation. The work center determines the labor rate, labor burden rate, and the labor burden percentage. For labor operations without a work center, the system calculates the cost from the Service Work Center in Call Management Control.

If this operation has an expense service category, the system calculates the cost from the expense cost price list (type E) for the call. The cost of one unit of the service category displays. If no expense cost list exists, expense cost defaults to zero.

Comments. Defaults to Yes if comments exist. Specify Yes to enter or review comments for this operation. The system copies comments into Call Invoice Recording. You can print comments on the invoice.

Svc Type Used. Output-only field displaying the service type that determines this operation's coverage. The service type that the system uses is not necessarily the one that you specified for the line item. The system can change the service type if you change the charge code.

Description. Specify a brief (maximum 24 character) description of this operation, which defaults from the standard operation or service routing step. This description prints on the invoice if detail is included.

♦ See "Changing Charge Codes" on page 539.

Product Line. Output-only field showing the charge product line for labor costs.

Project. Enter an optional code identifying the GL project for the labor/expense detail. The system associates the project code with the GL transactions it creates. You can track the call's cost by project.

Whether the field can be updated depends on the setting of Project Code Handling in SSM Accounting Control. If you use a charge code with Project Mandatory set to Yes, you must enter a project code.

▶ See "Project Codes in CAR" on page 555 for details.

Quantity. An output-only field displaying the operation's labor or expense quantity.

Price. The price for one unit of the operation's service category. Defaults from the price list on the call header unless this is a fixed price repair. For fixed price repairs, the system sets detail prices to zero, which you cannot change. If no price is found on the price list, the default is zero. To prevent changes, apply field security to Price.

Covered Amount. Amount of the total price for which you are not billing the customer. The system determines this amount from the coverage limits for the contract or service type. The covered amount defaults to zero when:

- No coverage exists on the contract or service type.
- The item has exceeded the contract's service limits.
- The item has exceeded a list price limit.
- The service is for a fixed price. In this case, covered amount cannot be changed.

Covered amount cannot exceed the price times the quantity.

To prevent changes, apply field security to Covered Amount.

Extended Price. The total price minus the covered amount. For fixed price repairs, this field is zero. The system calculate the extended price as follows:

*(Quantity * Price) – Covered Amount*

Currency. Output-only field displaying the call currency. Defaults from the call header.

When you finish entering data in this frame and click Next, you return to the Op field. Enter additional data until you record all operations. Click Next to accept the last entries and End to display the Item Usage frame.

Item Usage Frame

In the Item Usage frame, you report the inventory items that you used to repair or service the item in the Item Selection frame. Record items you used for specific operations, or simply add all the items after you complete the Labor/Expenses frame.

Fig. 14.24
CAR Item
Usage Frame

Item Usage for Operation 10						
Op	Item Number	Work Code	Qty Used	Qty Ret	Charge	Det MO
10	SC2	Tech	2.0	0.0	warranty	☐
10	B005 	Tech	2.0	0.0	warranty	☐

Op. Enter the operation number. You can record items for each operation. If you are not using operation steps, record all items on the first operation.

Item Number. Enter the item number of an item defined in Item Master Maintenance that you consumed or returned during the repair. If the call line item has an associated service BOM or its routing operations had associated BOMs, records for these items are already created.

Note Record a non-inventory item as an expense in the Labor/Expenses frame.

See “Swaps” on page 559.

If the item you specify in this field is the same as the item on the call line, a warning displays. If you choose to continue, you are prompted to indicate if this component issue is a swap. Your response affects how the installed base is updated.

Work Code. Defaults from the Item Selection frame, which defaults from the call header. The system uses the work code:

- To determine the applicable coverage limits
- To find a charge code
- To search for an item price on the call price list

Qty Used. Enter the number of item units you consumed. If this record came from a service BOM, Qty Used displays the value of Quantity Per on the BOM. If this line came from a Material Order, the order quantity defaults into this field. The system uses this field to calculate the extended price according to this formula:

*(Qty Used * Price) – Covered Amount*

After inventory has been issued, you can increase the quantity used for an operation but you cannot decrease it. To correct an overissue made by mistake, open a new operation and enter a negative quantity. Processing this line creates reversing GL transactions and increases inventory at the specified site and location.

▶ See “Correcting Report Errors” on page 549.

Note You cannot enter a negative quantity when you are executing a swap. This occurs when the item being issued is the same as the item on the call line and you respond Yes that this is a swap.

▶ See “Swaps” on page 559.

Qty Ret. Enter the number of units you are returning. For repairable units, as defined in Service Item Maintenance, Qty Ret defaults to Qty Used. Quantity returned also defaults to quantity used for a swap. Generally, you return items in CAR for two reasons:

- You exchange a defective or worn item for a new one.
- On an MO, you ordered items for the call that you did not use.

Note Use RMAs for simple returns that do not require an engineer.

If you specify a return quantity, set Det to Yes to display the Returned Items Detail frame. If item information comes from an MO, account for all items on the MO before you close the call. To close a line or call, Qty Used and Qty Ret must equal the MO order quantity.

Charge. The charge code default is based on several factors. For a fixed price work code, the Fixed Billable charge code from Default Charge Code Maintenance (11.21.21.13) displays.

If this is not a fixed repair, the system uses the under- or over-limit charge code for the coverage limits of the contract or service type. The default depends on the item’s extended price and, for contracts only, the amount applied to the limit.

If the limits have no associated charge codes, a charge code defined in Default Charge Code Maintenance displays. The system selects a charge code depending on the source of coverage (contract, warranty, or call default service type) and whether the operation is over or under limit.

See “Changing Charge Codes” on page 539 for details on changing system defaults.

With some restrictions, you can change the displayed value, but you cannot change between a non-fixed and fixed repair charge code. The system uses the charge code to determine the charge product line and the GL accounts that this service activity affects.

Det. Set Det (Detail) to Yes to display the Detail frame, which shows more data for this line. To update the installed base when you return items, set Det to Yes so you can enter the serial or ISB reference of the returned item.

MO. Output-only. If you ordered the item with an MO, an asterisk (*) initially displays and the Item Detail frame displays the MO number and line. After you issue the item for the call, the system no longer connects it to the MO.

Item Usage Detail Frame

Set Det to Yes in the Item Usage frame to display the Item Usage Detail frame illustrated in Figure 14.25.

Fig. 14.25
Item Usage
Detail Frame

The screenshot shows the 'Item Usage Detail' window. It contains two columns of fields. The left column includes: 'Multi Entry' (checkbox), 'Site' (text field with value 12000), 'Location' (text field with value 650), 'Lot/Serial' (text field), 'Reference' (text field), 'Engineer' (text field with value JNC), 'Service Category' (text field with value Item), 'Qty Allocated' (text field with value 0.0), 'MO Line' (text field), and 'Svc Type Used' (text field with value W901). The right column includes: 'Product Line' (text field with value 7000), 'Project' (text field), 'Quantity Used' (text field with value 2.0), 'Unit Cost' (text field with value 8.000), 'Price' (text field with value 10.00), 'Covered Amount' (text field with value 20.00), 'Extended Price' (text field with value 0.00), 'Currency' (text field with value USD), and 'Comments' (checkbox).

Multi Entry. Defaults to No unless the quantity used is greater than one and the issued item has Lot/Serial Control set to S in the item master. If Yes, a detail frame appears so you can enter a site, lot/serial, location, and reference for each item you consumed. You are not performing a detail allocation—you are simply recording detail about items.

Site. Enter the site from which you are issuing the item. This field defaults from the call line item site, unless the item was loaded from a material order. In this case, site, location, lot/serial, and reference default from the MO and cannot be changed.

Location. Enter the inventory location at the site from which you are issuing the item.

Note You cannot update location when an item is loaded from an MO.

Lot/Serial. If the item is lot/serial controlled, enter the lot or serial number. When lot/serial controlled items are loaded from MOs, this field defaults from the MO line and cannot be changed.

If Load Available Structure is Yes in Service Management Control and the item has Installed Base set to Yes in Service Item Maintenance, you must specify a lot/serial number to add the item to the installed base. The lot/serial number is part of the installed base record. If you are exchanging an installed base item, the system replaces the previous lot/serial number with this one.

Reference. Enter the item's lot reference number. Lot reference, site, location, and lot/serial number specifically identify inventory quantities. For lot reference, you can use the production lot of the item or a location reference such as a skid, roll, or pallet number.

Note You cannot update reference when an item is loaded from an MO.

Engineer. Specify the engineer who installed the part. The default is the engineer for the call line item. You can change the value—for example, if more than one engineer responded to the call.

Service Category. Output-only field that defaults from the item's service category in Service Item Maintenance (11.7.3). If none, the system uses the Item Service Category in Call Management Control (11.1.24). The system uses the service category to determine service limits and to search for a default charge code.

Qty Allocated. Specify the quantity of items on this line to allocate. This defaults to zero. Normally, you do not allocate items in Call Activity Recording because you are recording items that you have used. The system issues the inventory immediately in CAR. However,

if you are not going to issue the inventory at this time, enter a quantity to allocate. CAR does general allocations only. It does not create detail allocations even if you enter inventory detail.

MO Line. Material order number and line number that corresponds to the call line. MO Line has a value if you have not yet issued the MO item. Otherwise, the field is blank and cannot be updated.

▶ See “Changing Charge Codes” on page 539.

Svc Type Used. Output-only field displaying the service type that determines coverage. The service type the system uses for coverage may not be the same as the one you specified initially. The service type can change when you change the charge code.

Product Line. Output-only field showing the charge product line for item costs.

▶ See “Project Codes in CAR” on page 555 for details.

Project. Output-only field showing the GL project code.

Unit Cost. Output-only field showing the cost for one unit of the item. The system derives the cost from the site of the item you are repairing—not the site from which you issued the component.

During inventory processing, the system transfers items to the call line item site and issues them from there. The inventory transfer creates a GL transaction for any variance in costs between the sites.

For the system to find a cost, either:

- The site associated with the item in Item Master Maintenance is the same as the call line-item site, or
- Costs for the issued item at the call line-item site are set up using Item-Site Cost Maintenance.

Otherwise, cost defaults to zero. The cost displays in the Item Cost column in Call Invoice Recording. The system uses the cost to calculate the margin for this service activity.

Price. Defaults from the header’s price list unless this is a fixed price repair. For fixed price repairs, the system displays a zero for all details, which you cannot change. To prevent changes, apply field security to Price.

Price is the price for one unit. If no price exists on the price list, the system uses the item’s list price in the item master. The system calculates Extended Price by subtracting the covered amount from the total price (price * quantity).

Covered Amount. Amount of the total price for which you are not billing the customer. The system determines this amount from the coverage limits for the contract or service type. The covered amount defaults to zero when:

- No coverage exists on the contract or service type.
- The item has exceeded the contract's service limits.
- The item has exceeded a list price limit.
- The service is for a fixed price. In this case, covered amount cannot be changed.

Covered amount cannot exceed the price times the quantity.

To prevent changes, apply field security to Covered Amount.

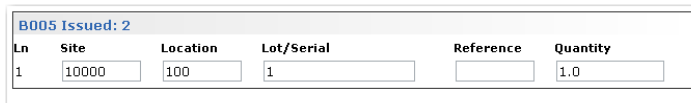
Extended Price. The total price minus the covered amount. For fixed price repairs, this field is zero.

Currency. Output-only field displaying the call currency. Defaults from the call header.

Comments. Defaults to Yes if comments exist. Specify Yes to enter or review comments for this item. The system copies comments into Call Invoice Recording. You can print comments on the invoice.

Multi-Item Issue Frame

If Multi is Yes, an additional frame displays that enables you to enter detailed information for each item you issued. Detailed allocations do not take place in CAR. However, you can specify the items to issue by site/location, lot/reference, and serial number.



Ln	Site	Location	Lot/Serial	Reference	Quantity
1	10000	100	1		1.0

Fig. 14.26
Multi-Item
Issue Frame

The fields in this pop-up are the same as those on the Item Detail frame. In this frame, you can specify separate detail for each item you are issuing.

Note If items were loaded from a material order, you cannot modify the site, location, lot/serial, or reference number.

Returned Items Detail Frame

If you specify a return quantity and Detail is Yes, the Returned Items Detail frame displays. Specify the return status and inventory return site and location. If you are returning more than one item, you can access a multiline entry frame. The system uses return serial numbers and ISB reference numbers to remove returned items from the installed base.

Fig. 14.27
Returned Items
Detail

The screenshot shows a window titled "Returned Items Detail". Inside, there are several input fields and checkboxes. The "Status" field is set to "Repair". The "Return Site" field contains "12000" and has a small icon to its right. The "Return Location" field contains "600". The "Return Serial" field is empty. The "Return Inv Ref" field is empty. The "Exchange Price" field contains "0.00". The "ISB Reference" field contains "0". On the right side, there are two checkboxes: "Fault Codes" and "Multi Entry", both of which are currently unchecked.

Status. The return status defaults from either:

- The default return status in Call Management Control if the item is repairable
- The default scrap status in Call Management Control if the item is not repairable

Note Repairable items have Repairable set to Yes in Service Item Maintenance.

You can change the return status to any status defined with Return Status Maintenance (11.21.17). However, you can use a Pending status only for items you ordered on an MO and an Exchange status only for items returned from the customer.

Return Site, Location. Depending on the return status and whether or not the item is repairable, the return site and location default as follows:

- To the return site and location, if the item is repairable and Good is Yes for the return status, or if the item is not repairable and Scrap is No.
- To the scrap site and location, if the item is not repairable and Scrap is Yes for the return status.
- To the repair site and location, if the item is repairable and Good is No for the return status.

▶ See "Return Statuses and Default Sites" on page 93 for details.

Note Set up default sites and locations with Default Site Maintenance (11.21.13).

If you are returning an item from an MO line, the location must allow receipts (RCT-TR). If the return is not from an MO line, the location must allow unplanned receipts (RCT-UNP).

The system searches for default sites and locations based on the returned item's product line, service group, work code, and item number and the area you specified on the call. Enter a site if no default site exists.

Note If the item being returned was ordered on an MO, return site and location default from the MO and cannot be changed.

Return Serial. If the item you are returning is lot/serial controlled, enter the serial number. When you return an unused lot/serial controlled item originally loaded from an MO line, this field defaults from the MO line.

If the serial number is in the installed base and Update ISB is Yes for this call line, the system removes the item with this serial number from the installed base. If you are returning multiple serial-controlled items, set Multi Entry to Yes to access a line item entry frame for multiple returns.

Return Inv Ref. Enter the lot reference number of the item you are returning. Lot reference, site, location, and lot/serial number identify inventory quantities. For lot reference, you can use the production lot of the item or a location reference such as a skid, roll, or pallet number.

Exchange Price. If you are exchanging an item that has no coverage, the system searches the header's repair price list for an exchange price with the exchange unit of measure in Call Management Control. If the exchanged item has coverage, the exchange price defaults to zero.

Note You cannot exchange an item ordered on an MO.

ISB Reference. All items that do not have serial numbers in the installed base need ISB reference numbers. Specify the ISB reference on a return so the system can exactly identify the item to remove from the installed base.

Fault Codes. If Yes, the fault code window displays so you can specify the reason for the return.

Multi Entry. If you are returning more than one item, specify Yes to access a line-item entry frame. You must use this frame to remove multiple items from the installed base.

When you finish entering data in this frame and click Next, you return to the Op field. Enter additional data until you record all item detail. Click Back to exit the item usage frames.

Multi-Item Return Detail Frame

If Multi Entry is Yes in the Returned Items Detail frame, a line-item entry frame displays. Enter information specific to each item returned. You can specify a separate return status and inventory return site and location for each item.

Fig. 14.28
Multi-Item
Return Detail

Ln	Status	Return Site	Return Location	From Site	From Location	Quantity
1	Repair	10000	100			1.0

Lot/Serial: S-1 ISB Ref: 0 Inv Ref:

Confirmation Frame

When you exit the labor/expenses and item usage frames, the system prompts you to display inventory about to be processed. If you accept the default of Yes, the system displays a confirmation frame similar to the one illustrated in Figure 14.29, listing the items that it will issue and return on this call.

Important Review the summary information to check the item numbers, inventory sites, and locations. After the system processes the inventory, there is no simple way to correct mistakes.

Items returned with a pending status do not display on the confirmation frame, because no inventory transactions take place for them at this time.

Call Activity Recording

Call ID: CA100004 Go To Actions

Header

Call ID: CA100004 Bill To: 4000 End User: 4001 TZone: GMT-8

Line	Item Number	Lot/Serial	Quantity	Site	Location
2	B005	1	1.0	Fr 10000	100
2	B005		1.0	Fr 10000	100
2	B006		2.0	Fr 12000	650
2	C007		2.0	Fr 12000	650
2	C008		3.0	Fr 12000	650
2	SC1		2.0	Fr 12000	650
2	SC2	2	1.0	Fr 10000	100
2	SC2	3	1.0	Fr 10000	100
2	SC2	S-1	1.0	To 10000	100
2	SC2			To 12000	600

Is all information correct

Fig. 14.29
Inventory
Confirmation
Frame

To make changes, respond No to the prompt asking if the information is correct. The Item Selection frame displays so that you can proceed through the detailed usage frames again.

Output Device Frame

If you accept the information in the confirmation frame, the next frame prompts you for an output device.

Call Activity Recording

Call ID: CA100004 Go To Actions

Header

Call ID: CA100004 Bill To: 4000 End User: 4001 TZone: GMT-8

Effective Date: 06/26/2007

Output:

Fig. 14.30
Output Device
Frame

Enter the GL effective date for the transactions and an output device for the report; then click Next to process inventory. The effective date must fall within an open GL calendar period. The system processes inventory and generates a report to the output device.

This report includes:

- Items issued or returned
- Labor/expense transactions
- Updates to the installed base
- Inventory errors or warnings the system encountered during execution

Whether you are generating an invoice or not, items that you recorded as consumed are no longer available in inventory. The system issues them immediately or transfers them to the call line site and issues them.

Call Line Status Frame

Figure 14.31 illustrates the Call Line Status frame.

Fig. 14.31
CAR Call Line
Status Frame

Call Line Status				
Line	Item Number	Serial	Status	Dates
1			New	
2	CP300	Serial-000005	Complete 	

The line number, item, and serial number display. Use Next/Previous to display the next and previous line numbers.

Status. You can apply field security to this field. The system sets the call line status to complete or closed, depending on the setting of Close on Recording. For a status of complete, inventory issues must complete with no errors. If the system detects errors, the line remains open and the report status is hold rather than invoiceable. You can invoice line items with a complete status. To prevent invoicing, change the line status.

Dates. You can record date information about the handling of this call. Use this if you have contract obligations to repair items within a defined time limit. To track the success of meeting the contract obligations, you can compare when the you received the call to when you resolved the problem.

Item Dates

Specify Yes to the Dates field to display the pop-up window in Figure 14.32. The dates in these fields are reference only.

Note If MTZ is active, a display time zone pop-up appears before the date pop-up. This way, whoever is entering the dates and times—either an engineer or a clerical person—can choose how dates and times are entered. The Date Complete, because it has no time, is an exception. It is entered relative to the end user’s time zone, regardless of the display time zone chosen.

▶ See Chapter 4, “Multiple Time Zones,” for more information.

Fig. 14.32
Setting Dates in
Call Line Status
Frame

Start Down. This date and time default from the call creation time. They indicate when the item you are servicing became dysfunctional.

End Down. This date and time default from the system date and time and indicate when the item became functional again.

Job Start. This date and time records when you started work on the problem.

Date Complete. This date defaults to the system date and indicates when you finished work on this line item.

Call Status Frame

When you complete all line items, a final frame enables you to specify a status for the entire call and modify call dates and times.

Note If MTZ is active and you did not edit call line dates, a display time zone pop-up appears before the call status frame. Your selection in the pop-up determines how the system presents dates and times on the call status frame.

▶ See Chapter 4, “Multiple Time Zones,” for more information.

Fig. 14.33
Call Status Frame

Header			
Call ID:	CA100007	Bill To:	SSM1001
End User:	Endsm102	TZone:	GMT-8

Call Status			
Status:	Complete	Complete Date:	06/26/2007
		Complete Time:	10:06
		Close Date:	
		Close Time:	:
Display TZ:	GMT-8	Next Status Date:	06/27/2007
Daybook Set:	sis	Next Status Time:	09:52
Generate Invoice:	☒		

Status. You can field security to this field. The system attempts to set the call's status to complete or closed, depending on the setting of Close on Recording. It sets the call's status to complete if all line items are complete. It sets the status to closed if line items are complete and no open MOs exist. If these conditions are not met, the system does not change the call's status.

Complete Date, Time. When the system sets the status to complete, it enters the completed date and time.

Close Date, Time. When the system sets the status to closed, it enters the close date and time.

Next Status Date, Time. Displays the value for the call. If you are using call escalations and do not want the next escalation step to affect this call, change the next status date and time.

See User Guide:
QAD Financials
A for details on
daybooks.

Daybook Set. Enter the code for the set of daybooks that the system will use during invoice post. This defaults from the customer address. You can change it to a valid value defined in Daybook Set Maintenance (25.8.7) or Daybook Set by Site Maintenance (25.8.10). If daybooks have been set up by site—based on a setting in Sales Order Accounting Control—the system verifies that the specified daybook set matches the call header site.

Generate Invoice. This field appears only if Invoice From Recording in SSM Accounting Control is Yes and you make a change in CAR that can affect the pending invoice. If Invoice from Recording is No, you must process the invoice in Call Invoice Recording (11.1.1.15). If you set the call status to hold or cancel, you cannot set Generate Invoice to Yes.

If you accept the Yes value for Generate Invoice, the system creates a pending invoice for lines that have a complete or closed status. If the call's status is complete or closed and Generate Invoice is Yes, the system invoices all lines.

Call Activity Recording in Depot Orders

Depot orders use two programs to record different types of information for service calls:

- Call Labor Recording
- Call Parts Recording

Call Labor Recording for Depot Orders

To record labor activity for inspection and repair against a depot order call, use Call Labor Recording (11.1.1.17). Typically an engineer records labor after evaluating a returned item, and then again when repairs to the item are complete. Labor activity may be recorded by call/call line or effective date.

Labor activity for existing records can be modified as long as the record is not closed. You can modify duration, start time, and end time, but cannot change the date of an existing labor activity record. For example, the duration may need to be modified if it was overestimated and needs correcting. A second line can be entered for the same Operation ID as the first line, using a negative value for the new line in the Duration field; the start time or end time must also be adjusted accordingly.

Note If the call labor record is associated with a call report that has already been invoiced, but the invoice has not yet been posted and printed, the system issues a warning that the invoice has been generated, and prompts you to continue to edit the call record. Responding Yes causes the Ready to Invoice field to be set to No in Call Invoice Recording (11.1.1.15).

Call Labor Recording does not support recording activity for service items. Instead, use Call Activity Recording (11.1.1.13).

Call Labor Recording is available from the Labor browse in the Depot Order collection and from the application menu.

Use the Call Labor Browse (11.1.1.18) to view existing call labor activity records.

Header Frame

Use the header frame to select the engineer, whether the labor activity recording is date- or call-driven, and the scope of records to display for data entry.

Fig. 14.34
Call Labor
Recording
(11.1.1.17) -
Header Frame

Engineer Code. Enter a valid code for the engineer whose labor is to be recorded.

Time Zone. This read-only field displays the time zone associated with the specified engineer.

Date Driven. If Yes, record labor using an effective date. Date-driven labor recording allows labor for multiple calls and call lines to be entered. Leave this field blank to use the current date. If No, record labor for multiple dates for a single call/call line.

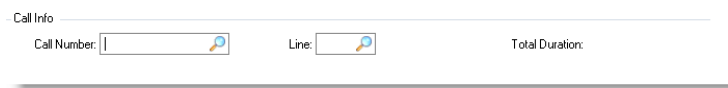
Assigned. Set this field to Yes to view calls/depot orders where the selected engineer is assigned to at least one call line. Set this field to No to view all calls/depot orders. If Call Labor Recording is accessed from within the Labor browse of the Depot Order collection, this field defaults to the currently selected engineer.

If there is a repair routing associated with the call/visit and if Date Driven is No, the system asks if the routing should be exploded. Responding Yes explodes the routing, and the Standard Operation values and Duration times are populated from the routing values; these values can be updated if required. Responding No causes the routing not to explode.

If there is a BOM associated with the routing, the system issues a message to the effect that the BOM will not be exploded in call labor recording (but will continue to be done so in call activity recording).

Call Info Frame

Use the Call Info frame to select a call and call line for labor recording when the Date Driven field is set to No. Only open calls are available for selection.



The screenshot shows a horizontal frame titled "Call Info". It contains three main sections: "Call Number:" followed by a text input field with a magnifying glass icon; "Line:" followed by a text input field with a magnifying glass icon; and "Total Duration:" followed by a text input field.

Fig. 14.35
Call Info Frame

Call Number. Enter a valid call number to record labor for. The system displays an error if the call number or call line entered is closed, on hold, or cancelled. Complete calls or call lines cause the system to display a warning.

Line. Enter a valid call line to record labor for.

Total Duration. Displays the running total duration of the labor recorded for a call and associated call lines. Total duration is updated when entering the current call line is completed.

Note This field is for reference only—the value it displays is unsuitable for the purposes of timekeeping or payroll verification.

Effective Date Frame

Use the Effective Date to enter a date on which to record call labor activity when the Date Driven field is set to Yes. You can enter labor activity for multiple calls/call lines when using this frame.



The screenshot shows a horizontal frame titled "Effective Date". It contains a single section: "Effective Date:" followed by a date input field showing "3/12/2009" with a dropdown arrow.

Fig. 14.36
Effective Date
Frame

Visits Frame

The Visits frame displays all open and unconsumed visits. If there are no visits to consume, this frame does not display.

Fig. 14.37
Visits Frame

- Visits								
Tran Nbr	Sel	Close	Fix Date	Fix Time	Engineer	Call ID	Line	End User
73	☐	☐	3/12/2009	21:08	fsse1	ca100571	1	FSS0001
78	☐	☐	3/12/2009	21:08	0002	202	1	202
79	☐	☐	3/12/2009	21:08	bjw	202	2	202

Transaction Number. This read-only field displays the transaction number of the open visit and the associated engineer.

Select. Enter Yes to consume the selected visit. Visits selected for consumption are recorded as labor when you respond to the system prompt. Consumed visits are unavailable for selection later. If No, the visit is not consumed and remains available for later consumption.

Close. Enter Yes to close the selected visit. Visits selected for closure are recorded as closed when you respond to the system prompt. Closed visits are unavailable for selection later. If No, the visit is not closed and remains available for later action. This field is enabled when a visit is selected.

Close Date. Enter the date when the labor was completed. This field is for reference only and appears on selected reports and inquiries.

Close Time. Enter the time when the labor was completed. This field is for reference only and appears on selected reports and inquiries.

Labor Details Frame

The Labor Details frame displays all labor records entered for the specified engineer—or for all engineers—with labor recorded for the selected call, or for all calls on the specified date.

Fig. 14.38
Labor Details
Frame

- Labor Details								
Number	Std Op	Call ID	Line	Duration	Start	End	Work Code	Svc Cat
1		202	2	31.133	15:00	22:08	Tech	Labor

Attempting to enter labor activity for calls that are closed, on hold, or cancelled causes an error to display. Entering labor for calls that are open but invoiced results in a warning; if you choose to continue, the call record is changed from invoiced to uninvoiced. Entering labor for a completed call line also causes a warning.

If entering labor for an effective date, you are prompted for the call and call line.

The Labor Details frame contains several fields that default from other fields:

- Specifying a standard operation causes Duration and Service Category to be defaulted from the specified operation. Otherwise, these fields default from the Service Control Labor Service Category. Travel-related labor is defaulted from the Service Control Travel Service Category.
- Work Code defaults from the call line or, if a call line is not available, from the call. If the call does not have a work code, the work code defaults from the Service Control Technical Work Code.

After recording labor, press End to exit the frame and verify that all information is correct before saving the form.

Number. Auto-generated by the system. Displays the number of the labor transaction.

Standard Operation. Specify a standard operation code set up with Service Standard Operation Maintenance (11.19.21) or Standard Operation Maintenance (14.9). Standard operations represent actions common to the service of several products or applicable to different service routings in different operation sequences. When specified, most remaining fields default from the values for the standard operation.

Call ID. Enter a valid call ID for which labor is being recorded.

Call Line. Enter a valid call line ID for which labor is being recorded.

Duration. Enter a duration in hours and minutes for the labor required to close the call. If you do not enter a value, duration defaults from the standard operation. If a standard operation is not provided, the system calculates the duration by subtracting the start time from the end time.

The duration of labor recorded for an existing record can be modified if required. For example, this may occur if the labor duration was overestimated and needs to be modified later to reflect the true duration. To do this, enter a second line for the same Operation ID as the first line, enter a negative value for that line in the Duration field, and adjust the start time or end time.

Start. Enter a time to indicate when the labor for the call commenced. If a value is not entered, the system calculates the start time by subtracting the duration from the end time. For date-driven activity reporting, the start time entered cannot overlap with the start time of another call/call line.

End. Enter a time to indicate when the labor for the call ended. If a value is not entered, the system calculates the end time by adding the start time and duration. For date-driven activity reporting, the end time entered cannot overlap with the end time of another call/call line.

If labor activity is recorded for a call line that has a visit associated with it, the system prompts you to close the visit. Responding Yes sets the close time of the visit to the end time of the last call line entry. Responding No causes the visit to remain open.

Call Parts Recording

Use Call Parts Recording (11.1.1.19) to issue/consume parts from a parts list, or to return parts that were consumed previously. For example, at the end of a repair call an engineer can use Call Parts Recording to return items previously identified in error as being consumed in Call Activity Recording (CAR). Returning the items reverses the original consumption activity and updates the quantity to return on the associated MO.

Note Call Parts Recording is a subset of the parts recording functionality available in CAR, intended to simplify the process of recording parts issue/consumption. The fields in Call Parts Recording and CAR have identical functions; for field descriptions see “Call Activity Recording” on page 565.

After entering the call ID and call line—these fields are populated automatically if Call Parts Recording is accessed from the Parts List browse—if a BOM is associated with the call line, you are given the option of exploding it. Exploding the BOM populates the item ID and

quantity. If the BOM is associated with a labor routing, the system issues a warning that the BOM will not be exploded as part of the Call Parts Recording process (but will continue to be done in CAR).

After selecting the items to process, indicate the items consumed and the quantity to return. Optionally you can record details about the consumed items and the returned items by using the Item Usage Detail and Item Return Detail screens.

On exiting the screens, fault code information can be entered. The system prompts for the effective date and destination for the report output, and then processes the items.

The system handles items to consume like this:

- Selecting a quantity to consume for an item with a material order causes that MO line to be shipped and updates CAR with the consumption of the item.
- Selecting a quantity to consume for an item without an MO updates CAR with the consumption of the item.

The system handles items to return like this:

- Selecting a quantity to return for an item with an MO causes the item to be received back into inventory. CAR is updated to indicate the item is not consumed.
- Selecting a quantity to return for an item without an MO (on the parts list only) returns the item to inventory and updates CAR to indicate it is not consumed.

Call Invoice Recording

Call Invoice Recording (CIR) is a complementary function to Call Activity Recording. With CIR, you can create and review invoice detail for calls in a summary or detail format. You can also review and modify tax data.

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Call Invoice Recording **624**

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Overview

Call Invoice Recording (CIR) is a complementary function to Call Activity Recording (CAR). It uses the same setup codes and service type information as CAR or any other call management activity.

The Invoice From Recording field in SSM Accounting Control determines where you can create pending invoices. If Yes, you can generate the invoice for call activity from CAR. If No, you generate invoices only in Call Invoice Recording.

Even if you invoice call activity in CAR, the overview of costs in CIR is helpful. Summary frames display costs and invoiceable amounts by invoice sort and charge code type. You can review item details and modify prices. The system updates these prices in CAR when you review the call. In CIR, call activity details display in similar frames to those in CAR.

Using CIR, you can:

- Review high-level summaries of charges and billing amounts.
- Check invoice detail, correct data entry errors, or adjust prices and covered amounts before you print the invoice.
- Review and update sales order trailer information.
- Review tax calculations and edit tax amounts in the trailer.

If you make changes in CIR, the system regenerates the invoice when you exit.

Generating Invoices

If you do not generate an invoice from Call Activity Recording, the system generates a pending invoice when you enter CIR's second frame. The invoice includes amounts for all invoiceable reports for the closed or complete lines on the call. Invoicing by report lets you invoice as often as you need—even daily or hourly.

If you do not want the system to invoice a particular call line, set the line item to a status other than complete or closed. You can also set the report status to hold.

You can modify complete lines. For example, if an engineer submits daily reports on a call line for a lengthy installation, you can create more than one invoice for the line. The first time through CIR, invoice amounts include existing reports. If you create additional reports, regenerate the invoice to add the new reports. When you post the invoice, invoicing starts over.

After you post an invoice, you can continue to add more reports to the call line. You can review the invoiced reports, but you cannot change them.

Once you generate an invoice, post and print it using the standard invoice programs in the Sales Orders/Invoices module. However, you can modify call invoices only in the SSM module. This ensures that the invoice remains synchronized with the call record details.

Managing Invoice Detail

All billing details are available for review in Call Invoice Recording. You do not, however, have to include all the detail on the printed invoice. You can limit the amount of detail printed on the invoice using the Detail field. Define a default level of detail when you set up an invoice sort in Invoice Sort Maintenance (11.21.5). You can also specify a default for an end user in End User Data Maintenance. In CIR, you can modify the defaults to change the level of detail as needed.

Detail determines how billing information is presented on the printed invoice. When Invoice Detail is Yes, you can print billing details for each line recorded in CAR. When Invoice Detail is No for an invoice sort, the system takes the entries for related service categories, totals them into one line item, and displays one line of detail.

Invoice Detail determines how much detail can be printed on the invoice. During invoice print, you use another field to control whether or not to actually print the details.

Figure 15.1 illustrates the option in the second frame of Invoice Post and Print (7.13.4), which displays when Print Invoice is Yes. If you choose to post and print invoices in separate steps, a similar field is available in Invoice Print or Reprint (7.13.12).

Fig. 15.1
Printing Call
Invoice Detail
Using Invoice Post
and Print

This field controls whether any call detail prints on the invoice.

If Print Call Invoice Detail is Yes, the system prints either the summarized line or all details you recorded, depending on the setting of Invoice Detail for the invoice sort or for the call line in CIR.

If Print Call Invoice Detail is No, the system prints only the call lines—the items for which service was provided—with associated information and a total invoice amount.

Note When you use fixed pricing, no pricing information prints for the detail since you provide all the service at one price.

Figure 15.2 is a sample invoice generated with Print Call Invoice Detail set to Yes in Invoice Post and Print. The Invoice Detail field for both the Items and Labor invoice sorts is Yes. As a result, each item and operation prints in detail. You can see the number of hours for each operation and the charge code of BILLABLE.

Sales Order: CA147			Ship Date: 07/10/07		
Order Date: 07/10/07			Purchase Order:		
Item Number	UM	Repaired	Backorder Tax	Price	Net Price

10-10000	EA	1.0	yes		229.00
OASIS(TM) COOLING SYSTEM					
HOME/INDUST MODEL					
Work Code: Tech			General Call		
Service Type: STANDARD			STANDARD SERVICE CONTRACT		
Line	Item Used	Quantity		Price	Billable

Type: ITEMS					
1	44-1000	1.0		0.00	0.00
	SENSOR UNIT,	BILLABLE		0.00	
2	44-3000	1.0		30.00	30.00
	'SMART' POWER CONVERTER	BILLABLE		0.00	
3	44-4000	1.0		49.00	49.00
	WIRING UNIT	BILLABLE		0.00	
Type: LABOR					
1	LABOR	0.5		75.00	37.50
	Routine Inspection	BILLABLE		0.00	
2	LABOR	1.0		75.00	75.00
	Fix the Problem	BILLABLE		0.00	

Fig. 15.2
Printed Invoice
with Detail

Use the combination of detail fields to customize the appearance of the invoice.

Use the Print on Invoice field to control the printing of call header comments and line item comments when you create or update comments in Call Maintenance, CAR, and CIR. Comments print for items, labor, and expenses if Print on Invoice is Yes for the comments and Print Call Invoice Detail is Yes when you print the invoice.

Modifications in CIR

The information in Call Invoice Recording comes from the activity you record and codes you use in Call Activity Recording. You can make some modifications to prices and covered amounts in CIR. However, you must make most changes in CAR and regenerate the invoice.

Item issues take place in CAR. You cannot change item quantities in CIR, since this would create errors in inventory amounts. Similarly, you cannot change charge codes, work codes, and service categories in CIR—they control the detail that CIR summarizes. For this reason, many fields in CIR are display only.

Prices

You can modify and adjust prices in CIR, including list price, net price, exchange price, and covered amount. CAR reflects any pricing changes you make in CIR. If you change the covered amount and contract limits exist, the system recalculates the remaining contract amount.

Tax Data Elements

◆ See Chapter 7, “Taxes in SSM,” on page 233 for details on how the system calculates taxes in call invoices.

If you use taxes, the system sets default tax information in CAR at the call header and line level. In CIR, the tax status and class of activity records defaults from the service category for labor and expenses or the item master for items. You can modify these tax fields as needed in CIR. However, this change does not carry over to CAR.

Important If you regenerate the invoice for a call line, the tax status and class for activity records revert to the default.

Descriptions

To include a unique description of an operation or item on the invoice, you can modify description fields. Like taxes, these changes are not reflected in Call Activity Recording.

Trailer Information

On the trailer, you can modify information such as the tax data. If you edit tax data in CIR, then make changes in CAR, your changes are overwritten when the invoice is regenerated. This should not be a problem, however, since the old tax amounts are no longer correct if you change a line’s prices and quantities.

Coordinating CAR and CIR

Because the steps of call invoicing build on one another, coordinate these activities carefully:

- Recording activity in CAR
- Generating an invoice
- Reviewing the invoice in CIR
- Posting and printing the invoice

These activities must occur in the proper sequence to prevent unexpected results.

Establish procedures to ensure that you synchronize printing and posting invoices. When you post the invoice, the system clears amounts in CIR. New activity then generates a separate invoice.

The system manages invoicing through the Ready to Invoice field in Call Invoice Recording, which determines if the invoice can be selected for posting and printing.

This field is normally set by the system as you use CAR and CIR. However, you may need to manually set it under special circumstances.

Setting Ready to Invoice Field for New Activity

When Invoice from Recording is Yes in SSM Accounting Control, you are prompted in CAR to generate an invoice for invoiceable activity. If you respond Yes, the invoice is generated and Ready to Invoice is set to Yes so that the invoice can be selected the next time Invoice Post and Print is executed. You do not need to access Call Invoice Recording (CIR) unless you need to review or modify the invoice.

When Invoice from Recording is No in SSM Accounting Control or you respond No to the Generate Invoice field in CAR, Ready to Invoice remains No. You must access CIR to generate the invoice. In this case, CIR sets the Ready to Invoice field to Yes after the invoice is successfully generated.

Setting Ready to Invoice Field for Additional Activity

The invoicing process varies when an invoice for a call already exists and you add more invoiceable activity to it.

Important If you make changes to a line in CAR for which you have generated an invoice, a warning displays. Make changes to this line with caution.

If you ignore the warning that a pending invoice exists and make changes to the call line, you must regenerate the invoice to reflect these changes. If Invoice from Recording is Yes in SSM Accounting Control, the system automatically regenerates the invoice when you complete CAR.

Note When the system regenerates an invoice, it does not delete the old one. It simply replaces changed lines. This approach preserves any adjustments you made in Call Invoice Recording.

If you do not generate invoices in CAR, the system does not regenerate the invoice until you access the call in CIR. To ensure that a new invoice is generated, the system resets the Ready to Invoice from Yes to No. This is because the existing invoice is now invalid; it does not reflect all of the invoiceable activity in the call so it should not be posted. Invoice Post and Print ignores the invoice until you regenerate it.

You must then manually set Ready to Invoice to Yes in CIR in order to view the invoice; otherwise, an error displays.

This situation points out the importance of close coordination and well planned procedures to manage these two activities.

Closing Calls

Close on Recording in Call Management Control determines when and how the system closes a call. If Close on Recording is Yes, the system closes calls with complete lines when you exit CAR. If Close on Recording is No, you must close the call as a separate step after it is invoiced. You can move a closed call to history or delete and archive it, reducing the number of calls in the system.

Understanding CIR Summaries

When you enter Call Invoice Recording, a summary frame displays. This summary gives an overview of activity in CAR and the resulting invoice amounts. View the detail frames for more information.

If you did not generate an invoice in Call Activity Recording, the system generates it for you when you enter the summary frame illustrated in Figure 15.3. The invoice includes invoiceable reports for call lines that are complete or closed.

Call Invoice Recording						
Call ID: CA100007 Go To - Actions -						
Charge Summary						
	Hours	Cost	Item Cost	Exp Cost	List Price	Det
Warranty	161		4	0	20	☐
Contract	0		0	0	0	☐
Covered	0		0	0	0	☐
Project	0		0	0	0	☐
Giveaway	0		0	0	0	☐
Fixed Bill	0		0	0	0	☐
Billable	0		0	0	-10	☐
Billing Summary						
Labor	161		0	0	0	☒
Items	0		4	0	0	☒
Expenses	0		0	0	0	☒
Fixed Prices	0		0	0	0	☒
	0		0	0	0	☐
	0		0	0	0	☐
Total	161		4	0	0	☐
Line Total	0.00	Cost	164.93	Margin		
	0%					

Fig. 15.3
CIR Summary
Frames

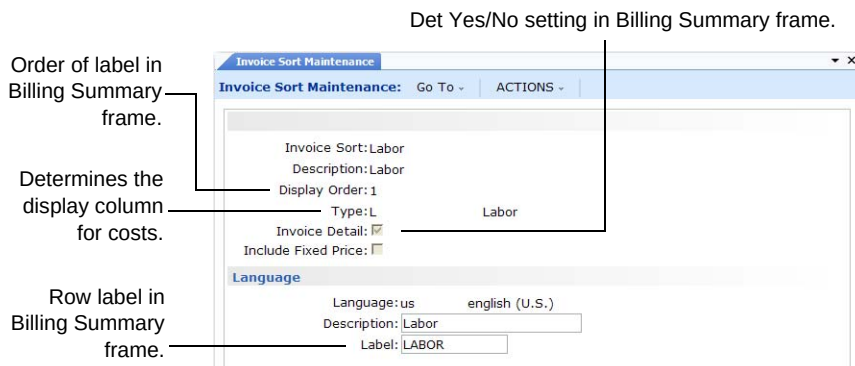
The top half of the frame shows the charge summary. The bottom half is a billing summary.

Note In the summary frames, the system rounds numbers to the nearest integer. Only the amounts at the bottom of the frame represent exact quantities. This can cause some confusion. For example, the system rounds up two quantities of 7.5 to 8. The summary total is 16 and the exact total is 15.

Invoice Sorts Setup

Invoice sort codes determine much of the way the system presents summary information in CIR.

Fig. 15.4
Invoice Sort
Maintenance
(11.21.5)



See “Invoice Sort Codes” on page 97.

In Invoice Sort Maintenance (11.21.5), you define:

- The type of data summarized by the invoice sort code, represented by the three columns in the Charge Summary frame.
- The row labels and their order in the Billing Summary frame.
- The Yes/No setting of the Det column.

Understanding how invoice sorts are defined is helpful in understanding CIR’s Charge Summary and Billing Summary frames.

Display Order. Determines the sequence in which invoice sort codes display in the Billing Summary frame. Define labels for different languages in the Language frame.

Type. Controls how the system totals costs in the Charge Summary costs. Labor costs display in column 1, item costs in column 2, and expense costs in column 3. Labor is type L, item is type I, and expense is type E.

Invoice Detail. Determines the default in the Det column of the Billing Summary, unless you specify a different invoice format for the end user in End User Data Maintenance.

When Invoice Detail is Yes, you can print detail on the invoice. If Invoice Detail is No, the system totals the entries for a service category into one line item and displays only this total. You can choose Yes or No on each call.

Figure 15.5 shows how the system uses other codes in the design of the CIR summary frames.

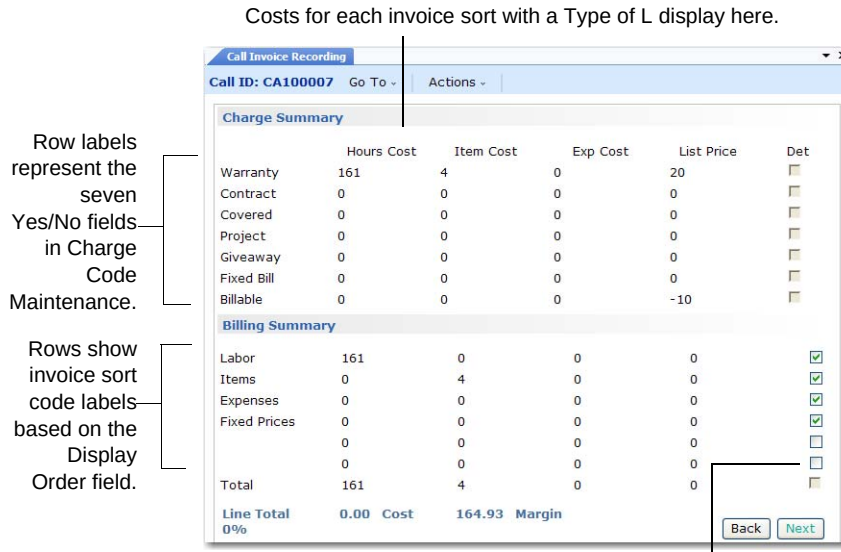


Fig. 15.5
Summary Design

Value comes from Invoice Detail in End User Data or Invoice Sort Maintenance.

Charge Summary

In the Charge Summary, the columns represent invoice sorts and the rows represent types of charge codes:

- The Hrs Cost column displays labor costs, invoice sort type L.
- The Item Cost column displays item costs, invoice sort type I.
- The Exp Cost column displays expense costs, invoice sort type E.

The system separates costs by type of charge code. The seven options in Charge Code Maintenance (11.21.21.1) correspond to the seven rows in the Charge Summary frame.

Fig. 15.6
Charge Code
Maintenance
(11.21.21.1)

Each field
represents a
different type
of charge,
reflected in
the Charge
Summary
rows in CIR.

', 'Contract: ☒', 'Covered: ☐', 'Project Mandatory: ☐', 'Fixed Price Billable: ☐', 'Billable: ☐', and 'Giveaway: ☐'. A line from the text on the left points to the 'Contract' checkbox."/>

The List Price column displays the total price for items, labor, and expenses for the service activity related to each charge code. The billable list price is usually the same as the total displayed at the bottom of the Billing Summary frame. This is the amount the end user pays for the service.

Note If you use only fixed pricing, Line Total reflects the Fixed Bill amount. If some call lines use fixed billing and others do not, the fixed billable and billable amounts together represent the line total.

The column labeled Det, Invoice Detail, in the Charge Summary refers to the Yes/No fields in the Billing Summary frame.

Billing Summary

The Billing Summary frame provides another summary view of CAR financial data.

Billing Summary Columns

The Billing Summary frame displays the total cost for each invoice sort. You can see how costs are broken out for items, labor, and expenses. The List Price column shows the total billing amount for each invoice sort.

The Det (Detail) column applies only to the Billing Summary frame. Use this to determine whether detail or only summary amounts can be printed on the invoice. The value of Det defaults first from the invoice format for the end user in End User Data Maintenance. If the end user has no invoice format, Det defaults from Invoice Sort Maintenance.

Billing Summary Rows

The Billing Summary rows display invoice sort labels in the order defined in Invoice Sort Maintenance. Up to six invoice sorts display. Table 15.1 shows how the invoice sorts for the example in Figure 15.5 are defined.

▶ See “Invoice Sort Codes” on page 97.

Label	Order	Type	Detail
Labor	1	L	No
Expenses	2	E	No
Items	3	I	No
Fixed	4	E	No

Table 15.1
Sample
Invoice Sorts

Effect of Exchanges

Because the summary frames display summary information only, some details are not explicitly reflected. One such detail is an exchange credit for items in CAR.

If you return items for credit in CAR, Billable List Price of the Charge Summary reflects the credit amount. The Billing Summary also shows the credit amount, although it is not labeled. Both are decreased by the amount of the credit given.

Total Summary Bar

When the Billing Summary frame displays in Call Invoice Recording, a message bar indicates summary totals.

- Line Total represents the invoice amount before adjustments or taxes are added.
- Cost shows the total cost of the service call.
- Margin percentage indicates the call’s gross profit or loss, calculated according to this formula:

$$\text{Margin} = (\text{Price} - \text{Cost}) / \text{Price}$$

The system calculates the margin using price and costs before it adds taxes and trailer code amounts.

Fig. 15.7
Summary Frame at
Completion of CIR

Adjust amount includes discount percent and trailer charges.

Call Invoice Recording						
Call ID: CA100011 Go To - Actions -						
Charge Summary						
	Hours	Cost	Item Cost	Exp Cost	List Price	Det
Warranty	0		0	0	0	☐
Contract	0		0	0	0	☐
Covered	0		0	0	0	☐
Project	0		0	0	0	☐
Giveaway	0		0	0	0	☐
Fixed Bill	73		0	0	50	☐
Billable	42		0	0	100	☐
Billing Summary						
Labor	114		0	0	100	☒
Items	0		0	0	0	☒
Expenses	0		0	0	0	☒
Fixed Prices	0		0	0	50	☐
	0		0	0	0	☐
	0		0	0	0	☐
Total	114		0	0	150	☐
Line Total	150.00	Cost	114.13	Margin	24%	
Adjustment	-3.00	Tax	11.03	Total	158.03	

Taxable calls display tax amounts for the call lines here.

- Adjustment displays discount percent and trailer amounts for the call.
- Tax summarizes the taxable amounts in the trailer.
- Total represents the invoice's billable amount.

Fixed Pricing in CIR

CAR and CIR manage fixed price service differently from other activities. Figure 15.8 illustrates invoice summary frames for fixed pricing.

See “Fixed Pricing in CAR” on page 533.

Fig. 15.8
Fixed Pricing
in CIR

With fixed billable set to Yes, you can record costs for a charge code.

Charge Summary					
	Hours Cost	Item Cost	Exp Cost	List Price	Det
Warranty	0	0	0	0	☐
Contract	0	0	0	0	☐
Covered	0	0	0	0	☐
Project	0	0	0	0	☐
Giveaway	0	0	0	0	☐
Fixed Bill	73	0	0	50	☐
Billable	42	0	0	100	☐

Billing Summary					
	Hours Cost	Item Cost	Exp Cost	List Price	
Labor	114	0	0	100	☒
Items	0	0	0	0	☒
Expenses	0	0	0	0	☒
Fixed Prices	0	0	0	50	☐
	0	0	0	0	☐
	0	0	0	0	☐
Total	114	0	0	150	☐

Line Total 150.00 Cost 114.13 Margin 24%

Back Next

When prices are shown here, they reflect the price for the fixed repair; no prices are detailed individually.

In the Charge Summary frame, the system records costs using a charge type with Fixed Billable set to Yes. The list price is the fixed repair price, not the total for individual items recorded.

In the Billing Summary, costs display for invoice sort codes based on the invoice sort's service categories. The price displays for the Fixed Price invoice sort.

Note You can combine exchange credits with fixed priced service. A negative amount displays in the List Price column for items, and the system reduces the line total by the credit amount.

Call Invoice Recording

This section gives reference information for Call Invoice Recording fields. You progress through this function in several frames. Some frames are optional, depending on field settings.

Table 15.2
CIR Frames

Frame	Req	Purpose
Header	Y	Select call and display related information.
Comments	N	If Comments is Yes, view or update call header comments.
Summary Frame	Y	View summary invoice information and set detail fields.
Item Selection	Y	Select the call line item to review.
Comments	N	If Comments is Yes, view or update call item comments.
Labor/Expense Totals	N	Select labor/expense invoice sorts.
Labor/Expenses	N	If you enter an invoice sort, view or update its summary data.
Labor/Expenses Detail	N	If Det is Yes, view or update detailed information for this invoice sort.
Comments	N	If Comments is Yes, view or update operation comments.
Item Totals	Y	Select item invoice sort.
Item Usage	N	If you enter an invoice sort, view or update summary data for the sort.
Item Detail	N	If Det is Yes, view or update detailed information for the invoice sort.
Comments	N	If Comments is Yes, view or update item usage comments.
Trailer	Y	Enter taxable or nontaxable trailer codes and other trailer information.
Summary Frame	Y	View summary invoice information with tax details.

Many CIR frames are similar to CAR and in fact use the same programs. As Figure 15.9 shows, the header frames of Call Invoice Recording (11.1.1.15) are similar to Call Activity Recording (11.1.1.13).

Call Invoice Recording

Call ID: CA100007 Go To Actions

Call Selection

Call ID: CA100007 Bill To: SSM1001 End User: Endsm102

Bill-To	End User
SSM CUSTOMER 1	End102
ANYWHERE	Anywhere CA
X United States of America	X United States of America

Status: Complete Call is complete

Priority: 0

Price List:

PO Number:

Assigned:

Work Code: Tech

Site: 10000

Description:

Channel:

Currency: USD

Taxable:

Terms: BASE

Ready to Invoice: ☒

Project:

Daybook Set: sls

Lang:

Comments:

Reports on
this call
are ready to
invoice.

Fig. 15.9
Call Invoice
Recording
(11.1.1.15)

Header Frame

You can access a call in CIR if it meets one of the following conditions:

- The call status is closed or complete. A warning displays if the call is on hold or canceled.
- The call has at least one line with a complete or closed status and an invoiceable report. Otherwise, the call is not ready for invoicing.

Note You can review a call with a canceled status in CIR, but you cannot generate an invoice for it. You can review a call with a hold status and generate an invoice for any complete or closed lines. In both cases, a warning displays regarding the call status.

Most header fields display information you entered for the call in Call Activity Recording. Display-only fields include End User, Price List, Assigned, Priority, Status, Site, Description, and Currency.

You can update PO Number, Work Code, Channel, Language, Taxable, Terms, Ready to Invoice, Comments, Project and Daybook Set. Except for Ready to Invoice, these fields default either from Call Maintenance or Call Activity Recording.

You can change Bill-To only if you have not generated a pending invoice for the reports on the call.

See
“Coordinating
CAR and CIR”
on page 615 for
additional
information.

Ready to Invoice. This field determines whether the invoice for this call can be selected by Invoice Post and Print.

No: This service activity is not ready for invoicing. It is being held for invoicing at some later date.

Yes: This activity is ready for invoicing. If the correct selection criteria are entered in Invoice Post and Print, you can post the invoice for this call and print a copy to be sent to the bill-to address. The program then sets the field to No.

Ready to Invoice is normally set by the system based on different events.

Project. This field has no effect on the call invoice. The sales and sales discount projects specified in CAR default to the invoice when it is generated.

Summary Frame

See
“Understanding
CIR Summaries”
on page 617 for
details.

If you did not generate an invoice from Call Activity Recording, the system generates an invoice for invoiceable line items when you enter the summary frame. This frame and its various features was discussed previously.

Call Line Detail Frames

When you leave the Billing Summary frame, you enter a sequence of frames similar to Call Activity Recording. First a line item selection frame displays. After you select a call line to review or update, labor and expense frames display first, then item usage frames. After you make changes and complete the trailer, the system recalculates the invoice and redisplay the summary frame.

The various detail frames let managers or supervisory personnel examine the CAR data and adjust prices before invoicing the customer.

Call Selection Frame

When you leave the Billing Summary frame, the Call Selection frame displays, as shown in Figure 15.10. Call ID, Bill-To, and End User are output only.

Call Selection

Call ID: CA100007 Bill To: SSM1001 End User: Endsm102

Ln	Item Number	Fix	Qty Repaired	Net Price	Invoice Cost
1	CP300	☐	1.0	0.00	124.81

Item Detail

Revenue Prod Ln: 8000 Fixed Price: 0.00
 Comments: ☐ Total List Price: 5.00
 Taxable: ☐ Covered Amount: 5.00
 Unit of Measure: EA Serial: Serial-22
 Sales Account: 3000 0600 Work Code: Tech
 Discount Account: 3900 0600 Svc Group: ☐
 Description: Finished Configured good Site: 10000

Fig. 15.10
Call Selection
Frame

Item Selection Frame

In the Item Selection frame, you can select a call line with activity to be invoiced. Other line fields are output only. Use Next/Previous to scroll through call lines. The Item Detail frame displays information related to the selected line. This example displays item detail for line 1.

The Item Selection information defaults from Call Activity Recording and the price and cost on the Billing Summary frame. The system calculates the total fields from the detail information. You cannot modify total fields. Make changes to prices or covered amounts at the detail level.

Ln. Line number refers to the call line in Call Maintenance or Call Activity Recording.

Item Number. Output only. Displays the number of the item being serviced on this call line.

Fix. Output only. Fix indicates whether or not you repaired this item at a fixed price. You enter this value in Call Activity Recording.

Qty Repaired. Output only. Qty Repaired is the total of this item that you repaired in this call. You enter this value in Call Maintenance or Call Activity Recording.

Net Price. Output only. The amount you bill the customer for this call line. Use Net Price to track margins and compare service costs and coverage costs.

Invoice Cost. Output only. The cost of service for this call line. This can be zero, less than, or greater than the net price for the item. Use Invoice Cost to track margins and compare service costs and coverage costs.

Item Detail Frame

Revenue Prod Line. The product line for the income you generate from servicing this line item. The revenue product line and the item product line can be different. The system finds a default revenue product line from product lines you define in Revenue Product Line Maintenance, using the call line's service type and work code, and the item's service group or product line.

If no revenue product line exists, the system uses as a default either the service type's product line or the item's product line, based on Use Item Prod Line in SSM Accounting Control. If Modify Sales Accounts is Yes in SSM Accounting Control, you can modify the sales and sales discount accounts of this product line.

Comments. If Yes, you can review or update the call line's comments. After you select or enter comments, you can specify where you want to print them.

Taxable. Defaults from the value of Taxable in CAR and sets the default for each line of detail.

Tax Class. The tax class of the detail records affects tax calculation.

UM. If Fix is No, you can edit this field. It defaults from the item's unit of measure in the item master. For non-inventory items, UM is blank. If Fix is Yes, the fixed price unit of measure in Call Management Control displays.

Sales and Discount Account, Sub-Account, Cost Center. The system displays the Sales and Sales Discount accounts. These accounts default from the revenue product line unless you define alternate accounts in Sales Account Maintenance (1.2.17).

You can modify these account components only if Modify Sales Accounts is Yes in SSM Accounting Control.

▶ See Chapter 7, "Taxes in SSM," on page 233 for details on how the system calculates taxes in call invoices.

▶ See "Detailed Accounting in CIR" on page 638 for more details about account usage.

When you post an invoice, the system:

- Credits the Sales account with the total sales amount, minus discounts or tax-included amounts. The system records this amount in sales history and uses it to calculate commissions and terms discounts. To distinguish it from other sales activity, the system stores sales history for call activity with a type of R, repair.
- Debits the Sales Discount account for the total sales amount minus the extended list price.

Sales and Discount Project. Enter an optional code identifying the general ledger (GL) project associated with the sales and sales discount amounts for this call line item. These fields default from CAR. The sales and discount project are typically the same.

▶ See “Project Codes in CAR” on page 555 for more information.

The system verifies that the project exists and is active and that it is valid with the other account components.

Description. For inventory items, displays the first line of the item’s description in Item Master Maintenance.

Note The fields on the right side of the Item Detail frame are output only.

Fixed Price. If you specify a fixed price for this line item on the call’s price list, it displays here. The fixed price displays even if Fixed Price is No for this service activity. Use this as reference if you provide fixed price repairs as an alternative to contract and warranty coverage.

Total List Price. For this line item, the total of all list prices for items, expenses, and labor. If any part of this service is covered, Total List Price is more than the net price in the Item Selection frame.

Covered Amount. The amount of service activity covered by the contract, warranty, or service type. The system calculates net price in the Item Selection frame from the total list price minus the covered amount.

Serial. The serial number of the repaired item displays.

Work Code. The work code for the repair, recorded in Call Maintenance or Call Activity Recording.

Service Group. The service group of the item, which you define in Service Item Maintenance.

Site. The line item's site in CAR. Site determines the From zone when the system calculates tax data for this line item.

Labor/Expenses Frames

After you click Next to accept and move past the call line frames, the Labor/Expense Totals frame appears. You can review labor and expenses recorded in CAR for each call line. Labor and expense details display by invoice sort.

After you enter an invoice sort, you can review its detail lines in the Labor/Expenses frame.

Fig. 15.11
Labor/Expenses
Frames

The screenshot shows a software window titled "Call Invoice Recording" with a standard Windows interface including a title bar and window controls. The window is divided into several sections:

- Call Selection:** Displays "Call ID: CA100007", "Bill To: SSM1001", and "End User: Endsm102".
- Item Selection:** A table with the following data:

Ln	Item Number	Fix Qty Repaired	Net Price	Invoice Cost
1	CP300	1.0	0.00	124.81
- Labor/Expense Totals:** Displays "Invoice Sort: Labor", "Cost: 122.81", and "Price: 0.00".
- Labor/Expenses:** A table with the following data:

Ln	Svc Cat	Qty Required	List Price	Det
1	Labor	0.5	0.00	

Invoice Sort. Enter an invoice sort associated with the labor and expense service categories recorded for the line item. When you select an invoice sort and press Enter, the system fills in the cost and price and displays the Labor/Expenses frame.

Cost. Output-only field displaying total labor or expense costs for the invoice sort.

Price. Output-only field displaying the net price of details recorded for this invoice sort. This is the amount you bill the customer.

Ln. Use this field to select the line of detail summarized by this invoice sort that you want to review. Use Next/Previous to scroll through lines.

Svc Cat. Output-only field displaying the line's service category.

Qty Required. Output-only field displaying the number of units of this service category recorded in CAR.

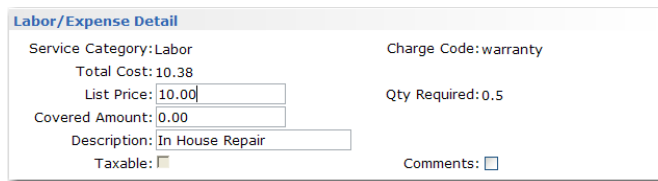
List Price. Output-only field displaying the price of one unit of this service category. To modify the price, set Detail to Yes.

Note Fixed price service uses one price and you cannot modify prices for individual details.

Det. If Yes, the next frame is the Labor/Expense Detail frame.

Labor/Expense Detail

If Det in the Labor/Expenses frame is Yes, the Labor/Expense Detail frame displays when you click Next to accept the labor or expense values. Output-only fields display values updated in Call Activity Recording.



Labor/Expense Detail	
Service Category: Labor	Charge Code: warranty
Total Cost: 10.38	
List Price: 10.00	Qty Required: 0.5
Covered Amount: 0.00	
Description: In House Repair	
Taxable: ☐	Comments: ☐

Fig. 15.12
Labor/Expense
Detail Frame

Service Category. Output-only field displaying the line's service category.

Charge Code. Output-only field displaying the charge code for this labor or expense line.

Total Cost. Output-only field displaying the total cost for this labor or expense line.

List Price. The price for one unit of this service category. You can modify the price, unless you are providing the service at a fixed price. Fixed price service uses one price and you cannot specify prices for individual details. Changes you make here display in Call Activity Recording, and the system recalculates the invoice's net price.

To control changes, apply field security to this field.

Qty Required. Output-only field displaying the number of units of this service category recorded in CAR.

Covered Amount. Displays the covered amount for this labor or expense line for review or update. Changes you make here display in Call Activity Recording, and the system recalculates the invoice's net price. To control changes, apply field security to this field.

Description. Displays the description of the standard operation or operation step from a routing. For expenses, Description is blank unless you entered a description in CAR. You can modify description, but changes are not reflected in CAR.

Taxable. If Yes, the system calculates taxes for the line. The default depends on the taxable status of the call line and whether the line is a fixed repair.

- If this is not a fixed price service and the taxable status of the call line is No, the taxable status of detail record is No and you cannot change it.
- If this is not a fixed price service and the taxable status of the call line is Yes, the taxable status of the detail record defaults from the value in Service Category Maintenance for the service category.
- If this is a fixed price service, the system calculates tax at the call line level. The taxable status of detail record is the same as the call line's status and you cannot change it.

Tax Class. Enter a tax class previously defined in Tax Class Maintenance (29.1.5). GTM tax classes help determine the tax environment (set of tax types) for the transaction.

Tax Class defaults from Service Category Maintenance. If the current call line is not taxable or is a fixed price service, Tax Class is blank and you cannot change it.

