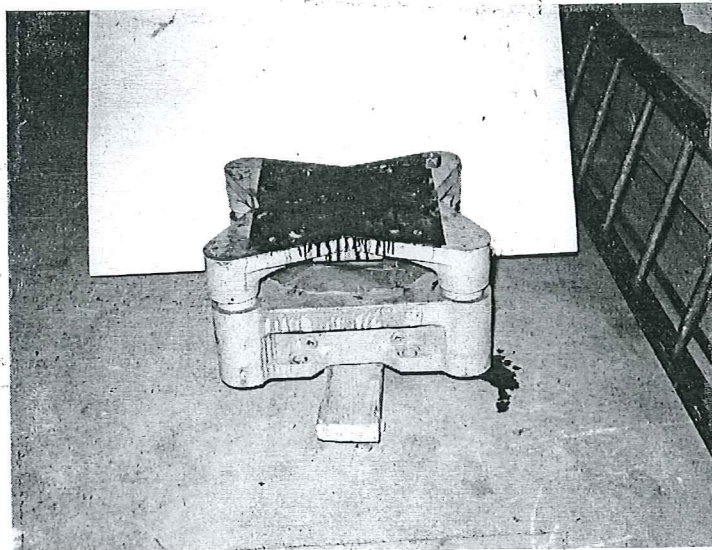


Appendix V. Photographs of High-Pressure Process of
Manufacturing the Helmet Liner

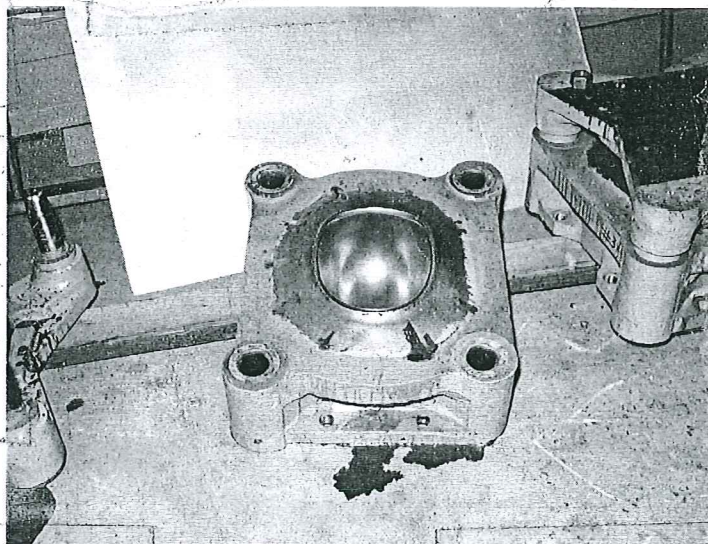
LINER HELMET MOLDS
INLAND MANUFACTURING COMPANY



Picture at left shows Inland mold force or male side up. Showing large guide pins, and Spider type construction.



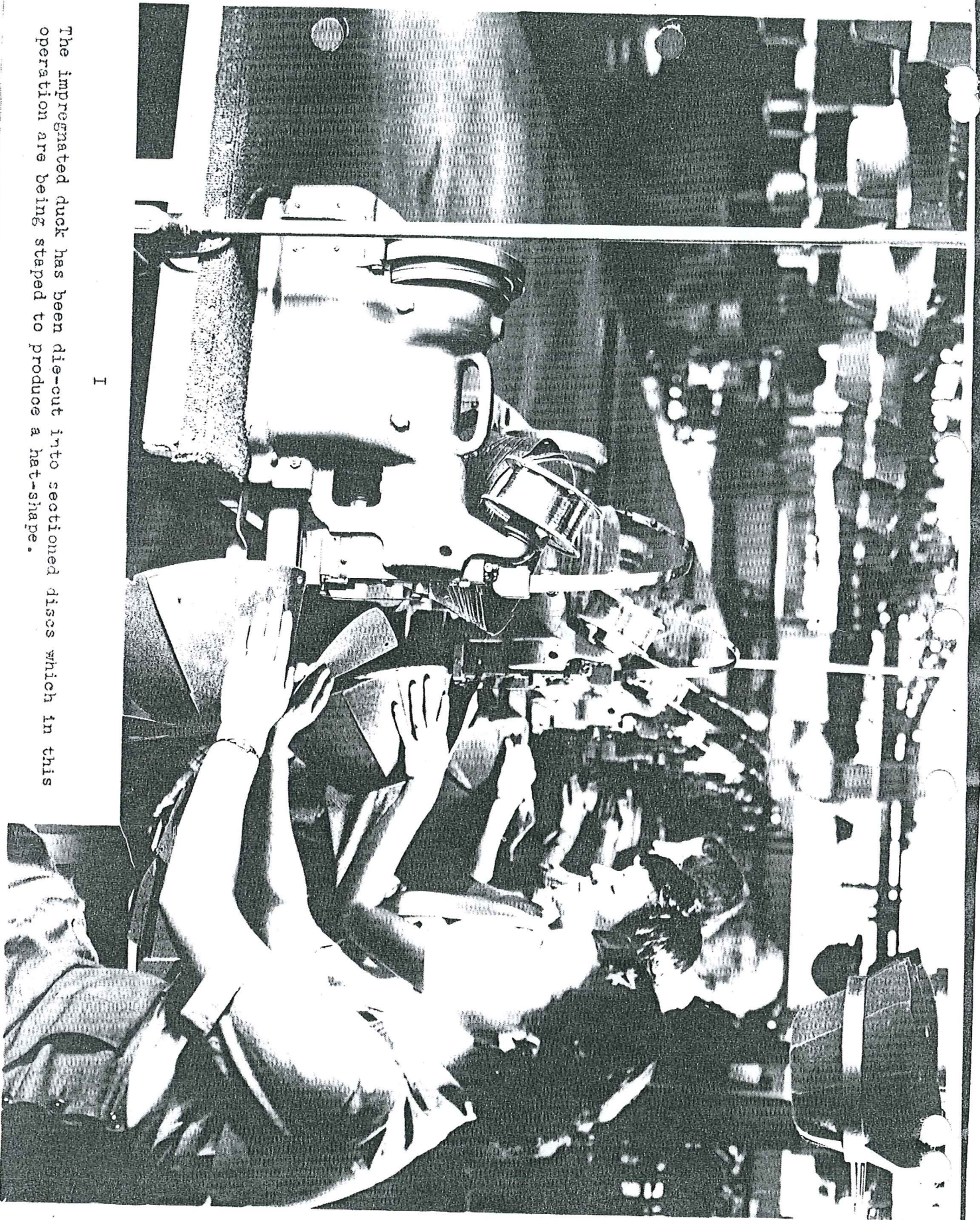
Pictur at left shows Inland mold closed and in molding & curing position. Curing cycle three to four min.



