

## FOR BETTER NAVION FLYING

### SUGGESTIONS FOR OBTAINING MAXIMUM CRUISING SPEED By W. P. "Doc" Sloan

Many experts have recently claimed that there is no such thing as getting an airplane "on the step", and have tried to substantiate their claims with a convincing rigamarole of aerodynamics. However, we have learned that careful trimming of the Navion for level flight will result in an improved cruising speed of from five to ten miles per hour, dependent upon load conditions, altitude, and desired cruising speed. To avoid conflict with the experts, we could call this procedure "trimming for maximum desired cruise" or obtaining the "most desired angle of attack for designed cruise".

Regardless of what the procedure is called, we have received letters from owners claiming their airplane is considerably slower than the advertised speeds, or slower than other airplanes of the same vintage. Flight checks with these owners generally reveal that improper methods of trim for cruise flight are the primary cause for lack of speed. In most instances they are starting to reduce power just before reaching their desired cruising altitude, climbing to that altitude at cruise settings, and then mushing through the air in nose-high attitude over a considerable period of time while the airplane attempts to gain forward momentum. The result is a "sagging" effect and reduced airspeed.

To obtain the most satisfactory cruising speed from your Navion, we suggest the following steps:

1. Dependent upon cruising altitude and load, climb several hundred feet above the desired cruising altitude before reducing climb power settings. The higher the altitude and greater the load, the more allowance should be made above desired cruise. For instance, cruising at three thousand feet with a light load should call for approximately 150-200 feet above cruise altitude, while altitudes above 8000 feet

should have an allowance of 300 to 500 feet if the load is heavy.

2. When excess altitude is reached, trim the nose slightly low by use of the trim tab and slight forward pressure on the wheel. Take your feet off of the rudder pedals. Unconscious torque correction will foul up your trim.
3. If the airplane is equipped with cowl flaps, close them, providing cylinder head temperatures are not excessive. Failure to close the cowl flaps at this point will necessitate a complete re-trim if closed after cruising speed is attained.
4. Slowly reduce power to desired cruise settings. Since the airplane is trimmed slightly nose low, the initial forward momentum will be picked up somewhat rapidly, and the RPM will tend to be slightly high. As a result, the airplane will try to assume a nose-high attitude. At this point, use slight forward pressure on the wheel while trimming the climb out with the trim tab.
5. Now, this is the time to revert to our early primary training. Too many of us have become dependent upon the rate-of-climb to do a good job of trimming. Because of the lag in the instrument, it is possible to be trimming the plane down when the nose is actually low, even though a climb is showing on the instrument, or vice versa. Forget your rate-of-climb, and watch the nose of the airplane in relation to the horizon as you trim. If the nose tries to climb, use slight forward pressure on the wheel to stop it from climbing, and trim slowly until that pressure disappears. At the same time, slowly reduce the RPM which has built up.
6. By this time, your airplane will have gained its approximate cruising speed, and

your altimeter and rate of climb will have settled down in the proper places. Accurate adjustment of the mixture should not be attempted until the tachometer is properly adjusted.

7. If you have settled below your desired cruising altitude, do one of two things;

either make up your mind to cruise at a slightly lower altitude, or apply climb power and start all over again. Don't attempt to get back to your desired cruising altitude by pulling the nose up or the entire effectiveness of your trim job will be lost.