Comments. Yes displays the comments transaction frame, where you can review and update comments entered in Call Activity Recording for labor/expense transactions.

▶ See Chapter 7, "Taxes in SSM," on page 233 for details on how the system calculates taxes in call invoices.

Item Totals and Item Usage Frames

After you review labor and expense invoice sorts, you can review item usage. The two frames are similar.

When you select an item invoice sort in the Item Totals frame and press Enter, the system fills in the cost and price and displays the Item Usage frame. You can review each detail line for an item invoice sort in the Item Usage frame. Output-only fields display information from Call Activity Recording.

In CAR, you can issue, return, and exchange items on the same line of detail. To ensure proper tax detail, CIR displays these actions as separate records.

Item Totals					
Invoice Sort: Item		Cost: 0.00		Price: 30.00	
Item Usage					
Ln	Item Number	Qty Required	Qty Returned	Exchange	Detail
1	100A-01	3.0	0.0	☐	☐

Fig. 15.13
Item Totals and
Usage Frames

Invoice Sort. Enter an invoice sort associated with the items you used to repair the call line item. The invoice sort must be type I, for item. When you select an invoice sort and press Enter, the system fills in the cost and price and displays the Item Usage frame.

Cost. Output-only field that displays the total cost for items in the invoice sort.

Price. Output-only field that displays the total net price for items in the invoice sort. This is the amount you bill the customer. Service coverage can make the net price less than the list price.

Ln. Use this field to select the line of detail summarized by this invoice sort that you want to review. Use the up and down arrows to scroll through lines.

Item Number. Output-only field that displays the inventory item number you used in this service activity.

Qty Required. Output-only field displaying the number of units you used of this item.

Qty Returned. Output-only field displaying the number of units you returned of this item.

Exchange. Output-only field indicating if you specified an exchange credit for returned items.

Detail. Controls whether or not the Item Detail frame displays next.

Issue Detail Frame

The output-only fields display values you entered in CAR.

Fig. 15.14
Issue Detail Frame

Issue Detail	
Service Category: Item	Charge Code: Billable
Total Cost: 0.00	
List Price: 10.00	Qty Required: 3.0
Covered Amount: 0.00	Serial:
Description: Mfg Comp	
Taxable: ☒	Comments:

Service Category. Output-only field displaying the item's service category.

Charge Code. Output-only field displaying the charge code for the item issued.

Total Cost. Output-only field displaying the total cost for this issue line. This field is zero for items you return or exchange.

List Price. The price for one unit of this item as you entered it in Call Activity Recording. You can modify the price unless you are providing this service at a fixed price. Fixed price service uses one price for the line and you cannot specify prices for individual details. To control modifications, apply field security to this field. If you make changes, the system displays them in Call Activity Recording, and recalculates the net price for the invoice.

Qty Required. Output-only field displaying the number of units of this item you used in Call Activity Recording.

Covered Amount. Displays the covered amount for the items on this line as you entered it in CAR for review or update. To control modifications, apply field security to this field. If you make changes, the system reflects them in Call Activity Recording, and recalculates the net price for the invoice.

Serial. Output-only field displays the serial number if you issued or returned one serialized item.

Description. Description of the issued item as you entered it in Item Master Maintenance or modified it in CAR. Description can be modified, but changes are not reflected in CAR.

Taxable. Indicate if the system calculates taxes on this line of detail. The default depends on the call line's taxable status and whether or not this is a fixed price repair.

- If this is not a fixed price service and the line's taxable status is No, the system sets the taxable status of all detail records to No and you cannot change it.
- If this is not a fixed price service and the line's taxable status is Yes, the taxable status for items defaults from the value in Item Master Maintenance.
- If this is a fixed price service, the system calculates tax at the call line level. The system sets the Taxable field at the detail level to the value of the call line and you cannot change it.

▶ See Chapter 7, "Taxes in SSM," on page 233 for details on how the system calculates taxes in call invoices.

Tax Class. Enter a tax class previously defined in Tax Class Maintenance (29.1.5). GTM tax classes help determine the tax environment (set of tax types) for the transaction.

Tax Class defaults from Item Master Maintenance. If the current call line is not taxable or is a fixed price service, Tax Class is blank and you cannot change it.

Comments. If Yes, you can review or update comments you recorded in Call Activity Recording for the service detail.

Exchange Detail

For items that you return for an exchange credit, a frame displays that is slightly different from the Issue Detail frame. This section describes only the fields that are different.

Fig. 15.15
Exchange Detail
Frame

The screenshot shows a form titled "Exchange Detail". It contains the following fields and values:

- Service Category: Item
- Exchange Price: 30.00
- Charge Code: Billable
- Qty Returned: 1.0
- Returned Serial:
- Description: Mfg Comp
- Taxable: ☒
- Comments: ☐

Exchange Price. Displays the amount of credit you specified in CAR for this exchange. If you make changes here, the system reflects them in Call Activity Recording and recalculates the net price for the invoice. To prevent price from being modified, apply field security to this field.

Qty Returned. Output-only field displaying the number of items you are exchanging.

Returned Serial. Output-only field displaying the serial number of the exchange item. This field has a value only when you return one serialized item in CAR.

Return Detail

For items that you return without an exchange credit, the Return Detail frame displays.

Fig. 15.16
Return Detail
Frame

The screenshot shows a form titled "Return Detail". It contains the following fields and values:

- Service Category: Item
- Qty Returned: 3.0
- Charge Code: Billable
- Returned Serial:
- Description: Mfg Comp
- Taxable: ☒
- Comments: ☐

The fields on this frame are the same as on the Exchange Detail frame.

Trailer Frame

After reviewing the invoice detail, the trailer frame displays. This is the same frame that displays for standard sales orders that you create in Sales Order Maintenance (7.1.1).

Fig. 15.17
Call Invoice
Recording Trailer
Frame

Most trailer fields default from the bill-to address and have the same function as in sales orders. These fields include Discount Percent, CR Initials, Credit Card, Action Status, Partial OK, and Ship Via. By default, CIR uses the taxable and nontaxable trailer codes in SSM Accounting Control.

You can review and edit tax detail in the trailer. Unlike a sales order, multiple lines of detail can exist for each call line.

In Call Invoice Recording, you create the invoice after you consume the items, rather than before they ship as in sales orders. For this reason, some trailer fields are not relevant in CIR, such as Ship Via, FOB Point, and Partial OK.

See Chapter 7, “Taxes in SSM,” on page 233 for details on taxes in CIR.

Detailed Accounting in CIR

Call Invoice Recording uses standard transaction and accounting procedures as in other modules. This section describes these transactions and the accounts they affect.

Service Accounts

Product lines are the basis for managing accounting. Before you record service activity in CAR, you must set up product lines and the codes that direct how transactions impact these product lines.

Several service accounts in Domain/Account Control (36.9.24) support service activity. These accounts are all defined with an account type of Standard.

Fig. 15.18
Service Accounts in
Domain/Account
Control (36.9.24)

The screenshot shows a software window titled "Domain/Account Control". Below the title bar is a menu bar with "Domain/Account Control:", "Go To", and "Actions". The main content area is titled "Service Accounts" and contains a list of accounts with their respective numbers and icons. The accounts listed are:

Account Name	Account Number	Icon 1	Icon 2
Service Labor:	6650	[Icon]	[Icon]
Service Overhead:	6491	[Icon]	[Icon]
Service Expense:	7400	[Icon]	[Icon]
Expense Due:	7410	[Icon]	[Icon]
Service Returns:	5053	[Icon]	[Icon]
Deferred Revenue:	3000	[Icon]	[Icon]
Accrued Revenue:	3000	[Icon]	[Icon]

The system uses the service accounts in the control program as defaults when you define a new product line in Product Line Maintenance (1.2.1).

The screenshot shows the 'Product Line Maintenance' window. The 'Product Line' is 7000, 'Description' is Warranty, 'Taxable' is checked, and 'Tax Class' is empty. 'Default Sub-Account' and 'Default Cost Center' are both empty, with 'Override' checkboxes next to them. The 'Service Accounts' section contains a table with the following data:

Service Account	Account Number	Account Number
Service Labor:	6550	0510
Service Overhead:	6491	0510
Service Expense:	7400	0510
Expense Due:	7410	0510
Service Returns:	5053	0510
Deferred Revenue:	3000	0510
Accrued Revenue:	3000	0510

Fig. 15.19
Service Accounts
in Product Line
Maintenance
(1.2.1)

The system updates service accounts for GL transactions created in Call Activity Recording and for expensed material orders (MOs).

Service Labor. For labor consumed in CAR, the system credits this account and debits the WIP account.

Service Overhead. The system uses this account and the service labor account to track labor burden for labor consumed in CAR. The system credits this account and debits the WIP account.

The system calculates labor burden using the manufacturing operation formula for burden:

$$\text{Hours} * (\text{Labor Rate} * \text{Work Center Burden \%} * .01 + \text{Work Center Burden Rate})$$

Note In service contexts, machines do not affect the formula.

Service Expense. The system uses the Service Expense account to track expenses in CAR. During CAR transaction processing, the system credits the Service Expense account of the charge product line for expense amounts and debits the WIP account.

The system also uses the Service Expense account when you order MOs with a charge code. The system tracks the expense of the ordered items using the Service Expense account of the product line associated with the charge code.

See “Managing Deferred and Accrued Revenue” on page 329.

Expense Due. During invoice post, the system debits the Expense Due account for CAR expense amounts and credits the WIP account.

Service Returns Account. When you return items in CAR, the system credits the Returns account and debits Inventory.

Deferred and Accrued Revenue. These accounts are used during contract billing based on the revenue type associated with a contract. They are always derived from the product line of the contract type associated with the contract.

The accounts updated during the processing of transactions in CAR may come from any of these product lines:

- The item’s product line
- The service type’s product line
- The charge product line
- The revenue product line

The first two product lines are collectively referred to as the WIP product line, since that is the only account updated in CAR.

Note Even though CAR work centers supply information about labor and labor burden, CAR does not use the work center’s department to derive a product line.

CAR Reports and Work Orders

When you receive items from a customer through an RMA, you can process the RMA by releasing it to a work order. This creates a rework work order using the item’s repair routing. You manage and complete the work order in the Work Orders module.

Processing in CAR is similar, although in CAR you are recording work that already took place. However, the work still consists of operations that record labor and the items you issued. Each CAR report you generate is a simple work order. The report creates work order transactions and affects similar accounts.

Reports in CAR have a simpler life cycle than work orders. Work orders follow this sequence:

- Process item issues.

- Process labor and labor burden.
- Receive work order (RCT-WO).
- Close the work order using Work Order Accounting Close (16.21).

Reports in CAR do not go through the last two steps. The system combines item and labor processing when you click Next from CAR's inventory confirmation frame. The CAR report, or work order, has this life cycle:

- Process item issues, labor, and labor burden.
- Post the invoice, which is similar to work order accounting close.

In general, the system updates accounts in CAR similar to the way it updates accounts for a work order, except that service accounts are updated when appropriate.

Variances in CAR

Another difference exists between accounting for standard work orders and CAR work orders. The system tracks material and labor variances for standard work orders. It does not track them for call activity.

The system calculates work order variances when the work order is closed. Closing a call, however, is not as final as closing a work order. You can open a closed call and record more activity for it. The only time you cannot change a call is when it is moved to history.

For calls, the system cannot determine if a difference is a variance or the result of a report that you have not yet added to the call.

Product Lines in CAR

You can affect multiple product lines when you record activity in CAR. These product lines can be one of the following: the WIP product line, charge product lines, and the revenue product line.

♦ See "Charge and Revenue Management" on page 115.

You can use the same product line for WIP, charges, and revenue. Depending on how you separate accounts, you can set up and implement product lines ranging from simple to complex.

Table 15.3 summarizes the accounts affected by recording activity and posting call invoices.

WIP Product Line

In CAR, the system uses the WIP account of the call item's product line for all WIP transactions for the line item. You specify this product line when you select a call item in Call Activity Recording.

The system determines the default product line for the WIP account based on the value of Use Item Prod Line in SSM Accounting Control. If Use Item Prod Line is Yes, the WIP product line defaults from the item's product line. If No, it defaults from the service type's product line. You can change the default when you begin recording activity for a call line. After you record activity, you cannot change the WIP product line.

The system uses only the WIP account from this product line, as one general holding area. During CAR processing, the system records amounts to the WIP account. When you post the invoice, the system transfers these amounts from the WIP account to the correct charge and revenue product line accounts.

Since call reports are similar to work orders, you can view financial transactions using two reports in the Work Orders module. Enter the call report number in the Work Order field of the following reports:

- Use Work Order Cost Report (16.3.4) to review costs for a call report.
- Use Work Order WIP Cost Report (16.3.5) to review GL transactions affecting WIP accounts for selected reports.

You cannot add a memo item to a standard work order. You can add memo items to calls unless Items Must Exist is Yes in Service Management Control. For CAR work orders with memo items, the system uses the service site's cost set. If none exists, the system uses the cost method in Inventory Accounting Control to generate a work order cost report.

Charge Product Line

The charge product line determines accounts for the cost of activity and appears on the item, labor, and expense detail frames in Call Activity Recording. You can relate charge codes to charge product lines to direct costs to accounts depending on the type of coverage: warranty, contract, billable.

The service accounts of the charge product line are important in CAR. The cost of goods accounts are also used: COGS-Material, COGS-Labor, COGS-Burden, COGS-Overhead, COGS-Subcontr. To isolate service costs from manufacturing costs, use different Cost of Goods Sold account numbers, or use sub-accounts and cost centers to permit distinct reporting.

During invoice post, the system searches for alternate cost of goods accounts from Inventory Account Maintenance (1.2.13) for the combination of product line, site, and location.

Revenue Product Line

The revenue product line determines the sales and sales discount accounts used for the income from service activity. You specify the revenue product line per line item in Call Invoice Recording.

Product Line Account Search Algorithm

After you enter a charge or revenue product line, the system first looks for alternate sales or inventory accounts. If these are not defined, it uses the accounts defined in Product Line Maintenance.

Inventory Accounts

Call Activity Recording searches for product line accounts the same way the rest of the system does. For an Inventory account, the system searches for GL accounts set up for the combination of product line, site, and location with Inventory Account Maintenance (1.2.13). If accounts for site and location do not exist, the system searches for a match on product line and site with a blank location. If these do not exist either, the system uses the default GL accounts in Product Line Maintenance.

Sales Accounts

You can set up alternate Sales and COGS accounts with Sales Account Maintenance (1.2.17), based on site, customer type, and channel. You normally set these up for sales orders, but the system checks for these alternate accounts when you post the call invoice.

You can define distribution channels in Generalized Codes Maintenance. Channel normally refers to the distribution channel originating the service activity.

Invoice Post and Print searches for accounts based on the revenue product line of the item repaired, the site associated with the call line item, the customer type of the end user's customer, and the channel specified on the header in CIR. The system searches for GL sales accounts in the following order:

- Product line, site, customer type, and channel
- Product line, site, and customer type, with a blank channel
- Product line, and site, with a blank customer type and blank channel
- Default GL accounts in Product Line Maintenance

Table 15.3
Accounting in CAR

	Processing Step	Action	Account	Product Line
Issue in CAR	Item Issue	Credit Debit	Inventory WIP	Item Item
	Item Returns	Credit Debit	Service Returns Inventory	Charge Item
	Labor	Credit Debit	Service Labor WIP	Charge Item
		Credit Debit	Service Overhead WIP	Charge Item
	Expense	Credit Debit	Service Expense WIP	Charge Item

	Processing Step	Action	Account	Product Line
Invoice Post and Print	Item Issues	Credit Debit	WIP COGS-Material COGS-Labor COGS-Burden COGS-Overhead COGS-Subcontr	Item Charge
	Item Exchange	Credit Debit	AR Sales	Customer Revenue
	Labor	Credit Debit	WIP COGS-Labor	Item Charge
		Credit Debit	WIP COGS-Burden	Item Charge
	Expense	Credit Debit	WIP Expense Due Employee	Item Charge
	Billable Total	Credit Debit	Sales AR	Revenue Customer

Call Escalation

Call escalation monitors the response times for calls. According to the schedule and impact you define, it increases the visibility and management involvement for calls that you have not serviced. Call escalation helps ensure that calls are serviced in time and by the appropriate personnel.

Using Escalations **648**

Escalation Maintenance **654**

Escalation Monitor **657**

Using Escalations

Call escalations let you track and correct a call's progress in its life cycle. If you do not resolve a call within a predefined time period, the system automatically gives it higher visibility.

▶ See Chapter 11, "Call Management," on page 359.

With the Call Queue Manager, you select calls by attributes such as priority, status, and queue. Using call escalations, you assign calls to specific queues, change their status, and increase their priority.

Since escalations change the attributes of a call according to your design, you must create the design carefully. Set up each escalation step so that it changes the call in a particular way.

Note Escalations affect only *open* calls. Deleted or canceled calls are excluded.

Enabling Escalations

You enable call escalations by setting Use Escalation to Yes in Call Management Control (11.1.24).

Important You must also run the Call Escalation Monitor for escalations to have an effect.

Before you can define other settings that affect escalations in Escalation Control, set Use Escalations to Yes. If this field is No when you access Escalation Control, the system displays a prompt that indicates that call escalation is not active, and asks if you want to enable escalations.

If you answer Yes, the system sets Use Escalation to Yes in Call Management Control, and you can modify Escalation Control. If you answer No, you cannot modify escalation fields.

Sample Escalation

Figure 16.1 illustrates a sample escalation. The Dispatch queue receives a call with a status of Pending. If a dispatcher does not address the call within an hour, the system escalates it to Open status and routes it to the

Engineer queue. If no engineer resolves the call within two hours in this queue, the system escalates the call again, this time to Emerg, or emergency status, and routes it to the supervisor's queue for attention.

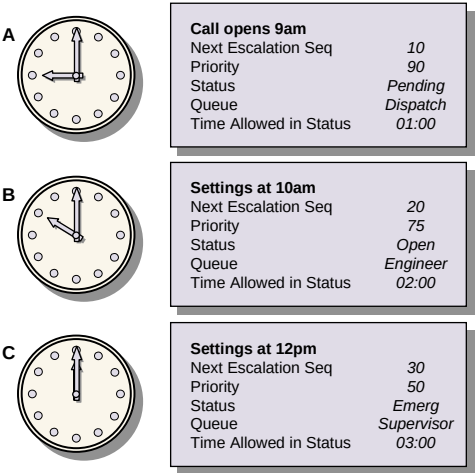


Fig. 16.1
Sample Call
Escalation

Escalation Worksheet

Use a worksheet like the one in Table 16.1 to define the escalation steps for a call.

Escalation Code	Esc Seq	Escalate?	Time in Status		Bump Priority	Next Status	Next Queue
			Days	Hrs			

Table 16.1
Escalation
Worksheet

Default Escalations

In Escalation Control, specify a default escalation to use if no other default is available. When creating calls, you can change the escalation for each call. The system searches for an escalation to use on a call as follows:

- The escalation for the end user in End User Data Maintenance
- The escalation for any call defaults in Call Default Maintenance
- The preferences of the end user in Service/Support User Preferences
- The Default Call Escalation field in Escalation Control

Effect of Escalations

You can use escalation sequences in two ways:

- To update certain fields on a call record
- To execute specific tasks external to the Call Maintenance process, such as printing the call, sending an alert message to a manager, or paging the engineer assigned to the call

To make these changes, the Escalation Monitor applies the instructions from the current escalation step. When a call is created, Call Maintenance also applies the first step of an escalation. The way these two updates occur is somewhat different.

Creating a Call with an Escalation

When you create a call with an escalation, the system applies the instructions from step 0. If the escalation has no step 0, initial call values do not change.

A call's escalation displays in the Call Info frame of Call Maintenance. A sequence number indicates the *next* escalation step that the Escalation Monitor will apply.

Fig. 16.2
Call with
Escalation

The screenshot shows the 'Call Maintenance' window with the following data:

User Selection		
Call ID: CA100153	Call Date: 4/18/2008	Time: 14:16
Serial: 100		
End User: 4032	Time Zone: EST/EDT	Memory Consultancy
Item Number: 1-BB	Ref: 5	Red Bean Bag
Contract:	Service Type: FIXED	Area:
Start Date:	Install Date: 4/9/2008	Morristown NJ 07960
End Date:	Warranty End:	Response: 0 Hours
PO Number:		Comments: ☐ Move ISB: ☐

Call Info		
Caller: Robin Kette	Phone: 973 538-02721	
Description: Preventive Maintenance		
Work Code: PM	Queue: Dispatch	Comments: ☒
Severity: X	Status: New	Event Date: 4/18/2008
Type: PM	Next Status: Open	Event Time: 14:16
Assigned:	Next Status Date: 4/18/2008	Escalation: ESC1
Priority: 0	Next Status Time: 14:16	Schedule: ☒
Prob/Skill:	Multiple Skills: ☐	From Quote:

Sequence 0 has been applied; 10 is the next sequence to be applied.

Figure 16.2 illustrates a newly created call in Call Maintenance. The Escalation field displays the escalation name and sequence 10. The next step the Escalation Monitor will apply is step 10.

The system has already applied the values of step 0. Even though the service type's response time is 4 hours, the call's Next Status Time is one half hour from the call open time. The reason for this disparity is that the time allowed for step 0 is 30 minutes.

An escalation step can have the following effect when you create a call:

- Increase the call's Priority field by the value of Bump Priority.
- Update the call's Status field to reflect the value of Next Status.
- Update the call's Next Status field to reflect the value of the *next* step's Next Status field.
- Update the call's Queue field to reflect the value of Next Queue.
- Update the call's Next Status Date field and Call Next Time field using Days Allowed in Status and Time Allowed in Status.

When you create a call with an escalation, the system adds Days Allowed in Status and Time Allowed in Status for step 0 to the call's open date and time to determine the call's Next Status Date and Next Status Time.

Note Escalations do not initially affect calls that the system creates, such as installation calls from invoice post and PM calls from contract schedules. The system schedules these calls in advance. Escalations affect these calls only after they reach the default next status date and time.

▶ See Table 11.3, “Call Default Precedence Rules,” on page 375 for the order in which the system uses defaults.

Using Other Defaults with Escalations

For many call fields, you can set default values in more than one place. When an escalation is applied to a new call in Call Maintenance, values from the escalation step override other defaults. For example, the system uses the escalation sequence to determine call status, next status, and queue, even if you define defaults in Call Default Maintenance.

In the following order, the system finds a default for the call’s initial priority from:

- The end-user record, if it is not zero
- The call’s contract or warranty
- The Default Call Service Type in Call Management Control

The Bump Priority value for the first escalation step then reduces the initial default priority.

Example You have a call where the end user’s priority is zero and the service type’s priority is 100. If the first escalation step specifies a bump priority of 75, the call’s initial priority is 25, not 100.

When you do not use escalations, the system calculates the call’s Next Status Date and Time using the service type’s response time. When an escalation applies to a new call, the system uses the Days Allowed in Status and Time Allowed in Status of step 0 to determine Next Status Date and Next Status Time.

Updating Existing Calls

The Escalation Monitor applies the escalation’s next step when the call’s Next Status Date and Next Status Time is older than the system date and time. After step 0, the system adds Days Allowed in Status and Time Allowed in Status to Event Date and Event Time to determine Next Status Date and Next Status Time.

Matching Escalations to Calls

Work Code, Call Type, Call Severity, and Call Problem in the top frame of Escalation Maintenance define the escalation key. The system applies the escalation only to calls with values that match the key.

You can leave fields blank to end the key, but you cannot skip fields. For example, to set up escalations based on call severity, you must also enter a call type and work code. When applying an escalation, the Escalation Monitor searches for the most complete match to the call's fields. If no escalation matches the call exactly, it applies a more generic escalation.

Example You create a call with work code Tech, severity 3, problem Elec. No escalation with these exact fields exists, but one does exist with work code Tech and all other fields blank. The system applies this escalation as the closest match.

Default Escalations

When you create escalation sequences to use as defaults, you must carefully consider how the escalation is set. When the escalation is associated with an end user, it may apply to many different kinds of calls.

You create an escalation PREMIUM and a sequence of escalation steps for work code Tech, but not for work code PM. You associate the PREMIUM escalation with end user 1001000.

When you create a PM call for end user 1001000, the PREMIUM escalation defaults from the end-user record. When the system looks for the first step to apply, no match exists for work code PM, so the system does not apply the first sequence of the escalation.

As a result, the escalation sequence number that displays in Call Maintenance is zero. The PREMIUM escalation remains associated with the call, but it does not take effect unless you change the call's work code to Tech.

Escalation Maintenance

Use Escalation Maintenance (11.1.13.1) to create and update escalation sequences.

Fig. 16.3
Escalation
Maintenance
(11.1.13.1)

The screenshot shows the 'Escalation Maintenance' window. The top section contains the following fields: Escalation Number: ESC1, Work Code: (blank), Call Type: (blank), Call Severity: (blank), Call Problem: (blank), and Sequence: 0. The bottom section contains: Description: Just Received Call, Escalate: ☒, Group: (blank), Print: ☐, Days Allowed In Status: 5, Time Allowed in Status: 04:00, Page Engineer: ☐, Bump Priority: 10, Next Status: Open, and Next Queue: Dispatch.

The work code, type, severity, and problem in the top frame of Escalation Maintenance uniquely define the escalation. The system applies this escalation to calls with values that match these fields. You can leave fields blank to end the key, but you cannot skip fields. For example, to base an escalation on call severity, you must specify a work code and call type.

When applying an escalation, the Escalation Monitor searches for the most complete match to the call's fields. If no escalation matches the call exactly, it applies a more generic escalation. It disregards one field at a time, moving upward from Call Problem until it disregards all key fields.

Escalation. Enter a name for the escalation. If this field is blank, the system creates a number using the prefix and next number in Escalation Control.

▶ See “Work Codes” on page 94.

Work Code. Enter a value to apply the escalation only to calls with this work code. Define work codes in Work Code Maintenance (11.21.1). The work code indicates the type of work you performed during service activity and affects invoicing and service limits.

Call Type. Enter a call type defined in Call Types Maintenance (11.1.21.4). If you enter a call type, you must enter a work code also. The escalation applies only to calls with this work code and call type.

Call Severity. Severity indicates the end user's perception of how serious the problem is. If you enter a call severity, you must also enter a work code and call type. The escalation sequence applies only to calls with this work code, call type, and call severity.

Note Define call severities in Generalized Codes Maintenance for field `ca_severity`.

Call Problem. Define call problems codes in Generalized Codes Maintenance (36.2.13) for field `fsskill`. This field classifies both the call problem and the skill the engineer needs to handle the call. If you enter a call problem code, you must also enter a work code, type, and severity. The escalation sequence applies only to calls with this work code, call type, call severity, and call problem.

Sequence. Enter a number defining the current step in the escalation. Each escalation must begin with a step 0. The system executes sequences from lowest to highest.

Note Define number sequences in increments of 10 (0, 10, 20, 30), to insert steps more easily later.

Description. Enter a brief description (maximum 24 characters) of the sequence.

Escalate. If Yes, the Escalation Monitor escalates this sequence to the next higher one. Enter No for the last step in the escalation.

Group. Define group codes in Generalized Codes Maintenance (36.2.13) for field `fsgroup`.

Print. Enter Yes to print calls when the system executes this step. Use this for critical steps or final steps to keep a record of closed calls. Define the printer in Escalation Printer of Escalation Control.

Days Allowed in Status. Determines the number of days a call remains in a step before the Escalation Monitor escalates the call to the next step. Use this field by itself or with Time Allowed in Status.

Note The value of Use Calendar Days in Escalation can affect the calculation of a call's next status date and time.

When you create a call with an escalation, the system applies the values of step 0. It adds the days and time allowed in status to the call's open date and time to determine the call's Next Status Date and Next Status Time.

The Escalation Monitor applies the next step in the sequence when the call's Next Status Date and Next Status Time is earlier than the system date and time. For steps after 0, the system adds Days Allowed in Status and Time Allowed in Status to the call's Event Date and Event Time to determine the Next Status Date and Next Status Time.

Time Allowed in Status. The system uses this value with Days Allowed in Status to determine the next status date and time.

Page Engineer. The default is No. If Yes, the system pages the engineer when the call reaches this escalation sequence. Use this when calls reach a critical or emergency situation.

Bump Priority. Enter the number of points you want the system to subtract from the current call priority when it executes this sequence. Lower numbers indicate higher priority.

Next Status. Determines the call's status when the system executes this escalation step. The system verifies that this status exists in Call Status Code Maintenance.

When you create a call with an escalation, the system applies the values of step 0 to the call. The system updates the call's Status field with step 0's Next Status value. It updates the call's Next Status field with the next step's Next Status value.

When the system escalates a call, the call's Status field reflects the status of the recently executed step and its Next Status field reflects the status of the next step the system will execute.

On an escalation, you cannot specify a status of closed, cancel, or complete from Call Management Control.

Next Queue. When the system executes this step, it moves the call to the queue you specify. If Next Queue is blank, the call remains in the current queue.

Escalation Monitor

Escalation steps have an effect only when the Escalation Monitor (11.1.13.13) is running. You can run the monitor as a full-time process on a dedicated terminal or in a window on an X Windows terminal. For correct escalation results, the monitor must run consistently.

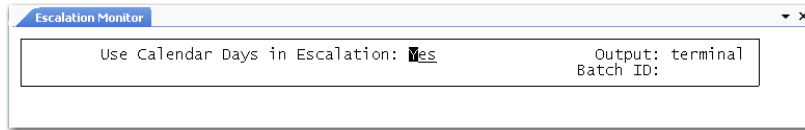


Fig. 16.4
Escalation Monitor
(11.1.13.13)

The Escalation Monitor examines each call's next event date and time. If these values are earlier than or equal to the system date and time, the system updates the call's priority, status, or queue according to the values in the current escalation step. Then it changes the call's Next Status Date and Next Status Time to reflect the days and time in the current escalation step.

The Escalation Monitor displays call records as it reviews them. It marks calls it updates with a Yes in the Act, or acted on, column.

Escalation Pause Interval

The Escalation Monitor examines calls depending on the frequency in Escalation Manager Pause in Escalation Control (11.1.13.24). This field defines the number of seconds that the Escalation Monitor pauses before rechecking open calls.

The escalation pause interval should be less than the shortest period of time you allow in any escalation. If the shortest time between two sequences is four hours, set Escalation Manager Pause to a value less than four hours.

Use Calendar Days in Escalation

When calculating the next status date and time, the Escalation Monitor uses this formula:

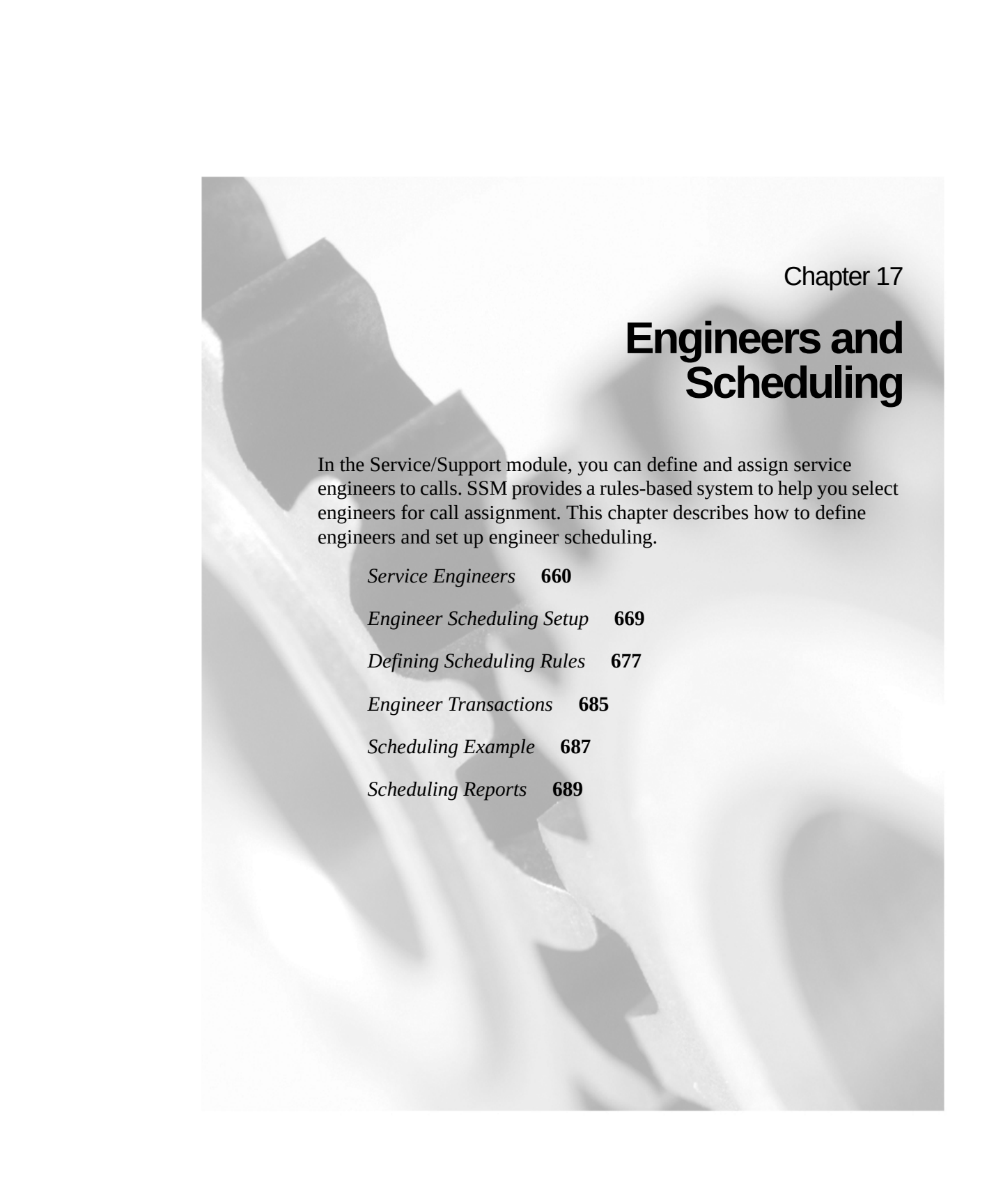
$$\text{Next Status Date} = \text{System Date} + \text{Days Allowed in Status}$$

Use Calendar Days in Escalation affects this calculation. Define this field in Escalation Control. It displays in the Escalation Monitor.

Set Use Calendar Days in Escalation to Yes for the system to use calendar days to calculate Days Allowed in Status. The system adds the value of days allowed in status to the system date. After the system determines this date, it examines the service coverage days. If the calculated date is not a covered day—if it is a weekend or holiday, for example—the system changes the date to the next covered day.

Set Use Calendar Days to No for the system to use work days to calculate Days Allowed in Status. The calls's service type defines valid service coverage days and hours. This method can result in a later date, and Escalation Monitor response time can increase due to extra calculations.

Example You take a call on Thursday, March 20. The service type provides coverage from Monday through Friday. The first escalation step specifies that the call can remain in the step for four days. Using calendar days, the next status date is Monday, March 24. Using work days, the next status date is Wednesday, March 26, since the calculation disregards Saturday and Sunday.

The background of the page is a grayscale image of interlocking gears. The gears are of various sizes and are positioned in a way that creates a sense of depth and mechanical complexity. The lighting is soft, highlighting the teeth of the gears and creating subtle shadows.

Chapter 17

Engineers and Scheduling

In the Service/Support module, you can define and assign service engineers to calls. SSM provides a rules-based system to help you select engineers for call assignment. This chapter describes how to define engineers and set up engineer scheduling.

Service Engineers **660**

Engineer Scheduling Setup **669**

Defining Scheduling Rules **677**

Engineer Transactions **685**

Scheduling Example **687**

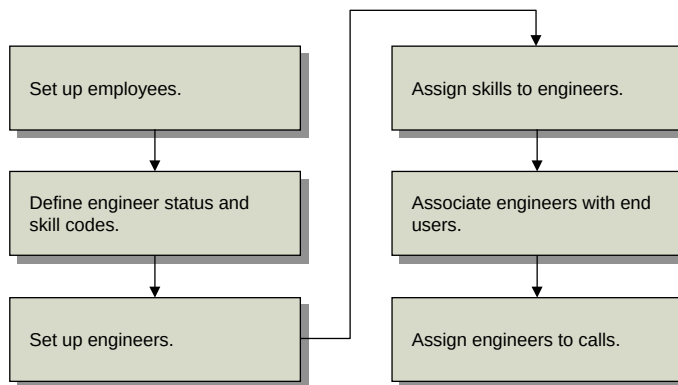
Scheduling Reports **689**

Service Engineers

To use the Service/Support Management call tracking functions, you first must identify the individuals who respond to calls.

Setting up engineers involves a number of related tasks, illustrated in Figure 17.1.

Fig. 17.1
Engineer
Work Flow



First define employees using Employee Create (36.1.7.1). Define engineer status codes with Engineer Status Maintenance (11.13.4) and skill codes in Generalized Codes Maintenance (36.2.13). Set up engineers with Engineer Maintenance (11.13.1). Assign skills with Engineer Skills Maintenance (11.13.5).

You can associate both primary and secondary engineers with end users. The system uses this association to assign default engineers in Call Maintenance or to rank engineers in engineer scheduling.

Engineer scheduling in Call Maintenance is optional. However, even without scheduling, you must define engineers to record service activity in Call Activity Recording.

Engineers and Multiple Time Zones

If you have end users in more than one time zone, you can use Multiple Time Zones (MTZ) to manage your response. MTZ works with service functions that deal with time-sensitive data, including call management, engineer scheduling, coverage checking, creation of installed base records, and reports and inquiries that display dates and times.

▶ See Chapter 4, “Multiple Time Zones,” for details on setting up and using MTZ.

The following list summarizes how MTZ affects engineer scheduling:

- You can associate a time zone with an engineer in Engineer Maintenance.
- You can assign scheduling points in Engineer Schedule Control based on matching time zones, either exactly or within a defined range. You can optionally limit engineers to schedule in Call Maintenance based on time zone.
- The value of Field Engineer in Engineer Maintenance determines how the system interprets schedule times: either relative to the time zone of a call’s end user or relative to the engineer’s time zone.
- You can select a display time zone before generating engineer reports and inquiries.

Engineer Site and Location

Most engineer attributes affect engineer scheduling. However, the engineer’s site, location, and area are important when you order items with material orders (MOs) and consume items in Call Activity Recording.

Use a consistent engineer site and location so you can manage inventory transactions that occur when you service calls.

Engineer Site/Location on MOs

Engineers can order service inventory with material orders (MOs). When you ship inventory for the MO, the system transfers inventory from the source site and location to the place you need it for the service activity.

▶ Chapter 20, “Material Orders,” discusses MOs.

The system searches for an engineer site and location defined in Engineer Maintenance. You can define either one or both of these for an engineer. If no site or location exists, the system searches for the engineer's area site and location. The system transfers the MO items you order to this site and location.

Consider inventory management issues when you define default sites and locations. If engineers obtain repair parts from regional supply centers, let the site default from the engineer's area and define each engineer as a separate location.

Note Significant overhead occurs when you define a site. For example, you allocate costs per site. For this reason, setting up individual engineers with separate sites requires more planning and implementation.

Inventory Consumption in CAR

When you consume MO inventory in Call Activity Recording, the system uses the same logic to determine a site and location for inventory issues as it uses in MO shipments. If you ship the items to a different site than the default, change the values in CAR to process inventory issues.

Establish procedures so the system always references the same site and location for service stock for a particular engineer.

Location Validation

The system validates the engineer location like any other location in the system. For example, the location must exist, unless Automatic Locations is Yes for the site.

The location you specify should not restrict any of the following transactions, which occur during service activities:

- For all MOs, the inventory transfer receipt transaction (RCT-TR)
- For expensed MOs—those with a charge code—the unplanned issue transaction (ISS-UNP)
- To issue items in CAR, the issue to work order transaction (ISS-WO)

Reserving Service Inventory

Other functions that allocate and issue inventory can use items you order on an MO. If service and manufacturing activities are in the same site, service inventory is vulnerable to access by manufacturing functions such as work orders or sales orders.

You can minimize the impact of other processes on service inventory in several ways:

- Use a special naming convention for service locations and establish procedures so that manufacturing functions skip these locations.
- Even if your service operation shares the same physical space as manufacturing, define a separate site for service. Managing service as its own site gives you greater control over inventory. In the service site, naming conventions and procedures can distinguish locations you use for different purposes such as stocking, return, repair, scrap, inspection.
- Give engineer locations an inventory status code with Available set to No. This status prevents the system from using the service inventory for other purposes. The service locations do not display in the picking logic for manufacturing functions.

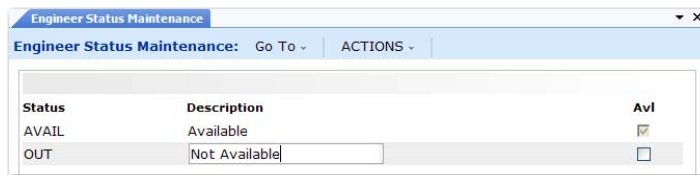
Note When you make a location unavailable, the system does not use it for standard picking. You can still issue inventory from the location in CAR. However, you cannot create detailed, or picked, allocation during Material Order Maintenance.

If the engineer location is not marked as unavailable, the system may allocate the items ordered on an MO, but not yet used, to another MO or sales order.

Setting Up Availability Status Codes

To determine an engineer's availability, define meaningful status codes in Engineer Status Maintenance (11.13.4) and associate them with engineers.

Fig. 17.2
Engineer Status
Maintenance
(11.13.4)



Status	Description	Avl
AVAIL	Available	☒
OUT	Not Available	☐

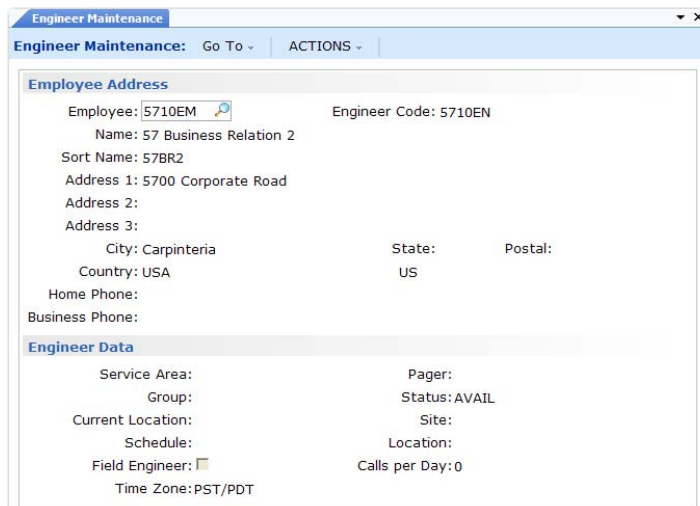
Availability status codes indicate whether or not an engineer is available. Multiple codes exist because there are multiple reasons for being available or unavailable. For example, use status to remove an engineer from consideration who is on extended leave or temporarily assigned to other duties.

Engineer Maintenance

Set up engineer information with Engineer Maintenance (11.13.1), illustrated in Figure 17.3.

Note Before setting up engineer information, define the engineer as an employee in Employee Create (36.1.7.1).

Fig. 17.3
Engineer
Maintenance
(11.13.1)



Engineer Maintenance

Employee: 5710EM Engineer Code: 5710EN
 Name: 57 Business Relation 2
 Sort Name: 57BR2
 Address 1: 5700 Corporate Road
 Address 2:
 Address 3:
 City: Carpinteria State: Postal:
 Country: USA US
 Home Phone:
 Business Phone:

Engineer Data

Service Area: Pager:
 Group: Status: AVAIL
 Current Location: Site:
 Schedule: Location:
 Field Engineer: ☐ Calls per Day: 0
 Time Zone: PST/PDT

Employee Address Frame

To define an employee as an engineer, enter the employee code in the Employee field. The employee must have an active status. This code defaults into the Engineer Code field. You can choose to set up a separate engineer code referring to this employee.

Example Some companies prefer to separate employee codes from engineer codes. An engineer's employee code might be GLB, while the individual is referred to as Eng004 for service engineer functions.

The rest of the Employee Address frame shows employee information in a display-only mode.

Note When you set up engineer information, the system creates an address record for the engineer with an operational address list type of engineer. Address list types distinguish different kinds of addresses. The system retrieves the address when you specify the engineer as a drop-ship address in Material Order Maintenance.

Engineer Data

Define engineer attributes in the Engineer Data frame. Engineer scheduling uses some fields to recommend an engineer for a call. Engineer paging uses other fields. Other fields are for reference. Call Activity Recording and Material Order Maintenance use Engineer Site and Location.

Service Area. Enter a service area defined in Area Maintenance (11.15.1). Engineer scheduling awards points to engineers whose area matches the area of a call end user. Assign the service area for end users in the Service Office Detail frame of End User Data Maintenance (11.9.1). Define the number of points to assign in Engineer Schedule Control.

Group. Use this field to group engineers according to a method significant for your business practices. For example, you can group engineers by level of expertise or experience.

Note Set up generalized codes for field fsgroup.

Current Location. Reference-only. This location is not an inventory location. Use this field if you temporarily assign the engineer to a different service center, or if the engineer is working out of his home rather than his regular office. Define location codes in Generalized Codes Maintenance for the field eng_location. If the engineer has a long-term assignment to a particular call, you can specify the call ID for location even when generalized codes validation is in effect.

Schedule. Enter the engineer's normal work schedule, which defines the hours that the system can assign calls to the engineer. For example, you can set the schedule to assign calls only 8 AM to 5 PM, Monday through Friday. Define schedules in Engineer Master Schedule Maintenance (11.13.15.1) or tailor a schedule for a specific engineer with Engineer Detail Schedule Maintenance (11.13.15.4).

Field Engineer. Indicate where an engineer normally works.

No: The engineer primarily works in-house—for example, providing phone support or at a repair center.

Yes: The engineer usually provides service at an end user's location. Consider setting this field to Yes if you use Paging.

This field affects call scheduling when Multiple Time Zones is active as well as engineer paging as follows:

- When MTZ is active and Field Engineer is Yes, the system interprets schedule times relative to the end user's time zone. When No, the system interprets schedule times relative to the engineer's time zone.
- If Field Engineer is Yes and Dispatcher is Yes in Call Management Control, the Page field in Call Maintenance defaults to Yes when you create a new call. When Page is Yes, you can initiate paging to contact the engineer.

Note A Time Zone field displays when Multiple Time Zones is active. Each engineer must have an associated time zone.

Pager. If you are using the Engineer Paging function, enter the pager number for the engineer.

▶ See Chapter 4, "Multiple Time Zones," for details.

▶ See page 166 for details.

Status. Enter a status defined in Engineer Status Maintenance (11.13.4). Status is a critical field for engineer scheduling that determines whether the engineer is available or not. If Limit by Availability is Yes in Engineer Schedule Control, call scheduling considers only engineers with an available status.

♦ See “Setting Up Availability Status Codes” on page 663.

If you assign an engineer with an unavailable status to a call, a warning displays.

Site and Location. Enter the site and location where this engineer obtains repair parts. The system uses this site and location as a default in Call Activity Recording and material order functions to specify where to order and consume repair parts. Standard site/location logic applies to these fields.

♦ See “Engineer Site and Location” on page 661.

Set up the engineer’s location with an unavailable inventory status so that the system does not allocate items designated for the engineer’s use for other purposes such as sales orders.

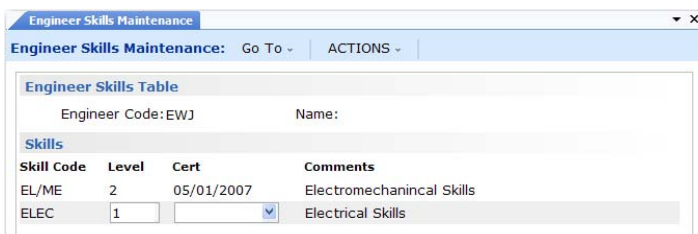
Calls per Day. Enter a number representing the average number of calls this engineer can complete in one day. The engineer scheduling function considers this number in calculating engineer availability if Display by Calls is Yes in Engineer Schedule Control.

Engineer Skills Maintenance

Assign skills to engineers in Engineer Skills Maintenance (11.13.5). To ensure that you use standard codes, define skill codes with Generalized Code Maintenance (36.2.13) for field fsskill.

Skill codes serve two purposes:

- They represent an engineer’s expertise.
- They represent the kinds of problems your end users report.



The screenshot shows the 'Engineer Skills Maintenance' window. At the top, there's a header bar with 'Engineer Skills Maintenance' and a search bar. Below the header, there's a section titled 'Engineer Skills Table'. It contains a table with columns: Skill Code, Level, Cert, and Comments. The table has two rows: one for 'EL/ME' with Level 2 and Cert 05/01/2007, and another for 'ELEC' with Level 1 and a dropdown arrow. The 'Comments' column for 'ELEC' says 'Electrical Skills'.

Skill Code	Level	Cert	Comments
EL/ME	2	05/01/2007	Electromechanical Skills
ELEC	1		Electrical Skills

Fig. 17.4
Engineer Skills
Maintenance
(11.13.5)

The system matches an engineer's skills to the call when it calculates engineer points. The Level and Certification Date field for the engineer's skill are for reference only. You can use them for internal certification of skills.

Assigning Engineers to End Users

You can associate a primary and secondary engineer with an end user in End User Data Maintenance (11.9.1). In Figure 17.5, the Engineer Code field defines the end user's primary engineer.

Fig. 17.5
Service Office
Detail Frame

Indicates primary engineer for this end user.

End User Data Maintenance

End User Data Maintenance: Go To ACTIONS

Customer Address

Customer: 10000 Business Relation: 10000-st92bmfg

Name: Quality Products Div 1000

Sort: Quality Products Div 1000

Address: Distribution Division

Address: One World Way

City: Morristown County: State: NJ

Country: X United States Post: 07960 Country Code: USA

Service Office Detail

Engineer Code: MEW Escalation Number:

Secondary Eng: MFS02 Travel Distance: 60 M

Engineer Group: Travel Time: 001:00

Service Area: AMERICAS

The primary engineer for an end user is given double points by the scheduling process when calls for this end user are created. Define how many points to assign in Engineer Schedule Control. The system gives the secondary engineer the points without doubling them.

When you associate a primary or secondary engineer with an end user, the system checks settings in Engineer Schedule Control. A warning displays if:

- Limit by Service Area is Yes and the engineer's service area does not match the end user's area.
- Limit by Time Zone is Yes and the engineer's time zone either does not match the end user's or is outside the range in Range of Hours to Consider.

See Chapter 4, "Multiple Time Zones," for details.

Note The system checks for time zones only if MTZ is active.

After you associate an engineer with an end user, you cannot delete the engineer in Engineer Maintenance. First change the end user's engineer, then delete the engineer.

Engineer Scheduling Setup

Setting up engineer scheduling involves a number of related tasks, illustrated in Figure 17.6.

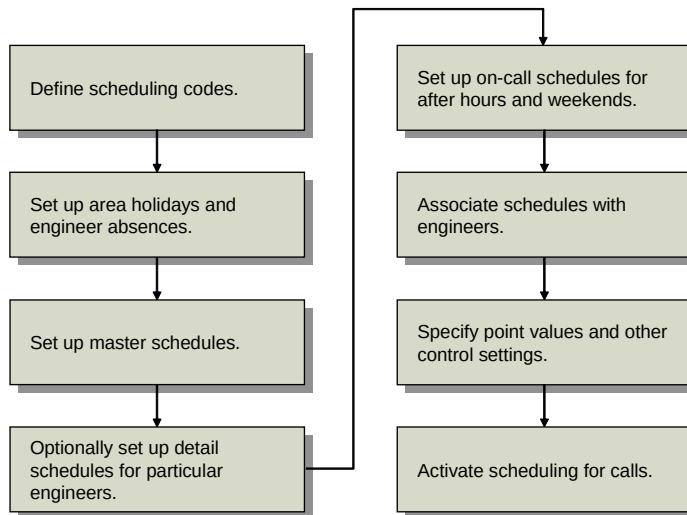


Fig. 17.6
Engineer
Scheduling
Work Flow

After you set up engineers and the codes associated with them, define area and engineer holidays if they are important to scheduling. Then define master schedules and use them as the basis for engineer detail schedules. Master schedules are also used as the basis for an on-call schedule, covering the hours outside normal work hours.

After schedules are defined, you can associate them with engineers. Then set up the control program to express the importance each scheduling factor has in your business environment. Finally, activate call scheduling in Call Management Control (11.1.24).

The system does not require all steps. Perform those you need for your business.

Defining Engineer Absences

Use two functions to define engineer holidays and absences:

See Chapter 18, “Area Maintenance,” on page 693.

- Set up holidays for a geographic region with Area Holiday Maintenance (11.15.9).
- Set up scheduled absences for a specific engineer in Engineer Absence Maintenance (11.13.15.17).

The system uses absences you define for the engineer first. If none exist, the system looks for holidays for the call’s service area.

Engineer Absence Maintenance (11.13.15.17) lets you schedule absences for a specific engineer. You can also schedule full-day absences or shorter absences from one hour’s duration, such as health appointments or half days. This flexible granularity lets you record personal appointments, any unusual working hours, or limited availability.

When identifying non-working time, you have the option to assign an exception or reason code to each entry.

The scheduling sequence in Call Maintenance (11.1.1.1) considers an engineer’s scheduled absences. If the day is a holiday or another type of planned absence for an engineer, the engineer displays with zero availability.

Fig. 17.7
Engineer Absence Maintenance
(11.13.15.17)

Engineer Absence Maintenance

Go To Actions Copy Print Preview

Engineer: EWJ
Start Date: 2/24/2007

Date	Start	End Time	Full	Hours	Reason Code	Description
1/8/2008	12:30	18:00	☐	5.5	doctor	health check
1/11/2008	00:00	24:00	☒	24.0	training	knowledge training
1/14/2008	00:00	24:00	☒	24.0	training	knowledge training

Date

Start

Full

End Time

Reason Code

Description

Address

1/2/2008

00:00

☐

24:00

Engineer. Enter the engineer code for the employee. The schedule applies to this engineer only.

Start Date. Enter the date for which to display absence records. The system will display a maximum of six records whose creation dates are nearest the start date entered.

Date. Enter the date for which you want to schedule an engineer absence. The default is the system date.

Start. Enter the time from which the engineer will be unavailable.

Full. Select this field if the engineer will be absent for the entire working day.

Days. Enter the number of days that the engineer will be absent. This field is only available if you select the Full (Days) field.

End Time. If the engineer will be absent for only a portion of the working day, for example, for a doctor's visit, enter the time at which he or she will return to work.

Reason Code. Specify a reason for the engineer's absence from a list of predefined values. This field is validated against values defined in Reason Code Maintenance (36.2.17).

Description. Enter a description of the reason code.

Address. Select the field if you want to associate an address with the engineer's absence. Use this field to identify the engineer's current location when available for work again.

If an engineer is out in the field and must stay the night in order to complete a call, you can define the absence and record the location of the hotel the engineer is staying at. When QAD Field Service Scheduler (FSS) schedules the next end user call the following day, it will know the starting point, or current location, of the engineer. When you select the Address field and click Next, the system displays the Absence Address frame.

See *User Guide: QAD Field Service Scheduler* for more information on FSS.

Fig. 17.8
Absence Address
Frame

Engineer Absence Maintenance

Go To Actions Copy Print Preview

Engineer: EWJ
Start Date: 2/24/2007

Address 1: Hotel Brampton
Address 2: 123 Albert Road
Address 3:
City: Dublin State: Zip:
Country:

Address. Enter up to three lines of address details (maximum 36 characters).

City. Enter the city (maximum 20 characters) for the address.

State. Select a valid state or province code for the address.

County. Select a valid county code that identifies the county for this address.

Zip. Enter the postal code or US zip code (maximum 10 characters) for the address.

Country. Specify the country of the address. This field is mandatory.

Defining a Master Schedule

Set up service schedules in Engineer Master Schedule Maintenance (11.13.15.1). You can define a schedule to use as a company-wide basic schedule. You can also use master schedules as the basis for engineer detail schedules and on-call schedules.

Day	Start	End Mid	Start Mid	End
Sunday ☐	00:00	00:00	00:00	00:00
Monday ☒	09:00	13:00	14:00	17:30
Tuesday ☒	09:00	13:00	14:00	17:30
Wednesday ☒	09:00	13:00	14:00	17:30
Thursday ☒	09:00	13:00	14:00	17:30
Friday ☒	09:00	13:00	14:00	17:30
Saturday ☐	00:00	00:00	00:00	00:00
Holidays ☐	00:00	00:00	00:00	00:00

Fig. 17.9
Engineer Master
Schedule
Maintenance
(11.13.15.1)

Schedule. Enter the eight-character code that identifies this schedule.

Start Effective and End Effective. When setting up service schedules, you can fill in a start and end effective date. When you specify a schedule, the system uses it only if the system date is within the effective period. If these fields are blank, the schedule is always effective. To set up a schedule for use in On-Call Maintenance, the effective dates must be blank.

Schedule Type. An optional field for grouping schedules. Define schedule type codes in Generalized Codes Maintenance for the field `esh_sched_type`.

Area. Enter the geographic region to which this schedule applies. Define areas in Area Maintenance. You also associate areas with end users and engineers. This field is for reference only.

Holidays. Indicate whether this schedule applies to holidays. The system uses this field with the Holidays field on the scheduled days and times to determine what hours, if any, an engineer works on a holiday.

- If this Holiday field is Yes, an engineer is available to work on a holiday. The system determines hours of availability by the day of the week on which the holiday falls. For example, if December 25 is a holiday and it falls on a Thursday, the engineer works the hours normally scheduled for Thursdays.

- If this field is No and the lower Holidays field is also No, engineers are not available to work on a holiday.
- If this field is No and the lower Holidays field is Yes, an engineer is available to work on a holiday. The hours of availability come from the hours you associate with the lower Holidays field, regardless of the day of the week of the holiday.
- If both fields are Yes, the first Holidays field takes precedence in determining the hours of availability.

Scheduling for holidays has an effect only if you set up holidays with Area Holiday Maintenance (11.15.9) or Engineer Absence Maintenance (11.13.15.17). If you define holidays for the engineer, the system uses them first, then holidays for the area.

Typically, you create on-call schedules to cover holidays, because most employees do not work during them.

On Call Schedule. This field is display only. When you assign engineers to a schedule using On-Call Maintenance (11.13.9), the system sets this field to Yes.

After you enter information in these fields, indicate the days the schedule covers and the work hours for engineers assigned to the schedule. You can also use the End Mid and Start Mid columns to define a single break in the engineer's hours for the day, such as for a lunch period. The time between the End Mid and Start Mid columns is considered as non-working time. If no time is entered for a break, the system checks the Lunch Duration field in Engineer Schedule Control (11.13.15.24). If the Lunch Duration field contains a value, the system deducts this value from the total daily time available for scheduling calls. If the Lunch Duration field is also blank, the engineer will be available for the entire working day.

◆ See “Engineer Maintenance” on page 664.

Assign a schedule to an engineer in Engineer Maintenance (11.13.1).

Engineer Detail Schedules

The engineer scheduling sequence in Call Maintenance uses more than master schedules when calculating engineer availability. It also considers the service coverage of the service type, on-call schedules, and the engineer's work schedule.

Create individual schedules for an engineer with Engineer Detail Schedule Maintenance (11.13.15.4), illustrated in Figure 17.10. These schedules are useful for contract or part-time personnel or engineers whose schedules do not follow the typical master schedule. Set up alternate schedules for specific periods of time by specifying a start and end effective date.

You can also use an engineer detail schedule to indicate that an engineer is unavailable for a period of time.

Day	Start	End Mid	Start Mid	End
Sunday: ☐	00:00	00:00	00:00	00:00
Monday: ☒	09:00	12:00	13:00	18:00
Tuesday: ☒	09:00	12:00	13:00	18:00
Wednesday: ☒	09:00	12:00	13:00	18:00
Thursday: ☒	09:00	12:00	13:00	18:00
Friday: ☒	09:00	12:00	13:00	18:00
Saturday: ☐	00:00	00:00	00:00	00:00
Holidays: ☐	13:00	00:00	00:00	15:00

Fig. 17.10
Engineer Detail
Schedule
Maintenance
(11.13.15.4)

This function is similar to setting up a master schedule.

Engineer. Enter the engineer code for the employee. The schedule applies to this engineer only.

Start Date/End Date. When setting up service schedules, you can fill in a start and end effective date. The system uses this schedule only if the system date is within the effective period. If these fields are blank, the schedule is always effective.

Normal Work Schedule. The schedule assigned to the engineer in Engineer Maintenance displays in this field. If you leave Basis for Schedule blank, the days and hours from the normal work schedule display as the starting point for creating the detail schedule.

Schedule Type. An optional field for grouping schedules. Define schedule type codes in Generalized Codes Maintenance for the field `egd_sched_type`.

Basis for Schedule. When you create the detail schedule, you can specify a schedule other than the normal work schedule as the starting point for creating the detail schedule. If you enter a schedule here, its days and hours display in the detail schedule fields.

Holidays. This field displays the value for the Holiday field of the schedule you are using as a basis for this detail schedule.

On-Call Scheduling

To provide service coverage for the periods that fall outside your normal schedule, follow these steps:

- 1 For the hours that your standard schedule does not cover, create schedules with Master Schedule Maintenance. If you have different engineers covering nights, weekends, or holidays, create more than one schedule. To use master schedules as on-call schedules, set them up without effective dates.
- 2 Use On-Call Maintenance to specify engineers available to take calls during these time periods. When you link an engineer to a schedule in On-Call Maintenance, the system sets On Call to Yes for the schedule.
- 3 When you create a call with a next status date and time outside your normal schedule, only engineers that you designated as on call receive availability points.

Figure 17.11 illustrates On-Call Maintenance (11.13.9).

Fig. 17.11
On-Call
Maintenance
(11.13.9)

The screenshot shows a software window titled "On-Call Maintenance". Below the title bar is a menu bar with "On-Call Maintenance:", "Go To", and "ACTIONS". The main area contains a form with two fields: "Area: AMERICAS" and "Description:". Below these is a table with the following data:

Eng Code	Start	Schedule	Name	End
MEW	05/01/2007	Holiday	Mary White	4/30/2008

Area and Description. The on-call schedule applies to a particular area, which you define in Area Maintenance. When you specify an area, its description displays beside it. When you take a call after normal business hours for an end user in this area, the system uses the on-call schedule for the area to determine who can respond to the call.

Eng Code and Name. Enter the code identifying an engineer. The employee name for the engineer displays in the Name field.

Start and End. If the engineer is on call only for a specific period of time, enter the beginning and end points defining this period. Leaving these fields blank puts an engineer on permanent on-call status.

Schedule. Enter the name of a schedule that specifies the on-call days and hours. Define these schedules in Engineer Master Schedule Maintenance without a start or end effective date. This prevents confusion in matching the engineer on-call periods with the on-call schedule.

On-Call Hours

Engineer scheduling determines when to schedule a call based on the call's next status date and time. It searches for a schedule that covers this date and time. If detailed, regular, and on-call schedules exist, all engineers with these schedules display in the Availability window.

To distinguish engineers available for on-call scheduling from others, the system displays two plus signs (++) rather than the number of hours or calls.

Defining Scheduling Rules

Engineer scheduling executes as part of Call Maintenance when you set up all required information. To use engineer scheduling in normal call processing, set Schedule New Calls to Yes in Call Management Control. This, in turn, sets the default in the Schedule field of Call Maintenance. Schedule must be Yes in Call Maintenance for scheduling to execute.

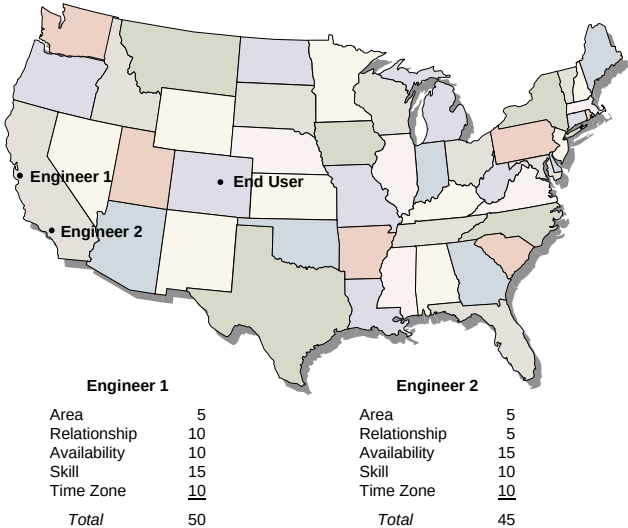
The system ranks engineers to assign to a call based on criteria that you design in a control program. You can accept the engineer with the highest rank, or choose another, according to your business practices.

