EDITOR'S NOTE: This is the first in a series of articles by Gunther Balz of Kalamazoo, Mich., describing a round-the-world flight he and his wife, Alice, completed last July. It was a fascinating flight, and the next best thing to duplicating it yourself is to read Gunther's account of it. Gunther and Alice were not out to break any records; they were using a capable plane as thousands of other pilots use them; to get where they want to go. The only difference here is that the young couple went further, and stayed longer, perhaps, than do most persons who vacation by personal plane. If you read this installment, we almost will guarantee that you will not want to miss the continuations in the March and April issues of The PILOT.

**S** an Francisco, San Francisco, this is N4371D. I say again, 0135 position; 32° north; 135° west; flight level 80; flight conditions OK; estimating 31°, 20' north; 137°, 30' west at 0415; 15 hours fuel; temperature 48°F; wind 170°, 15 knots; true airspeed 148 knots, over."

I turned up the volume on the HF; 5604 kilocycles was bad that night, but it was all we had. San Francisco repeated my position report, barely audibly through the crackle and snap of the static.

"That is Charlie, San Francisco. N4371D out."

"Roger, roger, 71D. San Francisco out."

Another hour before we would talk to San Francisco again. Another hour closer to the point of no return. The sun had gone down at 0220Z. We were out 750 miles, topping the solidly overcast Pacific with 1,300 miles to go. In a few minutes I would take a last shot of Venus, one of the few stars I could identify. The engines purred contentedly. Stretching back in the D50, I asked Alice for a cup of coffee, and was suddenly aware that we had hardly exchanged a word since takeoff in Oakland five hours ago.

I thought back to March 1962. We were midway through a three-weeks' vacation in Hawaii. Bob Carter, manager of Hawaiian Aircraft Sales, Piper dealer for Hawaii, had rented us an *Apache* which we used over a period of four days to visit the other Hawaiian Islands. The weather had been good, the flying easy, and the sightseeing spectacular.

The afternoon that I paid my bill at Hawaiian Aircraft Sales, someone said, "What you ought to do is get a PBY and fly around the world."

The seed of an idea can grow fast, particularly in an enthusiastic private pilot's mind. As I write this article, 10,000 gallons of gas, 65,000 miles, and a year and a half later, I can hardly believe that Alice and I actually made this flight.

But let's go back: The most critical aspects of this dream flight were the planning stages. What kind of airplane? What would the trip cost? What would be the legal regulations governing an around-the-world, nonprofes-

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## AROUND THE WORLD IN A TWIN-BONANZA

sional flight? Would anybody insure a private aircraft on a trip involving 35,000 miles of water flying? How could I get away from my job? The problems snowballed. Two or three times during the first months of planning, we almost listened to the universally negative advice of relatives, friends and other flyers, but neither Alice nor I like to give in-we consider each other extremely stubborn. We pretended to ignore the skeptics. We smiled thinly at the over-water horror stories told by friends who had been World War II pilots. Our most enthusiastic supporters were Catherine (Kitty) Howser and Max Karant of AOPA headquarters.

I had been flying an *Apache* for three years, including summer and winter IFR, but somehow, when I thought of the first leg, a 2,100-mile trip from Oakland, Calif., to Honolulu, the *Apache* seemed a bit frail. A number of *Apaches* have been ferried via this route, however.

The idea of a flying boat was very appealing. In Trade-A-Plane magazine and other used airplane journals, I had seen many ads for used flying boats. After doing some checking, I discovered that the terrific fuel consumption, maintenance problems and low air speed would make them prohibitive. Then, too, ex-military pilots had assured me that the odds of landing a PBY in the open sea were not much better than the odds of successfully ditching a retractable-gear landplane.

I read statistics about airplanes until I was blue in the face. An *Aztec* or a *Baron* looked good. Then I began reading about Pacific thunderstorms. There didn't seem to be many used *Aztecs* or *Barons* equipped with radar. We picked the next best thing, a twin that has a main spar built like a bridge, a good old 1957 D50 *Twin Bonanza*. The one we finally decided to buy had not only a snazzy new white and blue paint job but two zero-time Lycomings and plenty of ARC radio. For a start, we installed a Motorola ADF as a standby, a used SunAir HF transceiver with a fixed antenna and some shiny new propeller spinners.

As you know, 2,100 nautical miles is a long way to go nonstop in a light twin. No matter which aircraft was selected, auxiliary gas tanks would be a necessity. Not only would these tanks have to last out the flight to Hawaii, but they would remain installed on the aircraft for eight months and then have to be used for crossing the Atlantic. (As it turned out, we used them on many of our flights.) This meant that the installation had to be rugged enough to withstand turbulence, corrosion and a reasonable degree of rough handling. We investigated several sources for ferry tank systems. Some were simply 55 gallon drums held down by ropes. As it turned out, we selected the most sophisticated which was suggested by Ken Patterson, president of Floair in Newton, Kan.

