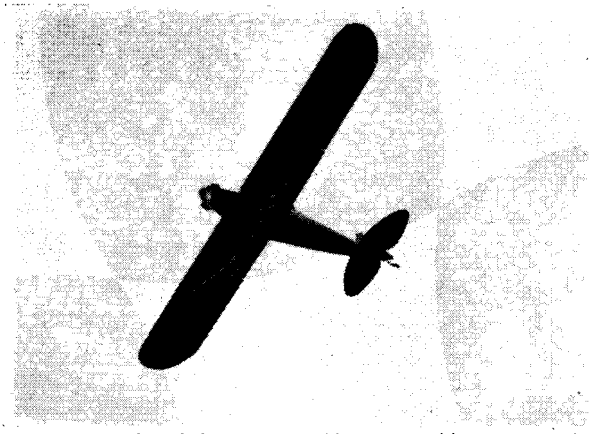
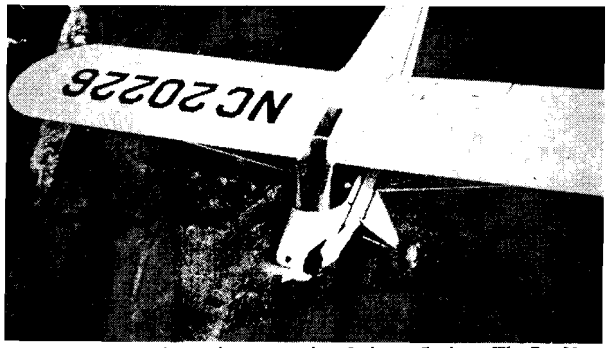


The Cub turning. Note resemblance to utility glider.



Looking down on the Cub in flight. *W. R. Mann*

Gliding & Soaring with a LIGHT PLANE

by Harold H. Brown

Few owners and users of light planes realize that in gliding efficiency, their ships are somewhere about midway between a primary and a secondary or utility glider. Neither do they realize what real fun gliding is or how much a knowledge of it adds to one's safety and security in the air.

In my own personal case, so far with my Cub I have had four "dead stick" landings, three of them emergencies. In all four of them, I landed without doing either the ship or myself any damage. In fact, outside of the motor being dead, the landings themselves were perfectly normal.

Over a year ago, I was talking with a friend of mine, Mr. Turpin, manager of the Airport at Dover, Delaware, and he told me that a dead stick landing was about a fifty-fifty chance of a crackup. Of course, it may be plain bull luck that I didn't have two crackups. However, I am inclined to lay the results to some extent to my practice of gliding.

Considerably over a year ago, I had something like an hour I could give to flying and, casting about for something to do, it struck me that it might be interesting to try some experiments in gliding. I got over a mark about four miles from the airport at about 3000 feet altitude and put the plane into a glide (motor fully throttled) first at forty miles an hour, and noted how far I was when my altimeter showed 500 feet. I repeated the experiment at 45 miles per hour glide and found that my distance wasn't quite as far. I then repeated the experiment at 35 miles and found it wasn't quite as far even as at forty-five. This, of course, showed me that my best gliding speed was somewhere around 40 miles per hour. Afterwards, I tested my airspeed indicator and found that it was approximately 12 m.p.h. slow. However, this didn't alter the fact that the airspeed as shown by my airspeed indicator that gave the best glide was somewhere around 40 miles per hour, with no wind. In the case of these trials, the wind was very slight and what there was was cross wind.

These experiments got me very much interested in the subject of gliding, and shortly after this I installed a rate of climb indicator or variometer in my ship. I found that at 40 m.p.h. by my airspeed indicator, the rate of descent was 2 miles per second, approximately 360 feet per minute. Furthermore, as the most efficient gliding speed depends to some extent on the loading of the plane, this instrument gave one a chance to find the most efficient gliding speed almost instantaneously while actually gliding by simply dividing the gliding speed by the rate of descent at the time, the combination which gave the biggest answer being the most efficient gliding speed.

Many of the light planes are not equipped with airspeed indicators, let alone rate of climb meters. To some extent, the tachometer can be used as a substitute for the airspeed indicator while gliding. For instance, I have noted that while idling on the ground with my motor fully throttled, the tachometer shows 700 r.p.m., whereas while gliding at the most efficient gliding speed, it shows 1100 r.p.m. However, beyond 1100 r.p.m. and at greater air speed, the r.p.m. increases very slightly so that this method, if it must be used, should be used with discretion. Another substitute for the airspeed indicator is a pitch indicator. This instrument is comparatively inexpensive. I might add, however, that the compass card, if one can be found on the ship, will make a fair substitute for the pitch indicator if one notes how high up the card comes on the lubber line while gliding.

The longest glide I have made so far was from directly over the center of Freehold to the Central Jersey airport in Windsor where I keep my ship, a distance of 17 miles. At my first attempt at this, I went up to 6600 feet over Freehold. It was rather interesting, as I was climbing at the rate of 1 meter per second and my airspeed indicator read 45 m.p.h. When I got over the center of Freehold on my first attempt, I simply intended to see how far I could glide. I kept the air speed at 40 and flew by airspeed motor. At times the rate of climb showed no descent at all and at others 1 meter. Owing to striking thermals, I was very much surprised to find when at 500 feet altitude I was only about two miles from the airport. It struck me that it would be worth trying again from a high altitude. I returned to the airport, put on my overcoat, and made a second attempt. This time I climbed to 7600 feet. I might mention that I climbed against the wind and glided with it. On this

(Continued on Page 12)