Adventure of a

PART 1

This Glasair builder flew the only homebuilt in last summer's race around the world.

By Ken Johnson

PHOTOS: KEN JOHNSON

Forced smiles? Ken Johnson's daughter, Heather, and wife, Judy, join Donna and Harry Cioppi for a before-the-race memento.

Flying my Glasair III in an air race around the world was the adventure of a lifetime. First, here are the technical details—then on to the personal experiences.

Ken and Judy Johnson of Erwinna, Pennsylvania, display their award-winning, world-hopping Glasair III.

Johnson's home field, Sky Manor Airport in Pottstown, New Jersey, provided major support for the Glasair-around-the-world adventure.

Grand Champion at Sun 'n Fun, at the Northwest EAA Fly-in at Arlington, Washington, and at Oshkosh. My Glasair III would be the only home-built airplane in the race around the world.

Getting Ready

The next 10 months were spent preparing for the race. It would turn out to be the greatest feat I could ever imagine for any general aviation pilot—especially in a homebuilt airplane.

To prepare the airplane for the race, I added a 47-gallon auxiliary fuel tank behind the seat, raising the total fuel capacity to 130 gallons, but throwing the c.g. out the back end of the envelope. This necessitated redesigning parts of several other flight systems to move as much weight forward as possible. The result was a c.g. right on the aft limit and the need to transfer fuel forward and equipment backward through the first couple of hours of each flight.

Next, I installed a standby vacuum system from Precise Flight and a second alternator from B&C. An oxygen system from Mountain High solved our only high-altitude concern. Victor Aviation of Palo Alto, California, gave the super smooth and crisp Black Edition Lycoming IO-540 a good tweaking, and American Propeller blueprinted and balanced the already efficient McCauley Black Mac prop to a degree I didn't think possible. Aircraft Engravers engraved and placarded all sorts of fuel caps, tanks and procedures.

Then followed about 50 hours of flight testing and phone conferences with the great folks from the aircraft company, Stoddard-Hamilton.

While I was preparing the airplane, I spent loads of enjoyable time promoting this event, searching for sponsors and organizing parties, benefit drives and events to raise money. We succeeded extraordinarily well in this department, with $64,000 from more than 350 sponsors. Most of the money was from "regular" folks sending in $25 - $50 - $100. We had a dozen or so corporate sponsors as well.

The Rules and the Course

This air race was conducted by *Arc en Ciel* (Rainbow), a French organization headed by Bernard and Maryse Lamy. The three categories of aircraft competing in the race:

1. Normally aspirated (my group)
2. Turbo charged
3. Turbo props

The race was a handicapped event in which each aircraft raced against a reference speed: the speed published in the owner's manual for 75% power at the optimum altitude for that aircraft. The goal of the pilot was to exceed the published reference speed of his aircraft.

Dates were May 1 - 25, 1994.

The route: Montreal, Canada; St. Johns, Newfoundland; Marrakesh, Morocco; Istanbul, Turkey; Dubai, United Arab Emirates; Agra, India; Ho Chi Minh City, Vietnam; Okinawa, Japan; Sendai, Japan; Petropavlovsk, Russia; Anchorage, Alaska; Calgary, Canada; Montreal, Canada.

The Decision

I first heard of this event while at Oshkosh 1993, thought about it for two days, and decided to enter. I would be flying my homebuilt Glasair III, N640KJ, which I constructed in the basement of my home. I had just finished a spectacular "Summer Of My Life" attending airshows across the country and being awarded

Low ceilings and rain greeted the Glasair racers at the start line in Montreal.

I had such a great time meeting hundreds of interesting people that I never seemed to tire of talking to about the upcoming event. I'll feel forever indebted for all the thoughtfulness showered on us by our friends and sponsors.

Finally, the aircraft was ready. All the special and emergency equipment, the navigation equipment, and paperwork were in order. I was confident that Larry Cioppi, my good friend and copilot and I were ready. Larry and I had even lost 20 pounds each before the race, as weight was so critical with our grossly overloaded Glasair.

Getting Started

We departed our home field, Sky Manor Airport in Pittstown, New Jersey—Best Little Airport in the East, as announced on the side of my airplane—bound for the starting line in Montreal with a wonderful sendoff, courtesy of Kent and Marie Linn, the airport owners. More than 100 friends came out to say goodbye, including a chorus from Frenchtown Elementary School. There were reporters from two local television stations and a few newspaper reporters. It was a memorable and emotional experience we will never forget.

I woke up May 1, 1994, first day of the Round the World Air Race, at 4:30 a.m. It was raining, the visibility was one-half mile, and the ceiling was 70 stories. I counted them on one of the hotels near the Queen Elizabeth in Montreal where we were staying.

