The LifeFlight IFR Project
The IFR Triad

**Pilot**
- Instrument Trained
- Instrument Current
- Instrument Proficient

**Aircraft**
- Meets FAA IFR Standards
- GPS Receiver Meets TSO C-129 Requirements

**Infrastructure**
- GPS Approaches
- GPS Routes
- Weather Availability
AWOS
Automated Weather Observation Stations in Maine

Remote, real-time weather reporting
enhancing safety and predictability

- temperature
- dewpoint
- wind speed/direction
- visibility
- cloud coverage/ceiling height
- altimeter/barometric pressure
- present weather
- freezing rain
- thunderstorms/lightning

Existing AWOS
Completed with Bond Funding Support
HGPS Approach
Helicopter Global Positioning System

An electronic map that improves access to remote communities and hospitals in poor weather or darkness
- designed by an aviation engineer
- FAA-approved

Selecting sites for GPS Approaches
- Hospitals that are more than 3 miles from an airport
- High volume recreational areas
- Island communities with changing weather patterns
- Homeland Security districts (Mount Desert Island)

Airport with GPS
If a helipad is within 3 miles of an airport, the pilot can use the airport approach when landing at the helipad.
Going forward:
Performance Based Navigation RNP 0.3
APPROACH ENHANCEMENTS

- Most GPS Approaches are Stand Alone

- In some cases additional segments called Routes and Feeders are developed to allow aircraft to descend from higher en-route altitudes to approach altitudes

- PBN “Next Gen’ routes are created where Radar is not available or flights on published routes would place the aircraft in freezing conditions or high traffic areas
• Multiple Helicopter GPS Approaches into heliports and airports serving islands off the coast of Maine.
NOTE: GPS required.
NOTE: RNAV 1.
NOTE: Pilot must ensure CDI sensitivity is set to 0.3 NM. CDI may be reset to 1 NM after SPIER.
NOTE: Use of Eastern Maine Medical Center requires permission of the owner; use of this procedure requires specific authorization by FAA flight standards.
NOTE: Use Bangor Intl altimeter setting.

DEPARTURE ROUTE DESCRIPTION

**VFR SEGMENT:** VFR climb to ZOGU, cross ZOGU at or above 700.

**IFR SEGMENT:** From ZOGU, track 145° to cross SPIER at or above 2700.
MISSED APPROACH:
CLIMBING LEFT TURN TO 3000 DIRECT KALTE AND HOLD

BAR HARBOR HELIPORT ELEV 35
202° / 0.65NM

MSA JASOR 25 NM

NOTE: CHART NOT TO SCALE

LIMIT FINAL AND MISSED APPROACH AIRSPEED TO 70 KIAS. USE HANCOCK CO.
BAR HARBOR ALTIMETER SETTINGS.
PROCEED VFR FROM JASOR OR CONDUCT THE SPECIFIED MISSED APPROACH.
HELIPORT LIGHTS CONTROLLED BY PHOTOCELL OR BY PRIOR ARRANGEMENT.

△ N/A
3.0 NM - 0.65 NM - COPTER RNAV (GPS) 022 DEPARTURE (PILOT NAV) JASOR 660 IGUNE 022° 1200 2.0 NM BAR HARBOR HELIPORT ELEV 35 NOTE: CHART NOT TO SCALE DEPARTURE ROUTE DESCRIPTION VFR Segment: Depart VFR. Climb as required to cross JASOR at or above 660 prior to entering IMC. IFR Segment: Track course 022°. Climb at minimum 270 ft/NM to cross IGUNE at or above 1200. Track course 022°. Climb at minimum 600 ft/NM to cross HATSO at or above 3000. Copter RNAV 022 Departure NOT Authorized with less than 500 ceiling and 3 / 4 mile visibility. MAINTAIN 70 KIAS ON DEPARTURE. Pilot MUST enter route and manually select 0.3 NM CDI sensitivity prior to departure. BANGOR APP CON 124.50 HANCOCK CO.- BAR HARBOR AWOS 118.025 HATSO 3000 JASOR IGUNE HATSO 022° 022° 022° SEGMENT REQUIRED CLimb GROUND SPEED (FT/NM) (KNOTS) HRP-MAP 0 50 60 70 80 MAP-FAF 270 225 270 315 360 FAF-IWP 600 500 600 700 800
COPTER RNAV (GPS) 325°

EASTERN MAINE MEDICAL CENTER (ME02)

Use of Eastern Maine Medical Center requires permission of the owner; use of this procedure requires specific authorization by FAA flight standards. lights controlled by photosensor or prior arrangement. Use Bangor Intl altimeter setting.

MISSED APPROACH: Climbing right turn to 2500 direct IROBE and hold.

BANGOR INTL ASOS 127.75

BANGOR APP CON 118.925

304° 0.6 NM from MAP

Proceed VFR from ZOGU or conduct the specified missed approach.

Limit final and missed approach to 70K.

Increase to 90K upon reaching the missed approach altitude; maintain 90K while in holding.

(FAF) ROBE

(IAP) ZOGU

(MAP) ZOGU

(MAP) ZOGU

MOON

1054

2000

1800

8100

4 NM

4500

325°

304° 0.6 NM from MAP

2500 IROBE

SPIER

2500

1800

3 NM

2 NM

CATEGORY
COPPER

LNAV MDA
640-3/4 470 (500-3/4)

EASTERN MAINE MEDICAL CENTER (ME02)

COPTER RNAV (GPS) 325°

BANGOR, MAINE
Orig 03JAN19 44°48'N-68°45'W
The next steps.. How to begin to “connect the dots”

This route starts in the middle of the ME02-22ME route to a fix north of ME55 then to HUVIR. Then from HUVIR it would split down to PWM to tie into TOBKE. The other route would go from HUVIR to CEPKO (I think we may could add the leg from CEPKO to FONEP to tie in ME37). The other route would tie ME95 to ME02 direct back. This would mean that we would need to make adjustments to the following procedures and possibly more to be able to connect all the remote facilities ME21, ME98, ME78, ME56, 35ME, ME55, 99ME, ME5, 93B, ME77, ME15.
IFR System Challenges

- Alternates—distance and fuel reserves, align 135 Alternate requirements for rotorcraft with part 91.169(b)(2)(ii), this would increase the likelihood that pilots will file IFR vice run underneath because they can not carry the extra alternate required fuel.

- Develop procedures for operators to transition from a Part 97 approach MAP to a hospital location within x distance (i.e. “just over the fence” of the airport) from the place where the approach was developed. Current transitions are problematic and have differing ceiling and visibility requirements and fall under two different operations, IFR and VFR, 2 different rules (135.609 and 613) and depending on the class airspace and can be confusing to pilots.

- Develop a procedure that would enable an operator to join a Part 97 IAP at an altitude that is lower than the IAF altitude. If the route can be TERPd through the area at a lower altitude, it would be extremely helpful to be a way to join a part 97 procedure at the altitude of the route.

- Can enhanced vision be used to improve ability to improve safe access of approach procedures and alternates?

- Communications, radar coverage and ADS-B gaps
“Knowing is not enough, we must apply, willing is not enough, we must do.”

Goethe

Epigraph IOM “EMS at the Crossroads”