

TM Master 2.655

# MAINTENANCE FORECAST

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# **Maintenance Forecast: Overview**

The *Forecast* section serves a useful tool to analyse your jobs' data and build a forecast for your maintenance routines and relating costs for a desired period of time.

Use the forecast to get the following information on your forthcoming maintenance activities:

- Jobs to be carried out during the selected period of time.
- Required spare parts and manpower resources along with their costs.
- <u>Costs allowed for inflation or wage increase</u>.
- <u>Shortage of spare parts</u> or <u>manpower resources</u>.
- Graphs for total costs and manpower resources for the selected time frame.

#### To use of the Forecast section, apply the common workflow of the Due list section:

**Step 1.** Use the filter bar to <u>create the forecast for the desired time interval and job</u> <u>parameters</u>.

Step 2. <u>View the created forecast</u>.

#### \*Use Case 1\*

The screen below shows the maintenance forecast for the Electric Department for the current year. The forecast report signals the shortage of abutment rings: the department has to change 10 rings monthly, whereas they currently have only 9 of them in stock. The shortage will become evident on the nearest maintenance day – April 29.

| Time period: Current calendar yea |                     | Depart                      | ment: Electric          | <b>v</b> | Category: |            | ¥      | Inflation (% per year):     | 0     |
|-----------------------------------|---------------------|-----------------------------|-------------------------|----------|-----------|------------|--------|-----------------------------|-------|
|                                   |                     | Job typ                     | e:                      | ×        | Priority: |            | *      | Wage increase (% per year): | 0     |
| Date from: 29.04.2014 🗸           | Date to: 31.12.2014 | <ul> <li>Code fr</li> </ul> | om: to                  |          | Assigned: |            | *      |                             |       |
| bbs Spare Parts Manpower          | Graph               |                             |                         |          |           |            |        |                             |       |
| Name                              | Qty Price           | Curre Co                    | st 🔺   On Or   In Stock |          | UOM       | Due date   | Maker  | P                           | art n |
| Abutment ring                     | 10                  | NOK                         | 0                       | 9        | PCE       | 29.04.2014 | Yanmar | 1                           | 7032  |
| Abutment ring                     | 10                  | NOK                         | 0                       | 0        | PCE       | 29.05.2014 | Yanmar | 1                           | 7032  |
| butment ring                      | 10                  | NOK                         | 0                       | 0        | PCE       | 29.06.2014 | Yanmar | 1                           | 7032  |
| butment ring                      | 10                  | NOK                         | 0                       | 0        | PCE       | 29.07.2014 | Yanmar | 1                           | 7032  |
| butment ring                      | 10                  | NOK                         | 0                       | 0        | PCE       | 29.08.2014 | Yanmar | 1                           | 7032  |
| butment ring                      | 10                  | NOK                         | 0                       | 0        | PCE       | 29.09.2014 | Yanmar | 1                           | 7032  |
| butment ring                      | 10                  | NOK                         | 0                       | 0        | PCE       | 29.10.2014 | Yanmar | 1                           | 7032  |
| butment ring                      | 10                  | NOK                         | 0                       | 0        | PCE       | 29.11.2014 | Yanmar | 1                           | 7032  |
| butment ring                      | 10                  | NOK                         | 0                       | Le la    | PCF       | 29 12 2014 | Yanmar | 1                           | 7032  |

#### \*Use Case 2\*

The screen below shows the maintenance forecast from 10/24/2014 to 11/24/2014 for the M/S TM Bounty Junior ship. There are 3548 jobs for 6,646.40 NOK to be carried out during this period. The upper pane lists all these 3548 maintenance jobs. The lower pane shows the details for the selected "Check battery electrolyte" job: its next dues within the set timeframe, as well as required spare parts and manpower resources and their costs on the adjacent tabs.