The mood was somber that morning at breakfast. We dined with the *Tailwinds* folks, Marion Jayne and daughter Patricia Keefer, and with Willie Tashima and Herb Halpert who were flying the Bonanza *Spirit of the Pacific*. The topic of conversation was the forecast for ice, rain and a freezing level of 5000 feet. What happened to all the perfect flying weather I envisioned for this trip?

I was concerned about ice on the Glasair and, after arriving at the airport, I tried to get some silicone spray to put on the leading edges of the wings. But none was available on such short notice, so we wound up using motor oil on the leading edges of the wing, propeller, front cowling, and the leading edges of the tail in the hope that ice would not stick there.

Finally it was our time to go. We departed at 9:15 a.m. local time in light rain and a 600-foot ceiling. It was a lousy flying day: The birds were walking. Some of the racers decided to fly at 3000 feet and go up the St. Lawrence River Valley to avoid ice.

Of course, the most direct route was over the mountains in New Hampshire and Vermont, which meant a climb to at least 9000 feet in ice-laden clouds. We talked to Montreal Departure and asked for RNAV direct to St. Johns, which was 1012 miles away and, can you believe it, they granted our request.

So off we went, climbing up to 13,000 feet and finding some good tailwinds. The ice wasn't too bad, and it didn't accumulate at all on the leading edges where I had applied the oil. We broke out after about 3 hours of flight time approximately 150 miles short of St. Johns. We looked out at the vistas of the frozen north under clear sky and were treated to the kind of flight that gets into your blood.

It was a beautiful last hour into St. Johns, but as we were approaching to land, there was a $30 million Airbus on the runway that wouldn't move for us. We wanted to land straight in, down wind, but that option was now taken away, and we had to fly downwind 5-6 miles beyond the runway, come back in and land behind the Airbus. This cost us 5-6 minutes—and probably the win on that leg.

While at St. Johns, we had the radio shop come out and check our transponder because it failed on the approach into St.Johns. Now I was worried about the next day's North Atlantic crossing without a transponder, as I wanted everything working right. The transponder checked out fine. I found out later that it worked for an hour or so until it got hot and then quit.

That's the way it went all the way around the world. If we needed the transponder for an approach, we would shut it off for a half hour or so and then turn it on just before the approach.

That evening we enjoyed a spectacular dinner hosted by the mayor of St. Johns. He presented us with gold cufflinks decorated with the city coat of arms.

Glasair time from Montreal to St. Johns (1012 miles) was 3:31. Average speed 288 mph.

Day Two

The next morning, hard rain on the window of our St. Johns hotel room awoke before the 4:30 wakeup call. I hadn't slept well because I had worried

about this leg for months. My biggest concern about this whole race was the North Atlantic crossing that would be made today. It was on my mind from the time I heard about this race in Oshkosh until the time we flew it on May 2.

Of course it's all in your mind, but we were the only ones with a homebuilt airplane crossing the North Atlantic with a single engine, overloaded like mad and in bad weather. In any case, as I looked outside, my first thought was, "What a mess." It was very windy, steady at about 30 knots. The ceiling was 250 feet, with about 1-mile visibility: miserable conditions. Worst of all it was 32°F on the ground. Yup, freezing conditions at ground level. I'd been awake for only 10 minutes and my nightmares were coming true.

We went downstairs for breakfast and I heard other competitors talking to Bernard, the race organizer, about this leg. "It will be a good day. The weather will be fine; we will fly between layers. You won't get ice. Besides, we're all big boys and girls now." Oh brother. Another fine mess I've managed to get myself into. I thought for sure we would be delayed while this weather system passed, but we were supposed to fly. So we sat down to a somber breakfast, then took a taxi out to the airport.

At the airport, there was some confusion about the briefing location. Finally, in a crowded second floor room, a weather briefer entertained us with freezing levels, fronts, headwinds and many things we didn't want to hear. We grabbed our weather briefing sheets and poured over them, trying to find tailwinds for our altitudes. Then we compared them to the plan I received from Shahid Sidiqi of NASA, who faxed us our flight plan every day.

Into the Muck

Back at the FBO, we put on our awkward survival suits and waddled across the ramp in the biting wind and rain. Visibility was now about ¾ mile and the ceiling was 250 feet: not even as high as the buildings. Larry and I looked at each other and kept marching. I preflighted while Larry tried to pile everything into the Glasair.

Once again I oiled the leading edges of the prop, the nose, wings and tail, getting oil all over the place, and trying to wipe my hands on paper towels that were flying across the ramp.

