

**Report Date:** 30 Apr 2013

**Summary Report for Individual Task**  
**091-94D-1380**  
**Repair Tactical Airspace Integration System (TAIS) AN/TSQ-221(\*)**  
**Status: Approved**

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DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE: None

**Condition:** You are in an operational environment (OE), with a non-mission capable Tactical Airspace Integration System (TAIS), AN/TSQ-221; and a maintenance request form that has been submitted to your shop. Your supervisor has assigned the workorder to you for repair. At your workstation you have the following items: Tool Kit TK-100/G or TK-105/G ; a Multimeter; Radio Frequency Power Test Set AN/URM-213; Technical Manual (TM) 11-5895-1887-10, TM 11-5895-1887-23, TM 11-5895-1887-23P; Department of the Army (DA) Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E (Equipment Inspection Maintenance Worksheet (EGA); DA Form 2407 (Maintenance Request) or DA Form 5990-E (Maintenance Request (EGA); Federal Aviation Administration (FAA) Form 6030-1 (Facility Maintenance Log); DA Pamphlet 750-8, local standing operating procedure (SOP), and a replaceable component, module , or chassis. Some iterations of this task should be performed in MOPP.

**Standard:** Restore AN/TSQ-221(\*) to fully mission capable condition using TM11-5895-1887-10, TM 11-5895-1887-23, TM 11-5895-1887-23P. Accurately complete all associated maintenance forms and records using DA Pam 750-8.

**Special Condition:** None

**Special Standard:** If equipment listed is not available, equivalent equipment may be substituted.

**Special Equipment:**

**Safety Level:** Low

**MOPP:** Sometimes

<b>Task Statements</b>
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**Cue:** Your supervisor has directed you to repair a non-mission capable Tactical Airspace Integration System (TAIS) AN/TSQ-221(\*) that was brought to the C&E shop.

**DANGER**

None

## WARNING

**ASPHYXIATION HAZARD** The truck and generator set produce toxic fumes. Failure to observe this warning can result in serious injury or death by asphyxiation. Operating the fire extinguisher inside the shelter exposes the operator to unsafe levels of Carbon oxide (CO<sub>2</sub>). Fight fires only from outside the shelter and completely ventilate the shelter prior to reentry.

**HIGH VOLTAGE HAZARD** This equipment has been tested, validated, and verified to operate safely when properly connected to the issued tactical generator or properly installed and grounded commercial 208 vac “pole” power. Locally procured or developed power generation equipment, such as transformers, must be tested and certified by the TAIS Materiel Developer (MATDEV) and the TAIS Original Equipment Manufacturer (OEM)/Prime Contractor before operation. Failure to observe this warning can result in serious injury, death, or damage to equipment. This equipment contains lethal voltages. Remove power from equipment before handling. Failure to observe this warning can result in serious injury or death. High voltage is produced by the generator set. Do not connect or disconnect power cables when generator is running. Do not cap or uncap power cable connectors when generator is running. Do not leave disconnected power cable connectors uncapped when generator is running. Failure to observe this warning can result in serious injury or death.

**ELECTRICAL STORM HAZARD** Electrical storms can cause the outside of Tactical Airspace Integration System (TAIS) equipment to be charged to high voltages. Do not touch outside of truck, shelter, generator, trailer, or grounding wires and rods during electrical storms. Do not enter or exit shelter and keep shelter door closed and properly latched during electrical storms. Failure to observe this warning can result in serious injury or death.

**WARNINGS FREEZING HAZARD** Avoid contacting metal items with bare skin in extremely cold weather. Failure to observe this warning can result in serious injury.

**BATTERY EXPLOSION HAZARD** Ensure laptop batteries are installed in BFT laptop during air transport. Failure to observe this warning may result in laptop battery explosion.

**BURN HAZARD** Equipment and generator may be hot to touch. Allow unit to cool before handling or use gloves when handling. Serious injury or death from burns or scalding could result from contact with high-pressure steam and/or liquid. Failure to observe this warning can result in serious injury.

**HEAVY EQUIPMENT HAZARD** The (common name) weighs (weight) pounds. (Number) team members are required to support and lift the equipment. Failure to observe this warning can cause serious injury.

## CAUTION

**PROPER CLEANING HAZARD** This equipment can be damaged by improper cleaning. Use only soft cloth slightly dampened with water or mild glass cleaner. Do not scrape with hard plastic or metal tools. Do not use alcohol, toluene, acetone, methyl ethyl ketone (MEK), volatile liquids, or harsh cleaning agents. Do not use scouring powder or other gritty cleansers. Failure to observe this caution can cause equipment damage.

**HEARING INJURY HAZARD** This equipment produces loud noises that can cause hearing loss. Wear hearing protection when near operating equipment. Failure to observe this caution can cause injury.

**EYE INJURY HAZARD** Some antenna elements are spring loaded. Be careful to open elements away from face. Failure to observe this warning can result in eye injury. Fiber-optic cables can be degraded or damaged by dust, dirt, oils, and misalignment. Use care to insert and remove connectors straight in and out without angling. Keep cable connectors capped when not connected. Do not connect dusty, dirty, or oily connectors. Do not coil or knot cables tightly. Failure to observe this caution can cause damage to equipment.

**Remarks:** Performing removal/installation procedures requires two maintenance personnel. Follow step-by-step procedures in TM 11-5895-1877-23. After completing maintenance procedures, ensure system is powered up in accordance with operator's manual. If not, system will register a fault.