Picture at left shows Inland mold cavity or female side up. Construction shows how metal was built up inside of a mounting ring and then machined out and finished.

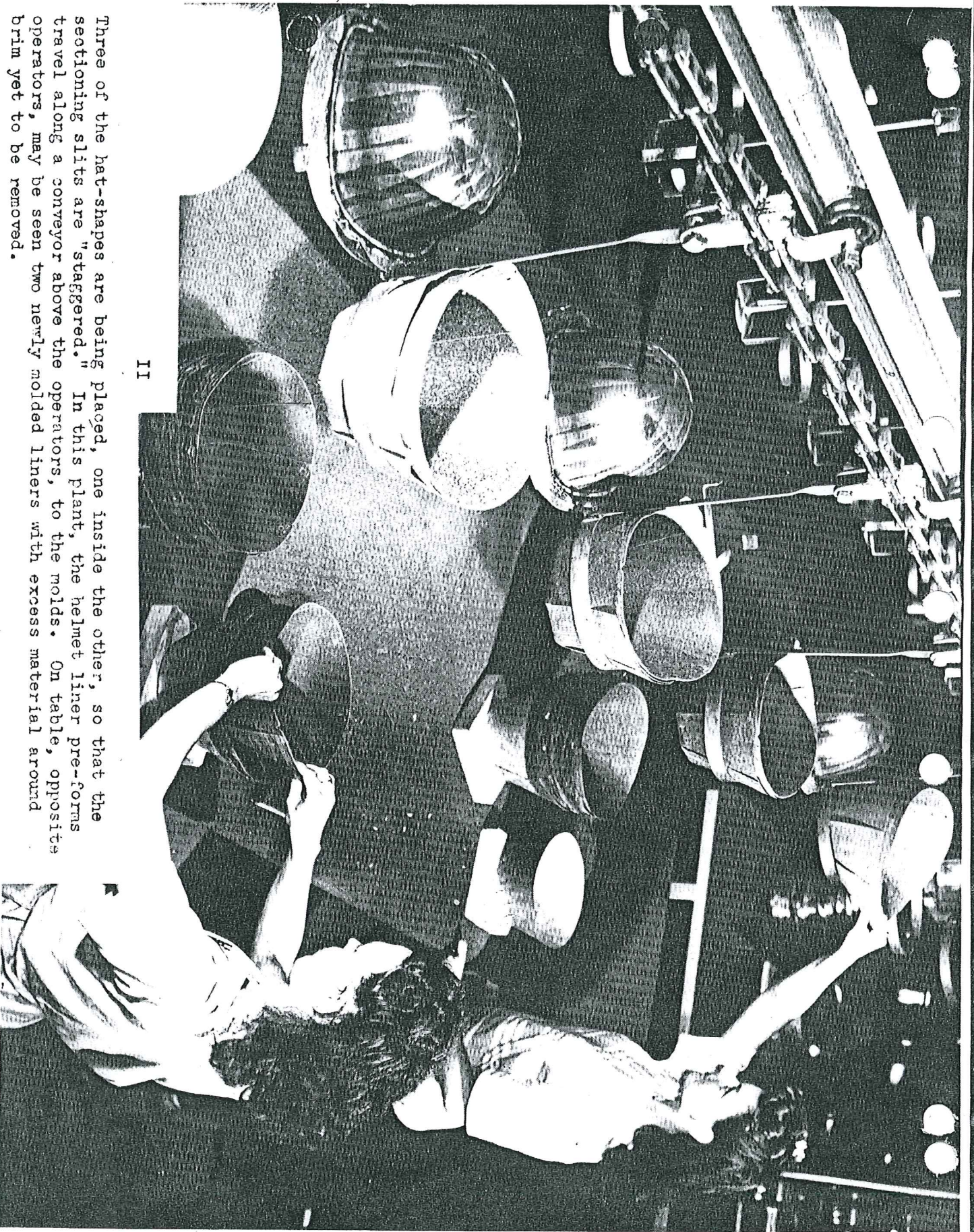
Pictures taken by Westinghouse Elect Co. Hampton, S.C. during Inspection and testing contract.

