

Stone Productions' CAO 48-1 Tracking

Introduction

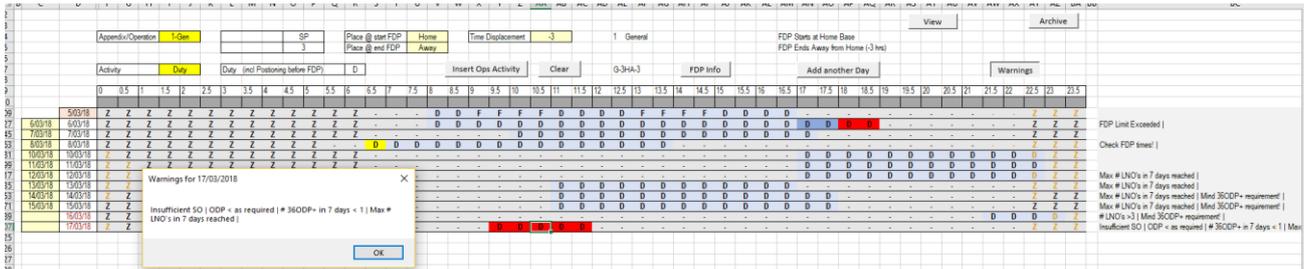
This Application is developed to track compliance of Duty and Flight Rosters with CASA Civil Aviation Order 48-1. The rules applied are based on Civil Aviation Order 48-1 Instrument 2013, as amended by Civil Aviation Order 48-1 Amendment Instrument 2016 (No. 1). This app has an Upgrade function for improvements, bug fixes and for when new rules are implemented.

The app is basically a template with which an Excel spreadsheet can be set up, to track duty and flight time for a flight crew member. By simply selecting the kind of operation that is performed and by selecting cells on a time line, Flight Duty Periods can be defined, and the program checks automatically for Compliance.

It has the capability to track compliance for;

- Appendix 1 - General
- Appendix 3 - Multi Pilot Operations except Complex Operations
- Appendix 4 - Single Pilot Operations
- Appendix 4B - Medical Transport Operations and Emergency Services
- Appendix 5 - Aerial Work Operations and Flight Training associated with Aerial Work
- Appendix 6 - Flight Training

It can also give a prediction of Sleepiness by calculating an improved IFLS (Individual Fatigue Likelihood Score) These scores could be used to set extra limits in an Operators Manual or as a tool for Appendix 7 FRMS.



Example 1-Gen

Example 3-MP

Setting Up

The template can be set up by entering a User Email Address (and the Registration Email Address for the Full version) and then click the SETUP button. The template will be renamed, and the main worksheets will become available. (Only 1 workbook per user can be used at the same time). The personalised workbook will have the following worksheets:

Setup

This worksheet is designed to setup the template and to enter some historic data to get the compliance calculations going from the startdate. On this page you can also define your standard personalised sleep rhythm for IFLS calculations.

Info

An information page with a summary of this manual.

Roster

This is the main working page (see more explanation below).

FDP Info

On this sheet a view of the calculations for a specified FDP can be presented here by using the 'FDP Info' button.

Codes

An overview of used codes in the system.

Limits

The text of Appendices 1, 3, 4, 4B, 5 and 6 with a summary and extracted calculation drivers.

Example 4-SP

On the left, dates can be entered for any duty days. You can skip (off duty) dates by entering the next line a date more than one day later than previous line. The IFLS will use the standard personalised sleep pattern from the Setup sheet for these skipped dates. If you want to reflect the IFLS for irregular sleep pattern during days off (e.g. not much sleep due to flights overseas), enter the dates for this irregular pattern and only use Sleep (Z) as activity in the pattern as experienced.

