ramco

RAMCO AVIATION SOLUTION
VERSION 5.8

USER GUIDE
MAINTENANCE PLANNING

ABOUT THIS MANUAL

This manual briefly describes the basic processes and functions in Ramco Aviation Solution.

WHO SHOULD READ THIS MANUAL

This manual is intended for users who are managing the Aviation industry processes and are new to Ramco Aviation Solution. This manual assumes that the user is familiar with the Aviation Industry nomenclatures and systems based software.

HOW TO USE THIS MANUAL

Ramco Aviation Solution provides extensive Online Help that contains detailed instructions on how to use the application. Users are suggested to use this manual for specific references, along with the Online Help. This manual contains enough information to help the users perform the basic tasks and points toward the Online Help for more detailed information.

HOW THIS MANUAL IS ORGANIZED

The User Guide is divided into 2 chapters and index. Given below is a brief run-through of what each chapter consists of.

Chapter 1 provides an overview of the entire Maintenance Planning business process. The sub processes are explained in the remaining chapters.

Chapter 2 focuses on the Aircraft Maintenance Forecast and Planning sub process.

The Index offers a quick reference to selected words used in the manual.

DOCUMENT CONVENTIONS

- The data entry has been explained taking into account the "Create" business activity. Specific references (if any) to any other business activity such as "Modify" and "View" is given as "Note" at the appropriate places.
- **Boldface** is used to denote commands and user interface labels.

  Example: Enter **Company Code** and click the **Get Details** pushbutton.
- Italics used for references.

  Example: *See Figure 1.1.*
- The  icon is used for Notes, to convey additional information.

REFERENCE DOCUMENTATION

This User Guide is part of the documentation set that comes with Ramco Aviation Solution.

The documentation is generally provided in two forms:

- The Documentation CD in Adobe® Systems' Portable Document Format (PDF).
- Context-sensitive Online Help information accessible from the application screens.

WHOM TO CONTACT FOR QUERIES

Please locate the nearest office for your geographical area from www.ramco.com for assistance.

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1 INTRODUCTION

Maintenance Planning is one of the important functions of an aviation maintenance & engineering organization. The planning function is responsible for ensuring a) aircraft availability to meet operational needs and b) compliance with the aviation maintenance regulatory standards. While maintenance activities to be performed on the aircraft and component can be derived from maintenance programs, scheduling the same for execution poses a bigger challenge. Planners needs to schedule maintenance activities taking into account various constraints, such as the ground time available, schedule limits, resource availability and execution center capacity and capability. It is also vital for the planner to take into consideration the current maintenance needs of the entire fleet and the meticulous maintenance planning required for specific aircraft at the same time. Maintenance Planning business process addresses this business need of planners by providing visibility to all the maintenance due objects, such as tasks and work packages. This process also facilitates creation of work packages along with resolution of resource and material bottlenecks. Maintenance planners can utilize the planning feature offered in this business process to plan and estimate materials and resources at a maintenance task level for a component/aircraft. Further, tasks that cannot be complied with on or before the scheduled date may be escalated to future to overcome the current material and resource bottlenecks.

The Maintenance Planning business process comprises Aircraft Maintenance Forecast and Aircraft Maintenance Planning sub processes

2 AIRCRAFT MAINTENANCE FORECAST AND PLANNING

The **Maintenance** Planning process involves the **Aircraft Maintenance Forecast**, and **Aircraft Maintenance Planning** business components.

The **Aircraft Maintenance Forecast** business component forecasts the scheduled maintenance activity for a sub fleet. An airline typically operates a fleet of aircraft comprising of a mix of different models belonging to different manufacturers. Aircraft are mostly are grouped based on their utilization to form a sub fleet. These aircraft pertaining to a sub fleet have to be maintained strictly in accordance with the guidelines/procedures laid down by the aircraft manufacturer which are duly ratified by the airworthiness authorities of the country of manufacture and the country in which the aircraft are registered. This business component enables the planner to forecast the maintenance activities that are due on an aircraft, to ensure the continued serviceability of the aircraft and its systems. The forecast enables planning in advance for material and resources such as skills, facilities and equipment requirements. This will eventually help in forecasting maintenance costs in terms of manpower requirements, budgetary estimates, material and labor costs and also form the basis for decisions on outsourcing and development of in-house facilities.

Maintenance planning is one of the important features of a maintenance & engineering organization. The role of planning function is to ensure availability of aircraft to meet operational needs, as well as schedule maintenance activities for aircraft. Maintenance activities are scheduled for execution taking into account various constraints such as the ground time available, schedule limits, man power, resource availability and execution center capacity and capability. Planners maintain a fleet-wise visibility of current maintenance needs of various aircraft and also identify a specific aircraft for which detailed planning needs to be performed.

2.1 GENERATING AIRCRAFT FORECAST

2.1.1 DEFINING THE QUICK CODES FOR AIRCRAFT MAINTENANCE FORECAST

Quick Codes are user-defined values, used to categorize a set of details of identified behavior. These quick codes are later used in the process of retrieving or addressing the details by referring to the attached quick code.

Quick codes act as additional qualifiers for a business entity or document. Quick codes can assume user-provided values, which can be used to categorize/group an entity/document record to satisfy specific needs in a user organization's internal processes, especially with respect to unique reporting requirements.

The quick code type "User Status" is predefined in the system. Values can be defined for this quick code type. For example, the quick code type "User Status" can contain the quick code "Hold".

1. Select **Create Quick Codes** under the **Aircraft Maintenance Forecast** business component. The **Create Quick Codes** page appears. *See Figure 2.1*.

2. Select the Quick Code Type.

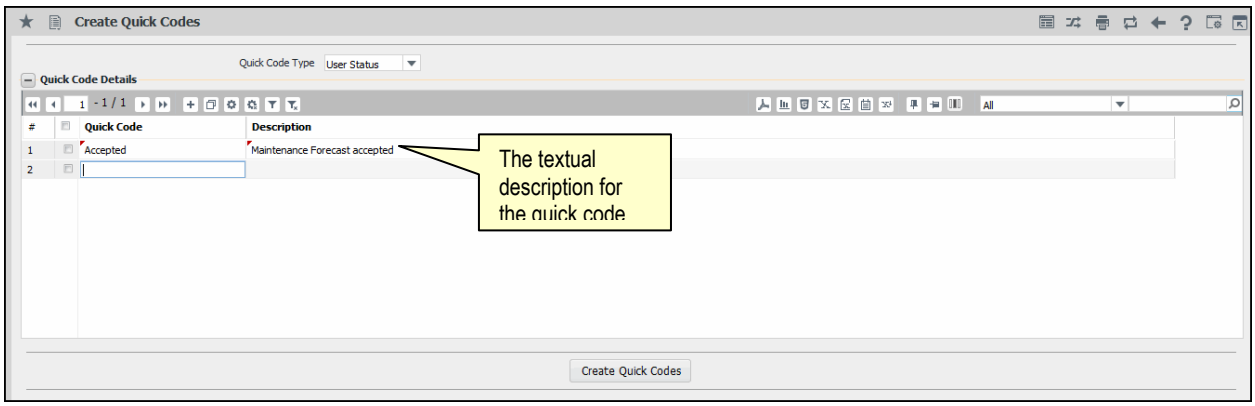

Figure 2.1 Creating quick codes for aircraft maintenance forecast

3. Enter unique quick codes for the selected type, in the **Quick Code** field in the multiline.

4. Enter the **Description** for the quick code.

5. Click the **Create Quick Codes** pushbutton.

Note: The system assigns the "Active" status to the quick codes entered in the multiline.

2.1.2 SETTING OPTIONS FOR AIRCRAFT MAINTENANCE FORECASTING

You can set default options for the various fields in the activities of the "Aircraft Maintenance Forecast" business component.

1. Select **Set Options** under Aircraft Maintenance Forecast business component. The **Set Options** page appears. *See Figure 2.2.*

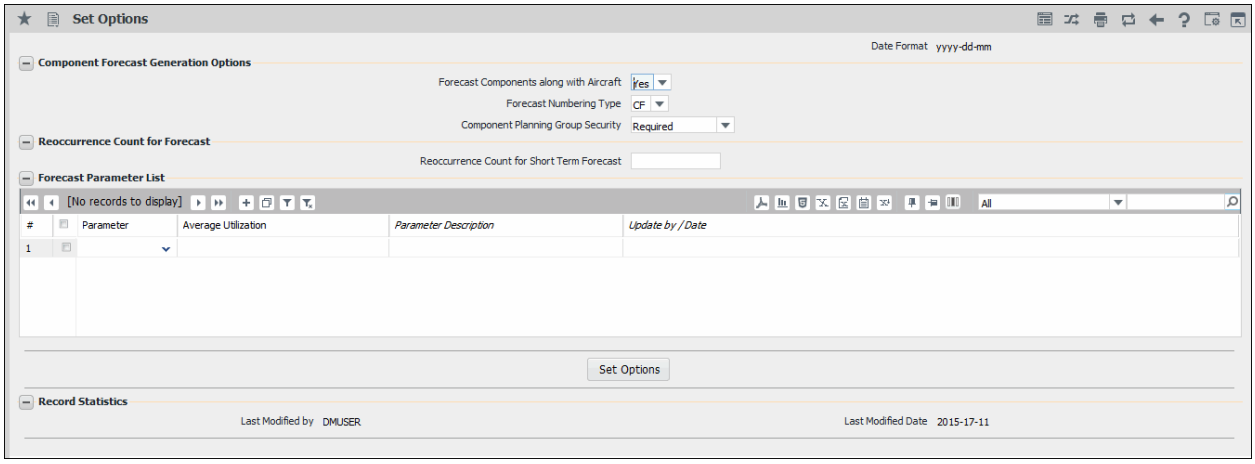

Figure 2.2 Setting options for aircraft maintenance forecast

In the **Component Forecast Generation Options** group box,

2. Select "Yes" in the **Forecast Components along with the Aircraft** field to indicate that component maintenance schedules can be forecasted along with the aircraft. Else select "No".

3. Select the numbering pattern to be used for generating the forecast in the **Forecast Numbering Type** field.

Note: For details on creating numbering types, refer to the Gantt chart "Defining numbering types for transactions" in the "Inventory Setup" User Guide.

4. Select "Required" in the **Component Planning Group Security** field to indicate planning security is required for component forecast. Else select "No".

Note: If the option "Required" is selected, the system checks whether the login user has valid permission to forecast the component maintenance schedules. The permission for component forecast is set in the "Create Planner Group" activity of the "Component Maintenance Planning" business component.

In the **Reoccurrence Count for Forecast** group box,

5. Enter the reoccurrence count for short term forecast in the **Reoccurrence Count for Short Term Forecast** field.

Note: This value should be a positive integer between 1 and 25.The system will not allow negative integers and zero.

6. Click the **Set Options** pushbutton to record the options.

Creating a sub fleet

Sub fleet is the logical grouping of aircraft that have a distinct identity and a fairly constant utilization. The utilization value of the sub fleet is inherited from all the aircraft(s) of the sub fleet. It is only based on the utilization value the actual scheduled dates are forecasted.

1. Select **Create Sub Fleet** under **Aircraft Maintenance Forecast** business component. The **Create Sub Fleet** page appears. *See Figure 2.3.*

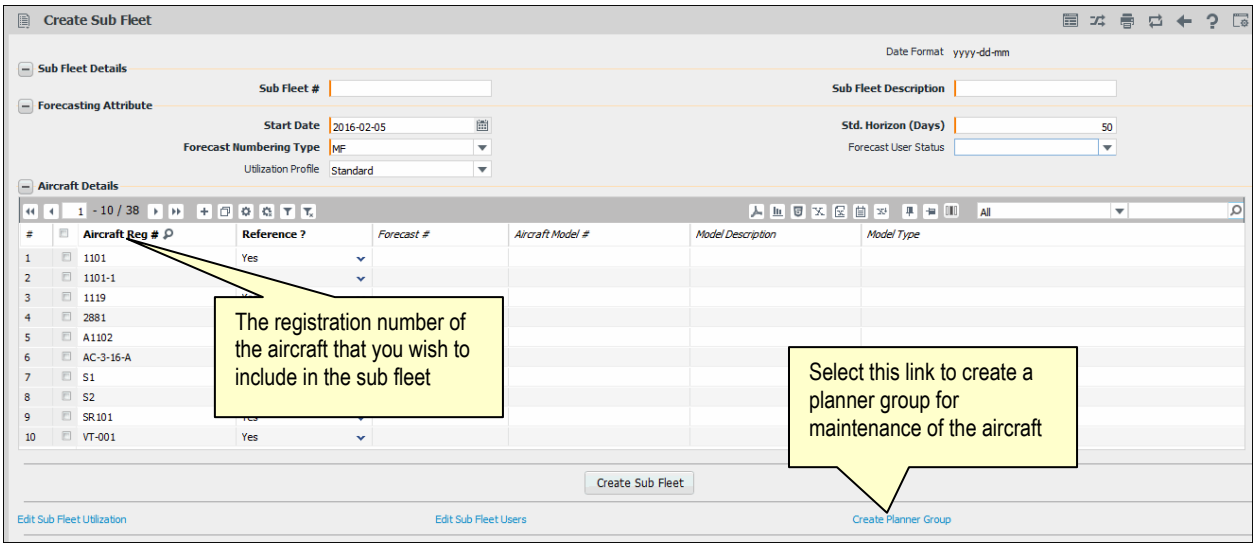

Figure 2.3 Creating sub fleet

In the **Sub Fleet Details** group box,

2. Enter the unique **Sub Fleet** #.

3. Enter the textual description of the sub fleet, in the **Sub Fleet Desc** field.

In the **Forecasting Attribute** group box,

4. Enter the **Start Date** from which, the sub fleet becomes effective.

5. Enter the number of days, indicating the span of the forecast for the sub fleet, in the **Std. Horizon (Days)** field.

6. Select the **Forecast Numbering Type** to specify the numbering type to be used by the system for generating the forecast.

Note: For details on creating numbering types, refer to the Gantt chart "Defining numbering types for transactions" in the "Inventory Setup" User Guide.

7. Select the **Forecast User Status** to specify the status of the user for the forecast for which you wish to create a sub fleet.

8. Select "Standard" in the **Utilization Profile** field to apply the utilization value directly from the "Aircraft" Component. Otherwise, select "Seasonal Variation" to compute the sub fleet utilization value based on the past usage or enter the utilization value directly.

In the **Aircraft Details** multiline,

9. Enter the **Aircraft Reg #** of the aircraft that you wish to include in the sub fleet.

Note: The "Aircraft Reg #" should not be part of any other 'active' sub fleet.

10. Select "Yes" in the **Reference?** field to set the reference for aircraft utilization. Else select "No".

Note: If you set the field to "Yes", the seasonal variations corresponding to the aircraft are considered for the sub fleet, while forecasting.

If the option is selected as "Yes" and the utilization profile is set to "Seasonal Variation", the system retrieves and loads the common consumption parameters for the aircrafts in the Parameter combo in the "Edit Sub Fleet Utilization" page from the "Aircraft" business component, on launching the "Edit Sub Fleet Utilization" page.

11. Click the **Create Sub Fleet** pushbutton to create a sub fleet.

To provide further details,

- Select **Edit Sub Fleet Utilization** link to enter the sub fleet utilization details.
- Select **Edit Sub Fleet Users** link to identify the permitted users for the sub fleet.
- Select **Create Planner Group** link to create a planner group for maintenance of the aircraft.

