

SUBJECT: Safety Of Use Message (SOUM) TACOM Control No. SOUM-04-006, Operational, Tank Gunfire Simulator (TGS or Hoffman, Device #17-61, NSN 6920-01-067-1667), Improved Tank Gunfire Simulator (ITGS, Device #17-157, NSN Not Assigned), and Armor Target Kill Simulator (ATKS, Device #17-133, P/N 12725085-1, NSN 6920-01-333-2362), and M21 Flash Artillery Simulator (NSN 1370-01-128-0418 DODIC 1370-L602).

* URGENT *
* DEATH OR SERIOUS INJURY TO SOLDIERS OR *
* DAMAGE TO ARMY EQUIPMENT WILL OCCUR IF THE *
* INSTRUCTIONS IN THIS MESSAGE ARE NOT IMPLEMENTED *

1. References:

a. TM 9-6920-742-14-2, Technical Manual-Operator, Unit, Direct Support, and General Support Maintenance Manual for Enhanced Remote Target System (ERETS): Small Arms Muzzle Flash Simulator (NSN 6920-01-146-3050) (PN 11829682) Gunfire Simulator (NSN 6920-01-333-2362) (PN 12725085-1) Small Arms Sound Simulator (NSN 6920-01-146-3046) (PN 11829734), June 97.

b. Hoffman-Werke Service Instruction Manual No. 61176, Maintenance Handbook with Parts List for Hoffman Simulator, Tank Main Tank Gunfire Simulator, Device #17-61, May 1986.

c. TD 17-6920-702, Technical Manual, Operation and Maintenance Instructions with Parts List, Operator and Organizational Maintenance for Tank Main Gunfire Simulator, Device #17-157 and Device #17-61, 1 March 1998.

d. FM 100-14, Risk Management, 23 March 1998.

e. AR 385-64, U.S. Army Explosives Safety Program, 1 February 2000.

f. DA PAM 385-64, Safety Ammunition and Explosives Safety Standards, 15 December 1999.

g. DA PAM 350-9, Index And Description Of Army Training Devices, 3 September 2002.

2. Distribution: Note this is a "Safety Of Use Message". MACOM Commanders will immediately retransmit this message to all subordinate commands/activities within 24 hours of receipt of this message and acknowledge receipt of this message within five working days to Safety Office, Tank-automotive and Armament Command (AMSTA-CS-CZR), Rock Island, IL 61299-7630, e-mail: amsta-cs-czr@ria.army.mil.

3. Problem Discussion: The Gunfire Simulator (GUFS) systems use three types of dispensers: Hoffman Device, Improved Tank Gunfire Simulator (ITGS) and the Armor Target Kill Simulator (ATKS) which fires the M21 Artillery Flash Simulator (DODIC 1370-L602). The combination of simulator and firing device simulates realism in training (e.g., an actual weapon has been fired or a target has been killed). Premature firing or inadvertent ignition of the M21 pyrotechnic simulator could result from electrostatic discharge, radio transmissions, mechanical failure, a defective pyrotechnic simulator, and human error. Several incidents occurred where premature firing of the simulator injured loader personnel. Based on historical data, injuries to user personnel have resulted in incidences of permanent partial disability, such as loss of hand and/or fingers, loss of an ear, fragments in the eyes, broken bones, permanent disfigurement as well as severe hand and facial burning, vision damage and loss of hearing.

4. User Actions:

a. Training. Commanders will implement a formal training program at all user sites for the Hoffman Device/ITGS/ATKS systems and M21 Simulator (also known as pyrotechnic cartridge). This training program will include certification with annual refresher training/re-certification, including operators and loaders.

(1) The training session shall as a minimum, address the procedures specified in the GUFS systems Technical Manual (TM) 9-6920-742-14-2 and TD 17-6920-702, and HOFFMAN-WERKE Service Instruction Manual No. 61176 and this SOUM.

(2) Risk Management (FM 100-14). Personnel shall be trained to identify and mitigate the hazards associated with pyrotechnic ammunition. In addition to the health hazardous compositions, the electrically initiated cartridges are susceptible to accidental ignition by Electro-static discharge (ESD), Electro-magnetic/radio frequency (RF), and Environmental (e.g., lightning) energies (E³ effects). For more information about these hazards, refer to DA PAM 385-64, Chapters 6 and 12.

b. User Operational Procedures. Commanders will ensure all users of GUFs systems are properly trained and certified to follow proper operational, inspection and maintenance procedures in their technical manuals and as outlined in this SOUM. If further assistance is required contact your local TACOM Logistics Assistance Representative (LAR), per paragraph 7.

(1) Summary of Safety Warnings and Cautions. The following are general safety precautions that personnel must become familiar with and adhere to during operation, maintenance and troubleshooting of the Gunfire Simulator (GUFs) systems using M21 Artillery Flash Simulators:

WARNING

"Electromagnetic/Radio Frequency (RF)

Radiation"

For radio transmissions less than 100 watts (including antenna gain): no radio transmission shall be permitted within three meters (~10 feet) from pyrotechnic cartridges. This applies to all radio transmissions, including mobile, handheld radios, cell phones, pagers, personal digital assistance (PDA), walkmans, CD or MPG players, etc.

