

The Atlantic Adventure

The rugged Greenland landscape may look forbidding, but using it and Iceland as stepping stones reduces the longest leg of an Atlantic crossing to 747 miles.

How to prepare
for the challenge
of an ocean
crossing in a
lightplane

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■ Most general aviation pilots never consider flying a lightplane to Europe because of the seemingly vast distances involved. New York and London, for example, are separated by 3,458 statute miles. But crossing the Atlantic doesn't require the endurance to vault such an expanse.

Although long-range ferry tanks and sophisticated navigation equipment are required to fly the 1,973-mile, non-stop leg from Gander, Newfoundland to Shannon, Ireland, these costs can be obviated by crossing the North Atlantic via the "ice route." Using Greenland and Iceland as stepping stones across the "pond," the longest leg of the flight can be reduced to 747 miles, a distance easily flown in many light twins and some singles, especially when long-range-cruise procedures are employed. (Some pilots, however, prefer to install a small, supplementary cabin tank as a hedge against the unexpected.)

In addition to adequate fuel, a pilot accepting the challenge of an ocean should also carry appropriate survival equipment and a long-range high-frequency (HF) transceiver. These items

(including the temporary installation of a cabin fuel tank) can be rented from one of several FBOs specializing in transoceanic equipment.

Something that cannot be purchased or rented, however, is the necessary IFR skills. Anyone not comfortable in the clouds should not contemplate such a journey.

Much has been written about flying small aircraft across big oceans and little can be added here to bolster the confidence of those who feel that such a flight is beyond their limitations. No one should be encouraged to fly the North Atlantic if he or she has serious premonitions about it. But experience has proven that modern aircraft and engines perform as well over the Atlantic as over Atlanta.

Curiously, a flight via Greenland and Iceland can be safer than a non-stop Atlantic crossing. Consider the takeoff weight of a light twin burdened with sufficient fuel to make a direct shot from Gander to Shannon. Frequently, this configuration so overloads an aircraft that during the first few hours of flight, the single-engine ceiling is below

sea level. This is a fact of flight that ferry pilots have learned to accept.

Navigation via Greenland and Iceland requires no unusual skill or knowledge. Anyone adept with ADF and dead reckoning procedures should have no difficulty. To the delight of many pilots, much of the route is defined by powerful radio beacons and VORTAC stations. Also, much of the northern route passes over snow-covered terrain or ice packs, both of which are more survivable than an oceanic ditching. And considering the absence of sharks, some feel more comfortable above the frigid Atlantic than the balmy Caribbean.

The major drawback to flying the Atlantic is weather. Anyone planning the trip (especially for the first time) should bring along a reserve of patience. Weather delays are common. Many crossings, however, have been conducted entirely in VFR conditions.

Most of the northern route lies within the semi-permanent, low-pressure belt girdling the globe between 50° and 70° north latitude. During much of the year, a pilot can expect to rub shoulders with a polar front during at least a part of his journey. Although the associated weather is relatively calm and stratified when compared to mid-latitude fronts (there is much less cumulo-type cloudiness), it is known for widespread icing conditions in the low and middle levels. This implies that an aircraft should be equipped with anti- or de-icing equipment although, with some patience, a flight can be planned around or above the icing areas. Fortunately, thunderstorms are rare along this route.

It would be presumptuous to make any generalizations about North Atlantic weather because it is fickle and characterized by a certain degree of unpredictability. But one piece of advice can be relied upon: inexperienced pilots should avoid the winter months. Meteorologists also advise caution during the early spring and late autumn. This is when North Atlantic weather is in a seasonal state of flux and when accurate forecasting is difficult. Summer months offer the best conditions.

Significant weather seems to move across the Atlantic in waves. A departure, for example, might be planned just prior to the forecasted arrival of a

front or low-pressure system at Gander. The previous system will have had a chance to move eastward, leaving most of the North Atlantic undisturbed.

Careful planning is *extremely* important, especially with respect to navigation, weather and aircraft performance. But it is also important (and convenient) to have some help along the way. For instance, when a pilot is about to undertake his first flight to Europe, he could arrange for assistance from Houston-based Universal Weather and Aviation Services. For \$50 per en route stop, UWAS will arrange to have someone greet him at each foreign port of call with free ground transportation and any servicing that might be required. This includes arranging for fueling and maintenance, Customs, flight plan filing, weather portfolios, landing fees, etc.

