

MOTOR GLIDER



TO PARAGUAY

**8,000 Miles Behind A
Turbo-Revmaster**

*By Jack Lambie
529 North Hart St.
Orange, CA 92667*

All Photos Courtesy The Author

“COME ON, JOE, take a look at your Volkswagen engine. (I was getting ready for an epic flight and wanted a free service check.) Make sure it will fly to Paraguay.”

Joe Horvath, the developer of the engine, looked up from his latest project, the Turbo-Citroen.

“Don’t call it a Volkswagen. It’s a Revmaster custom airplane engine. It has a solid machined crank, special pistons . . . heck, the only Volkswagen part we use is the case.”

“Okay, all the more reason for you to get some publicity. Just think, it will be the longest flight ever made with one of your engines.”

Joe looked at me in his relaxed way, “Look, Jack, I don’t want to know about it yet. On a trip that long, too many things can go wrong that may have nothing to do with the engine. If everything turns out, you can say, ‘It’s a Revmaster.’”

“I’ll have my mechanic check it, but I know that engine is good; it’s only got 250 hours.”

The engine had no oil leaks, but to stop a few drips, Joe’s mechanic rethreaded a fitting that operated the two-position Maloof propeller and rebuilt the Posa carburetor.

My airplane, an RF-5B Sperber motorglider, originally fitted with a Limbach-VW engine, had been built in Germany in 1976. The import dealers, Phil Paul and Charlie Gynes of Aero Sport, had Joe put on a Revmaster which improved its performance spectacularly. All their motorgliders were now being sent from Europe engineless so the Turbo-Revmasters could be installed. They had done a lot of flying with this plane in the past few years, but no one had ever seen exactly how high it would fly. On this venture I would see.

We loaded the plane with a sleeping bag, the latest maps from Pan-American Navigation, hundreds of rolls of film, and checked the fuel pump, radio and inflight entertainment center (a car stereo with headset). Passports, permits and letters to flying clubs were completed. At 1 p.m. on April 9th I took off.

The view from the cockpit is like sitting on the front porch of the world. Floating over the flat, green, irrigated fields of the Imperial Valley of California, the quiet Turbo-Revmaster drew the long winged RF-5B Sperber motorglider through the clear, desert air at an easy 100 mph. I radioed for clearance into Mexico and was soon gliding across the U.S. border to Mexicali Airport for the first stop of what became a marvelous flying adventure.

The one-month journey to Paraguay demonstrated to flying enthusiasts along the way that a motorglider is not only an exciting sporting machine, but a practical and economical airplane.

Another purpose was to explore upcurrents along the Andes mountain range and photograph the great South American Condor soaring birds.

I had started from Chino, California, 90 minutes earlier with minimum fuel, so in Mexicali we filled the standard ten gallon tank in front, plus the 27 gallon extra tank strapped in the back seat with 100 octane fuel to save money. (Only 94 cents a gallon in Mexico.)

“Sunset is at seven,” they said when I filed my flight plan for Hermosillo.

“I’ll make that easily before dark; it’s only three hours away,” I thought.

But I forgot my watch was set on California time (one hour later than here). When I arrived, it was so dark the sparkling lights of the city appeared suspended in the sky because of the clear air and lack of horizon.

There is no night visual flying allowed in Mexico, but the Commandante accepted my “wrong time set” explanation of why I had come without an IFR flight plan. I slept under the wing, fueled early, then taxied

to the runway in the calm, hot morning. The Revmaster engine accelerated the glider quickly as I opened the throttle and pushed the mixture rich.

When the tail lifted, the plane swerved to the right. Throttle off; brake on! We rolled off the runway over a small lump of paving material. The single main wheel snapped off. The beautiful motorglider fell heavily in a cloud of dust. A blade of the metal Maloof prop was bent, gear doors and outriggers were broken. The wheel lay 20 feet behind bleeding brake fluid. What happened?

We found the right rudder pedal in the rear cockpit had jammed, because a spare tail wheel worked its way in front of it. Spring stretch allowed steering on the ground but when the tail lifted, the jammed rudder swung the ship uncontrollably.

A total disaster! It would take weeks or months to get new parts, I thought. But with the fix-anything skills and helpfulness of the Mexicans, we were ready to go again after three days.

