

on by spot welding and later, bent tabs as well as spot-welding. Navy units featured bent tab brackets with silver soldering. These changes appear necessary as both our early and mid bands had the attach pieces broken loose.

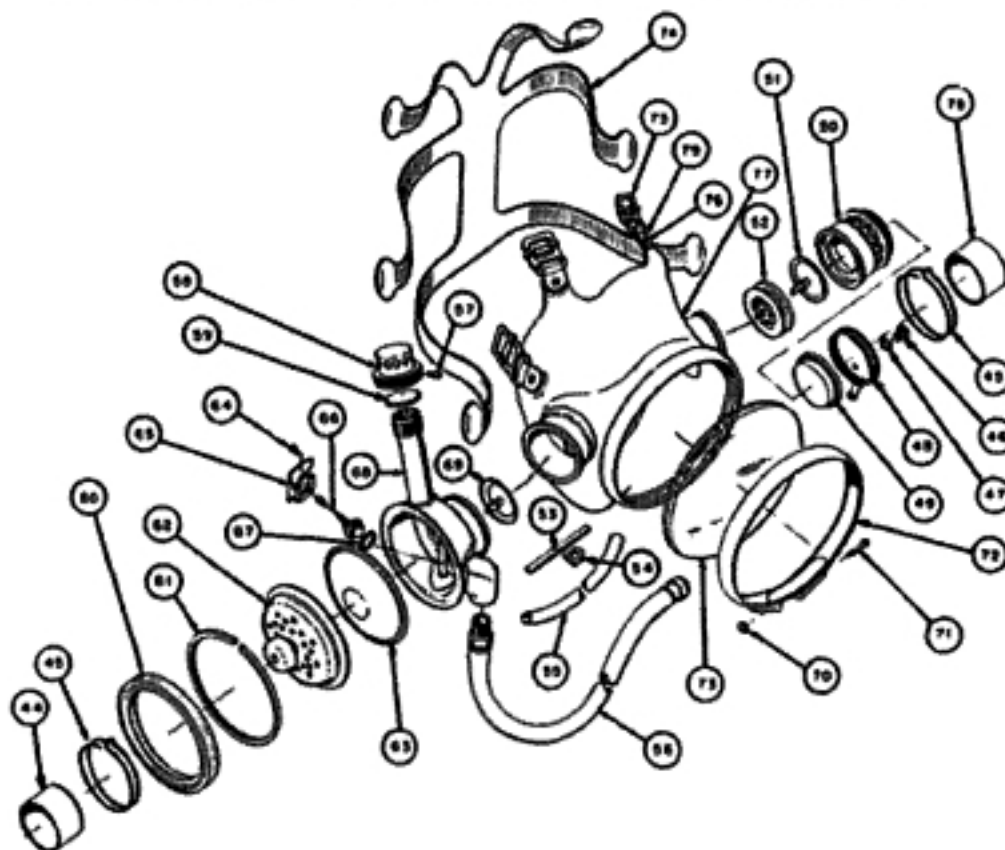
The rubber mask body appears to have undergone only two mold changes. The early mask featured a short curved emergency, air-inlet port protruding from the mask just below the regulator on the right hand side. It also had soft rubber that can be seen extruding from under the lens band in early photos.

The second generation deleted the emergency port and lengthened the check valve deflector (right inside port) from 3/4" to 1 1/2," and added raised letters, Scott Hydro-Pak LANCASTER, N.Y. U.S.A., on the top left of the mask skirt. The check valve deflector directs incoming air onto the glass lens to help with defogging. The buckle design changed, with the majority using alligator tooth sliders while late masks feature rollers, no teeth and a "D" ring at the two bottom buckles. The head harness, from Scott's Air-Pak, had elliptical strap ends on the early models while all later ones used the arrowhead design and a slightly thicker molding.

The second stage regulator and exhaust valve are mounted to the sides of the mask on rubber spigots and secured by monel wire clamps covered with a heavy rubber band. These clamps proved difficult to work with so Scott used 9 mm wide Oetiker band clamps on our factory refurbished (in 1973) mask.

The stainless regulator cover and body are held together by a large rubber guard ring slipped over a thin stainless ring clamp for ease of servicing. Pry both rings off by hand, remove the cover and the diaphragm and inspect the simple tilt valve, the inhalation check valve and the air "economiser" snorkel. To remove the tilt valve you must first remove the stainless deflector by bending its leaves out of the way and removing its four screws. If the tilt valve is stuck in place use a bent tipped cotter pin removal tool (Snap-on CP-3A) with a rounded point to pop the valve out from below (you will need to remove the air supply hose). You should inspect the rubber-covered tip of the tilt valve paying close attention to its inside flat sealing surface and the stainless seat interface. Do not disassemble the valve further unless you want real problems. The short snorkel is used for surface breathing while you fasten the mask or wait on the surface. It is too short to work as an effective snorkel for swimming, though this can be done if you're careful. Should you leave the valve open on top of the snorkel the

## HYDRO-PAK MASK & DEMAND REGULATOR



regulator will simply free flow until you screw the cap down. This can be seen to good effect, as well as a lot of Hydro-Pak diving, in the movie **Revenge of the Creature** (from the Black Lagoon, 1954) available at most video stores.

The unique regulator exhaust system was necessary because of the exhaust location on the opposite side of the mask. By turning on your right side (note: the manual incorrectly says left) the lowered demand regulator sees more hydrostatic pressure

than the higher exhaust valve and the mask will free flow. However, with Scott's system a balance tube feeds this higher pressure to the small exhaust diaphragm effectively closing off the exhaust port and preventing air loss. On the majority of units the chrome plated exhalation body has 17 holes of 1/4" diameter for exhausting air while the very late units have 3 milled slots 1/8" wide by 1 1/8" long. The drain plug on the exhaust cover threads into a rectangular block on early units and a round block for the rest of the models.

We washed, air-dried and powdered all the rubber parts using talc from a gymnasium supply (use no silicon spray, please). Be sure to clean the low pressure hoses inside as well but only talc the outsides (note: we talc all the rubber bits for storage but clean everything before testing in the pool as the powder is not good to breathe). The steel pieces are given a quick soak in 50-50 vinegar and distilled water mix. Remember, the vinegar, already at a 5% acid strength, must still be cut by 50%.

Reassemble the mask in reverse order using the factory *Instructions and Parts Catalog Scott Hydro-Pak Handbook No. H-46*. If you use Teflon tape on the hose to regulator fitting, as does the factory, be sure to keep the first few threads clear of tape to prevent a strand of tape from entering the system. Even a small piece of tape will cause the tilt valve to leak. On the first stage, the hose end meets a standard JIC 90-degree elbow fitting with a tapered cone seat, and needs no tape between the two. We chose the Oetiker hose clamps for mounting the regulators and discarded the covers during retrofit.

In our part two of the Scott Hydro-Pak we will examine the first stage regulator and tank valve(s), the unique backpack, and test our system under pressure.

*More information on this article can be found on our home page link at [www.hds.org](http://www.hds.org). For a copy of the Scott H-46 manual contact the author at [KRSEAHUNT@AOL.COM](mailto:KRSEAHUNT@AOL.COM)*