RAMCO AVIATION SOLUTION

VERSION 5.8

USER GUIDE

AIRCRAFT / SHOP WORK MANAGEMENT

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The documentation has been provided for the entire Aviation solution, although only a part of the entire solution may be deployed at the customer site, in accordance with the license agreement between the customer and Ramco Systems Limited. Therefore, the documentation made available to the customer may refer to features that are not present in the solution purchased / deployed at the customer site

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 4 chapters and index. Given below is a brief run-through of what each chapter consists of.

Chapter 1 provides an overview of **Aircraft / Shop Work Management** business process. The sub processes are explained in the remaining chapters.

Chapter 2 focuses on the **Work Monitoring & Control** 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" are 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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INTRODUCTION

Aviation industry is maintenance intensive and cannot be compromised due to the airworthiness of the aircraft. Most of the maintenance activities that are to be performed on the aircraft are based on the number of hours for which the aircraft flew and the number of airframe cycles that the aircraft has undergone. Apart from the planned maintenance, any discrepancies observed in aircraft also need to be reported and corrective actions taken accordingly so as to maintain the airworthiness of the aircraft.

The **Aircraft / Shop Work Management** business process comprises the **Work Monitoring and Control** sub process which enables the shop supervisors to plan work for the mechanics/employees and review the status of the tasks. The supervisors perform all the system activities including timesheet booking for the mechanics. This allows the mechanics to work only on the aircraft and reduce their system activities.

WORK MONITORING AND CONTROL

The Work Monitoring and Control sub process enables the shop supervisors to plan work for the mechanics/employees and review the status of the tasks. The main objective is to make it possible for the mechanics to work only on the aircraft, and reduce their system activities. The supervisors perform all the system activities, including timesheet booking for the mechanics.

The tasks are grouped into a package in the "Aircraft Maintenance Planning" business component. The grouped tasks are retrieved and the start date and end date for the execution of the tasks are assigned by the supervisor.

The **Work Monitoring and Control** business component enables the supervisor to accomplish the following:

- Plan work for the employee.
- Assign work to the employee.
- Perform timesheet booking for the employees.
- Review the work-in progress.
- Report actual work details of the employee.
- Modify the timesheet.

2.1 MANAGING WORK ASSIGNMENTS AND REPORTING

This activity enables the shop supervisors to plan work for the mechanics/employees and review the status of the tasks.

1. Select the **Manage Work Assignments and Reporting** link under the **Work Monitoring and Control** business component. The **Manage Work Assignments and Reporting** page appears. *See figure 2.1.*

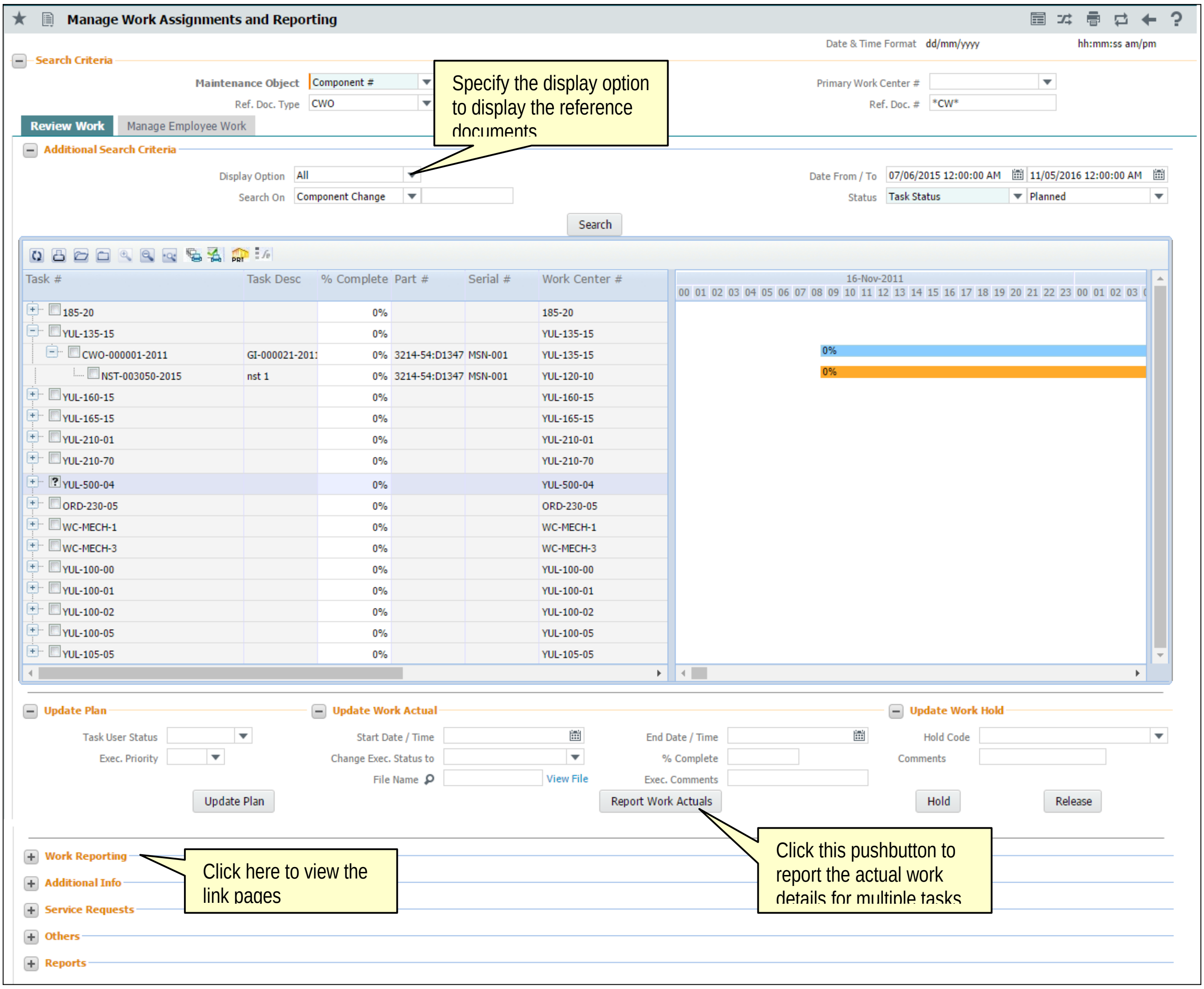

Figure 2.1 Managing work assignments and reporting

2. In the **Search Criteria** group box, select the **Maintenance Object** as ‘Aircraft Reg #’, ‘Part # / Serial #’ or ‘Component #’ and enter values in the editable box, corresponding to the option selected.

3. Select the “Review Work” tab to review the status of the task in the corresponding package.

4. Select the “Manage Employee Work” tab to assign work and perform timesheet booking for the employee.

2.1.1 REVIEWING THE WORK OF THE EMPLOYEE

The tasks which are grouped into a package in the **Aircraft Maintenance Planning** business component are retrieved in this tab and the start date and end date for the execution of the tasks are assigned by the supervisor. The supervisor can perform the following using this tab:

- Plan the work for the employee using the Gantt chart.
- Go to the Manage Employee Work tab and assign the work to the employee and book the hours the employees spent on the task. You can also modify the booked timesheet details, if required.
- Revisit the Review Work tab and review the progress of each task.
- Update the actual work details of the employee for multiple tasks.
- Change the status of the task to "Completed" if the assigned task is completed.
- Hold or release the task.

