

## **The AN/PSS-14 Mine Detector Requires a License:**

# **Mine Detection Moves Into the Future**

*By Mr. David Holbrook*

Why is there an article about mine detectors in *Army Chemical Review*? Isn't the mine detector an engineer thing? I'm sure that these questions will be on the minds of many Chemical Soldiers as they read through this issue of *Army Chemical Review*.

The Army is always changing. If you are required to conduct quartering-party operations, then your unit will be required to operate the AN/PSS-14 mine detector. With that in mind, the Chemical Corps is updating modified tables of organization and equipment (MTOEs) and authorizing the AN/PSS-14 for some Chemical units. Technical escort teams, smoke units, and Chemical companies (combat support and heavy) will need the AN/PSS-14 for site exploitation; consequently, it will be added to their MTOEs. So read on, Soldier, read on!

The AN/PSS-14 Mine Detection System is more advanced than any detector used to accomplish mine detection. But the AN/PSS-14 is only one part of this

remarkable system; the other and more essential part is the operator. The complexity of the system requires operators to be licensed to ensure safe and effective operation. For that reason and for the safety of personnel involved in route and area clearance operations, commanders must emphasize that each operator be properly licensed before using the system in a real-world situation. Licensing on the AN/PSS-14 will ensure that the operator is properly trained and that the equipment is adequately sustained to perform as designed.

### **Basic Operational Theory**

The AN/PSS-14 mine detector applies two technologies: metal detection (MD) and ground-penetrating radar (GPR). The AN/PSS-14 employs aided target recognition algorithms that alert the operator to the presence of targets of interest. A trained operator learns to mute the MD or GPR to identify an object buried in the ground, pinpoint its location, determine if it is a mine, and



**Soldiers being graded on sweeping techniques while attending the UMT course**

investigate it. The GPR can be used to distinguish mines from battlefield clutter and other metal debris.

### Fielding

The first step in fielding the AN/PSS-14 is educating units on the system requirements. The program manager (PM) for countermine and explosive ordnance disposal (EOD) sends a team to the unit location to conduct a new material introductory briefing. During the briefing, the PM representative explains the capabilities, sustainment requirements, licensing requirements, and training devices. The number one goal of the briefing is to ensure that commanders schedule time to conduct new equipment training (NET) and unit master training (UMT). (UMT is conducted by master trainers from the U.S. Army Engineer School [USAES].) Both courses are forty hours long and are conducted at the units' home stations or at Fort Leonard Wood, Missouri—whichever is more convenient for the unit. After the training is scheduled, the NET team travels to the training location, sets up the training site, begins training, and issues equipment (following successful NET completion). The operators who attend the training are considered certified.

### Training

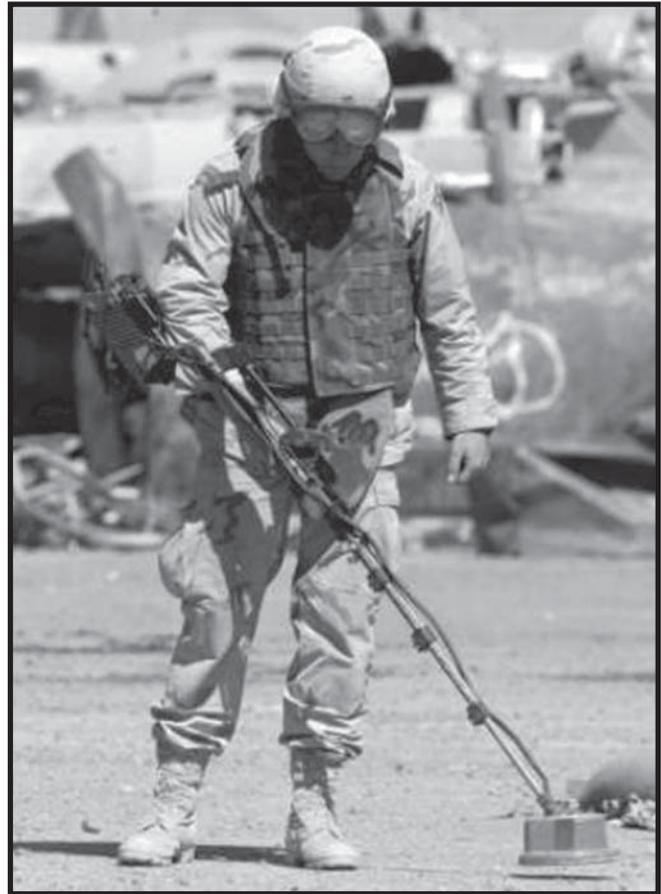
The PM provides proper training on every unit authorized the AN/PSS-14. This means that before a unit is fielded its authorized quantity of mine detectors, it must have an equal or greater number of licensed operators.

