The Informed Scheduler

Thursday, January 21, 2016 | 1:00 p.m. – 2:30 p.m.

PRESENTED BY:

Vinton Brown, Flight Safety International
James M. Kohler, Chief Pilot, DuPont
Andrew M. Bourland, CAM, Chief Pilot, Sherwin-Williams
Winston S. Carter, CAM, Gulfstream Aerospace
The Informed Scheduler

What does it really mean?

Information: noun in·for·ma·tion \ in-fər-ˈmā-shən\ 
  – knowledge that you get about someone or something 
  – facts or details about a subject

Informed: adjective in·formed \ in-ˈfôrmd\ 
  – having information

Source: Merriam-Webster
The Informed Scheduler

“Seek first to understand, then to be understood” – Stephen Covey
The Informed Scheduler

Time to re-focus

• We live in “our” world; not necessarily the pilots’ world
• We are largely “assemblers” of many bits of diverse information
• Pilots are users (internal customers) of our planning
• Understand and accept that aircraft limitations are real and variable
• Prioritize safety, efficient utilization, and passenger service/comfort
• Efficient aircraft utilization maximizes assets
  – Aircraft
  – People
Flight Planning

Start with the basic required elements

✔ Airworthy Condition / Aircraft Performance

✔ Crewmembers

✔ Safe areas for operation
Flight Planning

Crewmembers

• Qualified
• Current/recency of experience
• Legally/adequately rested, fit for flight/trip duty
• Valid medical certificate, passport, SIDA (Secure ID Display Area) badge
• Use accurate terminology in all communication (PIC/SIC)
Flight Planning

Aircraft Performance

✓ Aircraft condition

✓ Operating environment
Flight Planning

Aircraft Airworthiness

Minimum Equipment List (MEL)
Certain equipment may be inoperative

Configuration Deviation List (CDL)
Certain equipment may be missing

Dispatching Considerations
• Operating limitations while repair deferred
• Limited time for deferred repair
• Communicate with maintenance
• Don’t assume anything or speculate
# Flight Planning

## Aircraft Airworthiness

<table>
<thead>
<tr>
<th>U.S. DEPARTMENT OF TRANSPORTATION</th>
<th>MASTER MINIMUM EQUIPMENT LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEDERAL AVIATION ADMINISTRATION</td>
<td></td>
</tr>
</tbody>
</table>

### MEL Example

**Icing conditions:**

\[ \leq 10^\circ \text{ Celsius in visible moisture} \]

**Visible moisture?**

Any precipitation, fog, or clouds

---

### Aircraft Airworthiness

<table>
<thead>
<tr>
<th>AIRCRAFT: MFR MODEL</th>
<th>REVISION NO: 1</th>
<th>DATE: 08/15/2014</th>
<th>PAGE NO: 30-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SYSTEM SEQUENCE NUMBERS &amp; ITEM</td>
<td>REPAIR CATEGORY</td>
<td>2. NUMBER INSTALLED</td>
<td>3. NUMBER REQUIRED FOR DISPATCH</td>
</tr>
<tr>
<td>4. REMARKS OR EXCEPTIONS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 ICE AND RAIN PROTECTION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Wing Anti-Ice Protection System</td>
<td>C</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><a href="#">May be inoperative provided airplane is not operated in known or forecast icing conditions.</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Automatic Functions</td>
<td>C</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td><a href="#">May be inoperative provided airplane is operated in accordance with alternate procedures.</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Wing Anti-Ice Crossover Valve (XOVER, VLY) (Post MOD 025-10032)</td>
<td>C</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><a href="#">May be failed open provided airplane is operated in icing conditions according to wing anti-ice operation with single source procedures and AFM Limitations (below 26,000 ft).</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Flight Planning

Aircraft Performance

Primary phases of flight:

• Takeoff
• Climb
• Cruise
• Landing

Any phase can contain a limitation with impact on the whole flight.
Flight Planning

Aircraft Performance: Takeoff

- Aircraft weight
- Inoperative/missing equipment
- Runway length, slope, condition
- Atmospheric variables

Source: George Hall / Check Six
Flight Planning

Aircraft Performance: Climb

- Minimum climb gradient
- Terrain/obstacle clearance
- Runway-specific
- May limit aircraft weight

Sources: www.thejameslist.com
Flight Planning

Aircraft Performance: Cruise

- Altitude limited by weight
- Lower altitude = higher fuel burn
- Storm avoidance laterally
- MEL may limit altitude

Sources: www.ttxtav.com
Flight Planning

Aircraft Performance: Cruise / Driftdown

- Engine failure = lower altitude
- Required terrain clearance
- Route may limit weight

Sources: www.ttxtav.com
Flight Planning

Aircraft Performance: Landing

• Weight requires minimum length
• Length may limit weight
• Downhill slope may limit weight
• Contamination limits weight

Sources: www.airtug.com
Flight Planning

Weather considerations: Key categories

• Low ceilings and visibility
• Thunderstorms
• Turbulence
• Icing conditions
• Cold weather phenomena
Flight Planning

Weather considerations: Ceilings

Potential restrictions

- May prohibit descent to landing
- May prohibit takeoffs
- May be restrictive with inoperative anti-icing equipment