5. Select the **Review Work** tab in the **Manage Work Assignments and Reporting** page. *See figure 2.2.*

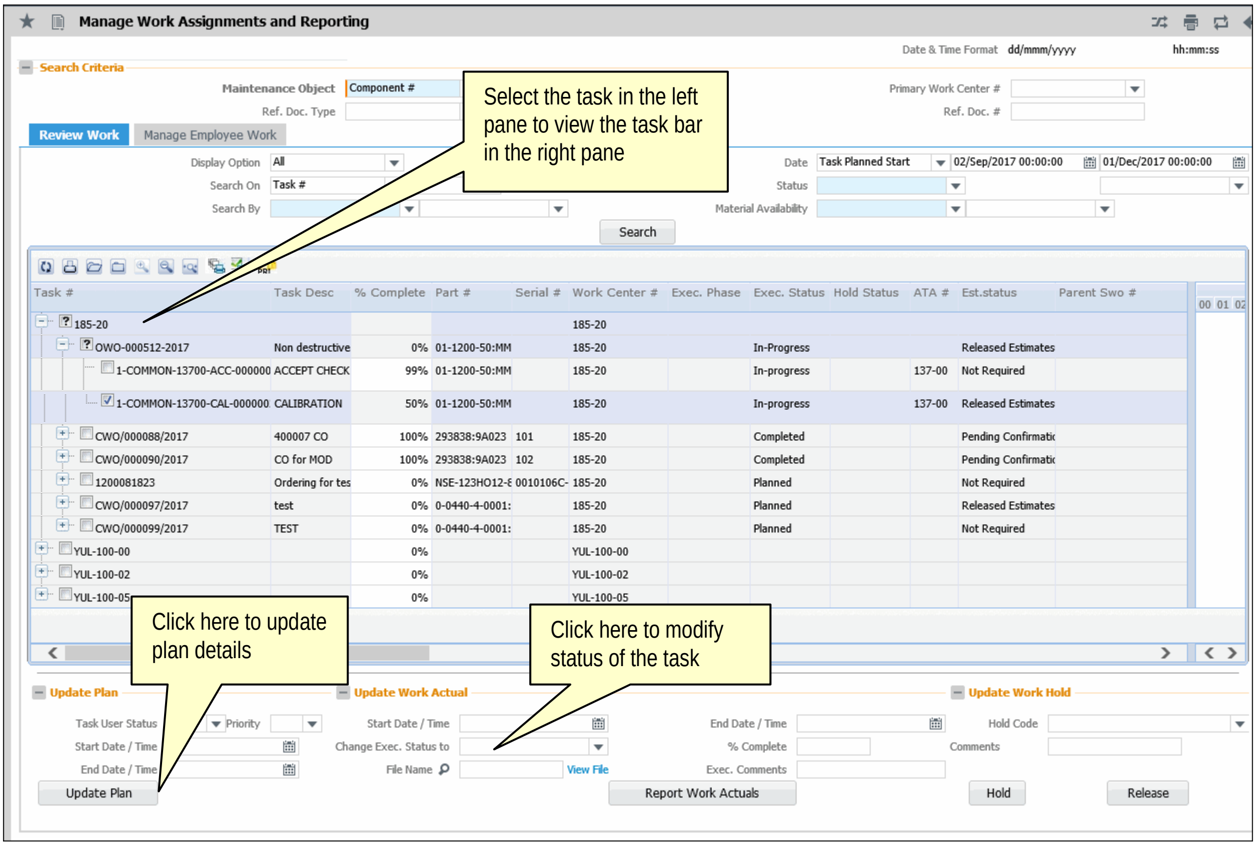

Figure 2.2 Reviewing work of employees

6. In the **Additional Search Criteria** group box, select the **Display Option** to display the reference documents and tasks in the Gantt Chart. The system provides the following options:

- "All" - Select this option to display all the tasks whose Plan Start Date fall within the From / To date range.
- "Delayed Start" - Select this option to display the reference documents and the associated tasks whose Actual Start Date / Time is greater than the Plan Start Date / Time. The details are displayed only at task level.
- "Delayed End" - Select this option to display the reference documents and the associated tasks whose Actual Start Date / Time, Actual End Date / Time and server

Date / Time are greater than the Plan End date / Time. The details are displayed only at task level.

Note: The system displays only those reference documents that are in "Planned", "In-Progress" and "Completed" statuses.

7. Use the **Date** drop-down list box to select the date type of the period for which you want to retrieve records. The drop-down list box displays the following: Task Planned Start, Task Planned End, Doc. Planned Start, Doc. Planned End, TAT End, Customer Required and Promised Delivery. Next, enter the start and end dates of the period for which you want to retrieve shop work orders and packages based on the selected date type.

1. Select the **Search On** based on which the task details are retrieved and displayed in the corresponding search details multiline. The system lists different sets of values based on the "Maintenance Object" and 'Display Option' selected An editable box is provided alongside in which the values corresponding to the item selected in the drop-down list box are to be entered.

2. Select **Doc. Status**, **Task Status** or the **Hold Status** of the task from the **Status** drop-down list box. In the next drop-down list box, select the status of the tasks/documents that you wish to retrieve in Gantt.

8. Use the **Search By** drop-down list box to select **Doc Class**, **Doc. Priority** or **Task Exec. Priority** by which you want to retrieve tasks/discrepancies. Enter the value for the selected attribute in the adjacent input box. The tasks/documents with attribute values that you specify here are retrieved in Gantt.

9. Use the **Material Availability** drop-down list box to indicate whether you want to retrieve documents or tasks in specific material status. To retrieve documents/tasks in specific material status, select the material status from the next drop-down list box. The drop-down list box displays the following: Not Requested, Not Available, Partially Available and Available.

10. Click the **Search** pushbutton.

The system displays a "Gantt Chart" which is divided into two panes.

Left Pane of the Gantt Chart

The aircraft for which the maintenance activities are planned for a specified date range can be retrieved and displayed in the left pane in the Gantt chart. The maintenance supervisors can now plan the work for the mechanics. The following details are displayed in the left pane at different levels: *See figure 2.3.*

- Work Center #
- Aircraft Reg #
- Execution Document #
- Task #

For each execution document, the system displays various columns such as Task #, Task Description, Seq #, Tracking #, % Completed, Part #, Serial #, Work Center, Exec. Phase, Exec. Status, Hold Status, ATA #, and Est. Status #. *See Figure 2.3.*

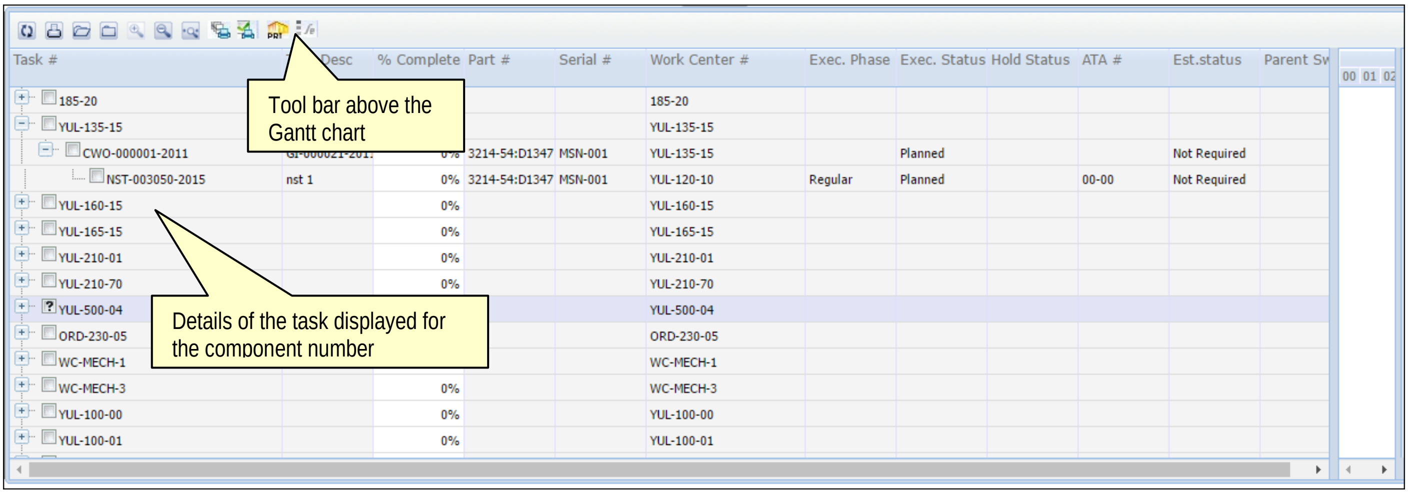

Figure 2.3 Reviewing work-Task details displayed at left pane of Gantt chart

Right Pane of the Gantt Chart

On clicking each task appearing on the left pane, the Planned Start date and Planned End Date of the corresponding task appear as bar in the right pane. The user can change the Planned Start Date and Planned End Date by shifting the position of the bar across the Gantt Chart. *See figure 2.4.*

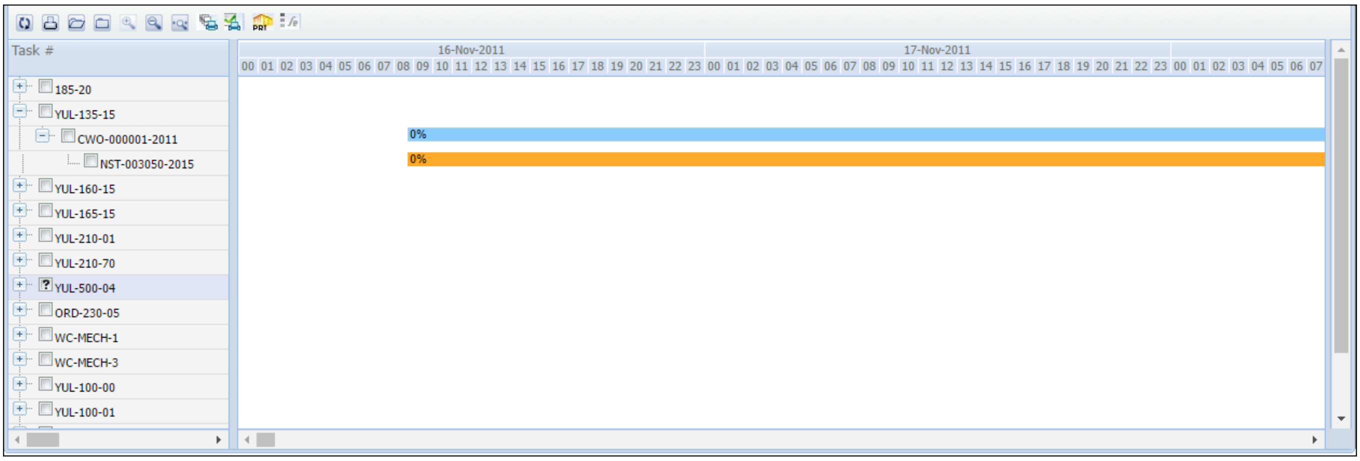

Figure 2.4 Reviewing work-Task details displayed at right pane of Gantt chart

After reporting work actuals in the "Manage Employee Work" tab page, the actual work execution details are displayed in the Gantt chart as bars in different colors as shown below:

40	Indicates the percentage of work completed.
	Indicates the total planned duration for completing the task. The percentage of work completed is displayed within this bar as digits.
	Indicates the actual time booked by the employee
	Indicates the document level planned bar.