We had to take our seatback cushions out of the plane when we wore our survival suits because there was not enough room in the cockpit for both. That meant leaning against the hard fuel tank that now doubled as a seatback. Now I realized we had no room at all for the seatback cushions, so I rushed over to Marion Jayne, our number one competitor, and asked if she would carry them. She said certainly, she would be glad to help. Those are the kind of people we raced with.

As we taxied out, I figured it must be all right—the other competitors were taking off—though these were the worst conditions I'd ever seen in my 26 years of flying—to say nothing of having to cross the North Atlantic with such an overloaded plane.

In a few minutes we had our clearance and found ourselves sitting at the end of the runway. I thought,"Boy this is gonna be something. This is the heaviest the plane has ever been; it's never been this far over gross!" That's because we never had all our survival equipment in it at once. We always had people carrying a few things for us, maybe 40-50 pounds. This time we had to carry it all.

We rolled down the runway and, instead of rotating at 70 knots and getting off at about 85, I didn't rotate until about 95 knots and, of course, it lifted off immediately. I wanted to have plenty of speed because of our aft c.g. problem. I also wanted to have lots of speed before getting into the clouds and having my windshield ice over.

With our aft c.g. problem, the already unstable situation becomes much worse as you cycle the landing gear. We rolled so fast down the runway, looking for more control, that the poor little nosegear tire expanded to a larger diameter. It stretched until it burned a groove into itself by rubbing against one of the fork bolts, and it remained a larger size permanently. This made the nosegear difficult to retract. I recycled the gear three times and finally, "Thank the Lord," it locked up. Otherwise, I would have had to shoot an ILS back into St. Johns with the windshield iced over.

With the nosegear up, the airplane flew slightly better. We climbed through IFR conditions and, luckily, once we got a couple of thousand feet up, we did get between layers where the ice was only minimal. We were climbing out and everything was going pretty well. Old Bernard was right after all.

I had to hand fly the airplane on each

leg for about an hour because of the weight in the back of the plane.

Radio Problems

We were advised to establish contact with Gander on our HF radio as soon as possible. Larry let out 40 feet of trailing antenna wire as we flew in the weather, but I didn't realize what a bad idea this was. Trailing antennas pick up intense static electricity, and we experienced it. My first indication was Larry ripping his headset off to save his ears. He was getting arcing so severe that it felt like hornets in his ear muffs. It wasn't possible to touch anything in the plane. I told Larry to shut the HF radio off and roll the antenna up, but it was impossible to hold onto the antenna reel because of the arcing.

I finally slowed the airplane to about 120 knots. The static dissipated and we got the antenna rolled back in again and the HF radio shut off. The HF antenna apparently picks up a lot of static electricity when passing through certain kinds of clouds. We never bothered rolling the antenna out again.

I learned later that everyone else was aware of the problem. During the discharge, lights came on in the airplane on items that weren't even turned on, such as marker beacon lights, the autopilot, and a few other others. An assessment of the damage revealed the autopilot was dead. I now faced the dreaded North Atlantic in IFR conditions with no autopilot. No HF contact was ever made during the entire trip, and we wound up sending the HF radio back early.

Hand-Flying the North Atlantic

About 2 hours out of St. Johns we got our first glimpse of the North Atlantic from 18,000 feet, and sighted first land 4 hours and 20 minutes out. This was Corvo Island, Azores.

One hour and 19 minutes later we spotted Santa Maria and landed, with no further adventures to report.

St. Johns to Santa Maria (1565 miles) took 5:39. Speed: 280 mph.

We spent 2 hours and 20 minutes rechecking weather, refueling the plane and just walking around feeling good about things in the 75°F weather. I had spent 10 months agonizing over the leg we had just flown, and now more than half of the Atlantic was behind us. Santa Maria is a dreary place, very windy, and about 30 years behind the times, but I was glad to be there.

All too soon we put on our dreaded survival suits and departed. We flew east an hour or so and experienced the most beautiful sunset through a little hand-held mirror pointed out the canopy over our shoulders. The rest of the trip was in the dark with stars shining brightly above. We picked up a few lightning strikes on our Stormscope and diverted slightly to the south of course to avoid the convective activity. To prove what good guys we really were, we reported the location of the hits to our competitors on race frequency. One twin didn't get the word, and he ran smack into one of those "bumps in the night." One of his chilling transmissions was "Somebody get us out of here."

About half an hour later, I felt this tremendous rush of relief, satisfaction, accomplishment, security and a few other sensations as I focused on some sparkling objects in the distance. At 11 o'clock in the evening local time, lights appeared up and down the coast, dimly at first, then unmistakable. I said to Larry, "That is not a line of ships. That is *Africa*." **KP**

CHECK BACK next month for a continuation of the race around the world in a Glasair III.