In the repair hangar, two mechanics removed the landing gear. Oscar Blanco, chief pilot for a charter service, took me, the propeller blades and broken wheel struts to his friends in Hermosillo. One, an old metalworker, repaired the shock struts and straightened the prop blade in his tiny shop. Another machined inserts for the broken landing gear, then welded it perfectly. While I refinished the prop blades to look like new and fiberglassed and repaired the gear doors, the mechanics reinstalled the wheel.

I was house guest of the charter pilot. One of the mechanics invited me to his rousing wedding party the night before I left. The Airport Commandante helped with the accident paperwork. The doctor who gave me a physical, as required by Mexican Accident Rules, wished me a good trip and would not accept payment. The accident was Thursday morning, yet, bravo for the Mexicans, on Sunday I was off for a test flight.

Everything worked perfectly during the five hours to Mazatlan, with wonderful thermals to 11,000 feet,



Jack Lambie, the RF-5B Sperber and the equipment that would sustain both during the flying/gliding journey to Paraguay.



The author loads his wing tip camera prior to installing the streamlined fairing over it.

then smooth air and a tailwind down the coast. That night the air traffic controllers invited me to sleep in the tower cab. Next day was an exquisite seven hours across the mountains to Acapulco. Strong lift over Guadalajara carried us to 12,000 feet but the wing shaking turbulence threatened to snap the camera off its tip mount. I maneuvered around a late afternoon storm which forced us back to the coast at Zehuatena. With only an hour and a half fuel and 100 miles to go, I slowed to 60 mph and powerglided quietly along the beach. The elegant harbor at Acapulco slipped below and the motorglider was soon rolling along the airport's big runway with 40 minutes fuel still remaining.

After a restful night on the couch in the air-conditioned "old" terminal, I took off for Tapachula at the southernmost edge of Mexico.

I like to map read and navigate my pilotage. It was too uninteresting and hazy flying along the beach so, again, I flew a straight line which carried us through tree covered mountains dotted with isolated villages. Lift under the cumulus clouds was good, but in the afternoon with cloud bases lower and mountains higher, I was forced into the calm, hazy air of the coastline near the gulf at Tehuantepec.

In the gradual descent to Tapachula, smoke from agricultural fires was thick and I used the VOR to find the airport. It was 4:30 p.m., just enough time for fuel, exit formalities and go to Guatemala City before dark.

The 1600 pound motorglider seemed to accelerate slowly in the hot, humid air. The tall palm trees at the end of the runway seemed close. I let the turbo boost give 40" of manifold pressure. The surge of power quickly pulled us into the air, but the engine protested with a loud "phumph"! I throttled back to 34" and circled over the field. Everything was normal. Onward to Guatemala.

At 750 feet over the ranches of the flat, green coastal plains, I wandered between dense rainstorms that blocked my course. Guatemala City was over 5,000 feet at the

end of a narrow pass. It was only 45 minutes to sunset. Could I find the Pass? Would it be clear? A return to Tapachula, Mexico, in the dark and rain would not be easy.

A break in the clouds and a startling glimpse of the 13,000 foot volcano, Acatanango, glowing in the light of sunset spotted me my position. I found the pass! It was almost clear. Cool wind from the mountains pushed against the rainy, coastal air forming a convergence zone of strong lift which swept us quickly to 6,000 feet. On to the airport for a sunset landing, with Customs, Immigration, close Flight Plan and welcome by Antonio Delgado of the Guatemala Aero Club.

I showed films on the Gossamer human-powered airplanes, told of the delights of motorgliding and enjoyed airplane talk in their fine clubhouse, well stocked with food and drink served by a gracious staff.

The flyers here were concerned about political unrest that had overtaken Nicaragua, El Salvador and Honduras. Armed men guarded the Aero Club, as well as their homes in town. They helped me plan a non-stop flight over the politically disorganized countries, to Panama 800 miles away.

At dawn Antonio drove me to the Aero Club and the powerful Revmaster easily pulled the heavily loaded, long winged plane into the air over the mile high capital city. A jaunty Great Lakes biplane flew formation for 20 minutes, then waved and rolled away. I was alone for the 9½ hour flight south to Panama.

