

FWD FLIGHT

TAXI/HOVER

COCKPIT

TROUBLESHOOTING TABS

APU

A

CW4 BURNETT

CH-47 AMTPC

CH-47
AIRCRAFT
MAINTENANCE
TEST FLIGHT
HANDBOOK

0044

LIST OF CHARTS

- Pedal Split Conversion Chart
- Engine Fire Extinguisher Pressures
- CH-47A Cockpit Controls Position Envelope
- CH-47B Cockpit Controls Position Envelope
- CH-47C Cockpit Controls Position Envelope
- Power Topping T55-L-5
- Power Topping T55-L7/7B
- Power Topping T55-L7C (66:1)
- Power Topping T55-L7C (64:1)
- Interstage Air Bleed Band Closure

LOCATED AFTER EMERGENCY PROCEDURES

INSTRUMENTS B

FLIGHT CONTROLS

ELECTRICAL D

HYDRAULIC E

SAS/SPEED TRIM F

ENGINES AND TRANSMISSIONS G

FUEL H

VIBRATIONS I

COMM/NAV J

EMERGENCY

BEFORE EXTERIOR CHECK

**Required paperwork completed
and log book and records checked**

**Weight and balance forms checked (Compute if
necessary)**

**Flight crew briefing on purpose and objectives
of flight**

BATTERY switch OFF

EXTERIOR CHECK

Entrance Door

1. Condition — CHECK
2. Upper section escape panel — CHECK
secure

General Inspection

1. Protective covers — REMOVED
2. Blade tiedowns — REMOVED
3. Wheels — CHOCKED
4. Fuel leakage — CHECK
5. Area — Clear of obstructions and loose
objects

Right Cabin Fuselage Section

1. AC power equip compartment
 - a. Equipment — CHECK
 - b. Door — LATCHED

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2. Fwd Aux Fuel Tank — CHECK leakage, servicing, and cap secure
3. Static port — CHECK
4. Fuel vents — CHECK clear
5. Navigation light — CHECK condition
6. Forward landing gear support structure — open access panel — CHECK for cracks or distortion
7. Forward landing gear — CHECK the following:
 - a. Tires for inflation, condition, and ply rating
 - b. Shock strut for inflation
 - c. Hoses and wheel brake assembly for leakage, chafing, and security
 - d. Fwd Aux fuel tank electrical connections and fuel lines — CHECK condition and security
 - e. Close access panel
8. Fuel main tank — CHECK leakage, required servicing, and cap secure
9. Fuselage skin — CHECK for dents, wrinkles, and loose or missing rivets
10. Fuel vents — CHECK clear
11. Aft aux fuel tank — CHECK leakage, servicing, and cap secure
12. Windows — CHECK for cracks and cleanliness

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Top of Fuselage

1. Forward rotor — CHECK lag damper lock-outs removed, security of components, oil level in all reservoirs, forward and aft blades for damage, sight cups ("A" Model only), Rotor — Phasing marks alignment, droop stops, pitch links, swashplate, upper boost actuators for condition security and leakage, and speed trim actuator for condition
2. SAS Port and Lines — CHECK condition and security "A" Model only
3. Forward transmission — CHECK for servicing
4. Hydraulic filter buttons and hydraulic lines — CHECK
5. First and second stage mixing units — CHECK for condition and security
6. Synch shaft adapter — CHECK
7. Forward pylon fairing — CHECK secure
8. Drive shafting, lord mounts, Thomas couplings, and support brackets — CHECK for condition, security, and foreign objects
9. Push-pull tubes, bellcranks, oil lines, hydraulic lines and electrical wiring — CHECK for condition and security
10. Drive shaft fairing — CHECK secure
11. Formation lights — CHECK condition

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12. Top of fuselage — CHECK for foreign objects
13. Fuselage skin — CHECK condition
14. No. 1 engine — CHECK as follows:
 - a. Inlet cover removed
 - b. Inlet for foreign objects
 - c. Oil level and cap secure
 - d. Fairing secure
 - e. Tailpipe for cracks, hot spots, security, and cover removed
 - f. Power turbine section, ignitors, and fire warning system
15. Aft rotor — CHECK as follows:
 - a. Lag damper lockouts removed
 - b. Oil levels in all reservoirs, sight cups ("A" Model only) for oil
 - c. Droop stops, pitch links, swashplate, upper boost actuators, and speed trim actuator
 - d. Thrust bearing — CHECK condition
16. Upper boost actuator safety blocks — REMOVED
17. Aft transmission — CHECK condition
18. Hydraulic filters, reservoirs and lines — CHECK for condition and security
19. Rotor phasing marks — CHECK for proper alignment

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20. Anti-collision and formation lights — CHECK
21. Combining transmission area — CHECK as follows:
 - a. Oil coolers and lines
 - b. Servicing
 - c. Phasing mechanism
 - d. Engine to transmission drive shafting
22. Doors and covers — SECURE
23. No. 2 engine — CHECK same as No. 1 engine

Aft Pylon Section

1. Aft landing gear support structure — CHECK for cracks or distortion
2. Aft landing gear — CHECK the following:
 - a. Tires for inflation and condition
 - b. Tires for ply rating
 - c. Shock strut for inflation and static lock unlocked
 - d. Power steering actuator, wheel brakes, and hoses for leakage, chafing, and security
 - e. Electrical connections for condition and security
3. All access doors and covers — SECURE
4. Ramp control — As required and close access door

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5. Hydraulic system test panel — CHECK all caps secure
6. Hydraulic oil cooler air inlet — CHECK clear
7. Fluid vent and drain lines — CHECK clear
8. APU air inlet — CHECK clear
9. Cargo loading ramp — CHECK condition
10. APU exhaust outlet — CHECK cover removed and outlet clear
11. Navigation light — CHECK condition
12. Fluid vent and drain lines — CHECK clear
13. All access doors and covers — CHECK secure
14. Aft landing gear support structure — CHECK for cracks or distortion
15. Aft landing gear — CHECK the following:
 - a. Tires for inflation, condition, and ply rating
 - b. Static ground wire secure and contacting the ground
 - c. Shock strut for inflation and static lock unlocked
 - d. Hoses and wheel brake assembly for leakage, chafing, and security

Left Cabin Fuselage Section

1. Windows — CHECK for cracks and cleanliness

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2. Fuselage skin — CHECK for dents, wrinkles, loose or missing rivets
3. Aft aux tank fuel vent — CHECK clear
4. Main and aux fuel tanks — CHECK leakage, required servicing, and caps secure
5. Fuel vents — CHECK clear
6. Static port — CHECK clear
7. Navigation lights — CHECK condition
8. Anticollision lights — CHECK condition
9. Antennas — CHECK condition and security
10. Forward landing gear support structure — CHECK for cracks or distortion
11. Forward landing gear — CHECK the following:
 - a. Tires for inflation, condition, and ply rating
 - b. Shock strut for inflation
 - c. Hoses and wheel brake assembly for leakage, chafing, and security
 - d. Fwd aux fuel tank electrical connections and fuel lines — CHECK condition and security
12. DC power equipment — CHECK battery connected, transformer rectifiers for condition and security, and sump jar
13. Access door — SECURE
14. Escape panel — SECURE

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Forward Cabin Section

1. Copilot's jettisonable door — CHECK condition and security
2. Copilot's hydraulic brake lines — CHECK for leakage
3. SAS yaw ports — CHECK clear
4. Pitot tube — CHECK cover removed
5. Windshields — CHECK for cracks and cleanliness
6. Windshield wipers — CHECK condition
7. Nose access panel — CHECK secure
8. Rear view mirror — CHECK condition and cover as required
9. Landing-search lights — CHECK condition
10. Pilot's hydraulic brake lines — CHECK for leakage
11. Outside air thermometer — CHECK
12. Pilot's jettisonable door — CHECK condition and security
13. Heater intake and exhaust outlet — CHECK clear

NEUTRAL RIG CHECK

Perform Neutral Rig Check Controls (left stick)

Pedals — Neutral (Even)

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Longitudinal — $11\frac{1}{2}'' \pm \frac{1}{2}''$ from
Emergency Switch

Lateral — $15\frac{1}{2}'' \pm \frac{1}{2}''$ from left side
frame

Thrust — $5\frac{3}{8}'' \pm \frac{3}{8}''$ from top of pivot
block

Stick positioner should be at "0"

All Upper Boost Actuators

$6\frac{1}{4}'' \pm \frac{1}{8}''$

Ball Slider

Forward — $2\frac{5}{8}'' \pm \frac{1}{16}''$

Aft — $2\frac{7}{8}'' \pm \frac{1}{16}''$

INTERIOR CHECK

Cabin Fuselage Section (right-hand side)

1. Cabin and ramp lights forward control switches — As required
2. Interior — CHECK for loose equipment
3. Speed trim amplifier function switch — CHECK at AC position

NOTE

During flight, if the switch is left at AFT, FWD, A/S, or MAN., longitudinal cyclic speed trim programming may be affected

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4. Heater compartment — CHECK security of components, vibrator contact position, and ignition circuit fuse
5. Winch and winch accessories — CHECK security
6. Emergency escape axe — CHECK condition and security
7. Seats, litters, or cargo — CHECK security
8. Heat outlets — position as required
9. Cabin lights — CHECK condition
10. Jettisonable cabin windows — CHECK security
11. First aid kits — CHECK security
12. Rescue hatch door — CHECK and position as required
13. Cargo hook — CHECK and position as required — check air charge — 2100 PSI
14. Lower rescue door — CHECK and position as required
15. Hoist control panel — CHECK switches and stow grip
16. Litter straps — CHECK stowed if not used

Aft Cabin Section

1. Combining transmission area — CHECK for leaks
2. Cabin and ramp lights switch — As required
3. Ramp control sequence valve — As required

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4. Ramp control lever — As required
5. ENGINE NO. 2 fuel valve — CHECK CLOSED
(Check Open "C" Model only)
6. ENGINE NO. 2 FUEL VALVE caution light —
PRESS-TO-TEST. The BATTERY switch must
be at ON to check the light. (Light will not
illuminate on "C" Model unless Fuel Valve
is closed)
7. CROSSFEED FUEL VALVE — CHECK
CLOSED
8. CROSSFEED FUEL VALVE caution light —
PRESS-TO-TEST. The BATTERY switch must
be ON to check the light
9. MANIFOLD VALVE — As required
10. MANUAL DEFUELING VALVE — CHECK
CLOSED
11. Hand pump — CHECK condition and leaks
12. Manual control valve — CHECK NORMAL
13. Utility Filler and Pressurized Tank — CHECK
for leaks and fluid level
14. Utility hydraulic accumulators — CHECK

NOTE

If pressure in the utility hydraulic accumulator is below 3,000 psi, it is necessary to pressurize the system with the hand pump before attempting to start the APU.

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15. Ramp area hydraulic lines — CHECK for leaks and filter button position
16. Utility bleed valve — CHECK for contamination
17. Ramp — CHECK condition and position as required
18. Ramp escape panel — CHECK security
19. Jettisonable cargo door — CHECK secure
20. APU — CHECK condition
21. AGB area lines — CHECK for leaks and condition
22. Flight control accumulators — CHECK 1,400 psi precharge
23. Flight boost manifolds — CHECK for leaks
24. Aft transmission and AGB — CHECK for oil level and condition (Use the OIL LEVEL CHECK light switch if necessary.)
25. Engine fire extinguisher pressures — CHECK (Refer to Table 2, Engine Fire Extinguisher Pressures)
26. Fire extinguisher circuit breakers — IN
27. Troop alarm box — CHECK condition
28. APU fuel solenoid valve — CHECK
29. APU manual fuel shutoff valve — CHECK OPEN
30. Compass flux valve — CHECK security

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31. Rearview mirror — CHECK stowed (If not installed)
32. APU fuel pump — CHECK for leaks and condition ("A" & "B" Model)
33. Engine No. 1 fuel valve — CHECK CLOSED (CHECK OPEN - "C" Model)
34. ENGINE NO. 1 FUEL VALVE caution light — PRESS-TO-TEST. The BATTERY switch must be ON to check the light. (The light will not illuminate on "C" Model unless Fuel Valve is closed)
35. Ramp interphone control panel — As required
36. Hand fire extinguisher — CHECK pressure and security

Cabin Fuselage Section (left-hand side)

1. First aid kits — CHECK security
2. Litter straps — CHECK stowed if not used
3. Jettisonable cabin windows — CHECK secure
4. Handcrank — CHECK stowed
5. Cabin heater thermostat — CHECK

NOTE

If the left side of the A/C is exposed to the sun, the thermostat will heat up sufficiently to signal the heater not to light off.

6. Transformer-rectifier air intake screens — CHECK clear

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7. Cabin escape panel — CHECK security
8. Hand fire extinguisher — CHECK pressure and security
9. Troop alarm box — CHECK condition
10. Avionic equipment — CHECK security of components and connections
11. CHECK SAS Electrical connections for condition and security
12. Litter poles — CHECK secure
13. SAS amplifier selector switches — CHECK at AC position
14. First aid kit — CHECK security
15. Troop CMDR seat

Flight Control Closet

1. Filters — CHECK
2. Hydraulic Lines — CHECK for leaks and security
3. SAS extensible links — CHECK condition and security
4. Electrical wiring and plugs — check condition and security
5. Lower Boost Actuators — CHECK for condition, leaks, and security
6. DCP Speed and Stick Trim Actuator — CHECK nominal length — $34\frac{19}{32}$ " \pm $\frac{1}{16}$ " condition and security

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7. Flight Controls — CHECK all push-pull tubes, magnetic brakes and viscous dampers for condition and security



COCKPIT CHECK

Pilot/Copilot Seats — CHECK

1. Axis adjustment and lock in place
2. Seat belt and shoulder harness
3. "G" lock manual and automatic operation

Pilot/Copilot Windows and Doors

1. Open and close (50-lb maximum force)
2. Slide operation (15-lb maximum force)
3. Handle alignment — CHECK
4. Jettison doors using inside and outside handles - 50-lb maximum force (optional)

Fire Bottle Security

Spare Lamp Box — CHECK

Cockpit Placard

1. Takeoff and landing checklist
2. Radio identification
3. Magnetic compass card

Adjust Mirror (if installed)

Circuit Breakers — As required

Switches

1. Lights — As required
2. Battery switch — OFF

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3. Generator switches — OFF
4. Utility System switch — As required
5. Anti-icing switches — OFF
6. Ignition switches — OFF
7. Start fuel switches — CLOSE
8. Flight control centering switch — ON
9. Hydraulic boost switch — BOTH ON
10. SAS switch — BOTH ON
11. Heater — OFF
12. Troop jump lights switch — OFF
13. Troop alarm switch — OFF
14. Windshield wipers switch — OFF
15. Engine fuel valve switches — CLOSE ("A"
and "B" model only)
16. Crossfeed fuel valve switch — CLOSE
17. Fuel booster pump switches — OFF
18. Hoist control and cargo hook switches —
OFF
19. Static discharger — OFF

Instrument Panel

1. Magnetic compass — free of bubbles
2. Fire extinguisher agent switch — NEUTRAL
3. Fire control handles — CHECK IN
4. Instrument range markings

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- a. Rotor tach
 - ("A" Model)
Red radial at 204, 233, 261
Green arc from 204 to 233
 - ("B" Model)
Red radial at 204, 233, 261
Yellow arc from 204 to 223
Green arc from 223 to 233
 - ("C" Model)
Red radial at 214, 233, 261
Yellow arc from 214 to 223
Green arc from 223 to 233
- b. Torque meter
 - ("A" & "B" Model)
Red radial at 860
 - ("C" Model)
Red radial at 890 (Dual Engine)
1015 (Single Eng.)
- c. A/S IND
 - ("A" Model)
Red radial at 132 knots
 - ("B" & "C" Model)
Red radial at 174 knots
- d. N_1 Tach
 - Red radial
Per individual eng.
- e. EGT Gauge (L-7C Engine)
 - Red radial: 740 and 816

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Blue radial: 700
Green arc: 230 to 660
Yellow arc: 752 to 816
(L-7/L-7B)
Red radial: 735, 816
Green arc: 230 to 635
Yellow arc: 746 to 816
(L-5)
Red radial: 638, 760
Green arc: 230 to 602
Yellow arc: 649 to 760

f. Eng. oil temp.

Red radial at 138°C

g. Eng. oil press.

Red radial 10 and 110 psi
Yellow arc 40 to 50 psi
Green arc 50 to 90 psi

h. Xmsn oil press.

Red radial 20 psi
Green arc 20 to 90 psi

i. Xmsn oil temp.

Red radial 130, 140°C
Green arc 60 to 130°C
Yellow arc 130 to 140°C

j. Flight boost press.

