the Q.E.D. racer

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CARRYING ON FROM my December 1977 article, after Grannie's funeral, my wife and I, also brother Tom and friend Andy Anderson drove back to Hagerstown, Maryland and went back to work at Fairchild. Henry and Lou Reisner (Superintendent and chief engineer respectively) offered us a few words of condolence. They had both known Grannie and respected him and his work.

Aviation, attempting to outlive the depression and the politicians Roosevelt had put in charge of it, was in the doldrums. When I requested a report on my brother's crash at Spartanburg, S.C., I was turned down. There was glib talk of the $700 airplane which would soon be in every garage. Army flyers, still flying obsolete biplanes had their flight schedules cut to almost nothing. However, the airlines were beginning to get modern low wing, twin engine transports and were doing a fine job. Then someone get a brilliant idea. Let the air force carry the mail, save a lot of money and give our young men all that experience. So, during the winter of 1933-34, Roosevelt canceled the air mail contracts and turned the job over to the Army Air Force. The sad results are, of course, now history and many fine young pilots were killed off before the airlines again took over.

There was hunger and trouble all over the United States that year with soup kitchens in the cities. Families were losing their homes by the hundreds as there was no way to make their monthly mortgage payments. It was a sad time for us and mighty hard to get into our old routine at Fairchild. One day I received a letter from an old friend named Allen Morse. He had been an engineer for Gee Bee on the R series. He was now project engineer on the Courtney Amphibian being built at Edo Aircraft of College Point, Long Island. I still have that letter which said in part, "I need all three of you guys and will start you at 75 cents." (Good pay in 1934.) We worked out a one week notice and departed. I personally felt that the ship was already obsolete before it was built but, at least, we would be a lot nearer Springfield.

(Photo Courtesy Robert H. Granville)
Lee Gehlbach, a premier U.S. test pilot, climbing into the Granville-Miller-de Lackner R-6H Q.E.D. for the first test flight.

Pete Miller and Don de Lackner were back at the New York office trying to pick up the pieces and close at least one of the deals which were pending. They were having very little luck. We all knew how hard it would be to build another racing airplane without Grannie's enthusiasm and guiding hand, but we were willing to try.

Finally one day, Pete and Don were invited to the offices of Floyd B. Odlum, a very wealthy financier. He explained that he was in the market for a fast, two-place, long range aircraft. Possibly, the ship would be flown in the upcoming London to Melbourne MacRobertson Race by Jacqueline Cochran and a copilot. His question was, could they design it and get it built in time for the race coming up in October?

They knew it would be a close struggle but assured him that it could be done.

The first step was to get him a three-view drawing, a specification and performance sheet and a price. Odlum said that if he purchased the ship, he would furnish the engine which had to be a Curtiss "Conqueror".

As soon as drawings could be produced, they were sent up to Springfield to my brother Mark. Our excellent wood worker, Phil La Palme, was on hand and out of work so Mark and Phil built a nice wind tunnel model. When finished, Pete went at once to the New York University and spent most of three days in the wind tunnel.

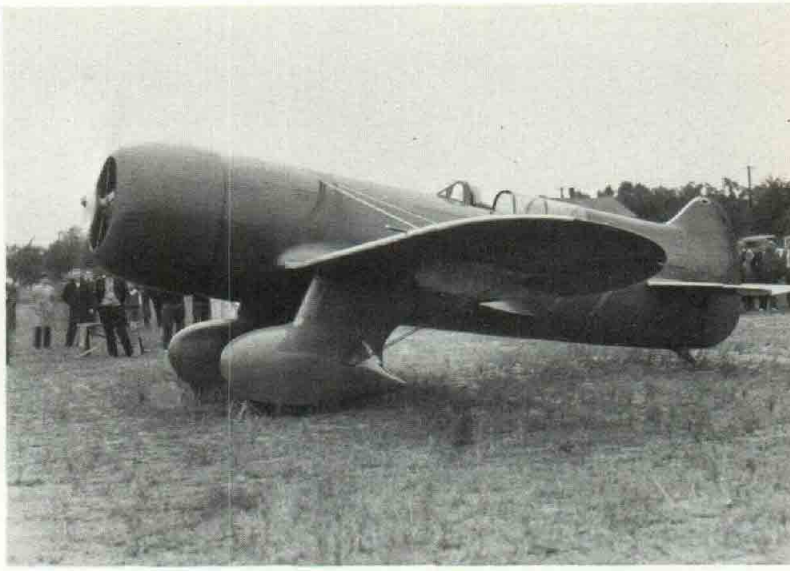
Finally the deal was closed. The ship, designated Gee Bee R-6 C, would be built but might not be entered. Miss Cochran was also purchasing a Conqueror powered "Northrup Gamma", and she would decide at a later date which to enter in the race. Mr. Odlum had hired a consulting aeronautical engineer to keep an eye on the design and a TWA pilot to teach Miss Cochran the art of celestial navigation.

So the design work began. It would be similar to the R-5 which was already partly designed, but be longer and have more wing area. It would have Grannie's double hinge flaps. To do the required job, it would have to get out of small fields with a heavy load of fuel, cruise at high speed, and also be able to land on small fields. Really quite an order. Although the fuselage would be the same width as the R-5, fairing would be designed to streamline the V type, water cooled engine. Specifications are at the end of this article.

On May 1st, 1934 the New York office of Granville, Miller, and de Lackner closed for good, and the Miller and de Lackner families moved back to Springfield, Mass. The men moved back into the drafting office at the old Gee Bee shop and went to work. As soon as I was needed, they sent for me and I arrived on May 15th. My wife and I were very glad to leave New York so we did not hesitate. Tom and Andy decided to stay with Al on the Courtney and would be along in early June. We found a beautiful house complete with a tennis court in Wilbraham at $25 per month. It was even completely furnished.

