

**TEMPORARY REVISION NO. 26  
TO PC-12 PILOT'S OPERATING HANDBOOK  
REPORT NO. 02211**

**SECTION 4 – NORMAL PROCEDURES**

This Temporary Revision:

- Adds an updated Note for Torque Limiter settings at the takeoff procedure and affects Section 4 Page 4-18,
- Updates the Torque Limiter description and affects Section 7-10 Page 7-10-12.

Record the incorporation of this Temporary Revision on the Log of Temporary Revisions.

**SECTION 4 – NORMAL PROCEDURES**

**4.9 TAKEOFF**

- |    |                     |  |
|----|---------------------|--|
| 1. | EHSI                | CHECK HDG  |
| 2. | ECS switch          | OFF<br>(If torque as per Static Takeoff Torque chart in Section 5 is below flat rating)  |
| 3. | Power Control Lever | SET<br>(Under certain hot and/or high airfield altitude the engine power is below the torque limiter setting and manual power setting is required according to Static Takeoff Torque chart in Section 5) |

**CAUTION**

THE TORQUE LIMITER ASSISTS THE PILOT IN SETTING THE ENGINE POWER. THE PILOT IS RESPONSIBLE TO RESPECT ALL ENGINE OPERATING LIMITS.

**NOTE**

Increasing airspeed might cause torque and ITT to increase. If torque increases above 44.3 psi (CAS caution), reduce power to avoid a CAS warning.

- |    |   |                              |
|----|---|------------------------------|
| 4. | Engine instruments:   |                              |
| a. | Torque  | MONITOR                      |
| b. | ITT   | MONITOR                      |
| c. | Ng  | MONITOR                      |
| d. | Oil Temp/Pressure   | MONITOR                      |
| 5. | Rotate at $V_{R_1}$ , initial climb at $V_X$ or $V_Y$ , as required |                              |
| 6. | Brakes  | PRESS to stop wheel rotation |

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After lift-off and positive rate of climb:

- |     |                     |                            |
|-----|---------------------|----------------------------|
| 7.  | Landing Gear Handle | UP                         |
| 8.  | Flaps               | 0° above 100 KIAS          |
| 9.  | Taxi Light          | OFF                        |
| 10. | External Lights     | AS REQUIRED                |
| 11. | Yaw Damper          | AS REQUIRED                |
| 12. | WX Radar            | AS REQUIRED (if installed) |

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**SECTION 7 – DESCRIPTION**

**SECTION 7-10 ENGINE**

**TORQUE LIMITER**

A torque limiter is installed on the engine at the torque transmitter boss on the forward engine case. Within the unit is a sealed bellows connected directly to the torquemeter oil pressure outlet, a chamber connected to the reduction gearbox to provide gearbox static pressure and to a drain port on the thrust bearing cover, a balance beam, and a pneumatic pressure orifice.

Oil pressure proportional to engine torque is applied through cored passages in the reduction gearbox to the sealed bellows in the limiter body. The bellows is mechanically connected to the balance beam and to the controlling spring. With an increase in torque pressure, above the control spring setting, the balance beam adjusts to compensate for this increase and causes the pneumatic pressure orifice to open and bleed off Py air. As Py air pressure is bled off, the fuel flow from the FCU is reduced by closing the metering valve, causing engine speed and hence engine torque to decrease until engine torquemeter pressure is balanced by the torque control spring pressure; at this time the Py pressure orifice close.

The torque limiter should assist the pilot during takeoff. In most cases it limits the maximum torque to below 44.3 psi (see description below). However, it is the pilot's responsibility to respect all engine operating limits including torque by reducing engine power.

The torque limiter limits the engine torque to below 44.3 psi. Due to ambient pressure at altitude and interference with the FCU maximum governing speed, maximum torque may not be obtained.

Engine torque will drop approximately 3.9 psi per 10,000 feet of altitude. Above 102% to 104% Ng (maximum Ng limit) the torque will decrease by approximately 2.9 psi. After this point the engine power is limited to maintain 104% Ng.

The maximum torque droop due to altitude has been considered in the static takeoff and balked landing torque charts.

If the maximum torque according to the torque chart is below flat rating (below the torque limiter setting), the torque has to be set manually by the PCL. Torque limiter operation must always be verified to ensure engine limits are respected. During the takeoff and the balked landing the PCL does not need to be retracted unless any limits are exceeded. The torque (if below flat rating) and ITT increases are acceptable.

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