This system involved three cabin tanks and a 55-gallon drum in the rear baggage compartment. Our D50 seated three in front and three in back. The back seat was removed and the tanks crammed in by Larry Manjeot, Floair shop foreman. The back 100-gallon tanks could barely be filled with a small diameter gas nozzle, so close did the necks come to the cabin roof. These tanks, as well as the 55-gallon drum in the aft baggage compartment, were held down by steel straps which connected to the wing spar and the main

> by GUNTHER BALZ AOPA 153788

Kalamazoo, Mich., couple make a 256-day flight most pilots dream about. Gunther Balz, the pilot, gives a first-hand account of the leisurely 55,000-mile trip in N4371D that takes them to 58 different countries



Gunther Balz, industrialist-pilot-author, is seated in the cockpit of the Beechcraft D50A Twin-Bonanza in which he and his wife, Alice, flew around the world. The accompanying article gives PILOT readers a front-row seat of this "dream" flight Beech Aircraft photo

structurals of the fuselage. The system was designed to withstand 3.5 G's.

Two electric auxiliary fuel pumps with a standby hand wobble pump were mounted on the small panel between the pilot and copilot seats. This blocked the copilot rudders in the Twin-Bonanza, but it turned out to be the only place to locate the pumps which would permit a reasonable degree of comfort for Alice and myself. A valve in the line from each tank selected the input to the pumps, which in turn transferred fuel to the right main tank. In normal cruise operation the left engine was run on cross-feed and fuel could be transferred from any cabin tank to the right main until the right main fuel gauge indicated full. The system worked beautifully throughout the trip. One trouble, however, was that there were no fuel gauges on the cabin tanks and the only way you could tell when a tank was dry was to run it until both engines quit. (This happened one time during maximum climb at 10,000 feet on instruments in the mountains over New Guinea.)

I visited Beech Aircraft in Wichita to find out about worldwide maintenance and, also, to inquire from their engineering department whether or not they thought the D50 would take off with an extra 2,000 pounds in it. Jim Phelps, Twin-Bonanza sales manager, and John Wilson, Pink Jackson and V. R. Razak, from the Beech engineering department, took a great deal of interest in our proposed trip. They not only said that the D50 would take off and fly, but they gave me some specially prepared graphs to prove it. Alex Kasavy, assistant export manager, provided me with a list of Beech distributors throughout the world. It was a long list, but for our proposed itinerary it soon became evident that



Pre-departure preparation was handled with meticulous care by Gunther and Alice Balz. This corner of a room in the Balz home will give you an idea of the amount of equipment carried (This included 30 pounds of navigation charts alone)

This picture of Diamond Head (Hawaii) was made from the Twin-Bonanza. Flight from Oakland to Honolulu was made by the Balzes without incident





we were going plenty of places that had never heard of Beech. In fact, many of these places probably would have never seen a light aircraft before, and I began to have visions of a cracked cylinder head in places like Rarotonga and Sao Tomé. I made a few mental calculations as to how much it would cost to send a mechanic by charter flight to one of these islands, investigate the trouble, return for spare parts, return to the scene of the trouble, make the repairs, and about this time I drew a blank. The obvious answer was to have the airplane in absolutely perfect condition in order to reduce the odds of malfunction. 4371 Delta was in beautiful condition when we bought it, but we took it back to Ohio Aviation and told Bud Grell, sales manager, and Charlie Groff, maintenance manager, to fix everything on the airplane that looked remotely like it might fail in the next 400 hours. They did. They gave the airplane a 1.000-hour inspection which cost \$3,000. It paid off. We had nothing greater than minor troubles throughout the trip, even though we flew through some of the most aggravating conditions an airplane could endure.

By June 1962 we had assembled the majority of our auxiliary equipment. including a four-man life raft, two Mae Wests, survival gun, emergency food and water, a standby transistor navigation radio, 30 pounds of navigation charts (mostly V30 and Jeppesen charts), an Airman's Almanac, sight reduction tables, and a \$20 surplus Bendix averaging sextant which turned out to be one of our most useful navigational aids. Another item which rated high on the priority list was a twoquart Thermos bottle for coffee which we drained dry on several occasions. The airplane was equipped with a front-seat relief tube as well, which

Alice reluctantly learned to use after I told her we would have 10 flights of six hours or more.