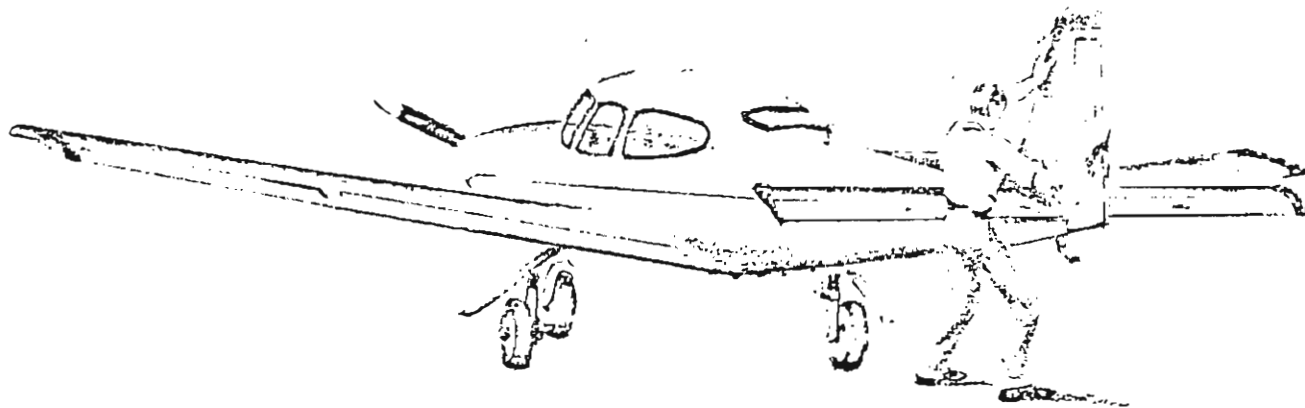
8. Now look at your airspeed. Better??????

## AVOID GROUND HANDLING DAMAGE

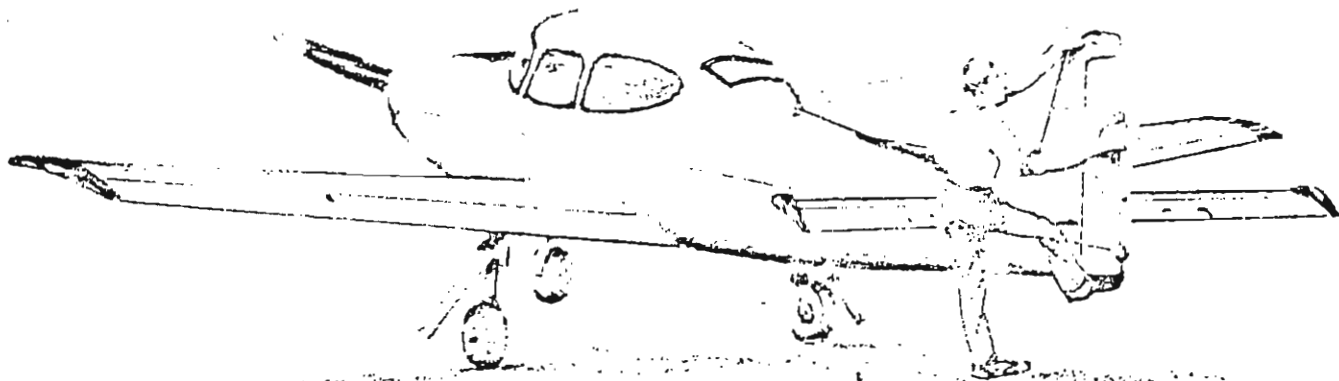
It has recently come to the factory's attention that in some cases where structural damage has occurred, it has been caused by abuses on the part of persons moving the aircraft about on the ground or in a hangar. Damage of the kind referred to above is most apt to occur on the empennage of the aircraft.

To avoid such damage, the easiest method of moving the airplane should be used and all pulling or pushing on the tail or wing surfaces avoided insofar as possible. The best method of moving a Navion is by means of a portable tow

bar attached to the nosewheel; however, there is also another satisfactory method which may be used for short moves or when the tow bar isn't handy. To use this method, first make certain that the airplanes brakes are released, then the tail of the aircraft should be pulled down by applying body weight to the leading edge of the vertical fin as shown in position I below. Next, place the right or left foot on top of the tail skid as shown in position II below. This will lift the nosewheel free of the ground, making it possible to easily steer the airplane in any direction by pushing either right or left on the tail skid.



*Position 1 - Pulling tail down to lift nosewheel.*



*Position 2 - Steering plane with foot while holding nosewheel off ground.*