The weather changed every 50 miles with a series of low pressure areas. First it was sparkling clear, then a wave lifted us to 13,000 feet south of San Salvador. Past the Gulf of Fonseca I glided down to stay below an overcast. A shearline near Lake Nicaragua gave excellent lift then cumulus buildups over the mountains of Costa Rica. I became accustomed to three levels of clouds, low fog along the coastline, cumulus inland and big nimbus over the mountains. I was never bored and was busy navigating precisely while enjoying the varied tropical scenery.

Whenever the 10 gallon front tank used 5 gallons, I plugged in a Honda car electric fuel pump which transferred exactly a liter a minute. I could calculate fuel remaining by timing the pump run.

Over politically unlandable Nicaragua the front tank had not filled in over 39 minutes! The bubbles in the clear plastic line were moving slowly and the pump was very hot. Something was wrong! I pushed the base of the little pump out the rear cockpit vent and found and released the pinched line. The bubbles soon began rushing happily forward . . . whew! Costa Rica seemed especially beautiful from the air. The long day went quickly.

At David, a Panamanian port of entry, it was too late to buy fuel and go on to Panama City. An Air Force enlisted girl gave me a ride into town. We sat in the square watching the friendly romancing of the "foot cruisers". I felt relaxed and accomplished after the long successful flight. Later at the airport I covered myself with mosquito repellent and slept peacefully under my wing, despite loud disco music from a nearby roadhouse.

Friday, in turbulent, rainy weather, it was only 2.5 hours to Panama City's El Patia Airport. The Planeadores Panama Glider Club met me and their leader, Bob Crawford, had press and TV cameramen waiting. We removed the spare tank to give the newsmen and aviation officials rides. Three days of talks, dinner parties, and a tour of the city with the Embassy Counsel added richness to the relaxing time. I borrowed maps and advice from the local pilots, one of whom toured me over the famous canal in his Cub.

Monday morning the quiet authority of the Rev-master engine swept the motorglider into the air for Medellin, Colombia. We surprised black vultures in a thermal over the hazy coast to climb into the cooler air yet still covered 93 miles the first hour.

Below were thick jungles, winding rivers. No roads, railways or air-sea rescue exists south of Panama. Hills appeared where none showed on the "unreliably surveyed" area of the map. I drifted lower to stay clear of a dark overcast. It was spooky at 750 feet with only one village of grass huts to break the wild views of trees and swamp. Rain streamed back in tiny globes along the waxed canopy. ▀

Ahead there were 11,000 foot mountain ranges. As the ground rose my horizon hazed into the rain and clouds. I turned south, and climbed through a hole to 6,600 feet in and out of canyons and "meadows" of cloud layers. This was the Inter-tropical Convergence where the air of the northern and southern hemispheres meet. The radio direction finder set to Turbo on the Colombian/Caribbean coast had swung around and around in my wanderings to climb over the clouds and rain.

If nothing appears after four hours, I would head back to Panama. Discouraged, with clouds everywhere, the plane continued climbing among the layers.

Then, around the corner of a towering storm cloud, a dark peak! I flew closer and could see a hole with green farms below. The Medellin VOR began signalling. Now, heading 120 degrees between the wet cloud build-ups, I see more holes. I spoiled down to 10,000 feet. A pass ahead! I swelled with joy seeing Medellin in sunshine ahead. I laughed with relief so hard I coughed in the thin air.

The Albattross Club met me and helped ease entry through customs and immigration. They had radioed Panama to find my takeoff time then called the Director of "Aviation Civil" at Bogota for special permission to land at Medellin. They gave a reception and dinner, a tour of the city, and proudly showed the Eaglet gliders they were building. My talk, in English, was translated into Spanish to the large, receptive group.

The next day an easy two-hour flight over many beautiful mountain estates brought us to Cali, the last port of exit from Colombia.

The local pilots said, "No one ever goes straight through Pasto and Quito to Peru because of the high ground and violent turbulence." They showed me a pass to go out to the coast and said, "Be sure to stay below the overcast out there."

"But the Condors are reported to be over the Andes near Pasto and Ecuador. I must go that way."

