

# MINE DETECTION MOVES INTO FUTURE

DAVID HOLBROOK

The AN/PSS-14 Mine Detecting Set (NSN:6665-01-504-7769) is more advanced than any metal detector used to accomplish mine detection. The AN/PSS-14 mine detector is only one part of this remarkable mine detection system. The other and more essential part of this system is the operator. The complexity of the system requires operators to be licensed to ensure safe and effective operation. For that reason and the safety of all personnel involved in route and area clearance operations, commanders must emphasize that each operator be properly licensed prior to using the system in a real-world situation. Licensing on the AN/PSS-14 is essential to ensure both the operator and the AN/PSS-14 are adequately sustained and perform as designed when used.

## 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 of a presence of a target of interest. A trained operator learns to mute the MD or the GPR to identify objects buried in the ground, pinpoint their location, and determine if they are potential mines. A licensed operator can detect metal objects in the ground and investigate the object using the GPR. The GPR can be used to distinguish potential mines from battlefield clutter and other metal debris.

## AN/PSS-14 Fielding

The first step in the fielding process is to educate units on the system requirements. The Program Manager (PM) for Countermine and Explosive Ordnance Disposal (EOD) sends a team to the unit's location to conduct a New Material Introductory Briefing (NMIB). During this briefing the PM's representative will explain the system's capabilities, sustainment requirements, licensing requirements, and training devices available for the system. The number one goal of the briefing is to ensure commanders lock in time for both the new equipment training (NET) and the unit master training (UMT). U.S. Army Engineer School-trained master trainers conduct UMT. Both of these courses are 40 hours in length and are conducted either at the unit's home station or at Fort Leonard Wood, Missouri, whichever is convenient for the unit. Once the training is scheduled, the NET team will arrive at the unit's location, set up the training site, begin training, and issue the equipment after successful NET completion. Once NET training is completed, the operators who attended the training are considered licensed on the system.

## Training

The PM has provided the means for every unit authorized the AN/PSS-14 to receive the proper training. The Department of Defense uses the "One Operator Trained – One System Issued"

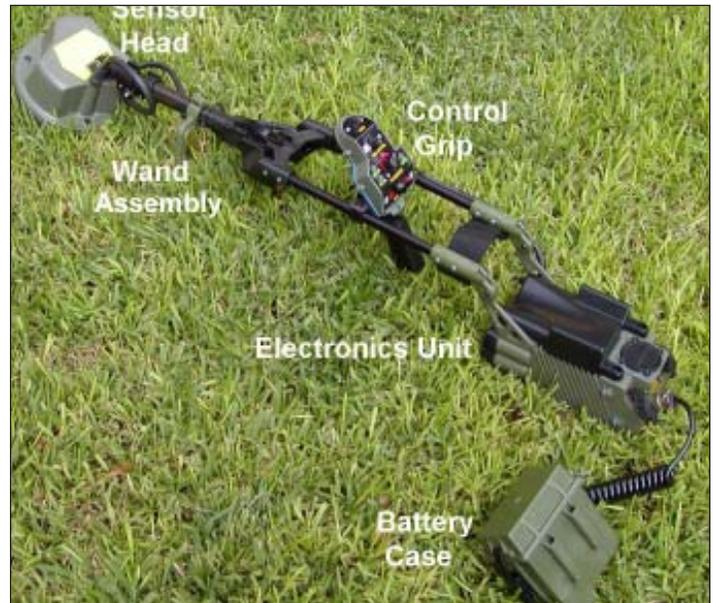


Figure 1 — AN/PSS-14

rule for the AN/PSS-14. This means that prior to a unit being fielded their authorized quantity of mine detectors they must have an equal or greater number of "licensed operators." Operators are licensed in only two ways:

1. Attended the full 40-hour training provided during NET; or
2. Attended a full 40-hour course conducted by a USAES-certified UMT.

Every unit will send operators to NET prior to being fielded the AN/PSS-14. The requirement is to send one operator for each AN/PSS-14 the unit is being issued. It is recommended that unit commanders send sergeants, (E5) or above, from their unit or from higher staff levels to attend the NET training. Those selected sergeants will then be qualified to take the additional training and become unit master trainers.

UMT training is conducted to provide a sustainment capability to each unit issued the AN/PSS-14. Units are encouraged to send as many E5s and above to this training as possible. These individuals will develop unit SOPs and conduct new operator and refresher training after the fielding process is complete. **Because of the licensing requirement for this system, all attendees in the UMT course must be E5 or above. Promotable E4s are not authorized to receive the UMT training.** Additionally, instructors are required to be operator-certified prior to participating in the UMT training. With this requirement in mind, units must capitalize on sending E5s or above to NET training so they are eligible for UMT later.

## Licensing

The U.S. Army Engineer School (USAES) feels that any piece



Courtesy photos

*Trained AN/PSS-14 operators learn to mute the metal detection and ground-penetrating radar to identify objects buried in the ground, pinpoint their location, and determine if they are potential mines.*

of 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 the loss of life or limb of another service member. The licensing requirement ensures the proficiency of the personnel trained in utilizing the equipment.

In accordance with Army Regulation 600-55, *The Army Driver and Operator Standardization Program (Selection, Training, Testing, and Licensing)*, Chapter 7-1 states the qualifications to operate are as follows:

a. All military personnel and DA civilians must have an OF 346 and demonstrate their proficiency in order to operate the following mechanical or ground support equipment:

(13) Mine-detecting equipment, truck mounted; all makes and models.

(15) Miscellaneous equipment, any equipment determined by the local commander or higher authority to warrant licensing such as powered lawn mowers; agricultural machinery; food preparation equipment; field ranges; immersion heaters; laundry equipment; snowmobiles; detecting sets, mine portable, AN/PRS-7 and AN/PSS-11.

The USAES has recommended the following changes to AR 600-55 in order to clarify the licensing requirement for the AN/PSS-14. The first draft of this manual was sent out for review and the final version

is scheduled for publication in early 2008.

a. All military personnel and DA civilians must have a DA 5984-E and demonstrate their proficiency in order to operate the following mechanical or ground support equipment:

(13) Change to Read: “Mine or other explosive detecting equipment, all portable, handheld, or truck-mounted models (including but not limited to AN/PSS-12 and AN/PSS-14).”

(15) Delete the last line of this paragraph that reads “detecting sets, mine portable, AN/PRS-7 and AN/PSS-11” licensing is at the discretion of the commander. USAES feels that licensing on explosive or mine-detecting equipment should not be at the discretion of the local commander.

### Summary

It is imperative that commanders become familiar with the capabilities of the AN/PSS-14. This system is vitally essential in safe route clearance operations in the current theater of operations and in future conflicts. 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 for the next few years. If you do not already have both NET and UMT training on your units training calendar, contact Rob Sellmer, AN/PSS-14



*Operators using the AN/PSS-14 must complete a 40-hour new equipment training course.*

fielding manager, at (703) 704-3397, DSN 654-3397, robert.sellmer@us.army.mil for NET and John Sullivan at (573) 563-7646 or cell (573) 528-9081 for UMT immediately to ensure you unit is ready to deploy with the best route clearance capabilities possible.

**David Holbrook** is a retired engineer lieutenant colonel and former battalion commander. He currently works as a senior analyst for BRTRC Research Corporation at Fort Leonard Wood, Missouri.