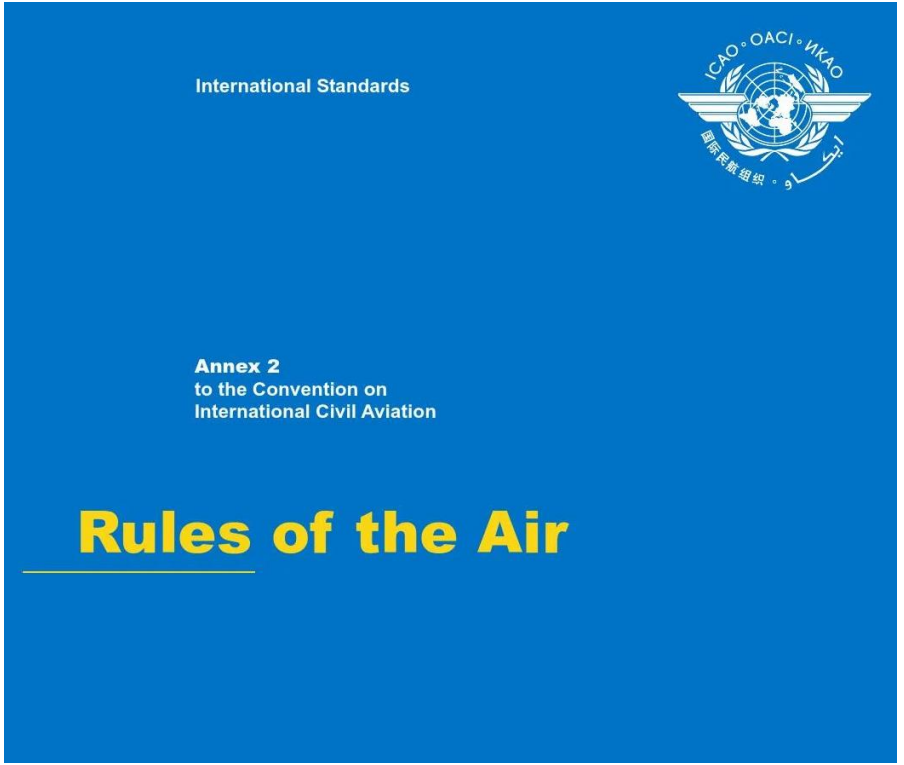
Accountability from the Flight Deck

Captain Barry Wiszniowski

Accountability from the Flight Deck

Pilot Accountability: What does the law say?

ICAO Annex 2



ICAO Annex 2, "Rules of the Air", States that the PIC:

- *be responsible for the operation of the aircraft in accordance with the rules of the air*
- *shall include a careful study of available current weather reports and forecasts, taking into consideration fuel requirements and an alternative course of action if the flight cannot be completed as planned*
- *shall have the final authority as to the disposition of the aircraft*

What is Accountability?

- *Accountability refers to giving account for one's actions and is often used to denote responsibility, answerability, blameworthiness and liability.*

- *"Instinctively, we believe that aviation accidents must have been caused by someone's fault or wrongdoing: the party(s) or organization must be identified and blamed."*

Sofa Michaelides-Mateou, Andreas Mateou

What am I Going to Say at the Tribunal?

VFR Approaches

Conform to published VTA routes and as directed by ATC.

Reversed Thrust – Landing

All rwys: Use of reverse thrust is to be avoided or reduced when conditions permit.

Night Restrictions	
Local Time	**Procedure**
1. 0001-0600	**Departure** of ICAO Annex 16 Chapter 2 or FAA FAR Part 36 Stage 2 certified JET AIRCRAFT 34,000 kg and over not permitted.
2. 0001-0600	**Departure** of JET AIRCRAFT rated over 34,000 kg (MTOW), regardless of actual take-off weight, require prior approval from YVRAA OPERATIONS.
3. 2200-0700	**Departure/Arrival** of ALL AIRCRAFT on rwys 08L & 26R not permitted.*
4. 2200-0700	**Local training flights** not permitted.
*See Contact & Approvals Section	

All Aircraft (Priority Flights Exempt)	
Local Time	Preferential Runway Usage
0600-2300 One direction flow	• Defer to westerly flow. • Minimize departures on runway 13 and arrivals on runway 31.
2300-0600 Two direction flow	• Westerly flow for departures and easterly flow for arrivals. • Minimize departures on runway 13 and arrivals on runway 31.
Subject to limiting factors including: physical condition of surfaces; irregular airfield operations; crosswind and tailwind conditions; and, traffic volume. (MEDEVACS EXEMPT)	

↑ NOTAM »

Application

These procedures apply to JET AIRCRAFT unless noted otherwise.

Departure Procedures

Jet Aircraft

1. NADP 1 or 2 required for all runways. Advise ATC CLNC DEL if using NADP 1. Follow SID to **3000'** BPOC.
2. Rwy 08R between 2300-0600 local; aircraft on westerly routes follow assigned SID to **2000'** BPOC.
3. ICAO Annex 16 Chapter 2 or FAA part 36 Stage 2 certified aircraft; departures on rwys 08L and 26R not permitted.

Arrival Procedures

IFR Approaches & Published Visual Approaches

Use low power/drag profiles consistent with safe operating procedures, conforming to published visual approaches and as directed by ATC.

VFR Approaches

Conform to published VTA routes and as directed by ATC.

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It is the pilot's responsibility to adhere to published noise abatement procedures.

