DEPARTMENT OF THE ARMY
UNITED STATES ARMY AVIATION AND MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA 35898-5000

REPLY TO
ATTENTION OF

30 JUL 1998

AMSAM-AR-E-I-P-A (70-37a)

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Interim Statement of Airworthiness Qualification (ISAQ), AH-64A Helicopter

1. References:

a. System Specification for AH-64A Advanced Attack Helicopter, DRC-S-H10000B, 15 April 1985 (with changes).

b. Technical Manual (TM) 1-1520-238-10, Operator's Manual, AH-64A Helicopter, 31 August 1994 (with changes).

c. Technical Manual (TM) 1-1520-238-23, Aviation Unit and Intermediate Maintenance Manual, AH-64A Helicopter, 16 May 1994 (with changes).

d. Technical Manual (TM) 1-1520-248-23, Aviation Unit and Intermediate Maintenance Manual, Engine Aircraft, Turbo-shaft, Models T700-GE-700, T700-GE-701 and T700-GE-701C, 28 April 1982 (with changes).

e. Technical Manual (TM) 1-1520-238-T, Aviation Unit and Intermediate Maintenance Troubleshooting Manual, 31 August 1992 (with changes).

f. Aircraft Training Manual, TC1-214, 24 May 1990.

g. Technical Manual (TM) 11-5855-263-23, Aviation Unit and Direct Support Maintenance Manual, Aviator's Night Vision Imaging System, AN/AVS-6(V)1 and AN/AVS-6(V)2, 1 June 1986.

h. Technical Manual (TM) 11-5855-263-10, Operator's Manual for Aviator's Night Vision Imaging System (ANVIS), AN/AVS-6(V)1 and AN/AVS-6(V)2, 5 July 1983.

i. Drawing 5008512, Night Vision and Electro-Optics Center, subject: Illustration of Center for Night Vision Electro-Optics (CNVEO) Prototype Adapter, Aviator's Night Vision Imaging System/Integrated Helmet and Display Sight System (ANVIS/IHADSS) Helmet (enclosure 7).

WARNING

Some Flight safety parts identified in the Overhaul and Retirement Schedule (Encl 1) are aircraft model specific. Parts removed from Longbow ("D" Model) Apache helicopters identified by ** **shall not** be used on the "A" Model Apache regardless of useable hours remaining. Parts removed from "A" Model Apache helicopters identified by *** **shall not** be used on the Longbow ("D" Model) Apache regardless of useable hours remaining.

j. Enclosure 1 contains changes to the Overhaul and Retirement Schedule in TM 1-1520-238-23 (reference 1c). All dash numbers are covered by the basic part number unless noted.

2. This memorandum constitutes an Interim Statement of Airworthiness Qualification in accordance with the Army Regulation (AR) 70-62 in support of both Conditional and Training Materiel Releases applicable to the AH-64A Helicopter with Serial Numbers (S/N) 82-23357 and subsequent defined in reference 1a.

3. The First Article Preproduction Verification and Validation testing of the AH-64A Helicopter to meet qualification requirements is in progress in accordance with the System Specification (reference 1a). There are no major unqualified items which would preclude issuance of the Materiel Release. A listing of the AH-64A unqualified components is included in the preliminary Department of Defense (DD) Form 250 of each AH-64A.

4. The following instructions apply:

a. This Interim Statement of Airworthiness Qualification rescinds and replaces the previous Interim Statement of Airworthiness Qualification, 94-S1, 29 June 1994.

b. Maintenance procedures shall be conducted in accordance with references 1c and 1e, and all applicable Safety-of-Flight (SOF) and other Advisory Messages.

c. In the event of conflict, the data specified by this memorandum shall take precedence over the data given in references 1b through 1e.

d. A copy of this Interim Statement of Airworthiness Qualification must be filed in every AH-64A logbook. Local reproduction is authorized.

5. *Fuel Cell Chafing Inspection:

AH-64A aircraft that fail the collective bellcrank and forward fuel cell chafing inspection in accordance with Technical Bulletin (TB) 1-1520-238-20-52, are authorized to install a fuel cell restraint panel in accordance with TB 1-1520-238-20-52. The panel is intended to constrain the forward fuel cell from expanding and inhibiting the operation of the flight controls and related mechanisms. A daily visual inspection shall be conducted in the subject area for the first 10 flight hours to ensure that no interference is incurred to the flight control assemblies, that no structural deterioration is occurring, no loss of security, and that no damage to the host helicopter exists. After this period the area will be visually inspected for the preceding at the next 10 flight hours or 14 day phase maintenance, whichever comes first and then at phase inspection. The unit(s) is authorized to overfly the 10 flight hours limit by the time necessary to complete the mission day or 2 hours, which ever is less.

6. *External fuel tank installation -

NOTE*

If a four tank plumbing kit is installed, but only the two inboard tanks are utilized, fluid jumper lines must be installed on both outboard pylons (multiplex (MUX) box bracket).

a. Use of one external fuel tank (Ref. SOF AH-64-98-01) for use with T700-GE-701 engines with Woodward governor HMUs installed or T700-GE-701C engines with the restrictions in paragraph 12 is authorized.

b. Single external fuel tank installation -

(1) Required modifications if a four tank plumbing kit is installed on a left wing tank -

(a) Fluid jumper line installed on the left outboard pylon (MUX box bracket)

(b) Electrical jumper wire installed on the right inboard pylon.

(c) Cap fluid lines at both right pylons (MUX box bracket) using MS21914-4D and MS21914-8D caps.

(2) Required modifications if a four tank plumbing kit is installed on a right wing tank -

(a) Fluid jumper line installed on the right outboard pylon (MUX box bracket).

(b) Electrical jumper wire installed on the left inboard pylon.

(c) Cap fluid lines at both left pylons (MUX box bracket) using MS21914-4D and MS21914-8D caps.

b. Required modifications if a two tank plumbing kit is installed on a left wing tank:

(1) Electrical jumper wire installed on the right inboard pylon.

(2) Cap fluid lines at right inboard pylons (MUX box bracket) using MS21914-4D and MS21914-8D caps.

c. Required modifications if a two tank plumbing kit is installed on a right wing tank:

(1) Electrical jumper wire installed on the left inboard pylon.

(2) Cap fluid lines at left inboard pylons (MUX box bracket) using MS21914-4D and MS21914-8D caps.

7. To obtain a single auxiliary tank empty indication, a jumper wire must be installed on the inboard pylon on the opposite side of the aircraft that the auxiliary tank is installed. The jumper wire should be installed by connecting the wire ends to the A&B pin connections on electrical connector J256. The dust cover should be installed after jumper installations. The recommended jumper wire is M22759/43-20-9 wire; M39029/58-363 contact, pin (two required).

8. *Center-of-gravity (cg) limits -

a. Lateral Limits are at Enclosure 2.

b. Longitudinal Limits are at Enclosure 6.

9. Engines -

WARNING*

Operation of a mix of T700-GE-701 and T700-GE-701C engines on the same AH-64A aircraft is prohibited.

a. Dual engine hot refueling is authorized only with the D-1 nozzle. Upon completion of the hot refuel operation, pull collective for #1 engine (with #2 engine at idle) to 60 percent torque or until the aircraft becomes light on wheels. Maintain this power setting for 30 seconds with the crossfeed fuel switch in the "AFT" position. Repeat the procedure for 30 seconds with the crossfeed fuel switch in the "NORMAL" position. This will purge air that may have collected in the fuel lines.

10. *In order to preclude AH-64 aircraft with T700-GE-701 engines with Woodward Governor Hydromechanical units (HMUs) installed or T700-GE-701C engines from flameout after external to internal fuel transfer on the ground, the following restrictions shall apply. Prior to flight after ground external to internal fuel transfer, perform the following:

a. If a single tank is installed on the left wing, purge the air from fuel lines of the #1 engine by pulling collective for #1 engine (with #2 at idle) to 60 percent torque or until the aircraft becomes light on wheels. Maintain this power setting for 30 seconds.

b. If the crossfeed switch is used on the ground, perform procedures to purge air per paragraph 11.

