SAS CMS Project
Crew Rest Planner
Functional Reference

Written by   *Yaser Mohamed*
Date   *20 February 2007*
Version   *1.0*

Summary

The purpose of the Rest Planner application is to allow a crew tracker to manually set rest times for long haul flights. The default calculations of rest during long haul flights splits the available rest times equally amongst the crew. Setting the rest times manually, the crew tracker may tailor the rest times after each crews individual needs with respect to duty points (mainly the 90-point rule).
In addition the rest planner will allow the tracker to increase and decrease the allowed rest period for a flight.

Change History

Version	Author	Date	Description
1.0	Yaser Mohamed	20-Feb-2007	

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1 Crew Rest Planner

The crew rest planner is always started for a specific flight.

1.1 User interface

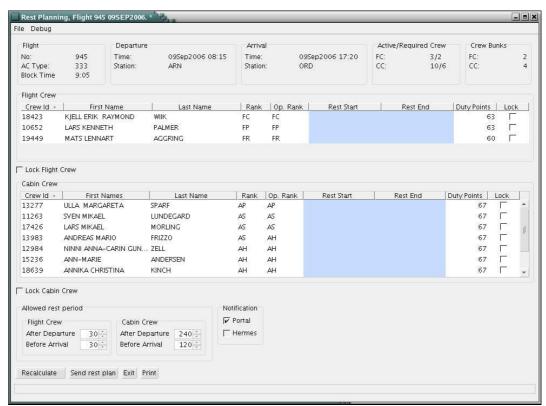The following picture shows the rest planner window:

Figure [1]   Crew Rest Planner for an example flight

In the top of the crew rest planner is a short summary of the flight. Below that the crew is listed in two separate lists, one for cabin crew (CC) and one for flight crew (FC). The crew tables are followed by a settings area which is used to govern the behaviour of the automatic rest calculation functions. At the bottom of the window, the action buttons are located as well as the status-bar.

1.1.1 Flight information

The flight information is displayed at the top of the screen and for the particular flight in the example above, it looks as follows:

Figure [2]   Flight Information part of the Crew Rest Planner

The flight information consists of the following informational blocks:

Flight: Contains the flight no, AC type and Block Time.
Departure: Contains the departure specific information such as departure time and departure station.
Arrival: Contains the arrival specific information such as arrival time and arrival station.
Active/Required Crew: Contains crew information. The "active" crew is the number of crew assigned to the flight. The required crew is the minimum required crew for this flight to be able to depart. The information in this box is divided into two categories, FC which is the flight crew and CC which is the cabin crew.

Crew Bunks: The figure depicts the number of resting places on the flight. This information is divided into two categories, the number of resting places for the flight crew (FC) and the number of resting places for the cabin crew (CC).

1.1.2 Crew Information

The main part of the rest planner view consists of the crew information. The crew information for our example looks as follows:

Figure [3]   Crew lists.

The information mainly consists of two tables. Each of the table shows one crew category (either flight crew or cabin crew). Within these tables, the crew are sorted on rank and seniority (in that order). This means that the first crew in the flight crew list is the pilot in command and the first crew in the cabin crew list is the chief of cabin.

Both the tables contains the following columns:

Crew Id: The crew id for the crew which that row represents.
First Names: The first names of the crew.
Last Name: The last name of the crew.
Rank: The rank of the crew when not on this flight.
Op. Rank: The rank of the crew on this flight (only differs from Rank when the crew is flying above or below rank).
Rest Start: The start date and time of the rest for the crew on this flight. This may be changed by the tracker.
Rest End: The end date and time of the rest for the crew. This may be changed by the tracker.
Duty Points: The duty points after this flight for the crew member according to the 90-points rule.
Lock: Used when wanting to prevent an automatic rest period calculation from altering the set rest time for the specific crew. The lock status of a crew can be altered by clicking the check-box located in this column for the crew that is to be locked. A checked box means the crew is locked, an unchecked box means the crew is unlocked.

The "Lock Flight/Cabin Crew" check-boxes below the table works in the same way as the table column "Lock" but affects the entire crew category (flight crew and cabin crew respectively).

1.1.3 Calculation settings

The calculations settings can be found below the crew information tables and the picture below is an example of what the settings section looks like:

Figure [4]   Calculation settings

The settings should be interpreted as follows:

Allowed rest period: Here the allowed rest period is set for flight crew and cabin crew separately. The values after the "After Departure" fields is the number of minutes after departure the crew may begin to rest.
The values after the "Before Arrival" is similarly the number of minutes before arrival the crew may rest to.
Notification: When the rest planning is complete the rest schedule may be sent to the crew in the form of a notification. The "Notification" determines whether the message should be sent to the crew via the Crew Portal or via HERMES or both.

1.1.4 Action bar

The action bar contains the buttons with which several actions may be taken. There is also a status-bar which provides feedback on the actions.

Figure [5]   Action bar

The Action bar consists of several buttons and a status bar. The status bar provides status and error messages when using the buttons.