| Forecast - TM Bounty Junior   |  |  |   |   |  | 948 JOD                     | 5s, 46.0 man no                  | ura, 40 a           | spare parts               | , 0,040.40      |                             |          |
|---|--|--|---|---|--|-----------------------------|----------------------------------|---------------------|---------------------------|-----------------|-----------------------------|----------|
| ime period: Date from to  | Department:  |  | <b>v</b>                                      | Category:   |  | ✓ Infl                      | lation (% per year):             | 0.00                | O Use unit pe             | ersonnel hours  |                             | Refresh  |
|   | Job type:  |  | ~   | Priority:   |  | ✓ Wa                        | age increase (% per year         | : 0.00              | Use crew s                | sea service hou | urs                         | Reset    |
| ate from: 10/24/2014 🔽 Date to: 11/24/  | /2014 V Code from:   | to   |   | Assigned:   |  | <b>v</b>                    |                                  |                     |                           |                 |                             |          |
| bbs Spare Parts Manpower Cost Graph Man   | hours Graph  |  |   |   |  |                             |                                  |                     |                           |                 |                             |          |
| Job name<br>Pro Charle back up time   |  | Code   | Man hours                                     | Component   | Job type   | Job no                      | Personnel ma Class               | Int                 | Due date                  | Job number      | Pri                         | Departn  |
| Ber Check back-up time  |  | 408.13   |   | UPS 3 for DP  | Chc  | 5                           |                                  | 6M                  | 10/24/2014                |                 | 1 0                         | Electric |
| Check battery electrolyte   |  | 501.04.01  |   | FRC Engine  | Chc  | 2                           | 1                                | 1M                  | 10/24/2014                |                 | 1 9                         | Electric |
| Check battery electrolyte   |  | 501.04.01  |   | FRC Engine  | Chc  | 2                           | 1                                | 1M                  | 11/24/2014                |                 | 29                          | Electric |
| Check boiler water side   |  | 641.01   |   | Oil Fired Boiler  | Chk  | 152                         |                                  | 6M                  | 10/24/2014                |                 | 1                           | Engine   |
| Check boller water side   |  | 041.01   |   | Oil Fired Boilêr  | СПК  | 192                         |                                  | IT                  | 10/24/2014                |                 | 1                           | Engine > |
| courrences Spare Parts Manpower Other costs   | Costs Summary  |  |   |   |  |                             |                                  |                     |                           |                 |                             |          |
| 🔍 🗓 Columns 📊 Group 🍸 👫 🛞   |  | •  |   |   |  |                             |                                  |                     |                           |                 |                             |          |
| lame Qty Price Curre Co   | ost In Stock UOM   | Due date   | Maker   | Part no.  |  |                             |                                  |                     |                           |                 |                             |          |
| butment ring 10 NOK   | 0 PCE  | 10/24/201  | 4 Yanmar                                      | r 170325  |  |                             |                                  |                     |                           |                 |                             |          |
| outment ring 10 NOK   | 0 PCE  | 11/24/201  | 4 Yanmar                                      | r 170325  |  |                             |                                  |                     |                           |                 |                             |          |
|   |  |  |   |   |  |                             |                                  |                     |                           |                 |                             |          |
| Occurrences Spare Parts   | Manpower C   | )ther cos  | ts Co   | osts Summ   | ary  |                             |                                  |                     |                           |                 |                             |          |
| Occurrences Spare Parts   | Manpower C   | ther cos   | ts Co   | osts Summ   | ary  |                             | •                                |                     |                           |                 |                             |          |
| Occurrences Spare Parts   | Manpower C<br>Group Y  | other cos  | ts Co<br>Cost                                 | osts Summ   | ary<br>ck l  | JOM                         | Due date                         | e                   | Maker                     | F               | Part no                     | ).       |
| Occurrences     Spare Parts       Image: Columns     Image: Columns       Name     Qty       Abutment ring     10   | Manpower C<br>Group Y<br>Price Cu  | Other cos  | ts Co<br>Cost                                 | osts Summ<br>I 💼  <br>In Sto<br>0   | ary<br>ck l  | JOM                         | Due date                         | •  <br>)14          | Maker<br>Yanmar           | F               | Part no                     | ).       |
| Occurrences     Spare Parts       Image: Columns     Image: Columns       Name     Qty       Abutment ring     10   | Manpower C<br>Group<br>Price Cu<br>NC  | Other cos  | ts Co<br>Cost                                 | osts Summ<br>I 💼  <br>In Sto<br>0<br>0  | ary<br>ck l<br>F<br>P                                      | JOM<br>CE<br>CE             | Due date<br>10/24/20<br>11/24/20 | e  <br>014<br>014   | Maker<br>Yanmar<br>Yanmar | F<br>1          | Part no<br>170325           | ).<br>5  |
| Occurrences Spare Parts           Name         Qty           Abutment ring         10           Abutment ring         10           gure 3. The Details pane sl           Occurrences         Spare Parts  | Manpower C<br>Group<br>Price Cu<br>NC<br>hows the spar   | OK<br>OK<br>Other  | ts Co<br>Cost<br>info fo                      | osts Summ<br>I III Sto<br>IIII Sto<br>O<br>O<br>O<br>O<br>O<br>Costs S                  | any<br>ck L<br>F<br>P<br>ected jo<br>Gummar,               | JOM<br>PCE<br>PCE<br>Db.    | Due date<br>10/24/20<br>11/24/20 | e  <br>014<br>014 1 | Maker<br>Yanmar<br>Yanmar | F<br>1          | Part no<br>170329<br>170329 | ).<br>5  |
| Occurrences       Spare Parts         Image: Columns       Image: Columns         Name       Qty         Abutment ring       10         Abutment ring       10         Abutment ring       10         Gure 3. The Details pane sl         Occcurrences       Spare Parts         Image: Columns       Image: Columns  | Manpower C<br>Group<br>Price C.<br>NO<br>hows the spar<br>Manpower<br>Group                                  | other cos  | ts Co<br>Cost<br>info fo<br>costs             | osts Summ<br>In Sto<br>O<br>O<br>O<br>Costs S<br>Costs S                                | ary<br>ck   L<br>P<br>P<br>ected jo<br>Summar              | JOM<br>ICE<br>ICE<br>bb.    | Due date<br>10/24/20<br>11/24/20 | e  <br>014<br>014   | Maker<br>Yanmar<br>Yanmar | F<br> <br>1     | Part no<br>170325           | ).<br>5  |
| Occurrences       Spare Parts         Image: Columns       Image: Columns         Name       Qty         Abutment ring       10         Abutment ring       10         Qure 3. The Details pane sl         Occurrences       Spare Parts         Image: Columns       Image: Columns         Image: Crew type       Image: Columns  | Manpower C<br>Group<br>Price Cu<br>NC<br>hows the spar<br>Manpower<br>Group<br>Group<br>Dur r   Est m        | OK<br>OK<br>OK<br>Other<br>Other<br>Other<br>Other<br>Other<br>Other<br>Other<br>Other   | ts Co<br>Cost<br>info fo<br>costs             | osts Summ<br>I III Sto<br>O<br>O<br>O<br>O<br>Costs S<br>I IIII<br>Costs S              | ary ck L C<br>F<br>P<br>ected jo<br>Summar,<br>Due         | JOM<br>CE<br>CE<br>bb.<br>y | Due date<br>10/24/20<br>11/24/20 | e  <br>014<br>014 1 | Maker<br>Yanmar<br>Yanmar | F<br>1          | Part no<br>7032<br>17032    | ).<br>5  |
| Occurrences       Spare Parts         Image: Columns       Image: Columns         Name       Qty         Abutment ring       10         Abutment ring       10         gure 3. The Details pane sl         Occurrences       Spare Parts         Image: Columns       Image: Columns         Image: Columns       Image: Columns         Crew type       Image: Hoppet columns         Project Engineer | Manpower C<br>Group<br>Price Cu<br>NC<br>hows the spar<br>Manpower<br>Group<br>Group<br>Dur r   Est m<br>100 | Other cos<br>Cos<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Differences<br>Di | ts Co<br>Cost<br>info fo<br>costs<br>t<br>100 | osts Summ<br>I III Sto<br>O<br>O<br>O<br>Costs S<br>I Costs S<br>I IIII<br>Curre<br>NOK | ary<br>ck L<br>F<br>P<br>ected jc<br>Summar<br>Due<br>10/2 | JOM<br>CE<br>CE<br>bb.<br>y | Due date<br>10/24/20<br>11/24/20 | e  <br>014<br>014   | Maker<br>Yanmar<br>Yanmar | F<br>1          | Part no<br>7032             | ).<br>5  |