Gander, Newfoundland, is the most popular jumping-off point. This is not because the town is particularly alluring (it is not), but mainly because it lies approximately on the great-circle route

from New York to London. Actually, Gander isn't that far north. At 49° north latitude, it lies on the same parallel that defines the western U.S.-Canadian border.

Most light aircraft bound for Europe leave the United States from Boston. From there, Gander is 910 miles north-east. The maritime route over Nova Scotia (via Halifax) is quite scenic and provides an opportunity to get a last-minute check on fuel consumption, performance and the status of all aircraft systems.

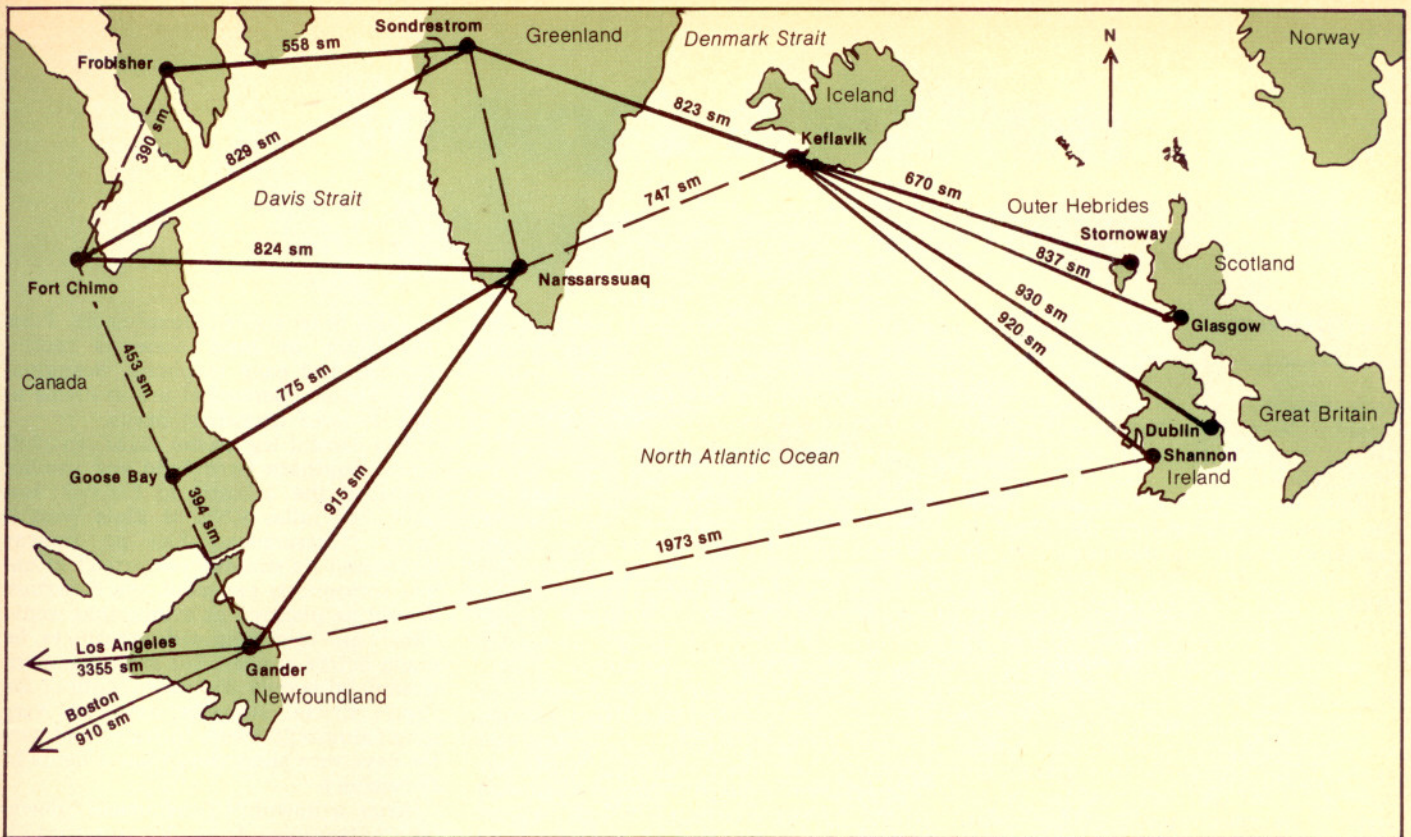
A pilot gets his first taste of over-water flying when he crosses a 160-mile chunk of the Atlantic, the Gulf of St. Lawrence, from Nova Scotia to the southwest coast of Newfoundland.