The shop was about as we had left it in October of 1933. The 45 foot full cantilever wing for the C-8 (February 1977) was still there. It was covered with 1/16 mahogany plywood and ready for balloon fabric, the same as the R-1 and R-2 wings. The tail group was in the same condition and the steel tube fuselage was all set up and tack welded.

I started ordering the necessary material as fast as we could find what was needed. Before we could even get started we had bad news. Our old friend and airport manager, Ed Fischer, told us that Mr. Hurlburt, one of the men who had been trying to finance Gee Bee when the banks closed, had reappeared. His group was taking over the shop and the C-8, also the trademark Gee Bee. They would finish the C-8 and Clyde Pangborn would fly it in the MacRobertson. Hurlburt had already closed the deal with James Tait, owner of the airport, so we were out. Apparently, the Taits felt as others did — that we couldn't get anywhere without Grannie.



(Photo Courtesy Robert Granville)
Running in the Hornet before the first test flight. Mark Granville in the cockpit. The leading edges of the wings, vertical fin and horizontal stabilizer are taped — probably to avoid erosion of the highly polished paint job before delivery to Jacqueline Cochran. The markings on the cowling read "Q.E.D." Manufactured by GMD Springfield, Mass. In its original form the aircraft was painted Luck Strike green with orange racing number 77 and lettering.

There was a good hangar across the field from our shop and was little used at the time. Ed Fischer said that if we could use it, to move in. We really had no choice.

So here was the situation: Strangers had control of our shop and the C-8 airplane plus our trademark, but no Gee Bee personnel. They would build a MacRobertson ship.

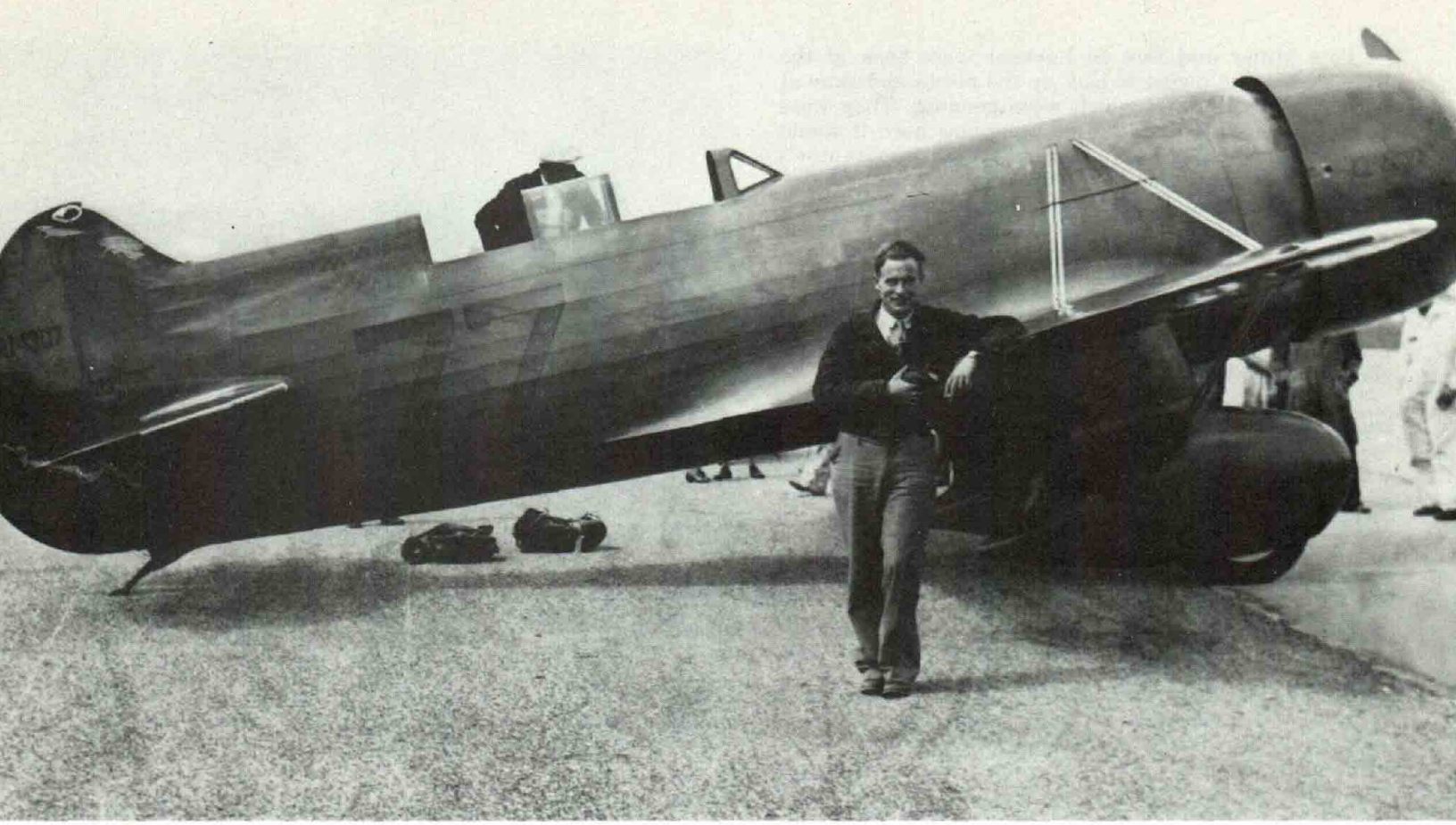
Across the field, in an empty hangar were the Gee Bee personnel with a contract to build a MacRobertson racer but with no tools and no Gee Bee trade mark. It was a rough spot for us.

