



Here is route PILOT editor flew from Washington to Milan



Before flight to Italy, Aztec N4663P was held up at Washington National Airport where Butler Aviation's radio shop corrected defective radio installations

Though there was no time for usual shakedown, PILOT editor found Piper Aztec performed beautifully on 5,000-mile ferry flight to Italy

"It's virtually a sure thing that Aztecs with U. S. registration markings will be seen in some of the farthest reaches of the world within the next couple of years."

That was a prediction in "The Aztec: An Evaluation" in the April PILOT. Within two months, quite by coincidence, I was flying a new Aztec (N4663P) to Milan, Italy. Now that I've made this trip I feel more strongly than ever that the Aztec is truly a global private transport.

This trip started with a phone call from Max Conrad (AOPA 95611). He had a couple of Aztecs to ferry that he himself couldn't take. One was to Dublin, the other to Milan. The ship to Dublin was ready and waiting when he called, and the call was on such short notice that I had to turn it down. So I agreed to take the one to Milan a couple of weeks later. This one was to go to Giorgio Urbani (AOPA 182878), Italian agent for the Jonas Aircraft and Arms Company, Piper's export representatives.

Once Six Three Papa had her radios and temporary fuselage tanks installed, Max Conrad flew her down to Washington from Lock Haven to pick me up. Radio installations in this plane were standard for the Aztec: a Motorola ADF-12E, Narco Mark II Omnigator, and a Narco

Mark V. A temporary, portable Sun-air high-frequency set lay on the floor by the right-hand front seat; this set is a mandatory requirement for any transoceanic flight.

As soon as I taxied out at Washington National to take off for Lock Haven (to take Max Conrad back to his home base), I noticed something wrong with the Mark II. After dropping Max at Lock Haven, I returned to Washington for the night. By then, the Mark II transmitter was out entirely. Butler Aviation's radio shop went to work, and found the set had apparently been defective when installed by a Lock Haven firm and had been realigned so as to include the defective part, thereby throwing the whole set out of kilter. Butler tracked down the defective transmitter part, replaced it and realigned the set.

Next day—Sunday, May 15—I took off from Washington for Milan. First stop was again Lock Haven, this time to pick up a fairly elaborate packet of special paperwork needed to make the flight legal so far as the FAA and Canadian Department of Transport were concerned. AOPA's Flight Department had heard of sudden crackdowns on transatlantic flights by the Canadians, but we had no detailed information. After considerable questioning of FAA officials

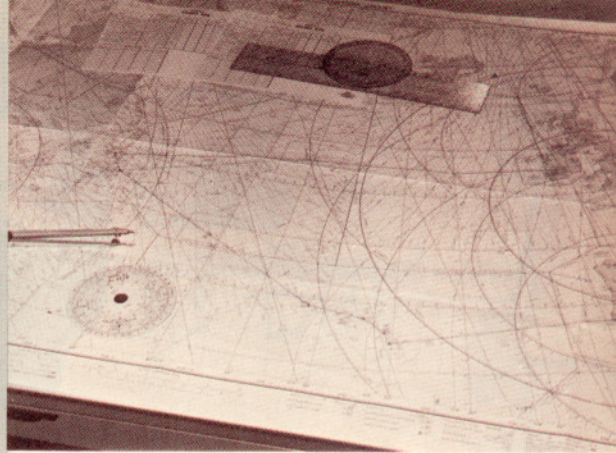
in Washington, and phone conversations with DOT officials in Ottawa, we learned that officials of the two governments had apparently agreed to a set of minimum standard requirements that had to be met before the Canadians would clear the flight out of Newfoundland. These include a standard ferry permit, plus FAA approval of whatever overweight condition is necessary for the eastbound flight across the Atlantic, approval of the temporary cabin tank installation, and approval of the weight and balance of the airplane.