Red radial 2500, 3200 psi
Green arc 2500 to 3200 psi

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- k. Utility boost press.
 - Red radial 2500, 3400 psi
 - Green arc 2500 to 3400 psi
- 5. Transmission oil pressure selector switch — AFT
- 6. Transmission oil temp. selector switch — SCAN
- 7. Fuel quantity selector switch — LH Tank, ("C" Model-Total)
- 8. Radar altimeter (if installed) — SET
- 9. Compass slaving switches — IN
- 10. VGI switches — NORM
- 11. Clocks — SET
- 12. Cockpit air knobs — CLIMATIC

Console

- 1. Navigation equip — OFF
- 2. Stick positioner — ZERO
- 3. Air control handles — CLIMATIC
- 4. Marker beacon sensitivity switch — As required
- 5. Marker beacon switch — OFF
- 6. Aft wheel swivel lock switch — As required
- 7. Engine condition levers — STOP
- 8. Emergency SAS release — RELEASE (Guard up)

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9. Speed trim function switch — AUTO
10. Pilot and copilot interphone panel switches — As required
11. Communications equip — OFF
12. Transponder — (IFF) OFF
13. Power steering switch — OFF
14. Troop commander's interphone panel switches — As required
15. Personal equip — CHECK

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Malfunction

Battery Switch — ON	D1
1. Check ICS all positions	J1
2. Cockpit lights	
a. Dome and utility lights	D2-5
b. Instrument flood lights	D6
c. Jump lights and troop alarm	D7,8
d. Cabin lights (jump lights go to dim on red cabin light position)	D9,10
3. UHF radio — ON then OFF	J2
BATTERY Switch to Emergency Position	D11
1. ICS — CHECK	
2. Caution lights — OUT	
3. FM radio — ON then OFF	J2
4. Emergency beep	G1
5. BATTERY switch to ON	
Caution Lights	D12
1. Test switch (all lights illuminate)	D13
2. Master caution lights — press to reset	D14
3. Bright dim switch — Operation	D15
4. Dome light switch to white position; dim caution lights go to bright	D16
Utility Hydraulic Switch — ON	
1. Reset parking brake	E1

Malfunction

- | | |
|--|-----------|
| 2. Check parking brake caution light operation | E2 |
| 3. Check swivel lock operation | |

APU Start

- | | |
|---|-----------|
| 1. APU switch to APU position | |
| 2. Three warning lights operation — (EXH. TEMP. and OVSP illuminated) (OIL PRESS press to test) | A2 |
| 3. APU to START (90% within 14 seconds maximum) | A3 |
| 4. Stabilize 98 - 106% | A4 |

Generator - Rectifier Operation

- | | |
|--------------------------------------|---------------|
| 1. Turn on each generator | D17 |
| 2. Each generator operates both T/Rs | D18,19 |

Aft Transmission Pressure-Check**Hydraulic Boost Pressure Indications**

- | | |
|--|-------------|
| 1. Pressure within 30 seconds maximum after APU start | E3 |
| 2. No. 1 and No. 2 boost pressure stabilize at 2500-3200 psi | E4-6 |
| 3. Utility boost press stabilize at 2500 - 3400 psi | |
| 4. ± 50 psi fluctuation maximum | |

Windshield Anti-Ice**CAUTION**

Do not operate system above an outside air temperature of 24°C. **D20,21**

Pitot and SAS Port Heat D22

1. Observe No. 2 A/C load meter

Lights

1. Search **D23-25**
 - a. Light
 - b. Auto retract
2. Anti-collision **D26,27**
3. Position and formation lights **D28,29**
4. Instrument **D30,31**
5. Emergency flood lights **D6**
 - a. Pilot instrument light rheostat — ON
 - b. GENERATOR CONTROL and BATTERY switches — OFF
 - c. Check emergency flood lights — ON **D32**

Center Flight Controls**Radios — ON****Fire Detection Lights D33**

Malfunction

T-Handle Fuel Shutoff

- | | |
|-------------------------------|-----------|
| 1. Turn both fuel valves — ON | H1 |
| 2. Operate T-Handles | H1 |
| 3. Fuel valve closed — CHECK | H1 |

Crossfeed Valve Operation **H2****VGI**

- | | |
|-------------------------------------|-----------|
| 1. 90 seconds maximum to align | J3 |
| 2. Pitch/roll adjustment and travel | |
| 3. Emergency operation | |

Turn and Slip Indicators

1. Alignment between indicators

Altimeters

- | | |
|--|-----------|
| 1. Set field barometric press on both altimeters | B1 |
| 2. Observe both alt ± 50 feet of field elevation | |

Fuel Gauge

- | | |
|--|-------------|
| 1. Left side: | |
| 2. Right side: | H3,4 |
| 3. Total (Full tanks-7000 lbs) "C" Model
(Full tanks-4000 lbs) "A" "B" Models | |

Malfunction

- | | |
|---------------------------|-------------|
| 4. Left and right - total | H3-5 |
| ±300 lbs. "C" Model | H6,7 |
| ±50 lbs. "A" & "B" Models | |

Control Interference **C1,2**

1. Perform control check
 - a. Both boost
 - b. Single boost

NOTE

Pedals adjusted full aft, will not contact floor.

NOTE

As each boost is turned OFF, observe warning light ON at 2,000 ± 50 psi. As each boost is turned on, observe boost press to normal range within two seconds. Select No. 1 boost On and place APU/AGB switch to start, observe No. 1 boost drop to 500 ± 50 psi and No. 2 boost returns to normal range as No. 1 falls below 2,000 psi.

E9,10

E7,8

Control Centering **C3-5**

1. Switch ON — holds control at full displacement
2. Switch OFF — CHECK control force feel

Control Travels**C6**

1. Check cockpit indicator position vs measured neutral measurements obtained from previous rig check
 - a. Longitudinal travel 7.5" fwd
6.5" aft ± 0.5 " (Use indicator)
 - b. Trim wheel full fwd, travel 8" ± 0.5 "
 - c. Trim wheel full aft, long. aft travel
7 $\frac{1}{8}$ " ± 0.5 "
2. Lateral travel from measured neutral approximately equal
3. Directional travel approximately equal
4. Thrust travel detent to full down 1 to 1.5"
5. Lateral play between cyclics $\frac{1}{8}$ " maximum

Control Break Out Forces

1. Longitudinal fwd and aft 1.2 to 2 lbs
2. Lateral left and right 1.2 to 2 lbs
3. Directional left and right 11 to 20 lbs
4. Detent (5 lbs max. up and 9 lb. max. down)
("A" Model detent — 4 lbs max. up and 5 lbs max. down)

NOTE

Break out forces should be approximately symmetrical.

Aft Transmission Pressure — SCAN**Engine Start and Operation**

1. Prestart
 - a. Beep full decrease (hold for 8 sec.) **G2,3**
 - b. E.C.L. to GND.
 - c. Fuel boost pumps — ON
 - d. Fuel Valve — OPEN ("A" & "B" Models)
 - e. Start fuel — ON
 - f. Ignition — ON
2. Start
 - a. Depress Start Button and hold until N_1 reaches 35%
 - b. Start fuel off at EGT 450°C or $N_1 = 35\%$
 - c. Engine motoring speed 18% within 15 seconds **G4,5**
3. Start to ground idle speed 45 seconds maximum (N_1 37.5 - 42.7%) EGT not to exceed 816°C for L-7, 760°C for L-5 **G6,7**

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Malfunction

4. Oil pressure 10 psi minimum **G8,9**
5. Ignition off
 - a. Cross feed — OPEN ("C" Model)
 - b. Repeat steps 1b, 1d, 1e, and 1f for other eng.
 - c. Repeat steps 2, 3, and 4
 - d. After engine stabilizes at ground idle — Ignition — OFF
6. Ground idle to flight idle over 80 rotor rpm. (Torque not to exceed 1200 foot lbs) (On single engine "C" Model, 1300 foot lbs) **G10**
 - a. Boost Pumps — ON
Crossfeed — CLOSED ("C" Model)
7. Beep switch operation, pilot and co-pilot No. 1 and BOTH **G11-16**
 - a. Pilot and copilot rotor tachometer readings 4 rpm split max. **B2-4**
8. Bleed band check (optional) (Ref. Fig. 5)
 - a. Operate eng. at F.1. for 2 min.
 - b. Station C.E. at eng. to determine closure
 - c. Slowly increase beep (rate not to exceed 1% N_1 in 10 sec.)
 - d. Check N_1 speed with Fig. 5 (Tolerance +0, -2% N_1)

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Malfunction

9. Eng. oil press flux check ± 5 psi max.

APU OFF

NOTE

Rotors at 230 rpm (225 "B" Model)

Fuel Boost and Crossfeed — CHECK

1. All boost pumps off **H8,9**
 - a. Observe both warning lights — ON
2. Crossfeed — OPEN **H2,H10**
3. Turn on boost pump (one at a time)
 - a. Observe both warning lights — OUT
4. Check all boost pumps **H8,9,10**

Underfrequency Check

1. Both engines to minimum beep
2. Both emergency beeps to full decrease
3. Remain at or below 193 ± 4 rpm for 5 seconds ("A" and "B" Model) 204 ± 4 rpm for 5 seconds ("C" Model and "B" Model w/2200 series xmsn)
4. Check generators remain on line above 197 or 208 rpm
5. Beep to 230 rpm (225 "B" Model) **D34**

No Relative Torque Change From Detent to Full Down Movement of Thrust **G17**

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Malfunction

Transmission Press Indicator Operation **B5-8**

1. Check individual readings. Maximum allowable flux (10% of nominal reading)
2. Scan reading ± 3 psi of low transmission
3. Test position to 0 psi
4. Warning lights ON at 20 ± 2 psi

Transmission Temperature Indicator Operation **B9-14**

1. Check individual readings
2. Scan reading $\pm 5^\circ$ of high temp. Xmsn
3. Test position to -70°C or below

Engine Vibration Check (optional)

Blade Track (SAS "OFF")

1. 230 rpm (225 "B" Model)
2. Thrust in detent
3. $\frac{1}{4}$ " spread between each blade and master blade
4. $\frac{3}{8}$ " maximum total separation

Radio Operation

1. Ensure all radios are operating

Anti-Collision Lights — ON

TAXI AND HOVER CHECK**Brakes**

1. Pilots and copilots, right and left **11-13**

Power Steering Check

1. Left and right turns
 - a. Full 90° turns
2. Wheel centering — swivel locks **E17,18**
LOCKED
3. Directional control **E14-16**
 - a. Swivels unlocked — 10° deviation per 100 ft.
 - b. Swivels locked — 5° deviation per 100 ft.

Lift Off

1. Check ground instability
2. Apply brakes and lift front gear off ground and check rear brakes
3. Check flight control response
4. SAS "ON". Check for hardovers
5. Check instruments for normal operating ranges
6. Lift off to hover

SAS Check**F1-6**

1. Stabilize at a hover

Malfunction

2. Check pitch, roll, and yaw on Both, No. 1, and No. 2 SAS

NOTE

No return to trim in roll axis on "B" & "C" Model

3. Check engage error on each SAS

Control Positions

C8,9

NOTE

SAS off if engage error exists

1. Longitudinal
 - a. Crosswind hover
 - b. Measure position
 - c. Note indicator position
 - d. Tolerance $\frac{3}{8}$ " forward to $\frac{5}{8}$ " aft of neutral position
2. Lateral **C10**
 - a. Hover into wind
 - b. Measure position
 - c. 0 to $\frac{1}{2}$ " right of neutral position
3. Directional **C11**
 - a. Hover into wind
 - b. Measure position
 - c. $\frac{1}{2}$ " maximum split (Refer to Table 1.)

4. Trim wheel operation
 - a. Note longitudinal cyclic position on indicator **C12,13**
 - b. Rotate trim wheel full forward

NOTE

Position indicator should move 1.4 ± 0.5 inch

- c. Repeat for aft

Engine Anti-Ice — CHECK (Do not check with screens installed) D35

1. Place A/C on ground. Thrust in detent
2. Engine Anti-Ice switch — ON
 - a. Note EGT rise (both engines)
 - b. Note N_1 drop (both engines)

Single Engine Operation

1. Hover on individual engines **G18**
2. Note
 - a. N_1
 - b. EGT
 - c. TQ
3. Torques should be within 12% differential

Emergency Beep Operation

1. Both generators — OFF **G1**

CH-47 AMTPC

Malfunction

2. Battery switch to emergency **G19**
3. Check each emer beep switch for increase then decrease

EGT — CHECK **B15**

1. Match N_1 's
2. Note EGT readings

Droop Eliminator **G20**

1. Establish 230 rpm in detent (225 "B" Model)
2. Lift off to stabilized hover
3. Maximum stabilized droop ± 3 rpm

Fuel Boost — CHECK **H11**

1. All boost pumps OFF for 2 minutes

Heater Operation **D36-39**

1. Check heater duct controls
2. Light off within 30 seconds
3. Switch heater OFF. Check that blower continues to run until combustion chamber cools
4. Vent position operation

Flight Instruments

1. Gyro compass 2° split between pilot and copilot indicators

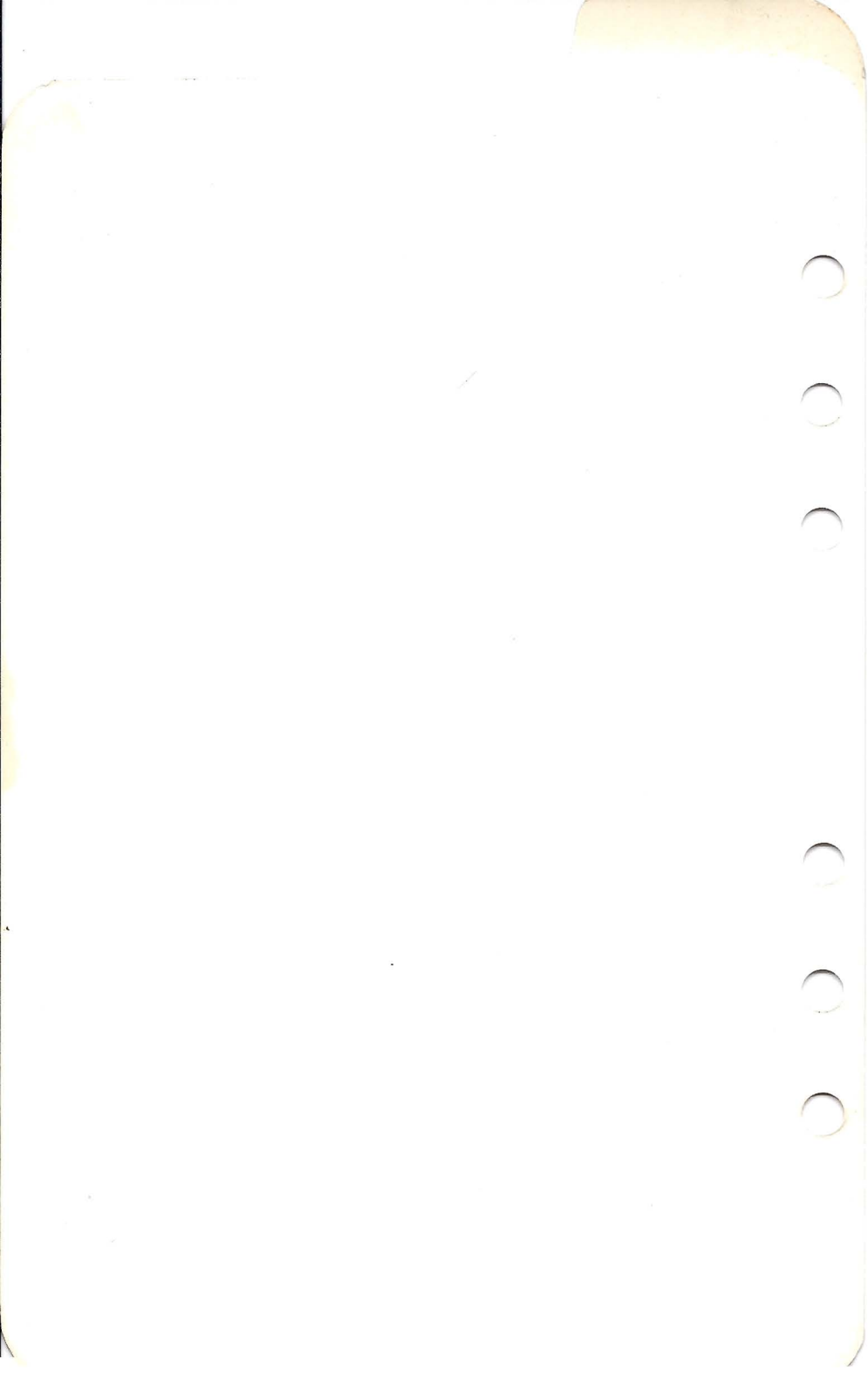
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Malfunction

2. Mag compass $\pm 5^\circ$ of gyro compass indication
3. VGI alignment
4. Turn and slip indicator
5. IVSI
6. Clocks

Instrument Check

1. Check all instruments for normal operation **B16,17**



FORWARD FLIGHT CHECK - CH-47A**Speed Sweep Check****NOTE**

Record zero A/S long. cyc. position from hover check.

1. Airspeed 60 knots:
 - a. Record long. cyclic pos. from indicator
 - b. Record lateral cyclic position
 - c. Record directional pedal split
 - d. Check airspeed on pilot and copilot indicators

B18,19**NOTE**

7 knot differential between indicators
4 knot fluctuation all speeds

2. Airspeed 80 knots
 - a. Record long. cyc. position
 - b. Record cyc. speed trim lift off (lift off 80 knots \pm 10 knots)
3. Airspeed 100 knots
 - a. Record long. cyclic position
 - b. Note airspeed pilot and copilot indicators (5 knots difference maximum)

Malfunction

- c. Record cyclic speed trim full extension **F8-10**
100 \pm 10 knots.
- 4. Airspeed 120 knots
 - a. Record long. cyclic position
- 5. Airspeed 132 knots or Vne
 - a. Record long. cyclic position
 - b. Record lateral cyclic position
 - c. Record directional pedal split
 - d. Check airspeed of pilot and copilot indicators (5 knots difference maximum)
 - e. Evaluate 1/Rev and 3/Rev vibration at rotor rpm closest to 230 for minimum vibration level **I1-3**
 - f. Check coordinated turns
- 6. Airspeed 100 knots
 - a. Record retraction of speed trim 100 \pm 10 knots
- 7. Airspeed 80 knots
 - a. Record full retraction of speed trim (80 knots \pm 10 knots)

Manual Operation

- 1. Establish 90 knots A/S
- 2. Place speed trim switch to manual. **F11**
Fully extend and retract both actuators, observing indicator movement. Switch to auto.