# Step 1. Create/Re-create a Forecast

| 1. Open FOI                                  | RECAST.                       | 2. Set the tir<br>details to c | ne frame and<br>reate the fore | other<br>cast. |                    | 3. Click REF           | RESH.                    |
|--|-------------------------------|--------------------------------|--------------------------------|----------------|--------------------|------------------------|--------------------------|
| <u>File T</u> ools <u>G</u> rid <u>H</u> elp |                               |                                |                                |                |                    |                        |                          |
| All units 🔹 M Bounty Juni                    | oi 🔹 🔲 🕄 🖏 Columns 🥅          | Group 🍸 👫 🖬 🗐 🛙                | h / · %                        |                |                    |                        |                          |
|  |                               |                                |                                |                |                    |                        |                          |
| · · ·  | Forecast - TM Bount           | y Junior                       | <u></u>                        | 3543           | jobs; 6 man hoι    | ırs; 40 spare parts    | ; 6046,4 NOK Total costs |
| Fleet ¥                                      | Time period: Date from to     | u 🔺                            | Department                     | Cotos          |                    | M Inflation (* por uni | why 0.00 Refreeb         |
| Shin X                                       | Date nonito                   | · /                            | Job transi                     | V Drawb        | jory.              | Wass issues (%         |                          |
| onp .  | Date from: 26.05.2014         | Date to: 26.06.2014            | Codo from: to                  | Accier         | y                  | • Wage Increase (A     | Reset                    |
| Inventory ¥                                  |                               |                                |                                | Assig          | ieu.               | •                      |                          |
| Movable Assets ×                             | Jobs Spare Parts Manpower     | Graph                          |                                |                |                    |                        |                          |
|  | Code Component                | Job type Job   Cla   J         | lob name Int                   | 🔺 Due date 🛛 J | ob   Pri   Man   D | Departm Assign to      | ^                        |
| Maintenance                                  | 721.07 S.W. Pump Th           | Ins 81 \                       | /isual inspection of unit      | 1M 26.06.2014  | 29 E               | ingine                 | _                        |
| Due  | 501.04.01 FRC Engine          | Chc 2 C                        | Check battery electrolyte      | 1M 26.05.2014  | 19 E               | lectric Elec           |                          |
|  | 501.04.01 FRC Engine          | Chc 2 C                        | Check battery electrolyte      | 1M 26.06.2014  | 2 9 E              | lectric Elec           |                          |
| Alam due                                     | ✓ 513.02.05 Watertight slidi  | Chk 38 M                       | Nonthly check of door          | IM 26.05.2014  | 19 E               | ngine                  |                          |
| Project                                      | T1121 Poslub Oil Pum          | Ine 81 \                       | Asual inspection of unit       | 1M 26.05.2014  | 19 E               | ingine                 |                          |
|  | 711.21 Prelub Oil Pum         | ins 81 \                       | /isual inspection of unit      | 1M 26.06.2014  | 2 9 E              | ingine                 | ~                        |
| History                                      |                               |                                |                                |                |                    |                        |                          |
|  | Occurrences Spare Parts Manpo | wer Other costs                |                                |                |                    |                        |                          |
| Alarm job history                            | Columns 🔳 🕻                   | iroup 🍸 👫 🖪 🖣                  | - 🐪                            |                |                    |                        |                          |
| SRF SRF                                      | Code Component                | ob type   Job no   Class   Jo  | b name Int Due                 | Job Man hours  | A Department Assi  | gn to                  |                          |
|  | 🄁 501.0 FRC Engine 0          | Thc 2 Ch                       | eck battery 1M 26.05           | 1              | Electric Elec      |                        |                          |
| Contacts                                     | 501.0 FRC Engine (            | thc 2 Ch                       | eck battery 1M 26.06           | 2              | Electric Elec      |                        |                          |
|  |                               |                                |                                |                |                    |                        |                          |
|  |                               |                                |                                |                |                    |                        |                          |
| Risk analysis documents                      |                               |                                |                                |                |                    |                        |                          |
|  |                               |                                |                                |                |                    |                        |                          |
| Forecast                                     |                               |                                |                                |                |                    |                        |                          |