Even working at the fastest (and costliest) pace to overcome this latest red tape, it took Bill McNary, Piper's assistant chief engineer, two days to find out what the FAA had to have on paper, then to issue the official authorization himself (as an FAA designee). It was that pile of paperwork I picked up at Lock Haven, on the way overseas. And it literally was a pile; it even included a blueprint.

Two 90-gallon auxiliary fuel tanks were filled through single filler neck behind front seat. This required filling front tank, waiting for fuel to seep through lines to rear tank, then refilling first tank

To MILAN By Aztec

by MAX KARANT • AOPA 18



This North Atlantic plotting chart used by Karant shows his Gander-Delta-Santa Maria-Lisbon route. Curving lines arcing from east are for plotting position from Consol stations

After a few minutes at Lock Haven, during which time I had about 50 gallons of fuel pumped into the cabin tanks, I took off for Boston. The flight was uneventful and I stopped overnight at Norwood Airport, home of Wiggins Airways. But I had noticed an intermittent cutting-out of the two VHF transmitters, and asked the Wiggins radio shop to try to track it down. It took all of the next morning to trace it to the Piper-made radio switch box, then to a defective switch, which had to be replaced. Having noticed a strong smell of gasoline in flight, I

also asked Wiggins to try to locate a fuel leak somewhere. The most obvious place—the temporary fuselage tanks—proved to be tight and dry. After some considerable hunting around the main wing tanks, no sign of a leak could be found. Nevertheless, the odor remained throughout the remainder of the flight, sometimes so strong I decided not to use the radio until the ventilators removed the fumes.

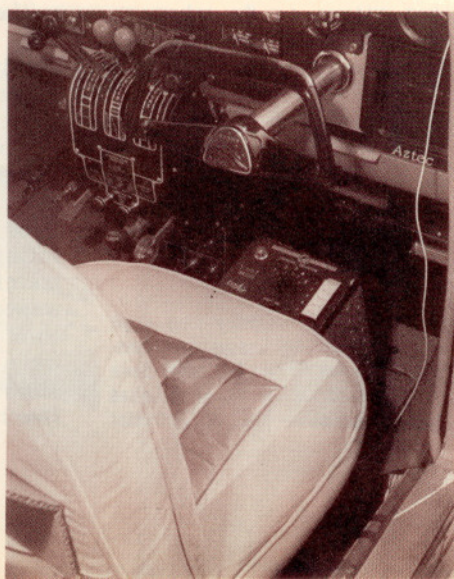
I don't know yet where the fumes came from.

After clearing the plane's export documents through the U. S. Customs

House in Boston and getting a favorable weather forecast for the nonstop flight to Gander, Newfoundland, I took off from Boston's Logan Field on May 17 and headed out to sea for Yarmouth, Nova Scotia, first landfall in Canada. Luckily, I was on an IFR flight plan because, shortly after passing Yarmouth, I ran into what turned out to be a warm front and deep low pressure area. Before long I was picking up ice, and it took about 15 minutes to get a lower altitude. The *Aztec* flew well with the ice, which quickly peeled off once I descended from 7,000 to 5,000 feet, but I stayed on instruments for the remainder of the flight (04:10 out of the total of 06:02).

By the time I crossed the southern coast of Newfoundland (about 90 miles west of an airway intersection appropriately named Piper's Hole) the forecast VFR weather was down to about 400 overcast and two miles

(Continued on page 70)



Portable Sunair high frequency radio was carried on floor, power supply behind right rudder pedal. White wire at right connects cigarette lighter plug to auxiliary fuel pump installed with fuselage tanks

visibility at Gander. This didn't concern me too much because I had plenty of fuel to go to my alternate (Harmon AFB in western Newfoundland) or all the way back to Yarmouth. Soon Gander radar picked me up, vectored me in toward the field, then turned me over to GCA, which I'd requested in preference to making either an ILS localizer, ADF or low-frequency range approach.

