

SUBJECT: SAFETY OF USE MSG, SOU - AMCOM - 03-001, OPERATIONAL,
SUPERCEDING AMCOM - SOUM - 01-04 AND AMCOM - SOUM - 01-05, FIRING
HELLFIRE MISSILES DURING TRAINING FROM THE APACHE (AH-64A & D) AND
OTHER AIRBORNE ROTARY WING PLATFORMS.

D XXX D
A X "WARNING" X A
N X DEATH OR SERIOUS INJURY TO SOLDIERS, OR DAMAGE X N
G X TO ARMY EQUIPMENT MIGHT OCCUR IF THE INSTRUCTIONS X G
E X IN THIS MESSAGE ARE NOT FOLLOWED. X E
R XXXR

1. DISTRIBUTION:

THIS IS AN "OPERATIONAL" SAFETY OF USE MSG, ADDRESSEES
SHALL IMMEDIATELY RETRANSMIT THIS MSG TO SUBORDINATE UNITS,
ACTIVITIES OR ELEMENTS AFFECTED OR CONCERNED. RETRANSMITTAL SHALL
REFERENCE THIS MESSAGE. MACOM COMMANDERS WILL IMMEDIATELY VERIFY
RECEIPT AND RETRANSMISSION OF THIS MESSAGE TO COMMANDER, USAAMCOM
REDSTONE ARSENAL AL//AMSAM-MMC-MM-M//.

2. THIS MESSAGE SUPERCEDES SOUM - 01-04 AND SOUM - AMCOM - 01-05.

3. PROBLEM:

A. ON 30 JUNE 01, AT FORT BRAGG, NC. AN AGM-114C HELLFIRE
MISSILE FIRED FROM AN OH-58D IMPACTED 1.8 KILOMETERS OUTSIDE THE
DIRECT (SMALL) SURFACE DANGER ZONE (SDZ). INVOLVED HELLFIRE MISSILE
LOTS WERE SUSPENDED. IN ADDITION, THE USE OF THE INDIRECT FIRE SDZ WAS
REQUIRED FOR ALL HELLFIRE FIRINGS.

B. INVESTIGATION TO DATE HAS IDENTIFIED THE ROOT CAUSE TO BE EXCESSIVE
ROLL RATES INDUCED BY INTERACTIONS BETWEEN THE AIRCRAFT, THE LAUNCHER
AND THE MISSILE. THESE EXCESSIVE ROLL TRANSIENTS CAUSE THE GYRO LIMITS
TO BE EXCEEDED WHICH MAY IN TURN CAUSE AN ERRANT MISSILE THAT LEAVES
THE SDZ.

C. THE MAXIMUM LAUNCH ALTITUDE FOR TRAINING SHALL NOT BE MORE THAN 300
FEET AGL.

D. AS PART OF THE INVESTIGATION EFFORT, AMCOM HAS DEVELOPED AND
VALIDATED A SIMULATION MODEL TO PREDICT MISSILE ROLL CHARACTERISTICS
FOR FIRINGS FROM THE AH-64 APACHE. BASED ON THE RESULTS OF THE
SIMULATION MODEL, THE DIRECT (SMALL) SDZ CAN BE USED ONLY UNDER THE
FOLLOWING CONDITIONS WHICH ARE APPLICABLE TO HELLFIRE MODELS AGM-114 A
THROUGH F:

