

Bell Helicopter **TEXTRON**

Bell Helicopter Textron
Division of Textron Inc.

Post Office Box 482
Fort Worth, Texas 76101
(817) 280-2011

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INFORMATION LETTER

TO: ALL 214B/B1 HELICOPTER OPERATORS

SUBJECT: INFLIGHT R.P.M. MANAGEMENT

The 214B/B1 Flight Manuals Section I allow steady state operation from 98% to 100% N₂ and transient operation from 95% to 105% N₂. Steady state droop is observed when the helicopter is lifted from flat pitch on the ground, 100% N₂ into a hover. The N₂ RPM should stabilize at 98% to 101%. Transient droop will be observed during the above maneuver as the short duration loss of N₂ RPM as collective pitch is being applied to attain hover. This transient droop should not result in an N₂ RPM of less than 95%.

Prior to take-off from a hover the N₂ RPM should be adjusted to 100%. As airspeed is increased in forward flight N₂ will increase to between 101% and 102% N₂ and should be readjusted to 100% N₂ for cruise flight.

When collective is lowered for an approach from level flight, N₂ will increase from the previously selected 100% to as much as 105% N₂ depending on the abruptness of the maneuver. Collective pitch control and cyclic flare should be utilized to prevent N₂ RPM from exceeding 105%. Do not readjust N₂ RPM with the beep switch during this maneuver.

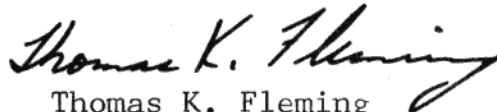
During application of collective pitch, as the helicopter is brought to a hover, increase beep to replace the down adjustment for cruise flight in Para. 2.

Steady state droop is adjusted as a maintenance function, by the mechanic, should it exceed the 3% discussed in Para. 1 above. See Droop Cam adjustment procedures in manual.

Transient droop is the short duration under speed that is observed when changing from a low power condition to a higher

12 September 1977

power condition and is proportional to the amount of power change and the quickness with which the collective is moved. Overshoot is just the opposite: short duration increase of RPM when collective is lowered. There is no maintenance adjustment that a mechanic can make to change this condition. Power changes from flat pitch to 100% torque should not exceed the transient limits unless the collective is moved very rapidly. Normal control movements should not result in more than 2% or 3% transient droop or overshoot.



Thomas K. Fleming
Manager
Product Support Engineering