Entering sub fleet utilization details

You can enter the utilization values for the sub fleet.

1. Select **Edit Sub Fleet Utilization** link in the **Create Sub Fleet** or **Edit Sub Fleet** page. The **Edit Sub Fleet Utilization** page appears. *See Figure 2.4.*

Note: The system launches this page only if the sub fleet "Utilization Profile" is set as "Seasonal Variation" and "Reference" is set as "Yes".

On launching this page, the system displays the utilization details that are already computed and the season In the Utilization Computation Details group box,

2. Select "Direct" in the **Utilization Reference field** to enter the utilization values directly. Otherwise select "Historical" to retrieve the utilization value from the **Aircraft** business component.

3. Select the **Computation Method** as "Simple Average Method", "Weighted Average Method", "Simple Moving Average Method" or "Weighted Moving Average Method".

Note: The system provides these options only when the "Utilization Reference" field is set as "Historical".

The computation method should be unique for the selected sub fleet and parameter. After computation, you cannot select different computation method for the same sub fleet and parameter.

On launch of the page for the first time a session is created with month from "Jan" and month to "Dec" and Utilization Reference as "Direct", the utilization value is calculated for the session.

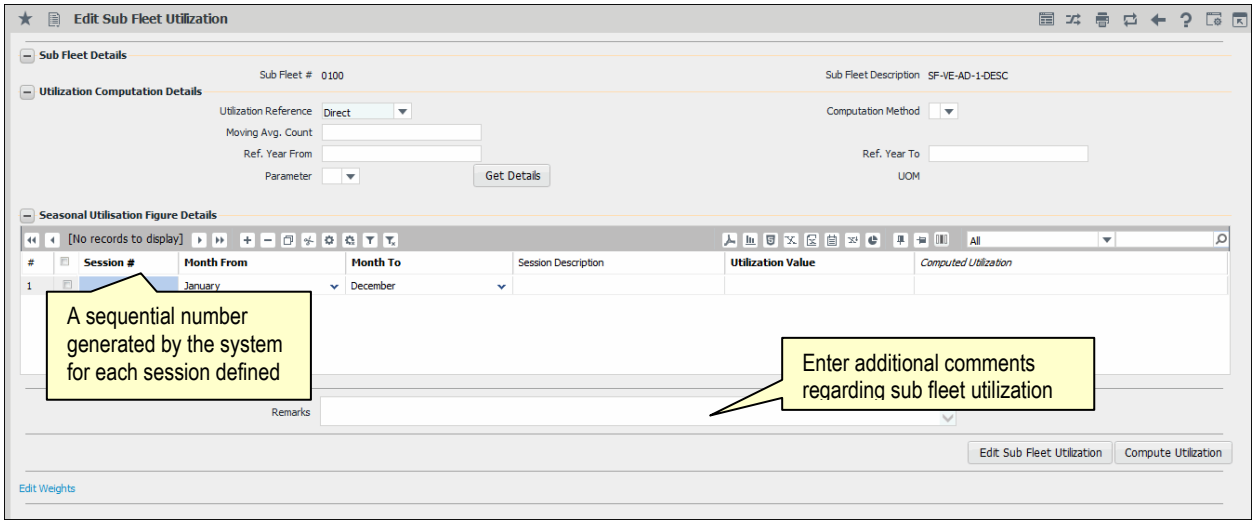

Figure 2.4 Entering sub fleet utilization details

4. Enter the average moving count for the sub fleet in the **Moving Avg. Count field**.

Note: Entry in this field is mandatory, if the computation is selected as "Simple Moving Average Method" or "Weighted Moving Average Method".

Leave this field blank, if the computation is selected as "Simple Moving Average Method" or "Weighted Moving Average Method". If values are entered for these methods, the system resets the value to zero.

5. Enter the year from which the utilization value of aircraft is considered for computing, in the **Ref. Year From** field.

6. Enter the year till which the utilization value of aircraft is considered for computing, in the **Ref. Year To** field.

*Note: Entry in **Ref. Year From** and **Ref. Year To** fields is mandatory, if the computation method is selected as "Simple Average Method" or "Weighted Average Method".*

Leave these fields blank, if the computation is selected as "Simple Moving Average Method" or "Weighted Moving Average Method". If values are entered for these methods, the system resets the value to zero.

7. Select the **Parameter** for the sub fleet.

Note: The system displays the common consumption parameter values defined for aircraft(s) belonging to the sub fleet, for which the reference is set as 'Yes'.

8. Click the **Get Details** pushbutton to retrieve the utilization values.

In the Seasonal Utilization Details multiline,

9. Select the starting month of the session in the **Month From** field.

Note: The first month of the first session should be set as "January".

If you create only one session, the span of the session should be one year.

If you create more than one session, the sessions must be defined across all the months in a year.

10. Select the ending month of the session in the **Month To** field.

Note: Ensure that the last month of the last session is set as "December".

11. Enter the textual description of the session in the **Session Description** field.

12. Enter the utilization value of the sub fleet for the session in the **Utilization Value** field.

Note: Entry in this field is mandatory, if the "Utilization Reference" is set as "Direct".

13. Click the **Edit Utilization** pushbutton to update the modified details.

Note: The system generates the session numbers sequentially and stores the utilization values against the respective sessions.

14. Click the **Compute Utilization** pushbutton to compute the utilization value of the sub fleet.

*Note: Ensure that the **Utilization Reference** field is set to "Historical", for computing the utilization value.*

Entering the weight details for sub fleet utilization

In the "Simple Average Method" and "Simple Moving Average Method", the average changes each day as the oldest value is dropped from the calculation and the new value is added in. Every day's value is given equal weight, and the effect of large values dropping out of the calculation as the average moves can unduly affect the result or skew the result in a way that may not be desirable. This can be rectified in the "Weighted Average Method" or "Weighted Moving Average Method", where the weight is assigned for the utilization year.

1. Select the **Edit Weights** link in the **Edit Sub Fleet Utilization** page. The **Edit Weights** page appears. *See Figure 2.5.*

Note: The system launches this page, only if the computation method is selected as "Weighted Average Method" or "Weighted Moving Average Method".

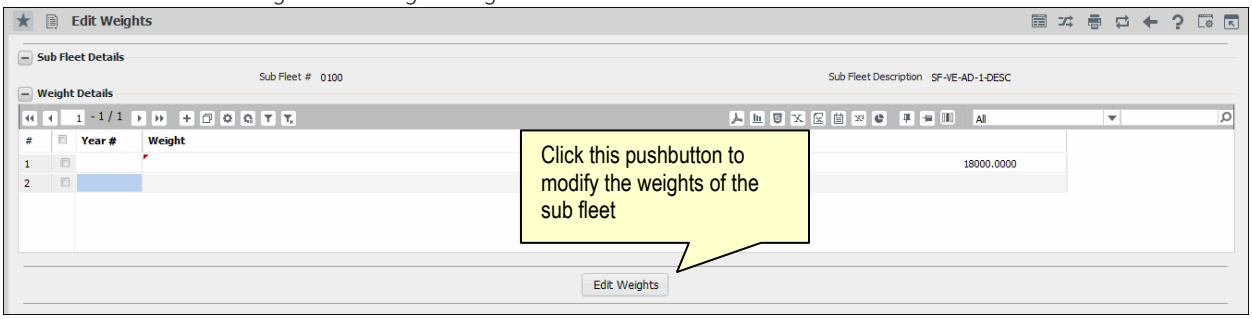

Figure 2.5 Entering the weight details for sub fleet utilization

In the **Weight Details** group box,

2. Enter the year for which the weight is assigned, in the Year # field.

Note: If the computation method is selected as "Weighted Average Method", the system by default, displays the years between and inclusive of "Ref. Year From" and the "Ref. Year To" fields, in the descending order. If the computation method is selected as "Weighted Moving Average Method", the system displays the years based on the "Moving Average Count".

3. Enter the user-defined value for the computed year in the Weight field.

Note: If this field is left blank, the system sets the value as "1".

4. Click the Edit Weights pushbutton to update the weight details of the sub fleet.

Note: The system saves the weight entered against each year for the sub fleet number and computation method.

Assigning users to sub fleet

You can define a list of system users who are permitted to generate forecast for a sub-fleet.

1. Select **Edit Sub Fleet Users** link in the **Create Sub Fleet** or **Edit Sub Fleet** page. The **Edit Sub Fleet Users** page appears. *See Figure 2.6.*

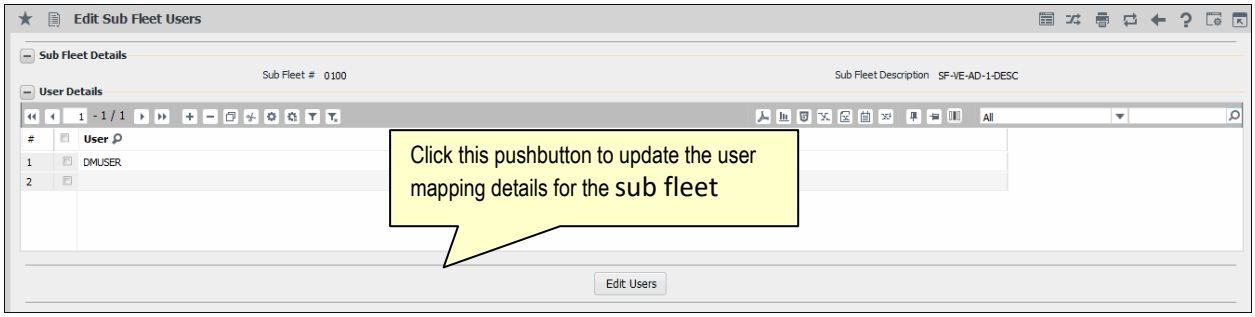

Figure 2.6 Assigning users to sub fleet

In the **User Details** group box,

2. Enter the code identifying the user for whom you wish to provide permission for generating the forecast, in the **User** field.

3. Click the **Edit Users** pushbutton to update the user mapping details for the sub fleet.

Moving aircraft to another active sub fleet

You can move an aircraft from one sub fleet to another, to group it under different models or utilization value.

Note: You can move the aircraft only if the current sub fleet forecast (to which the aircraft is attached) is not in the "Released" status.

1. Select **Move Aircraft Across Sub Fleet** link in the **Edit Sub Fleet** page. The **Move Aircraft Across Sub Fleets** page appears. *See Figure 2.7.*

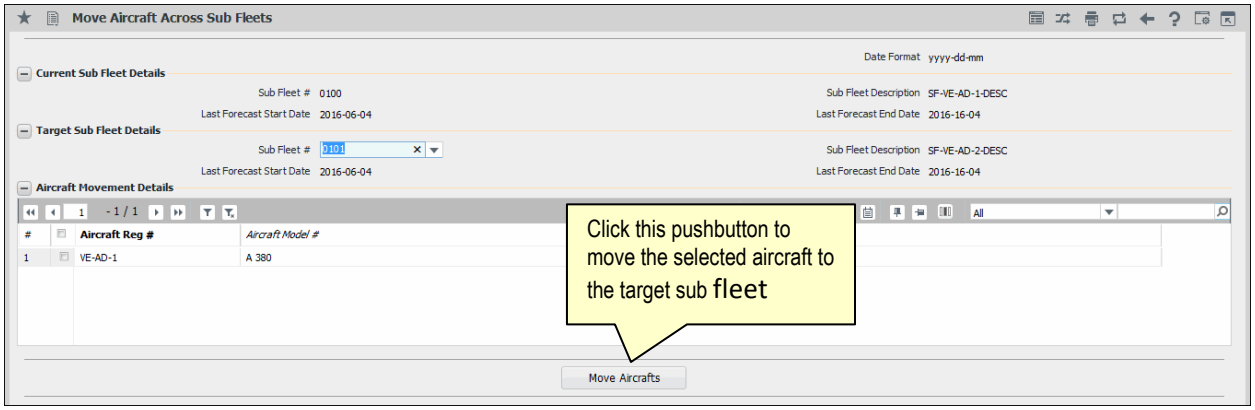

Figure 2.7 Moving aircraft to another active sub fleet

In the **Target Sub Fleet Details** group box,

2. Select the sub fleet to which the aircraft must be moved, in the **Sub Fleet #** field.

3. Click the **Move Aircrafts** pushbutton to move the selected aircraft to the target sub fleet.

Note: The system moves the aircraft only when the forecast status, of the current sub fleet and the target sub fleet, is "Closed" or "Cancelled".

The system updates the status of a sub fleet to "Inactive", if all the aircraft in the sub fleet are moved to another sub fleet.

2.2 GENERATE / REGENERATE FORECAST

You can generate / regenerate aircraft forecast for maintenance activities for further planning and execution. Based on the maintenance arising, the load across the execution centers is optimized taking into account the capability and the capacity of the execution centers. The planner decides when to ground the aircraft based on the compliance dates of the maintenance requirements. The work content for the visit is also firmed up and assigned to an execution facility.

1. Select **Generate / Regenerate Forecast** under **Aircraft Maintenance Forecast** business component. The **Generate / Regenerate Forecast** page appears. *See Figure 2.8.*

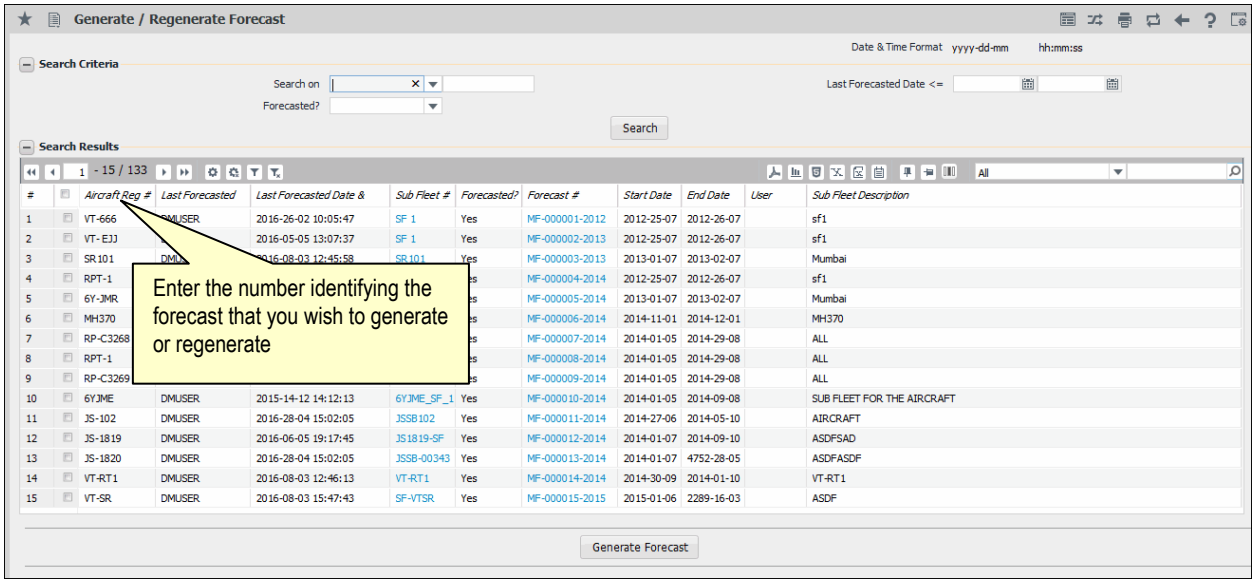

Figure 2.8 Generating / Regenerating forecast

2. Enter the filter criteria in the **Search Criteria** group box, to search for an aircraft forecast and click the **Search** pushbutton.

