### conodā TORONTO

#### Workshop 2 Commences at: 09:55

#### Reporting: Getting the most out of your data

#### Presented by: Dr. Steven Hursh

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## Workshop Topics

#### • How to build the following reports:

- Minimum Effectiveness less than 77
- Minimum Effectiveness less than 77, Sleep Reservoir at 75 or lower
- Fatigue Hazard Area

#### • A look at reports/data that can be extracted to third party BI tools

- Standard Reports
  - Summary CSV
  - Details CSV
  - Schedule Results to CSV
- Using the Events Table to isolate key data





# Min. Effectiveness <77

Report 1



The Worldwide Leader in Aviation for Fatigue Management Solutions



### SAFTE®FAST Calibration Values

| Continuous<br>Hours of<br>Wakefulness | Effectiveness<br>(% of Baseline) | Reaction Time<br>(% increase from<br>Baseline) | Lapse Likelihood<br>(relative to 1 for rested) | Mean Cog | BAC  |
|---------------------------------------|----------------------------------|--|--|----------|------|
| 18                                    | 80                               | +25%   | 3.1  | 88.3     |      |
| 18.5                                  | 77                               | +30%   | 3.7  | 86.3     | 0.05 |
| 19                                    | 75                               | +33%   | 4.0  | 84.5     |      |
| 21                                    | 70                               | +43%   | 5.2  | 81.4     | 0.08 |
| 40 <sup>3</sup>                       | 65 <sup>1</sup>                  | +54%   | 6.5  | 77.7     |      |

- US FAA has a threshold of 77 for flight and duty period evaluations
  - https://www.faa.gov/about/office\_org/headquarters\_offices/agc/practice\_areas/regulations/Part117/Part117\_G eneral/media/Final%20Flight%20Duty%20Rule.pdf
- Below 77, USAF applies countermeasures to improve performance
- Increase is non-linear because of circadian interactions





 Frequency of Minimum
 Effectiveness
 Critical < 77</li>

#### Minimum Effectiveness less than 77







# Report Building: Min E<77

#### To build this report, follow the steps below:

- a) Add Pivot Events report
- b) Row Labels: Schedule ID
- c) Report Filter: Effectiveness Minimum(Critical)
- d) Values: Count of Effectiveness
- e) Report Filter: Crewing
- f) Effectiveness Minimum (Critical) Filter: set to *is less* than or equal to 77
- g) Crewing Filter: Un-select False
- h) Schedule ID Filter: set to Sort Descending (Z-A) by: Count of Effectiveness Minimum (Critical)
- i) **Deselect**: Show Totals, Show Grid, Show Legend
- j) Plot Type: Bar

Report Name: Min Effectiveness Critical =<77 Horizontal Axis Name: Schedule ID Vertical Axis Name: Count of Min E Critical =< 70







# Min E<77, Min R<=75

Report 2



The Worldwide Leader in Aviation for Fatigue Management Solutions



Alertness Score (Effectiveness) Is Not The Whole Story

• If Sleep debt is not the issue AND the job has to be conducted at that time, then fatigue mitigation will focus on crew training and minimizing job specific demands rather than scheduling.



#### Night Duty Ending Below Threshold





## SAFTE-FAST Fatigue Hazard Mitigation Strategy



- If effectiveness is < 77 but there is no excessive sleep debt (sleep reservoir not less then 75), then pairing construction is not likely to be the key factor likely time of day.
- Unless the flight can be rescheduled, then crew-centered mitigations are necessary to protect crew performance at night.