I'd had the ship flying on the Piper AutoControl (actually a single-axis Mitchell autopilot) almost the entire trip. But when I went over to Gander GCA I turned off the autopilot and reset the directional gyro which, when set at zero when the autopilot is working, does an excellent job of holding a heading. So I reset it to match the magnetic compass before starting the GCA approach. GCA took over and casually talked me down to base leg at about 1,000 feet. Suddenly the directional gyro, which is a vital part of any instrument approach, shuddered a couple of times then spun wildly out of control. Instantly, I told the GCA controller what had happened. He didn't even take a deep breath, and went right on talking to me in an easy-going, casual vein. Without the slightest hesitation he said we'd keep right on with a no-gyro approach (a standard GCA emergency technique), and that I should simply turn left, right or stop turning, whenever he told me to do so.

Within a couple of minutes the *Aztec* settled slowly out of the heavy rain, lined up perfectly with the exact center of the runway, over the approach lights. As I rolled to a stop on the runway I asked him what the official weather now was. Three hundred and 1½. That guy was my pal for life. I parked the plane, cleared Customs, then went up to say hello to the GCA boys. The fellow who talked me down smiled when I told him of my concern. He had sensed my tension the moment he heard me speak, he said, and knew exactly what was worrying me. That's why he kept telling me repeatedly my exact position, describing the weather, and just generally conversing while he talked me down. He said they've brought in quite a few planes under 200-foot ceilings, some under 100, and a few zero-zero. So 300 and 1½ was a breeze—for him.

Suddenly the radio receiver opened up with a call from another *Aztec*, F-OBPL. I didn't know he was behind me, but I had seen the plane at Boston. He too asked for GCA. By now the weather was 200 and 1, but this pilot sounded just as nonchalant as the controller—although I found later that the driving rain had got in the nose of his plane through loose panels and shorted out his ADF. After he landed I went out to meet him. He was George Jannack, a professional ferry pilot for the Aircraft Ferry Company of Miami, flying an *Aztec* to France. We were destined to see a lot of each other.

To be exact, we were stranded at Gander for seven days by weather. Of

When the accompanying article was written AOPA did not have comments from Piper on the reported discrepancies. As this issue was going to press, Piper Sales Manager J.W. Miller (AOPA 20139), advised AOPA of some findings, based on an advance report to him by the article's author. Among Mr. Miller's comments:

- *Although customers' special requirements frequently require that radio installations be made outside the Piper company, it is Piper's expectation that an increasing percentage of such installations will be made by Piper, to company-engineered specifications.*

- *Curing of water leaks has become a major effort with several steps in the works, including revamping of all nose-mounted radio installations.*

- *The gasoline fumes have been traced to leakage around the fuel tanks' filler necks, permitting seepage of fuel into the wings. Piper investigators found the fumes particularly noticeable with partially-filled tanks, during acceleration and deceleration in takeoff and landing. The trouble has been corrected on all Aztecs in the field, whether they've experienced the trouble or not.*

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course, they "hadn't seen weather like this for a long long time." Even the unusually capable meteorologists at Gander were baffled. One front after another moved through from the west, then right out to sea, over both courses I was prepared to fly: via Ireland or the Azores. Jannack had less fuel aboard than I, but he had oxygen and could climb over weather; I couldn't. As it turned out, neither my fuel nor his oxygen made any difference. We didn't see the sun for six days, and there was endless rain, low ceilings and heavy fog. When the ceiling would get up to takeoff minimums (unlike the United States, the Canadians require this), the freezing level would be so low it was unsafe to try it. Or heavy thunderstorm activity would be reported by a variety of aircraft and ships over both routes.

As it turned out, quite a bit of the time at Gander was spent conforming to the Canadian rules, and in working on the two *Aztecs*. A DOT inspector happened to be at Gander, caught by the weather during an inspection trip out of his Moncton, N.B., base. He not only knew all the rules—including a new set we'd never heard of—he had the whole rule book with him. The rules we'd never heard of had to do with survival equipment the Canadian government now dictates any transoceanic flight must carry. The whole list had been in existence since September and became effective May 1, but the Canadian government apparently had only circulated the list to its own people. My contact with it was the first anyone in

AOPA, including the Flight Department, had ever heard of it.