3. Click the **Generate** pushbutton to generate or regenerate the forecast.

The system updates the Forecasted? flag as follows:

- From “In-Progress” to “Yes” on completion of generating the forecast for the Aircraft Reg #.
- From “No” to “In-progress” on retrieving the details of the Aircraft Reg # in the “Generate / Regenerate Forecast” multiline.

2.3 PLANNING MAINTENANCE ACTIVITIES FOR AN AIRCRAFT

This process provides you with a graphical user interface to accomplish the following,

- Analyze/review hour-wise/day-wise resource availability versus resource load in a work center
- Evaluate employees/materials/resources availability versus requirement in shifts/slots scheduled in a work center.
- Plan tasks/packages for maintenance of an aircraft.
- Evaluate resource and material constraints of tasks planned for execution on an aircraft.

2.3.1 SETTING OPTIONS FOR AIRCRAFT MAINTENANCE PLANNING

You can set default options for the various parameters, in the activities of the **Aircraft Maintenance Planning** business component. You can also modify the options that are already defined.

1. Select the **Set Options** link under the **Aircraft Maintenance Planning** business component. The **Set Options** page appears. *See Figure 2.9.*

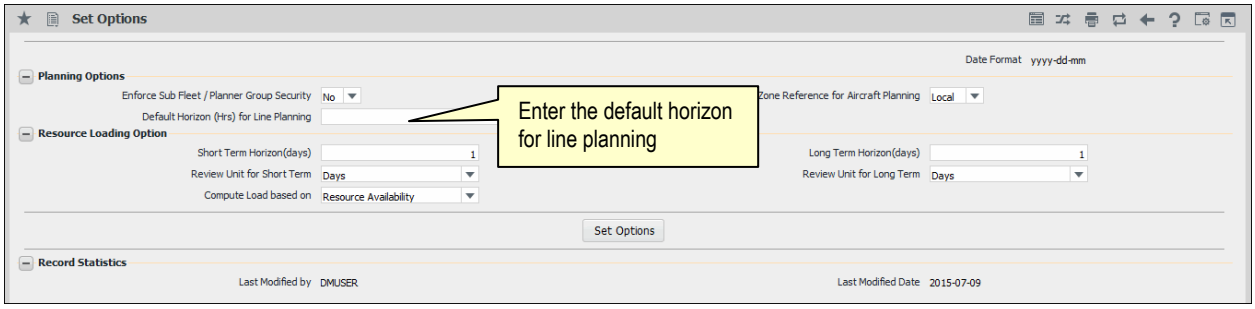

Figure 2.9 Setting Options for Aircraft Maintenance Planning

2. Use the **Enforce Sub Fleet / Planner Group Security** drop-down list box to select the access preferences to sub-fleets and planner groups.
3. Use the **Time Zone Reference for Aircraft Planning** drop-down list box to select the time zone reference for aircraft planning.
4. Use the **Default Horizon (Hrs) for Line Planning** drop-down list box to specify the default duration for line planning.
5. Enter the number of days that constitute short term duration for work center loading computation in the **Short Term (days)** field.
6. Enter the number of days that constitute long term duration for work center loading computation in the **Long Term (days)** field.
7. Use the **Review Unit for Short Term** drop down list box to select the unit of time for review of work center load during short term.
8. Use the **Review Unit for Long Term** drop down list box to select the unit of time for review of work center load during long term.
9. Use the **Compute Load based on** drop down list box to select the basis for estimating work load of a work center.
10. Click the **Set Options** pushbutton to set the options.

The system displays the login name of the user and date on which the option settings were last modified in the **Last Modified By** and **Last Modified Date** field respectively.

2.3.2 REVIEWING FLEET MAINTENANCE

This sub-process provides you with a graphical user interface to plan tasks/packages as part of maintenance planning for an aircraft.

A summary of all the forecasted tasks and discrepancies from the maintenance program tasks planned for an aircraft is provided to you. As an aircraft planner you can use this vital information as primary input to analyze/review maintenance prior to planning packages for an aircraft. Thereafter, you can accomplish the following as part of maintenance planning for an aircraft,

- Reschedule tasks
- Create / Release package
- Assign tasks to package
- Reschedule package
- Add/delete tasks from package
- Release package
- Cancel package
- Evaluate material and resource constraints for tasks at an aircraft level
- Assign package to slot
- Reschedule slot
- Print task cards

Specific Gantt charts explained below facilitate the above-mentioned tasks at ease in a graphical way.

- The **Job Details** Gantt chart provides aircraft and task level information. You can specify the search criteria to retrieve the aircraft for which you wish to schedule/reschedule maintenance activities. Tell me more.
- The **Package Details** Gantt chart provides information on packages scheduled for the aircraft that you select in the Job Details. You can assign these packages to slots listed in the following Gantt charts. Tell me more.
- The **Maint. Exe. Slot Details** Gantt chart displays the free slots to which you can assign packages for execution. Tell me more.
- The **Package-Slot Details** Gantt chart displays the assigned slots together with the allocated packages, to which you can assign more packages for execution. Tell me more.

1. Select the Plan Aircraft Maintenance link under the Aircraft Maintenance Planning business component. The Review Fleet Maintenance Plan page appears. *See Figure 2.10.*

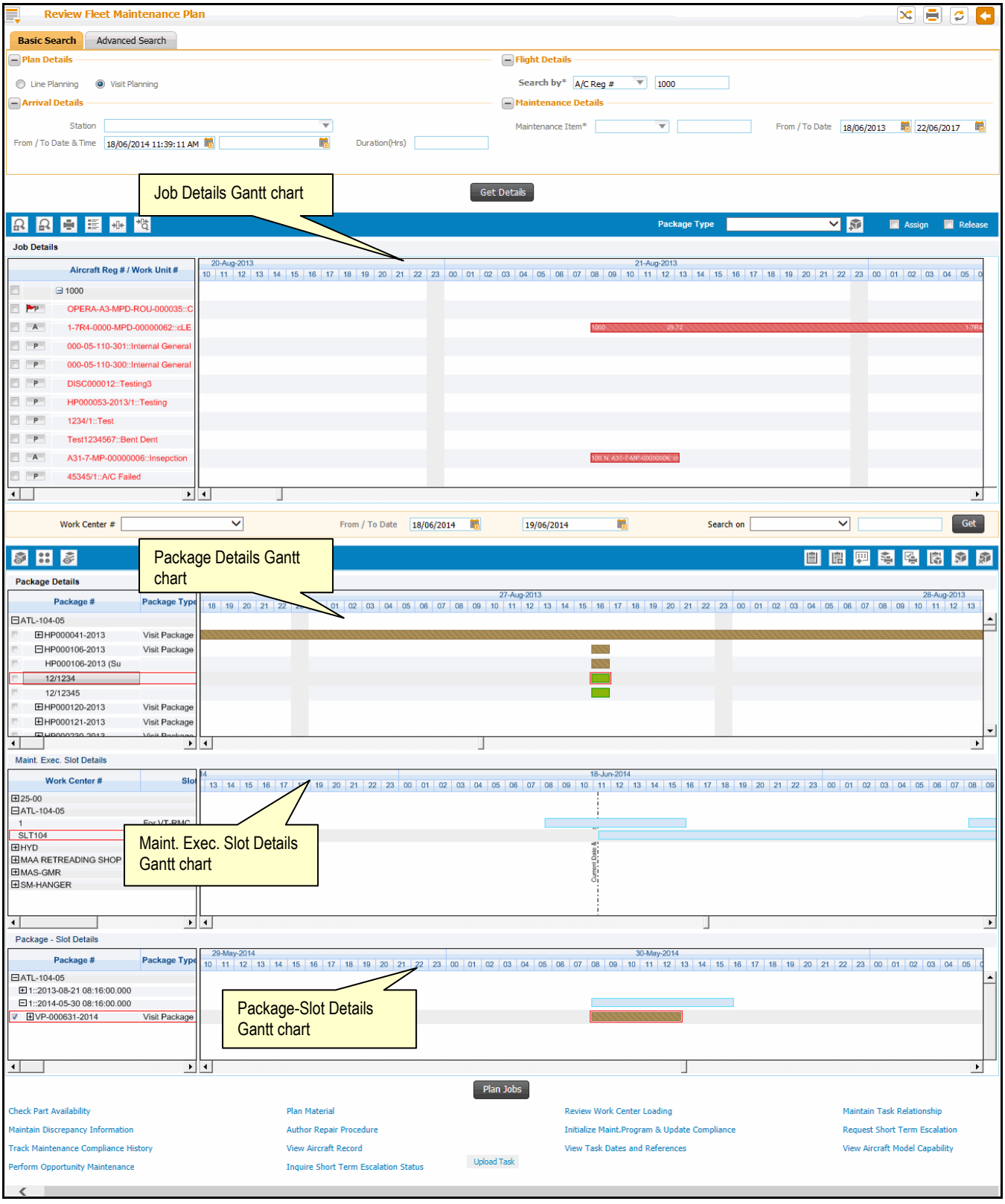

Figure 2.10 Reviewing Fleet Maintenance

2. In the **Basic Search** and/or **Advanced Search** sections enter the following details to retrieve the aircraft for which you want to plan maintenance.

- In the **Plan Details** group box, select the **Line Planning** radio button to plan maintenance activities e.g. Repair Overnight (RON) Checks in-between flights, or select the **Visit Planning** radio button to plan maintenance activities e.g. Heavy Checks during stay at airport.

- Enter **Aircraft Details**, **Arrival Details** and **Maintenance Details**.

3. Select the **Get Details** pushbutton.

The system retrieves/displays the following information about aircraft that meet the specified search criteria and/or additional search criteria.

- Planning summary of aircraft in the **Job Details** Gantt chart.
- Packages in **Fresh**, **Planned**, **In-progress** or **Completed** status in the **Package Details** Gantt chart.
- Packages assigned to slots in the **Package-Slot Details** Gantt chart.
- Free slots in the **Maint. Exe. Slot Details** Gantt chart.
- Tasks constituting a package are listed under the package in the **Package Details Package-Slot Details** Gantt chart.
- Time bars in the Gantt charts in the right pane depict the planned start-and end dates of the tasks/packages displayed in the left pane.

Job Details – Modify task details, schedule tasks and create / release package

The tasks due for execution on the aircraft during the period specified by the Date From/To in the Search Criteria group box are displayed under the aircraft in the Job Details Gantt chart. See *Figure 2.11.*

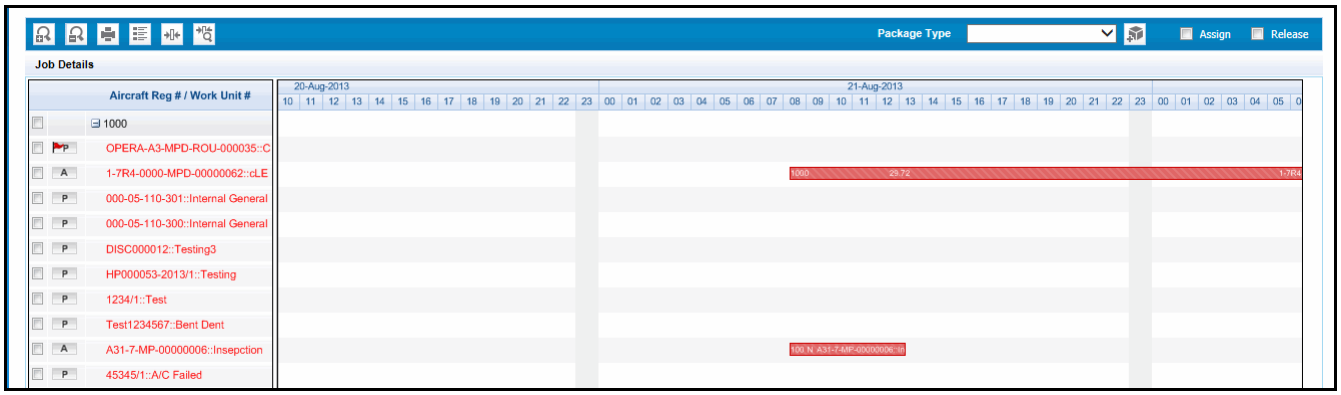

Figure 2.11 Job Details Gantt chart Reviewing Fleet Maintenance

The *Figure 2.12* depicts the hierarchy of information displayed in this Gantt chart.

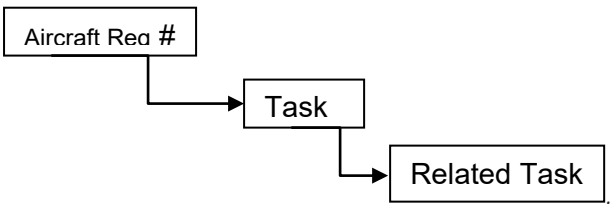

Figure 2.12 Job Details – Gantt chart hierarchy

Schedule/Reschedule tasks

Gantt: chart: The time bars in the Gantt chart show the scheduled dates of the tasks. You can move the time bars to reschedule start and end dates of execution of the task. The altered dates are reflected in the multiline on the left pane. Similarly, any change in the scheduled start and end dates made in the multiline on the left is instantly reflected in the time bars. The status of a task is displayed on its left in the left pane. The "Packaged" status is denoted as P; the "NP" status denotes the "Not packaged" status and "A" represents the "Assigned to Slot" status. You cannot change start and end dates of a task that is in "Packaged" or "Assigned to Slot" status. You can alter the schedules of tasks in "NP" status only. The altered dates are reflected in the multiline on the left pane.

