

Lessons from ASAP & FOQA



EXECUTIVE JET MANAGEMENT



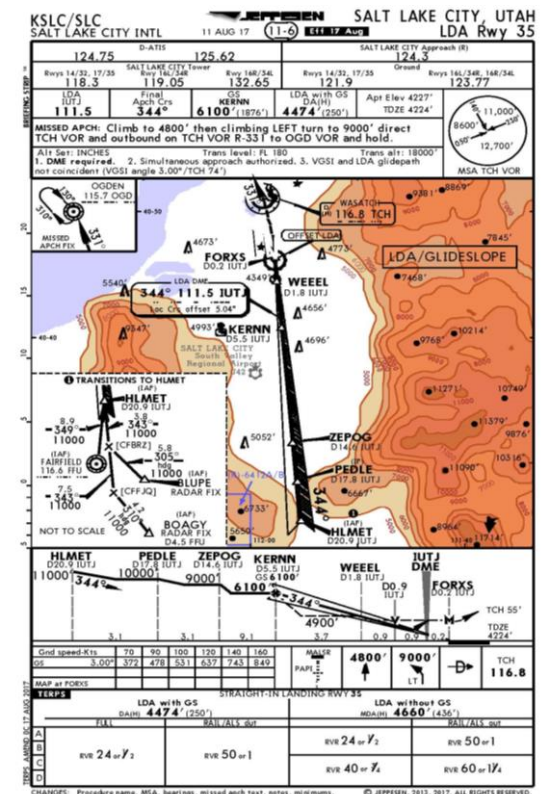
Fred Calvert
Director, Safety Assurance
Air Safety Investigator

Lesson 1. We all make mistakes

Pilot ASAP Report: ATC Controller Error KSLC Rwy 35 LDA DME Approach



Used with reporter's permission
LA = Low Altitude Warning



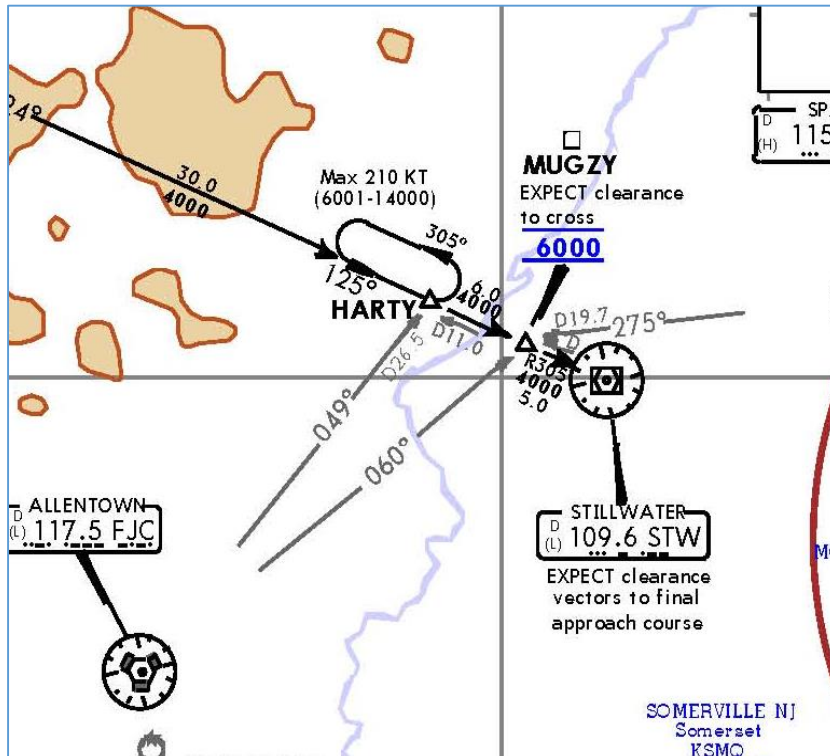
Lesson 2. We don't always know what's ahead

On arrival to KTEB on the WILKES BARRE 4 STAR and about 2 min prior to reaching MUGZY at 6000 MSL and 250KIAS, we overheard a GV preceding us on this arrival transmit to TRACON that "we just came very, very close to a glider at MUGZY at 6000 feet". As we approached MUGZY, the PF pointed out a glider at our 11 o'clock and same altitude. I also spotted the aircraft (white, low wing and probably single seat) in a right hand orbit. We passed behind it. Passing MUGZY we were given a normal radar vector to the east towards the KTEB Rwy 19 final. I acknowledged this vector and reported the glider encounter. A few seconds later I noticed another glider to our right about the same horizontal distance and about 1000 feet below us. We passed this aircraft N of its position. I also reported this aircraft to the very busy controller who responded with "we can't see them". Evasive action was not required. We then continued the approach and landing at KTEB. Both the PF and I have been flying into KTEB for 20-30 years. The PF was even based there for a few years. We both agreed that we were totally unaware of glider ops in this area. We also both agreed that had we been given the same vector 10-15 seconds earlier, the outcome of this event may have been very different.