Two aspects of the plan for this trip on which we never expected to receive official sanction were insurance and FAA permission to fly the airplane in its overweight configuration. The insurance question was settled quickly and, under the circumstances, relatively inexpensively. Don Wilson, our contact at Rollins, Burdick and Hunter of Chicago called me back a day after I described our problem to him with the information that Lloyds of London would take the risk on the hull at 51/2 % with a 11/2% refund for no claims at the end of the trip. There were no claims and the insurance for the 256day trip, including hull and liability, was \$2,000. The second part, the part concerning the legality and FAA sanction, was handled most expeditiously by the FAA office in Wichita. Arnold Reed, at the request of Ken Patterson of Floair, originated what we were told was the first two-way ferry permit ever issued. (A ferry permit allows an airplane to be flown under unusual conditions; in this case with 350 gallons of gasoline in the cabin and a takeoff weight 33% in excess of normal gross.) It is interesting to note that since our return from our trip a new paragraph has been written into the Federal Air Regulations to permit airplanes to be equipped with long range tanks in special cases.

To cover our fuel requirements I obtained a Shell and an Esso international carnet. Much to our surprise, even on the most remote Pacific islands, as soon as we shut down the engines after landing, someone would crawl out of a palm tree wearing a Shell hat. The highest price we paid for fuel on the trip was 70 cents a gallon and the lowest 16½ cents a gallon; the average price was 40 cents a gallon, 4 cents less than I pay in Kalamazoo, Mich.

By now I had approximately 100 hours in the Twin-Bonanza and the pre-departure excitement was becoming terrific. People would approach us with a sad look in their eyes and ask to shake our hands for the last time.

We got our travelers' checks, a letter of credit, and one morning we were driving out to the Kalamazoo Airport to start on what has possibly been the longest trip ever taken in a private airplane.

No IFR or night flying, we agreed; we wanted the maximum safety factor in our gas-heavy airplane. After last minute confusion and goodbys we got our clearance from Kalamazoo ground control and took off, entering the soup at 800 feet. We broke out of the overcast an hour later just west of Chicago.

We canceled our flight plan. Now, flying over Kansas into the clear sky ahead, we were really able to sense that mixture of adventure and anxiety which this trip had promised. We had put 100 gallons of fuel in the front cabin tank in Kalamazoo and made Abilene, Tex., non-stop. At Abilene we stretched our legs, took on more fuel and headed out over the mountains into Arizona. Flying over the rugged terrain north of Tucson we saw what looked like light rain showers ahead. As we flew under the dark clouds I snapped alert to the rattle of hail against the plane. It was brief and no damage was done. We only lost a little paint on the nose and wings. We

N4371D is checked out at the Beech factory.▶ Gunther Balz, pilot on the round-the-world flight, is standing beside the Twin-Bonanza Beech Aircraft Photo Alice Balz learns about survival the painless way. Here she is seated in the inflated life-raft in her home at Kalamazoo, Mich., sipping coffee while she reads how to survive in the event of a crash landing in some remote jungle

bumped along over the mountains and landed at Phoenix for the night. We both were very tired after only 10½ hours of flying. What, I wondered, were we going to do on the trip to Hawaii, which would be at least 14 hours?

The next morning was bright and clear, and except for an unscheduled stop at Lancaster, Calif., due to a solid line of thunderstorms over the Sierra Nevada, we had an uneventful trip which ended at Fullerton, Calif. On Oct. 19 we flew up the jagged California coast and headed in toward Oakland Airport. As we turned final at Oakland, it occurred to us that the runway didn't look nearly long enough for an airplane to take off with 33% over gross.

One of the first things I did in San Francisco was to check with Aeronautical Radio, Inc. (AIRINC). I was pleasantly surprised to find out how simple it is to use their facilities. They bill you on a contact basis, normally \$1.50 per message. I also talked to the ocean forecaster, and he said the weather looked good and that if we left the next day we would have a zero-wind component all the way to Hawaii.

So be it. We planned to leave at 0630 the next morning. At 0500 we left our San Francisco hotel and drove our rental car back to Oakland. Everything looked fine except for two things—we hadn't slept very well, and the fog was so thick that takeoff was out of the question. We didn't speak much as we crossed the Bay Bridge. We parked the car in front of the old terminal building at the Oakland Airport. The Weather Bureau was upstairs. Sure enough, the current weather was zero zero on both runways, expected to break up around noon. The winds were still favorable with a predicted zero component at 8,000 feet. I prepared a flight plan for Hilo, which is about 50 miles closer than Honolulu, while Alice got the

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Thermos filled with hot coffee. Making a flight plan for a 2,100-mile trip takes approximately one hour since reporting points are required every hour or  $5^{\circ}$ of longitude, whichever comes first.

