Check Pilot's Monthly

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WELCOME TO THE CHECK PILOT'S MONTHLY !!!

KALITTA CHARTERS COMMUNITY: A family of aviation professionals conducting worldwide air ambulance, cargo and passenger operations. This organization is known for its ability to get the job done.

THIS MONTH'S TOPICS:

- Standing versus rolling take-offs
- Error trends in the Tribe
- CRM: Part 2

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Flying is a Team Sport!

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STANDING VS. ROLLING TAKE-OFF:

BACKGROUND

- The following data is correlated from Lear Jet, Falcon Jet, King Air, BE-58, EM145, Challenger 601 and B757 flight manuals. If you have questions, **research** the posted data and verify its accuracy. This article is a recommendation.

- Standing Take-Off: Take-off from a full stop accomplished when computed balanced field length is at or near actual runway length corrected for contamination. Required when obstacle clearance is a factor. Hold brakes firmly as power is advanced to the computed take-off setting. Release brakes smoothly (not abruptly).

- Rolling Take-off: When obstacle clearance is not a factor and cleared for take-off, continue rolling from a position short of the runway at normal taxi speed. Align the aircraft on the runway and advance the thrust levers smoothly to the computed take-off setting.

- Most AFMs and other aircraft data indicate that required runway length and second segment climb numbers will be accurate from the point that take-off power in achieved. The B757 and Challenger 601 manuals indicate the difference between standing and rolling take-offs is negligible.

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STANDING VS. ROLLING TAKE-OFF:

LEAR JET

- Standing Take-Off:

Take-off from a full stop accomplished when computed balanced field length is at or near actual runway length corrected for contamination. Required when obstacle clearance is a factor. Hold brakes firmly as power is advanced to computed N1. Release brakes smoothly (not abruptly).

- Rolling Take-off:

Add 10% to your computed take-off runway requirement. Calculated runway and climb requirements will be accurate from the point that computed take-off power is achieved.

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STANDING VS. ROLLING TAKE-OFF:

FALCON 20

- Standing Take-Off

Take-off from a full stop accomplished when computed balanced field length is at or near actual runway length corrected for contamination. This technique is required when obstacle clearance is a factor. Hold brakes firmly as power is advanced to computed N1. Release brakes smoothly (not abruptly).

- Rolling Take-off

CF 700: If cleared for take-off prior to the runway: Align with the runway at normal taxi speed, advance the power to stabilize the engines then advance the throttles to calculated take-off EPR.

TFE731: If cleared for take-off prior to the runway: Align with the runway at normal taxi speed, advance the power to stabilize the engines then advance the throttles to calculated take-off N1. If conditions permit, consider not using the APR system to avoid inadvertent APR activation while advancing the throttles.

Obstacle clearance and required runway calculations will be accurate from the point take-off power is achieved.

Data for F Model Falcons to follow in a later issue.

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STANDING VS. ROLLING TAKE-OFF:

CHALLENGER 601

- Standing Take-Off:

Take-off from a standing start (take-off thrust set before brake release) must be accomplished when the calculated take-off distance is at or near actual runway length. Also, take-off from a standing start must be accomplished to ensure computed obstacle performance.

- Rolling Take-off:

This is the normal take-off procedure. Align the aircraft with the runway. Brakes are held until 55-60% then released as the power is increased to computed take-off N1.

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STANDING VS. ROLLING TAKE-OFF:

KING AIR

- Standing Take-Off

  Take-off from a full stop accomplished when computed balanced field length is at or near actual runway length corrected for contamination. Required when second segment climb is in question. Hold brakes firmly as power is advanced to computed N1. Release brakes smoothly (not abruptly).

- Rolling Take-off

Power-Apply power smoothly and slowly until propellers stabilize at 2,000 RPM.

Torque must be set at the minimum torque obtained from the appropriate MINIMUM TAKE-OFF power chart.

Take-off performance charts indicate that runway length, climb performance and obstacle clearance will be met at the point take-off torque is achieved.

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STANDING VS. ROLLING TAKE-OFF:

WRAP-UP

- The choice to execute a standing or rolling take-off rests with the pilot-in-command. Evaluate the conditions and act appropriately.

- Benefits of a rolling take-off:
  - Passenger comfort
  - Reduction of possible FOD Damage or compressor stalls in a cross wind
  - Reduced time on the runway to accommodate high volume periods at busy airports

ERROR TRENDS:

WHAT IS THE TRIBE DOING?

- What are we doing in the field?

The following data is from 2020. For your edification, the reports are constructed for six-month periods and published 4-6 weeks after the end of the evaluation period (i.e. the annual report for 2020 was published 3 Feb 2021.) The next report may be published July 2021.

If you want to see the original data, contact the Safety Department at Kalitta Air or Management .

ERROR TRENDS:

WHAT IS THE TRIBE DOING?

- Last years trends

Here's a list of the big-ticket items for 2020. The summary chart for the organization is posted near the end of this segment.

Diversion: Most diversions due to un-forecast weather, winds aloft or unexpected arrival conditions (snow on a 5000' runway).