 Frequency of Minimum
 Effectiveness
 Critical < 77 AND</li>
 Minimum
 Reservoir ≤ 75

# Min E<77, Min Res<75







## Report Building: Min E<77, Min R<75

#### To build this report, follow the steps below:

- a) Add Pivot Events report
- b) Row Labels: Schedule ID
- c) Report Filter: Crewing, Effectiveness Minimum (Critical), Reservoir Minimum (Critical)
- d) Values: Count of Reservoir Minimum (Critical)
- e) Crewing Filter: Un-select False
- f) Effectiveness Minimum (Critical) Filter: set to *is less* than 77
- g) Reservoir Minimum (Critical) Filter: set to *is less than* or equal to 75
- h) Schedule ID Filter: set to Sort Descending (Z-A) by: Count of Reservoir Minimum (Critical)
- i) **Deselect:** Show Totals, Show Legend
- j) Plot Type: Bar



Report Name: Min E<77, Min R<=75 Horizontal Axis Name: Schedule ID Vertical Axis Name: Count Min Reservoir Critical





# Fatigue Hazard Area

Report 3

The Worldwide Leader in Aviation for Fatigue Management Solutions





## Fatigue Hazard Area Calculation

<u>Fatigue Hazard Area is the Time Below Criterion weighted by Distance Below Criterion</u>



- FHA = TBC x DBC
- The scale goes from 0 to Total Crewing Time
- %FHA divides FHA by Total Crewing Time and scales from 0 to 100

Distance Below Criterion (DBC) (Criterion – Minimum)/Criterion  $\rightarrow$  0 to 1.00



- Schedule A:
  - FHA: 199.6
  - Min Effectiveness: 61.5
- Schedule B:
  - FHA: 79.8
  - Min Effectiveness: 60.7

#### Fatigue Hazard Area Examples









## Ranking Schedules by Fatigue Hazard Area





# **Report Building: Fatigue Hazard Screening**

#### To build this report, follow the steps below:

- a) Add Pivot Events (Crewing) report
- b) Row Labels: Schedule ID
- c) Values: Average of Fatigue Hazard
- d) Report Filter: Fatigue Hazard Area (Crewing)
- e) Fatigue Hazard Area (Crewing) Filter set to: *is* greater than 5
- f) Schedule ID Filter set to Sort Ascending (A-Z) by: Average of Fatigue Hazard Area (Crewing)
- g) Deselect: Show Totals, Show Legend
- h) Plot Type: Line

Report Name: Fatigue Hazard Area Ranking Horizontal Axis Name: Schedule ID Vertical Axis Name: Fatigue Hazard Area (>5)







- Summary CSV: contains over 100 configurable data options. Typically set as default in Output parameter
- Detail CSV: approx. 30 configurable data options. Typically not enabled by default. Runs minute by minute calculation per schedule.
- Schedule Results to CSV: exports all column headers and data analysis from the Modeling Results Table.
- Events Table: data can be grouped/filtered on to then be extracted and paste into BI tools.