11. *With **two or four** external fuel tanks symmetrically installed, the following restrictions apply:

a. Maximum speed for **two** 230 gallon external fuel tanks is **110 knots indicated air speed (KIAS)** and a normal load factor of 2g's (gravity acceleration) shall not be exceeded.

b. Maximum speed for **four** 230 gallon external fuel tanks is **65 KIAS** and a normal load factor of 2g's (gravity acceleration) shall not be exceeded.

c. Maneuvers are limited to those required to takeoff, climb to optimum altitude, heading/course corrections, obstacle avoidance, descent, and landing.

d. Two hundred thirty (230) gallon wing tanks shall be in flight stowed position (4 degrees nose-up with respect to waterline (WL)).

e. Rapid and step-shaped pedal inputs in excess of 1/2-inch shall be avoided.

NOTE

Aircraft equipped with T700-GE-701 engines and two Hamilton Standard HMUs or two Woodward HMUs or one Hamilton Standard and one Woodward HMU will have the additional restrictions in Paragraph 12 apply.

12. With **one** external fuel tank mounted on either inboard pylon (regardless of engine type) and a combination of weapons and stores, flight operations are subject to the following restrictions:

a. Use of JP-4 is prohibited during auxiliary tank operation above 80 degrees Fahrenheit ambient.

b. External fuel transfer shall not be accomplished below minimum safe single engine airspeed.

c. Internal fuel transfer is not authorized during external fuel transfer.

13. *Jettison of external tanks is not authorized except in an emergency condition, and then only from airspeeds less than 100 KIAS. Jettison from level flight if possible, and if not, jettison at an airspeed which minimizes the rate of descent at the time of jettison.

14. *Jettison of external stores is not authorized except for emergency conditions, and then only from unaccelerated flight during:

a. Level Flight - Hover to 40 KIAS (minimize side slip).

b. Level Flight - 40 to 120 KIAS (ball centered).

c. Descents (0 fpm to full autorotation) - 80 to 100 KIAS (ball centered).

15. *Autorotations -

a. If aircraft gross weight exceeds 15,500 pounds, practice autorotations shall be terminated at minimum of 200 feet AGL altitude for all AH-64A aircraft regardless of engine type.

b. During autorotation training, for aircraft equipped with shaft driven compressors (SDCs) [Part Number (P/N) 7-211710013-9/-11/-13/-15/-17], N_r speeds shall be limited to less than 103 percent.

16. Use of Night Vision Goggles (NVG) will be in accordance with the flight restrictions detailed below.

(Apache NVG (AN/AVS-6) Flight Restrictions)

a. The AN/AVS-6 NVG will be mounted on the IHADSS Helmet utilizing both reference 1f and Power Pack Assembly, P/N 5002570 [FSCM 54490].

b. Night Vision Goggles are intended to augment the PNVS by providing the co-pilot/gunner (CPG) with the capability to look for obstacles.

c. The following restrictions are imposed for Apache flight operations using NVG:

(1) Pilot Night Vision Sensor remains the primary sensor and must be operational prior to takeoff, and during the entire mission.

(2) The pilot will use PNVS while the CPG is using NVG.

(3) Only the CPG may use NVG during flight, assuming flight control only at times when the pilot cannot safely fly the aircraft, and for training requisite for night vision (NV) qualification/proficiency as specified by reference 1f.

(4) Co-pilot/gunner integral red panel lighting will be Off. (Blue/green lights can be left on.)

(5) Co-pilot/Gunner Caution/Warning/Advisory light (red only) will be set to night [dim] mode.

(6) Co-pilot/Gunner glare shields will be fully extended with "bat wings" in place.

CAUTION

Light interference resultant of Fire Handle or Master Caution Light activation can cause NVG to become inoperative.

(7) Operating and maintenance instructions shall be in accordance with references 1g and 1h.

(8) Co-pilot/Gunner NVG training and proficiency shall be in accordance with reference 1f.

(9) During close formation flight utilizing NVG, external aircraft lighting will be limited to Formation Lights only, except for the trail aircraft. The trail aircraft will utilize Navigation and Anticollision Lights in addition to the Formation Lights. Formation flight with NVG is not allowed within FAA-controlled airspace unless appropriate FAA approval has been obtained locally.

17. Global Positioning System (GPS) -

Installation of Trimble Trimpack GPS shall be in accordance with Technical Bulletin (TB) 1-1520-238-20-56. Technical Bulletin 1-1520-238-20-56 replaces TB 1-1520-238-20-15.

(1) The GPS shall be operated in accordance with the manuals provided by Trimble.

(2) Use of the Trimble GPS as a navigation reference is prohibited for Instrument Flight Rule (IFR) operations. If the GPS receiver is not fitted with an external NVG acceptable filter, the display backlighting shall not be operated during NVG operations.

18. Aircraft shall maintain stand-off distances in accordance with message HQ, ATCOM, AMSAT-R-E, 011600ZDEC95, subject: AH-64A CONUS High Intensity Radio Transmission Area (HIRTA) Standoffs, Which Applies for the 48 Contiguous States. The following messages apply for the remainder of the world (including Alaska and Hawaii):

a. HQ, AVSCOM, AMSAV-E, 091830ZJAN89, subject: CONUS HIRTA Message (Alaska and Hawaii only).

b. HQ, AVSCOM, AMSAV-E, 091845ZJAN89, subject: OCONUS HIRTA Message.

c. HQ, AVSCOM, AMSAV-E, 301430ZMAY89, subject: Change 1 to CONUS HIRTA Message (Alaska and Hawaii only).

19. Aircraft equipped with T700-GE-701C engines shall maintain stand-off distances in accordance with paragraph 21, except that paragraphs 21a, 21b and 21c are modified by the Aviation Safety Action Message (ASAM) (AH-64-93-ASAM-04).

20. Weapon Systems -

a. *Weapons firing envelopes are furnished as Enclosures 3 through 5.

21. *Firing of 2.75-inch Hydra-70 rocket configuration (fuse/warhead/motor)/flight conditions as follows:

CAUTION*

When forward airspeed exceeds 10 KIAS, do not use M229/M423 warhead/fuse combination for engagement of targets under 450 feet distance, and ensure the line of fire is clear of obstruction (trees/buildings) for at least 450 feet. When at hover or forward air speed is less than 10 KIAS, engagement distance and the requirement for line of fire to be clear of obstruction may be reduced to 350 feet. Firing this combination with the ballistics for the M151 warhead will result in the reduced rocket range.

a. Use of the MK66 MOD 2 rocket motor is prohibited.

CAUTION*

Firing M423/M274/MK66 in hover, or low speed at a height of less than seven feet above ground level (AGL), and for all other flight conditions of five feet AGL is not authorized.

b. Do not fire rockets with the M433 fuse in situations where they might fly closer than 51 meters from other airborne helicopters. This restriction comes from Safety of Usage Message, U.S. Army Industrial Operations Command (SOUM IOC) #2-97.

c. Due to possibility of surging the engines, do not fire rockets from in-board stations. Fire no more than pairs with two outboard launchers every three seconds, or fire with only one outboard launcher installed without restrictions (ripples permitted). These are the only conditions permitted. Other firing conditions will be required to be approved via a System Safety Risk Assessment (SSRA).

22. *The HELLFIRE AGM-114K missile may be operated in accordance with the following:

WARNING*

The warhead shall be handled as an experimental explosive device. Precautions to minimize impacts and accelerations shall be observed.

WARNING*

Do not expose the precursor warhead or new main warhead to fire or temperatures in excess of 155°F Fahrenheit for periods in excess of 4 hours.