"Okay," one shrugged, "but don't land in Ecuador. They change the rules between flights." I agreed. Preparing for this flight I had made five telephone calls to the Ecuadorean Consulate in California. They never could find out the requirements for a landing permit. The fuel truck driver put in 25 gallons of 100 octane. I offered him a \$20.00 bill.

"Okay, that's enough," he said.

The airport officials insisted on \$54.00 for landing and parking fees. In early morning, with all papers stamped and tanks full, I was off for Peru.

We climbed between the thick cumulus dotting the valley and headed toward the Andes. No Condors at Pasto. Into the Andes of Ecuador, the view was astonishing with green fields and cities over 9,000 feet.

Past Quito clouds began to cover the mountain tops and spread over the valleys. I circled in rainy upcurrents and squeezed through high passes with only a few hundred feet between the overcast and ground. Ahead only the conical flanks of Mt. Chomborazo were clear of cloud. We would be trapped in the big inter-mountain valleys

of Ecuador by the clouds, so at Latacunga I quickly headed west. Soaring to 14,200 feet we skimmed between clouds and mountains toward the overcast lowlands.

Hours later, still at 13,000 over the dense whiteness, I saw cumulus ahead marking the beginning of the Peruvian Desert. Near the border clouds thinned and we glided over the desert to land at Talara — Peru's northern-most point of entry — after 7½ hours.

The entry officials were friendly, only \$20.00 for customs and parking plus \$28.00 for the flight plan permit all the way to Bolivia. Then things got bad. Three Fuerza Aero Peru Officers crossed from the military side of the airport to look at my unusual, to them, motorglider. Instantly paranoid, they thought I was the James Bond of Flying and took away all four cameras, as well as my film. The next day they insisted I follow their Russian-built turbo-prop to Lima for further investigation.

I used extra throttle because it would be close reaching Lima before dark. Fog, from the cold Humboldt Current in the Pacific, gradually spread over the coast. Lima approach control said the airport was clear, but so dense was the foggy haze that even with radar vectors I didn't see anything until over the runway's flashing lights.

I got my cameras back but the film was ruined. The Peruvian Department of Transportation assessed me a charge of 100,000 soles for a two-day permit (\$400.00).

After three days of questions and delays, the take-off for LaPaz, Bolivia was a relief, although the climb through intermittent fog banks relying only on the sound of the engine and sunglow was heart stopping. The gyro instruments were disconnected and, during the customs and security searches, the airspeed indicator's static line had been pulled loose, rendering it inoperative.

After reaching Asuncion, Paraguay, Jack taught the new owners the joys of motorgliding — including aerobatics!



Along the coast for 150 miles and gliding down to the Isles de Chinchera, I searched for condors. Then, putting along the sea cliffs of the Paracas Peninsula, I had a brief encounter with a condor, then another, and finally four of the giant birds soaring together.

It was dramatic and exciting encountering the majestic birds I had seen only in pictures. They were wary.

While I'm trying to fly and photograph, the condors can dodge easily away. After 45 minutes chasing birds with the fuel-heavy, airspeedless glider, I was tense from the low level maneuvering and headed inland to find the Nasca Markings.

After crossing an exotic desert of wind blown sand and rock, we reached a blue-grey plateau. It was the site of the prehistoric patterns. I smiled at my navigation (guessimation) and luck. The book "Chariot of the Gods" says that these markings could only be seen from the air and, since prehistoric Nazca Indians did not have flying machines, they must have been made by "Ancient Astronauts." True, the lines, scraped into the desert, do look like airport runways and huge drawings of the other figures such as a monkey, warrior and a condor can best be seen from the air. However, they can also be seen clearly from nearby hills so a flying device was hardly necessary. I circled and took pictures.

It was late. Arequipa, Peru, should be my goal for today, but thermals were strong and I decided to climb into the Andes. Turbulence caused rapid changes in fuel pressure to the floatless Posa carb, resulting in engine stoppage for long seconds, but the thermals were powerful and by circling tightly in the lift, we climbed higher.

Deep in the spectacular snow-covered peaks, I surprised a condor and later another in a steep valley. With their superb control, they owned the air in these mountains. What if they lured me into a crash against one of these lonely cliffs and ate my carcass? But if that happened, I could think of no better way to disappear. Perhaps I would become a part of these great birds and soar with them forever.