Mar 56-



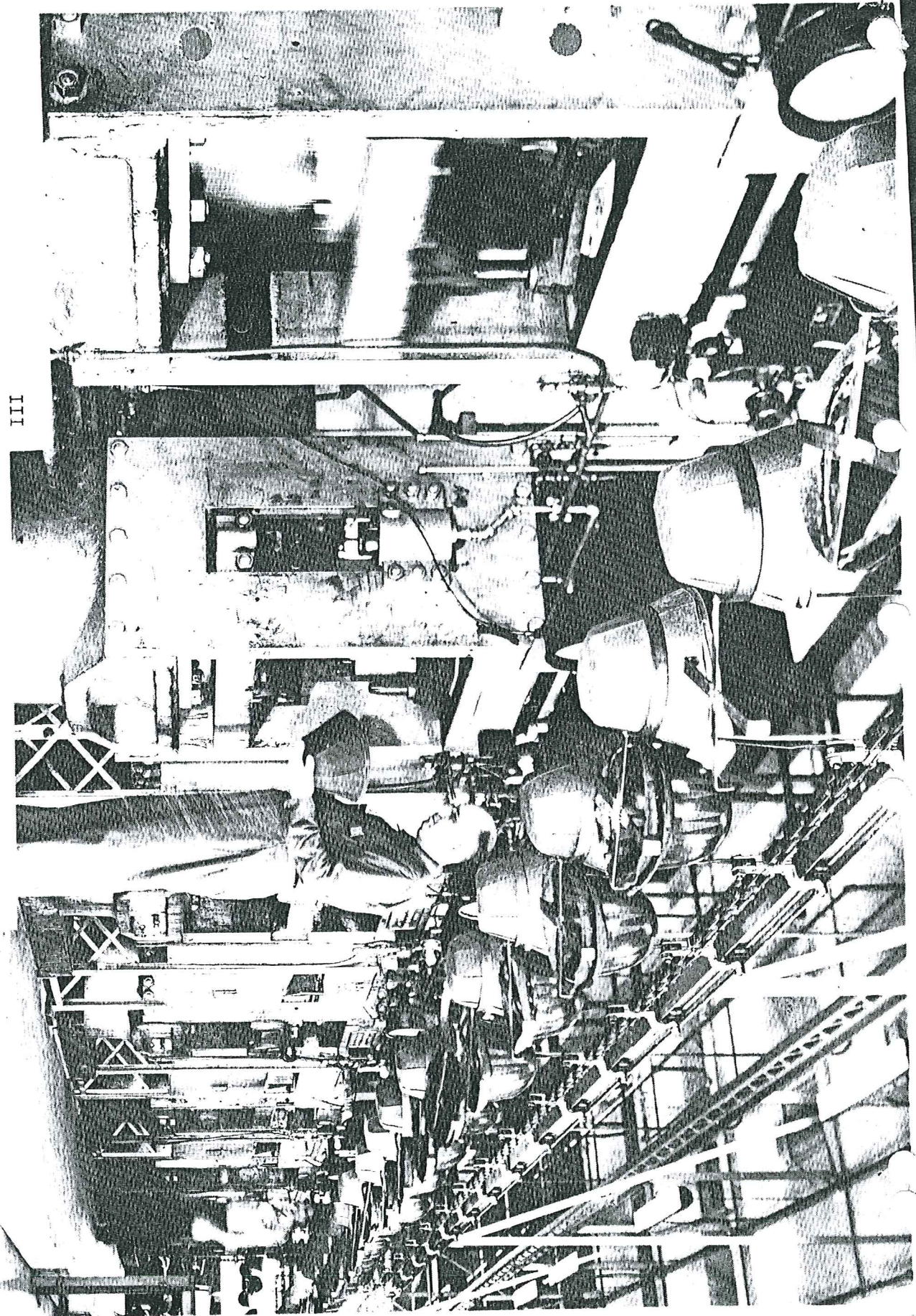
The impregnated duck has been die-cut into sectioned discs which in this operation are being staped to produce a hat-shape.

