Two Years with the Mask

—some problems, some answers

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January 1994 will mark two years since the first M40 masks were fielded to surety personnel at Johnston Island. Since that time, M40 and M42 masks have also been fielded to Forts Bragg, Campbell, Stewart, Ord, and Benning. In general, the masks have received favorable acceptance and soldiers can see the advantages of the M40 over the M17-series mask.

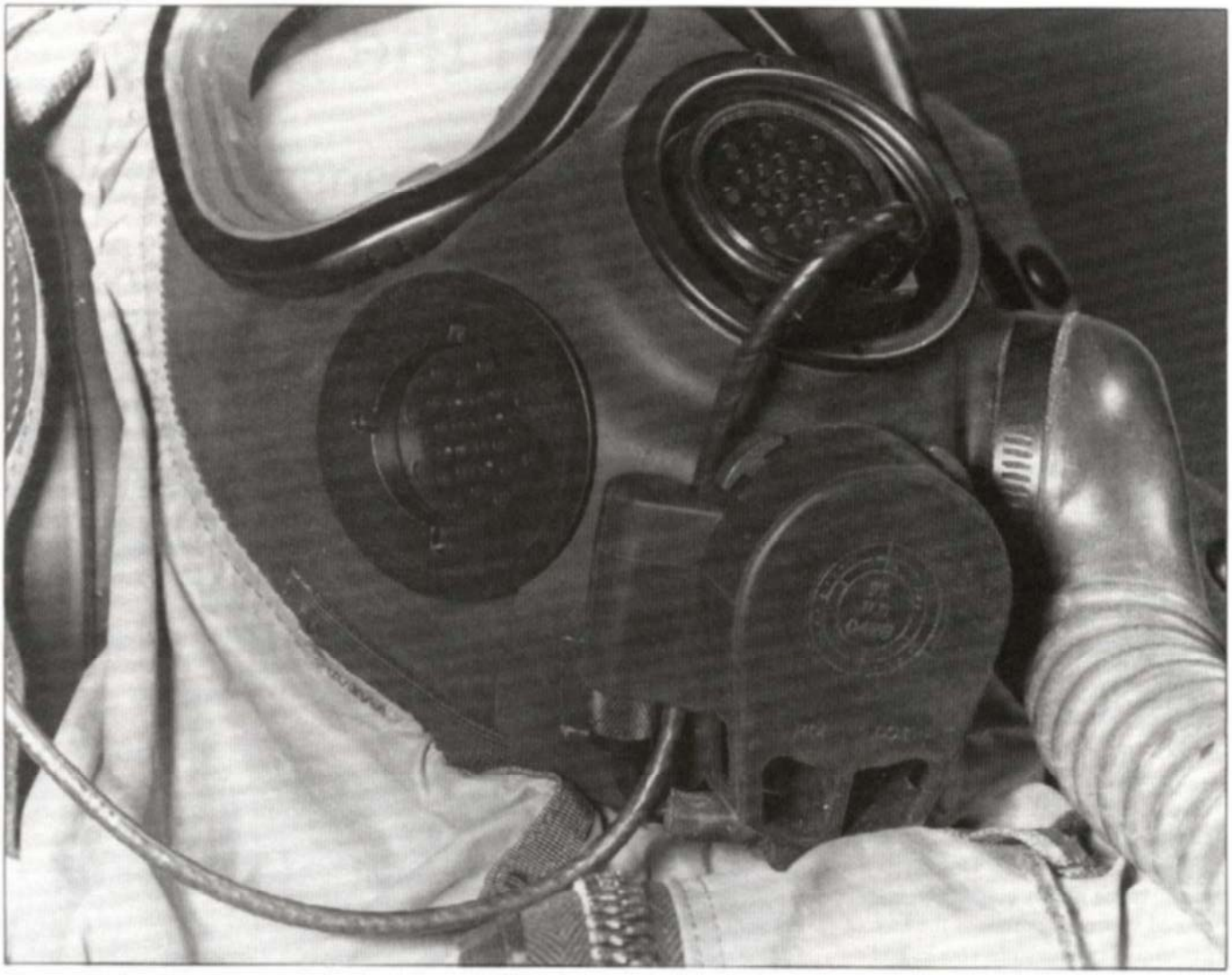
As with any new item, questions have occurred that require additional clarification. Many of these concerns will be addressed here. Our assessments of the masks in the field have caused concern because of the lack of preventive maintenance checks and services (PMCS) in the masks we inspected. It cannot be emphasized enough that PMCS standards in the manual must be followed to the fullest.

One of the most important components of the M40/M42 mask system is the canister, but if it's not tightened properly on the facepiece, it's completely useless. Numerous fielded masks have been examined and found to have loose canisters.

