

TM 55-1520-210-CL

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

Operator's and Crewmembers' Manual

ARMY MODELS

YUH-1D, UH-1D, AND UH-1H

AIRCRAFT

Pilot's Checklist

HEADQUARTERS, DEPARTMENT OF THE ARMY

APRIL 1969

***TM 55-1520-210-CL**
HEADQUARTERS
DEPARTMENT OF THE ARMY
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TM 55-1520-210-CL is published for the use of all concerned.

By Order of the Secretary of the Army:

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General, United States Army,
Chief of Staff.
Official:
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Major General, United States Army
The Adjutant General.

DISTRIBUTION:

To be distributed in accordance with DA Form 12-31 (qty rqr block no. 69) requirements for Operator and Crew Maintenance Instructions for UH-1D aircraft.

*This manual supersedes TM 55-1520-210-CL,
28 October 1968.

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GENERAL INFORMATION AND SCOPE

SCOPE. This checklist contains the operator's and crew-member's checks to be accomplished during normal and emergency operations. Performance data pertinent to normal operation of the aircraft is provided in the performance data section of this checklist.

GENERAL INFORMATION. The checklist consists of three parts: Normal procedures, emergency procedures, and performance data. Normal procedures consist of the procedures required for normal flight. Emergency procedures are subdivided into 10 classifications as follows: engine, propeller (Prop.), fire, fuel, electrical (Elec), hydraulic (Hyd), landing and ditching (Ldg/Dtch), flight controls (Flt Cont), bailout or ejection (Bailout) (Eject), and armament (Armt), as applicable. Performance data consists of charts and tables containing takeoff, cruise, and landing data. The takeoff and landing data card is also contained in the performance data.

NOTE

This checklist does not replace the amplified version of the procedures in the operator's manual (TM 55-1520-210-10) but is a condensed version of each procedure.

Normal Procedures Pages. The contents of the normal procedures of this manual are a condensation of the amplified checklist appearing in the normal procedures or crew duties portion of the applicable operator's manual.

Emergency Procedures Pages. The requirements in this section of the condensed checklist manual (CL) are identical to those for the normal procedures, except that the information is drawn from the amplified checks in the emergency procedures portion of the operator's manual. The emergency requirements are sub-divided into the 10 classifications listed above.

Performance Data Pages. A takeoff and landing data card is provided. The card covers the four phases listed below as well as all those items which are applicable and change during takeoff and landing.

Takeoff Data
Landing Immediately After Takeoff
Landing Data
Conditions

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Symbols Preceding Numbered Steps.

- * — Indicates performance of steps is mandatory for all "Thru Flights."
- (N) — Means performance of step is mandatory for "Night Flights."
- ★ — Indicates a detailed procedure for this step is included in the Performance Checks section, located at the back of the check-list.
- (I) — Indicates mandatory check for "Instrument Flights."
- (O) — Indicates if installed.

Reporting of Improvements. Reports of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to DA Publications, and forwarded direct to Commanding General, U.S. Army Aviation Materiel Command, ATTN: AMSAV-M P. O. Box 209, Main Office, St. Louis, Missouri 63166.

CODE SYSTEM

- D** UH-1D only
(T53-L-9, T53-L-9A or T53-L-11 series engine.)
- H** UH-1H only (T53-L-13 engine).
No code applies to both UH-1D and UH-1H.

FLIGHT PLANNING

CHECK — Mission and destination.

SELECT — Performance charts.

RECORD — Fuel quantity, airspeed, power settings, take-off, climb, cruise or hovering conditions, landing and fuel consumption for operating gross weight and climatic conditions.

Take-Off and Landing Data Cards.

WEIGHT AND BALANCE

Form 365F — Completed.

Compute take-off and landing gross weight, CG location, and weight of fuel, oil, payload, etc.

Loading limitations — Check.

BEFORE EXTERIOR CHECK

1. Forms and publications — Check.
2. Battery Switch — OFF.
- (N)3. Lights — Check, OFF.
4. Fuel and Cap Security — Check.

EXTERIOR CHECK — FUSELAGE FRONT

1. Rotor Blade — Condition.
2. Cabin Top — Condition and ventilators.
3. Radio Compartment — Security.

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4. Radio Compartment Door — Secured.
- (O) 5. FM Antennas — Condition/Security.
6. Pitot Tube — Check.
7. Cabin Lower Area — Check.
- (O) 8. Cargo Suspension Mirror — As desired.
9. Landing and Searchlight — Stowed.