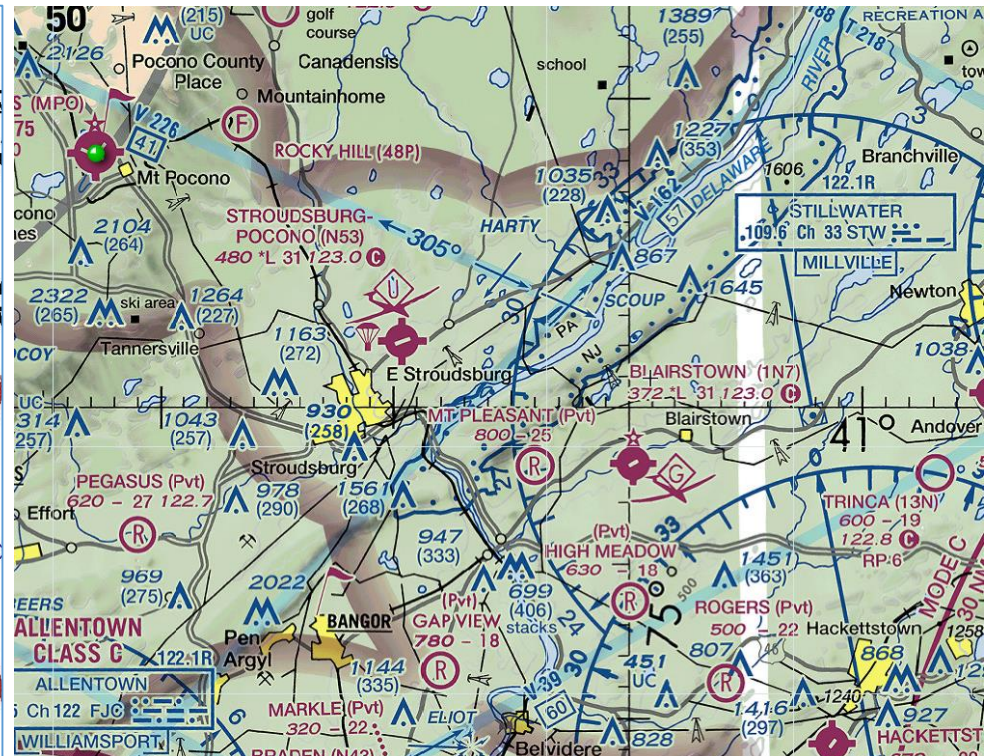


Lesson 2. We don't always know what's ahead

WILKES BARRE 4 ARRIVAL (STAR)



VFR SECTIONAL



Lesson 2. We don't always know what's ahead

4556 Airport Road Cincinnati, OH 45226 T 513 979 6600 F 513 979 6662

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CC-2013-06-01

TITLE: Glider Operations Near "MUGZY" on the "Wilkes Barre 4 Arrival"

DATE: June 18, 2013

This Crew Communication (CC) letter is being issued by the Executive Jet Management Safety Services Office in accordance with the Executive Jet Management Safety Management System Manual Section 8 for communication to all flight crew personnel about critical safety related information received through the EJM ASAP Safety Reporting Program.

Information has been received through an Aviation Safety Action Program (ASAP) Report warning of glider operations in the vicinity and altitude of the "MUGZY" non-compulsory reporting point on the "Wilkes Barre 4 Arrival."

The crew member submitting the report has given their permission to publish the de-identified narrative which reads (unedited):

On arrival to KTEB on the WILKES BARRE 4 STAR and approx 2 min prior to reaching MUGZY at 6000 MSL and 250 KIAS, we overheard a GV preceding us on this arrival transmit to TRACON that "we just came very, very close to a glider at MUGZY at 6000 feet". They were then given a normal vector towards the airport. As we approached MUGZY, the PF pointed out a glider at our 11 o'clock and same altitude. I also spotted the aircraft (white, low wing and probably single seat) in a right hand orbit. We passed behind it (5 of its position) at the above listed approx distance. Passing MUGZY we were given a normal radar vector to the east towards the KTEB Rwy 19 final. I acknowledged this vector and reported the glider encounter. A few seconds later I noticed another glider to our right approx the same horizontal distance and about 1000 feet below us. We passed this aircraft N of its position. I also reported this aircraft to the very busy controller who responded with "we can't see them". Evasive action was not required. We then continued the approach and landing at KTEB.

Both the PF and I have been flying into KTEB for 20-30 years. The PF was even based there for a few years. We both agreed that we were totally unaware of glider ops in this area. We also both agreed that had we been given the same vector 10-15 seconds earlier, the outcome of this event may have been very different.

I researched the pubs and the only mention I could find was a symbol on the VFR Sectional indicating glider ops in this area. We of course always operate under IFR and don't use this chart. There is also no mention of high speed IFR traffic in this area depicted on this chart, even though V226 coincides with this arrival routing. A similar arrival route is just south of this one for traffic inbound to KEWR.

I researched the pubs for airports in this area that might have glider traffic and found that 1N7 (Blairstown, NJ) has over 50 gliders based there. This airport is approx 5 NM SSW of MUGZY. I was able to speak with one of the locally based glider pilots. He stated that many nearby airports also have glider ops, and while they are probably unfamiliar with MUGZY or the STAR, (MUGZY is only depicted on the STAR) they should be aware of the need to avoid loitering in this area. He stated however that sometimes they may get "stuck" at this altitude.