4. Select the **Plan Jobs** pushbutton to save the changes made to tasks.

Note: The system performs the following when an NP task with work center is dragged from the Job Details Gantt Chart to a package

5. Adds tasks to the package
6. Updates the status of the task to "Fresh".

Modify task

1. Double-click on the time bar of the task that you want to modify, in the Job Details Gantt chart. A window appears with details of the task. *See Figure 2.13.*

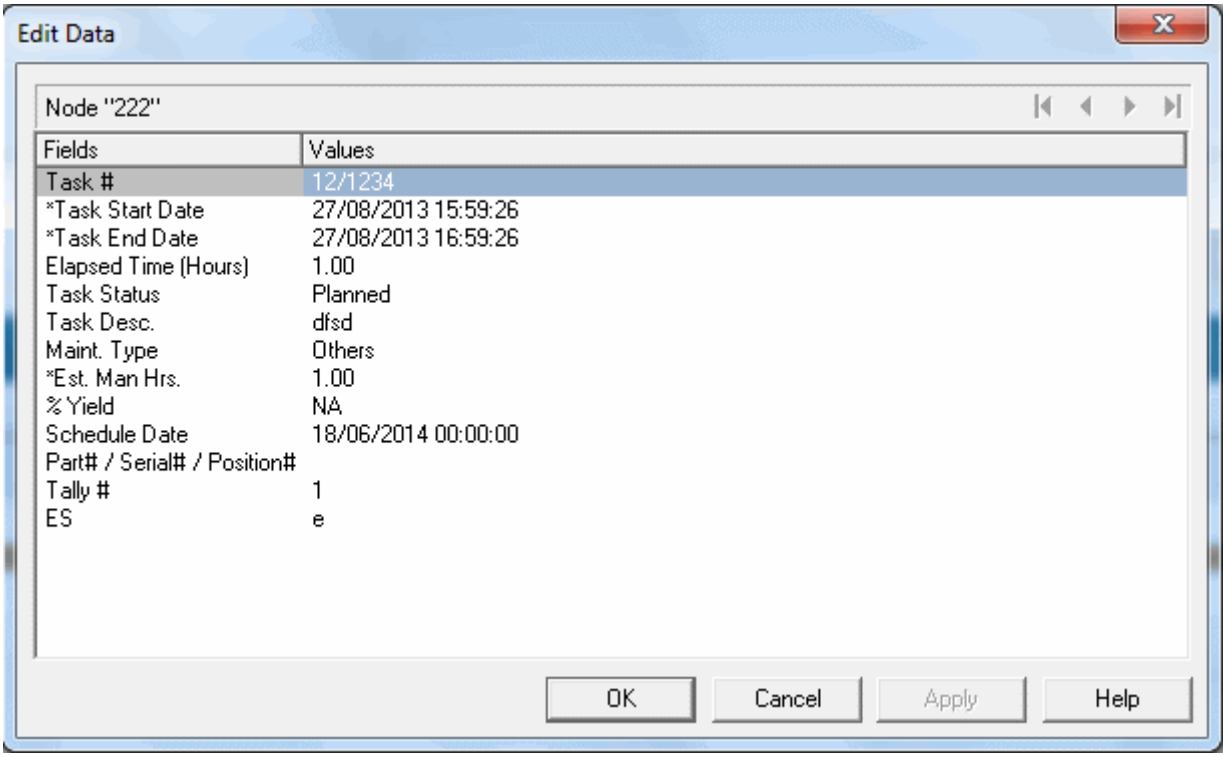

Figure 2.13 Edit task

2. Record/modify those fields that are prefixed with an asterisk.
3. Select the **Plan Jobs** pushbutton to save the changes made to a task.

Job Details Gantt chart: From within a block task, you may select one or more base tasks for creation of a new package. The base tasks that are excluded from the new package acquire the "NP" status. Such tasks are referred to as planning drop-outs. Dropped out base tasks are not displayed under the block task, instead they appear as non-block tasks under the aircraft. Base tasks that are deferred or short term escalated appear as non-block tasks under the aircraft as well.

***Note**: The planning status for "As Required" tasks will be displayed in a different color to differentiate it from regular Tasks.*

Tool bar above Job Details Gantt chart

The icons above the **Job Details** Gantt chart are applicable to the information displayed in the Job Details Gantt chart only.

	Zoom In: shows the timelines in Gantt charts in month and day format.
	Zoom Out: shows the timelines in Gantt charts in year and month format.

	Print
	Shows / hides legend
	Displays / hides material and resource constraints for tasks on the time bar of the Gantt chart.
	Evaluate material and resource constraints for tasks on the time bar of the Gantt chart.
	To add tasks at the aircraft level.
	To view the flight routing details.
	To update the planning details.
	To view the notes information.
	To delete the selected tasks.

To Add Tasks:

1. Select the  icon.
2. Enter the Task #, Base Aircraft Model # fields in the Task Details Group box.
3. Select the **New** radio button to create and add a non-standard task.
4. Select the **Existing** radio button to add an existing task from task library.
5. Enter the **ATA #** associated with the task.
6. Use the **Priority** drop-down list box to specify the priority codes, in the **Plan Details** Group box.
7. Select the **Save** pushbutton to add the tasks.

To view the Flight Routing details:

1. Select the  icon.
2. The system displays the routing details of the aircraft.

To update the planning details:

1. Select the  icon.
2. Use the **Priority** drop-down list box to update the priority codes, in the **Plan Details** Group box.
3. Click the **Save** pushbutton to update the planning details.

To view the notes information:

1. Select the  icon.
2. The system displays the history of the planning comments.

To delete Tasks:

1. Select the  icon to delete the selected task.

Legend box

You can see the legend box as shown in the *Figure 2.14*, if you click the icon above the **Job Details** Gantt chart.

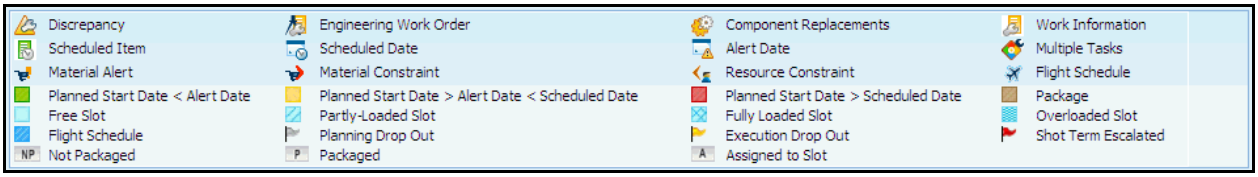

Figure 2.14 Legend box

Package Details - Modify package, schedule/reschedule package/task

1. Specify the following search criteria to find specific packages from among the retrieved packages in the **Package Details** Gantt chart.

2. Select the **Get** pushbutton to display packages that match the search criteria. *See Figure 2.15.*

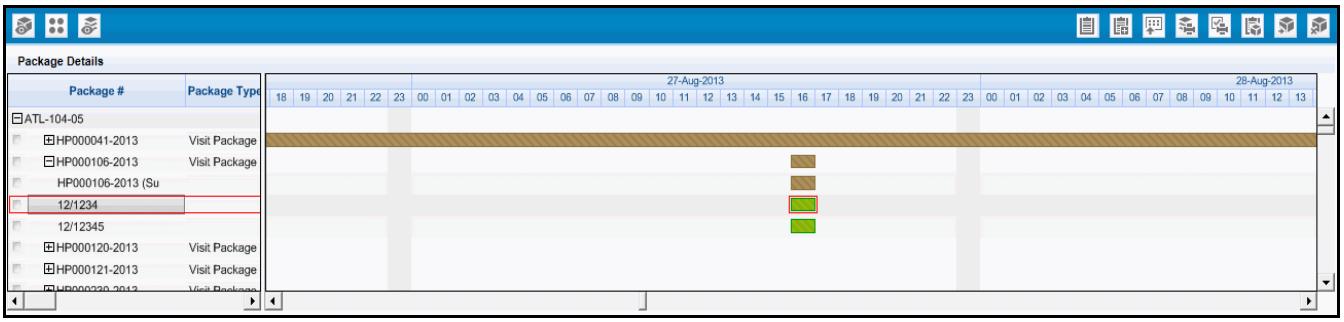

Figure 2.15 Package Details Gantt chart

The packages are grouped under the allocated primary work centers and displayed in the **Package Details** Gantt chart. Those packages not allocated to any work center are listed under the **Work Center not available** head. Note that the "Work Center not available" head appear in the Gantt chart only if any package without assigned work center exists. *Figure 2.16* depicts the hierarchy of information displayed in this Gantt chart.

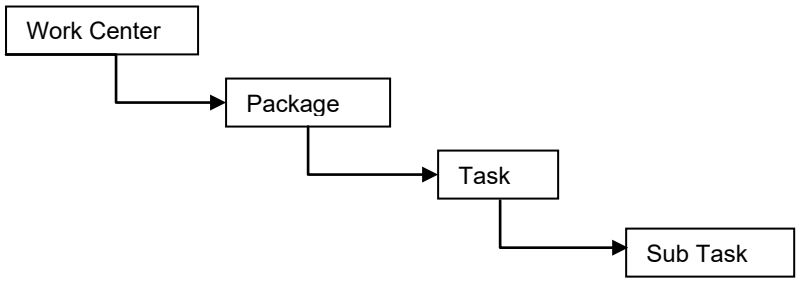

Figure 2.16 Package Details – Gantt chart hierarchy

Modify package

1. Drag a task in Not Packaged status from the Job Details Gantt chart and drop it on to a package in the Packages Details or Package-Slot Details Gantt charts to add a task to a package.

2. Move/shift the start and end dates of a package/task in the time bars of the Gantt chart.

Note: You must add the earliest instance of the task to a package when multiple instances of a task in "Pending" status exist for an aircraft. This means you must add tasks to a package in the chronological order of the task start date only.

3. To add/delete tasks from a package, see the Add/delete tasks in a package topic.

4. To remove tasks from a package, drag tasks from the **Package Details** Gantt chart and drop them on to the **Job Details** Gantt chart.

*Note: You can unassign tasks by dragging back the task from the **Package Details** Gantt chart to the **Job Details** Gantt chart. However, you must ensure that the unassigned task is not a predecessor task for a predecessor constrained task. To achieve these results, alternatively you can use the*  *icon.*

5. Alternatively, you can assign a task to a package by the click of the  icon in the toolbar on the right top of the Package Details Gantt chart. Prior to this action, you must do the following;

6. Select a task in the **Job Details** Gantt chart.

7. Select a package in the **Packages Details** or the **Package-Slot Details** Gantt chart

Note: You must ensure that only the task you want to allocate to a package is selected in the Job Details Gantt chart, prior to the click of the  *icon. Similarly, only the package to which you want to allocate the task must be checked, in the "Packages Details" or the "Package-Slot Details" Gantt chart.*

Save modified package

8. Select the **Plan Jobs** pushbutton to save the modified package.

Schedule/Reschedule package/ task

Gantt chart: The time bars in the Gantt chart on the right pane, depict the schedule of the packages/tasks. You can reschedule those packages/tasks that are in "Fresh" or "Planned" status. You may also alter the end date of a package/task that is in "In-progress" status though only in the future. However, you cannot alter any of the dates of a package/task, if it is in "Completed" or 'Closed' status. When you drag and drop a discrepancy task in "Pending" status from the Job Details Gantt chart to Package Details Gantt chart, the record status of the discrepancy becomes "Under Resolution". Such discrepancies are no longer displayed in the Job Details Gantt chart. However, discrepancies in "Deferred" record status retain their status even after they are allotted to a package. They also continue to be displayed in the Job Details Gantt chart.

1. Select the time bar of the package/task that you want to reschedule in the Gantt chart.

2. Move the left handle of the time bar to reschedule the start date of the package/task and the right handle to reschedule the end date.

3. Select the **Plan Jobs** pushbutton to save the changes made to a slot.

Note the following adjustments that occur automatically in the Gantt chart as you move the time bars to reschedule packages/ tasks:

If the new start date of a	**Then the start date of the**
Package is later than the start date of a constituent task	The package is set to the earliest task in the package.
Task is earlier than the start date of the package	Package is set to the task start date
If the new end date of a	**Then the end date of the**
Package is earlier than the end date of a task in the package	Package is set to the end date of the latest task in the package
Task is later than the end date of the package	Package end date is set to the end date of the latest task.

Modify task assigned to package

1. Double-click the time bar of the task # that you want to modify, in the Gantt chart. A window appears with the details of the task. *See Figure 2.17.*

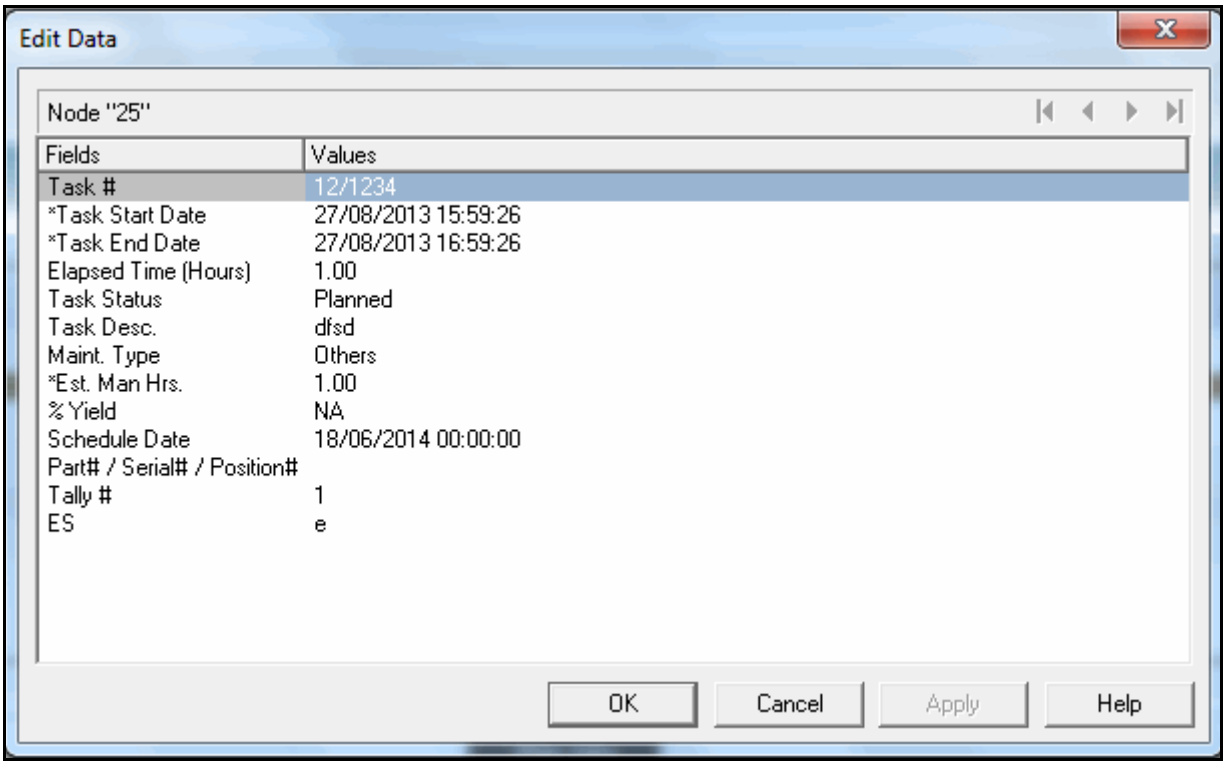

Figure 2.17 Edit task

2. Record/modify those fields that are prefixed with an asterisk.

3. Select the **Plan Jobs** pushbutton to save the changes made to a task.

Tool bar above Package Details Gantt chart

	Displays / hides the “Package Details” Gantt chart.
	Displays / hides the “Maint. Exe. Slot Details” Gantt chart.
	Displays / hides the “Package-Slot Details” Gantt chart.

Cancel package

1. Select the package you wish to cancel in the **Package Details** Gantt chart.
2. Select the  icon.

Note: The package you want to cancel must be in “Fresh” or “Planned’ status.

The system resets the status of tasks of a cancelled package to,

- “Pending” in the pending tray
- “Planned” in the **Job Details** Gantt chart.