|   |  | to CSV                          | Events Table                       |  |  |  |  |  |
|---|--|---------------------------------|------------------------------------|--|--|--|--|--|
| 🛱 Columns Editor — 🗆 🗙  | EÊ Columos Editor — □ X  |                                 |                                    |  |  |  |  |  |
| Select All Select None  |  | Column Chooser                  | Column Chooser                     |  |  |  |  |  |
|   | Select All Select None   | KEE Maximum                     | Pesenvoir Average (Crewing)        |  |  |  |  |  |
| Column n  | Column   | KSS Maximum                     | Keservon Average (crewing)         |  |  |  |  |  |
| ElectivenessCriticalMin   | GmtTime  |                                 | Deservie Maximum (Critical)        |  |  |  |  |  |
| KSSMax  | Base Time  | KSS Minimum                     | Reservoir Maximum (Critical)       |  |  |  |  |  |
| KSSMn   | Local Time   |                                 |                                    |  |  |  |  |  |
| KSSAvg  | TZ   | KSS Average                     | Reservoir Average (Critical)       |  |  |  |  |  |
| KSSStart  | Effectiveness  |                                 |                                    |  |  |  |  |  |
| KSSEnd  |  | KSS Start                       | Minutes                            |  |  |  |  |  |
| KSSCrewingMax   |  |                                 |                                    |  |  |  |  |  |
| KSSCrewingMin   |  | KSS End                         | Minutes (Crewing)                  |  |  |  |  |  |
| KSSCrewingAvg   | Sleep24  |                                 |                                    |  |  |  |  |  |
| KSSCrewingStart   | Sleep Debt   | KSS Maximum (Critical)          | Minutes (Critical)                 |  |  |  |  |  |
| KSSCrewingEnd   | HrsAwake   | iss maximum (entreally          |                                    |  |  |  |  |  |
| KSSCriticalMax  | Current Phase  | KEE Minimum (Critical)          | Minutes Below Criterion            |  |  |  |  |  |
| KSSCritical Min   | GoalPhase  | KSS Minimum (Critical)          |                                    |  |  |  |  |  |
| KSSCriticalAvg  | WOCL   | MEE Average (E-March            | Minutes Below Criterion (Crewing)  |  |  |  |  |  |
| SamnPereli/Max  | U OutPhase   | KSS Average (Critical)          | windles below criterion (crewing)  |  |  |  |  |  |
| SamnPerelliMin  | Cog  |                                 | Marchae Balance Citeday (Citica)   |  |  |  |  |  |
| SamnPerelliAvg  | Appendex   | Samn-Perelli Maximum            | Minutes Below Criterion (Critical) |  |  |  |  |  |
| SamnPerelliStart  | Ø BT   |                                 |                                    |  |  |  |  |  |
| SamnPerelliEnd  |  | Samn-Perelli Minimum            | % Below Criterion                  |  |  |  |  |  |
| SamnPerelliCrewingMax   |  |                                 |                                    |  |  |  |  |  |
| SamPereliCrewingMin   |  | Samn-Perelli Average            | % Below Criterion (Critical)       |  |  |  |  |  |
|   |  |                                 |                                    |  |  |  |  |  |
| Samperelic.rewingstart  | Attributes   | Samn-Perelli Start              | Number of Night Events (Crewing)   |  |  |  |  |  |
| SamaRendiction/Max  | LightPhase   |                                 |                                    |  |  |  |  |  |
| Same Perelli Citical Min  | SleepIntensity   | Samp Perelli End                | Number of Redeve Events (Crewing)  |  |  |  |  |  |
| Same Perelli Citical Avo  | Workload   | Samereren ena                   |                                    |  |  |  |  |  |
| BeservoirMax  | RelativePhase  | Come Develli Mavieure (Critice) | Number of WOCL Events (Crewing)    |  |  |  |  |  |
| ReservoirMin  | RelativeGoalPhase  | Samn-Perelli Maximum (Critical) | number of wood events (crewing)    |  |  |  |  |  |
| ReservoirAvg  |  |                                 | Number of Augmented Events         |  |  |  |  |  |
| ReservoirStart  |  | Samn-Perelli Minimum (Critical) | Number of Augmented Events         |  |  |  |  |  |
| ReservoirEnd  |  |                                 |                                    |  |  |  |  |  |
| ReservoirCrewingMax   |  | Samn-Perelli Average (Critical) | Number of Duties                   |  |  |  |  |  |
| Possessi Ceruinalán   | Cast Tana (Wasti yang Sang 24 Sing Dahi Un Ayaka Gurant Shara WOCL O AShara Cas Lana b                     |                                 |                                    |  |  |  |  |  |
| ID,Seq.Activity,Crewing,Description,From,To,StartGMT,StartBase,StartLocal,StartTZ,EndGMT,EndE | wink himo, wrown eness, steep 24, steep bew, i iis niwake, ouire iki hisse, mood, OutPflase, Cug, Lapse II | Reservoir Maximum               | Number of Split Duties             |  |  |  |  |  |



