

UNCLASSIFIED

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
1 st Review Date: <u>9/15/98</u>	Classification (Circle Number): <input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 <input type="radio"/> 11 <input type="radio"/> 12 <input type="radio"/> 13 <input type="radio"/> 14 <input type="radio"/> 15 <input type="radio"/> 16 <input type="radio"/> 17 <input type="radio"/> 18 <input type="radio"/> 19 <input type="radio"/> 20 <input type="radio"/> 21 <input type="radio"/> 22 <input type="radio"/> 23 <input type="radio"/> 24 <input type="radio"/> 25 <input type="radio"/> 26 <input type="radio"/> 27 <input type="radio"/> 28 <input type="radio"/> 29 <input type="radio"/> 30 <input type="radio"/> 31 <input type="radio"/> 32 <input type="radio"/> 33 <input type="radio"/> 34 <input type="radio"/> 35 <input type="radio"/> 36 <input type="radio"/> 37 <input 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Name: _____	Coordinate No DOE Classified Information: _____
2 nd Review Date: <u>9/21/98</u>	Coordinate With: _____
Authority ADP: <u>R.B. Crane</u>	Coordinate UCAF: <u>W</u>
Name: _____	Comments: <u>OK for release</u>

DEC 20 1960

File No. XW-52, 3.2

Procedure and Results

UNCLASSIFIED

An MW-52, (AA-1025-20) was assembled by Division 7115. The following seals and fittings were incorporated in the warhead:

2 1/2 inch Pro-Seal
20.375 inch Teflon coated "O" ring (XSA-997-2)
12.375 inch Teflon coated "O" ring (XSA-997-1)
Two SA-856-1 connectors
One SA-856-6 connector
One SA-688-1 connector
Pressure valve (134364-00)

The 2 1/2-inch joint, the connectors, and the pressure valve were sealed in accordance with Dwg. 157531 (Sealing Process for the MI-1208).

The warhead was then evacuated to as near zero pressure as possible by means of a Duo-seal Vacuum Pump. Pure helium was then introduced to attain a pressure of two atmospheres.

A leakage rate test, using a CEC Leak Detector (Model 210-B) in conjunction with a vacuum chamber system, was then performed. The warhead was placed in the vacuum chamber which was evacuated to a pressure of 4×10^{-5} mm Hg. The leakage rate was established at 2.8×10^{-6} std cc/sec. This test was performed in the Leak Detection Laboratory in Area III by members of 2721-1.

The weapon was then transported to Bldg. 860 and the 30-day High Temperature Cycling test (A2 of SC-11451(M)). Eleven probe tests were made during the course of the temperature cycling. No leakage was indicated. The probe tests, performed by Division 2721 personnel, were all made during the 90°F portion of the temperature cycle.

The warhead was next transported again to Bldg. 6630 (Area III). Using the same equipment previously mentioned, the warhead was evacuated and repressurized with helium to a pressure differential of two atmospheres. A leak rate test performed at 3×10^{-5} mm Hg again established a leak rate of 2.8×10^{-6} std cc/sec.

The assembly was then placed in the climatic chamber in Bldg. 6630 and subjected to the thermal shock test shown in A5 of SC-11451(M). Leak rate tests were performed while the warhead was at the temperature extremes of the final cycle. The leakage rate at -65°F was 6.56×10^{-7} std cc/sec, and 3.7×10^{-6} std cc/sec at +160°F.

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Distribution

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Conclusions and Results

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The seals and sealing procedures seem more than adequate to obviate excessive pressure loss resulting from any climatic conditions that the M-52 might be reasonably expected to encounter.

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