Who is Accountable? Reverse Thrust Landing

All runways:

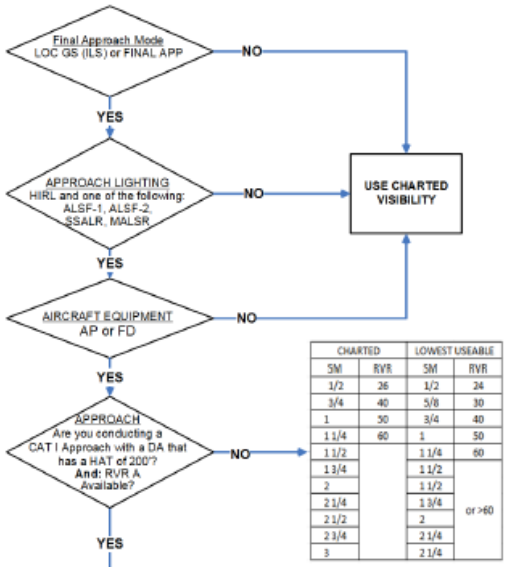
- *Use of reverse thrust is to be avoided or reduced when condition permit."*
- *"It is the pilot's responsibility to adhere to published noise abatement procedures."*

Who is Accountable? Reverse Thrust Landing

- *When is reverse thrust most effective?*
- *High speed or low speed?*
- *In court explain your reason for not using reverse thrust if you go off the end of the runway.*

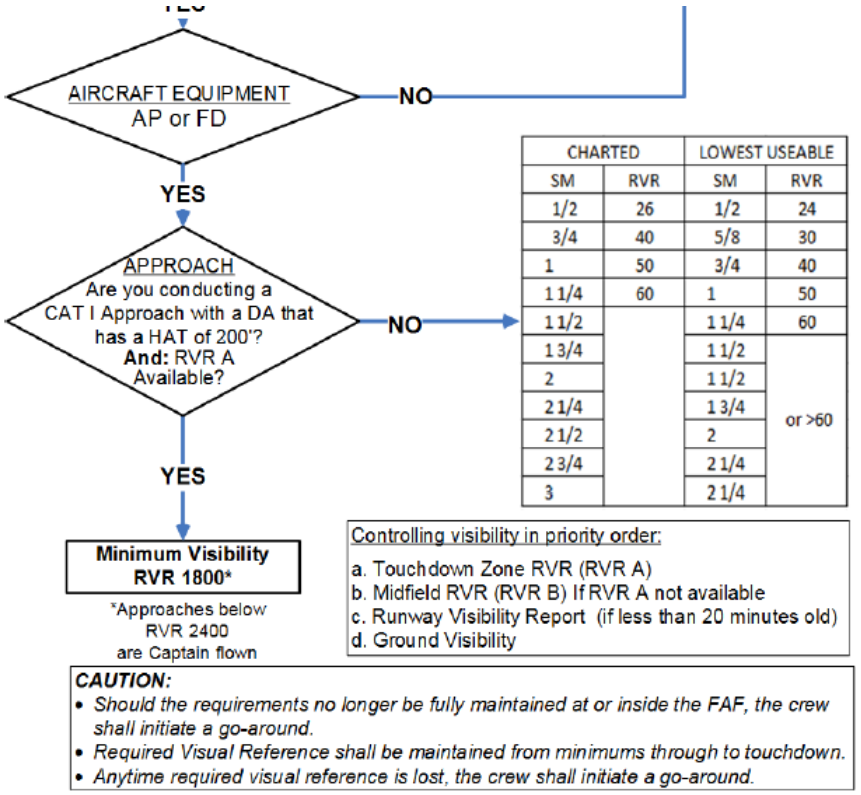
APPROACH VISIBILITY REQUIREMENTS - CANADA

The ability to conduct an approach is limited to the Aerodrome Level of Service or the applicable approach visibility requirements whichever is higher.



CHARTED		LOWEST USEABLE	
SM	RVR	SM	RVR
1/2	26	1/2	24
3/4	40	5/8	30
1	50	3/4	40
1 1/4	60	1	50
1 1/2		1 1/4	60
1 3/4		1 1/2	or >60
2		1 1/2	
2 1/4		1 3/4	
2 1/2		2	
2 3/4		2 1/4	
3		2 1/4	

LOW VIS



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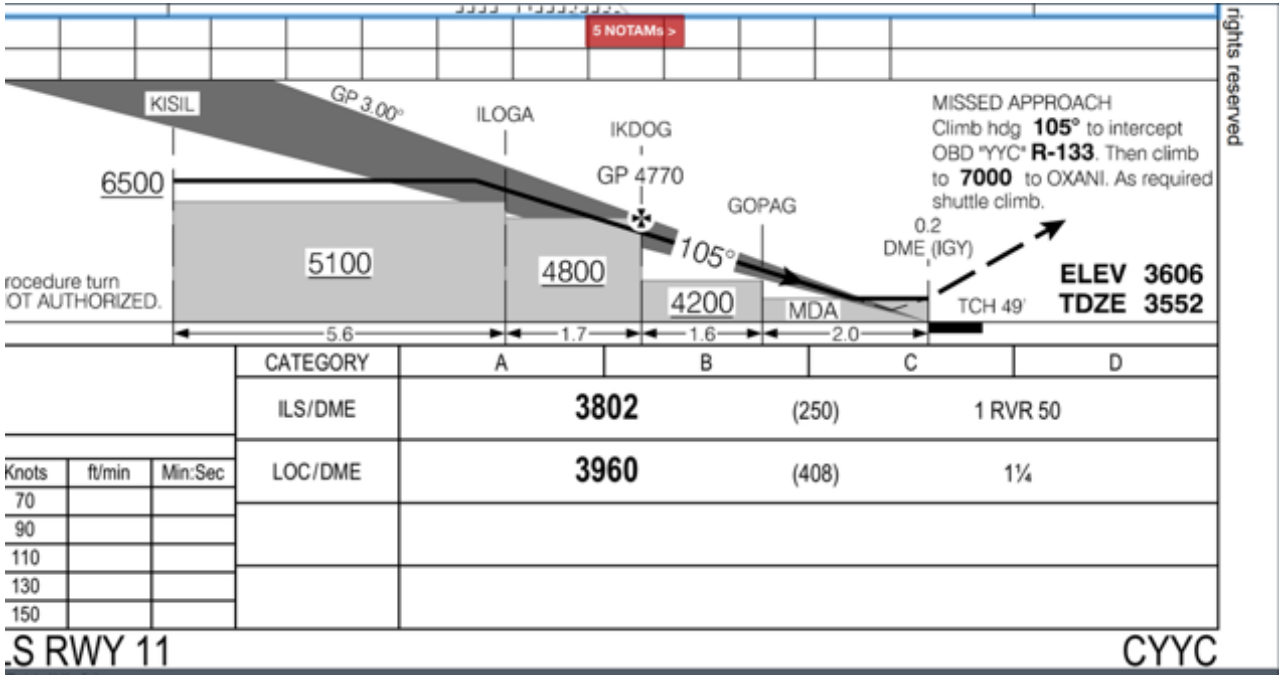
5 NOTAMs >
KISIL
GP 3.00°
ILOGA
IKDOG
GP 4770
GOPAG
6500
5100
4800
4200
105°
MDA
0.2
DME (IGY)
TCH 49'
MISSED APPROACH
Climb hdg 105° to intercept
OBD "YYC" R-133. Then climb
to 7000 to OXANI. As required
shuttle climb.
ELEV 3606
TDZE 3552
rocedure turn
OT AUTHORIZED.
5.6
1.7
1.6
2.0
rights reserved
CATEGORY
A
B
C
D
ILS/DME
3802
(250)
1 RVR 50
LOC/DME
3960
(408)
1¼
Knots
ft/min
Min:Sec
70
90
110
130
150
S RWY 11
CYYC