Engineer scheduling considers the following factors:

- *Area.* Is the engineer located in the end user's area?
- *Primary or Secondary Engineer.* Does the engineer have a special relationship with this end user?
- *Availability.* Is the engineer available during the time the call should be scheduled and how many hours or calls does the engineer have available?
- *Skill.* Do the engineer's skills match those required for the reported problem?
- *Time Zone (if Multiple Time Zones is active).* Is the engineer located in the end user's time zone, or within a defined range of time zones?

You give these criteria weighted values. Using these values, the system calculates a point total for each engineer for the call. The system then prioritizes the engineers by total points for assignment to the call.

Fig. 17.12
Engineer
Scheduling



The system calculates engineer availability whenever it schedules calls. If you have many engineers or complex schedules, these calculations can impact performance. To increase the calculation's efficiency, specify in the control program which engineers to consider during scheduling.

You can limit engineers to consider for scheduling to:

- Those with available hours or calls on the call day.
- Those with a skill that matches the call problem.
- Those who reside in the same area as the call's end user.
- If Multiple Time Zones is active, you can also limit scheduling to engineers with the same time zone as the call's end user, or who have a time zone within a matching offset range.

♦ See Chapter 4, "Multiple Time Zones," for details regarding MTZ.

Consider how to use these options relative to your business requirements. If you have many engineers, reduce the number that the system considers at one time by applying control program limits. To occasionally alter the policy expressed in the control program, you can let users update the limiting rules in Call Maintenance before scheduling occurs.

Limiting scheduling by service area or time zone also affects End User Data Maintenance. The system checks these fields when it assigns an engineer to an end user as the primary or secondary engineer. If either field is Yes, a warning displays if the engineer's area or time zone area does not match the end user's.

Engineer Point Calculation

Engineer Schedule Control (11.13.15.24) contains settings that form the basis for rules-based scheduling, as well as determining other aspects of the scheduling process.

Lunch Duration: 01:00	Area Points: 20
Display by Calls: ☒	Available Points: 5
Next Engineer Number: 0	Primary Eng Points: 2
Limit by Availability: ☒	Problem Points: 10
Limit by Service Area: ☐	Time Zone Points: 0
Limit by Problem/Skill: ☐	Limit by Time Zone: ☐
	Range of Hours to Consider:
	Override Scheduling Options: ☒

Fig. 17.13
Engineer Schedule
Control
(11.13.15.24)

◆ See “Viewing Engineer Availability by Hour or Call” on page 681 for details.

The system subtracts the value you specify in Lunch Duration from the number of hours you scheduled the engineer to work. Display by Calls determines whether the system calculates availability in terms of hours or calls.

Engineer ranking depends on the priorities expressed by the values you define in the control program. Changing these values affects the engineer point calculation and results in different recommendations from the system.

Area Points. If the area you assign to the engineer with Engineer Maintenance (11.13.1) matches the call’s area, which defaults from the end user, the system adds these points to the calculation.

Available Points. The system determines engineer availability by the status you assign in Engineer Maintenance. If this status indicates availability, the system multiplies the availability point value by either the number of hours an engineer is available or the number of calls the engineer can take.

Primary Eng Points. If the engineer is the end user’s primary engineer, the system doubles these points and adds them to the calculation. The system gives the secondary engineer these points without doubling them.

Problem Points. If the code in the Prob/Skill field of Call Maintenance exists in the engineer’s skill table (set up with 11.13.5), the system adds these points to the calculation.

Time Zone Points. The system uses this field with Range of Hours to Consider. If the engineer’s time zone matches or is within the specified range relative to the end user’s time zone, the system adds these points to the calculation. You can update this field only when Multiple Time Zones is active.

The system uses the following formula to calculate points for an engineer:

$$\text{Area Points} + (\text{Available Points} * \text{available hours}) + \text{Available Points} + (\text{Y} * \text{Primary Eng Points}) + \text{Problem Points} + \text{Time Zone Points}$$

In the formula, Y is 2 for the end user’s primary engineer, 1 for the secondary engineer, and 0 for all other engineers.

The formula weights availability heavily. Also, the end user's primary engineer gets twice the points from the control program.

Note The maximum number of points the system displays for an engineer in Call Maintenance is 999. If the scheduling sequence determines a greater value, only 999 displays. Consider this limitation when you assign control program weighting values. If your engineers can take 100 calls a day and you give them 10 points for being available, an engineer without any assigned calls starts with 1010 available points, already beyond the maximum display value.

Viewing Engineer Availability by Hour or Call

You can view availability in two ways:

- Based on hours
- Based on call volume (calls per day)

Display by Calls in Engineer Schedule Control determines whether the system calculates availability by hours or by calls assigned per day. Depending on how you set up the control program, the scheduling pop-up window in Call Maintenance shows the number of calls the system can still assign an engineer or the number of hours available.

In both views, negative numbers are possible. If you assign an engineer more calls than you allow in the Calls per Day field or more hours than you allow on the assigned schedule, availability displays a negative number.

Note Use the Engineer Availability Inquiry (11.13.15.11) to review the same information that displays in Call Maintenance.

Calculating Availability by Calls

You can base availability on the number of calls that the system can still assign to an engineer during a day rather than the available hours that remain. Use this option when calls do not vary much in duration.

Note Use Display by Calls if most calls take the same amount of time to complete.

If you set Display by Calls to Yes, specify in Engineer Maintenance (11.13.1) the number of calls per day the system can assign an engineer. The system calculates availability by subtracting the number of calls already scheduled from the value of Calls per Day.

Table 17.1 shows how the system calculates points in engineer scheduling based on calls. The standard formula for calculating availability points applies, but calls are used instead of hours.

Table 17.1
Sample Point
Determination
Using Calls

Engineer Calls per Day	Calls Assigned	Available Today	Avail Points	Value Used in Calculation
10	0	10	10	$(10 * 10) + 10 = 110$
10	8	2	10	$(2 * 10) + 10 = 30$

In this example, the system can assign the first engineer 10 calls, although it currently has assigned none. The weighting value in the control program is 10, resulting in an availability of 110.

The second engineer also has a maximum 10 calls per day, but the system has currently assigned 8 calls. Engineer scheduling multiplies the 2 remaining calls by the value in the control program, to arrive at a point calculation of 30. If other factors are the same, the system recommends the first engineer over the second for the next call.

Calculating Availability by Hours

If Display by Calls is No, the system calculates engineer availability in hours. Call scheduling calculates an engineer’s work load by examining the estimated hours for calls already assigned to the engineer.

You can affect an engineer’s work load in hours in two ways:

▶ See “Availability
Frame” on
page 408.

- Record an estimated time for an engineer in the Call Engineer Schedule Maintenance pop-up that displays in Call Maintenance when you enable engineer scheduling. The estimated time defaults from the Travel and Estimated Time pop-up. These estimated times default either from Call Default Maintenance, if you have defined defaults, or Call Management Control for the work code.
- The engineer reviews the call and records an estimated time in Engineer Assignment Maintenance (11.13.15.8). This function is almost identical to the pop-up window in Call Maintenance.

Important Use Engineer Assignment Maintenance for scheduling, not as an engineer time-keeping device. While an engineer can record time spent on a call, this has no effect on call scheduling. Call scheduling considers only future dates and times.

Based on the number of hours the engineer is scheduled to work, the system determines how many hours remain to be scheduled.

Table 17.2 shows how the system calculates availability based on hours unconsumed. The first engineer has 8 available hours. The control program setting is 10 points for each available hour, so the resulting value is 90. The second engineer has 7 hours consumed with 1 remaining available hour. The resulting value for the second engineer is 20.

Engineer Hours per Day	Hours Used	Available Hours	Avail Points in Control Program	Value Used in Calculation
8	0	8	10	$(8 * 10) + 10 = 90$
8	7	1	10	$(1 * 10) + 10 = 20$

Table 17.2
Sample Point
Determination
(Hours)

Travel Time

Travel time is for reference only and does not affect the estimated hours available for an engineer. To consider travel time in engineer availability, include this time in the hours you estimate for the call.

You can specify typical travel time based on the end user. If you specify this value, it displays by default in the Travel Time field of the Travel and Estimated Time frame of Call Maintenance (11.1.1.1).

Use travel time as a reference for estimating the total time for a call. The total call time consists of travel time plus the time for solving the problem. To adjust for travel time, you need to override the default call duration since the system does not automatically add it to the duration. In many situations, the total time can vary—for example, depending on alternate routes to the end user’s site.

Calculating Availability for Holidays

The system considers holidays during engineer scheduling in Call Maintenance. As you create schedules in Engineer Master Schedule Maintenance, you can mark them as covering or not covering holidays. Or you can create on-call schedules with On-Call Maintenance instead of covering holidays on standard schedules. Normally, fewer engineers are available on a holiday.

During engineer scheduling, the system examines the call's next status date and time. Then it determines if this date is a holiday for the call's area, from the area associated with the end user. Then it searches for a schedule with Holiday set to Yes. First, it searches engineer detail schedules, then master schedules, and finally an on-call schedule that matches the call area.

The display in the engineer scheduling pop-up window in Call Maintenance is affected by which schedules exist.

- If a schedule covering the holiday is not found, engineers display without availability, indicated by an asterisk (*).
- If standard coverage exists, the engineers covering the holiday show hours or calls available.
- If an on-call schedule exists that covers holidays, engineers available on the holiday display with a ++.

The scheduling sequence also takes into account an engineer's personal holidays defined with Engineer Holiday Maintenance. If the day is a personal holiday, the engineer displays as unavailable.

Note When you assign an engineer to an on-call schedule, the system assumes that the engineer is available during the specified time period even if engineer or area holidays exist. A warning displays in On-Call Maintenance indicating that the on-call schedule overrides holidays.

Engineer Transactions

The system creates transactions to keep track of engineer scheduling information. It creates an engineer transaction record when an engineer is assigned to a call in Call Maintenance, regardless of whether or not you are using engineer scheduling. The main impact of these transactions is in calculating engineer availability when Display by Calls is No.

Engineer Assignment Maintenance

You can create and maintain engineer transactions in Call Maintenance when Schedule is Yes on the header. You can also edit them in Engineer Assignment Maintenance (11.13.15.8). In this program, engineers can access calls quickly and simply to update details for the call transaction.

You can close the call from this program when you finish work for the call if the call has only a single transaction. Close calls with multiple transactions in Call Activity Recording, Call Maintenance, or the Call Queue Manager. To close a call and all its lines, select the Close check box.

Important Engineer Assignment Maintenance is *not* for engineers to record time spent on a call. It is a planning function that helps engineer scheduling determine the best candidate for taking a call on a future day and time.

The screenshot shows the 'Engineer Assignment Maint' window. At the top, it displays 'Engineer Code: MEW' and 'Mary White'. Below this, it shows 'Time Zone: GMT-8' and 'Display TZ:End User'. A table lists transactions with columns: Tran Nbr, St Date, Start, Hours, Close, Call ID, and End User TZ. The first row shows Tran Nbr 3, St Date 05/22/2007, Start 13:59, Hours 0.0, Close checkbox, Call ID matca-2, and End User TZ.

Tran Nbr	St Date	Start	Hours	Close	Call ID	End User TZ
3	05/22/2007	13:59	0.0	☐	matca-2	

Fig. 17.14
Engineer
Assignment
Maintenance
(11.13.15.8)

Normally, you assign engineers to a call in Call Maintenance. However, modifications you make in Engineer Assignment Maintenance can also affect call assignment in the following ways:

- If no engineer is assigned to a call and a transaction is created, the system assigns the transaction's engineer to the call. A message displays indicating this change.
- If you delete all transactions for the engineer assigned to a call and no other engineers have transactions for the call, the system sets the Assigned field on the call to blank.
- If you delete all transactions for the engineer assigned to a call and another engineer has transactions for the call, the system assigns that engineer. A message displays indicating this change.

If only one transaction is associated with a call, the system reflects changes you make to the transaction in Engineer Assignment Maintenance in Call Maintenance. When saving the transaction, the system prompts you to allow the transaction's Start Date and Start Time to update the call's Next Status Date and Time. The transaction's hours update the call's Duration field. You can update the Travel Time field if required.

A call can have more than one transaction. This occurs when the call resolution involves more than one engineer or the same engineer makes several visits to a site. The system enters Start Date, Start Time, and Hours per transaction.

▶ See Chapter 4, "Multiple Time Zones," for details on MTZ.

Note If MTZ is active, select a display time zone before accessing call scheduling transactions. The system replaces the call area field with the end user's time zone.

Rebuild Engineer Schedules

Engineer schedules link calls, engineers, and end users. Occasionally, these records can become unsynchronized. Use Rebuild Engineer Schedules (11.25.6) to ensure that calls and schedules have valid values for various fields.

To execute the utility, specify a default status. The system uses this for engineer records with a blank or invalid status. You can also specify a default on-call schedule. The system assigns this schedule to on-call records that have blank master schedules.

The utility also performs the following actions:

- Resets On Call to No if a master schedule is marked as an on-call schedule but has no associated on-call engineers.
- Deletes detail schedules for engineers who no longer exist.
- Closes calls for end users who do not exist.
- Automatically creates a visit or scheduling transaction if the Auto Create Visit field is set to Yes on Engineer Schedule Control (11.13.15.24).
- Verifies that an engineer scheduling transaction record exists for the engineer assigned to a call.
- If a call has no assigned engineer but engineer transaction records exist, assigns the first engineer as the call engineer.
- Deletes engineer transactions that refer to nonexistent calls or engineers.

Note Most of these situations do not occur in normal usage of the system.

The utility generates a report documenting records it changed, added, or deleted.

Run Rebuild Engineer Schedules as part of general maintenance and when you upgrade to a new release.

Scheduling Example

The following example illustrates how engineer scheduling works. In this example, Multiple Time Zones is not active.

A company sets up the following values in Engineer Schedule Control:

Area Points	20
Available Points	2
Primary Eng Points	10
Problem Points	5

Two engineers exist in the western region: Bill Smith, who has electrical skills, and Sam Jones, whose skill is preventive maintenance.

Note An engineer can have multiple skills, but in this example each engineer has only one.

An end user in this region reports an electrical problem. The system uses the following formula to calculate points:

$$\text{Area} + [(\text{Availability} * \text{Hours}) + \text{Availability}] + (2 * \text{Primary}) + \text{Problem}$$

How does the system apply the formula to engineers Bill Smith and Sam Jones?

- Both engineers are in the end user's area, so they each receive 20 points.
- Each engineer receives two points for working that day. Bill Smith is available eight hours, while Sam Jones is available four. The system multiplies these hours by two and adds them to the total, giving Bill 16 more points and Sam 8.
- Sam Jones is the primary engineer for the end user, so he receives 10 points multiplied by two. Bill Smith receives none.
- Bill Smith's skills match the call's problem, so he receives five points. Sam receives no points because his skills do not match the problem.

The expanded formula looks like this for each engineer:

Bill Smith:

$$\text{Area} + [(\text{Avail} * \text{Hours}) + \text{Avail}] + (0 * \text{Primary}) + \text{Prob} \\ 20 + [(2 * 8) + 2] + (0 * 10) + 5 = 43$$

Sam Jones:

$$\text{Area} + [(\text{Avail} * \text{Hours}) + \text{Avail}] + (2 * \text{Primary}) + \text{Prob} \\ 20 + [(2 * 4) + 2] + (2 * 10) + 0 = 50$$

Sam Jones has top priority for this call because he has 50 total points to Bill Smith's 43.

Changing Weighting Values

The engineer point calculation depends on the priorities expressed by the weighting values you define to indicate your company's needs. Changing these values in the control program affects the engineer point calculation and results in different recommendations from the system.

Area Points	20
Available Points	7
Primary Eng Points	10
Problem Points	5

The change in this example places a higher priority on the engineer's availability and de-emphasizes the other criteria. Now the final point calculation looks like this:

Bill Smith:

$$\text{Area} + [(\text{Avail} * \text{Hours}) + \text{Avail}] + (0 * \text{Primary}) + \text{Prob}$$

$$20 + [(7 * 8) + 7] + (0 * 10) + 5 = 88$$

Sam Jones:

$$\text{Area} + [(\text{Avail} * \text{Hours}) + \text{Avail}] + (2 * \text{Primary}) + \text{Prob}$$

$$20 + [(7 * 4)] + 7 + (2 * 10) + 0 = 75$$

Using this set of weighting values, Bill Smith is the engineer to assign to the call.

Consider this formula carefully when establishing weighting values in Engineer Schedule Control. Pay particular attention to available hours and the primary engineer points as these become *multiples* of the weighted value in the engineer point calculation. Changes to them easily outweigh the impact of other criteria.

Scheduling Reports

Several reports give different views of scheduling information.

Engineer Diary

The Engineer Diary (11.13.15.9) displays the transactions created for engineers in Call Maintenance or in Engineer Assignment Maintenance. This report provides an engineer with an overview of the week's call assignments.

Fig. 17.15
Engineer Diary
(11.13.15.9)

Time	Sunday	Monday	Tuesday	Wed	Thursday	Friday	Saturday
16:00		- CA100003					

See “Time Zones and Service Contracts” on page 164 for details.

When Multiple Time Zones is active, you must select a time zone for display.

Engineer Calendar

Engineer Calendar (11.13.15.10) displays the hours an engineer is scheduled for work during a week regardless of call assignment. If you maintain multiple schedules, including engineers on call and those with custom schedules, use this report to view who is working when.

Fig. 17.16
Engineer Calendar
(11.13.15.10)

Eng Code	Field	Weekdate	Sun	Mon	Tue	Wed	Thu	Fri	Sat
MEW	Yes	06/24/07		09:00 18:00	09:00 18:00	09:00 18:00	09:00 18:00	09:00	

The pound sign (#) displays next to scheduled times that occur on holidays. If a day’s only schedule is an on-call schedule, a plus sign (+) follows the scheduled times.

When Multiple Time Zones is active, the system interprets scheduled times as relative to the engineer or a call’s end user, depending on the setting of Field Engineer for the engineer. This setting displays in the column labeled Field.

Note Because on-call schedules are set up by area, only on-call schedules that match the area report criteria display. If Service Area is blank, the system uses the engineer's area to find an applicable on-call schedule. If an engineer is on call for more than one area, the other schedule information does not appear on this report.

Engineer Availability Inquiry

Use Engineer Availability Inquiry (11.13.15.11) to view information similar to that in the Engineer Availability pop-up in Call Maintenance. In Call Maintenance, the system considers five factors to evaluate availability:

- Engineer skill matching the call problem
- Availability on the call's next event date and time
- Engineer area matching the call area
- Engineer being the primary or secondary engineer assigned to the call's end user
- Engineer time zone matching the defined range around the end user time zone, when MTZ is active

You must supply the same call information the system uses to calculate availability: area, date and time, problem, and time zone. The only factor the system does not consider in the simulation is the points awarded for the primary or secondary engineer, since this information is specific to an end user.

Like Call Maintenance, this inquiry considers the scheduling limits you define in Engineer Schedule Control. If Override Scheduling Options is Yes in the control program, the same pop-up displays as in Call Maintenance. Here you can limit the set of engineers to consider. Otherwise, the system applies limiting factors that you defined in Engineer Schedule Control.

Note When MTZ is active, additional scheduling options display.

Fig. 17.17
Engineer
Availability Inquiry
(11.13.15.11)

Engineer Availability Inquiry

Engineer Availability Inquiry: Go To ACTIONS

Display Availability For: 05/22/2007 Time: 14:20

Service Area: AMERICAS Display By Hours: ☐

Prob/Skill: ELEC Display TZ: GMT-8 Output: ☐

Override Scheduling Options

Limit by Availability: ☐

Limit by Service Area: ☐

Limit by Problem/Skill: ☐

Limit by Time Zone: ☐

Range of Hours to Consider:

Important If Limit by Service Area is Yes and you do not specify an area, the system considers only engineers without a defined area. If Limit by Problem/Skill is Yes and you do not specify a problem or skill code, no engineers display.

The report output is identical to the output in the Engineer Availability scrolling window in Call Maintenance, except that the report does not show point totals.

Fig. 17.18
Engineer
Availability Inquiry
(11.13.15.11)

Engineer Availability Inquiry 05/22/07

QAD

Display Availability For: 05/22/07 Time: 14:20

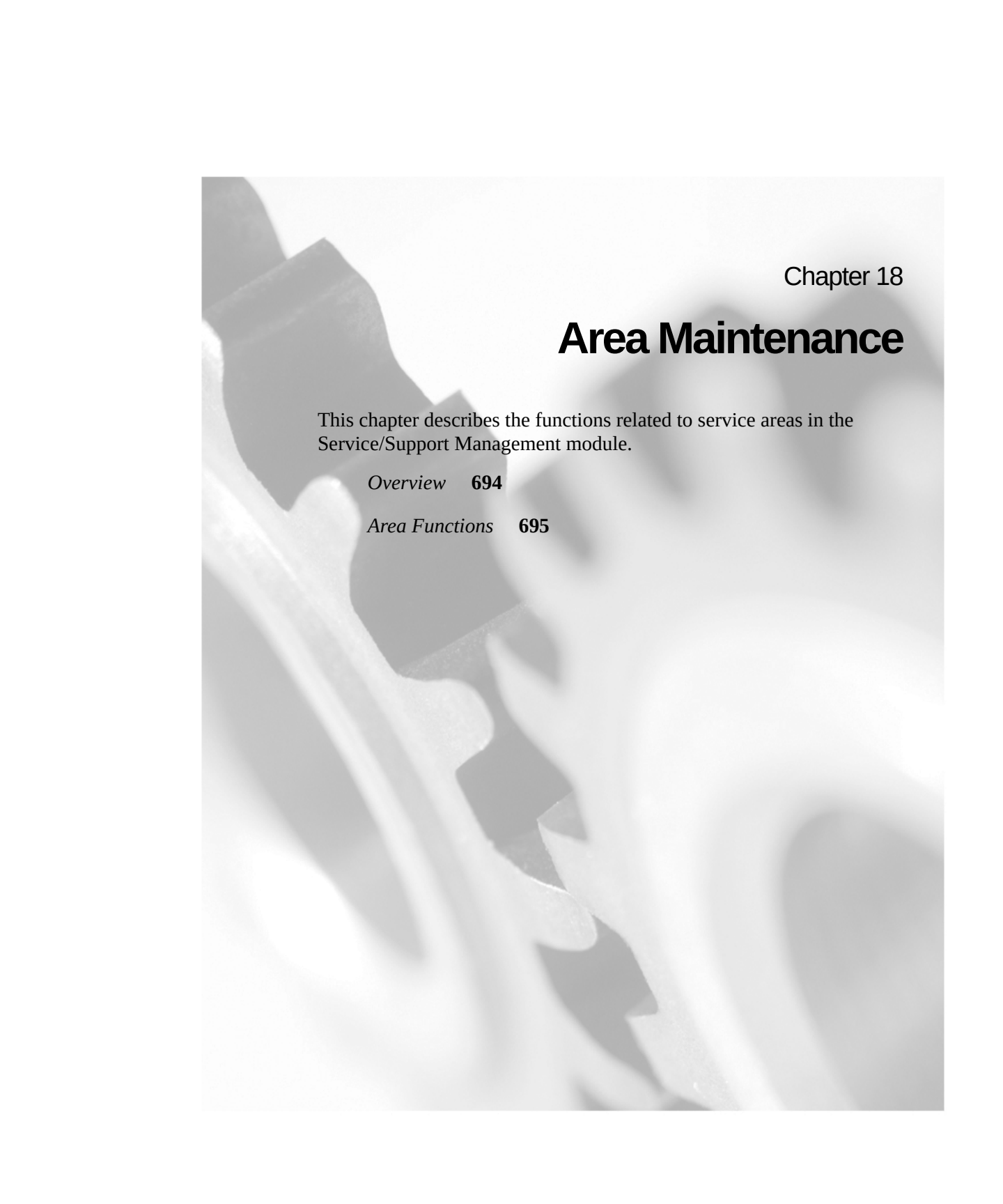
Service Area: AMERICAS Display By Hours: No

Prob/Skill: ELEC Display TZ: GMT-8 Output: PAGE

Availability (Calls) The Week Of: 05/20/07 Call Day: Tue

Eng Code	Prb Area	Time Zone	Start	End	Mon	Tue	Wed	Thu	Fri	Sat	Sun
EWJ	Yes Westcst	GMT-8	09:00	18:00	4	4	4	4	4	*	*
KES	Yes Eastcst	GMT-8	09:00	18:00	4	4	4	4	4	*	*
JNC	Yes North	GMT-8	09:00	18:00	3	3	3	3	3	*	*
JSH	Yes South	GMT-8	09:00	18:00	3	3	3	3	3	*	*
EWL	No Westcst	GMT-8	09:00	18:00	4	5	5	5	5	*	*
RWR	No Westcst	GMT-8	09:00	18:00	5	5	5	5	5	*	*
MEW	No Eastcst	GMT-8	09:00	18:00	4	4	4	4	4	*	*
MWE	No Westcst	GMT-8	09:00	18:00	3	3	3	3	3	*	*
PCB	No Canada	GMT-8	09:00	18:00	3	3	3	3	3	*	*
PWJ	Yes Westcst	GMT-8			*	*	*	*	*	*	*
SWW	Yes Westcst	GMT-8			*	*	*	*	*	6	6
FSE	No AMERICAS	GMT-8			*	*	*	*	*	*	*
MFS01	No AMERICAS	GMT-8			*	*	*	*	*	*	*
MFS02	No AMERICAS	GMT-8			*	*	*	*	*	*	*
PAO-eng	No	GMT-8	09:00	18:00	0	0	0	0	0	*	*

11.13.15.11 Engineer Availability Inquiry fsegwiq.p

The background of the page is a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that they appear to be meshing together. The lighting creates highlights and shadows on the teeth of the gears, giving them a three-dimensional appearance. The overall tone is technical and industrial.

Chapter 18

Area Maintenance

This chapter describes the functions related to service areas in the Service/Support Management module.

Overview **694**

Area Functions **695**

Overview

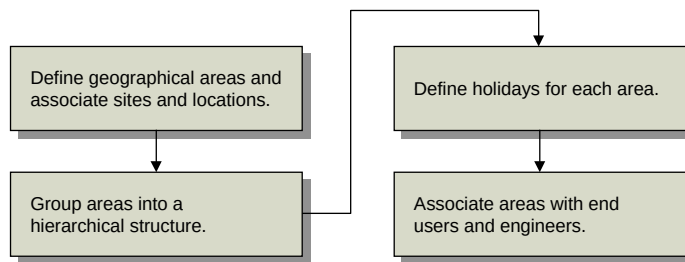
The activity of service organizations can be divided in a number of different ways:

- Geographically by physical location
- By product line or item group
- By type of service, such as telephone or on-site

When geographical regions are important, one or more service facilities may provide inventory to engineers. Use Area Maintenance and Area Structure Maintenance to record these relationships.

Figure 18.1 illustrates a typical workflow for setting up and using areas.

Fig. 18.1
Area Work Flow



You can set up each facility and area office with a code in Area Maintenance (11.15.1). Use Area Structure Maintenance (11.15.5) to group and organize these facilities and offices. For example, group Los Angeles, San Francisco, and Seattle service facilities under the Western Region, which you in turn group under the U.S. region. This grouping has no effect in service processing; it is for reference only.

If you are using engineer scheduling, define holidays for areas so that engineers are not scheduled on nonwork days in Area Holiday Maintenance (11.15.9).

Once you define areas, associate them with service engineers and end users. Engineer scheduling uses these relationships to assign engineers in the appropriate area to calls. To facilitate dispatching the appropriate engineer, you can sort calls by area in the Call Queue Manager.

Area Site/Location

The area site and location represent the source of repair parts for calls serviced in the area. This site can be the repair center, or the place where that area's service organization normally gets its inventory. You can then use three or four areas relating to a particular site for controlling remote inventory.

Area site functionality lets you manage a variety of business scenarios related to site, location, work center, area, engineer scheduling and supply, and inventory control for remote locations.

The site and location for an area provide inventory issue defaults in Call Activity Recording and Material Order Maintenance if you do not define a site and location for an engineer.

You can use engineer and area sites and locations in combinations. For example, you can associate a different location with each engineer and leave the engineer Site field blank. When the engineer records activity for a call, the site for inventory issues defaults from the area but the location defaults from the one defined in Engineer Maintenance. Use this setup to track inventory issues to individual engineers.

In Default Site Maintenance, you can set up return sites based on area to manage defective or worn material returned as part of call processing. This setup is especially useful when you return items to a different site or location than you issue them from.

♦ See "Default Sites and Locations" on page 106 for details.

Area Holidays

Since areas often represent geographic regions and holidays vary from region to region, you can specify holidays for each area. You can also associate on-call schedules with areas. Define holidays for each area so the scheduling function does not schedule engineers for those days, unless the schedule covers holidays.

♦ See Chapter 17, "Engineers and Scheduling," on page 659.

Area Functions

The three main area functions, in addition to reports and inquiries, are:

- Area Maintenance
- Area Structure Maintenance

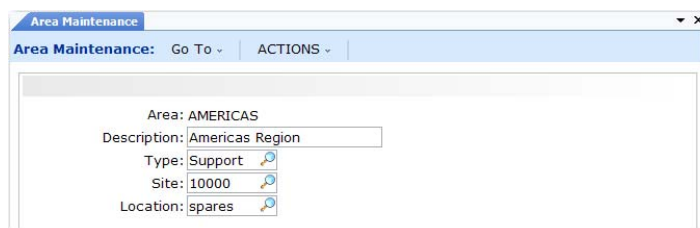
- Area Holiday Maintenance

The following sections describe these functions.

Area Maintenance

Use Area Maintenance (11.15.1), illustrated in Figure 18.2, to create, maintain, and delete areas. Before deleting an area, the system verifies that the area is not referenced by an area structure, engineer, on-call schedule, holiday, call, default site, call quote, or end user.

Fig. 18.2
Area Maintenance
(11.15.1)



The screenshot shows a software window titled "Area Maintenance". Inside the window, there is a form with the following fields and values:

- Area: AMERICAS
- Description: Americas Region
- Type: Support
- Site: 10000
- Location: spares

Each field has a small magnifying glass icon to its right, indicating a search or lookup function. The window also has a "Go To" dropdown and an "ACTIONS" dropdown in the top right corner.

Area. Enter an eight-character code to identify the area. You can use any format.

Description. Enter a brief description (maximum 24 characters) of the area. This description appears in the Areas lookup to help identify the area.

Type. Use this field to classify areas into types. You can use one type of area to designate work centers—for example, CENTER—and another to designate areas for assigning engineers—ENG—if these do not coincide. For example, a work center can handle repairs and returns for Western Canada, while you can assign engineers to a single city or district.

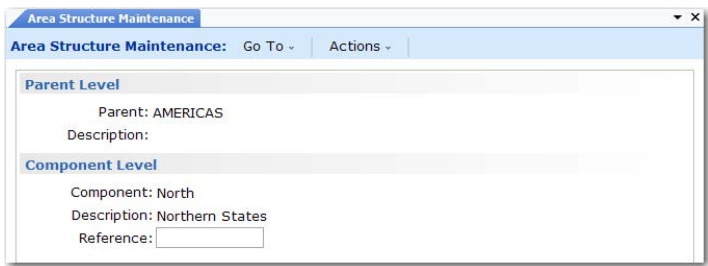
Note Set up area types with Generalized Codes Maintenance for the field reg_type.

Site. Enter the site representing the place where you obtain repair parts for this area. If the engineer does not have a site and location defined, this site provides inventory issue defaults in Call Activity Recording and Material Order Maintenance.

Location. Beneath the site is location. Using standard location logic, you can maintain specific inventory locations for an area. If the engineer does not have a site and location defined, this location provides inventory issue defaults in Call Activity Recording and Material Order Maintenance.

Area Structure Maintenance

Define relationships between areas using Area Structure Maintenance (11.15.5), illustrated in Figure 18.3. In Area Structure Maintenance, you group subregions under a parent. This function is for reference only.



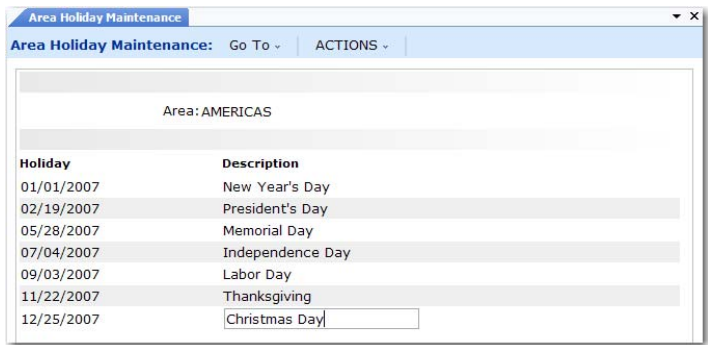
The screenshot shows a software window titled "Area Structure Maintenance". It has a menu bar with "Go To" and "Actions". The main content area is divided into two sections: "Parent Level" and "Component Level". Under "Parent Level", it shows "Parent: AMERICAS" and "Description:". Under "Component Level", it shows "Component: North", "Description: Northern States", and a "Reference:" field with an empty input box.

Fig. 18.3
Area Structure
Maintenance
(11.15.5)

To use this function, first define areas in Area Maintenance.

Area Holiday Maintenance

Define holidays for an area using Area Holiday Maintenance (11.15.9), illustrated in Figure 18.4.



The screenshot shows a software window titled "Area Holiday Maintenance". It has a menu bar with "Go To" and "ACTIONS". The main content area shows "Area: AMERICAS" at the top. Below it is a table with two columns: "Holiday" and "Description". The table lists several holidays with their dates and descriptions. The last row, "12/25/2007", has "Christmas Day" in the description field, which is currently empty.

Holiday	Description
01/01/2007	New Year's Day
02/19/2007	President's Day
05/28/2007	Memorial Day
07/04/2007	Independence Day
09/03/2007	Labor Day
11/22/2007	Thanksgiving
12/25/2007	Christmas Day

Fig. 18.4
Area Holiday
Maintenance
(11.15.9)

After you set up holidays, you can use the Holiday settings in Engineer Master Schedule Maintenance (11.13.15.1) to indicate whether or not the schedule covers them.

Service Requests

This chapter describes Service Requests (SRs). Service Requests provide a mechanism for the service organization, customers, and field personnel to get product information back to the rest of the company and track user requests throughout the enterprise.

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Service Request Setup **702**

Service Request Maintenance **704**

Service Request Queue Manager **707**

Service Request Delete/Archive **708**

Business Considerations

In day-to-day business operations, calls come in on topics ranging from requests for marketing or sales material to questions regarding how your equipment works to complaints about equipment breakdown and failure. Service requests let you manage internal responses to problems relayed from field activities or calls.

Managing service requests can help you detect the causes of problems and prevent future support costs. You can consolidate several calls reporting the same failure into one service request. If a design or engineering change is necessary, you can create an Engineering Change Notice (ECN) to address the required changes.

Example A copier company runs an aggressive service organization that performs repairs and preventive maintenance for its own products and for competitors' products. After all, those who maintain a product often learn more about it than those who create it. In an industry that is driven by technological innovation, technology transfer can be a strategic ingredient.

The service engineers gain insight into the design, use, and maintainability of the leading copiers. The company wants to leverage the experience and insights of the service engineers into improvements in their copier line. To accomplish this goal, the company implements a service request system where service engineers can feed suggestions back to manufacturing.

Linking Service Requests to Calls

The service request links call activity to your internal response for engineering problems: a service request is a response to a call. In this sense, only *one* call generates the SR. Each service request references only one call. Many calls can reference the same service request.

Example Call number CA198 details a pump failure. The problems recorded for the pump are significant enough to request a change in design and notify the engineering department that these failures are occurring. A service request is created that references CA198.

Specify the call ID here.

Service Request Maintenance: Go To Actions

SR: SR200002 Call: CA100009 Copy Call Comments: ☐

Date Entered: 06/11/2007
 Type: 1000
 Problem: 6000
 End User: 10000A Quality Products Div 1000
 Item Number: 57-0001 Cooling core
 Severity: A
 Assigned:
 Status: received
 Queue: WORK
 Priority: 10
 Started In: Rev. AB
 Target Version Fix: Rev. AC
 Target Fix Date: 6/29/2007
 Estimated Hours: 7.5
 Description: Unspecified system breakdown

Fixed In:
 ECO:
 Close Date:
 Actual Hours: 0.00
 Note#:

Fig. 19.1
Service Request
Maintenance
(11.1.15.1)

The system updates the Service Request field in the Call Update frame to reflect the SR created for this call. You can view this update in Call Maintenance.

Call Maintenance: Go To Actions

Call ID: CA100009

User Selection

Call ID: CA100009 Call Date: 06/11/2007 Time: 14:21
 Serial:
 End User: 10000A Time Zone: Quality Products Div
 Item Number: 57-0001 Ref: 4 Cooling core
 Contract: Service Type: STANDARD Area:
 Start Date: Install Date: Carpinteria CA 93013
 End Date: Warranty End: Response: 4 Hours
 PO Number: Comments: ☐

Call Update

Page Engineer: ☐
 Multi Items: ☐
 Fault Codes: ☐
 Resolution:
 Service Request: SR200002
 Time Spent: 0.00

Service Type: STANDARD
 Entered By: mfg
 Print Call: ☐
 Call Printed: ☐

Fig. 19.2
SR Displays in Call
Maintenance

The system updates the call record.

Later, you receive more calls concerning this same problem. You can select the appropriate SR number for the new calls as you receive them. In this way, you do not have to keep issuing new service requests for the same problem and can be sure engineering is already looking at the problem.

As a result, you assign only one call to a service request, but a service request can be assigned to many calls.

This process works best when there is a one-to-one correspondence between service requests and problems. Many calls with the *same problem* reference the service request addressing this problem. However, each problem requiring engineering changes should have its own service request.

Service Request Setup

Before using the SR functions, follow these steps:

- 1 Define SR Status Codes and specify open and close statuses in the control program.
- 2 Define SR queues.
- 3 Optionally define generalized codes.

SR Status Codes

Each service request has a status. These status codes are defined in SR Status Code Maintenance (11.1.15.7). The SR status is similar to the call status code, but must be managed manually.

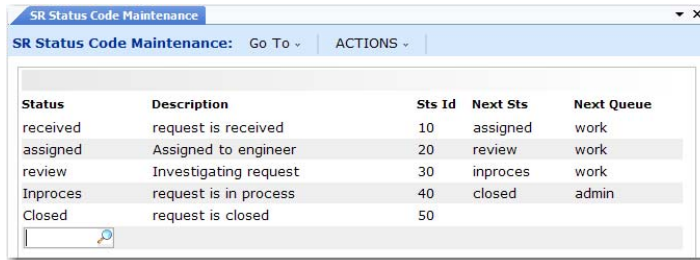
You can define two statuses in SR Control (11.1.15.24).

SR Open Status. This is the general status for an open SR and the initial status for any new SR.

SR Close Status. The closed status is the final status of an SR and indicates all service activity for it is finished. You can delete and archive closed SRs.

SR Status Code Maintenance

Figure 19.3 illustrates SR Status Code Maintenance, which is similar to Call Status Code Maintenance.



The screenshot shows a window titled "SR Status Code Maintenance" with a search bar and an "ACTIONS" dropdown. Below is a table with the following data:

Status	Description	Sts Id	Next Sts	Next Queue
received	request is received	10	assigned	work
assigned	Assigned to engineer	20	review	work
review	Investigating request	30	inproces	work
Inproces	request is in process	40	closed	admin
Closed	request is closed	50		

Fig. 19.3
SR Status Code
Maintenance
(11.1.15.7)

Status. Enter a unique name or code for this SR status. Making the name recognizable can help users identify its purpose more easily.

Description. Enter a brief description (maximum 24 characters) of this status. This description appears on the lookup you use to select statuses.

Sts ID. Use this field to indicate the order in which statuses occur in the life cycle of an SR. The lookup that displays SR statuses displays them in numeric order by the status ID, rather than alphabetically.

Next Status. Specify the status that normally follows this status in the SR life cycle. This field is for reference only.

Next Queue. Specify the queue to which SRs with the next status should be routed. This field is for reference only.

SR Queues

You can place each service request in a queue when you create it. The queue is a user-defined holding area for managing and directing SRs.

Define SR queues in SR Queue Maintenance (11.1.15.10).

Fig. 19.4
SR Queue
Maintenance
(11.1.15.10)

When you define a queue, you specify a queue name and a description.

Queue. Enter an 8-character code identifying this queue.

Description. Enter a brief description (maximum 24 characters) of the queue to help users in understanding its purpose.

Service Request Maintenance

Create service requests with Service Request Maintenance (11.1.15.1), illustrated in Figure 19.5.

Fig. 19.5
Service Request
Maintenance
(11.1.15.1)

SR. When you create a new SR, you can leave this field blank to have the system supply a number based on Service Request Prefix and SR Number in Service Request Control.

Call. If a call initiates the creation of this service request, enter the call ID in this field. When you enter a call, a number of fields default from it, including End User, Item Number, and Description.

Copy Call Comments. When you specify a call, you can copy the call's comments into the SR as the submitter comments. These comments can provide a description of the problem the SR addresses.

Date Entered. The default is the system date. This field is for reference only and appears on some reports and inquiries. You can also use it to prioritize work.

Type. Specify a user-defined code that can group service requests by type. For example, you can use SR type to assign the SR to the appropriate engineer. Update this field here or from the Service Request Queue Manager. Set up values with Generalized Codes Maintenance for the field `srr_type`.

Problem. Specify a user-defined code describing the type of problem addressed by this SR. If you set up SR problem codes to match the engineer skills, you can easily assign appropriate engineers. Update this field here or from the Service Request Queue Manager. Set up values with Generalized Codes Maintenance for the field `srr_problem`.

End User. You must first define end users in End User Create and End User Data Maintenance. Enter the user reporting the problem addressed by this SR. End User defaults from the call if you specify one.

Item Number. Specify the product with a problem addressed by this SR. Validation depends on the setting of Items Must Exist in Service Management Control. If Yes, you must have defined the item with Item Master Maintenance. If No, you can enter any item number. Item defaults from the call if you specify one.

Severity. Specify a code indicating the user's perception of the severity of the problem reported on this service request. This field is for reference only and appears on selected reports and inquiries. Set up values with Generalized Codes Maintenance for the field `srr_severity`.

Assigned. Specify the individual assigned to address the problem reported on this SR. Define engineers first in Engineer Maintenance. You can view service requests by assigned engineer in the Service Request Queue Manager.

Status. Specify the position of this service request relative to the SR life cycle. Define status codes first with SR Status Code Maintenance. For a new SR, status defaults from the SR Open Status in Service Request Control. Update this field here or from the Service Request Queue Manager.

Queue. Specify the queue to which to assign the service request. Set up SR queues with SR Queue Maintenance.

Priority. Indicate how important this service request is. Lower numbers indicate higher priority. Update this field here or from the Service Request Queue Manager.

Started In. Enter an optional code that identifies the version of the product that this problem started in. This field is for reference only and appears on selected reports and inquiries. When servicing software, this code can identify the program revision or software release number that the problem was found in. In other industries, this code identifies the product version or drawing that has the problem.

Target Version Fix. Enter an optional code that identifies when or how the correction is to be issued. This field is for reference only and appears on selected reports and inquiries. For software corrections, this code can identify the patch number or software release number expected to include the fix for this problem. In other situations, this code identifies the engineering drawing or revision that includes the correction.

Target Fix Date. Enter the date when this service request is to be completed. This field is for reference only and appears on selected reports and inquiries. Usually, you estimate the number of hours the service request will take and then use this to arrive at a target fix date. This is the date that you promise the customer.

Note Compare target date and estimated hours with the close date and hours entered on the service request when evaluating service performance.

Estimated Hours. Enter the estimated number of hours it will take to complete this service request. This field is for reference only and appears on selected reports and inquiries.

Fixed In. Enter an optional code identifying when or how you issued the correction. This field is for reference only and appears on selected reports and inquiries. For software corrections, this code identifies the patch number or software release number that included the fix for this problem. In other situations, this code identifies the engineering drawing or revision that includes the correction.

ECO. Enter an optional code identifying the Engineer Change Order (ECO) or Engineer Change Notice (ECN) number associated with the correction for this service request. This field is for reference only and appears on selected reports and inquiries. Many organizations have a numbering schema for keeping track of changes such as ECO or ECN systems. You can use this field for tracking any other numbered document that is associated with the changes made to correct the problems reported on this service request.

Close Date. Enter the date this service request was closed by setting the status to the SR Close Status in Service Request Control. You can delete or archive closed service requests with Service Request Delete/Archive.

Actual Hours. Specify the number of hours it took to complete this service request. This field is for reference only and appears on selected reports and inquiries. You can compare this number to the estimated hours when evaluating service performance.

Note #. Enter an optional code or number referencing engineer notes pertinent to this service request.

Description. Enter a brief description of this service request. Defaults from the call if you specified one. You can include longer descriptions in the submitter comments.

Service Request Queue Manager

Use the Service Request Queue Manager (11.1.15.13) to view and manipulate service requests. You can sort SRs by the service engineer assigned to them or by priority.

Fig. 19.6
Service Request
Queue Manager
(11.1.15.13)

Service Request Queue Manager: Go To - ACTIONS -

Search For

Assigned: Priority: 999

Service Requests

SR	Priority	Status	Assigned	End User	Problem
SR200001	10	received		4001	3000

You can edit service requests from the queue manager. Select the line you want to edit and the Update SR frame, similar to the one in Figure 19.7, displays.

Fig. 19.7
Updating SRs in
the Queue Manager

Service Request Queue Manager: Go To - ACTIONS -

Search For

Assigned: Priority: 999

Update SR

SR	Priority	Status	Assigned	Problem	Type
SR200001	10	received		3000	1000

From this frame, you can change the SR priority, status, assigned engineer, problem code, and type. Managers can use this to re-prioritize SRs and assign them to appropriate engineers.

Service Request Delete/Archive

Use Service Request Delete/Archive (11.1.15.23) to delete and archive closed service requests from the system when you no longer need them.

Fig. 19.8
Service Request
Delete/Archive
(11.1.15.23)

Service Request Delete/Archive: Go To - ACTIONS -

SR: To:

End User: To:

Close Date: To: 12/31/2006

Delete: ☐

Archive: ☒

Archive File: sr070522.hst

Output: PAGE

Material Orders

Use material orders (MOs) to manage inventory in a service environment. This chapter defines the types of MOs and their basic maintenance. Following this is a discussion of how MOs are shipped and the other functions you use in conjunction with shipping. Finally, this chapter describes the consumption of MOs in Call Activity Recording and returning items ordered on MOs.

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Business Considerations

MOs provide a flexible mechanism for managing inventories in the service environment. With MOs, service personnel, whether in the field or repair center, can order repair parts for specific calls or to replenish their inventory. The MO can interact with call tracking, enabling you to track back orders and manage the relationship between service inventory and call closure.

Use MOs to:

- Issue items that you do not track individually, similar to manufacturing floor stock. These are items that you typically issue in bulk, such as screws or washers, without any detailed usage tracking. This type of MO is an *expensed* MO.
- Manage inventory moving between a supply center and service locations. The supply center can be a central supply center or one dedicated to service activity. Locations are typically remote locations such as engineers in the field carrying truck stock, or a remote service center. You can also issue the items to a service location within a manufacturing site.

The MO process is not limited by geography. MOs can manage inventory moving between any kind of service entity, mobile or stationary, large or small. The following list indicates three scenarios managed with MOs:

- 1 Inventory moving between a warehouse and a service department located at the same site or to a service desk in the same building
- 2 Inventory moving between a home supply depot and a fleet of service trucks
- 3 Inventory moving between a central warehouse and a repair center or refurbishment shop

These scenarios are illustrated in Figure 20.1.

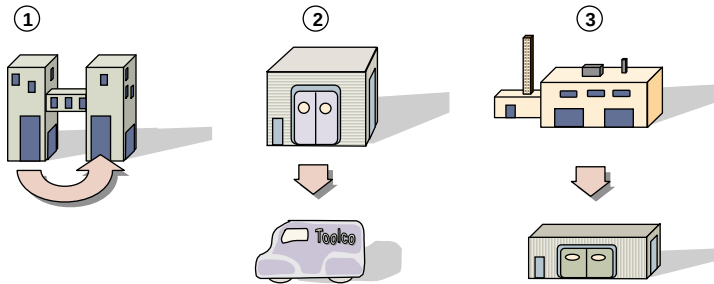


Fig. 20.1
MO Inventory
Management

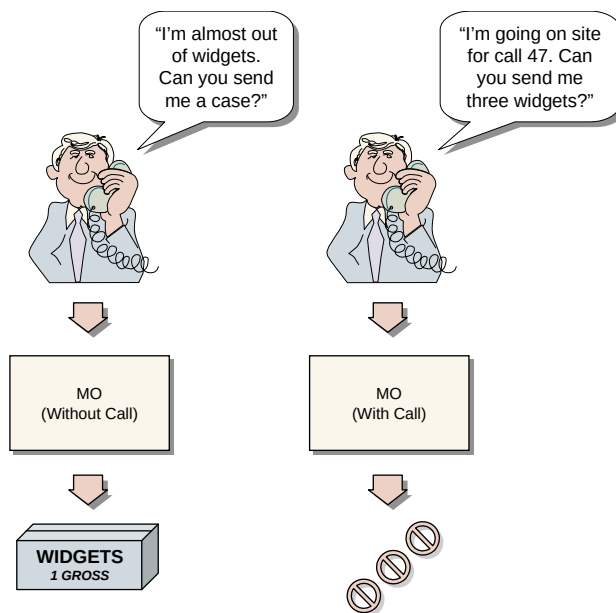
If the engineer works at a repair center and you issue items to the call directly from the repair center site, you may not need to use MOs.

MOs are most useful when the engineer works remotely, such as out of a repair truck or van. In this case, you need an additional inventory transaction to move inventory from the site or location where repair parts are stocked to the engineer's site or location where you can issue and consume the inventory on the call.

MOs that transfer inventory are divided into two types:

- Items you order to replenish general service stock
- Items you order to meet the requirements of a particular call

Fig. 20.2
MO Tracks
Inventory for a Call



See *User Guide: QAD Sales* for details on EMT.

Based on the structure of your supply chain and your supplier relationships, you might consider using Enterprise Material Transfer (EMT) for some MO items. EMT lets you automatically generate a purchase order from an MO.

Material Order Life Cycle

MOs have a life cycle similar to a standard sales order, except that no billing occurs. The internal movement of goods in MOs mirrors the standard shipping and distribution process. Whenever possible, standard programs are used. This facilitates learning MO functions for the experienced user, since they are based on familiar processes.

MOs transfer inventory from one site and location to another. They do not support the invoicing features of sales orders. Even though you can drop ship MO items to a customer location, invoicing and taxing only occur as part of the MO consumption in Call Activity Recording.

See the Shipping chapter in *User Guide: QAD Sales* for details.

If you are using advanced shipping features including inventory movement codes and shipping groups, you can generate shipping documents for material orders when the addresses associated with the

transfer-from and transfer-to sites or locations belong to a valid shipping group and the inventory movement codes associated with applicable shipping group allow transaction type ISS-TR.

If you are ordering EMT items on MOs, your supplier provides you with the items at the end of the EMT cycle. You then transfer them to the engineer's location using Material Order Shipments (11.11.6) just as you would with any other item.

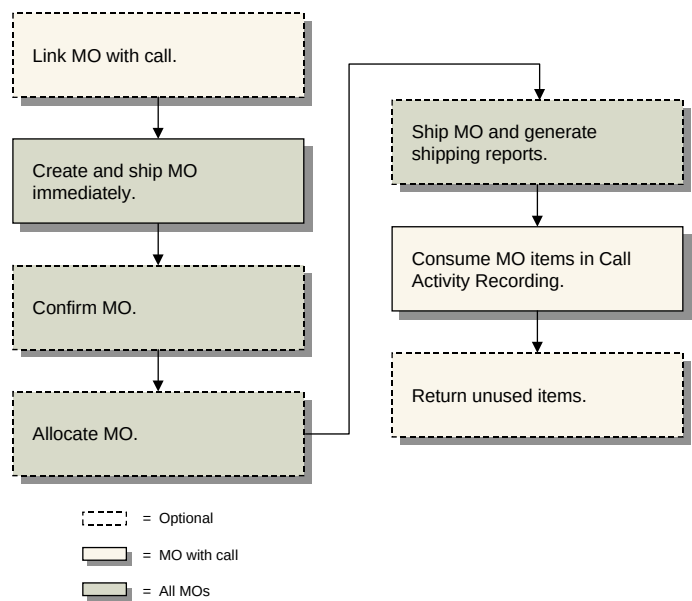


Fig. 20.3
Material Order Life Cycle

You create MOs in Material Order Maintenance and either link them with a call, for the engineer's inventory, or expense them. You can ship the ordered items when you create the MO if you allocate and confirm the order.

Otherwise, you can execute separate allocation, confirmation, and shipment functions using Material Order Confirmation (11.11.2), MO Manual Allocations (11.11.4), MO Automatic Allocations (11.11.5), and Material Order Shipments (11.11.6). These functions are similar to their counterparts in the Sales Orders/Invoices module. You can generate a packing list for an MO with Sales Order Packing List (7.9.13). A delivery note is also created as part of shipment.

♦ See *User Guide: QAD Sales* for information on ATP.

When ATP Enforcement is Yes in Sales Order Control (7.1.24) and ATP Enforce in the item or item-site record is Warning or Error, the system determines whether inventory will be available to promise (ATP) on the due date. When you enter a confirmed order line and ATP is not sufficient, the system displays a frame with ATP information and options. When you use Material Order Confirmation, you can decide before confirming the MOs whether the system should change order-line due dates to meet ATP requirements.

If you are using EMT, MO line items that were marked as EMT type transshipment are allocated automatically to the MO when they are received from the supplier. You cannot use MO Manual Allocations or MO Automatic Allocations for these items.

The system deletes expensed MOs and MOs for the engineer's own consumption when the orders ship completely. You must consume MOs associated with a call for that call in Call Activity Recording or return unused inventory either in CAR or with MO Direct/Pending Returns (11.11.8). When you have consumed or deleted all items on the MO with a call, the system deletes the MO.

The system provides alternate ways of viewing information about open MOs, those that have shipped, those with items on back order, and those that have items marked as pending return. You can also track the status of EMT purchase orders that have been automatically generated from MOs.

MOs for EMT Items

♦ See *User Guide: QAD Sales* for more information on EMT.

The Enterprise Material Transfer (EMT) module lets you automatically translate sales orders and material orders into purchase orders. You use EDI ECommerce to exchange purchase orders, change documents, and shipping documents in electronic data interchange (EDI) format with your suppliers.

Much EMT processing is automatic. For example, when you change the order quantity of an MO item, the system automatically updates the purchase order and generates an EDI document to inform the supplier. When a supplier picks or ships the items, the supplier's system automatically generates a status change message indicating that you can no longer make changes to the MO line.

EMT Shipment Type for MOs

Most of the features of EMT are the same regardless of whether you are using sales orders or material orders. However, there is one important difference. Sales orders for EMT items let you specify two shipment types:

- Transshipment. The supplier sends the items to you, and you then ship them to the final customer.
- Direct shipment. The supplier is authorized to send the items directly to the final customer.

EMT MOs offer only one shipping option: transshipment. The supplier ships the EMT items to the ordering site. It is then your responsibility to transfer them to their final destination.

Direct Allocations

Depending on your relationship with an EMT supplier, you can reserve inventory in the supplier's database to fill your MO. This is called *direct allocation*. For this feature to work, you must meet a number of conditions:

- You must be able to connect with the supplier's application database.
- Several master table records must be set up in both your database and your supplier's. These include site and supplier records to represent the connected database.
- The feature must be enabled in Sales Order Control.

To directly allocate an MO line item, change the default item site to the site established for the connected database. The system then creates a special, preliminary allocation in the supplier's application database. When you export the EMT purchase order and your supplier imports it as a confirmed sales order, the supplier's system automatically converts the preliminary allocation to a general allocation for the secondary sales order.

◆ See *User Guide: QAD Sales* for information on setting up direct allocations.

MOs and Intrastat

▶ See *User Guide: QAD Financials B* for details on Intrastat.

The Intrastat module captures information needed to generate customs reports for shipments among members of the European Union. If you are using Intrastat, data is generated for the shipment of material orders similarly to the way data is generated for sales orders. The Import/Export field on the MO header controls whether an additional frame displays for Intrastat defaults.

Note If you use Intrastat, you should manage inventory movement with MOs. In CAR, Intrastat data is generated only for items ordered on MOs. Other items are not tracked.

However, because the requirements of a service environment differ from those for standard orders, some aspects of Intrastat processing for MOs are different than for sales orders. In addition, different types of MOs are processed somewhat differently.

For standard sales orders, Intrastat data is moved to a history table when the invoice for the order is posted. Unlike sales orders, invoices are not generated for MOs. The items on the MO are invoiced directly or indirectly when they are used for a service call and the call is invoiced. For this reason, Intrastat history is not created for MOs at invoice post, but when they are shipped or consumed, depending on the type of MO.

- **MOs with a Call.** When an MO is associated with a call, Intrastat data is created in MO Maintenance, as appropriate. The MO is then loaded in Call Activity Recording as item usage. When all of the items on an MO line are either issued or returned, the line is deleted and the Intrastat data is moved to the history table.
- **MOs without a Call.** Two kinds of MOs are not associated with calls: expensed MOs and MOs for inventory replenishment. For these types of MOs, Intrastat history is created when the MO line ships completely. This may occur in MO Maintenance, if Ship Immediate is Yes, or later in Material Order Shipments.

Two types of Intrastat history records can be created for MOs: one when items are issued and one when items are returned.

Creating Material Orders

Creating an MO is similar to creating a sales order. You create MOs in Material Order Maintenance (11.11.1), shown in Figure 20.4. Follow these steps:

- 1 Define MO header data.
- 2 Create MO line items.
- 3 Optionally initiate shipment.

Material Order Maintenance

Go To Actions Copy Print Preview Attach

Attachments

MO: SE046 Order Ref: calss7 Engineer: fsse1 Ship-To: fsse1

End User Ship To

00010000 Xia Li

10909 Oxnard St 9510 Barkerville Ave

North hollywood CA 91606 Whittier 90605

United States United States

Order Date: 3/13/2008 Site: Confirmed: 3/13/2008

Required Date: 3/17/2008 Currency: USD Language: us

Required Time: 09:30 Charge Code:

Due Date: 3/17/2008

Action Status: Ship Immed

Ship Via: Allocate

Remarks: Comments

Import/Export: Print Pack List

Fig. 20.4
Material Order
Maintenance
(11.11.1)

You order items on an MO as you do sales order line items.

Except for fields added to accommodate the call relationship, the MO fields act like the equivalent sales order fields. However, you define default values for MO fields in Material Order Control, including allocate lines due in days, detail allocations, line format, shipping lead time, header and line comments, and keep booking history. These fields operate in the same way as the equivalent Sales Order Control fields.

See “Material Order Control” on page 909.

If you are using EMT, additional fields display on the MO line for the supplier and EMT type—just as on a sales order.

Note The login country for the user determines the numeric and date formats.

Specifying the Type of MO

Three basic types of MOs each play a slightly different role in a service organization:

- MOs with a call
- MOs for inventory replenishment
- Expensed MOs

How you fill out the MO header determines the type of MO you create. Header information differs for each type. After you create the MO, you cannot change its type. For example, if you create an MO without a call, you cannot go back later and add one.

Note If you are using the Project Realization Module, you can create MOs for project activity orders (PAOs). You can specify either a PAO or a call in the Order Ref field of the MO header. When you specify a PAO, different frames display in Material Order Maintenance.

MO With Call

When using MOs with a call, you open a call and order material specifically for the call. Linking the MO to the call has the advantage of making all the tools inside Call Activity Recording available for managing the MO.

In some business situations, legal or contractual reasons require this explicit connection between service inventory allotments and call history. For example, the government can require military contractors to supply this kind of data as part of the maintenance record.

In other cases, the business simply prefers this method, or it is the easiest, most economical way to supply engineers and account for service costs. You can use this method when you bill a customer directly for parts consumed on a call.

For MOs with a call, you use Call Activity Recording to coordinate the whole supply, reporting, and return of inventory generated by service activity. You can track costs and activity per call, customer, end user, or problem.

Relationship Between Call and MO

MOs can only be created for open calls. The call status cannot be closed, canceled, or hold. If you enter a call with a status of complete, the system displays a warning. The engineer and ship-to values on the MO default from the call. The MO also uses other defaults associated with the customer of the call's end user, including ship via, remarks, and currency.

Ship-to addresses for MOs with a call default from the value of Ship To in Material Order Control (11.11.24). If this is end user, the Ship-To defaults from the call's end user. If it is engineer, it defaults from the address of the engineer assigned to the call.

You can also create drop-ship addresses. Suppose the engineer wants a replacement item shipped to a local airport so he can pick it up on the way to the customer site. Material Order Maintenance enables you to create a Ship-To address for this particular material order. If the address does not exist, you are prompted to create it.

Each MO line references a particular call line. When you select the call line later in Call Activity Recording, the system displays related MO lines. You can then choose to load the MO items into CAR item detail records.

♦ See "Loading MO Lines into CAR" on page 753 for details.

Note When an MO is associated with a call, all items ordered must be consumed by the call or returned before the call can be closed. When this happens, the system removes the MO.

Using MOs or BOMs to Load CAR Item Usage

The system provides three ways to streamline data entry in the Call Activity Recording Item Usage frames:

- Ordering the items needed with an MO and loading the MO lines in CAR.
- Attaching a BOM to the item being repaired and allowing CAR to list all BOM items as item usage in CAR.
- Creating a parts list and loading the parts list items in CAR.

♦ See "Generating Usage Records Automatically" on page 530 for details.

These methods are alternatives to one another—you cannot use them together. Decide which method is best for your business practices and establish procedures to ensure that the method you use is consistent across your enterprise.

If you order the items required for a call with an MO, you must load and consume these items in CAR. If you attach a BOM to the item and the system lists the BOM items for the call, the same items can be loaded again, resulting in twice as many items appearing in the usage frame as are required.

A warning displays when you create an MO for a call line item and you have assigned a BOM to the item, or when you have already created reports with item usage. The system does not generate an error. If you need to order additional items beyond the standard BOM, this may not be an erroneous situation.

You can have CAR and Material Order Maintenance autocreate lines from a parts list or a BOM. If you create a parts list, the parts list takes precedence and you cannot explode the BOM. If a parts list does not exist, CAR can autocreate lines from MO lines. Using a parts list also means that changes to the MO are reflected in the parts list, and vice versa. In order to ensure the accuracy of CAR item usage, QAD recommends the use of a parts list. For details, see “Creating a Parts List” on page 436.

Filling Out the MO Header

For MOs with a call, you must enter an open call in the Order Ref field. If you enter a call, you cannot specify a charge code.

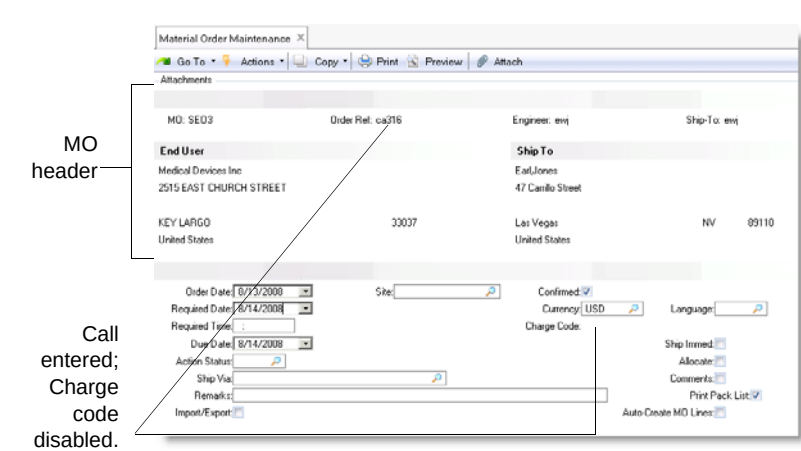


Fig. 20.5
Header for MO
with a Call

MO Without a Call

You do not have to attach an MO to a call. The system considers inventory transferred by an MO without a call as general replenishment inventory for the engineer’s service stock. Use this method when it is not reasonable to track against particular calls, but you still need to track individual items.

Once all items ordered on the MO ship completely, the system deletes the MO. Transaction history includes details about the transactions processed.

When you create an MO without a call, do not enter a call or charge code. The ordered items are put in the engineer location at shipment time, but not issued. MOs without a call basically execute an inventory transfer from one site and location to another.