NOTE

Indicators return to mid range

SAS evaluation 100 knots

F12,13

1. Check both No. 1 and No. 2 in pitch, roll and yaw axis.
2. Check coordinated turns on single SAS

FORWARD FLIGHT CHECK - CH-47B

Speed Sweep Check

NOTE

Record zero A/S long. cyc. position from hover check

1. Stabilize A/S at 50 knots. Observe that both speed trim indicators are in the lower green block
2. Increase A/S to 60 knots
 - a. Record long. cyclic position from indicator
 - b. Record lateral cyclic position
 - c. Record directional pedal split
 - d. Check airspeed on pilot and copilot indicators **B18,19**

NOTE

7 knot differential between indicators
4 knot fluctuation all airspeeds

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Malfunction

3. Increase A/S to 70 knots. Observe that both indicators have started to move from retracted position. Record cyclic speed trim lift off. (Lift off 60 knots \pm 10 knots)
4. Airspeed 80 knots. Record long. cyclic position
5. Airspeed 100 knots
 - a. Record long. cyclic position
 - b. Note airspeed, pilot and copilot indicators (5 knots difference maximum)
6. Airspeed 120 knots
 - a. Record long. cyclic position
 - b. Observe that both indicators are in the upper green block (Fully extended 120 knots \pm 10 knots)
7. Airspeed 140 knots
 - a. Record long. cyclic position
 - b. Record lateral cyclic position
 - c. Record directional pedal split
 - d. Check airspeed of pilot and copilot indicators. (6 knots difference maximum)

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Malfunction

8. Airspeed 150 knots
 - a. Evaluate 1/Rev and 3/Rev vibration
 - b. Check coordinated turns
9. Airspeed 120 knots
Record retraction of speed trim 120 ± 10 knots
10. Airspeed 60 knots
Record full retraction of speed trim (60 knots ± 10 knots)

Manual Operation

1. Establish 90 knots A/S
2. Place speed trim switch to manual. **F11**
Fully extend and retract both actuators observing indicator movement. Switch to auto, note indicators return to mid range.

SAS evaluation 120 knots **F12,13**

1. Check both, No. 1 and No. 2 in pitch, roll and yaw axis.
2. Check coordinated turns on single SAS

FORWARD FLIGHT CHECK - CH-47C**Speed Sweep Check****NOTE**

Record zero A/S long cyclic position from hover check

1. Stabilize A/S at 50 knots. Observe that both speed trim indicators are in the lower green block
2. Increase A/S to 60 knots
 - a. Record long. cyclic position from indicator
 - b. Record lateral cyclic position
 - c. Record directional pedal split
 - d. Check airspeed on pilot and co-pilot indicators **B18,19**

NOTE

7 knot differential between indicators
4 knot fluctuation all airspeeds

3. Increase A/S to 70 knots. Observe that both indicators have started to move from retracted position

Record cyclic speed trim lift off (lift off 60 knots \pm 10 knots)

4. Airspeed 80 knots
Record long. cyclic position

Malfunction

5. Airspeed 100 knots
 - a. Record long. cyclic position
 - b. Note airspeed pilot and copilot indicators (5 knot difference maximum)
6. Airspeed 120 knots
Record long. cyclic position
7. Airspeed 140 knots
 - a. Record long. cyclic position
 - b. Record lateral cyclic position
 - c. Record directional pedal split
 - d. Check airspeed of pilot and copilot indicators (6 knots difference maximum)
8. Airspeed 150 knots
 - a. Record long. cyclic position
 - b. Evaluate 1/Rev. and 3/Rev. vibration
 - c. Check coordinated turns
9. Increase airspeed to 160 knots. Observe that both indicators are in the upper green block (fully extended 160 knots ± 13 knots)

NOTE

If unable to reach 160 knots, estimate indicator position

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Malfunction

10. Airspeed 150 knots
Record retraction of speed trim (160 knots \pm 13 knots)
11. Airspeed 60 knots
Record full retraction of speed trim (60 knots \pm 10 knots)

Manual Operation

1. Establish 110 knots A/S
2. Place speed trim switch to manual. **F11**
Fully extend and retract both actuators observing indicator movement. Switch to auto, note indicators return to mid range

SAS Evaluation 120 knots **F12,13**

1. Check both, No. 1 and No. 2 in pitch, roll and yaw axis
2. Check coordinated turns on single SAS

Engine Power

1. Determine topping altitude from **G21-24**
Figure 1, 2, 3, or 4
2. Single engine at maximum beep-drop rotor rpm to attain maximum N_1 reading
3. Record
 - a. Pressure altitude (Set altimeter at 29.92)
 - b. Outside air temp.

- c. Airspeed
- d. Torque
- e. RPM
- f. N_1
- g. EGT

NOTE

"C" Model — maximum torque single engine 1015 lb. ft. Dual engine 890 lb. ft.

Autorotation

C14,15

- 1. Establish 70 knots
- 2. Record
 - a. Pressure altitude
 - b. Outside air temp.
 - c. Fuel
 - d. RPM in detent
 - e. RPM in flat pitch
 - f. Pedal split (2" maximum) (Refer to Table 1.)

Navigation and Communication

- 1. UHF
 - a. Transmit and receive
 - b. Preset and manual tune

J4

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Malfunction

- 2. FM
 - a. Transmit and receive
 - b. Homing **J5**
 - (1) Center needle note relative course
 - (2) OFF flags concealed
- 3. Gyro and magnetic compass
 - a. Synchronize compass **J6**
 - b. Magnetic compass $\pm 5\%$ of gyro **J7**
compass on North, South, East, West headings
 - c. 2° maximum difference between pilot and copilot indicators
- 4. VOR
 - a. Tuning, reception, volume **J8**
 - b. No. 2 needle on gyro compass $\pm 3^\circ$ **J9**
of true magnetic course to station
 - c. Course direction indicator **J10**
 - (1) $\pm 3^\circ$ of true magnetic course
 - (2) 10° off course gives full needle displacement
 - d. Station passage
 - e. Total No. 2 needle fluctuation 10° **J11**
- 5. ADF
 - a. Tuning, reception, volume

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Malfunction

- b. Check ADF, ANT, LOOP, and BFO operation
- c. No. 1 needle on gyro compass $\pm 3^\circ$ **12,13**
of magnetic bearing to station
- d. Total No. 1 needle fluctuation $\pm 5^\circ$ **J14**
- e. Station passage
- 6. Marker beacon
 - a. Push-to-test lights **J15**
 - b. Check audio high and low
 - c. Check light operation high and low **J16**
- 7. Transponder CHECK APX-44 or IFF **J17**
 - a. Master Control Switch — ST. BY. pilot light — ON
 - b. Warm up 3 to 5 minutes
 - c. Audio switch — OFF
 - d. I/P switch — OFF
 - e. Function control switch — CIVIL
 - f. Mode 2 and 3 switch — As required
 - g. Mode 1 and 3 code control switch — As required

Miscellaneous

- 1. IVSI
- 2. Turn and slip indicators
- 3. Altimeters

Malfunction

- a. Pilot and copilot difference
 - 100 @ 0 to 500 feet
 - 150 @ 1000 - 2000 feet
 - 200 @ 2000 - 4000 feet
 - 300 @ 4000 - 8000 feet
 - 350 @ 8000 - 10,000 feet
 - b. No needle sticking at any altitude
4. Heater operation

Record Instrument Indications

After Landing Check

- 1. Anti-collision lights OFF
- 2. Transponder (IFF) OFF
- 3. SAS OFF
- 4. Swivel locks — As required
- 5. Power steering — As required

Engine Shutdown

- 1. Parking brakes — SET
- 2. Minimum beep — CHECK
 - a. Both engines
 - (1) 204 ± 4 rpm (L-5 engines)
 - (2) 208 ± 4 rpm (L-7 engines)
 - (3) 220 ± 2 rpm ("C" Model)
 - b. Individual engines
 - (1) 204 ± 4 (L-5 engines)

G25,26

Malfunction

- (2) 208 ± 4 (L-7 engines)
- (3) 216 ± 2 ("C" Model)
- c. Adjust for closest possible TQ match without excessive N_1 split

NOTE

1. "B" Model with -2200 series aft transmission installed, "C" Model minimum beep applies
2. During minimum beep check, record ground idle speed for each engine.
3. Always beep up then down after each adjustment
 - d. No. 2 engine condition lever — GROUND THEN STOP
 - e. Fuel boost pump switches — OFF
 - f. Fuel valve switch — CLOSE ("A" & "B" Models only)
 - g. Engine beep trim switch (No. 1 and 2) Regain 230 ROTOR RPM 225 ROTOR RPM "B" Model
 - h. APU — START
 - i. Engine beep trim switch (No. 1 and 2) — DECREASE
 - j. No. 1 engine condition lever — GROUND THEN STOP
 - k. Fuel boost pump switches — OFF

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Malfunction

- l. Fuel valve switch — CLOSE ("A" & "B" Models only)
- m. All radios and navigation equipment — OFF
- n. Generator switches — OFF
- o. APU — STOP
- p. Battery switch — OFF

Conclusion and De-Briefing

1. Check engine topping (See figure 1, 2, 3, or 4)
2. Check stick plot (See chart 1, 2, or 3)

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SECTION A APU

Malfunction

Probable Cause

- A1.** APU will not start
- Precharge on accumulator too low
 - No fuel to APU
 - No ignition
 - Acceleration schedule too low
- A2.** Warning lights do not press to test
- Battery disconnected
 - Burned out bulb
 - Battery low
 - Faulty wiring
- A3.** APU does not reach 90%RPM within 14 seconds
- Clogged start fuel nozzle
 - Fuel control "acceleration schedule" requires adjustment
 - Inadequate fuel supply
 - Main fuel injectors clogged
 - Defective fuel control
- A4.** APU operates below normal stabilized speed of 98 to 106%
- Fuel control "rated speed adjustment" requires adjustment

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Malfunction

Probable Cause

- b. Defective hydraulic pump motor is causing APU drag
- c. APU bearing wear causing excessive drag

**SECTION B
INSTRUMENTS**

Malfunction	Probable Cause
B1. Altimeters in excess of ± 50 feet of field elevation	a. Altimeter set wrong b. Faulty altimeter
B2. Pilots and copilots rotor tachometer indicator inoperative	a. Defective rotor tachometer generator b. Defective wiring
B3. Pilots rotor tachometer indicator inoperative	a. Defective rotor tachometer indicator b. Defective wiring
B4. Greater than 4 RPM split between pilots and copilots rotor tach indicators	a. Defective indicators b. Defective wiring
B5. Pressure on low individual indication is more or less than ± 3 psi of scan indication	a. Faulty indicator b. Faulty selector switch
B6. Fluctuation is more than 10% of nominal indication	a. Faulty transducer

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Malfunction	Probable Cause
	b. Defective pressure relief valve
B7.	Transmission oil pressure indicating system inoperative
	a. Transmission oil pressure circuit breaker out
	b. Defective indicator
	c. Defective selector switch
	d. Defective wiring
B8.	When scan select switch is placed to test, pointer moves to 0 psi but the transmission oil low caution light does not come on
	a. Defective indicator
	b. Defective wiring
B9.	Temperature drops to -70°C (scan or individual positions)
	a. Faulty temperature bulb
	b. Broken wire
	c. Faulty indicator
	d. Faulty selector switch
B10.	Temperature goes to full high indication
	a. Faulty temperature bulb
	b. Faulty indicator
	c. Faulty selector switch
B11.	Temperature indication on high individual indication is more or less than $\pm 5^{\circ}$ of scan indication
	a. Faulty indicator

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Malfunction	Probable Cause
	b. Faulty selector switch
	c. Defective wiring
B12.	With scan selector switch in TEST position, the indicator pointer moves toward but not below -70°C
	a. Defective indicator
	b. Defective selector switch
B13.	Transmission oil temperature indicating system inoperative (all positions)
	a. Transmission oil temperature circuit breaker out
	b. Defective selector switch
	c. Defective indicator
	d. Defective wiring
B14.	One transmission does not indicate when selected
	a. Defective selector switch
B15.	EGT's have excessive split with matched N_1 's
	a. Faulty EGT indicator
	b. Faulty EGT harness
	c. Check EGT system calibration
B16.	Engine oil pressure fluctuates in excess of ± 5 psi
	a. Defective indicator
	b. Defective transmitter
	c. Filters clogged

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Malfunction

Probable Cause

- d. Sticky relief valve
- e. Defective oil pump
- B17.** Unable to reduce angle box pressure
 - a. Stiff or hung up pressure relief spring
 - b. Crossed wires between combining and engine transmissions
- B18.** Excessive A/S indicator fluctuations
 - a. Faulty indicator
 - b. Leak in pitot static lines
- B19.** Greater than 7 knots difference between pilots and copilots A/S indicators
 - a. Faulty indicator
 - b. Leaking lines

SECTION C
FLIGHT CONTROLS

Malfunction	Probable Cause
C1.	Binding in controls
	a. Connecting bolts overtorqued
	b. Faulty rod ends
	c. Improper rigging
	d. Floor fasteners loose
	e. Defective stick boost actuators
C2.	Trim wheel will not function
	a. Disconnected DCP actuator motor
	b. AC S/T circuit breaker out
	c. Defective S/T amplifier
	d. Trim wheel inoperative
	e. DCP actuator inoperative
	f. Defective wiring
C3.	Magnetic brake will not hold controls at full travel
	a. Switch wired backwards
	b. Magnetic brake slipping
	c. Magnetic brake inoperative
	d. Circuit breaker out
	e. Control centering incorrectly rigged
	f. Defective centering spring

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Malfunction

Probable Cause

- C4.** Control system will not stay in displaced position
- a. Twisted brake line (pedals)
 - b. Improper balance spring setting
 - c. Defective viscous dampers
 - d. Defective artificial feel system
 - e. Improperly adjusted balance and detent
- C5.** Control centering lacks authority throughout range
- a. Magnetic brake positioning arm not properly adjusted
 - b. Wrong magnetic brake installed
- C6.** Control travel incorrect
- a. Improper rigging; stops improperly set or upper boost actuator improperly set
 - b. Cockpit indicator incorrect
 - c. Binding in controls
- C7.** Breakout forces not symmetrical
- a. Balance springs improperly set
 - b. Binding in controls
 - c. Improper spring installed
- C8.** In crosswind hover longitudinal cyclic stick position is greater than $\frac{3}{8}$ " forward or $\frac{5}{8}$ " aft of neutral
- a. A/C improperly rigged

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Malfunction	Probable Cause
	b. Cyclic position indicator improperly positioned
	c. Trim wheel not centered
	d. Speed trim not properly set
	e. Pitch link adjustment required
C9.	Excessive control displacements
	a. A/C incorrectly rigged
	b. SAS engage error
C10.	Lateral stick is out of tolerance during an into-the-wind hover
	a. A/C incorrectly rigged
C11.	Excessive pedal split in hover
	a. SAS engage error
	b. A/C incorrectly rigged
C12.	With trim wheel rotated full forward cyclic stick moves aft 1.4 ± 0.5 inches as noted on stick position indicator
	a. Trim wheel installed backwards
	b. Wiring reversed to trim wheel electrical connector
C13.	With trim wheel moved full aft, cyclic stick position indicator indicates less than 1.4 ± 0.5 inch aft cyclic stick travel
	a. Defective servo-amplifier card in speed trim amplifier
	b. Defective trim wheel

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Malfunction

Probable Cause

c. Defective (DCP) stick trim actuator

C14. Autorotation rpm low

a. A/C incorrectly rigged

b. Blade pitch angle too high

C15. Excessive pedal split

a. A/C improperly rigged

b. SAS engage error

**SECTION D
ELECTRICAL**

Malfunction	Probable Cause
D1.	No indication of battery power supplied to the helicopter
	a. Caution lights circuit breaker out
	b. Battery disconnected
	c. Battery low
	d. Faulty battery relay
	e. Faulty battery switch
	f. Defective wiring
D2.	Cockpit dome lights inoperative
	a. Circuit breaker out
	b. Burned out bulb
	c. Defective switch
	d. Defective wiring
D3.	Cockpit dome lights will not dim
	a. Defective rheostat
	b. Defective wiring
D4.	Cockpit white dome lights only inoperative
	a. Defective bulbs
	b. Defective light selector switch
	c. Defective wiring

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Malfunction

Probable Cause

- D5.** Utility lights inoperative
 - a. Circuit breaker out
 - b. Defective light assembly
 - c. Defective wiring
- D6.** Instrument flood lights inoperative
 - a. Defective bulbs
 - b. Defective instrument panel flood light switch
 - c. Defective wiring
- D7.** Jump lights and TROOP ALARM inoperative
 - a. Defective jump light relay
 - b. Defective wiring
- D8.** Troop alarm bells inoperative
 - a. Circuit breaker out
 - b. Defective alarm bell switch
 - c. Defective wiring
- D9.** Cabin and ramp lights inoperative
 - a. Defective cabin light relay
 - b. Defective switch
 - c. Defective wiring
- D10.** Cabin and ramp lights inoperative in RED
 - a. Defective switch
 - b. Defective bulbs
 - c. Defective relay