Who is Accountable? Approach Visibility Requirements

- *Anywhere else in the world the Charted Minimum for the approach is limiting.*
- *So why take the monkey off the operators back and put it on the Captain's back?*

Remember an earlier slide on the “RULES of the Air?

ICAO Annex 2 2.3.2 Pre-flight action

Did the system breakdown?

What was the root or causal factors in this event?

Lessons Learned?

Are we any safer?

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How Accountability & Safety is Managed from the Flight Deck

The primary goal is *safety*.
With that, accountability will follow.

How is accountability controlled or developed?

- *Regulations*
- *Standard Operating Procedures*
- *Checklists*
- *Threat and Error Management*
- *Experience*

Threat Error Management T.E.M

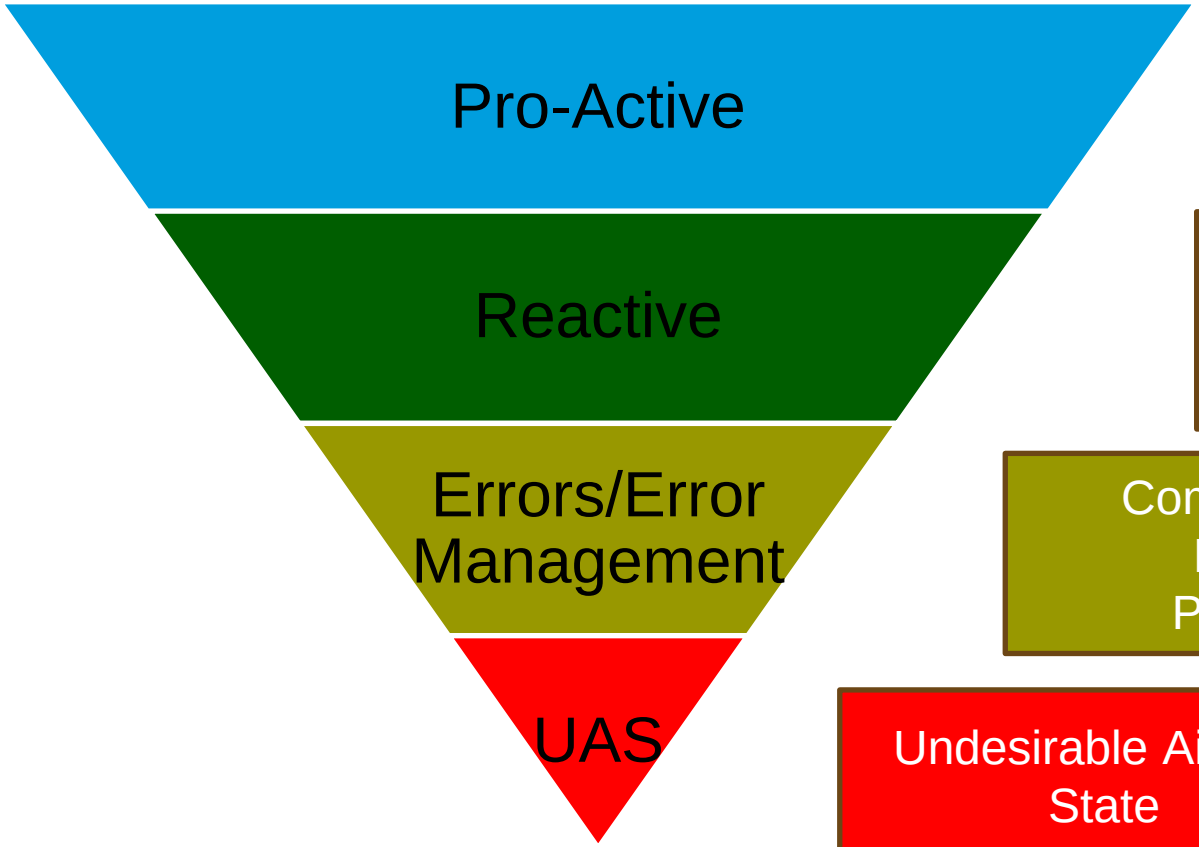
- *Used to address threats (usually external) and errors (internal) that may impact the level of safety and prevent an undesirable aircraft state.*

What is a threat?