CAUTION*

Missiles may experience numerous anomalies when in the vicinity of high power communication, navigation, or radar transmitters. These anomalies include, but are not limited to, failure to pass built-in-test (BIT), uncommanded BIT, failure to track the laser source, incorrect or blank missile symbology, and missile or related missile electronics failures.

23. SPECIAL INSPECTIONS -

a. *Stabilator Pivot Bolt Inspection every 250 hours as follows (reference 1c):

(1) Remove access doors LS1 and RS1 and fairing L545 and R545.

(2) Remove stabilator pivot bolts one at a time [paragraph 2.113, reference 1c].

(3) Check stabilator pivot bolts and self-aligning bearing for evidence of surface discoloration and roughness.

(4) If surface discoloration and roughness are visible, or if bolt removal was difficult, polish bolt with crocus cloth [E139].

(5) After polishing, inspect surface for pits and/or scratches. If pits and/or scratches exceed limits [paragraph 2.113, reference 1c], replace bolt.

(6) If pits and/or scratches do not exceed limits [paragraph 2.113, reference 1c], ensure sharp edges are removed (deburred) with minimal material and surface coating loss.

NOTE*

To check surface discoloration and roughness on self-aligning bearings it may be necessary to remove stabilator assembly [paragraph 2.113, reference 1c].

(7) Check inner race of self-aligning bearing.

NOTE*

Discoloration may be deeper than surface level. Polishing should remove roughness. Avoid removal of surface coating and material.

(8) If surface discoloration and roughness exist, polish race with crocus cloth [E139].

(9) After polishing, if surface pits and scratches remain, do not attempt blending. If scratches and pits prevent easy installation of pivot bolt, replace stabilator [paragraph 2.113, reference 1c].

(10) Check that spacer slides freely and smoothly over surface of bolt.

(11) Coat pivot bolts with grease [E5] and install [paragraph 2.113, reference 1c].

(12) Secure fairings L545 and R545, and access doors L51 and R51.

24. Pre-planned Instrument Meteorological Conditions (IMC) flight is limited to FAA uncontrolled airspace.

AMSAM-AR-E-I-P-A (70-37a)
SUBJECT: Interim Statement of Airworthiness Qualification, AH-64A Helicopter

25. Asterisked (*) paragraphs are designated for publication in future Technical Manual changes.

26. Point of contact for this action is Mr. Larry Powitzky, AMSAM-AR-E-I-P-A, DSN 897-4801 or Commercial (205) 313-4801; E-mail: powitzky1@avrdecr.redstone.army.mil.

7 Encls
as

BARRY J. BASKETT
Director of Aviation Engineering

DISTRIBUTION:
See the attached list.

Changes to TM 1-1520-238-23 "Retirement and Overhaul Schedule" for AH-64A.

The following components have had a reduction in Retirement Hours.

PART NAME	PART NUMBER	New Retirement Hours	Retirement Interval Notes	New Overhaul Hours	Overhaul Interval Notes
Support Assy Mixer	7-211160040-5/-7	7,431	**		
Hanger, Bearing, Aft	7-211350007	6,487	**		
M/R Drive Shaft	7-211350021	3,283	**		
M/R Drive Shaft (Fenn Mfg)	7-211350021	2,258	**		
T/R Fork Assy	7-211421008-7/-9/-11	2,394	**		
T/R Strap Assy	7-211421035-5/-7	12,000			
Bolt, Self-Lock, Rotor Cont	7-211511133	11,303	**		
Lat Bellcrank Support Bolt	7-211511134	11,303	**		
Bolt, Aft Long Bell Spt	7-211511209	9,346	**		
Bolt, Torq Link Spt	7-211511211	9,346	**		
Clutch Assy	7-311310003-3/-7	1,000			
Clutch Assy	7-311310003-9	2,500			
Hanger, Bearing, Fwd	7-311350008	6,487	**		
Hub Subassembly	7-311411015	3,359			
Plate, Lower	7-311411080	3,359			
Lower Shoe Assy	7-311411088	4,367			
Plate, Upper	7-311411096	3,359			
Lead Lag Damper	7-311411110	3,710	***		
Trunnion Damper	7-311411187	2,739	***		
Feathering Bearing Housing	7-311411193-11/-15	1,918			
Pitch Housing	7-311411215-7/-13/-15	1,918			
M/R Non-Rot S-Plate	7-311511107	11,303	**		
Collective Bellcrank	7-311511117	10,409	**		
Aft Long Bellcrank	7-311511125	7,431	**		
Fwd Long Bellcrank	7-311511127	7,431	**		
Longitudinal Link	7-311511130	9,346	**		
Collective Act, Spt Assy	7-311511176-11 to -19	11,997	**		
Long Torq Link Assy	7-311511181	9,346	**		
M/R Attach Pin	Avibank 53460-3	2,243			

ENCL 1

Changes to TM 1-1520-238-23 "Retirement and Overhaul Schedule" for AH-64A.

The following components have had an increase in Retirement Hours.

PART NAME	PART NUMBER	New Retirement Hours	Retirement Interval Notes	New Overhaul Hours	Overhaul Interval Notes
M/R Drive Plate	7-211310098-5/-7	13,257			
M/R Attach Pin	7-211411185	11,068			
Mast M/R Support	7-311160020	19,078	**		
Strut, Fwd Center, LH	7-311160055-1	18,243			
Strut, Fwd Center, RH	7-311160055-2	18,243			
Strut, Aft Center, LH	7-311160085-1	18,243			
Strut, Aft Center, RH	7-311160085-2	18,243			
Main Rotor Blade	7-311412000-3/-5	6,000			
Swept Tip	7-311412035-7	6,000			
T/R Blade Assy	7-311422050-3/-5/-9	6,201			
Longitudinal, Actuator Spt	7-311511175	12,474	**		
T/R Swashplate Brg	7-311527069/-3	1,500			

ENCL 1

Encl 1

Changes to TM 1-1520-238-23 "Retirement and Overhaul Schedule" for AH-64A.

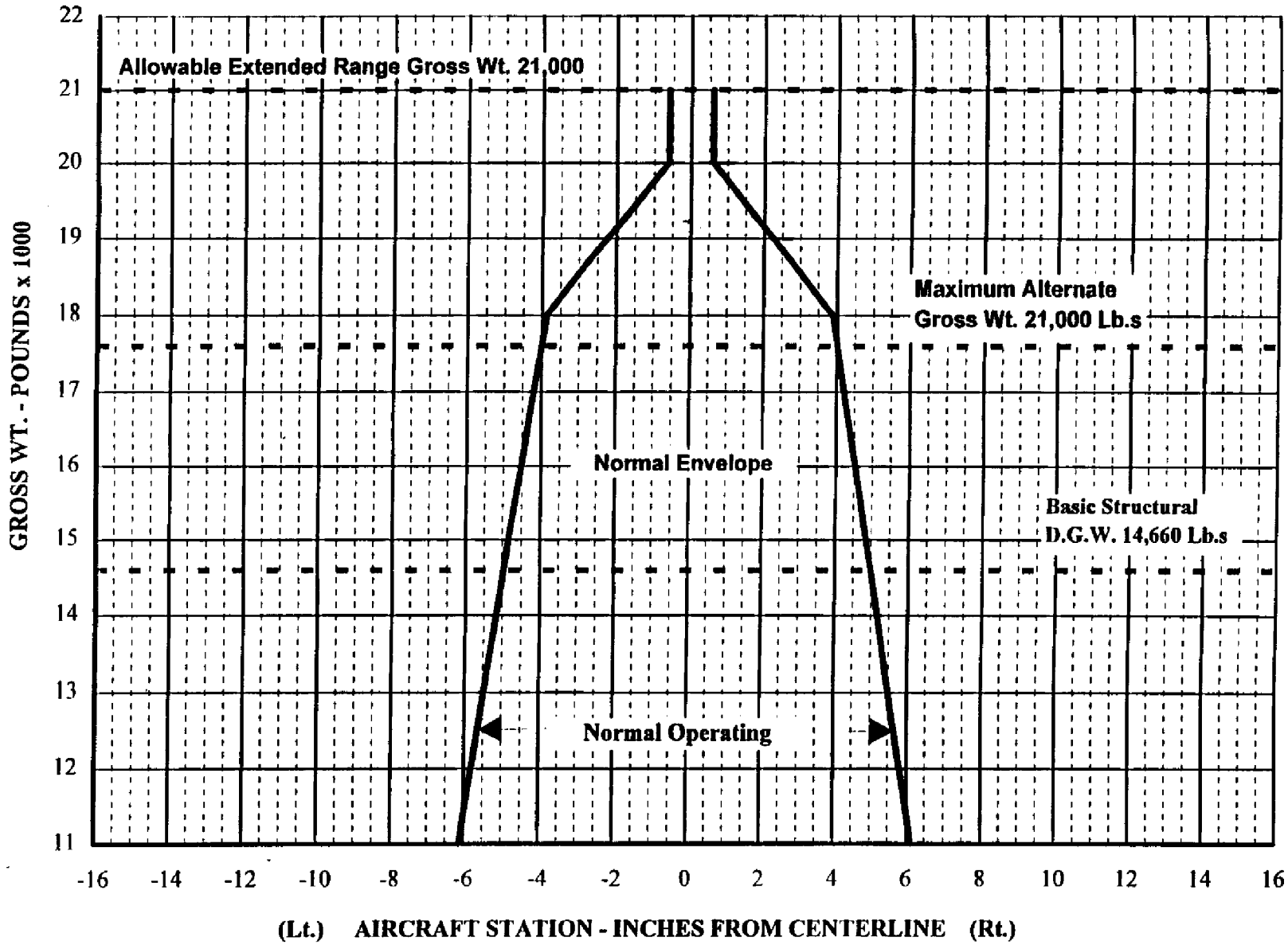
The following parts have been identified as Condition Change Components.