**Notes:** (\*) Annotates applicable version of AN/TSQ-221A  
AN/TSQ-221A(V)1, NSN 5895-01-574-6798 (EIC: N/A)  
AN/TSQ-221A(V)2, NSN 5895-01-574-6816 (EIC: N/A)  
AN/TSQ-221A(V)3, NSN 5895-01-574-6811 (EIC: N/A)  
AN/TSQ-221A(V)4, NSN 5895-01-574-6821 (EIC: N/A)

### Performance Steps

1. Obtain all required tools, test equipment, references and materials using TM 11-5895-1887-23.
2. Complete and initial appropriate blocks on maintenance request forms using DA PAM 750-8.
3. Perform visual inspection.
4. Properly set up test equipment.
5. Verify faults listed on maintenance forms using appropriate troubleshooting chart in TM 11-5895-1887-23.
6. Perform troubleshooting procedures on the AN/TSQ 221(\*) using the troubleshooting chart in TM 11-5895-1887-23.
7. Identify defective part (s) using TM 11-5895-1887-23.
8. Replace defective part(s) using TM 11-5895-1887-23P.
  - a. Remove component and parts to be replaced and those that prevent access to them.
  - b. Disassemble components and parts to be replaced.
  - c. Clean all components or parts that were dusty, dirty, or corroded.
  - d. Replace serviceable parts and /or components, if necessary.
9. Perform operational checks using TM 11-5895-1887-10.
10. Complete appropriate blocks on maintenance request forms using DA PAM 750-8.
11. Tag defective part(s) for turn-in using DA PAM 750-8.
12. Notify supervisor upon completion of task.

(Asterisks indicates a leader performance step.)

**Evaluation Preparation:** Ensure all items required in the condition statement are on hand or there are appropriate substitutions. Meet all safety requirements.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Obtained all required tools, test equipment, references and materials using TM 11-5895-1887-23.			
2. Completed initial appropriate blocks on maintenance request forms using DA PAM 750-8.			
3. Performed visual inspection.			
4. Properly set up test equipment.			
5. Verified faults listed on maintenance forms using appropriate troubleshooting chart in TM 11-5895-1887-23.			
6. Performed troubleshooting procedures on the AN/TSQ 221(*) using the troubleshooting chart in 11-5895-1887-23.			
7. Identified defective part(s) using TM 11-5895-1887-23.			
8. Replaced defective part(s) using TM 11-5895-1887-23P.			
a. Removed component and parts to be replaced and those that prevent access to them.			
b. Disassembled components and parts to be replaced.			
c. Cleaned all components or parts that were dusty, dirty, or corroded.			
d. Replaced serviceable parts and /or components, if necessary.			
9. Performed operational checks using TM 11-5895-1887-10.			
10. Completed appropriate blocks on maintenance request forms using DA PAM 750-8.			
11. Tagged defective part(s) for turn-in using DA PAM 750-8.			
12. Notified supervisor upon completion of task.			

**Supporting Reference(s):**

Step Number	Reference ID	Reference Name	Required	Primary
	11-5895-1887-23P	FIELD MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST FOR COMMAND SYSTEM TACTICAL (TACTICAL AIRSPACE INTEGRATION SYSTEM) (TAIS)	Yes	No
	DA FORM 2404	EQUIPMENT INSPECTION AND MAINTENANCE WORKSHEET	Yes	No
	DA FORM 2407	MAINTENANCE REQUEST FORM	Yes	No
	DA FORM 5988-E	Equipment Inspection Maintenance Worksheet	Yes	No
	DA FORM 5990-E	Maintenance Request	Yes	No
	FAA FORM 6030-1	Facility Maintenance Log	Yes	No
	PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual.	Yes	No
	TB 385-4	SAFETY REQUIREMENTS FOR MAINTENANCE OF ELECTRICAL AND ELECTRONIC EQUIPMENT	No	No
	TM 11-5895-1887-10	Operator Manual for Command System, Tactical (Tactical Airspace Integration System) (TAIS) AN/TSQ-221A	Yes	No
	TM 11-5895-1887-23	Field Maintenance Manual for Command System, Tactical (Tactical Airspace Integration System) (TAIS) AN/TSQ-221(V)1, AN/TSQ-221A(V)2, AN/TSQ-221A(V)3 AN/TSQ-221A(V)4, (5895-01-574-6821)	Yes	No

**Environment:** All operations must conform to the Army Environmental Program, TC 3-34.489 (The Soldier and the Environment), FM 3-34.5 (Environmental Considerations), AR 200-1 (Environmental Protection and Enhancement), local, state, and federal environmental policies, The Clean Air Act (CAA), CAA amendments, National Ambient Air-Quality Standards (NAAQS), as well as OSHA Hazard Communication Standard for Industry, 29 CFR, part 1910.

**Safety:** In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Incidental to Army operations and activities, all operations must provide for public safety, safe and healthful workplaces, procedures and equipment. Observe all safety precautions when using lifting devices and handling heavy parts. Observe all safety and/or environmental precautions regarding electricity, radiation, radio frequency (RD), fuel, lubricants, high pressures, and refrigerants. Provide ventilation for exhaust fumes during equipment operation and use hearing protection when required IAW AR 385-10 (The Army Safety Program), The Clear Air Act (CAA), CAA amendments, National Ambient Air Quality Standards (NAAQS), and the OSHA Communication Standard.

**Prerequisite Individual Tasks :** None

**Supporting Individual Tasks :** None

**Supported Individual Tasks :** None

**Supported Collective Tasks :**

Task Number	Title	Proponent	Status
09-2-4000	Perform Direct Support Maintenance Operations (EAD)	09 - Ordnance (missiles and munitions) (Collective)	Approved

**ICTL Data :**

ICTL Title	Personnel Type	MOS Data
MOS 94D	Enlisted	MOS: 94D, Skill Level: SL1, Duty Pos: OKG