Take-off aborts: The fleet aborted take-offs for mechanical issues, bird strikes and an ATC cancellation after the take-off roll had begun.

ATC Deviations: Multiple deviations occurred in altitude and waypoint selection. The majority of these issues appear to have resulted from poor communication with ATC and/or CRM.

Fuel problems: Multiple issues during ground fueling during fuel transfers and mechanical failures

Runway incursion: CRM and situational awareness.

Near Misses: One instance at an uncontrolled airport and one during ground handling.

Air Turn backs: Multiple air turn backs generally due to mechanical failures.

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ERROR TRENDS:

WHAT IS THE TRIBE DOING?

- So what?

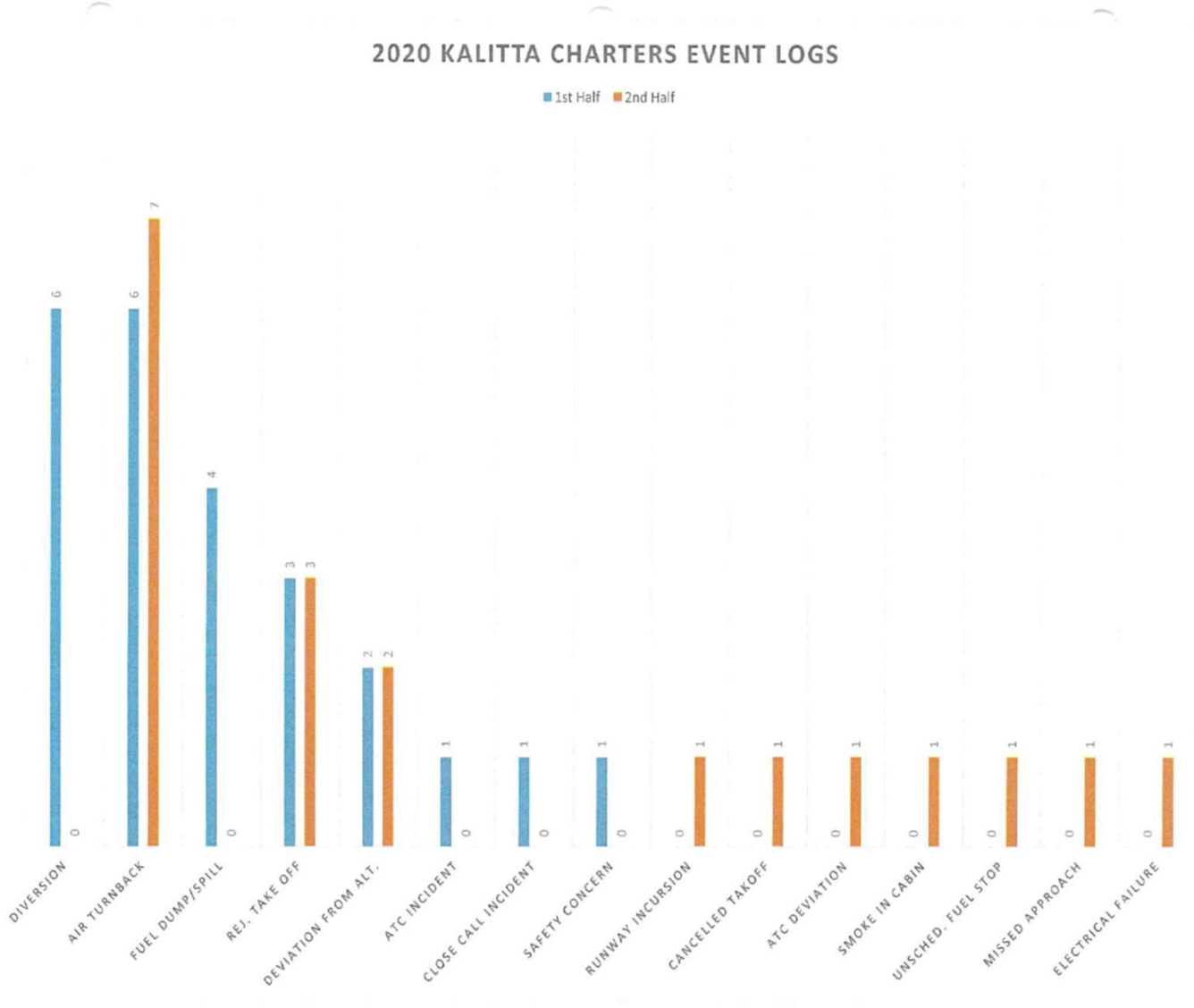
First thought…most of us weren't there during these incidents. Let's avoid Monday morning quarterbacking. The best we can do is accept that flights will have issues and professionally mitigate those risks at the earliest opportunity.

Common trends extracted from the reported incidents/situations:

- Breakdown in communication or CRM (CRM as it pertains to the entire mission team and in the cockpit)
- Mechanical anomalies
- Preflight mission planning (135.299)
- Loss of situational awareness

ERROR TRENDS:

WHAT IS THE TRIBE DOING?