FUSELAGE — LEFT SIDE

- (O) 1. Pitot-Static Port — Unobstructed.
2. NAV Light — Condition/Security.
3. Entrance Doors — Condition/Operation.
4. Landing Gear — Condition.
5. Cargo Suspension Cable — Check.

FUSELAGE — AFT CABIN LEFT SIDE

1. Eng/Trans Area — Check — Cowling Secure.
2. Electrical Compartment — Check.
3. Fuel Filter — Drain, check.
4. Right, Left Pumps and Sumps — Drain.
- (O) 5. Aux Fuel Tank Filter and Sump — Drain.
6. Access Doors — Secure.

AFT FUSELAGE — LEFT SIDE

1. Tail Rotor Drive Shaft Coupling — Position, Security.
2. Aft Fuselage — Condition.
3. Synchronized Elevator — Condition.
4. Antenna — Condition/Security.

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5. Main Rotor Blade — Condition rotate 90° to fuselage.

FUSELAGE — FULL AFT

1. Extension Covers — Secure.
2. Tail Rotor — Condition, free movement.
3. Tail Skid — Condition/Security.
4. Nav Lights — Condition/Security.
5. FM Antenna — Condition.

AFT FUSELAGE — RIGHT SIDE

1. Tail Rotor Gearboxes — Condition — Oil Levels.
2. Antenna — Condition/Security.
3. Synchronized Elevator — Condition.
4. Aft Fuselage — Condition.

FUSELAGE — AFT OF CABIN RIGHT SIDE

1. Oil Cooling Fan Compartment — Check.
2. Baggage Compartment — Check.
3. Eng/Trans Area — Check, cowling secure.
4. Oil Level — Check.
- (O) 5. Hydraulic Fluid — Check.
6. Access Doors — Secured.

FUSELAGE — CABIN RIGHT SIDE

1. Nav Lights — Condition/Security.
- (O) 2. Hydraulic Fluid — Check.

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3. Entrance Doors — Condition/Security.
4. Landing Gear — Condition.
- (O)5. Pitot-Static Port — Unobstructed.

CABIN TOP

1. Main Rotor System — Condition, security, fluid levels.
2. TRANS and HYD cap — Secure.
3. Short Shaft — Condition/Security.
4. Engine Air Intake — Unobstructed.
5. Antennas — Condition/Security.
6. Anti-collision Light — Condition/Security.
7. Engine and Trans Cowling — Secured.
8. Cabin Top Ventilators — Unobstructed.

INTERIOR CHECK — CARGO COMPARTMENT

- (N) 1. Battery Switch — ON.
- (N) 2. Dome Lights — As required.
3. Fire Extinguisher — Check.
4. Cargo — Secure.
5. Passenger Seats — Secure.
6. First Aid Kits — Condition/Security.
7. Trans Oil — Check.
8. Electrical Outlets — Condition.
9. Crewmember Radio Panel — Check.
10. Loose Equipment — Secured.
- (N)11. Dome Lights — OFF.
- (N)12. Battery Switch — OFF.

BEFORE STARTING ENGINE

1. Entrance Doors — Secured.
2. Seat and Pedals — Adjust.
3. Seat Belt and Shoulder Harness — Adjusted/Fastened.
4. Shoulder Harness Lock — Check.
5. Cyclic, Collective, and Throttle Friction — OFF.
6. Cyclic, Collective Pitch and Pedals — Check/Position.
7. Landing/Searchlight — OFF.
8. AC Circuit Breakers — IN.
9. Radio — OFF/Set.
10. Governor — AUTO.
11. De-Ice — OFF.
12. Aux Fuel Pump — OFF.
13. Low rpm Audio — OFF.
14. Main Fuel — OFF.
- (O) 15. Start Fuel — OFF.
16. HYD Cont Switch — ON.
17. Force Trim — ON.
18. Chip Detector Switch — BOTH.
19. Compass Slaving — IN/MAG.
20. Instruments — Static indications, markings.
21. Turn and Slip Indicator — Check.
22. Marker Beacon — OFF.
23. Clock — Wound/Running.
24. MAGnetic Compass, DEViation Card — Check.
25. VSI's — Note Indication.

