



HOMEBUILT

POLARIZATION IS THE NAME OF THE GAME

By Budd Davisson

As you walk through the line of homebuilts this year, starting at the north end by the Warbirds, and worked your way south toward the Ultralights, it took a while to realize what the dichotomy of Warbird-to-Ultralight meant: It indicated total extremes and symbolized a subtle trend that appeared to characterize the homebuilt presence at Oshkosh '83. The movement is one of polarization.

By polarization, we mean the movement was away from the middle ground homebuilt towards the extreme types. For 1983 this meant the featherweight ARVs on one end of the stick and 280 knot, high altitude screamers on the other. Progress in the areas in between was minimal and almost invisible at Oshkosh.

An area of fuzzy definition and one which we're certain many of the parboiled attendees didn't understand is that even though there is a tendency to lump the ARVs in with the Ultralights, legally they are still homebuilts. So, from that point of view, you'd have to say that there was massive progress in homebuilt development this year. However, the polarization at the low end of the performance totem pole was so distinct that we've decided to split the ARVs off as a separate area of interest and, assuming Lert can remember how to put a ribbon in his typewriter, we'll let him delve into that (?) area solo. This seems particularly apropos, since he was also one of the judges for the ARV Competition conducted this year.

The gulf between a simple ARV such as the Avid Flyer and Ed Swearingen's as yet uncompleted SX-300 was at least as wide as the Ultralight/Warbird gap. Swearingen

is best known for his high-tech modifications to biz jets and producing one of the more popular commuter/corporate turbine transports. His SX shows his expertise in the area of high-tech airplanes. It also shows he is assuming a high degree of builder skill and an even higher degree of piloting skill because the all aluminum, flush riveted bird carries 300 plus horsepower upfront and has a wing loading equal to that of a P-51. That, however, is the price one pays, if you want to move over the magic 300 miles per hour barrier. If it were anyone but Ed Swearingen, you would say he was smoking too many funny cigarettes and the project would never come to fruition. But, there is no doubt that next year's Oshkosh will see this two-place, 300 miles per hour, mini-fighter sitting out on the flight line.

In that same category, Doctor Brokaw had his new re-engined Brokaw Bullet blazing around the pattern at warp nine. Although the changes are subtle from years past, the bigger engine and extended wings obviously gave him a giant boost in the take-off and get-up-and-go departments.

One of the big surprises in the bigger than-a-breadbox category of complex homebuilts was the appearance of Fred Keller's homebuilt Defiant. For years Rutan has been saying he would never release the push/pull Defiant as a homebuilt, but, surprise folks! There it was, big and beautiful . . . the composite embodiment of all Rutan's best ideas and design work. A 200 miles per hour plus, center line thrust twin. Those of us who have had an opportunity to fly the airplane consider it to be the best light twin



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The Beachner V-8 Special is a slick looking homebuilt powered by a convert auto V-8.

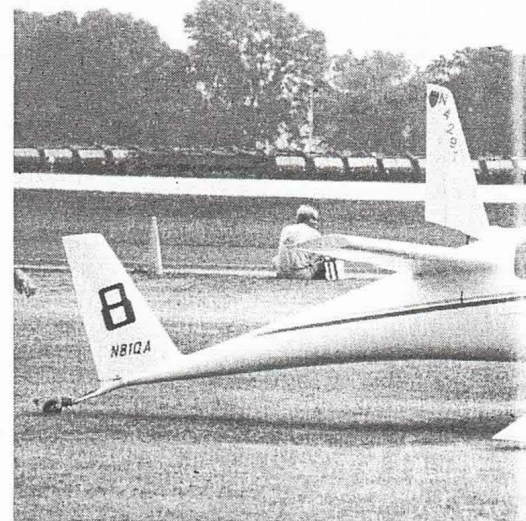
was or how much flight time was on it. Certainly one of the more intriguing of these, was a little melon shaped canard which caught our eye almost immediately because of the propeller arrangement . . . it rotates around a portion of the fuselage boom and has the vertical tail surface behind it. Externally it appeared to be extremely well turned out but we would give plenty to see what the structure was around that

in the air, bar none. Apparently the word has worked its way out into the market place and has resulted in some fairly intense pressure because Rutan announced that he would be releasing the Defiant as a homebuilt. This opens an entirely new category in the homebuilt line-up of super stars. This gives us a twin engine, five place, all weather high performance bird that will absolutely dissiminate any factory made twin of similar horsepower (160 ponies on each end) in every possible regime, including safety, performance, handling characteristics, etc. At last, the ultimate pickle fork.