For radio transmissions greater than 100 watts, but less than 320 kilowatts (including antenna gain) no radio transmission shall be permitted within 200 meters (approximately 660 feet) from all pyrotechnic cartridges.

WARNING

"Protective Clothing & Equipment (PCE)"

Personnel loading/unloading the GUFFS systems are to be certified to handle electrically initiated pyrotechnics and shall wear approved hearing protection, hardhat, face shield (NSN 8415-01-039-6000) per MIL-STD-1202 and high-temperature gloves (combat vehicle crewman type, MIL-G-44108). Failure to wear PCE will result in serious injury or death in the event of an accidental ignition of M21 Simulator(s).

WARNING

"Stay Out Of Line Of Fire"

Never lean, bend or stand directly over a firing tube or externally fired M21 Simulator when loading. Doing so could cause serious injury or death due to accidental ignition of pyrotechnic cartridges.

WARNING

"Environmental Effects"

Never load the M21 Simulators into the GUFFS systems during thunder or lightning storms. Doing so may cause serious injury or death due to accidental ignition of pyrotechnic cartridges.

WARNING

"Electrostatic Effects"

Prior to arming, disarming or performing maintenance, always touch metal frame of GUFFS systems so as to

ground static electricity (perform before loading each M21 Simulator). Failure to do so could cause serious injury or death due to accidental ignition of pyrotechnic cartridges.

WARNING
"Packaging"

Never remove the M21 Simulator from its protective packaging until use is imminent. M21 Simulators are permitted outside barrier bags only during the loading and unloading of the GUFFS systems. Use of plastic bags, sacks or similar material that may produce static electricity is prohibited.

NOTE

Nine cartridges are packed per paperboard carton. Each carton is in a barrier bag and eighteen of the barrier-bagged cartons are placed in a wooden box.

WARNING

"Shorting Safety Cap"

Extreme caution should be exercised when handling pyrotechnic cartridges. Do not remove shorting cap, if available, until ready to install ignition plug into gunfire simulator output receptacle. Doing so may cause serious injury or death due to accidental ignition of pyrotechnic cartridges.

NOTE

The M21 Simulator consists of an outer, plastic case encompassing two sections, which are taped together. Upper section is a protective cap and is removed prior to loading and firing. The hollow space within the protective cap houses the ignition leads and electrical plug used to electrically initiate the cartridge. A short circuit safety cap on the end of the electrical plug protects the cartridge from some E³ effects. Not all M21 Simulators have the short circuit safety cap. If there is a short circuit cap on the M21 Simulator, it must remain in place at all times unless you are in the process of loading the firing device. Save the short circuit caps for possible reuse in capping misfires.

WARNING

"Disconnect Power"

Always disconnect the GUFFS system from any power source prior to initiating loading. Operators have been seriously injured due to firing device malfunctions.

WARNING

"Protect Wires"

Do not use M21 Simulators with broken or damaged insulators. Turn them in to EOD personnel for disposal.

WARNING

"Lead Wire Caution"

Do not pull plug out of its receptacle by jerking or pulling on wire (ignition leads). This may sever a lead and cause it to become an aerial for electromagnetic radiation. This will give a false feeling of safety (if the lead is internally severed)

to those observing that the shorting safety cap is properly positioned.

WARNING

"Safe Separation Distances"

Only personnel who have been trained and certified in the methods of safe operation of the GUFFS systems and pyrotechnic cartridges shall be authorized to enter the area when equipment is in use (see specific firing device for safety distances).

WARNING

"Unauthorized Equipment Prohibited"

The standard M21 Simulator (NSN 1370-01-128-0418 L602) is authorized for use in the GUFFS systems. Unauthorized pyrotechnic cartridges can cause personal injury and/or damage to equipment. Reconfiguration or modification of the GUFFS systems is prohibited.

Warning

"Protect Your Eyes"

Protect your eyes from pyrotechnic flash. Don't look at the flash of the pyrotechnic cartridge; the light intensity of 4 to 10 million candle-power can be harmful to your eyes.

WARNING

"Precaution for Using Explosives"

Pyrotechnics are more dangerous than many other types of ammunition because they are more easily initiated. Military pyrotechnics must be handled with care at all times. Safety precautions for handling and firing pyrotechnic cartridges and accessories are included in AR 385-64.

CAUTION

At cold temperatures (below -25 degrees F) lead wires of cartridges become brittle. Handle wires with care to avoid damage or breakage.

NOTE

Prior to operation inspect for damaged or misfired cartridges. Damaged cartridges will be removed in accordance with misfire disposal procedures and local EOD procedures.

WARNING

"Misfire Delay Time"

When an M21 Simulator misfires, wait the minimum time (15 minutes ATKs or 25 minutes Hoffman/ITGS) before approaching the device.

NOTE

Unexpended cartridges shall be transported to the applicable servicing Ammunition Supply Point (ASP).