Fig. 20.6
MO Without a Call
for Transferring
Inventory

The screenshot shows the 'Material Order Maintenance' window. The 'Order Ref.' field is empty. The 'Engineer' is 'FSE' and 'Ship To' is 'FSE'. The 'Ship To' address is '3900 Maple Avenue, Miami, United States, FL 33131'. The 'Order Date' is '2/8/2008', 'Required Date' is '2/8/2008', and 'Required Time' is '00:00'. The 'Confirmed' checkbox is checked, and the 'Currency' is 'USD'. The 'Language' is 'English'. The 'Charge Code' field is empty. The 'Action Status' is 'Index'. The 'Ship Method' is 'Fedex'. The 'Remarks' field is empty. The 'Import/Export' checkbox is checked. The 'Ship Invoiced', 'Allocate', 'Comments', and 'Print Pick List' checkboxes are unchecked.

Expensed MOs

Expensed MOs are also not attached to a call. Use this method when tracking items expensed as part of the general service activity—usually items you order in lots and store at the workbench or truck. The service engineers do not track any inventory piece by piece. They expense the items once and use them as necessary. A reorder point method typically controls reordering. Also, use this method for items ordered in bulk such as nuts, bolts, screws, washers, lubricants, cleaners, disposable tips, and wipes.

Expensed MOs require a charge code. The system uses the charge code to find a charge product line set up in Charge Product Line Maintenance (11.21.21.5) for this charge code. The system charges the Service Expense account of this product line for the cost of the items.

When you ship an expensed MO, the system transfers inventory to the destination site and location where you issue and consume the items. If this process completes successfully, the system deletes the MO upon completion of shipment. You can review transaction history for transaction details.

When you create an expensed MO, you do not enter a call in the Order Ref field, but you do specify a charge code as shown in Figure 20.7.

Fig. 20.7
MO Without a Call
for Restocking
Expensed Supplies

No call entered, but a charge code is entered.

The screenshot shows the 'Material Order Maintenance' window. The 'Order Ref' field is 'SE124'. The 'Charge Code' field is 'Fixed'. The 'Order Date' is '4/10/2008'. The 'Required Date' is '4/11/2008'. The 'Due Date' is '4/11/2008'. The 'Site' field is empty. The 'Currency' is 'USD'. The 'Language' is empty. The 'Ship To' address is '2900 Maple Avenue, Miami, FL 33131, United States'. The 'Engineer' is 'FSE'. The 'Ship To' field is also 'FSE'. The 'Action Status' is 'Ship Via'. The 'Remarks' field is empty. The 'Import/Export' checkbox is checked. The 'Ship Invoiced', 'Allocate', 'Comments', and 'Print Pack List' checkboxes are unchecked.

Summary of MO Types

Table 20.1 summarizes the interaction between the Order Ref and Charge Code fields in identifying the type of MO.

MO Type	Order Ref Field	Charge Code Field
With call	Enter a call number	Field not accessible
Without a call	Blank	Blank
Expensed	Blank	Enter a charge code

Table 20.1
Defining MO Types

Credit Implications of MOs

MOs are a type of sales order and follow most of the rules of sales orders. If the customer bill-to on an MO with a call is on credit hold or over their credit limit, MO processing is determined by the setting of Credit Hold Option in SSM Accounting Control. This field can have one of three values:

- 0 (zero): You can create MOs regardless of the customer’s credit status.
- 1: You can create MOs, but a warning displays and the action status of the MO is set to hold.
- 2: You cannot create MOs for customers who are on credit hold. An error message displays, and you cannot create the MO until the customer Credit Hold field is reset to No. With this setting, if the

customer is over the specified credit limit but not yet on hold, you can create the MO. However, a warning displays and the action status of the MO is set to hold.

Note You can remove credit holds using Sales Order Credit Maintenance (7.1.13) or Sales Order Auto Credit Approval (7.1.17).

If you are using EMT, the system applies the same logic as with EMT sales orders to determine how credit information is transmitted to the supplier. If the Action Status field on the header of an MO associated with a call is changed to HD (Hold), EMT creates a PO change document for the supplier under these conditions:

- The PO has been transmitted to the supplier.
- The supplier has not transmitted a status change indicating that the item has been picked or shipped.
- The customer associated with the call is authorized to have hold orders processed by a supplier (EMT Credit Flow is Yes for the customer).
- The supplier is authorized to receive orders placed on hold (Send Credit Held SO is Yes for the supplier).

Material Order Maintenance

This section includes a detailed field-by-field reference of Material Order Maintenance (11.11.1). It takes several steps to create an MO, some of which are optional, depending on various settings.

Table 20.2
Material Order
Maintenance
Frames

Frame	Req	Purpose
Header	Y	Define the kind of MO and defaults for line item entry.
Allocation Pop-Up	N	If Allocations is Yes, define allocation parameters for line-item entry.
Comments	N	If the header Comments field is Yes, specify comments for entire MO.
Auto-Create MO Lines	N	If Auto Create MO Lines is Yes, use the Materials List to record details of MO lines and create new BOM
Line-Item Entry	Y	Enter item number and allocation information.
Allocation Detail	N	If Detail Alloc is Yes, enter detailed allocation data.

Frame	Req	Purpose
Comments	N	If the line-item Comments field is Yes, specify comments for this line.
Material Order Shipments	N	If Ship Immed is Yes, begin shipment process (see “Material Order Shipments” on page 741).

The material order does not have a trailer for pricing and taxing information. This differs from similar ordering functions because items on MOs are not sold like other items. MOs transfer inventory from one site and location to another site and location within the same enterprise.

Material Order Header

Material Order Maintenance X

Go To Actions Copy Print Preview Attach

Attachments

MO: SE046

Order Ref: calss7

Engineer: fsse1

Ship-To: fsse1

End User

00010000

10909 Oxnard St

North hollywood

United States

Ship To

Xia Li

9510 Barkerville Ave

Whittier

United States

CA

91606

90605

Order Date: 3/13/2008

Required Date: 3/17/2008

Required Time: 09:30

Due Date: 3/17/2008

Action Status:

Ship Via:

Remarks:

Import/Export: ☒

Site:

Confirmed: ☒

3/13/2008

Currency: USD

Language: us

Charge Code:

Ship Immed: ☐

Allocate: ☐

Comments: ☐

Print Pack List: ☐

Fig. 20.8
Material Order
Maintenance
(11.11.1)

MO. Enter the MO number. Use a unique prefix to distinguish MOs from standard sales orders. If you leave this field blank, the system supplies a number based on the Material Order Prefix and Next Material Order fields in Material Order Control (11.11.24). You can select an existing MO from a drill-down list.

Order Ref. Entering a call in this field establishes the MO type. When you enter a call ID, the system fills in the Engineer and Ship-To fields based on the call. You cannot enter a call with a status of closed, canceled, or hold. If you enter a call with a status of complete, the system displays a warning.

Engineer. If you specify a call, the engineer assigned to the call displays, but you can change this value. If the call has no assigned engineer or you have not specified a call, you must select a valid engineer to receive this order.

The engineer for the MO normally determines the site and location to which items are transferred during MO shipments. If the engineer has a site and location in Engineer Maintenance, the system uses these as defaults. Otherwise, the site and location associated with the engineer's area are used. Maintaining consistent defaults is important in streamlining the consumption and return of items ordered on MOs for a call in Call Activity Recording and MO Direct/Pending Returns.

Note After you have processed shipments for an MO, you cannot modify the Engineer field.

Ship-To. For MOs without a call, the Ship-To is the engineer's address and you cannot change the value. If you entered a call, the value for Ship-To depends on the Ship To value in Material Order Control (11.11.24), either end user or engineer. You can also enter a drop-ship address, for special orders. Tailor the default ship-to for your business practices by using the Ship To setting in Material Order Control.

Note Regardless of the Ship-To value, items are transferred to the site and location for the MO line. The Ship-To address prints on the Material Delivery Note.

Lower Frame

Order Date. Order Date defaults from the system date. You can change this value. For example, if you take an order over the phone and do not enter the order into the system until three days later, you can change the date to reflect the day you took the order.

Required Date. The required date is calculated by the system based on the order date plus the Shipping Lead Time in Material Order Control (11.11.24).

If you modify the required deliver-by date at the header level for an existing MO, the system prompts you to update the required date for each line item.

If you respond Yes, the required date for each line item is updated to match the updated required date on the MO header as long as EMT is not being used and the line has not been shipped in full. If a line item cannot be updated due to EMT restrictions, an alert displays. If one or more line items cannot be updated, a prompt displays asking whether you want to continue to update the line items that can be updated, or if you want to cancel the update. If you cancel the update, the line items remain unchanged, but you can still update line items manually if required. When the update is complete, the system displays a message to this effect.

If you respond No, none of the MO line items are updated. You can, however, update the required date on line items manually if required.

Due Date. The due date is calculated by the system based on the order date plus the Shipping Lead Time in Material Order Control (11.11.24).

If you modify the required ship-by due date at the header level for an existing MO, the system prompts you to update the due date for each line item.

If you respond Yes, the due date for each line item is updated to match the updated due date on the MO header as long as EMT is not being used and the line has not been shipped in full. If a line item cannot be updated due to EMT restrictions, an alert displays. If one or more line items cannot be updated, a prompt displays asking whether you want to continue to update the line items that can be updated, or if you want to cancel the update. If you cancel the update, the line items remain unchanged, but you can still update line items manually if required. When the update is complete, the system displays a message to this effect.

If you respond No, none of the MO line items are updated. You can, however, update the due date on line items manually if required.

Required Time. Enter the time at which the material order is required. This is most useful if the materials are needed on the same day as they are ordered.

When you create new material order lines, the system will use the time defined in this field as the default time.

▶ See “Credit Implications of MOs” on page 723.

Action Status. If the customer associated with the call specified on the MO is on credit hold, HD displays in the Action Status field. The effect of this status depends on the value of Credit Hold Option in SSM Accounting Control.

Ship Via. MOs transfer material. When you associate the MO with a call, this field defaults from the customer Ship Via for the end user initiating the call. You can enter any valid shipper in this field. The Ship Via information prints on the Material Delivery Note. Set up values for Ship Via with Generalized Codes Maintenance for the field so_shipvia.

Remarks. You can enter brief remarks concerning MO handling here. If you specify a call on the MO, remarks default from the end user’s customer.

▶ See “MOs and Intrastat” on page 716.

Import/Export. Defaults from Imp/Exp Default in Intrastat Control and displays if Use Intrastat is Yes in the same control program. Set this field to Yes to enter or maintain import and export data for the order used to create Intrastat History Reports. If Yes, the standard Intrastat frames displays for input of appropriate data.

▶ See “Default Sites and Locations” on page 106 for details.

Site. Enter the site where the items to ship are located. This site is used as a default during line-item entry. You can change this value on a per line-item basis. This field defaults from the spares site set up with Default Site Maintenance (11.21.13) for a blank key.

Confirmed. This field is similar to the same field in sales orders, and defaults from the value for Confirmed Orders in Material Order Control. Yes means that the MO is confirmed and available for shipping when your entry is complete. You can modify this field only when you first create an MO. If the MO is not confirmed when you create it, you must execute Material Order Confirmation (11.11.2).

If you are using EMT and enter an EMT transshipment item, the system only creates a purchase order for the supplier when the line is confirmed. If you create the line as unconfirmed, the PO is automatically generated when you run Material Order Confirmation.

Currency. If you specify a call, this field defaults from the currency associated with the call's customer. Otherwise, it defaults from the currency associated with the internal customer specified in Material Order Control. You can enter a different currency for this material order when you create the order. You cannot change the currency for an existing order. You can apply field security to this field.

If you enter a non-base currency, an exchange rate pop-up displays the current exchange rate relationship. You can modify this, if needed, and optionally specify the rate as fixed.

Language. Enter the language to use on material order documents. Language defaults from the call end user or the end user's customer.

Charge Code. You can update this field only when you first create an MO and do not specify a call. If this is an expensed MO, enter a valid charge code defined in Charge Code Maintenance (11.21.21.1). The system uses the charge code to determine a charge product line. The expense is debited to the Service Expense account associated with this product line. If you enter a charge code, the system expenses everything on the MO to this charge code.

Ship Immediately. The value for this field defaults from Material Order Control.

Yes: The shipment frames display after you complete your MO entry. Completing the MO shipment entry then starts all the inventory transfer functions.

No: You must execute shipment as a separate function later, using Material Order Shipments (11.11.6).

Allocations. If this field is Yes, a pop-up window displays so that you can modify the allocation parameters set by default in the control program. These parameters include consume forecast, allocate days in future, and detail allocations.

Comments. The value for this field defaults from the MO Header Comments field in Material Order Control. If Yes, a standard transaction comment frame displays for entry of header comments. You can print header comments on MO documents such as the Material Delivery Note by setting Print on Packing List to Yes.

Print Pack List. If this field is Yes (the default), you can print a packing list for this MO with Sales Order Packing List (7.9.13). A separate MO packing list print function does not exist. However, material order shipments produce a Material Delivery Note, which you can use as a packing list. If detail allocations were not made in Material Order Maintenance, printing a packing list performs the allocations.

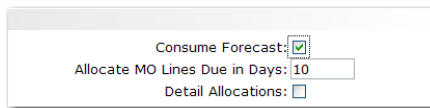
Auto-Create MO Lines. If this field is No (the default), you can manually enter MO lines. Set this field to Yes to use the Materials List to record details of MO lines and create a new BOM structure. (This field is read-only if the MO already exists.)

Allocations Pop-Up

See “Allocating Material Orders” on page 740 for more information.

If you enter Yes in the Allocate field, the pop-up window illustrated in Figure 20.9 displays. The values in these three fields default from corresponding fields in Material Order Control. You manage other aspects of allocations through Sales Order Control settings.

Fig. 20.9
Allocations Pop-Up
Window (11.11.1)



Consume Forecast: ☒

Allocate MO Lines Due in Days:

Detail Allocations: ☐

Consume Forecast. Defaults from the Consume Forecast field in Material Order Control. If Yes, MOs consume forecast in the same way as sales orders. When you enter an MO, the system decreases available quantity in the sales forecast for the item by the MO quantity.

Allocate MO Lines Due in Days. Defaults from the same field in Material Order Control. Specifies the number of days into the future to allocate MOs.

Use allocations to control shipments, especially in shortage situations. When you enter an MO, the system compares the order quantity to the quantity available to allocate. If there is a shortage, the order cannot be filled. The system tries to allocate available inventory only to line items due within the number of days specified here, giving you more control over the process.

Detail Allocations. The value for this field defaults from the Detail Allocations field in Material Order Control. Yes indicates that detail allocations are normally made during MO line entry. Enter No if detail allocations are not normally entered on the MO. The value specified on the header sets the default value on each MO line item. You can change it item by item.

Note Even if this field is Yes on the MO header, it automatically changes to No for EMT line items. You cannot change it manually. The system automatically allocates EMT items to the MO when they are received from the supplier.

Autocreation of MO Lines

If you set the Auto-Create MO Lines field to Yes, you can use the Materials List to record details of MO lines and create a new BOM structure.

The Call and End User details default from the MO header. After entering the number of the call line, either accept the default repair BOM code (defaulted from the call line), or enter a new BOM code. The BOM structure displays listing the description, quantity, and UM of each component.

Note If the BOM has previously been exploded in CAR or a parts list exists from Parts List Maintenance (11.1.10), the items on the BOM will not display; for details about Parts List Maintenance, see “Creating a Parts List” on page 436. If a parts list exists, those items on the list that have not been added to a MO will display and can be added to the MO being created.

You can add or delete components, or modify component quantities, as required. Any components added to the BOM must be valid (that is, there can be no memo items for any of the components).

After making any modifications, you are given the option of saving your changes as a new service BOM. Click Yes to save the updated service BOM in Service Structure Maintenance using the BOM code you entered. Otherwise, click No to disregard your changes.

Complete any remaining MO header details. Once complete, the Material Order Line frame displays, showing a line for each of the components created in your new BOM structure. Edit these lines as required, then complete your MO.

Line-Item Entry

After you complete MO header entries, the line-item entry frame displays. The MO line-item frame works like other line-item entry functions in the system. It has two modes of display: single-line mode and multiline mode. Set the default mode in the Line Format field in Material Order Control.

To order several items, use the multiline entry format to streamline data entry. The multiline entry format asks only for the line number, the related call line, the item number, and quantity.

Figure 20.10 illustrates the single-line format.

Fig. 20.10
MO Line-Item
Entry (11.11.1)

When Use Enterprise Material Transfer is Yes in Sales Order Control, the Supplier and EMT Type fields display in this pop-up also.

Ln	Site	Supplier	EMT Type	red	UM	Unit Price
2	ALM001		NON-EMT		EA	0.00

Description: Site: rdbkb Line Ref:
 Location: Cnf:
 Lot/Serial: Required: 11/15/2007 UM Conv: 1.0000
 Qty Allocated: 0.0000 Req Time: 10:00
 Qty Picked: 0.0000 Due Date: 11/15/2007
 Qty Shipped: 0.0000 Consume Forecast:
 Qty Consumed: 0.0000 Detail Allocation:
 Qty Returned: 0.0000 Comments:
 USD Cost: 0.00 Category:

Important If you are entering an MO for an EMT transshipment item, you must use single-line mode. Otherwise, EMT Type defaults to non-EMT and the system does not automatically generate a PO for the supplier.

Ln. The current line number displays. If you are updating an MO with multiple lines, the last line of the MO displays so that you know how many lines exist.

Order Ref Line. When you attach an MO to a call, specify which line on the call is related to this line of the MO. You can ignore the Order Ref field for MO types without a call. It is crucial that you build the relationship between MO line and call line correctly because it is used later in Call Activity Recording. CAR does not assume that the line items on the MO are in the same order as those on the call; you must specify the relationship explicitly.

CAR needs to know two elements: first, that an MO exists for the call and second, how the MO lines match the call line. This ensures that the system uses the information from the call for the right item. The system also checks the status of the call line, just like the call status. To order items for a call line, the line cannot be closed, canceled, or on hold. The system displays a warning if the call line is complete.

When you start creating the line item, even though a call is not attached to the MO, a default call line number 1 appears. This is a required field that you cannot change.

Item Number. Enter the item number you are ordering from the supply center or inventory source. Remember, this is an internal, or captive, order process—you are not ordering from a vendor or outside supplier. The item must be defined in the item master.

For an EMT transshipment item, you can enter your supplier's code for the item, as long as you set up a cross-reference to your item number in Supplier Item Maintenance (1.19).

Note You cannot order configured items or family planning items on an MO. These items have a Pur/Mfg code of C and F.

If the item you enter has replacement types defined for it and the entry is on or past the item replacement's effective date, the system either prompts you to confirm the item replacement or displays pop-up frames to select other types of item replacements.

♦ See User Guide:
QAD Master
Data.

Site. After you enter the item number, a pop-up window displays so that you can specify the inventory site of the item. This site defaults from the site on the MO header, unless the item does not exist there. In this case, the system suggests the site associated with the item in Item Master Maintenance.

Standard inventory rules for sites apply to the MO site. For example, if there is no inventory on hand for the item and the inventory status is defined with overissue set to No, the system displays an error.

See “Direct Allocations” on page 715.

If this is an EMT transshipment item and you are using direct allocations to reserve inventory in your supplier’s application database, you can change the default site to the one associated with the supplier’s connected database.

Supplier. Enter the supplier associated with this item. This field displays only if Use Enterprise Material Transfer is Yes in Sales Order Control. For EMT transshipment items, the field defaults from the supplier defined for the item in Item Master Maintenance.

EMT Type. Indicate whether this is a non-EMT or transshipment item. This field displays only if Use Enterprise Material Transfer is Yes in Sales Order Control. A default EMT shipment type can be defined for customers, items, items/sites, and in Sales Order Control. The EMT Sequence field in Sales Order Control determines the order the system uses to search these records for a default.

Quantity Ordered. Enter the quantity of this item you want to order. Negative quantities are not allowed. If this MO is associated with a call, the quantity ordered displays in the Qty Used field in the Item Usage frame of Call Activity Recording.

Unit of Measure. You can update this field only when the Order Ref field is blank. Call Activity Recording (11.1.1.13) requires items to be issued in the inventory unit of measure.

Unit of measure defaults from the unit of measure for the item in Item Master Maintenance. You can change the value, unless an order reference has been specified. If you select an alternate unit of measure that you defined in Unit of Measure Maintenance (1.13), the system accesses the appropriate conversion factor.

Example An item is held in inventory in the unit of measure EA but sold or purchased in a case of 25. If you enter the unit of measure CS, the system displays a UM conversion of 25. The system adjusts the cost and inventory quantity when this item is shipped or received. If you have not defined the alternate unit of measure in Unit of Measure Maintenance, a warning displays and no conversion takes place.

For a serial-controlled EMT transshipment item, the MO line-item unit of measure must match the stock unit of measure. Otherwise, the system displays an error.

List Price. This is an output-only field that shows the extended price for the item based on the list price in Item Master Maintenance multiplied by the quantity ordered.

Lower Line Detail Frame

This frame displays information such as the item’s description. You can specify a lot or serial number here if the item is a serialized or lot-controlled item.

The screenshot shows the 'Material Order Maintenance' window with the 'Lower Line Detail Frame' expanded. The window title is 'Material Order Maintenance'. The menu bar includes 'Go To', 'Actions', 'Copy', 'Print', and 'Preview'. Below the menu bar is an 'Attachments' section. The main area displays the following information:

Ln	Order Ref Line	Item Number	Qty Ordered	UM	Unit Price
2	1	0101AS	0.0	EA	0.00

Below the table, the 'Description' field is populated with '0101AS'. The 'Location' field is empty. The 'Site' is 'rbtkb'. The 'Line Ref' field is empty. The 'Lot/Serial' field is empty. The 'Cnf' checkbox is checked. The 'Required' date is '11/15/2007'. The 'UM Conv' field is '1.0000'. The 'Req Time' is '18:00'. The 'Due Date' is '11/15/2007'. The 'Consume Forecast' checkbox is checked. The 'Detail Allocation' checkbox is unchecked. The 'Comments' field is empty. The 'USD' field is empty. The 'Cost' is '1.40'. The 'Category' field is empty.

Fig. 20.11
MO Line-Item
Detail

Description. Output-only field that displays the inventory description of the item.

Location. This field indicates the location at the associated site where inventory items exist.

Lot/Serial. For lot/serial controlled items, you can specify the particular number for this line item. If you are ordering multiple items on one line, set Detail Alloc to Yes. This displays a pop-up window where you can specify a lot/serial number for each item you order.

Qty Allocated. The total of quantity allocated, plus quantity shipped, plus quantity picked cannot be greater than quantity open on the line item. You can apply field security to this field. Confirmed must be Yes before you can enter a quantity to allocate. For confirmed orders, the system calculates a default based on several fields.

◆ See “Allocating Material Orders” on page 740 for more information.

- The Quantity Available to Allocate calculation method in Sales Order Control.
- The value for Limit Allocations to Avail to Allocate in Sales Order Control.
- The setting of Allocate MO Lines Due in Days in the MO header determines the allocation window for orders.

If Allocate MO Lines Due in Days is zero or the due date is beyond the allocation horizon, Qty Allocated defaults to zero. You can use MO Manual or Automatic Allocations to allocate inventory to an MO line due outside the allocation window or when sufficient inventory becomes available.

Confirmed. This field defaults from the Confirmed field on the header. Yes or No in this field indicates whether or not the item is ready to ship. If Confirmed is No, you must execute a separate confirmation step before items can be allocated and shipped.

Required Date and Due Date. The required and due dates default from the header. You can modify either date for each line.

Req Time. Enter the time at which the material order is required. When you create new lines, the default value is the time defined in the material order header.

The required date and time can also indicate when the ordered items will arrive at the customer’s site. Therefore, the scheduler will know at what time to plan an engineer on-site visit to a customer, using the ordered spare parts for repairs or service.

Note When ATP Enforcement is Yes in Sales Order Control (7.1.24) and ATP Enforce in the item or item-site record is Warning or Error, the system determines whether inventory will be available to promise (ATP) on the due date. If it is not, the system displays a frame with ATP information and options.

♦ See *User Guide: QAD Sales* for information on ATP.

Category. This field can be used to assign optional categories to material order line items. For example, you can generate some reports based on categories in the Shipment Performance module.

♦ See *User Guide: QAD Sales* for information on Shipment Performance.

Entries are validated against values defined in Generalized Codes Maintenance (36.2.13) for field line_category.

Line Ref. This field can be used for custom programming as a reference for customized reports giving line-by-line information. Use this field to insert an eight-character label or reference that is later displayed by the report.

UM Conversion. Displays appropriate unit of measure conversion based on the unit of measure for the item.

Consume Forecast. Defaults from the Consume Forecast field in the MO header. If Yes, the quantity on this line consumes forecast in the same way as sales orders. When you enter the MO line, the system decreases available quantity in the sales forecast for the item by the MO quantity.

Detail Allocation. Defaults from the Detail Allocation field on the MO header, which in turn defaulted from Material Order Control. You can modify this for each line item. If you specify a quantity to allocate and the order is confirmed, Yes displays a pop-up window so that you can specify the information required for detail allocation, including lot/serial, location, and lot reference.

Allocations for EMT transship items are performed automatically when the items are received from the supplier. You cannot detail allocate these items in Material Order Maintenance.

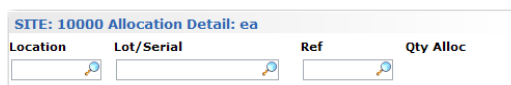
Comments. Specify Yes or No to enter comments for this specific MO line item. Defaults from the MO Line Comments setting in Material Order Control. Include line comments on MO documents such as the Material Delivery Note when Print on Packing List is Yes.

After you enter a line, the system returns to the beginning of line entry to start another line item. To order more material, continue and repeat the same line entry process. When you finish, click Back to initiate shipment, if Ship Immed is Yes, or to return to the menu.

Detail Allocation Pop-Up

This pop-up enables you to enter specific allocation information for the items you are ordering. To perform detailed allocation, enter the order as confirmed.

Fig. 20.12
MO Detail
Allocation Pop-Up

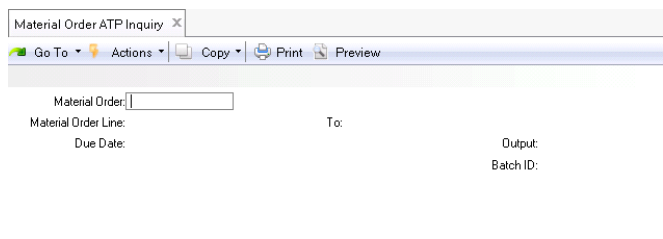


The screenshot shows a pop-up window titled "SITE: 10000 Allocation Detail: ea". It contains a table with four columns: "Location", "Lot/Serial", "Ref", and "Qty Alloc". Each of the first three columns has a text input field with a magnifying glass icon to its right, indicating a search function.

Material Order ATP Inquiry

Use Material Order ATP Inquiry (11.11.7) to view ATP information associated with a specific material order and lines. Right-clicking a record in the Material Order browse causes the inquiry to run using the currently selected record.

Fig. 20.13
Material Order
ATP Inquiry
(11.11.7)



The screenshot shows a window titled "Material Order ATP Inquiry" with a standard toolbar containing "Go To", "Actions", "Copy", "Print", and "Preview". Below the toolbar, there are input fields for "Material Order:" and "To:". Further down, there are labels for "Material Order Line:", "Due Date:", "Output:", and "Batch ID:", each followed by a corresponding input field.

Specifying a material order displays all unconfirmed material order lines whose due date is less than or equal to the date specified. If a material order line is not specified, all MO lines display. MO lines may be skipped if:

- No due date is specified for the MO line.
- Site security does not allow the current user to view the line.
- The line is an EMT part, a configured part, or ATP enforcement for the line is None.

The system generates a report similar to the one in Figure 20.14 to the output device you specify.

Line	Item Number	Earliest Due Date	ATP Qty On Hand	ATP Horizon Date	Date Due Date	Qty to Ship	Order Qty
1	do-001	03/03/09	0.00 EA	03/08/09	01/09/09	5.00 EA	5.00 EA

Fig. 20.14
Material Order
ATP Inquiry Report

Shipping Material Orders

You can approach shipping MOs in two ways:

- Ship items in Material Order Maintenance by entering the MO as confirmed and allocated.
- Follow the more traditional approach taken with sales orders where you execute separate confirmation, allocation, and shipment functions. In addition, you can print a packing list using Sales Order Packing List.

Confirming Material Orders

MOs must be confirmed before they can be allocated or shipped. You can do this in a separate step with Material Order Confirmation (11.11.2).

Material Order Confirmation

Material Order Confirmation: Go To ACTIONS

Material Order:

Engineer:

Order Reference:

Ship-To:

Order Date:

Due Date:

To:

To:

To:

To:

To:

To:

Expensed MOs:

Change Due Dates for ATP Enforcement Warnings:

Change Due Dates for ATP Enforcement Errors:

Use Standard ATP when APO ATP is Unavailable:

Fig. 20.15
Material Order
Confirmation
(11.11.2)

Enter appropriate criteria to select MOs for confirmation, then execute the function. The system processes MOs in the specified range. If Expensed MOs is No, the system processes only MOs without a charge code. If Yes, the system includes expensed orders.

See *User Guide: QAD Sales* for information on ATP.

When ATP Enforcement Enabled is Yes in Sales Order Control (7.1.24), you can optionally have the system automatically change the due dates before confirming MOs when the available to promise (ATP) quantity is insufficient to fill the order. Based on the ATP enforcement level associated with the item, the system adjusts the due dates for MO lines that produce ATP warnings or errors to dates when the required quantities are available.

The system generates a report similar to the one in Figure 20.16 to the output device you specify.

Fig. 20.16
 Material Order Confirmation Report

Order	Order Ref	Engineer	Ship-To	Ord Date	Required	Due	Confirmed	St
62	CA157	pkh	00000005	07/11/08	07/14/08	07/14/08	07/11/08	--

Allocating Material Orders

Allocations reserve inventory so it is not allocated to other sales orders, RMA issue lines, intersite requests, calls, or work orders. Use allocations to control the shipment of items, especially in situations when a sufficient quantity of an item does not exist to fill all orders.

See “MOs for EMT Items” on page 714.

Note You cannot allocate EMT items to an MO. The system allocates these items when they are received from the supplier.

Control allocations in MOs with settings in Sales Order Control and Material Order Control.

- The Quantity Available to Allocate calculation method in Sales Order Control controls how the system determines the number of items available to allocate. The calculation is the same for all items and sites.
- The value for Limit Allocations to Avail to Allocate in Sales Order Control determines how the system handles shortage situations. If this field is No, Quantity Allocated defaults from Quantity Ordered even if a sufficient quantity to allocate does not exist. If this is Yes, Quantity Allocated never exceeds the quantity available. If there is no quantity available to allocate, Quantity Allocated defaults to 0.
- The setting of Allocate MO Lines Due in Days in Material Order Control determines the value for the same field in Material Order Maintenance, MO Manual Allocations, and MO Auto Allocations.

The system only attempts to allocate MO lines with a due date within the range defined by this field. For MOs due outside the range, Quantity Allocated defaults to 0 regardless of available quantity.

- The Detail Allocations field in Material Order Control sets the default for the similar field in Material Order Maintenance. If this is Yes for an MO line, an inventory allocation pop-up window displays so you can specify site/locations and lot/serial/reference numbers.

You can even ship items in Material Order Maintenance without creating allocations by specifying a quantity to ship. If you make allocations, you can set Ship Allocated to Yes, and the system sets up default ship quantities for you.

MO items are picked when you print a packing list for an MO with the Sales Order Packing List (7.9.13) function. To do this, set Print Pack List to Yes for the MO in Material Order Maintenance.

If you use packing lists to communicate shipping priorities, you can set Pick Only Allocated Lines to Yes in Sales Order Control. In this case, only allocated quantities print from the Sales Order Packing List function, telling the shipping department what to ship.

You can allocate inventory at several stages of an MO's life cycle:

- Material Order Maintenance does general allocations for all orders due within the number of days you specified in Material Order Control. You can also enter detail allocations.
- Execute MO Automatic Allocations (11.11.5) regularly to perform general allocations for any orders due within a certain number of days. Use this function to allocate for MOs beyond the allocation limit you specified in the control program during order entry.
- You can use MO Manual Allocations (11.11.4) to override general or detailed allocations.

Material Order Shipments

Use Material Order Shipments to enter the selection data for shipping MOs. Unlike shipment for standard sales orders, Material Order Shipment executes an inventory transfer and receipt, and an additional unplanned issue, depending on the kind of MO:

- *MO with a Call.* Transfers items from their current location to the place where they will be consumed on a call.
- *MO without a Call.* Transfers items from their current location to replenish engineer stock.
- *Expensed MO.* Transfers the items, then issues them as service expense.

A transfer reduces inventory quantity for an item at the From Site and From Location, and increases it at the Engineer Site and Engineer Location. When the function completes, it prints delivery documents.

▶ See the Shipping chapter in *User Guide: QAD Sales* for details.

Note If you are using shipping groups and inventory movement codes, you can enter shipment information and generate shippers during MO shipment.

During the material order shipment process, you perform the following steps:

- Enter shipment data.
- Modify line-item quantities.
- Confirm shipments.
- Enter trailer data.
- Print Material Delivery Note and Back Order Advice.

You can execute Material Order Shipments as a separate function or initiate shipments in Material Order Maintenance if you enter confirmed orders. To initiate shipments from Material Order Maintenance, set Ship Immed on the MO header to Yes.

Engineer Site and Location

▶ See “Engineer Site and Location” on page 661 for more details.

A consistent engineer site and location are critical to managing MOs. During shipment, the destination fields default from the site and location associated with the engineer in Engineer Maintenance. If these are not available, the system uses the default site and location defined for the engineer’s area.

When inventory ordered on an MO is consumed in Call Activity Recording, the system uses the same logic to derive the site and location for inventory issues. So, if you ship the items somewhere else, change the defaults in CAR for inventory issues to occur correctly.

Establish procedures so that the system references the same site and location when looking for stock for a particular engineer.

The system performs normal location validation. This includes verifying whether the location exists, based on the setting of Automatic Locations, and verifying the actions allowed at the location based on restricted transactions.

- For all MOs, the inventory receipt transaction (RCT-TR) must be allowed.
- For expensed MOs, the unplanned issue transaction (ISS-UNP) must also be allowed.

Material Order Shipments Field Reference

If you do not choose to ship immediately from Material Order Maintenance, you can ship MOs later, using Material Order Shipments (11.11.6), illustrated in Figure 20.17. To ship an MO involves several steps, some of which are optional.

Note The login country for the user determines the numeric and date formats.

Frame	Req	Purpose
Header	Y	Specify MO to be shipped and shipment defaults.
MO Line Items	Y	Review and modify allocations and quantities.
Issue Detail	N	If Multi Entry is Yes, change details for multiple quantities.
Confirmation	Y	Confirm items to be shipped.
Trailer	Y	Generate delivery note.

Table 20.3
MO Frames

Material Order Shipments Header

Material Order Shipments X

Go To Actions Copy Print Preview Attach

Attachments

MO: SEO10

Engineer: ewj

Order Ref: ncr-do1

Effective Date: 3/10/2009

Ship Allocated: ☐

Consume: ☐

From Site:

To Site: 12000

To Location: 100

Ship Picked: ☒

Fig. 20.17
Material Order Shipments Header (11.11.6)

MO. Enter the number of a valid MO you created with Material Order Maintenance. The MO number must exist. If the MO is not confirmed or has no lines, a warning displays. When this function is executed from Material Order Maintenance, the system fills in the number and does not let you change it.

Engineer and Order Ref. These fields are output only and default from the MO.

Effective Date. Enter the GL effective date for the shipment transaction. The default is the current date. The system verifies that the date is within an open fiscal period.

The effective date determines when this transaction affects GL balances.

Ship Allocated. The default is No. If Yes, the quantity allocated on each item line displays in the To Ship column in the MO line-item detail section of Material Order Shipments. If you have not printed a packing list—for example, if you are shipping from Material Order Maintenance—none of the items are picked. In this case, use Ship Allocated to set up default shipping information.

Note Use Ship Allocated to set up default shipping information if you are shipping directly from Material Order Maintenance.

Ship Picked. Specify Yes (the default) to include all items in the To Ship column that were picked when the packing list was printed. Otherwise, they display in the Backorder column, and you must specify the order quantity for each line.

Consume. By default this field is set to Yes to indicate that the selected items should be consumed automatically when shipped. This defaults from the setting of the Material Order Control file.

Override Partial OK. Specify whether to allow partial shipments for this material order.

Yes: Allow partial shipments.

No: Check the Partial OK field in Customer Data Maintenance to determine whether partial shipments are allowed.

Note This setting has no effect on MOs without a call.

From Site. Inventory site where items are located. You can leave this field blank unless the MO spans multiple databases. If you specify the site, it must be valid.

To Site and Location. These fields default from the site and location associated with the engineer. If these values are blank, the system uses the site and location defined for the engineer's area.

Material Order Line Items

After you complete the header, the Material Order Line Items frame displays. Each item ordered on the MO displays. You can change each line before it is transferred. You can also overrule the system allocation and enter another location from which to transfer the item.

Ln	Item Number	T	Qty Alloc	Picked	To Ship	Backorder Site
1	100b		0.0	0.0	0.0	1.0 MD400

Line:

Cancel B/O: ☐

Site:

Loc:

Quantity:

Item Number:

Description:

UM:

Lot/Serial:

Reference:

Req Date:

Consume Shipped Lines: ☐

Multi Entry: ☐

Time:

Back

Next

Fig. 20.18
Material Order
Shipments Line
Items

Line. Enter a line number to display or modify associated data.

Cancel B/O. The default is No. Yes indicates that any item under the Backorder column should be removed from the order. No indicates that items on backorder should be retained for later shipment.

Quantity. The quantity to be shipped for this line displays. You can modify it. If Ship Allocated and Ship Picked are Yes, the quantity is the total of the Allocated and Picked columns. You can enter a new quantity. For example, an engineer may have ordered five items and now wants only three.

Item Number, Description, and UM. These are output-only fields referring to the line-item number and its inventory description and unit of measure.

Site and Location. Defaults from the inventory site and location associated with the item in the item master. You can modify these fields.

Lot/Serial and Reference. The serial number and inventory reference of the first item picked for this line.

Required Date, Time. Enter the date and time at which the material order is required. These values indicate when the ordered items will arrive at the customer's site.

Consume Shipped. •This field defaults from the Consume field on the header. Enter Yes to cause this line to be consumed.

Multi Entry. The system sets this field to Yes when a line has multiple items and it cannot be changed. If Yes, an Item Issue Detail frame displays so that you can modify the serial number of each item picked.

When you accept the shipping information, you are prompted to confirm the items being shipped. The default reply is Yes. Accepting Yes displays the line item, item being shipped, what site and location it is shipping from, lot and serial numbers, quantity, and unit of measure.

You are prompted again to confirm that all information is correct. If you accept Yes, the shipment trailer displays. If you enter No, you can change information.

Material Order Shipment Trailer

The trailer entry is analogous to standard sales order shipment. After accepting the data, the system processes the items entered.

Fig. 20.19
Material Order
Shipments Trailer

Material Order Shipments

Material Order Shipments: Go To ▾ ACTIONS ▾

MO: SEO3	Effective Date: 05/22/2007	From Site:
Engineer: MEW	Ship Allocated: ☒	To Site: 10000
Order Ref: matca-2	Ship Picked: ☒	To Location: 100

Ship Via:

Ship Date: 05/22/2007

Remarks: All shipments per corp contract

Ship Via. When the MO is associated with a call, this field defaults from the Ship Via associated with the end user's customer. Set up codes with Generalized Codes Maintenance for field so_shipvia.

Ship Date. Defaults from the system date, but can be modified.

Remarks. You can enter brief remarks concerning MO handling. If you specified a call on this MO, remarks default from the remarks associated with the end user's customer.

Output. Enter an output device for reports that print when the shipment function executes.

Printed Output

The system creates two documents during the shipment process:

- *Material Delivery Note.* This document always prints and includes the shipping address, quantities, pricing, extended price, shipped from location, and shipped date. It is a packing slip to use with your freight service. The title, Material Delivery Note, prints at the top of the output.
- *Back Order Advice.* This document prints only if items on the MO remain on back order. It shows items, quantities, and sales price information.

Material Delivery Note

Each Material Delivery Note has a control number. The system uses this number to track transactions related to this MO. Use the control number when partial shipments are made or items remain on back order and are shipped later. In this case, the system tracks the quantity shipped on each document. Set the value for this number in the Next Delivery Note field of Material Order Control.

The material delivery note lists items on the MO that are transferred to the engineer location. This includes all picking information and price information based on the price of the item in Item Master Maintenance. These prices are suggestions only and can differ from the invoice pricing determined during Call Activity Recording.

Fig. 20.20
Material Delivery
Note (132-column
print format)

MATERIAL DELIVERY NOTE			Doc : 00000004		Page: 1		Date : 07/11/07			
Ship to:		Lake Refrigerator Co.			Order Ref: CA157					
		321 South Lake St.			Eng: PKH					
		Building 47			MO: 62					
		Los Angeles, CA 93122			Charge:					
		USA								
Ln	Item Number	Rep	Qty Ordered	Site	Location	Lot/Serial	Qty Delivered	Unit Price	UM	Tot Pri
1	44-1000	No	1.00				2.00	10.00	EA	20.
	Sensor Unit			10000	stock		2.00			
2										

Back Order Advice

Back Order Advice lists all MO items on back order, their quantity, and sales price information. Each Back Order Advice has a control number. Set the value for this number in the Next Back Order Advice field of Material Order Control.

Fig. 20.21
Back Order Advice
(132-column print
format)

ITEMS DUE TO BE DELIVERED TO:				Doc : 00000003	Page: 1	Date : 07/11/07
Harvey, Phillip				Order Ref:		
1900 Acacia Drive				Eng: PKH		
San Marcos, CA 92069				MO: 63		
USA				Charge:		
Ln	Item Number	Description	Qty Ordered	Qty Backorder	Unit	Price
1	44-100	Sensor Unit	10.00	5.00	EA	0.00
Remarks:						

Inventory and GL Transactions

Shipping an MO generates issue (ISS-TR) and receipt (RCT-TR) inventory transactions. If the transfer is a site-to-site transfer, the system creates GL account transactions and bookings with standard inventory transfer routines.

You can review the transactions created using Unposted Transaction Inquiry (25.13.13). The GL reference begins with IC and does the following:

- Debits the Inventory account defined in Inventory Account Maintenance for the product line at the To site and location
- Credits the Inventory account defined in Inventory Account Maintenance for the product line at the From site and location

When inventory transactions affect more than one site, costs may differ between the two sites. Cost variances are posted to the Transfer Variance account defined for the item product line and site in Inventory Account Maintenance, if available. Otherwise, the account defined for the site in Site Maintenance is used. The system automatically generates the appropriate balancing transactions in the GL for each site.

- When the two sites are in different entities, a balancing entry is posted to the appropriate Cross-Company Inventory Control account defined for the domain referencing the intercompany codes associated with the entities.
- When the two sites are in the same entity, a balancing debit or credit is posted to the Transfer Clearing account defined in Inventory Accounting Control.

Expensed MOs

In case of an expensed MO with a charge code, the items ordered are transferred to the engineer site and location entered in Material Order Shipments and then consumed. The system handles this action as an unplanned issue (ISS-UNP).

The debit account for the costs is the Service Expense account from the product line for the charge code. Costs are credited against the Inventory account of the consumed item's product line.

MOs With and Without a Call

While expensed MOs are issued immediately, items transferred with other MOs remain in inventory. Items ordered for a call are issued out of inventory only when they are consumed for the call in Call Activity

Recording. To maintain the relationship between the items and the call, the system marks the items in the To site as allocated to the call or line. This allocation prints on standard reports like the Allocated Inventory.

Items ordered for the engineer's inventory replenishment remain in inventory until consumed in some way, probably in Call Activity Recording.

Material Order Reports

Review information associated with MOs and shipments in three reports:

- Open Material Order Report (11.11.11)
- Material Order Backlog Report (11.11.12)
- Material Order Shipment Report (11.11.13)

See *User Guide: QAD Sales*.

If you are using EMT and your MO includes a line for an EMT transshipment item, you can view the transmission and shipment status of the EMT purchase order using EMT Tracking Report (7.15.11).

Open Material Order Report

Use the Open Material Order Report (11.11.11) to review line-item detail on MOs. You can restrict the report to include only MO lines that have a quantity shipped, or display information for all items on open MOs regardless of whether any quantity has shipped.

This report is generated based on information maintained in the MO master table. When an MO without a call has fully shipped, the system deletes it. When all items on an MO for a call are consumed or returned, the system also deletes it. Use the Material Order Shipment Report to generate a report based on transaction history for MOs that are no longer available in the MO master table.

Fig. 20.22
Open Material
Order Report
(11.11.11)

The screenshot shows a software window titled "Open Material Order Report". The window has a menu bar with "Open Material Order Report:", "Go To", and "ACTIONS". The main content area contains several input fields for search criteria: "Order Ref:", "Engineer:", and "Sold-To:" on the left side, and "To:", "To:", and "To:" on the right side. There is a checkbox labeled "Shipped Items Only:". At the bottom right, there are labels for "Output:" and "Batch ID:". The window has a standard Windows-style title bar with a close button (X) in the top right corner.

Select MO lines to report by call ID (order ref), engineer, and sold-to address. The system prints any item on order on any open MO line in the specified range. Line items within the selection print in order of due date.

Material Order Backlog Report

Use the Material Order Backlog Report (11.11.12) to display open MO lines waiting to be shipped. The system lists MO lines by item number, order, due date, site, or any combination. The system lists each item’s availability by site and line items by due date.

Inventory quantities are the same as those in the Stock Availability Inquiry (3.17).

Material Order Backlog Report

Material Order Backlog Report: Go To ACTIONS

Engineer Code:

To:

Item Number:

To:

Order:

To:

Due Date:

To:

Site:

To:

Location:

To:

Fig. 20.23
Material Order
Backlog Report
(11.11.12)

The system prints back-ordered items on an MO line with a due date and site in the specified range. Each line item within the selection prints in order of due date.

fseodl.p b+	11.11.12	Material Order Backlog Report	Date: 08/19/07
Page: 1		Quality Products, Inc.	Time: 11:37:54
Order/Ln	Site	Item Number Description	Due Date Qty Ordered Qty Alloc.
50	PKH	Harvey, Phillip	Order Ref: CA127
1	10000	10-15000 COOLING SYSTEM	07/25/07 10.0 10.0
2	10000	44-2000 CONTROL UNIT	07/25/07 10.0 0.0
M0123-B	glb	Bellicose, George	Order Ref: CA123
1	10000	55-100 EVAPORATOR	07/30/07 2.0 0.0

Fig. 20.24
Backlog Report
(132-column print
format)

Material Order Shipment Report

Use the Material Order Shipment Report (11.11.13) to print a report based on the transaction history created whenever an MO is shipped. Use this to view transactions for MOs that have fully shipped and been deleted by the system. If an MO line has partially shipped, the open quantity on the MO line displays.

The report includes the call number for MOs that have not been consumed completely in CAR. Since the system does not maintain the call number in transaction history, it is not available after the MO is consumed and deleted.

Fig. 20.25
Material Order
Shipment Report
(11.11.13)

Only MO lines with a quantity shipped appear on the report. You can restrict the report to only items shipped or optionally include information for items returned.

Select MO lines to include by item number, engineer code, MO number, and ship date. Except for engineer, the selection criteria determine the way the system sorts and presents information on the report. The report is sorted by item number, effective date, or MO number, depending on the range you specify, then by the transaction history number. If you specify only the engineer, the system sorts the report by transaction history number.

Important Generating a report with blank selection criteria or using only the engineer code can impact program performance. Also, because the report searches all transaction history records, a large amount of history can degrade performance.

Loading MO Lines into CAR

When you associate an MO with a call, you must associate each line item with a particular call line. When you access the call line in Call Activity Recording, the system displays a list of MO line items ordered for it. The engineer can select some or all of these items, which the system loads into the Item Usage frame of CAR.

Loading MO lines simplifies the recording of consumed and exchanged items ordered with MOs. Once items are loaded, you can modify the usage records like any other records in CAR.

If you select an MO line but do not issue the inventory, the system removes it from the usage detail and lets you reload it. The system keeps track of items consumed on the MO and continues to present the Material Order Selection frame until you have consumed or returned all MO items.

Material Order Selection Frame

When you select a call line item in CAR that has one or more open MOs, the Material Order Selection frame displays.

Items have
been
ordered
for
the
call
line.

Call Activity Recording

Call ID: CA100011 Go To - Actions -

Header

Call ID: CA100011 Bill To: 4000 End User: 4001 TZone: GMT-8

Item Selection

Line	Serial	Item Number	Work Cd	Svc Type	Report
1	SS-11554	CP300	Tech	W90I	194

Material Order Line Selection

Order	Ln	Item Number	Lot/Serial Number	Engineer	Quantity Open	T
SEO9	1	100A-01		MEW	3.00	☐

Fig. 20.26
Loading MO Lines
in Call Activity
Recording
(11.1.1.13)

The selection frame displays all open MO lines for the call line. An MO line is open when the quantity shipped on the MO is greater than the quantity consumed plus the quantity returned.

Select or deselect MO lines as needed. An asterisk (*) indicates selection. To leave the scrolling window and continue processing, click Next. After you finish the selection, the system loads the items ordered on the MO

into item usage records in CAR. Click Back while in the scrolling window to return to Call Activity Recording without loading any MO lines.

A user in CAR can select an item ordered on an MO for this call by a different engineer; however, the system displays a warning. The system validates each loaded line and displays standard CAR warnings and errors.

For each MO line you select, the system creates one item usage record. Internally, each item usage record remains linked to the MO line so it is recognized later when you update quantities. As a result, if items on an MO are not yet accounted for, the MO remains on the list of open MOs that you can select the next time you process this call item.

Item Usage Record

The system determines default information for the various fields in the item usage record as follows:

Quantity Used. The quantity used defaults from the open quantity of the MO line.

Quantity Returned. The quantity returned defaults from the quantity used if you have defined the item being consumed as repairable.

Note Set Repairable to Yes in Service Item Maintenance (11.3.7).

Operation Number. If item usage records exist, the system loads the MO into the first operation without them. If all operations have items, the system loads the MO into an operation numbered 10 more than the last one. If there is currently no item usage, the system loads the MO into the first operation.

Item Number. Same as the MO item number.

Inventory Details. The site, location, lot/serial, and reference associated with the MO line are loaded into the item usage detail and cannot be changed. Since detail allocations have been made to the call during MO shipment, you must consume the item that was shipped on the MO.

Inventory Transactions

When you accept the information in the item usage frame, several actions can occur:

- An inventory transaction for the consumed items takes place (ISS-WO).
- The system updates the quantity open on the MO based on the quantity consumed.
- After inventory processing and quantity updating, the system deletes the MO line if the quantity shipped equals the quantity ordered, the open quantity on the line is zero, and the pending quantity is zero.
- When the system deletes the last line of an MO, it also deletes the MO header.

Returning Items on MOs

An engineer may need to return items ordered on an MO when:

- Items ordered for a call are not used. Return these items in Call Activity Recording or in MO Direct/Pending Returns (11.11.8).
- Items ordered for engineer stock on an MO without a call are no longer needed. Return these items in MO Direct/Pending Returns (11.11.8), as long as the system has not deleted the MO.
- Items returned in Call Activity Recording are given a pending status. This means that the items are registered as returned, but remain in the engineer stock. You must physically return them to general stock in MO Direct/Pending Returns.

Return Setup

The return process in CAR and MO Direct/Pending Returns depends on two important setup activities, discussed in Chapter 3:

- “Return Status” on page 111
- “Default Sites and Locations” on page 106

Make sure you understand these concepts before continuing with this section.

MO Returns in CAR

▶ See “Returned Items Detail Frame” on page 594.

You can return items ordered on an MO in Call Activity Recording. The system executes these returns as inventory transfers, since the MO items are in standard stock. The return status you specify indicates the type of return in CAR. The system restricts the return statuses used with MO items as follows:

- Pending can be Yes or No. If Yes, Good must be Yes and Scrap No. If Pending is Yes, the return is registered against the call, but the items are not physically returned. Complete the return later using MO Direct/Pending Returns (11.19.13.8).
- Exchange must be No. You cannot return items ordered on an MO for credit. Exchange processing is reserved for items returned from a customer.

When returning items in CAR, always set Detail to Yes so that you can review the return status and default site and location for the return. When Detail is Yes, the Returned Items Detail pop-up displays. This frame enables you to specify the return status and inventory return site and location. If you are returning more than one item, you can access a multiline entry frame.

Updating Inventory

When you return items loaded from an MO line in CAR, the system moves them from one inventory site/location to another, using an inventory transfer transaction. If the return status has pending set to Yes, no inventory is moved at this time. However, the allocation to the call is removed.

The system keeps track of the open quantities on the MO. Returning items updates the quantity returned. A pending return updates both quantity returned and quantity pending.

Deleting MO Lines

After processing inventory and updating quantities, the system deletes the MO line if the quantity shipped equals the quantity ordered, the open quantity on the line is zero, and the pending quantity is zero. When the system deletes the last line of an MO, it also deletes the MO header.

MO Direct/Pending Returns

Use MO Direct/Pending Returns (11.11.8) for MOs associated with a call to:

- Return items ordered for a call but not used.
- Complete the return of items ordered on an MO for a call and marked with a pending return status in Call Activity Recording.

It is possible to return items ordered for engineer stock—MOs without a call—that you no longer need. However, when all items ship successfully on an MO without a call, the system deletes it. When this occurs and it is necessary to return items, you must use standard inventory management functions to transfer the items.

Note You cannot return items ordered with an expensed MO. If you specify an MO that has a charge code, the system displays an error.

Return Status

Use the return status in MO Direct/Pending Returns in two ways, depending on whether you are doing a direct return or completing a pending return.

You cannot use MO Direct/Pending Returns to mark items as pending, only to complete a pending return started in Call Activity Recording. This means you can specify a pending return status only if some items are marked as pending in CAR. Otherwise, the system displays an error.

Pending returns are assumed to be good, since they are items you ordered on an MO and did not use. They are returned to the default return site and location set up in Default Site Maintenance.

For direct returns, the system uses the return status to determine the default site and location for the returned items. You cannot specify a return status marked with exchange, since the items being returned do not come from a customer.

Because completing a pending return and directly returning items are processed differently, you cannot execute both types of returns at once.

Example You want to return four items left on an MO. Two were marked as pending return in CAR. You must execute this function once with a pending status and the quantity pending, then again with another valid return status and the quantity unconsumed.

Return Quantities

The system keeps track of various quantities on the MO. Any kind of return, both direct and pending, updates the quantity returned. A pending return also updates the quantity pending. For this reason, when these quantities display in MO Direct/Pending Returns, the quantity shipped may not equal the quantity returned, plus the quantity consumed, plus the quantity pending.

If both an open quantity and a quantity marked pending exists, the system defaults the value into the quantity field based on the return status.

MO Direct/Pending Returns Header

Figure 20.27 illustrates the header frame of MO Direct/Pending Returns.

Fig. 20.27
MO Direct/Pending
Returns (11.11.8)

The screenshot shows a software window titled "MO Direct/Pending Returns". Inside the window, there is a header bar with the text "MO Direct/Pending Returns:" followed by "Go To" and "ACTIONS". Below the header bar, there is a form with several input fields arranged in two rows. The first row contains "MO:" (with a search icon), "Order Reference:", and "Engineer:". The second row contains "Return All:" (with a checkbox), "Status:", "Site:", and "Location:". The "Effective:" field is located below "Return All:".

MO. Enter a valid MO with items to be returned. The MO cannot have a charge code.

Order Reference and Engineer. These are output-only fields that default from the MO.

Return All. Specifying Yes sets up all open quantities on the MO to be returned. If No, you must enter each line on the MO and select quantities to be returned before they are processed. Specify Yes to streamline data entry.

Status. Status defaults from the Return Status in Call Management Control. The definition of the return status determines what kind of return you are performing and the default return site and location.

Enter any valid return status defined with Return Status Maintenance (11.21.17) except an exchange status. Pending returns have a Qty Pending value greater than zero. If a pending status is specified, some items must be marked as a pending return in Call Activity Recording or an error displays.

Site and Location. Site and location default first from the engineer site and location, then from the engineer’s area. You can change these values if the items reside in a different site and location. These values provide the default for each line with quantities to be returned.

Effective. Enter the GL effective date for the return transaction. The default is the current date. The system verifies that the date is within an open fiscal period.

The effective date determines when this transaction affects GL balances.

Selecting Items to Return

Once you complete the header, the line-item selection frames display.

The screenshot shows a software window titled "MO Direct/Pending Returns". The header section contains the following information: MO: SEO3, Order Reference: CA100004, Engineer: JNC, Return All: ☐, Status: Return, Site: 10000, Effective: 07/06/2007, and Location: 650. Below the header is a table with one line item:

Ln	Order Ref Line	Item Number	UM	Status	Quantity
1	1	b002	EA	Return	1.0

Below the table, there are several input fields: Description: Component B2, Type: (empty), Qty Allocated: 0.0000, Qty Shipped: 1.0000, From Site: 10000 (with a dropdown arrow), Location: 650 (with a dropdown arrow), Qty Consumed: 0.0, Return Site: 10000 (with a dropdown arrow), Location: 100 (with a dropdown arrow), Qty Returned: 0.0, Return Serial: 1 (with a text input field), Multi Entry: ☐, and Comments: ☐.

Fig. 20.28
MO Direct/
Pending Returns
(11.11.8)

The Ln, Order Ref Line, Item Number, and UM fields are output only and reflect values from the MO line.

Status. Defaults from the header’s status and has the same restrictions and effect.

Quantity. If a pending status is specified, the Qty Pending displays by default. For a direct return, the open quantity on the MO line displays. Enter the number of these items you want to return. If you specify more than the open or pending quantity, an error displays. The open quantity is the Qty Shipped minus the Qty Consumed minus Qty Returned.

Description, Type, Qty Allocated, Qty Shipped, Qty Consumed, Qty Returned, and Qty Pending are output-only fields.

From Site and Location. Site and location default from the header. The system transfers inventory from this site and location to the return site and location.

Return Site and Location. The system searches for a default return site and location based on the attributes of the return status. Define return sites with Default Site Maintenance (11.21.13) for combinations of product line, service group, work code, item, and area. The return location must allow receipts (RCT-TR).

The system searches for a return site using the product line and service group of the item being returned. The system derives the area from the engineer. Work code is not used in this function.

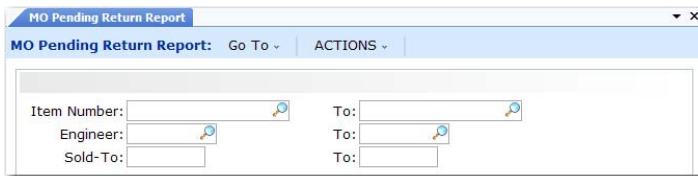
Return Serial. If the item being returned is lot/serial controlled, enter the correct number in this field.

Multi Entry. Enter Yes if you are returning multiple items and need to specify detail information for each one. If Yes, a Return Detail frame displays so that you can specify the lot/serial of each item returned.

Comments. If Comments is Yes, you can add or modify comments for the return.

Pending Return Report

The MO Pending Return Report (11.11.9) displays MO lines with at least one item that has a pending return status. Review this report on a regular basis to make sure that engineers return the items they said they did not use.



The screenshot shows a software window titled "MO Pending Return Report". Below the title bar is a menu bar with "MO Pending Return Report:", "Go To ~", and "ACTIONS ~". The main area contains a form with two columns of input fields. The left column has "Item Number:", "Engineer:", and "Sold-To:". The right column has "To:" repeated three times. Each input field has a small magnifying glass icon to its right, indicating a search function.

Fig. 20.29
MO Pending
Return Report
(11.11.9)

Since you cannot close a call until you return or consume all items ordered on an MO, ensure that pending returns are completed in a timely fashion.

Service Structures and Routings

Service structures and routings address the need of service organizations to manage repairing, installing, and maintaining items. This chapter discusses BOMs and routings in the service environment and provides details about setting up service BOMs, routings, standard operations, and work centers.

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BOMs/Routings in Service Environments **765**

Service BOM Code Maintenance **772**

Service Structure Maintenance **772**

Service Routing Maintenance **774**

Service Work Center Maintenance **777**

Service Standard Operation Maintenance **778**

Copying Service Structures and Routings **781**

Overview

Service structures and routings address the need of service organizations to manage repairing, installing, and maintaining items. These needs fall into three general categories:

- Service engineers need to identify the parts used to maintain an item, fix or install it, and the steps to follow during the service activity.
- Items returned from the customer for repair often require overhaul and refurbishing. A way is needed to assign the repair to a work center and manage it.
- Service activities may require labor and shop floor reporting similar to standard manufacturing control functions.

The functions on the Service Structures/Routings Menu (11.19), listed in Table 21.1, address these needs.

Table 21.1
Service
Structures/Routings
Menu (11.19)

Menu No.	Menu Title	Program
11.19.1	Service BOM Code Maintenance	fsbommt.p
11.19.2	Service BOM Code Inquiry	sbomiq.p
11.19.3	Service BOM Code Report	fsbomrp.p
11.19.5	Service Structure Maintenance	fspsmt.p
11.19.6	Service Structure Inquiry	fspsiq.p
11.19.7	Service Structure Report	fspsrp.p
11.19.9	Service Structure Copy	fspscp.p
11.19.13	Service Work Center Maintenance	fswcmt.p
11.19.14	Service Work Center Inquiry	fswciq.p
11.19.15	Service Work Center Report	fswcrp.p
11.19.17	Service Routing Maintenance	fsromt.p
11.19.18	Service Routing Inquiry	fsroi.p
11.19.19	Service Routing Report	fsrorp.p
11.19.20	Service Routing Copy	fsrocp.p
11.19.21	Service Std Operation Maint	fsopmnt.p
11.19.22	Standard Operation Browse	rwbr002.p
11.19.23	Service Std Operation Report	fsopmrp.p

This chapter discusses each of these functions in more detail:

- Service BOM Code Maintenance (11.19.1) defines the codes identifying a set of items used in service activity.
- Service Structure Maintenance (11.19.5) is used to create the list of items consumed during a predefined service activity.
- Service Work Center Maintenance (11.19.13) enables you to set up service work centers. You can also use standard work centers for service activities.
- Service Routing Maintenance (11.19.17) enables you to define a set of operations detailing the steps taken in a service activity.
- Service Standard Operation Maintenance (11.19.21) enables you to define operations common to the service of several products or applicable to different service routings in different operation sequences.

Figure 21.1 illustrates a typical workflow for setting up and using service structures and routings.

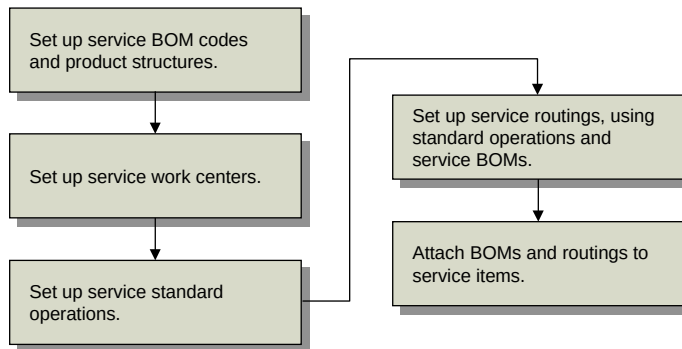


Fig. 21.1
Service
Structure/Routing
Workflow

BOMs/Routings in Service Environments

The terms *BOM* and *routing* are familiar terms to users of standard manufacturing functions. In manufacturing, a BOM defines the raw materials, components, or subassemblies that make up an item. A routing is a set of steps for manufacturing an item.

In the manufacturing environment, the BOM and routing associated with an item are typically standard: the item is generally made in the same way. While alternates and substitutions can exist, this one-to-one relationship is illustrated by the fact that the BOM and routing associated with an inventory item typically have the same number code as the item. Manufactured item 10-400 uses BOM 10-400 and routing 10-400.

In Service/Support Management, you use BOMs and routings in a slightly different fashion, reflecting the requirements of the service environment. From a service perspective, a *BOM* may be a list of replacement parts for repairing or maintaining an item, or a set of items needed to perform an installation. A *routing* is a set of steps detailing the procedure to be followed in repairing, installing, or maintaining an item.

Special Characteristics of Service BOMs/Routings

Because of the requirements of the service environment, service BOMs and routings have characteristics that distinguish them from standard manufacturing BOMs and routings.