26. Heading Indicator — ADF Position, DEV card posted.
27. Altimeters — Set.
28. Airspeed Indications — Note indication.
29. Free-Air Temp Gauge — Note Indication.
30. Str/Gen Switch — START.
31. Nonessential Bus — NORMAL ON.
32. VM Selector Switch — BAT (main Gen if APC Start).
33. Main Generator Switch — ON.
34. AC Phase Selector — AC Phase.
35. Inverter Switch — OFF.
36. Instrument Lights — As required.
37. DC Circuit Breakers — IN, (except armament and special equipment).
38. Pitot Heat — OFF.
39. Dome Light — As required.
40. External Lights — As required.
41. Anti-collision Light — OFF.
42. Wipers — OFF.
43. Cargo Rel Switch — OFF.
44. Cabin Heating Switches — OFF.

STARTING ENGINE

1. Bat Switch — OFF. (ON for battery start).
2. Copilot's Attitude Indicator — Cage (APU Start only).
3. Inverter Switch — SPARE. (OFF for battery start).
4. Fire Detector Light — Test.
5. Rpm Warning Light — ON.

6. Fuel Filter and Cargo Release Light — Test.
7. Fuel Gage Test Switch — Test (APU Start).
8. Caution Panel Warning Lights — Test, RESET.
9. Main Fuel Switch — ON. (Check fuel pressure APU start.)
- (O) 10. Start Fuel — ON.
11. Governor RPM INC-DEC Switch — DEC 10 seconds.
12. Throttle — Set.
- (N) 13. Dome Light — OFF.
14. Fireguard — Posted.
15. Rotor Blades — Clear.
16. Starter Switch — (40 sec max).
- (O) 17. Start-fuel Switch — OFF at 400° EGT.
18. Starter Switch — Release at 40% N₁.
19. Copilot's Attitude Indicator (Battery Start) — Cage.
20. Inverter Switch (Battery Start) — Spare.
21. Throttle — Flight Idle.
22. Gas Producer 56% to 58% (L-13 engine — 70% to 72%).
23. Engine Oil Pressure — Normal.
24. Transmission Oil Pressure — Normal.
- (N) 25. Interior Lights — As desired.
26. APU — (APU Start) — Disconnect.
27. Battery Switch (APU Start) — ON.
28. Fuel Gauge Test Switch (Battery Start) — Test.

ENGINE RUNUP

1. Force Trim — Check.
2. Hydraulic System — Check.
3. ICS and Radios — ON as desired.
4. Helmet — ON.
5. Fuel System and De-Ice — Check.
- (I) 6. Pitot Heat — Check.
7. AC Phase Selector — Check (leave in BC).
8. Inverter Switch — OFF, then MAIN.
9. AC Phase Selector — Check (leave in AC).
10. Voltmeter Selector Switch — Check (leave in NONESS BUS position).
11. Main Generator — OFF.
12. Starter Generator — Standby.
13. Nonessential Bus Switch — Check.
14. Voltmeter Selector Switch — Check remaining positions; (Leave in MAIN GEN position).
15. Main Generator — ON.
16. Throttle — Full open. 6000 plus or minus 50 rpm.
17. All Engine and Transmission Instruments — Normal.
18. Low Rpm Audio Switch — Audio.
19. RPM INC-DEC Switch — Full Increase — 6700 plus or minus 50 rpm, set rpm at 6600.
- (I) 20. Communication and Nav Radios — Operational check as desired.
21. Clock — Set.
- (I) 22. Heading Indicator — Check.

- (I)23. MAG Compass — Check.
- (I)24. Altimeter — K-factor.
- (I)25. Attitude Indicator — Set.
- 26. Anti-collision Light — As desired.
- 27. Force Trim Switch — As desired.
- 28. Collective Pitch Friction — As desired.

PRIOR TO INSTRUMENT TAKEOFF

- (I)1. VSI, Altimeter — Indicates climb, descent.
- (I)2. Turn Needle, Heading Indicator, and Magnetic Compass — Indicates turn right and left.
- (I)3. Slip Indicator — Ball free in race.
- (I)4. Attitude Indicator — Indicates nose high, nose low, bank left, right.
- (I)5. Airspeed Indicator — Check.
- (I)6. Engine and Transmission Instruments — Normal.
- (I)7. Engine RPM — As desired.
- (I)8. Torque — Note PSI for hover.
- (I)9. Index Over Take-Off Heading — Set.
- (I)10. Pitot Heat — As required.

BEFORE TAKEOFF AND LANDING CHECK

- 1. RPM — 6600.
- 2. Fuel Quantity — Check.
- 3. Instruments — Normal.
- 4. Caution Lights — Check.
- 5. Low RPM Audio Warning Switch — AUDIO.
- 6. Bleed air switch — OFF.

