Glider DEGRAVITATION

A Study in Winches

by Frank Apgar

My first demonstration of winch launching was given by Gus Scheurer, at Millington, New Jersey. Gus had previously told me what he had in mind but, at that time, I thought it impractical.

It was quite a surprise when he and the members of his club rolled out an old Model T Ford, with a drum bolted to the right rear wheel. The car was set in position, jacked up and blocked. Two sticks were used to guide the rope. When everything was set, the rope was attached to their Mead and signals given to go ahead. The winch driver pulled down the gas and pressed hard on the clutch, then let it drop back into high. The take-off was quite different from any we had ever experienced. The glider seemed to move only about four feet on the ground before it zipped into the air on a smooth, steady climb to about 150 feet, whereupon the pilot released and glided down to a nice landing. So, there was what I believe to have been the first winch launching in America.

Our "Y Flying Club" then decided to build a winch. For our first model we used a 1919 Dodge sedan, a 16 inch diameter drum with 30 inch diameter flanges built of ¼ inch plates. For guide rollers, wooden pulleys, mounted on bicycle front wheel hubs, were used. The side rollers were steel tubes mounted on Ford generator bearings. The outfit lasted two years before the car finally laid down and died.

Other cars were used and either wore out or broke down. This may be explained by the fact that our top price for cars was $10.00. After having a lot of trouble with worn-out cars, we decided to acquire a good one, so we bought a Buick for $25.00. It has given us very good service for the past two years and is still going strong.

The drum has been changed from the right wheel to the left, and an extra set of rollers mounted on the front fender. The guide roller is mounted just in back of the driver's seat and can be operated by him in a pinch. Another and more important consideration is that he can look straight ahead and watch the launching.

At first we used ¼ inch manila rope. This we found satisfactory for primaries and light secondaries (as the New Jersey boys call them). However, one season was all we could use this rope without several breaks. Later we tried 5/16 inch manila rope and found this much more practical. We could always be sure of its not breaking the first season and there were very few breaks the second. Heavy ships were launched with safety.

Winch of the Purdue Glider Club.

Members of the Newark Glider Club then decided to try their hand at building a winch. For motive power for their machine, they used a Buick, stripped to the chassis. A drum was mounted above the drive shaft, directly behind the driver's seat, and driven by a chain through a cone clutch. One of the newest improvements was a self-winding guide. It consisted of the conventional rollers to guide the rope mounted on a double worm, also actuated by a chain off the winding drum. This winch can be operated by one man, who sits to the left of the drum. To his left is the lever to operate the clutch. The throttle is to his right. The winch has to be towed to position, as it does not run under its own power.

I would like to comment on the winches I have seen, not with the intent to criticize winches of other clubs, but to point the way for prospective builders.

First, there must be a fairly powerful car, in good condition. Without this, frequent stalling on the take-off will occur. An under-powered winch will be unable to get ships out of rough fields or launching areas where

Upper: Detail of the Hornberg Winch.
Lower: Art Schultz operating Meeker Winch.