

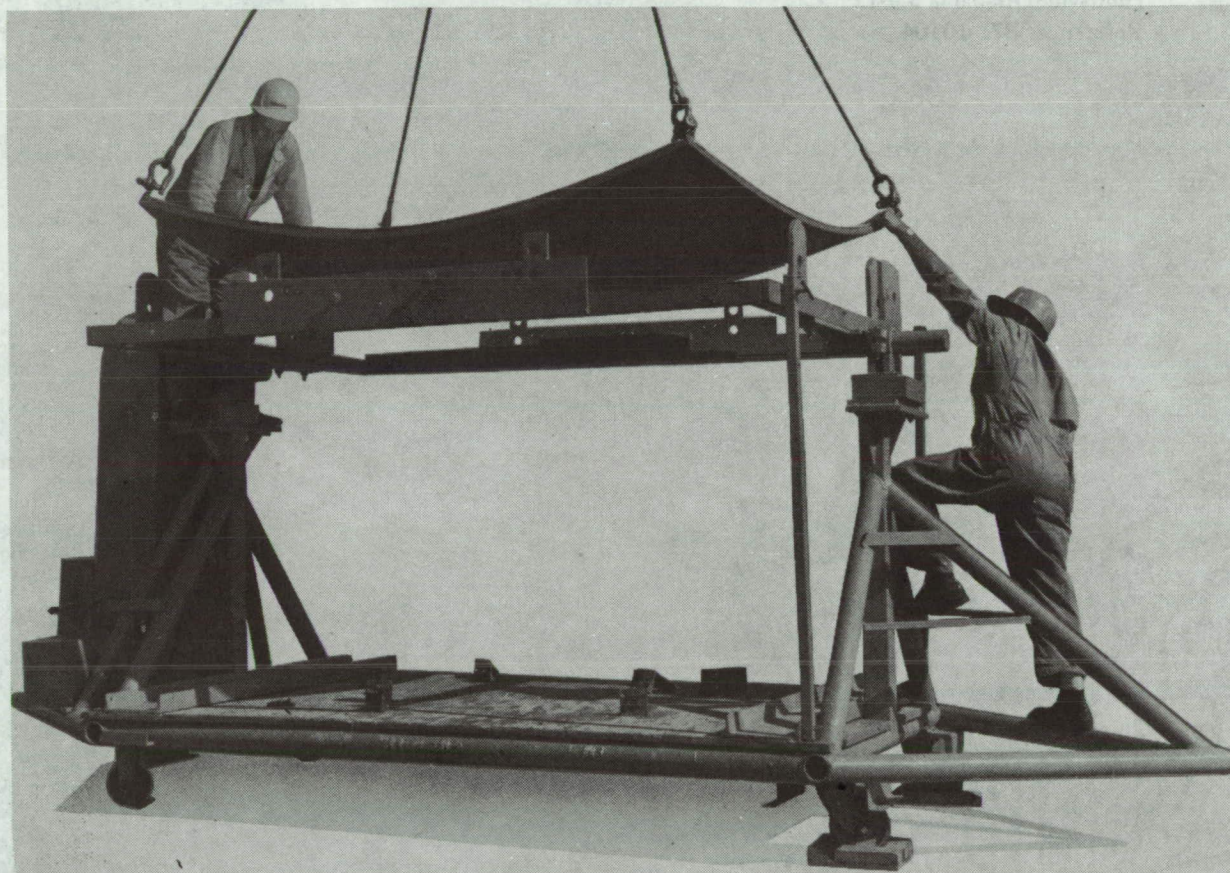
NASA TECH BRIEF

Marshall Space Flight Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

Removal of Filler Material from Large High Energy Formed Parts



The problem:

During high energy forming operations, a bismuth alloy (Cerrobend) is used as a filler to obtain proper contours in large "waffle grid" workpieces. This filler makes the workpiece unwieldy. It is difficult to remove the filler material.

The solution:

Apply steam heat at 88.9°C (160°F) to the underside of the workpiece and allow the filler to melt and drain from the "waffle grids".

How it's done:

The formed part is lowered onto a handling fixture, comprised of a welded tubular base with an open rectangular frame supported on a pair of uprights so that the part may rotate. The workpiece is secured to the pivotal frame, which is locked into the receiving position by a pair of removable struts. When the workpiece is secured to the fixture, the struts are removed and the workpiece is inverted. The struts are then re-engaged, locking the workpiece in position with the "waffle grid"

(continued overleaf)

side down. A plenum chamber (not shown), which may be covered to reduce heat loss from the chamber, is placed over the workpiece. Steam is introduced into the chamber and heats the workpiece to effect the removal of the filler metal. A welded steel tray, mounted on casters (not shown), is provided to receive the filler metal as it dislodges from the under surface of the workpiece.

Patent Status:

No patent action is contemplated by NASA.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Code A & TS-TU
Huntsville, Alabama 35812
Reference: B72-10104

Source: D. E. Krantz, G. W. Wine, and
J. S. Corral of
North American Rockwell Corp.
under contract to
Marshall Space Flight Center
(MFS-16326)