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Malfunction	Probable Cause
	d. Defective wiring
D11. No power to emergency bus	a. Feeder circuit breaker out b. Defective BATTERY switch c. Defective emergency bus relay d. Defective wiring
D12. Caution lights inoperative	a. BATTERY switch OFF or in EMERGENCY b. Caution light circuit breakers out c. Defective caution light panel d. Defective wiring
D13. Caution lights do not come on when test switch is depressed	a. Defective test switch b. Defective caution light panel c. Defective wiring
D14. Master caution light (MCLC) won't cancel when reset	a. Master caution capsule sticking in panel b. Defective master caution light panel
D15. Caution lights do not dim	a. Defective dim switch b. Defective dimming relay c. Defective caution light panel d. Defective wiring

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Malfunction	Probable Cause
D16. When dome light switch is placed to WHITE (caution lights dimmed) the caution lights do not go to bright	<ul style="list-style-type: none">a. Defective dimming lock-out relayb. Defective wiring
D17. No. 1 generator won't come on line	<ul style="list-style-type: none">a. Defective voltage regulatorb. Defective protection control panelc. Defective frequency sensing and time delay relay (APU and generator control box)d. Defective wiringe. Defective generator
D18. No. 1 or No. 2 generator OFF, No. 1 or 2 GEN OUT CAUTION light ON (no ac cross-tie indicated on load meter) No. 2 transformer/rectifier warning light ON	<ul style="list-style-type: none">a. Ac bus control circuit breaker outb. Defective ac bus-tie relayc. Defective wiring
D19. Both generators on line, No. 2 rectifier OFF caution light is on, indicating dc cross tie (No. 1 loadmeter indication increasing)	<ul style="list-style-type: none">a. Secondary bus insufficiently loadedb. No. 2 transformer/rectifier 3-phase ac circuit breaker outc. Defective No. 2 transformer/rectifier

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Malfunction

Probable Cause

d. Defective wiring

D20. Windshield anti-ice system will not cycle at present temperature of 45°C

a. Defective windshield temperature sensor element

b. Defective windshield anti-ice controller

c. Defective anti-ice control relay

D21. Windshield anti-ice system will not operate below an outside air temperature of 24°C

a. Windshield anti-ice ac circuit breaker out

b. DC circuit breaker out

c. Defective temperature sensing element

d. Defective windshield

e. Defective controller

f. Defective wiring

D22. No pitot heat and SAS port heat

a. Pitot heat circuit breaker out

b. Defective pitot heat switch

c. Defective heating elements

d. Defective wiring

D23. Searchlight-pilots or copilots search light will not come on

a. Searchlight circuit breaker out

b. Defective searchlight filament (SLT-FIL) switch on thrust lever

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Malfunction

Probable Cause

- c. Defective bulb
 - d. Defective searchlight assembly
 - e. Defective wiring
- D24.** Pilot's or copilot's searchlight will not extend
- a. Searchlight control circuit breaker out
 - b. Defective SEARCHLIGHT control switch on thrust lever
 - c. Defective SEARCHLIGHT switch (SLT CONT)
 - d. Defective wiring
 - e. Defective searchlight assembly
- D25.** Pilot's or copilot's searchlight will not rotate left or right
- a. Defective SEARCHLIGHT control switch
 - b. Defective wiring
 - c. Defective searchlight assembly
- D26.** Top and bottom anti-collision lights will not rotate or come on
- a. Anti-collision lights circuit breaker out
 - b. Defective anti-collision light switch
 - c. Defective wiring
 - d. Defective light assembly
- D27.** Anti-collision light rotates but will not come on
- a. Defective bulb

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Malfunction

Probable Cause

- b. Defective light assembly
- D28.** All position lights inoperative
 - a. Position lights circuit breaker out
 - b. Defective position lights switch
 - c. Defective wiring
- D29.** Position lights will not dim
 - a. Defective position lights switch
 - b. Defective position lights dimming resistor
 - c. Defective wiring
- D30.** Instrument lights inoperative
 - a. Circuit breaker out
 - b. Defective rheostat
 - c. Defective dimming rheostat
 - d. Defective wiring
- D31.** Instrument lights will not brighten
 - a. Defective rheostat
 - b. Dimming rheostat requires adjustment
- D32.** No emergency flood lights when GENERATOR CONTROL and BATTERY switches are OFF
 - a. SECONDARY COCKPIT LIGHTS circuit breaker out
 - b. Pilot's instrument light's rheostat is OFF
 - c. Defective flood light relay
 - d. Defective wiring

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Malfunction

Probable Cause

- D33.** Fire detection lights inoperative
- Burned out bulb
 - Defective PRESS-TO-TEST switch
 - Defective wiring
 - Defective eng detection element
 - Defective controller
- D34.** At emergency minimum beep, generators drop off the line at 198 or 209 rpm
- Defective frequency and time delay relay
 - Defective PMG section on generator
- D35.** When engine anti-ice switch is placed to ON, a decrease in N_1 is not detected and EGT does not rise
- Defective switch
 - System blocked
 - Defective valve
- D36.** Heater blower inoperative
- Heater blower circuit breaker out
 - Defective blower relay
 - Defective blower
 - Defective wiring
- D37.** Heater will not light off but vent works
- Plug fouled
 - Thermostat hot

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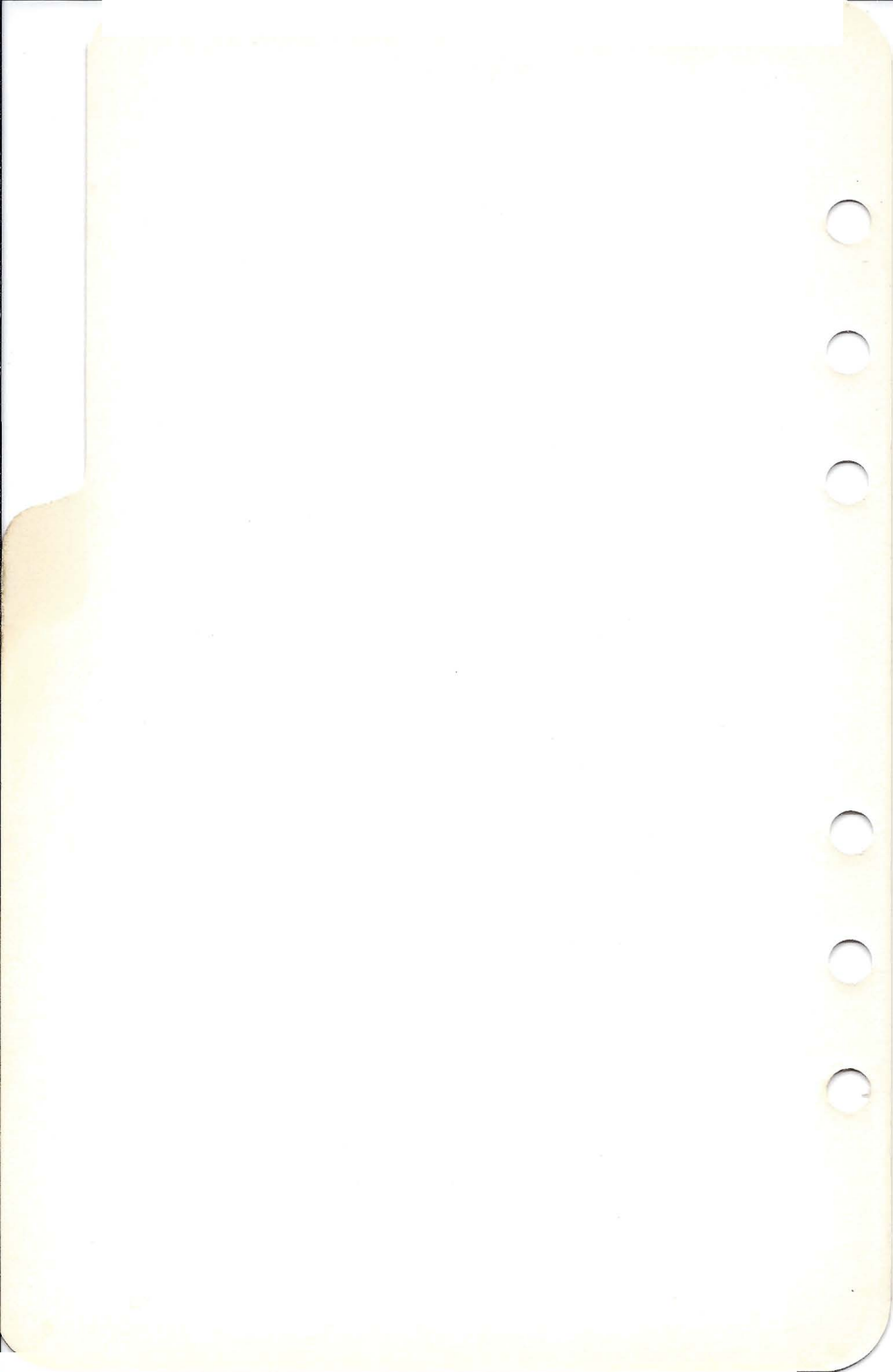
Malfunction	Probable Cause
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D38. Heater does not light off within 30 seconds

- a. Defective blower
- b. Defective air pressure switch
- c. Defective relays
- d. Defective wiring

D39. Heater inoperative

- a. Defective blower system
- b. Defective fuel system
- c. Defective ignition system



**SECTION E
HYDRAULIC**

Malfunction	Probable Cause
E1. Parking brake won't reset	a. Utility hydraulic switch inoperative b. Brake incorrectly rigged
E2. Parking brake warning light won't stay on	a. Brake incorrectly rigged b. Microswitch incorrectly rigged
E3. No boost pressure indication	a. Defective transmitter b. Inoperative pump
E4. Fluctuating pressure	a. Defective transmitter b. Low service level c. Defective gauge d. Trapped air in the system e. Defective flight control hydraulic boost pump
E5. No. 2 flight boost pump pressure does not build up within 30 seconds after APU start	a. AGB overloaded b. AGB hydraulic motor defective c. Defective frequency sensing and time delay relay

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Malfunction

Probable Cause

- d. Defective wiring
- E6.** No. 1 boost pressure is below 2500 psi
 - a. Low reservoir level
 - b. Trapped air in system
 - c. Hoses kinked
 - d. Defective flight control hydraulic boost indicator
 - e. Defective flight control hydraulic boost transmitter
 - f. Defective flight control hydraulic boost pump
- E7.** Hydraulic boost switch OFF, caution light out
 - a. Defective hydraulic boost pressure switch
 - b. Defective wiring
- E8.** Hydraulic boost pressure does not indicate within 2 seconds after switch is turned on
 - a. Defective hydraulic boost switch
 - b. Defective hydraulic boost solenoid valve
 - c. Defective hydraulic boost pump
- E9.** Able to turn off both flight boosts
 - a. Interlock malfunction
- E10.** No. 1 boost will not drop to 500 ± 50 PSI
 - a. AGB switch malfunction
 - b. Defective boost pump solenoid valve
 - c. Defective No. 1 hydraulic boost pump

CH-47 AMTPC

Malfunction	Probable Cause
--------------------	-----------------------

- | | |
|---|---------------------------------------|
| | d. Defective wiring |
| E11. Brakes are spongy | a. Air in brake line |
| E12. Brakes are leaking | a. Over serviced |
| | b. Faulty seal |
| E13. Brakes will not hold | a. Defective utility hydraulic system |
| | b. Defective wheel brake |
| E14. Intermittent power steering | |

NOTE

When power steering or swivel lock switch is cycled, if hydraulic pressure drops approximately 200 pounds, stays there for short duration and returns to previous value, the problem is hydraulic; if no drop, the problem is electrical

- | | |
|--|---|
| | a. Faulty actuator |
| | b. Faulty control box |
| E15. Power steering turns left or right with control in neutral | |
| | a. Struts uneven |
| | b. Aft gear misaligned |
| | c. Power steering not properly adjusted |
| | d. Defective actuator |

CH-47 AMTPC

Malfunction

Probable Cause

- e. Defective hydraulic system
- f. Defective wiring
- E16.** Aircraft turns left or right with swivels locked
 - a. Struts uneven
 - b. Aft gear misaligned
 - c. Swivels not locking
- E17.** Wheels will not center with swivel locks turned ON
 - a. Aft gear misaligned
 - b. Swivel lock inoperative
- E18.** Wheel does not center after liftoff
 - a. Defective utility hydraulic system
 - b. Defective centering cam assembly

SECTION F
SAS/SPEED TRIM

Malfunction	Probable Cause
F1. Yaw kicks	a. Water in side slip lines b. Defective SAS link
F2. No pitch or roll response	a. Failed gyro in SAS box
F3. Hardover	a. Defective card in SAS box
F4. Oscillation	a. Faulty link b. Gain too high in given channel
F5. Excessive left pedal with helicopter trimmed in hover and SAS on	a. Pedals incorrectly rigged b. Yaw extensible link not adjusted for neutral
F6. In a hover SAS is switched from BOTH ON to single SAS ON and a kick is felt in the yaw axis (engagement error)	a. Yaw channel for given SAS requires balancing b. Yaw link feedback potentiometer requires adjustment

CH-47 AMTPC

Malfunction

Probable Cause

- c. Defective demodulator-modulator card in yaw channel
- d. Defective SAS box
- F7.** Forward or aft cyclic trim actuator does not start to extend at 60 or 80 knots indicated air speed
 - a. Forward or aft cyclic trim channels out of adjustment
 - b. Failed actuator
 - c. Defective amplifier
 - d. Leak in pitot static lines to the amplifier
- F8.** Cyclic speed trim does not fully extend or is fully extended too soon
 - a. Speed trim out of adjustment
- F9.** Cyclic position plot too high or low
 - a. DCP schedule out of adjustment
 - b. A/C incorrectly rigged
- F10.** Cyclic speed trim completely inoperative in automatic mode
 - a. Speed trim ac circuit breaker out
 - b. Defective amplifier
 - c. Defective wiring
- F11.** Cyclic speed trim does not operate manually
 - a. Failed actuator
 - b. Faulty switch
 - c. Defective wiring

CH-47 AMTPC

Malfunction

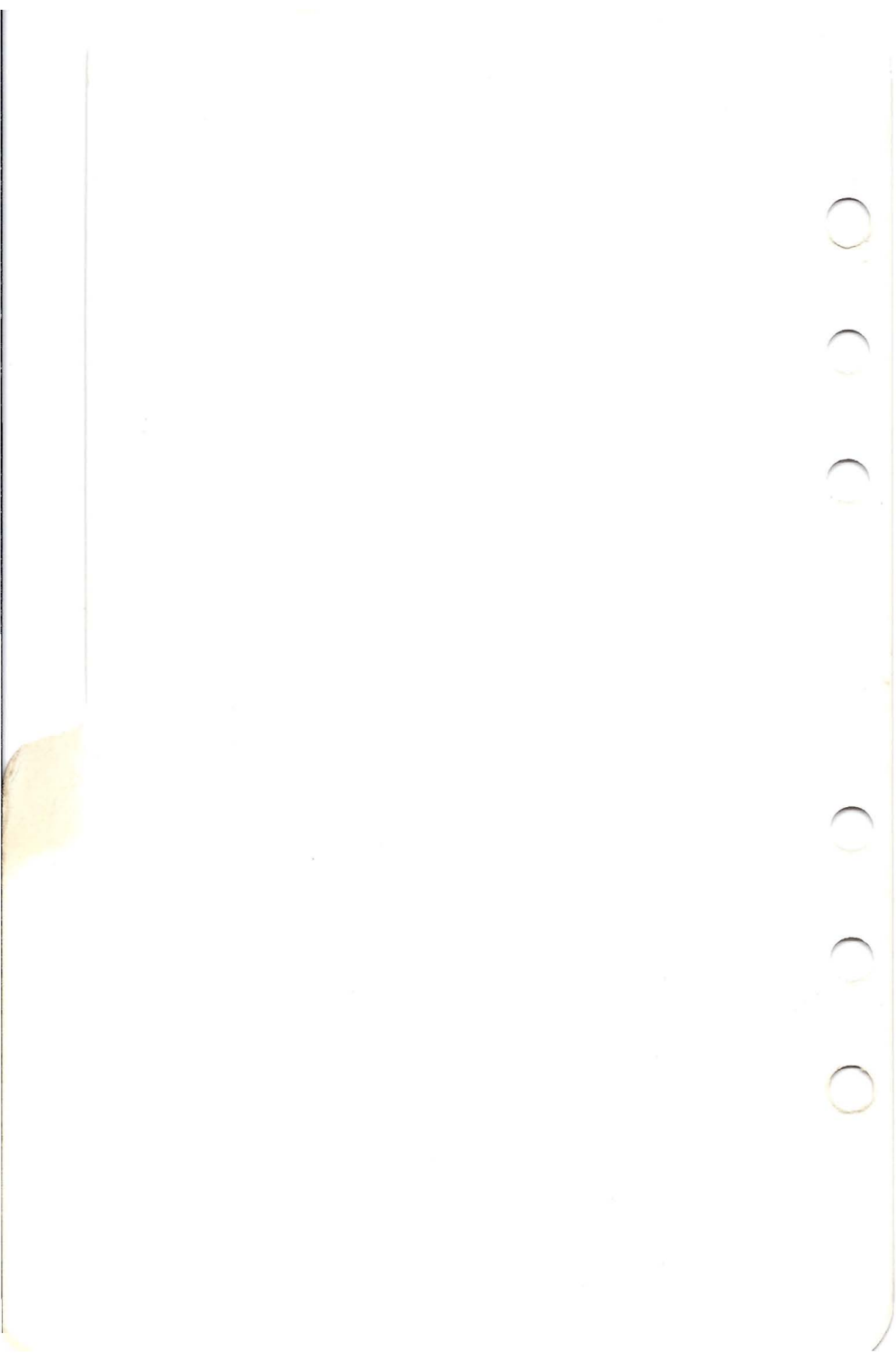
Probable Cause

F12. Uncoordinated turns

- a. SAS roll yaw circuit faulty
- b. Leak in side slip lines

F13. Yaw hunting

- a. High gain in yaw channel in SAS box
- b. Leak in side slip lines



SECTION G
ENGINES AND TRANSMISSIONS

Malfunction	Probable Cause
G1. Emergency beep inoperative	a. Faulty relay b. Faulty or failed actuator motor c. BATTERY switch OFF
G2. Normal N_{II} system inoperative	a. No AC power, circuit breaker not reset b. Defective remote control box c. Defective wiring
G3. Both normal and emergency engine control systems inoperative	a. Defective N_{II} actuator b. Defective emergency trim relay c. Defective wiring between remote control box and actuator
G4. No. 1 engine will not motor with START button depressed	a. Engine start circuit breaker out b. Defective start switch c. Defective engine start solenoid valve d. Defective start relay e. Defective utility hydraulic system f. Defective wiring