*Figure 5. The basic routine to create the maintenance forecast.* 

- 1. Open the Forecast section:
  - To open Forecast for a ship selected in the top menu, click Maintenance -> Forecast.
  - To open Forecast for a unit/fleet selected in the top menu, click **Fleet** -> **Forecast**.
- 2. (*To change the default filter forecast parameters*) By default, the forecast is displayed for the currently selected fleet or ship for a month ahead of the current date, for example from 19 of May to 19 of June.

To create a forecast for other time intervals or job parameters, use the filter bar. (See The Forecast Grid Tabs and Columns details for details.)

The steps to create a forecast for costs allowed for inflation or wage increase are described in the <u>corresponding section</u>.

(*If necessary*) Use the top menu selectors to choose another fleet or ship for the forecast. (*The ship selector is available only if the Forecast is opened via* **Maintenance** -> **Forecast.**)

3. Click **Refresh** to create the forecast report.

Use the grid in the central part of the screen to view the created forecast (see <u>How to view a</u> <u>forecast</u>).

## The Forecast Filter Bar Fields Details

| Time period: | Date from to          | Department:             | ~  | Category: | Y | Inflation (% per year):     | 0.00 | O Use unit personnel hours                     | Sefresh | 1 |
|--------------|-----------------------|-------------------------|----|-----------|---|-----------------------------|------|--|---------|---|
|              |                       | Job type:               | ~  | Priority: | ~ | Wage increase (% per year): | 0.00 | <ul> <li>Use crew sea service hours</li> </ul> | Reset   |   |
| Date from:   | 10/24/2014 V Date to: | 11/24/2014 V Code from: | to | Assigned: | ~ |                             |      |  |         |   |

(The fields that are missing from the list below are referenced in the How to use the "Due" list filter bar section of the TM Master User Manual.)

- **Time period:** Use the field and the available choices to set the time interval or voyage (if the latter is applicable) for which to create the forecast:
  - a. **Date from-to** Select the value, and then set any date in the **Date from** and **Date to** fields that will appear.
  - b. **Current calendar year -** Select the value to view the forecast for the period from the current date to December 31 of the current year.
  - c. **Next calendar year** Select the value to view the forecast for the period from 1 of January to 31 of December of the coming year.
- Inflation Enter the annual inflation rate to calculate the spare parts costs and price allowed for inflation. To view results, use the **Cost** and **Price** columns on the **Spare Part** tab of the Forecast grid.
- Wage increase: Enter a percent of wage increase to calculate manpower costs allowed for wage increase. To view results, use the **Cost** column on the **Manpower** tab of the Forecast grid.
- Use unit personnel hours: Use the option to calculate Man Hours and Personnel man hours based on the info on the newly added Unit Personnel tab (Ship -> Details).

| 🚟 De       | etails - TN  | I Bounty      | / Junic  | or        |              |                 |          |               |           |                  |                |                     |               | Details Unit   |
|------------|--------------|---------------|----------|-----------|--------------|-----------------|----------|---------------|-----------|------------------|----------------|---------------------|---------------|----------------|
| General    | Documents    | Certificates  | Settings | Deck      | Lifeboats    | Heartbeat       | Backup   | Replication   | Technical | Work regulations | Work schedules | Budget overspending | Movable asset | Unit Personnel |
| Include in | KPI incident | calculation [ | ✓ Ma     | anual     | [            | ~               |          |               |           |                  |                |                     |               |                |
|            |              |               |          | Default o | data for cre | w               |          |               |           |                  |                |                     |               |                |
|            |              |               |          | Avg. cre  | w onboard    | pr. day:        |          | 0             | -         |                  |                |                     |               |                |
|            |              |               |          | Avg cre   | w hours pr.  | day:            |          | 0             | <b>\$</b> |                  |                |                     |               |                |
|            |              |               |          | Avg day   | s in operat  | on pr. year:    |          | 0             | 1         |                  |                |                     |               |                |
|            |              |               |          | Crew ex   | posure hou   | irs pr. year:   |          | 0             | ÷         |                  |                |                     |               |                |
|            |              |               |          |           |              |                 |          |               |           |                  |                |                     |               |                |
|            |              |               |          |           |              |                 |          |               |           |                  |                |                     |               |                |
| 🕹 [E       | ] 🗙 🖪        | 🕒 Colu        | mns 🔲    | Group     | Y 4          | <u>R</u> efresh | <b>#</b> |               |           | - 🖌              |                |                     |               |                |
| CrewTyp    | e N          | lumber on Bo  | ard Ma   | n Hours   | per C   (    | Comments        | T        | otal Man hour | s         |                  |                |                     |               |                |

• Use crew sea service hours: Use the option to calculate Man Hours and Personnel man hours based on the data from the Crew module.