#### Extracting Data: Summary, Detail & Schedule Results to CSV

| Home                                     | Tools View    |                   |                                |              |                |          |             |                                |                       |   |                                 |                                   |                       |                                |                      |                       |  |              |                |          |
|--|---------------|-------------------|--------------------------------|--------------|----------------|----------|-------------|--------------------------------|-----------------------|---|---------------------------------|-----------------------------------|-----------------------|--------------------------------|----------------------|-----------------------|--|--------------|----------------|----------|
| New Open Save Sa                         | ave As Temp   | lates New         | Copy Import                    | Load         | Analyze        | Clear    | Add Vi      | ew/Edit Delete                 | Filter Fi<br>earch Se | ter<br>arch Repo                        | User<br>Supp                    | <sup>r</sup> Manual<br>ort Portal | Open Folder           |                                |                      |                       |  |              |                |          |
| Project                                  | Temp          | lates             | Scenarios                      |              | Data and Pro   | cessing  |             | Schedules                      | Ev                    | ents Repo                               | orting                          | Help                              | Output                |                                |                      |                       |  |              |                |          |
| <ul> <li>Scenario</li> </ul>             |               |                   |                                |              |                | Date     |             | Total Duration                 | Number of             | Effectiveness                           | Effectiveness                   | Effectivenes                      | s KSS                 | Samn-Perelli                   | Reservoir            | Reservoir             | % Below  | Workload     | Workload To    | <b>^</b> |
| Name                                     | RostersSample |                   |                                | Schedule ID  |                | (Base)   | Route       | (Work)                         | Events                | (Crewing)                               | imum Average<br>wing) (Crewing) | Minimum<br>(Critical)             | Maximum<br>(Critical) | Maximum<br>(Critical)          | Minimum<br>(Crewing) | Minimum<br>(Critical) | Criterion<br>(Crewing)                               | Maximum      | Median Ha      | ii.      |
| Description                              | The system de | ault for the avi  | iation                         |              |                |          |             |                                |                       | (=====;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;; | (                               | (,                                | (                     | (=,                            | (=-=,g)              | (,                    | (  |              |                |          |
|  | industry      |                   |                                | <u>ع د</u>   | 98765          | 02/06/17 | YYZ, YHZ,   | 4219                           | 57                    | 74.0                                    | 88.7                            | 74.                               | 0 7.3                 | 5.7                            | 79.2                 | 79.2                  |  | 26.8         | 13.3           | 1        |
|  |               |                   |                                | <u>+ 5</u>   | 12345          | 01/06/17 | YXE, YQR,   | 7869                           | 120                   | 66.7                                    | 82.9                            | 66.                               | 7 7.9                 | 6.1                            | 72.9                 | 72.9                  | 47.2   | 32.8         | 14.4           | 1        |
| <ul> <li>Configuration</li> </ul>        |               |                   |                                | <u>بک ٹی</u> | 23456          | 01/06/17 | YYZ, EWR,   | 7369                           | 97                    | 68.4                                    | 91.4                            | 68/                               | 4 7.7                 | 6.0                            | 74.4                 | 74.4                  | 17.0   | 41.0         | 22.0           | 4        |
| Industry                                 | Aviation      |                   | ~                              | ∿د ٹ<br>∿_ ا | 34567          | 01/06/17 | YYZ, YOW,   | 5353                           | 11                    | 69.8                                    | 82.6                            | 69,                               | 8 /.t                 | 6.0                            | /5.4                 | /5.4                  | 47.6   | 34.9         | 20.0           | -        |