CH-47 AMTPC

Malfunction

Probable Cause

- G5.** Engine will not accelerate to 19% within 15 seconds during start cycle
- Insufficient starting fuel
 - Defective utility hydraulic start solenoid valve
 - Defective utility hydraulic system
 - Defective hydraulic starter motor
- G6.** Engine will not accelerate to ground idle
- N_1 improperly rigged
 - Faulty start motor
 - G.I. ADJ screw requires adjustment
- G7.** Engine will not accelerate from ground idle to flight range within 45 seconds
- N_1 actuator slow
 - Fuel control acceleration and start fuel requires adjustment
 - Bleed band defective
 - Defective engine fuel control
- G8.** No oil pressure
- Transmitter disconnected
 - Transmitter failed
 - Gauge inoperative
- G9.** Engine oil pressure below 10 psi
- Clogged No. 2 bearing filter
 - Engine oil pump not adjusted properly

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Malfunction

Probable Cause

- c. Defective indicator
 - d. Defective engine oil pressure transmitter
 - e. Improper transmitter installed
- G10.** Transient torque exceeds 1200 foot pounds (1300 foot pounds, single engine)
- a. Acceleration schedule set too high
 - b. Faulty fuel control
 - c. Faulty torque indicating system
 - d. Engine beep trim switches not at minimum beep prior to moving ECL to FI
- G11.** Pilot and copilot beep trim switches inoperative
- a. Engine trim dc circuit breaker out
 - b. Defective wiring
- G12.** Pilot's NO. 1 AND 2 ENGINE BEEP TRIM switch inoperative
- a. Defective switch
 - b. Defective wiring
- G13.** To match engine torques, engine beep trim switches must be beeped in opposite directions
- a. Excessive N_{II} actuators speeds between engine No. 1 and No. 2
 - b. Beep trim actuator speeds in the No. 1 and No. 2 engine remote control box vary excessively

CH-47 AMTPC

Malfunction

Probable Cause

- G14.** Engine torques will not match
- N_{II} system not rigged properly
 - Defective N_{II} actuator
 - Defective engine fuel control
 - Defective engine torque transmitter
 - Defective torque indicator
 - Defective engine
- G15.** While beeping engines to match torque, No. 1 engine beeps up much faster than No. 2 causing an excessive torque split, and No. 1 engine must be beeped in the opposite direction to match torques (engines stabilized, torques remain matched)
- Excessive difference in N_{II} actuator speeds between the No. 1 and No. 2 engine
 - Defective N_{II} actuator
 - Defective remote control box
- G16.** Excessive hunting with engine torques matched
- Defective N_{II} actuator
 - Defective remote control box
 - Defective wiring
- G17.** Excessive change in engine torque when thrust lever is moved to full down
- Flight controls (thrust system) incorrectly rigged

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Malfunction

Probable Cause

- b. Engine droop eliminator potentiometer out of adjustment
- G18.** Difference in engine torque indications during single engine operation greater than 6% of average TQ between engines
 - a. Faulty torque indicator
 - b. Faulty torque indicating system of engine
 - c. Emergency engine trim circuit breaker out
 - d. Defective emergency beep trim switch
 - e. Defective wiring
- G19.** Engine emergency beep trim switch operates in increase but inoperative when placed to decrease
 - a. Defective switch
 - b. Defective actuator
 - c. Defective emergency trim relay
 - d. Defective wiring
- G20.** Droop greater than ± 3 rpm
 - a. Droop potentiometers improperly adjusted
 - b. Engine improperly rigged
 - c. Defective droop eliminator potentiometer
- G21.** Excessive torque fluctuation of topping
 - a. Faulty transducer
 - b. Faulty indicator
 - c. Excessive A/C vibration

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Malfunction	Probable Cause
G22. Excessive N_1 fluctuation at topping	
	a. Faulty indicator
	b. Faulty tachometer generator
	c. Defective wiring
G23. Topping too low	
	a. N_1 improperly rigged
	b. N_{11} improperly rigged
	c. Topping adjustment low
	d. Torque rate limiter adjustment low
	e. Improper bleed band adjustment
G24. Torque low at topping (N_1 and EGT appear normal)	
	a. Defective torque indicating system
G25. At minimum beep, rotor rpm not 208 ± 4 , 204 ± 4 , or 216 ± 2	
	a. Minimum beep trim resistor in RH pod requires adjustment
G26. Unable to adjust minimum beep	
	a. N_{11} engine controls improperly rigged
	b. Defective minimum beep trim variable resistor
	c. Defective N_{11} actuator (feed back pot)

SECTION H

FUEL

Malfunction	Probable Cause
H1.	Main fuel valve does not close when fire T-handle is pulled out <ul style="list-style-type: none">a. Faulty T-handle micro switchb. Defective wiring
H2.	Crossfeed valve does not open when switch is placed to ON <ul style="list-style-type: none">a. Crossfeed control circuit breaker outb. Defective crossfeed valve switchc. Defective crossfeed valved. Defective wiring
H3.	Indicator pointer pegged full scale for all positions of fuel selector switch <ul style="list-style-type: none">a. Open shielded wiring from tank probes
H4.	No fuel indication all switch positions <ul style="list-style-type: none">a. FUEL QTY system requires calibrationb. Defective indicatorc. Defective selector switchd. Defective wiring
H5.	Indicated total does not equal computed total by ± 50 pounds or ± 300 pounds <ul style="list-style-type: none">a. FUEL QTY system requires calibrationb. Defective selector switchc. Defective wiring

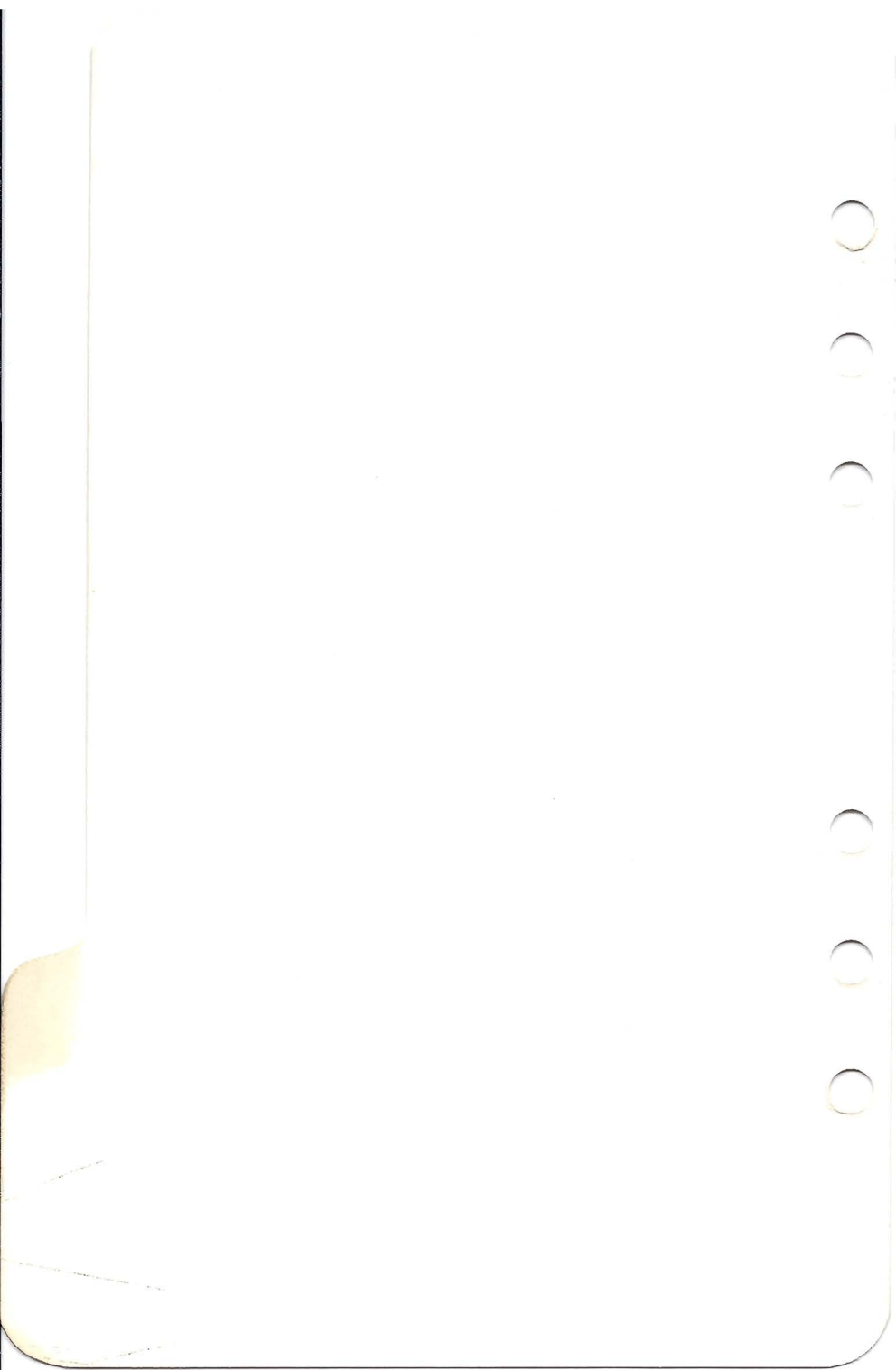
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Malfunction	Probable Cause
H6.	Fuel quantity indicator pointer erratic <ul style="list-style-type: none">a. Open shielded wiring from tank probesb. Defective indicatorc. Defective wiringd. Defective probes
H7.	Tanks full, no single tank indication. Total indication OK. <ul style="list-style-type: none">a. Defective selector switchb. Defective wiring
H8.	No fuel pressure warning lights when fuel boost pumps are OFF <ul style="list-style-type: none">a. Caution lights circuit breaker outb. Defective wiring
H9.	Boost pump inoperative <ul style="list-style-type: none">a. Fuel boost pump circuit breaker outb. Defective boost pump relayc. Defective pumpd. Defective wiring
H10.	With crossfeed switch at OPEN and single boost pump turned on, only the caution light for the tested system turned on goes out <ul style="list-style-type: none">a. Crossfeed circuit breaker outb. Defective crossfeed valvec. Defective caution lightd. Defective wiring

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Malfunction	Probable Cause
--------------------	-----------------------

- | | |
|--|------------------------------------|
| H11. Engine flames out with boost pumps off | |
| | a. Failed engine driven boost pump |



SECTION I VIBRATIONS

Malfunction	Probable Cause
11.	Excessive 1/Rev vibration
	a. Blades out of track
	b. Weak lag damper
	c. Blades unbalanced
12.	Excessive 3/Rev vibration
	a. Loose aft pylon splice bolts
	b. Loose component support fitting
	c. Loose engine, fairing, or tail cone
	d. Loose landing gear, work platforms, access doors, ramps, escape panels, windows, or doors
13.	High frequency vibration
	a. Sync shaft out of balance
	b. Engine out of balance or has F.O.D.
	c. Excessive radial play on transmission shafts
	d. Defective lord mount on sync shafting

C
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C

SECTION J
COMMUNICATION/NAVIGATION

Malfunction	Probable Cause
J1.	No ICS <ol style="list-style-type: none">Intercom switches offFailed intercom boxBroken jack cordBroken or improper headsetFaulty interphone junction box
J2.	Radio inoperative <ol style="list-style-type: none">Defective R/T unitDefective wiring
J3.	VGI will not align <ol style="list-style-type: none">Faulty gyroFaulty indicatorCircuit breaker out
J4.	UHF continues to channel <ol style="list-style-type: none">Faulty control head
J5.	FM homing will not center, always gives full right or left deflection <ol style="list-style-type: none">Faulty antennaFaulty home sensing unitShortened coaxial cableWeak receiver

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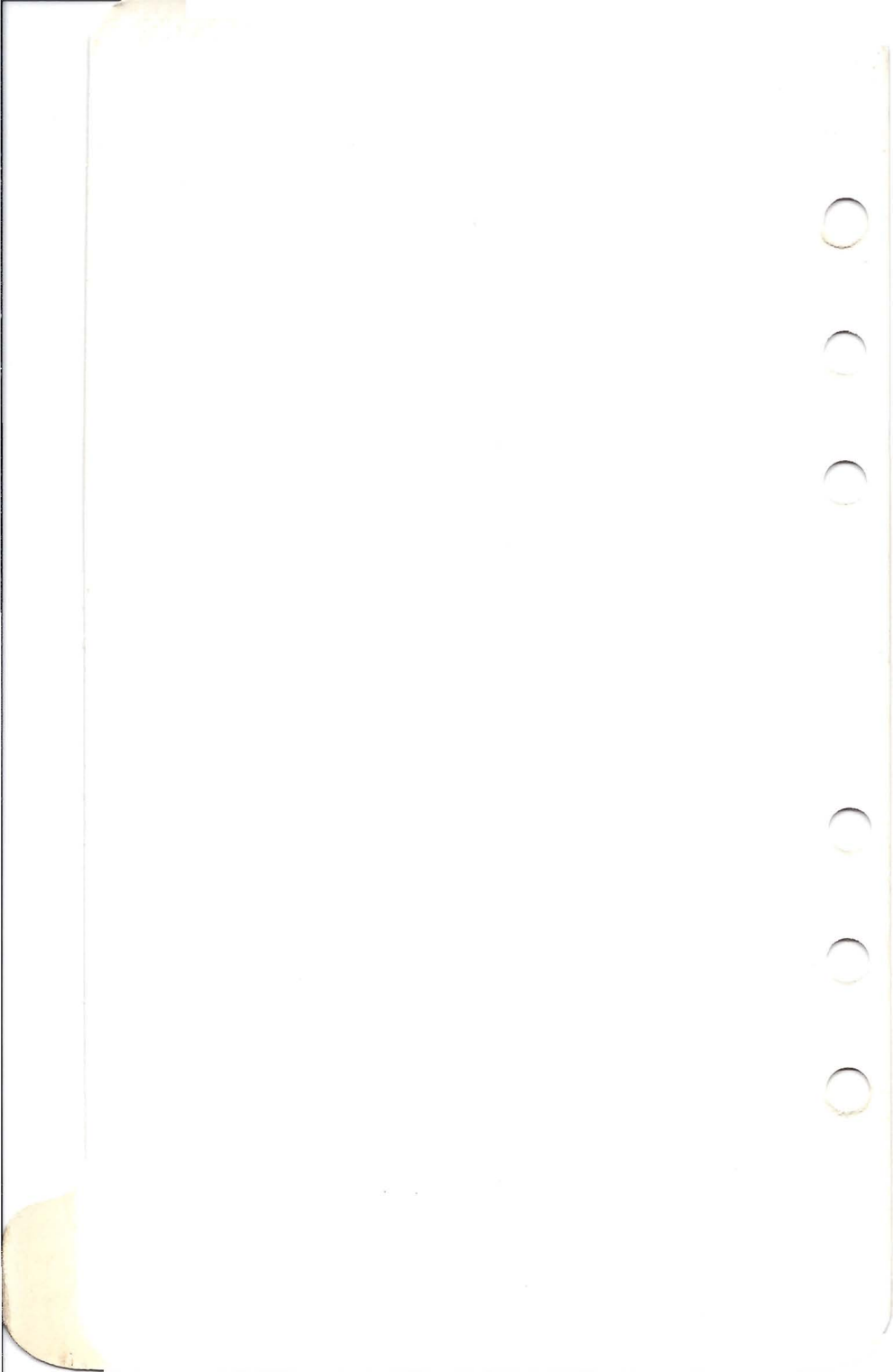
Malfunction	Probable Cause
J6. Gyro compass will not hold sync	
	a. Faulty gyro
	b. Faulty flux valve
	c. Faulty indicator
J7. Gyro compass will not sync	
	a. Faulty indicator
	b. Flux valve needs re-swinging
J8. VOR volume weak	
	a. Faulty receiver
	b. Low sensitivity
J9. VOR off heading (No. 2 needle)	
	a. Faulty receiver
J10. Course direction indicator does not give 10° sweep	
	a. Receiver requires adjustment
J11. Excessive needle flux	
	a. Faulty receiver
J12. ADF indicates OFF heading greater than 3°	
	a. Antenna loop requires compensation
	b. Faulty receiver
J13. No. 1 needle more than $\pm 3^\circ$ off magnetic bearing to station	
	a. Gyro compass not synchronized
	b. Faulty antenna
	c. Faulty receiver

