

argument in favor of slotted flaps which are discussed in more detail below.

In spite of the shortcomings of this particular flap design, the flap does provide positive features such as a lower landing speed, a much shorter take-off run and good visibility at all speeds since the angle of attack of the wing can be varied with the flap instead of by changing the attitude of the entire ship. To the pilots who have flown the ship extensively, the flap handle becomes as much an integral part of controlling the ship as the stick.

The over-all performance exhibited by the Sisu I with the flaps neutral, shows that it will match the best that the world has to offer today and that it is close to the ultimate performance barrier mentioned by the late Dr. Raspet.

In one of his lectures Dr. Raspet expressed the opinion that with our present knowledge, an ultimate glide ratio of 44 or 45 is about all that we can look forward to. The Swiss Elfe M has a quoted glide ratio of 44 but it is not stated whether this is a measured or calculated value. Those who have been engaged in designing and building high-performance sailplanes are aware of the difficulty of reaching this goal.

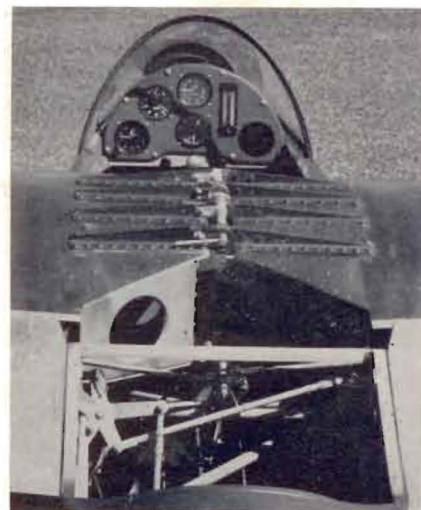
## Flying Qualities

The over-all flying qualities of the Sisu I are very good, the controls are light, responsive and smooth. Without exception, all pilots who have flown it, in spite of specific criticisms about details, were pleased with the over-all response and feel of the ship.

A good appraisal of the flying characteristics of the ship has been prepared by Dick Johnson in a separate article entitled "Test Flying the Sisu I Sailplane". The opinions expressed by Dick in this article are his impressions after his first flight in the Sisu I and in many ways they may be more accurate than impressions derived after complete familiarity is attained. Familiarity often tends to mask deficiencies since a pilot learns to automatically compensate for them and may eventually lose sight of them completely.

## The Production Version Sisu IA

The over-all quality of the design and flight characteristics of the Sisu I recommends it as a highly desirable sailplane for competition and record purposes. Since nothing in the United States with comparable characteristics is in production, the Arlington Aircraft Company was formed to obtain an FAA type cer-



A view showing the instrument panel and wing attach fittings of the Sisu I.

tificate and produce an improved version to satisfy the needs of pilots whose soaring proficiency overreaches the performance of existing production sailplanes.

The experience gained from over 100 hours of flying in the Sisu I offers a sound background for determining changes necessary to improve various details in design, to correct certain deficiencies in flying qualities and to extend the low speed performance capabilities to enable the ship to compete on equal terms in marginal soaring conditions with ships designed primarily for such conditions.

The most significant change between the Sisu I and the IA will be

## MEASURED PERFORMANCE OF SISU-I

G.W. = 660 LBS  $W/S = 6.11$  PSF

STALLING SPEEDS	
FLAP SETTING	V-MPH
0	48
5	46
10	44
15	43
20	42
25	41

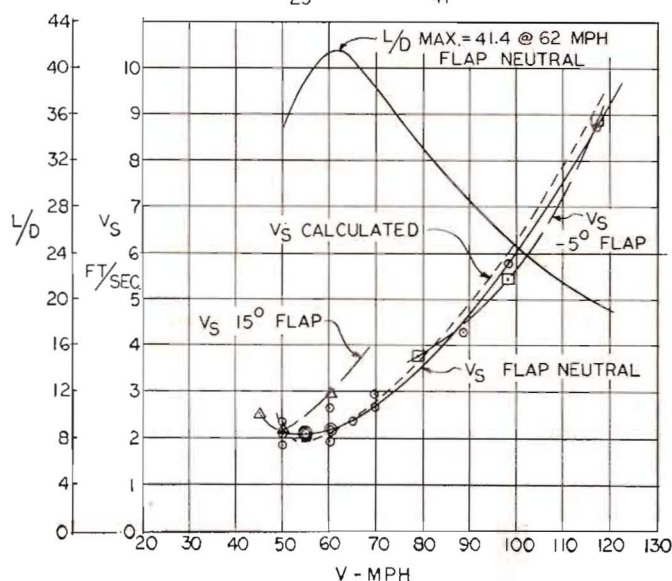


Figure 1, left.

Figure 2, below.

## PERFORMANCE OF SISU-IA

G.W. = 660 LBS  $W/S = 6.11$  PSF