Multiple BOMs and Routings

The major difference between manufacturing and service is that the service environment does not usually have a single way of doing things. Installation, repair, and maintenance reflect three service scenarios where different procedures requiring different item usage occur. But there can be other scenarios. A service organization can have several standard repair routings, not just one, reflecting typical problems encountered in the field.

You can associate three service BOMs and routings with a service item:

- *Repair*. Each type of repair typically has its own repair routing for procedures and repair BOM for items replaced during repair. Though repair steps can vary, the goal is to specify general repair steps that are always performed.
- *PM*. As with repairs, preventive maintenance (PM) visits also have a routing and bill of material. PM visits are different from repair situations. The PM routing defines standard procedures that need to be performed for a preventive maintenance visit. The PM BOM defines the items that you always replace or consume during a preventive maintenance visit.

- *Installation.* The operational steps and items used during an installation represent a third kind of standard BOM and routing that is different from repairs and preventive maintenance.

Note Use Service Item Maintenance (11.3.7) to associate BOMs and routings with an item.

BOMs Associated with Operations

This proliferation of related BOMs and routings leads to a second distinction in the service environment. In manufacturing, the BOM is often set up so that you use parts of the BOM at various operation steps. This is facilitated by the one-to-one relationship between a BOM and a routing.

In the service environment, since there can be several routings, the operation that uses an item may not be numbered the same in each. To accommodate this difference, the system links service BOMs to operations rather than linking operations to BOMs. You can create shorter BOMs listing the items used during a standard operations or routing step. You can then specify these BOM codes in the appropriate step on the routing.

Unique Codes

You typically identify manufacturing BOMs and routings with the same code as the associated item. You must identify service BOMs and routings with unique codes. You cannot use inventory item numbers.

Relationship of Service and Non-Service Codes

The programs you use to maintain service BOMs, product structures, routings, work centers, and standard operations are similar to those in the manufacturing modules. However, the system does make a distinction about where you can edit codes:

- You can maintain service and manufacturing BOM codes interchangeably in Service BOM Code Maintenance (11.19.10) and Product Structure Code Maintenance (13.1). However, a warning displays if you do not maintain the code in the program that created it.

- You cannot maintain manufacturing product structures using Service Structure Maintenance (11.19.5). Conversely, you cannot maintain service product structures with Product Structure Maintenance (13.5).
- You cannot maintain manufacturing routings using Service Routing Maintenance (11.19.17), since many of the fields required in manufacturing are not used in service. Similarly, you cannot maintain service routings with Routing Maintenance (14.13.1).
- You can edit a manufacturing work center with Service Work Center Maintenance (11.19.13), but a warning displays. You can maintain a service work center in Work Center Maintenance (14.5), but a warning displays.
- You can edit a service standard operation with Standard Operation Maintenance (14.9), but a warning displays. Similarly, you can maintain a manufacturing standard operation with Service Standard Operation Maintenance (11.19.21), but a warning displays.

You can use standard operations and work centers set up in the Routings/Work Centers module in service activities. For example, if an item is refurbished using a manufacturing work center, you can specify it on a service routing. You can also use manufacturing operations with service routings, although defaults for some data elements unique to service are not available.

You can associate a service routing with an item in Item Master Maintenance, although this is not recommended.

Important If you do cost rollups in a manufacturing environment, do not associate a service routing with an item in Item Master Maintenance. The roll-up process does not consider BOMs that are attached to routing steps. This can lead to an inaccurate cost rollup.

The only place that you can use a manufacturing BOM in service is as the list of items associated with a routing step or standard operation. You cannot associate manufacturing BOMs and routings with service items. However, you can use them in the service copy functions as source for service BOMs and routings.

Attaching BOMs/Routings to Service Items

After you create the appropriate service routings and bills of materials, you can attach them to items using Service Item Maintenance (11.3.7). You can specify three BOMs and routings that relate to three fields in Service Item Maintenance:

- A repair BOM and routing are normally attached to an item when Repairable is Yes.
- An installation BOM and routing are normally attached to an item when Installation Call is Yes. You can have variations on a standard PM BOM and routing depending on how often you service the covered item.
- A PM BOM and routing are normally attached to the item when PM Days is nonzero.

▶ See “Service Item Maintenance” on page 52 for details.

▶ See “Using BOM Type” on page 354 for details on BOM type codes.

If your company handles service activities differently at different sites, you can define service BOMs and routings for each site with Service Item by Site Maintenance (11.3.9).

BOM Codes for Non-Inventory Items

During preventive maintenance and repairs, you can use non-inventory items. To track these supplies, create BOM codes for them in Service BOM Code Maintenance (11.19.1).

Then attach the BOM code to the routing at the appropriate operation. The items are listed as part of the items needed when a call is printed. However, they are not included as item usage in Call Activity Recording, since the system loads only inventory items as item usage in CAR.

Using Service BOMs and Routings

The system uses service BOMs and routings in a number of places:

- Call creation and printing
- Call Quote Maintenance
- Call Activity Recording
- RMA Release to Work Order (repair routing only)
- Attachment of BOMs to standard operations and service routings

Call Creation

One of the three BOMs and routings associated with a service item is used during call creation, depending on the work code you specify.

- The PM BOM and routing are used by default for calls with the PM work code. The system can generate these calls from a preventive maintenance schedule associated with a service contract, or you can generate them by using the Call Generator or by specifying the PM work code in Call Maintenance.
- The Installation BOM and routing are used by default for calls with the Install work code. The system creates these calls during invoice post for items requiring an installation, or you can create them by using the Call Generator or by specifying the Install work code in Call Maintenance.
- The repair BOM and routing are used by default for calls with any other work code.

Note Define the Install and PM work codes in Call Management Control.

You can modify defaults in Call Maintenance if Call Structure Window is Yes in Call Management Control. This field controls the display of the repair detail window in Call Maintenance. You can change defaults later in Call Activity Recording, if they have not been loaded as usage and activity recorded against them.

You can include service BOMs and routings when you print a call to provide the engineer with a detailed set of instructions for the service activity.

Call Quote Maintenance and Call Activity Recording

When you create a call quote, the work code determines the appropriate service BOM and routing, just as in Call Maintenance. For both quotes and calls, the service BOM and routing can be used to populate the detail records for labor and items. The system loads each routing operation in the Labor/Expenses detail. The system loads all BOM items in the Item Usage frame for the first operation without items.

This streamlines data entry for standard repair sequences. You can modify the sequence for this particular quote. When you release the quote to a call, the same detail records display in Call Activity Recording. You can make minor adjustments to reflect the work performed.

RMA Release to Work Order

You can process items received on an RMA through a work order by releasing an RMA receipt line to a work order with RMA Release to Work Order (11.7.1.5). The system transfers the repair routing to the work order, defining the operations that must be performed to complete the item rework. The repair BOM is not used. The item being repaired is considered the BOM on the repair work order.

Standard Operations and Service Routings

You can associate service BOMs with service items in Service Item Maintenance, as described previously. You can also associate a BOM code with a standard operation or with a step on a routing.

Use this for more precise control over how the system loads items in Call Activity Recording and Call Quote Maintenance. When you associate a BOM with a service item, the system loads the BOM items into the first routing step without items. This may not be the step where you use them.

To avoid this, divide the list of components required for the entire service activity into lists of the items used at each step. Then create service BOMs to represent the item subsets. Finally, associate each shorter BOM with the appropriate operation.

When routings set up this way are exploded in CAR, the system loads the set of items needed for each step as item usage for the step.

Service BOM Code Maintenance

Define service BOM codes in Service BOM Code Maintenance (11.19.1).

Fig. 21.2
Service BOM Code
Maintenance
(11.19.1)

This function is optional. You can also create BOM codes in Service Structure Maintenance. However, you can define the codes here, then define the components with Service Structure Maintenance. If you do not use this function, comments are blank.

The BOM code cannot be an item number defined in the item master. If you specify a manufacturing BOM, a warning displays.

Service Structure Maintenance

Specify the details for service BOM codes in Service Structure Maintenance (11.19.5). This program uses only a subset of the fields displayed in Product Structure Maintenance. These two functions are similar. However, there is an important difference. The parent item of a service structure must be a service BOM code; it cannot be an item defined in the item master. You can create the service BOM code here or with Service BOM Code Maintenance (11.19.1).

Service Structure Maintenance

Service Structure Maintenance: Go To ACTIONS

BOM Code: INSTCP
Description: Install Configured Good
UM: EA

Component Item: APS-1111 Component 1111

Rev:
Reference:
Effective Date:
Quantity Per: 0.0
Start Effective:
End Effective:
Remarks:

To: EA

Fig. 21.3
Service Structure
Maintenance
(11.19.5)

BOM Code. If the BOM code does not exist, the system prompts you to create it. Specify an 18-character code identifying a service product structure, or BOM. Parts or components used in the service of an item are grouped under a BOM code. The parent item cannot be an item defined in the item master or a manufacturing BOM code, but must be a service BOM created here or in Service BOM Code Maintenance. To maintain the relationship with the item being repaired, you can use a prefix or suffix naming convention.

Description. Enter a brief description (maximum 24 characters) of this service structure. This description displays when you reference the structure.

The next four fields—component item, revision, reference, and effective dates—comprise a key for the last four fields.

Component Item. You can specify any item defined in the item master as a part of this service structure, except configured items. You can also use another service or manufacturing BOM. You can use a formula item defined in the item master. You cannot specify a formula BOM.

Rev. If you select an item master item as a component, its current revision number displays.

Reference. Use a reference number to specify the same component more than once in a service structure. The reference number defines this item's position when the BOM is exploded.

Effective Date. Starting and ending effective dates are inclusive and cannot overlap. The default is blank. This field indicates the first day this parent/component relationship is to be effective, and is part of the key in searching for a quantity to use.

Quantity Per. The quantity of the component item needed during the service activity. When you print a repair work order, call quote, or call report, the system lists each component item and the quantity required to perform the work. The system loads Quantity Per into the Item Usage frames in Call Quote Maintenance and Call Activity Recording as Qty Used.

Start Effective and End Effective. Starting and ending effective dates are inclusive and cannot overlap. You can leave one or both dates blank, which is the default. They indicate the first and last day this parent/component relationship is to be effective. Effective dates phase in engineering changes and maintain product structure history.

Remarks. Enter a brief comment describing this component's use.

Service Routing Maintenance

Specify the details for service routings in Service Routing Maintenance (11.19.17), illustrated in Figure 21.4. A service routing is the sequence of steps involved in a service operation. This sequence can include any number of standard operations, or can use operations defined for this service routing only.

Note Standard routings cannot be updated with Service Routing Maintenance.

Service routing codes must follow the same rules as service BOMs:

- The routing code must be unique to Service/Support Management.
- It cannot be an existing item number in the item master.

Standard Operations

Standard operations streamline data entry by providing defaults for all but the effective dates (Start Date and End Date). The comments you enter for each step print on the call so that the engineer can see how to service the item. You can use both manufacturing standard operations, which you

define in the Routings/Work Center module, and service standard operations on a service routing. If you use manufacturing standard operations, defaults for service-only attributes are not available.

Work Centers

When you set up a service routing, you can use standard work centers that are part of your regular manufacturing operations. Or you can use service work centers that you create in Service Work Center Maintenance (11.19.13). The kind of work centers you use depends on your business procedures.

Note Work centers are important in Call Activity Recording because the system derives the standard cost of labor from the work center.

The work center is a required field even if you do not use work centers in the traditional manufacturing sense. If you dispatch engineers to do preventive maintenance or repair on site, you can set up a service work center named FIELD, or designate each engineer as a work center.

The screenshot shows a software window titled "Service Routing Maintenance". It has a menu bar with "Go To" and "ACTIONS". The main area contains the following fields and values:

- Routing Code: INSTCP
- Operation: 10
- Start Date: (empty)
- End Date: (empty)
- Standard Operation: (empty)
- Work Center: 500-02
- Description: On Site Install
- Run Time: 1.0
- Tool Code: (empty)
- Subcontract Cost: 0.00
- BOM Code: (empty)
- Service Category: Labor
- Comments: (empty)

Fig. 21.4
Service Routing
Maintenance
(11.19.17)

Routing Code. An 18-character code that identifies the service routing. This cannot be a routing code defined in the Routings/Work Center module or an item number defined in the item master.

Operation. This number identifies where this step occurs in the routing sequence. Operations are usually initially defined in increments of 10, such as 10, 20, 30. This lets you easily insert steps.

Start and End Date. Starting and ending effective dates are inclusive and cannot overlap. You can leave one or both dates blank, which is the default. They indicate the first and last day this operation step is to be effective. Use effective dates to phase in engineering changes.

Standard Operation. You can specify a standard operation code set up with Service Standard Operation Maintenance (11.19.21) or Standard Operation Maintenance (14.9). Standard operations represent actions common to the service of several products or applicable to different service routings in different operation sequences. When specified, most remaining fields default from the values for the standard operation.

Work Center. Defaults from the standard operation, if specified. You can use either service work centers or manufacturing work centers. The work center is important in Call Activity Recording because the system derives the standard cost of labor from it.

Description. Enter a brief description (maximum 24 characters) of the operation. Description defaults from the standard operation, if specified.

Run Time. The approximate number of hours required to perform this step. This field defines the quantity in the Labor/Expenses frame of CAR. Run Time defaults from the standard operation, if specified.

Start and End Date. Starting and ending effective dates are inclusive and cannot overlap. You can leave one or both dates blank, which is the default. They indicate the first and last day this operation step is to be effective. Use effective dates to phase in engineering changes.

Tool Code. The tool associated with this step. Tool Code defaults from the standard operation, if defined. Set up tool codes in Generalized Codes Maintenance for field `ro_tool`.

Subcontract Cost. Defaults from the standard operation, if specified. Indicate the cost of subcontracting this step. If you specify a run time, leave this field blank. The system does not consider subcontract costs when it generates a call invoice.

BOM Code. Defaults from the standard operation, if specified. BOM Code indicates the list of items to use at this routing step. This code must be a service or manufacturing BOM code. These items are

loaded as usage for this step in Call Activity Recording. By default, the system loads all items in the BOM associated with a service item into the first routing step without items.

Note For more control over how items are loaded in CAR, create service BOMs that include only items used at an operation, then associate the BOM with the correct routing step.

Service Category. Defaults from the standard operation, if specified. The service category for the labor used during this operation. Use the service category to control the financial flow of service activity into GL accounts. Select a labor or expense service category.

Comments. If Yes, enter comments to print on the call. You can use them as detailed instructions for servicing an item.

Service Work Center Maintenance

In a service context, work centers represent a facility used for repairing items. If you use service routings, you must attach work centers to each operation in the routing, just as in manufacturing. You can use either service work centers or manufacturing work centers, set up with Work Center Maintenance (14.5), interchangeably.

Note If the reengineering of an article requires the same equipment as original production, service it in the same work center that created it.

In Call Activity Recording, the system uses the work center to derive the standard cost of labor. If operations do not have a work center, the system uses the Service Work Center value in Call Management Control to derive the cost of labor.

To use the standard cost feature, set up work centers even if you do not use them as defined in the manufacturing environment. For example, if you employ field engineers who perform their labor at the customer site, create a work center for each engineer or a generic work center named FIELD.

You define only a subset of the planning attributes of a standard work center for service work centers. For example, you do not specify setup time, run/setup crew, and machine burden rate.

Fig. 21.5
Service Work
Center
Maintenance
(11.19.13)

Service Work Center Maintenance: Go To ACTIONS

Work Center: 400-02

Description: On Site Test
 Department: 300 Subcontract Dept.
 Labor Rate: 20.00
 Labor Burden Rate: 5.00
 Labor Burden Percent: 5.00%

Work Center. Enter an 8-character code to identify this service work center.

Description. Enter a brief description (maximum 24 characters) of this work center to help identify its function.

Department. The department to which this work center belongs. Department codes identify groupings of manufacturing work centers, in your own facility or at outside suppliers. This field is for reference only.

In the manufacturing environment, you assign work centers to a department primarily for planning and accounting. This feature is not used with service work centers. When labor is reported in Call Activity Recording, the accounts associated with the charge product line are always used.

Labor Rate. Specify the average labor rate paid per labor hour to run this work center. The system uses this value in Call Activity Recording to calculate and post labor cost and display margin in Call Invoice Recording.

Labor Burden Rate. Specify the labor burden rate per hour applicable to both setup and run time at this work center.

Labor Burden Percentage. Specify the labor burden percentage applicable to the total labor cost at this work center.

Service Standard Operation Maintenance

A standard operation represents a process or operation common to the service of several products or applicable to different service routings in different operation sequences.

Standard operations supply defaults for service routings when you define them with Service Routing Maintenance. You can also access them from the Labor/Expenses frame in Call Activity Recording. For example, when you reference a standard operation, the system supplies information about the service category and the amount required to complete the operation by default.

Service Standard Operation Maintenance (11.19.21) is similar to Standard Operation Maintenance (14.9). Only a subset of the fields used in manufacturing operations is used in service. You can modify non-service standard operations with this function, but a warning appears.

Note You can use both service and manufacturing standard operations in service routings or in CAR.

The screenshot shows a window titled "Service Std Operation Maint". Below the title bar is a menu bar with "Service Std Operation Maint:", "Go To -", and "ACTIONS -". The main area contains the following fields:

- Standard Operation: TEST
- Description: Repair Inspection
- Work Center: 400-01
- Run Time: 0.5
- Service Category: Labor
- Tool Code:
- Supplier:
- BOM Code:
- Subcontract Cost: 0.00
- Subcontract LT: 0
- Comments:

Fig. 21.6
Service Standard
Operation
Maintenance
(11.19.21)

Standard Operation. Enter a code identifying an operation common to the service of several products or applicable to different service routings in different operation sequences.

Description. Enter a brief description (maximum 24 characters) of this operation. Description defaults into the Description field when you use this operation on a routing step. Include more detailed information in the comments.

Work Center. Can be either a manufacturing work center defined in the Routings/Work Center module or a service work center defined with Service Work Center Maintenance. Work Center defaults into the Work Center field when you use this operation on a routing step. The work center provides costing information for labor reported in Call Activity Recording.

Run Time. Approximate number of hours required to perform this operation. The run time defaults into the Run Time field when you use this operation on a routing step. It also defines the quantity used in the Labor/Expenses frame of CAR when you reference this operation.

Service Category. The service category for the labor used during this operation. Use the service category to control the financial flow of service activity into GL accounts. Select a labor or expense service category. If not defined, the system uses the Default Labor Service Category value in Call Management Control.

Tool Code. The tool associated with this operation. Defaults into the Tool Code field when you use this operation on a routing step. Set up tool codes in Generalized Codes Maintenance for field ro_tool.

Supplier. The address code of the normal, or preferred, supplier for this subcontract operation.

BOM Code. The product structure defining components to be used during this operation. A warning displays if this is not a service product structure. This BOM is loaded as item usage for the operation when specified on a routing. The BOM associated with a service item is loaded into the first operation without items of its own.

Note If you want more control over how items are loaded in CAR, create service BOMs that include only the items used at an operation, then associate the BOM with the correct routing step.

Subcontract Cost. Indicate the cost of subcontracting this operation step. Defaults into the Subcontract Cost field when you use this operation on a routing step. If you specify a subcontract cost, leave run time blank. This field is not used for service routings.

Subcontract LT. The average number of shop calendar days it takes a subcontractor to perform this operation. This field is not used for service routings.

Comments. If Yes, enter comments. These default into the routing when this standard operation is referenced and print on the call to give the engineer detailed instructions for servicing an item.

Copying Service Structures and Routings

To facilitate the definition of new routings, use Service Routing Copy to copy all or a range of steps from one routing to another. You can start with a standard routing as the source. If the destination routing does not exist, the system creates it as a service routing.

If the destination routing already has operations, the operations of the source routing are added to it, unless operation numbers overlap. In this case, the destination operation is not changed.

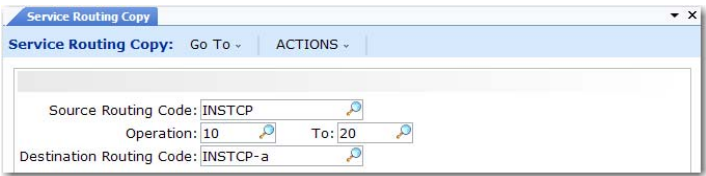


Fig. 21.7
Service Routing
Copy (11.19.20)

Copy service structures in a similar fashion with Service Structure Copy (11.19.9).

If the destination structure already has components, the system displays a warning and prompts you to continue. Using the Combine Common Components field, you can choose to either combine or overwrite the existing item/quantity components being transferred from the source to the destination structure.

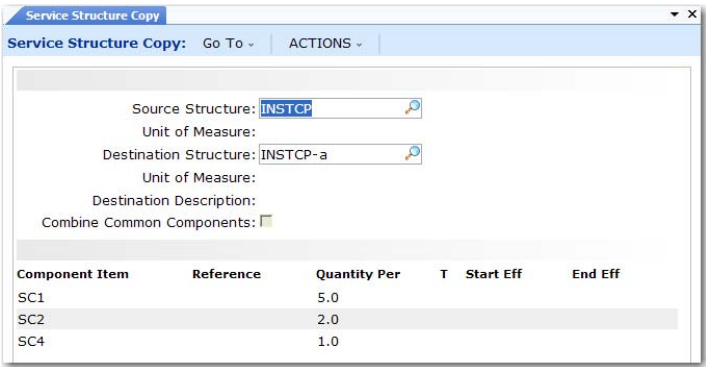


Fig. 21.8
Service Structure
Copy (11.19.9)

Use these functions to streamline data entry when setting up multiple service structures and routings.

Depot Orders

Depot order functions allow the creation, processing, and monitoring of depot orders performed within the repair/service unit of an organization. This chapter describes depot order functions.

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Overview

Typically a *depot order* is defined as activity that occurs in-house at the site of the manufacturer or distributor, rather than at the site of the end user. Repair activities that take place at the customer site are usually defined as constituting *field service repair*.

A depot order may require a replacement part to be sent to the customer before the damaged part is received in-house. A depot order also requires the defective part to be tracked when received in-house for repair from the customer.

As with any repair, the repaired items may or may not be covered by a warranty contract. Chargeable labor, material, and miscellaneous expenses may be incurred during evaluation and repair processes. Changes to installed base records must be recorded timely and accurately.

Note Where a customer wants to return a recently purchased item, RMAs should be used. Using an RMA instead of processing a negative sales order allows the item to be properly inspected before it is returned to inventory. Where a user has returned a defective item, QAD recommends that a depot order be used rather than an RMA since this allows the replace/repair process to be tracked more effectively. Note, however, that depot orders do not provide RTS capability.

Depot Order Collection

In the QAD .NET UI, you can use the Depot Order collection to access programs that let you create, process, and monitor depot orders. Typically the collection is used by employees who have a shop floor role, and by customer service representatives when handling calls from customers.

The Depot Order collection consists of the following browses:

- Depot Order browse - Lists customer-returned items for repair or replacement. The browse displays the call ID, item number, end user, status, receipt date, shipment date, and so on. This browse drives the records displayed in the other browses listed below.
- Parts List browse - Displays parts list records, including item number, description, and quantity.

- Material Order browse - Displays material order-related information, including sold-to and order date information.
- Call Labor Recording browse - Displays labor activity-related information, including start and end time, engineer, work code, and service category.
- Depot Inventory Tracking browse - Displays inventory tracking information for the item, including unit of measure, lot/serial information, site, and transaction type (repair or replacement, receipt or shipment).

Functionally related programs are available by right-clicking entries in the browses. For example, right-clicking an entry in the Material Order browse allows you to launch the Material Order ATP Inquiry (11.11.7) using the currently selected record as the default. Depot order-related programs also display in the application menu.

You can define other collections of related browse and maintenance programs within the QAD .NET UI that let you browse and maintain related item, parts, and material order data that you can then save under Favorites. Use Browse Collection Maintenance to do this. For details, see *User Guide: QAD User Interfaces*.

System Security

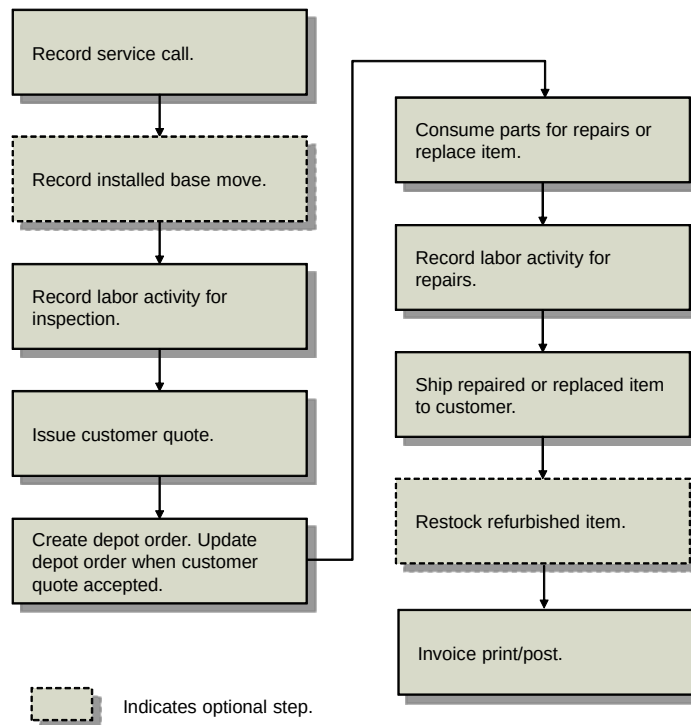
System security can be set for any program or browse that has a menu entry. If you do not have access to either a program or the menu within which the program resides, you cannot access the program in the Depot Order Collection.

Example If you do not have access to Parts List Maintenance in the Call Management Menu (11.1), the program is not available to you in Depot Order collection.

Depot Order Process Flow

Figure 22.1 illustrates an overview of the typical depot order process flow. Use this process flow and the accompanying description to help you process depot orders in your organization.

Fig. 22.1
Business Process
Flow



The first step involves the service call being logged using Call Maintenance (11.1.1.1). Optionally, at this point, if the depot order item now belongs to another end user, this can be recorded by using the Installed Base Move frame of Call Maintenance.

Next, the item is received from the customer and inspected to determine whether the item should be replaced or repaired, and associated repair/replacement costs are determined.

Labor activity for the inspection is recorded using Call Labor Recording (11.1.1.17). The resulting quote is communicated to the customer. The depot order is created using Depot Order Maintenance (11.1.2.1), though the depot order record is not yet confirmed.

Next, if the customer accepts the quote, the status of the depot order in Depot Order Maintenance is manually updated to indicate the customer has confirmed the order.

If the item is being replaced, the item is entered on the depot order as an additional call line and sales order line. The system automatically creates a material order for the item to be shipped and consumed against the call to remove the replacement from inventory.

If the item is being repaired, material for the repair is planned on a parts list and/or a material order. Parts can be preloaded from a BOM and saved as a new BOM for future use.

Next, an engineer records labor activity for repairs by using Call Labor Recording. Any additional items consumed or any items returned (not needed) are recorded as part of the repair in Call Parts Recording (11.1.1.19).

Next, the CSR verifies that the repair work has been completed and updates the depot order to enable invoicing. Optionally at this point the service type may be changed by using the Repair Data frame in Depot Order Maintenance to redirect service costs to different GL accounts based on the work performed and the coverage entitled to the customer. GL transactions are reversed and reposted.

The repaired item is either shipped back to the customer or restocked. If the item is returned to inventory, this is recorded using Depot Item Restock (11.1.2.4). Restocked items are removed from the customer installed base.

Invoicing occurs on the sales order line (which acts as a pending invoice for calls); this may be a zero invoice if a replacement item was sent with pricing attached to its shipment.

Recording Service Calls

In depot orders, service calls are logged using Call Maintenance (11.1.1.1). For details, see Chapter 11, “Call Management,” on page 359.

In order for the service call to be regarded as a depot order, when the Work Code pop-up window displays in Call Maintenance, you must enter a work code that has Repair Center set to Yes in Work Code Maintenance (11.21.1).

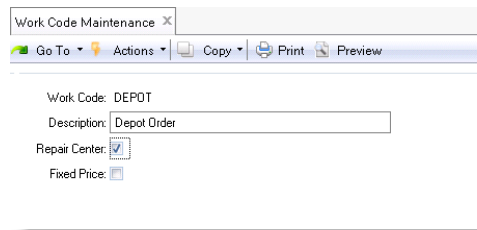
Fig. 22.2
Work Code Pop-Up
in Call
Maintenance



A small dialog box titled 'Work Code: Depot' with a search icon. It contains three input fields: 'Work Code:' with the value 'Depot', 'Model:', and 'Service Group:'.

Only service calls that are associated with the appropriate work code are available for selection in Depot Order Maintenance and the Depot Order browse.

Fig. 22.3
Work Code
Maintenance
(11.21.1)



A window titled 'Work Code Maintenance' with a menu bar (Go To, Actions, Copy, Print, Preview). The main area contains the following fields: 'Work Code: DEPOT', 'Description: Depot Order', 'Repair Center: ☒', and 'Fixed Price: ☐'. The 'Repair Center' checkbox is checked.

For details on creating work codes, see “Work Codes” in Chapter 3, “Service Setup,” on page 91.

Call Labor Recording

To record labor activity for inspection and repair against a depot order call, use Call Labor Recording (11.1.1.17). Typically an engineer records labor after evaluating a returned item, and then again when repairs to the item are complete. Labor activity may be recorded by call/call line or effective date.

Labor activity for existing records can be modified as long as the record is not closed. You can modify duration, start time, and end time, but cannot change the date of an existing labor activity record. For example, the duration may need to be modified if it was overestimated and needs correcting. A second line can be entered for the same Operation ID as the first line, using a negative value for the new line in the Duration field; the start time or end time must also be adjusted accordingly.

Note If the call labor record is associated with a call report that has already been invoiced, but the invoice has not yet been posted and printed, the system issues a warning that the invoice has been generated, and prompts you to continue to edit the call record. Responding Yes causes the Ready to Invoice field to be set to No in Call Invoice Recording (11.1.1.15).

Call Labor Recording does not support recording activity for service items. Instead, use Call Activity Recording (11.1.1.13).

Call Labor Recording is available from the Labor browse in the Depot Order collection and from the application menu.

Use Call Labor Browse (11.1.1.18) to view existing call labor activity records.

Header Frame

Use the header frame to select the engineer, whether the labor activity recording is date- or call-driven, and the scope of records to display for data entry.

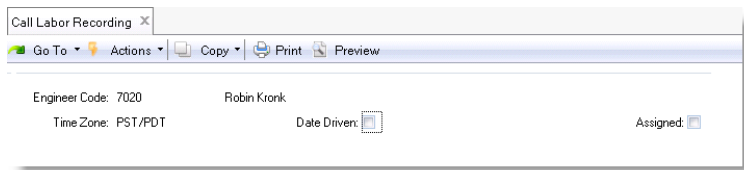


Fig. 22.4
Call Labor
Recording
(11.1.1.17) -
Header Frame

Engineer Code. Enter a valid code for the engineer whose labor is to be recorded.

Time Zone. This read-only field displays the time zone associated with the specified engineer.

Date Driven. If Yes, record labor using an effective date. Date-driven labor recording allows labor for multiple calls and call lines to be entered. Leave this field blank to use the current date. If No, record labor for multiple dates for a single call/call line.

Assigned. Set this field to Yes to view calls/depot orders where the selected engineer is assigned to at least one call line. Set this field to No to view all calls/depot orders. If Call Labor Recording is accessed from within the Labor browse of the Depot Order collection, this field defaults to the currently selected engineer.

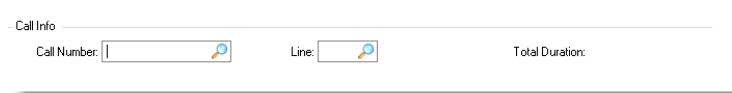
If there is a repair routing associated with the call/visit and if Date Driven is No, the system asks if the routing should be exploded. Responding Yes explodes the routing, and the Standard Operation values and Duration times are populated from the routing values; these values can be updated if required. Responding No causes the routing not to explode.

If there is a BOM associated with the routing, the system issues a message to the effect that the BOM will not be exploded in call labor recording (but will continue to be done so in call activity recording).

Call Info Frame

Use this frame to select a call and call line for labor recording when the Date Driven field is set to No. Only open calls are available for selection.

Fig. 22.5
Call Info Frame



The screenshot shows a window titled "Call Info". Inside the window, there are three labels with corresponding input fields: "Call Number:" followed by a text box with a magnifying glass icon, "Line:" followed by a text box with a magnifying glass icon, and "Total Duration:" followed by a text box.

Call Number. Enter a valid call number to record labor for. The system displays an error if the call number or call line entered is closed, on hold, or cancelled. Complete calls or call lines cause the system to display a warning.

Line. Enter a valid call line to record labor for.

Total Duration. Displays the running total duration of the labor recorded for a call and associated call lines. Total duration is updated when entering the current call line is completed.

Note This field is for reference only—the value it displays is unsuitable for the purposes of timekeeping or payroll verification.

Effective Date Frame

Use this frame to enter a date on which to record call labor activity when the Date Driven field is set to Yes. You can enter labor activity for multiple calls/call lines when using this frame.

Effective Date

Effective Date: 3/12/2009

Fig. 22.6
Effective Date
Frame

Visits Frame

This frame displays all open and unconsumed visits. If there are no visits to consume, this frame does not display.

- Visits

Tran Nbr	Sel	Close	Fix Date	Fix Time	Engineer	Call ID	Line	End User
73	☐	☐	3/12/2009	21:08	fsse1	ca100571	1	FS\$0001
78	☐	☐	3/12/2009	21:08	0002	202	1	202
79	☒	☐	3/12/2009	21:08	bjev	202	2	202

Fig. 22.7
Visits Frame

Transaction Number. This read-only field displays the transaction number of the open visit and the associated engineer.

Select. Enter Yes to consume the selected visit. Visits selected for consumption are recorded as labor when you respond to the system prompt. Consumed visits are unavailable for selection later. If No, the visit is not consumed and remains available for later consumption.

Close. Enter Yes to close the selected visit. Visits selected for closure are recorded as closed when you respond to the system prompt. Closed visits are unavailable for selection later. If No, the visit is not closed and remains available for later action. This field is enabled when a visit is selected.

Close Date. Enter the date when the labor was completed. This field is for reference only and appears on selected reports and inquiries.

Close Time. Enter the time when the labor was completed. This field is for reference only and appears on selected reports and inquiries.

Labor Details Frame

This frame displays all labor records entered for the specified engineer—or for all engineers—with labor recorded for the selected call, or for all calls on the specified date.

Fig. 22.8
Labor Details
Frame

Labor Details								
Number	Std Op	Call ID	Line	Duration	Start	End	Work Code	Svc Cat
11		202	2	31.133	15:00	22:08	Tech	Labor

Attempting to enter labor activity for calls that are closed, on hold, or cancelled causes an error to display. Entering labor for calls that are open but invoiced results in a warning; if you choose to continue, the call record is changed from invoiced to uninvoiced. Entering labor for a completed call line also causes a warning.

If entering labor for an effective date, you are prompted for the call and call line.

The Labor Details frame contains several fields that default from other fields:

- Specifying a standard operation causes Duration and Service Category to be defaulted from the specified operation. Otherwise, these fields default from the Service Control Labor Service Category. Travel-related labor is defaulted from the Service Control Travel Service Category.
- Work Code defaults from the call line or, if a call line is not available, from the call. If the call does not have a work code, the work code defaults from the Service Control Technical Work Code.

After recording labor, press End to exit the frame and verify that all information is correct before saving the form.

Number. Auto-generated by the system. Displays the number of the labor transaction.

Standard Operation. Specify a standard operation code set up with Service Standard Operation Maintenance (11.19.21) or Standard Operation Maintenance (14.9). Standard operations represent actions common to the service of several products or applicable to different

service routings in different operation sequences. When specified, most remaining fields default from the values for the standard operation.

Call ID. Enter a valid call ID for which labor is being recorded.

Call Line. Enter a valid call line ID for which labor is being recorded.

Duration. Enter a duration in hours and minutes for the labor required to close the call. If you do not enter a value, duration defaults from the standard operation. If a standard operation is not provided, the system calculates the duration by subtracting the start time from the end time.

The duration of labor recorded for an existing record can be modified if required. For example, this may occur if the labor duration was overestimated and needs to be modified later to reflect the true duration. To do this, enter a second line for the same Operation ID as the first line, enter a negative value for that line in the Duration field, and adjust the start time or end time.

Start. Enter a time to indicate when the labor for the call commenced. If a value is not entered, the system calculates the start time by subtracting the duration from the end time. For date-driven activity reporting, the start time entered cannot overlap with the start time of another call/call line.

End. Enter a time to indicate when the labor for the call ended. If a value is not entered, the system calculates the end time by adding the start time and duration. For date-driven activity reporting, the end time entered cannot overlap with the end time of another call/call line.

If labor activity is recorded for a call line that has a visit associated with it, the system prompts you to close the visit. Responding Yes sets the close time of the visit to the end time of the last call line entry. Responding No causes the visit to remain open.

Depot Order Maintenance

Use Depot Order Maintenance (11.1.2.1) to manage depot orders. Depot orders cannot be created manually: a depot order is a service call that is associated with a work code that has Repair Center set to Yes.

The header frames of Depot Order Maintenance contain fields that display information defaulted from the call: call ID, sold-to, bill-to, name and address, and ship-to information. Other fields are used to record receipt and delivery data. The Confirmed field defaults to Yes; it can be set to No to indicate that customer authorization for the repair has not yet been received. Other fields on the headers contain tax environment, salesperson, and freight-related information.

When entering information about a specific line item, you indicate the repair type for the item: Repair or Replace. If Replace is selected, the system automatically generates a second depot order line with a repair type of Replacement.

You use the Item Repair Data frame to record information about the item repair; for example, if the repair type is Replacement, you can specify an alternate item ID. The alternate item ID would then be used by the system when a repaired end-item is returned to inventory (that is, restocked) rather than sent back to the customer. Restocked items often use an alternate item ID to indicate they are restocked, as opposed to new, items.

You also can use the Item Repair Data frame to record BOM code, routing, service type information, and pricing information. You can use either fixed pricing or time and materials pricing types.

Use the Item Receipt frame to record receipt information for the returned item: receipt date, quantity, site, and so on. An Item Receipt Shipment Data frame displays shipment information, such as the actual date of shipment; this frame is updated when the repair or replacement item is shipped out using sales order shipments or the workbench.

If a depot order line is identified as being a replacement repair type, an MO is created automatically for this line using the alternate item ID if one has been specified on the depot order; otherwise the MO uses the item ID. The remainder of the information required to create the MO defaults from the depot order/call. The system uses the existing credit checking functionality to ensure that the order does not exceed authorized credit limits.

Use the Depot Order browse (11.1.2.2) to view information about current depot order records, such as status of the call/call line, receipt, and shipment dates.

Depot Order Maintenance Flow

Depot order maintenance occurs in the following order:

- 1 Fill out the Depot Order Maintenance header, including customer, end user, and call, and coverage information specific to depot order processing. This sets up default values for line item issues and receipts.
- 2 Specify items to be shipped to the customer.
- 3 Specify items to be received from the customer for repair or replacement.
- 4 Enter trailer information, including trailer codes, tax, and standard credit information.
- 5 Complete the trailer that totals billing amounts and trailer codes.
- 6 Optionally ship or receive directly from Depot Order Maintenance. You can also use the separate ship and receive functions.

Header Frame

Figure 22.9 illustrates the header frame that displays basic identifying information about the depot order. Many field values are defaulted from the call information.

Fig. 22.9
Depot Order
Maintenance
(11.1.2.1), Header
Frame

Depot Order Maintenance X

Go To Actions Copy Print Preview

Order: CA100001 Sold-To: 4030 Bill-To: RM40CUS1 End User: 4032

Bill-To: RM40BRC1 End User: Memory Consultancy
 6 23 Wood Road
 U
 W/arddha AR Morristown NJ 07960
 France United States test

Ship-To: 4030 Engineer: pdj Status: new
 Order Date: 2/27/2009 Work Code: Tech Site: 12000
 Required Date: 2/27/2009 Daybook Set: db2 Queue: Engineer
 Promise Date: Price List: Channel:
 Due Date: 2/27/2009 Currency: USD Taxable: ☒
 Warranty End: Confirmed: ☒ 2/27/2009
 PO Number: Ready to Invoice: ☐
 Remarks:

Back Next

Order. Enter a valid depot order number. Valid order numbers are those for service calls that are associated with a work code that has Repair Center set to Yes.

Sold-To. This read-only field displays the customer associated with the call's end user.

Bill-To. This read-only field defaults from the Sold-To value unless you define the sold-to address with a different bill-to.

End User. Defaults from the bill-to address.

Ship-To. Defaults from the End User ID. If you update it, the value must be a valid ship-to assigned to the sold-to.

Order Date. Displays the call date of the associated call. Order Date defaults from the system date. You can change this value. For example, if you take an order over the phone and do not enter the order into the system until three days later, you can change the date to reflect the day you took the order.

Required Date. Enter the date on which the customer requires the item to be delivered. If left blank, this field defaults to the due date.

Promise Date. Indicate the date the customer was promised delivery. The promise date can be different than the due date. Promise dates include delivery transit time, while due date is the date the items must be ready for shipment.

Due Date. Enter a date on which the repaired item is due to be shipped.

Warranty End. This read-only field displays the warranty end date based on the warranty duration and install date.

PO Number. Specify a purchase order number for the item associated with this call. This field is required if the end user reporting the problem has been defined in End User Data Maintenance as requiring a purchase order.

Remarks. Any remarks specified for the sold-to customer display by default. You can change these to make them specific to this depot order. Remarks display on printed documents.

Engineer. The code identifying the engineer assigned to the call displays by default. The employee name of this engineer displays next to the code.

Work Code. Defaults from the call. Work codes designate what type of work is performed during service activity. You can enter another work code that has Repair Center set to Yes, if required.

Daybook Set. Enter the daybook set that will be used when this order is invoiced. This value defaults from Customer Data Maintenance. At Invoice Post and Print, the system assigns an invoice number based on one of the daybooks in the specified set.

Price List. This read-only field displays the price list used to calculate the line item price. For a replace line, this value will always be 0.

Currency. Defaults from the currency of the customer bill-to record associated with this call. The first time through, you can select any currency, but after you move to the next frame, you cannot change the currency.

Status. Enter an 8-character code identifying the call status. Calls that have been recorded but have not yet been acted upon are typically given a New status. Once the associated item has been inspected and the customer has accepted the service quote, the status must be updated to indicate the depot order/call can be acted upon.

Site. Indicate the inventory site where repair parts for the item being serviced reside. Depot Order Maintenance uses the site when parts are issued in the repair of this item.

Queue. Defaults from the call and indicates the queue to which you assigned this call. Set up queues with Call Queue Maintenance (11.1.21.7).

Channel. Specify an optional code identifying the distribution channel through which this depot order originated. Channel can be used to determine GL sales and COGs accounts affected by inventory transactions. This field is validated against Generalized Codes Maintenance (36.2.13).

Taxable. Enter Yes if activity for this call is subject to tax; otherwise, enter No. The tax status defaults from the end-user tax data.

Confirm. The default is Yes. You can set this field to No to indicate that customer authorization for the repair process has not yet been received. This field must be set to Yes in order to ship items against this order.

Ready to Invoice. This field is initially set to No. After you have shipped or received items, the system sets it to Yes. Invoice Post and Print examines this field. It must be Yes before you can post the invoice. You can change the field to prevent invoicing. If you ship more items later, the system sets Ready to Invoice to Yes so the depot order can be selected the next time invoices are posted.

Ready to Invoice cannot be set to Yes if an open MO exists. In addition, for a repair or replacement line, at least one shipment line must have been shipped. For a replace line, the line must be completed.

When you click Next, the tax environment pop-up window displays fields related to the tax usage, tax environment, and so on. These fields default from the depot order header. For details about these fields, refer to *User Guide: Financials Volume A*.

When you click Next, the pop-up window exits and the second header frame of Depot Order Maintenance displays.

Second Depot Order Header

For depot order lines that are not replace lines, a second header frame displays when you click Next on the first header frame.

Fig. 22.10
Second Depot
Order Maintenance
Header Frame

Salesperson 1. Defaults from the sales person for the sold-to address. Identifies the salesperson to receive commission and quota credit for this depot order. The salesperson information on each line item defaults from the salesperson and commission rate on the header. You can change it on each line item. To change the salesperson on a line item, set Multiple to Yes.

Multiple. Indicate whether more than one salesperson is responsible for this depot order. If this field is Yes, a pop-up window prompts you to enter up to four salesperson codes.

Commission 1. Specifies the commission percentage this salesperson is to receive. Besides the normal commission rate for the salesperson, you can enter commission rates for sales to specific customers or sales of specific product lines.

Freight List. Defaults from the freight list for the sold-to address. Freight list codes identify a set of shipping rates for different zones and shipping weights or units. The freight list on the header sets the default for each line item.

Freight Minimum Weight. Defaults from the freight minimum weight for the sold-to address. This field is the minimum weight on which to base the shipping charge if the freight list type is bulk. This field does not apply to freight lists of type unit. For bulk freight lists, shipments that weigh less than this amount are charged based on a minimum weight charge, not the shipment weight.

Freight Terms. Defaults from the freight terms for the sold-to address. The freight terms determine how the system applies freight charges. They can be added to the order trailer, added to the unit cost for each ordered item, displayed as a freight allowance, or not calculated.

Calculate Freight. Defaults to Yes for a new order; otherwise, defaults to No. If Yes, the system calculates site- and currency-specific freight charges on RMAs. Charges can be calculated for the line item's shipping weight for unit price lists or for the order's total shipping weight for bulk price lists. Calculated freight charges appear on the trailer.

Display Weights. Specifies whether to display the Freight window for each line item, which enables you to enter or modify data in the Freight Class and Freight Ship Weight fields. For inventory items, these fields default from the item master. For memo items, you must specify them. The Freight window also shows information the system uses to calculate freight for the line item, so you can review freight amounts easily.

Line Frame (Repair Data)

When you click Next on the second depot order header frame and select the item, the Item Repair Data frame displays. This frame allows you to record information about repair dates, pricing details, alternate item ID, and so on.

Fig. 22.11
Item Repair Data
Frame

Item Repair Data		
Required Date: 2/27/2009	Engineer: bjw	Line Status: New
Promise Date:	Est Cost: 0.00	Site: 12000
Due Date: 2/27/2009		Taxable: ☒
Alternate Item: 1-BB		Revision:
Model:		Comments: ☐
BOM Code: PMCP100a		Receive: ☐
Routing:		WIP Product Line: 1000
Service Type: FIXED		

Item Number. Specify the number of the item requiring service. If the end user supplied an installed base serial number, the system fills in this field. If this item is in the installed base, it must belong to the end user entered previously.

Quantity. By default, this field displays the quantity of the item from the ISB. For a repair line, if the work code is not fixed, this field can only contain a value of 1.

Unit of Measure. This field defaults from Item Master Maintenance.

Lot/Serial. This field defaults from the call line item.

Repair Type. Indicates the type of the repair being performed to the returned item. You can modify this field when the value is Repair.

Required Date. Enter the date on which the customer requires the item to be delivered. If left blank, this field defaults to the due date.

Promise Date. Indicate the date the customer was promised delivery. The promise date can be different than the due date. Promise dates include delivery transit time, while due date is the date the items must be ready for shipment.

Due Date. Enter a date on which the repaired item is due to be shipped.

Alternate Item. If entering a replacement line, you can enter an alternate item number for the depot order line. This value is used only for internal tracking by the system.

This field is used when a repaired end-item is to be returned to inventory (restocked) rather than returned to the customer. Restocked items often use a different item number to indicate they are repaired items, not new items.

The Alternate Item is the item ID for inventory issued out of the stockroom on an MO, consumed against the depot order, and then shipped to the customer. The item number, not the alternate item number, is invoiced.

This field can be left blank even if the order line is for a replacement item. In this case, you may want to retrieve from inventory and ship to the customer a new item as opposed to a rotatable/restocked item.

Model. Enter the model number associated with this item. Many organizations service products by model.

BOM Code. Enter a valid service BOM for the part set up with Service Structure Maintenance.

Routing. Enter a valid routing code for the part set up with Service Structure Maintenance.

Service Type. This field defaults from the call. If necessary, you can modify this value. Enter a service type defined in Contract or Warranty Type Maintenance.

This value can be updated only if no activity has been posted against the order/call, or if the status of the order/call is complete and it is ready to be invoiced. No changes can be made to the service type if the line has been either partially or fully invoiced.

The service type for a replacement line cannot be changed and is read-only. This constraint ensures that the service type of the replacement line matches the service type of the corresponding replace line.

Engineer. The code identifying the engineer assigned to the order/call displays by default. The employee name of this engineer displays next to the code.

Estimated Cost. Enter an estimated cost if using fixed pricing; the system calculates charges using the value entered. If time and materials is used, the field defaults to blank.

Note When setting a repair type line to complete, the value in the Estimated Cost field is updated according to the actual price logged in Call Activity Recording.

Line Status. Defaults from the call line. Before a replacement (or a returned) item can be shipped back to the customer, the line status must be complete.

Site. Defaults from the previous instance of this field in the first header frame.

Taxable. Enter Yes if activity for this call is subject to tax; otherwise, enter No. The tax status defaults from the end-user tax data.

Revision. Revision is used to track the revision level of the part that requires service, which may differ from the current revision level of the item in the Item Master. This value defaults from the Item Master but can be updated if required.

Comments. Defaults to Yes if comments exist; otherwise defaults to No. If Yes, the standard comments frame displays when you click Next, so you can enter or review comments associated with this item.

Receive. Controls whether the Item Receipt frame will be displayed. Set to Yes to display the frame.

Line Frame (Receipt/Shipment Data)

Use this frame to review shipment data, such as activity (repair receipt, repair shipment), actual date of activity completion, and so on; these fields are read-only. The data on this frame updates when the repair or replacement item is shipped using sales order shipments or the workbench.

Item Receipt Shipment Data						
Ln	Activity	Actual	Quantity	Site	Location	Lot/Serial
1	Rpr Rcpt		1.0	12000		100
2	Rpr Ship		1.0	12000		100

Fig. 22.12
Receipt/Shipment
Data Frame

Reference. This field defaults from the call line item. Lot reference, site, location, and lot/serial number specifically identify inventory quantities.

Transaction Type. Indicates the type of the transaction. Possible values are Repair Receipt, Repair Shipment, or Replacement Shipment.

Quantity. By default, this field displays the quantity of the item from the ISB.

Estimated Date. Displays the estimated date for completion of this transaction type.

Actual Date. Displays the actual date for completion of this transaction type.

Site. Defaults from the depot order header or from the customer site.

Location. Displays the inventory location at the site from which the items are being issued.

Item Receipt Shipment Data Frame

Use this frame to record receipt details of the depot order item. Several fields on this frame—Item Number, Description, and Item Type, Unit of Measure, and End User—default from the depot order header or the call/call line.

Note This frame displays when the Receive field is set to Yes on the Repair Data frame.

Fig. 22.13
Item Receipt Frame

Ln	Activity	Actual	Quantity	Site	Location	Lot/Serial	Ref
1	Pipe Rcpt		1.0	12000	100	100	5
2	Pipe Shpt		1.0	12000	100	100	5

Item Number. This field defaults to 1.

Description. Enter a brief description (maximum 24 characters) of the code identifying its use and purpose.

Item Type. Defaults from the call/call line and validated against generalized codes. The value can be SW (software), S (system), or O (other). You can add codes in Generalized Codes Maintenance.

Lot/Serial. This field defaults from the call line item.

Quantity. By default, this field displays the quantity of the item from the ISB.

Unit of Measure. This field defaults from Item Master Maintenance.

Receipt Date. This field displays the value entered in the Actual Date field in the Receipt/Shipment Data frame.

Site. Defaults from the previous instance of this field in the Receipt/Shipment Data frame.

Location. Defaults from the previous instance of this field in the Receipt/Shipment Data frame.

End User. Displays the end user that the item is currently associated with.

Trailer Frame

The trailer is the same as that for a sales order and displays charges, credits, and information for shipping and invoicing. Most trailer fields—including include CR Initials, Credit Card, Action Status, Partial OK, and Ship Via—default from the bill-to address.

Call Parts Recording

Use Call Parts Recording (11.1.1.19) to issue/consume parts from a parts list, or to return parts that were consumed previously. For example, at the end of a repair call an engineer can use Call Parts Recording to return items previously identified in error as being consumed in Call Activity Recording (CAR). Returning the items reverses the original consumption activity and updates the quantity to return on the associated MO.

After entering the call ID and call line—these fields are populated automatically if Call Parts Recording is accessed from the Parts List browse—if a BOM is associated with the call line, you are given the option of exploding it. Exploding the BOM populates the item ID and quantity. If the BOM is associated with a labor routing, the system issues a warning that the BOM will not be exploded as part of the Call Parts Recording process (but will continue to be done in CAR).

After selecting the items to process, indicate the items consumed and the quantity to return. Optionally you can record details about the consumed items and the returned items by using the Item Usage Detail and Item Return Detail screens.

On exiting the screens, fault code information can be entered. The system prompts for the effective date and destination for the report output, and then processes the items.

The system handles items to consume like this:

- Selecting a quantity to consume for an item with a material order causes that MO line to be shipped and updates CAR with the consumption of the item.
- Selecting a quantity to consume for an item without an MO updates CAR with the consumption of the item.

The system handles items to return like this:

- Selecting a quantity to return for an item with an MO causes the item to be received back into inventory. CAR is updated to indicate the item is not consumed.
- Selecting a quantity to return for an item without an MO (on the parts list only) returns the item to inventory and updates CAR to indicate it is not consumed.

Note Call Parts Recording is a subset of the parts recording functionality available in CAR, intended to simplify the process of recording parts issue/consumption. The fields in Call Parts Recording and CAR have identical functions; for field descriptions see “Call Activity Recording” on page 565.

Material Order Control

Use Material Order Control (11.11.24) to enable the automatic consumption of items that are to be shipped using Material Order Shipments (11.11.6).

For details on shipping MOs for depot orders, see “Material Order Shipments” on page 807.

Fig. 22.14
Material Order
Control (11.11.24)

Consume Shipped Lines. Set this field to control the consumption of items.

Yes. Enables the automatic MO shipment/CAR consumption for all material orders.

Only DOM. Enables the automatic MO shipment/CAR consumption for depot material orders only (that is, for orders associated with calls that have a work code with the Repair Center check box set to Yes.)

No. Do not auto-consume items; instead, use the standard MO shipment/CAR consumption.

Material Order Shipments

Use Material Order Shipments (11.11.6) to enable the optional automatic consumption of items that are shipped. This ability means that you do not have to explicitly consume MO parts in CAR. Consumption takes place against open calls only; if the call is complete or closed, no consumption will occur, even though the MO can be created and shipped.

Note Before using Material Order Shipment to consume items automatically, you must enable auto-consumption in Material Order Control. For details, see “Material Order Control” on page 806.

The screenshot shows a software window titled "Material Order Shipments" with a standard toolbar (Go To, Actions, Copy, Print, Preview, Attach). Below the toolbar is an "Attachments" section. The main area contains the following fields:

MO: SEQ10	Effective Date: 3/10/2009	From Site:
Engineer: ewj	Ship Allocated: ☐	To Site: 12000
Order Ref: ncr-d01	Ship Picked: ☒	To Location: 100
	Consume: ☐	

Fig. 22.15
Material Order Shipments Header Frame (11.11.6)

Consume. By default this field is set to Yes to indicate that the selected items should be consumed automatically when shipped. This defaults from the setting of Material Order Control.

Click Next to display the line detail frame to control the consumption of line items.

Fig. 22.16
Line Detail Frame

Material Order Line Items						
Ln	Item Number	T	Qty Alloc	Picked	To Ship	Backorder Site
1	100b		0.0	0.0	0.0	1.0 MD400

Line: 1	Cancel B/O:	Site:	Loc:
Quantity:		Lot/Serial:	
Item Number:	UM:	Reference:	Multi Entry: ☐
Description:		Req Date:	Time:
	Consume Shipped Lines: ☐		

Consume Shipped. This field defaults from the Consume field on the header. Enter Yes to cause this line to be consumed.

Consumption Report Output. This field lets you specify the output option for the Consumption report.

The MO consumption report displays the details of the items consumed and any errors encountered during the consumption process. Any lines that remain unconsumed due to errors must be corrected and consumed within CAR. Transaction history is created for consumed lines.

Material Order ATP Inquiry

Use Material Order ATP Inquiry (11.11.7) to view ATP information associated with a specific material order and lines. Right-clicking a record in the Material Order browse causes the inquiry to run using the currently selected record.

Fig. 22.17
Material Order ATP
Inquiry (11.11.7)

Material Order ATP Inquiry

Go To Actions Copy Print Preview

Material Order:	
Material Order Line:	To:
Due Date:	Output:
	Batch ID:

Specifying a material order displays all unconfirmed material order lines whose due date is less than or equal to the date specified. If a material order line is not specified, all MO lines display. MO lines may be skipped if:

- No due date is specified for the MO line.
- Site security does not allow the current user to view the line.
- The line is an EMT part, a configured part, or ATP enforcement for the line is None.

The system generates a report similar to the one in Figure 22.18 to the output device you specify.

Line	Item Number	Earliest Due Date	ATP Qty On Hand	ATP Horizon Date	Due Date	Qty to Ship	Order Qty
1	do-001	03/03/09	0.00 EA	03/08/09	01/09/09	5.00 EA	5.00 EA

Fig. 22.18
Material Order ATP
Inquiry Output

Depot Item Restocking

Use Depot Item Restock (11.1.2.4) to restock inventory with items that were originally returned by customers, repaired in-house, and then restocked in refurbished inventory.

Note This program is available from the Depot Order browse as well as the menu.

Restocked items may have a different item number to indicate that the item is a refurbished—as opposed to new—unit. You can give an item that will be restocked a different item number by entering a value in the Alternate Item Number field in Depot Order Maintenance.

Depot items must be received before they can be restocked. If required, site information may be updated.

Fig. 22.19
Depot Item Restock
(11.1.2.4)

Line	Alternate Item	Quantity Receipt	Serial	Site
1	do-001	1.0 1/7/2009	xx	12000

Only depot order lines that have a complete status can be restocked. The line selected is passed to the Receipts–Return to Stock (3.11) program. The installed base is updated to reflect that the item was restocked into inventory and removed from the customer’s installed base.

Call ID. Enter a valid call ID. The call must be a replace type of depot order line and have a status of complete in order for the item to be restocked. If the call has a status of closed or hold, the restock frame does not display.

Line. Enter a number identifying a detail line. Only one line at a time can be entered for restocking.

Depot Order Shipment

After the item is repaired and ready to ship, the existing sales order shipment and pre-shipper workbench screens are used to ship the item to the customer.

Shipment of the item is prevented if:

- The Confirmed field is set to No to indicate that the order has not been accepted by the customer.
- The shipment is on credit hold.
- The depot order line status is not complete.

Note The depot order status may be set to complete if there is an open MO; the status cannot be set to closed unless the MO is for a replacement line.

The actual date of shipment records is updated. After the item ships, the invoice ISB is updated while printing and posting occurs.

Use the Depot Inventory Tracking browse (11.1.2.3) to review depot order, item ID and description, quantity and unit of measure, lot/serial number, end user ID, site (receipt or shipment, depending on the activity), location (receipt or shipment, depending on the activity), transaction type, and transaction date.

Depot Order Invoicing

A depot order line can be invoiced when the line status is complete and Ready to Invoice is set to Yes. Ready to Invoice cannot be set to Yes if any of the following apply:

- Open MOs are associated with the depot order (with the exception of MOs for a line that has had, or will have, a replacement part shipped out against it).
- An outstanding item receipt quantity is due from the customer for that depot order line (for example, a replacement unit was sent and the customer never returned their broken unit for repair, which was part of the agreement).

Customers must manually update the status of the depot order/order line to Closed.

Service Type Change

As part of depot order invoicing, you can update the service type on the depot order line if no activity has been posted against the order/call, or if the order/call status is complete and is ready to invoice. The service type cannot be changed if the line has been either partially or fully invoiced.

The service type for a replacement item cannot be updated: it is read-only. This ensures that the service type of the replacement item matches the service type of its associated replace item.

If you change the service type, the system checks to see if the inventory, work order, and service GL accounts associated with the new service type product line are different than those GL accounts associated with the old service type product line. If they are the same, no further processing is required. But if the GL accounts are different, the system:

- Reverses any associated WO or IC transactions already created for the call/call line.
- Creates new WO/IC transactions that use the product line inventory, WIP, and GL accounts associated with the updated service type.

This ensures that the inventory history and GL transaction activity are synchronized and posted to the correct product line accounts.

- Reverses any other labor, item, or other expenses posted against the call in CAR that require reversing.

All transactions created after the service type is changed post to the GL accounts associated with the product line of the new service type.

The GL effective date for these reversing/correcting transactions defaults to the effective date for the original GL transaction; this date can be modified if required (or if the original GL posting period has been closed). The effective date for the reversing transaction defaults from the old effective date if the GL period is open; otherwise it defaults to the system date.

Return Material Authorizations

Use return material authorizations (RMAs) to manage simple returns from your end users. You can receive a returned item and issue a replacement item with an RMA. This chapter discusses how to set up and use RMAs, and provides a detailed description of RMA Maintenance.

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RMA Life Cycle

Use RMAs for managing simple returns. In general, RMAs perform three activities:

- Receive returned items for repair or replacement.
- Issue replacement items.
- Create invoices for this activity.

RMAs are limited to the receipt and issue of items. Track activities that require an engineer's intervention with Call Activity Recording (CAR). CAR also supports the exchange of items. However, in CAR, this exchange is part of an engineer's activity in responding to a call for repair or preventive maintenance.

The following two features distinguish RMA returns from returns in CAR:

- You can generate RMAs independently of call tracking functions.
- RMAs do not require the intervention of a service engineer.

You can view RMAs as a type of sales order with special features to accommodate the requirements of a service environment. RMAs use all sales order features, such as freight processing and best pricing. Best pricing determines applicable prices using codes and rules you defined in the SO/SQ/RMA Issues Pricing Menu (1.10.1).

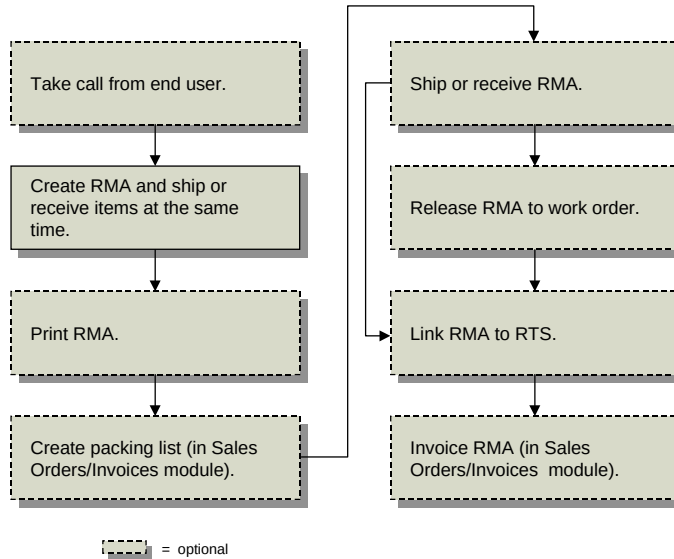
Note Best pricing applies only to RMA issues. Define price lists for RMA receipts by setting up credit price lists in the PO/Sched/RMA Rcpt Price Menu (1.10.2).

Since RMAs are similar to sales orders, you use the Sales Orders/Invoices module to manage the invoicing and credit functions. Use Pending Invoice Maintenance to correct pricing information on an RMA invoice just like a sales order invoice.

♦ See the Shipping chapter in *User Guide: QAD Sales* for details.

Note If you are using shipping groups and inventory movement codes, you can enter shipment information and generate shippers during RMA shipments just like sales order shipments.

Fig. 23.1
RMA Workflow



Create RMAs with RMA Maintenance (11.7.1.1). Shipments and receipts on an RMA can take place when you create the RMA, or later in RMA Shipments (11.7.1.16) and RMA Receipts (11.7.1.13). If you create the RMA as unconfirmed, confirm it before shipment using RMA Confirmation (11.7.1.6).

Use RMA Print (11.7.1.3) to print the RMA and use the standard Sales Order Packing List (7.9.13) to create a packing list for an RMA.

Note In RMA Print, the country for the sold-to customer determines the numeric and date formats.

If you are going to refurbish the item received on an RMA, release it to a work order using RMA Release to Work Order (11.7.1.5). To send the item to a supplier for repair, associate an RMA with an RTS in RTS Maintenance (11.7.3.1).