NOTE

Insure that the GUFFS system is not physically damaged and that it has been properly serviced and maintained. Inspect firing tubes for debris or burn damage. Inspect electrical cables for damage and check for positive plug connections (i.e., tighten connector). Inspect 2-prong receptacle holes for sand or other debris. Holes shall be cleaned and damaged cables replaced.

NOTE

If damaged, GUFs systems shall be disarmed and cleared of any live cartridges in accordance with misfire (no fire) disposal procedures and local EOD procedures.

(2) M21 Artillery Flash Simulator.

(a) The M21 is a military simulator, which must be handled with care at all times. The M21 is composed of pyrotechnic composition and an electric match which can accidentally ignite if the leads become an antenna and pick up stray electromagnetic radiation. If available, do not remove shorting cap until ready to install ignition plug into gunfire simulator output receptacle. Failure to do so may cause serious injury due to accidental ignition of pyrotechnic cartridges.

(b) Insure electro-static discharge (ESD) will not activate the M21 Simulator by touching metal parts of the GUFs systems prior to loading and unloading the M21.

(c) Never remove the M21 Simulator from its protective packing until use is imminent. Due to electromagnetic radiation (EMR) susceptibility, pyrotechnic items shall remain in aluminized barrier bags. M21 Simulators are permitted outside barrier bags only during the loading and unloading of the dispenser system.

(d) Keep M21 Simulators away from RF transmitting devices when outside of barrier bags as specified below.

(i) For radio transmission less than 100 watts (including antenna gain): no radio transmission shall be permitted within three meters (~10 feet) from pyrotechnic cartridges. This applies to all radio transmissions, including mobile and handheld radios. This also includes all electromagnetic producing devices including cell phones, pagers, personal digital assistance (PDAs), walkmans, CD or MPG players, etc.

(ii) For radio transmissions greater than 100 watts but less than 320 kilowatts (including antenna gain): no radio transmission shall be permitted within 200 meters (approximately 660 feet) from all pyrotechnic cartridges.

(e) Protective Clothing & Equipment (PCE). Personnel loading/unloading the GUFFS systems are to be certified to handle electrically initiated pyrotechnics and shall wear approved hearing protection, hardhat, face shield (NSN 8415-01-039-6000) per MIL-STD-1202 and high-temperature gloves (combat vehicle crewman type, MIL-G-44108). Failure to wear PCE will result in serious injury or death in the event of an accidental ignition of M21 Simulator(s).

(3) ATKS (#17-133) – Use the following procedures adapted from TM 9-6920-742-14-2, paragraphs 2-8 thru 2-9 for loading, unloading, misfire (no fire), and disposal and inspection/maintenance procedures.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), plus the following specific warnings:

WARNING

"Safe Separation Distances"

Personnel not directly involved in loading of pyrotechnic cartridges must remain outside a 100-foot radius area from the ATKS during operations. Only personnel who have been trained and certified in the methods of safe operation of the ATKS and pyrotechnic cartridges shall be authorized to enter the area when equipment is in use.

WARNING

"Unauthorized Equipment Prohibited"

The standard M21 Simulator (NSN 1370-01-128-0418 L602) is authorized for use in the ATKS. Unauthorized pyrotechnic cartridges can cause personal injury and/or damage to equipment. Reconfiguration or modification of the ATKS is prohibited. The configuration in use must agree with TM 9-6920-742-14-2, page 2-10, paragraph 2-7a.

(a) Loading Procedures. Loading of each firing tube assembly starts at its inner most firing tube and is loaded to the outer most firing tube. Position yourself on either the right or left hand side of the ATKS (see Figure 2-6 of TM 9-6920-742-14-2) nearest the tube you are loading before actually loading it. This provides the maximum operator safety. Refer to Figures 2-6 and 2-7 of TM 9-6920-742-14-2 for numbering of the tubes.

WARNING

"Stay Out of Line of Fire"

Never lean, bend or stand directly over a firing tube or externally fired M21 Simulator when loading. Doing so could cause serious injury or death due to accidental ignition of pyrotechnic cartridges.

(i) Disconnect the ATKS power cord from its source of power.

(ii) Place the SAFE/ARM switch in the down position.

(iii) Touch the ATKS frame to discharge any static electricity.

(iv) Remove the cartridges (Figure 2-7, #1 of TM 9-6920-742-14-2), P/N 9349243, NSN 1370-01-128-0418 L602, from their storage container.

(v) Remove closure tape (Figure 2-7, #2 of TM 9-6920-742-14-2) securing protective cap (Figure 2-7, #3) to M21 cartridge.

(vi) The following loading sequence must be followed:

WARNING

Position yourself on either the right or left hand side of the ATKS (Figure 2-6 of TM 9-6920-742-14-2) nearest the tube you are loading before actually loading it. Never lean over a loaded tube (see "Stay Out of Line of Fire" warning above).

Loading Sequence (Right Hand Side)

Cluster 1 - firing tube numbers 1, 5, 3, 2, and 4.

