Pictures by Carl Schuppel

Neil Hunter's Big-EZ. Built around a full IFR panel (below), it is significantly larger than a standard Long-EZ. The bottom picture shows the rear seat instrument panel.

NEIL HUNTER'S BIG-EZ

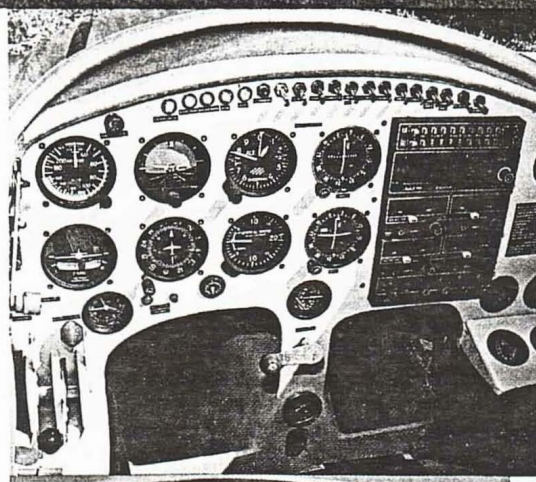
EAAers will recall Neil Hunter as the retired Air Force pilot who, in company with Al and Mabel Coha in their Vari-Eze, flew his Long-EZ from his home in Satellite Beach, FL to Brazil and back in the fall of 1983 (see "Brazil . . . The Eze Way", SPORT AVIATION, January 1985). Just after Oshkosh '84, he sold that airplane to a Tulsa atmospheric research firm to use as a remotely piloted vehicle . . . and very quickly found himself suffering the pangs of withdrawal. He had not been without an airplane to fly for most of his adult life to that point. Predictably, within a few months he was back in his shop slicing up foam and slathering on epoxy like mad — and I mean **really** mad! He began work on November 17, 1984 and rolled out a flyable airplane on July 1, 1985! This in spite of the fact that what to the casual glance appears to be a Long-EZ is to a great extent an all-new design. The airfoils and aerodynamics are Long-EZ, but the airframe is significantly larger than a stock Long.

A high time military transport veteran with thousands of hours of over-ocean and IFR time, Neil expects his personal airplane to be a travelling machine, so it has to have IFR capability. He loved his Long-EZ but always wished he had more instrument panel space. Thus, when he began his new airplane, he drew out the fuselage bulkhead that contains the instrument panel, enlarging it to handle all the electronic bells and whistles he wanted — then built a proportionately larger Long-EZ around it. The end result was a Big-EZ 4-1/2 inches wider at the instrument panel bulkhead, 7 inches wider at the pilot's shoulders and 2 inches wider at the firewall. The entire fuselage was 2 inches deeper, done in such a way as to provide additional prop clearance and cockpit headroom.

To lift this larger fuselage and carry it further, Neil increased the wing span 10 inches. The stretch was done in the area of the strake/fuel tanks, increasing the fuel capacity to a whopping 75 gallons (37.5 in each strake)! The little joggle in the leading edge of the strakes was omitted, which made them easier to build. The final airframe change was to increase the height of the winglets by 3 inches.

For an engine, Neil bought the 160 hp Lycoming O-320-D3G (fuel pump and Slick mags) Johnny Murphy had recently removed from his Glasair, had it majored and installed it in the EZ. A special 4 into 1 exhaust system was built up which produces a very macho, deep throated growl he likes a lot. The wood prop was a 74" x 68" — and a couple of brands have been tried to date.

Some other goodies included a landing light on the nose gear strut. It's turned on and off manually with a cockpit switch and a micro switch cuts it off automatically when the gear is retracted. Neil also installed tie-down rings, tied into the ends of the wing spars, which is the strongest point in the airframe. The rear cockpit has a



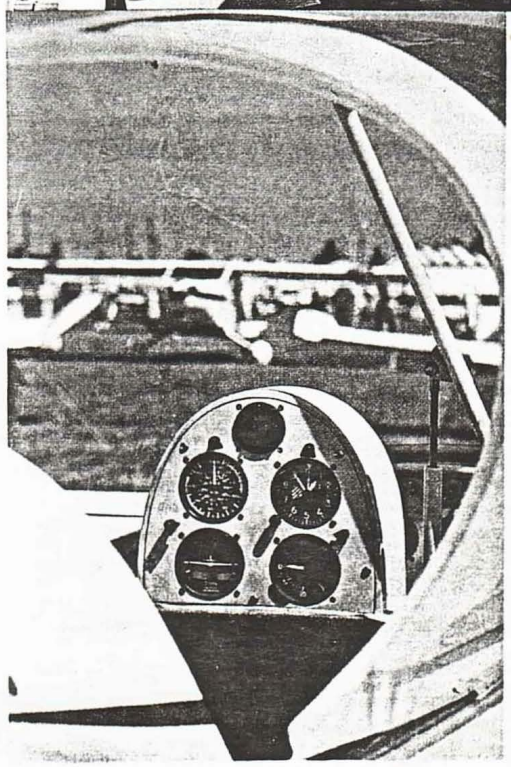


Photo by Carl Schuppel

Neil Hunter

basic instrument panel containing an airspeed indicator, altimeter, ROC magnetic compass and a turn coordinator. The passenger has a throttle and stick but no rudder pedals.

From the beginning of the project, Neil intended to install a Loran C, so in constructing the wings, he built in the ground plane and antenna as per the instructions of RST's Jim Wier. The right wing core was strung spanwise, top and bottom with copper wire to create a ground plane and the antenna was installed inside the winglet. It works great, Neil has found.

All these mods did not come free, of course. The empty weight came out nudging 1,000 pounds and the wetted area was up . . . so even with a big engine, the question was how performance would compare with a stock 115 hp Long-EZ. To Neil's pleasant surprise, his Big-EZ compares very favorably. It trues out at 213 mph (185 kts.) at 2,000 feet and will cruise 190 (165 kts.) true at 2,600 rpm.

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One concern Neil had as he began his test flying was stall characteristics. As an experienced Rutan aircraft builder and pilot, he was fully aware that Burt's canard designs do not lend themselves to modifications as do more conventional configurations. Sure enough, it did react **differently**, though not as he expected.

Lighty loaded, it landed slower and got off quicker than his Long-EZ did and would fly down to 52 knots indicated with full aft stick with no wing rock. The added wing area and the droop tips he installed on his canard (which he had previously found would allow earlier rotation on the Long-EZ) were likely responsible, he felt. With the airplane heavily loaded, however, he **did** get wing rock. He added vortilons to the main wing and that eliminated the wing rock at the weights he has flown the airplane to date — although Neil is quick to point out that he has yet to carry out an exhaustive investigation of the aft end of the CG envelope.

I was particularly curious about Neil's Big-EZ because I know he has aspirations to do some really long distance flying in it. 75 gallons of fuel in something that will fly as fast as an EZ on so little power is definitely overkill for making Oshkosh each summer . . . there **have** to be other reasons for it. Plans are not definite yet, but Neil wants to fly to Europe . . . and there are developments in the Far East in which he may become involved. "Stay tuned" is all we can tell you at this point.