Any situation, event, hazard outside of the normal operating environment that has the potential to cause an error or produce a negative impact to the operation

- *External threats*
- *Internal threats*
- *Latent threats*
- *Organizational threats*

Departure – Areas of Vulnerability – Arrival



Threat Management Expected Threats

Threat Management Unexpected Threats

Communication Handling Procedural

Undesirable Aircraft State

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Error management

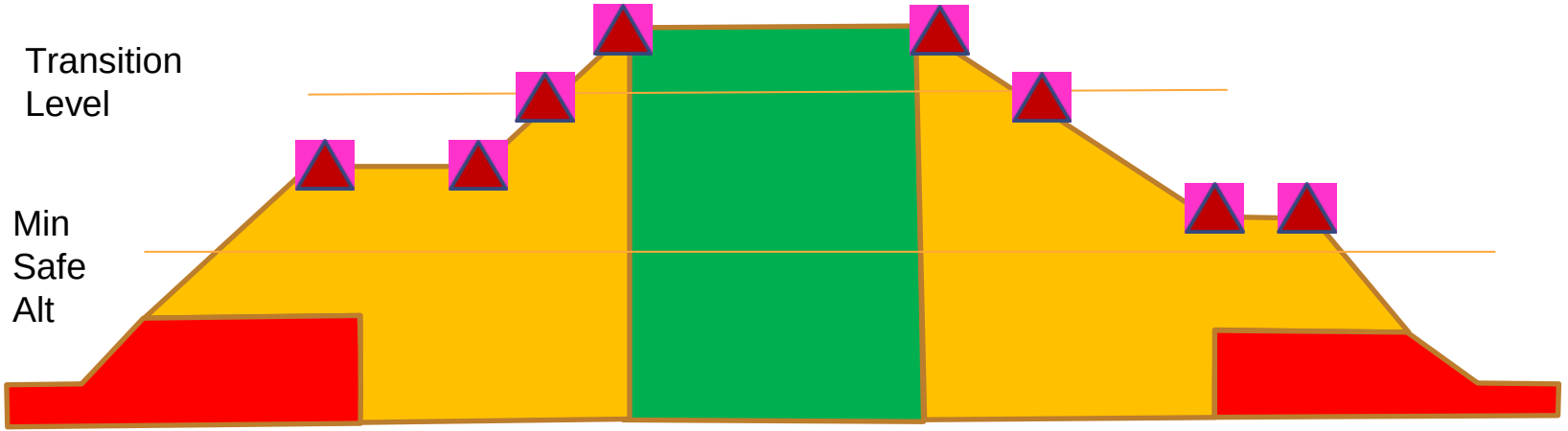
- *Error avoidance: to reduce the probability of errors occurring.*
- *Error trapping: to deal with errors committed either by detecting and correcting them before they have operational impact.*
- *Error mitigation: to contain and reduce the severity of those that become consequential.*

Error management

- *Defenses, barriers, and safeguards assist in Error Avoidance, Error Trapping and or Error Mitigation*

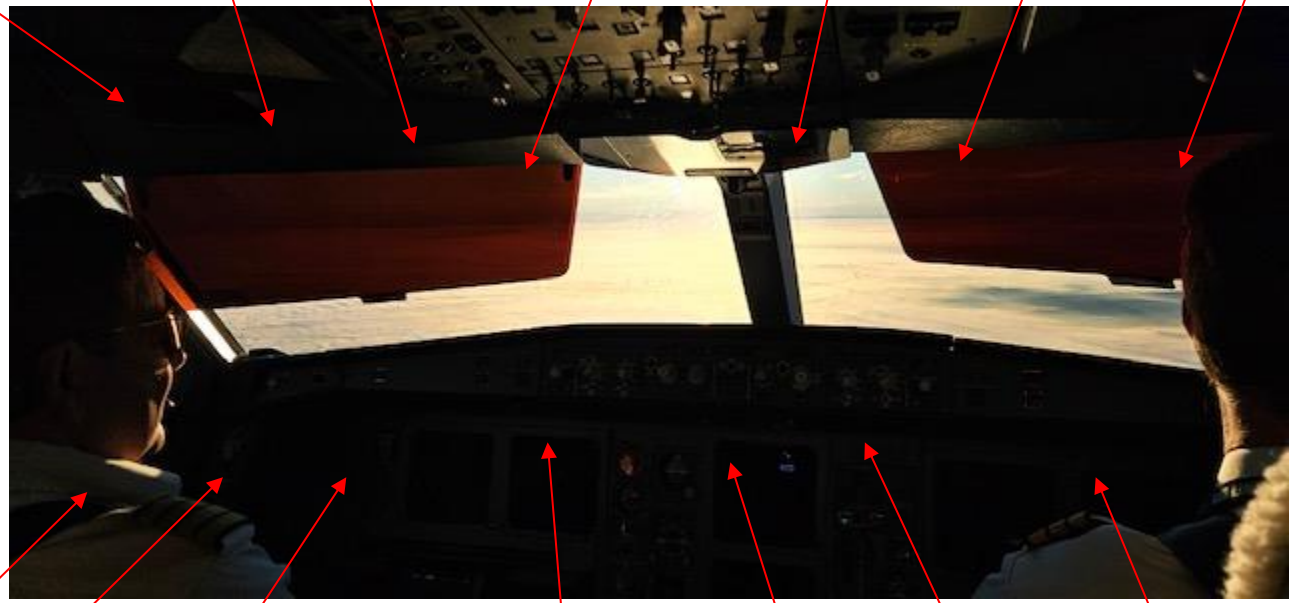
- *some are engineered (alarms, physical barriers, automatic shutdowns),*