Briefly, I went over in my mind our navigational strategy:

Phase I: We would leave Oakland and aim for a 200-mile diameter circle with Station Ship November in the center. Just get within ADF range of November and you can't miss, I thought.

Phase II: Correct course at November and head for a 200-mile circle surrounding Hilo. Use the sextant for sun shots which will give us speed checks. Track the VOR and Consolan station outbound from San Francisco.

I wiped the sweat off my forehead and gave the flight plan to the FAA man. We filed for a noon takeoff. 4371 Delta was squatting like an earth-bound duck on tires almost flattened with the gas load.

At noon, the short runway at Oakland had one-quarter-mile visibility and the ceiling was 100 feet. We canceled our flight plan. We did not want to fly the Pacific at night since ditching would be next to impossible.

The Oakland Airport has an excellent motel across the street where we got a room for the night. We were disappointed and relieved as we started our wait.

I awakened at 0500 the next morning. The fog was worse than the day before. I couldn't even see the courtyard fountain, 50 feet distant from our motel balcony. We dressed without re-ferring to the fog. After breakfast we went back to the Weather Bureau at the airport. By now I recognized just about all of the weather boys. The forecaster just shook his head when I came to the door, zero, zero. It was then 0730. Alice and I went down to the coffee shop where I explained that takeoff before noon seemed unlikely and that 1000 San Francisco time was the latest we could take off and still have daylight all the way to We decided to Hawaii. wait until 1000.

I ran up the engines and then joined Alice, who was sitting on a bench in front of the old terminal building. We (Continued on page 52)

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stared into the fog until noon, ate lunch and observed with interest an Aero Commander take off on the short runway at 1330. I refiled our flight plan for 1500 takeoff. The forecast winds gave a plus five component. At 1400, the long runway was still zero zero, but the short runway (6,600 feet) had onequarter-mile visibility and ceiling 100 feet, variable to 200 feet. At 1445 we decided to try it, realizing that a go-around instrument approach would be out of the question: ditch straight ahead in Oakland Bay. We checked our gear, put on life jackets, shoulder harnesses, and started to taxi through the fog. From the amount of light it was obvious that the cloud layer was only a few thousand feet thick.

"N4371D clearance."

"Roger, Oakland, ready to copy," I said, my mouth going dry.

"N4371 Delta cleared to the Hilo airport. Direct San Francisco Gap, great circle route 30° north, 140° west, great circle Hilo, over."

After repeating the clearance, I called the tower and was cleared into position. We taxied to the end of the runway and turned with the tail hanging over the unpaved approach end of the runway.

"4371D cleared for takeoff."

At 1521 I opened the throttles, brakes locked. The D50 shuddered and

brakes locked. The Dou should strained, all gauges normal. "Let's go, baby," I shouted. We ac-celerated quickly, considering we were prove nounds over gross. With the 2,000 pounds over gross. With the CG 4" back of normal maximum, trim was almost full down. Beech said 95 m.p.h. indicated for takeoff. At 105 m.p.h. she flew off and we were on the way after a ground roll of 3,000 feet. I retracted the gear, pulled back the props to 3,100 r.p.m. We were on in-struments, indicating 140 m.p.h., climbing 400 feet per minute.

"Contact departure control 124.7. Good trip."

"Roger. Oakland radar, N4371D." no response. I tried two more times. We were still on instruments. I thought of the bridge ahead. Our altitude was 1,200 feet. I switched back to tower frequency. Try again, they said. I held course. Finally:

"Roger, 71D. Radar contact. Turn left 240°."

At 2,500 we broke out on top and saw the bridge towers to our right. The San Francisco Gap beacon was loud and clear on the ADF. We were told to cross the Gap at 3,500 feet or above, so we did a 360° turn to gain altitude. I throttled back to 25 inches and 2,800

One item of equipment that Gunther Balz took around the world with him was a \$20 surplus Bendix averaging sextant. Here he is shown using it during a stopover in Honolulu. The sextant turned out to be one of his most useful navigational aids, he says

W. Balz, 32-year-old Gunther Kalamazoo industrialist, started flying in 1957 after a four-year hitch in the U.S. Navy-he served on a destroyer. He is president of the Roto Finish Company, Kalamazoo, and of the Ransohoff Company of Hamilton, O. These companies manufacture machinery and chemicals for the surface treatment of metals. He was graduated from the Massachusetts Institute of Technology in 1953. His wife, Alice, who was his copilot on the world flight, is a graduate of Smith College. (She, incidentally, was copilot in the writing of this article, according to Gunther.) Mrs. Balz is a student pilot with about 25 hours of flight time to her credit. Gunther holds a private license and instrument and SMEL ratings.

r.p.m., which gave us 150 indicated and 300 feet per minute. The heads and oil were still in the green. The airplane flew all right, but lead-heavy on the controls, with a tendency to porpoise badly on autopilot. We reported the Gap, gave our estimate for 100 miles out and established communications with AIRINC on 131.9. Slowly we gained altitude. At 6,000 feet we leveled off for 15 minutes to cool the engines. Finally we made flight level 80.