Continued on next page

Page 1 of 3

- ASAP Report June 17, 2013
- Received permission from submitter to publish as Crew Communication Letter
- Crew Communications Letter issued on June 18, 2013
- Reviewed in initial crew SMS training
- Shared with other 135 operators conducting charter for EJM
- Information added to crew briefing sheet for KTEB departures and arrivals indicating glider operations about 5nm Southwest of MUGZY



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Lesson 2. We don't always know what's ahead



- Carson City, NV
- Under 91.215 gliders are not required to have a Mode C transponder installed
- However if installed and maintained under 91.413 pilot shall operate the transponder, including Mode C
- Glider pilot did not have transponder on to save ship's battery for radio



Lesson 3.0 Risk is Everywhere



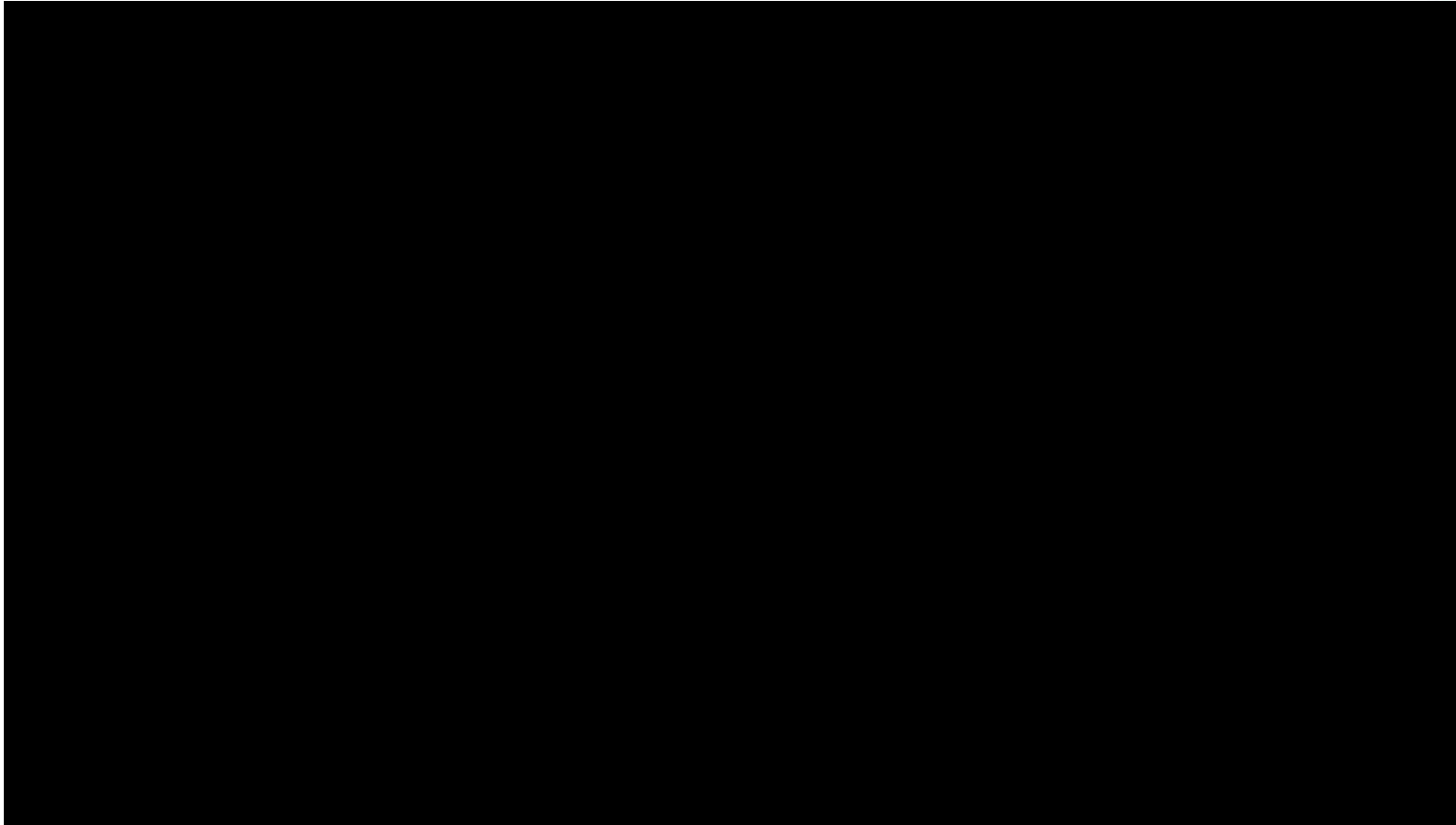
- Human Error
- At-Risk Behavior
- Reckless Behavior