Fortunately, I had nearly everything required. I say "nearly," because I didn't have a portable, self-contained emergency radio to go with the life raft. That required a phone call to Bill Peppler, Canadian Owners and Pilots Association general manager, at Ottawa. He located a "Sarah" emergency beacon for rent and had it shipped air express the next morning. It cost nearly \$5 to ship it to Gander, \$80 to rent it, and about \$20 to ship it back from Europe.

The DOT man went over everything, insisted all requirements be met, and also proved very helpful. He helped me swing my magnetic compass in the rain, using his very precise hand compass. In one quadrant we found the *Aztec's* compass nearly 20° off, with all radios and other electrical equipment turned on.

Aside from the fact that the long delay ruined a plan I had to do some flying in Europe, the worst thing about Gander again proved to be its so-called hotel accommodations. While this giant airport has a huge, costly, ultra-modern terminal building, its "hotel" is the other extreme: an abandoned wartime clapboard military barracks clear across the field from the fancy terminal. It's a \$2 cab ride just from one side of the field to the other, and you have to make the trip three times a day just for meals.

But Gander had its compensations. There were the excellent radar controllers. And a bush-plane operator, Eastern Provincial Airways, which is based at Gander proved a warmly-welcomed friend in need in correcting a few items on the two *Aztecs*.

Unlike the *Apache* which I flew to France last year (PILOT, September

1959), this *Aztec* didn't get shaken down properly before my departure for Europe. It's customary prior to any such flight, especially in a new airplane, to fly it between 10 and 15 hours, looking for every flaw and making sure each is corrected before heading for Newfoundland. This time, due to a variety of circumstances (including the fact that the plane's new Italian owner was already impatient with the standard delays), I made the mistake of flying the ship only briefly (I'd been told the ship had already been thoroughly shaken down), catching a few items, then heading for Gander. I've already mentioned the mysterious fuel leak; even now I don't have the explanation. The Mark II transmitter was fixed but, unknown to me until I was nearly over the Azores, the receiver section of that set also was faulty. It had failed completely before I got to the Portuguese coast. That left me with one VHF set, the Mark V, for both communications and VOR-ILS. Fortunately, my last IFR stretch was the Boston-Gander leg.

The BFO (beat-frequency oscillator) switch on the Motorola ADF apparently had been improperly installed, because the European stations (for which it was installed) proved unidentifiable, despite the fact that the ADF itself proved very effective at very long ranges. I picked up Ocean Station Delta, for example, more than 200 miles away, and the powerful Lisbon homer nearly 600 miles at sea. But it was impossible to identify any European station, even though I flew right over them. I checked with other planes in the air, on VHF, and found they were receiving the identifications normally.

Water leaked in through a number of panel joints in the nose, although a special bulkhead that Max Conrad asked be installed in 63P effectively protected the ADF power supply. The other *Aztec* didn't have such a bulkhead, and when Jannack took the nose apart at Gander to check the radio failure, they found the ADF power supply flooded. We ended up sticking masking tape over all exposed joints in the noses of both planes.

The AutoControl worked normally after leaving Gander, and I never determined what caused it to tumble suddenly during that GCA approach. The Mitchell Company told me later that such failures are due to the gyros themselves, which Mitchell leaves unchanged.

The two portable cabin tanks held about 170 gallons. With the standard 144 gallons that gave me about 16 hours nonstop at 20 g.p.h. Longest nonstop hop I made was nine hours, 46 minutes from Gander to the Azores, which meant I had ample fuel left to go on to Lisbon if I'd had to. I'd decided to use Piper's standard charted 55% power settings for the flight, which showed a normal fuel consumption of 20 g.p.h. (10 per engine). I was particularly concerned with this consumption because, in an earlier article on the *Aztec* (PILOT, April 1960) I'd commented at some length on the fact that

I was unable to get the kind of fuel consumption Piper advertised. Of course, it was imperative that I have exact control over the fuel consumption on an ocean flight, so I concentrated on Six Three Papa's consumption.

