

ANNOUNCEMENTS

Written examination for private license will be given at any time by any Instructor at our Operations Office. This examination is to be given before your original solo X C.

As you will have noticed from the stub of your pay check, the premiums for the hospitalization insurance have been paid and your policy will be in full effect November 15th. We are hoping you will never have to use it.

Saturday, October 13th, we are going to have a large number of out-of-town visitors at the airport. Mr. Ponish urges everyone to be as neatly dressed as possible and to have the shops and hangars clean.

AVIATION VOCABULARY

Aviation vocabulary will be resumed next week.

WEIGHT AND BALANCE

By F. H. Ponish

So far, we have only dealt with the CG location of the empty airplane. When the plane is loaded with pilot, passengers, baggage, fuel and oil, the CG location will move forward or aft of the empty CG location. To insure safe flying conditions the CAA gives in the pertinent aircraft specification and the Operation Record of the plane (Form 309) the forward and aft limits that the CG is permitted to move. Under no condition must these limits be exceeded. In the aircraft specification and the operation record, there is also listed the maximum allowable gross weight (weight when the airplane is fully loaded). This weight must never be exceeded.

We shall now consider the loading of an airplane in such a manner as to arrive at the location of the CG in its extreme forward position. This is called the "CG forward extreme". Remember any added weight, forward of the empty CG location, will make the airplane nose heavy and any weight added, aft of the empty CG location, will make the airplane tail heavy.

The weights as given in Part 04 are used in all calculations of CG forward and aft extremes.

Fuel 6 lbs. Persons 170 lbs.
Oil 7.5 " Parachutes 20 "

For your convenience you will find reproduced below the aircraft specifications of a Piper Cub J3 C-65 which are pertinent to the calculations involved:

CG Range \nearrow 10.6 to \nearrow 22.6
Standard weight 1100 lbs.
No. Seats 2 (one at \nearrow 9 and one at \nearrow 36)
Baggage 20 lbs \nearrow 49
Fuel capacity 12 gals. (-18)
Oil capacity 1 gal. (-29)

Let us now find the CG Forward Extreme of a J3 C-65 which has an empty weight of 650 lbs. and empty CG location 16. Arrange your work as before:

	Wt.	Arm	Moment
	(lbs.)	(in.)	(in.lbs.)
A EW	650	16	10400

Now consider that in order to find the CG Forward Extreme the airplane must be loaded with only those items which tend to move the CG forward.

It is obvious that the plane will have to be occupied by a pilot. According to the aircraft specifications a J3 C-65 is licensed for two seats, one at \nearrow 9 and the other at \nearrow 36. The weight of a person occupying the seat at \nearrow 9 will tend to move the CG forward. However, the specifications require that a J3 C-65 be flown solo from the rear seat. It follows,