Sources: www.dailymail.co.uk
Flight Planning

Weather considerations: Surface Visibility

Potential restrictions

- May prohibit descent to landing
- May prohibit takeoffs

Sources: www.aerowiki.info.blogspot.com
Flight Planning

Weather considerations: Turbulence

- In and around thunderstorm activity
- Vicinity of jet stream
- Frontal movement
- Mountain wave turbulence (MWT)
- Clear Air Turbulence (CAT)

Sources: www.examiner.com
Flight Planning

Weather considerations: Thunderstorms

- Large area or scattered cells
- Long-lasting or fast-moving
- Structural damage or loss of control
- General turbulence
- Tornadoes
- Lightning
- Hail
- Icing

Avoid severe thunderstorms:

- at least 20 miles, laterally
- at least 1,000 feet for each knot of wind speed aloft, vertically
Flight Planning

Weather considerations: Cold weather phenomena

- Temporary runway closures
- Arrival & departure delays
- Deicing delays
- Reduced braking action
- Alters engine air intake
- Degrade radio equipment
- Binds up flight controls, landing gear

Sources: www.usatoday.net
LeoMoon74 Photography, Flickr
Flight Planning

Weather considerations: Icing

- Adds weight and drag
- Alters engine air intake
- Degrade radio equipment
- Binds up flight controls, landing gear
- Performance limitations

- Deice prior to flight
- Anti-ice if takeoff in icing conditions
- Holdover time
- Cumulonimbus -10 to -20° Celcius
- Conditions may require deviations
Flight Planning

Weather considerations: Narrowing everything down

Surface/airport and en route conditions

- Current Location
- Values/Intensity
- Projected/Forecast Location
Flight Planning

Weather considerations: Safe areas of operation

- Departure airport
- En route
- Destination
- Potential alternate airports
- Ground time / parking during trip
Flight Planning

Weather considerations: Airport Reports & Forecasts

METAR

Airport observations (updated hourly or upon significant change)

KTPA 151453Z 16020G30KT 130V200 3SM -RA BR SCT012 BKN010 OVC110 20/19
A2978 RMK PK WND 18030/1422
WSHFT 1413 RAE33B46
# Flight Planning

## Weather considerations: Airport Reports & Forecasts

### METAR

#### Common contractions

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA</td>
<td>Rain</td>
</tr>
<tr>
<td>FG</td>
<td>Fog</td>
</tr>
<tr>
<td>SN</td>
<td>Snow</td>
</tr>
<tr>
<td>BR</td>
<td>Mist</td>
</tr>
<tr>
<td>FU</td>
<td>Smoke</td>
</tr>
<tr>
<td>FZRA</td>
<td>Freezing rain</td>
</tr>
<tr>
<td>TS</td>
<td>Thunderstorms</td>
</tr>
<tr>
<td>FC/+FC</td>
<td>Funnel cloud / Tornado</td>
</tr>
</tbody>
</table>

#### Ceiling: Lowest cloud layer or other obscuration

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKN</td>
<td>Broken cloud layer</td>
</tr>
<tr>
<td>OVC</td>
<td>Overcast cloud layer</td>
</tr>
<tr>
<td>VV</td>
<td>Vertical Visibility. May be associated with FG or FU</td>
</tr>
</tbody>
</table>
Flight Planning

Weather considerations: Airport Reports & Forecasts

TAF

Terminal Aerodrome Forecast (24 or 30 hours, issued 4x/day or amended)

KTEB 151439Z 1515/1615 03005KT P6SM FEW100 BKN250
TEMPO 1522/1600 18020G25KT300 1/2SM SN SCT015 OVC002
FM160000 18010KT 1SM -SN FEW008 BKN008 OVC020
BCMG160204 190006KT 3SM BR SCT050
FM160800 09015KT P6SM SCT 100

- Scrutinize time frames closely as applicable to operations
- BCMG = “Becoming”, sometime between beginning hour and ending hour
- Be conservative with forecasts and consider nearby airport TAFs
Flight Planning

Weather considerations: En Route Reports

PIREP

Pilot Reports (In-flight observations/reports)

- Very valuable, adds credibility to other reports/forecasts
- The only source
  - Actual cloud tops
  - Actual icing conditions
  - Actual turbulence
Flight Planning

Weather considerations: Thunderstorms

Sources: NOAA/NWS
Flight Planning

Weather considerations: Thunderstorms

Sources: WSI Corporation
Flight Planning

Facilities: Airport / Services

NOTAMs Notices to Airmen

- Timely communication
- Potential hazards
- Airport runways, taxiways, lighting
- Change in communication or navigation status
Flight Planning

Facilities: Airport / Services

NOTAMs  Notices to Airmen

!TPA KTPA A1345/15)  **TPA RWY 10 CLSD TO LDG**  
1509251825-1609302100

!TPA KTPA A1344/15)  **TPA RWY 28 CLSD TO DEPARTING ACFT**  
1509251824-1609302100

!JFK  (KJFK A0240/16)  **JFK RWY 13R/31L CLSD**  
1601161100-1601161800

!JFK JFK NAV ILS RWY 31R OUT OF SERVICE
Thank you!