COWLING - MAINTENANCE PRACTICES

1. Cowling - Maintenance Practices

A. Cowling Removal

(1) Check to be sure that the engine magneto switch is in the OFF position.

(2) Disconnect the necessary electrical wiring from the engine cowling.

(3) Remove the bolts, spacers and nuts at each end of the center cowling angle and carefully remove the cowling.

B. Cowling Installation

(1) Check to be sure that the engine magneto switch is in the OFF position.

(2) Carefully place the cowling in position.

(3) Secure the cowling at each end of the center cowling angle with bolts, spacers and nuts.

(4) Connect any necessary electrical wiring to the cowling.

(5) Check to be sure the upper cowling will latch securely to the lower cowling when fully latched; if not, proceed with COWLING LATCH RIGGING.

C. Cowling Latch Rigging

The latch assembly on each side of the cowling consists of an outside master latch, two link rods and two auxiliary latches located on the inside of the lower cowl; and two brackets, each containing a hook pin, on the inside of the upper cowling. Actuating the outside latch moves each link rod to operate its respective latch. The fore and aft inside latches each incorporate a set of jaws which are open only when the outside latch is placed in the fully unlatched position. The jaws remain closed in both the latched and the pre-latched positions. To rig the latches proceed as follows:

(1) Loosen the fore and aft inside Hartwell latches on their brackets and position the latches so that when the upper cowl door is lowered the hook pin falls directly over the center of the latch. Secure the latch making sure the latch is vertically straight.

(2) Open the outside latch and HOLD the latch in the fully unlatched position. The link rods should hold both sets of auxiliary latch jaws fully open in this position: if not, loosen the connecting points of the two link rods and position the rods to fully open each jaw with the outside latch held fully open. Tighten the connecting points of the two link rods.

(3) Hold the latch fully open and lower the top cowl until the latch jaws are between the shoulder of the hook pins and the lip directly above the point. Release the latch to the pre-latched position.

(4) Secure the hook pins in this position with the jam nuts.

(5) Fully latch the cowling. There should be slight tension on the latch as it is moved from the pre-latched to the fully latched position, thus snugging down the upper cowl. The pull down tension should not be enough to bow the two link rods.

(6) Final adjustment on the latch mechanism is accomplished by raising or lowering the hook pins as required to secure the cowling with the above tension.

(7) Secure the hook pins in the proper position with the jam nuts and safety wire the jam nuts together.

CAUTION: When latching the cowling, always be sure the latch jaws fully engage the shoulder of the hook pins. After latching the cowling always pull "up" on the forward and aft cowl door handles to check for security.

D. Cowl Flap Rigging

(1) Attach the flap control rod end to the flap.

(2) Position the control arm, attached to the wheel well cover, up and forward so that the flap control rod parallels the control arm. Connect the rod to the control arm.

(3) Adjust the control rod linkage so that the door pulls in snug against the opening.

NOTE: When adjusting the rod end linkage, ensure proper rod end engagement by observing threads in the sight hole of the control end.

(4) Set the push-pull control in the pilots compartment to the closed position.

(5) Rig the push-pull control arm assembly, at the wheel well cover (right hand side), in the forward position so that the control rod will center over the arm hinge. 0.00 to 0.06 inch overcenter is needed to prevent the cowl flaps from creeping open in flight. An amount greater than this maximum may cause the control to override center and lock.

(6) Attach the control rod ball joint link to the arm assembly and pull the control to the full open position. The flap should open approximately 4 inches, measured at the aft inboard end of the flap to the face of the exhaust stack flame shield.