ENGINE SHUTDOWN

1. Collective Pitch — Full down.
2. Governor RPM INC-DEC Switch — Full decrease.
3. Throttle — Flight idle.
4. Low RPM Audio — OFF.
5. Force Trim — ON.
6. Starter-Generator Switch — START.
- (N)7. Nav Lights — Flashing.
8. Anti-collision Light — OFF.
9. Exhaust Gas Temp — Stabilize, minimum of two minutes.
10. Throttle — OFF.
11. Main Fuel Switch — OFF.
12. Radios and ICS — OFF.
13. Electrical Switches — OFF (except main generator and battery).
- (N)14. Nav Lights — OFF, after rotor tied down.
15. Battery — OFF.
16. Main Rotor Blades — Tie down.
17. Walk Around Inspection — Complete.
18. DA Form 2408-12 and -13 — Complete.

EMERGENCY

ENGINE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1

ENGINE

ENGINE FAILURE DURING TAKEOFF AND WHILE HOVERING BELOW 10 FEET

1. Collective — Maintain position.
2. Cyclic — Apply as required to maintain position over ground.
3. Directional Control — Maintain.
4. Collective Pitch — Approximately one foot above the ground, cushion landing.

ENGINE FAILURE LOW ALTITUDE

1. Collective — Reduce to maintain rotor rpm.
2. Directional Control — Maintain.
3. Select Landing Area.
4. If Altitude Permits — Obtain forward airspeed, turn off switches and fuel.
5. Cyclic — Decelerate.
6. Collective — Cushion landing.

ENGINE FAILURE DURING FLIGHT

1. Collective — Maintain rotor rpm within limits.
2. Autorotative Glide — Establish.
3. Select forced landing area.
4. If time permits — Make radio call, turn battery switch and fuel valve — OFF.
5. Shoulder Harness — Lock.
6. Cyclic — Decelerating attitude as necessary.

7. Collective — Cushion landing.

ENGINE RESTART DURING FLIGHT

1. Establish autorotative glide.
2. Select forced landing area.
3. GOV switch — EMERGENCY.
4. Attempt Start.
5. Throttle — As necessary to maintain operating RPM.

EMERGENCY STARTING PROCEDURE

1. Throttle Closed.
2. Engine Fuel Control/Governor switch — Emergency.
3. Energize starter, start clock (start-fuel flow and ignition occur simultaneously).
4. When N_1 speed passes through 8%, open throttle slowly and advance to flight idle position as start progresses.
5. Release starter switch at 40% N_1 or after 40 seconds, whichever occurs first.
6. Engine Fuel Control/Governor switch — AUTOMATIC.

TAIL ROTOR MALFUNCTION

Refer to Tail Rotor Malfunction In Flight,
Chapter 4 of TM 55-1520-210-10.

**LOSS OF ENGINE/TRANSMISSION OIL
PRESSURE OR EXCESSIVE ENGINE/
TRANSMISSION OIL TEMPERATURE**

Accomplish a normal landing at the nearest
available safe landing area (open field, etc.).

FIRE

FIRE

ENGINE FIRE DURING STARTING — INTERNAL

1. Starter Switch — Continue to press.
2. Throttle — Close.
- (O)3. Start Fuel — OFF.
4. Main Fuel — OFF.
5. As EGT decreases to normal — Complete shutdown and record limit and duration of hot start on DA Form 2408-13.

ENGINE FIRE DURING STARTING — EXTERNAL.

1. Close Throttle.
2. Complete Shutdown.
3. Exit the Aircraft.
4. Use Fire Extinguisher.

ENGINE FIRE DURING FLIGHT

1. Select Forced Landing Area.
2. Autorotational Glide — Establish.
3. Throttle — Close.
4. Fuel Main switch — OFF.
5. Battery switch — OFF.
6. Generator switch — OFF, except when power is required to operate lights or avionic equipment.
7. Shoulder Harness — Lock.
8. Autorotational Landing — Accomplish.

FUSELAGE FIRE

1. Airspeed — Reduce to minimum.
2. Windows and Doors — Open if smoke enters cabin.
3. Battery switch — OFF.
4. Generator switch — OFF (ON if lighting or avionic equipment is to be used).
5. Landing — Accomplish at the nearest available safe landing area (open field, etc.).

ELECTRICAL FIRE

1. Instruments — Check.
2. Battery and Generator switches — OFF.
3. Circuit Breakers — Out.
4. Landing — Accomplish at the nearest available safe landing area.

SMOKE AND FUME ELIMINATION

1. Pilot's and Copilot's Windows — Open.
2. Cabin Ventilators — Open.
3. Cargo Doors — Open.
4. Aircraft Controls — Side slip, if practical.