Higher the lift carried us and at 17,000 feet I saw El Misti, the volcano near Arequipa, well south and behind us. A thin street of cumulus clouds beckoned.

Bounding along under the lift, breathing oxygen, I could arrive at LaPaz at sunset with a few gallons of fuel in reserve. Onward to LaPaz.

I related to enjoy my dream experience — to cross the Andes. The brilliant scenery and invisibly clear air heightened the feeling of being in a special place.

Shadows marked the mountains and incised valleys when Lake Titicaca's 12,500 foot surface appeared on the horizon, as smooth as polished slate. The clouds over Mt. Illimani and its snow covered peak were golden in the last sunrays when the long runway of the highest commercial airport in the world came in sight.

The "Ayar Uchu" Glider Club members were lined up on the ramp as I climbed from the cockpit, cold and numb. After 10½ hours of exhausting excitement, it was wonderful to be met with such enthusiasm and warmth by fellow pilots.

Although most of the flyers had immigrated from Germany and Austria, the club took its name from the Inca version of the myth of Icarus and Daedalus, called "Ayar Uchu."

They had imported their gliders and airplanes at great expense to fly over the plains and mountains of this beautiful high country. A tow plane would be inefficient at their 12,900 feet gliderport, so they used a "TOST" winch, powered with a Ford V-8 to pull their sailplanes kite-like into the air.

I gave my talk and was guest at glider pilot Rudolph Ortner's Tyrolean style mansion, finished in the exotic

woods of the Bolivian lowlands. Again I was aware of how we humans need one another. They enjoyed my flying visit as much as I was inspired by being with friends who also appreciated the thrill of matching oneself with the air and being creatures of flight.

I had four days to worry about the takeoff from the 13,400 foot high El Alto Airport because a storm was reported over the lowland jungles of my next destination, Santa Cruz, Bolivia.

With only the rear tank filled to keep the nose light, we started our run. My feet on the rudder pedals moved like a dancer because the wind would gust from 5 mph to 35 mph and change direction equally fast. After a run of 1 kilometer, the Turbo-Revmaster pulled us into the thin, choppy air.

Good thermals and the beautifully smooth engine got us to 19,000 feet. Surprisingly, this is low because the gentle hills at 17,000 feet and the plains at 14,000 feet were only a few thousand feet below. Past Cochabamba, the valleys began filling with cloud. I decided to continue using my remaining oxygen and stay high rather than trying to wander through misty Andean canyons.

Soon the Andes were behind and we floated over the thick, white clouds. Santa Cruz was forecast "clear" but I could only get feeble replies in broken English when I tried to ask the height of the cloud base. Then a loud American voice called.

"November 99887, come in on 123.4 and tell me what you need."

"I'm from California, flying a motorglider and I need to know how much space, if any, below the clouds at Santa Cruz."

"Okay, you've got 7,000 foot ceiling, and a strong south wind. Be sure you are over the VOR because the mountains are into the clouds."

Flying over the featureless clouds, time always seems to pass slowly. My unseen new friend and I talked airplane to airplane. His name was Jack Neiman, a retired Navy pilot flying a turbo-prop for a mining company.

"Say, I'll be back in a few hours. You can put your plane in my hangar and stay with me tonight." Sounded great!

The VOR needle began to move erratically when my calculations said we should be over Santa Cruz.

Gathering my courage I pulled the lever to open the wing spoilers. With a quiet trimble of turbulence, the big glider dropped quickly into the clouds. I sat in the grey-white staring intently ahead ready to close spoilers and pull up quickly if rocks appeared ahead, then a flash of green jungle and a brown river. Suddenly, we were in a different world. Santa Cruz straight ahead, a booming oil town in the low jungles. The dark wall of the Andes thrust into the clouds a few miles behind me. A curious, friendly crowd gathered and helped me push the plane to Jack's hangar.

Soldiers ran practice maneuvers around El Trompillo Airport. They ignored me. (Two weeks later, in Bolivia's 189th Coup, the military took over Santa Cruz.)