Create / release package for execution

1. Select the type of the package you wish to create in the **Package Type** drop-down list box provided in the **Job Details** Gantt chart.
2. Select the package you wish to release for execution in the **Package Details** Gantt chart.
3. Click the 'Create Package' '  ' icon in the **Job Details** Gantt chart section (or)
4. Click the 'Release Package' '  ' icon in the **Package Details** Gantt chart. The Create / Release Package window appears. *See Figure 2.18.*

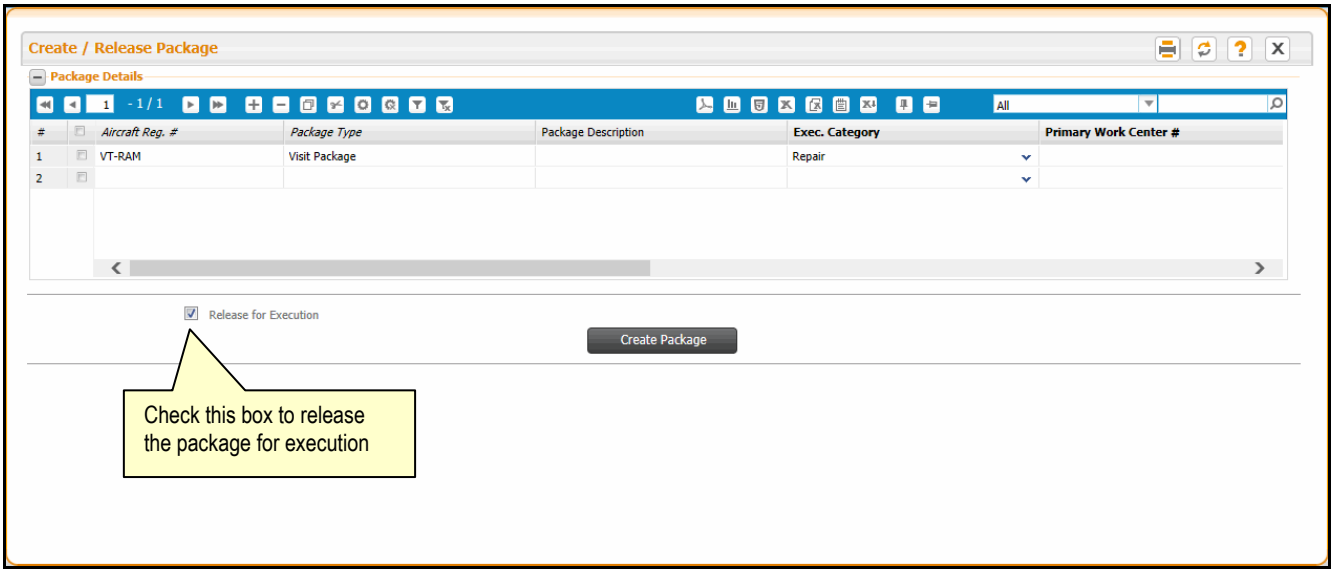

Figure 2.18 Creating package

5. Specify/modify the **Package Description**.
6. Use the **Doc Category** drop-down list box to select the document category.
7. Use the **Primary Work Center** drop-down list box to select the primary work center.
8. Enter the station in which the package is executed on the aircraft in the **Exec. Station** field.
9. Enter the flight subsequent to which the package must be executed on the aircraft in the **Flight #** field.
10. Enter the **Customer PO #** associated to the customer order.
11. Enter the customer order reference for the aircraft in the Customer Order # field.

Note: 1) The Applicability of the customer order you specify must be "Aircraft". 2) The system does not allow the release of a package for a customer-owned aircraft, if the customer order for the package is not in "Processed" status. Use the Expense Type drop-down list box to select the expense type of the task.

12. Enter the **CAPEX Proposal #** of the task.
13. Use the **User Status** drop-down list box to select the user status for the package.
14. Check the **Release for Execution** box, if you wish to release the package for execution. This check box appears only if the "Release" check box in the main page is checked.
15. Click the Create Package pushbutton.
16. Click the **Release Package** pushbutton.

*Note: The **Release Package** pushbutton appears only if this screen is invoked by clicking the 'Release Package' icon '  '. See Figure 2.19.*

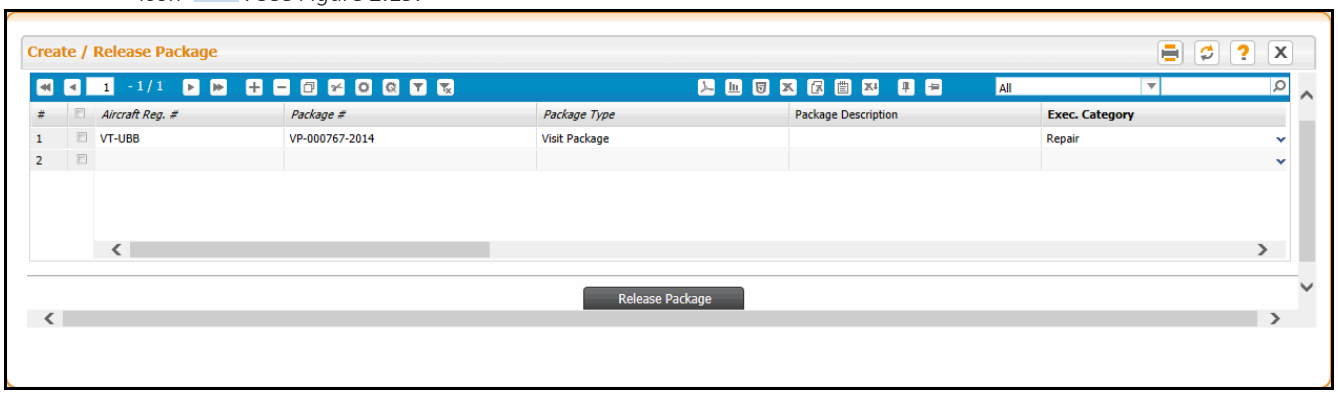

Figure 2.19 Releasing package for execution

The system releases the package for execution on the aircraft after the flight at the execution station.

Modify/ tasks/package

1. Select the package you wish to cancel in the **Package Details** Gantt chart.
4. Select the  icon. The **Edit Package Additional Information** window appears.

You can now add forecasted / unforecasted / non-routine tasks to the package that you have selected in the **Review Aircraft Maintenance** page.

Refer to **Aircraft Maintenance** user guide for detailed information.

Evaluate Constraints

The **Job Details** Gantt chart depicts the resource and material constraints at the aircraft level. *See Figure 2.20.*

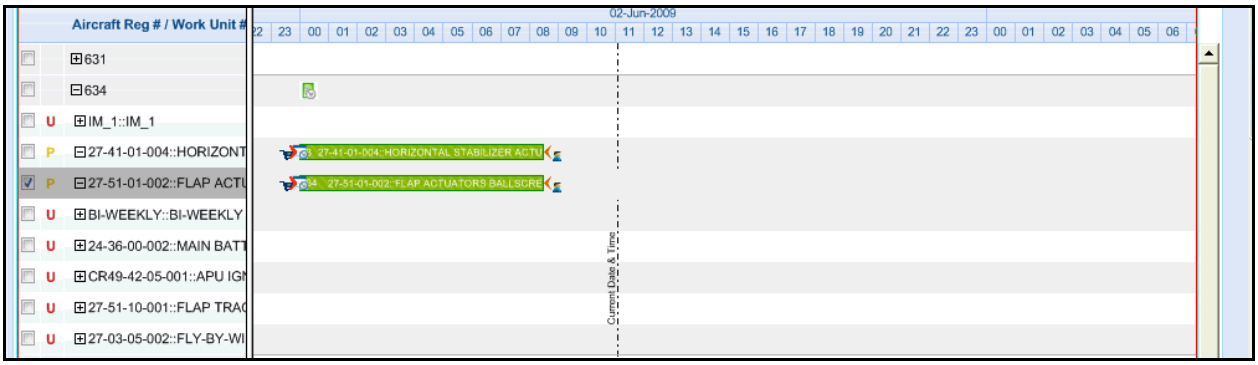

Figure 2.20 Resource and material constraints

1. Click the  icon on the Tool bar above the **Job Details** Gantt chart to show / hide constraints in the Gantt chart.
2. Click the  icon in the Tool bar above the **Job Details** to evaluate constraints in the Gantt chart for the new information.

The  icon on the time bar representing the aircraft in the Gantt chart indicates that resource constraints exist for the aircraft. This infers that the resources (Skill, Equipment, Tools and Others) required for executing maintenance tasks on the aircraft exceed the availability.

3. Double-click on the  icon to see the details of resource constraints in a window.

The icon indicates material constraints exist for the aircraft. This infers the available numbers of parts do not adequately match the material requirement of the tasks scheduled for the aircraft.

4. Double-click on the icon to see the details of material constraints in a window.

Print packages: Print entire packages:

1. Select packages you want to print in the **Package Details** and/or the **Package-Slot Details** Gantt chart.
2. Select the icon above the **Package Details** Gantt chart.

The system prints the package (in PDF) at the printer configured to the execution work center associated with the package. The system considers all the tasks within a selected package for printing, irrespective of the selection of the tasks within the package.

Print packages: Print selective tasks in a package

1. Select a package in the **Package Details** and/or the **Package-Slot Details** Gantt chart.
2. Select the icon above the **Package Details** Gantt chart.

The **View Package** page of the Tech Doc system appears. Here, you can select those tasks from the package that you want to print. You can also choose to include/exclude any part of the package that you want to print. For further information, see OLH on "View Package" page.

Note: Prior to using the Print facility, the Tech Doc system must be configured and attached to the application. Required parameters such as Username, Password and Custid must be defined for the Tech Doc system in the Technical Document Interface component.

3. Select packages you want to export to the Microsoft Project (MSP), in the **Package Details** and/or the **Package-Slot Details** Gantt chart.
4. Select the icon above the **Package Details** Gantt chart to export the selected packages to MSP.

Maint. Exe. Slot Details Gantt chart – Modify slot

The **Maint. Exe Slot Details** Gantt chart displays slots to which no packages are assigned yet. *See Figure 2.21.*

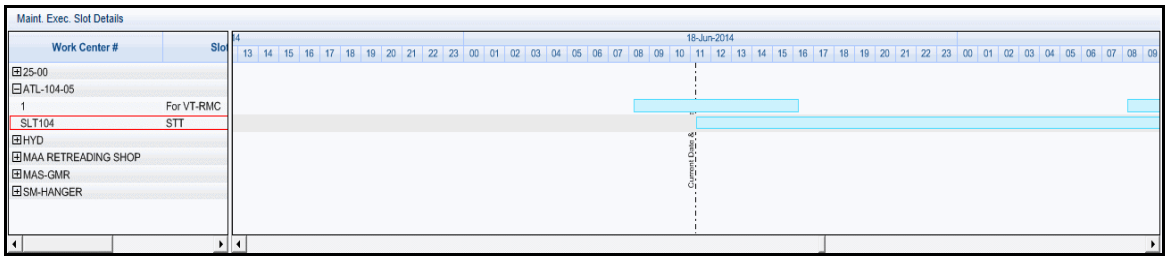

Figure 2.21 Maint. Exe Slot Details – Gantt chart

The *Figure 2.22* depicts the hierarchy of information displayed in this Gantt chart.

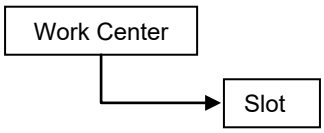

Figure 2.22 Maint. Exe Slot Details – Gantt chart hierarchy

Gantt chart: The time bars on the right pane display the schedule details of slots, which are grouped under work centers. You can use the time bars of the slots and reschedule their start and end dates in the future.

1. Select the **Plan Jobs** pushbutton to save the changes made to a slot.

Modify slot details

2. Double-click on the time bar of the slot that you want to modify, in the Gantt chart. A window appears with details of the task.

3. Record/modify those fields that are prefixed with an asterisk.

4. Select the **Plan Jobs** pushbutton to save the changes made to slots.

Package-Slot Details Gantt chart – Allocate package to slot, Schedule/Reschedule package/task, modify package/task details

The **Package-Slot Details** Gantt chart displays the slots to which packages have been already assigned. *See Figure 2.23*

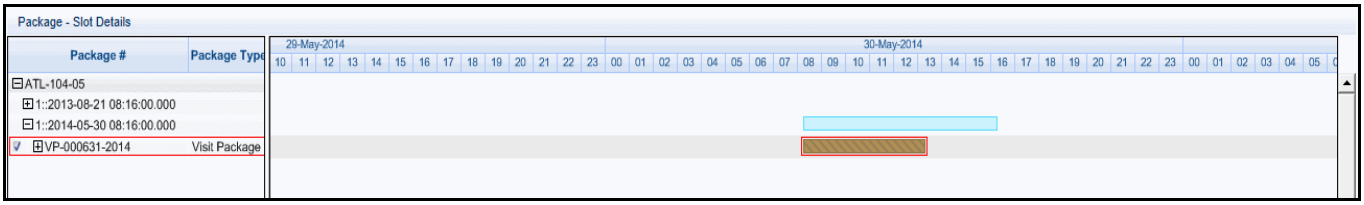

Figure 2.23 Package Slot Details – Gantt chart

The hierarchy for information in this Gantt chart is shown in *Figure 2.24*.

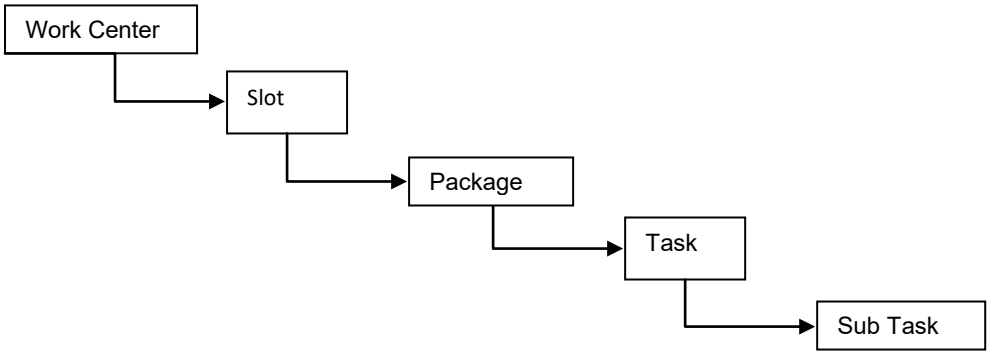

Figure 2.24 Package – Slot Details Slot Details – Gantt chart

Assign package to slot

1. To assign a package to a slot, drag the package from the Package Details Gantt chart and drop it on the time bar of a slot in the Maint. Exe. Slot Details Gantt chart or Package-Slot Details Gantt chart. As you drop a package on a time bar of a free slot, the slot becomes an assigned slot and instantly shown in the Package-Slot Details Gantt chart together with the package.

Note: You cannot reschedule a package in "In-Progress' or "Completed" status.

You can move a package back to the Package Details Gantt chart from the Maint. Exe. Slot Details Gantt chart. However, this is possible only if the package is in "Fresh" or "Planned" status. You can also change the slot of a package from one work center to another work center.

2. Select the **Plan Jobs** pushbutton to save the changes made to packages/tasks.

Schedule/Reschedule package/task

Gantt chart: The time bars in the Gantt chart on the right pane, depict the schedule of the packages/tasks. You can reschedule those packages/tasks that are in "Fresh" or "Planned" statuses by moving the time bars to the left or to the right. The schedule dates of package/tasks cannot be moved prior to the slot start date. The procedure for rescheduling of start and end dates of packages/tasks by moving the time bars is similar to that in the Package Details Gantt chart.

Modify package/task details

1. Double-click the time bar of the package/task that you want to modify, in the Gantt chart.
2. You can record/modify fields that are prefixed with an asterisk.

To proceed, carry out the following:

- Select the **Check Part Availability** link to find out the availability of parts against part requirements.
- Select the **Plan Material** link to generate material request for parts required for a task scheduled for an aircraft.
- Select the **Review Work Center Loading** link to review the load of the work center.
- Select the **Maintain Task Relationship** to record/modify relationships between tasks.

Refer Maintenance Programs user guide for detailed information.

