

Operating Tips . . .

FOR BETTER NAVION FLYING

HOT WEATHER CAUSES WINDOW EXPANSION

During extremely hot weather, it should be remembered that the Lucite material used in the windows of your Navion canopy has a comparatively high coefficient of expansion. For this reason, the windows are cut undersize for their openings to allow for normal expansion; however, it is possible for these windows to expand beyond the allowed-for limit during unusually hot weather. A bulging of the window panels, or buckling of the rubber retaining strips will be the first indication that the allowable expansion room is exceeded.

If your Navion is exposed to such extremely high

temperatures, the window panels showing signs of over-expansion should be trimmed slightly to allow more expansion room. Over-trimming must be avoided however, or the windows will be too small for their openings during very cold weather.

Whenever possible, leaving the cockpit canopy open several inches when the airplane is parked in the hot sun will prevent a building-up of cabin temperature, which causes over-expansion of the windows and may be injurious to all cockpit furnishings including the flight and engine instruments.

KNOW THE WORKINGS OF YOUR NAVION'S LANDING GEAR CONTROL SYSTEM

If the landing gear control lever on your Navion works hard, the following description of the gear control system may explain why.

To begin with, let's assume you have just taken off and are about to move the control lever to the "Gear Up" position. Here's what happens: Moving the control lever up, repositions the hydraulic power and control valve so as to reverse hydraulic flow in the landing gear system. At the same time a flexible steel cable, running to the up-lock hooks in the wheel wells for both main gear and nose gear, is pulled. This in turn pulls the up-lock hooks into the "lock" position where they are held by spring tension. The small rollers on the bottom of the main struts and nose gear retract link engage these hooks, which hold the gear into the wheel well after hydraulic power is shut off. As the gear comes up, the lock rollers push aside the spring loaded hooks until they are able to slide past them, after which the springs snap the hooks back into "lock" position. Hydraulic power is then turned off by the pilot and the gear settles down on the up-lock hooks.

Now, let's see what happens when you lower the gear preparatory to landing. First the hydraulic power should be turned ON. This lifts the gear off the up-lock hooks because you haven't yet repositioned the control

lever for gear down. This lifting of the gear off the hooks makes it easier to operate the gear control lever because the cable linkage between the lever and the up-locks mentioned above should be rigged in such a way that the first few degrees of lever movement will pull the up-lock hooks clear of the gear before the control valve is moved far enough to reverse hydraulic flow in the system. If the cable linkage becomes stretched or out of adjustment it sometimes becomes difficult to operate the control lever due to the fact a reversal of hydraulic flow takes place in the valve before the up-lock hooks have been pulled completely clear.

To avoid stretching the cable and in order to make the gear control lever easier to operate, pilots should move the gear handle from the "UP" to "DOWN" position with a rapid, positive motion. A slow or hesitant movement of the control lever will only accentuate any slight cable misadjustment that might exist and the additional load applied to the cable by "hook drag" will only needlessly stretch the cable further out of adjustment.

The gear emergency lever located just below the regular control lever is designed to give additional leverage and more travel range on the up-lock cable so that in the event normal movement of the valve or

cable does not release the gear from an "UP" position the extra leverage and travel afforded by the emergency handle will. If at any time pushing the emergency lever down will not lower the gear with hydraulic

pressure ON, operate the lever with hydraulic pressure OFF to preclude any possibility of hydraulic pressure holding the gear in the wheel wells.

RYAN HUB CAPS FUNCTIONAL AND DECORATIVE

Besides improving the appearance of older Navions, the hub caps sold as accessories by the Ryan Aeronautical Company and furnished as standard equipment on new models, will protect the main wheel bearings from sand and water.

These hub caps can be installed on any Navion, provided it is equipped with Hayes-Goodrich type

wheels as standard equipment, or as the result of brake conversion. The protection against grit and water getting into the wheel bearings afforded by these hub caps is especially valuable on those Navions being regularly, or occasionally, operated off of dirt runways or temporary landing areas. See your Navion dealer about a set at the earliest opportunity.

DOES YOUR NAVION HAVE GAPOSIS?

Did you know that due to a characteristic of the airflow over the horizontal stabilizer and elevators on your Navion, if more than a 1/8 inch gap exists between the elevator leading edge and stabilizer trailing edge, it may be necessary to use excessive nose down trim. This is true because a wide gap at this point causes a "burble" in the air before it passes over the elevators, thus destroying much of their effectivity,

which in turn causes the airplane to become aerodynamically tail heavy.

If "Gaposis" exists on your Navion, it should be corrected by having a mechanic bend and fit the top and bottom trailing edge skins of the horizontal stabilizer in such a manner that they set closer to the elevator leading edges.

**NO OTHER PLANE COMBINES
SO MANY FEATURES SO WELL**