Cluster 2 - firing tube numbers 10, 6, 8, 7, and 9.

Loading Sequence (Left Hand Side)

Cluster 3 - firing tube numbers 11, 15, 13, 12, and 14.

Cluster 4 - firing tube numbers 16, 20, 18, 17, and 19.

(vii) Carefully uncoil the ignition lead (Figure 2-7, #4 of TM 9-6920-742-14-2) to the cartridge, and install the cartridge into the firing tube with Styrofoam end up.

(viii) Run the leads to the corresponding output receptacle in sequence beginning with tube number one. See figure 2-6 of TM 9-6920-742-14-2.

(ix) Remove shorting safety cap, if available (Refer to Figure 2-7, #5 in TM 9-6920-742-14-2) from the cartridge ignition plug, and install the plug into the output receptacle corresponding to the firing tube. Save safety caps for possible use in capping misfires.

(x) Repeat sequentially steps (iii) through (ix) for each of the twenty tubes.

(b) Misfire (No Fire) Disposal.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed at the beginning of paragraph 4.b(3), in addition to the following:

NOTE

This paragraph contains the procedures necessary for handling M21 Artillery Flash Simulators that are suspected of having been actuated but did not function.

(i) Upon completion of firing cycle remove the remote firing power source (cable) to the ATKS and visually inspect the ATKS unit for any M21 Pyrotechnics not fired.

(ii) Move 100 feet away and wait 15 minutes to allow any slow burning pyrotechnic to fully ignite.

(iii) Recheck that power has been turned off.

(iv) Place the SAFE/ARM switch in the down position.

(v) Touch the ATKS frame to discharge any static electricity.

(vi) Unplug the ignition leads from output receptacle and install shorting plug leads.

NOTE

When shorting safety cap is unavailable, cut off M21 Simulator plug, strip one inch of insulation from remaining lead ends and twist bare wires together to affect a short circuit.

(vii) Immediately move 100 feet away and wait 15 minutes.

(viii) After the 15-minute wait, remove unfired round, coil ignition leads and place on top of M21 Simulator and store in suitable container. Surround with sand, cover, and leave in area suitable for temporary storage.

(ix) Transfer to the servicing ammunition supply point.

(c) Unloading Procedures. Unload the ATKS in the following sequence. Refer to figure 2-6 of the TM 9-6920-742-14-2:

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed at the beginning of paragraph 4.b(3), in addition to the following:

WARNING

Position yourself on either the right or left hand side of the ATKS (Figure 2-6 of TM 9-6920-742-14-2) nearest the tube you are unloading before actually unloading it. Never lean over a loaded tube (see "Stay Out of Line of Fire" warning in paragraph 4.b(1) above).

Unloading Sequence (Right Hand Side)

Cluster 1 - firing tube numbers 2, 4, 3, 1, and 5.

Cluster 2 - firing tube numbers 7, 9, 8, 6, and 10.

Unloading Sequence (Left Hand Side)

Cluster 3 - firing tube numbers 14, 12, 13, 11, and 15.

Cluster 4 - firing tube numbers 19, 17, 18, 16, and 20.

(d) Inspection/Maintenance Procedures.

Proper inspection of the ATKS device shall be followed per TM 9-6910-742-14-2, Operator and Unit Preventive Maintenance Checks and Services (Table 2-3 & 4-1) as listed below:

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed at the beginning of paragraph 4.b(3), in addition to the following:

WARNING

"Keep Away From Live Circuits"

Maintenance personnel must observe all safety precautions during maintenance and troubleshooting of the Armor Target Kill Simulator. Live circuits are exposed during some maintenance and troubleshooting procedures.

WARNING

Prior to arming, disarming or performing maintenance, always touch metal frame of ATKS so as to ground static electricity. Never lean, bend or stand directly over a firing tube or externally fired simulator when loading/unloading. Doing so could cause serious injury or death due to accidental ignition of pyrotechnics. Disarm, then disconnect the ATKS connection from control assembly on Tank Target Assembly (TTA), Improved Lifting Target Elevating Mechanism (ILTEM), or Target Interface Unit (TIU). The ATKS must be disconnected before performing maintenance. Explosion is possible and can cause personal injury and damage to equipment.

NOTE

At cold temperatures (below -25 degrees F) lead wires of M21 Simulators become brittle. Handle wires with care to avoid damage or breakage.

(i) Firing Tube Assemblies – Visually inspect firing tube assemblies for any debris or burn damage. Equipment not ready if debris is around simulator. Remove any loose or flammable material from around the area.

(ii) Input Cables – Inspect electrical cables and connectors for damaged, missing or broken contacts. Also check for positive plug connections (i.e., tighten connector). Inspect simulator 2-prong receptacle holes for sand or other debris. Holes shall be cleaned and damaged cables replaced. Equipment not ready if contacts are broken or missing. Report any broken connector to next higher level of maintenance.

(iii) Control Assembly – Move the SAFE/ARM switch to the safe and arm positions. Ensure

the switch will lock in both positions. Equipment not ready if switch will not lock in each position.