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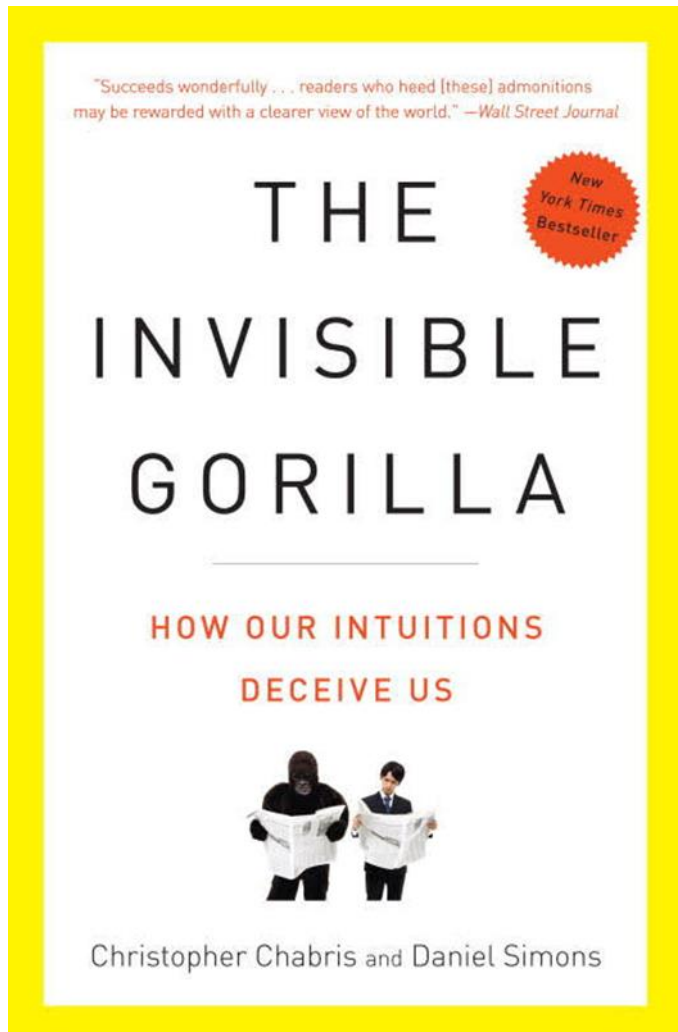
Lesson 3.1

What we had yesterday, may not be what we have today



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Lesson 3.2 The Monkey is Always There



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Lesson 3.3 Who are the best teachers?



You are

- Because today you learned something
- You become the teacher through safety reporting
- ASAP & Mandatory Reports
- Crew Communication Letters
- Safety News Letters



Safety Reporting - Safety Performance Indicator (SPI)

SMS Safety Performance Indicators			Updated 4/25/2019				
Item #	Safety Performance Indicator	Target	Lagging Indicator* Leading Indicator**	Current Risk	Current ARMS Risk Level	Mitigation Strategy	Mitigations / Task Assigned to
8	Safety Reporting (ASAP)(Mandatroy)	> 36 / 10000 Departures	92 / 10,000 Departures	On target		N/A	Calvert



FOQA at Executive Jet Management



U.S. Department
of Transportation

Federal Aviation
Administration

Advisory Circular

Subject: FLIGHT OPERATIONAL
QUALITY ASSURANCE

Date: 4/12/04
Initiated By: AFS-230

AC No: 120-82
Change:

1. PURPOSE. This advisory circular (AC) provides guidance on one means, but not necessarily the only means, of developing, implementing, and operating a voluntary Flight Operational Quality Assurance (FOQA) program that is acceptable to the Federal Aviation Administration (FAA).

a. FOQA is a voluntary safety program that is designed to make commercial aviation safer by allowing commercial airlines and pilots to share de-identified aggregate information with the FAA so that the FAA can monitor national trends in aircraft operations and target its resources to address operational risk issues (e.g., flight operations, air traffic control (ATC), airports). The fundamental objective of this new FAA/pilot/carrier partnership is to allow all three parties to identify and reduce or eliminate safety risks, as well as minimize deviations from the regulations. To achieve this objective and obtain valuable safety information, the airlines, pilots, and the FAA are voluntarily agreeing to participate in this program so that all three organizations can achieve a mutual goal of making air travel safer.

b. A cornerstone of this new program is the understanding that aggregate data that is provided to the FAA will be kept confidential and the identity of reporting pilots or airlines will remain anonymous as allowed by law. Information submitted to the FAA pursuant to this program will be protected as "voluntarily submitted safety related data" under Title 14 of the Code of Federal Regulations (14 CFR) part 193.

(1) In general, aggregate FOQA data provided to the FAA under 14 CFR part 13, section 13.401 should be stripped of information that could identify the submitting airline prior to leaving the airline premises and, regardless of submission venue, should include the following statement:

WARNING: This FOQA information is protected from disclosure under 49 U.S.C. 40123 and part 193. It may be released only with the written permission of the Federal Aviation Administration Associate Administrator for Regulation and Certification.