There was a little room on posts in one corner of the hangar and we found an old desk and a couple of drafting tables. That gave us an office of sorts. Next, we purchased a few power tools, some welding equipment, built some benches and we had a shop. Luckily, the men had excellent tool kits of their own which was a big help.

Ed Granville, who was working in the experimental flight hangar at Pratt & Whitney, got a leave of absence and came back to take over the metal work. Hi Jones came back from Chance Vought. Phil La Palme, Mark Granville and Bill Munger were all on hand and when Tom and Andy Anderson arrived, we had the most of our old R series crew.

I had good luck in getting material. Practically all of it had to come from out-of-state. We were soon going strong working five days a week until 10 p.m. and on week ends, whatever we could stand. We had all been through this grind at least twice before. Pete and Don were at their drafting tables at all hours.

The second big blow came, when Mr. Odlum announced that our engine was not going to be available and to stop work at once. Lee Gehlbach, who was going to do the flight testing for us, just happened to be there on that day. He and Don de Lackner went at once to New York to try and persuade Odlum to let us continue. He listened and finally asked what could be done about the engine. Lee told him that a good old Pratt & Whitney "Hornet" would do just fine, maybe even better than the "Conquerer". Mr. Odlum gave his o.k. and said he would



(Charles Mandrake Collection)
Lee Gehlbach and the Q.E.D. at Burbank, California for the 1934 Bendix. After this race the vertical fin area was enlarged to eliminate a tendency to hunt at cruise — compare with pictures taken later in the airplane's career.

order the engine at once. It came through in late July, a "Hornet" S.D. Serial #2496. It had a blower ratio of 12:1, a compression ratio of 6.5:1, and was rated for take-off at sea level at 675 hp at 2,050 rpm using 87 octane fuel. A new motor mount had to be designed and built — also, all fuselage fairing had to be redesigned to streamline the big radial.

Mr. Hurlburt's group, over in our old shop, never did seem to get going. After a while the shop was closed again and when the race finally came off, Pangborn was copilot for Roscoe Turner in his Boeing 247 D. However, we never did get the Gee Bee trade mark back again.

Looking back today, I can't imagine how Mark, with little help and less tools, ever made up those gas and oil tanks, boots, cowlings, and fillets, but somehow he accomplished it. Ed and his crew produced the fuselage and all other steel work. In order to save a lot of time, the landing gear was purchased, complete from Curtiss. It was intended for a Curtiss Shrike. Though more cumbersome than a regular Gee Bee gear, it worked very well. Tom and I, plus La Palme and a couple others built the wings and the all-wood tail group. Construction of the tail was exactly like the R series except for size, but the wings were even more rugged. Also all flying and landing wires were double, completely eliminating the chance of trouble from a broken wire.

After the wings and tail were covered with 1/16 mahogany plywood, all nail heads were set, filled and sanded. Next a covering of Dartmouthtex balloon fabric was applied over the plywood and a perfect finish was put on. Miss Cochran ordered the ship painted Lucky Strike green with orange racing numbers and letters. I am told that Miss Cochran was the Lucky Strike girl that year and for this reason the QED was so painted.

Lee Gehlbach arrived in early August to stay until, at least, test hop date. I invited him to stay with us at our new home in Wilbraham which he readily accepted. Therefore, my wife and I got to know this really great pilot very well during the next two or three weeks.

We put our normal fine finish over the entire ship. The registration number NR 14307 had been assigned to her, and Pete and Don came up with an appropriate name: "Q.E.D" from the Latin "Which was to be proven".

About August 15th she was ready for test hop and a beautiful, sturdy craft she was. Lee Gehlbach, who was one of the nation's top test pilots, as well as being the 1932 pilot of the R-2, was ready and eager to see what the "Q.E.D." could do.

The flight plan was exactly the same as had been done with the Z, and the R series; take-off over electric power line from Springfield Airport, and when ready to land, go into Bowles Agawam Airport which was about five miles to the west across the Connecticut River. Bowles had two hardened runways.

This ship had a hand crank inertia starter so Mark did not have to pull the prop by hand to start this one. After photographing was over and a few taxi runs made, Lee was ready and climbed swiftly out of the field. The crew with fire extinquishers headed at once for Bowles, but on arrival, the "Q.E.D." was nowhere in sight. A few minutes later, Pete Miller called us to say that Lee was back on Springfield Airport and everything was fine. After a few stalls, he had decided there was no need to go to Bowles, and he landed at Springfield **without** even using flaps.

Of course, there was some work to do on the ship, but Lee was elated with its performance and handling. He decided that if Mr. Odlum would permit it, the ship would have a fine chance of winning the Bendix Race which was only days away. He told Odlum that this would be a good shake down cruise before the MacRobertson and Mr. Odlum told him to go ahead. So, the racing number "77" was added on either side of the fuselage.

On August 28th the "Q.E.D." took off for Los Angeles. Mark was riding the rear cockpit with his trusty tool kit. As Des Moines, Iowa was to be the first stop for fuel on the way back, Mark left the ship at this point, and Lee went on to Los Angeles alone. Mark would fuel the ship and climb back in when Lee returned. As things rarely work out as planned, probably Mark should have gone all the way, for in the first stretch of the race, the big NACA cowl loosened up, and Lee landed in Des Moines with the prop grinding hard into the leading edge. There was nothing Mark could do except remove it, which he did, and they headed on to Cleveland with a bare engine. This, of course, cut the cruise speed a great deal and although there was no more trouble, the ship was out of the money.

