

Transcontinental hop

Flying the prototype Defiant on a 2000-mile cross-country.

BY DON DOWNIE

It was the first two-way transcontinental trip for Mike and Sally Melvill in the prototype Defiant. Destination was Sun 'n Fun 1985 at Lakeland, Florida. As a result of the 25.7-hour round trip, Mike had some enthusiastic comments about the Defiant.

"The higher we went, the better it flew," he says. "The airplane seems happier at high altitude. The props are smoother and easier to synchronize. The cabin is quieter. On our leg between Muscle Shoals, Alabama, and Lakeland, Florida, we went up to 15,500 feet and picked up a 56-knot tailwind. Our ground speed was 226 knots! Actually, the airplane trues out at 172 knots at that altitude. While we can true out at 185 knots at 8500 feet, we'd burn a great deal more fuel. At altitude, we were burning 4.6 to 6 gph per engine and our average for the entire trip was 13.7 gph total." (The prototype Defiant has a temporary, four-man oxygen system in the back end for high-altitude flight.)

Melvill, who has logged many cross-country trips in his single-engine Long-EZ, says that he felt absolutely comfortable with this twin-engine aircraft on night and overwater cross-country legs. "With the Long-EZ at night, I'm always looking for airports, dark patches on the ground or any other place where I could land in case of engine failure. With the Defiant, I never even thought about it! We went into Muscle Shoals on a very black, moonless night and there was no apprehension. You can quickly get used to two engines."

Sally Melvill takes a different view of the cross-country in the Defiant: "It was the first time I could take all the suitcases and everything that I wanted. The ship was super comfortable. On the return trip, we went direct from Lakeland to New Orleans; this put us a good distance out over the Gulf of Mexico—something that we couldn't do with our Long-EZ."

Although he has flown the Defiant on trips to Wichita, Kansas, Oshkosh, Wisconsin, and Baja California (usually

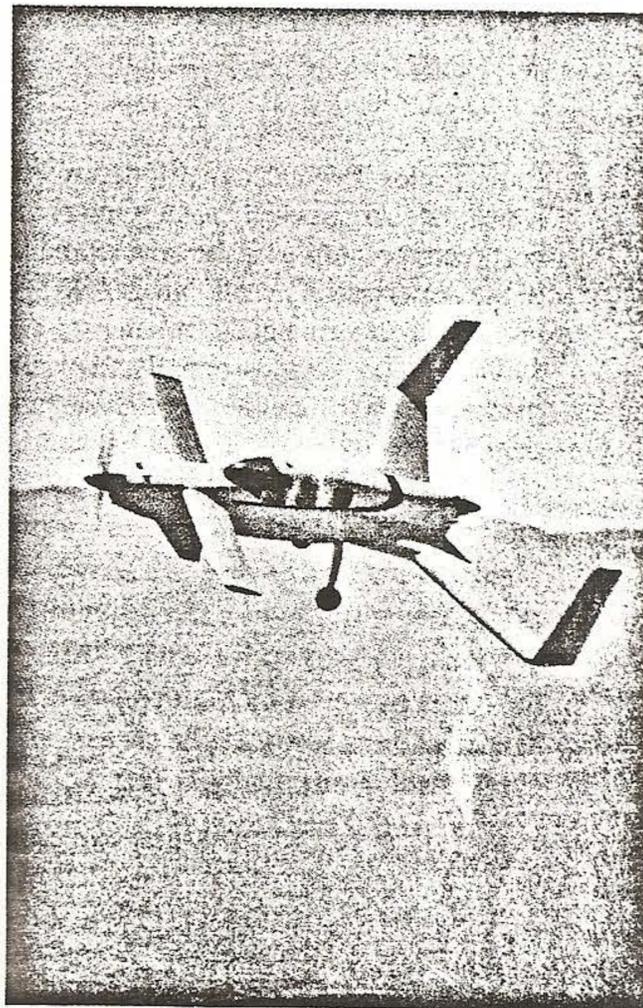
with Burt Rutan), this was Melvill's first long trip as pilot in command. He and Sally visited four Defiant builders enroute: Frank Yost, Johnny Murphy, Charles Grey and J. B. Jordon. All are nearing completion on their Defiant projects and Melvill expects to see at least two of their ships at Oshkosh this year.

For the cross-country capabilities of the Defiant on a routine trip—with no effort to break records—look at the Melvills' trip eastbound to Lakeland, which was flown between 11,500 and 15,500 feet over a distance of 2050 n.m. The Defiant logged 11.3 hours with an average ground speed of 181 knots and burned 154 gallons of fuel at a consumption rate of 13.63 gph. Landings were made in Elk City, Oklahoma, 5.4 hours and 940 n.m. from Mojave, California, and at Muscle Shoals, another 590 n.m. and 3.4 hours. Thanks to a good tailwind, the 520-n.m. leg between Muscle Shoals and Lakeland took just 2½ hours, resulting in an average groundspeed of 208 knots.

The return flight into the usual headwinds was made between 2500 and 8500 feet. The 750 n.m. between Lakeland and Gulf Airport in Houston, Texas, was covered in 5.4 hours at a ground speed of 139 knots. The Defiant flew the 430 n.m. from Houston to Ft. Stockton, Texas, in three hours with a 143-knot ground speed. From there it was another 830 n.m. and an even five hours to Mojave with a ground speed of 166 knots. The entire return trip took 13.4 hours with an average speed of 150 knots on 201 gallons of fuel (15 gph). At the trip's conclusion, the prototype had logged 987 hours total time.

Melvill is satisfied with the redundancy of both electrical and fuel systems in the Defiant. The electrical system has two alternators and two batteries with circuitry to utilize either one or both systems. The rear alternator quit over Texas and Melvill continued to his destination—five hours away—using only the front electrical system.

"The fuel system is the best I've seen



Don Downie

"The higher we went, the better it flew," says Mike Melvill of his 2000-mile flight to Lakeland, Florida, in the prototype Defiant: during one leg at 15,500 feet, the plane had ground speed of 226 knots.

on any aircraft," explains Mike. "You have two big, main-wing tanks: left for the front engine and right for the rear powerplant. Then there are two 4 to 5-gallon sump tanks under the floor of the baggage compartment. These have panel-mounted fuel gauges so that you can safely burn down to your last gallon in each system. A low-level light comes on the panel when the main-wing tank is exhausted. A crossfeed system makes it possible to run both engines off one tank.

"There isn't anything else on the market that will carry four big people, full fuel and baggage," says Melvill. □