PART NAME	PART NUMBER	New Retirement Hours	Retirement Interval Notes	New Overhaul Hours	Overhaul Interval Notes
Bearing, Plain Rod End	289332-5	On Cond			
Coupling, NGB to XMSN	7-211350001	On Cond			
Shaft, NGB to XMSN	7-211350002	On Cond			
Coupling, NGB to XMSN	7-211350003	On Cond			
Coupling, Common	7-211350004-3	On Cond			
Shaft, XMSN to Hanger	7-211350005-3	On Cond			
Shaft Common	7-211350006-3/-5	On Cond			
Shaft, IGB to T/R GB	7-211350027-3/-5	On Cond			
Rod End, Damper	7-211411186-5	On Cond			
T/R Hub	7-211421037-3	On Cond	**		
Rod Assy, Primary Spt Eng Mount	7-211670105-3	On Cond			
Eng Mount Spt, Inbd, FWD	7-211671010-601	On Cond			
Spt Assy, Aft Eng Mt LH, RH	7-311113128	On Cond			
Spt Assy, FWD Eng Mt LH, RH	7-311113290	On Cond			
Spt Assy, Fwd Eng Mount	7-311113292	On Cond			
Stab Actuator Fitting Assy	7-311114201	On Cond			
Spar Box Assy, Vert Stab	7-311122601	On Cond			
Stabilator Assembly	7-311123600	On Cond			
Stabilator Actuator Fitting	7-311123622	On Cond			
Wing Assembly, LH	7-311130200-601	On Cond			
Wing Assembly, RH	7-311130200-602	On Cond			
Base Assembly, Mast Spt	7-311160030	On Cond	**		
Bolt, Mixer Pivot Spt	7-311160044	On Cond			
Strut, Fwd Side, LH	7-311160060-1	On Cond			
Strut, Fwd Side, RH	7-311160060-2	On Cond			
Strut, Aft Side, LH	7-311160070-1	On Cond			
Strut, Aft Side, RH	7-311160070-2	On Cond			
Main XMSN Assy	7-311310001	On Cond			
Tail Rotor Brace, FWD and Aft	7-311340185	On Cond			
M/R Hub Ret Nut	7-311411102-3/-5	On Cond			
Stretched Strap	7-311411146-5/-7	On Cond			
Lead Lag Link Assy	7-311411155	On Cond			
M/R Rot. Swashplate	7-311511102	On Cond			

Changes to TM 1-1520-238-23 "Retirement and Overhaul Schedule" for AH-64A.					
Lateral Bellcrank	7-311511123	On Cond			
M/R Pitch Link Assy	7-311511135	On Cond			
Pitch Rod End	7-311511137	On Cond			
Lateral Actuator Support	7-311511139-5 to -11	On Cond			
M/R Scissors Assy	7-311511158-3/-5	On Cond			
Lateral Link	7-311511182	On Cond			
T/R Actuator Spt Assy	7-311525062	On Cond			
T/R Directional Bellcrank	7-311525063-13/-17	On Cond			
T/R Link Assy	7-311525064-11/-21	On Cond			
T/R Control Spt Bracket	7-311525065	On Cond			
T/R Rot Swashplate	7-311527003	On Cond			
T/R Scissors Link Assy	7-311527009	On Cond			
T/R Pitch Link Assy	7-311527035	On Cond			
T/R Swashplate Assy	7-311527038	On Cond			
T/R Non-Rot Swashplate	7-311527061	On Cond			
Eng Mount Fitting Lower, FWD	7-311670014	On Cond			
Engine Mount, V-Link, Aft	7-311670024	On Cond			
Spt Assy, Eng Mount, Aft	7-311670117-11/-21	On Cond			
Eng Mount Spt, FWD Inbd	7-311670131	On Cond			
M/R Actuator	7-311820011	On Cond			
M/R Actuator	7-311820012	On Cond			
T/R Actuator	7-311820014	On Cond			
Power Dist M/R De-Ice	7-311A10025	On Cond			
Stabilator Actuator	7-311D10018/-3	On Cond			
Stabilator Fitting	7-311D10023/-3	On Cond			
Standpipe, ADS	7-319720011	On Cond			
Drive Plate Cover	7-319720014	On Cond			
Flexible Support	7-319720015	On Cond			
Bearing Housing	7-319720018	On Cond			
Bearing	7-319720020	On Cond			
Adapter	7-319720026	On Cond			
Shaft Assembly, Soft Mount	7-319720028	On Cond			