I



II

Three of the hat-shapes are being placed, one inside the other, so that the sectioning slits are "staggered." In this plant, the helmet liner pre-forms travel along a conveyor above the operators, to the molds. On table, opposite operators, may be seen two newly molded liners with excess material around brim yet to be removed.

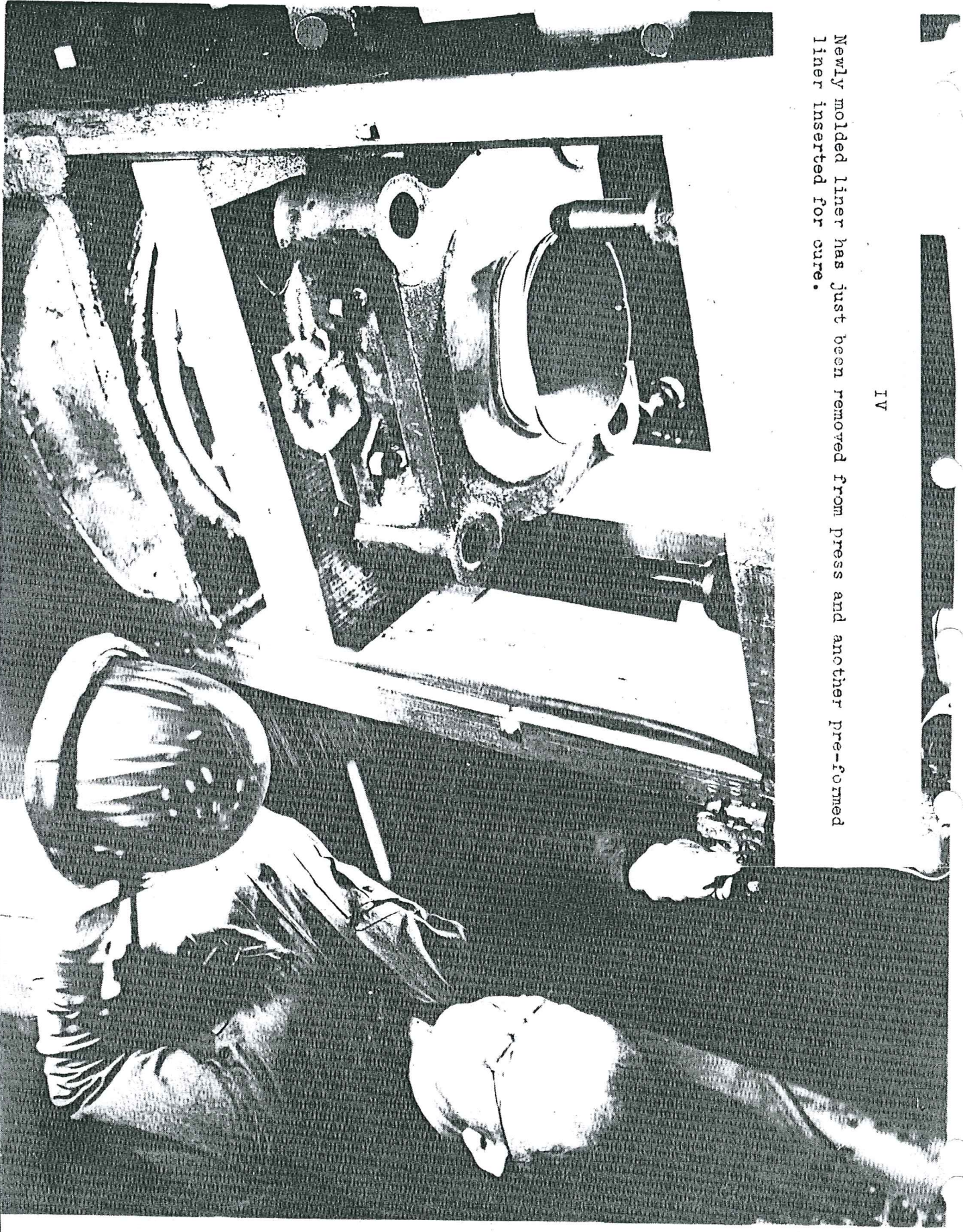