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Malfunction

Probable Cause

- J14.** Excessive No. 1 needle flux
- a. Faulty receiver
 - b. Faulty antenna
- J15.** Marker beacon audio weak or inoperative
- a. Low sensitivity (place adjustment to position 5)
 - b. Faulty receiver
- J16.** Marker beacon light inoperative or inoperative on low position
- a. Low sensitivity
 - b. Faulty receiver
 - c. Antenna not peaked
- J17.** Transponder malfunction: pilot light not on; press the test button. If pilot light still fails to light, either the bulb is burned out or no power is reaching the set



FAILURE OF ONE ENGINE DURING TAKEOFF

Maintain Necessary Control and Power (Continued Flight)

Engine beep trim switch (No. 1 & 2) —
MAINTAIN 230 ROTOR RPM

Airspeed — BEST SINGLE-ENGINE
CLIMB

Cleanup Dead Engine

Engine condition lever (affected engine) —
STOP

Presence of fire — CHECK

Fuel valve switch (affected engine) — CLOSE

Crossfeed switch — AS REQUIRED

Fuel booster pump switches (affected
engine) — AS REQUIRED

Maintain Necessary Control and Power (Discontinued Flight)

Thrust control rod — MAINTAIN
SETTING

Cyclic stick and directional pedals —
ADJUST

Thrust control rod — RAISE

**FAILURE OF BOTH ENGINES
DURING FLIGHT**

Maintain Necessary Control

Thrust control rod — ADJUST

Airspeed — MAINTAIN 70 OR 90
KNOTS

Engine or engines — RESTART

Cleanup Dead Engines

Engine condition levers — STOP

Presence of fire — CHECK

Fuel valve switches — CLOSE

Crossfeed switch — CLOSE

Fuel booster pump switches — OFF

FAILURE OF ONE ENGINE DURING FLIGHT

Maintain Necessary Control And Power

Engine beep trim switch (No. 1 & 2) —
MAINTAIN 230 ROTOR RPM

Airspeed — BEST SINGLE-ENGINE
CRUISE

Cleanup Dead Engine

Engine condition lever (affected engine) —
STOP

Presence of fire — CHECK

Fuel valve switch (affected engine) —
CLOSE

Crossfeed switch — AS REQUIRED

Fuel booster pump switches (affected
engine) — AS REQUIRED

ENGINE RESTART DURING FLIGHT

- Engine condition lever — GROUND
- Fire control handle — CHECK IN
- Fuel booster pump switches (affected engine) — CHECK ON
- Crossfeed switch — AS REQUIRED
- Fuel valve switch — OPEN
- Ignition switch — ON
- Start fuel switch — OPEN
- Start pushbutton — DEPRESS AND HOLD
- Start fuel switch — CLOSE (600°C)
- Engine oil pressure — CHECK
- Ignition switch — OFF
- Engine instruments — RECHECK
- Engine condition lever — FLIGHT
- Rotor rpm — 230
- Engine torque — MATCH

**FUEL PRESSURE DROP — ENGINE
OPERATING NORMALLY**

**Below 6,000 Feet — Engine Operating
Normally**

Master caution light — PUSH TO
RESET

Crossfeed switch — OPEN

Master caution panel — CHECK

Above 6,000 Feet — Engine Flames Out

Engine condition lever (affected
engine) — STOP

Master caution light — PUSH TO
RESET

Crossfeed switch — OPEN

Master caution panel — CHECK

Engine — RESTART

GO-AROUND WITH ONE ENGINE INOPERATIVE

Cyclic stick — ADJUST

Engine beep trim switch (No. 1 & 2) —
MAINTAIN 230 ROTOR RPM

Thrust control rod — ADJUST

TAKEOFF WITH ONE ENGINE INOPERATIVE

Prior to Takeoff

Thrust control rod — 3-DEGREE DETENT

Rotor rpm — 230

Takeoff

Thrust control rod — RAISE AND
MAINTAIN 230 ROTOR RPM

Cyclic stick — ADJUST

Trim wheel — ADJUST

Airspeed — BEST SINGLE-ENGINE
CLIMB

NORMAL ENGINE BEEP TRIM SWITCH FAILURE

Both ac eng trim circuit breakers —
PULL IMMEDIATELY

Emergency beep trim switches — USE

EMERGENCY ENGINE SHUTDOWN

During Failure of Ac and Dc Electrical Systems

Fuel valves — CLOSE (Manually)

All other switches and controls — OFF

EMERGENCY ENGINE SHUTDOWN

During Gas Producer Actuator or Condition Lever Failure

Fuel valve switch (affected engine) —
CLOSE

All other switches and controls — OFF

LOW OIL QUANTITY

Master caution lights — PUSH TO
RESET

Oil temperature and pressure indicators
(affected engine) — CHECK

**TRANSMISSION OIL TEMPERATURE OR
PRESSURE CAUTION LIGHT ON**

Master caution lights — PUSH TO
RESET

Thrust control rod — LOWER

Transmission oil temperature and
pressure indicators — CHECK

**ENGINE FIRE DURING STARTING
OR SHUTDOWN**

Engine condition lever (affected engine) —
STOP

Fuel valve switch (affected engine) —
CLOSE

Engine start pushbutton (affected engine) —
PRESS AND HOLD

Start fuel switch (affected engine) —
CLOSE

Ignition switch (affected engine) — OFF

Fuel booster pumps — OFF

AUXILIARY POWER UNIT FIRE

APU switch — STOP

Engine condition levers — STOP

Fuel valve switches — CLOSE

Portable fire extinguisher — USE

ENGINE COMPARTMENT FIRE IN FLIGHT

Engine condition lever (affected engine) — STOP

Fire control handle (affected engine) — PULL

Fire extinguisher agent switch — SELECT BOTTLE NO. 1 OR BOTTLE NO. 2

Fuel valve switch (affected engine) — CLOSE

Crossfeed switch — AS REQUIRED

Fuel booster pump switches (affected engine) — AS REQUIRED

ELECTRICAL FIRE

Personnel — ALERTED

Airspeed — 100 KNOTS OR BELOW

Battery switch — EMERGENCY

Generator switches — OFF

Hand fire extinguisher — AS REQUIRED

Helicopter — LAND AS SOON AS PRACTICAL

SMOKE AND FUME ELIMINATION

Airspeed — 80 to 100 knots

Cargo loading ramp — OPEN

Upper half of main cabin door —
OPEN

Pilot's sliding window — OPEN

Helicopter attitude — 20° LEFT YAW

FUEL BOOSTER PUMP FAILURE

Master caution light — PUSH TO
RESET

Engine condition lever (affected
engine) — STOP

Crossfeed switch — OPEN

Master caution panel — CHECK

Fuel booster pump switches (affected
tank) — OFF

Engine — RESTART

FUEL LOW CAUTION LIGHT ON

Master caution light — PUSH TO
RESET

Fuel quantity indicator — CHECK

Fuel quantity — BALANCE

FAILURE OF ONE AC GENERATOR

Master caution lights — PUSH TO
RESET

All circuit breakers — CHECK

Generator switch — RESET AND
THEN ON

Master caution panel — CHECK

FAILURE OF BOTH AC GENERATORS

Airspeed — 100 KNOTS OR BELOW

Helicopter — LAND AS SOON AS
PRACTICAL

Altitude — DESCEND BELOW 6,000 FEET

Generator switches — TEST

Ac bus cont circuit breaker — PULL

Generator switch — RESET THEN ON

To isolate

Generator switch — OFF

Circuit breakers — PULL

Generator switch — RESET THEN ON

Circuit breakers — PUSH IN

Ac bus cont circuit breaker — PUSH IN

Battery switch — AS REQUIRED

Emergency engine beep trim switches —
AS REQUIRED

Helicopter — LAND AS SOON AS
PRACTICAL

FAILURE OF BOTH TRANSFORMER-RECTIFIERS

Master caution lights — PUSH TO
RESET

Airspeed — 100 KNOTS OR BELOW

Battery switch — AS REQUIRED

All dc equipment not essential to
flight — OFF

EMERGENCY DESCENT

Thrust control rod — LOWER

Airspeed — ESTABLISH AN AIRSPEED
WHICH WILL PRODUCE MAXIMUM
RATE OF DESCENT

AUTOROTATIVE LANDING

Thrust control rod — LOWER
IMMEDIATELY

Airspeed — MAINTAIN 70 OR 85
KNOTS

Longitudinal cyclic speed trim —
CHECK RETRACTED

Personnel — ALERT

Iff — EMERGENCY

Radio call — COMPLETE

Shoulder harness — LOCK

Parking brake — CHECK RELEASED

Flare — 100 FEET

Thrust control rod — RAISE

Wheel brakes — AS REQUIRED

PRACTICE AUTOROTATION

Entry

Aft wheel swivel locks — LOCKED

Rotor rpm — 230

Thrust control rod — LOWER

Airspeed — 70 OR 85 KNOTS

Longitudinal cyclic speed trim —
CHECK RETRACTED

At Approximately 100 Feet

Cyclic — FLARE

Thrust control rod — AS REQUIRED

At Approximately 15 Feet (Aft Wheel Height)

Thrust control rod — RAISE

Cyclic stick and directional pedals —
AS REQUIRED

After Touchdown

Cyclic stick — FORWARD

Thrust control rod — LOWER

Wheel brakes — USE

**EMERGENCY LANDING IN HEAVILY
WOODED AREAS**

Engine condition levers — STOP

Generator switches — OFF

Battery switch — OFF

**LONGITUDINAL CYCLIC SPEED
TRIM SYSTEM FAILURE**

Airspeed — AS REQUIRED

Ac and dc speed trim circuit breakers —
CHECK IN

Speed trim function switch — SELECT
OTHER FUNCTION

SINGLE SAS FAILURE — BOTH ON

Helicopter — MAINTAIN CONTROL

Airspeed — REDUCE TO 60 TO 80
KNOTS IAS

Longitudinal cyclic speed trim —
CHECK RETRACTED

Altitude — INCREASE IF AT EXTREMELY
LOW GROUND CLEARANCE

Malfunctioning system — ISOLATE

Malfunctioning SAS, SAS dc circuit
breaker — PULL

BAILOUT CHECKLIST

- Alarm bell — RING
- Airspeed — 80 KNOTS
- Flight controls — TRIM
- Helicopter — EXIT

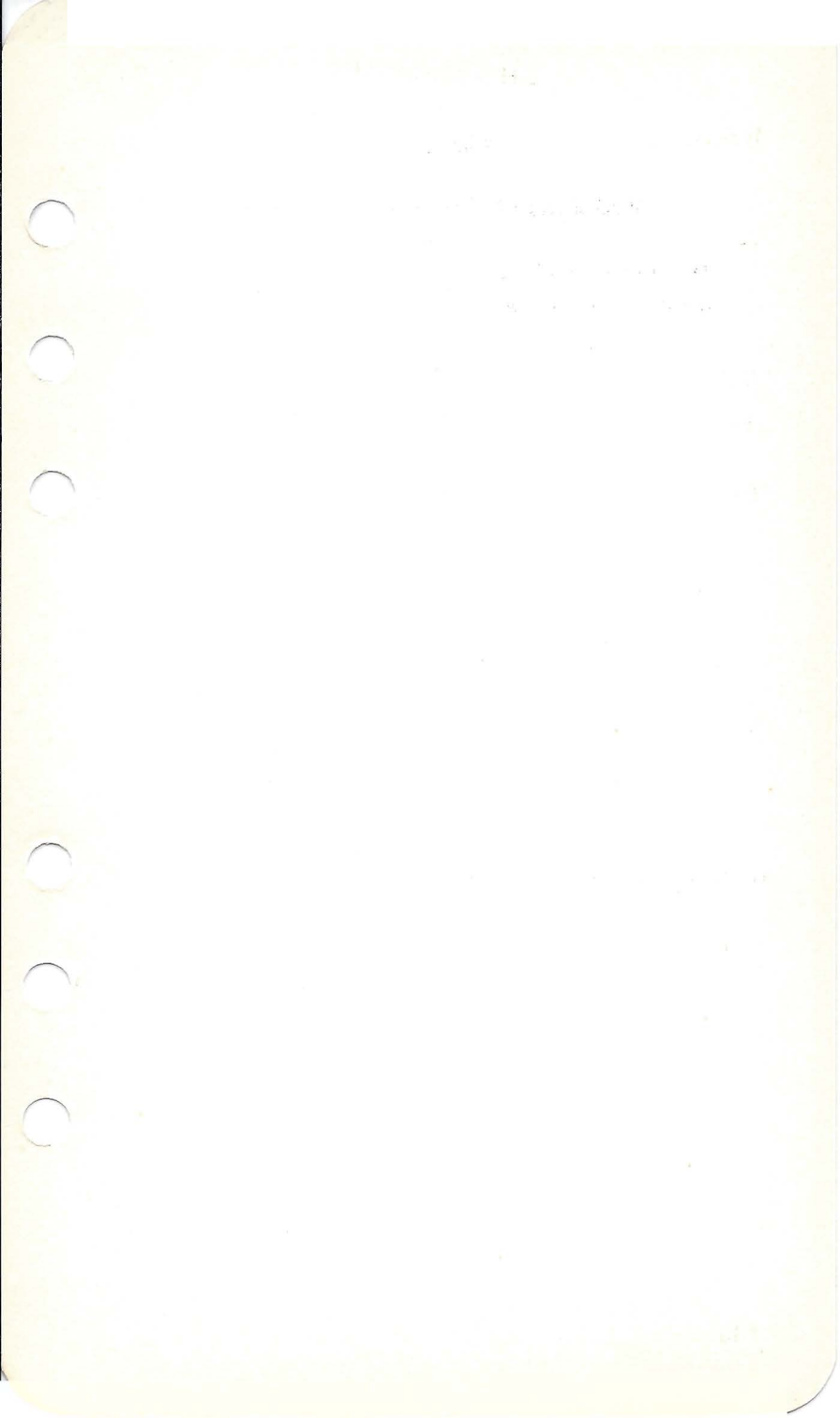
PILOT AND COPILOT JETTISONABLE DOOR

Exterior Ground Jettisoning

- Trigger button — PUSH
- Jettisoning handle — TURN HANDLE
UP OR DOWN
- If door does not fall away — PULL

In-Flight Jettisoning

- Jettisoning handle — ROTATE
- If door is not carried away — PUSH



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Table 1

Pedal Split Conversion Chart

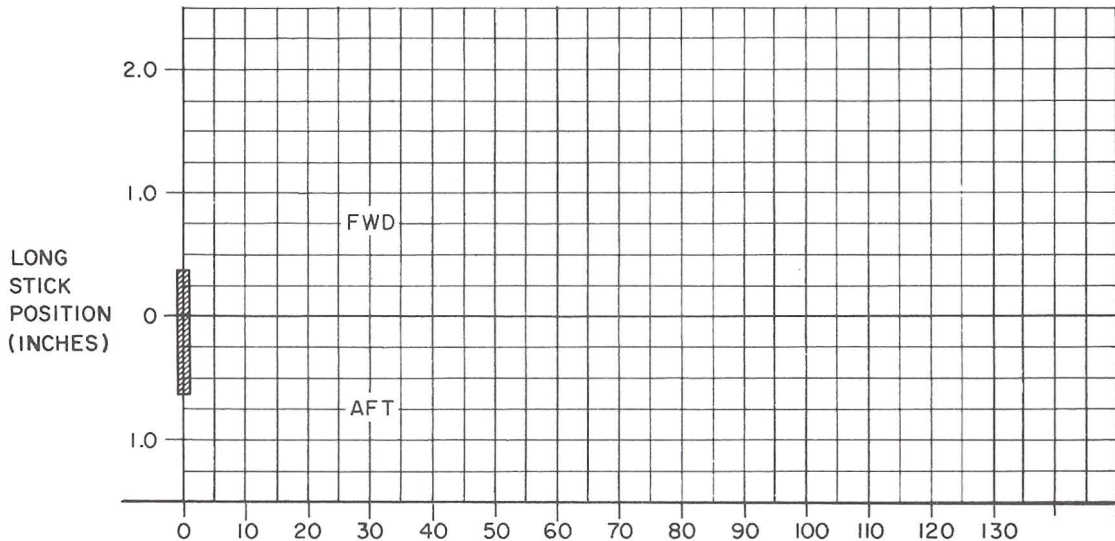
Difference at Floor Pedal Neutral/Pedal Displaced	Actual Pedal Split
$\frac{1}{8}$	$\frac{3}{8}$
$\frac{1}{4}$	$\frac{3}{4}$
$\frac{3}{8}$	$1\frac{1}{8}$
$\frac{1}{2}$	$1\frac{1}{2}$
$\frac{5}{8}$	$1\frac{5}{16}$
$\frac{3}{4}$	$2\frac{5}{16}$
$\frac{7}{8}$	$2\frac{11}{16}$
1	3
$1\frac{1}{8}$	$3\frac{7}{16}$
$1\frac{1}{4}$	$3\frac{13}{16}$
$1\frac{3}{8}$	$4\frac{1}{4}$
$1\frac{1}{2}$	$4\frac{5}{8}$

All dimensions are in inches.