There was just one small problem picked up during the long cross country flights. As in the R series, the "Q.E.D." did not have quite enough fin area and had a tendency to "hunt" which would have to be corrected occasionally. More area was added as soon as they arrived back to Springfield, and this the **only** change necessary.

Lee Gehlbach left soon after as he had dive tests to make for Grumman and other work. The "Q.E.D." sat in the hangar and we had no idea what would be next, if anything. However, before leaving, Lee took the "Q.E.D." to Newark Airport to show it off to Miss Cochran and give her some dual in it. This was not to be, for his left brake locked when he landed, resulting in a ground loop and minor damage to the left wing tip. Don de Lackner was with him and when back over Springfield, Lee gave Don a series of wing overs, etc., that made him quite sick. Probably, Lee figured this would be his last chance to give the "Q.E.D." a work out, and it was.

Suddenly, Mr. Odlum called with the news that Miss Cochran had had a crack-up with her Northrup and it could not be repaired in time for the MacRobertson race. She must have the "Q.E.D.". The question was could it be ready. Pete and Don explained that the structures, control systems, stress analysis, and drawings would have to be approved by the Civil Aeronautics Branch of the Department of Commerce. The ship would also have to pass the ICAN (International Commission of Aerial Navigation of France). These were tests to prove the flight characteristics of all the race entries. Mr. Oldum said he thought he could undercut the red tape in Washington and to get down there at once. This was done and in just three days every drawing was approved.

An excellent pilot was needed to fly the ICAN tests and we were lucky to get Lee Miles. He was young but had had lots of experience racing his own Miles Atwood Special. He was highly recommended by Lee Gehlbach and he flew the "Q.E.D." as though he was a part of it.

I can't remember much about what the ICAN tests consisted of, but the most important one was the barrier clearance test. The ship, fully loaded to 6,500 pounds, had to lift off over a 50 foot barrier, a certain distance from take-off point. If it was unable to do so, the load would have to be reduced until it could, and no more load than that could be carried in the race.

Test day was an exciting one. Inspector Ray Quick, I believe, was the Dept. of Commerce inspector assigned to the flying qualities requirements and we were all at Bowles field to watch. One hundred octane fuel was brand new in 1934, and was put in one tank for take-off and the other was loaded with 87 octane. It was hoped to get a little more climb power this way. I think Miles ran the "Hornet" too long on the ground and got it too hot but I'm not sure what was the reason for what happened. Halfway down the field and already airborne, the engine began to detonate badly. Lee instantly cut the throttle, dropped the flaps and did everything he knew to get her back on the ground and fast. He hit ground in a three point position, brakes locked and plowed furrows in the soft field almost to the fence. At this point he relieved one brake and ground looped, throwing dirt over the fence from his tail skid. Lee jumped down, a little white faced but with a grin on his face and said, "That warms a fellow up quite a bit." The inspector turned to Pete Miller and again I quote, "Any plane that can do that, gets my approval." There was no damage and on Lee's second attempt, he cleared the mythical barrier easily.

Someone will probably tell me if I am wrong, but I have been told that no other American ship passed this test without sealing off some of its fuel tankage.

Ed Granville had agreed to go to England with the ship and have it ready for take-off. So far, Miss Cochran had not flown it nor had her copilot who as far as I know had not even seen it.

Lee Miles with Ed aboard flew the "Q.E.D." down to New York and was able to taxi up to where a crane could lift her onto the deck of a ship. Ed made sure she was tied down securely on the forward deck and shook hands with Lee Miles and was off on his first ocean voyage. It was a rough and stormy one but Ed took care of the aircraft as best he could and also installed a set of landing lights in the nose of the boots during his voyage.

Mr. Wesley Smith, who said he was the copilot, met Ed at the dock in England. The "Q.E.D." was set off by crane and was on the edge of a field big enough to take-off from. Smith was going to fly it to Mildenhall and this would be his first flight in the aircraft. Ed got her ready, climbed in back, and Smith got her in the air without incident. However, when they reached Mildenhall, Smith dropped flaps and flared high, dropping in with a very heavy thud. Reminiscing over the "Q.E.D." days, just last Memorial Day, I asked Ed about that landing. With a big grin he said and I quote, "Well, I decided then and there that this would be my last flight with Mr. Smith."

The "Q.E.D." had more range than most of the starters so Cochran and Smith decided that their first fuel stop would be Bucharest, Rumania. Ed saw them off and headed immediately for home. I know little about the flight, but it was reported to be solid overcast all the way and very cold over the Alps. There was no provision for heat. Don de Lackner says he was told by Miss Cochran that she was so cold that she had to be lifted from the cockpit upon arrival at Bucharest. There are many stories as to just what ended the flight at this point, but I expect cold was the major factor. There is also a story that Rumanian pilots flew the ship to a new speed record while it was in their country, but I cannot verify that.

We had no more ships to build at that time. Pete decided to stick it out for a while, but Don de Lackner with a growing family had to look for greener pastures. Tom and Mark opened a garage although Mark didn't stay long. Repairing old cars was not for him. Ed and Hi went back to their jobs in East Hartford. As for me, I finally got a job in the metal tail division of Chance Vought and was with that company until moving to Maine in 1946. However, I did have two long leaves of absence, once to work with Pete and Mark on the "Moonship"; again to help build "Time Flies" for Frank Hawks.

Little was heard about the "Q.E.D." for some time. We read where it was flown by Royal Leonard in the 1935 Bendix but had been forced down with motor trouble. I have no details.