- 1) LOCK ON BEFORE LAUNCH (LOBL) OR LOCK ON AFTER LAUNCH-DIRECT
(LOAL-D) HELLFIRE MISSILE FIRINGS.
- 2) APACHE AIRCRAFT MUST BE OUTFITTED WITH HELLFIRE LAUNCHERS (M272
OR M299) ON THE INBOARD PYLONS AND M261 HYDRA-70 ROCKET LAUNCHERS
ON THE OUTBOARD PYLONS WITH OR WITHOUT ROCKETS.
- 3) HELLFIRE MISSILES MAY BE FIRED FROM ONLY TWO RAILS: LEFT AND
RIGHT INBOARD PYLONS, UPPER INBOARD RAILS. THE USERS MAY
LOAD/FIRE MISSILES ON BOTH RAILS OR ON JUST ONE RAIL.
- 4) THE OTHER INBOARD PYLON RAILS MUST CONTAIN EITHER LIVE HELLFIRE
MISSILES OR M34 DUMMY HELLFIRE MISSILES. M36 TRAINING HELLFIRE
MISSILES ARE NOT PERMISSIBLE.
- 5) IN LIEU OF A HELLFIRE LAUNCHER, THE EXTENDED RANGE FUEL (ERF)
TANK MAY BE LOADED ON ONE SIDE OF THE AIRCRAFT ALLOWING ONLY THE
OPPOSITE SIDE FOR A MISSILE TO BE FIRED FROM THE INBOARD PYLON,
UPPER INBOARD RAIL. THE PYLON OUTBOARD TO THE ERF TANK MAY BE
LOADED WITH ANY CONFIGURATION EXCEPT LIVE HELLFIRE MISSILES.
- 6) HELLFIRE MISSILES MAY NOT BE FIRED IF THERE ARE TAIL WINDS IN
EXCESS OF 20 KNOTS.
- 7) AMCOM - SOUM - 00-01 REMAINS IN EFFECT INCLUDING RESTRICTIONS ON
LAUNCH MODES. ADDITIONALLY, IF THE MISSILE APPEARS TO FLY

STRAIGHT UP, STOP LASING THE TARGET, OTHERWISE, CONTINUE TO LASE FOR 30 SECONDS OR UNTIL MISSILE IMPACT.

E. THE EXISTING INDIRECT (LARGE) SDZ CAN BE USED WITH ALL RESTRICTIONS LISTED IN ABOVE PARAGRAPHS 3.C AND 3.D UNDER THE FOLLOWING LAUNCH CONDITIONS:

- 1) HELLFIRE MODELS AGM-114 K AND M FOR ALL LAUNCH MODES.
- 2) HELLFIRE MODELS AGM-114 A THRU F FOR LOCK ON AFTER LAUNCH - LOW (LOAL-L) OR LOCK ON AFTER LAUNCH - HIGH (LOAL-H).

F. RESULTS FROM THE SIMULATION MODEL WERE USED TO DEVELOP NEW "INTERIM DIRECT" AND "INTERIM INDIRECT" FIRE SDZS THAT SHALL BE USED AS DETAILED BELOW:

- 1) THE "INTERIM DIRECT" SDZ DATED 08 NOVEMBER 2002 SHALL BE USED FOR HELLFIRE (A THROUGH F MODEL) MISSILE FIRINGS FROM ANY OTHER APACHE WEAPONS CONFIGURATION OR OTHER AIRBORNE ROTARY WING PLATFORMS FOR LOBL AND LOAL-D LAUNCH MODES.

- 2) THE "INTERIM INDIRECT" SDZ DATED 08 NOVEMBER 2002 SHALL BE USED FOR ALL

MISSILE LAUNCH MODES FOR THE K AND M MODELS AND THE INDIRECT LAUNCH MODES

FOR A THROUGH F HELLFIRE MISSILES FROM ALL AIRBORNE ROTARY WING PLATFORMS.

- 3) THE DIMENSIONS OF THE "INTERIM DIRECT" SDZ AND "INTERIM INDIRECT" SDZ CAN

BE OBTAINED FROM THE ARM PM POC.

G. AMCOM IS IN THE PROCESS OF EVALUATING KIWIA AND ADDITIONAL APACHE CONFIGURATIONS WITH RESPECT TO ROLL RATES. THE RESULTS OF THIS ONGOING PROCESS MAY RESULT IN FUTURE CHANGES TO THIS SAFETY OF USE MESSAGE.

H. SDZ WAIVERS WILL BE IAW AR 385-62 AND AR 385-63.

4. SUPPLY STATUS: N/A

5. THE AVIATION ROCKETS AND MISSILES (ARM) PROJECT OFFICE POINT OF CONTACT

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