Areas of Vulnerability



Threats That Can Lead to Flight Crew Error

Non-SOP De-icing Cabin Maintenance Dispatch Airports Fatigue



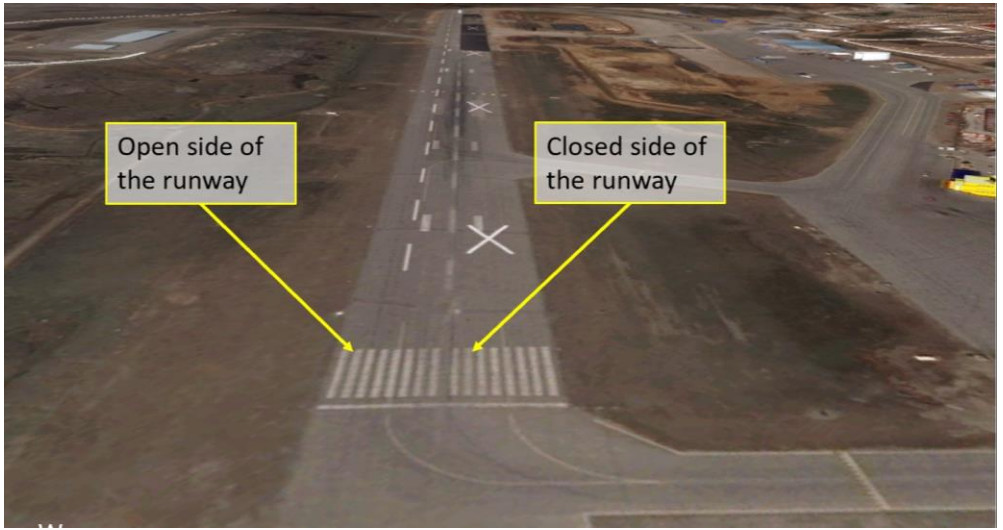
ATC Weather Documentation Continuation Bias Terrain Company Aircraft state

Causes of Error

Based on your experiences…

Causes of Error

- *Ambiguity*
- *Preoccupation*
- *Confusion*
- *Not Communicating*
- *Not Addressing Discrepancies*
- *Violating SOPs*
- *No One Flying the Aircraft*
- *Failure To Set or Meet Targets*


Open side of the runway
Closed side of the runway

*Situational Awareness **Red** Flags*

Based on your operational experience….

What do you think?

*Situational Awareness **Red** Flags*

- *Non-Compliance with SOPs*
- *Distractions / Stress / Fatigue*
- *Ineffective Leadership / Followership*
- *Ineffective Briefing*
- *Imbalance in Workload Distribution*
- *Complacency*
- *Loss of Situational Awareness*

Accountability through Situational Awareness and Threat Management

The aviation community is very fortunate that we are able to learn from past events.

Remember… as in most events…it's only the names and dates that change!

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Standard Operating Procedures

SOP's & Company Culture?

Failed Rejected Take-off

- *In 2014 a Gulfstream G-IV, crashed after it overran the end of runway 11 during a rejected takeoff*
- *Flight crew neglected to disengage the airplane's gust lock system, and did not perform a control check prior to take-off. When the PIC attempted to rotate the airplane, he discovered that he could not move the control yoke*
- *The flight crew delayed applying brakes for about 10 seconds and further delayed reducing power by 4 seconds.*
- *Flight data recorders showed that the pilots had neglected to perform complete flight control checks before 98% of their previous 175 takeoffs in the airplane*

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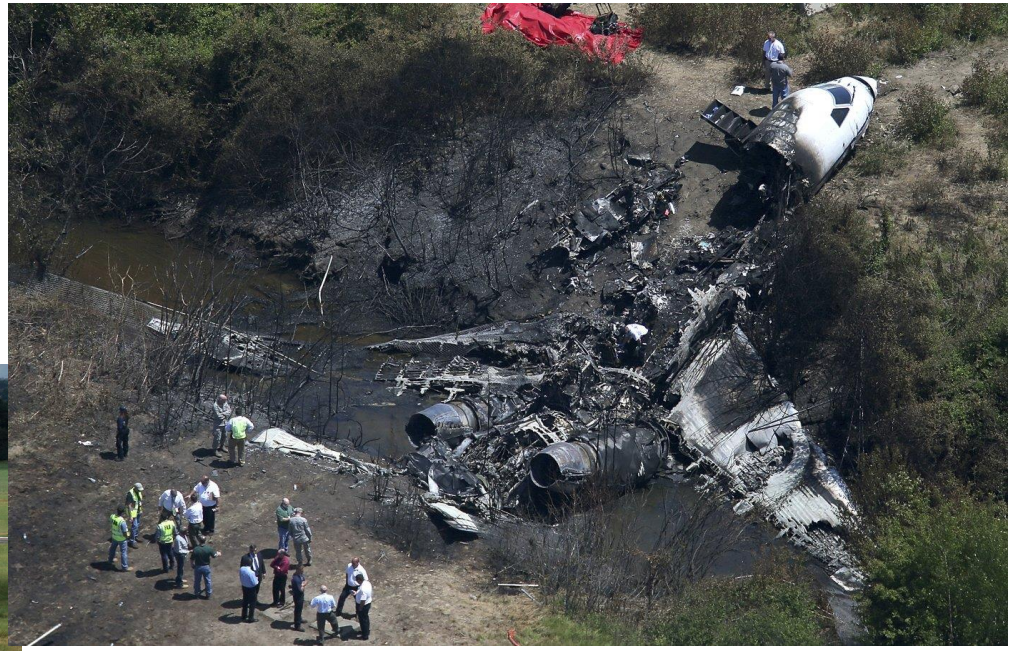
Probable Cause?
Accountability?