- Guidance in AC 120-82
- FAA approval of EJM FOQA I&O Plan Sept 2012
- EASA requirement for Part 135 aircraft >27,000kg
- Currently 47 aircraft in program
- Gulfstream, Global and Falcon 7X
- Adding about 26 additional aircraft in 2019



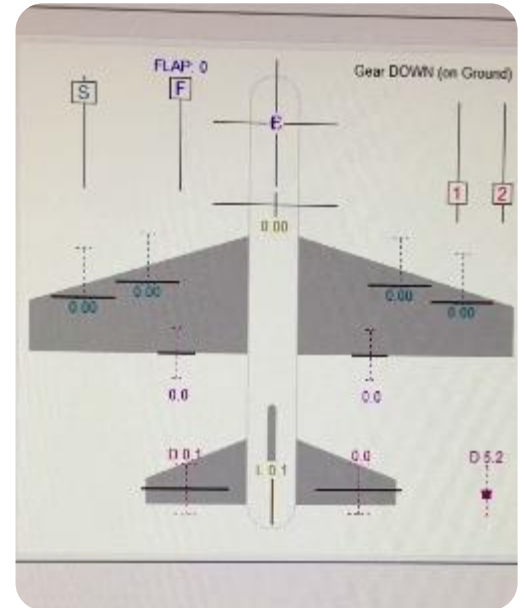
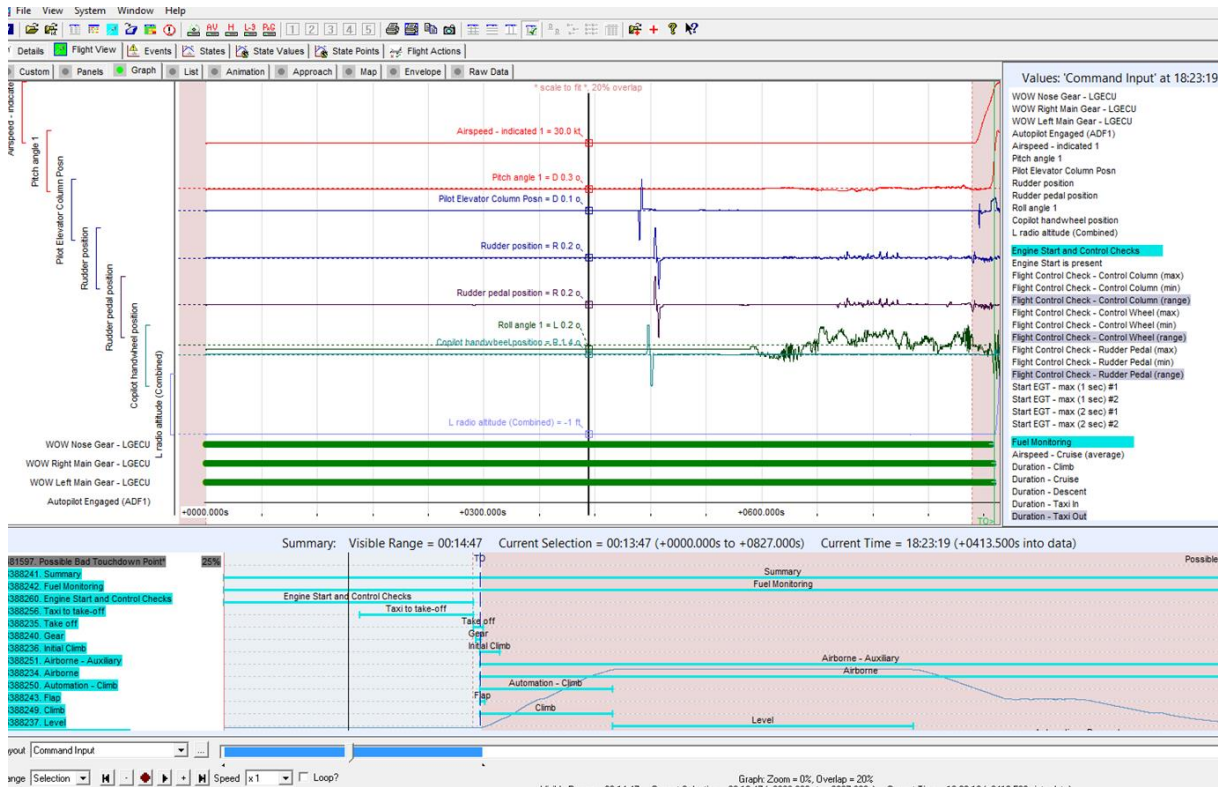
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Safety Performance Indicators from FOQA Data