Jack taxied up in his turbo-prop, parked and took me to a local bar filled with smugglers, adventurers, pilots and oil workers. He had come to Bolivia years ago to deliver a plane, married one of the beautiful girls of Santa Cruz and has been establishing his idea of paradise ever since.

After dinner his wife, Natalie, served drinks while Jack helped plan the flight to Asuncion, Paraguay. The immense area of uninhabited jungle known as the Gran Chaco must be crossed. My chart stated the area was unreliably mapped so Jack marked some of the plateaus he knew that punctuated the flat, wet jungle. Surpris-

ingly, there is little rain in the Chaco, but the melting snows of the distant Andes stagnant in the poorly drained lands resulting in impenetrable trees, thorn bushes and swamps.

I sat late talking to their daughter, Tina, who was pioneering a thousand square mile ranch near the Brazilian border.

Next morning Jack and Natalie waved goodbye after helping me through exit formalities and filling my tanks from their private supply. They were marvelous people and Santa Cruz an intriguing city. I should have stayed longer.

The Turbo-Revmaster boosted the heavy motorglider into the tropical air with a quiet rush. I pulled up the single gear and was off for Asuncion 7½ hours away. In ten miles the jungle was everywhere like a great, green sea. A good thermal filled with beautiful hawks carried us high using nature's energy. It was easy to lose direction with no landmarks but I felt secure in my little plywood cockpit with trusted engine and compass in front.

I yawned in the warm sun and checked the time. The Izozog Swamp must be below now. Fifty miles to the Paraguayan border. The VOR beam from Santa Cruz's El Trompillo faded. No ADF signal from the Mennonite Colony of Filadelfia far ahead.

The fuel gauge showed 5 or 6 gallons were now used of the 10 in the front tank. I plugged the electric pump into my cigarette lighter fixture on the panel. It clicked rhythmically and the bubbles in the clear plastic line showed fuel was going to the forward tank. I was feeling safe and snug high above the unlandable tangle. How strangely exhilarating it is to be carried in an airplane over such unpenetrable lands far from our own species. Then the pump stopped!

It started up for a few moments then quit again, as if to punctuate its sudden betrayal. The line was free; the pump was cool. No reason for it to stop, unless, perhaps, it had been damaged when it overheated in Nicaragua.

The motorglider could probably fly to the airport at Filadelfia with the fuel remaining according to my quick calculations. But, 40 minutes later when the ADF picked up Filadelfia I saw we were east of course. There must be a west wind. Then the Cerro Leon Plateau, one of the few landmarks Jack Neiman indicated on my map, showed that we were 30 minutes late. A strong crosswind! There was not enough fuel to go to Filadelfia.

I checked and double checked the pump . . . nothing. I blew in the vent pipe to pressurize the tank. Bubbles



Over El Salvador, Jack flew past the 7815 ft. Volcan de Santa Ana and triggered a picture of himself and the spectacular scenery below with his wingtip camera.

Down and out in Hermosillo, Mexico . . . but not for long. Mexican mechanics lived up to their reputation of being able to repair anything and had Jack on his way in three days!



did begin moving forward into the engine, now set at a whispering half power, but my lungs couldn't hold the pressure high enough to push the fuel into that emptying front tank.

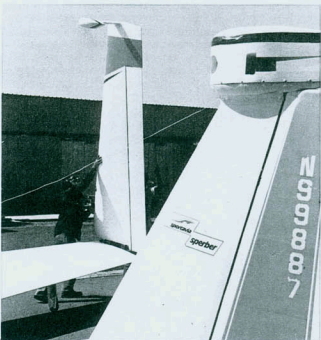
An airstrip appeared, alone and isolated in the jungle. I squandered 7,000 feet to make an approach but found standing water and big bushes on the runway. With the long, low wings of the glider, there was little chance of landing to refuel the front tank and taking off. Nothing to do except go on until the engine stopped, then glide in the now smooth air as far as possible. I again tried blowing in the rear tank vent pipe as the ship climbed but the air was pushing out into my mouth.

An idea. Why not seal the rear tank, climb, and let the pressure difference between the rear and front tank create a natural siphon? In back I had some scraps of mylar plastic, originally used as covering for the Gossamer Albatross human-powered airplane. I pulled a piece over the refueling hole and put the cap on to make the tank airtight.