The "problem," which others inexperienced with the 250 h.p. Lycoming in the *Aztec* and *Comanche* also have found, is in the engine's fuel system itself. The leaning process is much more critical with this engine than in any other I've flown, and I went to work to learn it with care. Once I'd learned that Lycoming has designed this engine so that the range from full-rich to full-lean is a movement of about ¼-inch of the mixture control (that moves quite a few inches on the *Aztec's* throttle quadrant). I experimented until I found the best possible position for each engine's control, then marked each with a pencil. That proved the answer; on one leg I averaged just a little over 19 g.p.h. The engines performed beautifully on the entire flight; they even worried me a little, because they didn't burn four quarts of oil between them from Washington to Milan.

Normal gross weight of the *Aztec* is 4,800 pounds. To carry all the fuel and other payload, I had to get the plane approved for an overload. Under the new U.S.-Canadian rules, everything had to be stated exactly. It took Piper engineers, working with FAA officials both in New York and Washington, two days just to get the *Aztec* approved for a 336 pound overload, for a gross of 5,136. That's about a 6.5% overload; the *Apache* I flew to Paris a year ago was some 20% overloaded, yet still flew beautifully. Nevertheless, the U.S. and Canadian governments are taking a more active hand in all such operations, and have so far made it at least three times harder to make such a flight than ever before. Safety? The accident record for such flights is just about perfect, even with the no-holds barred, often-screwball flights made in the past. Real reason behind all the activity seems to be two or three willful violations of sheer common sense—by professional pilots.

The leg from Gander to Santa Maria in the Azores is about 1,785 statute miles. The first positive check point is Ocean Station Delta, the international weather ship which was about 775 miles from Gander on my flight. Like all such ships spotted on the oceans throughout the world, Delta is completely equipped for use by aircraft. It has a powerful low-frequency homing beacon, which my ADF picked up not long after I'd left the North American coast. It also has radar, VHF and HF communications, and a complete weather station. Jannack and I passed over Delta about four hours, 40 minutes from Gander, and they plotted both our planes on their radar, giving us groundspeed and drift. We had our expected headwind for that leg; groundspeed was 168 m.p.h.

The weather was beautiful all the way, although I had to climb an extra thousand feet several hours out in order

ATTENTION
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to stay on top of the cloud deck and avoid known icing. Takeoff had been just after breakfast, so we made the entire flight in bright sunshine, arriving at Santa Maria at 6:41 p.m. local time, just in time for a leisurely dinner. Jannack, however, refueled and took off again that night for Paris.

Next morning, I ordered enough fuel for a 12-hour flight, having planned a six-hour, 30-minutes flight to Madrid. I'd decided to overfly Lisbon because of the voluminous red tape reported there by members. Santa Maria to Madrid is 1,222 miles. My actual flying time was six hours, 55 minutes for a block-to-block speed of 177 m.p.h. Again, I was assigned 9,000 feet, just as I had been for the Gander-Santa Maria flight.

It was on this leg that I first became concerned with the ADF, because I found I was unable to read the identification of any station I tuned to in the Lisbon area. At one point I heard a faint identification in the background of the station I was homing on, and identified it as Gibraltar. However, I stuck to my plotted heading, because I was receiving a very strong homer far at sea, and it was where Lisbon was supposed to be (which I made sure of by tuning to a number of stations and taking cross-bearings). As it turned out, the "LS" homer at Lisbon was the station I'd been tuned to for nearly 600 miles. But even though I flew right over the antenna, at no time could I identify its coded signals. The same proved true the rest of the flight through Spain, France and into Italy.