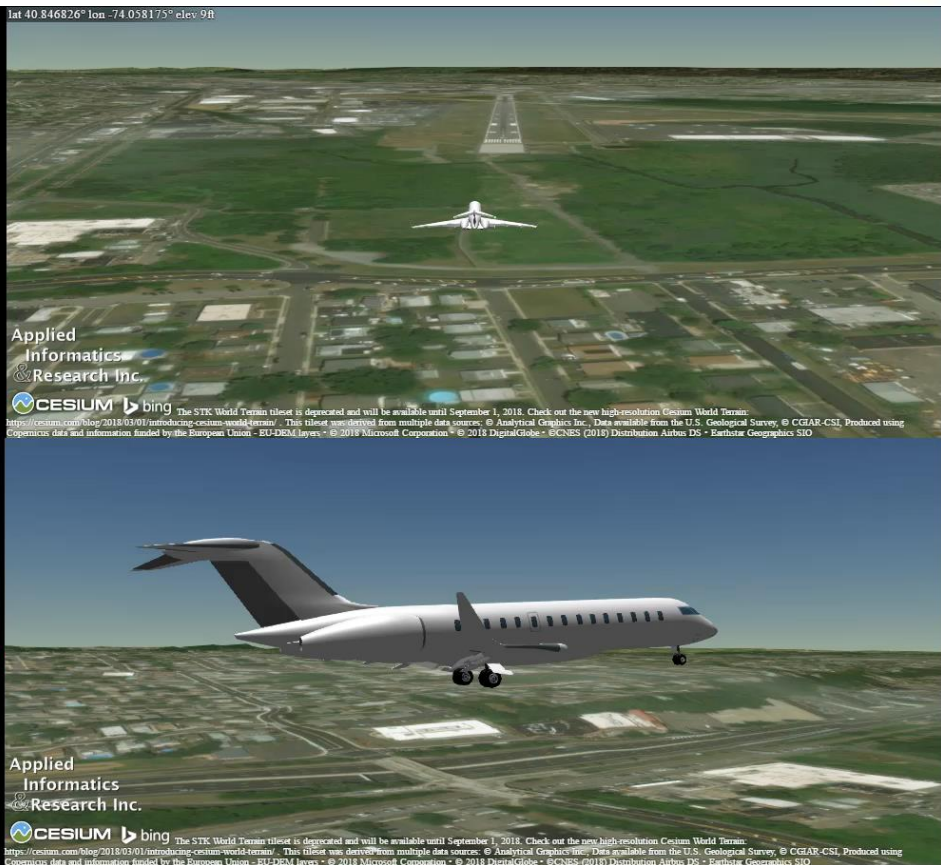
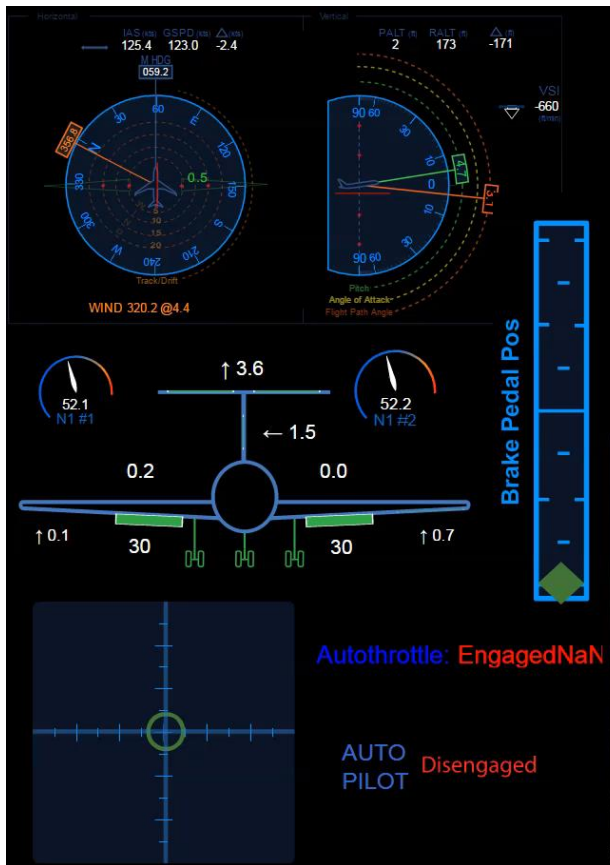
Executive Jet Management, Inc.							
SMS Safety Performance Indicators			Updated 4/25/2019				
Item #	Safety Performance Indicator	Target	Lagging Indicator* Leading Indicator**	Current Risk	Current ARMS Risk Level	Mitigation Strategy	Mitigations / Task Assigned to
6	Global Wing Tip Strikes (FDM Data)	0 / 10,000 Departures	0	Current FDM data indicates zero events during takeoff and landing, with-in set parameters		Conditions that can lead to wing tip strikes reviewed during crew initial company SMS training.	Berner/Calvert
7	Control Surfaces Predeparture Checks (FDM Data)	30,000 / 10,000 Departures 100% Compliance	Last 12 Months Column = 0.00 Wheel = 0.00 Rudder = 0.00	Automated script add to Aerobytes analysis software to indicated full compliance, partial compliance or no checks and to data mine all data in system. Analysis fleet type checklists to determine location of checks of flight controls in the checklist. On target		Continuous discussion in new pilot indoctrination, pilot recurrent and publication of data. Included in Q2 2018 road show talks	Jackson/Calvert



FOQA Data Review Control Surface Checks



FOQA Data Review: Global Wing Tip Strike



FOQA Data Review: Global Wing Tip Strike



Development of SOPs



Night Visual Approaches
GOM change to require uses of available precision approaches, for night visual approaches.

Text added to GOM:
Only request visual approaches at night to runways that have an instrument approach and fly the instrument approach profile.