ENCL 1

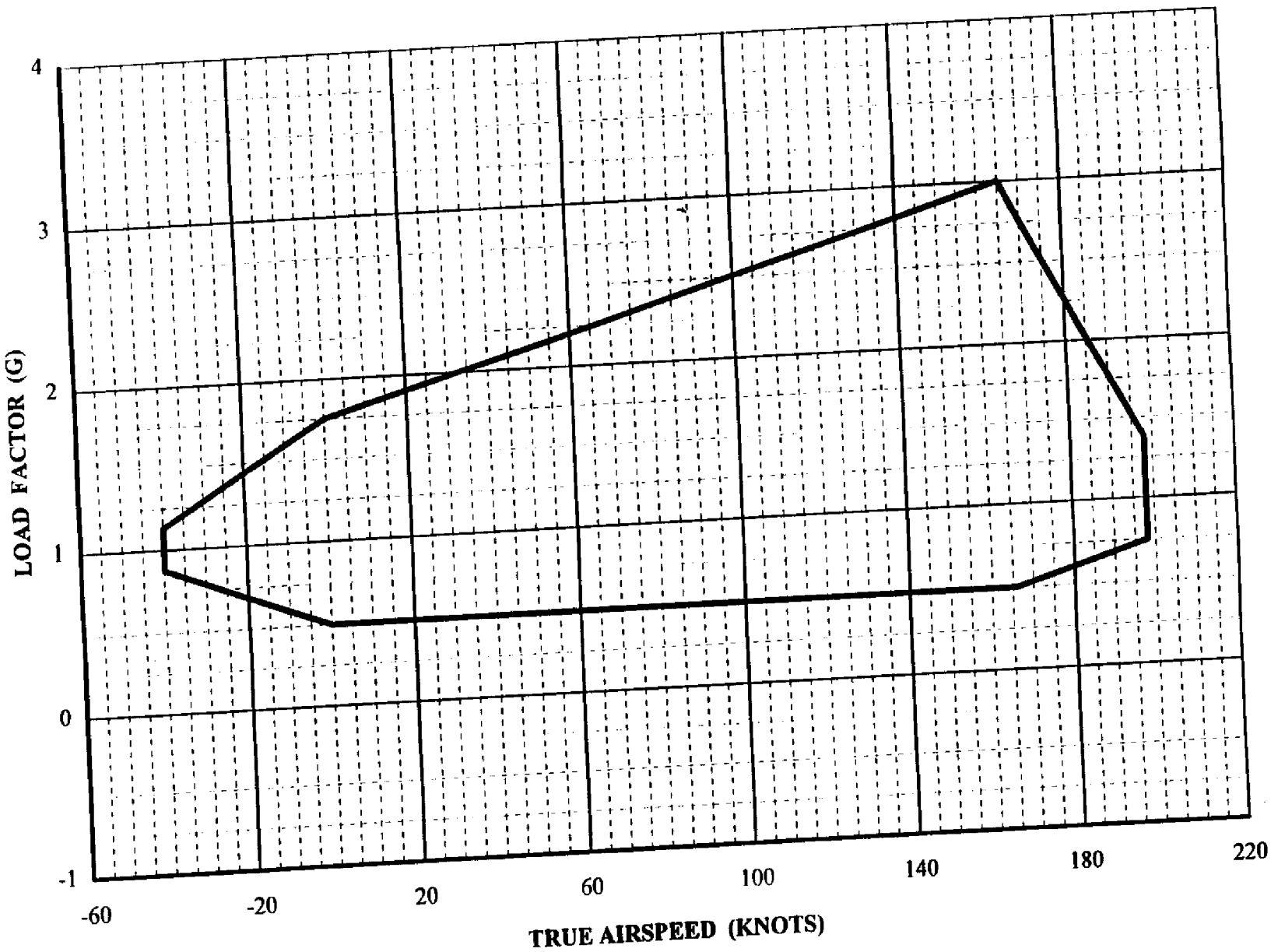
LATERAL C.G.



