

# Sporting Glider Pick-up

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EVER since the first information on glider pick-up was released during the recent war, many of the glider fraternity have been keenly interested in the application of this development to the single and two-place sailplanes. It did not take much imagination to see the advantages to be gained by launching gliders via this method not only for retrieval but for base operation as well. Any doubts that existed in the minds of the pilots as to risks or dangers of "snatching" gliders have been allayed by the nation-wide demonstrations performed by the Troop Carrier Command with C-47s and CG-4As or CG-15s. The early rumors of pilot blackout, glider noses tearing off, wings left behind, etc. have all been put to rest as completely unfounded. The considerations that presently come to mind are more of an economic than technical nature.

Certain basic principles prevail and adaptability of gliders and tugs must be investigated before going into the economics of pick-ups. (1) Familiar to all operators of gliders and airplanes is the compatibility of tow speeds. The tow-plane must be capable of flying within the safe speed range of the glider. This, of course, is true whether pick-up is involved or not. (2) The aircraft making the pick-ups should have a normal flight weight of three times, or more, the glider weight. Thus, if the latter weighs 600 lbs., 270 kg., the airplane should gross more than 1800 lbs., 815 kg. Tug-to-glider weight ratios of  $2\frac{1}{2}$  and lower have been successfully utilized in England under war conditions but for commercial and sporting applications the reliance on maximum engine performance this calls upon would not be recommended. The ratio of three to one generally requires little more power application on the "follow-through" than is needed for normal climb with glider in tow. In retrieving or salvaging a sailplane from a particularly confined area with either deep grass or soft sand footing, more power would be neces-

sary for a few seconds. (3) The fuselage structure of the pick-up tug should provide sufficient structure to carry the pick-up loads. Generally the larger the tug, the simpler the problem; hence, a further argument in favor of the three to one, or more, weight ratio.

Practically all glider "snatches" in the past have been made with pick-up units or reels. Seven different sizes of energy absorbing units have been supplied for military gliders. Known to only a few people are the glider pick-ups made with UNOLYN, a new plastic energy absorbing material developed by All American Aviation that replaces the pick-up unit. This material can be used only once but can be supplied for quick application and without the involvements associated with the installation of a pick-up unit. UNOLYN will be discussed in more detail below.

Until a short time ago, the only unit that possessed possibilities for sporting gliders and sailplanes was the All American Aviation Model 15. The normal maximum rating of this unit is to pick up a 1500 lb., 680 kg., glider at an average speed of 120 mph, 190 khp. It is ideally suited for picking up the Cinema TG-1, Schweizer TG-2 and TG-3, Laister-Kauffmann TG-4, Pratt-Read LNE-1 or TG-32 (all two-place) or any of the three-place conversions (TG-5, TG-6 and TG-8). Needless to say, any single-place sailplanes are easily handled by the Model 15. The energy requirements in picking up the average one- and two-place sporting sailplanes would permit Model 15 operation on a frequency of a "snatch" every three to five minutes for several hours without landing or anything more than routine service. Incidentally, it would make no difference whether the gliders or sailplanes are skid or wheel mounted. The capacity of the Model 15 unit is far in excess of the requirements encountered in any contest or club activity.

To cope with the heavier loads and higher speeds encountered in post-war mail pick-up operations, the



An L-1A with the Model 15 picking-up a Piper TG-8. The tug has just left the ground after a run of about 100 ft.



The cub demonstrates the ability to climb out of small fields by using pick-up.