A SIMPLIFIED HANGAR DESIGN

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Interested in a sailplane hangar but do not have $500 to spare? Then read the following article to see how the Quebec Soaring Club solved this problem and came up with a unique design embodying high utility at low cost.

Money was the dominant factor from the outset. We had set about the task of producing a suitbble shelter to protect our LK-10A trainer against the year round elements of rain, sun, hail and snow. Our job was further complicated because we were leasing a farm pasture for a landing strip, and if the farmer should ever decide to replace our "birds" by someone's cows, we would need something simple to dismantle and transport. We had already trod this thorney road the year before when we were obliged to dismantle the hangar for the Tiger Moth on our move to St. Jean Chrysostome from Manseau. Smarting under the memory of this fatiguing and time consuming ordeal we set about a general evaluation of hangar shapes, construction, using always the guidelines of cost and simplicity. Putting all conventional hangar designs to the test, as well as some not so conventional designs, the hangar which is described herein arose as a natural consequence of the constraints we had imposed.

The structure chosen is most aptly described as a shed of length and breath sufficient to cover the LK-10A fuselage and empennage. The shed is supported at six points aft of the sailplane wing, the forward section cantilevered over the nose to allow the fuselage to enter without removing the wings. The protruding wings are protected from harmful ultraviolet sun rays, and from garden variety hail or sleet storms by heavy duck slip covers that attach in a simple fashion. It was felt that adequate summer protection was afforded by this manner. Since the front of the shed is partially open, the canopy may be further safeguarded against blowing dust by a simple cover attached to the fuselage.

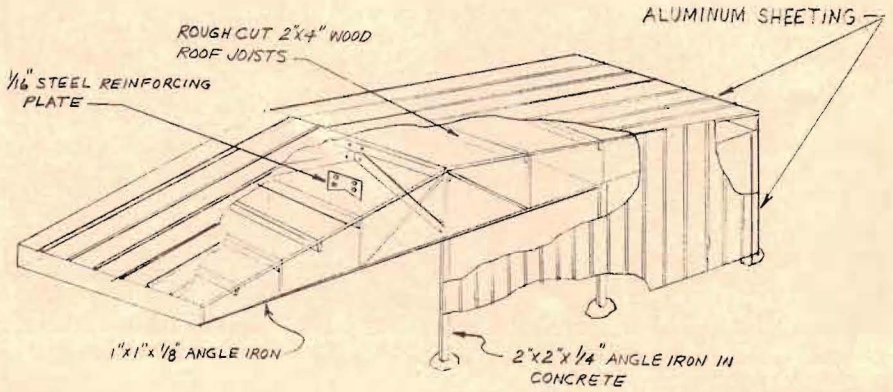
For the winter months, when complete protection is necessary, the wings are dismantled and stored inside the shed along each side of the fuselage. The shed openings are closed for the winter by the additional of plywood panels which insure a snow tight enclosure.

The hangar that less than $500 built. Simple and easy to construct, it offers ample protection.

The idea of this summer-open, winter-closed concept seemed novel enough to investigate, but the incredibly long appearance of the cantilevered nose section bode dismal predictions to the feasibility of simple lightweight construction. Some rapid stress calculations quickly dispelled all doubts however, and a preliminary proposal was made including an estimated cost. The club unanimously voted to allocate funds to construct this shelter, and the final design drawings and calculations were under taken.

Since snow loads can be very high in Quebec, the roof was peaked somewhat to alleviate this problem, but was designed never the-less to accommodate several feet more snow than is likely ever to accumulate. Because of the low height of the structure, the long overhang is an appealing invitation for passersby to swing a moment or so from the framework, so an unusual loading of 1,000 pounds was incorporated into the design. Maximum wind velocity designed into the structure was about 75 miles per hour.

In its skeleton form, the structure consists of two 1″x1″x⅛″ angle iron trusses 25′x6″ long which are bolted onto six 2″x2″x¼″ angle iron uprights set into 12 inch deep holes which were then filled with concrete. While this poses some diffi-



Hangar Cutaway