- Select the **Maintenance Discrepancy Information** link to record/modify the details of the discrepancies

Refer Compliance Management user guide for detailed information.

- Select the **Author Repair Procedure** link to provide details of non-routine tasks for the aircraft.

Refer Maintenance Programs user guide for detailed information.

- Select the **Initialize Maint. Program and Update Compliance** link to define/redefine maintenance program/compliance details for the aircraft.

Refer Configuration Management user guide for detailed information.

- Select the **Request Short Term Escalation** to request for deferment of a discrepancy.
- Select the **Perform Opportunity Maintenance** link to record tasks to an AME Exe. Ref / line package.

Requesting for short term escalations for the selected tasks

Execution of maintenance activity may be deferred due to various reasons such as resource constraints, flying schedules of an aircraft or workload of an execution center. Each be accompanied by an appropriate reason and requires approval from an authorized person.

To defer a task, you must request for short term escalation of the task. You may escalate a usage-based task by a specific number of FH or FC; escalate date-based task by a specific number of days or both.

You can approve the short term escalation request in the Compliance Tracking & Control component.

1. Select the Request Short Term Escalations link in the Review Fleet Maintenance Plan page. The Request Short Term Escalations page appears. *See Figure 2.25.*
2. Select the Numbering Type for generating the short term escalation number automatically.

Note: For details on creating numbering types, refer to the section "Defining numbering types for transactions"

in the "Inventory Setup" User Guide.

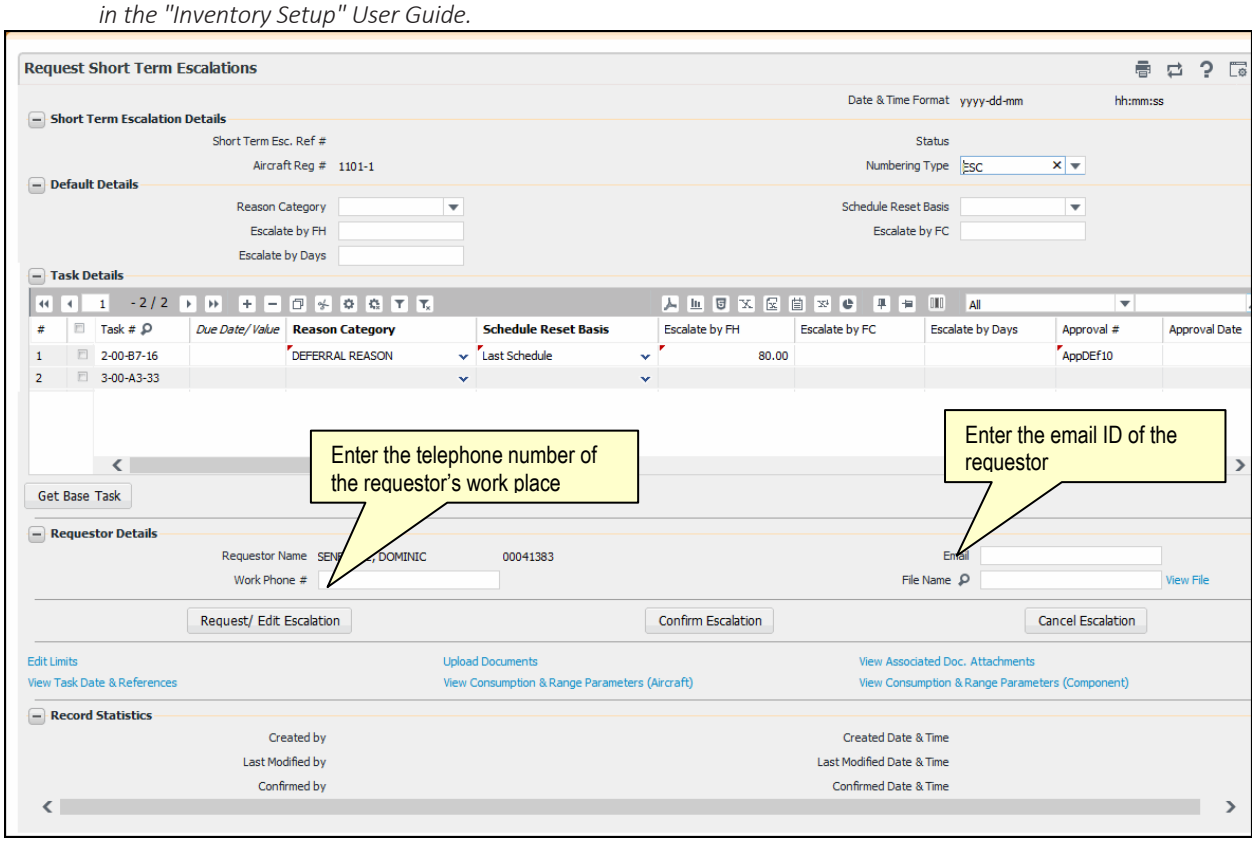

Figure 2.25 Creating short term escalation for a task

In the **Task Details** multiline,

3. Specify the **Task #** for which you want to create a short term request.
4. Select the **Reason Category** to specify the reason for the deferment of the tasks.
5. Use the **Schedule Reset Basis** drop-down list box to specify the basis for rescheduling the maintenance task. The drop-down list box displays

- "Last Schedule", if the Schedule Reset Basis parameter in the Set Options activity is set to "Last Schedule".
- "Deferred Schedule", if the Schedule Reset Basis parameter in the Set Options activity is set to "Deferred Schedule".
- Both of the above, if the **Schedule Reset Basis** parameter is left blank in the **Set Options** activity.

6. Specify the FH by which you want to escalate the execution of the task in the **Escalate by FH** field.
7. Specify the FC by which you want to escalate the execution of the task in the **Escalate by FC** field.
8. Specify the days by which you want to escalate the execution of the task in the **Escalate by Days** field.
9. Specify Approval # and Approval Date fields.
10. Enter the **Requestor Comments**, pertaining to short term escalation.
11. Use the **Regulatory Authority** drop-down list box to select the regulatory authority to approve the short term escalation request.
12. Set **Limit Type** as "Time Based", "Usage Based", "Time & Usage Based" or "Indefinite Deferral".

Note: The option "Indefinite Deferral" is displayed, only if the system parameter "Indefinite Deferral" is set as "Allowed" in the "Set Options" activity of the "Compliance Tracking & Control" business component. By default, the "Reason Category" and "Limit Type" drop-down list boxes display blanks.

To display base tasks,

a. Select the task for which you want to retrieve Base tasks in the **Task Details** multiline.

b. Select the **Get Base Tasks** pushbutton.

The base tasks appear under the primary task in the multiline.

13. Specify the **Email** and **Work Phone #** of the requestor.

14. Click the **Request/Edit Escalation** pushbutton to record the short term escalation details for tasks selected in the multiline.

Confirming short term escalation request

15. Click the **Confirm Escalation** pushbutton, to confirm the short term escalation.

Canceling short term escalation request

16. Click the **Cancel Escalation** pushbutton, to cancel the Short Term Escalation.

Note: The system sets the status of the short term escalation as "Fresh" and the transient status of the tasks as "Pending Deferral".

The system updates the status of the tasks in the pending tray as follows:

- If the deferment policy of the deferred work unit is set as "Complete Work Unit", the deferred tasks will be updated in the 'Compliance Tracking & Control' pending tray with (i) the job status as "Pending", and (ii) the transient status as "Pending Deferral".
- If the selected tasks are unplanned (i) the job status of the unplanned tasks will be updated to "Pending", and (ii) the transient status will be updated to "Pending Deferral". The deferred unplanned work unit will be added in the pending tray, only if the job status is "Pending" and the transient status is "Deferred".

17. To confirm the deferment of the selected tasks, click the **Confirm Request** pushbutton.

The system sets the status of the short term escalation as "Confirmed" and the transient status of the tasks as "Pending Deferral".

If the system parameters Short Term Escalation Authorization For Aircraft Work units and Short Term Escalation Authorization For Component Work units are set as "Not Required" in the Set Options activity of the Compliance Tracking & Control business component, the system performs the following:

- Changes the status of the short term escalation to "Processed", and the transient status of the work unit to "Deferred" and retains the job status as "Pending".
- For the aircraft/component tasks, the system updates the triggering parameter and "Schedule Date" in the 'Compliance Tracking & Control'/Component Maintenance Planning pending tray, based on the limit type specified for the tasks.
- For the tasks with the job type "Aircraft" / "Onwing", the system updates (i) the transient status of the tasks as "Deferred" (ii) the status of the short term escalation as "Processed".

Note: Status update will be based on the option setting for "Short Term Escalation Authorization for Aircraft Workunits" / "Short Term Escalation Authorization for Component Workunits" field. If it is set as "Not Required", the system will update the status of the work unit when the deferral is confirmed. Otherwise, the status of the work unit will be updated when the deferral is authorized.

You can proceed to,

- Define or edit the escalation limits for the tasks.

Setting escalation limits for tasks

You can specify escalation limits for a work unit based on time, usage or both.

1. Select the **Edit Limits** link in the **Request Short Term Escalations** page. The **Edit Short Term Escalation Limits** page appears. *See Figure 2.26.*

2. In the **Task Details** group box, select the task for which you want to record escalation limits in the **Task #** drop-down list box. The drop-down lists all the tasks specified in the short term escalation request. Enter the number of days by which the work unit is deferred, in the **Deferred By (Days)** field.

3. Enter the alert value, in days, to indicate when the work unit must be performed, in the **Alert Value (Days)** field.

Note: Leave the "Deferred By (Days)" and "Alert Value (Days)" fields blank, if the deferral type is "Usage Based".

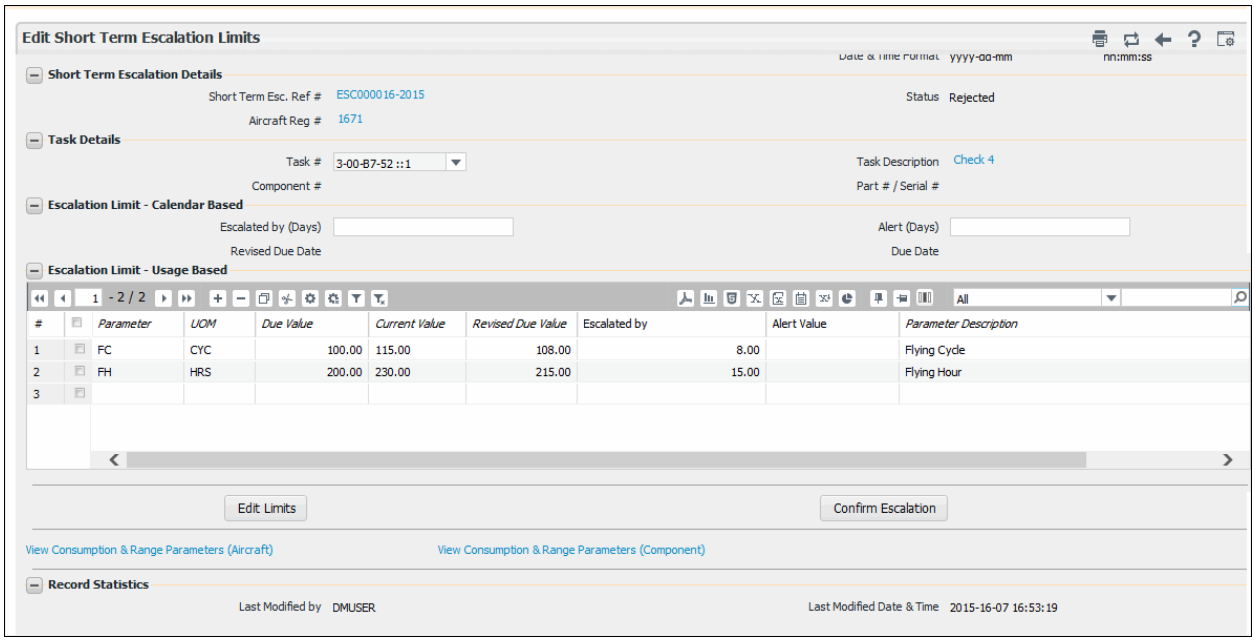

Figure 2.26 Setting escalation limits for deferring tasks

In the **Deferral Limit – Parameter Based** multiline,

4. Enter the parameter value, in days, to indicate when the work unit must be performed, in the **Alert Value** field.

5. Enter the value of the parameter by which the work unit is deferred, in the **Deferred By** field.

6. Click the **Edit Limits** pushbutton, to update the modified escalation limits.

Planning material for the tasks

This process allows the planner to plan and acquire the material required to execute tasks.

You can plan material requirements for specific packages or specific tasks spanning different packages at one go in this page.

To acquire the required parts, you can generate material request(s). You can also generate material requests for new parts that are not available in the inventory, if required for tasks.

Material Request (MR) is the document through which the planner communicates the need for material, required for the execution of the task on a specific date, to the warehouses. Once the material request is processed based on the availability of the part in the inventory, the inventory personnel generates the issue document and the required parts are issued from the warehouse.

The system generates a unique material request number. Using this process, you can also short close the material request, if the parts are not required anymore for executing the tasks. Once short closed, the material request will not be available for any future transaction. You can access this page from these components: Aircraft Maintenance Execution, Aircraft Maintenance Planning and, Work Monitoring and Control.

On launch of the page, the **Part Requirements** multiline displays details of tasks selected in the previous page. If one or more packages are selected in the previous page, all tasks from the selected packages are displayed in the multiline. You may use the search criteria, if you wish to retrieve tasks other than those selected in the previous page.

