

Garnet Block,
10th Street and 2nd Avenue, A
Calgary, Alberta,
October 25, 1934.

Dear Hiram:—

I have a change of occupation and address too, although I'm still in Calgary. Tom and I gave up the Service Station owing to poor business, and I was lucky to pick up another job almost immediately. I am now caring for the heating plant in two blocks and I believe I have the most comfortable and easy job in Calgary. I come and go as I please for time is practically my own.

Our gliding activities have been hung up for several weeks because the city kicked about using the airport and we didn't have another place to go to. However, we are now lined up for a new site ~~right~~ and as soon as the drum and the nacelle on the glider is completed we shall be out again. I have taken an old Northrop fuselage and skid, and have cut it down for the wings and tail surfaces off my ship. We are also putting on a perfectly streamlined nacelle for the pilot. The nacelle is built up

of $\frac{1}{4}$ " plywood bulkheads, $\frac{1}{2}$ " x $\frac{1}{2}$ " longirons, and $\frac{1}{4}$ " x $\frac{1}{4}$ " stringers or formers. The nacelle has been built extra strong for rough ground handling and for clumsy pilots getting in and out of the cockpit. The structure is bullet or fish shaped and has a stub entering edge similar to the higher priced sailplane noses.

We have gone to extreme care in making the nacelle good looking, streamlined, and for ease of entry for pilot. When sitting in the seat it is possible to see three feet ahead of the glider while the ship is in a glide. The visibility is almost perfect and yet there is plenty of room for the largest pilots.

There is a built in streamlined headrest that tapers half way down the nacelle. For training there is a large ~~span~~ cockpit opening $26\frac{1}{2}$ " x 24" and for finished fliers a hood is put in place that leaves only the pilots head visible. He may be ready to test hop it next Sunday for I am covering the nacelle now and should get a coat of dope on this evening.

The Dorthrop fuselage is much

heavier than mine and the nacelle will add some extra weight too. There may be from 30 to 60 lbs greater weight, but when considering the ratio of lift to drag on the Durand 24 airfoil at 2° ~~incidence~~ angle of attack, we find it to be 14.5. Therefore, we have only 3.4 to 4.1 pounds of resistance to overcome to equalize the extra weight.

The advantages of covering in the pilot for better performance can readily be appreciated and then again the student becomes immediately familiarized with an enclosure and can take to a cockpit ^{in a} soarer or secondary much more intelligently. There is also a disadvantage of a cracked skid but the advantages are greater. Extra care of course must be taken in training.

Wire towing will certainly make it possible to tow a sailplane within the thrust of cumulus or storm clouds and I believe is much safer than airplane towing. We noticed the difference when changing from $\frac{3}{8}$ " rope to $\frac{1}{4}$ ". It is remarked and certainly cuts down performance. When I was in Kansas

city, we used a flexible control cable 1000 feet long, varying in diameter from $\frac{3}{32}$ " to $\frac{5}{32}$ ". Stranded cable offers considerable drag but even when using small diameter cable it has an advantage over $\frac{1}{4}$ " manila rope. We put in a non-twist link every 100 feet to prevent the wire from twisting into knots. Hard wire with its smooth surface will give better results still.

I should like to get a copy of the Soaring Society of America Bulletin so you may send order Nov. & Dec. issues for me.

In the short time we have trained in Calgary, we have put in 221 flights and put about 15 members into the air.

I am converting my fuselage into a sailplane fuselage and will build a new taper wing and rounded tail surfaces. Construction will start immediately after our converted primary is completed. Hope to have the power ready next summer early.

Write again soon, Hiram, and I shall be glad to hear of the Amisk gliding.

Sincerely,
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