## How to Create a Forecast for Costs Allowed for Inflation or Wage Increase?

There is an opportunity to account for annual inflation and wage increase when calculating forecast costs on spare parts and personnel.

#### To calculate inflation costs for spare parts:

- 1. When creating the forecast, set the desired percent of inflation in the **Inflation** field of the filter bar.
- 2. Use the **Spare parts** tab to view results.

Note: The Costs info must be filled out on a spare part.

#### To calculate personnel costs accounted for wages increase:

- 1. When creating the forecast, set the desired percent of wage increase in the **Wage increase** field of the filter bar.
- 3. Use the **Manpower** tab to view results.

Note: The Hour rate field must be filled out on the Personnel tab see How to register personnel requirements for a job? for details.

# Step 2. View the Created Forecast.

Once you <u>create</u> the forecast, use the tabbed grid in the central part of the screen to view the forecast information and plan your activities and resources or deal proactively with discovered shortage.

- How to view the forecast job data?
- How to view the forecast spare parts data?
- How to view the forecast manpower data?
- How to view the forecast totals?
- How to view your forecast costs and manpower resources via the visualized graphs?



*Figure 6. The basic routine to view the maintenance forecast.* 

- Switch the tabs to view the list of jobs and corresponding spare parts and manpower resources for the defined period of time. Refer to The Forecast Grid Tabs and Columns details for details.
- Values in red on the **Spare Parts** and **Manpower** tabs signals the shortage of the resources. Use the column description The Details Pane Tabs to know how to overcome the shortage.
- Double-click the selected job or spare part to open the **Job details** or **Spare part** details window, respectively. Use this windows to modify the job or spare part data.
- Consider using the grouping functionality to get more structured look of your maintenance schedule.
- Use the 🛅 [Show details] button to view additional information on your job/spare part/manpower resources selected in the grid. Refer to The Forecast Grid Tabs and Columns details for tabs' and columns' meaning.

## The Forecast Grid Tabs and Columns details

The section details the tabs of the main grid:

| Time period: Date from-to                                | Department:   | • <u>The Jobs tab</u>        |
|--|---|------------------------------|
| Date from: 10/22/2014 V Date to:                         | Job type:   | • <u>The Spare Parts tab</u> |
| Jobs Spare Parts Manpower Cost Graph                     | Man hours Graph   | • The Manpower tab           |
| Code ▲ Personnel man hours<br>✓ 635.03.04<br>④ 635.03.04 | Component         Job type         Job           Servo system         Chk         30           Servo system         Ins         6 | • The Cost Graph tab         |
| ✓ 635.03.04  | El. motor, Serv Meg 1   | • The Man hours Graph tab    |

**Note**: The columns below include the columns that have not been described before in the manual or have additional meaning to the one described before.

#### Jobs:

Shows all the occurrences of the maintenance jobs for the time interval and job parameters defined in the <u>filter pane</u> based on the jobs' details, such as scheduling interval, running hours, etc.

| Jobs | Spare Parts Manpower Cost Graph Man hours Graph |           |           |                  |          |        |              |       |     |            |            |     |            |
|------|---|-----------|-----------|------------------|----------|--------|--------------|-------|-----|------------|------------|-----|------------|
|      | Job name  | ▲ Code    | Man hours | Component        | Job type | Job no | Personnel ma | Class | Int | Due date   | Job number | Pri | Departrr 🔨 |
| B    | Check back-up time                              | 408.11    |           | UPS 1 for DP     | Chc      | 5      |              |       | 6M  | 10/24/2014 |            | 10  | Electric   |
| B    | Check back-up time                              | 408.13    |           | UPS 3 for DP     | Chc      | 5      |              |       | 6M  | 10/24/2014 |            | 1 0 | Electric   |
| P    | Check battery electrolyte                       | 501.04.01 |           | FRC Engine       | Chc      |        |              |       | 1M  | 10/24/2014 |            |     | Electric   |
| B    | Check battery electrolyte                       | 501.04.01 |           | FRC Engine       | Chc      | 2      | 1            |       | 1M  | 11/24/2014 |            | 29  | Electric   |
| 1    | Check boiler water side                         | 641.01    |           | Oil Fired Boiler | Chk      | 152    |              |       | 6M  | 10/24/2014 |            | 1   | Engine     |
| 1    | Check boiler water side                         | 641.01    |           | Oil Fired Boiler | Chk      | 152    |              |       | 1Y  | 10/24/2014 |            | 1   | Engine 🗸   |
| <    |   |           |           |                  |          |        |              |       |     |            |            |     | >          |

• **Due date**: Shows a job's due date predicted according to the job's details, such as scheduling interval, running hours, etc. (Requires that **Data interval** and/or **Hour interval** as well as **Last done** fields are properly filled and maintained.)