The airway from Lisbon to Madrid is made up of low-powered homing beacons which were hard to pick up and impossible to identify. Fortunately, the weather was excellent and I had pilotage charts, so I navigated to Madrid in the old-fashioned way. At Barajas Airport I was told to park out on the field, at least a half-mile from the terminal building. Then I discovered I'd arrived on a religious holiday, a skeleton force of personnel was on duty and several loads of airline passengers were waiting to be cared for. It took nearly two hours to weave my way through the red tape. Finally I got a cab to a hotel.

Next morning I spent another hour fighting my way through the tape and finally took off for the 810-mile flight to Milan via Barcelona, Marseilles, Toulon, Cannes, Nice and Monaco. Again, the weather was excellent and the flight routine. Block speed was 178 m.p.h.; time was four hours, 31 minutes.

Total flying time, Washington to Milan, was 30 hours, 51 minutes. I estimate my actual distance flown was 5,150 miles, so the block-to-block cruising speed for the entire trip was 167 m.p.h.

Easiest, most restful part of the entire trip was the actual flying over the ocean. The rest was the customary maze of red tape and frustrating routine. Because you are flying in another country as their guest, you must not protest. But to an American, who's thoroughly accustomed to the compara-

tive ease with which you fly in the United States, and the wonderful facilities and services always available from the FAA, the frustration sometimes reaches an almost unbearable peak.

As a matter of candid fact, I personally don't think I'd want or be able to own a private plane in much of Europe. The complexity and time-consuming effort necessary to make simple, routine flights is startling to the American pilot. In Madrid it took a bit over an hour going through traffic control, meteorology and the military just to make a routine VFR flight on a sunny day. In Milan it took over 30 minutes to go through the standard routine of all these bureaus—just to fly across town, to another airport 14 minutes away. Everywhere you go there are long forms to be filled out, official rubber stamps on everything. The meteorologists are upset if you can't tell them the night before what time the next day you plan to make that short VFR flight, because they have to make out an elaborate forecast (which you have to sign, along with the forecaster). By U.S. standards, flying a private plane in Europe seems to give you about the same door-to-door speed as an auto, no more.

Danger? There still are many who think such an ocean flight today is no different from what Lindbergh did 33 years ago. Some of the conversations I've had on this subject, and some of the letters I've written, are both amusing and disturbing. They're amusing because I'm so inherently afraid of daredevil antics in airplanes that I'd probably have fainted out of sheer fright if I'd been asked to fly Lindbergh's crude old Ryan monoplane. That plane was handmade, the engine was good—but nothing like present-day Lycomings. He had no instruments to speak of; I had a complete panel, plus an autopilot. He had no radio; I had four (five, if you include the little tran-

sistorized battery-operated portable, which I've actually used to make a simulated instrument approach). I had two engines, he had one (and the *Aztec* will fly all day on one engine, fully loaded).

Lindbergh was all alone in every sense of the term. I had constant communications with weather ships and other airplanes. I had a variety of radio aids that hadn't even been invented in 1927. Even the neatly packaged Pan Avion inflatable raft and survival gear I carried were unknown in those days.

Nevertheless, it's hard for many to make the mental transition from 1927 to 1960, even harder for them to believe that many hundreds of such flights have been made safely in recent months, and many more are going on even now. Virtually all single-engine *Comanches*, *Bonanzas*, *Debonairs* and *Bellancas* are delivered to Europe by flying them across, although I personally would confine my transatlantic flying to twins. Not only that; the Canadians' arbitrary rule against single-engine overseas flights leaving their territory automatically forces ferrying companies to fly the route from the United States via Bermuda and Santa Maria. The hop from Bermuda to Santa Maria is 2,260 miles nonstop, which is 475 miles farther than from Gander.

Of course, all twins are ferried across too. So there's hardly a time when there's not one or more general aviation aircraft aloft over the Atlantic—a considerable number, incidentally, being AOPA members flying to Europe, the Middle East and Africa for business or pleasure.

So the hazards involved in flying the Atlantic in a modern general aviation airplane are quite low on my list of deterrents. The greatest deterrent to my ever making another such flight is the medieval attitude of almost every other government toward any but airline and military aircraft. END