The following buttons are available:

Recalculate: When this button is pressed, the application attempts to automatically calculate fairly distributed rest times for all crew that are unlocked (see crew list for information on locked crew). The application considers the time period set in the "Calculation settings".
Send rest plan: When this button is pressed, a notification is generated and sent to all crew. The notification contains information about the rest times for the crew.
Exit: Closes the application.
Print: Generates a rest report in the pdf format. The report is automatically opened in the preferred pdf viewer. An example of a rest report is shown in the figure below:

Crew Rest Report

Planning Period: 19 - 28Feb2007 Rule Set: Tracking Plan: TestPlans/Tracking_SEP/sk_sto_all_sep_a17/sk_sto_all_sep_a17

Flight information

Flight		Departure		Arrival		Active/Required Crew		Crew Bunks	
No:	945	Time:	09SEP2006 08:15	Time:	09SEP2006 17:20	FC:	3/2	FC:	2
AC Type:	333	Station	ARN	Station	ORD	CC	10/6	CC:	4

Flight Crew

Crew Id	First Name	Last Name	Rank	Op. Rank	Rest Start	Rest End	Duty Points
18423	KJELL ERIK RAYMOND	WIIK	FC	FC	16:01	17:00	68
10652	LARS KENNETH	PALMER	FP	FP	08:45	15:00	57
19449	MATS LENNART	AGGRING	FR	FR	15:01	16:00	63

Cabin Crew

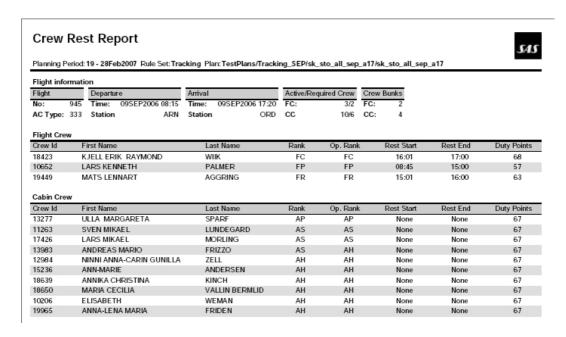| Crew Id	First Name	Last Name	Rank	Op. Rank	Rest Start	Rest End	Duty Points
13277	ULLA MARGARETA	SPARF	AP	AP	None	None	67
11263	SVEN MIKAEL	LUNDEGARD	AS	AS	None	None	67
17426	LARS MIKAEL	MORLING	AS	AS	None	None	67
13983	ANDREAS MARIO	FRIZZO	AS	AH	None	None	67
12984	NINNI ANNA-CARIN GUNILLA	ZELL	AH	AH	None	None	67
15236	ANN-MARIE	ANDERSEN	AH	AH	None	None	67
18639	ANNIKA CHRISTINA	KINCH	AH	AH	None	None	67
18650	MARIA CECILIA	VALLIN BERMLID	AH	AH	None	None	67
10206	ELISABETH	WEMAN	AH	AH	None	None	67
19965	ANNA-LENA MARIA	FRIDEN	AH	AH	None	None	67

Figure [6]   Example of a Crew Rest Report

This report is taken from the example in chapter 1.2.

How to use the rest planner will be described in greater detail in the following chapter.

1.2 Using the Rest Planner

As mentioned the purpose of the rest planner is to manually set rest times for the individual crew members. This is done either by setting all the rest times manually or by setting the rest times for a few selected crew members, locking them and then pressing the "Recalculate" button.
Pressing the "Recalculate" button without having set any rest times manually may also be of use, if using the calculation settings (see previous chapter, 1.1) to alter the allowed rest period.

1.2.1 Example

Note: This example is fictive. There is no plan nor roster which corresponds to the example. A random long haul flight has been used.

Due to an earlier delay FP Palmer will be breaking the 90-point rule in a later flight. The crew tracker (CT) decides to find out if this problem can be solved with some creative rest planning on the long haul flight in the duty. The Rest Planner for that flight looks as follows:
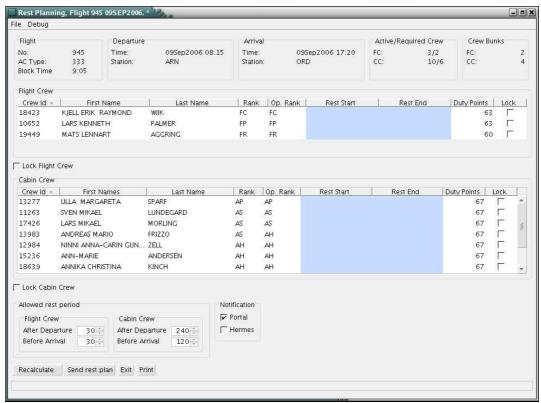
Figure [7]   The Rest Planner

The cabin crew rest is not of interest thus the CT disables it by checking the "Lock Cabin Crew" check-box below the "Cabin Crew" table.