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FOQA Data Validation

First – Don't believe the data!

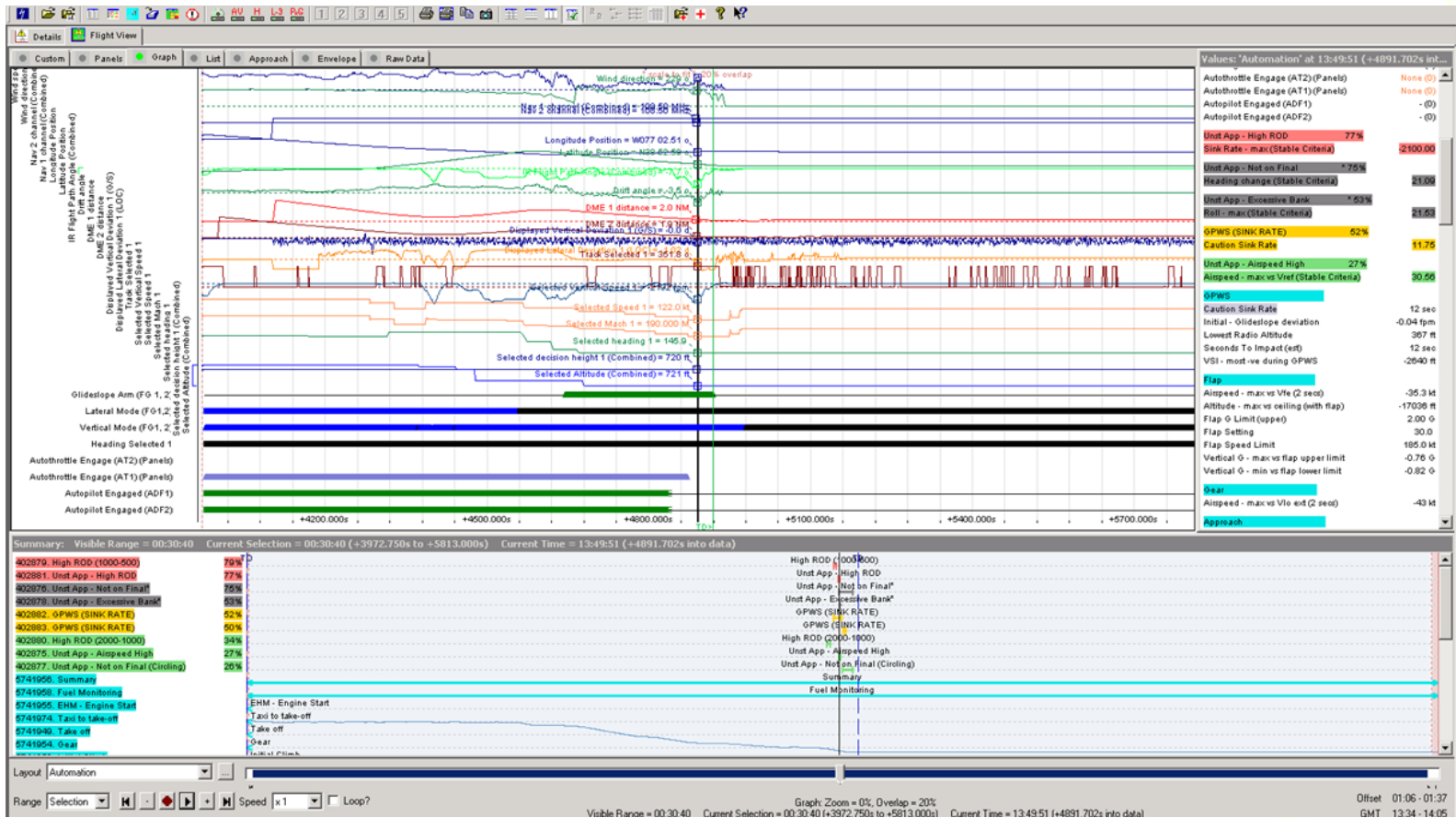
- Ask can this be real?
- There are many sources of error:
 - FDR system errors, program errors, bad data, poor data quality,
 - weather conditions
 - how the aircraft was going through the air at the time of the recorded event or exceedance
- FDM data must be used with caution
- Only people trained in FDM data analysis should interpret FDM data
- Could accuse crew of events that never happened