RMA billing takes place in the Sales Orders/Invoices module using standard Invoice Post and Print (7.13.4). As with a sales order, you use Pending Invoice Maintenance (7.13.1) to change prices, tax status, and salesperson commission.

See Chapter 24, “Returns to Suppliers,” on page 865 for details on RTS features.

Manage credit issues in the Sales Orders/Invoices module. If an RMA is on hold because of a credit problem, you can clear it using Sales Order Auto Credit Approval (7.1.17).

Once fully invoiced, the system deletes RMAs, just like sales orders. To prevent obsolete RMAs from being left in the system, post invoices for an RMA even if monetary amounts are zero.

Effects of Optional Modules

A number of optional features and modules affect the processing of RMAs. Many of these options add additional pop-up windows that display during header or line-item entry. This chapter describes standard RMA processing. If you are using optional features, the following list indicates where you can find additional information when:

◆ See *User Guide: QAD Sales* for information on ATP.

- You are using available-to-promise (ATP) features and the system determines that insufficient inventory will be available on the due date for a confirmed RMA issue line. The system displays a frame with ATP information and options. When you use RMA Confirmation, you can decide before confirming the RMAs whether the system should change order-line due dates to meet ATP requirements.
- You are entering a sales order for a configured item. These pop-ups are described in *User Guide: QAD Sales*.
- You are using the optional Logistics Accounting module. The effect of this module is described in *User Guide: QAD Master Data*.

RMA/RTS Control Settings

RMA/RTS Control (11.7.24) sets defaults for handling both RMA and RTS (return to supplier) functions. Some fields apply to both RMAs and RTSs. Others are used exclusively by one or the other.

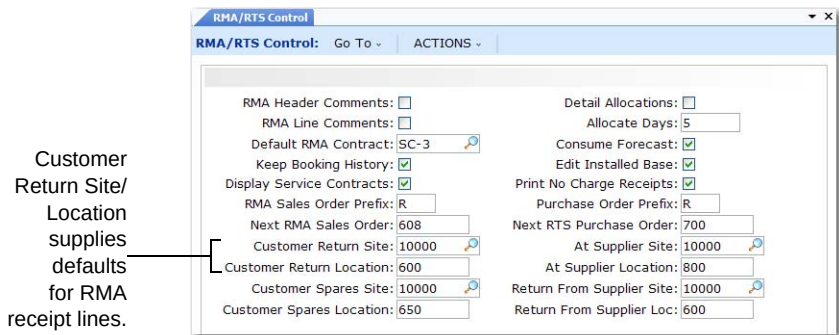


Fig. 23.2
RMA/RTS Control
(11.7.24)

Customer Return Site in the control program is the default for RMA receipts. If you perform repairs at a manufacturing site, specify that site as the customer return site. If your return and repair operations are separate from manufacturing, use the repair site as your customer return site.

Figure 23.3 represents three different scenarios for setting up return sites and locations.

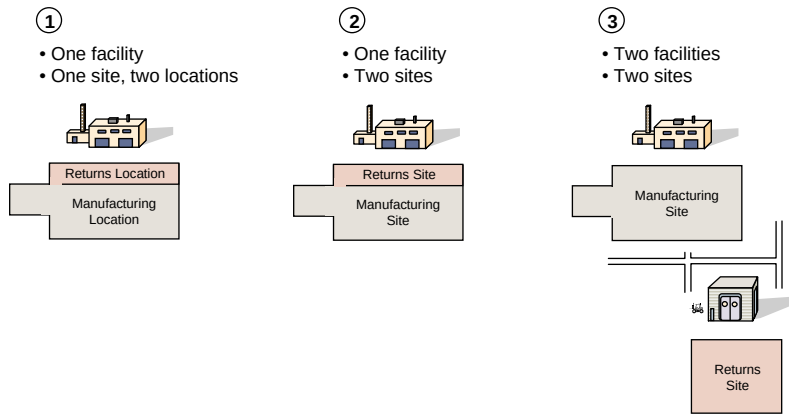


Fig. 23.3
Return and Spares
Sites and Locations

Setting Up Return Locations

Along with a customer return site, you can set a customer return location default for RMA receipts. If you use a special location for receiving RMA goods, this location probably has special characteristics. Use inventory status codes to define those characteristics.

Generally, until you inspect a returned item, you do not want it to be available for sales orders or work orders. Use a nonavailable location status to prevent other functions from allocating returned inventory.

Use the Nettable inventory status field to determine whether returned inventory is considered on-hand by MRP and planning functions. If you can put most returns into usable stock with little or no repair, set the status of this inventory location to be nettable. If you scrap most returns, set the status to be non-nettable, so MRP does not count the inventory as being on hand.

The RMA receipt function performs a negative sales order shipment to process the return. The return location should not restrict the ISS-SO transaction.

Setting Up Customer Spares

Another important control program setting for RMAs is Customer Spares Site. In this field, specify the site you want as the default for issue of replacement items on RMAs.

Business Issues for RMA Implementation

Several implementation issues determine how you set other values in RMA/RTS Control.

Forecasting Replacement Parts

If you are forecasting your replacement parts, set Consume Forecast to Yes. Forecast is then consumed when an RMA is issued.

Inventory Allocations

Allocations reserve inventory so it is not allocated to other sales orders, material orders, RMA issue lines, intersite requests, calls, or work orders. Allocations help control the shipment of items, especially when a sufficient quantity of an item does not exist to fill all orders.

Control RMA allocations with settings in Sales Order Control and RMA/RTS Control.

- The Quantity Available to Allocate calculation method in Sales Order Control controls how the system determines the number of items available to allocate. The calculation is the same for all items and sites.
- The value for Limit Allocations to Avail to Allocate in Sales Order Control determines how the system handles shortage situations. If this field is No, Quantity Allocated defaults from Quantity Ordered even if a sufficient quantity to allocate does not exist. If this is Yes, Quantity Allocated never exceeds the quantity available. If there is no quantity available to allocate, Quantity Allocated defaults to 0.
- The setting of Allocate Days in RMA/RTS Control determines the value for the same field in RMA Maintenance. The system attempts to allocate only RMAs with a due date within the range that this field defines. For RMAs due outside the range, Quantity Allocated defaults to 0 regardless of available quantity.
- The Detail Allocations field in RMA/RTS Control sets the default for the similar field in RMA Maintenance. If this is Yes for an RMA issue line, an inventory allocation pop-up window displays for specification of site and locations and lot/serial/reference numbers.

You can ship items from RMA Maintenance, without allocations, by specifying a quantity to ship. If you use packing lists to communicate shipping priorities, you can set Pick Only Allocated Lines to Yes in Sales Order Control. In this case, only allocated quantities print from the Sales Order Packing List function, telling the shipping department what to ship.

Transaction History

To keep an audit history of updates and changes to RMAs, set Keep Booking History to Yes. The system maintains transaction history records, identified as type ORD-SO. Each record includes the item, order quantity, price, cost, date, user ID, and other information. You can review this information using booking inquiries and reports.

Updating the Installed Base

You can modify installed base information within an RMA. For instance, to specify an alternate end user for one line item that is different from the end user on the header, you can change the end user for the line. Set Edit Installed Base to Yes in the control program to modify installed base information within the RMA using a pop-up window.

Default RMA Contract

See Chapter 25, “Control Programs,” on page 881 for a description of all control program settings.

The service type in the control program determines the default in RMA Maintenance (11.7.1.1) if an RMA does not reference a call or contract. All items on the RMA receive coverage as defined by this service type.

Sales Order Control

RMA/RTS Control contains settings that enable you to make business decisions concerning the aspects of RMAs that are unique to a service environment. However, RMAs are also a special kind of sales order.

Many business decisions that you make in Sales Order Control (7.1.24) affect aspects of RMA processing. For example, the following settings in Sales Order Control (in addition to others) are considered by RMAs as well as sales orders:

See “Inventory Allocations” on page 818 for details related to allocations.

- Allocation method, Limit Allocation to Avail to Alloc, and Print Only Lines Allocated
- ATP Enforcement
- Calculate Promise Date
- Shipping Lead Time—RMA due date for issues is the system date plus shipping lead time
- Line Format (S/M)
- Minimum Ship Amount
- Consume forecast forward or backward
- FOB Point

Settings in Sales Order Accounting Control (36.9.6) also have an effect on RMA processing:

- Price Table Required

- Vary Pricing Date by SO Line

RMA Coverage

When handling returns, you address many coverage issues. Is repair covered? Is repair feasible in terms of the amount of coverage? Is this item critical to the account, and should the RMA costs be shifted to goodwill? How can coverage be adjusted for one item or special case?

Pricing is another coverage issue for RMA items. A returned item is usually not new and may not be in good condition. How much credit do you give for the return if you issue a new item and credit the customer for the return?

Coverage issues for RMAs are handled through service types, charge types, and RMA credit price lists:

- Service types determine credit pricing and coverage levels for the RMA as a whole.
- Charge types enable you to change the service type for a particular item on an RMA.
- RMA credit price lists manage the cost of returns.

Note Only the percent of coverage defined for the service type or contract is used in RMA Maintenance. Limit consumption on contracts takes place only in Call Activity Recording.

RMA Service Types

The service type associated with an RMA determines credit pricing and coverage levels, as well as other coverage details. By default, an RMA uses the service type from one of three sources:

- The service type of the call associated with the RMA
- The service type of a contract selected to cover the RMA
- The default service type in RMA/RTS Control (11.7.24), if no call or contract are associated with the RMA

▶ See Chapter 5, “Contract and Warranty Types,” on page 175 for details on setting up service types.

Service types determine the financial impact of RMA processing. They provide default credit price lists for RMA receipts, default restocking charges, and also determine the percentage of coverage. In addition, the service type determines whether you can ship a replacement item before you receive the defective item, and can determine the default product line.

Credit Price List

During returns, an RMA credit price list must exist before the system can calculate the credit price. If no credit price list exists, the system sets the line item price of a receipt to zero. Define RMA credit price lists in the PO/Sched/RMA Rcpt Pricing Menu (1.10.2).

Product Line

RMA Maintenance supports an expanded use of product lines to determine accounting impacts. Support organizations use this to distinguish the financial impacts of service provided under different kinds of coverage: warranty, contract, giveaway, billable.

The default product line for RMAs depends on the setting of Use Item Prod Line in SSM Accounting Control. If this is Yes, the item's product line is the default. If No, the product line of the service type is the default. The product line determines which GL accounts are affected by an RMA.

The system uses the product line for the RMA line to determine sales-related accounts in the same way as sales orders. In RMAs, the system determines COGS accounts in the same manner. The system first looks for accounts set up with Sales Account Maintenance (1.2.17), using the product line associated with the RMA line item, the RMA header's site and channel, and the customer type of the sold-to address. If no matching records exist, the system uses the accounts in Product Line Maintenance.

Note Inventory accounts for RMA transactions are based on the product line associated with the item being issued or returned in Item Master Maintenance. This is essential to inventory control implementation, since the same source for GL account numbers must be used for issuing and receiving items to reconcile inventory value with GL account balances.

Issue Line Percentage of Coverage

For RMA issue lines, line item discount reflects the level of coverage of the service type in effect for the RMA. The system supplies a default for this field in the following manner:

- 1 First, the system determines the service category associated with the line item. You can specify this with Service Item Maintenance (11.3.7). Otherwise, the system uses the item service category from Call Management Control.
- 2 If a contract is associated with the RMA, the system searches the contract header limits for a coverage percentage in the following order.
 - Search for a coverage percent defined for the invoice sort related to the item's service category.
 - Search for a coverage percent defined for the contract total limit.
- 3 If contract or contract header limits are not found, search the service type specified on the RMA in the same order: first by invoice sort, then total.
- 4 Add the service coverage percent to any discount calculated by the best pricing algorithms and display the results in the line item Discount field.

Note The system uses the order-line due date when it searches for effective coverage level records.

The system displays the amount of discount that results from service coverage and the amount that results from a price list discount.

Coverage Examples

An RMA obtains coverage in three ways: from a call, a contract, or the control program. The following examples illustrate each method of coverage.

RMA with a Call

When an RMA references a call, the system uses the call's coverage. In Figure 23.4, a call is taken for an item covered under contract 2.

Fig. 23.4
Call Maintenance
(11.1.1.1)

Item cp300,
serial number
Serial-00002
is covered by
contract 2.

Call Maintenance
Call ID: CA100010 Go To Actions

User Selection

Call ID: CA100010 Call Date: 06/29/2007 Time: 11:31
 Serial: Serial-00002
 End User: 10000A Time Zone: Quality Products Div
 Item Number: cp300 Ref: 0 Finished Configured good
 Contract: 2 Service Type: STANDARD Area: Carpinteria CA 93013
 Start Date: 06/01/2007 Install Date: 06/29/2007 Response: 4 Hours
 End Date: 05/31/2008 Warranty End: 09/27/2007 Comments: ☐
 PO Number:

Call Info

Caller: Eric Bloggs Phone:
 Description: Preventive Maintenance
 Work Code: PM Queue: Dispatch Comments: ☐
 Severity: X Status: New Event Date: 06/29/2007
 Type: PM Next Status: Open Event Time: 11:31
 Prob/Skill: Next Status Date: 02/29/2008 Escalation: ESC1 0
 Assigned: EWJ Next Status Time: 09:00
 Priority: 35 From Quote: Schedule: ☐

If you create an RMA referencing this call, the system uses the contract and service type from the call for the RMA.

Fig. 23.5
RMA Maintenance
(11.7.1.1)

When call
CA100010 is
referenced on
an RMA, its
contract and
contract type
are used for
coverage.

RMA Maintenance
RMA Order: R622 Go To Actions

Header

Order: R622 Sold-To: 10000 Bill To: 10000 Ship-To: 10000

Sold-To **Ship-To**

Quality Products Div 1000 Quality Products Div 1000
 Distribution Division Distribution Division
 One World Way One World Way
 Morristown NJ 07960 Morristown NJ 07960
 X United States of America X United States of America

Additional RMA Details

Issue Site: 10000 Receive Site: 10000
 Issue Location: 650 Receive Location: 600
 Call ID: CA100010 Ready to Invoice: ☐
 RMA Contract: 2 Daybook Set: mat1
 Service Type: STANDARD
 Credit Price List: RMA1

In this example, call CA100010 was taken for a contract item. Figure 23.4 shows that Call Maintenance determines the contract (2) as well as the service type associated with that contract (Standard). When call CA100010 is specified in the RMA Maintenance, the system uses contract 2 and service type Standard as defaults to determine the level of coverage.

RMA with a Contract

Since RMAs do not have to refer to a call, the system has other ways to determine coverage levels. One of these is by selecting from a list of active contracts for the end user. The system displays the Service Contract pop-up window depending on the Display Service Contracts setting in RMA/RTS Control. If this field is Yes, a pop-up window showing all valid or open contracts for the end user displays after you complete the upper frame of RMA Maintenance.



Fig. 23.6
Coverage for an
RMA Without
a Call

RMA Without Call or Contract

If an RMA does not reference a call and no contracts exist for the end user or a contract is not selected, the system uses the service type for the Default RMA Contract field in RMA/RTS Control. All items added to the RMA receive the level of coverage of this service type, unless you use the charge type feature.

RMA Charge Types

The RMA charge type addresses an issue arising daily for many service organizations: How can coverage be adjusted for one call or special case?

When this need occurs, you want the ongoing contractual or warranted relationship with the customer to remain unchanged. You need only a one-time adjustment. For example, the service engineer can make a special charge for an unusual repair. Or, for various reasons, you waive

normal charges for this RMA. Using a charge type, you can adjust coverage for this special case without changing the coverage relationship with the customer.

Example You issue replacement items normally covered 100% by a warranty. However, one item is broken due to misuse by the customer and therefore is not covered under the warranty terms. You need to charge full price for this part. Change the charge type for this item issue to reference a service type that has 0% coverage.

Defining Charge Type/Service Type Relationships

Define RMA charge types in the Default Charge Information frame of RMA/RTS Control (11.7.24), illustrated in Figure 23.7. The system supports four charge types. You can associate each with a separate service type. The system defines the warranty (W) and contract (S) charge type codes and you cannot change them. Select any other code for the billable and giveaway charge types.

Fig. 23.7
RMA Charge
Type Control
Settings

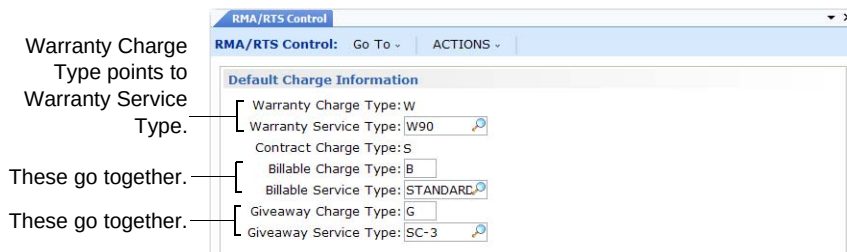


Figure 23.7 shows three groups of charge/service type relationships:

- Warranty Charge Type and Warranty Service Type
- Billable Charge Type and Billable Service Type
- Giveaway Charge Type and Giveaway Service Type

In Figure 23.7, a W charge type, which you cannot change, references a warranty service type named W-1. The billable charge type is B and references the billable service type STANDARD. The giveaway charge type is G and associated with the giveaway service type SC-3.

A fourth relationship is not as obvious. The contract charge type, which you cannot change from S, references the Default RMA Contract in the first frame of RMA/RTS Control. When you specify a charge type of S as an override, the system applies the terms of the default RMA contract type.

Charge Type Defaults in RMA Maintenance

When you create an RMA, the header's service type is either a warranty code or a service contract type. The system uses the terms of the header service type by default for each line item. If the type is a warranty, the charge type for each line item defaults to W (warranty). If the header's service type is a contract type, the charge type on line items defaults to S (service contract).

Overriding Charge Type Defaults

The default charge type displays during RMA line item entry. You can change it to reference another charge type defined in the control program. Changing the charge type changes the level of coverage for the line item.

If the default charge type for a line item is W, you can change it to reference one of three other service types:

- Specify S to use the default RMA contract type from RMA/RTS Control.
- Specify the billable charge type you defined to bring in the level of coverage of the billable service type from the control program.
- Specify the giveaway charge type you defined to bring in the level of coverage of the giveaway service type from the control program.

In the same way, you can change an S default to W or to the billable or giveaway charge types that you can define.

Changing Charge Types

When you edit an RMA line, you can modify the charge type only if Reprice is Yes in the RMA header or for the line. The level of coverage associated with the service type referenced by a charge type affects pricing for the RMA issue line. If Reprice is No, the charge type pop-up does not display when you modify a line.

Note Even if Reprice is Yes, you cannot change the charge type if you have shipped a quantity on the line.

Changing the charge type on an RMA line always causes it to reference the service type in the control program.

Example You specify a contract service type on an RMA header. For the first line, the charge type defaults to S, but you change it to G. The system applies the coverage level of the giveaway charge type to this line item. You edit the item a second time, changing the G to S. The system applies the level of coverage of the default RMA contract type in the control program, not the one on the RMA header.

Coverage and Pricing for RMA Receipts

RMA issues use the price lists, analysis codes, and relationships you define in the SO/SQ/RMA Issues Pricing Menu (1.10.1). The system determines the issue price, without specifying a price list.

RMA receipts, however, require that you define a specific credit price list in the PO/Sched/RMA Rcpt Price Menu (1.10.2). The credit price list defaults from the service type, but you can modify this when you create an RMA.

The RMA Credit Price List defaults from service type Standard.

RMA Maintenance

RMA Order: R622 Go To Actions

Header

Order: R622 Sold-To: 10000 Bill To: 10000 Ship-To: 10000

Sold-To **Ship-To**

Quality Products Div 1000 Quality Products Div 1000
 Distribution Division Distribution Division
 One World Way One World Way
 Morristown NJ 07960 Morristown NJ 07960
 X United States of America X United States of America

Additional RMA Details

Issue Site: 10000 Receive Site: 10000
 Issue Location: 650 Receive Location: 600
 Call ID: CA100010 Ready to Invoice: ☐
 RMA Contract: 2 Daybook Set: mat1
 Service Type: STANDARD
 Credit Price List: RMA1

Fig. 23.8
Additional RMA
Details Pop-Up

In Figure 23.8, use the pop-up window in the RMA Maintenance header to specify a credit price list for RMA receipts. The credit price list on the header defaults to each RMA receipt line item. If no credit price list exists, the price for that line item is zero. The RMA receipt looks only at the Credit Price List, not the full item price.

The service type on the RMA header also defines any restocking charge for a receipt line. If you change the service type on RMA header, the new restocking charge takes effect for existing lines only if Reprice is Yes or if you modify the list or net price fields for the receipt line.

The same is true if you change the price list on the RMA header. The change affects existing lines only if Reprice is Yes or if you modify the list or net price fields for the receipt line.

Pricing for RMA Issue Line Items

Pricing for RMA issue lines follows the sales order pricing algorithms. With this system, you do not specify a price list during RMA processing. The system determines the price list according to a best pricing algorithm using the codes and rules set up for pricing items on sales orders.

This section gives an overview of how pricing for RMA issues works and highlights considerations for RMAs. For a complete discussion of sales order pricing, refer to *User Guide: QAD Master Data*.

Determining a Price

During processing in RMA Maintenance for line item issues, the system determines which price lists apply, based on the pricing customer, then determines the price using several processing steps.

Pricing Customer

The system uses the ship-to customer in the price list search if the address code is defined as a customer. Otherwise, the system uses the sold-to address. In RMAs, the ship-to defaults from the end user. If the end user is not defined as a customer, the system uses the customer associated with the end user in the price list search.

Price List Candidates

The system next determines applicable price lists by comparing the customer number and item number on the RMA issue line with the customer code and item code on the price list. A match exists when all of the following conditions are true.

- Customer/Analysis Code on the price list is blank or matches either the customer on the RMA or an analysis code associated with this customer.
- Item/Analysis Code on the price list is blank or matches either the item number on the RMA or any analysis code associated with the item number.
- The order currency and price list currency match.
- The start and end dates are effective.

Note Blank indicates the price list applies to all customers or items.

Determining Line Item Prices

After the system has found the qualifying price lists, it determines the combinations that result in the best price. The rules for combining price lists come from the Comb Type field in sales order Price List Maintenance.

When the system determines line item prices, it basically follows the same steps as for sales order pricing. Step 4 is unique to RMA pricing.

- 1 *Build the Best List Price.* The system evaluates each applicable list price type price list. If more than one exists, the system uses the lowest price. If no list price list exists, the system uses the Price field value from the item master. This price displays in the List Price field of the RMA issue line.
- 2 *Build the Best Net Price.* The system accesses each applicable discount %, discount amount, markup, and net price list. It then determines the combinations that yield the lowest price. The rules for combining price lists come from the Combination Type field in Price List Maintenance (1.10.1.1).
- 3 *Modify Price for Minimum or Maximum.* List price type price lists can include the definition of a minimum and maximum price. If the best price comes from a price list with minimum and maximum prices, the system verifies that the calculated net price on the RMA issue line is below the maximum price or above the minimum. If not, it adjusts net price.
- 4 *Apply Coverage Percent.* This step is unique to RMAs. The system determines the applicable coverage percent based on the service type, warranty, or contract providing coverage. It adds this percent to the discount previously calculated (100% maximum), and recalculates the net price. It displays Discount and Net Price on the RMA issue line.
- 5 *Manual Override of Calculated Prices.* You can change the calculated list price, discount, and net price on RMA issue lines if you have access to these fields. When you do, the system records a manual discount, which is the difference between the system-generated price and the price you entered.

Special RMA Pricing Considerations

In the case of RMAs, the system treats the discount applied as a result of service coverage like a manual discount. It displays this way in the price list inquiry functions. You cannot distinguish it from other overrides that you specify. The system marks the discount as coming from a service type and lets you reprice the issue line.

Minimum Prices

If you specify a minimum price on the applicable price list, the system uses it in calculating the price *before* it applies the service coverage discount. However, when the system applies the service coverage percent, it allows the net price for an item to fall below the minimum list price. For minimum prices the rules and agreements of the service coverage can override the rules set up in sales order pricing.

Minimum Price Examples

You issue item 116 on an RMA using a service contract that provides 50% coverage. The system determines that price list A gives the best price for item 116. This price list specifies a price of \$6.00 with a minimum price of \$5.00 and maximum of \$7.00. The system finds no applicable price discounts when it calculates prices. If no coverage is provided on the RMA, the net price equals the list price of \$6.00.

Now the system applies the coverage percent to the price, resulting in a net price of \$3.00. Even though this net price is below the \$5.00 minimum, the system does not generate an error. The adjustment is a result of service coverage and remains even if the issue line is repriced.

Using the same data, consider what happens if the system finds applicable price discounts that lower the net price below the minimum *before* service coverage is applied.

The initial list price of \$6.00 is discounted 20% yielding a net price of \$4.80. The system raises this to the minimum (\$5.00) and then applies the service coverage (50%) for a net price of \$2.50. A message indicates that the price has been adjusted because the net price is lower than the minimum.

Repricing RMA Issue Lines

You reprice sales orders in Sales Order Repricing (7.1.11) and can include RMA issue lines in this function. To reprice an RMA issue line, create it with Fixed Price set to No. Repricing does not affect RMA receipt lines, since the system determines prices for RMA receipts differently from RMA issues.

Note If you have changed the price on an RMA issue line, the system does *not* reprice it. This is the same as with sales orders. The system only recalculates prices that it generated.

When the system reprices RMA issue lines, it recalculates list price and applicable discounts and adjusts for minimum/maximum list price as described previously. It then reapplies the coverage percent and any manual discount you specified.

Accrual for Price Breaks

Items issued on RMAs are like sales order lines in terms of price breaks and accrual.

Other Pricing Functions

RMAs follow the same rules as sales orders in calculating prices for configured products.

Use Sales Order Price Inquiry (1.10.1.17) for RMAs to display information about the price lists and discounts applied in calculating prices for line item issues. The service coverage amount displays as a manual discount. You can also use Sales Order Pricing Report (7.15.7).

Effect of Control Settings on RMA Pricing

Define settings that affect pricing in Sales Order Accounting Control and Pricing Control. These settings affect RMAs just like sales orders, with the exception of Pricing Date.

Pricing Control

In Pricing Control, the setting of Price SO by Line determines the default for the Line Pricing field in the RMA header. SO Factor Rounding and Display SO Discounts also determine how the system displays discounts in the Discount field of the RMA line item issue frame.

In sales orders, the date the system uses to search for an effective price list is determined by Default SO Pricing Date in Pricing Control. This can have one of five values: order date, required date, promise date, due date, and performance date.

For RMAs, the system uses the order date to search for effective prices, regardless of the setting in Pricing Control.

Sales Order Accounting Control

In Sales Order Accounting Control, Price Table Required and Vary Pricing Date by SO Line can affect RMA processing.

- If Price Table Required is Yes, a price list in the item unit of measure must exist.
- If Vary Pricing Date by SO Line is Yes, you can edit Pricing Date and Credit Terms Int in the pricing pop-up window during RMA issue line item entry. Otherwise, the system uses the header value for each line and you cannot change it on individual lines. When you update the header, the system automatically updates the corresponding values on the lines.

RMA Issues and Receipts

Create RMAs with RMA Maintenance (11.7.1.1). This function is similar to Sales Order Maintenance (7.1.1), with the addition of several pop-up windows for supplying information unique to RMAs.

An RMA tracks items leaving from or arriving at your site or warehouse. This includes items shipped to and returned from customers. After you receive or issue items, the installed base can be updated when you post the RMA invoice. Again, the system can record items issued to your end users and remove items received from them.

The system creates an invoice when you ship or receive items on the RMA. The Ready to Invoice field can be set in RMA Maintenance.

RMA Issues

In the classical flow for returned items, you receive a returned item and then either issue a replacement or fix the returned item and ship it back. In this scenario, you process the RMA receipt before the RMA issue.

However, in modern service organizations, an RMA issue often occurs immediately upon receipt of a return, or even before the end user returns the item. The issue is processed first.

This more aggressive approach to RMA issues tries to ensure that the customer does not go without use of the item. This has always been an important part of servicing mission-critical items, since customer down time can be costly. The trend in service is to be proactive and replace an item, even a noncritical item, as soon as possible. Dealing with the returned item comes second.

Note Use the Ship Before Return setting on the service type to control whether items on linked RMA lines can be shipped before defective ones are returned.

RMA Receipts

The third section of RMA Maintenance enables you to process the receipt of items returned from your customers. These items might be damaged or broken, or perhaps are being returned for a different or upgraded model.

Figure 23.9 shows the RMA Receipt Line frame of RMA Maintenance. With the exception of a few fields, the layout of this frame is the same as the RMA Issue Line frame.

RMA Maintenance

RMA Order: R624 Go To Actions

Header

RMA: R624 Sold-To: 10000 Ln For: Single Org:

RMA Receipt Line

Ln	Item Number	Return Qty	UM	List Price	Discount	Net Price
2	CP300	0.0		0.00	0.0	0.00

RMA
Receipt Line

Fig. 23.9
RMA Receipt Lines

Linking Receipts to Issues

The Issue Line Detail frame in RMA Maintenance contains a logical Rec (receipt) field. Set this field to Yes to display a pop-up window where you can create a receipt corresponding to an issue. The item on the current RMA issue line is the default receipt line item, and the system links the two lines. Use this feature for one-to-one part replacement.

Fig. 23.10
Linking RMA
Issues and Receipts

Item issued defaults as item to be received.

Defaults from Customer Return Site/Location in RMA/RTS Control.

RMA Maintenance						
RMA Order: R624 Go To ▾ Actions ▾						
Header						
RMA: R624		Sold-To: 10000		Ln For: Single		Org:
RMA Issue Line						
Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
2	CP200	1.0	EA	250.00	84.0	40.00
Receipt						
Line: 3						
Item Number: CP200				Price: 0.00		
Description: Finished Configured good				Site: 10000		
UM: EA				Location: 600		
Lot/Serial:				Processing: P		
ISB Reference: 0				Taxable: ☐		
Qty Expected: 1.0				Type:		
Qty to Receive: 0.0				Fault Code:		
Pending						

In this example, an RMA issue line item is created for an item cp200. If the Rec field is Yes, the item number cp200, unit of measure, quantity, and ship type default from the issue line.

Note The item number on a linked receipt does not have to be the same as the issue line item. You can change it only when you first create the line. If you do change it, the system prompts you to confirm the change before it saves the line.

The default site is the customer return site in RMA/RTS Control. This link works only if you are both shipping and receiving in real time—that is, right away.

When you create a receipt line for an issue line by setting Rec to Yes, the system links the two lines. The system checks the value of Ship Before Return on the service type only when lines are linked.

RMA Billing

You can invoice RMA issues and receipts together. RMA issues can create an invoice charged to the bill-to address. RMA receipts can create a credit, as well as a billable amount if a restocking charge exists. When an RMA includes both issues and receipts, the system charges the net amount.

Example An RMA issue is charged \$500 and a receipt credited \$400. When you invoice this RMA, it shows a \$500 charge for line item one and a credit price of \$400 for line item two, with a net price of \$100.

You can also process the issue and receipt separately. This creates two postings to Accounts Receivable, one for \$500 and a credit for \$400. The net result is an invoice for \$100.

RMA Billing Flow

An RMA issue typically follows the steps shown in Figure 23.11.

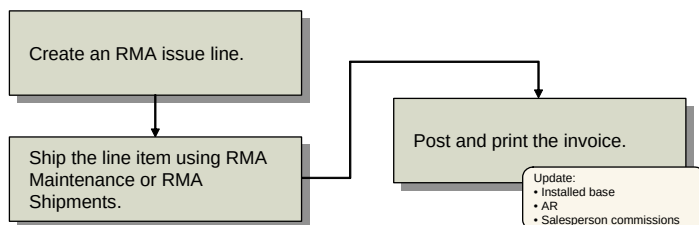


Fig. 23.11
RMA Issues
Billing Flow

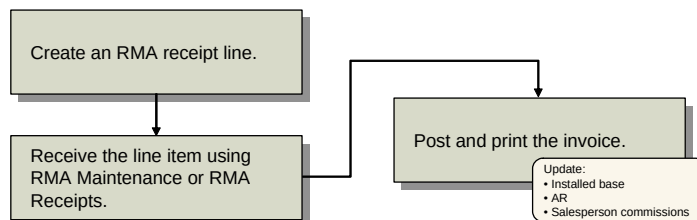
Posting the invoice updates the installed base, accounts receivable, and salesperson commissions.

Once an amount to invoice exists on an RMA, through shipment or receipts, you cannot modify pricing data in RMA Maintenance. Use Pending Invoice Maintenance (7.13.1) to change prices. You can also use Pending Invoice Maintenance to change tax status and salesperson commission.

RMA Credit Flow

An RMA receipt typically follows the steps shown in Figure 23.12.

Fig. 23.12
RMA Receipts
Credit Flow



After you receive the item on an RMA receipt line, you can post and print the invoice. Posting the invoice updates the installed base, accounts receivable, and salesperson commissions.

General Ledger Impacts

▶ See page 822 for a discussion of product lines in RMAs.

When you ship items on an RMA, the system debits the five cost of goods sold (COGS) accounts and credits inventory. An RMA receipt does the opposite: debits inventory and credits cost of goods sold. These accounts are accessed from Inventory Account Maintenance and Sales Account Maintenance based on the product line associated with the RMA.

When you post the RMA invoice, the system debits accounts receivable and sales discount accounts and credits taxes, freight, trailer charges, and sales accounts.

Customer Credit Status

RMAs are a type of sales order and follow most sales order rules. However, for RMAs, the value of Credit Hold Option in SSM Accounting Control determines RMA processing rather than the value of Hold Orders over Credit Limit in Sales Order Accounting Control.

If the customer bill-to on an RMA is on credit hold or over the credit limit, RMA processing is determined by the setting of Credit Hold Option, which can have one of three values:

0 (zero): You can create RMAs regardless of the customer's credit status.

1: You can create RMAs, but a warning displays and the action status of the RMA is set to hold.

2: You cannot create RMAs for customers who are on credit hold or over their credit limit. An error message displays. Reset the customer Credit Hold field to No to create the RMA.

With this setting, when the RMA line being entered puts the customer balance over the credit limit, the system does not prevent you from completing the request. This is because the credit limit is not actually exceeded until the order line is complete. Instead, the system accepts the RMA, displays a warning message, and places the resulting document on credit hold.

Remove credit holds from existing RMAs using Sales Order Credit Maintenance (7.1.13) or Sales Order Auto Credit Approval (7.1.17). You cannot release an RMA to a work order if the action status is nonblank.

RMA Invoices

An invoice for an RMA looks similar to a sales order invoice. However, the system handles some aspects of the invoice differently for an RMA.

- If the RMA is associated with a call, call comments that print on the invoice print on the RMA invoice.
- If the RMA is associated with a call, the call number prints on the invoice header.
- The service contract providing coverage on the RMA displays beneath each invoice line, for both issues and receipts.

Invoice reprint for an RMA creates an invoice that looks like the original with one exception. If you have deleted and archived the call associated with the RMA, call comments are not available for printing.

Releasing RMAs to Work Orders

Some service organizations use standard manufacturing operations to refurbish items received from customers on an RMA. To do this, specify W (work order) as the processing option on the RMA receipt line item.

Fig. 23.13
Processing Option

Once released, work order number and ID display here.

Set Processing to W to release this RMA to a work order.

RMA Maintenance

RMA Order: R622 Go To - Actions -

Header

RMA: R622 Sold-To: 10000 Ln For: Single Org:

RMA Receipt Line

Ln	Item Number	Return Qty	UM	List Price	Discount	Net Price
3	CP100	1.0	EA	0.00	0.0	0.00

Receipt Line Details

Quantity Received: 0.0 Product Line: 1000
 Received Date: Restock: 0.00
 Expected Date: 09/04/2007
 Qty to Receive: 0.0
 Fault Code:
 ISB Reference: 0
 Processing: W Pending
 Linked Line: 0
 Multi Entry: ☐
 Repair WO:
 ID:
 RTS:
 RTS Line: 0
 Update Installed Base: ☒

The default processing option is P for pending. You can change this to W at any time.

Example When you create the RMA receipt line, you do not know if a work order is needed, so you set Processing to P. When the item is actually received and inspected, you determine a work order is required. At this point, you can go into RMA Maintenance and enter W in the Processing field.

Use RMA Release to Work Order to create rework orders for all RMA receipt lines with a quantity already received and a W processing option. Rework orders have a Type R.

Fig. 23.14
Releasing RMA to Work Order

RMA Release to Work Order

RMA Release to Work Order: Go To - ACTIONS -

RMA: To:
 Combine Work Orders: ☐
 Effective Date: 05/23/2007
 Output:
 Batch ID:

You can choose to combine work orders. In this case, you can summarize RMAs for a single item and site, unless it is serial-number controlled, on one repair work order. Otherwise, one work order is created for each RMA.

The system always creates individual work orders for serial-number controlled items by using a unique ID, so the components used in the repair can be identified.

The system creates the work order number by taking the RMA number and appending the receipt line number, using a period as a separator. For example, for RMA9 and receipt line 3, the work order number is RMA9.3. The system stores this number and the work order ID on the RMA. View it in RMA Maintenance in the Receipt Line Details frame.

Note When Combine Work Orders is Yes, the RMA number used for the work order number is the first RMA with a line released.

If the item being repaired has an associated repair routing in Service Item Maintenance, the system uses the repair routing to determine the operations on the work order. The work order type is R, indicating a rework order.

Note You cannot release an RMA with a non-blank action status to a work order. A non-blank action status indicates that the RMA is on credit hold.

RMA Maintenance

The execution of RMA Maintenance follows several steps:

- Fill out the RMA header, including customer, end user, and call, and coverage information specific to RMA processing. This sets up default values for line item issues and receipts.
- Specify items to be shipped to the customer.
- Specify items to be received from the customer for repair or replacement.
- Enter trailer information, including trailer codes, tax, and standard credit information.
- Complete the trailer that totals billing amounts and trailer codes.

- Optionally ship or receive directly from RMA Maintenance. You can also use the separate ship and receive functions.

This section illustrates the frames used to complete this sequence.

Fig. 23.15
RMA Maintenance
(11.7.1.1)

The screenshot shows the 'RMA Maintenance' window for 'RMA Order: R622'. The window has a 'Go To' dropdown and an 'Actions' dropdown. The main content is divided into three sections: 'Header', 'Sold-To', and 'Ship-To'. The 'Header' section shows 'Order: R622', 'Sold-To: 10000', 'Bill To: 10000', and 'Ship-To: 10000'. The 'Sold-To' section shows 'Quality Products Div 1000', 'Distribution Division', 'One World Way', 'Morristown NJ 07960', and 'X United States of America'. The 'Ship-To' section shows the same information. The 'Details' section shows various dates and settings: 'Order Date: 09/04/2007', 'Due Date: 09/05/2007', 'Promise Date:', 'Expected: 09/04/2007', 'Perform Date:', 'Pricing Date: 09/04/2007', 'Purchase Order:', 'Remarks:', 'Line Pricing: [checkbox]', 'Manual:', 'Daybook Set: mat1', 'Channel:', 'Project:', 'Site: 2005', 'Confirmed: [checkbox]', 'Currency: USD', 'Taxable: [checkbox]', 'Fixed Price: [checkbox]', 'Credit Terms: BASE', 'Org Inv:', 'Credit Terms Interest %: 0.00', and 'Reprice: [checkbox]'. The 'Lang: us' is also displayed.

Order. If you leave this field blank when you create a new RMA, the system supplies a number by appending the RMA Sales Order Prefix in RMA/RTS Control to the value in the Next RMA Sales Order field. The system increments this field.

Call ID. A pop-up window displays so that you can supply a call ID. This field is optional; RMAs do not have to reference a call. If you supply a call, several fields on the RMA default from the call: the sold-to address, which is the call customer; end user; purchase order; contract; and call service type. The call number and comments designated to print on invoices display on the invoice for the RMA.

Sold-To. If the RMA references a call, the customer associated with the call's end user displays by default. Otherwise, you must supply a valid customer code.

Bill-To. This defaults from the Sold-To value unless you define the sold-to address with a different bill-to.

End User. A pop-up window displays so you can enter the end user for the items being returned or replaced. If the RMA references a call, the end user defaults from the call. If you enter a nonexistent end user, the system prompts you to create a new end user directly from RMA Maintenance. The frames for creating an end user are the same as those displayed in Call Maintenance.

♦ See “End User Selection Frame” on page 397 for details.

Ship-To. Defaults from Sold-To. You can specify a different ship-to address for this customer, or you can create a ship-to address directly in RMA Maintenance by leaving the field blank.

Order Date. Defaults from the system date and indicates the date you recorded this RMA. This can be the date you entered the RMA or the date the customer requested an RMA.

Due Date. Defaults from the system date plus the shipping lead time in Sales Order Control and indicates the date you need to ship the replacement items from your facility. This field provides the default date for each RMA issue line. The system uses the issue line due date to search for effective coverage limits for the line item.

Promise Date. Indicate the date the customer was promised delivery. The promise date can be different than the due date. Promise dates include delivery transit time, while due date is the date the items must be ready for shipment.

♦ See *User Guide: QAD Master Data* for information on transit times.

The header default is blank. If you leave it blank, the system automatically calculates line-item promise dates under these conditions:

- Calculate Promise Date is Yes in Sales Order Control.
- Transit time data has been defined for the ship-from site in Delivery Transit Time Maintenance (2.16).

Expected Date. Defaults from the system date. Indicate the date you expect to receive items returned from the customer on this RMA and provides the default date for each RMA receipt line.

Perform Date. Enter the date originally planned to be the due date. This date does not include transit time and can be used to evaluate the accuracy of shipment due dates.

Pricing Date. The pricing date for an RMA defaults from the order date. This is unlike a standard sales order where the default comes from the value of SO Default Pricing Date in Pricing Control (1.10.1.24). This can have five possible values: Due Date, Order Date, Required Date, Promise Date, or Performance Date. The system uses Price Date in determining the effective date for price list searches.

Whether you can change Pricing Date on individual lines depends on the setting of Vary Pricing Date by SO Line in Sales Order Accounting Control (36.9.6). When that field is Yes, you can change the date on each line. When it is No, you cannot. Instead, the system automatically updates all lines when you change the header.

Purchase Order. Defaults from the call if you specified one. You can change this field. This field is required if the current end user is defined to require a PO.

Remarks. Any remarks specified for the sold-to customer display by default. You can change these to make them specific to this RMA. Remarks display on printed documents.

Line Pricing. This field has effect only for a newly created order. If you are maintaining an existing order, the system sets this field to No and you cannot change it. For a new order, it defaults from the Price SO by Line field in Pricing Control (1.10.1.24).

If No, the system prices each line without considering other lines on the order. This may not be the best price, since additional item quantities on other lines can qualify a line for a different price list. If Yes, the system prices each line item as it is entered in relation to other lines on the order and displays the best price. In either case, if prices change because of quantity breaks, the system recalculates them at the end of order entry.

Set this field to No to improve performance during order entry, since fewer calculations are performed.

Manual. You can apply field security to this field. Manual enables you to enter a price list code to be considered for RMA issue lines. Define this price list first with Manual set to Yes in Price List Maintenance (1.10.1.1). Manual price lists do not necessarily determine the issue line price. The system uses them with the other price list search algorithms to determine the best price.

Daybook Set. Enter the daybook set that will be used when this order is invoiced. This value defaults from Customer Data Maintenance.

Valid values depend on the setting of Use Daybook Set by Site in Sales Order Accounting Control:

- When Use Daybook Set by Site is Yes, the value you enter must either be defined in Daybook Set by Site Maintenance for the order header site, or that program must include a daybook set with a blank site value.
- Otherwise, the value you enter must be defined in Daybook Set Maintenance.

At Invoice Post and Print, the system assigns an invoice number based on one of the daybooks in the specified set. It selects the specific daybook code by determining the value and type of the invoice; for example, customer invoice or correction invoice.

Channel. Specify an optional code identifying the distribution channel through which this RMA originated. Channel can be used to determine GL sales and COGs accounts affected by inventory transactions. Set up optional sales accounts with Sales Account Maintenance (1.2.17) based on product line, site, customer type, and channel. To standardize usage, set up values in Generalized Codes Maintenance for field so_channel.

Project. Project code is one component of an account number defined in GL setup functions. Other account components are account, sub-account, and cost center. Each component you enter must be valid on its own and in combination with other account number components. The project on the header is the default for all line items. You can change this for any line.

Site. The RMA header site helps determine the default tax environment associated with the RMA. You can specify a different site at the item level. At the item level, Site defaults from the Customer Spares Site/Location and Customer Return Site/Location in RMA/RTS Control. If you use site security, the person executing this transaction must have access or the system generates an error.

Confirmed. For sales orders, this field defaults from Sales Order Control. For RMAs, Confirmed always defaults to Yes since direct contact with an end user has normally already taken place. MRP

processes confirmed orders as sales demand and the orders consume forecast. The header's Confirmed setting provides the default for each line item's Confirmed field.

Confirmed orders are allocated, consume forecast, and create demands for Material Requirements Planning (MRP). Confirmed orders also affect the customer order total when the system reviews credit limits.

You cannot ship unconfirmed line items using RMA shipments. If unconfirmed, you must execute confirmation before shipment using RMA Confirmation.

Currency. Defaults from the currency of the customer Bill-To address. When you create an RMA, you can change this value to any valid currency. After you move to the next frame, you cannot change it.

When you specify a foreign currency, a pop-up displays the exchange rate relationship effective on the order date. You can change it or mark this rate as fixed. If the exchange rate is not fixed, the system uses the exchange rate effective on the invoice post date. If the exchange rate is fixed, the system does not change it.

Language. Defaults from the language associated with the Ship-To address. Use this field when printing formal documents, which can be run by selecting a range of language codes. This enables you to use preprinted forms in different languages. The system stores comment information with a language code.

Taxable, Class, Effective Date. Defaults from the values for the ship-to address. Indicate whether this RMA is subject to tax. The taxable status for the order header displays as the default for each line item, but you can change it.

Fixed Price. Defaults from the Fixed Price setting for the sold-to address. Indicate whether the prices are fixed or subject to updates due to inflation or commodity repricing. Fixed Price must be No for an RMA to be considered by Sales Order Repricing.

This use of fixed price is different from fixed prices as used in service pricing, which enable the customer to be invoiced for a fixed price regardless of the cost of items, labor, and expenses recorded.

Credit Terms. Defaults from the credit terms for the sold-to address. Credit term codes identify types of payment terms, defining the due date and discounts for early payment.

Original Invoice. This field does not apply to RMAs.

Credit Terms Interest. The implicit interest added into an item's price based on the number of days to pay defined for the credit term. Use terms interest percent in hyperinflationary environments to accrue the estimated inflation increase.

The list price for the line item displays the included interest amount, based on the list price and the credit terms. This field sets the default for each issue line. You can modify it only if Vary Pricing By SO Line is Yes in Sales Order Accounting Control. When that field is No, you cannot modify individual lines. Instead, the system automatically updates the lines when you change the header value.

Reprice. You can edit this field only when you are maintaining an existing order. It indicates whether you can update prices for RMA issue lines or whether the prices come from current pricing data during this edit session. To change the charge type or prices for an issue line, Reprice must be Yes. Also, set this to Yes if you are combining RMA issue lines with sales order lines to accumulate quantities for price breaks.

This field affects only the current maintenance session. The value of Fixed Price determines which orders are repriced by Sales Order Repricing.

Reprice also affects RMA receipt lines. If you change the header service type or credit price list, existing receipt lines are affected only if Reprice is Yes or if you change the price fields on the line.

If Reprice is Yes, it affects all lines on the order and you cannot change it at the line level. If it is No on the header, a pop-up window during issue line entry enables you change it to Yes for the line. The system reprices new lines regardless of this setting.

Second RMA Header

When you click Next on the first RMA header frame, a second frame displays.

Fig. 23.16
Second RMA
Header Frame

The screenshot shows the 'RMA Maintenance' window for 'RMA Order: R622'. The window has a 'Go To' and 'Actions' menu. The 'Header' section displays the following information:

Header	
Order: R622	Sold-To: 10000 Bill To: 10000 Ship-To: 10000
Sold-To	Ship-To
Quality Products Div 1000	Quality Products Div 1000
Distribution Division	Distribution Division
One World Way	One World Way
Morristown NJ 07960	Morristown NJ 07960
X United States of America	X United States of America

The 'Freight Data' section contains the following fields:

Freight Data		
Salesperson 1: 00060010	Freight List: Fed-X	Consignment: ☐
Multiple: ☐	Frft Min Wgt: 0	Consume Forecast: ☒
Commission 1: 10.00%	Freight Terms: PREPAID	Detail Allocations: ☐
Calculate Freight: ☐	Allocate Days: 5	Comments: ☐
Display Weights: ☒	Import/Export: ☐	
Entered By: mfg		

Salesperson. Defaults from the sales person for the sold-to address. Identifies the salesperson to receive commission and quota credit for this RMA. The salesperson information on each line item defaults from the salesperson and commission rate on the header. You can change it on each line item. To change the salesperson on a line item, set Multiple to Yes.

Multiple. Indicate whether more than one salesperson is responsible for this RMA. If this field is Yes, a pop-up window prompts you to enter up to four salesperson codes.

Commission. Specifies the commission percentage this salesperson is to receive. Besides the normal commission rate for the salesperson, you can enter commission rates for sales to specific customers or sales of specific product lines.

Freight List. Defaults from the freight list for the sold-to address. Freight list codes identify a set of shipping rates for different zones and shipping weights or units. The freight list on the header sets the default for each line item.

Freight Minimum Weight. Defaults from the freight minimum weight for the sold-to address. This field is the minimum weight on which to base the shipping charge if the freight list type is bulk. This field does not apply to freight lists of type unit. For bulk freight lists, shipments that weigh less than this amount are charged based on a minimum weight charge, not the shipment weight.

Freight Terms. Defaults from the freight terms for the sold-to address. The freight terms determine how the system applies freight charges. They can be added to the order trailer, added to the unit cost for each ordered item, displayed as a freight allowance, or not calculated.

Calculate Freight. Defaults to Yes for a new order; otherwise, defaults to No. If Yes, the system calculates site- and currency-specific freight charges on RMAs. Charges can be calculated for the line item's shipping weight for unit price lists or for the order's total shipping weight for bulk price lists. Calculated freight charges appear on the trailer.

Display Weights. Specifies whether to display the Freight window for each line item, which enables you to enter or modify data in the Freight Class and Freight Ship Weight fields. For inventory items, these fields default from the item master. For memo items, you must specify them. The Freight window also shows information the system uses to calculate freight for the line item, so you can review freight amounts easily.

Consume Forecast. Defaults from RMA/RTS Control. This field specifies whether the quantity ordered on the RMA consumes available forecast. If Yes, the order consumes the forecast. If No, the system considers the order quantity abnormal and plans for it in addition to the forecast.

Detail Allocations. Defaults from RMA/RTS Control. Specifies whether you usually make detail allocations during line item entry. Detail allocations assign specific inventory lot/serial numbers and locations to be shipped on an order. The setting on the header determines each line's default.

If Yes, at the line level, a pop-up window for detail allocations displays. If you do not detail allocate during line item entry, the system detail allocates when you print the RMA packing list.

Allocate Days. Defaults from the Allocate Days field in RMA/RTS Control. This field specifies the number of calendar days into the future for the system to use as a cutoff for allocating items on RMA issue lines. If the header's due date extends beyond the allocation window, automatic allocation does not take place for a new issue line.

♦ See “Inventory Allocations” on page 818 for more information.

Allocation is subject to two settings in Sales Order Control:

- The Quantity Available to Allocate calculation method specifies how the system determines the number of items available to allocate.
- The value for Limit Allocations to Avail to Allocate determines how the system handles shortage situations. If this field is No, the quantity allocated for an RMA issue line defaults from the quantity ordered even if a sufficient quantity to allocate does not exist. If this is Yes, quantity allocated never exceeds the quantity available. If there is no quantity available to allocate, quantity allocated defaults to 0.

Comments. Defaults from the Header Comments field in RMA/RTS Control. If this is Yes, the transaction comment frame displays for you to enter comments specific to this RMA. Enter information here that relates to the entire RMA, such as delivery information or credit comments.

Import/Export. Defaults from Imp/Exp Default in Intrastat Control and appears if Use Intrastat is Yes in the same control program. Set this field to Yes to enter or maintain import and export data for the order used to create Intrastat History Reports. If Yes, the standard Intrastat frames displays for input of appropriate data.

Additional RMA Details

The next frame requests information unique to RMA processing.

The screenshot shows the 'RMA Maintenance' window for 'RMA Order: R622'. The 'Additional RMA Details' section contains the following fields:

Additional RMA Details	
Issue Site:	10000
Issue Location:	650
Call ID:	CA100010
RMA Contract:	2
Service Type:	STANDARD
Credit Price List:	RMA1
Receive Site:	10000
Receive Location:	600
Ready to Invoice:	☐
Daybook Set:	mat1

Fig. 23.17
Additional RMA
Details Frame

Issue Site. Defaults from Customer Spares Site in RMA/RTS Control and identifies the site from which you ship replacement items to customers. This site displays as the default for each RMA issue line, but you can change it. If you use site security, you must have proper access or the system generates an error.

Issue Location. Defaults from Customer Spares Location in RMA/RTS Control and identifies the location from which you ship replacement items to customers. This location displays as the default for each RMA issue line, but you can change it.

Receive Site. Defaults from Customer Return Site in RMA/RTS Control and identifies the site where you receive returned items. This site displays as the default for each RMA receipt line, but you can change it. If you use site security, you must have proper access or the system generates an error.

Receive Location. Defaults from the Customer Return Location defined in RMA/RTS Control and identifies the location where you receive returned items. This location displays as the default for each RMA receipt line, but you can change it.

Call ID. If you reference a call ID on the header, it displays here and you can change it. If you change the call after you create the RMA, the system does not recalculate the information that defaults from the call—sold-to, end user, purchase order, contract, service type.

RMA Contract. If you select a contract from the pop-up window of contracts for the specified end user, or if a contract defaults from a referenced call, it displays here. If a contract is available, it determines the coverage percentages and the default service type, which determines other coverage terms and conditions such as the credit price list, restocking charge, and ship before return setting.

If the service type of the contract is not changed, the Charge Type, or CT, field for RMA issue lines defaults to S, indicating service contract coverage.

The contract specified on the RMA header prints on the RMA invoice for both issues and receipts if a contract service type is used for coverage.

Service Type. Defaults from the contract displayed in the previous field, or the service type on the referenced call. Otherwise, defaults from Default RMA Contract in RMA/RTS Control.

The RMA header service type determines the default credit price list for returns, restocking charge to be added for returned items, and whether or not you can ship items before you complete a return. If you do not specify a contract in the RMA Contract field or no applicable limits exist on the contract, the service type determines the coverage percent applied to line item issues. The service type also sets the default charge type for issue line item entry. The values are: S if a contract type, W if a warranty.

If you change the service type on the RMA header after lines exist, its terms and conditions apply to new lines you add. They are applied to existing lines only if you reprice them. A message displays, indicating that you may want to review the coverage and pricing for existing RMA lines.

Credit Price List. Enter the price list code that applies to items returned on an RMA. This price list is accessed when processing RMA receipts to determine the amount of credit to give to the customer for the returned items.

The credit price list is ONLY used for RMA receipts. RMA receipt lines access price lists defined with Cust Schedule Price List Maint. You cannot enter a supplier price list in an RMA receipt.

The credit price is used in conjunction with any restocking charge defined for the service type in effect in RMA Maintenance. The credit is automatically reduced by the amount of the restocking charge. If no credit price list is available in RMA Maintenance or if a price for the item being received is not found, its price defaults to zero and must be specified manually.

Ready to Invoice. This field is initially set to No. After you have shipped or received items, the system sets it to Yes. Invoice Post and Print examines this field. It must be Yes before you can post the invoice. You can change the field to prevent invoicing.

If you ship more items later, the system sets Ready to Invoice to Yes so the RMA can be selected the next time invoices are posted.

RMA Issue Line

This frame is similar to the line item entry frame for sales orders (7.1.1). Most fields in the item detail default from values in the RMA header, and have the same effect as described previously. This section describes the fields unique to RMAs.

If the item you enter has replacement types defined for it and the entry is on or past the item replacement's effective date, the system either prompts you to confirm the item replacement or displays pop-up frames to select other types of item replacements.

See *User Guide: QAD Master Data*.

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
2	CP100	1.0	EA	150.00	0.0	150.00

Line Details

Desc: Finished Configured good
Loc: 650 Site: 10000

Charge Type

CT
S

Fig. 23.18
RMA Issue Line
Entry Frames

Charge Type. After entering an item and quantity on a new line, a pop-up displays for entering a charge type. This code identifies how to bill the line item. If coverage is from a warranty type, charge type

See “RMA Charge Types” on page 825.

defaults to W. If coverage is from a contract or contract type, it defaults to S. You can define billable and giveaway charge types in RMA/RTS Control.

Charge types let you determine, per line, the service type for the item. Define four charge type/service type relationships using settings in RMA/RTS Control:

- The warranty charge type, set by the system to W, identifies charges covered under warranty. If the RMA header service type is a contract type and W is specified for the charge type, the system uses the level of coverage of the warranty service type in the control program.
- The contract charge type, set by the system to S, identifies charges covered under a service contract. If the RMA header service type is a warranty, specifying S brings in the coverage levels of the Default RMA Contract specified in the first frame of RMA/RTS Control.
- The giveaway charge type that you define in the control program can be specified as an override in RMA Maintenance and brings in the coverage level of the giveaway service type. This service type normally provides full coverage.
- The billable charge type, which you define in the control program, can be specified as an override in RMA Maintenance and brings in the coverage level of the Billable Service Type. This service type normally provides no coverage—the end user is responsible for the full amount.

You can modify the charge type for an existing line item only if Reprice is Yes for the line and you have not shipped any quantity.

List Price. You can apply field security to this field. The value in this field is the unit price before applicable discounts or markups are applied. The system uses this value in calculating the net price. The system posts the list price to the sales account when posting an invoice to AR or GL. If a difference between the net price and list price exists, the system posts the difference to the sales discount account.

During order processing, the system first determines the best list price for an item by searching for applicable price lists in Price List Maintenance with a list type of Price List. If more than one price list exists, the system uses the lowest price.

If Line Pricing is No, the system prices each line without regard to other lines. When order entry is complete, the system determines if the new lines qualify for any quantity breaks and recalculates prices accordingly.

You can change the calculated list price, discount, and net price if you have access to these fields. If you do, the system records a manual discount, which reflects the difference between the system-generated price and the price entered.

Discount. You can apply field security to this field. It displays the discount calculated by the system to be applied to this item. The number of decimals comes from the SO Factor Rounding field in Pricing Control.

The system accesses each applicable Discount %, Discount Amt, Markup, and Net Price price list. It then determines the combination yielding the lowest net price. The rules for combining price lists come from Combination Type in Price List Maintenance (1.10.1.1).

Once the system determines the best discount, it adjusts the price for minimum and maximum list amount and adds the coverage percent for the contract or service type. The value in the Discount % field includes discounts calculated based on pricing structures and the discount applied due to service coverage. Maximum discount is 100%. A message at the bottom of the screen indicates the portion of the discount percent that is derived from service coverage.

Note You can display and enter Discount as a percent or as a factor, depending on the setting of Display SO Discounts As in Pricing Control.

Net Price. You can apply field security to this field. The system calculates this value by multiplying the list price by the discount %. If you enter a manual discount, the system recalculates net price based on it.

Product Line. When you leave the line item entry on a new line, a pop-up for Product Line displays. The default depends on the setting of Use Item Prod Line in SSM Accounting Control. If this is Yes,

Product Line defaults from the item. If No, Product Line defaults from the service type. The product line determines the GL accounts affected by shipments on this RMA.

The system determines sales-related accounts and COGs accounts using this product line. Once you ship items on a line or invoice the line, you can no longer change the product line and the pop-up does not display. See page 822 for a discussion of product lines in RMAs.

Issue Line Details

The next frame displays information unique to RMA processing. The first five fields—Qty Shipped, Shipped Date, Product Line, Covered Amount, and Due Date—are display only.

Fig. 23.19
Issue Line
Details Frame

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
2	CP100	1.0	EA	220.00	75.0	55.00

Issue Line Details

Quantity Shipped: 0.0 Product Line: 1000
 Shipped Date: Covered Amount: 165.00
 Due Date: 09/05/2007 Edit Installed Base: ☒
 Quantity to Ship: Item Revision:
 Multi Entry: ☐ Linked Line:
 Receipt: ☒

Quantity to Ship. Enter a number to indicate the quantity to ship from RMA Maintenance during inventory processing.

Multi Entry. Defaults to No unless detail records exist, in which case it is set to Yes and cannot be changed. Indicate whether this issue transaction involves multiple sites, locations, lot/serial numbers, or lot reference numbers. Use this field only if you plan to ship from RMA Maintenance.

If Multi Entry is Yes and Quantity to Ship is nonzero, a window pops up for you to record issue details. Specify No if this transaction involves only one site, location, and lot/serial number, and the lot reference is blank.

Receipt. Indicate whether to generate a receipt line and link it to this issue line. If Yes, a pop-up window displays, enabling you to enter the item number, site, location, lot/serial, ISB reference, quantity expected, and price of the item to be returned from the customer. The system generates a receipt line and links it to the issue line. If No, you can enter and link receipt information later.

When a receipt line is linked to an issue line, the shipment cannot occur before the defective item is returned unless Ship before Return is Yes for the service type.

Edit Installed Base. Defaults from the value of Edit Installed Base in RMA/RTS Control and determines whether the Installed Base Detail frame displays. This frame enables you to change the defaults for installed base updates, such as whether to update the installed base, end user, warranty, and other details.

Item Revision. This defaults from the revision number you specified when you defined the issue line item in the Item Master.

Linked Line. If this issue line is linked to a receipt line, the receipt line number displays in this field. The system updates this field when you set Receipt to Yes to create an associated receipt line. If you add receipt lines later, you can update this field to link the receipt lines to the correct issue line.

When lines are linked, the system checks the value of Ship Before Return on the service type for the RMA. If this is No, you must process the receipt line before the shipment, or at the same time if you are shipping or receiving from RMA Maintenance. If you do not process the entire quantity expected on the return, you can ship only the number received.

Installed Base Detail

The Installed Base Detail frame displays when Edit Installed Base is Yes in the previous frame.

Fig. 23.20
Installed Base
Detail Frame

Installed Base Detail

Update Installed Base: ☒

Installation Call: ☒

End User: 10000A

Installed Base Location:

Ownership:

Warranty Code: W90I

Lot/Serial:

Item Number:

Warranty Start Date:

Update Installed Base. This field defaults to Yes if the Installed Base field in Service Item Maintenance is Yes for the item *and* the Create ISB field is Yes for the end user in End User Data Maintenance. Yes indicates that an installed base record should be created for this line item. If Yes, when you post the invoice for this RMA, the system records the item and serial number in the installed base. The system uses information in the remaining fields in the Installed Base Detail frame when the record is created.

Note The value of Create ISB for a new end user defaults from the Create ISB field in End User Control.

Installation Call. This field defaults to Yes if the item being issued requires an installation call and Auto Install Calls is Yes in Call Management Control. If Yes, the system creates an installation call when it adds the item to the installed base during invoice post. Use this for item installations that need an engineer's technical expertise. If the item requires an installation call, set Installation Call to Yes in Service Item Maintenance.

End User. This field defaults from the end user on the RMA header. You can change it to another end user for this customer.

Installed Base Location. A reference-only field used for a 24-character description of the current location of this installed base item at the end-user site. This might be a building location, suite number, or floor.

Ownership. A reference-only field indicating who possesses the item. If the end-user address code refers to a large company, you can enter the department or individual using the item. Set up values for ownership with generalized codes for field isb_owner.

Warranty Code. Defaults from the warranty for the item in Service Item Maintenance and determines the coverage terms and conditions including response time, credit price list, and days of coverage.

Parent Serial and Item. You can track both products and components in the installed base. This is especially true for configured products. If you maintain the entire configuration in the installed base, the customer can return a component such as a PC disk drive, and you can relate the new component issued to the original PC. Use the Parent Item field to make sure that the issued item is added as part of the original purchase.

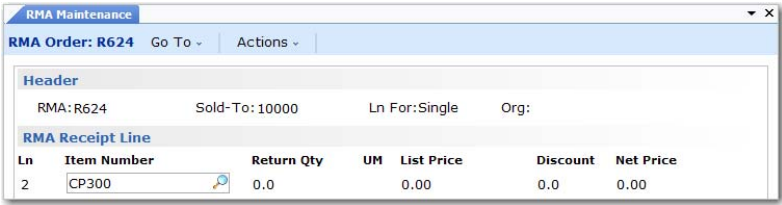
Warranty Start Date. The warranty start date defaults to blank. If you do not specify a date, the system uses the RMA ship date as the warranty start date when it creates the installed base record for the issue line item during invoice post.

