current condition:
satellite IR imagery on 2015-03-09, ~19GMT
(03-09 Mon, ~12PM)

• upper-level trough approaches from central Pacific, increasing cloudiness over EAFB on Tue through Wed
• ridge rebuilds later this week into early next week
metbrief: 2015-03-09
(science flight #2: 2015-03-10 Tue)

• biggest concern for Tue flight is **icing risk at landing** due to increased moisture in mid to upper atmosphere (peak Wed ~5-11am)

➡ if ≤12-hr flight, landing looks OK at 8PM, marginal icing risk at 10PM

<table>
<thead>
<tr>
<th>Time</th>
<th>Wind</th>
<th>Cld Cover (base)</th>
<th>Precip</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tue</strong> takeoff 17Z (10AM)</td>
<td>0-5 knot NNE020</td>
<td>FEW, SCT (high)</td>
<td>none</td>
</tr>
<tr>
<td><strong>midflight</strong> 03Z (08PM)</td>
<td>some high clouds expected at takeoff and along the SE jog, less along the SW leg down to ~10N; few low clouds; possible convection south of 10N</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>landing</strong> 14Z (07AM)</td>
<td>5 knot SW235</td>
<td>BKN, OVC (mid and high)</td>
<td>low prob</td>
</tr>
<tr>
<td><strong>landing</strong> 05Z (10PM)</td>
<td>5-10 knot SW250</td>
<td>SCT, BKN (mid and high)</td>
<td>low prob</td>
</tr>
</tbody>
</table>
Tue flight landing condition (GFS):

500 mb RH and soundings on 2015-03-11, 12GMT
(03-11 Wed, 05AM)

• a band of high mid-level moisture air approaches EAFB from the east
• lots of mid-level moisture (top: color shading) combined with upward motion (top: magenta contours), cold Ts and saturated air (right: sounding) pose **icing risk**
  ➡ Lenny’s estimate of icing probability: **20-30%**
• icing probability peaks between 5am and 11am Wed, decreases by 5pm
Tue 12-hr flight landing condition (GFS):  
500 mb RH and soundings on 2015-03-11, 06GMT  
(03-10 Tue, 11PM)

• band of mid-level moisture begins its approach over EAFB
• icing risk is **marginal** at 10PM landing on a 12-hr flight, OK at 8PM (how early to land depends on how conservative EAFB is)
Tue flight –5 hrs before takeoff condition (NWS Aviation):

Icing on 2015-03-10, 12GMT (03-10 Tue, 05AM)

Maximum icing severity (1000 ft. MSL to FL300)

18 hr forecast valid 1200 UTC Tue 10 Mar 2015

* Latest available forecast (as of 03-09, 12PM)
Tue midflight condition (GFS):

- lots of high clouds at and to the west of EAFB; cloud-free along SW flight track -- similar in NAM model
- very few low clouds, except at NW-most point
- some convection (magenta contours) along the southbound leg, south of ~10N

high & low clouds on 2015-03-11, 00GMT
(03-10 Tue, 05PM)
Tue midflight condition (L. Pfister):
convective influence at 47 and 53 kft on 2015-03-11, 06GMT
(03-10 Tue, 11PM)

- North and South Pacific air at southbound leg (south of 10N)
- Some old air from Africa at 52 kft north of 10N
good takeoff and landing conditions

watch for cold Ts and convection forecast to the south of 10N

<table>
<thead>
<tr>
<th>Time</th>
<th>Wind</th>
<th>Cloud Cover (Base)</th>
<th>Precip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thu takeoff 03Z (08PM)</td>
<td>10 knot NE045</td>
<td>FEW, SCT (high)</td>
<td>none</td>
</tr>
<tr>
<td>midnight 13Z (06AM)</td>
<td>some convection to the south of 10N; high clouds to the west of the flight track</td>
<td></td>
<td></td>
</tr>
<tr>
<td>landing 23Z (04PM)</td>
<td>10-15 knot NE045</td>
<td>FEW, SCT (high)</td>
<td>none</td>
</tr>
</tbody>
</table>
Thu midflight condition (GFS): tropopause and 85 mb T on 2015-03-13, 12GMT (03-13 Fri, 05AM)

- aim for the cold Ts with highest probability of finding TTL cirrus
Thu midflight condition (GFS):

100 and 150 mb EPV on 2015-03-13, 12GMT (03-13 Fri, 05AM)

• tropical air intrusion at the far SW point
• possible convection (right: magenta contours) south of 10N
Thu midflight condition (GFS):

high & low clouds on 2015-03-13, 18GMT
(03-13 Fri, 11AM)

- high clouds expected to the west of the flight track (moving NE)
- only a few low clouds along the track
2015-03-09 metbrief summary

- Upper-level trough is approaching from the central Pacific, increasing cloudiness (mid to upper-levels) over EAFB on Tue-Wed. Ridge develops later this week into early next week (i.e., back to warm and dry weather).

- science flight #2: Tue flight (10AM takeoff)
  - good takeoff conditions
  - slight chance of precip at landing, but not of concern (precip mostly to the north of EAFB)
  - increased moisture in mid to upper atmosphere poses **icing risk at landing** (peak at Wed ~5-11am)
    - if 12-hr flight: looks OK at 8PM, marginal icing risk at 11PM
  - clouds (especially high clouds) along the early portion of the flight track, but should be **relatively cloud-free 21–02Z (2–7 PM)**

- science flight #3: Thu flight (8PM takeoff)
  - good takeoff and landing conditions
  - cold Ts, cirrus clouds, tropical air, possible convection expected near the SW far point