Separate adjustable ventilators supply additional air; two in the center of the cabin ceiling just aft of the windshield supply air for the pilot and copilot, and four in the rear cabin ceiling above the side windows supply air to the rear seat passengers.

An air exhaust vent at the rear of the cabin removes stale air and increases the flow of fresh air through the cabin.

STATIC PRESSURE ALTERNATE SOURCE VALVE.

A static pressure alternate source valve is installed in the static system for use when the external static sources are malfunctioning. This valve also permits draining condensate from the static lines.

If erroneous instrument readings are suspected due to water or ice in the static pressure lines, the static pressure alternate source valve should be opened. Since this valve vents to the static pressure of the cabin, the airspeed indicator and altimeter will show slightly different readings than normal. Therefore, the alternate static source should be used primarily as a drain valve to restore the original system.

If the alternate static source must be used for instrument operation, compensation should be made in indicated airspeeds and altitudes. In landing with the alternate source valve open and the pilot's storm window closed, fly at an indicated airspeed 10 MPH slower and altitude 50 feet lower than normal. With the static source valve open and the pilot's storm window open, make these allowances 3 MPH and 10 feet, respectively.

STARTING ENGINES.

Although either engine may be started first and the procedure is identical for both, the front engine is normally started first. The cable from the battery to this engine is much shorter which permits more electrical power to be delivered to the starter. If the battery is low, the front engine should start more readily.

The continuous-flow fuel injection system will start spraying fuel in the intake ports as soon as the throttle and mixture controls are opened and the auxiliary pump is turned on. If the auxiliary pump is turned on

accidentally while the engine is stopped, with the throttle open and the mixture rich, solid fuel will collect temporarily in the cylinder intake ports, the quantity depending on the amount of throttle opening and the length of time the pump has been operating. If this happens, it is advisable to wait a few minutes until this fuel drains away before starting the engine. To avoid flooding, be sure you are ready to crank the engine as soon as a steady fuel flow of 2 to 4 gal/hr is obtained.

Engine mis-starts characterized by weak, intermittent explosions followed by puffs of black smoke from the exhausts are caused by overpriming or flooding. This situation is more apt to develop in hot weather, or when the engine is hot. If it occurs, repeat the starting routine with the throttle approximately 1/2 open, the mixture in idle cut-off and the auxiliary pump off. As the engine fires, move the mixture control to full rich and decrease the throttle to idle.

Engine mis-starts characterized by sufficient power to take the engine away from the starter but dying in 3 to 5 revolutions are the result of an excessively lean mixture after the start and can occur in warm or cold temperatures. Repeat the starting procedure but allow additional priming time with the auxiliary fuel pump switch on "LOW" before cranking is started, or place the auxiliary fuel pump switch on "HI" immediately for a richer mixture while cranking.

If prolonged cranking is necessary, allow the starter motor to cool at frequent intervals, since excessive heat may damage the armature.

TAXIING.

Taxiing over loose gravel or cinders should be done using primarily the rear engine. This prevents the front propeller from picking up and throwing particles into the rear propeller. In addition, the rear propeller has greater ground clearance, minimizing stone damage to the propeller tips. Full throttle run-ups over loose gravel should be avoided unless the airplane has obtained considerable forward speed.

NOTE

Taxiing, as in any twin-engine airplane, should be done with both engines operating.