| Input Load Type                          | CALLE EVEL    | COV 20            |                                | 1 5          | 40070<br>56780 | 10/06/17 | VVZ VOW     | 7312                           | 40                    | 90.5                                    | 90.1                            | 90.                               | 0 79                  | 61                             | 00.0                 | 00.0                  | 21.1   | 27.5         | 23.4           |          |
|  | SAFIERASI     |                   | · ·                            |              | 6789           | 01/06/17 | YMX YOM     | 8016                           | 86                    | 73.1                                    | 88.7                            | 73.                               | 3 7.3                 | 5.7                            | 74.1                 | 74.1                  | 14.9   | 35.2         | 12.3           |          |
| <ul> <li>Input - Load</li> </ul>         |               |                   |                                | .↓.£         | 3 78910        | 02/06/17 | YYZ. YWG    | 7454                           | 98                    | 69.9                                    | 83,4                            | 69.                               | 9 7.6                 | 6.0                            | 71.4                 | 71.4                  | 42.2   | 27.6         | 16.4           |          |
| SAFTE-FAST CSV                           | D:\OneDrive - | Institutes for Be | ehavi                          | 1.0          | 891011         | 31/05/17 | YYZ, YOW,   | 10344                          | 115                   | 67.4                                    | 92.2                            | 67,                               | 4 7.8                 | 6.1                            | 75.4                 | 75.4                  | 11.4   | 28.2         | 11.5           |          |
| Period Start                             | 3/ 1/20       | 8                 |                                | Ψť           | 91011          | 13/06/17 | YYZ, EWR,   | 4502                           | 45                    | 96.5                                    | 98.1                            | 96.                               | 5 2.5                 | 2.1                            | 83.8                 | 83.8                  | 0.0  | 27.3         | 13.6           |          |
| Crewing Codes                            |               |                   |                                | ±۵           | 3 101112       | 01/06/17 | EWR, BDA,   | 8338                           | 101                   | 69.5                                    | 90.9                            | 69.                               | 5 7.7                 | 6.0                            | 74.1                 | 74.1                  | 19.0   | 38.6         | 21.1           |          |
| Non-Crewing Events                       | Include Ex    | ept D7D.0         | CDT, WOB,                      | ₹            | 111213         | 01/06/17 | YYZ, YOW,   | 6787                           | 94                    | 69.8                                    | 83.3                            | 69.                               | 8 7.6                 | 6.0                            | 75.4                 | 75.4                  | 44.8   | 34.9         | 19.9           |          |
|  | O Ignore Exc  | ept               |                                | ₹            | 121314         | 16/06/17 | YYZ, YWG,   | 2432                           | 31                    | 73.5                                    | 88.6                            | 73.                               | 5 7.3                 | 5.7                            | 79.4                 | 79.4                  |  | 25.4         | 16.8           |          |
|  | -             |                   | Vildcards                      | ₹¢           | 3 131415       | 01/06/17 | YXE, YQR,   | 4713                           | 65                    | 66.5                                    | 81.2                            | 66.                               | 5 7.9                 | 6.1                            | 67.5                 | 67.5                  | 47.4   | 46.4         | 22.9           |          |
|  |               | ation 0           |                                | ₹            | \$ 50642       | 30/06/17 | YOW, YYZ    | 315                            | 6                     | 99.4                                    | 100.4                           | 99/                               | 4 1.3                 | 1.2                            | 87.2                 | 87.2                  | 0.0  | 5.8          | 5.8            |          |
| Custom Data Farmat                       |               |                   | <b>•</b>                       | ±¢           | 3 141516       | 12/06/17 | YYZ, YYC, Y | 4995                           | 49                    | 71.0                                    | 84.0                            | 71/                               | 0 7.5                 | 5.9                            | 74.6                 | 74.6                  |  | 11.5         | 6.6            |          |
| Custom Date Format                       |               |                   |                                | <u>ع د</u>   | 151617         | 01/06/17 | ATL, YYZ, Y | 6372                           | 87                    | 54.8                                    | 79.0                            | 54.                               | 8 8.4                 | 6.6                            | 63.9                 | 63.9                  | 44.8   | 28.8         | 18.2           | *        |