We settled down to the routine of transferring fuel, burning out the back tanks first to get the airplane in trim. Every 45 minutes I shot a sun line. Our ground speed was running 145 knots, which was a little below estimate. The horizon was clear, and below a solid deck, tops about 2,500 feet. A half dozen airliners came and went on 131.9. We had plenty of company on the radio. Alice and I exchanged glances, drank coffee, communicated, navigated, flew and thought of the long night ahead.

At 0513Z, two minutes off estimate, the ADF needle flipped and we crossed Ocean Station Ship November. The lower cloud deck kept us from seeing

Photos by the author and Alice Balz



the lights of November. There was no moon. The unending blackness was dispelled only by eery greenish starlight and the navigational light's glow. We were halfway in 6 hours and 52 minutes. The winds would be shifting around toward the nose from here on in. Mentally we gritted our teeth for the  $7\frac{1}{2}$ hour ride ahead. It was then about 2300 San Francisco time. At our request we were cleared down to flight level 60 for better winds.

"What was that?" asked Alice in a voice that wouldn't have left me surprised to find the right wing missing.

I looked off to starboard, and sure enough, lightning. We were in and out of the tops now and the stall warning buzzer was making its nerve-scraping sound due to turbulence.

I hadn't mentioned to Alice the cold front which San Francisco weather had forecast north of our proposed track, but there it was, just waiting to gobble up the *Twin-Bonanza*. The lightning flashes were becoming more frequent.

The turbulence increased and we were in the clouds most of the time now. The tops appeared to be about 12,000. I looked at our dual gyro panel and autopilot affectionately while remembering the stories of the 1927 Dole race to Hawaii. In those little single-engine planes the pilots avoided the death spiral on instruments by deliberately entering a spin and then pulling out when they saw the water 500 feet below.

At 0920Z we passed the point of no return. HF communications were so erratic by this time that we were working Honolulu on a relay through Seattle, Wash. At 1050Z we picked up the Hilo range on the ADF. We started working Aeronautical Radio in Honolulu on 131.9 about 350 miles out. The clarity of VHF communications and the smooth on-top flight conditions restored our belief that Hawaii was actually out there and that we might live to see it. Our position reports were strictly dead reckoning. The sextant was useless. I had not planned to fly at night and had consequently not learned to identify the stars visible in the Pacific area. I tried to use the star finder in the Airman's Almanac. You preset the altitude of a star and point the sextant at the predicted azimuth. By this method I was able to reduce the star I was looking for to a possibility of one in 50.

We figured that one good check would be the distance out that we started to receive the Hilo VOR, which at 6,000 feet over water would be about 75 miles. We tuned it in and waited. We were at least 30 minutes behind estimate, which I accounted for in our next position report. Then, happy days, the telltale change in receiver noise as I tuned the 15D back and forth over the Hilo frequency.

I gave our position and received the news that Hilo was 1,500 broken, 2,500 overcast, visibility five miles with rain showers. The cloud deck below us was solid again and climbing. There was an invisible 13,825-ft. mountain dead ahead.

"N4371D cleared to Bay View intersection, Victor 2, East Hilo, maintain 6,000."

"71D, Roger."

I was having trouble focusing on the instruments. Alice kept giving me coffee and asking about the mountain. I took oxygen to clear my head, resigned to an instrument approach at Hilo.

We saw the runway lights ahead when we broke out at 2,000 feet. As we approached the field over the bay, Alice and I exchanged glances and smiled. We had it made.

Next month, Gunther Balz will describe the flight of N4371D to the South Sea islands, Oceania, Formosa (Taiwan) and intermediate points. On the first leg of this part of the air odyssey around the world, Gunther and Alice run into their first bad luck: With a course set for Christmas Island from Hawaii, they are forced to return to Honolulu because of rain and turbulence. The second part of this fascinating account of a "dream" flight will instruct and entertain you right up to the landing at Taipei.

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Gunther makes a final check of the Twin-Bonanza before taking off from the Oakland, Calif., Airport. N4371D became airborne at 1521 after better than a day-and-a-half delay because of bad weather