(iv) Gunfire Simulator (ATKS) – Insure that the ATKS systems has been properly serviced and maintained. Visually inspect the gunfire simulator for physical damage. Equipment is not ready if damage to any firing receptacles or firing tubes.

(4) Hoffman (TGS) Device - (#17-61).

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

(a) General Safety Rules

(i) Always stand behind the Hoffman Firing Device.

(ii) Always inspect wire insulation on M21 Simulators.

(iii) Before inserting or removing M21 Simulators from the Hoffman device, the loader must disconnect the power cable from the device and place arming key in uniform pocket.

(iv) Operator shall not turn Firing Device from SAFE to ARM position until ordered to do so by the tank commander (TC).

(v) Never lean, bend or stand directly over a firing tube or externally fired simulator when loading/unloading. Doing so could cause serious injury due to accidental ignition of pyrotechnic cartridges. Always treat the device as loaded and ready to fire even when they are unloaded or in safe mode.

(vi) Prior to loading, unloading, arming, disarming or performing maintenance, always touch the metal handle of a Hoffman device with bare skin (e.g., your bare wrist above your glove) to ground static electricity. Failure to do so could

cause serious injury due to accidental ignition of pyrotechnic cartridges.

(b) Safety Distances

(i) Front - 50 Meters

(ii) Side - 25 Meters

(iii) Do not Fire within 150 Meters of Villages, Buildings or Flammable Materials.

(c) Hoffman Pre-Loading Procedures.

(i) Turn-Off Main Gun

(ii) Set Firing Device to SAFE

position:

* Remove lockout key from lockout safety switch.

* Place key in uniform pocket. - Press yellow contact button.

* Inspect that Red/Armed light is OFF and Green/SAFE light is ON.

NOTE

The lock barrel must protrude about 10MM out of the lockout safety switch. The key remains in the hands of the gunner for safekeeping.

WARNING

Green signal must light for firing device to be in loading position.

(iii) Prepare each M21 Simulator for loading:

* Remove the adhesive tape from the cartridge.

* Remove the M21 Simulator cover.

* Pull the M21 ignition leads taut.

(d) Hoffman Loading Procedures.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

WARNING

Do not stand in front of the firing unit. Load the Hoffman from the side or behind the firing unit.

(i) Ensure pre-loading procedures were completed.

(ii) Disconnect the cable from the rear of the firing unit.

(iii) Grasp frame of firing device to discharge static electricity.

WARNING

Always disconnect the Hoffman/ITGS device from any power source prior to initiating loading.

(iv) Insert M21 Simulators into the firing drum chambers with square flange (explosive cartridge end) to rear down to the base. For each M21 Simulator:

* Draw ignition lead over rim of drum to rear.

* Remove short-circuit cap from ignition lead.

* Pull each lead taut and wrap excess wire around ignition lead retainer.

* Inspect that ignition lead are not placed in front of adjacent firing drums.

WARNING

Do not damage the insulation of the ignition leads. Do not use cartridges with broken or damaged insulators but turn them to EOD personnel for disposal.

(v) Insert M21 Simulator wire lead ignition plug into corresponding socket.

(vi) Close and latch the Hoffman hinged cover.

(vii) Re-connect power cable to rear of Firing Unit.

(e) Arming and Firing the Hoffman.

(i) Insert key into lockout Safety switch.

WARNING

Do not turn-on the firing device from the safe to the arm position until ordered to do so by the tank commander. The loader is responsible for turning on and setting the control unit to SAFE.

(ii) Press key down and turn left to "Armed" position.

(iii) Inspect that Green Load/Unload (SAFE) light is OFF and Red/Armed light is ON.

(iv) Report to Tank Commander (TC): "READY TO FIRE".

(v) TC orders "FIRE".

(vi) After announcing "ON THE WAY", Gunner presses main gun firing trigger. The Gunner would consecutively fire all M21 Simulators by pressing the trigger.

WARNING

If an M21 Simulator fails to ignite, continue firing sequence and follow misfire removal procedures after firing remaining M21 Simulators.

(vi) After firing of all M21 Simulators, set Fire Device to SAFE by turning key to right. Remove key and put it in your uniform pocket.

(vii) Inspect that the Red/Armed light is OFF and Green/SAFE light is ON.

(f) Reloading Hoffman.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

(i) Insert key into lockout Safety switch.

(ii) Press key down and turn right to (SAFE).

(iii) Remove key and place it in uniform pocket.

(iv) Inspect that Red/Armed light is OFF and Green/SAFE light is ON.

(v) Press yellow contact button and bring Device into loading position.

(vi) Inspect that the Green/SAFE light is ON and Red/Armed light is OFF .

(vii) Pull-off and remove wire leads and plugs of fired M21 Simulators.

(viii) Using the cleaning brush and scraper from the accessories in the transport/storage container, remove all residues left in firing drums.

(ix) Reload M21 Simulators following loading procedures contained above.