The today's due date also shows overdue jobs and jobs with no interval defined (i.e. with "0" in the **Int** column).

If a job has more than one frequency defined, only its instance with higher frequency will show (e.g. if a job is set to run once a year and once every 10000, the job with the one-year interval will show in the list).

- **Occurrence no**: Indicates the number of the occurrences of the job in the list (first due occurrence of the job during the defined period is labelled "1", the next due after that is labelled "2", etc.).
- **Personnel Man Hours**: Total man hours for the job based on the **Personnel** tab of the job details.
- Man Hours: Man hours for the job based on the corresponding field on the General tab of the job details.
- Use the status bar on the <u>Details pane</u> to view costs for the selected job
   Costs: 0.00 NOK spare parts; 200.00 NOK manpower; 0.00 NOK other; 200.00 NOK total

#### Spare parts:

Lists all spare parts required for the jobs listed on the **Jobs** tab based on the spare parts information for the jobs.

| Jobs Spare Parts Manpower Cost | Graph Man hours Gr | aph         |               |            |                                      |            |
|--------------------------------|--------------------|-------------|---------------|------------|--------------------------------------|------------|
| Name Qty 🔺                     | Price Currency     | Cost On Ord | ler In St UOM | Due date   | Maker                                | Part no.   |
| Seal ring 1                    | NOK                | 0.00        | 7 2 PCE       | 10/24/2014 | Tamrotor Marine Compressors AS       | NT0301     |
| Profibus Com Card 1            | NOK                | 0.00        | 8 PCE         | 10/24/2014 | LØNNE Scandinavia As                 | 9001934    |
| Return filter, Parker 2        | NOK                | 0.00        | 1 12 PCE      | 10/24/2014 | Wärtsilä Propulsion Netherlands B.V. | PXX 2A-10  |
| TU 831V1 2                     | NOK                | 0.00        | 5 PCE         | 10/24/2014 | Notrth-Western Ship Repairs          | TU831 V1 B |
| Short side screw for main b 2  | 315.20 NOK         | 630.40      | 8 PCE         | 10/24/2014 | Wärtsilä Finland Oy, Ship Power      | 100014     |
| A0 810V2 3                     | NOK                | 0.00        | 1 8 PCE       | 10/24/2014 | ABB                                  | AO810V2 An |
| Valve seat insert exhaust 4    | NOK                | 0.00        | 8 PCE         | 10/24/2014 | Wärtsilä Finland Oy, Ship Power      | 120022     |
| Shim 90-327B 5                 | 1,000 NOK          | 5,000       | 16 7 PCE      | 10/24/2014 | Yanmar                               | 170327     |
| Abutment ring 10               | NOK                | 0.00        | 109 PCE       | 10/24/2014 | Yanmar                               | 170325     |
| Abutment ring 10               | NOK                | 0.00        | 99 PCE        | 11/24/2014 | Yanmar                               | 170325     |
| Abutment ring 10               | NOK                | 0.00        | 89 PCE        | 12/24/2014 | Yanmar                               | 170325     |

• **Cost** (*Available if the Price field for the spare part is set. Otherwise, the value is 0.*) Shows the total cost for all spares required for a job in the ship's currency and in the base currency if multiple vessels are selected.

If a value is set in the **Inflation** field of the filter bar, the **Cost** field displays yearly inflated cost of the spare.

- **Qty** (*Available if the Items section for the corresponding job is set.*) Shows quantity of required spares for the exact job.
- In Stock (Available if the corresponding field for the spare part is set.) The item in red indicates that the required spare quantity for the exact job is lower than the current stock level on board.

To add spare part(s) to draft: select (or multi-select) the spare(s) and then use the right-click menu to select [**Add to Draft**] button and select the draft or create the new one.

| Jobs Spare Parts Manpower C        | Cost | Graph Man hours     | Graph    |               |
|------------------------------------|------|---------------------|----------|---------------|
| Name                               |      | Qty 🔺 Price         | Currency | Cost On Order |
| Switch HPO                         | _    | 1                   | NOK      | 0.00          |
| Filter drier 3/8" Solder 16 CU.IN. | đ,   | Print Preview       |          | 0.00          |
| Racor Filter                       |      | Select All          | Ctd+A    | 128.00        |
| Oil Control Ring                   |      | 50100t <u>1</u> 4   | Garrin   | 0.00          |
| Maintenance kit                    | 1    | Copy content to cli | pboard   | 0.00          |
| Battery for PLS (TSX37)            |      | Reset Grid Column   |          | 0.00          |
| Filter A-Lub.                      |      | Reset and Column    | 5        | 1,592         |
| Element AS-Fuel                    |      | Get settings        |          | 875.00        |
|                                    |      | Re-Replicate        |          |               |
|                                    |      | Add to Draft        | ۱.       | Kanon         |
|                                    |      |                     |          | Lysrør        |
|                                    |      |                     |          | New Draft     |

To overcome the issue, double-click the spare and then use the **Add stock**] button in the spare part details window that opens.

To modify the orders' data for the selected spare, <u>use the **Orders** tab of the Details pane</u>.