The NTSB determines that the probable cause of this accident was:

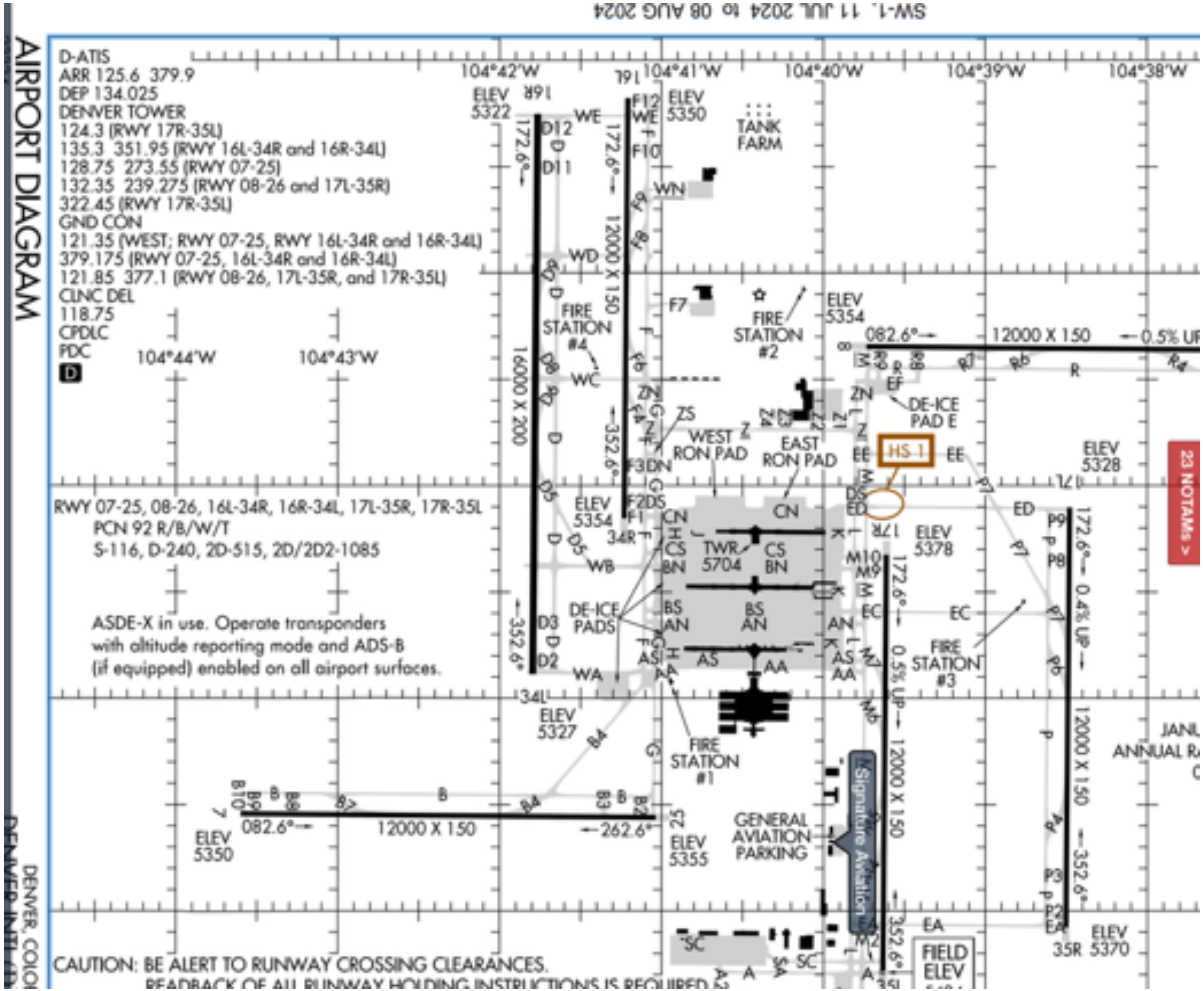
- *Flight crewmembers' failure to perform the flight control check before takeoff*
- *Their attempt to take off with the gust lock system engaged*
- *Delayed execution of a rejected takeoff after they became aware that the controls were locked*

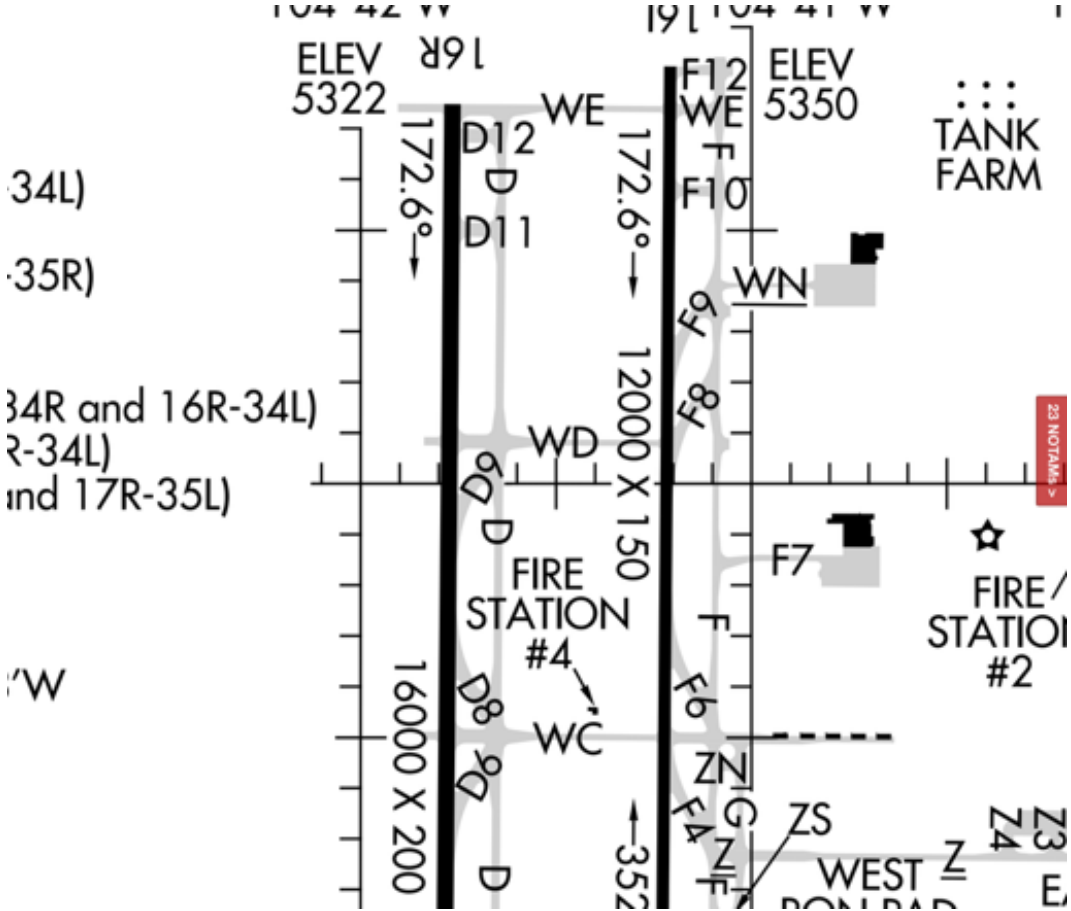
The NTSB determines that the probable cause of this accident was:

