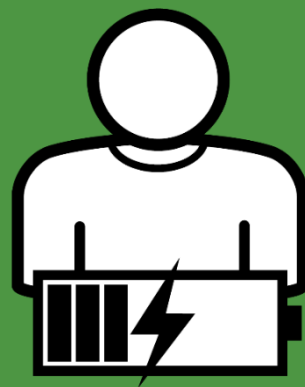# Fatigue Reduction:

How to use the Fatigue and Risk index tool (FRI) in Click Roster

Introduction

This document explains how to use the FRI tool from a practical point of view. For information on what the FRI tool is and what the fatigue and risk indexes mean, please take the Fatigue Risk Management Technical Briefing on the [Network Rail eLearning platform](#).

Important information:

The FRI should not be used on its own to consider a roster or selection of rosters

The tool doesn't consider individual factors that may impact fatigue, including:
- The quality and length of sleep between shifts.
- Individual differences or personal circumstances.
- If rest breaks or sleep opportunities have been used effectively.
- How the individual will commute to work (e.g. did they sleep on the train, or did they drive in?)

These factors should be considered when reviewing the roster, to help determine the impact they might have on fatigue risk.

FRI index scores: The Network Rail Fatigue Risk Management Standard

The Fatigue Risk Management Standard (NR/L2/OHS/003) contains a list of trigger conditions. When someone exceeds a trigger condition, there are specific fatigue risk management actions that need to happen.

These are the trigger conditions that relate to FRI scores.

- Fatigue index should be no more than **35 for day shifts**
- Fatigue index should be no more than **45 for night shifts**
- Risk index scores should not be above **1.6**

The majority of working patterns within Network Rail produce fatigue scores of less than 30-35 for day shifts and 40-45 for night shifts.

These scores reflect what is known to be achievable by the majority of rail companies, rather than 'good practice' in managing fatigue.

Always aim to reduce scores to as low a value as reasonably practicable, not just to a level where they comply to the standard.

**You should use the FRI tool…**

- When developing a new roster, making changes to a roster or comparing rosters.
- Following an incident, or during an investigation, to assess the actual hours worked leading up to an event.
- To assess an individual or group using actual worked data, such as submitted timesheets, to establish fatigue risk when changing a roster or authorising overtime.

Using the FRI tool in Click Roster

1. Right click on the relevant team and select 'Calculate FRI'
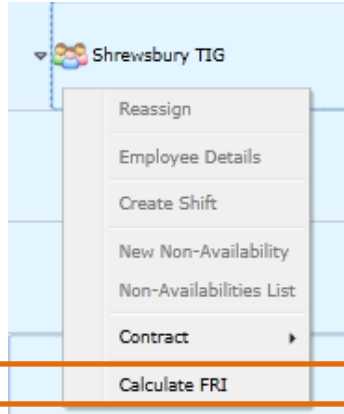
2. A pop-up will then appear, asking you for the date range you'd like to calculate the FRI Index for. Enter the roster start and end date and click on Apply.
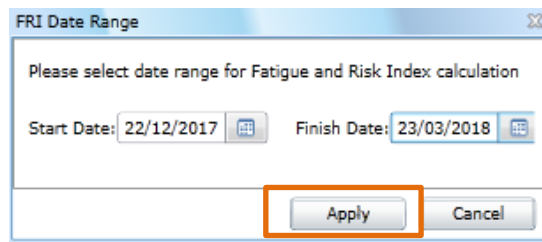

3. To view the FRI scores for any shift right-click on the shift and select 'Edit Shift', when the new window opens select the FRI tab. The FRI scores will be displayed along with details of when they were calculated.
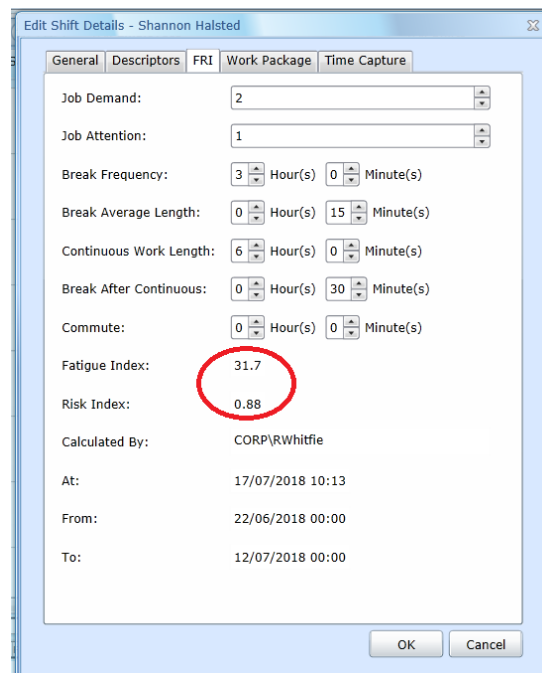
4. Any shifts with a fatigue index over 40 or a risk index greater than 1.6 will result in a violation being flagged with a pop-up box (if the 'Check Rules' indicator is turned on).
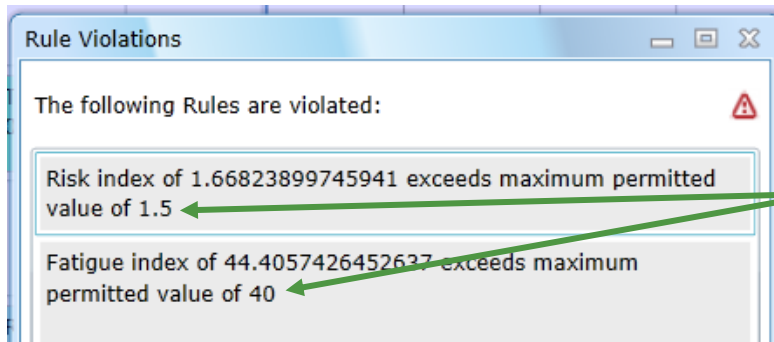