Note: Ensure that the "Plan Start Date & Time" is not modified for the tasks which are in "In-Progress" status, and both the "Plan Start Date & Time" and "Plan End Date & Time" are not modified for the tasks which are in "Completed" status.

The Bar Chart displays the task details either at the "Primary Work Center Level" or "Execution Work Center level". By default, the details are displayed at the "Primary Work Center Level". You can use the toggle button provided in the tool bar above the Gantt chart, to change the display level from "Primary Work Center Level" ( ) "**Tool bar displayed above the Gantt Chart**

The various icons displayed in the tool bar above the Gantt chart are as shown:

	Reload Grid, Cancel Changes
	Print Grid
	'Expand All Rows' - Expands or s the nodes under the work center.
	'Collapse All Rows'
	'Zoom In' - Displays the task schedule details day-wise.
x	'Zoom Out' - Displays the task schedule details month-wise and year wise.
	Zoom to fit page
	'Print' - Prints the details displayed in the Gantt Chart.
	'Print Package' - Prints the package document in PDF format.
	'Selective Print' - Launches the ePublications entry point screen.
	'Primary Work Center Toggle button' - Displays the task details at Primary work center level.
	Legends

11. In the **Update Plan** group box, enter the status of the time lag for the task to go to the next stage of execution in the **Task User Status** drop-down list box.

12. Use the **Task User Status** drop-down list box to specify the status of the time lag for the task to go to the next stage of execution. The system lists the options as follows:

o If "Aircraft Reg #" is selected as the "Maintenance Object" in the "Search Criteria" group box, the system lists all the all the active quick codes defined for the quick code type "Task User Status" in the "Flight Log" business component.

o If "Part # / Serial #" or "Component #" is selected as the "Maintenance Object" in the "Search Criteria" group box, the system lists all the quick codes defined for the user status in shop Work Order

13. Use the **Priority** drop-down list box to specify the priority of execution of the task for which you wish to modify status.

14. Enter **Start Date & Time** and **End Date & Time** as scheduled for the execution of the task.

15. Click the **Update Plan** pushbutton to update the plan details.

16. In the **Update Work Actuals** group box, enter the Start Date / Time, and End Date / Time of execution of the task.

Note: The system allows modification of the "Start Date / Time" and "End Date / Time" only for tasks which are in "Planned" status.

17. Use the **Change Exec. Status to** drop-down list box to change the status of the task as "In-Progress", "Completed", "Closed", "Cancelled" or "Pre-Closed".

18. Enter the **% Complete** of the task execution, and the **File Name** which contains the task execution.

19. Enter any remarks regarding the reason for change in the status of the task in the **Exec. Comments** field.

20. Click the **Report Work Actuals** pushbutton to modify the status of the task.

21. In the **Update Work Hold** group box, select the **Hold Code** associated to the 'hold' of the task and specify the **Comments** related to the tasks that are on hold.

22. Click the **Hold / Release** pushbutton to hold or release the task.

Note: Ensure that your role has been mapped for releasing a hold and "All Roles" is specified as the value for the parameter ""Release Responsibility Roles' in the "Define Process Entities" activity of the "Common Masters" business component.

You cannot update the task plan or report the 'Work Actuals', when the task is on hold.

To proceed further,

- Select the icon to expand the **Work Reporting** group box to view the link pages:
- Select the **Record Part Consumption** link to record the part consumption details.
- Select the **Record Work Hold** link to record the details of the tasks that are on hold.
- Select the **Report Fuel / Oil Log** link to enter the fuel and oil consumption details
- Select the **Record Parameter Reading / Cond. Eval. Form** link to record the parameter values and conditional evaluation details of the parameters.
- Select the Report Resource Estimates / Actuals link to update resource actual information.
- Select the **Record Signoff & Work Completion** link to sign-off the tasks and sub tasks in bulk.
- Select the **Return Parts** link to return parts to the warehouse after completion of task.
- Select the **Issue Certificate of Maintenance** link to issue the certificate of maintenance (CoM) for the Execution Ref #.
- Select the **Bulk Material Request** link to plan for the material required for executing the task/ package.
- Select the **Revise Deferral Limits** link to revise the deferral limits set for the discrepancy.
- Select the **Create Maintenance Return** link to create a maintenance return document
- Select the Perform Opportunity Maintenance link to perform opportunity maintenance.
- Select the icon to expand the "Additional Info" group box to view the link pages
- Select the Edit Discrepancy Additional Information link to modify the discrepancy additional information.
- Select the **Edit Package Additional Information** link to modify the additional information of the package.
- Select the **Edit Task Additional Information** link at the bottom of the page to modify the additional information of the task.
- Select the **Edit / Authorize Labour Hours** link to modify / authorize labour hour details.

- Select the ⊞ icon to expand the **Service Requests** group box to view the link pages:
- Select the **Track Response** link to record details of any request raised by an employee and track the response to the requests.
- Select the **Create Eng. Service Requests** link to create and confirm an engineering request (ESR).
- Select the **View Engg. Advice Note** link to select an engineering advice note (EAN) for viewing.
- Select the ⊞ icon to expand the “Others” group box to view the link pages:
- Select the **View Task** link to view the details of the task.
- Select the **View Discrepancy** link to view discrepancy information.
- Select the **View Task Date & References** link to view details of reference documents and date of completion of tasks.
- Select the **View A/C Maint. Exe. Ref. #** link to view the A/C maintenance execution reference details.
- Select the **Author Repair Procedure** to modify the non-standard task details.
- Selec the View Comments Information link to view comment information.
- Select the **Check Part Availability** link to view details of part availability in the warehouse.
- Select the **View Associated Doc. Attachments** link to view the associated document attachments**.**
- Select the **Upload Documents** link to upload the documents
- Select the ⊞ icon to expand the “Reports” group box to view the link pages:
- Select the **Manage Tear Down Report** to generate a report containing the details of the maintenance activities carried out on a part.
- Select the **Part Tag Report** link to tag the condition of a part.
- Select the Record Parameter Reading / Cond. Eval. Form link to record the parameter values and conditional evaluation details of the parameters.
- Select the **Edit / Authorize Labor Hours** link to modify and authorize the details of the labor hours recorded against aircraft maintenance execution documents.
- Select the **Author Repair Procedure** link to author the repair procedure details for Non standard tasks.
- Select the **Check Part Availability** link to check the availability of the parts across warehouses.
- Select the **Create Engg. Service Request** link to create an engineering service request.
- Select the **View Engg. Advice Note** link to view the engineering advice note.
- Select the **View Comments Information** link to view the comments such as assignment Comments, employee comments, execution comments or sign-off comments.
- Select the **View Task Dates & References** link to view the task / discrepancy date and reference details.
- Select the **View Discrepancy** link to view the discrepancy details.
- Select the **View A/C Maint. Exe. Ref. #** link to view the A/C maintenance execution reference details.

- Select the **View Task** link to view the task details.

2.1.2 RECORDING PARAMETER DETAILS AND CONDITIONAL EVALUATION DETAILS FOR THE TASK

Engineering Change Management is a very critical and essential part of Aircraft Maintenance. Most of the engineering changes are very complex in nature and often needs lot of evaluation and follow-up. Consequentially, it is vital that the information systems employed, guide other related functions viz., Maintenance Planning & Production control, through various steps they need to take for effective completion of engineering change initiated, thus ensuring seamless information flow for effective decision making.

Some of the maintenance inspections trigger multiple tasks based on set of conditions defined as part of the task card definition and authoring process. During execution of the main task, mechanic performs the inspection and fills up the evaluation form. Based on the evaluation, another set of task has to be triggered. The planner has to manually

review the post compliance follow-up instructions and execution details, to arrive at the next set of action.

The set of post conditional triggers can be captured in this screen. Based on the post-compliance value provided during execution, system can automatically perform the needed post compliance triggering action without manual intervention for analyzing the execution comments and deriving the post compliance action needed.

1. Select the **Record Parameter Reading / Cond. Eval. Form** link from any of the following business components:

- Work Monitoring and Control: “Review Work” tab of the “Manage Work Assignments and Reporting” activity.
- Aircraft Maintenance Execution: “Record Aircraft Maintenance Execution Details” activity.
- Shop Work Order:
  - “Record Shop Execution Details” activity.