FUEL

FUEL SYSTEM FAILURE

FUEL SYSTEM FAILURE (DURING FLIGHT) FUEL BOOST PUMP FAILURE

1. Descend — Descend below 4600 feet if possible.
2. Main Fuel switch — ON.
3. Main Fuel and Fuel Boost Pump Circuit Breakers — IN.

FAILURE OF ENGINE FUEL PUMP

1. Land at the nearest available safe landing area (open field, etc.).

ENGINE FUEL CONTROL SYSTEM MALFUNCTIONS

OVERSPEEDING N₂ GOVERNOR (HIGH RPM).

1. Simultaneously increase collective, rolling off twist grip throttle — establish operating rpm.
2. Maintain desired operating rpm with throttle and collective.
3. Land at nearest available safe landing area.

LOSS OF ENGINE (N₂) RPM

1. Collective — Down to maintain rotor rpm.
2. Throttle — Retard.
3. Governor switch — EMERGENCY position.

- 4. Governor RPM INCREASE-DECREASE Switch —DECREASE.**

Throttle — Advance slowly and firmly to obtain engine operating rpm.

COMPRESSOR STALL

1. Collective — Reduce power.
2. De-Ice switch — OFF.
3. Bleed Air — OFF.
4. Land — Normal landing at the nearest available safe landing area (open field, etc.).

INLET GUIDE VANE ACTUATOR FAILURE

- 4** If failure of the Inlet Guide Actuator occurs, the pilot will notice an instantaneous rise in EGT. By reducing collective pitch, the EGT can be maintained in the green arc; however, this will result in the engine producing a maximum of 500 (SHP) shaft horsepower (approximately 20 to 25 pounds torque).

ELECT

ELECTRICAL (ELECT) SYSTEM FAILURE

**CHIP DETECTOR WARNING LIGHT
ILLUMINATION**

Illumination of either the XMSN, TAIL ROTOR, or ENGINE CHIP DET warning lights indicates metal particles in the transmission, tail rotor gear boxes or engine.

If either warning light illuminates, accomplish a landing at nearest available safe landing area.

**ENGINE SHUTDOWN WITH COMPLETE
ELECTRICAL FAILURE**

In the event of a complete electrical failure accomplish engine shutdown as follows: Disconnect main fuel quick-disconnect at engine fuel filter.

HYD

100

HYDRAULIC (HYD) SYSTEM FAILURE

1. Airspeed — Adjust to comfortable level. (Approximately 60-70 knots).
2. Hydraulic Control Circuit Breaker — OUT. Check for electrical failure of hydraulic control switch.
3. Hydraulic Control Circuit Breaker — IN. If electrical failure of the hydraulic control switch has been eliminated and actual hydraulic failure confirmed.
4. Hydraulic Control switch — ON, (OFF, if power is not restored). Reset master caution light.
5. Landing — Accomplish landing at nearest available safe landing area (open field, etc.).

COLLECTIVE BOUNCE.

Collective bounce is a pilot induced vertical oscillation of the collective control system when an absolute friction (either pilot applied or control rigged) is less than seven pounds. Collective bounce may be encountered in any flight condition by a rapid buildup of vertical bounce at approximately three cycles per second. The severity of the oscillation is such that effective control of the aircraft may become difficult to maintain. The pilot should insure that adequate collective friction is applied, and maintained in all flight conditions. Should collective bounce be encountered accomplish the following:

1. Relax pressure on collective pitch control.
2. Hydraulic control switch — OFF.
3. Collective friction — Increase.
4. Collective pitch — Positive application either up or down.
5. Hydraulic control switch — ON after oscillation has subsided.

NOTE

Record duration and severity of collective bounce on 2408-13.

LANDING AND DITCHING (LDG/DTCH)

LANDING IN TREES

1. Enter normal autorotation (from altitude or low level).
2. Landing area — Select.
3. Shoulder Harness — Lock.
4. Decelerate — Sufficient to attain zero ground speed at tree-top level.
5. Prior to main blade contact — Apply collective pitch sufficient to attain minimum rate of descent.
6. As helicopter settles — Increase collective pitch to maximum.

DITCHING — POWER ON

1. Descent and Pre-landing — Execute.
2. Passengers — Alerted.
3. Helicopter Position — Radio position.
4. Pilot's and Copilot's Doors — Jettison while hovering a few feet above water; both cargo doors full open; slide cargo doors full open.
5. Instruct passengers to exit helicopter.
6. Fly a Safe Distance — Avoid passenger injury.
7. Battery switch — OFF.
8. Main Fuel switch OFF, Close Throttle — Allow aircraft to settle in a level attitude, apply full collective. When aircraft begins to roll, apply full cyclic in the same direction.

