

—new mount shows promise

Operating the M3A4 Smoke

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The retirement of the Army's workhorse, the aging quarter-ton truck, signalled good news for all units receiving the new high-mobility, multipurpose, wheeled vehicles (HMMWV). However, the transition caused concern among chemical companies deploying the M3A4 smoke generator. After all, how do you effectively deploy a system comprised of a vehicle, trailer, and two smoke generators when the modified table of equipment (MTOE)-authorized hardware to install the generators on the vehicles is not compatible with the HMMWV?

The obvious answer seemed to be to carry the generators as general cargo in the bed of the HMMWV until the replacement mounting system, the M288 mount, was procured and deployed to the field. This required unloading the generators and two 55-gallon drums of fog oil onto the ground before placing the system into operation to make smoke.

Operating in this fashion limits the ability of smoke units to quickly change positions when the wind inevitably changes. It also decreases the already dubious survivability of the smoke crews by restricting their ability to quickly displace when detected and engaged by enemy direct and indirect fire.

The 164th Chemical Company

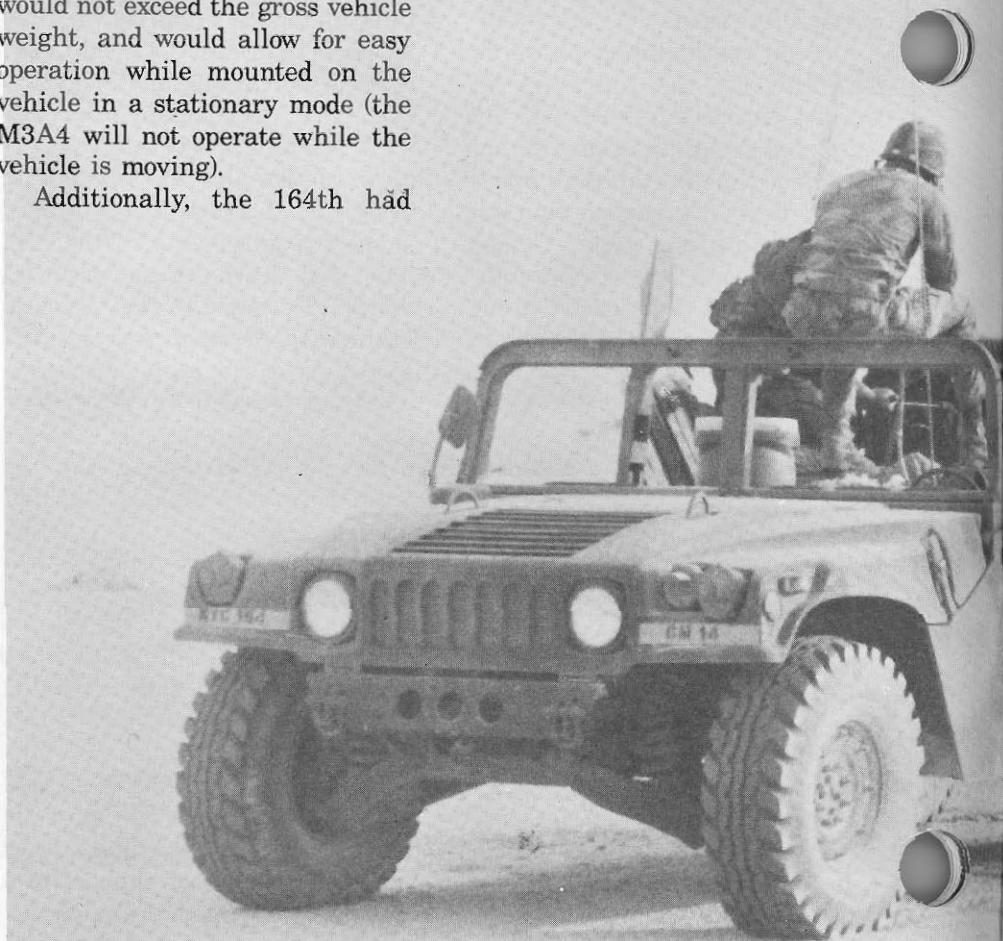
(Smoke Generator) from Fort Lewis, Washington, developed an interesting and inexpensive solution to this problem. The unit took a basic design and list of requirements to their local direct support maintenance unit, the 542d Maintenance Company, and asked for a mounting system that would secure two generators and two barrels of fog oil using the existing tie down bolts in the bed of the HMMWV.

The 164th wanted a mount that, when fully loaded on the vehicle, would not exceed the gross vehicle weight, and would allow for easy operation while mounted on the vehicle in a stationary mode (the M3A4 will not operate while the vehicle is moving).

Additionally, the 164th had

heard from other units that securing the generators to the vehicle by clamping the tubular frame of the generator at the bottom would often break those frames during offroad movements and wanted to preclude this from happening to their systems.

The welding shop from the 542d took the basic design concepts provided and built a prototype consisting of an angle iron box frame that would fit into the bed of the HMMWV and could be secured to



Generator on the HMMWV

the existing tie down bolts.

At the front of this frame a rack was built that would allow two barrels of fog oil to be cinched to the frame between it and the crew compartment of the vehicle. This rack was hinged to swing up and out of the way to allow loading fog oil drums from either side of the vehicle.

Another frame was welded across the top of the box frame that extended midway over the wheel wells and was secured with a removable angle iron frame that fit across both generators and was cinched down in the middle. This gave a wraparound feature for securing the generators to the vehicle to preclude breaking its tubular aluminum frame.

A place to carry five-gallon cans of fuel and the generator fire extinguishers was built into the box frame just behind the fog oil rack. The Fort Lewis safety office evaluated the system and approved it for initial use and testing.

The 164th used the local training areas of Fort Lewis to test the new configuration, driving over many kinds of rough terrain to ensure that the generators would be held securely to the vehicle. Finally, the system was tested for ease and quickness of operation.

In all of this initial testing the mount performed well and the decision was made to build 11 more in order to outfit one platoon of the 164th.

Crew drills were established for operating with the newly configured smoke generator system. These drills consisted of loading and unloading procedures, fire reaction drills, fog oil replacement, and system operations.

The 164th refined and tested its crews over a five-month period in the fall and winter of 1987-88, and they became very proficient at operating with "their" new system.

The real test for the generator mount came in an opportunity to deploy with the 3d Brigade of the 9th Infantry Division (Motorized) to the mountainous and desert conditions of Yakima Firing Center. During the FTX, the 164th was used constantly for obscuring the movements and position of the two motorized battalions of the brigade. The nature of the motorized division required the smoke platoon to

move rapidly over all types of terrain.

The unit concluded that the mounts not only held up over very rough and exhaustive operating conditions but also made operations easier. Smoke crews could place the systems into operation and pack up and move in mere seconds instead of the 15 to 30 minutes previously required.

Total cost of the mount, including parts and labor, was \$315 per copy as compared to roughly \$3,300 for the M288 mount. The capabilities of the two mounts are very comparable.

The 164th has planned several improvements to the design that will improve its performance and allow an M60 machinegun to be mounted between the two generators. A prototype is being constructed. 

The Chemical School, in conjunction with PM-Smoke and Chemical Research, Development and Engineering Center (CRDEC), is presently reviewing the 164th Chemical Company mount as a possible replacement for the M288 mount in units equipped with the M3A4 Smoke Generator System and M998 HMMWV. The School anticipates publishing a school decision and world-wide message in Oct 88. Directorate of Combat Developments point of contact is CPT Riecks, AUTOVON 865-3877/3906.

—Editor

