

solely for cargo use, to increase the payload of a tow-plane. The main point was lost in these arguments. The important fact is that the glider is a large container. As a container, it has military value when it can do a job that cannot be accomplished at all or cannot be accomplished as efficiently by any other means. Its most important military characteristic is its ability to land in small unprepared areas in which a transport plane cannot, and its ability to carry larger loads of men or equipment than can be dropped by parachute. It must be understood in its relation to this primary mission and these other means of delivering men and supplies by air. Its many advantages over the parachute as a means of delivery are obvious. Not only does it deposit its fighting team at an exact predetermined spot, but the troops are together, ready to fight the moment they stop rolling. Another great advantage is pointed up by an episode in Tunisia. A small force of Germans was thrusting forward to seize an area of strategical value to both sides. To forestall this, American parachutists, outnumbering the German force, were dropped, and succeeded in taking the area. Complete surprise was effected and the mission went off exactly as planned. However, the German force, equipped with heavy artillery, soon forced the Americans back, since the paratroops had only the smaller weapons which they had been able to jump with or drop. Had gliders been available, they might have brought to the paratroops the necessary AT guns and howitzers which would have enabled them to hold their ground.

Another aspect of the use of gliders as the sole means of performing a mission involves the pickup system. Developed by Richard duPont for the All American Aviation mail line, pickup has been expanded so that it is now perfectly feasible to snatch a fully loaded CG-4A from almost any open area. (Glider Pickup, *SOARING*, Jan.-Feb., 1943.) For operations like those in Normandy, this may have little immediate tactical value other than that gliders can be quickly and easily retrieved for succeeding missions. It does, however, open up many new tactical possibilities as we shall see, and it seems likely that the future use of the pick-up with gliders will be increasingly important.

Keeping in mind, then, that the glider is a form of large container for delivering men supplies,—and it can be retrieved full or empty, let us examine the various types of tactical operations for which gliders have been or might be used.

First in importance is the airborne attack. This is exemplified by the Crete, Sicilian and Normandy missions. It involves the use of large numbers of gliders, flying probably in darkness or half light, in an operation designed to land troops who will outflank the enemy three-

dimensionally, to seize important communications points and disrupt the enemy's rear, thus making it difficult or impossible for him to bring up reserves while a coordinated attack is launched on the ground. In Normandy the airborne troops were landed well inland astride road and rail lines while the seaborne assault stormed the beaches. Such an operation is extremely complex, and many of the factors which must be considered in planning have been learned only by hard experience. Local air superiority is an absolute prerequisite, unless complete surprise can be attained.

A second and most important type of mission is the establishment of an airhead behind enemy lines, as was done in Burma by Colonel Cochran's Air Commandos. The important difference between this and the Normandy invasion lies in the fact that here the airborne force comprised the entire assault. It was not merely sealing off an area where ground troops or seaborne troops would later attack. This unique and daring operation was the first of its kind, and proved the feasibility of such a form of warfare, particularly for this theater where a large area is sparsely held. While seaborne assault troops are limited to two dimensions and must establish their beachhead along a coastline which may be strongly defended, the airborne attack may establish its airhead anywhere in enemy territory, and there is no way of defending surely against it, except possibly by other airborne forces.

It is apparent that the mere existence of a large airborne force as a strategic reserve is a potent threat, and the enemy may have to tie up large forces to be prepared to meet the attack of airborne divisions which may drop anywhere in his backyard. In the case of the Burma operation, the mission was run off at night, with no fighter cover, and depended on complete surprise, which was attained. This show was different from the first type in that gliders were not used to carry in the assault troops. The gliders served as containers for delivering aviation engineer equipment which could prepare an airstrip so that powered transports could then make a regular shuttle run to this spot 150 miles deep in enemy territory, bringing General Wingate's raiders, food, ammunition, and other equipment. The glider landings succeeded in getting the engineers in, and the next night 65 transport planes landed, carrying the first of the Wingate forces. Within seven days a large fighting force had been delivered, including 500,000 pounds of supplies, 1,183 mules, and 175 ponies. The airstrip was not discovered by the Japs for 8 days, by which time it was much too late. Here was a clear case of gliders performing a unique service. No other way of doing this same job could have been used.

Similar to this type of mission, but on a different scale

*Soaring*