

OPERATING Limitations

NF/Nr
(Min) 91
(Norm) 103
(Max) 112

AIR SPEED (MAX)
Sea Level, STANDARD DAY
Up To 19,500 Lbs 142 KTS
19,500 Lbs to 22,050 Lbs 138 KTS

T_Q
(Norm) 40-86
(Max Dual Eng) 103
(Max Single Eng) 123
(5 Sec Transient)
DUAL Engine 206-240
(5 Sec Transient)
SINGLE Engine 123-150

N_g
(Min) 56 ± 3 %
(Norm) 70 - 100 %
(Military)
(30 min) 100 %
(5 min limit) 102.7 %
(Topping limit)
(28 seconds) 106.0 %

T₅ Norm
(Norm) 300-660°
(Military) 696°
(5 min limit) 696°-721°
(28 Sec limit) 721°-735°

T₅ START
OK up to 735°
Log Time + Temp above 735°
OK if Aborting 840° to 950°
Above 950° no further
STARTS + Inspection required

ENG OIL Pressure
(Min) 10 PSI
(Norm) 24-64 PSI
(Max) 75 PSI

ENG OIL TEMP
(Min) -54° C
(Norm) 7°-121° C
(Max) 121° C

Transmission Limits
NORM DUAL Eng 86
NORM Single Eng 103
30 min Limit - DUAL Eng 103
30 min Limit - Single Eng 123
5 Sec Limit - DUAL Eng 120
5 Sec Limit - Single Eng 150

TRANS OIL Pressure
(Min) 12 PSI
(Norm) 35-90 PSI
(Max) 100 PSI

TRANS OIL Temp
(Min) -6.7° C
(Norm) 40-135° C
(Max) 145° C

Above 41° FAT

(2) OK to operate from 135° C to 145° C but must Log

Time and Temp

(8) Above 145° C main Gearbox must be changed

NORMAL Utility Hydraulic Pressure is from 2600 to 3150 PSI

NORMAL Primary and Auxillary Hydraulic Pressure is From 1300 to 1600 PSI

The Primary and Aux caution light will illuminate when pressure drops below 1000 PSI

Maximum Airspeeds

Sideward Flight - 35 KTS

Rearward Flight - 30 KTS

AUX Float Bags Inflated - 70 KTS

MIN Rate of Descent in an Autorotation - 70 KTS

MAX glide Distance in an Autorotation - 110 KTS

MAX water Touchdown Speed - 20 KTS

MAX Airspeed to operate cargo door or windows AND AFT Ramp is 115 KTS

HOVERING TURNS WILL NOT exceed 360° IN 15 seconds

MAX Angle of BANK is 50°

Landing Gear Limitations

A) Landing gear shall be down and locked anytime overhead below 300 ' AGL

B) MAX groundspeed on touchdown or for Takeoff is 40 KTS

C) MAX Touchdown SINK rate with gross weight of 19,500 Lbs is 480 FPM

APU

AT Approx 30 % speed The APU Advisory Light illuminates

AT 45 % speed, Release The function switch

Clutch engagement should occur at 76 % to 85 % speed

A writeup on CG 4377 is required if engagement occurs above 85 %

With clutch engagement acceleration will slow down for approximately 3 seconds, then rapidly increase to 98% to 100%. A momentary overshoot of 110 % is allowed

The Total time for a start should be 5 to 15 seconds

Slower start Time in colder weather can be anticipated but should never exceed 18 seconds

The APU should be shutdown if The APU hangs up for more than 4 seconds. 6 seconds when The Temperature is below 29°C .

At least one fuel boost pump per engine, if not crossfeeding, is required for operation of the helicopter during any of the following conditions:

- | | |
|--|--|
| 1) Above 6000' Pressure Altitude | 5) ^{One pump per tank during} TAKEOFF AND LANDING |
| 2) Below 600 lbs of Fuel per Main Tank | 6) Above 43° FAT |
| 3) Transferring Fuel | 7) DUMPING FUEL |
| 4) When Fuel Filter Bypass Light is "ON" | 8) When a fuel low pressure caution light is "ON" |

STARTER OPERATIONS

Do not operate the starter for more than 30 seconds continuously in one start attempt.

Allow a 3 minute cooling period between start attempts.

No more than 3 start attempts is allowed in any 30 minute period.

High velocity or gusty winds can cause excessive blade flapping. The rotor should not be engaged in winds above 60 kts. When engaging or disengaging the rotor in high or gusty winds, the rotor should be accelerated or decelerated as rapidly as possible, limiting torque used to 60%.