Approaching this landfall, the route passes abeam St. Pierre, a French-owned island where single-engine aircraft used to initiate Atlantic crossings. This was before the Canadian government gave its approval for these aircraft to use Canada as a jumping-off point.

Continuing northeast, Victor 300



An iceberg drifts off the south Greenland coast. Considering the absence of sharks, some pilots feel more comfortable flying above the frigid Northern Atlantic than the balmy Caribbean. Photo by Carl Osten.



leads over 165 miles of Newfoundland's rugged, lake-riddled terrain to Gander International Airport. Facilities here include an efficient and willing meteorological staff acclaimed to have the most expertise in North Atlantic forecasting.

Gander's massive, architecturally impressive terminal building was constructed in the late fifties when piston-driven airliners made frequent, scheduled fuel stops en route to or from Europe. But when the carriers traded jugs for jets, Gander was left behind in a wake of burnt kerosene. Today it is used primarily as an alternate airport, receiving infrequent use except for a few Air Canada flights and transient general aviation aircraft bound for distant horizons.

The airport is reminiscent of a small, midwestern town bypassed by a new expressway. Restaurant and curio shop personnel stand by optimistically, waiting patiently for patronage.

The first leg across the Atlantic begins at Gander. Narssarsuaq, on the southern tip of Greenland, lies 915 miles to the north-northeast. If forecasted winds or aircraft range make this long a leg inadvisable a pilot can fly to Goose Bay, Labrador, 394 miles over land to the north-northwest. The distance from "Goose" to Narssarsuaq is only 775 miles, reducing the length of the first overwater leg by 140 miles.

The biggest potential problem of the trip is considered to be the occasionally moody weather at Narssarsuaq. This is strictly a VFR airport with the nearest alternate, Sondrestrom AFB, 434 miles to the north on Greenland's west coast.

If the latest Narssarsuaq weather isn't available at Goose or Gander, it can be obtained by sending a request to the forecaster at Sondrestrom who will in turn call the tower at Narssarsuaq. If the skies are overcast, the tower will call a small fishing village near the mouth of the fjord through which one would have to fly to get to the airport. The "open" or "closed" condition of the fjord is passed to the tower, relayed to Sondrestrom and eventually gets to Gander or Goose, wherever it is needed. This process takes about two hours.

Immediately prior to leaving Canada, it is essential to reconfirm compass accuracy. This is done by lining up on Runway 9 (at either airport) to insure that the compass isn't being affected adversely by unknown quantities of magnetic deviation.

Navigating to Narssarsuaq is relatively simple. Gander Center and VORTAC provide vectors for the first 150-200 miles to help establish the desired track. This is a critical phase of the flight. Once on course and at cruising altitude, request a radar check of ground speed to confirm your forward progress. If ground speed is less than can be tolerated (considering fuel on board), turn around and spend another day (or two) in lovely, downtown Gander. (Summer fishing there is good.)

Also confirm that the compass heading required to maintain track is reasonably close to that determined during preflight planning. This also guarantees that you haven't failed to properly correct for the almost 40° of westerly variation that exists along this first leg.

About an hour after takeoff, a pilot is on his own to monitor the compass and the clock, to impatiently await the passage of time and to have a cardiac arrest every time an instrument needle moves unexpectedly. He's all alone reflecting upon the smallness of his craft and the immensity of the sea.

But he doesn't have to be alone. A call in-the-blind on 121.5 is bound to result in a communications link with one of numerous jetliners criss-crossing the North Atlantic. These pilots are required to guard the emergency frequency and usually are more than willing to relay position reports. Many will have overflown Southern Greenland and offer first-hand observations of the weather there.

These pireps usually can be obtained prior to reaching the halfway point to Greenland and provide another opportunity to reverse course, if necessary.

Eloquent passages have been written about finding the Tunugdliarfik Fjord, the only fjord that leads from the Greenland coast to Narssarsuaq. But this really is not particularly difficult because the Danish government has installed a radio beacon on Simiutak Island near the mouth of the fjord (see diagram).