The manual states that the canister must be *screwed tightly into facepiece*; however, changes are currently being made to clarify this requirement even further. It's important that the soldier firmly tighten the canister with the whole hand until the faceblank begins to flex. We don't feel anyone should be concerned about making the connector too tight as long as the mask itself is not damaged in the process.

Through years of using the M17-, M9-, and M25-series masks, soldiers have been accustomed to stowing the mask in the carrier with the facepiece pressed together and lenses facing the opening. Soldiers must adopt a new mindset for the M40/42 mask. Stow the M40/42 mask sideways, or in an open position with the lenses facing away from the soldier. See photo this page.

Proper stowage position of the mask in the carrier.



The proposed routing of the microphone cord in the M42 mask.

Many examples of broken drink tube couplings have been detected—attributed directly to the position of the mask during stowage. If the mask is flexed during stowage, it can be demonstrated how the molded-in metal side ring in the facepiece can make direct contact with the coupling and, by applying a side load, break off the coupling. A video tape on the care and use of the mask was released to the field as an aid during initial training, but could serve for retraining. Efforts are underway to revise the training video by correcting its few discrepancies as well as highlighting the proper stowage position of the mask in the carrier.

PMCS is very important in maintaining the cleanliness of the outlet valve seat and disk. It's very easy to get sand and dirt on the mask in a typical field environment; but, dirt in the outlet valve area can result in a mask leak. The valve assembly cannot seal properly if any foreign material lies along the sealing surface; so it's extremely important that this area be kept clean. Wipe with a clean, dry piece of cheesecloth or soft cloth, then check that the disk lies flat on the valve seat, and that no residue remains from your wipe cloth.

Soldiers using the M42 mask have reported cases of losing the microphone cord. The 24th Infantry Division at Fort Stewart, Georgia, has already instituted a technique to prevent loss; however PM NBCDS has developed a procedure where the cord is routed through and behind the outlet valve cover. If the microphone connector becomes detached, the outlet valve cover will prevent the cord from becoming lost (see photo, above). Actions are being taken to include this as a permanent change to the manual.

The sizing tariff was based on the overall size of the Army and established at 30 percent large, 60 percent medium, and 10 percent small. During the fielding of specific units, the number of required medium

The proper attachment of the rubber inlet valve seat to the metal ring.

masks exceeded the 60 percent tariff quantity. Units experienced unnecessary delays and expense while the surplus smalls and larges were returned to US Army Armament, Munitions, and Chemical Command to be exchanged for the required medium masks. The PM NBCDS will work with the US Army Chemical School to determine whether there should be different tariffs for different units, based on the soldier gender mix.

Another area of concern—a master shipping box does not necessarily contain eight masks. The number of masks is controlled by a production lot, and sometimes empty boxes are included to complete the load. This should not affect the total number of masks received. This quantity will be properly identified on the master shipping document.

Some of the masks initially delivered contained loose front voicemitter retaining rings. There was an isolated period of time where some production lots were improperly torqued and leakage test equipment was out of calibration. These masks had been identified, segregated into a nonissuable code, and returned to the manufacturer under the warranty recall program.

In addition to making factory corrections, the production torque requirement was increased and the manufactures apply a second torque to the ring. However, the manual outlines a good PMCS procedure: check both voicemitter retaining rings for tightness and, if necessary, tighten by hand. This does not mean to first loosen the ring to check for tightness because the front voicemitter locking gasket could become dislocated and unusable.

As stated in the manual, the soldier can wear the canister on either side of the mask depending on whether the individual is right- or left-handed. It's important that the inlet valve seat and disk be placed on the side of the mask that will contain the canister. It's also extremely important that the rubber inlet valve seat (wagon wheel) be properly attached to the metal ring. The metal ring must nest in the groove of the rubber inlet valve seat. See photo, left. If the seat is not properly installed, the mask could either leak, fog, or both.

It must be emphasized that the drinking system of the mask was designed to be used only with water. Sodas and drinks other than water can cause the quick disconnect assembly to become inoperative, possibly through the formation of mold or sugar hardening. Such drinks, therefore, are not authorized.

The bottom line of this article is to emphasize the importance of following PMCS standards, which are reinforced by the skill level 1 Soldier's Manual of Common Tasks as well as operational procedures described in the manual. This has a direct bearing on unit NBC readiness rating.

Technical manual changes will always be made when corrections are needed and improvements identified. The M40 and M42 masks far exceed the capabilities of the M17-, M9- and M25-series masks. Any mask is a piece of life-saving equipment and must be handled with care. The M40 and M42 masks represent the best available CB protective masks in the world and through proper care and PMCS, you can ensure that the mask is ready to protect you in the event of CB usage.