ENCL 2

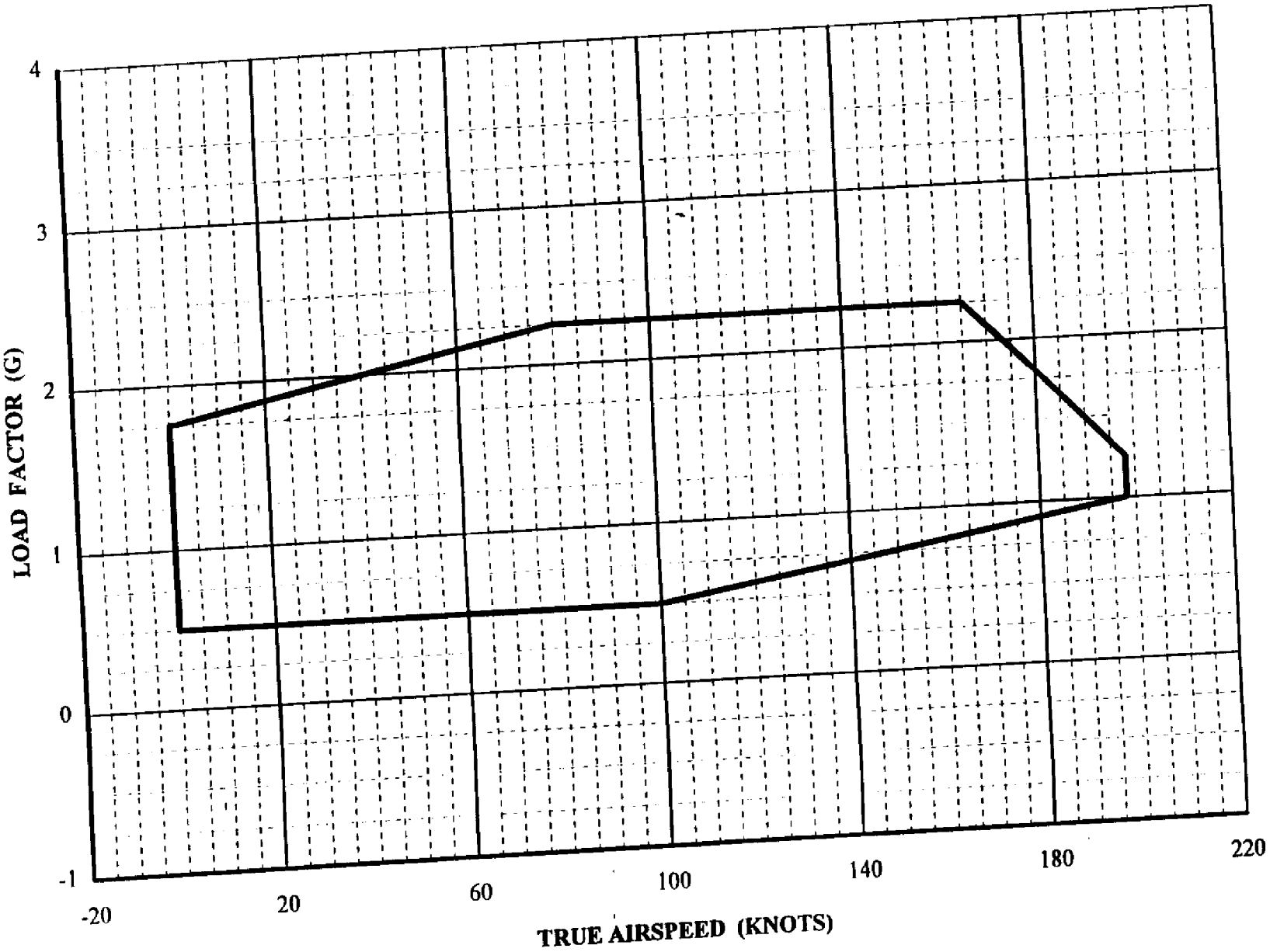
ENCL 3

AH-64A
GUNFIRE ENVELOPE



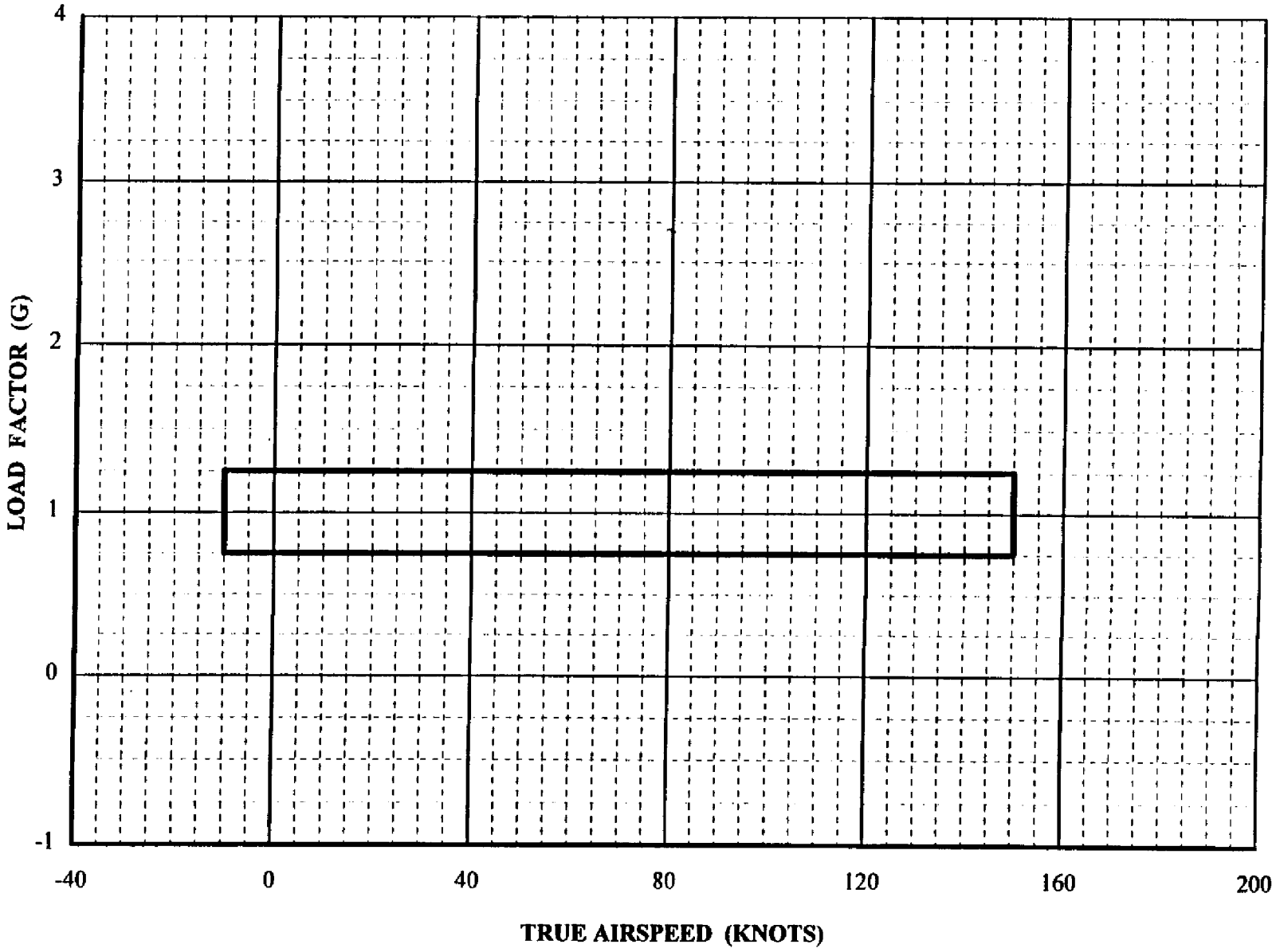
Encl 4

AH-64A
ROCKET FIRING ENVELOPE



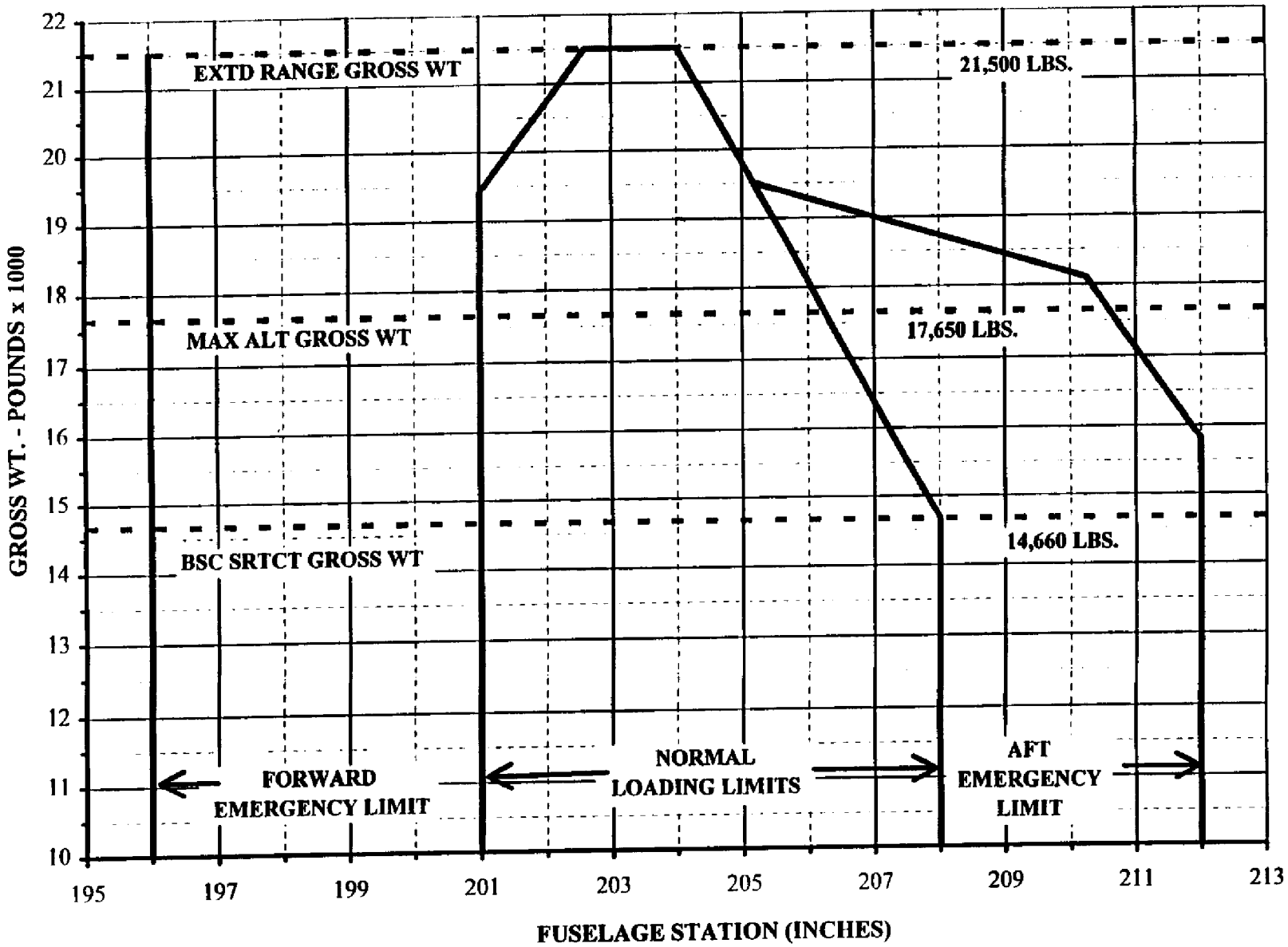
Encl 5

AH-64A
HELLFIRE ENVELOPE



ENCL 6

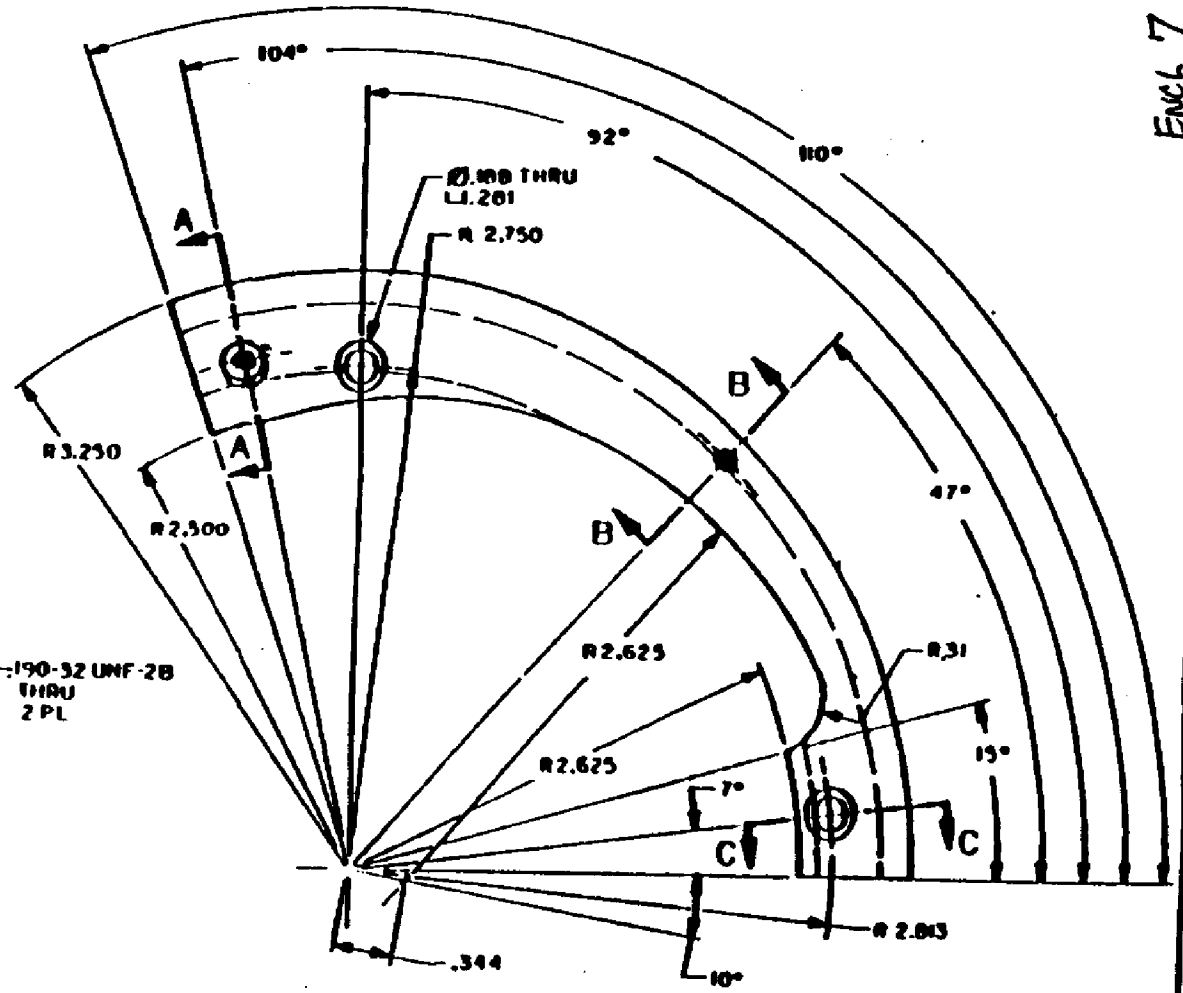
AH-64A APACHE CENTER - OF - GRAVITY
LONGITUTUDINAL C.G. LIMITS

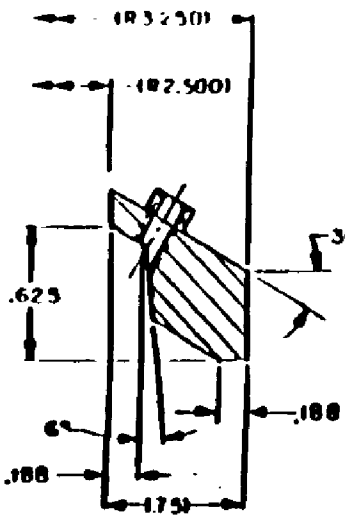


ENCL 7

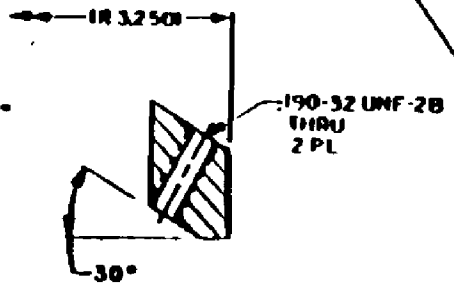
NOTES:

1. SURFACE ROUGHNESS 63/.
2. NOT USED.
3. SECTIONS HAVE BEEN ROTATED.
4. LEFT HAND SIDE SHOWN, RIGHT HAND SIDE OPPOSITE.

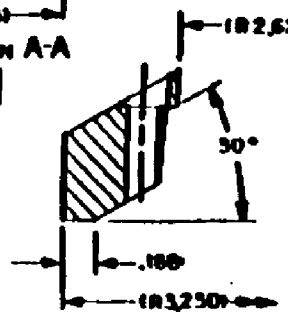




SECTION A-A
3



SECTION B-B
3



SECTION C-C
3

AL ALY

ADC(PB) 2-10-87

ILLUSTRATION OF CIVEO PROTO-TYPE ADAPTOR, ANVIS/HADDS HELMET

C	54490	.500E ? SK

ENCL 7

Distribution:

Commander:
2/6th Cavalry, ATTN: AETV-AVA-V-A, CMR 416, APO AE 09140
6/6th Cavalry, ATTN: AETV-AVA-CS, CDR 416, APO AE 09140
11th Aviation Brigade, ATTN: AETS-AVA, APO AE 09140
7th/159th, ATTN: AETS-SC-AV-A, APO AE 09140
4th Combat Aviation Brigade, 1st Armored Division, ATTN: AETV-TFJ, APO AE 09165
1/501st Aviation Regiment, ATTN: AETV-TFJ-B, Unit 20195, APO AE 09165
3/1st Aviation Regiment, ATTN: AETV-BGK-M, CMR 454, APO AE 09250
3d Infantry Division, ATTN: AETV-BDE-AVN-E, APO AE 09250
200th TAMMC, Unit 23203, ATTN: AERLA-MMC-AM, APO AE 09263
EUSA, ATTN: EAGC-EA, Unit 15236, APO AP 96205-0009
1st BN, 2d AVN, ATTN: S3, Unit 15008, APO AP 96208-0476