9. Shoulder Harness and Safety Belt — Release and clear helicopter when main rotor has stopped.

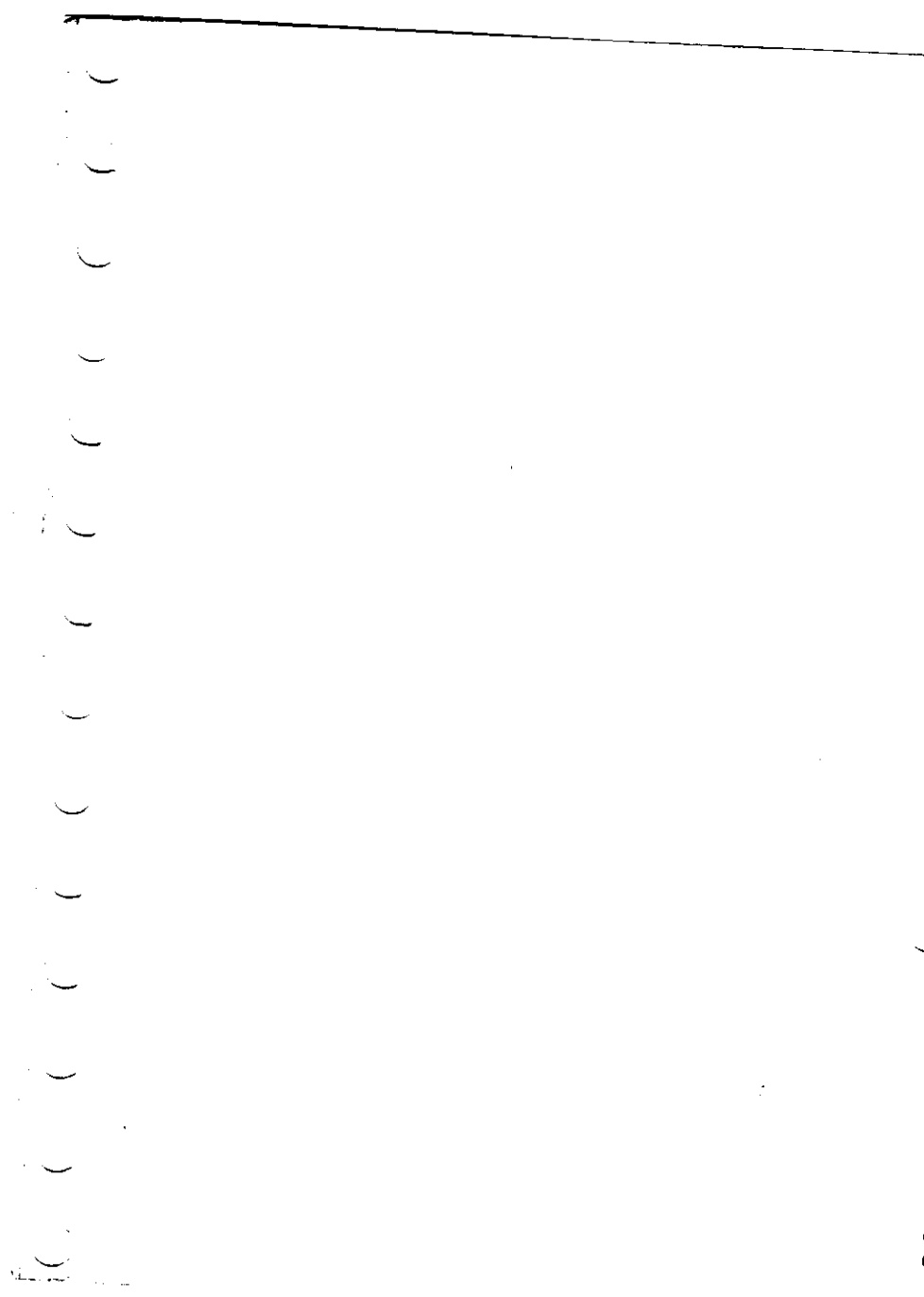
DITCHING — POWER OFF

1. Collective Pitch — Adjust as required to maintain rotor rpm within limits.
2. Autorotative Glide — Establish into the wind.
3. Passengers — Alerted.
4. Helicopter Position — Radio position.
5. Battery Switch and Main Fuel switch — OFF.
6. Pilot and Copilot's Doors — Jettison at low altitude, both cargo doors full open.
7. Shoulder Harness — Lock.
8. Deceleration — Execute near water surface to attain zero ground speed.
9. Apply Collective Pitch — Sufficient to attain minimum rate of descent.
10. Allow aircraft to settle in a level attitude — apply full collective; when aircraft begins to roll, apply full cyclic in the direction of roll.
11. Shoulder Horness and Safety Belts — Release and clear helicopter when main rotor has stopped.