#### Manpower:

Lists all disciplines required for jobs with total number of hours and total costs per discipline based on the personnel information of the jobs.

| Jobs Spare P  | Parts Manpower | Cost Graph Ma | an hours G | raph       |      |
|---------------|----------------|---------------|------------|------------|------|
| Crew type     | Est man hours  | Cost          | Currency   | Due date   | Av 👻 |
| 1st Engineer  | 1              | 108           | NOK        | 10/24/2014 | 0    |
| 1st Officer   | 8              | 0             | NOK        | 10/24/2014 | 0    |
| 2nd Officer   | 1              | 300           | NOK        | 10/24/2014 | 0    |
| Project Engin | 1              | 100           | NOK        | 10/24/2014 | 0    |

• Available man hours Shows available man hours based on service records per discipline/date. The item in red indicates that required crew types and relevant man hours are less than planned/onboard crew for the selected time period.

To assign the required personnel and increase the available man hours, use the **Crew** module (for reference, go Help-> How to -> Crew to access the "How to.." for TM Crew? guide.)

To modify the manpower data for the job, use the job details window.

• **Cost** (*Available if the corresponding data is set on the Personnel tab of the job. Otherwise, the value is set to 0.*) Shows the manpower cost required for a job in the ship's currency and in the base currency if multiple vessels are selected.

If a value is set in the **Wage Increase** field of the filter bar, **Cost** displays an increased wage costs.

To modify the manpower data for the job, use the job details window.

## **The Details Pane Tabs**

Use the **Show Details** button to access the details view for the selected element in the grid or graph (except the Man Hours Graph). The tabs of the detailed view grid are referenced below.

(Note: The section describes only tabs, refer to The Forecast Grid Tabs and Columns details for detailed column description.)

| ·      |                       | <u> </u>               | ы с             | olumns [   | Group      | 71       | <b>*</b>                   |               |          |          | Ż   |
|--------|-----------------------|------------------------|-----------------|------------|------------|----------|----------------------------|---------------|----------|----------|-----|
| (Art   | Foreca                | ast - TN               | l Bou           | nty Ju     | nior       |          |                            |               |          |          | -/  |
| Time   | e period:             | Date from              | -to             | ~          |            |          | Depa                       | irtment:      |          |          |     |
| Date   | e from:               | 10/24/2                | 014 🗸           | Date to:   | 11/24      | /2014    | Job ty<br>Code             | ype:<br>from: |          | to       |     |
| Jobs   | Spare                 | e Parts M              | lanpower        | Cost Gra   | aph Man    | hours Gr | aph                        |               |          |          |     |
|        | Job na                | me                     | 🔺 🛛 Coo         | le         | Man hour   | s Co     | mponent                    | Jo            | b type   | Job no   |     |
| Q      | lnspe                 | ct Hydrauli            | c 101           | .01        |            | M        | V Deep (                   | Cy In         | s        | 123      | <   |
|        |                       |                        | 101             | .01        |            | M,       | V Deep (                   | ly In         | S        | 123      |     |
| 9      | Surve                 | / Mainwhe<br>/ Mainwhe | el 335<br>ಆ ಎಎಂ | .01<br>.01 |            | AL       | xillary Cra<br>xillary Cra | ne S<br>ne S  | UR<br>UR | 4        | _   |
| Occi   | urrences              | Spare Pa               | rts Man         | power C    | ther costs | Costs    | Summary                    |               |          |          | 3   |
|        | <b>a</b> 3            |                        | Columns         | Gr         | oup 🍸      |          |                            |               |          | •        | 1   |
|        | Code                  | Compo                  | nent            | Job type   | e 🛛 Job no | Class .  | . Job na                   | ame           | Int      | Due      | Jo  |
| B      | 335.01                | Auxillar               | y Crane         | SUR        | 4          |          | Surve                      | y Mainw       | 1M       | 10/24    |     |
| P      | 335.01                | Auxillar               | y Crane         | SUR        | 4          |          | Surve                      | y Mainw       | 1M       | 11/24    |     |
| Alkhan | and the second second |                        | * <b>\</b> 2    | ****       |            |          |                            |               |          | مرجع الم | u.d |

Figure 7. The **Show Details** button switch on/off the detailed view for the selected item in the grid

#### Jobs:

The details pane for the Jobs tab selected in the main grid shows the following data:



- **Occurrences** Lists all occurrences for the selected job during the set time frame. The occurrences are calculated based on the job's intervals.
- **Spare Parts** Lists all spare parts required for the selected job. (*Available if the corresponding data for the job is set.*)
- **Manpower** Lists personnel required for the selected job. (*Available if the corresponding data for the job is set.*)
- Other costs Lists other costs (Available if the corresponding data for the job is set.)
- **Costs Summary** Lists the costs for the job.

#### Spare Parts:

The **details** pane for the Spare Parts tab selected in the main grid shows the following data:



- Jobs Shows the job that requires the selected spare part with the required quantity and cost.
- **Orders** Shows the list of related orders. (*Available if the corresponding data for the spare part is set.*)

Double-click to edit the selected order draft or create a new one.