In 1936, the National Air Races were held at Mines Field, Los Angeles. The "Q.E.D." was sitting there, but apparently not being flown. Lee Miles saw it and immediately got the urge to fly it again. Lee and his partner Leon Atwood made an appointment with Miss Cochran at her apartment in Hollywood and Lee came away with permission to enter the "Q.E.D." in the Thompson Trophy race. He had little time to prepare and, of course, the ship

was really too big for closed course racing. However, Lee flew eleven laps averaging over 200 miles an hour although the "Hornet" was running badly all the way. At the end of the eleven laps he landed and he and Leon went to work, to try and find the engine trouble. They checked the fuel system completely, finding no major problem and when they fired it up again, it ran beautifully.

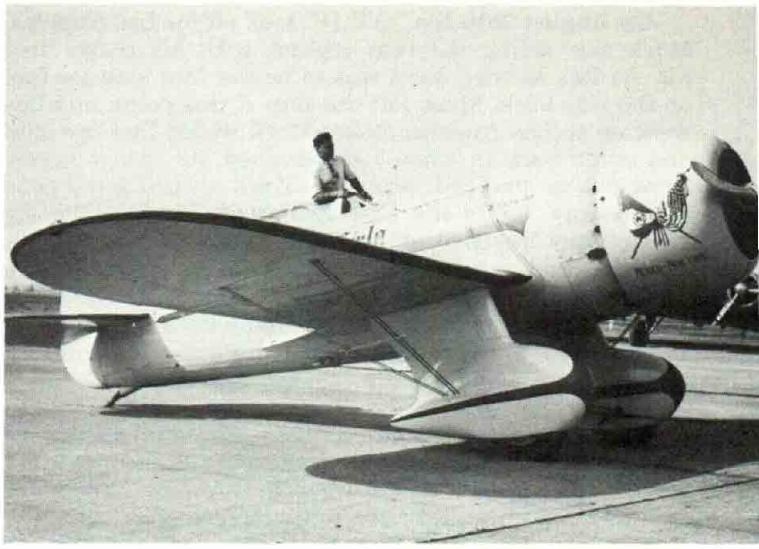
Leon Atwood had never flown a fast ship like the "Q.E.D." so Lee, probably figuring the opportunity wouldn't present itself again, offered to give him that chance before turning the ship back to Jacqueline Cochran. They had to check out the engine anyhow. Lee took the front cockpit and let Leon take the duals and taxi out for take-off. Leon told me this story at Oshkosh '77 and I will quote some of the things he told me. "It was a big solid feeling ship and when I started feeding the coal to it, it just seemed to roll straight down the runway, no problem at all. It was one of the biggest and certainly one of the fastest airplanes I had ever flown. I could hardly believe it."

Mr. Atwood went on to tell me that they had maybe an hour of daylight left and how they flew north up the coast of California, swung inland to the San Gabriel Mountains and then south over the San Bernadino Valley. They were having a lot of fun and soon realized they were at 12,000 feet and over the San Gorgonio Pass. Leon swung the ship back westward and started to let down slowly toward Mines Field.

Leon continues his story, quote, "With a little pressure on right rudder and right aileron, we were completing this massive circle getting back to Los Angeles, just to me, a great experience. It was just as smooth, no problems, no roughness. Of course, we were not running the engine at a high rpm, just going along beautifully. I pointed the nose sort of in the direction of Mines Field and southern Los Angeles and started reducing power. We would be back in ten or twelve minutes, so everything seemed just perfect."

Lee and Leon cruised gently back over Englewood, talking and joking. Nearing Mines Field they could now see the big North American parking lot. It was empty but on the East edge of it was a dirt road with cars bumper to bumper coming from the Air Race area. Over the road was a great one hundred thousand volt high tension line. Just to the west of the lot lay Mines Field.

It was just about here, that Leon realized that he had lost more altitude than he had intended to and he would have to use a little power in order to reach the field. He started slowly pushing the throttle open and soon realized nothing was happening. That big prop was just wind willing with no power. As Leon tells it, quote, "Lee looked back over his shoulder and I said 'No power, you take it.' After all, he had had a lot more experience with this thing than I, and it was only right that he should take it. In the meantime, he was working the wobble pump and snapping the ignition on and off but nothing happened. He looked back at me and said 'Are you off?' and I said "Yes." I began to see that we were either going under those wires or through them. So I said, 'Do you think you can set it down?' Lee said, 'Watch this, its going to be good.' He made a slight bank to the right and actually pressed the stick forward. Well, we went under those wires and over this mass of cars, bumper to bumper on the road. As we went under those wires, I heard something that sounded like a 22 pistol shot over my head, but at that time, things were happening awful fast. About that time we were on the ground in that parking lot rolling pretty fast and using up space. Lee clamped on the right brake and we did a ground loop. Well it came to a stop facing back east and we didn't even blow a tire or touch a wing."



(Charles Mandrake Collection)
Francisco Sarabia getting a tow to the hangars at Floyd Bennett Field after his 1939 non-stop flight from Mexico City — 3,250 miles in 10 hours 38 minutes. He landed with the fuel gauges on empty.

The prop had been sticking straight up after it had stopped windmilling and when they went under the power line. About six inches down from the tip, the blade had hit a guide wire and snapped it. This was the shot Leon had heard. This cable smashed down on a car underneath, ruining a hood, and smashing a windshield. No one was injured and there was no damage to the aircraft. To me, this was a great job of piloting an excellent airplane.

As far as I know, this was Lee Miles' last flight in the "Q.E.D.". About one year later, he was killed in the crash of his own Miles-Atwood Special.