The **Record Parameter Reading / Cond. Eval. Form** page appears. *See figure 2 5.*

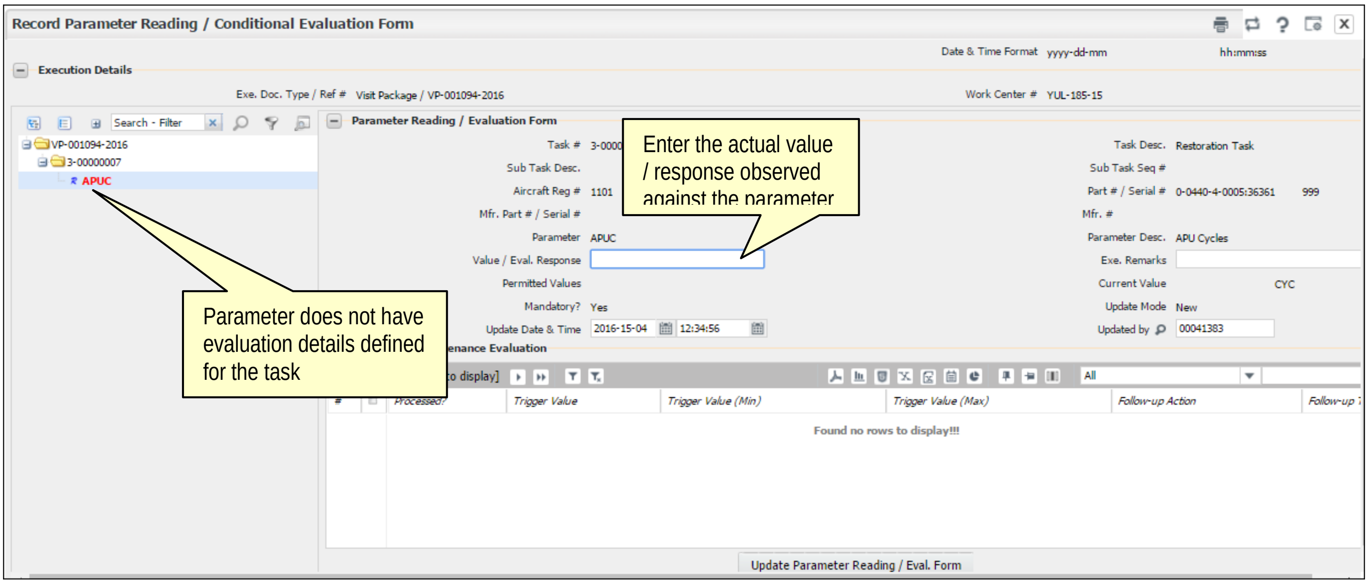

Figure 2 5 Recording parameter details and conditional evaluation details

The system displays the Exe. Doc. Type / Ref # and the Work Center # in the Execution Details group box.

Tree Structure

The system displays a tree structure in the left pane. The tree will have the 'Execution Doc. #' as the parent node (level). All the nodes of the tree are displayed in an exploded form. The various nodes displayed in the tree are as follows:

First (Parent) node: Execution Doc. #: The package, shop work order or the aircraft maintenance execution document against which the tasks are performed on an aircraft / engine.

Second node: Task # which have parameter requirements defined at task and / or at sub-task levels.

Third node:

- Parameter(s) mapped for the task (Parameters are listed in the same order as defined for the task in the "Edit Parameter Reading / Eval. Form' page of the "Maintenance Task'" business component).
- Sub Task Description which has parameter requirements. This is displayed in an order as per the Sub Task Seq #.

Fourth Node: Parameter mapped at each of the sub task level (Parameters are listed in the same order as defined for the task in the "Edit Parameter Reading / Eval. Form" page of the "Maintenance Task" business component).

For the parameter with and without conditional evaluation requirements, the nodes are represented with different symbols as shown below:

- Indicates that the parameter has evaluation details defined for the task or sub tasks in the "Maintenance Task" business component.

- Indicates that the parameter does not have evaluation details defined for the task or sub tasks in the "Maintenance Task" business component.

Parameter Node with and without Value / Eval. Response:

When the parameter information is displayed in the tree interface, if the 'Value/ Eval. Response' is already defined for that parameter, the saved 'Value / Eval. Response' value is displayed along with the parameter, concatenated by "::", in

'Bold Blue' font. If the 'Value/ Eval. Response' is not defined for the parameter, the parameter node is displayed in 'Bold Red' font.

Example:

If the 'Exec. Doc #' is HVY-003482-2010, 'Task #' is 53A0051-HFEC, 'Sub Task Desc.' is "Inspection of Crack Length" and 'Parameter' is "Length". The tree structure is displayed as follows:

Without Value / Eval. Response:

HVY-003482-2010

|

53A0051-HFEC

|

Inspection of Crack Length

|

Length

With Value / Eval. Response:

HVY-003482-2010

|

53A0051-HFEC

|

Inspection of Crack Length

|

Length :: 5mm

Parameter reading / conditional evaluation details:

2. On clicking the "Task #" and "Sub Task #" nodes in the tree interface, the system displays the details in the Parameter Reading / Evaluation Form" group box and in the "Conditional Maintenance Evaluation" multiline, in the right pane.

3. The system displays the following fields in the **Parameter Reading / Evaluation Form** group box:

- Task #
- Task Desc.
- Sub Task Desc.
- Sub Task Seq #
- Aircraft Reg #
- Part # / Serial #
- Parameter

- **Parameter Desc.**
- **Permitted Values** defined for the 'Task # - Sub Task Seq # - Parameter' combination
- Current Value of the parameter
- **"Mandatory?"** which Indicates whether the Value / Eval. Response recording is mandatory or not for the parameter.
- **Update Mode** of the parameter

4. Enter the **Value / Eval. Response** value indicating the actual value / response observed against the parameter as part of the compliance of the task.
5. Enter the execution remarks in the **Exe. Remarks** field.
6. Enter the date and time at which the parameter details are updated in the **"Update Date & Time"** field.
7. Enter the employee code of the login user who updated the parameter details in the **Updated by** field.
8. In the Conditional Maintenance Evaluation multiline, the system displays the Processed?, Trigger Value, Trigger Value (Min), Trigger Value (Max), Follow-up Action, Follow-up Task #, Records Follow-up Instructions and Evaluation Remarks.
9. Click the **Update Parameter Reading / Eval. Form** pushbutton to update the parameter reading details and conditional evaluation details for the task.

2.1.3 MANAGING EMPLOYEE WORK

The supervisors can assign work to the employee, book the timesheet and report the actual work details. As a supervisor, you can carry out the following:

- Search for the reference document specific to the aircraft registration number. The system displays the tasks that are mapped to the document.
- Map the employee for each combination of reference document and the task number.
- Enter the assignment details such as start date / time, end date / time, assignment comments, employee comments, etc.
- Select the **Update Mode** as "Assignment" and click the **Update Details** pushbutton.
- Book the timesheet for the employee and modify the timesheet details.
- Select the **Display Option** and **Update Mode** as "Work Actuals" and click the **Update Details** pushbutton to update the actual work details of the employee at task level.

3. Select the **Manage Employee Work** tab in the **Manage Work Assignments and Reporting** page. *See figure 2.6.*

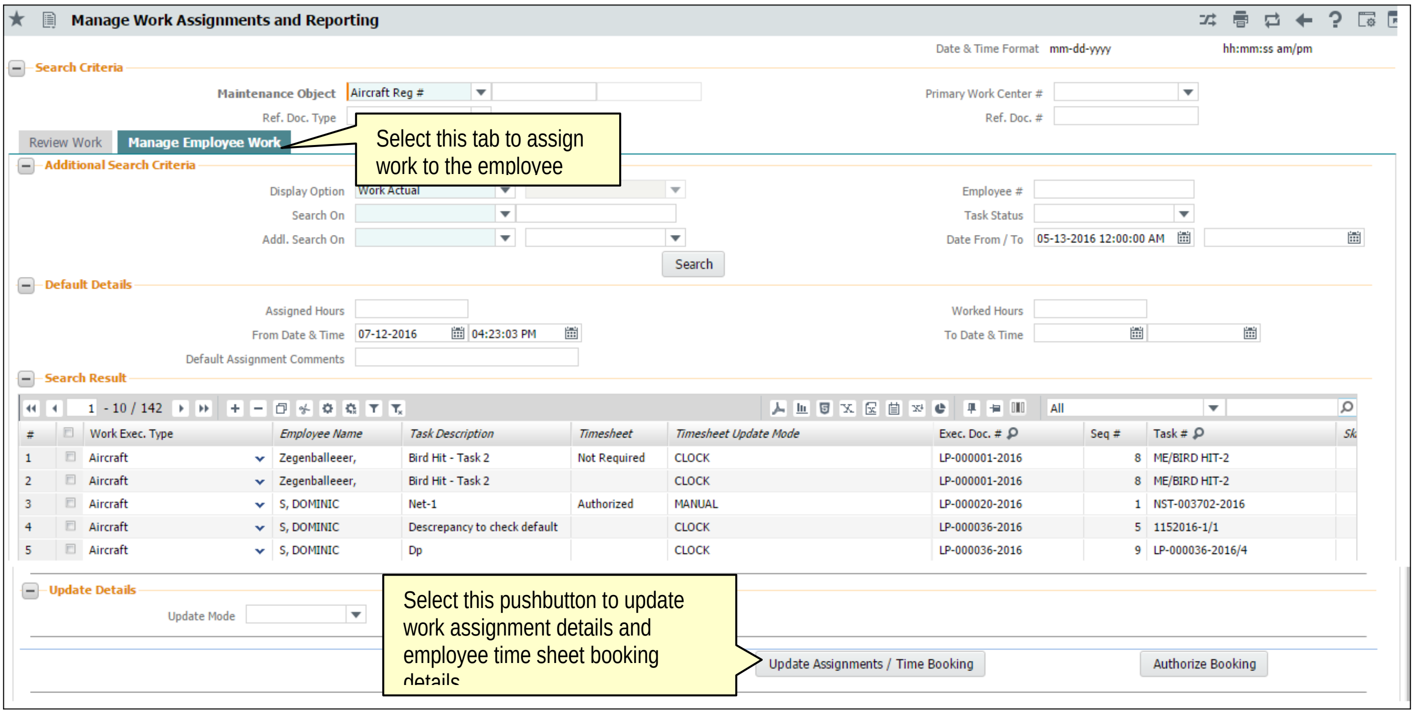

Figure 2.6 Managing employee work

4. In the **Additional Search Criteria** group box, select the **Display Option** as "New Updates", "Assigned Records", "Work Actuals" or "New Assignments", for displaying the work assignment details in the multiline. If "New Assignments" is selected here, a secondary drop-down box is displayed alongside, which lists one of the values "Task #", Skill", "Zone #", "Work Area #" and "ATA #", based on the value of the process parameter 'Default Assignment by' set for 'All Packages' in the "Define Process Entities" activity of the "Common Master" business component.