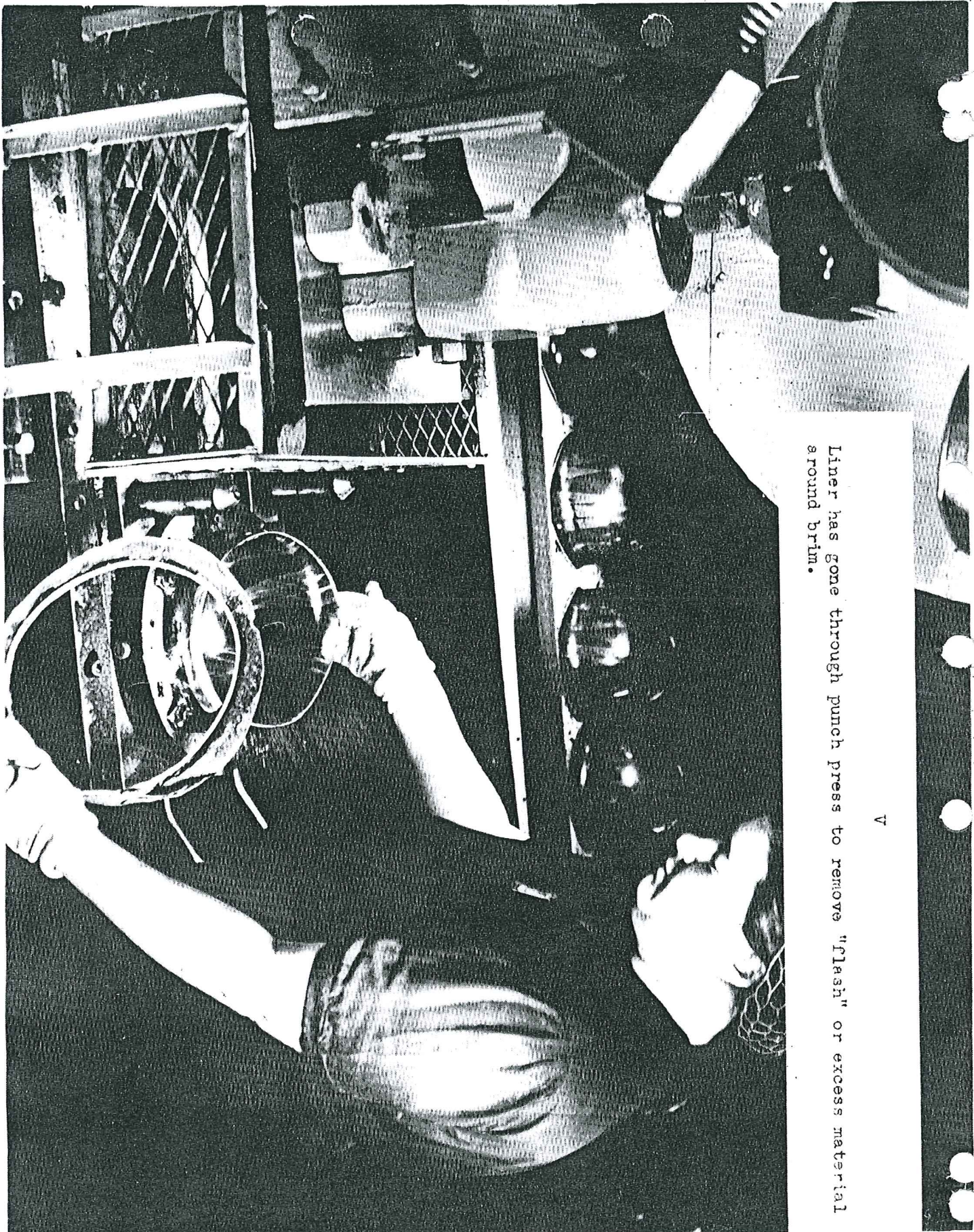
III

Operator is about to place pre-formed helmet in the molding press where it will be given two minutes' cure at 2200 F., under pressure of 150 tons. Above operator are two conveyor lines: one of pre-formed liners, and one of newly molded liners.

Newly molded liner has just been removed from press and another pre-formed liner inserted for cure.