Leon Atwood adds the following, quote, "I discussed the "Q.E.D." with Lee after he had flown it in the qualifying trials for the MacRobertson Race, for you people back there. He was very fond of the airplane, and didn't find any bad habits at all. He thought it was a great flying machine. My own little experience was that it flew beautifully, even performed nicely with a dead stick and with that big old butter paddle, in a vertical position and not feathered." All I can say is, "Thank you Mr. Atwood."

After the 1936 races there was little news of the "Q.E.D." for a long time again. Apparently no one was flying it. Finally, it was sold to Charles Babb, a used airplane dealer in California who believed the "Q.E.D." could still win the Bendix. He apparently either put in a different engine or rebuilt the regular one, changing the blower gears to 14:1 which was not recommended by Pratt & Whitney. The ship was completely gone over ending up, pure white with bright red trim, a great improvement over the solid green.

The only thing I know about the 1938 Bendix is George Armistead's report in April 1940 Popular Aviation and called, "I learned about flying from that." He seems to have had a great dislike or fear of the ship but most of his complaints are centered around the engine which he says was souped up to 975 hp. He had a bad time with taking off from Union Air Terminal at Burbank in pitch blackness and also lots of very bad weather to the east. He remarked that he pulled up through the San Gorgonio Pass at 14,000 feet, went on oxygen and headed for the Colorado River at close to 300 miles an hour on his airspeed. At least he tells us, the ship was fast. Over Kingman, Arizona, he says his oil pressure dropped and the oil temperature went way up. In a

few more minutes he lost the knob off his radio receiver and quit, landing at Winslow, Arizona.

The next owner of the "Q.E.D." was a man who not only knew how to fly but also how to maintain a ship in flying condition. Francisco Sarabia came up from Mexico City and bought the "Q.E.D.". All this talk about its being a jinx ship did not bother him. He well knew that jinxes are man made. After making sure his ship was in proper flying condition, he took off from Los Angeles. Six hours and twenty minutes later he landed at Central Airport, Mexico City.

Sarabia had a lot going for him at home. He was a small airline owner and also a personal pilot for President Cardenas. He was beloved by the people, as was Charles Lindbergh in our own country.

Convinced now that he had the airplane that was capable of doing the things he had hoped to do, Sarabia started making plans. He put the ship under Mexican registration and she became XB-AKM. His first long range nonstop speed attempt would be a good will flight between Mexico City and New York City. This would be about 2,350 miles and had been flown successfully by Amelia Earhart on May 8, 1935. She had flown her grand old Lockheed Vega, and her time was 14 hours and 19 minutes.

Not one to do things by halves, Sarabia had the aircraft completely gone over. He retained the red and white color combination trimmed with narrow lines of black. She would no longer be the "Q.E.D." as on each side of the fuselage he painted, "Conquistador del Cielo". On either side of the big engine cowl appeared crossed flags of Mexico and the United States in full color. Below these were the words, "Mexico-New York". On the fuselage above the center stripe line and directly over the leading edge of the wing and on each side was his name, D. A. F. Sarabia. On each side of the fin appeared a map of the United States and Mexico, with a line drawn to show exactly the route he intended to fly. Ahead of that was a circle saying "International Exposition-Mexico City 1940." This must have been advertising for a coming event.

The government issued a special stamp (Which can be found in Scott's Catalog) to commemorate the flight even before it started, so it's plain to see that Mexico had no doubts but that he would finish the flight.

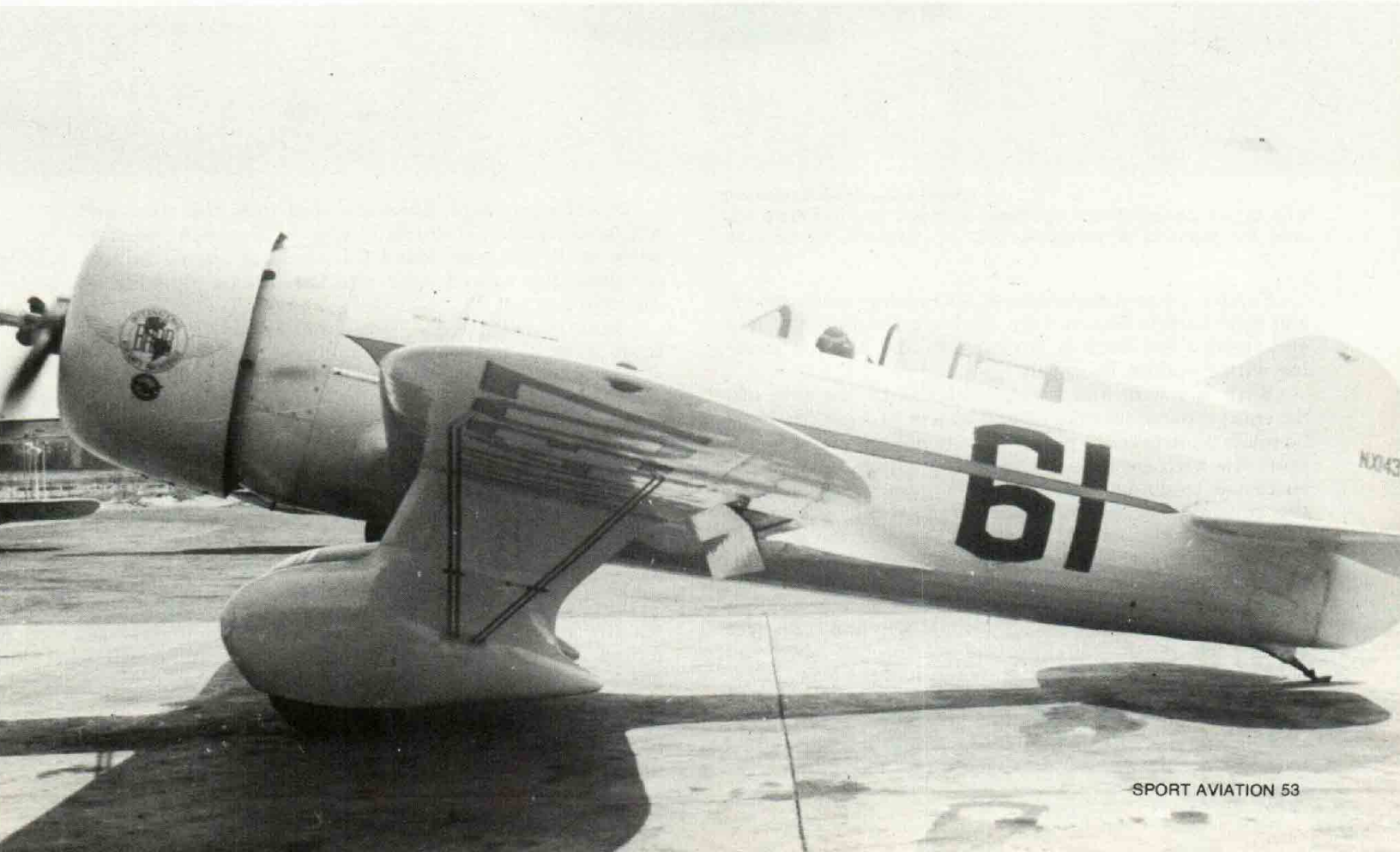
Mrs. Sarabia went on ahead to meet her husband when he touched down at Floyd Bennett Field. Early in the morning of May 24, 1939, Francisco Sarabia lifted the "Sky Conqueror" from Mexico City's Central Airport (7,500 ft. altitude) and headed for New York. The ship was loaded with an absolutely full load of fuel.

