

PROPELLER ELECTRIC CONTROL

SUPER CONVAIR 340

REVERSING

1. Airplane landing - weight on landing gear energizes Reverse lock out Solenoid (via its relay and "scissors" switch) permits pulling throttle levers into reverse position. Throttle switches close- energizes solenoid valve, also relays B & C through I & O.
2. Relay B closes connects secondary power to relays B & C through K. Relay C closes, connects third source of power to relays B & C, through A & lower C & B points. Relay D closes - from K through upper C points, out M to No.2 blade switch.
3. Relay D closing, energizes feather pump relay; from K through centre D, centre B points & F also connects secondary ground for relays B & C through N to Press. Cut out switch.
4. Feather pump motor runs, until prop. reaches  $-4^{\circ}$  to  $-5^{\circ}$  when No. 2 blade switch opens de-energizes relay D, disconnects power to feather pump relay and pump motor stops.

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UNREVERSING

1. Throttle levers pushed forward into Unreverse regime. Reverse lock out solenoid still energized. Throttle reverse switches opened, de-energize solenoid valve. Disconnects primary & secondary power to relays B & C (at K & I) but relays remain locked in by power from A through lower C and lower B points.
2. Throttle unreverse switch closed, energizes feather pump relay through I- centre B points and F. Feather pump relay closes, pump motor runs.
3. Prop. Blades move off reverse position, at 35° to 37° (Low Pitch Gov. range) No.2 blade switch closes to ground, energizes relay E ( from P through centre C points).
4. Relay E points open (normally closed) breaks ground for relays B & C. Relay B opens - disconnects power to feather pump relay. Relay C opens de-energizes relay E. Prop. control taken over by Governor.

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MANUAL FEATHER

1. Feather switch pushed IN - connects power to contact plate from 1. Energizes feather switch holding coil; 3 to 7 to Press. Cut Out Switch. Lights up feather button; Energizes feather pump relay from 2. Energizes relay D; from 4 through B. to M & No.2 blade switch.
2. Feather pump motor runs. Relay D closes & makes secondary ground for feather switch holding coil, as safeguard against oil pressure surges opening Press Cut Out Switch.
3. As feathering proceeds Blade No.2 switch opens at 6° to 12° before full feather (96°); relay D opens & breaks secondary ground for feather switch holding coil.
4. Pressure Cut-Out Switch opens at full feather (96°) (650P.S.I) de-energizes feather switch holding coil - contact plate returns to neutral - button light goes out - de-energizes feather pump relay - Feather pump motor stops.

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UNFEATHER

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1. Feather switch pulled OUT, connects D.C power to contact plate from 1. Energizes feather pump relay from 11 through D & F. Energizes relay A from 5 through C & J to No.1 blade switch (closed on feather).
2. Feather pump motor runs. Relay A closes, energizes Solenoid valve, from 6 through G & B.
3. Blade No. 1 switch opens ( at High Pitch Gov. range) breaks ground for Relay A which opens thus disconnecting power to Solenoid valve ( between G & B) Valve de-energized.
4. Props soon begin to "windmill" - Pilot releases pull on switch- it resumes to neutral Power disconnected at feather switch contact plate. De-energizes feather pump relay. Feather pump motor stops. Prop. control taken over by Governor.