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ERROR TRENDS:

WHAT IS THE TRIBE DOING?

- What next?

How can we improve?

- Follow the procedures we have in place
- Maintain Situational Awareness and effective communication within the crew, with ATC and with all of our third-party vendors.
- See what is in front of us. Avoid expectation bias and complacency.
- Recommendation: Take a few extra minutes in flight planning. Work mission issues out as early as feasible.
- Submit ideas for any changes to procedure in writing.

Keep doing THIS stuff!!!!

- Maintain our mental flexibility and aircraft awareness.
- Support each other's decisions. This is a team sport.
- Maintain our Can-Do attitude and inherent capability to do the right thing.
- Be flexible enough to make changes to your own perspective.

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CREW RESOURCE MANAGEMENT (CRM)

(PART 2)

What are the defining characteristics of CRM?

- Leadership/Followership
- Communications
- Problem solving
- Decision making and Judgement
- Task management
- Situational awareness
- Threat/Error management

When used effectively, these tools create an environment that produces the greatest possibility for a successful outcome to each flight.

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CREW RESOURCE MANAGEMENT (CRM)

(PART 2)

Having discussed Leadership/Followership in the first issue, let's look at Communications. Between 1976 and 1981, 70% of all ASRS reports submitted by pilots and air traffic controllers had a root cause of missed communications. A lack of accurate information transfer is caused by multiple factors. These include individual failures like distraction, failure to monitor, complacency, and system failures like radio frequency congestion, radio failures to high workload situations for pilots and/or controllers.

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CREW RESOURCE MANAGEMENT (CRM)

(PART 2)

As a pilot, communicating with your resources is the mainstay of CRM. Crewmembers, ATC, company personnel all require verbal communication. You can't win a game without communicating the game plan to your crewmembers inside and outside the cockpit. Equally, unless you accept objective feedback, you can't alter the game plan to adapt to the changing environment. Not voicing known errors, mistakes, or deficiencies is not being a team player. This is not helpful to the team Captain or the team.

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CREW RESOURCE MANAGEMENT (CRM)

(PART 2)

Key Take-Aways

- Articulate the plan
- Listen to concerns
- Adjust the plan as necessary and communicate the changes
- Ask questions
- Give objective, respectful feedback

These techniques will work well for everyone in the cockpit and lead to a successful flight.

KALITTA CHARTERS EDUCATION SERIES (KCES)

READING LIST

STUDY TOPICS

Books

Fire and Air: A Life on the Edge, Patty Wagstaff, 1997

Carrying the Fire: An Astronaut's Journey, Michael Collins, 1974

Mavericks of the Sky: The First Daring Pilot of the U.S. Air Mail, Barry Rosenburg and Catherine Macaulay, 2006

Historical Study Areas

- Development of the winglet
- Development of the Electronic Engine Controller (EEC), Digital Electronic Engine Controller (DEEC) and Full Authority Digital Engine (or electronic) Controller (FADEC)

Technical Study Areas

- Radio Magnetic Indicator (RMI): https://www.aircraftsystemstech.com/2017/05/radio-magnetic-indicator-rmi-and.html?m=1
- AC 90-100A, U.S. Terminal and En Route Area Navigation (RNAV) Operations

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FINAL SAFETY NOTES

WHAT CAN KILL OR VIOLATE YOU TODAY?

Beware expectation bias and complacency!! Embrace pragmatism and see/hear what is in front of you and not the script you expect. Listen, see and act……DO NOT REACT.

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A matter of perspective…..

Missed approaches (MA), Go-arounds (GA) and rejected landings (RL) are normal procedures. They are neither emergency procedures nor emotional events.

Mentally prepare your approaches completely through the MA/GA/RL and all you are doing is a normal take-off with an extra notch or two of flaps.

Did You Preflight Yourself Today?

UPCOMING TOPICS

Upcoming topics:

- CRM Part 3
- Fuel Samples: What's the deal?
- V speeds and aircraft configuration
- Aeromedical: Are you hypoglycemic?
- Aeromedical: The worst type of spatial disorientation
- Fuel Check: Why do we do them?
- Climb profiles: Check out the numbers!
- Never run out of altitude, airspeed and ideas all at the same time
- Continuing Education: Earn that degree
- The stigma of Going Around
- Contract Fuel: What is it and how do we pay?

Let's do what we do best……we fly!

Comments or suggestions are expected and desired. Contact mhandren@kalittacharters.com.

Open submissions: Submit NLT the 15th of each month

REFERENCES

- Rolling Take-offs
  - Lear Jet 30 Series Training manual
  - Gates Lear Jet Training Manual (30 Series), Page 37
  - Falcon 20 Performance Planning Manual
  - How to fly a Challenger
  - King Air 200 AFM
  - King Air 200 Pilot Operating Handbook and performance charts
- Error Trends
  - Kalitta Air Safety Department
- CRM
  - Crew Resource Management 2nd Edition, Barbara Kanki, Robert Helmreich and Jose Anca