I slowed to best climb speed. All praise atmospheric pressure change with altitude! The fuel bubbled forward. By 9,000 feet the front tank had enough fuel to easily fly to Philadelphia. I smiled in probably undeserved cleverness. It is amazing how complacent one becomes. Thirty minutes ago I could have lost the beautiful motorglider and had days or even weeks of struggle through the wilderness. Now I relaxed again and planned an automatic system like this for all airplanes to eliminate fuel pumps forever.

I thought about the pump. Why had it stopped? It wasn't hot. I untaped the wires to the cigarette-lighter-type plug. One was disconnected. I retwisted and wrapped the joint, plugged in and the little pump again chugged to the urges of plus and minus electricity. Soon a faint spray of 100 octane splashed over the canopy. The front tank was full!

Filadelphia had been established by a Mennonite religious group from USA. It has a rectangular pattern unlike the ancient Spanish cities of South America. The city was truly isolated, and soon after passing, the jungle was again everywhere.



The author, Jack Lambie, unfolds the wings to ready the ship for take-off. The motor drive cameras were mounted in streamlined pods on the right wing tip and the top of the vertical fin. The 17 meter (56 foot) span glider folds to 36 feet for storage.

In late afternoon rainbows hallowed the Sperber's shadow as we skimmed over scattered clouds. With the unpeeped jungle still below, Asuncion appeared, shining in the setting sun.

The pilots in Asuncion welcomed me intensely and were ecstatic over the motorglider. It was the first true sports plane in Paraguay. I taught them to soar and operate the machine. They purchased it from the dealer in California. It was sad to leave the plane. I had grown to feel as one with it in shared adventures over the past month.

A Braniff DC-8 flew me back to Los Angeles in 15 hours over the route that had taken 85 hours in the long winged motorglider.

The low rumble of the boundary layer sliding past this sleek aluminum airplane was the only sensation as we were carried over the curving earth a mile every six seconds. Have we lost or gained?

Some say airline flying is not travel at all. One is simply set down at another place after a number of hours, sleeping, reading, and munching cleverly packaged dinners. I disagree.

I thought of contrasts as I sipped a drink and nibbled at dinner. During a fuel stop at Lima, Peru, I went into the Flight Planning Office and checked our route to Los Angeles. I was startled at the long, curving, non-stop line over the ocean. After having flown the distance over land and with many stops, in a small plane, I realized the dramatic performance of the big jets.

My journey was rich and unforgettable with the intimacy of navigating and maneuvering the wood and fabric glider plane between clouds, in thermals and over mountains, deserts and jungles and the many new friends. I understood some of the feelings of Antoine De St. Exupery and Guallamet in their pioneering Andean flights. The ocean, jungles and mountains are still the same. The reliability and trust we have in our present machines is the great change.

Now, as I watch the faint dawn outline the coast of Mexico, far to the East, the difference between big and small doesn't matter. I love riding the big jets, and am proud to be a member of this elegant species that can invent and control our environment in such a great machine. I appreciate how far we have come because I have intimately flown this journey and understand the concentration and flying experience it takes.

The jet motors were quiet as the big plane began its long descent to Los Angeles, California. The motorglider and the huge jet, as are all flying machines, are wonderful beyond imagination.

I couldn't wait to tell Joe how his engine performed. He had concentrated his energies on this motor for years, and the blend of simple design and subtle refinement produced an engine in perfect harmony with any light airplane. I spent only \$432.00 on gasoline in the 85 hours of flying including the expensive fill-ups in Panama and Peru. I was amazed to make 7 to 9 hour flights days in a row without adding oil. It used so little I gave away my spare cans in LaPaz, Bolivia.

"Well, you made it, huh?" Joe said as I walked into his shop.

"Well, Joe, that Volkswagen of yours ran perfectly." Joe winced.

"I won't forget its quiet, smooth power and I'm glad my trust in your engine was well placed. It is one of the best things I ever had in the front of an airplane. You can be proud of it."

"Okay," said Joe, "now you can call it . . ."

"I know, I know, it's a Turbo-Revmaster and it even sounds like a real airplane engine." I smiled and shook his hand.