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BAIL OUT

1. Passengers — Alerted.
2. Helicopter Position — Radio position.
3. Doors — Open cargo doors as required.
4. Controls — Set to establish CRUISE forward speed with flight attitude slightly nose down.
5. When Ready — Bail out through nearest exit.



PERFORMANCE

TAKEOFF DATA CARD

CONDITIONS

Gross Weight	Lbs
Field Length	Ft
Density Altitude	Ft
Effective Wind	Kts

TAKEOFF

Takeoff Over 50 ft. Obstacle	Ft
Obstacle Clearance Speed	Kts IAS

LANDING IMMEDIATELY AFTER TAKEOFF WITH POWER OFF CONDITION

Approach Speed	Kts IAS
Landing Distance Over 50 ft. Obstacle	Ft

LANDING DATA CARD

CONDITIONS

Field Length	Ft
Gross Weight	Lbs
Density Altitude	Ft
Effective Wind	Kts

(FRONT SIDE)

LANDING

Landing Distance Over 50 ft Obstacle	Ft
Approach Speed Over 50 ft Obstacle	Kts IAS

(REAR SIDE)

P-2

ARM T

**M23 ARMAMENT SUBSYSTEM
INSTALLED UH-1D/H HELICOPTER**

ON ENTERING HELICOPTER

- | | |
|---|--------------------------|
| 1. Right and left mount assemblies | INSTALLED |
| 2. Machine guns M60D | INSTALLED
AND SECURED |
| 3. Safety button to safe "S" position | CHECK |
| 4. Ammunition | CHECK |
| 5. Safety harness | SECURED |

AFTER FIRING

- | | |
|---|-------|
| 1. Safety button to safe "S" position | CHECK |
| 2. Remove ammunition and clear barrel | CHECK |

BEFORE LEAVING HELICOPTER

- | | |
|----------------------------|---------|
| 1. Machine guns M60D | SECURED |
| 2. Ammunition | CHECK |

RESCUE HOIST

HOIST OPERATION

The following sets forth the necessary steps for the hoist operator — to actuate hoist boom outboard, lower cable, retract cable, and return hoist boom to stowed position.

NOTE

Hoist cable is color coded as follows:
First 25 feet is yellow, the next 175 feet is unpointed, the next 40 feet is yellow and the last 16 feet is red.

Check with pilot (use intercom) that hoist cable cutter, hoist control and hoist power circuit breakers are IN.

After pilot has established zero airspeed over desired location, move boom toggle switch to OUT position to swing hoist boom outboard. Move variable speed control knob (labeled DOWN/UP) on hoist control pendant to DOWN to lower the hoist cable. Speed control must be moved to the right, then forward.

NOTE

The further the DOWN/UP speed control is moved from its neutral position, the faster the hoist will run. The hoist should

normally be operated at full speed, as slow speed operation will cause motor to heat excessively.

Move DOWN/UP speed control to UP to raise the hoist load. Speed control must be moved to the left, then aft.

NOTE

In case the extended portion of the hoist cable has to be jettisoned, a CABLE CUT is provided on the control box.

Move boom toggle switch to IN position to swing hoist boom inboard.

Bring hoist load into cabin and swing hoist boom to stowed (fully inboard).

TM-55-1520-219-CL

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

Operator's and Crewmember's Checklist

ARMY MODEL

UH-1B

Helicopter

Pilot's Checklist

HEADQUARTERS, DEPARTMENT OF THE ARMY

DECEMBER 1968

***TM 55-1520-219-CL**

**HEADQUARTERS
DEPARTMENT OF THE ARMY**
Washington, D.C., *18 December 1968*

TM 55-1520-219-CL is published for the use of all concerned.

By Order of the Secretary of the Army:

WILLIAM C. WESTMORELAND
General, United States Army,
Chief of Staff.

Official:
KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:
To be distributed in accordance with DA Form 12-31
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Crew Maintenance Instructions for UH-1A-1B aircraft.