1. Select the Plan Material link from Plan Aircraft Maintenance or select the Bulk Material link from the left pane of the Record Aircraft Maintenance Execution Details page and the Manage Work Assignments and Reporting activity. *See Figure 2.27.*

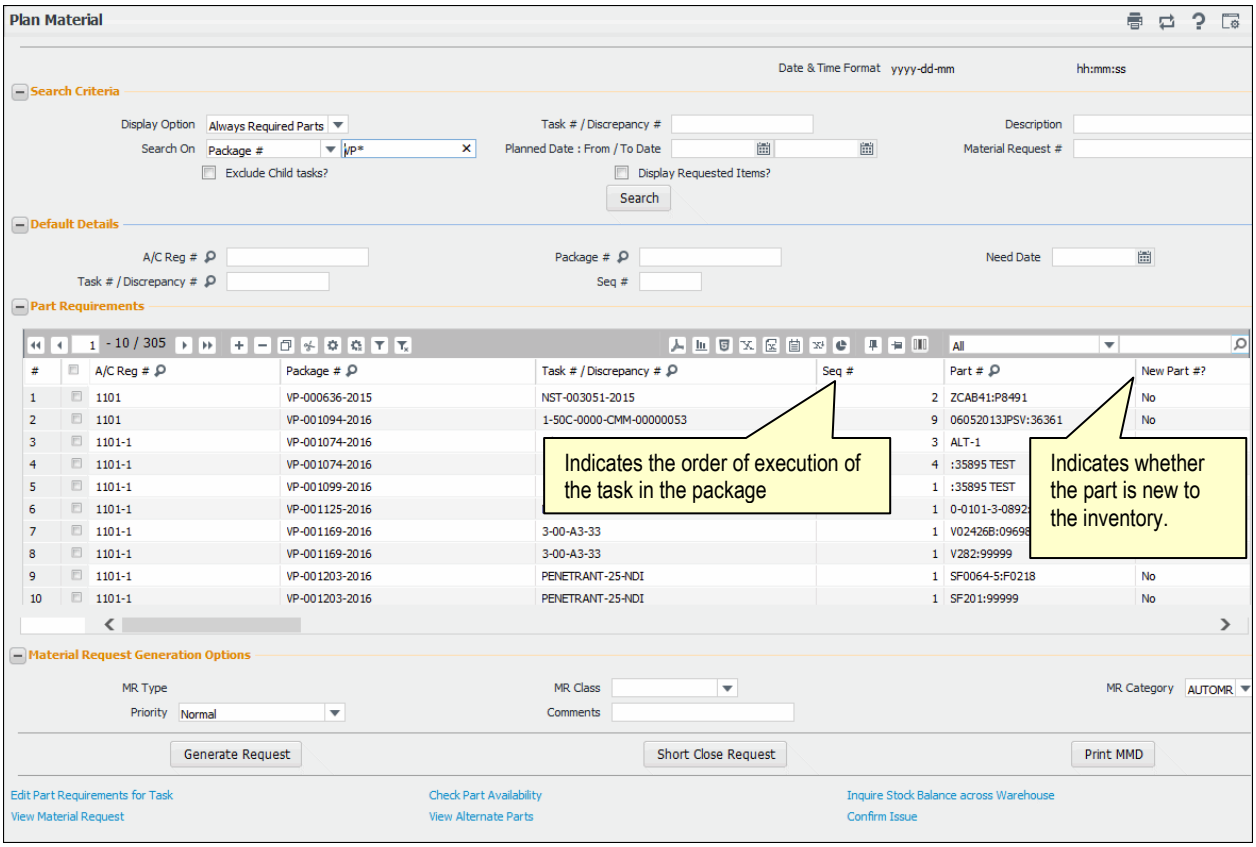

Figure 2.27 Planning material for maintenance

2. In the **Search Criteria** group-box, enter the search criteria based on which the tasks must be retrieved and click the **Search** pushbutton.

Note: If this page is accessed from the Aircraft Maintenance Execution component, the 'Search On' drop-down list box displays Package #. If this page is accessed from the "Work Monitoring and Control' component, the 'Search On' drop-down list box displays

a. Package #, if a package is selected in the previous page.

b. Task #, if a task is selected in the previous page.

However, in all the above cases, the user cannot change the values in the 'Search On' drop-down list box.

3. In the **Default Details** group box select the **A/C Reg #**, **Package #**, and enter the **Need Date**, **Task # / Discrepancy #** and the **Seq #** of the task.

4. In the **Part Requirements** multiline, enter **A/C Reg #** for which material is required / requested.

5. Enter **Package #** comprising all the tasks to be executed on the part.

   Note: The above fields do not appear, if you have accessed this page from the "Aircraft Maintenance Execution" activity.

6. Enter the **Task # / Discrepancy #** to be executed on the part attached to the aircraft, Mandatory.

7. Enter **Seq #** to indicate the order of execution of the task in the package.

8. The **Part #** required to carry out maintenance task scheduled to be executed.

9. Use the **New Part #?** drop-down list box to indicate whether the part is new to the inventory. Select "Yes", if the part is new. This implies the part has not yet been defined in the **Part Administration** component. Select "No", if the part is an existing part. By default, this field is set to "No".

   Note: Do not select "Yes" in this field, if you have specified a valid part defined in the "Part Administration" business component.

10. Enter **UOM** of measurement of the part. This field is mandatory for new parts. The UOM that you specify must exist in Active status with conversion defined in the UOM component.

11. Enter the **Need Date** of the part required for maintenance.

12. Select the **Warehouse #** for the warehouse that must issue the part in the **Warehouse # field.** The warehouse # is mandatory, if the page is accessed from components other than Aircraft Maintenance Execution and Work Monitoring and Control.

13. Enter the **Required Qty** of the part.

14. Select the **Stock Status** for the part.

15. Select the **Substitute Type** of the part and enter the **Substitute Part #** for the part.

16. Use the drop-down list box to indicate the regularity of requirement of the part in the **Need Frequency** field.

17. Select the **Request Mode** for the required part. From the drop-down list box, select

    - "Normal", if the required part is "Effective" for the aircraft or model or the aircraft.
    - "Conditional Requisition", if the required part is "Conditional Effective" for the aircraft or model or the aircraft.
    - "Force Requisition", if the required part is not "Effective" for the aircraft or model or the aircraft.

    Note that Effectivity for a part is defined in the "Manage Part Effectivity" activity of the "Aircraft" component.

18. The **Part Description** for the part required for maintenance. This field is mandatory for new parts.

19. In the **Material Request Generation Options** group-box, select the MR Class as "Maintenance" or "Replenishment**".** However, only "Maintenance" is available, if this page is accessed from Work Monitoring Control and Aircraft Maintenance Execution components. However, only "Maintenance" is available, if this page is accessed from Work Monitoring Control and Aircraft Maintenance Execution components. Further, select the following for the material request.

20. Use the **MR Category** drop-down list box to select the category of the material request.

21. Use the **Priority** drop-down list box to select the priority of the material request.

22. Click the **Generate Request** pushbutton to generate the material request.

    - Generates the material request in "Authorized" status if the MR Class is "Maintenance". Also, if there required part is available in the warehouse, then automatically creates and issue document in "Fresh" status.

    - Generates material request in "Fresh" status if the MR Class is "Replenishment".

23. Click the **Short Close Request** pushbutton to short close the material request. You must enter the **Comments** for short closure.

    - Updates the material request status to "Short Close" and also updates the total quantity of part required.

24. Click the **Print MMD** pushbutton.

    - The system initiates printing of MMD only if material issues in "Fresh" status exist for material requests. However, for material requests with priority of "AOG", the system prints the MMD regardless of any material issue.

Note: For material requests with priority "AOG", the MMD printing transaction must be mapped to the transaction type "MRAOG" in the requesting warehouse. Likewise, for material request with matching material issue in "Fresh" status, the MMD printing transaction must be mapped to the transaction type "Issue".

To proceed

- Select the **Edit Part Requirements for Task** link, to specify the part requirements for the task.
- Select the **Check Part Availability** link to know about the availability of the parts for the task.
- Select the **Inquire Stock Balance across Warehouse** link to know about the stock balance in all the applicable warehouses for the task/part.
- Select the **View Material Request** link to look for the details of the material request.
- Select **View Alternate Parts** to see details of alternate parts for the part.
- Select **Confirm Issue** to confirm the part issue.

Performing opportunity maintenance in a package

You can include forecasted work units on the aircraft which are scheduled for execution in the near future. An aircraft maybe grounded for unscheduled maintenance. This grounding provides an opportunity to include other tasks scheduled in the future along with the regular resolution procedures. You can select those work units that are to be performed on the grounded aircraft and assign it to the aircraft maintenance execution/line package. This helps to optimize the utilization of maintenance facilities, such as work centers/hangars by executing scheduled tasks together with related forthcoming tasks.

1. Select the Perform Opportunity Maintenance link in the Review Aircraft Maintenance page. The Select Work Units for Opportunity Maintenance page appears. *See Figure 2.28.*

To search for the pending work units,

2. Use the drop-down list box to retrieve specific tasks for which you want to initiate opportunity maintenance. The drop-down list box displays the following: Block Items, Non-Block Items, Scheduled

Items, Component Removal, Discrepancies, Eng. Docs, Planning Drop-Outs, Exe. Drop-Outs and, Short Term Esc. Enter the task # in the field located alongside to retrieve details of a specific task alone. You can also specify multiple values in the input box using separators, such as “,”, “;” and ”*”.

3. The start date of the period for which you want to retrieve tasks Date Format) in the first input box (Date Format). The end date of the period for which you want to retrieve in the second input box (Date Format). The system retrieves those forecasted tasks with “Pending” job status that are planned or scheduled in the period between these two dates. By default, Date From/To dates appear as follows, Date From: Current date, Date To: Current date + the number of days defined for “Planning Horizon for Job Allocation (Days)” in the Set Options activity of the Common Masters component.

Note that for the system gives precedence to the planned date of task over its schedule date. This implies that the scheduled date of a task is taken into consideration only if the planned date of the task is not available.

4. Specify the remaining days/ flight hours/ flight cycles for forecasted tasks for execution on the aircraft in the **Rem. Value<=** field. Ensure that the value entered here is positive. Use the drop-down list box to select the unit of measurement, which is provided alongside. The drop-own list displays “Days” as well as all pre-defined consumption parameters. The system retrieves all those forecasted but pending tasks with the remaining days/ flight hours/ flight cycles less than or equal to that you specify here.

5. Use the **Part #** drop-down list box to select the part type of the component on which maintenance must be done. The system displays the following options: “Engine", "APU", “Landing Gear" and "Others". You can type the part number reference of the component in the box provided alongside. The part number must match with the selected part type. The system retrieves the tasks with “Job Type” as “Component Removal”, “On-Wing”, or “Off-Wing”. All “Pending” and “Deferred” discrepancies associated with components with the part number reference are also retrieved by the system.

6. Use the **Search On** drop-down list box to select the basis for searching tasks for opportunity maintenance. The drop-down list box displays the following: Task Desc., Trig. Param, Zone #, Position Code, Serial #, MCR#, ATA#, Elapsed Time (Hrs.) <= and, Deferral Type.

In the drop-down list box, select

- Task Desc. and specify the description of the task in the field provided alongside. You may enter the description in full or specify it partially using “*” character. The system retrieves those tasks with descriptions that are similar to what you enter here.
- Trig. Param and specify the triggering parameter for the task in the field provided alongside. You may enter the parameter in full or specify it partially using “*” character. The system retrieves those tasks with the triggering parameter that are similar to what you enter here.
- Zone # and specify the zone number associated with tasks in the field provided alongside. You may enter the zone number in full or specify it partially using “*” character. The system retrieves those tasks with zone number that is similar to what you enter here.
- Position Code and specify the position code associated with tasks in the field provided alongside. You may enter the position code in full or specify it partially using “*” character. The system retrieves those tasks with position code that is similar to what you enter here.
- Serial # and specify the serial number associated with tasks in the field provided alongside. You may enter the serial number in full or specify it partially using “*” character. The system retrieves those tasks with the serial number that is similar to what you enter here. Leave this field blank to retrieve all the pending tasks irrespective of the serial #.
- MCR # and specify the MCR number associated with tasks in the field provided alongside. You may enter the MCR number in full or specify it partially using “*” character. The system retrieves those tasks with the MCR number that is similar to what you enter here. Leave this field blank to retrieve all the pending tasks irrespective of the estimated MCR #.

- ATA # and specify the ATA number associated with tasks in the field provided alongside. You may enter the serial number in full or specify it partially using "*" character. The system retrieves those tasks with the ATA number that is similar to what you enter here. Leave this field blank to retrieve all pending tasks, and pending and deferred discrepancies irrespective of the ATA #.
- Elapsed Time (Hrs.) <= and the estimated elapsed hours for tasks (Decimal) in the second input box. The system retrieves all pending tasks whose estimated elapsed time is less than or equal to the hours specified here. Leave this field blank to retrieve all the pending tasks irrespective of the estimated elapsed time.
- Deferral Type and the deferral type of discrepancies in the second input box. The system retrieves those deferred discrepancies with the deferral type that you select here. Leave this field blank to retrieve all the deferred discrepancies irrespective of the deferral type

7. Use the **Additional Search By** first drop-down list box to select the additional basis of identifying tasks for opportunity maintenance. The drop-down lit box displays Task Type, Task Category, Exe. Phase, Exe. Type, Eng. Doc Type and Work Center #. When you select

- Task Type, the second drop-down list box displays all Active quick codes defined under quick code type "Task Type". The search retrieves all forecasted tasks of the task type that you select in the second drop-down list box.
- Task Category, the second drop-down list box displays all Active quick codes defined under quick code type "Task Category". The search retrieves all forecasted tasks in the task category that you select in the second drop-down list box.
- Exe. Phase, the second drop-down list box displays all Active quick codes defined under quick code type "Exe. Phase". The search retrieves all forecasted tasks whose current phase of execution is the same as that you select in the second drop-down list box.
- Exe. Type, the second drop-down list box displays Major and Minor. The search retrieves all those forecasted tasks with the execution type that you select in the second drop-down list box.
- Eng. Doc Type, the second drop-down list box displays all Active document types defined under the document type "Eng. Doc Type" from the Common Masters component. The search retrieves all those forecasted tasks associated with the engineering document type that you select in the second drop-down list box.
- Work Center #, the second drop-down list displays all the Active work centers with the execution capability set to "Line Jobs", "Hangar" and "Shops" & All". The search retrieves all those forecasted tasks scheduled for execution in the work center that you select in the second drop-down list box.

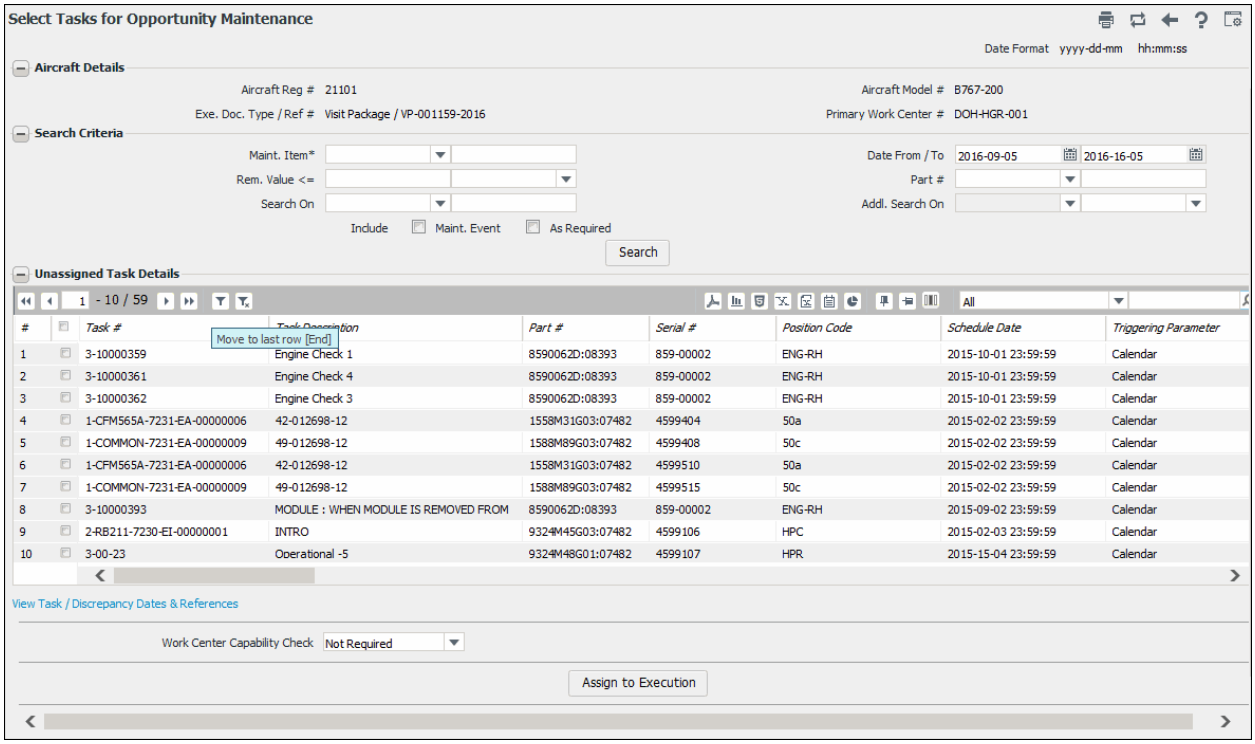

Figure 2.28 Performing opportunity maintenance

Select the following check boxes under “Include”.