ANTI-ICE

Engine anti-ice should be on anytime FAT is below 10° C.

When temperature in the bellmouth reaches 38° the caution light should go out while the advisory lights will remain on as long as the system is on. At temperatures above -18° C the caution lights should not remain illuminated during ground operations.

Torques should be matched within 10% of each other during all normal flight operations.

Power Available Check -

The torque readings obtained must be within -7% of that obtained on the TOLL CARD

NORMAL APPROACH - Do not exceed 121° nose up attitude at the point of ground contact. AT 15° nose up attitude, the tail pylon will contact the ground on landing

WATER TAXI - Nr should be 103% and should not water taxi faster than 10 knots

WATER LANDING Do not exceed 7° nose up attitude
MAX Touchdown Speed is 20 knots

Operation of the hoist at airspeeds above 80 knots IAS will result in possible airframe/hoist damage

TRAIL LINE HOIST - The weak link is designed to separate when more than 300 lbs. of pressure is brought to bear on it.

There is 240 feet of usable cable on the rescue hoist

With a properly operating engine oil low level caution system, the engine oil quantity low caution light comes on when 1.5 gallons of oil remain

Flights with no indication of transmission oil pressure can be sustained for approximately 45 minutes.

Ng/T5 Check -

Subtract 10° C from T5 if engine anti-ice is on during the check

Write up on CG 4377 if T5 is 15° below or 20° above Ng baseline

Terminate mission if Ng/T5 check shows T5 30° below or 35° above indicated baseline

The hover lights should not be left on for longer than 15 minutes.

Instrument Flight Procedures

- A) A minimum speed of approximately 40 kts should be observed to maintain normal flight characteristics in fwd flight
- B) Limit cruising flight turns to 20° angle of bank
- C) STANDARD rate turns recommended below 6000' MSL
- D) AT higher altitudes use 1/2 STANDARD rate turns

Rescue hoist Lifting and lowering capacity is 600 pounds

DURING engine start, when the engine lites off and accelerates to approximately 49 ± 4 % Ng the starter and ignition will automatically drop out.

DURING The accel/decel check, the maximum Nf on each engine should agree within 2 %

An adjustment to engine topping is not required if either of the following conditions are met:

A) Ng is not more than 0.5 % below the figure determined from the chart and TS is between 700 °C and 721 °C

B) TS is 716 °C to 721 °C and Ng does not exceed or is no more than 1.5 % below the maximum operational limit as determined from the chart.

(If neither of the above conditions can be met a notation should be made on CG-4377)

The recommended hovering altitudes for weights up to 19,500 lbs is 5 FT. Between 19,500 lbs AND 22,050 lbs The recommended altitude for hovering is 1-3 FT.

When The Push-To-Test control knob of The radar altimeter is depressed, a visual indication of 100' $\pm$ 15 is indicative of a satisfactory system.

The minimum governing range is reached at approximately 87 % NF.

The ground idle position is located at approximately 56 $\pm$ 3 % Ng.

What control movement limits cannot be exceeded when the AUX servo switch is turned off?

Collective $\frac{1}{16}$ ", Cyclic $\frac{1}{8}$ ", Pedals $\frac{1}{16}$ ".

To ensure that the rotors will not turn with both engines in GROUND IDLE, a minimum of 320 PSI is required on the rotor brake.

Fuel can be dumped at a rate of 160 lbs per minute (both engines)

ALL practice autorotations should be entered from an altitude of no less than 700' AGL.

Directional control becomes MARGINAL if RPM decays to 85 % NF/Nr.

One rotation of the yaw trim knob turns the helo approximately 72°.

IN MAKING Topping Adjustments ONE FULL TURN
(36 CLICKS) Clockwise INCREASES / ~~decreases~~
Topping Approximately 2 1/4 % Ng.

1 CLICK equals 1 ° TS

The cabin heater draws approximately 8 PPH FUEL
from The FORWARD MAIN FUEL TANK IN The High Mode

FUEL for The APU is supplied from The AFT MAIN
TANK AT A RATE of 73 Pounds per HOUR (MAXIMUM)

IF The primary flight control servo system fails IN
flight, Airspeed should be adjusted To 80 KNOTS.

AFTER completing a patch to 50 feet, The ALTITUDE
shall not be cranked down below 15 feet on The
RADAR ALTIMETER