



Route taken by the Piper family on their transatlantic flight to Europe is shown on map above. Solid line depicts planned flight route eastward. Broken line from Goose Bay to Reykjavik reflects alternate course taken because of forecast of strong headwinds

To Europe By Aztec

Transatlantic general aviation ferry flights have become routine, but there's still an air of adventure in an island-hopping family pleasure flight 'over the pond'

Max Karant says its difficult, or hazardous, but it isn't. At least, it wasn't this time. And it doesn't have to be an *Aztec*, although of course we'd like it to be. The *Aztec* is particularly suited for transoceanic flights with its large separate baggage compartments, adequate range, and good instrument and ice-carrying characteristics.

It does have to be a multi-engine airplane, however, to eliminate the obvious hazards—mental and mechanical—and the pilot must be proficient on instruments. Other than that, with reasonable planning and average luck with the weather, the trip by private plane from America to Europe can be as easy and about as long as one from Lock Haven to San Francisco and return—4,600 to 4,900 miles, depending on the exact route, to Geneva, Switzerland via Houlton, Maine; Goose Bay, Newfoundland; Greenland; Iceland; Scotland; and Paris.

For the Pipers—me at the controls, my wife, Helen, and our children, Pat, 18, and Howard, Jr., 17—the ocean crossing in Piper *Aztec* N5789 Yankee in mid-June this year was one that we had looked forward to for a long time. Even though we've always been convinced that general aviation aircraft use is virtually unlimited, our transatlantic flight has given us even greater appreciation of the private plane's capabilities. Our trip was pleasant, interesting, educational and devoid of the hair-raising incidents that have been reported by some who have made the same flight.

The flight can hold, on the other hand, numerous surprises and difficult decisions, and some serious risk, authorities will hasten to point out, so it should not be entered into without thorough planning. During one five-month period in 1964, out of 150 flights of general aircraft on the route to Europe, there were

some 55 search and rescue alerts, and an additional 20 incidents and accidents that did not require alerts. This reflects 75 problems of some kind out of 150 flights. Obviously, it is essential that pilots be extremely careful in planning and executing this type of flight. Improper communications, poor navigation, inadequate weather analysis and understanding were the major causes of trouble, in that order.

In order to carry the family, it is necessary to leave the airplane in a standard configuration. If extra fuel tanks are installed, a ferry permit is required and only members of the crew can be on board. This means that the flights must be planned around standard fuel capacity and ranges. This is easy enough if things go normally and the island-hopping route is followed.

Dozens of light twins fly to Europe each year with ferry permits and extra fuel, so this is not unusual any longer.



Piper family poses at Lock Haven in front of the Aztec in which they made their transatlantic pleasure flight. From left are Howard Piper, daughter Pat, 18, Mrs. Piper, and son, Howard Jr., 17



On the isolated wastes of Greenland at Sondrestrom Air Force Base, air transport is the chief means of travel, and distance (see post) is measured in time rather than miles. Note approximate equidistance from North Pole and London, Paris and New York

Our company sends an average of about one a week on that route. With extra tanks, the route can be from Boston to Gander, Newfoundland, to Shannon, Ireland, or if the weather is unfavorable, from Gander to the Azores to Portugal or Spain. Gander to Shannon is 1,727 nautical miles; to the Azores, 1,480 miles. From the Azores to Lisbon is 770 nautical miles, so total miles flown is considerably longer over the southern route, depending on the final destination in Europe. Most of our planes go to Piper Aircraft International in Geneva, Switzerland.

Via Shannon, it is 3,600 nautical miles from Lock Haven to Geneva. By way of the Azores it is 4,240 miles. The island-hopping route covers about 4,000 miles.

It is a little more of a trick to go without extra tanks because there isn't much choice as to where you can go if the weather turns sour. The flight from Lock Haven to Goose Bay, Newfoundland, with a customs and refueling stop at Houlton, Maine, is easy enough—about 1,100 nautical miles altogether—with ample alternates. This can easily

be done in one day.

The second day's flight is really the main problem. From Goose Bay to Narssarssuaq, Greenland, is 675 nautical miles (775 statute). The airport at Narssarssuaq is strictly VFR—no instrument approach facilities, and the terrain is such that instrument approaches or departures are not feasible. It is necessary to fly up a steep-walled fjord and land on a one-way runway, and to depart with good ceilings because of mountains near the airport.

The problem is that if the weather socks in at Narssarssuaq, there is no alternate within range. Going back to Goose Bay is not feasible. Two airports farther north in Greenland—at Sondrestrom Fjord, about 400 miles up the west coast, and Kulusuk, 350 miles to the northeast on the east coast—are

both very marginal alternates. Going on to Iceland is another 652 miles and generally not possible. So it is essential that the weather in Narssarssuaq be just right upon arrival there.

Actually, this isn't so hard to be sure of. Narssarssuaq weather reports can be obtained quickly from Goose Bay or Gander, and radio contact over High Frequency radio (we used 5626.5 kc) can confirm that weather is holding at the destination during the flight. There is a weather ship about halfway across. It was our intention to check with this ship or with Gander at the halfway point, and to return to Goose Bay if there were any question about conditions at Narssarssuaq.