5. Enter **Employee #**.

6. Select the **Search On** based on which the task details are retrieved and displayed in the corresponding search details multiline. The system lists different sets of values based on the "Maintenance Object" and 'Display Option' selected An editable box is provided alongside in which the values corresponding to the item selected in the drop-down list box are to be entered.

7. Select the **Task Status** as "Planned", "In-Progress", "Incomplete", "Deferred" "Completed", "Pre-Closed", "Closed" or "Planned & In-Progress".

8. Specify the **Task Category** and the **Exec. Phase** of the task. The Execution Phase may be "Post Flight", "Preparatory" or "Regular".

9. In the Default Details group box, enter the Assigned Hours, Worked Hours, From Date & Time, and To Date & Time and Default Assignment Comments and click the Search pushbutton.

10. In the **Search Results** multiline, select the **Work Exec. Type** as Aircraft or Shop and enter the **Exec. Doc. #**, **Seq #**, **Task #** and **Employee #**.

11. Enter the **From Date**, **From Time**, **To Date** and **To Time** indicating the work assignment date and time or actual start / end date and time, based on the **Update Mode** selected.

12. Enter the Assigned Hours, Worked Hours, Repair Classification, Attendance Type, I-Direct Category, Assignment Comments and Employee Comments.

*Note: You must enter the **Assignment Comments** either in the multiline or in the **Default Details** group box.*

13. Enter the current date and time in the **Updated Date Time** field.

14. Enter the name of the supervisor who authorized the time sheet bookings in the **Updated By** field and the remarks in the **Update Remarks** field.

15. Select the **Update Mode** as “Assignment” or “Work Actuals”, in the **Update Details** group box.

16. Select the **Update Assignments** pushbutton to update work assignment details for the employee.

✐ *Note: You cannot update assignment details for the ‘Work Exec. Type’ set as “Shop”.*

17. Click the **Update Assignments / Time Booking** pushbutton to update work assignment details and employee time sheet booking details.

✐ *Note: This button is not visible, if the Display Option is selected as “New Assignments” in the Additional Search Criteria.*

✐ *If the “Update Mode” is “Assignment” and if the Execution Status of any one of the tasks selected in the multiline is "Draft", “Duplicated”, “Routed for Repair”, "Closed" or "Pre Closed" status, the system does not allow you to update assignments.*

18. Click the **Authorize Booking** pushbutton to authorize the timesheet booking details for an employee.

2.2 RECORDING WORK HOLD DETAILS

This activity allows you to put documents and tasks on hold for a particular duration. Tasks can be put on hold due to various business reasons, such as non-availability of a part or non-availability of a resource. Only those tasks that are in “Fresh”, “Planned” “In-Progress” and “Completed” statuses can be put on hold. You can capture the hold details at task level or at document level. You can also release the documents and tasks which are ‘held’.

You cannot perform any action on the tasks that are on hold. For e.g. you cannot change the status, update task plan, record timesheet or create a material request for these tasks.

1. Select the **Record Work Hold** link in the **Review Work** tab of the **Manage Work Assignments and Reporting** activity. The **Record Work Hold** page appears. *See figure 2.7.*

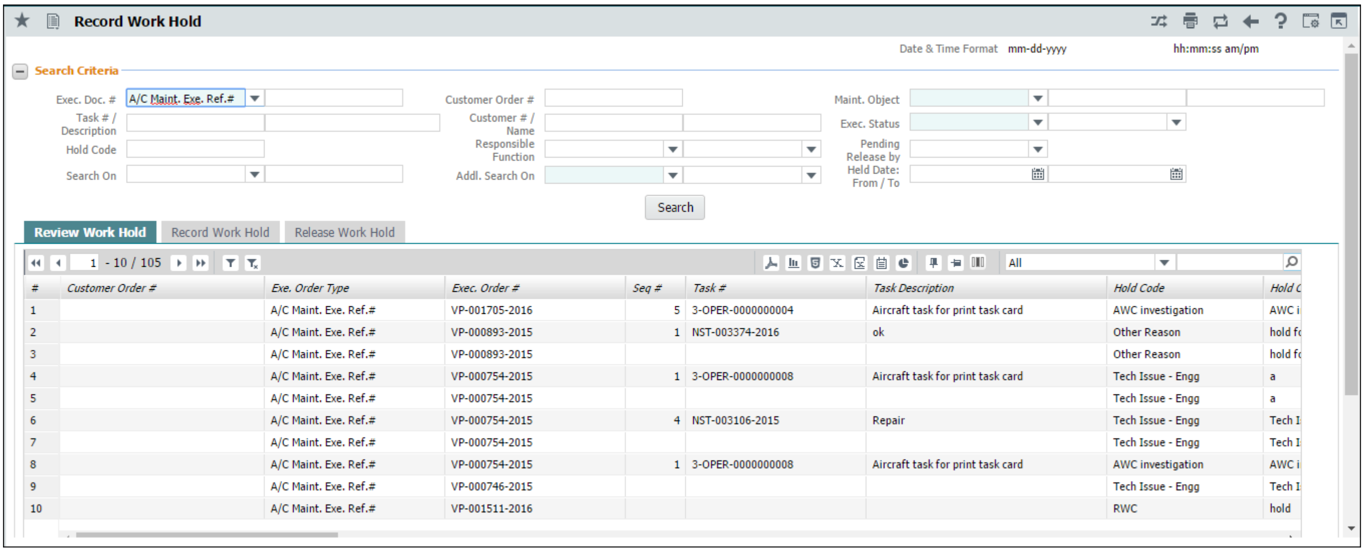

Figure 2.7 Reviewing work hold details

2. In the Search Criteria,
3. Enter the **Exec. Doc. # and the other search criteria details** and click the **Search** pushbutton to retrieve the search details in the multiline.
4. Select the Review Work Hold tab page to view all the tasks and associated customer orders and shop work orders put on work hold and released.
5. Select the Record Work Hold tab page to record work hold details.
6. Select the Release Work Hold tab page to release work hold put previously.

2.2.1 REVIEWING WORK HOLD DETAILS

In this section you can view details of work order, customer order and the associated tasks put on hold as well as those that are released.

2.2.2 RECORDING WORK HOLD DETAILS

In this tab page, you can record the hold details for a document or a task /shop work order and can also retrieve hold details that are previously defined. You can record hold details such as hold code associated to the hold, duration of hold, permitted delay duration. Only those tasks that are in Fresh, Planned and In-Progress, Completed statuses can be put on hold. *See figure 2.8.*

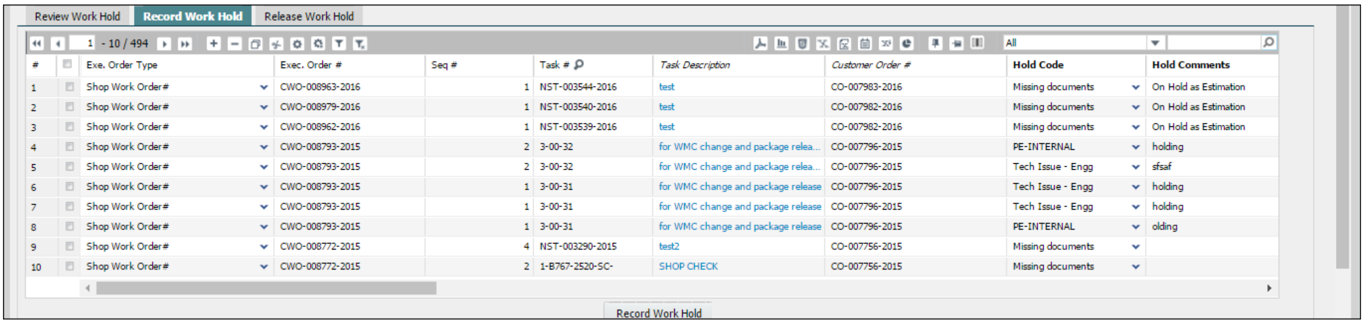

Figure 2.8 Recording work hold details

7. Use the **Exe. Order Type** drop-down list box to select the execution document for which you wish to record work hold details.

8. Use the drop-down list box to select the **Hold Code** and enter any additional comments relating to the hold in the **Hold Comments** field.

9. Enter the **Initiated By** for the person responsible for initialing work hold.

10. Enter **Released By for** the person responsible for releasing the work hold

11. Click the **Record Work Hold** pushbutton to record the hold details for the task. You can also release the held task.