(g) Unloading the Hoffman.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

WARNING

Do not unload the Hoffman until the lockout safety switch has been turned off, the key removed, and the power supply on the firing device unscrewed and plug disconnected.

WARNING

Stand to the side or rear of the firing drums while unloading the device.

(i) Insert key into lockout Safety switch.

(ii) Turn key in switch control box to right (SAFE).

(iii) Remove key and place it in uniform pocket.

(iv) Inspect that Red/Armed light is OFF and Green/SAFE light is ON.

(v) Disconnect power to the Firing Device.

(vi) Remove plugs of M21 Simulators ignition Leads from the sockets one through nine.

(vii) Attach short-circuit caps to the plugs.

(viii) Unwrap ignition leads from the retainers.

(ix) Remove M21 Simulators from the firing drum attached to the ignition lead.

(x) Roll-up ignition leads, insert them into protective caps, and re-install the protective caps to M21 Simulators.

NOTE

Repack unfired M21 Simulators into their original packages.

(h) Misfire (No Fire) Removal.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

WARNING

When an M21 Simulator misfires, wait a minimum of 25 minutes before approaching the device.

(i) After a minimum of 25 minutes has expired, turn key in switch of control box to right (SAFE).

(ii) Inspect that Green/SAFE light is On and Red/Armed light is OFF.

(iii) While standing behind the Hoffman, disconnect the power cable.

(iv) Unplug ignition leads belonging to the misfired pyrotechnics.

(v) Place the short-circuit cap over the plug.

NOTE

When shorting safety cap is unavailable, cut off M21 Simulator plug, strip one inch of insulation from remaining lead ends and twist bare wires together to affect a short circuit.

(vi) Carefully remove misfired cartridge and return it to noncommissioned officer in charge (NCOIC) for disposal by EOD.

(5) ITGS, Device (#17-157)

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

(a) General Safety Rules

(i) Always stand behind the ITGS Firing Device.

(ii) Always inspect wire insulation on M21 Simulators.

(iii) Before inserting or removing M21 Simulators from the ITGS device, the loader must disconnect the power cable from the device and place arming key in uniform pocket. Operator shall not turn Firing Device from SAFE to ARM position until ordered to do so by the tank commander TC).

(iv) Never lean, bend or stand directly over a firing tube or externally fired simulator when loading/unloading. Doing so could cause serious injury due to accidental ignition of pyrotechnic cartridges. Always treat the device as loaded and ready to fire even when they are unloaded or in safe mode.

(v) Prior to loading, unloading, arming, disarming or performing maintenance, always touch the metal handle of an ITGS device with bare skin (e.g., your bare wrist above your glove) to ground static electricity. Failure to do so could cause serious injury due to accidental ignition of pyrotechnic cartridges.

(b) Safety Distances

(i) Front - 50 Meters

(ii) Side - 25 Meters

(iii) Do not Fire within 150 Meters of Villages, Buildings or Flammable Materials.

(c) ITGS Pre-Loading Procedures.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

(i) Turn-Off Main Gun

(ii) Set Firing Device to SAFE

position:

* Inspect ROUNDS FIRED indicator is on zero.

* Insert key into KEY Switch.

* Turn Key Switch to OFF/SAFE, remove Key, and place it in uniform pocket.

* Inspect that green/SAFE light is ON and the Red/Armed light is OFF.

WARNING

Green signal must light for firing device to be in loading position.

(iii) Prepare each M21 Simulator for loading:

* Disconnect the cable from rear of firing unit.

* Remove adhesive tape from the cartridge.

* Remove M21 Simulators cover.

* Pull M21 ignition leads taut.

(d) ITGS Loading Procedures.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

WARNING

Do not stand in front of the firing unit. Load the ITGS from the side or behind the firing unit.

(i) Inspect pre-loading procedures were completed.

(ii) Ensure cable disconnected from rear of Firing Unit.

(iii) Grasp frame of firing device to discharge static electricity.

(iv) Open hinged cover located on rear of ITGS before inserting M21 Simulators.

NOTE

Opening hinged cover will engage a safety button, which serves as a secondary safety device to make sure that ignition current is not available to the firing drums.

WARNING

Always disconnect the ITGS device from any power source prior to initiating loading.

(v) Insert M21 Simulators into the firing drum chambers with square flange (explosive cartridge end) to rear down to the base. For each M21 Simulator:

* Draw ignition lead over rim of drum to rear.

* Remove short-circuit cap from ignition lead. Save caps to reinstall after exercise.

* Pull lead taut to allow inserting ignition plug into socket in rear of ITGS.

* Inspect ignition lead to assure that it is not placed in front of adjacent firing drums.

WARNING

Do not damage the insulation of the ignition leads. Do not use M21 Simulators with broken or damaged insulators. Turn them in to EOD personnel for disposal.

(i) Insert each M21 Simulator wire lead ignition plug into corresponding socket.

(ii) Close and latch ITGS hinged cover.

(iii) Re-connect power cable to rear of Firing Unit.

(e) Arming and Firing the ITGS.

(i) Insert key into the KEY SWITCH.