| <ul> <li>Input - Augmentation</li> </ul> | n             |                   |                                |              |                |          |             |                                |                       |   |                                 |                                   |                       |                                |                      |                       |  |              |                | -        |
| Enable                                   |               |                   |                                | Sumr         | mary Events    | Graph    |             |                                |                       |   |                                 |                                   |                       |                                |                      |                       |  |              | 4              | ×        |
| Event Rules                              | R:MEL,HNL;S   | R:1 R:HNL,ME      | EL;SR                          | Results      |                |          | Effectiv    | Effectiveness Average (Crewing |                       |   | Effectiveness Minimum (Crewin E |                                   |                       | Effectiveness Minimum (Critica |                      |                       | Reservoir Minimum (Critical) % Below Criterion (Crew |              |                |          |
| Input - Duties                           |               |                   |                                |              |                |          |             |                                |                       |   |                                 |                                   |                       |                                |                      |                       |  |              |                |          |
| Auto-Duties                              | $\checkmark$  |                   |                                |              |                |          |             |                                | 90+ (15) 90-          | + (4)                                   |                                 | 90+ (4                            | )                     | _                              | 65-75 (19)           |                       |  |              |                | 5        |
| Base Station                             |               |                   | Success (37) 0-65 (9) 0-65 (9) |              |                |          |             |                                |                       |   |                                 | 10-                               | 20 (12)               |                                |                      |                       |  |              |                |          |
| Determine Base From                      | Schedule Star | Station           | $\sim$                         |              |                |          |             |                                |                       |   |                                 |                                   |                       | 0-65 (1)                       |                      | 1-10 (4)              | <u>)</u>   |              |                |          |
| Max Break                                |               |                   |                                |              |                |          |             |                                |                       |   |                                 |                                   |                       |                                |                      |                       |  |              |                |          |
| Brief Duration                           | 01:00         |                   | ÷                              |              |                | Warning  | (10)        |                                | 05                    | 77 (24)                                 |                                 | 05.77                             | (2.0)                 |                                |                      |                       |  |              |                |          |
| Debrief Duration                         | 00:30         |                   | 77-90 (22) bo-// (24)          |              |                |          |             |                                |                       | 75-90 (17) 20+ (17)                     |                                 |                                   |                       |                                |                      |                       |  |              |                |          |
| Duty Break Type                          | Sit           |                   | ~ ~                            |              |                |          |             |                                |                       |   |                                 |                                   |                       |                                |                      |                       |  |              |                |          |
| C:\Users\Jeff\Desktop\                   | UserGroup\rep | orts\Rosters S    | Sample Hazard I                | Report       | v2.sfp         |          |             |                                |                       |   |                                 |                                   |                       |                                |                      | Sched                 | ules: 47 Eve   | nts: 3305 Du | ation: 1577101 |          |