2.2.3 RELEASING WORK HOLD

This page enables you to view the tasks on hold, which can be released. The system displays **Exe. Order Type**, **Exec. Order #**, **Task #**, **Hold Code**, **Hold Level**, **Hold Category**, **Released By** and other details in this tab. *See figure 2 9.*

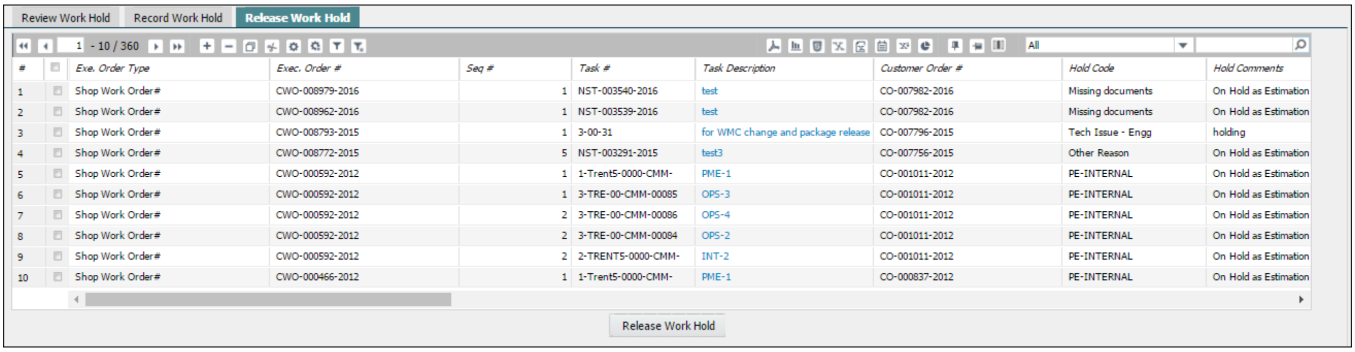

Figure 2.9 Releasing work hold details

12. Click the **Release Work Hold** pushbutton to release hold on tasks.

2.3 RECORDING WORK ESTIMATES

This activity provides an overview of the estimation status of all the execution documents e.g. shop work orders and AME documents. You can retrieve the packages and parent / and child work orders for which estimates are available. Both external work orders and internal work orders can be retrieved in this page. Internal work orders are those that are basically created for MRO use, whereas external work orders are customer based. For the execution documents retrieved, you can view the estimation status at task level and confirm the estimates.

You can also retrieve the actual parts and resources utilized for the execution of the task. You can estimate the number of parts and/or resources required by the mechanic for completing each task. After the estimation is complete, you can confirm the part and resource estimates. On confirming the estimation, if the work order has a customer order reference, a quotation service will be triggered.

You can also estimate the charges for the tasks in the work order.

This activity allows you to accomplish the following:

- Retrieve AME documents and SWO documents for which estimates are available and for which estimates are to be done.
- View the estimation status of the execution documents.
- View estimation status at task level.
- Retrieve actual parts / resources utilized for task execution.
- Estimate parts / resources required for executing tasks.
- Confirm part / resource estimates.
- Estimate charges for the tasks within the work order.

2.3.1 RECORDING WORK ESTIMATES

1. Select the **Record Work Estimates** activity under the **Work Monitoring and Control** business component. The **Record Work Estimates** page appears.
2. Enter the **Search Criteria** to retrieve the work orders in the multiline.

Note: You can specify the customer number and the customer name if you wish to retrieve external work orders.

3. In the **Display Option** field, select one of the following radio buttons:
    - **Top Assly. Work Orders -** Select this radio button, if you wish to display only the parent work orders.
    - **All Work Orders -** Select this radio button, if you wish to display both the parent work orders and the child work orders.
4. Click the **Search** pushbutton to retrieve the **Search Results** in the multiline.
5. Click the hyperlinked execution document number in the multiline. The **Edit Work Estimates** page appears. *See figure 2.10.*

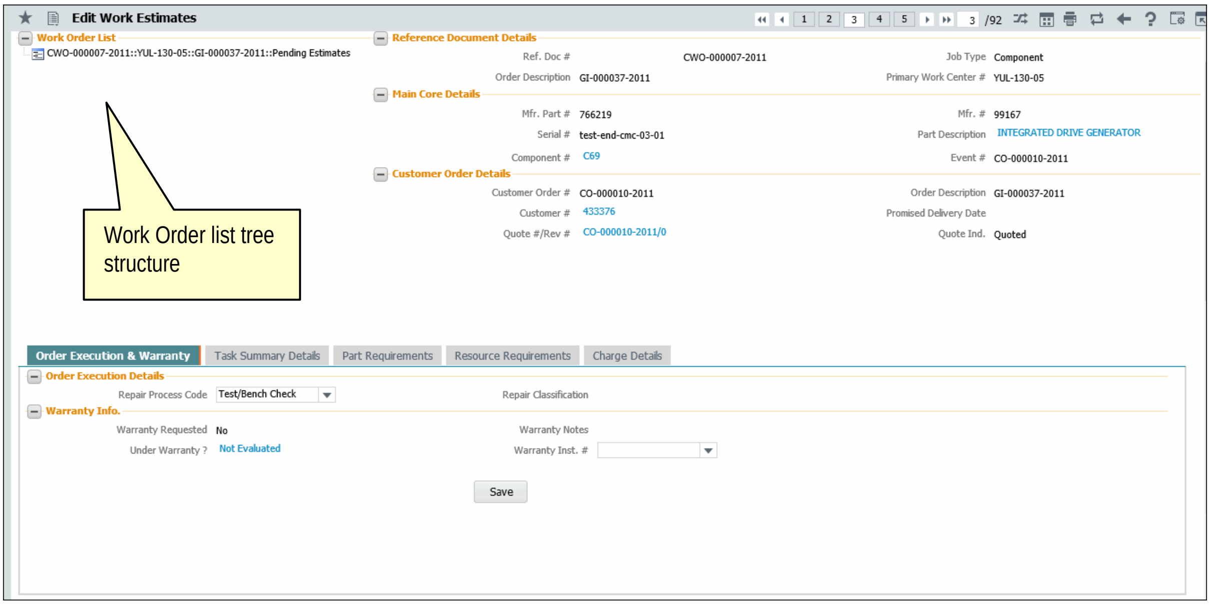

Figure 2.10 Recording work estimates

Work Order List Tree

The system displays the "Work Order List" tree in the left pane, which displays the execution document selected in the "Record Work Estimates" page, and its child work orders. The Package # / parent shop work order is displayed as the first level node. The child work orders are displayed as sub-nodes under the following folders:

- Pending Estimates: All the child work orders whose estimation status is "Pending Estimates", are displayed under this folder.
- Pending Confirmation: All the child work orders whose estimation status is "Pending Confirmation", are displayed under this folder.
- Pending Re-estimates: All the child work orders whose estimation status is "Pending Re-estimates", are displayed under this folder.
- Confirmed Estimates: All the child work orders whose estimation status is "Confirmed Estimates", are displayed under this folder.
- Released Estimates: All the child work orders whose estimation status is "Released Estimates", are displayed under this folder.
- Not Applicable: All the child work orders whose estimation status is "Not Applicable", are displayed under this folder.

The tree structure is as follows:

AME # / Parent SWO # :: Work Center :: Order Description :: Estimation Status

- Pending Estimates

  - Child SWO # :: Work Center # :: SWO Desc. :: Order Status

  - Pending Confirmation

  - Child SWO #:: Work Center # :: SWO Desc. :: Order Status

  - Pending Re- Estimates

- Child SWO #:: Work Center # :: SWO Desc. :: Order Status

- Confirmed Estimates

- Child SWO # :: Work Center # :: SWO Desc. :: Order Status

- Estimates Released

- Child SWO #:: Work Center # :: SWO Desc. :: Order Status

- Not Required

- Child SWO #:: Work Center # :: SWO Desc. :: Order Status

In the right pane, the system displays Reference Document Details, Main Core Details, Order Execution Details and Customer Order Details for the work order selected in the tree.

To proceed,

- Select the Order Execution and Warranty tab to estimate the warranty Information details of the part within the work order.
- Select the Task Summary Details tab to confirm the estimates of the tasks in the work order.
- Select the Part Requirements tab to estimate part requirements for the execution of tasks within the work order.
- Select the Resource Requirements tab to estimate resource requirements for the execution of tasks within the work order.
- Select the Charge Details tab to estimate the charges of the task within the work order.

Order Execution and Warranty Details

This tab provides an overview of the warranty Information details of the part within the work order. You can also save the part Warranty Information.

The **Order Execution and Warranty** tab appears by default in the **Edit Work Estimates** main page. *See figure 2.11.*

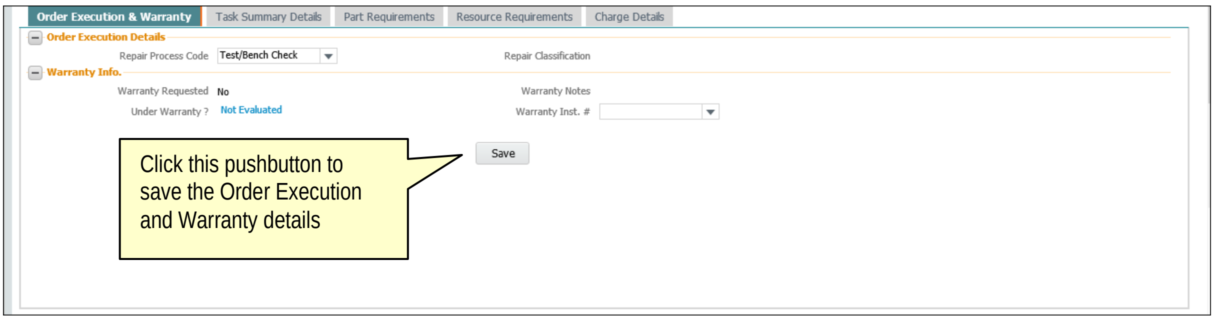

Figure 2. 111 Edit work estimates - Order Execution and Warranty

In the Order Execution Details group box,

6. Select **Repair Process Code** drop-down list to specify the repair process code of the part.

In the **Warranty Info.** group box,

7. Click the hyperlinked field which could be "Yes", "No" or "Not Applicable" in order to view the warranty instance of the part.