***This manual supersedes TM 55-1520-219-10CL, 22 January 1968.**

GENERAL INFORMATION AND SCOPE

SCOPE. This checklist contains the operator's and crewmember's checks to be accomplished during normal and emergency operations. Performance data pertinent to normal operation of the aircraft is provided in the performance data section of this checklist.

GENERAL INFORMATION. The checklist consists of three parts: Normal procedures, emergency procedures, and performance data. Normal procedures consist of the procedures required for normal flight. Emergency procedures are subdivided into 10 classifications as follows: engine, tail rotor, fire, fuel, electrical (Elec), hydraulic (Hyd), landing and ditching (Ldg/Dtch), flight controls (Flt Cont), bailout or ejection (Bailout) (Eject), and armament (Armt), as applicable. Performance data consists of the take-off and landing data card.

Note

This checklist does not replace the amplified version of the procedures in the operator's manual (TM 55-1520-219-10), but is a condensed version of each procedure.

Normal Procedures Pages. The contents of the normal procedures of this manual are a condensation of the amplified checklist appearing in the normal procedures or crew duties portion of the applicable operator's manual.

Emergency Procedures Pages. The requirements in this section of the condensed checklist manual (CL) are identical to those for the normal procedures, except that the information is drawn from the amplified checks in the emergency procedures portion of the operator's manual. The emergency requirements are subdivided into the classifications listed above.

Performance Data Pages. A take-off and landing data card is provided. The card covers the four phases listed below as well as all those items which are applicable and change during take-off and landing.

Take-off Data
Landing Immediately After Take-off
Landing Data
Conditions

Symbols Preceding Numbered Steps:

- * — Indicates performance of steps is mandatory for all Thru-Flights.
- (N) — Means performance of step is mandatory for Night-Flights.
- Indicates a detailed procedure for this step is included in the Performance Checks section, located at the back of the checklist.
- (I) — Indicates mandatory check for Instrument Flights.
- (O) — Indicates if installed.

Reporting of Improvements. Reports of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, (Recommended Changes to DA Publications) and forwarded direct to Commanding General, U.S. Army Aviation Systems Command, ATTN: AMSAV-R- M, P.O. Box 209, St. Louis, Missouri 63166.

BEFORE EXTERIOR CHECK

1. Forms and Publications -- Check.
2. Battery Switch -- OFF.
- (N) 3. Lights -- Check, OFF.
4. Fuel and Cap Security -- Check.

EXTERIOR CHECK -- FUSELAGE FRONT

1. Rotor Blade -- Condition.
2. Cabin Top -- Condition and Ventilators.
3. Radio Compartment -- Security.
- (O) 4. FM Antennas -- Condition/Security.
5. Pitot Tube -- Unobstructed.
6. Cabin Lower Area -- Condition.
- (O) 7. Cargo Suspension Mirror -- As desired.
8. Landing and Searchlight -- Stowed.

FUSELAGE -- LEFT SIDE

1. Pitot-Static Port -- Unobstructed.
2. Navigation Light -- Security.
3. Entrance Doors -- Condition/Operation.
4. Landing Gear -- Condition.
5. Cargo Suspension Cable -- Condition/
Operation.

FUSELAGE -- AFT CABIN LEFT SIDE

1. Engine and Transmission Deck -- Check,
Cowling Secure.
2. Electrical Compartment -- Check.
3. Defueling Valve -- Drain.
4. Fuel Filter -- Drain and Check.

5. Fuel Tank Sump and Pump — Drain.
6. Governor Control Drain — Drain.
7. Access Doors — Secure.

AFT FUSELAGE — LEFT SIDE

1. Tail Rotor Drive Shaft Coupling — Position and Security.
2. Aft Fuselage — Condition.
3. Synchronized Elevator — Condition.
4. Antenna — Condition/Security.
5. Main Rotor Blade — Condition, Rotate 90°.

FUSELAGE — FULL AFT

1. Extension Covers — Secure.
2. Tail Rotor — Condition, Free Movement.
3. Tail Skid — Condition/Security.
4. Navigation Light — Condition/Security.
5. FM Antenna — Condition.

AFT FUSELAGE — RIGHT SIDE

1. Tail Rotor Gearboxes Oil Levels — Check Oil Levels.
2. Antenna — Condition/Security.
3. Synchronized Elevator — Condition.
4. Aft Fuselage — Condition.

FUSELAGE — AFT OF CABIN RIGHT SIDE

1. Engine/Transmission Area — Check, Cowling Secure.
2. Baggage Compartment — Check.