There are more buttons at the top of this worksheet:

- Clear to clear any entries on the timelines first select the cells and then click this button
- FDP Info to get information on the background calculations for a specific FDP. Select a cell within the FDP and click this button. The copied information can be found on the FDP Info sheet.
- Add another Day to add a day to your Roster table click this button
- View to toggle between different zoom levels of the Roster worksheet
- Warnings to display all warnings for a particular day in a message box (when there are many warnings that don't fit on the right side of the time table)

Example 5-AW

Warnings

Warnings will be generated for the following conditions:

- (Pending) Flight Time (FT) Exceedances for 7 and 28 day periods
- FT Rate of Effort (ROE) warnings for 90 and 365 day periods
- (Pending) Exceedance of Duty limits for 7 and 14 day periods
- (Pending) Exceedance of Late Night Operations (LNO) related FDP limits
- Warning for time separation of 2 consecutive LNO's
- Insufficient Off Duty Periods (ODP)
- (Pending) Requirement for 36ODP+ (36 hour Off Duty Period with 2 local nights) (also in relation to LNO's and FDP Increases if applicable)
- (Pending) Requirement for 72ODP+ (72 hour Off Duty Period with 3 local nights)
- Sleep Opportunity and ODP prior requirements
- (Pending) Requirements for days ODP in 28 and 84 day periods
- Incorrect Split Duty Rest Periods (SDRP)

- Incorrect time periods for FDP (Apx 1-Gen)
- Exceedance of Delay and Standby periods
- When Delay or SDRP equals an ODP

Nearly all CAO articles are covered except;

- that Flight Training must be in first 7 hours of FDP
- requirements for checking crew fitness before accepting an FDP extension
- Extension; If unforeseen operational circumstances arise after take-off on final sector, flight may continue to planned destination or alternate
- Any specific Ops Manual requirements (Stone Productions can implement that for you!)

Flight Time limitation calculations are based on the time brackets that are selected as “Fly” and based on a sum of max 28 days (may be more in the passed if you skip off duty days). For limitations based on longer periods an Rate of Effort (ROE) is calculated to warn if these long term limitations are in the balance. These warnings will give a good indication when logbook period totals need to be monitored.

Late Night Operations (LNO) will be counted for per day as applicable for the chosen operation/appendix. What constitutes a LNO differs between appendices. If flown until 23:00 on a 1-Gen Apx/Ops than this will count as a day with a LNO and will also count for the total when later operations are conducted as for example Apx 5-AW with LNO times between 0:00 and 4:59.

The screenshot shows a detailed flight logbook spreadsheet. The columns represent dates from 10/05/19 to 25/05/19. The rows show flight time (F), sleep (S), and activity (A) for each day. The spreadsheet includes various filters and summary statistics on the right side, such as '# FDP's >=4 with LNO's = 3'.

Example 6-Trng

(Improved) Individual Fatigue Likelihood Score (IFLS)

The formula to calculate the improved IFLS is as follows:

$$\text{IFLS} = (\text{if } T < 5; (5 - T) * 4) + (\text{if } F < 12; (12 - F) * 2) + (\text{if } A > F; (A - F) * X)$$

- T Effective Sleep prior 24 hours
- F Effective Sleep prior 48 hours
- A hours Awake since last significant sleep (= minimum 2 hours)
- X Activity Factor; 1.5 for “Fly” otherwise 1
- Effective Sleep sum of hours within Circadian rhythm + (sum of hours outside Circadian rhythm) * 0.8
- Circadian Rhythm when 3 out of 4 consecutive days slept at the same time

Amber	IFLS > 0.5
Purple	IFLS > 7.5
Red	IFLS > 12

Amber is when people start to begin to get tired
Purple; people in general are quite tired
Red; when people in general get very tired. (Unsafe for Flying?)



Production Version

For production version of this program contact Stone Productions.

<https://www.stoneproductions.com.au/contact.html>

Pricing:

Single Appendix;	\$65.- per user per year
Single Appendix + IFLS;	\$80.- per user per year
Full Version:	\$99.- per user per year

Downloads & Information:

<https://www.stoneproductions.com.au/frms.html>