On a clear day, the precipitous walls can be overflown by homing in on the NA RBN (on the airport), 52 miles inland from Simiutak. But those who have flown the fjord route recommend that this entrance to Greenland be used irrespective of the weather. The majesty of flying between 3,000- to 5,000-foot-high cliffs rising from the frigid, blue-

black waters is an awesome sight that shouldn't be missed. This would be like visiting Copenhagen and not going to Tivoli Gardens.

When the ceiling is less than 7,100 feet, however, navigating the fjord is mandatory since Narssarsuaq has no IFR approaches; you've got to fly through the "tunnel." However, this procedure should not be attempted by someone new to the area when the ceiling is less than 4,000 feet and the visibility less than 5 miles.

To find the right fjord, depart Simiutak on a magnetic track of 091° using pilotage and ADF skills to a maximum. Every rock on the surface must be related to its counterpart on the chart. The entrance to the proper fjord is found 25 miles from the SI beacon and is identified positively by another beacon (NS). About 14 miles and numerous icebergs later, a wrecked ocean vessel is seen near the north wall. At this point, it would be wise to reduce airspeed and extend partial flaps even though the airport is not yet in sight. When the last corner is rounded, the runway will appear only a few miles

ahead. An unprepared pilot with an excess of airspeed and altitude could easily overshoot the airport and have to maneuver within the limited confines of a granite-and-ice cul-de-sac.

Narssarsuaq—or Blue West I—is a classic one-way airport. The single, 6,500-foot-long runway dead ends at the base of the Greenland Ice Cap. To make matters worse, the runway slopes from an elevation of 10 feet at the west end to 112 feet at the east. Consequently, landings are made on Runway 8 and departures from Runway 26, no matter which way the cold wind blows.

If, prior to departing Gander or Goose, it appears that Narssarsuaq weather will be inadequate, a pilot can use the alternate route via Frobisher Bay on the eastern edge of Canada's Northwest Territories. Although well off the beaten path, Frobisher has a long runway served by an ILS and plenty of fuel.

From Frobisher, a pilot can head for the 558-mile-distant Sondrestrom AFB across the Davis Strait on the east coast of Greenland. Most of this leg can be conducted by VOR navigation.

Sondrestrom (which offers precision and surveillance radar approaches) has been known to be unfriendly, but only

to those who arrive unexpectedly. Prior permission to land there is recommended and easy to obtain. Scandinavian Airlines personnel are available to tend to your overnight needs.

The second leg of the flight stretches across Southern Greenland and another chunk of the Atlantic to Keflavik, Iceland, 747 miles ENE of Blue West I. Since Narssarsuaq has no runway lights and its smudge pots aren't lit unless someone is expected, the departure should be planned at a time that would allow an unanticipated return to be made before sunset. But since Southern Greenland is only 350 miles south of the Arctic Circle, summer days are very long (almost 20 hours in June) and winter days very short (less than 4 hours in December).

After a downhill (and usually downwind) departure from Narssarsuaq, it is necessary to climb in lazy circles to 11,000 feet before crossing the 100-mile-wide ice cap. The terrain across the cap reaches up to 9,000 feet but, because of snow and ice, very little of it can be seen.

After crossing Greenland's east coast and marvelling at the glacial tongues of ice lapping at the sea, it's time for about 500 miles of dead reckoning to the transmission fringes of the Keflavik VORTAC on the southwestern tip of Iceland.

"Kef" is a major international airport with all facilities, but anyone planning on spending some time in Iceland (you should) would be better off landing at Reykjavik which is on the outskirts of the capital city and only 23 miles northwest of Keflavik.

The final leg across the Atlantic depends on the pilot's ultimate destination and spendable fuel. The shortest leg is to Stornoway, Scotland, 670 miles southeast of Keflavik, and requires about 300 miles of dead reckoning. It is always wise to avoid dead reckoning over large bodies of water when strong cross-track winds are forecasted. Otherwise, however, it's fairly difficult to drift so far off course as to miss a landfall that has a VOR waiting to greet you. To miss the Stornoway VOR after 300 miles of dead reckoning, for example, would require drifting steadily off course at more than a 26-degree angle.

Ultimately, the VOR needle comes alive and, shortly thereafter, a pilot is gazing at one of the British Isles on the distant horizon. It is a sight to be frozen in memory, a thrill never to be forgotten, an adventure never to be duplicated. □