8. Select the **Maint. Event** check box to display all the “Maintenance Events” in all the Active maintenance programs of the aircraft reg #.

9. Select the **As Required** check box to display the Tasks which are identified with “Program Item Type” as “As Required” in all the Active Maintenance Programs of the Aircraft Reg # and attached components.

10. Click the **Search** pushbutton, to retrieve the work units based on the above search options.

Note: The system retrieves only the component work units from the “Component Forecast Log” for the attached components of the Aircraft.

The system displays the unassigned work unit details in the multiline.

11. Use the **Work Center Capability Check** drop-down list box to specify whether work center capability check for executing the task is required or not. The system lists the options, “Required” and “Not Required”. If this field is set to “Required”, the system checks for the capability/maintenance type of the work center for the execution of the task. However, if you do not specify the work center for the task, the system checks for the capability/maintenance type of the work center of the execution document. The system allows you to assign the task to the execution document only if one of the above is true. The system displays “Not Required”, by default.

12. Check the box in the multiline to select the work unit.

13. Click the **Assign To Execution** pushbutton, to assign the work units to the specified aircraft maintenance execution/line package.

Note: The system displays an error message, if any other concurrent user attempts to simultaneously modify the details of the work unit selected in the multiline.

For the components involved in “Component Removal” transaction, the system ensures that a restoration work unit has been specified in the “Maintain Restoration Work Units” activity of the “Component Maintenance Program” business component.

The system assigns the selected work units to the aircraft maintenance execution/line package and changes the status of the work units from “Pending” to “Assigned” in their sources.

2.3.3 REVIEWING WORK CENTER LOADING

The user can analyze the skill requirements on a given day for a particular maintenance activity and plan it to the work center, where appropriate skilled resources are available. Also evaluation of employees / resources associated to a work center with different shift patterns can be done.

The planned start date and time and the duration available to complete the maintenance activity are considered.

1. Select the Review Work Center Loading link under the Aircraft Maintenance Planning business component.

Or

2. Select the **Review Work Center Loading** link in the **Review Fleet Maintenance** page or the **Plan Aircraft Maintenance** page. The Review Work Center Loading page appears. *See Figure 2.29.*

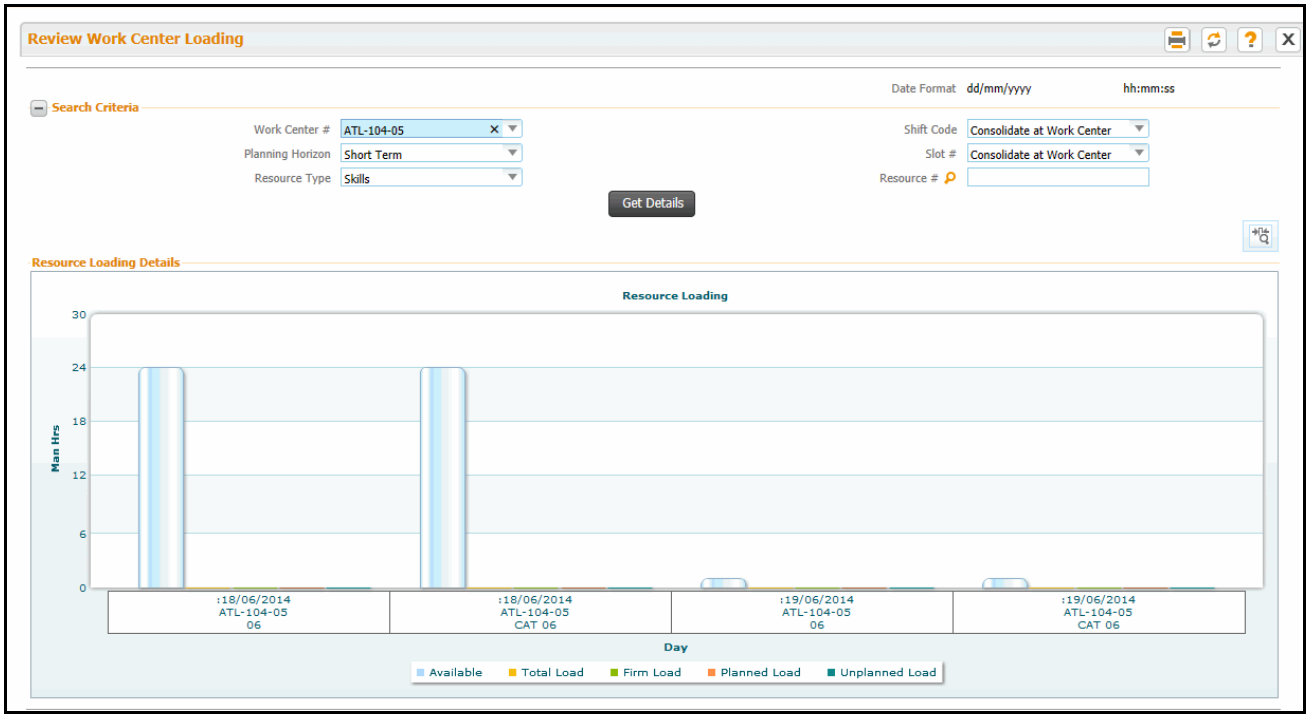

Figure 2.29 Reviewing Work Center Loading

3. Use the **Work Center #** drop-down list box to select the work center for which you want to review the work load. The system lists all the work centers in “Active” status mapped.

4. Use the **Shift Code** drop-down list box to select the shift associated with the work center for which you wish to review the work load. The system lists those shift codes in “Active” status defined for the work center in the Work Center component. In addition to the shifts, the drop-drop list box also lists "Consolidate at Work Center" and "Consolidate at Shift". If you have selected “All Work Centers” in the Work Center # field, the drop-down list displays the "Consolidate at Work Center" as the only option. Use the **Planning Horizon** drop-down list box to select the planning duration for the work center loading. The system lists the options “Long Term” and “Short Term”,

5. Use the **Slot #** drop-down list box to select the slot associated with the work center for which you wish to review the work load. The system lists all those slots in “Active” status defined for the work center in the Work Center component. In addition to the slots, the drop-drop list box also lists "Consolidate at Work Center" and "Consolidate at Slot"

If you have selected “All Work Centers” in the Work Center # field, the drop-down list displays the "Consolidate at Work Center" as the only option.

The chart depicts the resource availability and load for each of the slots applicable on all the days comprising the planning horizon from the system date.

6. Use the **Resource Type** list box to select the type of the resource for which you wish to review the scheduled work center load. The system displays Skill, Equipment, Tools and Others.

7. Enter the **Resource #** for which you wish to review the work center loading. You can specify more than one skill using “-“ separator.

8. Select the **Get Details** push button, to retrieve the details of work center loading

The system displays the Resource Loading Details chart that represents the following information.

- The Y-axis denotes the Man hours available/required for tasks

- The X-axis displays the bar graph for each of the resource/skill for a specific time unit for date range (from the current server date to the number of days comprising the planning horizon). For short term horizon, the resource availability and resource load data is available for hours or days as defined by the Review Unit for Short Term in the Set Options activity. Similarly, for long term planning horizon, resource availability and resource load data is available for days, weeks or months is influenced by the Review Unit for Long Term as defined in the Set Options.

The system evaluates the required hours of a resource by a task against the available Man hours of resource in the work center. The work center load is classified in the following way,

- "Firm load", includes Man hours of a resource scheduled for tasks in "Allocated" status and unplanned tasks allocated to a package.
- "Planned load", includes Man hours of a resource scheduled for tasks in "Planned" status, if planned start and end dates are available.
- "Unplanned load", includes Man hours of a resource scheduled for tasks in "Unplanned" status, if planned start and end dates are not available.

The various bars in the graph represent the availability of a resource against the load as given below,

- The bar: total availability of a resource
- The bar: firm load for a resource.
- The bar: planned load for the resource
- The bar: unplanned load for a resource
- The bar: sum total of planned, unplanned and firm load for a resource

2.3.4 MANAGING AIRCRAFT - EMPLOYEE ASSIGNMENT

Typically, aircraft cabin maintenance is carried in the aircraft during the ground time at the station. A primary employee is identified based on shift availability and assigned either a flight or a package. You can also assign additional employees besides the primary employee to a package or flight.

1. Select the **Manage Aircraft - Employee Assignment** link under the **Aircraft Maintenance Planning** business component. The "Manage Aircraft - Employee Assignment" page appears. *See Figure 2.30.*

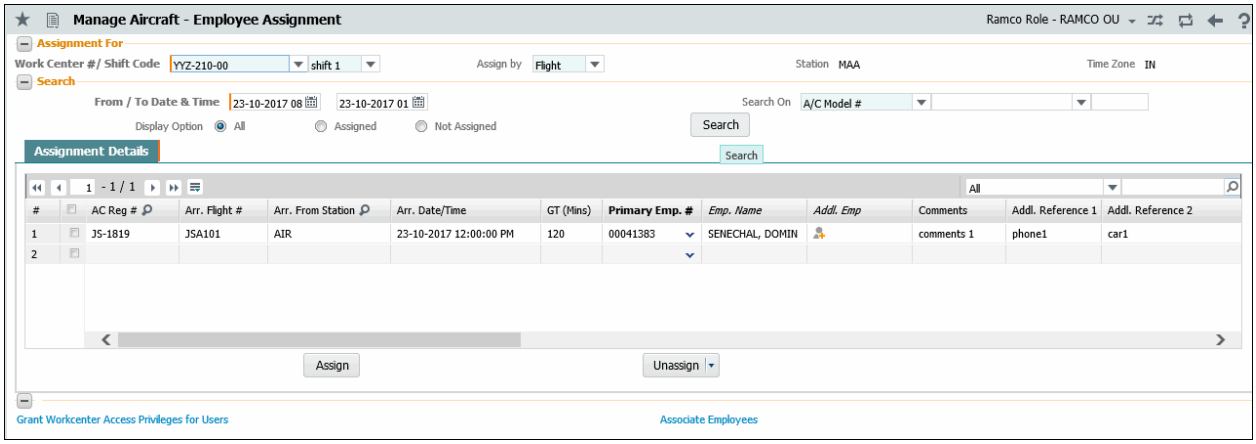

Figure 2.30: Managing employee work assignments

2. In the **Assignment For** group box, use the **Work Center** drop-down list box to select the work center in which the package must be executed. In the next drop-down list box, select the shift in which the employee must complete the assignment.

3. Use the **Assign by** drop-down list box to select the basis on which the employee must be assigned work. The drop-down list box displays Flight and Package.

4. In the **Assignment Details** multiline, enter **AC Reg. #** assigned to the employee as identified by the login user.

5. Enter the arrival flight # of the aircraft assigned to the employee in the **Arr. Flight #** field..

6. Enter the station from which the aircraft is scheduled to arrive in the **Arr. From Station** field.

7. Enter the date and time of arrival of the aircraft as per the local time zone of the station in the **Arr. Date/Time** field.

8. Enter the ground time of the aircraft in minutes in GT (Mins) field.

9. Use the **Primary Emp. #** drop-down list box to select the employee to whom aircraft or package is to be assigned. The drop-down list box displays primary employee # based on the process parameter "Allow Employees for Assignment" defined in the Define Process Entities activity of Common Master.

10. Enter additional information on the assignment in the **Comments** field.

11. Enter details of equipment/vehicle used by the employee for maintenance jobs in the **Addl. Reference 1** and **Addl. Reference 2** fields.

9. Enter the departure flight # of the aircraft assigned to the employee in the **Dep. Flight #** field.

10. Enter the station to which the aircraft is scheduled to depart from the current station in the **Dep. To Station** field.

11. Enter the date and time of departure of the aircraft from the arrival station. In the **Dep. Date/Time** field.

12. Click the **Assign** pushbutton to allocate the flight/package to the employee.

13. Click the **Unassign** pushbutton to withdraw the flight/package from the employee.

Note: If Assigned By is Package, Unassign will be the only value in the drop-down list box. However, if Assign By is Flight, Delete option is also available in addition to Unassign.

On click of the **Unassign** button, the primary employee additional employees and references are removed from the package/flight.

12. Click the **Delete** pushbutton from the drop-down list to remove the assignment record.

Note: If Assign by is Flight, the Scheduled Flight details cannot be deleted or modified though the Adhoc assignment details saved against Aircraft# can be deleted.

To proceed

- Select the **Grant Workcenter Access Privileges for Users** link to record access details for the employee in the selected records.
- Select the **Associate Employees** link to tag the employee in the selected records to a work center.

Assign additional employees to a flight or package

1. Click the **Assign** pushbutton in the **Manage Aircraft - Employee Assignment** page. The "Assign Additional Employees" page appears. *See Figure 2.31.*

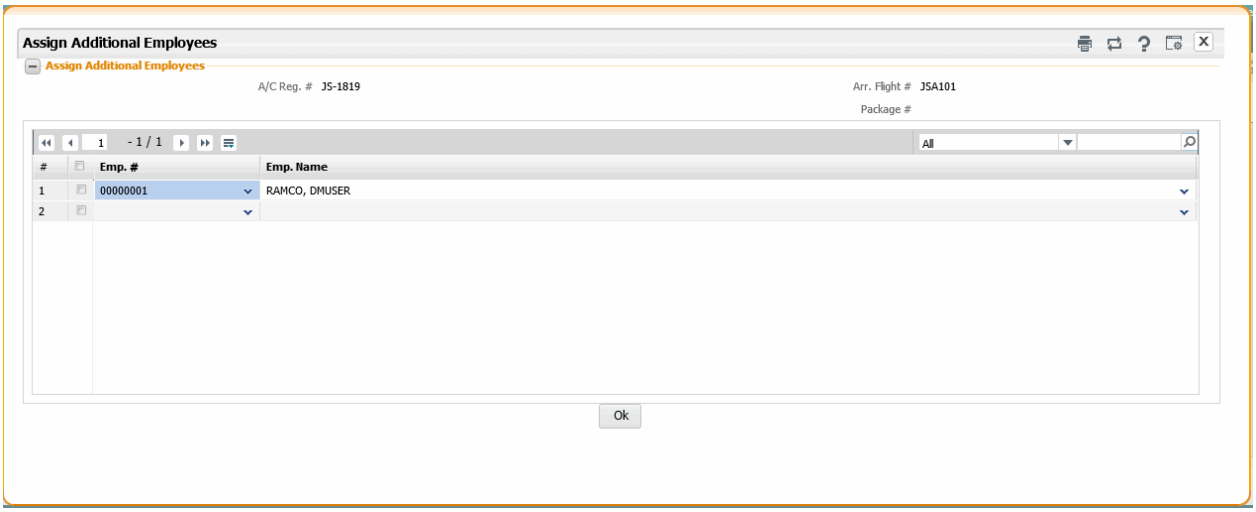

Figure 2.31: Assigning additional employees to flight/package

2. In the multiline, enter **Employee #** of the employee you want to assign to the flight or package.

3. Select the **Ok** pushbutton to save details.

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