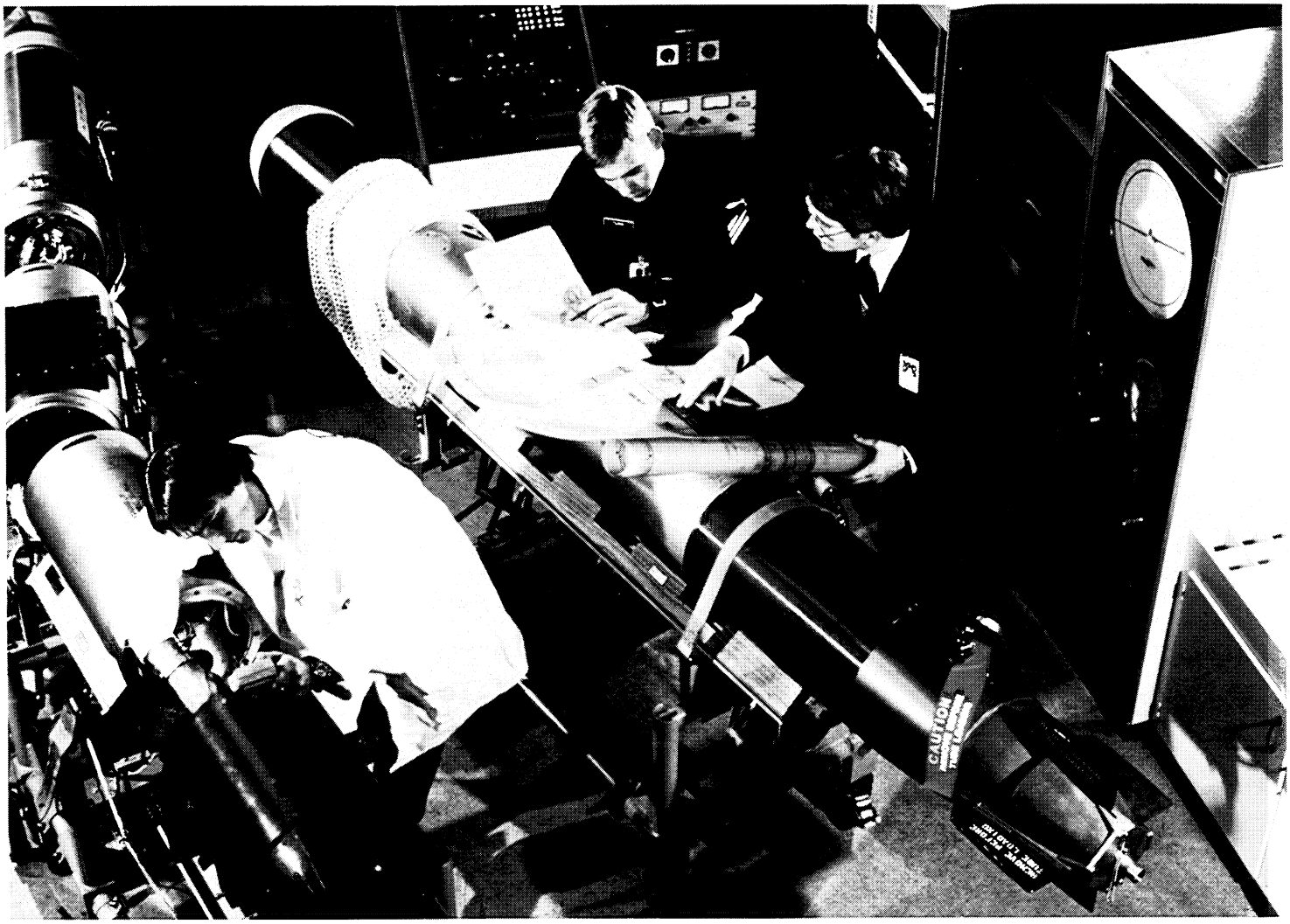
Absorbent Material



The accompanying photo shows a pair of Mark 50 "smart" torpedos being readied for delivery to the U.S. Navy at a Honeywell Inc. facility in Keyport, Washington. NASA technical information helped Honeywell engineers solve a problem occasioned by a Navy requirement for operating the Mark 50 at considerable depth.

Test runs disclosed that, as operating depth increased, ocean pressure tended to force sea water through the hull assembly joints, degrading torpedo reliability by possible short-circuiting of the electronic controls. Thus leak depth—rather than the depth at which pressure would crush the hull—became a limiting factor in the performance of the torpedo.

Honeywell sought a way of correcting the problem without expensive and time-consuming redesign of the system. A company engineer recalled an article published in NASA's *Tech Briefs*, a publication that details new technology developed in the course of NASA programs; the article described a superabsorbent fabric developed by Johnson Space Center (JSC) for capturing human wastes in manned spacecraft. Honeywell contacted JSC, obtained additional details and was referred to an acceptable manufacturer of the absorbent material.

Honeywell then procured the material and fabricated it into special containment devices now used on the Torpedo Mark 50. The absorbent fabric can sequester up to 400 times its own weight in water; therefore, a relatively small amount of it is sufficient to protect the Mark 50 from deepwater hull seepages. Instead of the great expense the company would have incurred in redesigning the torpedo or its hull joints, Honeywell's cost of correcting the problem was on the order of one man-week.