The system calculates the warranty end date by adding the warranty duration to the warranty start date. If an install call is created for the item during invoice post, the system updates the warranty start and end dates again when the install call is closed based on the call closure date.

All system updates to the warranty start and end dates occur *only* if you do not specify a date. To let the system manage this date for you, leave the field blank.

RMA Receipts

RMA receipts is similar to RMA issues. Most fields in the item detail default from values in the RMA header and have the same effect as described previously. The few differences are described here.



The screenshot shows a software window titled "RMA Maintenance" with a sub-header "RMA Order: R624". Below this, there is a "Header" section with fields: "RMA: R624", "Sold-To: 10000", "Ln For: Single", and "Org:". Below the header is an "RMA Receipt Line" table with the following data:

Ln	Item Number	Return Qty	UM	List Price	Discount	Net Price
2	CP300	0.0		0.00	0.0	0.00

Fig. 23.21
RMA Receipt Lines

List Price. You can apply field security to this field. List price comes from the RMA Credit Price List on the header, which in turn defaulted from the service type.

Discount. You can apply field security to this field. If a restocking charge exists for the service type, it displays in this field. In this case, you cannot modify Discount. A message displays indicating that a restocking charge has been applied. If you have not defined a restocking charge, you can enter a discount to be applied.

You can display and enter values in Discount as a percent or as a factor, depending on the setting of Display SO Discounts As in Pricing Control. The number of decimals is determined by the SO Factor Rounding field in Pricing Control.

Net Price. You can apply field security to this field. The system calculates net price based on the list price and discount. If you change Net Price and the discount is derived from a restocking charge, the system recalculates the list price.

Receipt Line Details

The Receipt Line Details frame contains fields unique to RMA processing. The first five fields—Qty Received, Received Date, Expected Date, Product Line, Restock—are display-only fields. Qty Received and Received Date have values if a return has been made. Expected Date and Product Line default from the header. Restock displays the restocking charge for the service type.

Repair WO, ID, RTS, and RTS line are also output-only fields that have a value only if you have released the received item to a work order or created an RTS to return the item to the supplier for repair.

RMA Maintenance

RMA Order: R622 Go To Actions

Header

RMA: R622 Sold-To: 10000 Ln For: Single Org:

Ln	Item Number	Return Qty	UM	List Price	Discount	Net Price
3	CP100	1.0	EA	0.00	0.0	0.00

Receipt Line Details

Quantity Received: 0.0 Product Line: 1000
 Received Date: Restock: 0.00
 Expected Date: 09/04/2007
 Qty to Receive: 0.0 Repair WO: ID:
 Fault Code: RTS:
 ISB Reference: 0 RTS Line: 0
 Processing: W Pending
 Linked Line: 0
 Multi Entry: ☐ Update Installed Base: ☒

Fig. 23.22
Receipt Line
Details Frame

Qty to Receive. Defaults to 0. Specify a value to receive items directly from RMA Maintenance.

Fault Code. An optional code that identifies the problem or reason for the return. Set up fault codes for field `rmd_fault_cd` in Generalized Code Maintenance.

ISB Reference. Each item that is not controlled by serial numbers in the installed base needs a unique ISB reference number. If you specify the ISB reference on a return, the system can identify which item to remove from the installed base if Update Installed Base is Yes.

Processing. Enter one of three values:

- *P (Pending).* Enter P if you are not sure of the item's disposition.
- *W (Work Order).* Enter W so RMA Release to Work Order can consider this line item when rework work orders are created.
- *R (RTS).* The value R is for reference only, and indicates that you plan to repair the item by returning it to the supplier.

Linked Line. If this receipt line is linked to an issue line, its line number displays in this field. If you did not link the receipt from the issue line, you can link the issue line from the receipt by specifying its line number here.

Multi Entry. Defaults to No unless detail records exist, in which case it is set to Yes and cannot be changed. Indicate whether this receipt transaction involves multiple sites, locations, lot/serial numbers or lot reference numbers. Use this field only if you receive items directly from RMA Maintenance.

If Yes and Qty to Receive is nonzero, another window pops up for you to record inventory details. Specify No if this transaction involves only one site, location, and lot/serial number, and the lot reference is blank. If you are using lot reference numbers, you must specify Yes even if only one item is being received.

Repair WO and ID. If the processing option for this line is W (work order) you can execute RMA Release to Work Order to create a work order for refurbishing the item. The work order number consists of the RMA number followed by the line number, separated by a period. The system updates this field with the work order number and ID created.

RTS and RTS Line. If you use an RTS to return the item to the supplier for refurbishment, the system keeps track of the RTS and line that shipped the item.

Update Installed Base. This field indicates if an installed base record for the item being returned should be deleted. It defaults to Yes when three conditions are true:

- The Installed Base field in Service Item Maintenance is Yes for the item.
- The Create ISB field is Yes for the end user in End User Data Maintenance.
- At least one installed base record exists for the item, lot and reference, or serial number specified.

RMA Trailer

The RMA trailer is the same as a sales order's. It displays charges and credits and information for shipping and invoicing.

The screenshot shows the 'RMA Maintenance' window for 'RMA Order: R622'. The 'Trailer' section is active, displaying various financial and tax details. The 'Header' section shows 'Order: R622', 'Sold-To: 10000', 'Bill To: 10000', and 'Ship-To: 10000'. The 'Trailer' section includes 'Non-Taxable: 0.00', 'Taxable: 55.00', 'Currency: USD', 'Line Total: 55.00', 'Discount: 0.00', 'Tax Date', 'Containers: 0.00', 'Line Charges: 0.00', 'Taxable Service', 'Taxable Freight', 'Taxable Special', 'Total Tax: 5.50', and 'Total: 60.50'. The 'Trailer Information' section includes 'CR Initials', 'Credit Card', 'Action Status', 'Revision: 0', 'EDI PO Ack', 'Print Sales Order', 'Print Pack List', 'Print Inv Hist', 'EDI Inv Hist', 'Partial OK', 'Prepaid: 0.00', 'FOB Point', 'Ship Via', and 'BOL'.

Fig. 23.23
RMA Trailer
Frames

Most fields on the trailer default from the bill-to address—CR Initials, Credit Card, Action Status, Partial OK, Ship Via—or Sales Order Control and have the same function as in sales orders.

RMA Confirmation Screen

You can ship and receive items directly from RMA Maintenance. When you click Next after completing the trailer, you are prompted to display RMA lines. If you respond Yes, a confirmation screen displays, first for receipts, then for issues.

The screenshot shows the 'RMA Maintenance' window for 'RMA Order: R622'. The 'Receipts' section is active, displaying a table with columns: 'Ln', 'Item Number', 'T', 'Qty Expected', 'Qty to Receive', 'Qty Received', and 'Due Date'. The table contains one row: '3', 'CP100', 'T', '1.0', '0.0', '0.0', and '09/04/2007'.

Fig. 23.24
RMA Receipt
Confirmation
Frame

If you entered a quantity to receive or a quantity to ship earlier, it displays in the Qty to Receive or Qty to Ship column. The system prompts you to initiate shipment or receipt from RMA Maintenance.

Ship/Receive RMA Lines. Respond Yes to initiate the shipment or receipt of items with a nonzero quantity in the Qty to Ship or Qty to Receive column.

Effective Date. The default is the system date. The date in this field is the ship date for invoice generation and other accounting processes. Inventory transaction history uses the current system date and time.

Returns to Suppliers

Use the return to supplier (RTS) process to manage items received from your end users that need to be returned to a vendor for repair. Like a return material authorization (RMA), an RTS has two parts that let you set up lines for shipment to the supplier and receipt from the supplier when the repair is complete. This chapter describes RTS functionality and discusses how it fits into the service environment.

RTS Life Cycle **866**

Tracking RTS Inventory **867**

Receiving an RTS Transfer from a Vendor **869**

RTSs and Regulatory Attributes **870**

RTS Maintenance **871**

RTS Life Cycle

See Chapter 23, “Return Material Authorizations,” on page 813.

The return to supplier process takes the return material authorization (RMA) process one step further. Sometimes you send an item returned from the end user back to a supplier, who repairs or replaces it. Use the return to supplier function to track the return to the supplier (RTS) and link the original return from your customer to it.

Fig. 24.1
RTS Flow

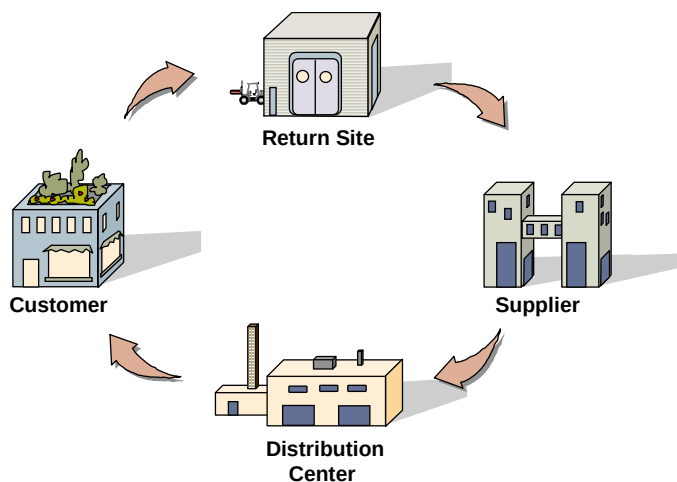


Figure 24.1 shows the full route of the item as it is received by the customer, returned to you, then returned to your supplier, who in turn returns it to you.

RTS Maintenance executes two distinct processes: you return items to the supplier, and you receive items back from the supplier. You can specify whether:

- The supplier ships the repaired item to you at your service repair site, or
- The supplier ships the repaired item to the customer.

RTSs have a life cycle similar to a standard purchase order. You create them with RTS Maintenance. You ship and receive them in separate functions: RTS Shipments and RTS Receipts.

If you are using shipping groups and inventory movement codes, you can enter shipment information and generate shippers during RTS shipments just like a PO return.

See the Shipping chapter in *User Guide: QAD Sales* for details.

Tracking RTS Inventory

You can use one of two methods to manage inventory for an item returned to a supplier:

- Specify the supplier as an inventory site and track the inventory within the application database.
- Issue the item out of inventory and not track it until it is returned.

Transferring RTS Inventory

In the first option, inventory remains within view in your application database, even though it is not physically present. You specify a supplier inventory site and locate the RTS item there. This approach gives you the advantage of knowing at all times how many units of the item are being repaired. Since the system supports costing by site, you can assign any cost or no cost to these RTS items while they are at your supplier’s site.

The supplier site for inventory is set up in RMA/RTS Control (11.7.24).

Inventory site
representing
items
returned to a
supplier.

The screenshot shows the 'RMA/RTS Control' window with the following settings:

Field	Value
RMA Header Comments	☐
RMA Line Comments	☐
Default RMA Contract	SC-3
Keep Booking History	☐
Display Service Contracts	☒
RMA Sales Order Prefix	R
Next RMA Sales Order	614
Customer Return Site	10000
Customer Return Location	600
Customer Spares Site	10000
Customer Spares Location	650
Detail Allocations	☐
Allocate Days	0
Consume Forecast	☒
Edit Installed Base	☒
Print No Charge Receipts	☐
Purchase Order Prefix	R
Next RTS Purchase Order	700
At Supplier Site	10000
At Supplier Location	800
Return From Supplier Site	10000
Return From Supplier Loc	600

Fig. 24.2
RMA/RTS Control
(11.7.24)

At Supplier Site represents all your suppliers. To track the RTS when you have multiple suppliers, set up one at supplier site and define a different location for each supplier.

To track RTS items as inventory, set Inventory Issue to No in RTS Maintenance (11.7.3.1). When inventory issue is No, the system creates the RTS with a ship type of R.

Note You can use this feature only for inventory items. For memo items, inventory issue is Yes and you cannot change it.

A non-blank ship type normally indicates a memo item. Even though ship type is non-blank for an RTS, the system enforces required inventory edits and compliance features. You are moving inventory during the transaction. The R indicates inventory is being transferred rather than issued and received.

Fig. 24.3
RTS Maintenance
(11.7.3.1)

Items are transferred, not issued.

Defaults from Customer Return Site and Location in control program.

Defaults from the At Supplier Site and Location.

RTS Maintenance

RTS Maintenance: Go To Actions

Items Returned To Supplier

RMA: R701 Supplier: 3000 Ship-To: 3000 S/M: Single

Ln	Item Number	UM	Return Qty	Price	Disc%
1	CP100	EA	1.0	40.00	0.00%

Item Returned To Supplier

Lot/Serial: Serial-00002 Description: Finished Configured good

Inv Issue: ☐ Expected Date: 09/28/2007

Qty Shipped: 0.0 Date Shipped:

From Site: 10000 Fault Code:

From Location: 600 Comments:

To Site: 10000

To Location: 800 Type: R

Ext Price: 40.00 RMA:

RMA Line: 0 Link: 0

The RTS Type field is set to R when Inv Issue is No and cannot be changed.

When Inventory Issue is No, the destination site defaults from the At Supplier Site value. Inventory is transferred from the customer return site to the supplier site and displays in inventory inquiries and reports as on-hand at the supplier site.

Table 24.1
Inventory Transactions
Generated with
Inv Issue = No

Transaction	Description	Debit Account	Credit Account
ISS-TR	Ship from site	Goods in transit	Inventory
RCT-TR	At supplier site	Inventory	Goods in transit

Issuing Inventory for an RTS

The second option for processing RTS items is to set Inventory Issue to Yes in RTS Maintenance (11.7.3.1). This means you are issuing inventory and not tracking the returned item in the database.

Setting Inventory Issue to Yes is similar to processing a sales order shipment or RMA shipment. When the shipment occurs, the inventory is reduced and you no longer have visibility of it. When you set Inventory Issue to Yes, the inventory ships from the customer return site and is no longer visible within your application database.

Transaction	Debit Account	Credit Account
RCT-PO	PO Receipts	Inventory

Table 24.2
Inventory
Transactions
Generated with
Inv Issue = Yes

Both a return to supplier and a receipt from supplier create the same transaction type (RCT-PO). The only difference is that the quantity is negative for a return.

Note Whether you are performing inventory issues and receipts or transferring inventory, the features of the Regulatory Attributes module that affect purchase orders also apply to RTSs. This includes the ability to modify inventory attributes upon RTS receipt and lot-control level. The value of Single Lot per PO Receipt affects an RTS only when inventory issue or receipt is Yes.

Receiving an RTS Transfer from a Vendor

Use RTS Maintenance for two functions:

- Sending an item needing repair back to the supplier
- Receiving the refurbished item

Two similar frames in RTS Maintenance correspond to these functions: one for sending an item to the supplier and one for receiving an item returned from the supplier. The frame titles in RTS Maintenance indicate which function is being executed.

Fig. 24.4
Receipt from
Supplier

Items will be transferred, not received.

Defaults from Return From Supplier Site and Location in RMA/RTS Control.

Ln	Item Number	UM	Qty Ordered	Price	Disc%
2	CP100	EA	2.0	40.00	0.00%

Item Received From Supplier

Lot/Serial: Serial-00002 Description: Finished Configured good

Required Date: 10/04/2007

Received Date:

Pur Acct: 5100 0100

Inv Receipt: ☐ Single Lot: ☒

Qty Received: 0.0 Type: R

From Site: 10000 Return Id:

From Location: 800 RMA Line: 0

To Site: 10000 Link: 0

To Location: 600 Ext Price: 80.00

The Inventory Receipt field functions like the Inventory Issue field. When you have a matching issue and receipt line on an RTS, you must set Inventory Issue and Inventory Receipt the same for both lines, so they both affect inventory in the same way.

Set Inventory Receipt to Yes to receive the item from the supplier into your inventory. No indicates you are transferring inventory from the At Supplier Site and At Supplier Location to the Return from Supplier Site and Return from Supplier Location defined in RMA/RTS Control. You can change these settings for each line.

In Figure 24.4, Inventory Receipt is No so you can transfer the item. The From Site and From Location default from the At Supplier Site and Location; the To Site and To Location default from the Return From Supplier Site and Location.

RTSs and Regulatory Attributes

If you are using the Regulatory Attributes module, RTSs are affected in the same fashion as purchase orders. Several control program settings in Regulatory Attributes Control (1.22.24) affect an RTS.

- If Compliance Active is Yes, a pop-up appears in RTS receipts that let you modify inventory attributes during receipt.
- When inventory receipt is Yes, Single Lot per PO Receipt also affects RTSs. If this is set to Yes and you have previously received a lot, you cannot receive it again on an RTS.

Example You need to consider the implications of this carefully. You receive a lot from a supplier. Later you return two items from that lot to the supplier with an RTS. When you receive the items back, you cannot receive them to the same lot number in a controlled environment. The reason for this is that additional work has been done on them and they are no longer the same as other items in the lot.

- RTSs are also affected by the lot-control level in Regulatory Attributes Control.
- If you enable automatic lot numbering for an item in Item Master Maintenance, it is effective in RTS Receipts.

RTS Maintenance

Figure 24.5 illustrates the first two frames of RTS Maintenance (11.7.3.1).

The screenshot shows the 'RTS Maintenance' window with the following data:

Supplier		Ship-To	
Acme Supply Co.	Acme Supply Co.		
1 Claridge Drive	1 Claridge Drive		
Verona NJ 07044	Verona NJ 07044		
X United States	X United States		

Below the tabs, the following fields are visible:

- Order Date: 09/04/2007
- Taxable: ☐
- Currency: USD
- Project:
- Required Date: 10/4/2007
- Expected Date: 9/28/2007
- Lang: us
- RMA Contract:
- Ln Disc: 0%
- Credit Terms: 2-10/30
- Contract Type:
- Imp/Exp: ☐
- Comments: ☐
- Remarks:

Fig. 24.5
RTS Maintenance
(11.7.3.1)

RTS. If you leave this field blank when you create an RTS, the system supplies a number by appending the Purchase Order Prefix in RMA/RTS Control to the value in Next RTS Purchase Order. The system increments this field.

Supplier. Enter a supplier defined in Supplier Create (28.20.1.1) and set up in Supplier Data Maintenance (2.3.1). This is the supplier to whom you are returning items.

Note Only suppliers set as active in Supplier Create are available for this program.

Ship-To. This defaults from the Supplier record, but you can change to an alternate address.

Order Date. The default is the system date, indicating when you recorded this RTS. This can be the date when you entered the RTS or the date the customer requested an RTS.

Required Date. If left blank, defaults to the order date. This field is the date that the items are required back from the supplier and provides the default date for each RTS receipt line.

Expected Date. If left blank, defaults to the order date. Indicate the date you expect to ship the items to the supplier on this RTS and provides the default date for each RTS issue line.

RMA Contract. If you have linked this RTS to an RMA, you can enter the RMA contract number in this field. This field is for reference only.

Contract Type. If you have linked this RTS to an RMA, you can enter the RMA contract type in this field. This field is for reference only.

Remarks. Any remarks specified for the supplier display by default. You can enter remarks specific to this RTS. Remarks display on printed documents.

Taxable, Class, Effective Date. Default from the values for the Supplier address. These fields indicate whether this RTS is subject to tax. The taxable status for the order header displays as the default for each line item, but you can change it.

Currency. Defaults from the currency for the supplier. When you first create an RTS, you can change this to any currency, but once you move to the next frame, it cannot be changed.

When you specify a foreign currency, a pop-up displays the exchange rate relationship effective on the order date. You can change it or mark this rate as fixed. If the exchange rate is not fixed, the system updates it at later points in the RTS life cycle. If the exchange rate is fixed, the system does not change it.

Ln Disc. Defaults from the supplier. This field indicates the percentage discount usually offered by this supplier.

Import/Export. Defaults from Imp/Exp Default in Intrastat Control and displays if Use Intrastat is Yes in the same control program. Set this field to Yes to enter or maintain import and export data for the order used to create Intrastat History Reports. If Yes, the standard Intrastat frames display for input of appropriate data.

Project. Project code is one component of an account number defined in GL setup functions. Other account components are account, sub-account, and cost center. Each component you enter must be valid on its own and in combination with other account number components. The project on the header is the default for all line items. You can change this for any line.

Site. Must be a valid site code. The system uses the site to determine the default tax environment. Sites for RTS issue and receipt lines default from RMA/RTS Control.

Language. Defaults from the language for the Sold-To address. Use this when printing formal documents as a selection criteria for the print function.

Credit Terms. Defaults from the credit terms for the supplier. Credit terms identify specific types of payment terms, defining the due date and any discounts for early payment.

Comments. Defaults from the RMA Header Comments field in RMA/RTS Control. When Comments is Yes, a frame displays where you can enter comments for this RTS. Enter information that relates to the entire RTS, such as delivery information or credit comments.

Items Returned to Supplier

There are two line item entry frames for an RTS: one for items returned to the supplier and one for items received from them. Many fields on this frame are the same as in standard purchase order functions and are not described here.

Fig. 24.6
Items Returned to
Supplier (11.7.3.1)

RTS Maintenance

RTS Maintenance: Go To Actions

Items Returned To Supplier

RMA: R701 Supplier: 3000 Ship-To: 3000 S/M: Single

Ln	Item Number	UM	Return Qty	Price	Disc%
1	CP100	EA	1.0	40.00	0.00%

Item Returned To Supplier

Lot/Serial: Serial-00002 Description: Finished Configured good

Inv Issue: ☐ Expected Date: 09/28/2007

Qty Shipped: 0.0 Date Shipped:

From Site: 10000 Fault Code:

From Location: 600 Comments: ☐

To Site: 10000 Type: R

To Location: 800 RMA:

Ext Price: 40.00 RMA Line: 0

Link: 0

Item Number. Enter the number of an item to be returned to your supplier. The lookup for this field displays all RMA receipt lines with an open quantity that has not already been attached to an RTS return line. These are the items you are most likely to be returning to your supplier.

If you enter a memo item, inventory issue defaults to Yes in the lower frame and you cannot change it.

Price. List price must be specified manually and indicates the amount of credit you expect to receive.

Disc %. Discount percent comes from the supplier in the header and indicates the discount the supplier normally gives you for this returned item.

Inv Issue. Indicate whether to issue inventory from stock or to transfer it to a temporary supplier location when you ship items back to a supplier. If Yes, items are issued from stock and no longer appear on your inventory balance.

If No, the system transfers items to At Supplier Site and At Supplier Location in RMA/RTS Control. When the items are received back from the supplier, the system transfers them from the at-supplier site and location to the Return From Supplier Site and Return From Supplier Location.

Note When you have a matching issue and receipt line on an RTS, you must set Inv Issue and Inv Receipt the same for both, so they affect inventory the same way.

From Site and Location. These fields default from Customer Return Site and Customer Return Location in RMA/RTS Control. Indicate the site and location where the items to be returned to the supplier currently reside.

To Site and Location. You can edit these fields only if Inventory Issue is No. In this case, the system transfers the items to another site and location for tracking instead of issuing them from inventory. The site and location default from the At Supplier Site and At Supplier Location in RMA/RTS Control.

Type. When Inventory Issue/Receipt is Yes, Type defaults from Memo Order Type in Item-Site Inventory Data Maintenance (1.4.16), if defined for the order line site; otherwise, it defaults from Item Master Maintenance (1.4.1). If Type is blank, the line item is shipped from or received into inventory, recorded in GL, and used by planning.

When Inventory Issue/Receipt is No: The system sets Type to R, indicating an RTS with Inventory Issue/Receipt set to No. For Item Master items, inventory movement still takes place even when Issue/Receive is No. In this case, items are transferred from one site/location to another.

For this reason, the ship type loaded into transaction history is blank, not R, since the transfer affects inventory balances. This ensures accuracy on reports (such as Inventory Valuation as of Date Report, which uses the transaction history to reconstruct the quantity on hand).

Other standard ship types do not apply to RTS shipment/receipts. These include S (subcontract) and B (blanket). Any other type is interpreted as a non-inventory item. Receipts of memo items do not affect inventory, but do debit Purchasing Expenses in general ledger.

This field is validated against values defined in Generalized Codes Maintenance (36.2.13) for field name pod_type.

RMA and RMA Line. If you receive an item from a customer on an RMA and are now returning it to the supplier, enter the RMA and RMA line numbers in these fields for reference. If you select the RMA line item from the lookup on the Item field, the system fills in the RMA number and line. The system verifies that:

- The RMA line exists.
- It is a receipt line, not an issue line.
- The item number matches with an open quantity not already associated with other RTS return lines.

Link. The system maintains this field. It links lines from the receipt portion of the RTS. When an RTS receipt line is linked to the RTS return—or ship—line, its number appears here.

Items Received from Supplier

RTS receipts is similar to RTS returns. Again, most fields in the item detail have the same effect as described previously. The differences are described here.

Fig. 24.7
RTS Receipt Lines

RTS Maintenance

RTS Maintenance: Go To Actions

Items Received From Supplier

RMA: R701 Supplier: 3000 Ship-To: 3000 S/M: Single

Ln	Item Number	UM	Qty Ordered	Price	Disc%
2	CP100	EA	2.0	40.00	0.00%

Item Received From Supplier

Lot/Serial: Serial-00002 Description: Finished Configured good
 Inv Receipt: ☐ Required Date: 10/04/2007
 Qty Received: 0.0 Received Date:
 From Site: 10000 Pur Acct: 5100 0100
 From Location: 800 Single Lot: ☒
 To Site: 10000 Type: R
 To Location: 600 Return Id:
 Ext Price: 80.00 RMA Line: 0
 Link: 0

Inv Receipt. Indicate if inventory is to be received into stock or transferred from the at-supplier location when you receive items from the supplier.

No: Items are transferred from the At Supplier Site and At Supplier Location in RMA/RTS Control to the Return from Supplier Site and Return From Supplier Location.

Yes: Items are received into stock and appear on your inventory balance.

When you have a matching issue and receipt line on an RTS, you must set Inventory Issue and Inventory Receipt the same for both, so they affect inventory in the same way.

Link. If this receipt is related to a line you issued previously, enter the line number here. The system updates the issue line with this information.

Note Lines can only be linked if the Inventory Issue/Receipt settings are the same.

RTS Trailer

The RTS trailer is similar to a purchase order trailer. It displays charges and credits and other shipping and invoicing information.

The screenshot shows a software window titled "RTS Maintenance". At the top, there are tabs for "Go To" and "Actions". The main content area displays information for "RTS: R701". It includes fields for "Supplier: 3000" and "Ship-To: 3000". Below this, there is a section for tax information: "Non-Taxable: 0.00", "Taxable: 0.00", "Currency: USD", "Line Total: 0.00", "Total Tax: 0.00", "Tax Date: 10/04/2007", and "Total: 0.00". There is a "View/Edit Tax Detail" button. Further down, there are fields for "Order Revision: 0", "Order Rev Date" (with a dropdown arrow), "Amount Prepaid: 0.00", "Status" (with a dropdown arrow), "Print PO" (checked checkbox), "EDI PO" (unchecked checkbox), "Close Date", "FOB" (with a dropdown arrow), "Deliver To" (text field), and "Ship Via" (with a dropdown arrow and a magnifying glass icon).

Fig. 24.8
RTS Trailer Frames

Some fields on the trailer default from the supplier address such as Ship Via or from Purchasing Control (5.24) and have the same function as in purchase orders.

RTS Picklist

The RTS Picklist Print report (11.7.3.15) enables you to display items due for return to suppliers before picking the items. It lets shipping keep a hard-copy list of what items need to be picked and shipped back to a supplier.

The report is intended for an organization's internal use and does not contain financial fields, such as prices and tax information.

Fig. 24.9
RTS Picklist Print
(11.7.3.15)

The screenshot shows a web-based form titled "RTS Picklist Print". At the top, there is a navigation bar with "Go To", "Actions", "Copy", "Print", and "Preview" options. The main form area contains several input fields and checkboxes. On the left side, there are fields for "RTS:", "Supplier:", "Item Number:", "Order Date:", and "Language ID:", each followed by a "To:" field for range selection. On the right side, there are additional "To:" fields for further range selection. Below these fields, there are three checkboxes: "Open RTS Documents Only" (checked), "Unprinted RTS Documents Only" (checked), and "Update" (checked). There is also a "Form Code" field with the value "1". In the bottom right corner, there are labels for "Output:" and "Batch ID:".

RTS (From/To). Specify the first and last RTS numbers in the range for which to print the report.

Supplier (From/To). Specify the first and last supplier codes in the range for which you want to print the report.

Item Number (From/To). Specify the first and last items in the range for which you want to print the report.

Order Date (From/To). Specify the first and last order dates in the range for which you want to print the report.

Language ID (From/To). Specify the first and last language ID in the range for which you want to print the report.

Open RTS Documents Only. Set to Yes to print open RTS documents only.

Unprinted RTS Documents Only. Set to Yes to only print RTS documents that have yet to be printed.

Form Code. Specify the form code of the document format on which you want these documents to print. You can customize forms to suit your business needs.

Update. Set Update to No to print a simulated picklist for review without updating the database.

Control Programs

With its inherent flexibility, the Service/Support Management (SSM) module meets the needs of users with diverse business requirements. Settings in the 11 SSM control programs support this flexibility. This chapter discusses each control program and describes each setting and its impact on service activity.

Service Management Control **882**

Call Management Control **886**

Call Escalation Control **896**

Service Request Control **898**

Contract Control **899**

RMA/RTS Control **902**

End User Control **908**

Material Order Control **909**

Engineer Schedule Control **913**

Paging Control **917**

SSM Accounting Control **918**

Service Management Control

Service Management Control (11.24) contains general settings that affect more than one kind of service activity. Most of these settings are used to manage the installed base.

Fig. 25.1
Service
Management
Control (11.24)

The screenshot shows the 'Service Management Control' window. It has a title bar with the text 'Service Management Control' and a close button. Below the title bar is a menu bar with 'Service Management Control:', 'Go To ~', and 'Actions ~'. The main area contains several settings:

- Items in Installed Base: ☐
- Items Must Exist: ☒
- Load Available Structure: ☒
- System Level:
- Ship to Installed Base: ☒
- Installed Base History: ☒
- Travel UM:
- Multiple Time Zones:
- Service Data in Item Master: ☐
- Filter ISB by Classification: ☐
- Supress API Warnings: ☐
- Server Time Zone: PST/PDT
- Domain Time Zone: GMT-8

Items in Installed Base. If Yes, you can record service contracts and service calls only for items in the installed base. If No, you can take calls in Call Maintenance for items not in the installed base. You can add a record for the item and end user to the installed base when you record activity in Call Activity Recording.

Use this field with Items Must Exist to define the degree of control you want over the item specified on service contracts and calls.

The four ways to combine these two fields are listed in Table 25.1.

Table 25.1
Item Control Field
Combinations

Items in Installed Base	Items Must Exist	Effect
No	No	You can add any item to a call or service contract. The installed base does not have to contain the item and it does not have to exist in the item master. With this pairing, you can take calls and generate service contracts for any item, even those your company does not sell.
No	Yes	You can take calls and generate service contracts only for items in the item master. However, the customer's installed base record does not have to contain the item. Use this pairing if you do not need an accurate installed base, but you do support only products you manufacture and sell.

Items in Installed Base	Items Must Exist	Effect
Yes	Yes	You can take calls or issue service contracts only for items that are in the installed base and in the item master. This combination gives you the most control.
Yes	No	You can take calls or issue service contracts for any item in the installed base; you may not have made or sold the item. Use this to keep accurate installed base records and if you service items you do not manufacture.

Items Must Exist. If Yes, an item must be in the item master before you can create a service contract or call for it. If your company services only products that you have manufactured and shipped, set this field to Yes. If you service products from other manufacturer or operate a walk-in type repair service, set this field to No.

Load Available Structure. The field determines whether the system adds product structures to the installed base during invoice post and in Call Activity Recording. Setting this field to Yes has an effect only if other conditions are true:

- The item is one you manufacture or configure.
- Ship to Installed Base is Yes.
- The parent and each component are service items defined with Service Item Maintenance (11.3.7), and the Installed Base field is Yes.
- The item can be added with a quantity of 1. The shipment quantity for configured items is 1, and the work order quantity for serial- or lot-controlled items is 1 for the system to identify the as-built structure. Since you seldom create lots with a quantity of 1, Load Available Structure usually has no effect on lot-controlled items.
- The parent item is serial number controlled or is a configured product. A configured product shipped on a final assembly work order can be identified without a serial number as long as it is shipped with a quantity of one.

If the situation meets these conditions, the system attempts to add components of the parent item to the installed base as derived from the sales order BOM or the work orders used to build it and its components. The system derives this information from transaction history records.

If Load Available Structure is No and Ship to Installed Base is Yes, the system creates an ISB record only for the parent and includes no component details.

System Level. This field enables you to specify a code indicating a system-level item. Set up values in Generalized Codes Maintenance for field `pt_sys_type`. Associate system-level codes with installed base items in the System Type field of Service Item Maintenance (11.3.7).

The system uses the code defined in Service Management Control with the System Level On Calls field in Call Management Control. Before you can set System Level On Calls to Yes, specify a value for System Level. The system checks this code in two places:

- In Call Management, it is checked during next/previous processing on the Item field.
- In the Installed Base Report (11.3.3), selecting the System Level Only option restricts the report to items with a system type that matches the System Level value in the control program.

Service Data in Item Master. If Yes, you can edit the service attributes of an inventory item in Item Master Maintenance (1.4.1). These are the same frames as in Service Item Maintenance (11.3.7). If No, you can edit these attributes only in Service Item Maintenance.

Filter ISB by Classification. Specify whether you want to filter ISB records based on classification codes before displaying ISB lookups. No: All ISB records are displayed.

Yes: You can select a classification code to limit records included before an ISB lookup displays.

This field defaults to Service/Support User Preferences (11.21.23) where you can specify a different value for individual users as needed.

The value of this setting affects all programs that have a field with an associated installed base lookup.

If you want to use filtering by classification, you must set up classification codes in Classification Maintenance and associate them with items in Service Item Maintenance.

♦ See “Classifying ISB Records” on page 46.

Ship to Installed Base. Controls the integration between sales and service. If Yes, the system updates the installed base during Invoice Post and Print (7.13.4) of sales orders for service items. If you use the Sales Orders/Invoices module and ship to end users, set this field to Yes, since it can streamline recording installation information. If you sell through distributors or retailers, this may not be appropriate.

Installed Base History. Determines whether the system creates transaction history records for manual updates to the installed base. When Yes, a history record is created whenever a user manually creates an ISB record, deletes a record, or changes the serial number on an existing record. Review these transactions with the ISB History Report (11.3.22.3). Tracking history provides an additional level of security in managing an installed base.

Travel UM (M, KM). M indicates travel distances are in miles; KM indicates kilometers. This setting determines the default for the travel distance unit of measure in the Service Office Detail frame of End User Data Maintenance (11.9.1). This value in Call Maintenance (11.1.1.1) designates distance between the end-user installation and service office.

Multiple Time Zones. This field indicates whether MTZ is active. You can update it in the control program only when its value is Yes. To activate MTZ, use the Multiple Time Zones Startup Utility (11.21.22.24), which changes the value in the control program from No to Yes.

♦ See Chapter 4, “Multiple Time Zones,” for details.

When MTZ is active, you can associate time zones with customers, end users, and engineers. Most call-related dates and times are displayed relative to the end-user time zone.

Warning You can turn MTZ on and off, but it is not recommended. If you turn it off, you must enter call dates relative to the end-user time zone. Otherwise, data is not consistent when MTZ is reactivated.

Server Time Zone. This field displays the time zone of the server machine for the application database. The system uses this time zone for all time-zone conversions.

The Multiple Time Zones Startup Utility (11.21.22.24) sets this field. Do not modify it unless you change the geographical location of the server machine. In this case, use the Server Time Zone Change Utility (11.21.22.22) to make the change. This utility adjusts records to conform to the new time zone.

Note A Server Time Zone field can also be updated in Database Control (36.24.1) when MTZ is not active in any domain in SSM. Once MTZ has been activated, the field in Database Control cannot be updated.

Domain Time Zone. You can edit this field only when Multiple Time Zones is active. Define this time zone with Multiple Time Zones Maintenance (11.21.22.1) to indicate the time zone of this domain. The domain time zone may be the same as the server time zone. It can differ if the domains are for corporate units in separate geographical regions.

This field has no effect on the way the system stores dates and times. In most call reports and inquiries, you can view dates and times relative to domain time.

Call Management Control

Call Management Control (11.1.24) manages many aspects of calls, including call statuses, defaults for call creation, call activity recording and invoicing, and call quotes.

Fig. 25.2
Call Management
Control (11.1.24)

Call Prefix. Used with the Next Call ID in a later frame to assign a default call ID number for new calls. Use prefixes to distinguish calls, quotes, RMA, service requests, and contracts. You must specify different prefixes for calls and call quotes.

Default Call Queue. Default queue for grouping service calls for dispatch and review with the Call Queue Manager. Define queues in Call Queue Maintenance (11.1.21.7). The system searches for a call queue default as follows. If escalations are in effect, it determines call queue by the escalation step; next, call defaults defined with Call Default Maintenance; then the call queue in Service/Support User Preferences, and, finally, the call queue in the control program.

Call Comments. Specify Yes if you normally enter transaction comments during Call Maintenance (11.1.1.1). You can enter up to 99 pages of information on a call. This field determines the default that displays in the Call Info frame of Call Maintenance when you create a call.

Assign Primary Engineer. If Yes, the system assigns the primary engineer for the end user to new calls and call quotes. You can change this value. If this field is Yes, Schedule New Calls is normally set to No.

Schedule New Calls. Specify whether to execute the engineer scheduling sequence in Call Maintenance. If Yes, the Schedule field in the Call Info frame defaults to Yes. This initiates the engineer scheduling sequence upon completion of the Call Info frame. Set this to No if you do not use engineer scheduling.

Dispatcher. The default is No. Sets the default for the Page Engineer field in the Call Update frame of Call Maintenance when you create a call. If the call's engineer has Field Engineer set to Yes in Engineer Maintenance and Dispatcher is Yes, the Engineer Paging frame appears so that paging can be initiated. Use Yes if a call dispatcher routes incoming calls to engineers.

Total Call Time. Indicate whether the system calculates the time spent on a call. Telephone support organizations may want the system to calculate time spent. This field determines the value for Time Spent in the Call Update frame of Call Maintenance (11.1.1.1). If this field is Yes, the system keeps track of the elapsed time in decimal hours

spent maintaining the call. The system begins calculating time when you enter the Call Info frame and stops when you reach the Call Update frame. Each time you modify a call, the additional time spent displays.

If you spend time on the call outside of Call Maintenance, you must adjust the time spent manually.

When this field is No, the time spent defaults to zero and must be entered manually.

Default Call Service Type. Specify the default contract type for terms and conditions when a call item has no contract or warranty. Define contract types with Contract Type Maintenance (11.5.10). This service type determines the response time, hours of coverage, and priority. Normally, the call default has no coverage levels.

Temporary Customer. Enter a valid, active customer defined in Customer Create. Use this customer in Call Maintenance when taking calls from end users who are not in the system. Use this feature if you service items sold through distributors or retailers and end users contact your company directly for service. If your company sells only to end users, you may not need a temporary customer number.

System Level on Calls. Use this setting if you take calls only for certain items, or to ensure that calls are taken only for the parent item in a configured product structure. Default is No. Before you can enter Yes, specify a code for the System Level field in Service Management Control. Define these codes in Generalized Codes Maintenance for field pt_sys_type. Setting this field to Yes affects next/previous processing in the Item Number field in Call Maintenance. Only items designated as system level display.

Call Activity With Temp. Used with the Temporary Customer setting. Set this field to No to prevent update of a call in Call Activity Recording or Call Invoice Recording until the customer is changed. You cannot close calls recorded for the temporary customer number. You must create a valid customer/end-user record, then update the call.

Fault Codes. Sets the default for the Fault Codes field in Call Maintenance, Call Quote Maintenance, and Call Activity Recording. If Yes, the Fault Codes field defaults to Yes and the Fault Codes frame appears. In this frame, enter information about the reasons for the call and its resolution.

Call Time Window. The default is No. Determines whether the Travel and Estimated Time frame appears in Call Maintenance. Enter Yes if you normally record estimated call length, travel distance, and travel time. User preferences in Service/Support User Preferences (11.21.23) can override the control program.

Use the estimated call length to calculate engineer availability during call scheduling if Display by Calls is No in Engineer Schedule Control. Estimated call length defaults from Call Management Control settings for the various work codes.

Call Structure Window. The default is No. Determines whether the Item Service Structure Detail frame appears in Call Maintenance. If Yes, you can enter or modify the service BOM and routing for the call's first item. The BOM and routing, in turn, can determine the items and operations loaded into Call Activity Recording detail frames. User preferences in Service/Support User Preferences (11.21.23) can override this value. The service BOM and routing can also be specified later in the Call Item frame.

Auto Install Calls. Indicate whether the system generates installation calls. You can mark each item as customer installable in Service Item Maintenance (11.3.7). Schedule an engineer for items that the customer cannot install. When Auto Install Calls is Yes and an item requires installation, Invoice Post and Print generates a call to schedule the installation.

Installation Days Ahead. Specify the number of days after an item's ship date that you want to schedule an installation call. When an item requiring an installation call is loaded into the installed base, the system calculates the call's next activity date based on the ship date plus the value of Installation Days Ahead.

Use Escalation. Enter Yes to use escalations. Set this value to Yes before you can set up other escalation parameters in Call Escalation Control. When using escalations, the first step of the escalation

(sequence 0) determines the defaults in Call Maintenance for Priority, Queue, Status, Next Queue, Next Status, Next Status Date, and Next Status Time.

Queue Manager (0, 1, 2, 3). Controls the sort criteria for calls in the Call Queue Manager (11.1.6). User preferences set up in Service/Support User Preferences (11.21.23) can override this value.

0 (zero): Displays calls by Next Date and Next Time. Use Pivot to toggle the sort order by end user.

1: Groups calls by the Assigned field, then response priority. Use Pivot to toggle the sort order by queue.

2: Sorts by the Assigned field. Use Pivot to toggle the sort order by end user.

3: Sorts by the Area field. Use Pivot to toggle the sort order by customer.

Queue Manager Pause. Specify the number of seconds that the Call Queue Manager (11.1.6) waits before it refreshes the screen. When the screen refreshes, new calls are included. If this field is 0 (zero), the screen does not refresh.

Multiple Skills. Indicate the default value for the Multiple Skills field in Call Maintenance (11.1.1.1). The Multiple Skills field controls the option to define the list of skills an engineer requires to solve a call.

If you set this field to Yes, the Multiple Skills field in Call Maintenance will always be set to Yes. If you set this field to No, the system checks whether multiple skills are specified for the call. If the call has multiple skills, the system sets the Multiple Skills field in Call Maintenance to Yes; otherwise, it is set to No.

Work Code Settings

Fig. 25.3
Work Code Frame
(11.1.24)

Technical Work Code: Tech	Default Call Length: 003:00
PM Work Code: PM	PM Call Length: 002:00
Install Work Code: INST	Install Call Length: 008:00
Update Work Code: UPDT	Update Call Length: 001:00
Corrective Work Code: CORR	Corrective Call Length: 004:00

Technical Work Code. Enter a work code defined in Work Code Maintenance (11.21.1). Defines the default work code for calls you create in Call Maintenance (11.1.1.1) and Call Quote Maintenance (11.1.1.7).

PM Work Code. Enter a work code defined in Work Code Maintenance (11.21.1). Defines the default work code for calls the system generates during preventive maintenance scheduling in Contract Maintenance. The system uses this work code for all calls it creates for a preventive maintenance schedule.

Install Work Code. Enter a work code defined in Work Code Maintenance (11.21.1). Defines the default work code used for installation calls generated during Invoice Post and Print.

Update Work Code. Enter a work code defined in Work Code Maintenance (11.21.1). The system currently does not use this field.

Corrective Work Code. Enter a work code defined in Work Code Maintenance (11.21.1). You can use this work code with field notifications, which support the mass generation of calls for recall or other corrective action.

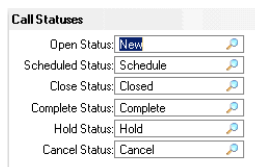
Default Call Length. Average call duration in hours; defaults to the Estimated Length field in the Travel and Estimated Time frame of Call Maintenance (11.1.1.1) for calls with the technical work code. The system also uses it as the default for the PM, install, update, or corrective work codes if no values exist for them. It is the general default for all other work codes. Call length affects engineer scheduling when Display by Calls is No in Engineer Schedule Control.

PM, Install, Update, and Corrective Call Length. Average call duration in hours for calls using the associated work code; defaults to the Estimated Length field in the Travel and Estimated Time frame of Call Maintenance (11.1.1.1). Call length affects engineer scheduling if Display by Calls is No in Engineer Schedule Control.

Call Statuses Frame

In the Call Statuses frame of Call Management Control, you define the status defaults for the call management programs. Define call statuses first in Call Status Maintenance (11.1.21.1).

Fig. 25.4
Call Statuses Frame
(11.1.24)



Open Status. Specify the general status for an open call and the initial status for new calls. An open call is dynamic—its line item and other data can change at any time. The system sets line items that cannot be completed or closed in Call Activity Recording to this status. In addition, a call quote must have this status to be released to recording.

Scheduled Status. Specify the default status for scheduled calls. When a call is scheduled in FSS, its status is set to this value. If you do not define a scheduled status, scheduled calls retain their previously assigned status.

See *User Guide: QAD Field Service Scheduler* for more information on FSS.

Close Status. Specify the status that represents the final status of a call and indicates no more service activity for this call is needed. If the call items have not already been added to the installed base in Call Activity Recording, the system can create an installed base record when the call status is set to closed.

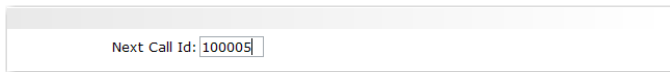
You cannot record activity for a closed call. For example, you cannot order service items for it or add new lines or reports. However, you can reopen it to record more activity. You can move a closed call to history and archive and delete it if it is fully invoiced.

Complete Status. The complete status means the call is ready for invoicing—that is, at least one invoiceable report with detail exists. You can still modify related data, order service items for it with a material order, and record new activity for it.

Hold Status. The hold status prevents recording new activity for a call or line in Call Activity Recording or generating an invoice from CAR. You cannot create a material order for a call on hold. For anything further to happen to the call, change its status. You can still invoice existing activity in CIR.

Cancel Status. You cannot record activity for the call or line item or order service items for it. You can cancel a call or line item only if you have not recorded activity for it. Without activity, no invoice can be generated for a canceled call. You can move a canceled call to history and archive and delete it.

Next Call ID Frame



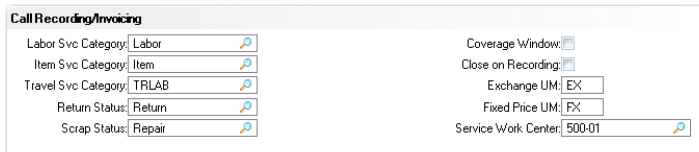
Next Call Id: 100005

Fig. 25.5
Next Call ID Frame
(11.1.24)

Next Call ID. The next call number for system-assigned call identification numbers. The system uses the next call number in Call Maintenance if the Call ID field is blank on a new service call. Call IDs begin with a prefix, specified earlier, followed by the next sequential call number. The system increments this next call number and displays it in this field.

Call Recording/Invoicing Frame

The next frame in Call Management Control contains settings that affect recording service activity and invoicing. Figure 25.6 displays the Call Recording /Invoicing frame.



Call Recording/Invoicing

Labor Svc Category: Labor	Coverage Window: ☐
Item Svc Category: Item	Close on Recording: ☐
Travel Svc Category: TRLAB	Exchange UM: EX
Return Status: Return	Fixed Price UM: FX
Scrap Status: Repair	Service Work Center: 500-01

Fig. 25.6
Call Recording/
Invoicing Frame
(11.1.24)

Labor Svc Category. This value is the default in the labor/expense detail of Call Activity Recording if no other value exists. It also provides the default for standard operations and routing steps. You

can change the value during any CAR session. Define service categories with Service Category Maintenance (11.21.9). One of the labor or expense fields for the service category must be Yes.

Item Svc Category. This value is the default in the item detail of Call Activity Recording if no other value exists. You can also define a service category for each service item in Service Item Maintenance (11.3.7). Define service categories with Service Category Maintenance (11.21.9). One of the item fields for the service category must be Yes.

Travel Svc Category. This value is the default for consuming labor for travel time on a visit in Call Activity Recording if no other value exists.

Return Status. Sets the default status for returned items in Call Activity Recording if that item is defined as repairable with Service Item Maintenance (11.3.7). Also sets the default return status in MO Direct/Pending Returns (11.11.8). First define the status in Return Status Maintenance (11.21.17).

Scrap Status. Sets the default status for returned items in Call Activity Recording if that item is not defined as repairable with Service Item Maintenance (11.3.7). First define the status in Return Status Maintenance (11.21.17).

Note You cannot use a status with Pending set to Yes.

Exchange UM. Defines the unit of measure for Service Pricing Maintenance (11.17.1) when you define repair price lists for exchanges in Call Activity Recording. When you use a return status with Exchange set to Yes in Call Activity Recording, the system searches the call price list for a price with this UM. If a price is found, it displays as the default price for the exchange credit.

Fixed Price UM. Defines the unit of measure for Service Pricing Maintenance when you define a repair price list for fixed price service in Call Activity Recording. When you use a work code with Fixed Price set to Yes in Call Activity Recording, the system searches the call price list for a price with this UM and displays it as the default fixed price. The end user is invoiced this amount, regardless of the cost of service.

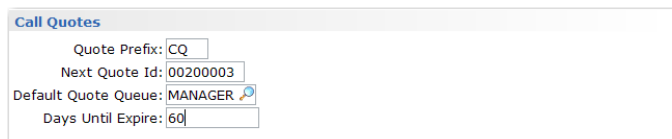
Coverage Window. This value determines the default for the Coverage field of the Call Item frame of Call Maintenance and the Item Detail frame of Call Activity Recording. If Coverage is Yes, a frame displays showing coverage information such as contract number, contract service type, start and end dates, active service type, warranty service type, and install date. Levels and limits of coverage also display; for contracts, information about limit consumption is included. Set this field to Yes to enable service personnel to more easily analyze the billing impact of proposed service activity.

Close on Recording. Determines how the system normally changes call statuses Call Activity Recording. If Close on Recording is No, the system attempts to set the call status to complete when you finish recording service activity. If the call cannot be completed, its status is unchanged.

If Yes, the system attempts to close the call by setting its status to the closed status in the control program. If all conditions for call closure are not met—for example, there are open MOs, reports on hold, invalid line statuses—the system attempts to set the call status to complete so that invoicing can take place.

Service Work Center. Enter a work center defined with Service Work Center Maintenance (11.19.13) or standard Work Center Maintenance (14.5). Used in the Call Activity Recording Labor/Expense frame to supply the cost of labor if a routing or standard operation is not used.

Call Quotes Frame



The screenshot shows a software interface titled "Call Quotes". It contains four input fields arranged vertically:

- Quote Prefix: CQ
- Next Quote Id: 00200003
- Default Quote Queue: MANAGER (with a dropdown arrow icon)
- Days Until Expire: 60

Fig. 25.7
Call Quotes Frame
(11.1.24)

Quote Prefix. Used with Next Quote ID to assign a default call quote ID number. Helps to distinguish calls, quotes, RMA, service requests, and contracts. The call quote prefix cannot be the same as the call prefix.

Next Quote ID. The next call quote number the system assigns. The next quote number is used in Call Quote Maintenance (11.1.1.6) if the Quote field is blank for a new quote. Quote IDs begin with a prefix, followed by the next sequential quote number. The system increments this next quote number and displays it here.

Default Quote Queue. Code used to group service quotes for dispatching and review with the Queue Manager. Define queues in Call Queue Maintenance (11.1.21.7). When you create a quote with Call Quote Maintenance (11.1.1.7), the system searches first for a default queue in Call Default Maintenance (11.1.21.10), then the Call Quote Queue in Service/Support User Preferences, and finally, the value in the control program.

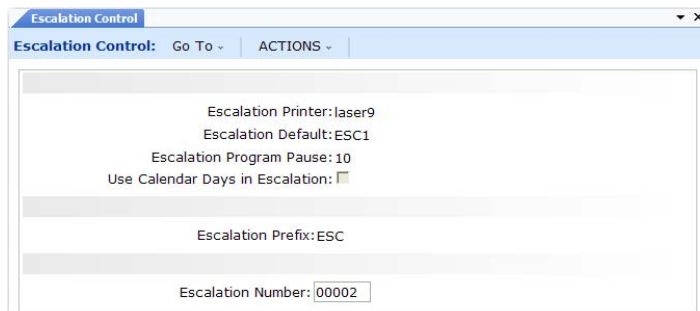
Days Until Expire. The default is 0. The system determines the expiration date for a new call quote by adding the value in this field to the creation date. You can change the expiration date in Call Quote Maintenance (11.1.1.7).

Call Escalation Control

The Use Escalation setting in Call Management Control (11.1.24) indicates whether or not to use escalations. If this field is No and you access Call Escalation Control (11.1.13.24), a warning displays asking if you want to enable escalations.

If you respond with Yes to this message, the system changes the setting in the call control program, enabling you to modify the escalation control program. If you respond with No, you cannot specify values for these fields.

Fig. 25.8
Call Escalation
Control
(11.1.13.24)



The screenshot shows a window titled "Escalation Control" with a standard Windows-style title bar (minimize, maximize, close buttons). Below the title bar is a menu bar with "Escalation Control:", "Go To", and "ACTIONS". The main content area is a light gray box containing the following text:

- Escalation Printer: laser9
- Escalation Default: ESC1
- Escalation Program Pause: 10
- Use Calendar Days in Escalation: ☐
- Escalation Prefix: ESC
- Escalation Number: 00002

Escalation Printer. Dedicated printer used by the Escalation Monitor (11.1.13.13) to print call reports. Must be defined in Printer Setup Maintenance (36.13.2). When Print is Yes for an escalation step, the system sends the call report to this printer.

Escalation Default. Must be an escalation code defined with Escalation Maintenance (11.1.13.1). If you use escalations, the system searches for a default escalation code in Call Maintenance (11.1.1.1) in the following order: escalation defined for the end user, escalation defined in Call Default Maintenance, escalation defined in Service/Support User Preferences, escalation defined in the control program.

Escalation Program Pause. Number of seconds the Escalation Monitor (11.1.13.13) pauses before restarting a cycle. Set this interval to a value less than the shortest period of time in any escalation. If the shortest amount of time between two sequences is zero days and four hours, which the system calculates by summing the Days Allowed in Status and Time Allowed in Status fields in Escalation Maintenance, then set Escalation Program Pause to a value less than four hours.

Use Calendar Days in Escalation. This field sets the default for the Use Calendar Days in Escalation field in the Escalation Monitor. It determines whether to use calendar days or workdays to calculate Next Status Date. The formula is: today's date + Days Allowed in Status from the current escalation step.

- If Yes, the system uses calendar days in the calculation. If the Next Status Date resolves to a non-workday as determined by the warranty or service type, the system advances the date to the next workday.
- If No, the system uses only work days in the calculation, excluding non-workdays. When No, the calculated date is either the same or later than the date calculated with a value of Yes.

Escalation Prefix. Used with the Next Escalation Number for automatic numbering of new escalations. Prefixes help to distinguish between different types of codes.

Escalation Number. The next number the system assigns in Escalation Maintenance (11.1.13.1) if the Escalation field is blank. Escalation numbers begin with a prefix, followed by the next sequential escalation number. The system increments this next number and displays it here.

Service Request Control

Service Request Control (11.1.15.24) contains settings that affect the life cycle of service requests.

Fig. 25.9
Service Request
Control
(11.1.15.24)

The screenshot shows a window titled "Service Request Control" with a standard Windows interface. Below the title bar is a menu bar with "Service Request Control:", "Go To ~", and "ACTIONS ~". The main content area contains three configuration fields: "Service Request Prefix:" with a text box containing "SR", "SR Open Status:" with a dropdown menu showing "Received" and a magnifying glass icon, and "SR Close Status:" with a dropdown menu showing "Closed" and a magnifying glass icon. At the bottom of the window, there is a label "SR Number: 200002".

Service Request Prefix. Used with the SR Number field to assign a default service request ID number.

SR Open Status. Enter an SR status defined in SR Status Code Maintenance (11.1.15.7). This status indicates the beginning point in the life cycle of an SR. It displays by default when you create a new SR in Service Request Maintenance.

SR Close Status. Enter an SR status defined in SR Status Code Maintenance (11.1.15.7). This status indicates no further activity can take place. You can delete or archive closed SRs.

SR Number. The next service request (SR) number the system assigns in Service Request Maintenance (11.1.15.1) if the SR field is blank. Service request numbers begin with a prefix, followed by the next sequential SR number. The system increments this next SR number and displays it here.

Contract Control

Use Contract Control (11.5.24) to define defaults for streamlining the definition and printing of service contract and managing billing and invoicing issues.

Contract Management Frame

The screenshot shows the 'Contract Control' window with the following settings:

Ln Format S/M: Single	Quote Prefix: Q
Print Service Contracts: ☒	Next Service Quote: 100
Service Header Comments: ☐	Contract Prefix: C
Service Line Comments: ☐	Next Service Contract: 5
Contract Site: 10000	Service SO Prefix: SVO
Items in Installed Base: ☐	Create PM Calls: ☒
Next Service Sales Order: 05001	

Fig. 25.10
Contract
Management Frame
(11.5.24)

Ln Format (S/M). Indicate the preferred method for entering service quote and contract line items. Specify single to display and maintain detailed information for each line item. In multiline mode, you can enter basic information such as item, quantity, and price for up to 12 lines on a single screen. Dates, site, location, tax status, and GL accounts default. Use single-line format to access and change this information. You can change the line format at any time during order entry and alternate between single and multiline format.

Print Service Contracts. Indicate whether you normally print service contracts. This field determines the default for a new service contract, but can be changed. Contract Print (11.5.13.4) includes only contracts with Print set to Yes. At the completion of printing, Print is set to No.

Note For Contract Print, the country for the sold-to customer determines the numeric and date formats.

Service Header Comments. Indicate whether you normally enter comments on each contract quote or contract header. Header information usually applies to the entire quote or contract and prints at the top of the document. This setting determines the default that displays when you enter or modify a contract, but can be changed.

Service Line Comments. Indicate whether you normally enter comments on each order line. Line item information usually applies to a specific line item and prints following that line. This setting determines the default that displays when you enter a line, but can be changed.

Contract Site. The site responsible for this service quote or contract. Usually this is the site where you perform the repairs. When you release a service contract for billing, this site gets revenue credit.

Items in Installed Base. Indicate if a record of an item must exist in the end user's installed base before it can be added to a contract or contract quote. The initial value defaults from the same field in Service Management Control (11.24).

No: You can reference an item on a contract even when it is not present in the end user's installed base. However, the system issues a warning that an installed base record does not exist.

Yes: Contract quotes and contracts can reference only items that exist in the end user's installed base. Use Installed Base Item Maintenance (11.3.1) to add an installed item for the end user, if necessary.

This field supports a flexible approach to managing the installed base. For example, you can set the field in Service Management Control to No so that you can take calls for any item. Then set the field in Contract Control to Yes so you provide coverage for items in the installed base only.

You can define any combination of Yes and No values for the two Items in Installed Base fields. However, setting Items in Installed Base to Yes at the system level and No at the contract level can create problems if you do not ensure that covered items are added to the installed base later. Otherwise, you will not be able to create a call for an end user with valid contract coverage.

Use Items In Installed Base in Contract Control and Items Must Exist in Service Management Control together to define the degree of control you want to exercise over the item codes entered on contracts. Four possible combinations exist.

Items In Installed Base is No, Items Must Exist is No:

You can add any item to a service contract. The installed base does not have to contain the item and it does not have to exist in the item master. This pairing lets you take calls and generate service contracts for any item, including items your company does not sell.

Items In Installed Base is No, Items Must Exist is Yes:

You can generate contracts only for items in the item master. However, the customer's installed base record does not have to contain the item. This pairing works best for companies that do not need to maintain an accurate installed base, but that support only products they manufacture and sell.

Items In Installed Base is Yes, Items Must Exist is Yes:

You can issue contracts only for items that are already in the installed base and that are in the item master.

Items In Installed Base is Yes, Items Must Exist is No:

You can issue contracts for any item in the end user's installed base; the item does not have to be something that you make or sell. This combination works best for companies that need to keep accurate installed base records and who also service items they do not sell.

Quote Prefix. Unlike other prefix codes, the contract quote prefix is used only internally. The system does not combine it with the next contract quote number. The contract prefix cannot be the same as the contract quote prefix. Do not change the contract quote prefix after contract quotes exist in the system.

▶ See “Managing Deferred and Accrued Revenue” on page 329 for details.

Next Service Quote. The next automatic service quote number for system-assigned numbers. When you enter a contract quote, you can leave the quote number blank to let the system set it to the next sequential number.

Contract Prefix. Unlike other prefix codes, the contract prefix is used only internally. The system does not combine it with the next contract number. The contract prefix cannot be the same as the contract quote prefix. Do not change the contract prefix after contracts exist in the system.

Next Service Contract. The next automatic contract number for system-assigned numbers. When you enter a service contract, leave the contract number blank to let the system set it to the next sequential number.

Service SO Prefix. An optional prefix code for pending invoice numbers created when a contract is released for billing. Use a prefix to distinguish the origin of orders and invoices. The system sets the number for this pending invoice to the prefix code followed by the next sequential number in the Next Service Sales Order field.

Create PM Calls. Determines whether the system creates calls during the PM scheduling sequence in Contract Maintenance. If Yes, the system creates the first scheduled call before the Contract PM Schedule frame displays. When this call is closed, the system generates the next call on the schedule.

If No, the system does not generate the first call or subsequent calls. You can still generate a call by selecting a schedule date and clicking Next in Contract Maintenance. However, normally you use the Call Generator to create all scheduled calls within a range of dates.

Set Create PM Calls to No for more control over call open dates and to use BOM types. When the first call is created in Contract Maintenance, you cannot specify a BOM type.

Next Service Sales Order. The Billing Release to Invoice function uses this number when it creates pending invoices for contracts. Each pending invoice has a unique sales order number, which the system creates by appending the Service Sales Order Prefix to the number in this field. The system increments this number and records it in the control program. You can use a distinct range of numbers to distinguish the origin of orders and invoices.

See “Using BOM Type” on page 354 for details.

RMA/RTS Control

Set up RMA/RTS Control (11.7.24) to match how you normally enter RMA and RTS transactions. This is also where you designate default shipping and receiving sites and locations for returns and spares.

The screenshot shows the 'RMA/RTS Control' window with the following settings:

Setting	Value
RMA Header Comments:	☐
RMA Line Comments:	☐
Default RMA Contract:	SC-3
Keep Booking History:	☐
Display Service Contracts:	☒
RMA Sales Order Prefix:	R
Next RMA Sales Order:	614
Customer Return Site:	10000
Customer Return Location:	600
Customer Spares Site:	10000
Customer Spares Location:	650
Detail Allocations:	☐
Allocate Days:	0
Consume Forecast:	☒
Edit Installed Base:	☒
Print No Charge Receipts:	☐
Purchase Order Prefix:	R
Next RTS Purchase Order:	700
At Supplier Site:	10000
At Supplier Location:	800
Return From Supplier Site:	10000
Return From Supplier Loc:	600

Fig. 25.11
RMA/RTS Control
(11.7.24)

RMA Header Comments. Indicate whether you normally enter comments on an RMA or RTS header. If Yes, the Comments field on the RMA and RTS header defaults to Yes. You can change this setting.

RMA Line Comments. Indicate whether you normally enter comments on each RMA or RTS line. If Yes, the Comments field on each RMA and RTS line defaults to Yes. You can change this setting.

Default RMA Contract. This service contract type supplies default coverage information for items on RMAs without other coverage. The system also uses this service type if you change the charge type suggested for an RMA line item to the service contract charge type (S). The service type defines the default level of coverage for RMA line items, restocking charges for returns, the credit price list, and determines whether or not you can issue a replacement item before you receive an item from the customer. Set up contract types with Contract Type Maintenance (11.5.10).

Keep Booking History. Indicate whether to maintain booking history. If Yes, the system keeps an audit trail of changes to RMAs by creating transaction history records, identified as type ORD-SO. The record includes the item, order quantity, price, cost, date, user ID, and other information. You can review this information using booking inquiries and reports. Use Transactions Detail Inquiry (3.21.1) to review detailed transaction history.