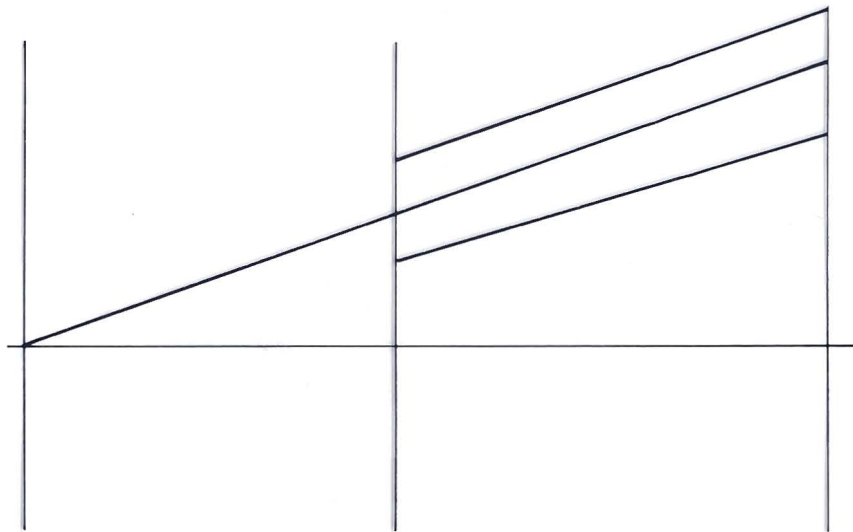
Table 2**Engine Fire Extinguisher Pressures**

Ambient Temperature (Fahrenheit)	Minimum Indication (Psi)	Maximum Indication (Psi)
-65°	271	344
-60°	275	350
-40°	292	370
-20°	320	400
0°	355	437
20°	396	486
40°	449	540
60°	518	618
80°	593	702
100°	691	784
125°	785	902

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CH-47A COCKPIT CONTROLS POSITION ENVELOPEAIRCRAFT CONFIGURATION
STANDARD UNBALLASTEDROTOR RPM - 230
RATE OF CLIMB - 0 FT/MIN.
STICK POSITION TRIM - "0"Chart 1
(1 of 2)

CH-47A COCKPIT CONTROLS POSITION ENVELOPE



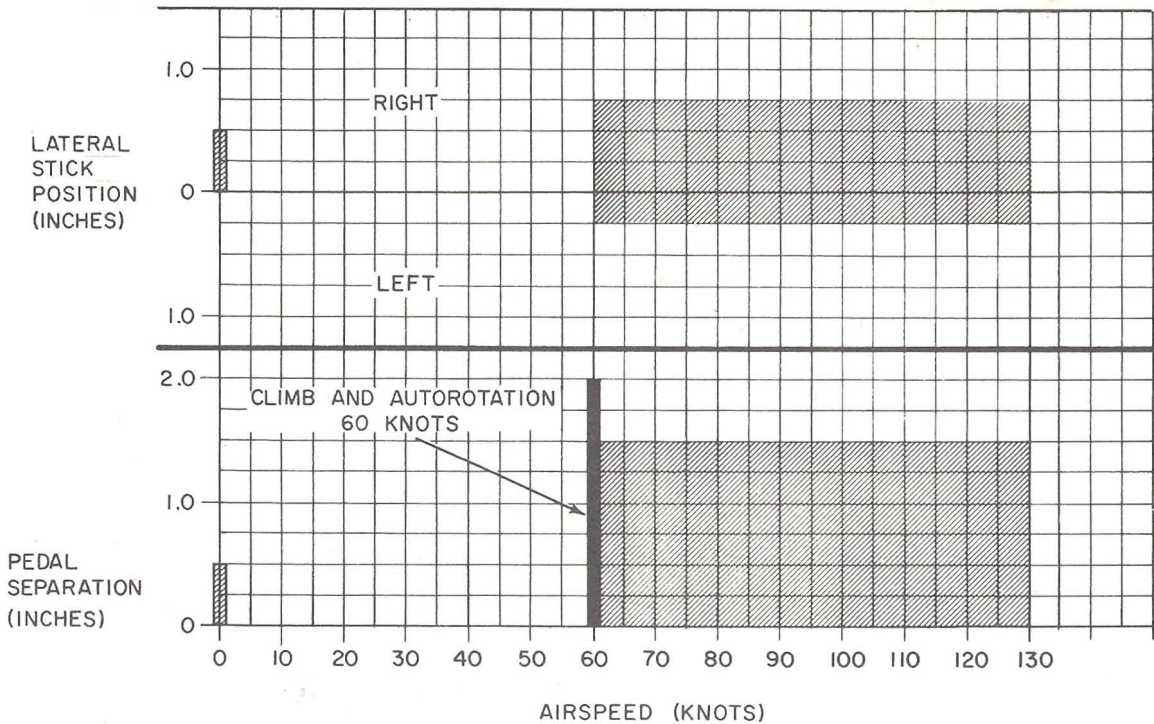
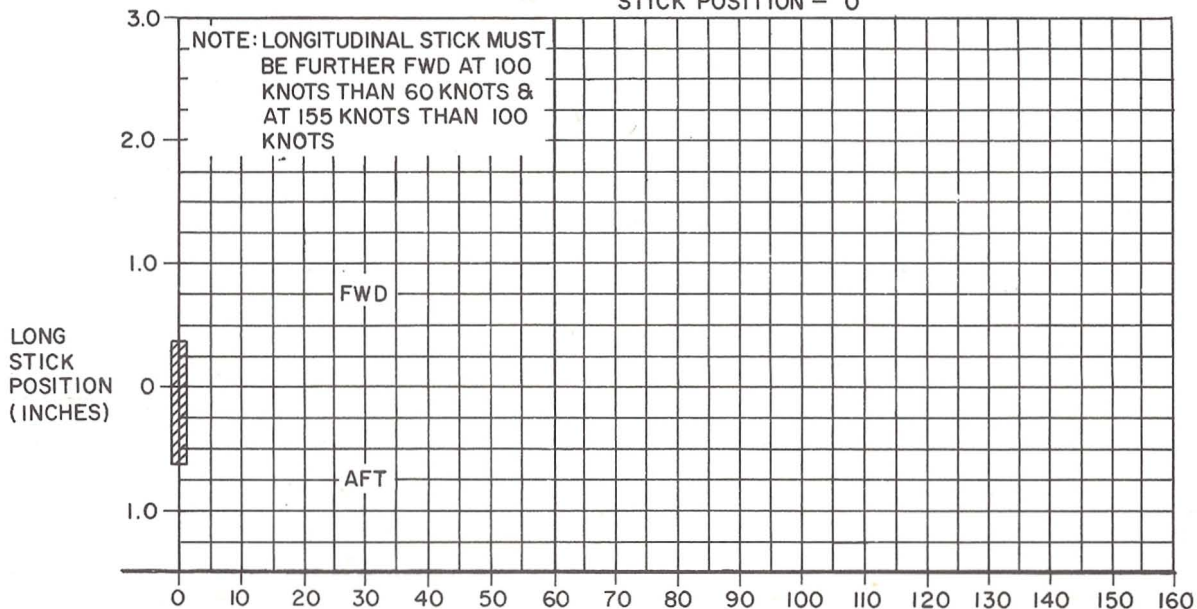


Chart 1
(2 of 2)

CH-47B COCKPIT CONTROLS POSITION ENVELOPE

AIRCRAFT CONFIGURATION
STANDARD UNBALLASTED

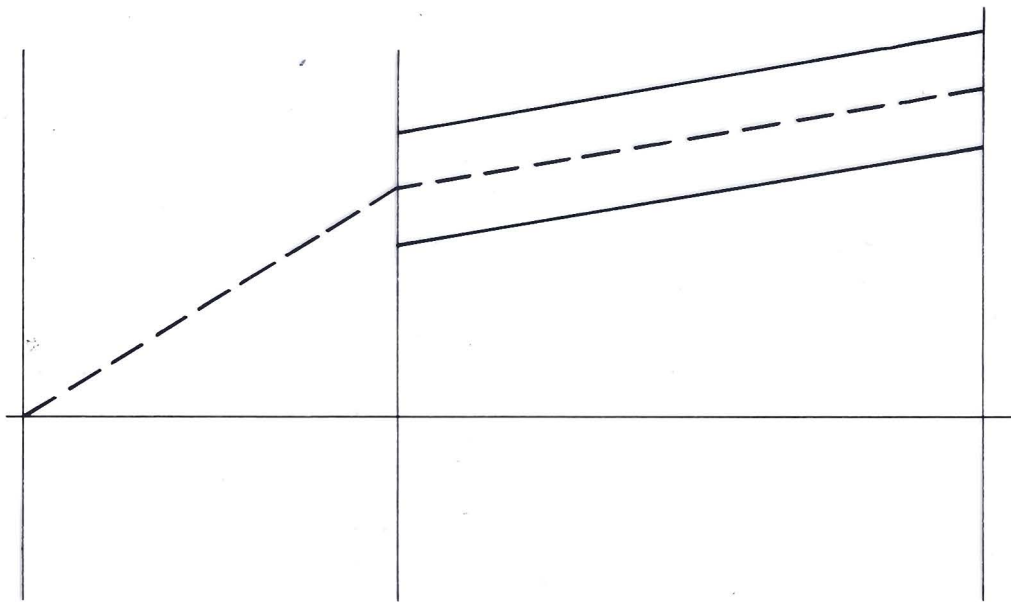
ROTOR RPM - 225
RATE OF CLIMB - 0 FT/MIN
STICK POSITION - "0"

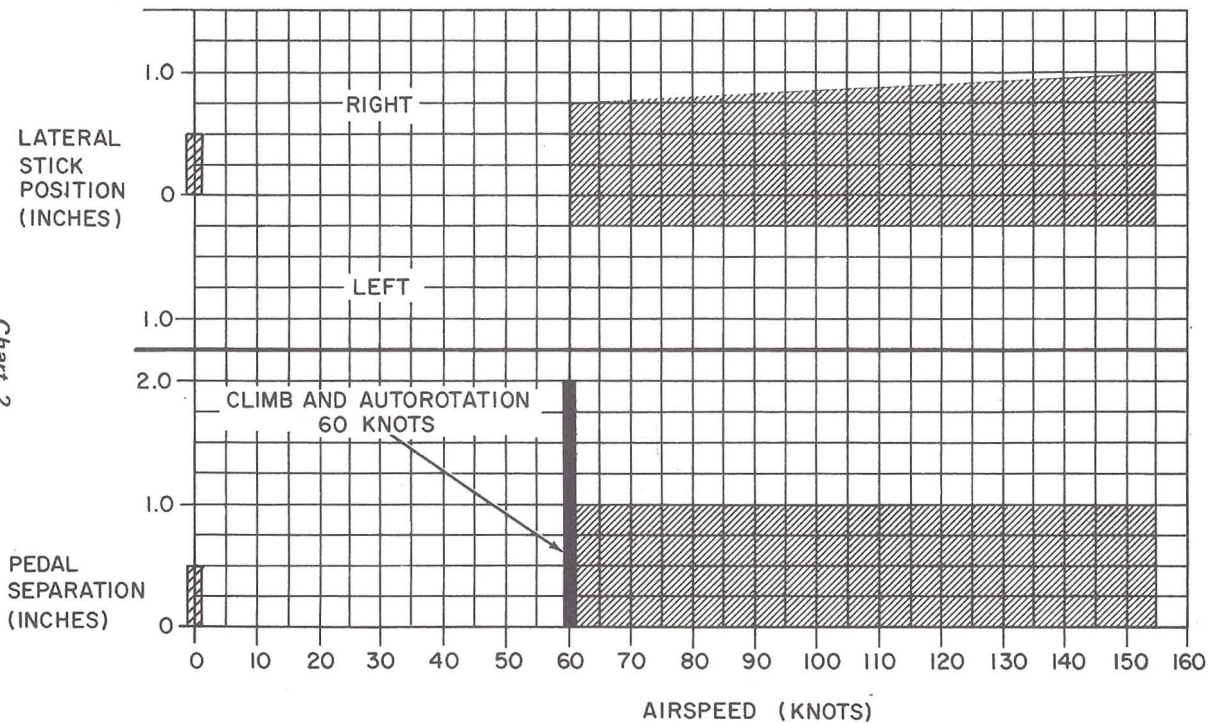


CH-47 AMTPC

Chart 2
(1 of 2)

CH-47B COCKPIT CONTROLS POSITION ENVELOPE





CH-47C COCKPIT CONTROLS POSITION ENVELOPE

AIRCRAFT CONFIGURATION
STANDARD UNBALLASTED

ROTOR RPM - 230
RATE OF CLIMB - 0 FT/MIN
STICK POSITION - "0"

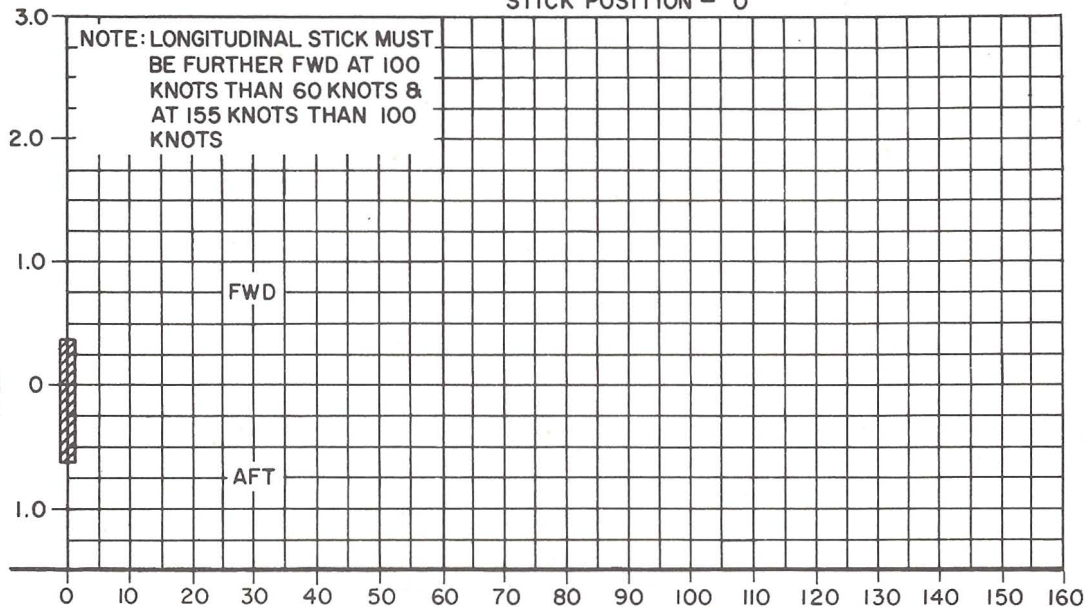
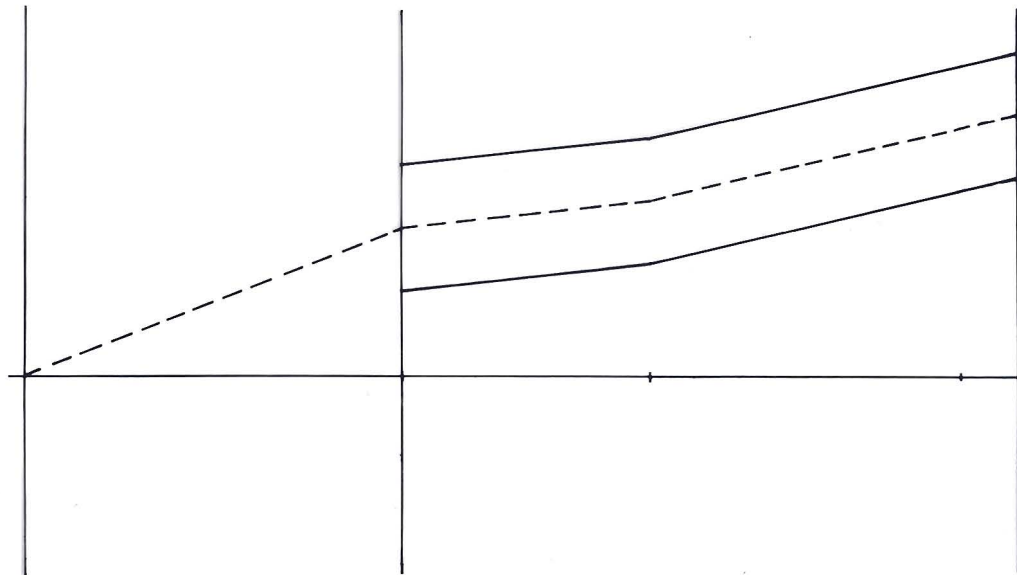
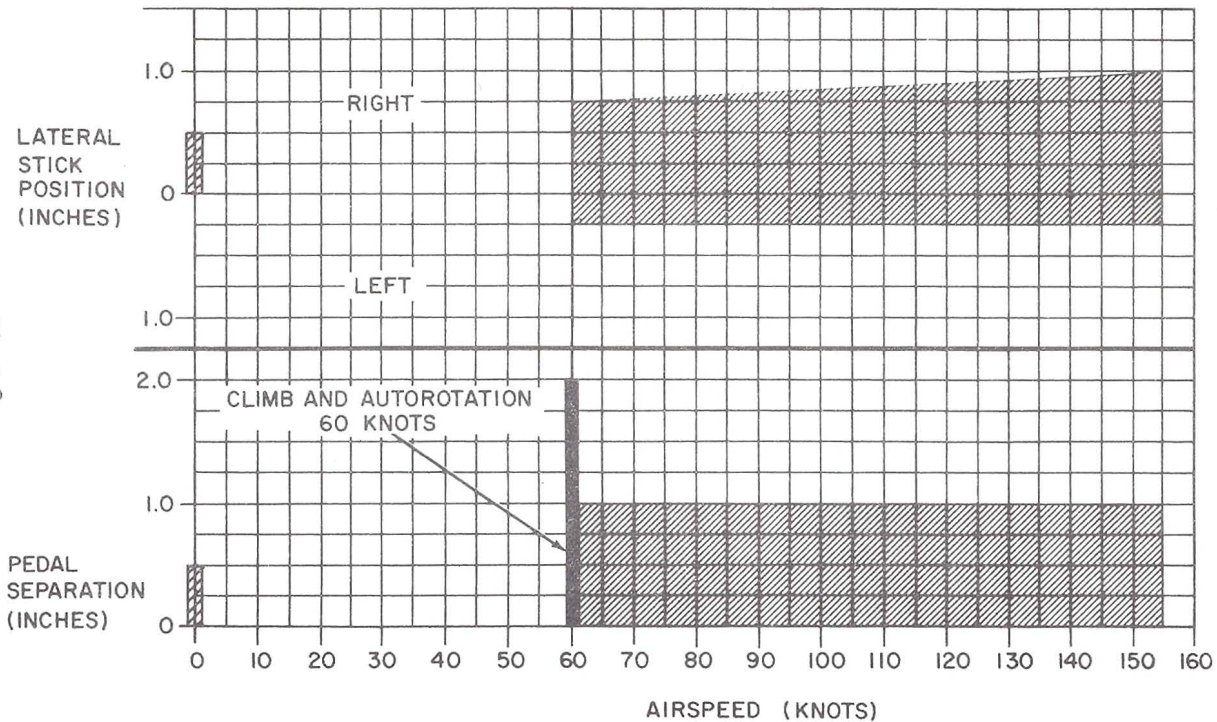