WARNING

Operator shall not turn the firing device from the safe to the arm position until ordered to do so by the tank commander (TC). The loader is responsible for turning on and setting the control unit to safe.

(ii) Turn Key counter clockwise to ON.

(iii) Inspect the red ARMED light is ON and the Green/SAFE light is OFF.

(iv) When red ARMED light is ON, report to TC: "READY TO FIRE".

NOTE

The gunner must switch the safe/main/coax switch to main before ITGS will fire.

(v) TC orders "FIRE".

(vi) After announcing "ON THE WAY", Gunner presses main gun firing trigger. The Gunner could fire The M21 Simulators consecutively by pressing the trigger.

WARNING

If an M21 Simulator fails to ignite, continue firing sequence and follow misfire (no fire) removal procedures after firing remaining M21 Simulators.

(vii) After firing all M21 Simulators, turn key in KEY Switch counter clockwise to SAFE. Remove key and put it in your uniform pocket.

(viii) Inspect that the Red/Armed light is OFF and Green/SAFE light indicator is ON.

(f) Reloading ITGS.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

(i) Press the orange RESET button to cycle unit to reload.

(ii) Inspect that the Red/Armed light goes OFF and Green/SAFE light indicator is ON.

(iii) Open hinged cover at rear of ITGS, pull-off and remove wire leads and plugs of fired M21 Simulators.

(iv) Using the cleaning brush and scraper from the accessories in the transport/storage container, remove all residues left in firing drums.

(v) Reload M21 Simulators following loading procedures contained above.

(g) Unloading the ITGS.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

WARNING

Do not unload the ITGS until the lockout safety switch has been turned off, the key removed, and the power supply on the firing device unscrewed and plug disconnected.

WARNING

Stand to the side or rear of the firing drums while unloading the device.

(i) Turn key in KEY SWITCH counter Clockwise (SAFE), remove key and place it in uniform pocket.

(ii) Inspect that Red/Armed light is OFF and Green/SAFE light indicator is ON.

(iii) Disconnect power cable from Firing Unit.

(iv) Remove the plugs of the M21 Simulators ignition leads from the sockets one through nine.

(v) Attach short-circuit caps to the plugs.

(vi) Unwrap ignition leads from the retainers.

(vii) Remove M21 Simulators from firing drum attached to ignition leads.

(viii) Roll-up ignition leads, insert them into protective caps, and re-install the protective caps to M21 Simulators.

NOTE

Repack unfired M21 Simulators into their original packages.

(h) Misfire (No Fire) Removal.

WARNING

Prior to conducting the following procedures, review and adhere to the general warnings and cautions listed above in paragraph 4.b(1), in addition to the following:

WARNING

When an M21 Simulator misfires, wait a minimum of 25 minutes before approaching the device.

(i) After a minimum of 25 minutes has expired, press the RESET button.

(ii) Turn key switch to OFF/SAFE, remove key and place it in uniform pocket.

(iii) Inspect that Red/Armed light is OFF and Green/SAFE light indicator is ON.

(iv) While standing behind the ITGS, disconnect the power cable.

(v) Unplug ignition leads belonging to the misfired pyrotechnics.

(vi) Place the short-circuit cap over the plug.

NOTE

When shorting safety cap is unavailable, cut off M21 Simulator plug, strip one inch of insulation from remaining lead ends and twist bare wires together to affect a short circuit.

(vii) Carefully remove misfire (no fire) and return it to NCOIC for disposal by EOD.

5. Program Sponsor Action:

a. New Material Fielding Plan. The Hoffman Device and ITGS is scheduled to be replaced with the Main Gun Signature Simulator (MGSS) at a future date. The Range Gunnery Simulation System (RGSS) will replace ATKS at a future date. The M30 simulator will replace M21 artillery flash simulator. The training program will be the same as described above for the new MGSS/RGSS/M30 systems.

b. Demilitarization Plan. When the Hoffman (#17-61), ITGS (#17-157) and ATKS (#17-133) systems are replaced with a MGSS/RGSS/M30 systems, the installation will request disposition instructions from the U.S. Army Training Support Center (USATSC), ATTN: ATIC-ATMD, Fort Eustis, VA 23604-5166. That office has responsibility for the management of fielded training devices. USATSC's disposition instructions to the field will include a directive to immediately turn in all old systems to the Defense Reutilization and Marketing Office (DRMO), with a Demil Code of "D" to ensure items are destroyed and can not be used for its intended purpose.

c. Correction Procedures. Updates to this training program will be periodically posted online at the following websites:

(1) At the Army Knowledge Online (AKO) website (<http://www.us.army.mil/>), Knowledge Collaboration Center (KCC): Click on the "Collaborate" tab at top, then click sequentially on Army Communities, AMC, TACOM, TACOM Safety, and then Messages. To subscribe: Scroll down the page to "Search & Subscribe", click on the down arrow (under View Knowledge Centers by Army Community), select "AMC", then click on "VIEW->". Click on the "TACOM" hyperlink, and place a check in the box next to the "TACOM Safety" file cabinet icon. Then click on the "Subscribe" icon on the gray toolbar above.

