

Design For Comfort

By CAPTAIN RALPH S. BARNABY

LIKE everyone, I suppose, who has played around with gliding and soaring, I've often thought about the details of the sailplane I'd build if my situation and conditions were such that I could do it.

In general type and design, my ideas have wandered from the conventional to the less conventional but intriguing canard; from the high aspect-ratio, long-spanned soarer to a minimum-size job, tailored to fit my own 135 pound, 5 foot 4¼ inch dimensions.

While these important decisions are still in abeyance, one phase of the design has pretty well crystalized in my thinking. As one might imagine from the above-mentioned personal dimensions, I've suffered from cockpit trouble throughout my now somewhat extended flying career.

Early in my Naval flying I had to make an important decision in taking off and landing single-engine landplanes—whether to sit high where I could get a fairly good look ahead; but would have limited rudder control and practically no brakes; or, to sit low where I could get full rudder and brake movement, but see nothing at all out in front, counting on getting my last look ahead just before turning into the groove. I chose the latter, and at least I've survived.

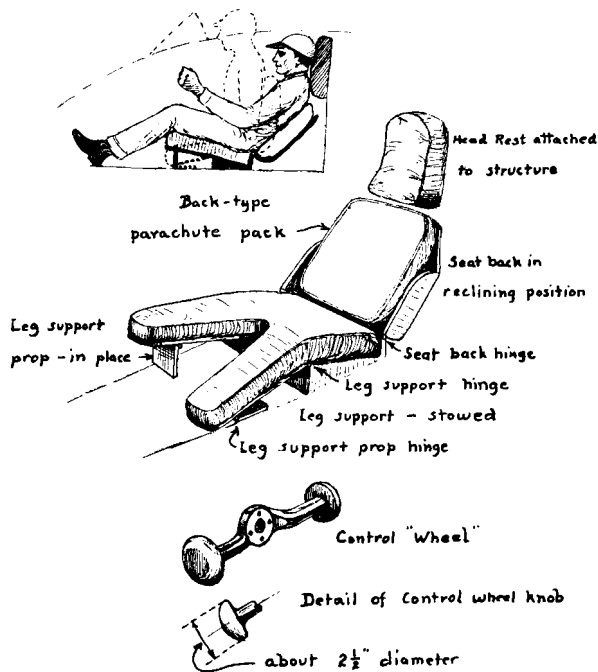
In sailplanes, with one exception, vision hasn't been a problem, and I've usually been able by means of cushions, etc., to achieve a condition whereby not only could I see where I was going but could also use the rudder. The one exception was my flight in the Olympia EON at Wichita Falls in 1947. That cockpit, rigged no doubt for elongated Charlie Wingfield, defeated me. No cushions were available, and rather than miss the chance to fly it, I took off lying practically flat on my back, holding my feet against the rudder pedals by bracing the back of my head against the bulkhead. From time to time I'd grab hold of some part of the structure with my left hand, pull myself up, take a look around at the scenery and locate the field and other aircraft, and then sink back to a not-too-comfortable view of the sky and instruments.

That won't happen to me in my sailplane! It may be that some six footer will find he can't get his knees under the instrument panel or close the cockpit cover over his head, but that will be his hard luck—I probably won't want him flying my glider anyway!

Now I don't object to reclining position, in fact it's one of my favorites, but it requires proper support—not a sagging span between butt and neck. My glider's seat-back, which will suitably house the parachute pack, will be

adjustable for two positions, a near-vertical, and a slope. The latter, fairing properly with a fixed head-rest, will result in a restful semi-reclining position and still support my head, shoulders and back for a comfortable view ahead.

To obtain full motion requires some movement of the upper leg. This means that the seat bottom cannot have too long a fore-and-aft dimension without restricting rudder con-



trol. This in turn reduces the bearing area and causes considerable discomfort in long flights.

I shall get around this by having a short, well-upholstered, fixed seat bottom, with two divided sections hinged at the front of this seat and extending forward to a point under the knee of each leg. These extensions, also upholstered, will be quickly adjustable in position. In take-off and landing, or while doing other maneuvers in which full rudder might be necessary, they will be dropped down out of the way, but while cruising in normal soaring flight where toe control of the rudder will suffice, I'll raise them to support the whole upper leg.

For less leg interference I would use a "Dep" control rather than the conventional "stick", but instead of a wheel I'll use a sort of elongated dumb-bell with a mushroom-shaped knob on each end, fashioned to fit the hand comfortably.

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