Apparently no word came through from Sarabia all day but at about 6:40 in the afternoon and just about dusk, the Conqueror appeared coming in for a landing down wind. His fuel gauges showed empty and he did not dare to chance a go around. It was a perfect landing with about one gallon of fuel left in the tanks.

A very, very tired, but happy young man emerged from the cockpit with a smile and wave to the crowd. He had completed the flight exactly as planned and knocked over three hours off Amelia Earhart's record.

Days of business and festivity followed. He carried messages for Mayor Le Guardia and also President Roosevelt. A huge banquet was held and Don de Lackner was an invited guest. He soon discovered that Sarabia wanted to find out if Granville, Miller, and de Lackner would be interested in moving to Mexico to design and build aircraft for the Mexican Air Force. Sarabia also had a conference with Pete Miller and Mark Granville but nothing ever came of it.

(Charles Mandrake Collection)
George Armistead and the Q.E.D. in the 1938 Bendix. The aircraft had been refinished by airplane broker Charles Babb, whose logo appears on the cowl. Note the patented Granville double hinged flaps.



(Charles Mandrake Collection)
The Q.E.D./Conquistador del Cielo at Floyd Bennett Field before the flight to Washington, D.C. . . . fated to be its last.

Finally it was time to deliver his message to Roosevelt and head back to Mexico City. He landed at Bolling Field and spent a few days in Washington and had his meeting with Franklin Roosevelt.

With his wife and several friends to see him off, Sarabia prepared for take-off at 5:30 a.m. of June 7th. Here he made a mistake, as he apparently did not give his aircraft his own personal inspection, which he was accustomed to doing. The "Sky Conqueror" roared down the runway and was off. One hundred feet above the runway, the Hornet quit abruptly. He was too close to the end of the field to land, too low to go anywhere else and nothing ahead but the waters of the Potomac River. Of course, Sarabia knew that as soon as his landing gear hit the water that the ship would trip and snap over on its back. All he could do was get the tail down and hold it off as long as possible. When it went over, Sarabia's face was thrown hard in between the windshield frames. Attempts to rescue him failed and he drowned. Had he had a shoulder harness he would have been unhurt as the ship was not damaged from the landing.

Naval equipment lifted the ship from the river and a CAA inspector (I think it was Al Bourdon) went to work on it. He soon found the cause of engine failure, a wiping rag sucked tight into the intake, shutting off air completely.

Again, the stupid cry, "jinx ship", but jinx had nothing to do with it. It was either deliberate murder or plain stupidity by someone working on the ship.

Mr. Roosevelt sent Sarabia's body home to Mexico in a bomber and there was a lot of grief and anger there. Nothing came of it, however, and to this day, the rag is still a mystery.

Mr. John Chapin has done a fine research job on the Sarabia's and the "Sky Conqueror". It is all in the August issue of Wings Magazine including some pictures of the aircraft as it looks today, so I will not repeat it.

In brief, the ship was returned to Ciudad Lerdo, Sarabia's home town, where it sat for several years. Finally members of the family had it completely repaired and refinished to flying condition. A beautiful, single airplane museum was built to house it and it was presented to the Mexican government.

Now it is on display there at Ciudad Lerdo, 24 hours a day for all to see and admire. It is in mint condition and very beautiful.

Francisco Sarabia, the Lindbergh of Mexico, Lowell R. Bayles, one of our greatest pilots, and Grannie Granville, both a great designer and an excellent pilot, all died absolutely needlessly, and all because of the carelessness of others. All three were flying airplanes built by the Granville's organization. All three had complete faith in their aircraft. Jinx? Silly.