Then the rest is set for Palmer. As only one of the three flight crew may rest at any given moment and as CT decides that the other two flight crew should at least get minimum rest (1 hour), Palmer's rest time is decided to be between 8:45 (30 min after departure) until 15:00. This only leaves 1h and 50 minutes of available rest time for the remaining flight crew. This is solved by increasing the allowed rest period. In this case the CT decreases the flight crew "Before Arrival" setting to 20 (min).

At this point the application looks as follows:
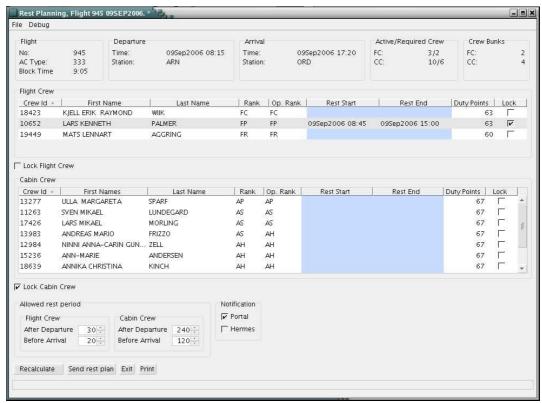
Figure [8]   The rest planner form with the alterations.

The CT then presses the "Recalculate" button. The Rest Planner will then look as follows:
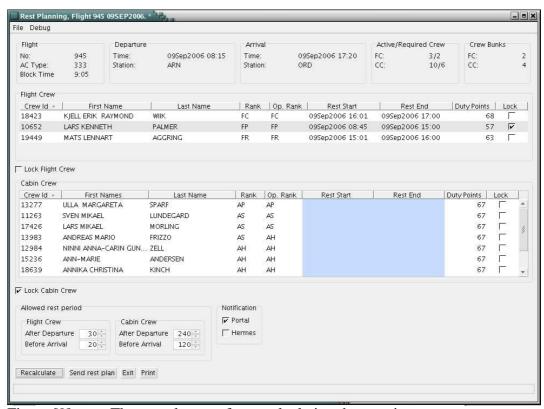

Figure [9]   The rest planner after recalculating the rest times.

As can be seen in figure 9, the rest planner has automatically used the entire allowed rest period for the flight crew (30 min after departure until 20 min before arrival) and, regarding the locked rest time distributed the remaining available rest as evenly as possible (in this example this means that the other two flight crew receives one hour of rest each).

For all crew, the rest planner also updates the duty-points column.
The CT then wants to notify the crew of these rest times. The CT chooses to do so by printing a rest report which is then handed to the FC. The rest report for the rest plan above is received by pressing "Print":

Crew Rest Report

SAS

Planning Period: 19 - 28Feb2007 Rule Set: Tracking Plan: TestPlans/Tracking_SEP/sk_sto_all_sep_a17/sk_sto_all_sep_a17

Flight information

Flight		Departure		Arrival		Active/Required Crew		Crew Bunks	
No:	945	Time:	09SEP2006 08:15	Time:	09SEP2006 17:20	FC:	3/2	FC:	2
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Flight Crew

Crew Id	First Name	Last Name	Rank	Op. Rank	Rest Start	Rest End	Duty Points
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10652	LARS KENNETH	PALMER	FP	FP	08:45	15:00	57
19449	MATS LENNART	AGGRING	FR	FR	15:01	16:00	63

Cabin Crew

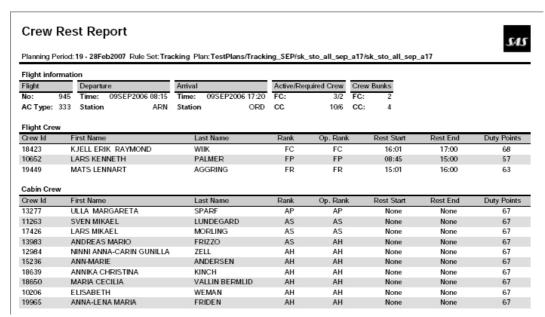| Crew Id	First Name	Last Name	Rank	Op. Rank	Rest Start	Rest End	Duty Points
13277	ULLA MARGARETA	SPARF	AP	AP	None	None	67
11263	SVEN MIKAEL	LUNDEGARD	AS	AS	None	None	67
17426	LARS MIKAEL	MORLING	AS	AS	None	None	67
13983	ANDREAS MARIO	FRIZZO	AS	AH	None	None	67
12984	NINNI ANNA-CARIN GUNILLA	ZELL	AH	AH	None	None	67
15236	ANN-MARIE	ANDERSEN	AH	AH	None	None	67
18639	ANNIKA CHRISTINA	KINCH	AH	AH	None	None	67
18650	MARIA CECILIA	VALLIN BERMLID	AH	AH	None	None	67
10206	ELISABETH	WEMAN	AH	AH	None	None	67
19965	ANNA-LENA MARIA	FRIDEN	AH	AH	None	None	67

Figure [10]   The rest report for the rest plan showed in figure 9.