Izzy Briggs, Concord, NH’s flight plan to cross the North Atlantic in a Defiant 6-22

This trip plan assumes worst case scenario, that my ground speed is 130 knots and I can never fly above 3,000' due to low temps coupled with low ceilings that hide icing conditions. Any improvements in weather or wind can improve these planning numbers.

Flight: ENJB ENTO BIEG BGBW 83B KSFM

Aircraft

Rutan Defiant

N603TB (Formerly LN-DDD)

Engines: Two HIO-360's electronic ignition, Bendix fuel servo injection (about 190+ HP each)

Propellers: Unknown Mfg....book indicates Hendrickson

Empty Weight: 1,971

MGW: 3,200

Max Takeoff Weight: 3,200 lbs

Single Engine Service Ceiling: 7,000'

Va 130 KIAS

Vne 195 KIAS

Vno 175 KIAS

Vx 80 KIAS

Vy 100 KIAS

Usable Strake Fuel Capacity: 108 (105 Usable) Gallons:648 lbs

Aux Tank 1: Turtlepack 33 Gallon: 198 lbs

Aux Tank 2: Homebuilt 38 Gallons: 228 lbs

Tanks Weight: 75 lbs

Usable Weight: 1,229 lbs

Total Fuel and Tanks: 1,149

Survival equipment and other items: 200 lbs

Pilot 250

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1,599 lbs

Overgross: 370 lbs

61 Gallons = 370 lbs

ENJB ENTO  BIEG  BGBW  83B KSFM

ENJB to ENTO

Short flight to ENTO to stage for the trip to Iceland. Will fuel up fully in ENTO.

ENTO to BIEG

305 degrees,

776 NM,

Cruising Altitude: 3,000' - 4,000'

130 kts groundspeed

17 GPH

6 hours total time in flight

101 Gallons fuel consumed

30-40 gallons reserve

May consider more southern route to favor being close to Shetland Islands and Faroe islands as emergency stops. Example waypoints to southern route are VALDI and 6307N.

Primary destination for this leg is BIEG (Egilsstadir, Austernald Iceland).

Runway 03/21 is 6,070 feet.

100 LL Fuel is available through Iceland Jet Center (https://jetcenter.is/our-services/)

Alternates and Emergency landings along the way are BIRK: Iceland, EKVG:Faroe, EGPB:Shetland Islands

BIEG to BGBW

277 degrees

868 NM,

Cruising Altitude: 3,000' - 4,000'

130 kts groundspeed

17 GPH

6.7 hours total time in flight

113 Gallons fuel consumed

40-50 gallons reserve

Direct over the top of Iceland, VFR permitting. Maximum expected altitude to be encountered is about 5,400'near BIMM.

BGBW Runway is 6,004'

Alternate destination is BGGH 275 miles along the coast north of BGBW. A Direct flight to BGGH is not possible due to a maximum drift-down altitude limitation of the aircraft of 7,000'. Elevations within 5 miles of the seacoast airport Narsarsuaq (BGBW) exceed 7,500' and go as high as 11,000' to the interior of Greenland.

BGBW 83B

254 degrees,

1,171 NM,

Cruising Altitude: 3,000' - 6,500'

130 kts groundspeed

17 GPH

9 hours total time in flight

153 Gallons fuel consumed

23 gallons reserve

83B is a Port of Entry of Presque Isle Maine. I'll clear Customs here, refuel and continue to the final destination of Sanford Maine. Numerous alternates exist along the route once over Canada including CYYR (Goose Bay), about half way. Elevations are not expected to exceed 3,700' along the route of travel. Devations for weather or better winds are the only anticipated reasons to change couse or altitude.

Higher altitudes may be possible as the flight proceeds further south and temperatures increase.

Wherever possible, the aircraft will climb above 8,000' for better fuel economy, however, due to cold temperatures, the flight cannot fly over cloud decks that may create a freezing condition. The Canard's ability to handle icing conditions is not known and travel into any possible icing conditions including light ice must be avoided.

