Tips from Controllers: Northeast Focus

- If you can rarely get the routing you filed for, try using a TEC route if one exists.
- Specific routing is often determined by the layout of the ATC sectors (they usually have very narrow corridors).
- After filing your route, you can try looking at flightaware.com before calling for the clearance to get an idea of what the actual route may be.
- For the New York area, the traffic around Newark has a big impact.

New England's Adverse Weather Tom Horne

- CAPE (Convective Available Potential Energy)
 - Ranges:
 - 1,000-1,500 Positive
 - 1,500-2,500 Large
 - +2,500 Extreme
 - Maps:
 - twister.sbs.ohio-state.edu/imageg.php?dispimg=severe/cape&imgname=CAPE
- 35-40 kt shear (up to 25,000') = supercells
- CAPE + Shear is used to determine the severe weather potential
 - $^\circ~$ Also, look at lapse rates: if they're greater than 2°C/1000', that means an unstable atmosphere.

Sea Fog Conditions

- ▲ SST (Sea Surface Temperature) and air temp within 10°F
- ▲ Light winds
- ▲ Autumn: warm sea, cold air
- ▲ Spring: cold sea, warm air
- \checkmark Bermuda high = haze

Freezing Rain

- ▲ Warm front phenomenon
 - Above-freezing temps aloft
 - Below-freezing temps below
- ▲ Multiple freezing layers = multiple temperature inversions
- ▲ Types of ice
 - \circ 0 to -10°C = clear ice
 - -10° C to -20° C = rime ice
- ▲ Most types of icing takes place between 0 to $7^{\circ}C$
- ▲ <u>Escaping freezing rain</u>
 - ° Can climb, but there can be multiple freezing layers too
 - Watch OAT
 - Descend, but you may face ice on the way down
 - ° Land
 - Beware of winter warm fronts large areas can be affected

▲ www.spc.noaa.gov

IFR Safety Focus: FAF Inbound JJ Greenway

Briefing the approach (key items)

- ▲ Inbound course
- ▲ Intercept altitude
- ▲ DA/MDA
- ▲ First missed approach step
- ▲ Confirm GPS mode
 - [°] Know how to cycle to a missed approach
- ▲ More airports are using pilot-controlled lighting
 - Be aware that not all of them use the CTAF
- ▲ Review 91.175
- ▲ RVR: For Part-91 operations, it is legal to land if the RVR is below the approach minimums, *but not recommended*.
- ▲ Be aware of circle-to-land notes (such as at DXR, circling south of field not authorized)
 - The airport must be *continuously* in sight

IFR approaches in VMC

- ▲ Be sure to note the direction of traffic
- ▲ Beware of other traffic flying VFR in the area
- ▲ Above all: if needed, slow down, and ask ATC

What You Should Know About Aging Airplanes

Marv Nuss marvin.nuss@faa.gov

- <u>www.asf.org/agingaircraft</u>
- Aircraft built before 1969: CAR 3
- Aircraft built after 1969: Part 23
- "Limit Load"
 - Expected to occur <u>once</u> in an aircraft's life
 - ex) big gusts, severe manuevers: 3.8g
- "Ultimate Load"
 - 1.5x limit load
 - Provides for a margin of error (variability of manufacture, etc)

What is aging?

- ▲ Fatigue: associated with hours/cycles flown
- ▲ Corrosion: associated with calendar time
- ▲ Deterioration: associated with calendar time
- ▲ Onset of aging can be affected by the quality of maintenance and inspections
- ▲ No two planes are the same
- ▲ Usage affects fatigue strength

Fatigue cracking

- ▲ Inevitable with tension-loaded aircraft structures (such as wings)
- ▲ Reduced the inherent strength capability
- ▲ Probability of normal fatigue wearout increases steadily with time
- ▲ <u>A 10% increase in load/stress reduces life by 50%</u>
- ▲ Every aircraft starts with its own "fatigue trust fund" balance
 - Each aircraft "withdraws" at different rates
 - There can be no "deposits"
 - Inspections can determine how much life is left

Managing Fatigue Cracking

- ▲ Inspect, if practical
 - If you can't get to areas prone to cracking, retire the part early
 - Always consider the next weakest link
- ▲ Minimize probability of cracking across the fleet
 - Modify/replace before cracks are expected to be found
- ▲ Failure to act can be catastrophic, even with good designs

- A Best Practices Guide for Maintaining Aging GA Airplanes
 - <u>www.faa.gov/aircraft/air_cert/design_approvals/small_airplanes/cos/aging_aircraft/media/a</u> <u>ging_aircraft_best_practices.pdf</u>
- ▲ Work with type clubs
- ▲ Report SDRs (Service Difficulty Report): av-info.faa.gov/sdrx
- ▲ "Smoking" rivets are indications of high load transfer through them
 - This area is possibly prone to fatigue
- ▲ Circuit breakers
 - Reset them ocassionally to minimize oxidation
 - But be careful about resetting in flight

<u>Links</u>

- ▲ rgl.faa.gov Get ADs emailed
- ▲ <u>www.aginggeneralaviation.org</u> Includes the "Best Practices" guide