When we were ready to start, the weather at Narssarssuaq was much better than necessary and was expected to hold. Another complication arose unexpectedly, however. A strong low pressure area was located a few hundred miles south of Greenland, and the counterclockwise winds were creating headwinds up to 40 knots along our route. This made the range of the *Aztec* a bit more questionable, not only on the trip

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Rugged snow-capped terrain of Greenland afforded relief from 610-mile stretch of over-water flight, but would offer little comfort in an emergency

to Greenland, but even more so on the following 670-nautical-mile trip to Reykjavik, Iceland. The low was expected to remain in that position for several days, and Goose Bay is not a spot in which a few days' layover in bad weather would be welcome.

Considering all this, and the fact that weather to the north was almost CAVU and the winds were less unfavorable that way, we decided to detour north-northwest about 230 nautical miles to a remote radar base at Saglek, then 610 miles to Sondrestrom. This made the trip to Iceland about 285 miles longer, but the wind difference made it not appreciably longer in hours. Saglek cannot be used normally, and we were only able to go there by special permission.

There is another alternate route which has been used by a few pilots, but since we were at Goose Bay it would have been too far out of the way for us. This route starts from Quebec, goes to Knob Lake, then Frobisher, Sondrestrom, Kulusuk, and Iceland. None of the legs is longer than 540 nautical miles and more alternate facilities are reachable.

As it turned out, we should have gone to Narssarsuaq instead of Sondrestrom, because the winds were not as strong as forecast, and the flight there and on to Iceland could have been made easily enough. With the family along, however, one is perhaps inclined to be somewhat overcautious.

A good reason for going to Narssarsuaq instead of Sondrestrom is that the landing fee and other charges made at Sondrestrom totaled \$190. Evidently the intent is to discourage private flights into Sondrestrom, an American Air Force base on Danish territory. At every other stop en route, fees were nominal—a few dollars for landing, parking, and customs.

Fuel costs are very low at every stop except in Maine, where 100 octane is 50 cents a gallon. In Goose Bay it is 27 cents, in Sondrestrom 40 cents, Iceland 27 cents, Scotland 20 cents.

The total fuel cost for the trip, including filling up at Geneva at about 70 cents a gallon, was \$214.44. At only one time was over 100 gallons added, out of a total fuel capacity of 144 gallons, so that over two hours of range was

left at every landing. No flight was over 740 nautical miles, or five hours.

The *Aztec* was cruised consistently at 10,000 feet, at 2,200 r.p.m. and 20 inches manifold pressure, about 55% power. True airspeed under those conditions is about 193 m.p.h. (168 knots), and fuel consumption runs 20 to 21 gallons per hour, giving seven hours of range, or about 1,170 nautical miles. It is easy to increase the range to nine hours, or 1,365 nautical miles, by slowing to 175 m.p.h. at 10,000 feet, 2,000 r.p.m. and 19 inches of pressure.

No oil was added during the entire trip, and about two quarts per engine were used over 28 hours.

The unusual stationary low south of Greenland—weathermen at Goose Bay said this occurred perhaps twice a year—caused headwinds over the entire flight from Maine to Paris, averaging about 15 knots. This did tend to confirm the feasibility of returning via the same route against the normal westerly winds.

Communications throughout the trip proved no problem. If HF contact wasn't possible, there were always other high-flying airline or military aircraft which were very cooperative in passing on position reports. Navigation by ADF and by omni, when within 100 miles or so of the destination, is a cinch. Instrument approaches, with radar help if wanted, are easy everywhere except in Greenland.

Sighting the jagged coastline of Greenland from 100 miles out, and the flight over the Greenland ice cap, in themselves are worth the trip. This type of a crossing is really considerably more exhilarating and interesting than filling up with a few hundred gallons of fuel and starting off for Shannon or the Azores over nothing but ocean. Both Greenland and Iceland are extremely unusual and worthwhile seeing.

Of course, summer is the time to go. Daylight is 24 hours a day in Greenland and Iceland, the weather is better and temperatures are high enough so that icing isn't much of a problem. A change of altitude one way or the other was all that was needed to unload the few thin layers of ice that the *Aztec* picked up.

In the future, as the airplanes become more advanced and capable—not that they are not perfectly adequate now—and as pilots travel more widely and become more aware of this route to Europe, surely there is going to be a lot of general aviation traffic back and forth. Perhaps with encouragement by pilots making the flight and by AOPA, the Air Force can be induced to do away with the high landing fees at Sondrestrom, eliminating one minor roadblock. One must now obtain permission from the Minister of Aviation, Gm Kongevej, Copenhagen, Denmark, before landing in Greenland, or pay an increased fee. This regulation could also be rescinded in the interests of improved tourist relations.

This route to Europe appears to have considerable potential—it will be interesting to see how it develops. ●

FLIGHT LOG—LOCK HAVEN TO GENEVA

Leg	Miles		Time	Statute MPH	Fuel U. S. Gals.	Fuel Cost
	Nautical	Statute				
Lock Haven—Old Town, Me.	435	500	2 hrs.	185	60	\$30.00
Old Town—Houlton, Me.—Goose Bay, Newfoundland	655	750	4.6	163	100	26.60
Goose Bay—Saglek	320	365	2.2	165	49	13.67
Saglek—Sondrestrom, Greenland	610	700	4.0	175	83	32.37
Sondrestrom—Reykjavik, Iceland	740	850	5.0	170	103	27.40
Reykjavik—Prestwick, Scotland	740	850	4.7	180	95	19.00
Prestwick—Paris	490	565	3.2	178		
Paris—Geneva, Switzerland	280	320	1.6	200	97	65.40
Total	4270	4900	28.0		587	\$214.44

Average Speed—175 statute miles per hour. Average Fuel Consumption—20.9 gallons per hour.