(2) At the Army Electronic Product Support (AEPS) website (<http://aeps.ria.army.mil/>): In the address box of your web browser, type: <https://aeps.ria.army.mil/ako/safety/> for AKO users; or <https://aeps2.ria.army.mil/safety/> for registered AEPS users and/or Public Key Infrastructure (PKI) Common Access Card (CAC) users.

6. The Points of Contact for this action:

a. Technical. Armor Target Kill Simulator – Ms. Diane Converse, DSN 793-2428, email: conversed@ria.army.mil or Ms. Judy Bechtler-Holzer, DSN 793-8530, email: bechtlerholzerj@ria.army.mil, U.S. Army Tank-automotive and Armaments Command-Rock Island (TACOM-RI), AMSTA-LC-CTR, Commercial 309-782-2428/8530.

b. Technical. Hoffman Device and Improved Tank Gunfire Simulator – Mr. Conrad Ortega, Program Executive Office for Simulation, Training and Instrumentation (PEO STRI), DSN 970-3766, Commercial 407-384-3766, e-mail: conrad_ortega@peostri.army.mil, or PEO STRI AMP Field OPS, DSN 970-3741, commercial 407-384-3741.

c. Technical. M21 Flash Simulator Pyrotechnic – Ms. Gwendolyn Thomas, U.S. Army Joint Munitions Command, AMSJM-QAS, DSN 793-7577, Commercial 309-782-7577, e-mail: thomasg@osc.army.mil. Mr. Mark Dorr, U.S. Army Joint Munitions Command, AMSJM-CDC, DSN 793-7099, commercial 309-782-7099, e-mail: mark.dorr@us.army.mil.

d. Safety. ATKS – Mr. Gavin Ziegler, U.S. Army Tank-automotive and Armaments Command-Rock Island (TACOM-RI), AMSTA-CS-CZR, DSN 793-2995/6499, commercial 309-782-2995/6499, e-mail: gavin.ziegler@us.army.mil, website: <http://tri.army.mil/safety/>. M21 Flash Simulator Pyrotechnic – Mr. Russell Hartwig, Joint Munitions Command, AMSJM-SF, DSN 792-2024/2113, commercial 309-782-2024/2113, e-mail: hartwigr@osc.army.mil. ITGS/Hoffman Device – Mr. Fernando Fuentes, U.S. Army PEO STRI, Program Executive Office For Simulation, Training, & Instrumentation, commercial 407-384-3948, e-mail: Fernando.Fuentes@peostri.army.mil, website: <http://peostri.army.mil>.

e. Demilitarization. ATKS – Mr. Neil Bohls or Mr. Michael Nichols, U.S. Army Training Support Center (USATSC) ATTN: ATIC-CTS, DSN 826-2320, commercial 757-878-2320, e-mail: bohls@atsc.army.mil or michael.nichols@atsc.army.mil, Hoffman Device/ITGS – Ms. Carolyn Ashton, U.S. Army Training Support Center (USATSC), ATIC-ATMS-FD, DSN 826-4771, commercial 757-878-4771, e-mail: carolyn.ashton@atsc.army.mil. M21 Artillery Flash Simulator – Mr. Richard Fuller, AMJMC-CTD, DSN 793-6306, commercial 309-782-6306, e-mail: richard.fullerjr@us.army.mil.

7. Logistics Area Representative (LAR). To find your TACOM LAR, you must be a registered user in the Army Electronic Product Support (AEPS) database, click on this link:

<https://aeps2.ria.army.mil/Services/Lars/Tacom/larmap/LARlocate/larmap.cfm>. Then select the appropriate region, i.e., CONUS, USAREUR, Far East, Kuwait Select the location nearest you and click on a name. This will give you a LAR's name, DSN and commercial phone number, email address, and photo. If you are not a registered user, request access at the public page: <https://aeps.ria.army.mil/aepspublic.cfm>, click on "Access Request Form" and follow the instructions for obtaining an AEPS userid. If you don't have access to AEPS, you can also obtain this information by contacting the TACOM Senior Command Representative (SCR) for your area.

CONUS-East: includes all units east of the Mississippi, FORSCOM, SOUTHCOM, KUWAIT, and CONUS

units deployed, (to include National Guard and Reserve units), DSN 236-6923, Commercial 910-396-6923.

CONUS-West: includes all units west of the Mississippi (to include all National Guard and Reserve units), DSN 737-0263, Commercial 254-287-0263.

USAREUR: Great Britain, Germany, Belgium, Luxemburg, Italy, Bosnia, Kosovo, and Macedonia, DSN 314-375-3461, Commercial 01149 621-487-3461, in Germany, 0621-487-3461.

Far East: includes Alaska, Hawaii, Korea, Okinawa, Kwajlein, and Japan, DSN 315-722-3036/3579, commercial 011 82 32 520-6036/6579.

SBCT units can contact your SCR at DSN 357-2991, Commercial 253-967-2991.

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