8. Select the **Warranty Inst. #** which is applicable only for the warranty offered by the MRO.

9. Click the **Save** pushbutton to record the Order Execution and the warranty information details of the part.

Task summary details

This tab provides an overview of the estimation details of the task within the work order. You can also confirm the part / resource estimates. *See figure 2.11.*.

10. Select the **Task Summary Details** tab in the **Edit Work Estimates** main page. *See figure 2.12.*

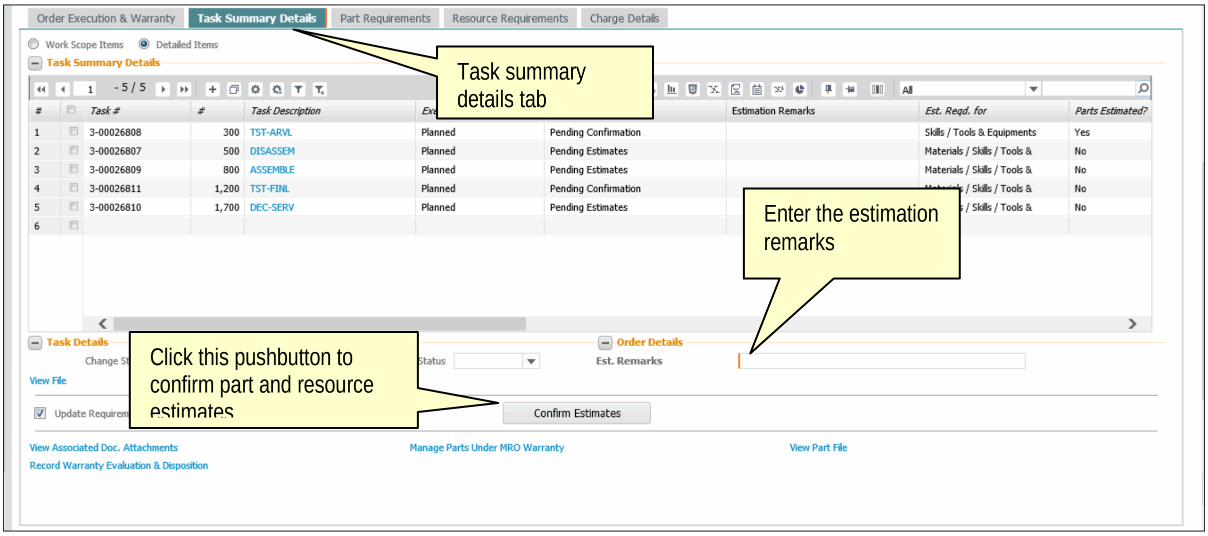

Figure 2.12 Edit work estimates - Task summary details

11. Select one of the following radio buttons above the multiline:

- **Work Scope Items** - Select this radio button to display all the tasks that have WBS code for which the process parameter 'Workscoping Element' is set as "Yes" in the "Set Process Parameters" page of the "Common Master" business component.

- **Detailed Items** - Select this radio button to display all the tasks that have WBS code for which the process parameter 'Execution Operations?' is set as "Yes".

In the **Task Summary Details** multiline, the system displays the following estimation details:

- **Est. Reqd. for** which indicates whether estimation is required for parts, resources or specific part. The system displays the following values:
  - Mtl. Est – Indicates that estimation is required for the parts.
  - Res. And Mtl. Est – Indicates that estimation is required for both parts and resources.
  - Specific Part – Indicates that estimation is required for a specific part.
- **Parts Estimated?** which indicates whether part estimates are available for the task.
- **Resource Estimated?** which indicates whether resource estimates are available for the task.

- **Est. Reqd.?** indicating whether part / resource estimation is required for external work orders.
- Parent task details, Root task details.

12. Select 'Yes' or 'No' in the **Warranty Reco.?** drop-down list to specify whether warranty is recommended for the part.
    - If Warranty Resolution for the work order is set as "Accepted", 'Warranty Reco.?' must be selected as "Yes" for the tasks.
    - If Warranty Resolution for the work order is set as "Rejected", 'Warranty Reco.?' must be selected as "No" for the tasks.
    - If Warranty Resolution for the work order is set as "Partial", 'Warranty Reco.?' must be selected as "Yes" for at least one task in the multiline.
13. Enter the **Estimation Remarks** for the part / resource.
14. In the **Task Details** group box, use the **Change Status to** drop-down list box to change the status of the task. You can select the value "Not Required" only if the Estimation Status of the task is "Pending Estimates" or "Pending Confirmation".
15. In the **Order Details** group box, enter the **Est. Remarks.**
16. Check the **Update Requirements** box to update the part and resource requirement details in the execution side.
17. Select the **Confirm Estimates** pushbutton to confirm the part and resource estimates.

Note: Only tasks with Estimation Status as "Pending Confirmation", can be confirmed.

- On clicking this pushbutton, the system triggers Quotation service, if the work order has a customer order reference.
- Generates material request for a part, only when the following conditions are satisfied:
    - The status of the task is "Planned' or "In-Progress".
    - 'Need Frequency' of the part is "Always".
    - Part # for which the MR is generated, must be always 'Effective' to the main core component defined in the "Aircraft" business component.
    - MR is generated for the newly added part and for the part retrieved for which the 'Est. Qty' is modified in the "Part Requirements" tab page.
    - The process parameter 'Prevent Material Request?' for the Entity Type "Hold Code" is not set as "Yes" in the "Set Process Parameters" page of the "Common Master" business component.

To proceed,

- Select the **View Associated Doc. Attachments** link to view the associated document attachments.

Estimating part requirements

In this page, you can retrieve all the tasks within the work order and the estimate the part requirements.

18. Select the **Part Requirements** tab in the **Edit Work Estimates** main page. *See figure 2.133.*

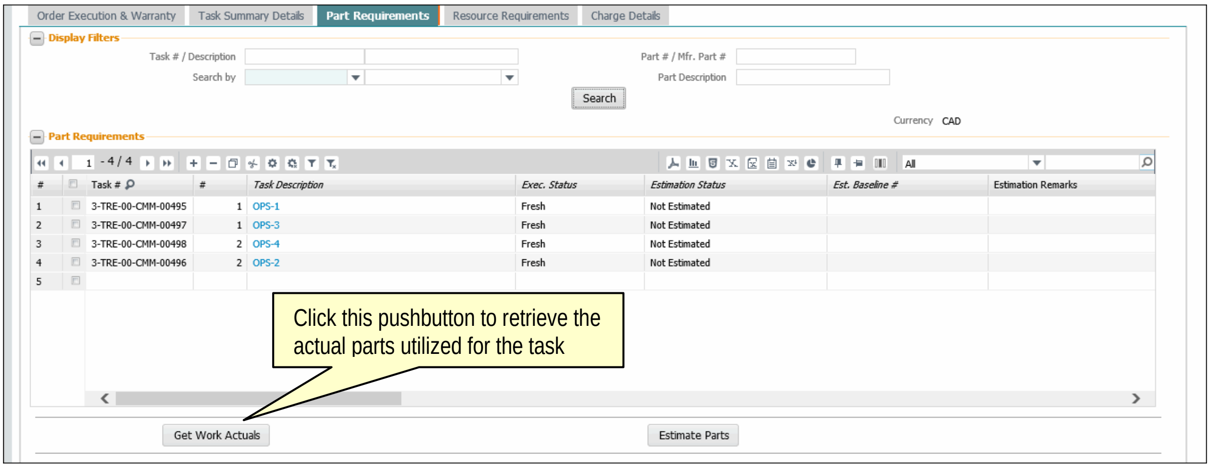

Figure 2.13 Estimating part requirements

19. Enter the search criteria in the **Display Filters** group box and click the **Search** pushbutton to retrieve the details of part requirements estimated for execution of task within the work order.

20. In the **Part Requirements** multiline, enter the sequence # of the task and the **Task #**.

21. Enter the Part # / Mfr. Part # - Mfr. # and UOM for the part.

22. Enter the **Est. Qty.** indicating the estimated quantity of parts required to complete the task within the work order.

23. Click the **Get Work Actuals** pushbutton to retrieve the execution related details i.e. actual parts utilized for the execution of the task.

24. Click the **Estimate Parts** pushbutton to estimate the part requirements.

Estimating resource requirements

In this tab, you can retrieve the actual resources utilized for the execution of the task, and estimate the resource requirements.