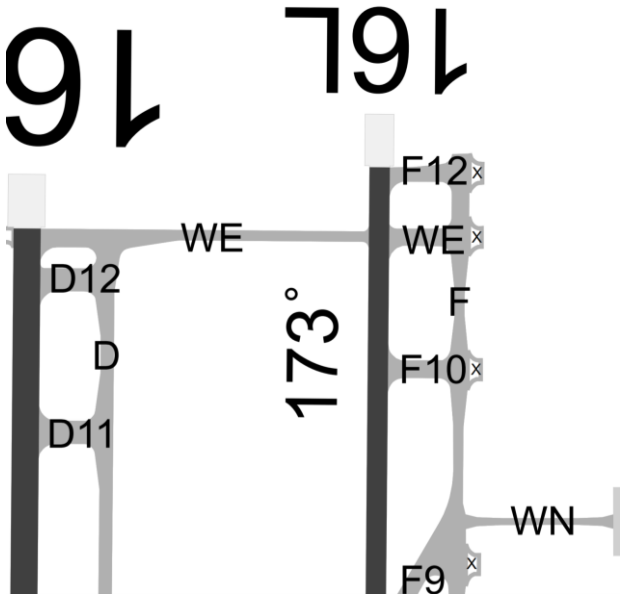
- *Contributing to the accident were the flight crew's habitual noncompliance with checklists*
- *Gulfstream Aerospace Corporation's failure to ensure that the G-IV gust lock/throttle lever interlock system would prevent an attempted takeoff with the gust lock engaged*
- *Federal Aviation Administration's failure to detect this inadequacy during the G-IV's certification*

Runway Excursion in Denver

- *Crew missed highspeed exit F9 due to poor braking, ATC requests landed aircraft to expediate to end of runway due to traffic on approach*
- *Intermediate taxiways unavailable due to snow accumulation*
- *Pilots increased taxi speed as requested, but poor braking resulted in missing taxiway F12 and the aircraft stopped short of the clearway.*
- *Unable to make a turn, the crew taxied onto clearway and back to gate.*


AIRPORT DIAGRAM
SW-1, 11 JUL 2024 to 08 AUG 2024
D-ATIS
ARR 125.6 379.9
DEP 134.025
DENVER TOWER
124.3 (RWY 17R-35L)
135.3 351.95 (RWY 16L-34R and 16R-34L)
128.75 273.55 (RWY 07-25)
132.35 239.275 (RWY 08-26 and 17L-35R)
322.45 (RWY 17R-35L)
GND CON
121.35 (WEST; RWY 07-25, RWY 16L-34R and 16R-34L)
379.175 (RWY 07-25, 16L-34R and 16R-34L)
121.85 377.1 (RWY 08-26, 17L-35R, and 17R-35L)
CLNC DEL
118.75
CPDLC
PDC
D
104°44'W
104°43'W
104°42'W
104°41'W
104°40'W
104°39'W
104°38'W
RWY 07-25, 08-26, 16L-34R, 16R-34L, 17L-35R, 17R-35L
PCN 92 R/B/W/T
S-116, D-240, 2D-515, 2D/2D2-1085
ASDE-X in use. Operate transponders with altitude reporting mode and ADS-B (if equipped) enabled on all airport surfaces.
ELEV 5322
ELEV 5350
TANK FARM
FIRE STATION #4
FIRE STATION #2
ELEV 5354
12000 X 150
16000 X 200
WEST RON PAD
EAST RON PAD
DE-ICE PAD E
HS-1
ELEV 5328
ELEV 5354
34R
TWR 5704
ELEV 5378
DE-ICE PADS
FIRE STATION #3
ELEV 5327
34L
FIRE STATION #1
ELEV 5350
GENERAL AVIATION PARKING
Signature Aviation
ELEV 5355
ELEV 5370
35R
FIELD ELEV
CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
23 NOTAMs


ELEV 5322
16R
WE
D12
D
D11
172.6°
ELEV 5350
F12
WE
F
F10
TANK FARM
WN
F9
F8
WD
12000 X 150
23 NOTAMs
F7
FIRE STATION #4
FIRE STATION #2
F6
WC
ZN
ZS
F4
WEST
Z3
Z4
16000 X 200
34L)
35R)
34R and 16R-34L)
R-34L)
nd 17R-35L)
W