#### Manpower:

The **details** pane for the Manpower tab selected in the main grid shows the following data:

| Columns         Group         All         Image: Column and the second and t | J | lobs | Crew |            |          |     |                  |     |             |               |            |       |               |           |       |      |
|--|---|------|------|------------|----------|-----|------------------|-----|-------------|---------------|------------|-------|---------------|-----------|-------|------|
| Code Component Job type Job Job name Int Due date Job Man hours Department Assig Est man hours Hour rate Curre Cost  |   |      | 3, 1 | 🍌 Columns  | Group    | 7 🕰 | •••              |     | •           | 6             |            |       |               |           |       |      |
| P 501 EPC Expires Cho 2 Check betweed 1M 26.06.2014 2 Electric Elect 1 100 NOK 100   |   |      | Code | Component  | Job type | Job | Job name         | Int | Due date    | Job Man hours | Department | Assig | Est man hours | Hour rate | Curre | Cost |
| Soft The signer and 2 check ballery e The 20.002014 2 section section 1 100 Nork 100   |   | P    | 501  | FRC Engine | Cho      | 2   | Check battery el | 1   | M 26.06.201 | 4 2           | Electric   | Eec   | 1             | 100       | NOK   | 100  |

- Jobs Shows the job that requires the selected discipline with the number of hours and cost. Double-click the selected job to open the job details window and modify the job's manpower information.
- **Crew** Shows the exact person assigned for the job (*Available if the corresponding data for the job is set.*)

Double-click to edit the selected team crew or create a new one.

#### How to View the Forecast Totals?

Use the ribbon to view the totals of the forecast you created:

- Total number of jobs to be carried out, e.g. "3543 jobs";
- Total number of personnel man hours, e.g. "6 man hours";
- Total number of spare parts required. e.g. "40 spare parts";
- Total cost for all jobs, e.g. "6046,6 NOK total costs"

| 🗿 Forecast - TM Bounty Junior |             | 3543 jobs; 6 man hours; | 40 spare parts; 6046    | ,4 NOK Total costs |
|-------------------------------|-------------|-------------------------|-------------------------|--------------------|
| Time period: Date from to     | Department: | Category:               | Inflation (% per year): | 0,00 Sefresh       |

Figure 8. The ribbon with forecast totals.

## How to Read the Visualized Graphs (Cost Graph and Man Hours Graph)?

Once you <u>create</u> the forecast, the two graphs - **Cost Graph** and **Man hours Graph** tabs help to visualize the information in the grids:

- The **Cost Graph** visualizes the total costs for all jobs for the selected time period.
- The **Man Hours Graph** visualizes the required and available manpower resources for all jobs for the selected time period.

#### \*Use case for the Cost Graph\*

The screen below is the total cost graph for 2 dates (*circled orange*) – 19.05.2014 and 20.05.2014. The total cost of all jobs for 20.05.2014 is 5100 NOK: the topmost red diamond (*eqauls to 5100 on the Costs axis*) above 20.05.2014 stands for the sum of the manpower cost (*represented as blue diamond and eqauls to 100 on the Costs axis*) and the spare parts cost (*represented as orange diamond eqauls to 5000 on the Costs axis*), i.e. 100 NOK+5000 NOK=5100 NOK.



While the two graphs differ in vertical axes functionality, the time period horizontal axe functionality is the same.

The **Date** axis shows the timeline that is set on the filter bar.

- Use the selector next to the scroll bar to vary the timeframe displaying data per day, per week, etc.
  - 1:1 fits the whole timeframe (set on the filter bar) into your screen
  - 1:2 fits the half of the timeframe into your screen
  - etc.
- Use the horizontal scrollbar to move along the timeline.

• Use the dropdown on the main toolbar to set the timeline to display daily, weekly, monthly, or yearly intervals.

| -            |                              |                                 |
|--------------|------------------------------|---------------------------------|
| File         | e <u>T</u> ools <u>H</u> elp |                                 |
| All u        | inits 🔹 TM Bounty Junior 🝷   | Weekly 🔽 🗒                      |
|              | Ch Foreset TM Down           | Daily                           |
| av.          | Forecast - TM Bour           | C Weekly                        |
| igation pane | Time period: Date from-to    | Yearly Departmer                |
|              |                              | Job type:                       |
|              | Date from: 10/22/2014 🗸      | Date to: 11/22/2014 V Code from |
|              | Jobs Spare Parts Manpower    | Cost Graph Man hours Graph      |
|              |                              |                                 |

#### The Cost Graph

The **Costs** axis shows the following:

- The most expensive "date" makes the top value of the scale.
- Hover the pointer over a symbol to know the exact cost value it represents.
- The symbols represent the following costs per one date:
  - - Spare parts The orange square stands for spare parts cost.
  - Manpower The blue circle stands for manpower costs.
  - Other costs The green line stands for "other costs". (Comes from the Other costs tab of the Job.)
  - Total The red diamond stands for the sum of the costs for spares, manpower, and other costs.
- To switch off/on cost graphs, right-click anywhere within the graph and check/uncheck on desired item(s)



• To switch to the total accumulative cost for the period, use the **Accumulate values** option of the right-click menu of the graph.



#### Man Hours Graph

The symbols represent the following manpower data per one date:

- Job man hours
   the total man hours for jobs based on the Man hours field on the component job.
   Personnel man hours
  - the total man hours based on the **Personnel** tab of the job.
- Available man hours
   the total available man hours based on crew sea service.