25. Select the **Resource Requirements** tab in the **Edit Work Estimates** main page. *See figure 2.14.*

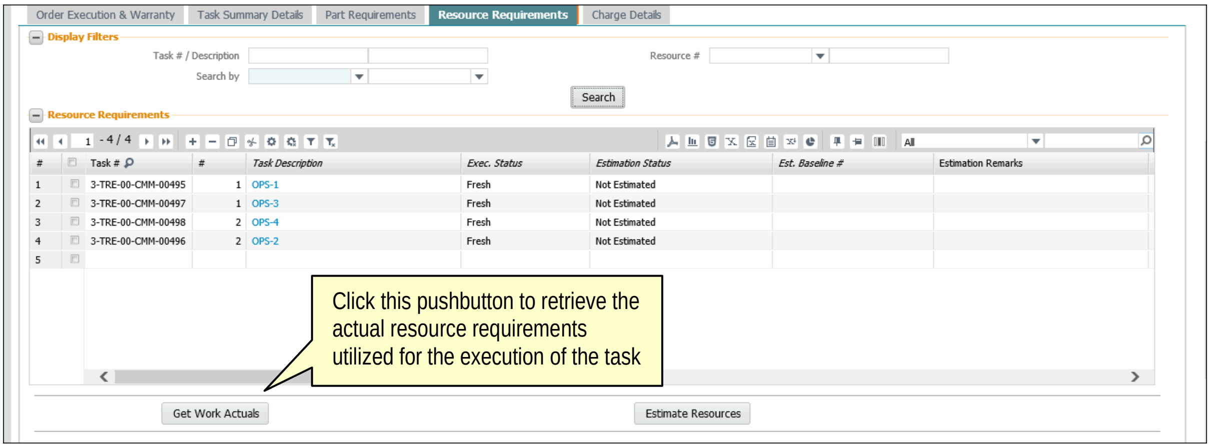

Figure 2.14 Estimating resource requirements

26. Enter the search criteria in the **Display Filters** group box and click the **Search** pushbutton to retrieve the details of resource requirements estimated for execution of task within the work order.

27. In the **Resource Requirements** multiline, enter the sequence # of the task and the **Task #**.

28. Select the **Resource Type** as ‘Skills’, ‘Tools’, ‘Equipment’ or ‘Others’, and enter the **Resource #**.

29. Enter the **Est. Nos** indicating the estimated number of resources required to complete the task within the work order.

30. Enter the estimated elapsed time required for the resource to complete the task, in the **Est. Time** field.

31. Click the **Get Work Actuals** pushbutton to retrieve the execution related details i.e. actual resources utilized for the execution of the task.

32. Click the **Estimate Resources** pushbutton to estimate the resource requirements.

Estimating charges

This tab allows you to estimate the charge details for the tasks within the work order. You can specify the charge code and the variant number of the charge code. Variants indicate the individual characteristics of charge codes, which may vary as per geographies, suppliers, etc.

33. Select the **Charge Details** tab in the **Edit Work Estimates** main page. *See figure 2.145.*

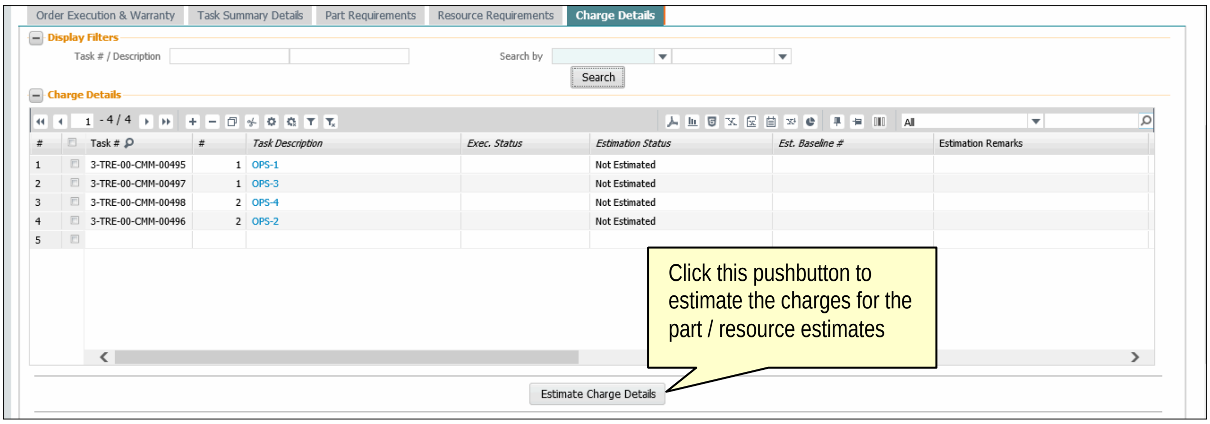

Figure 2.15 Estimating charges

34. Enter the search criteria in the **Display Filters** group box and click the **Search** pushbutton to retrieve the charge details in the multiline.

35. In the **Charge Details** multiline, enter the sequence # of the task and the **Task #**.

36. Enter the **Charge Code** identifying the charge levied for the task execution. The charge code entered must be in 'Active' status with TCD Type "Charge" and TCD Basis "Flat", as defined in the **Tax, Charges & Discount (TCD)** business component.

37. Enter the **Variant #** which is the identification number of the variant of the charge.

✐ *Note: Variants indicate the individual characteristics of charge codes, which may vary as per geographies, suppliers, etc. For example, you can define TCD code as 'Excise duty' and variants as 'Excise duty of USA' or 'Excise duty of Europe'. You can define multiple variants for a TCD code. The variant details can be defined for each organization unit.*

38. Enter the TCD Amount, TCD Currency, and Estimation Remarks.

39. Click the **Estimate Charge Details** pushbutton to estimate the charges for the part / resource estimates.

2.4 REVIEWING WORK EXECUTION AND REPORTING ACTUALS

This activity acts as a single interface to upload information relating to the maintenance / service of the aircraft into the system in cases where online recording of such information is not viable. For example the maintenance-related jobs that are carried out in remote locations. Subsequent to which the tasks are released for execution as well as status of the tasks are updated.

The panel in the right of the screen displays links that directs the commercial personnel to the next possible action in sequence as per the document status.

Note: The system on launch of the page defaults either the Customer Order, Work Order or AME tab pages based on the access rights for the user.

Note: If you launch this screen from the Manage Customer Order or Approve / Close Customer Order page, the system defaults the Customer Order tab in this page.

1. Select the **Review Work Execution and Report Actuals** activity in the **Work Monitoring and Control** business component. The **Review Work Execution and Report Actuals** page appears. *See figure 2.15.*

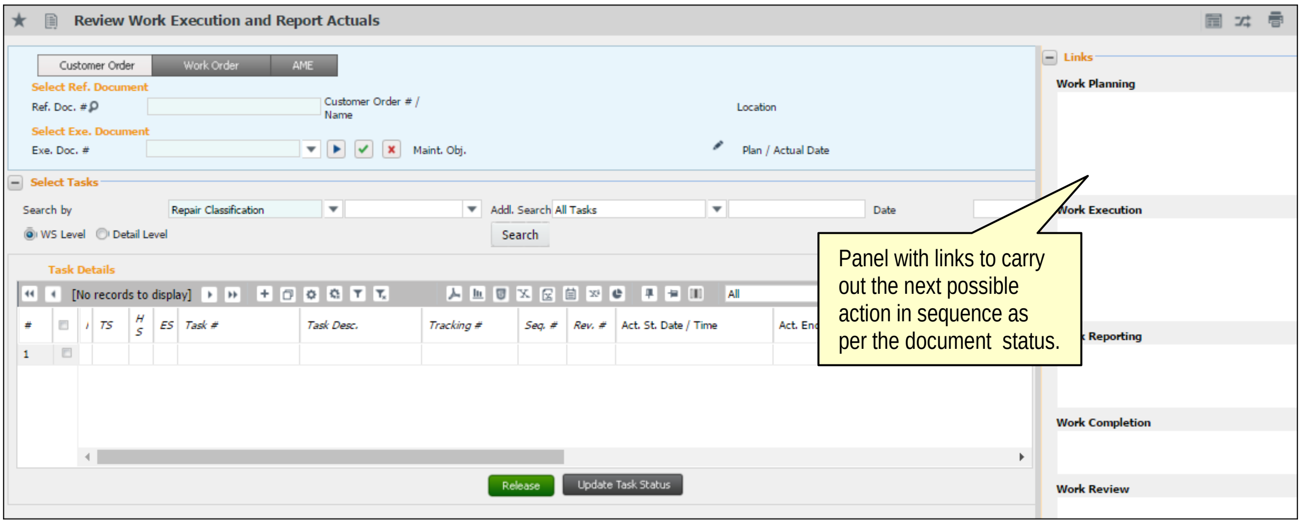

Figure 2.16 Reviewing work execution and report actuals

2. In the Select Ref. Document group box:
3. Enter the number identifying the reference document, which could be CO / WO / AME in **Ref.Doc. #**.
4. In the Select Exe. Document group box:
5. Use the **Exec. Doc. #** drop-down list box to select the code identifying the reference document relating to task execution and the other search criteria details.
6. In the Select Tasks group box:
7. Use the **Search By** and or **Addl**. **Search** drop-down list box to select the basis on which you wish to retrieve details in the multiline.
8. Provide the period effectivity of the task in the **Date** field within which you wish to retrieve details in the multiline.

9. Select the **WS Level** radio button to retrieve and display all the tasks for which Workscoping property is set as 'Yes' for their WBS Code and root task if there are multiple workscoping tasks with a hierarchy defined.

10. Select the **Detail Level** radio button to retrieve and display all the tasks (including the non-routines / non-standard tasks) for which Execution Operations is set as 'Yes' for their WBS Code and click the **Search** pushbutton to retrieve the search details in the multiline.

11. In the Tasks Details group box:

12. Provide the start and end date and time of execution of the selected tasks in the **Act. St. Date/Time** and **Act. End Date/Time column** respectively.

13. Select the execution-related action to be performed on the task from the **Exec. Action** drop-down list box.

14. Enter the percentage of work completed in the **% complete** column.

15. Select the Release pushbutton to release the work order for execution and select the **Update Task Status** pushbutton to update task details.

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