Composite airplanes are reportedly quick to build but John Murphy of Cocoa, Florida, has carried the concept to the extreme. He has been the first to build virtually every new composite airplane to come out and has showed up at Oshkosh with a different airplane almost every year. This year it was a fixed tri-gear

Glasair. Although Stoddard-Hamilton offers a fixed gear conventional, and a retractable trike, they do not offer, or at least *did* not, offer a fixed tri-gear version. According to the word circulating on the grounds, however, they were so impressed by Murphy's little trike that they are going to add it to their line. It gives them tri-gear simplicity and ease of handling without any of the retractable's complexities.

As you get down toward the smaller homebuilts, the line of demarcation between ARV and just cute little airplane gets awfully subjective, especially since they both fall into the same licensing category. So, for that reason, it became a little difficult to categorize several airplanes. Further complicating the picture, from the spectators' point of view, is that several new little designs were trucked in, rather than trundling in under their own power. You never really knew how viable the design



The Q-200 is the new high-performance version of the Quikie.

propeller arrangement. Of course, the question is, does this fall into the ARV category? Better yet, who cares?

The same thing might be said about the Zia. Originally conceived as a sensuous tailless motor glider, the Zia has been transformed over the last year or so into a twin boom pusher of more or less conventional lay-out and very nice lines. We never actually saw the airplane off the ground during the convention, but we do know that it has flight time on it, and its designer



Take one seldom used BD-5, add a whole bunch of modifications and you have the Acapella.

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George Applebay has a well earned reputation based upon his success with the Zuni sailplanes. Lert has flown it, watch for a future pilot report.

One of the few new designs to crop up in the middle ground that is now almost overpopulated with EZs, Thorpes, and Mustang IIs, was the Beachner V8 Special. The airplane features a 215 cubic inch aluminum Buick V-8. Construction was steel tube and wood with foam for shape. The appearance and performance of the retractable two-seater, was excellent, but we would



be very interested in carefully examining a set of plans to see how he interfaced the foam with the rest of the structure.

Pushed back in the corner, where it was missed by a lot of the crowd, was Dudley Kelly's latest bi-plane adventure. As we mentioned last year, too often these type of designs are overshadowed by the newest whatzit. Kelly and a few others are still hanging in there trying to produce suitable fun flying machines for the traditional (or reactionary) amongst us. We hope he is successful.

One of the more disquieting aspects of Oshkosh, although it has certainly been in evidence in past years, is the continual proliferation of new kits and designs to be sold to the homebuilding public. We saw at least two airplanes which, to our knowl-

edge, had never left the ground yet the designer was taking money for plans and information kits. This is not new to '83, but the commercial aspect of homebuilding has exploded so rapidly that it is difficult, if not impossible, for the newcomer to make adequate decisions on what is and what is not a safe product. Safety and design viability often seems to be a function of the designer's attitude towards responsibility, more than his actual experience and credentials. Many excellent designs have come from first time designers, but unfortunately, that is not always the case. The situation seems to vary all over the block. Sooner or later there is going to have to be some sort of policing done within the organization, not only to ensure products but also to interact and protect the movement from regulation.

The National Association of Sport Aircraft Designers (NASAD) is an attempt to do that sort of thing and has had some success. Further, a meeting was held this year for the first time, of the manufacturers of sport airplane products and kits to determine the feasibility of an association that would, like GAMA, work to the benefit of the industry and the movement. Hopefully something will work out. However, since sport aviation is nothing more than a wildly varied combination of extreme individualists, it may be a hard row to hoe.

Homebuilding has changed so drastically over the last ten years that many would hardly recognize it. In the late 60s/early 70s, if one offered a foam and fiberglass, twin engine, push/pull canard for sale, the membership would have bought him a one-way ticket to a rubber room. If he had talked about building mini replicas of J3-Cubs using two-stroke engines, the obvious question would have been, "why." As shown at Oshkosh '83, the marketplace, the members, and the aircraft have matured significantly. There is absolutely no end in sight, which means, the next few years are going to be really exciting and we can hardly wait to report on Oshkosh '84. □

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