



# THINK SAFETY

by

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## STATUS REPORT MASK SERVICE UNIT

This article is being presented to acquaint the members of this Department with the current status of the Mask Service Unit (MSU).

Earlier this year, a 4.5 air cylinder failure occurred while it was being charged at the MSU quarters. As a result of this incident, most of the MSU programs have been put on a back burner. The most ambitious of those programs was the conversion of the demand regulator to a positive pressure system with an automatic shutoff. Presently, the only companies in the field that are using the positive pressure system are the Hazardous Material Unit #1 (HazMat #1) and, as a backup for HazMat #1, Rescue Company 3 and Rescue Company 4. The positive pressure pilot program, which was suspended during the latter part of last year, is scheduled to resume shortly. It had been originally suspended in order to permit the manufacturer to implement several necessary modifications. Resumption of the program was further delayed due to the cylinder failure incident. The positive pressure mask will eventually become an integral part of the tools and equipment that are now in use in the New York City Fire Department. It will, however, take longer than anticipated due to various modifications and the aforementioned setback.

The failure of the cylinder caused the Federal Department of Transportation (DOT) to limit the charging pressure of the 4.5 cylinders to 4,000 psi. The reduction in pressure from 4,500 psi to 4,000 psi was recommended to secure a greater safety margin for all users of self-contained breathing apparatus with 4.5 hoop-wrapped cylinders. This reduction in pressure also resulted in downgrading the use-time of our mask from thirty minutes to twenty-five minutes. The DOT has also prohibited the cylinder manufacturer from producing any new hoop-wrapped cylinders until the problem is resolved.

The cylinder manufacturer proposed a solution to the problem, which requires that each cylinder currently

in use be fitted with a steel ring which is heated and pressed onto the neck. This will strengthen the neck area, and should prevent any violent rupture.

The DOT has recently approved the manufacturer's solution (neck ring), thereby allowing the modified cylinders to be charged to the original design pressure of 4,500 psi. This, of course, allows the use-time to be returned to the original thirty minute duration.

The MSU is also involved in having all of our 4.5 hoop-wrapped cylinders visually examined, to prevent the possibility of another failure.

The mask manufacturer has begun to supply a completely wrapped (polar-wrapped), half-hour cylinder on new masks. These cylinders are manufactured by a different company and are similar to the larger, one-hour cylinder in their configuration. They are easily recognizable by their rounded bottom, which prevents them from standing in an upright position when not supported. In addition, they are completely wrapped with fiberglass, top and bottom.

The MSU is also looking at a forty-five minute, completely wrapped, cylinder for possible use in high-rise areas.

The members of the MSU have also received training in the Draeger, four-hour, rebreather mask. The Department now has fourteen of these masks for evaluation. If they are deemed satisfactory for Fire Department use, there is the possibility that they will be assigned to one or two specific companies.

The MSU is also in the process of checking all the standard masks that are presently in use in the field. The standard mask has been in use by the chauffeurs of engines and ladders companies. The standard mask is also available as a spare at the Division level. By the time this article is published, the MSU will be in the process of completing the check of all of the standard masks in the Borough of Manhattan. When this project is complete, all of that borough's standard masks will have been checked. At that point, only the ladder company chauffeurs will be equipped with a standard mask. The standard masks will have been removed from engine companies, and will not be returned. It is anticipated that the standard masks currently in use will be replaced with 4.5's in the near future.

The MSU has also been involved in upgrading our facility. We have recently had two more compressors installed, along with their associated purification systems. That brings the total number of compressors on line to four.

## CONCLUSION

These are only the outstanding items that the MSU is involved with at this time. There are numerous smaller, but no less important, projects that remain warm, if not hot. For example:

- nose cups for the 4.5 facepiece.
- a communications system for the 4.5 facepiece.
- an improved marking system for the mask.
- standardizing the Department's oxyacetylene equipment (tote weld).
- the acquisition of many more resuscitators.

As previously stated, the information contained in this article is presented to acquaint you with the current status of the MSU. With the continued assistance of the members of the field, the MSU hopes not only to improve and increase the safety of the self-contained breathing apparatus, but also to enhance the efficiency of other tools and equipment that are used by our fire-fighting forces. ▲