Display Service Contracts. This field determines if the Service Contract pop-up window appears when you create an RMA not referencing a call. Coverage for an RMA referencing a call defaults

from the call. For RMAs without a call, the contract pop-up enables you to select coverage from available service contracts for the current end user. If this field is No, the pop-up does not display and the contract defaults from Default RMA Contract in the control program.

RMA Sales Order Prefix. Defines the prefix for new RMAs that you create with a blank Order field. Because the system stores RMAs and sales orders in the same table, you use the prefix to distinguish RMAs from other types of sales orders.

Next RMA Sales Order. Used with the RMA Sales Order Prefix to determine the next RMA number when the Order field is blank on a new RMA. The prefix is not required. The system increments this RMA number each time you enter an RMA.

Customer Return Site/Location. This site and location display as defaults for RMA receipt lines, but you can change them. When you receive the items back from the customer, the system increases the inventory balance at this site and location. For an RTS, this site and location provides the default for items being returned to the supplier.

Customer Spares Site/Location. Site/location from which you ship replacement parts on RMAs. This site and location are the defaults for RMA issue lines, but you can change them. When you ship the items to the customer, the system decreases the inventory balance at this site and location.

Detail Allocations. Enter Yes if you usually make detail allocations during RMA issue line entry, No if you do not. Detail allocations assign specific inventory lot/serial numbers and locations to be shipped on an RMA. You can change this value on each line item.

Allocate Days. Specifies the number of days into the future to use as a cutoff for allocating items on RMA issue lines. This value defaults to the corresponding field in the RMA header, which in turn defaults to each line.

Allocations reserve inventory so it is not allocated to other sales orders, RMA issue lines, intersite requests, or work orders. The system only tries to allocate available inventory to RMA issue line items due within the specified number of days, giving you more control over the allocation process. Two other control program settings affect allocations in RMAs:

- The Quantity Available to Allocate calculation method in Sales Order Control controls how the system determines the number of items available to allocate. The calculation is the same for all items and sites.
- The value for Limit Allocations to Avail to Allocate in Sales Order Control determines how the system handles shortage situations. If this field is No, Quantity Allocated defaults from Quantity Ordered even if a sufficient quantity to allocate does not exist. If this is Yes, Quantity Allocated never exceeds the quantity available. If there is no quantity available to allocate, Quantity Allocated defaults to 0.

Consume Forecast. Determines the default in the Consume Forecast field on the RMA header, which determines the default for each line item. If Consume Forecast is Yes for an RMA issue line item, it consumes forecast the same way that sales order lines do. When you enter an RMA issue line, the system decrements the available quantity in the sales forecast for the item by the RMA quantity.

Edit Installed Base. Determines the default for the Edit Installed Base field in RMA Maintenance, which controls the appearance of the Installed Base Detail frame. Use this frame to modify the defaults for the installed base for RMA issues. This setting has no effect if Ship to Installed Base is No in Service Management Control.

Print No Charge Receipts. This field indicates if the system generates and prints invoice lines for RMA receipt lines that have no invoiceable amount. This field also affects the printing of the invoice itself if none of its lines involve a financial transaction.

- If Yes, the system generates invoices lines even if no financial transaction occurs. The system prints an invoice even if none of the lines on the RMA generate a financial transaction.
- If No, the system does not generate an invoice line for RMA receipt lines that do not involve a financial transaction. The system does not print an invoice if none of the lines create financial transactions.

RMAs normally involve two events: receiving damaged or defective goods from an end user and shipping replacements. The shipment of an item produces an invoice line even if no financial transaction

occurs. For the receipt portion of the RMA, you can use this field to control whether or not the system creates invoice lines for no-charge transactions.

If you typically use RMA receipts only to ensure that an item is returned from the end user and do not give credits or add restocking charges, set Print No Charge Receipts to No to simplify invoicing. If a receipt without financial impact is an exception, set Print No Charge Receipts to Yes to ensure visibility over the invoicing process.

Purchase Order Prefix. Defines the prefix for new RTSs that you create with a blank Order field. Since the system stores RTSs and purchase orders in the same table, use the prefix to distinguish RTSs from other types of purchase orders.

Next RTS Purchase Order. Used with Purchase Order Prefix to determine the next RTS number when the RTS field is blank in RTS Maintenance.

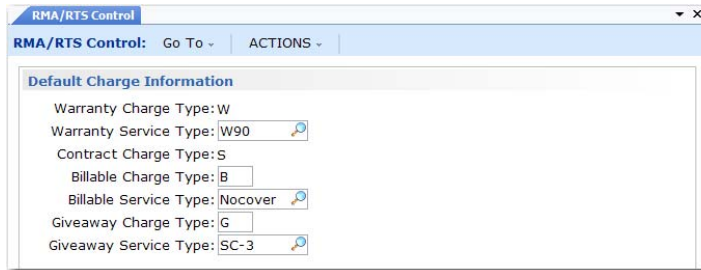
At Supplier Site/Location. This site and location display as the default To Site and To Location for RTS issue lines and From Site and From Location on RTS receipts when Inventory Issue/Receive is No.

In this case, RTS Shipments perform an inventory transfer. Rather than issuing the returned items from inventory, they are transferred to the designated At Supplier Site and Location. You still own the items and see them on your inventory. When you receive the items back from the supplier, the system transfers them from the At Supplier Site and Location to the Return From Supplier Site/Location.

If Inventory Issue/Receive is Yes on an RTS, shipping the items back to the supplier removes them from stock. The system decreases inventory at the site and location specified on the RMA. When you receive them back, the system returns them into inventory at the site and location specified on the RMA.

Return From Supplier Site/Location. Identifies the site/location into which the system transfers items received back from a supplier. This site and location display as the default To Site and To Location on the Receipts section of an RTS, but you can change them.

Default Charge Information



The screenshot shows a software window titled "RMA/RTS Control". Inside, there is a section titled "Default Charge Information" with the following fields:

- Warranty Charge Type: W
- Warranty Service Type: W90
- Contract Charge Type: S
- Billable Charge Type: B
- Billable Service Type: Nocover
- Giveaway Charge Type: G
- Giveaway Service Type: SC-3

Fig. 25.12
RMA/RTS Control
(11.7.24)

Warranty Charge Type. This display-only value is always W. This charge type is the default on an RMA line item when the service type is a warranty. If you change another charge type to W, the system displays the terms and conditions for Warranty Service Type in the control program.

Warranty Service Type. Identifies the service type defined with Warranty Type Maintenance to use when you change the charge type (CT) value to W on an RMA issue line item. The system uses the level of coverage and price list for this service type instead of the default service type on the RMA header.

Contract Charge Type. This display-only value is always S. This charge type is the default on an RMA issue line when the service type in effect is a contract. If you change the charge type to S, the system displays the terms and conditions for the Default RMA Contract type specified on the previous frame of the control program.

Billable Charge Type. Specify any value other than W or C. Enter this charge type on an RMA issue line to apply the terms and conditions for the Billable Service Type defined in the control program.

Billable Service Type. Identifies the service type defined with Contract Type or Warranty Type Maintenance to use when you change the charge type (CT) field to the Billable Charge Type on an RMA issue line. The system uses this service type's level of coverage and price list instead of the service type on the RMA header. Normally, the service type provides no coverage and you bill the customer for the entire amount on this line item.

Giveaway Charge Type. Specify any value other than W or C. Enter this charge type on an RMA issue line to apply the terms and conditions for the Giveaway Service Type defined in the control program.

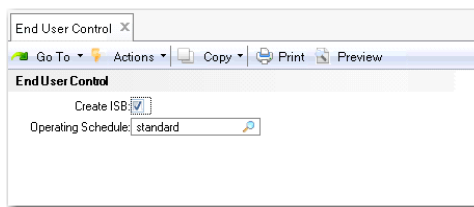
Giveaway Service Type. Identifies the service type defined with Contract Type or Warranty Type Maintenance to use when you change the charge type (CT) field to the Giveaway Charge Type on an RMA issue line. The system uses this service type's level of coverage and price list instead of the service type on the RMA header.

Normally, the service type provides 100 percent coverage and you do not invoice the customer for this line item.

End User Control

Use End User Control (11.9.24) to determine the default value for the Create ISB field and the default schedule to use for end users.

Fig. 25.13
End User Control
(11.9.24)



Create ISB. Sets the default for Create ISB in a new end-user record. The value of Create ISB for an end user determines whether to add items associated with the end user to the installed base.

The system considers two values to determine whether to add an item to the installed base:

- The value of Create ISB for the end user
- The value of Installed Base, specified in Service Item Maintenance, for the item

These both must be Yes before the system adds the item to the installed base. If both these fields are Yes, the Update ISB field defaults to Yes in Call Maintenance, Call Activity Recording, and RMA Maintenance.

If Ship To Installed Base is Yes in Service Management Control, the value of Create ISB in End User Control has a special effect. If the Ship To address on the sales order is not an end user, the system creates an end-user record when it posts the sales order invoice. The system uses the value of Create ISB in the control program to determine whether to add items to the installed base for the new end user.

For an undefined end user, if the item normally goes to the installed base and Create ISB is Yes in the control program, Update Installed Base defaults to Yes in Sales Order Maintenance. You can change this value in a pop-up window if SO Edit ISB Defaults is Yes in Sales Order Control. Otherwise, it takes effect during invoice post and the item is added to the installed base when the end-user record is created.

If you are tracking the installed base, this field gives you more control over how items are added. If you normally add items to the installed base regardless of the end user, set Create ISB to Yes and this value defaults to the functions where you create ISB records. To more tightly control ISB updates so that you can create ISB records only for a predefined set of end users, set this field to No and change the field in End User Data Maintenance.

Operating Schedule. Specify the default schedule to use for end users. You can select one of the schedules defined in End User Master Schedule Maintenance (11.9.13). See “End User Schedules” on page 35 for more information.

Note If the Operating Schedule field is blank and no schedules are defined in End User Master Schedule Maintenance, the system does not consider end user schedules when scheduling calls.

Material Order Control

Use Material Order Control (11.11.24) to define defaults for many MO input fields and establish values that affect MO processing.

Fig. 25.14
Material Order
Control (11.11.24)

The screenshot shows the 'Material Order Control' window with the following fields and options:

- Material Order Control** (Title Bar)
- Go To** (Dropdown), **Actions** (Dropdown), **Copy** (Icon), **Print** (Icon), **Preview** (Icon)
- Material Orders** (Section Header)
- Allocate MO Lines Due in Days:** (0 for no allocations)
- Detail Allocations:** ☐
- Ln Format S/M:** (Dropdown)
- Keep Booking History:** ☒
- Shipping Lead Time:**
- Ship Immed:** ☐
- MO Header Comments:**
- MO Line Comments:**
- Internal Customer:**
- Material Order Prefix:**
- Next Material Order:**
- Next Back Order Advice:**
- Next Delivery Note:**
- Confirmed Orders:** ☒
- Consume Forecast:** ☒
- Ship To:** (Dropdown)
- Consume Shipped Lines:**

Allocate MO Lines Due in Days. Specifies the number of days into the future to allocate MOs. Use allocations to control shipments, especially in shortage situations. Set this value to 0 (zero) to prevent automatic allocations. When you enter an MO, the system compares the order quantity to the quantity available to allocate. If a shortage exists, the order cannot be filled. The system tries to allocate available inventory only to line items due within the number of days specified here, giving you more control over the process.

If you use automatic allocations, set Confirmed Orders to Yes to allocate only confirmed orders.

Detail Allocations. Determines the default in the Detail Allocations field of the MO header, which determines the default for each MO line. Detail allocations assign specific lot/serial numbers and locations for shipping on an MO. Enter Yes if you normally make detail allocations during Material Order Maintenance. Otherwise, enter No.

Ln Format (S/M). Indicate the normal mode for entering material order line items. Use S, single-line mode, to display and maintain detailed information for each line item. Use M, multiline mode, to enter information such as item, quantity, and price for up to 12 lines on one screen. Dates, site, location, confirmed orders, comments, and other values default. Use single-line format to access and change the defaults. You can change the line format at any time during order entry, and alternate between single and multiline format.

Keep Booking History. Indicate whether to maintain booking history. If Yes, the system keeps an audit trail of changes to MOs by creating transaction history records, identified as type ORD-MO. The record includes the item, order quantity, price, cost, date, user ID, and other information. You can review this information using booking inquiries and reports. Review detailed transaction history using Transactions Detail Inquiry (3.21.1).

Shipping Lead Time. The usual number of calendar days between the date you enter an MO and the date you ship the items. If you ship orders immediately, use zero. When you create an MO, the required and due dates default to the system date plus the shipping lead time, indicating the normal delivery date. You can change this date.

Ship Immediately. If Yes, a frame appears when you leave line entry so you can initiate the shipment process from Material Order Maintenance. If Ship Immediately is No, you are finished with the material order when you accept your input.

MO Header Comments. Indicate if you normally enter header comments for MOs. If Yes, the Comments field on the MO header defaults to Yes.

MO Line Comments. Indicate if you normally enter comments for MO line items. If Yes, the Comments field on each MO line defaults to Yes.

Internal Customer. Enter a valid, active customer defined in Customer Create. Values associated with the Internal Customer are used whenever an MO is created without an associated call.

When an MO has a call, the customer number and currency default from the customer associated with the call's end user. For an MO without a call, the system uses the number and currency associated with the customer specified in this field. Normally, this customer should have the domain base currency.

Material Order Prefix. Defines the prefix for automatic numbering of MOs when the MO field is blank in Material Order Maintenance. Because the system stores MOs, RMAs, and sales orders in the same table, use the prefix to distinguish MOs from other types of sales orders.

Next Material Order. The system uses this value with the Material Order Prefix to create the next MO number. The prefix is optional. The system increments the MO number each time you enter an MO.

Next Back Order Advice. The system uses this value when a Back Order Advice is created during MO shipments. The system increments this number each time a Back Order Advice is created.

Next Delivery Note. The system uses this value when an Material Delivery Note is generated during MO shipments. The system increments this number each time a Delivery Note is created.

Confirmed Orders. Indicate whether you normally enter MOs as confirmed. This field determines the default in Material Order Maintenance. Enter Yes if you normally enter MOs as confirmed orders. Enter No if they are not confirmed when entered, but require a separate confirmation step.

Confirmed orders are allocated, consume forecast, and create demands for material planning. Unconfirmed orders are not allocated, do not consume forecast, and do not create demands for material planning until you process a separate Material Order Confirmation function.

Consume Forecast. Determines the default in the Consume Forecast field on the MO header, which determines the default for each line item. If Consume Forecast is Yes for an MO item, it consumes forecast the same way that sales order lines do. When you enter an MO, the system decrements the available quantity in the sales forecast for the item by the MO quantity.

Ship To. Possible values are user or engineer. The value for Ship To determines the value for Ship-To on a new MO associated with a call.

- If user, the MO Ship-To defaults from the end user who called.
- If engineer, the MO Ship-To defaults from the address of the engineer assigned to the call.

Use this field to tailor the Ship-To default according to your business practices. You can change the Ship-To entry on a particular MO.

Note For MOs without a call, Ship-To is the engineer's address, and cannot be changed.

Consume Shipped Lines. Set this field to control the consumption of items.

Yes. Enables the automatic MO shipment/CAR consumption for all material orders.

Only DOM. Enables the automatic MO shipment/CAR consumption for depot material orders only (that is, for orders associated with calls that have a work code with the Repair Center check box set to Yes.)

No. Do not auto-consume items; instead, use the standard MO shipment/CAR consumption.

Engineer Schedule Control

Engineer Schedule Control (11.13.15.24) enables you to prioritize how engineers are assigned to calls. The system uses the following factors when ranking engineers for a call:

- Whether the engineer is assigned to the same area as the end user
- How much time an engineer has available to handle the call
- Whether the engineer is the end user's primary engineer
- Whether the engineer has the skills to handle the call
- Whether the engineer is in the same time zone or within a defined range of the end user on the call

Note This factor is considered only if Multiple Time Zones is active.

The system calculates engineer points according to this formula:

*Area Points + (Available Points * available hours) + Available Points + (2 * Primary Eng Points) + Problem Points + Time Zone Points*

Note Time zone points are considered only if Multiple Time Zones is active.

Specify the highest value for factors that are most important to your company. The greater the value, the higher the weighting. The formula weights availability and primary engineer higher than other factors.

The engineer with the highest score displays at the top of the list in the scheduling window in Call Maintenance (11.1.1.1).

Fig. 25.15
Engineer Schedule
Control
 (11.13.15.24)

Lunch Duration. The length of time, in hours and minutes, normally taken by engineers for lunch. The system deducts this value from the total daily available time. If you change this field, rebuild the engineer schedules to update existing schedules. Run Rebuild Engineer Schedules (11.13.15.25) to recalculate available hours.

Display by Calls. Specifies whether to calculate and display engineer availability in terms of available hours or by the number of calls an engineer can take.

- If Yes, the availability window in Call Maintenance prioritizes engineers according to their point totals, and displays the number of calls each can still take.
- If No, it prioritizes engineers according to point totals, but lists the number of hours per day that each is still available.

Next Engineer Number. A number the system maintains and uses to match engineer codes and addresses. When you define an employee as an engineer, the system creates an address master record for the engineer. The system can then retrieve address information when you specify the engineer as a drop-ship address in Material Order Maintenance.

The system creates the address master using the engineer code, unless that code already identifies another address. In this case, the system uses Next Engineer Number and updates the control program.

Area Points. The number of points to add to an engineer's scheduling score if the engineer's assigned service area, defined in Engineer Maintenance, matches that of the call's end user, defined in the Service Office Detail frame of End User Data Maintenance.

Available Points. The number of points to use when calculating the scheduling score for an engineer with an available status. Statuses can have any name, but their Available field must be Yes. The system multiplies this value by the number of calls or hours the engineer has remaining for the day. Define availability status codes in Engineer Status Maintenance (11.13.4).

Primary Eng Points. If the engineer is the primary engineer for the end user initiating a call, the system doubles these points and adds them to the scheduling score. The secondary engineer is given these points without doubling them. Define primary engineers in the Engineer Code field in the Service Office Detail frame of End User Data Maintenance.

Problem Points. The number of points to add to the scheduling score if an engineer has a skill matching the problem on the call. Assign skills to an engineer in Engineer Skills Maintenance.

Time Zone Points. You can update this field only when MTZ is active. The system uses this field with Range of Hours to Consider. The value can range from 0 to 99 and specifies the number of points to give to an engineer with a time zone that matches or falls within the specified range relative to the time zone of a call's end user. Define time zones for engineers in Engineer Maintenance.

♦ See Chapter 4, "Multiple Time Zones," for details about MTZ.

Limit by Availability. Indicate whether the engineer scheduling routines in Call Maintenance consider only engineers who have an available status and available hours or calls on the date being examined.

If Override Scheduling Options is Yes in Engineer Schedule Control, you can modify this value in Call Maintenance before the Engineer Availability window displays. Otherwise, it is always applied.

Limit by Service Area. Indicate whether the engineer scheduling routines in Call Maintenance consider only engineers with a service area that matches the call's area.

The system checks this field when you assign an engineer to an end user in End User Data Maintenance. If it is Yes, a warning displays if the area of the assigned engineer and the end user do not match.

If Override Scheduling Options is Yes in Engineer Schedule Control, you can modify the value of this field in Call Maintenance before the Engineer Availability window displays. Otherwise, it is always applied.

Limit by Problem/Skill. Indicate whether the engineer scheduling routines in Call Maintenance consider only engineers with a skill that matches the call problem.

If Override Scheduling Options is Yes in Engineer Schedule Control, you can modify the value of this field in Call Maintenance before the Engineer Availability window displays. Otherwise, it is always applied.

Limit by Time Zone. You can update this field only when MTZ is active. Indicate whether the engineer scheduling routines in Call Maintenance consider only engineers with a time zone that matches the time zone of the call's end user.

The system uses this field with Range of Hours to Consider. It checks both fields when you assign an engineer to an end user in End User Data Maintenance. If Limit by Time Zone is Yes, a warning displays if the time zone of the assigned engineer is not within the range of the end user's time zone.

Range of Hours to Consider. You can update this field only when MTZ is active. The system considers it only when Limit by Time Zone is Yes. It indicates how many other time zones you can include for scheduling.

- Blank indicates the time zone of the engineer must match the time zone of the call's end user.
- An integer value indicates any time zone within a range is considered a match. The integer represents the number of time zones more or less than the end user's that are considered a match for scheduling.

Override Scheduling Options. Indicate whether you can modify the four limiting options—and range of hours when Multiple Time Zones is active—when you edit a call.

- When Yes, a pop-up window with these options displays in Call Maintenance before the Engineer Availability window displays. The limit settings display with the values in the control program. You can modify them to affect the scheduling of engineers for that edit session only.
- When No, the system always applies the scheduling options in the control program in Call Maintenance.

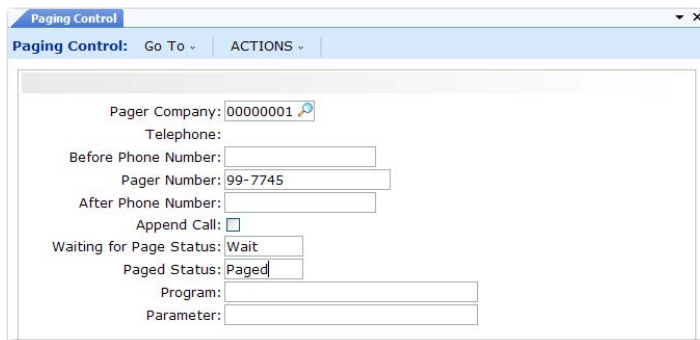
Prioritize Call Header. Select the field if you want to display call header values for the Status, Engineer, and Work Code fields in the Call View Browse in Field Service Scheduler (FSS). Clear the field to display call line values for the Status, Engineer, and Work Code fields in the Call View Browse in FSS.

See *User Guide: QAD Field Service Scheduler* for more information on FSS.

Auto Create Visit. Select the field if you want the system to automatically create a visit or scheduling transaction when an engineer is assigned to a call. The visit will be created for the assigned engineer and scheduled on the next status date and time on the call. Clear the field if you want to manually create a visit or scheduling transaction.

Paging Control

Settings in Paging Control (11.13.17.24) establish the connection with your communications application.



The screenshot shows the 'Paging Control' window. It has a title bar with 'Paging Control' and a menu bar with 'Go To' and 'ACTIONS'. The main area contains several input fields: 'Pager Company' (00000001), 'Telephone' (empty), 'Before Phone Number' (empty), 'Pager Number' (99-7745), 'After Phone Number' (empty), 'Append Call' (checkbox), 'Waiting for Page Status' (Wait), 'Paged Status' (Paged), 'Program' (empty), and 'Parameter' (empty).

Fig. 25.16
Paging Control
(11.13.17.24)

Pager Company. Specify the company supplying your paging services. This should be defined as a valid, active supplier in Supplier Create.

Telephone. The system displays the pager company's phone number from its associated supplier record.

Before Phone Number. Parameters to pass to the dialing program before the phone number string. An example for UNIX systems using the cu program:

```
-s 9600 -l tty1A
```

Pager Number. The pager number to use in Call Maintenance if the Pager field of Engineer Maintenance is blank.

After Phone Number. Parameter string to pass to the operating system after the pager phone number. Some dialing programs require an escape sequence after the phone number to hang up the line or reset the modem.

Append Call. Not used.

Waiting for Page Status. Not used.

Paged Status. Not used. The value written to paging history signifying that an engineer has been paged.

Program. Path and program name for the communications application. For UNIX systems using the cu program:

```
/usr/bin/cu
```

Parameter. Parameters that follow the Program field, if you need more space than is available in the Before Phone Number field.

SSM Accounting Control

Settings in SSM Accounting Control (36.9.10) affect various operational aspects of SSM that also have financial impacts. They are included in a single program to simplify access control.

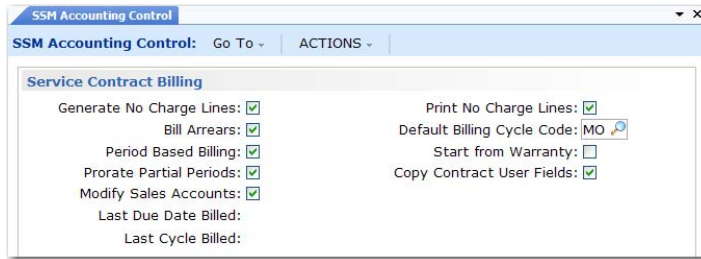


Fig. 25.17
SSM Accounting
Control (36.9.10),
Service Contract
Billing Frame

Generate No Charge Lines. Indicate whether to generate invoice lines for contract line items that have no associated charge. Billing Release to Invoice (11.5.18.13) examines this field when the system generates invoice lines for a contract. If No, only a contract line with an amount to be billed generates a corresponding invoice line. If no lines on the contract create a financial transaction, the system does not generate an invoice. If Yes, the system creates an invoice line for each service contract line regardless of the invoice amount.

An invoice line with a zero amount can exist when a service contract line has either a zero quantity or price.

Use this feature to generate a billing that shows items covered at no additional charge as part of some other purchased coverage.

Example The first line on a contract is for service on a computer. Lines 2 through 5 list components that are included at no charge: CPU, Memory, Disk Drive, Terminal.

When the service invoice is created, you can choose to see only line 1 by setting Generate No Charge Lines to No, or all lines by setting Generate No Charge Lines to Yes.

Use this field with Print No Charge Lines, which Invoice Print examines. If Generate is No, the setting of the Print field has no effect. If Generate is Yes, you normally set the Print field to Yes also. Set the Print field to No only to generate and print a no-charge invoice without displaying any line items on it.

Bill Arrears. This field determines the default for Bill Arrears in Contract Maintenance (11.5.13.1). This field indicates whether to bill service contracts at the beginning or the end of the service period. If Yes, service contracts are billed on the first day following the end of the billing period. After a bill is released for invoicing, the system sets the next billing date to the first day of the next billing period.

▶ See “Managing Deferred and Accrued Revenue” on page 329.

The setting of Bill Arrears affects which revenue type can be used with a contract:

- When Bill Arrears is Yes, you can choose cash basis or accrued.
- When Bill Arrears is No, you can choose cash basis or deferred.

Period Based Billing. Indicate whether contract billing is normally synchronized with calendar months:

Yes: Invoicing begins on the first day of the next calendar month, regardless of the start date of the contract. For example, a contract with a start date of January 23 is billed starting on February 1.

No: Billing periods for contract invoices use the actual start date of the contract header and line, without synchronizing to the start and end days of the month. A contract on a monthly cycle starting on January 23 is billed on January 23, February 23, March 23, and so on, assuming Bill Arrears is No.

The value you define in the control program sets the default for the same field when new contracts and quotes are created.

Period Based Billing works in conjunction with Prorate Partial Periods. If Period Based Billing is Yes, you can set Prorate Partial Periods to Yes to ensure that any partial periods are included in invoicing. If Period Based Billing is Yes and Prorate Partial Periods is No, any days in the partial period prior to the beginning of the month or after the end are essentially given away free.

Billing periods are always determined by the contract header start and end dates, in conjunction with the billing cycle code. The system then fits the line billing into those periods, based on the line start and end dates and billing cycle. If contract line start and end dates differ from the header, partial periods can result for the line even if none exist for the header.

Prorate Partial Periods. Indicate how the system normally invoices for coverage periods that are less than a complete month:

No: If Period Based Billing is Yes, partial periods are essentially given away free and no invoice is generated for them.

Yes: Invoices are generated for partial periods based on the percentage of a month the partial period represents.

The value you define in the control program sets the default for the same field when new contracts and quotes are created.

If Period Based Billing is Yes, partial periods are likely to occur. You can use the Prorate Partial Periods field to make sure that any partial periods are included in invoicing. If Period Based Billing is Yes and Prorate Partial Periods is No, any days in the partial period prior to the beginning of the month are essentially given away free.

Partial periods can also occur even if you are not using period based billing. You might have a contract that begins on January 12 and ends on March 20. The system would bill for two months, leaving a partial period from March 12 to March 20. The value of Prorate Partial Periods would determine whether billing is created for this period.

Modify Sales Accounts. Determines whether you can update the Sales and Sales Discount accounts in Contract and Contract Quote Maintenance. If No, the accounts display but you cannot change them.

Print No Charge Lines. Specifies if invoice lines with zero amounts print on service contract invoices. Invoice Print and Invoice Reprint examine this field. If Yes, an invoice line is printed even if there is no charge to the customer. If No, only nonzero invoice lines print.

This field is used with Generate No Charge Lines, which is examined by the Billing Release to Invoice function. If the Generate field is No, the setting of the Print field has no effect. If the Generate field is Yes, you normally set the Print field to Yes also. Set the Print field to No only to generate and print a no-charge invoice without displaying any line items on it.

Default Billing Cycle Code. Enter a code indicating how often you typically bill service contracts. For example, contract lines can be billed monthly, quarterly, or annually. This field is required. Set up billing cycles with Billing Cycle Code Maintenance (11.5.18.1).

This code defaults to the header Billing Cycle field when new contract quotes or contracts are created. The header billing cycle defaults to the next contract level, either default items or end users, based on the value of Item End Users in the contract header.

You can accept the default or specify a different billing cycle code at various levels below the contract header. However, you cannot specify a lower-level cycle that indicates less frequent billing than the cycle specified on the header.

Start from Warranty. Indicate whether a service contract normally starts only after the warranty expires. If Yes, when you enter a service contract for an installed base item, the system sets the start date to the day following the warranty expiration date. You can change this start date.

Copy Contract User Fields. If Yes, the system copies data for user-defined fields from the service contract to the pending invoice without requiring custom programming.

Last Due Date Billed. An output-only field updated when you execute Billing Release to Invoice. It displays the date in the Contracts Due Until field when you last executed Billing Release to Invoice (11.5.18.13).

Last Cycle Billed. An output-only field updated with the Billing Cycle value when you execute Billing Release to Invoice.

Fig. 25.18
SSM Accounting
Control, Contract
Control Frame

Company Address. Address code that normally appears on printed documents such as service quotes and contracts. This address also applies to call quotes and service marketing letters. You can change it to another address prior to printing. If you print on pre-addressed forms, leave this field blank.

Keep Contract History. Indicate whether to maintain booking history for contracts. If Yes, the system keeps an audit trail of contract billings and billing reversals in transaction history, identified as type ORD-SO. It records the service type, order quantity, price, cost, date, and user ID, among other information. Use booking inquiries and reports to review this information. Review detailed transaction history using Transactions Detail Inquiry (3.21.1).

Contract booking history differs from sales order booking history in that contract additions and changes are not recorded, only the billing activity.

Revenue Type. Enter the revenue type code to use as the default for billing service contracts. Valid values are A (Accrued Revenue), C (Cash Basis), or D (Deferred Revenue). The default is C.

Cash Basis: To post contract revenue upon receipt, set Revenue Type to C. In cash-basis accounting, revenue is recorded in the period it is actually received.

Accrued Revenue: To accrue revenue by default, set Revenue Type to A. You should also set Bill Arrears to Yes; otherwise, errors are generated in Contract Maintenance. In accrual-basis accounting, revenue is recorded in the period in which it is earned, regardless of whether cash is received in that period. Run Revenue Recognition (11.5.18.21) to accrue amounts, usually monthly.

Note The default setting of Bill Arrears should be appropriate for the default revenue type.

Deferred Revenue: To defer revenue by default, set Revenue Type to D. You should also set Bill Arrears to No; otherwise, errors are generated in Contract Maintenance. Perform the normal invoicing procedure at the beginning of the contract coverage period. Collected revenue is held in a deferred account and is posted periodically over the contract duration when you run Revenue Recognition.

♦ See “Recognizing Revenue” on page 331.

The value you define in the control program sets the default for the same field when new contracts and quotes are created.

If you plan to use deferred or accrued revenue types, you must set up appropriate accounts for the system to use either in Domain/Account Control (36.9.24) or in Product Line Maintenance (1.2.1).

◆ See “Billing Customers or End Users” on page 326.

Bill End Users. Indicate who normally receives invoices generated for contracts by Billing Release to Invoice:

No: Only one billing address, specified in the contract header, is associated with the contract. Billing Release to Invoice (11.5.18.13) generates all contract invoices to this address.

Yes: Multiple billing addresses can be associated with the contract, one for each contract end user. At least one invoice is generated in Billing Release to Invoice for the bill-to address associated with each end user defined on the contract.

Note The invoice for contract-wide additional charges is always sent to the header billing address, regardless of the value of Bill End Users.

This field sets the default for the same field in the header of new contract quotes and contracts.

◆ See “Summarized or Detail Billing” on page 327.

Bill Summary. Enter Yes if you typically invoice contracts in summary format; otherwise, enter No. This field sets the default for the same field in the header of new contract quotes and contracts.

When Bill Summary is Yes for a contract, the details that are not printed on an invoice are stored in the database. You can view these details using Billing Detail Report.

Note The system limits invoices to 999 lines. If the setting of Bill Summary would result in more than 999 lines on an invoice, Billing Release to Invoice creates separate invoices as needed.

Contract Limits. This field determines whether limit amounts can be defined in Contract Type Maintenance and updated in Contract Quote Maintenance and Contract Maintenance. This setting has no affect on warranty types. Limit amounts cannot be defined for them.

No: You can define coverage levels in Contract Type Maintenance, but limit amounts cannot be specified. The coverage levels as defined for the service type are used without modification when a contract or contract quote is created.

Yes: You can define both coverage levels and limits in Contract Type Maintenance. When you create a new contract or contract quote, you are prompted to copy coverage limit data from the contract type to the contract header. You can copy and update coverage limits at every level of the contract: header, default end user or item, and detail lines.

Important The enforcement of limits is only possible when coverage details are copied into the contract.

When used on a contract, limit amounts are checked in addition to coverage levels. As service is recorded for an item on a contract in Call Activity Recording, the amounts are accumulated against the limit. When the limit is reached, the system suggests an over-limit charge code, although this can still be overridden on a case-by-case basis.

If you do not plan to use the limit feature but provide a level of coverage without limits, set this field to No to avoid unnecessary prompts during contract maintenance.

Renew Limits From (C/S). Possible values are C, for contract, and S, for service type. The default is C. This field determines the default for the same field in Contract Maintenance and only has an effect when the Contract Limits is Yes. The value for the contract supplies the default for the Renew Single Contract and Copy Contract to Contract functions. In Renewal Process/Report, the system checks the value of this field for each contract being renewed.

- When set to C during renewal or copy functions, the system copies limits as defined on the existing contract, extending the effective dates to accommodate the new contract start and stop dates.
- When set to S, the system refers to the service type for the contract and copies the limits defined there. If you set up limits on the type with effective dates, the system copies the limits effective on the new contract start date from the service type.

Record Limits History. If Yes, the system writes a history record whenever contract limits are consumed during invoice post. This record includes information about the call and the activity that consumed the limits. If No, the system does not create this history.

Item End Users. Indicate how you typically set up the relationship between items and end users on contracts. This field sets the default for the same field in the header of new contract quotes and contracts.

No: The contract is designed to provide coverage for one or more end users with associated items.

▶ See “Contract Design” on page 244.

Yes: The contract is designed to provide coverage for one or more items with associated end users.

The value you specify for this field on a contract determines the order in which frames display as you maintain the contract. You cannot change this value after a contract has been created.

End User Totals. This field controls the display of the End User Total frame in Contract Maintenance and Contract Quote Maintenance.

No: The frame is not included in the sequence of frames.

Yes: The frame is included.

This field is also checked by Contract Quote Print (11.5.1.3) and Contract Print (11.5.13.4). End-user totals are not printed when this field is No.

End User Additional Charges. This field controls the display of the End User Additional Charges frame in Contract Maintenance and Contract Quote Maintenance.

No: The frame is not included in the sequence of frames.

Yes: The frame is included.

Note If the contract being edited has end-user additional charge items, the frame displays regardless of this setting.

Contract Additional Charges. This field controls the display of the Contract Additional Charges frame in Contract Maintenance and Contract Quote Maintenance.

No: The frame is not included in the sequence of frames.

Yes: The frame is included.

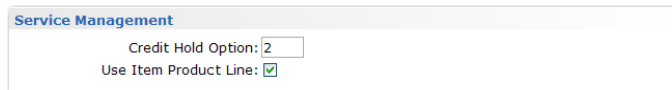
Note If the contract being edited has contract-wide additional charge items, the frame displays regardless of this setting.

Taxable Trailer Code [1,2,3]. The taxable trailer codes most frequently used on service quotes and contracts. Trailer codes identify miscellaneous non-sales charges. These codes display as the default on the trailer for taxable contracts and quotes, prompting you to enter any miscellaneous charges. You can change these charges. Miscellaneous charges can include freight, customs and import duties, setup, service, handling, or other special charges.

Each trailer code is set up with the appropriate GL account to which amounts are posted. You can enter trailer codes along with an amount on the trailer section of service quotes and contracts. The system calculates any applicable taxes. The trailer code, description, and amount print on all formal documents.

Nontaxable Trailer Code [1,2,3]. The nontaxable trailer codes most frequently used on service quotes and contracts. Trailer codes identify miscellaneous non-sales charges. These codes display as the default on the trailer for nontaxable contracts and quotes, prompting you to enter any miscellaneous charges. You can change the charges. Miscellaneous charges can include freight, customs and import duties, setup, service, handling, or other special charges.

Each trailer code is set up with the appropriate GL account to which amounts are posted. You can enter trailer codes along with an amount on the trailer section of service quotes and contracts. The trailer code, description, and amount print on all formal documents.



The screenshot shows a window titled "Service Management". Inside the window, there are two fields: "Credit Hold Option:" with a text input box containing the number "2", and "Use Item Product Line:" with a checked checkbox.

Fig. 25.19
SSM Accounting
Control, Service
Management Frame

Credit Hold Option. This field indicates how the system should manage a request for service activity from a customer on credit hold or over their credit limit. Service activity includes:

- Calls
- Contracts
- Return material authorizations (RMAs). For RMAs, the value of Credit Hold Option is checked rather than the value of Hold Orders over Credit Limit in Sales Order Accounting Control.
- Material orders (MOs), only when they are associated with a service call that does not have the hold status defined in Call Management Control; an MO can never be created for a call on hold. This field also does not affect MOs associated with project activity orders (PAOs), which are controlled by a similar field in Project Realization Control.

Enter one of the following values:

0: Service activity is accepted, regardless of the customer credit status.

1: Service calls, call-related MOs, RMAs, and contracts are accepted, but a warning displays if the customer is on credit hold or the credit limit is exceeded. The action status of MOs, RMAs, and contracts is set to HD (hold). The call status is set to the Hold status defined in Call Management Control.

2: Service calls, RMAs, and contracts cannot be created for customers who are on credit hold or over their credit limits. An error message displays and you cannot record the call or create an RMA or contract until the customer credit hold field is reset to No. In addition, contract quotes cannot be released to contract, and call quotes cannot be released to a call. RMA shipments are not allowed if the customer balance plus the order value exceeds the customer credit limit, and RMAs cannot be released to a work order.

MO processing is slightly different. If the call customer is on credit hold, the MO cannot be created. However, if the customer balance exceeds the credit limit, the MO can be created, a warning displays, and the action status is set to HD.

When Credit Hold Option is 2 and the RMA, contract, or MO line being entered puts the customer balance over the credit limit, the system does not prevent you from completing the request. This is because the credit limit is not actually exceeded until the order line is complete. Instead, the system accepts the service contract, RMA, or MO, displays a warning message, and places the resulting document on credit hold.

Use Item Prod Line. The default is Yes. If Yes, the system uses the product line of the item. If No, the system uses the product line from the service type. This setting affects the determination of the default product line in Contract Maintenance, Contract Quote Maintenance, RMAs, and Call Activity Recording. You can change the product line.

In each function, the effect of Use Item Prod Line can be different.

- In contracts and contract quotes, the product line determines the GL sales accounts.
- In RMAs, the product line determines the GL sales and cost of goods sold accounts.

- In Call Activity Recording, the setting of Use Item Prod Line determines which product line's WIP account is used for labor, expense, and item transactions. It can also affect the search for a charge product line if you have not set up one in Charge Product Line Maintenance.

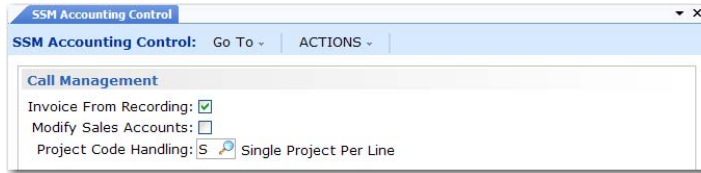


Fig. 25.20
SSM Accounting
Control, Call
Management Frame

Invoice From Recording. Determines whether or not you can invoice from Call Activity Recording. If Yes, a Generate Invoice field appears in the Call Status frame of Call Activity Recording. If No, you can generate invoices only from Call Invoice Recording. Set this to No to restrict who is allowed to generate invoices.

Modify Sales Accounts. Determines whether you can modify the Sales and Sales Discount accounts in Call Invoice Recording. If No, the accounts display but you cannot change them.

Project Code Handling. Use this field to indicate how you want the system to apply project codes to the costs and revenue recorded for call service activity. There are two choices: Single Project per Line (S) and Project per Labor/Expense (P).

These two settings support two different models for using projects. The first choice lets you track both costs and revenue with the same project. This might be used for a lengthy installation of a complex system. The second model is closer to the way projects apply to standard work orders in a manufacturing environment. In this model, costs are tracked separately from revenue.

Up to three projects can be specified in Call Activity Recording:

- Project associated with the Sales account for tracking call revenue. This project is validated with the other Sales account components that display on the screen.

- Project associated with the Sales Discount account. This is typically the same as the sales account project. This project is validated with the other Sales Discount account components that display on the screen.
- Project associated with call line reports for tracking call costs. This project is validated with other Cost of Goods Sold account components during GL transaction post.

When Project Code Handling is set to Single Project per Line (S):

- One sales project and one sales discount project can be associated with each call line in Call Activity Recording. These default from the contract line providing coverage, if any, and are typically the same.
- The system sets the report project to the value entered for the sales project and it cannot be changed. The same project is used for both revenue and costs created by labor/expense transactions and material issues and receipts for this line.
- Once you have specified a project, it cannot be changed. The sales project defaults to each report and each labor, expense, and item detail record.
- When an invoice is created for the call line, either in CAR (if Invoice from Recording is Yes) or Call Invoice Recording (CIR), the sales and sales discount projects from CAR default to the call invoice. These values can be modified in CIR, if needed.

When Project Code Handling is set to Project per Labor/Expense (P):

- Each labor and expense transaction created for a call line can have a different project associated with it. The sales and sales discount project default from the contract line providing coverage and can be modified. The report project also defaults from the contract-line sales project and can be modified.
- If a contract does not provide coverage or a project is not specified on the contract line, all call line projects default to blank. Each time a new report is opened for a call line, the same defaulting logic is used.
- The report project sets the default for each labor record. For expenses, the project defaults first from the employee (engineer), if one has been defined; otherwise, the report project is used. This

is similar to the way work orders handle project codes. You can modify the report project even after other reports exist, and the new project defaults to new labor and expense transactions.

- You can also modify the project on each labor and expense detail. However, the project associated with item consumption defaults from the report project and cannot be changed.
- The report project is used for costs only. When an invoice is generated, the sales and sales discount projects default to the invoice just as when Project Code Handling is set to S. The revenue projects (sales and sales discount) set the default for each line on the call invoice. The only difference in how revenue projects are handled when Project Code Handling is P is that the fields can be modified in CAR even after reports exist.

Reference

This chapter includes additional reference information useful in customizing SSM for your particular environment.

User Exits **934**

Installed Base Classification **945**

User Exits

This is an extensive system that addresses a range of customer needs and requirements. Even with the broad functionality in Service/Support Management (SSM), users with unique requirements may need to customize one or more standard functions.

You can make customizations to Service/Support Management programs directly to source code, if this is available, or through user exit points that the system supports. The advantage of the user exit method discussed in this chapter is that it reduces maintenance costs for customization. Further, when you use exit points to call custom programs rather than modifying source code, you can upgrade your system more simply

In the SSM module, you can initiate calls to your own custom subroutines from many functions. When these subroutines are invoked, the system passes them one or more parameters, reflecting the Progress record identifiers for the records currently maintained by the calling routine. Design the custom subroutines invoked from user exits to accept the specific parameters in the designated order.

Setting Up User Exits

Use the following programs on the SSM Utilities menu (11.25) to set up user exits and specify the programs to be called:

- Use Custom Program Insertion Maintenance (11.25.1) to specify the program to be called at a particular exit.
- Use Custom Program Insertion Browse (11.25.2) to view the exits that have been activated.
- Use Custom Program Entry Point Validation (11.25.3) to define the exits that can be used in 11.25.1.
- Use Custom Program Entry Point Browse (11.25.4) to view the exits set up in 11.25.3.

Custom Program Entry Point Validation

Use Custom Program Entry Point Validation (11.25.3) to define the exits that can be used in Custom Program Insertion Maintenance (11.25.1).

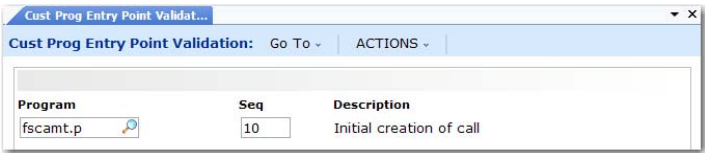


Fig. 26.1
Custom Program
Entry Point
Validation (11.25.3)

To set up an exit, specify the program name where the exit is found and its sequence number. Enter a description in the Description field. Table 26.1 lists programs and sequence numbers that you can use.

Custom Program Insertion Maintenance

To use a custom subroutine, you specify its program name and the appropriate exit point using Custom Program Insertion Maintenance (11.25.1).

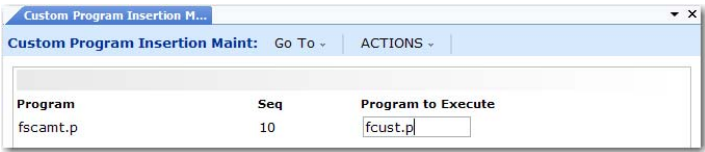


Fig. 26.2
Custom Program
Insertion
Maintenance
(11.25.1)

Program. Enter the menu-level name of an SSM program with user exits.

Seq. Enter the sequence number identifying which exit in Program you want to use.

Program to Execute. Enter the name of the custom routine you want to invoke at this user exit.

Progress Programming Rules

You must write all custom programs to accept one or more parameters. Table 26.1 describes these parameters.

Custom programs are executed within the flow of the standard programs. If your program displays any frames to the user, make sure that the way they are displayed does not interfere with the standard functions. Two important rules to follow are:

- Any frames displayed should be overlay frames.

- Do not use the “Hide All” command.

When batch processing occurs, a custom program should not solicit input from the user. The only interface should be messages. This rule applies to three of the user exits in Call Activity Recording that occur during inventory processing. These exits are numbered 50, 55, and 60.

Also, for the custom program to be found, make sure it resides in an appropriate directory in your propath. The system looks for the program in a directory that matches the first two characters of the program name. For example, place a program named `fscustom.p` in the `.../fs` directory.

List of User Exits

Table 26.1 lists the user exit points, a description of when each is activated, and the input parameters in their required order.

Table 26.1
User Exits

Program	Seq	Comments	Input Parameters
Installed Base Item Maintenance (<code>fsisbmt.p</code>)	10	Immediately after a new <code>isb_mstr</code> is created.	recid (<code>isb_mstr</code>)
	20	Immediately after an <code>isb_mstr</code> is deleted.	end user id part serial ref
	30	Immediately after the user changes the item's serial number.	recid (<code>isb_mstr</code>) old serial number
Installed Item Move (<code>fsisbm.v.p</code>)	10	Immediately before the end user number is changed on the parent level <code>isb_mstr</code> .	recid (<code>isb_mstr</code>) new end user number
	20	Immediately before the end user number is changed on a lower level component <code>isb_mstr</code> .	recid (<code>isb_mstr</code>) new end user number

Table 26.1 — User Exits — (Page 1 of 9)

Program	Seq	Comments	Input Parameters
Call Maintenance (fscamt.p)	10	Before the cursor enters the call ID field, fscamt.p loads variable <i>canewrun</i> with the program name to execute. This program is then executed by fscamt.p when a new call is being created just after the work code, model, service group pop-up displays to establish call defaults.	recid (ca_mstr)
	20	Before the cursor enters the call ID field, fscamt.p loads shared variable <i>carun</i> with the program name to execute. This program is then executed by fscamta.p before the user keys in name, phone, etc. in the call header lower frame.	recid (ca_mstr)
	40	This user exit is called right before calling fscammt.p to handle call comments.	recid (ca_mstr)
	50	The program is called after the Item Service Structure pop-up.	recid (ca_mstr)
	55	The program is called after the Item Service Structure pop-up if <i>ca_assign</i> has changed.	recid (ca_mstr)
	60	After the Item Service Structure pop-up, if <i>ca_status</i> has changed (fscamta1.p).	recid (ca_mstr)
	70	After the Item Service Structure pop-up, if <i>ca_queue</i> has changed (fscamtc.p).	recid (ca_mstr)
	80	After the user selects or enters a new call line number, routine <i>fsitmcm</i> .p calls this exit before displaying an existing line item or creating a new one.	recid (itm_det) Logical (newitem) indicating whether line is newly created.

Table 26.1 — User Exits — (Page 2 of 9)

Program	Seq	Comments	Input Parameters
Call Maintenance (fscamt.p)	85	When a user is editing a call line item and sets Fault Codes to Yes, fscmtmt.p calls this exit right after the fault code frame displays. This exit requires three input parameters, but the middle one is only a place holder; it is not used in Call Maintenance.	recid (ca_mstr) recid (wo_mstr). Not used in Call Maintenance. recid (itm_det)
	90	Called right after all call data has been entered and before calling fscamt.b.p to print a call.	recid (ca_mstr)
	100	If the call is being closed, after close processing is complete (fscamt1). Note that this exit applies to all programs where calls are closed: fscamt.p, fscmt.p, fsquemg.p, and fsegtmt.p.	recid (ca_mstr)
Call Queue Manager (fscamt.p)	100	If you close the call at the end of the update transaction (fsquem1b.p).	recid (ca_mstr)
Service Request Maintenance (fssrmt.p)	10	Executed with the creation of a new SR.	recid (srr_mstr)
	20	Executed when the value of srr_status has been modified.	recid (srr_mstr)
	30	Executed when the value of srr_assign has been modified.	recid (srr_mstr)
	40	Executed when the value of srr_que has been modified.	recid (srr_mstr)
	90	Executed when the value of srr_status is set to the closed status defined in SR Control (svc_srr_close).	recid (srr_mstr)

Table 26.1 — User Exits — (Page 3 of 9)

Program	Seq	Comments	Input Parameters
Contract Maintenance (fssamt.p)	10	The name of a program to run for the contract header is loaded into the <i>sarun</i> variable by <i>fssamt.p</i> . This program is executed between header comments and the first line item.	recid (sa_mstr)
	20	The name of a program to run for contract lines is loaded into the <i>sadrn</i> shared variable by <i>fssamt.p</i> . This program is executed in <i>fssama01.p</i> immediately before line item comments may be entered and in <i>fssamt.t.p</i> immediately after the comments are entered.	recid (sa_mstr) recid (sad_det)
RMA Maintenance (fsrcamt.p)	10	Executed by <i>sosomt1a.p</i> immediately before header comments are entered.	recid (so_mstr) recid (rma_mstr)
	20	Executed for RMA issue lines. The name of the program to run is loaded into variable <i>solinerun</i> by <i>sosomta.p</i> , and executed right before line comments by <i>sosomt1a.p</i> .	recid (so_mstr) recid (sod_det) (<i>sosomt1a.p</i> does not pick up <i>rma_mstr</i> or <i>rmd_det</i>)
	30	Executed for RMA receipt lines. The program to run is loaded into variable <i>solinerun</i> by <i>sosomta.p</i> , and executed right before line comments by <i>sosomt1a.p</i> . Also loaded and executed by <i>fsrcmar02.p</i> after the linked receipt line.	recid (so_mstr) recid (sod_det) (<i>sosomt1a.p</i> does not pick up <i>rma_mstr</i> or <i>rmd_det</i>)
	100	Executed by <i>fsrcmamt.u.p</i> right before the “Display RMA Lines” message.	recid (so_mstr) recid (rma_mstr)
	110	Right after exit 100.	recid (so_mstr) recid (rma_mstr)

Table 26.1 — User Exits — (Page 4 of 9)

Program	Seq	Comments	Input Parameters
Sales Order Maintenance (sosomt.p)	10	Executed by <code>sosomt1a.p</code> immediately before header comments can be entered.	recid (so_mstr)
	20	The name of a program to run is loaded into variable <code>solinerun</code> by <code>sosomt.a.p</code> , and executed right before line comments by <code>sosomt1a.p</code> .	recid (so_mstr) recid (sod_det)
Update ISB from Sales Order Maintenance and RMA Maintenance (sosomisb.p)	10	The program is called after the Update Installed Base Item pop-up.	recid (so_mstr) recid (sod_det) Logical (new_line) indicating whether line is newly created.

Table 26.1 — User Exits — (Page 5 of 9)

Program	Seq	Comments	Input Parameters
Call Activity Recording (fscarmt.p) Note: Call Quote Maintenance (fscqmt.p calls fscarmt.p to execute the same programs.	10	This exit is called by fscarmtm.p right after header comments, before the line items.	recid (ca_mstr)
	15	After the user selects or enters a new call line number, routine fscarmta.p calls this exit after displaying an existing line item or creating a new one.	recid (itm_det) Logical (newitem) indicating whether line is newly created
	20	This exit is called by fscarmta.p right after the Fault Codes pop-up and before the MO line selection. Only executed for call quote if not fixed price	recid (ca_mstr) recid (wo_mstr)
	50	Called by fscar mk1.p when the ISB quantity of a component item is increased. No input should be solicited from the user.	recid (wo_mstr) recid (itm_det) recid (wod_det) recid (isb_mstr) (of the component item)
	55	Called by fscar mk1.p when a new component is added to the ISB. No input should be solicited from the user.	recid (wo_mstr) recid (itm_det) recid (wod_det)
	60	Called by fscar mk2.p when a component item is deleted or has its ISB quantity reduced. No input should be solicited from the user.	recid (wo_mstr) recid (itm_det) recid (wod_det) Percentage of the ISB item that has been deleted (The delete percentage is defined like the field tr_qty_chg.)

Table 26.1 — User Exits — (Page 6 of 9)

Program	Seq	Comments	Input Parameters
Call Invoice Recording (fscaimt.p)	10	Executed by fscaimtm.p after the last header frame, before the billing summary displays.	recid (ca_mstr)
	20	Executed by fscaimtj.p, which creates the so_mstr, after tax processing completes.	recid (ca_mstr) recid (so_mstr)
	30	Program fscaimte.p, which creates the invoice, loads this exit program name into variable <i>carun</i> , then executes it after creating or updating the first sod_det (from the first invoiceable report) for the itm_det.	recid (ca_mstr) recid (so_mstr) (? if none) recid (itm_det) recid (sod_det) (? if none) recid (wo_mstr)
	50	Executed by fscaimtf.p, which does line maintenance, right before starting the labor/parts subroutines for the line.	recid (ca_mstr) recid (so_mstr) recid (itm_det) recid (sod_det)
Material Order Maintenance (fseomt.p)	10	Executed immediately before MO header comments by fseomt.p.	recid (so_mstr)
	20	Program fseomta.p (MO Line Items) loads variable <i>solinerun</i> with the name of this exit program, then fseomtla.p executes that program just before line item comments are maintained.	recid (so_mstr) recid (sod_det)
Service Contract Limits (fssalmt.p)	10	Executed by fssalmt.p after maintaining limits on a service contract or service contract lines.	recid (sal_mstr)
	20	Executed by fssalmt.p after maintaining warranty limits of isb_mstr type. (This feature has not been implemented yet.)	recid (sal_mstr)
	30	Executed by fssalmt.p after maintaining limits on contract or warranty types.	recid (sal_mstr)
Service Work Center Maintenance (fswcmt.p)	10	Executed by fswcmtm.p at the end of work center maintenance.	recid (wc_mstr)

Table 26.1 — User Exits — (Page 7 of 9)

Program	Seq	Comments	Input Parameters
Service Standard Op Maintenance (fsopmmt.p)	10	Executed by fsopmmt.p right before comments are entered.	recid (opm_mstr)
Work Code Maintenance (fsfwkmt.p)	10	Executed by fsfwkmt.p at the end of Work Code Maintenance.	recid (fwk_mstr)
Charge Product Line Maintenance (fsfcccmt.p)	10	Executed by fsfcccmt.p at the end of Charge Product Line Maintenance.	recid (fcc_mstr)
Revenue Product Line Maintenance (fsfccrmt.p)	10	Executed by fsfccrmt.p at the end of Revenue Product Line Maintenance.	recid (fcc_mstr)
Default Charge Code Maintenance (fsfcdmt.p)	10	Executed by fsfcdmt.p at the end of Default Charge Code Maintenance.	recid (fcd_mstr)
Charge Code Maintenance (fsfcgmt.p)	10	Executed by fsfcgmt.p at the end of Charge Code Maintenance.	recid (fcg_mstr)
Invoice Sort Maintenance (fsfismt.p)	10	Executed by fsfismt.p at the end of Invoice Sort Maintenance.	recid (fis_mstr)
Service Category Maintenance (fsfscmt.p)	10	Executed by fsfscmt.p at the end of Service Category Maintenance.	recid (fsc_mstr)
Service Price List Maintenance (fsfpcmt.p)	10	Executed by fsfpcmt.p at the end of Price List Maintenance.	recid (fpc_mstr)
Return Status Maintenance (fsfpstmt.p)	10	Executed by fsfpstmt.p at the end of Return Status Maintenance.	recid (fpst_mstr)

Table 26.1 — User Exits — (Page 8 of 9)

Program	Seq	Comments	Input Parameters
Contract Copy/ Renewal Routines (fsqosaa.p) (Refer to page 945 for additional details.)	10	The name of a program to run after a contract header is created by any copy/renewal routine. The exit should be attached to program fsqosaa.p and is executed in batch; no user input should be required.	recid (sa_mstr)
	20	The name of a program to run after a contract quote header is created by any copy/renewal routine. The exit should be attached to program fsqosaa.p and is executed in batch; no user input should be required.	recid (sa_mstr)
	30	The name of a program to run after a contract line is created by any copy/renewal routine. The exit should be attached to program fsqosaa.p and is executed in batch; no user input should be required.	recid (sa_det)
	40	The name of a program to run after a contract quote line is created by any copy/renewal routine. The exit should be attached to program fsqosaa.p and is executed in batch; no user input should be required.	recid (sad_det)
General Comments (gpcmnt01.p)	10	Executed after comments are defaulted, but before they are displayed for editing. Used in most places where comments are edited.	recid (cmt_det) Logical indicating whether comments are newly created
Service Comments (fscamnt.p)	10	Executed after comments are defaulted, but before they are displayed for editing. Used in service routines where comments are edited that include a date/time stamp.	recid (cmt_det) Logical indicating whether comments are newly created

Table 26.1 — User Exits — (Page 9 of 9)

User Exits for Contract Copy/Renewal Routines

Most user exits are defined for a menu-level program. The exception to this is the family of six programs used to copy and renew service contracts and contract quotes, which are all very similar internally. This program family includes the following options:

- Contract Quote Release to Contract (11.5.1.5)
- Contract Quote Copy from Quote (11.5.1.6)
- Contract Quote Copy from Contract (11.5.1.7)
- Contract Copy to Contract (11.5.13.6)
- Renew Single Contract (11.5.13.8)
- Renew Process/Report (11.5.13.10)

Rather than creating separate user exits for each menu-level program, four generic exits can be set up to take affect whenever a contract or contract quote header or line is created. This is done by attaching the exits to program `fsqosaa.p`, rather than the menu-level program name. This approach means, for example, that the same user program is called whenever a new contract line is created, regardless of the particular program that initiated the update.

Note Enter `fsqosaa.p` in the Program field of Custom Program Entry Point Validation.

The user exits for contract copy/renewal programs all execute in the background. You should make sure that the program you call does not require any user input.

Installed Base Classification

Using features of SSM, you can set up classification codes for grouping items in the installed base into hierarchical relationships. This section provides some additional technical details about customizing the lookups that display installed based records.

♦ See “Classifying ISB Records” on page 46.

Classification codes can be used in any of the service programs that display items from the installed base listed in Table 26.2. This table lists the fields that provide filtered data for each supported program.

Table 26.2
Programs with
Fields that Support
Classification
Codes

Menu Number	Description	Program Name	Field Names
7.1.1	Sales Order Maintenance	sosomt.p	serial
11.1.1.1	Call Maintenance	fscamt.p	ref, part, serial
11.1.1.7	Call Quote Maintenance	fscqmt.p	itm_ref, itm_part, itm_serial
11.1.1.13	Call Activity Recording	fscarmt.p	itm_ref, itm_part, itm_serial
11.1.3.1	Pending Call Maintenance	fspcmt.p	ca_part, ca_ref, ca_serial
11.1.6	Call Queue Manager	fsquemg.p	itm_ref, itm_part, itm_serial
11.1.8	Call Generator	fscagen.p	fn_from_serial, fn_to_serial, fn_from_part, fn_to_part
11.3.1	Installed Base Item Maintenance	fsisbmt.p	serial, ref, isb_part
11.3.5	Installed Configuration Maintenance	fsbmismt.p	par, comp, comp_ref, par_ref, par_ser
11.3.12.1	Field Notification Maintenance	fsfnmt.p	fn_from_serial, fn_to_serial, fn_from_part, fn_to_part
11.3.12.2	Field Notification Inquiry	fsfniq.p	fn_from_serial, fn_to_serial, fn_from_part, fn_to_part
11.3.13	Installed Item Move	fsisbm.v	part
11.5.1.1	Contract Quote Maintenance	fsqomt.p	serial, sad_for
11.5.13.1	Contract Maintenance	fssamt.p	serial, sod_for
11.7.1.1	RMA Maintenance	fsmamt.p	rmd_ref, serial, sod_serial, part
11.13.15.8	Engineer Assignment Maintenance	fsegtmt.p	itm_ref, itm_part, itm_serial

To support filtering data returned by lookups associated with fields that display ISB data, modified browses have been attached to these fields. It is possible in some cases that you may prefer to view the unfiltered data even though you normally use classification codes. In this case, you can replace the filtered lookup with the unfiltered one listed in Table 26.3.

Table 26.3
ISB Browsers

Calling Procedure	Field/Variable	Field Label	Filtered Lookup	Unfiltered Lookup
fspcmt.p	ca_part	Item Number	fslu076.p	gplu153.p
fspcmt.p	ca_ref	Reference	fslu080.p	fslu057.p
	ca_serial	Serial	fslu078.p	gplu156.p
fs*.p	comp	Item	fslu075.p	gplu151.p
	comp_ref	Reference	fslu080.p	fslu057.p
fsbmismt.p	comp_serial		fslu079.p	gslu050.p
	fn_from_part	From Item	fslu075.p	gplu151.p
	fn_from_serial	From Serial	fslu078.p	gplu156.p
	fn_to_part	To Item	fslu075.p	gplu151.p
	fn_to_serial	To Serial	fslu078.p	gplu156.p
	isb_part	Item Number	fslu076.p	gplu153.p
	itm_part	Item	fslu076.p	gplu153.p
	itm_ref	Ref	fslu080.p	fslu057.p
fsrmais.p	lotserial	Installed Base	fslu079.p	fslu050.p
fsbmismt.p	par	Parent Part	fslu077.p	fslu039.p
	parent-item	Parent Item	fslu077.p	fslu039.p
fsisbm.p	part		fslu076.p	gplu153.p
fsrmamt.p	part		fslu076.p	gplu153.p
	par_ref	Reference	fslu080.p	fslu057.p
fsbmismt.p	par_ser		fslu079.p	gplu156.p
fscamt.p	ref	Reference	fslu080.p	fslu057.p
fsisbmt.p	ref	reference	fslu080.p	fslu057.p
fsqomt.p	sad_for	Supported Item	fslu075.p	gplu151.p
fssamt.p	sad_for	Supported Item	fslu075.p	gplu151.p
fsisbmt.p	serial		fslu079.p	fslu050.p
fsqomt.p	serial	Serial	fslu079.p	fslu050.p
fsrmamt.p	serial		fslu079.p	fslu050.p
fssamt.p	serial	Serial	fslu079.p	fslu050.p
sosomt.p	serial		fslu079.p	fslu050.p
fscamt.p	serial	Serial	fslu078.p	gplu156.p
fsrmamt.p	sod_serial	Lot/Serial	fslu079.p	fslu050.p

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