IV

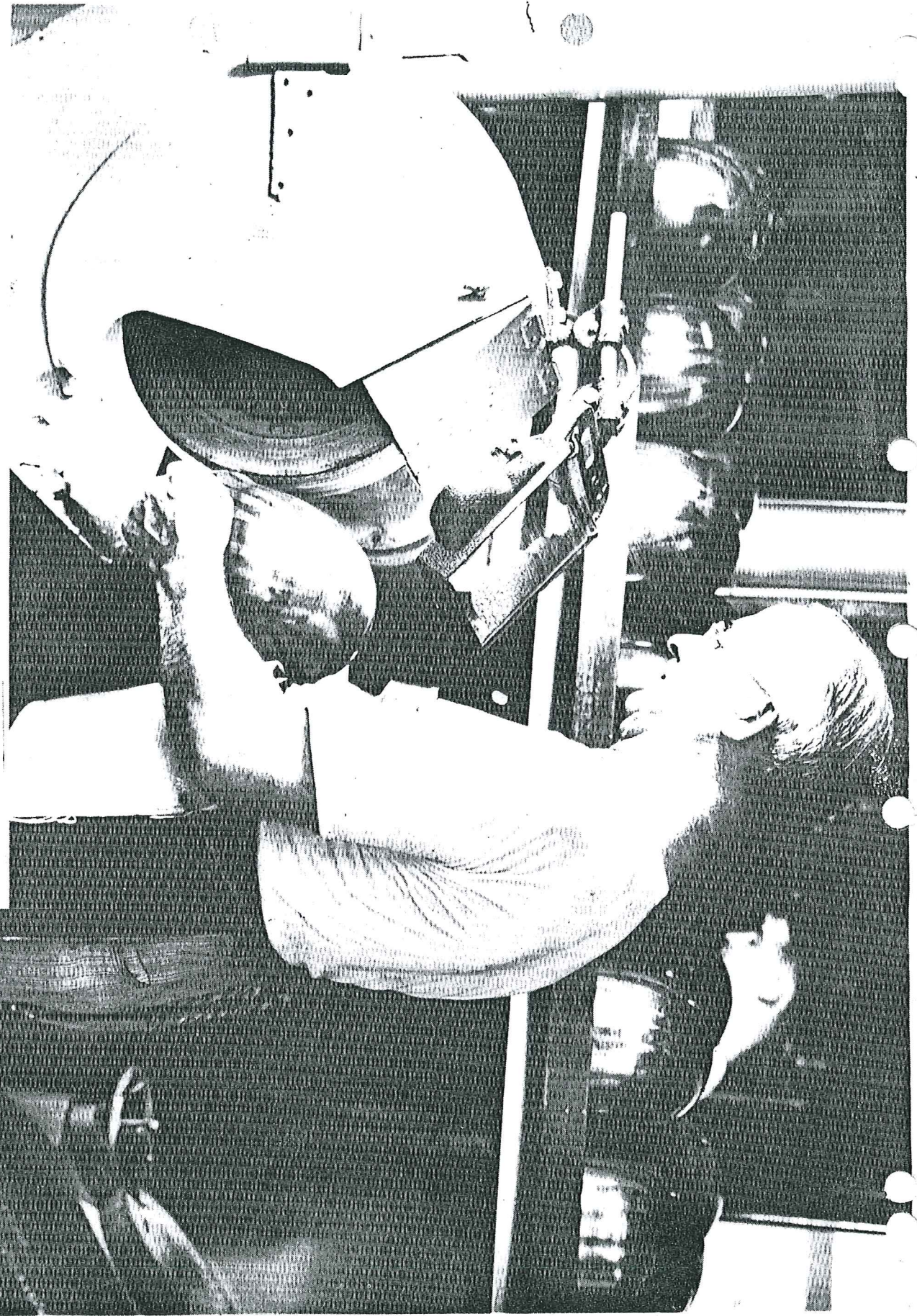


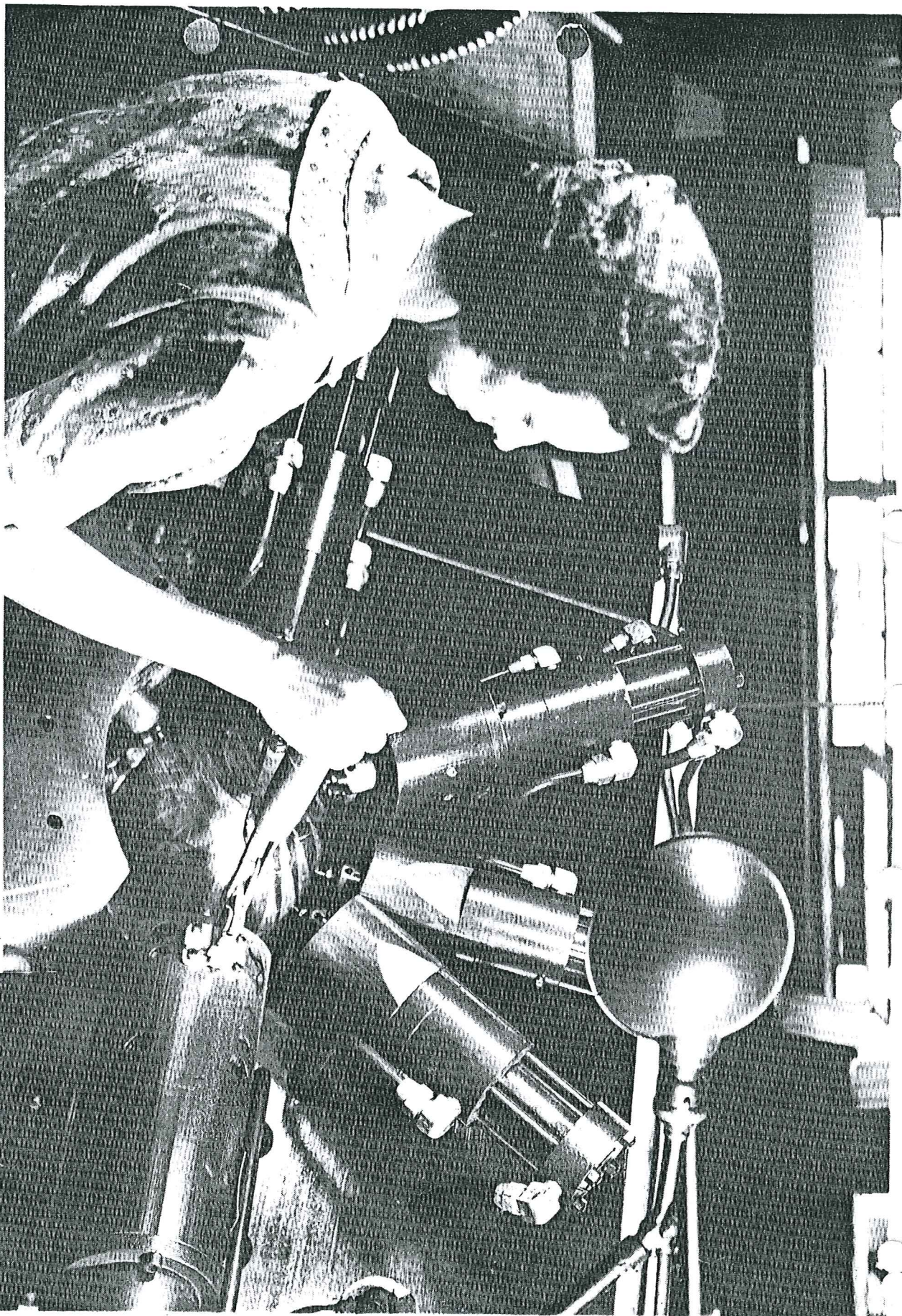


Liner has gone through punch press to remove "flash" or excess material around brim.

Raw edge of liner is being burnished to bring about a heat-seal. Several liners, one capping the other, can be burnished at one time.