#### **Extracting Data: Events Table**

| Home                                     | Tools \                | /iew                     |                    |            |                    |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    |                                   |                     | ^                        |
|--|------------------------|--------------------------|--------------------|------------|--------------------|----------------|--------------|--------------------------|------------------------------------|---------------------------------------|---------------------------------------|--|------------------------------|---------------------------------------|-----------------------------------|------------------------------------|-----------------------------------|---------------------|--------------------------|
| New Open Save Sz<br>Project              | ave As                 | Templates                | New Copy Impo      | nt Los     | ad Analyze         | Clear          | Add V        | iew/Edit Delete          | Froup Gr<br>Filter Fi<br>Search Se | roup<br>ilter<br>earch Repo           | User<br>Supp                          | r Manual<br>ort Portal<br>Help         | Open Folder<br>Output        |                                       |                                   |                                    |                                   |                     |                          |
| ▼ Scenario                               |                        |                          |                    | ^          |                    |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    |                                   |                     |                          |
| Name<br>Description                      | Rosters?<br>The syst   | Sample<br>em default for | the aviation       |            | Schedule II        | Date<br>(Base) | Route        | Total Duration<br>(Work) | Number of<br>Events                | Effectiveness<br>Minimum<br>(Crewing) | Effectiveness<br>Average<br>(Crewing) | Effectivenes:<br>Minimum<br>(Critical) | KSS<br>Maximum<br>(Critical) | Samn-Perelli<br>Maximum<br>(Critical) | Reservoir<br>Minimum<br>(Crewing) | Reservoir<br>Minimum<br>(Critical) | % Below<br>Criterion<br>(Crewing) | Workload<br>Maximum | Workload To<br>Median Ha |
|  | industry               |                          |                    | • الح      | 98765              | 02/06/17       | YYZ, YHZ,    | 4219                     | 57                                 | 74.0                                  | 88.7                                  | 74.                                    | 7.3                          | 5.7                                   | 79.2                              | 79.2                               | 20.7                              | 26.8                | 13.3                     |
|  |                        |                          |                    | : <b>ٹ</b> | 3 12345            | 01/06/17       | YXE, YQR,    | 7869                     | 120                                | 66.7                                  | 82.9                                  | 66.                                    | 7 7.9                        | 6.1                                   | 72.9                              | 72.9                               | 47.2                              | 32.8                | 14.4                     |
| <ul> <li>Configuration</li> </ul>        |                        |                          | ]                  | : <u>ٹ</u> | 23456              | 301/06/17      | YYZ, EWR,    | 7369                     | 97                                 | 68.4                                  | 91.4                                  | 68,                                    | 4 7.7                        | 6.0                                   | 74.4                              | 74.4                               | 17.0                              | 41.0                | 22.0                     |
| Industry                                 | Aviation               |                          | ~                  |            | 34567              | 01/06/17       | YYZ, YOW,    | 5353                     | 77                                 | 69.8                                  | 82.6                                  | 69.                                    | 3 7.6                        | 6.0                                   | 75.4                              | 75.4                               | 47.6                              | 34.9                | 20.0                     |
| Industry                                 | Aviation               | TAOT COV                 | ~                  |            | 45678              | 13/06/17       | YYZ, EWR,    | 4502                     | 46                                 | 96.5                                  | 98.1                                  | 96.                                    | 5 2.5                        | 2.1                                   | 83.8                              | 83.8                               | 0.0                               | 27.3                | 13.6                     |
| Input Load Type                          | SAFTE                  | FASTUSV                  | ~                  |            | 50/89              | 01/06/17       | VMX_VOM      | 8016                     | 92                                 | 73.1                                  | 90.2                                  | 73                                     | 2 73                         | 5.1                                   | 72.8                              | 72.8                               | 21.1                              | 35.0                | 12.3                     |
| Input - Load                             |                        |                          |                    |            | 3 78910            | 02/06/17       | YYZ YWG      | 7454                     | 98                                 | 69.9                                  | 83.4                                  | 69.                                    | , ,<br>) 7.6                 | 6.0                                   | 71.4                              | 71,4                               | 42.2                              | 27.6                | 16.4                     |
| SAFTE-FAST CSV                           | D:\One[                | Drive - Institute        | es for Behavi      | . <u>.</u> | 3 891011           | 31/05/17       | YYZ, YOW,    | 10344                    | 115                                | 67.4                                  | 92.2                                  | 67.                                    | 4 7.8                        | 6.1                                   | 75.4                              | 75.4                               | 11.4                              | 28.2                | 11.5                     |
| Period Start                             | 3/                     | 1/2018                   |                    | <u>ب</u>   | <b>3</b> 91011     | 13/06/17       | YYZ, EWR,    | 4502                     | 45                                 | 96.5                                  | 98.1                                  | 96.                                    | 5 2.5                        | 2.1                                   | 83.8                              | 83.8                               | 0.0                               | 27.3                | 13.6                     |
| Crewing Codes                            |                        |                          |                    | ى 🛃        | 🗘 101112           | 01/06/17       | EWR, BDA,    | 8338                     | 101                                | 69.5                                  | 90.9                                  | 69.                                    | 5 7.7                        | 6.0                                   | 74.1                              | 74.1                               | 19.0                              | 38.6                | 21.1                     |