Chart 3
(1 of 2)

CH-47 AMTPC

CH-47C COCKPIT CONTROLS POSITION ENVELOPE



Chart 3
(2 of 2)



POWER TOPPING T55-L7

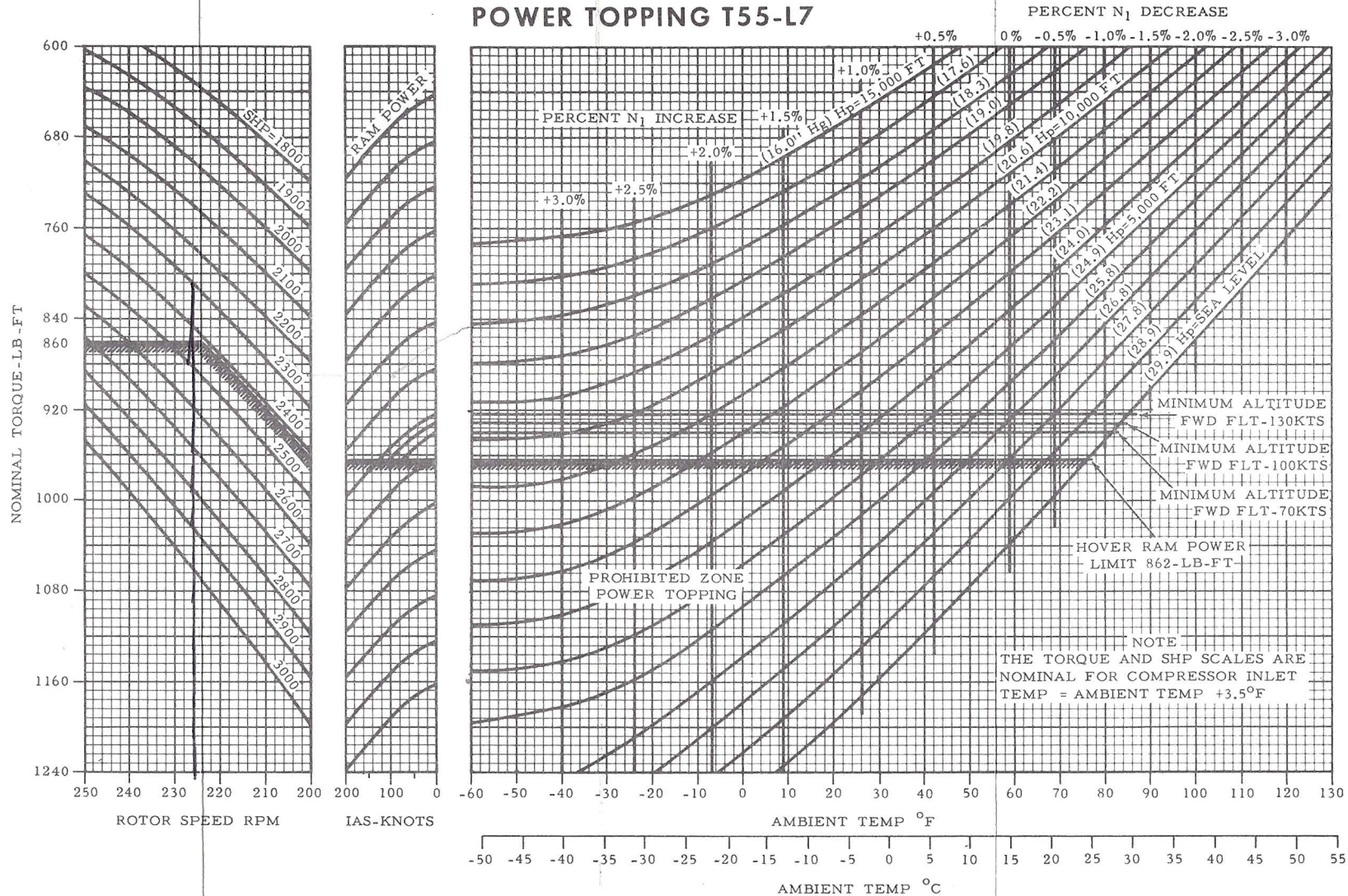
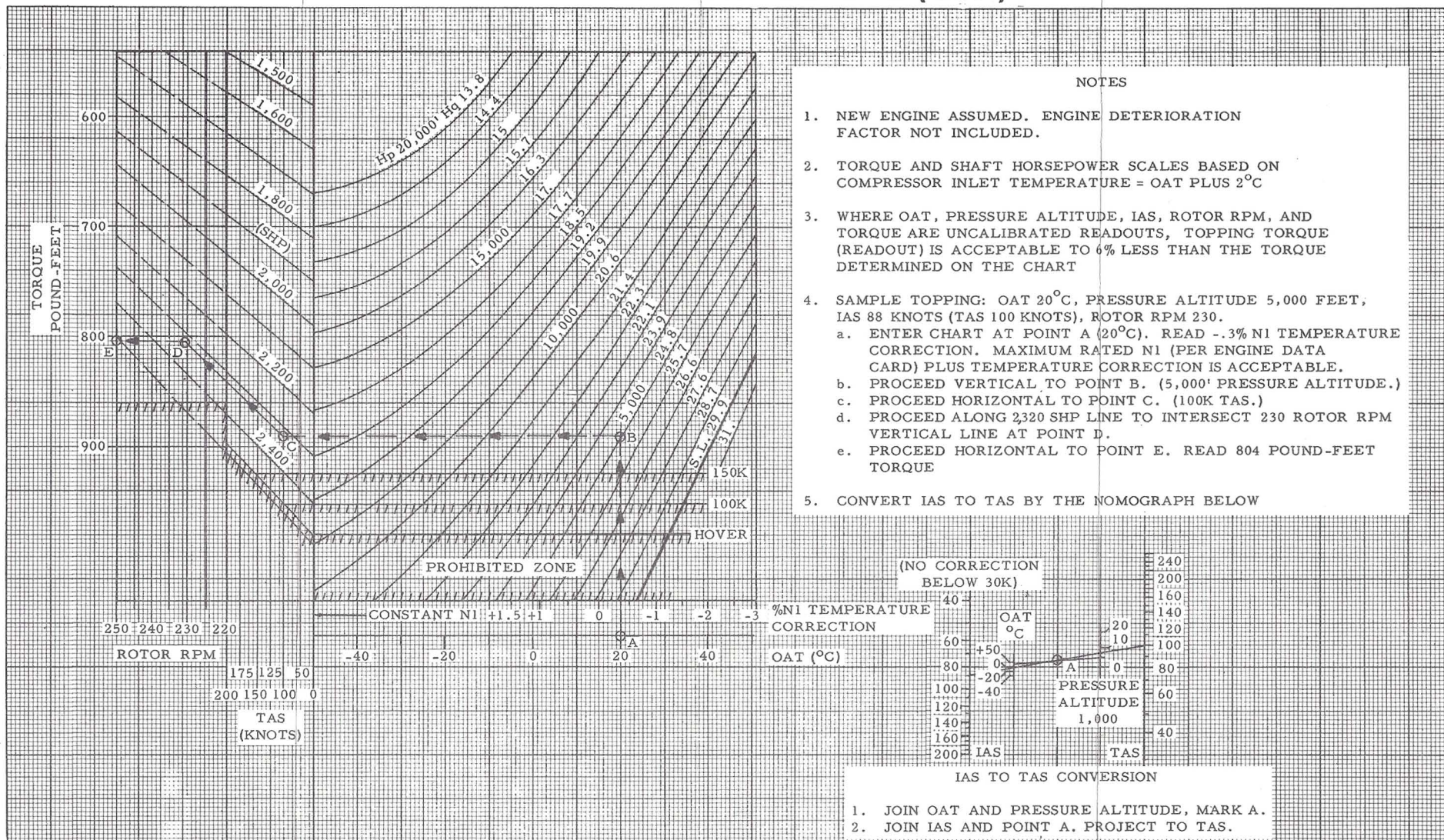


Figure 2

POWER TOPPING T55-L7C (66:1)



POWER TOPPING T55-L7C (64:1)

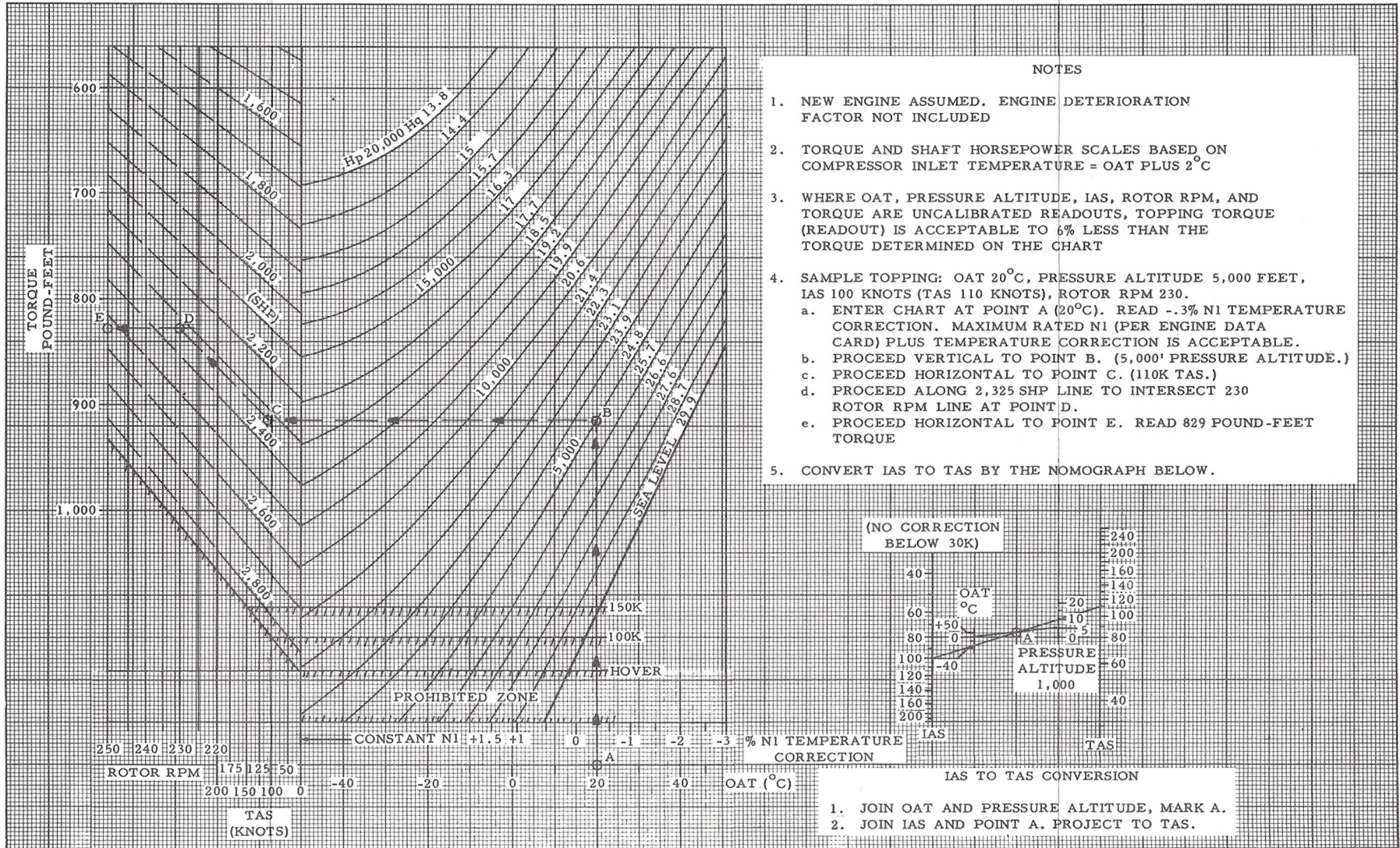


Figure 4

INTERSTAGE AIR BLEED BAND CLOSURE

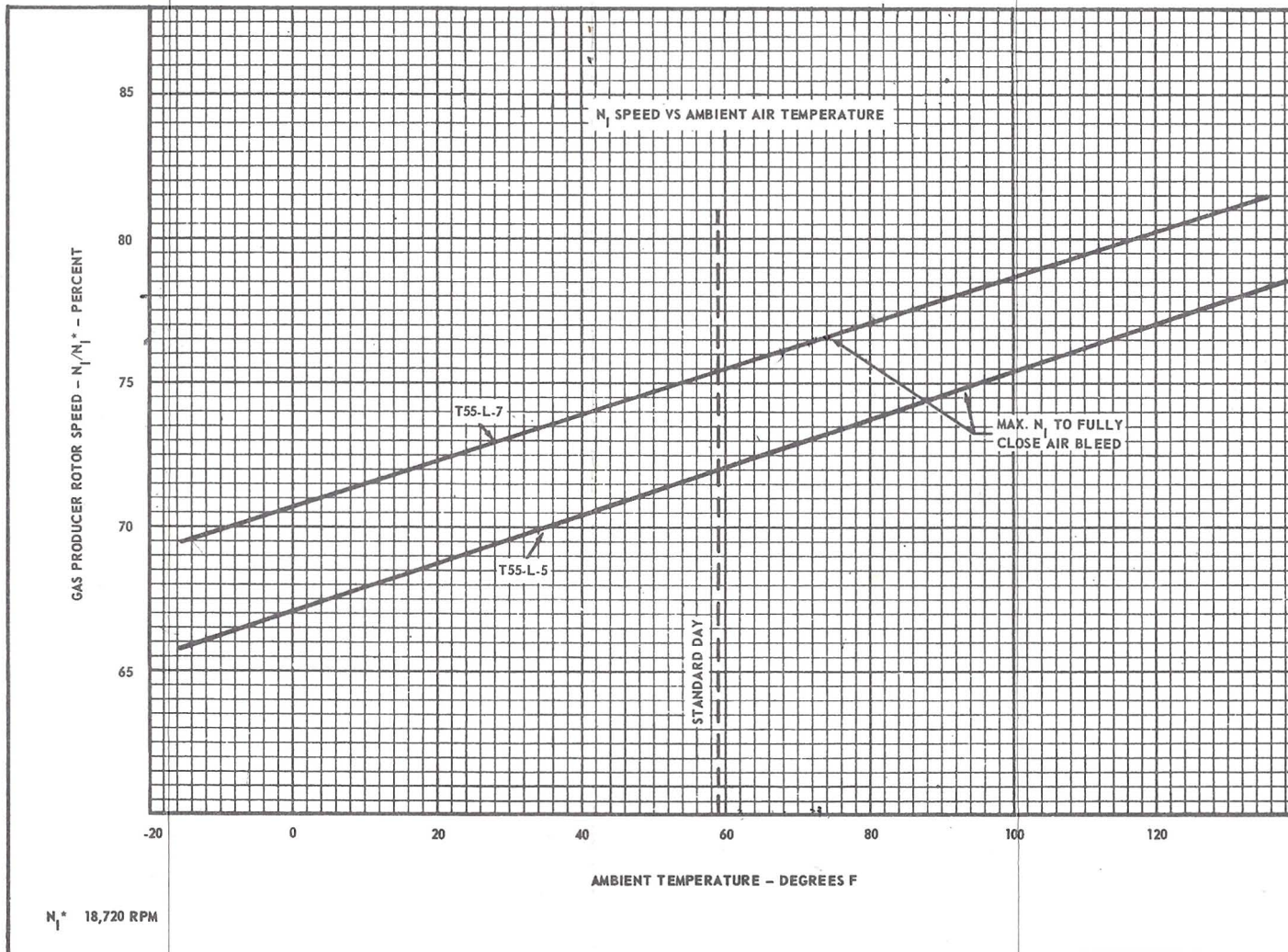


Figure 5