6th CAV BDE, ATTN: S3, Unit 15711, APO AP 96271-0711
1st Sqdn, 6th CAV, ATTN: S3, Unit 15567, APO AP 96297-0669
3d Sqdn, 6th CAV, ATTN: S3, Unit 15712, APO AP 96271-0712
194th MAINT BN, ATTN: S3, Unit 15215, APO AP 96271-0151
G Co, 52d AVN REG, Unit 15166, APO AP 96297
U.S. Army Aviation Center, ATTN: ATZQ-DOL-AQ [2] (D. Caddell), ATZQ-S, ATZQ-ATB-O, ATZQ-TSM, Fort Rucker, AL 36362-5117
U.S. Army Aviation Technical Test Center, ATTN: STEAT-MP-P, Fort Rucker, AL 36362-5276
33d Aviation Group, Bldg 25109, Knox AHP, Fort Rucker, AL 36362-5270
1/285th Aviation, Arizona Army National Guard, ATTN: QC, Silver Bell Heliport, Marana, AZ 85853-9598
AASF #2, Arizona Army National Guard, ATTN: QC, Silverbell Army Heliport, Marana, AZ 85653-9598
1/111th Aviation Florida Army National Guard, ATTN: Commander, AASF #1, Craig Field, PO Box 8628, Jacksonville, FL 32239-8628
Aviation Brigade, 24th Infantry Division (Mechanized), ATTN: AFZP-VX-C, Hunter Army Airfield, Savannah, GA 31409
1/3 Aviation Regiment, ATTN: AFZP-VXB-C, Hunter Army Airfield, Savannah, GA 31409
USAMC, ATTN: AMXLA-C-E-ST-H (Wilson), Hunter Army Airfield, Building 1128, Savannah, GA 31409-5194
1/183d Aviation Battalion, Idaho Army National Guard, ATTN: Commander AASF, PO Box 45, Boise, ID 83707
101st Airborne Division, 101st Aviation Brigade, ATTN: AFKD-KF-CO, Aviation Maintenance Officer, Fort Campbell, KY 42223-0094
1/101st Aviation Regiment, ATTN: AFZB-KF-E-CO, Fort Campbell, KY 42223