16
16L
F12
WE
WE
D12
D
D11
173°
F
F10
WN
F9

Runway Excursion in Denver

- *At the time of arrival the most recent Runway Surface Condition (RSC) report for 34 R was nearly five hours old and is as follows;*

  ***NEW** DEN Effective: 26.Dec.2009 1238z - UFN 1A8481/09*

  RWY 16L/34R THIN LOOSE SN PLOWED/SWEPT/SA DEICE LIQUID 40 FT WIDE REMINDER THIN LOOSE SN


Denver

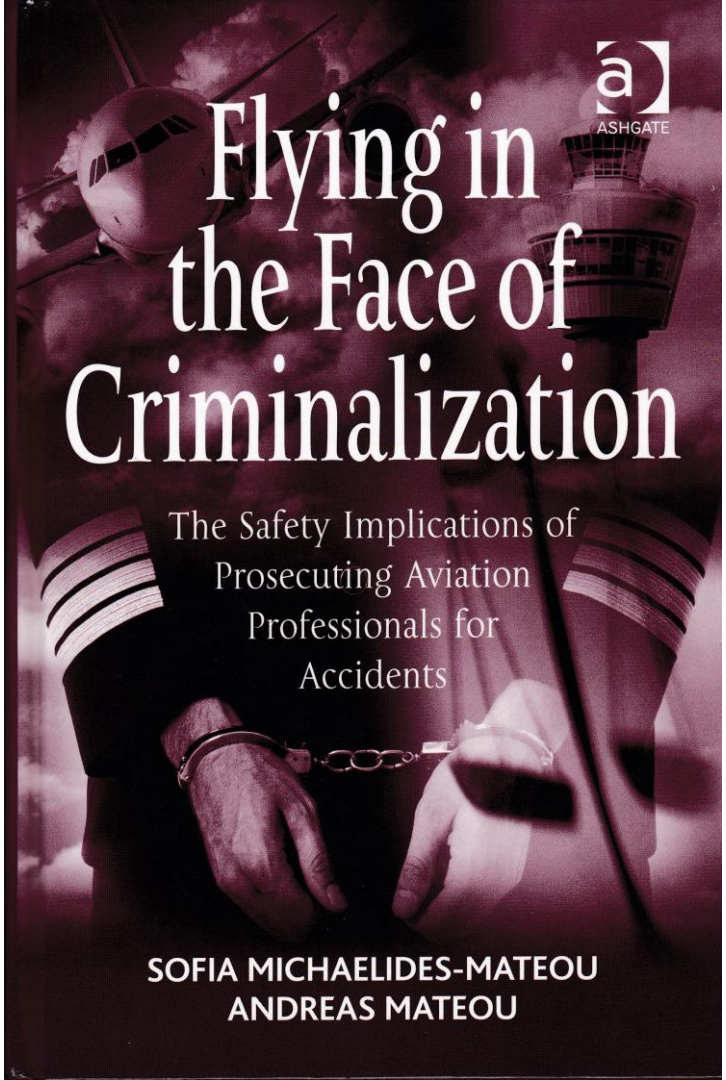
Runway Excursion in Denver

- *Preparing and Planning for the Approach and Landing.*
- *The importance of accurate and timely information in the process of Threat and Error Management.*
- *Did the pilot take the monkey off the Controllers back when he “expedited to the end of the runway”?*

Accountability and Human Factors

- *Human Factors have been considered as the direct cause of aviation accidents and incidents.*
- *Pilots involved in the events have generally been found guilty.*
- *Do you agree or disagree?*

Case Study


ASHGATE
Flying in the Face of Criminalization
The Safety Implications of Prosecuting Aviation Professionals for Accidents
SOFIA MICHAELIDES-MATEOU
ANDREAS MATEOU

Linate Airport Disaster

- *The Linate Airport disaster occurred in Italy at Linate Airport in Milan on the morning of Monday, 8 October 2001. Scandinavian Airlines System Flight 686, a McDonnell Douglas MD-87 airliner carrying 110 people bound for Copenhagen, Denmark, collided on take-off with a Cessna Citation CJ2 business jet carrying four people bound for Paris, France. All 114 people on both aircraft were killed, as well as four people on the ground*

- *The subsequent investigation determined that the collision was caused by several nonfunctioning and nonconforming safety systems, standards, and procedures at the airport.*

Linate Airport Disaster

- *On 16 April 2004, a Milan court found four persons guilty for the disaster. Airport director Vincenzo Fusco and air-traffic controller Paolo Zacchetti were both sentenced to eight years in prison. Francesco Federico, former head of the airport, and Sandro Gualano, former head of the air traffic control agency, received sentences of six and a half years. The pardon law issued by the Italian Parliament on 29 July 2006 reduced all convictions by three years.*

- *On 7 July 2006, Fusco and Federico were acquitted by the Milan Appeals Court. The controller Zacchetti's sentence was reduced to three years. In addition three more people were sentenced for multiple manslaughter and negligent disaster: former ENAV director general Fabio Marzocca to four years and four months, and former SEA airports agency officials Antonio Cavanna and Lorenzo Grecchi each to three years and three months.*

Conclusion: How to safely manage the threats and remain accountable.

How to safely manage the threats and remain accountable

- *Follow the Regulations*
- *Comply with Standard Operating Procedures*
- *Use the Checklist*
- *Count on the Synergy and Experience available*
- *Vigilant Situational Awareness*
- *6P Rule*

How to safely manage the threats and remain accountable

- *The PIC is the person legally in charge of the aircraft and its flight safety and operation, and would normally be the primary person liable for an infraction of any flight rule.*

By Safely Managing the flight to...

Keep the monkey off my back!

Thank you for your time.