83B KSFM

228 degrees,

228 NM,

Cruising Altitude: Best speed and economy.

150 kts groundspeed

20 GPH

1.6 hours total time in flight

32 Gallons fuel consumed

20 gallons reserve

This trip will proceed Day VFR to the final aircraft destination of Sanford Maine.

**Marc Zeitlin, Tehachapi, CA’s comments:**

*“So all I'll say is that since you're projecting a VERY conservative flight regime and always have more than enough reserve fuel, there should be no fuel related issues here. HOWEVER. I would at least consider modifying the route to fly over the Shetlands and Faroes, if for no other reason than seeing land and an airport under you every few hours might be nice and reassuring, and minimize time to reach an airport in an emergency. Also, if you stop at ENBR (Bergen) for fuel before heading to BIEG, you save an hour of fuel as more reserve.*

*Also, I know that you don't want to stop in Reykavik, but that gives a LOT of margin (another 1:15 - 200 NM) heading off to Greenland (BGBW). And all that is technically free margin, although not necessarily logistic margin.*

*Same can be said for a stop in Goose Bay (CYYR) which almost cuts your longest leg in 1/2, and you basically fly right over it anyway.*

*So \_IF\_ there were no other considerations other than maximizing fuel when over water, I might consider:*

*ENJB  ENBR  EGPB  EKVG  BIEG  BIRK  BGBW  CYYR 83B*

*but you don't stop at EGPB or EKVG - you just overfly. And if you're nowhere near the crappy conditions you posit that you'd be willing to take off in (personally, if the ceilings were going to be 3K ft. with a constant 30 kt headwind the whole time, I'd seriously consider waiting a few days, rather than just launching into it) then you can decide on the fly not to stop in one or two of your projected stops.”*

**Henry Hallum, “**I've made four North Atlantic crossings in sketchy homebuilt airplanes so I guess this counts for $0.04. In no particular order:

Strongly recommend not trying to skip Reykjavik or Canada. IMO you are overthinking the severity of the bureaucratic bullshit. In real life it is not that bad, and especially for a non-commercial flight moving an airplane \*out\* of Europe, they really don't care about much. Nobody's ever scrutinized my paperwork or even asked for anything other than my passport and I think on one occasion my pilot certificate. IMO you're also underthinking the severity of marathon legs in an airplane that's new to you, with patchy communications and limited ability to get weather updates.

The scariest of these legs is the last one. Northeastern Canada is desolate; the weather is often nasty (budget for headwinds at least 30 kt worse than forecast); much of the terrain is unforgiving for a forced landing and the gravel runways are few and far between. Stop in Goose Bay for goodness' sake, grill a steak at Trapper's Cabin and get some sleep before you brave that. The place basically exists to support transient GA, they are friendly and DGAF if you lie about having HF.

200 lb of survival equipment sounds like a lot. Mine totals about 75 lb including a good raft with a canopy, immersion suit, rations and polar bear repellent.

Make sure you thoroughly test your ferry fuel system before departure, as well as getting at least a handful of hours in the airplane for general familiarity / shakedown.

Marc wrote:

> I would at least consider modifying the route to fly over the Shetlands and Faroes, if for no other reason than seeing land and an airport under you every few hours

The sentiment is reasonable, but you probably won't actually \*see\* much other than cloud. Speaking of which, while it's definitely a very good idea to avoid icing, I'd reconsider your policy of never overflying cloud above the freezing level. I'm not even sure you'll be able to get an IFR clearance that low, and IIRC oceanic VFR flights below controlled airspace are no longer allowed in at least Gander FIR. If you try to wait for severe clear weather across the whole route you'll be waiting a long time. IMO intercontinental scud-running or low-level IFR in the class G, even if allowed, is sketchier than cruising along in cold dry clear air above an undercast.”