Note: I am very much indebted to Howell W. "Pete" Miller, not only for the specification sheets, but also for checking every article I have written for SPORT AVIATION to be sure that what I offer are the facts.

FOLLOWING ARE THE ORIGINAL SPECIFICATIONS FOR THE Q.E.D.

Courtesy of Howell W. Miller

GRANVILLE, MILLER & DeLACKNER MODEL R6-H

The "Q.E.D.", designed and built by Granville, Miller & de Lackner of Springfield, Mass., is a commercial descendant of the famous Granville "Gee Bee No. 11". The new ship has been designed and built to meet the latest requirements of the Department for "C" license.

The purpose of the design is to provide the ultimate in a two-place, enclosed cabin sport plane, embodying the highest speed consistent with safe landing speed, and gas capacity sufficient to classify the plane as long range.

Similar to the "Gee Bee No. 11" in fuselage diameter, the "Q.E.D." has been lengthened and carries over double the horizontal tail area, as well as more than twice the wing area, and flaps of a design patented by Z. D. Granville. Double stainless steel brace wires are employed for both front and rear flying and landing wires. Dual controls are provided and two complete sets of engine instruments with space are provided in three separate compartments. The present model is suitable for geared or ungeared engines up to 1,000 hp.

The fuselage is of welded chrome molybdenum tubing throughout, with detachable motor mount. Fairing is a combination of aluminum over and under the tanks and up to the windshield, fabric back to the cantilever fin which is plywood covered. Fuel tanks are slung in the fuselage by well padded dural straps. The main tank of 275 gals. is provided with a dump valve which is closeable air-tight for buoyancy after being emptied. A 25 gal. gravity reserve tank together with another 100 gals. tank occupy the bay directly behind the fire wall, while directly ahead of the fire wall, but spaced away from it is a 28 gal. oil tank.

The wings are somewhat different from conventional design, although similar to racing practice design. The front spar is in reality two closely spaced spruce beams with the wires pulling from between them, eliminating any eccentricity. The rear spar is a single beam with the wires pulling from the heat treated compression tube which also serves as an aileron hinge. Maple patch plates and steel bushing washers provide ample bearing for the wire pull fittings. Similar patches provide strength at the butt fittings, while bolts have fibre bushings to increase their bearing area. Ribs are of plywood web and spruce cap strip design, closely spaced and rigidly attached to both spars. The airfoil is a recent NACA development, modified to give increased rear spar depth at the wire pull point, and a tapered tip. No drag wires are used, the plywood skin carrying the shear load. Ailerons are of similar construction to that of the wing, with an added torsion spar behind the hinge spar. Flaps are built into the wing and extend from the aileron to the in-board end of each wing panel.

The tail surfaces are all plywood covered, both horizontal and vertical surfaces being full cantilever. The rudder is provided with an adjustable tab. The elevators have a static balance which also gives a small amount of aerodynamic balance. The stabilizer is supported from two widely separated points on the front spar and an adjustable point at the rear spar. By a new elevator control linkage system, the stabilizer may be adjusted in any position while the elevators remain in their same relative position to the stabilizer. The rudder is a continuation of the fuselage fairing, being nearly a foot thick at the widest point at the hinge line. The fin is built on a steel tube frame work integral with the fuselage.

The landing gear consists of 31" stream line wheels and tires attached to long travel oleo struts. Wheel boots do not move with the wheels but are rigidly attached to the stationary landing gear structure. A heat-treated cross tube of streamline section carries the tension between the landing gear and also takes the stresses from side load landing. A full cantilever tail skid spring with stellited shoe is provided.

All control surfaces and control parts are ball bearing hinged and jointed, forty-three bearings being used. Ailerons are controlled by a combination torque tube and push-pull combination. Engine controls are push-pull for spark and throttle, while mixture, oil cooler, and air meter are flexible wire. Flap and stabilizer adjustments are torque tube operated.

A full NACA cowl easily removable in two halves is rigidly attached to two supporting rings, one fore, the other aft of the engine cylinders. The inner cowl is provided with large, quickly removable inspection doors. The engine is cooled by the latest pressure type baffle. All fresh air intakes are brought through the engine baffle: two to feed the carburetor, one for an oil radiator, another to cool the oil tank, while two others provide fresh air to both cockpits. Exhaust air from the inner cowl is drawn out through a venturi in the bottom of the fairing just behind the fire wall. Navigation venturi tubes are located between the cylinders and through the baffles.

The cockpits are enclosed by a shatter-proof glass windshield and sliding side windows. Vision is excellent and insured in bad weather by stops which permit the sliding windows to be locked in any position. Positive sight gauges show gasoline levels in both tanks. Seats and rudder pedals are adjustable on the ground and both sticks are removable. A swinging cover controls the flow of fresh air into the cockpits.

GRANVILLE, MILLER & DeLACKNER Q.E.D. MODEL R-6H

Span	34 ft. 3 in.
Length	27 ft. 2 in.
Height	9 ft. 6 in.
Wing Area	211 sq. ft.
Angle of Incidence	2 degrees
Dihedral	4½ degrees
Fuel Capacity	400 gal.
Oil Capacity	28 gal.
Empty Weight	3144 lbs.
Useful Load	3356 lbs.
Gross Weight	6500 lbs.
Wing Loading	36 lbs. per sq. ft.
Rudder Area	10½ sq. ft.
Fin Area	3.7 sq. ft.
Stabilizer Area	24.5 sq. ft.
Elevator Area	15.6 sq. ft.
Aileron Area	21.2 sq. ft.