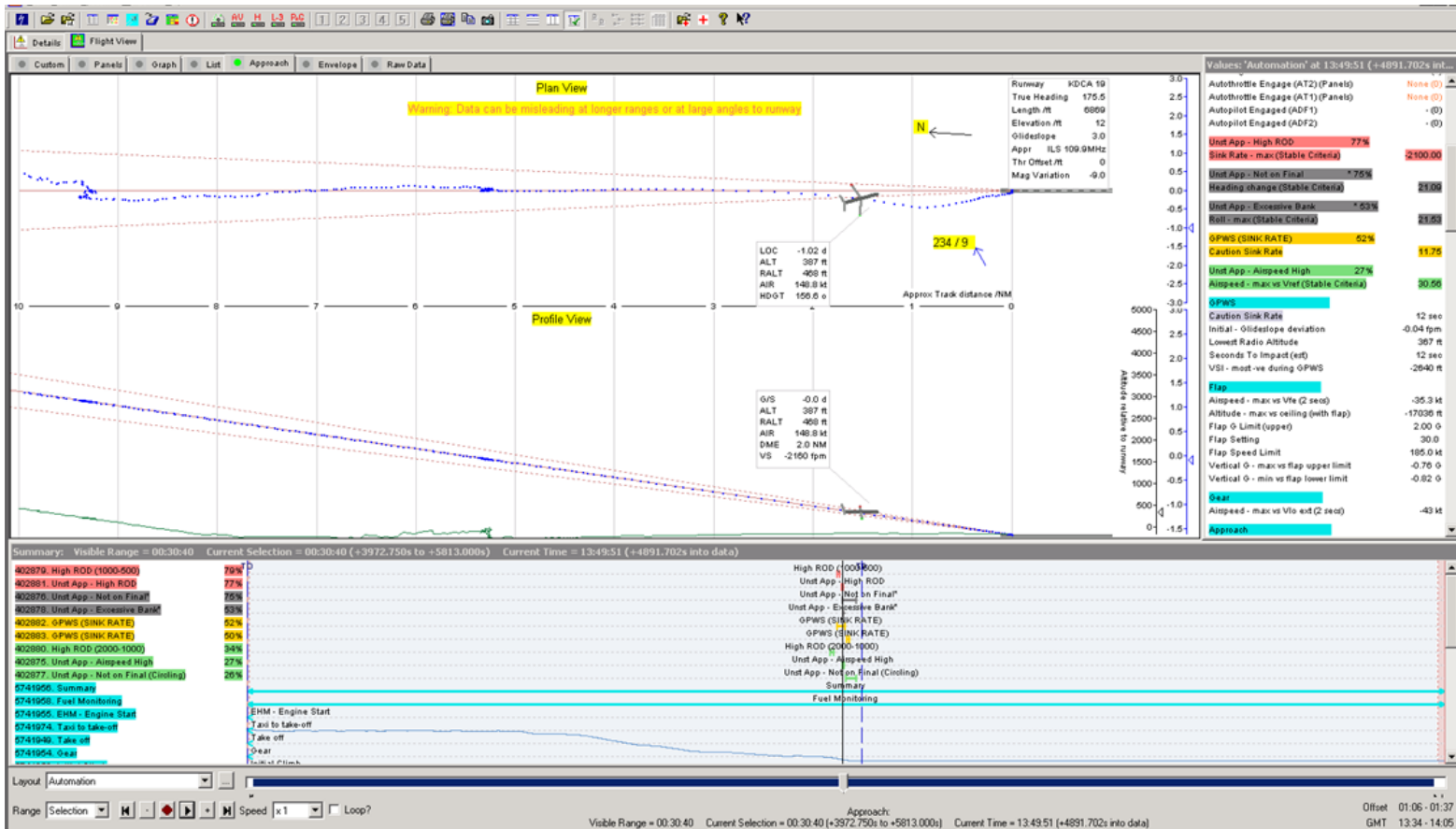
FOQA Data Validation



FOQA Data Validation



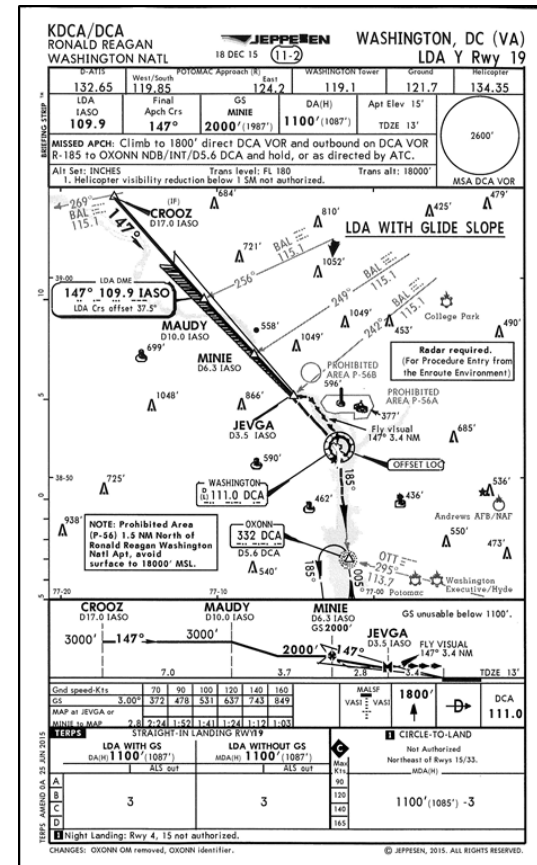
FOQA Data Validation



FOQA Data Validation

KDCA LDA Y Rwy 19

- Why were there so many flags
 - Software see stabilized approach as
 - @500 ft.
 - Within one dot LOC and GS
 - VSPD less than 1000 fpm
 - Airspeed no less than VREF
 - No greater than V approach
 - Aircraft fully configured



THANK YOU

QUESTIONS?



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