PLEASE NOTE: The maximum permitted values shown in this pop up don't align with the standard (where risk index of 1.6 and FRI of 35 for day working and 45 for night apply).

5. Once the FRI has been calculated you can view data from CRT as a report. Select the reports dropdown then 'Open FRI Report'.
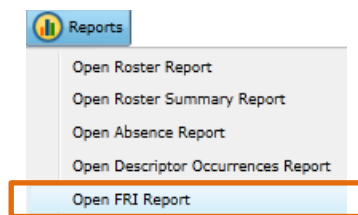
6. A new Internet Explorer window will open. Enter the week commencing date for the week you wish to run the report.
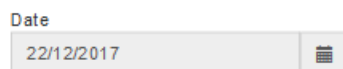
Note: FRI reports can only be pulled from the system one week at a time, if you need more than one week, a separate report will be required for each week.

7. Select the teams that you wish to run the report for, then click the Run Report button.

8. The report will look like this:

Shift Name	Start Time	Finish Time	Risk Index	Fatigue Index	Last Calculated	Up To Date		
			Scotland (M) / Glasgow / Glasgow / Team A					
			Richard Whitfield (52376)					
Trn - Weekday Night	25/12/2017 19:00	26/12/2017 05:00	0.88	31.70	23/10/2017 14:22	Yes		
Trn - Weekday Night	26/12/2017 19:00	27/12/2017 05:00	0.98	33.14	23/10/2017 14:22	Yes		
Trn - Weekday Night	27/12/2017 19:00	28/12/2017 05:00	1.09	36.16	23/10/2017 14:22	Yes		
Trn - Weekday Night	28/12/2017 19:00	29/12/2017 05:00	1.20	39.12	23/10/2017 14:22	Yes		
			Joan Rivers (209710)					
Trn - Weekday Night	25/12/2017 19:00	26/12/2017 05:00	0.88	31.70	23/10/2017 14:22	Yes		
Trn - Weekday Night	26/12/2017 19:00	27/12/2017 05:00	0.98	33.14	23/10/2017 14:22	Yes		
Trn - Weekday Night	27/12/2017 19:00	28/12/2017 05:00	1.09	36.16	23/10/2017 14:22	Yes		
Trn - Weekday Night	28/12/2017 19:00	29/12/2017 05:00	1.20	39.12	23/10/2017 14:22	Yes		

Interpretation

The main things to look out for are:

- What are the fatigue and Risk values? Remember, you should always aim to reduce scores to as low a value as reasonably practicable, not just to a level where they comply to the standard.

- The number of consecutive shifts, especially if:

    o They involve more than seven 8-hour shifts or four 12-hour shifts in a row

    o They are longer in length (10 or 12-hour shifts)

    o Involve a lot of nights

    o Have less opportunity for breaks within them

- The impact of factors like travel time and workload

- How often are high fatigue and risk index values occurring, and is there variation over the roster? Consider the distribution of rest days amongst of high fatigue duties.

- The number of rest days and how they are distributed across the roster; particularly following blocks of night shifts. Good practice is two full nights' sleep after a block of nights.

- Are any of the other Fatigue Risk Management standard triggers being exceeded?

- Reduce the incidence of single days off, especially where surrounding shifts are associated with higher fatigue scores, or where rest days begin on the same day as a duty finishes (e.g. finishing a night duty at 0800).

- If you're making a change to a roster, do you know the actual hours the team or individual has worked previously? These might differ significantly to what was originally planned.

- How are shift rotations handled? Best practice is to rotate forward, not backward.