| Non-Crewing Events                       | Inclu                  | ide Except               | D7D, CDT, WOB,     | ئىل        | 🗘 111213           | 01/06/17       | YYZ, YOW,    | 6787                     | 94                                 | 69.8                                  | 83.3                                  | 69.                                    | 3 7.6                        | 6.0                                   | 75.4                              | 75.4                               |                                   | 34.9                | 19.9                     |
|  | 🔿 Igno                 | re Except                |                    | <u>ٹ ٹ</u> | 121314             | 16/06/17       | YYZ, YWG,    | 2432                     | 31                                 | 73.5                                  | 88.6                                  | 73.                                    | 5 7.3                        | 5.7                                   | 79.4                              | 79.4                               |                                   | 25.4                | 16.8                     |
|  |                        |                          | Wildcards          | 4          | 121/15             | 01/06/17       | VVF VOD      | /713                     | 65                                 | 66.5                                  | R1 7                                  | 66                                     | 5 70                         | 61                                    | 67.5                              | 67.5                               | A7.A                              | A6 A                | 22.0                     |
|  | 🗌 Igno                 | re Duration              | 0                  | Sur        | mmary Events Graph |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    |                                   |                     | F                        |
| Custom Date Format                       |                        |                          |                    | Pa         | - I                |                | Effortio     | inners Average (C        | rowing Eff                         | lastivanass M                         | inimum (Craw                          | in Effort                              | iveness Minim                | um (Critica                           | Pasanuair Mi                      | nimum (Critic                      |                                   | alow Critorion      | (Crowing)                |
| <ul> <li>Input - Augmentation</li> </ul> | n                      |                          |                    | ne.        | suits              |                | checu        | veness Average (C        | rewing En                          | ecuveriess ivi                        | inimum (crew                          | in chect                               | iveness winnin               | ium (chuca                            | Reservoir Ivii                    | ninum (criu                        | .ai) /ot                          | selow criterior     | (crewing)                |
| Enable                                   |                        |                          |                    |            |                    |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    |                                   |                     |                          |
| Event Rules                              | R:MEL,H                | INL;SR:1 R:H             | INL,MEL;SR         |            |                    |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    |                                   |                     |                          |
| Input - Duties                           |                        |                          |                    |            | (03)               |                |              |                          | 90+(15) 90                         | + (4)                                 | 0-65                                  | 90+ (4                                 |                              | 0-65 (9)                              | 65-75 (19)                        |                                    | 10.                               | 20 (12)             | 0-1 (4)                  |
| Auto-Duties                              |                        |                          |                    | 50         | ccess (37)         |                |              |                          |                                    |                                       | 5 65                                  |  |                              | 0.00(0)                               |                                   |                                    |                                   |                     | 1-10 (4)                 |
| Base Station                             |                        |                          |                    |            |                    |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    | 0-65 (1)                          |                     |                          |
| Determine Base From                      | Schedule Start Station |                          |                    |            |                    |                | (10)         |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    |                                   |                     |                          |
| Max Break                                |                        |                          |                    |            |                    | Warning        | (10) 77-90 ( | 22)                      | 65                                 | -77 (24)                              |                                       | 65-77                                  | (24)                         |                                       |                                   | 70                                 | 00 (17)                           |                     | 20. (17)                 |
| Brief Duration                           | 01:00                  |                          |                    |            |                    |                | // 50(       | /                        |                                    |                                       |                                       |  |                              |                                       |                                   | /5                                 | -50(17)                           |                     | 20+(17)                  |
| Debrief Duration                         | 00:30                  |                          | ×                  |            |                    |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    |                                   |                     |                          |
| Duty Break Type                          | Ca                     |                          | •                  |            |                    |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   |                                    |                                   |                     |                          |
| Collineration Deside and                 | SIL                    |                          | ×                  | ¥          | 1.2.6              |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   | Cabad                              | 1 47 5                            |                     | 1577101                  |
| C:\Users\Jeff\Desktop\                   | UserGrou               | ip\reports\R             | osters Sample Haza | га Керо    | rt v2.stp          |                |              |                          |                                    |                                       |                                       |  |                              |                                       |                                   | Schedu                             | Jies: 47 Ever                     | nts: 3305 Dur       | ation: 1577101           |





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# Questions?

**Conclusion of Presentation** 

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