2/101st Aviation Regiment, ATTN: AFZB-KF-M-CO, Fort Campbell, KY 42223
3/101st Aviation Regiment, ATTN: AFZB-KF-F-CO, Fort Campbell, KY 42223
8/299th Aviation Regiment, ATTN: ATZK-PTA, Bldg 2324, Fort Knox, KY 40121-5000
ASF #73, ATTN: AFKB-AC-AV (Quality Control), Fort Knox, KY 40121-5000
Communications Electronics Command, Airborne Electronics Research Activity, ATTN: AMSEL-RD-AF-M, Hangar 5, NAEC, Lakehurst, NJ 08733-5009
1/130th Aviation, North Carolina Army National Guard, ATTN: AASF #1 (CPT Goodwin), PO Box 2006, Morrisville, NC 27560-8002
18th Airborne Corps, ATTN: Directorate for Logistics, Materiel Maintenance Division, Fort Bragg NC 28307-5000
18th Aviation Brigade, ATTN: AFZA-AZ-CO, Fort Bragg, NC 28307
I Company, 159th Aviation Regiment, ATTN: QC, Fort Bragg, NC 28307-5000
82d Aviation Brigade, ATTN: AFVC-GD-G4 Aviation Office, Fort Bragg, NC 28307-5000
1st Battalion (Attack), 82d Aviation Brigade, ATTN: AFVC-AV-ATK-D Quality Control Section, Fort Bragg, NC 28307-5100
229th Aviation Group (Attack) (Airborne), ATTN: AFZA-AV-ATK-RCO, Fort Bragg, NC 28307-5000,
1/229th Aviation Regiment, ATTN: AFVU-AH-NN-CDR, Fort Bragg, NC 28307
3/229th Aviation Regiment, ATTN: AFZA-AZ-ATK-HA, Fort Bragg, NC 28307
1/151st Aviation, South Carolina Army National Guard, ATTN: TAG AASF, QC, McEntire Air National Guard Base, Eastover, SC 29044-9690
28th Aviation Group, 4360 Beltway Place, Suite 230, Arlington, TX 76018
1/4th Aviation Brigade, ATTN: AFZC-AV-PC, Fort Hood, TX 76544
4th Aviation Brigade, 4th Infantry Division (Mechanized), ATTN: AFZC-AB-CDR, Fort Hood, TX 76544
III Corps and Fort Hood, ATTN: AFZF-GL-M, Fort Hood, TX 76546-5056
1st Cavalry Division, ATTN: AFVA-GD, Fort Hood, TX 76546-5101
Aviation Brigade, 1st Cavalry Division, ATTN: AFVA-AB-CO, Fort Hood, TX 76545
1/502 Aviation Regiment, ATTN: AFZX-AV-CO, Fort Hood, TX 76544
21st Brigade, ATTN: S-4, Aviation Maintenance Section (Apache), Fort Hood, TX 76544-5068
1/149th Aviation, ATTN: AASF #4, Maintenance Officer, 1183 Ellington Field, Houston, TX 77034-5597

1/211th Aviation, Utah Army National Guard, ATTN: AASF QC (DOAS-AASF-UT-QC), 7563 South Airport Rd, West Jordan, UT 84084-6215
USAALS, ATTN: ATSQ-TDN, ATSQ-LES, ATZF-PTA, Fort Eustis, VA 23604-5426

Director, Airworthiness Qualification Test Directorate, U.S. Army Aviation Technical Test Center, ATTN: STEAT-QC, Edwards Air Force Base, CA 93523-5000

Defense Plant Representative Office, Boeing Corp, ATTN: DCMDW-RZE, DCMDW-RZDF, DCMDW-RZAC (M. Himes), 5000 E. McDowell Rd, Mesa, AZ 85205-9797

CF:
Commander:
EUSA, ATTN: FKJ4-MS-M, APO AP 96204-0009
EUSA, ATTN: EAGC-EA, APO AP 96205-0009
U.S. Army Safety Center, ATTN: CSSC-PMA, Fort Rucker, AL 36362
1106th Aviation Classification Repair Activity Depot (AVCRAD), California Army National Guard, ATTN: FRAV-QC, 5168 E. Dakota St, Fresno, CA 93727-7404
Joint Readiness Training Center, ATTN: ATZL-JRO-U, Fort Polk, LA 71459-5000
U.S. Army Test and Evaluation Command, ATTN: AMSTE-TA-V, Aberdeen Proving Ground, MD 21005-5055
U.S. Army Aviation Classification Repair Activity Depot (AVCRAD), PO Box 3349, Gulfport, MS 39505-3349
U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-VS-AA, AMSAM-MMC-VS-AB, AMSAM-MMC-RE-FF, AMSAM-AR-E-I-P, AMSAM-SA-CS-NF Redstone Arsenal, Al 35898-5000
U.S. Army Aviation Classification Repair Activity Depot (AVCRAD) [1], ATTN: QC [1], 2501 Lester Jones Ave, Regional Airport, Springfield, MO 65801-9513
Corpus Christi Army Depot, ATTN: SDSCC-QQR, Mail Stop 67, 308 Crecy Street, Corpus Christi, TX 78419
Corpus Christi Army Depot, ATTN: SIOCC-AS-AD (Aguilar), 308 Crecy Street, Corpus Christi, TX 78419
U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-VS-EC (Young), Mail Stop 55, Corpus Christi Army Depot, 308 Crecy Street, Corpus Christi, TX 78419-5260
III Corps and Fort Hood, ATTN: AMSAM-MMC-VS-E(R. Boland), Fort Hood, TX 76544-5056
U.S. Army Aviation and Missile Command, ATTN: Pubs, 1202A Rio Blvd, Killeen, TX 76543
USAALS, ATTN: ATSQ-LTD-HA, AAHD/DAHT/USAALS, Bldg 2418, Fort Eustis, VA 23404
AATD, ATTN: J.W. Davis, Bldg 2402, Fort Eustis, VA 23604-5577
USAALS, AAHD, ATTN: BNCOC Committee, Fort Eustis, VA 23604

Project Manager:
Apache Attack Helicopter, ATTN: SFAE-AV-AAH-LB-S, L, LF SFAE-AV-AAH-S, SFAE-AV-AAH-APM-IO [6], SFAE-AV-AAH-APM-ATH, Redstone Arsenal, Al 35898-5000
Night Vision Electro-Optics, ATTN: AMSEL-RD-NV-AS-RPV, AMSEL-RD-NV-AS-ID, Fort Belvoir, VA 22060-5677

Chief:
Apache Transition Team - Europe, ATTN: SFAE-AV-AAH-ATT-E, APO AE 09266-4747
Logistics Assistance Office, ATTN: AMXLA-A-E-CO, APO AE 09266
Apache Material Fielding Team, ATTN: SFAE-AV-AAH-MFT-K APO AP 96205-0066
Logistics Assistance Office - Far East, ATTN: AMXLA-FE, APO AP 96205-0212
Logistics Assistance Office, ATTN: AMXLA-C-S-RU, Fort Rucker, AL 36362-0918
USA AMC LAO, ATTN: AMXLS-F-ST(H) (Jeff Cinader), Bldg 1128, Hunter Army Airfield, Savannah, GA 31409-5194
Logistics Assistance Office, ATTN: AMXLA-C-E-CA, Fort Campbell, KY 42223-0094
Logistics Assistance Office, ATTN: AMXLA-C-S-BG, Fort Bragg, NC 28307-5000
Apache Material Fielding Team - Fort Hood, ATTN: SFAE-AV-AAH MFT-H, Fort Hood, TX 76544-5056
Logistics Assistance Office, ATTN: AMXLA-C-SC, Fort Hood, TX 76544-5056
Logistics Assistance Office, ATTN: AMXLA-X-N-EU, Building 1608, Fort Eustis, VA 23604-5535

General Electric Company, T700 Apache CSO, 1000 Western Ave, Mail Drop 24209, Lynn, MA 01910
Boeing, Bldg 543 D-211, ATTN: Vic Conner, 5000 E. McDowell Rd, Mesa, AZ 85205-9797