Every unit must send operators to NET before the AN/PSS-14 is fielded. Only **sergeants (E5s) or above** may attend the training. Selected attendees will then be qualified to take additional training and become unit master trainers.

UMT is conducted to provide a sustainment capability to each unit issued the AN/PSS-14. Units are encouraged to send as many attendees (**E5 and above**) as possible to this training.<sup>1</sup> These individuals develop unit standing operating procedures (SOPs) and conduct new operator and refresher training when the fielding process is complete. Additionally, instructors are required to be operator-certified before participating in UMT. With this requirement in mind, units must capitalize on sending personnel to NET so that they are eligible for UMT later.

### Licensing

The leadership at USAES feels that equipment designed to detect explosives, mines, or other hazards must have a licensing requirement associated with it. The proper use of these types of equipment will prevent



**Soldier using an AN/PSS-14**

injuries and the loss of lives. The licensing requirement ensures the proficiency of personnel using the equipment. Army Regulation (AR) 600-55, Chapter 7, states that all military personnel and Department of the Army (DA) civilians must have a completed Optional Form (OF) 346 (*U.S. Government Motor Vehicle Operator's Identification Card*) and be able to demonstrate their proficiency before operating miscellaneous equipment determined by local commanders or higher authorities to warrant licensing (such as powered lawn mowers; agricultural machinery; food preparation equipment; field ranges; immersion heaters; laundry equipment; snowmobiles; and detecting sets, mine-portable, AN/PRS-7 and AN/PSS-11).

The USAES has recommended the following changes to AR 600-55 to clarify the licensing requirement for the AN/PSS-14: All military personnel and DA civilians must have a certified DA Form 5984-E (*Operator's Permit Record*) and demonstrate their proficiency to operate mine-detecting or other explosive-detecting equipment, to include all portable, handheld, and truck-mounted models (including, but not limited to, AN/PSS-12 and AN/PSS-14). The first draft of revised AR 600-55 is

currently under review. The final version is scheduled for completion in early 2008.

### Summary

It is imperative that commanders become familiar with the capabilities of the AN/PSS-14. This system is essential to safe route clearance operations. The USAES has provided all the tools required to establish a successful training and licensing program, to include providing units with a draft SOP for adoption and immediate implementation. The PM has an aggressive fielding schedule for the AN/PSS-14. If NET and UMT are not on your unit training calendars, please contact the following personnel:

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**Soldier using the Sweep Monitoring System to calibrate an AN/PSS-14**

#### **Endnote:**

<sup>1</sup>Because of the licensing requirement for this system, all personnel in the UMT course must be E5 or above. **Specialists are not authorized UMT.**

#### **References:**

AR 600-55, *The Army Driver and Operator Standardization Program (Selection, Training, Testing, and Licensing)*, 18 June 2007.

DA Form 5984-E, *Operator's Permit Record*, 1 March 1991.

OF 346, *U.S. Government Motor Vehicle Operator's Identification Card*, November 1985.

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