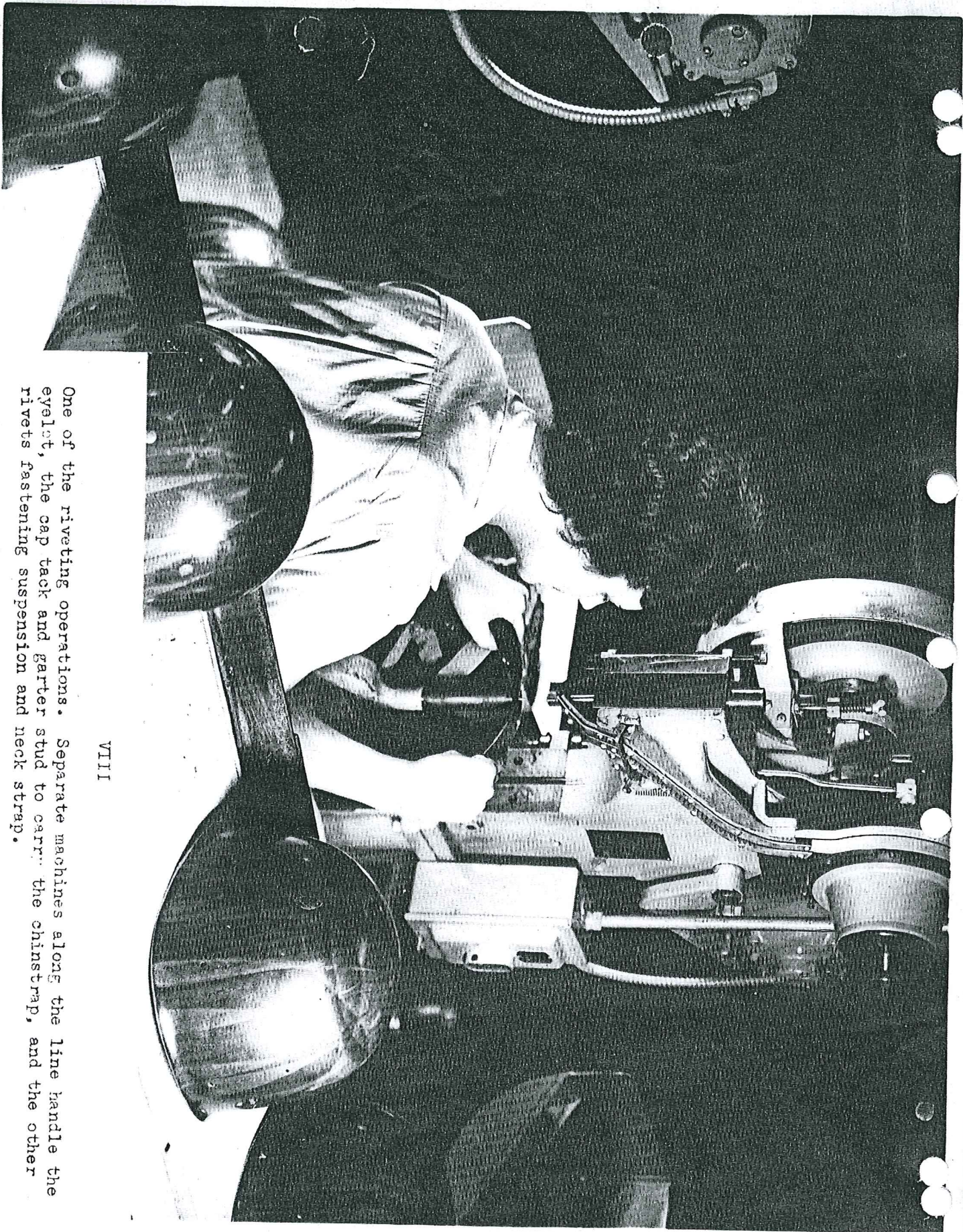
VI





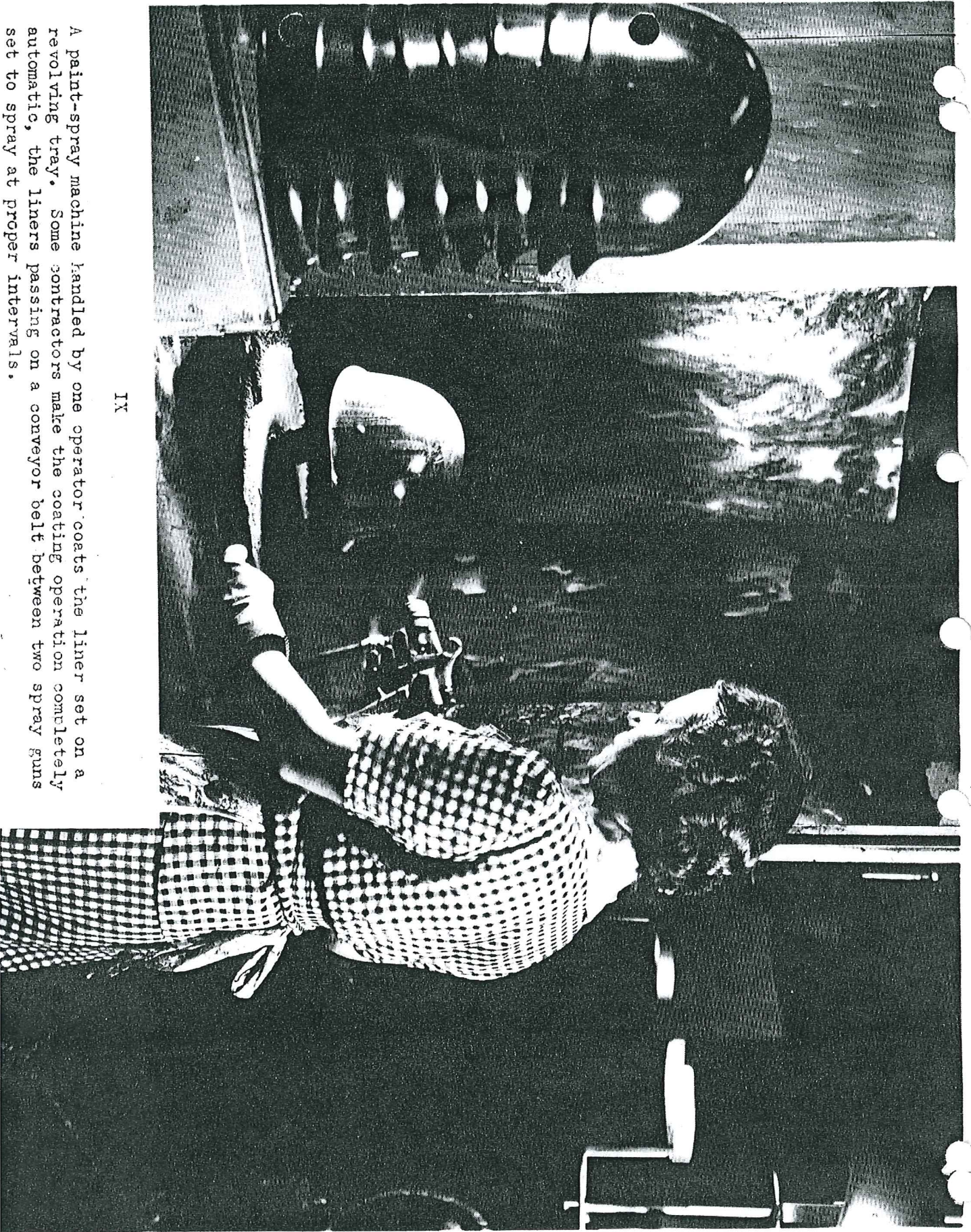
VII

Liner now is in piercing press which punches at one operation the 11 holes necessary to admit various rivets and the eyelet to carry the wearer's insignia.



One of the riveting operations. Separate machines along the line handle the eyelot, the cap tack and garter stud to carry the chinstrap, and the other rivets fastening suspension and neck strap.

VIII

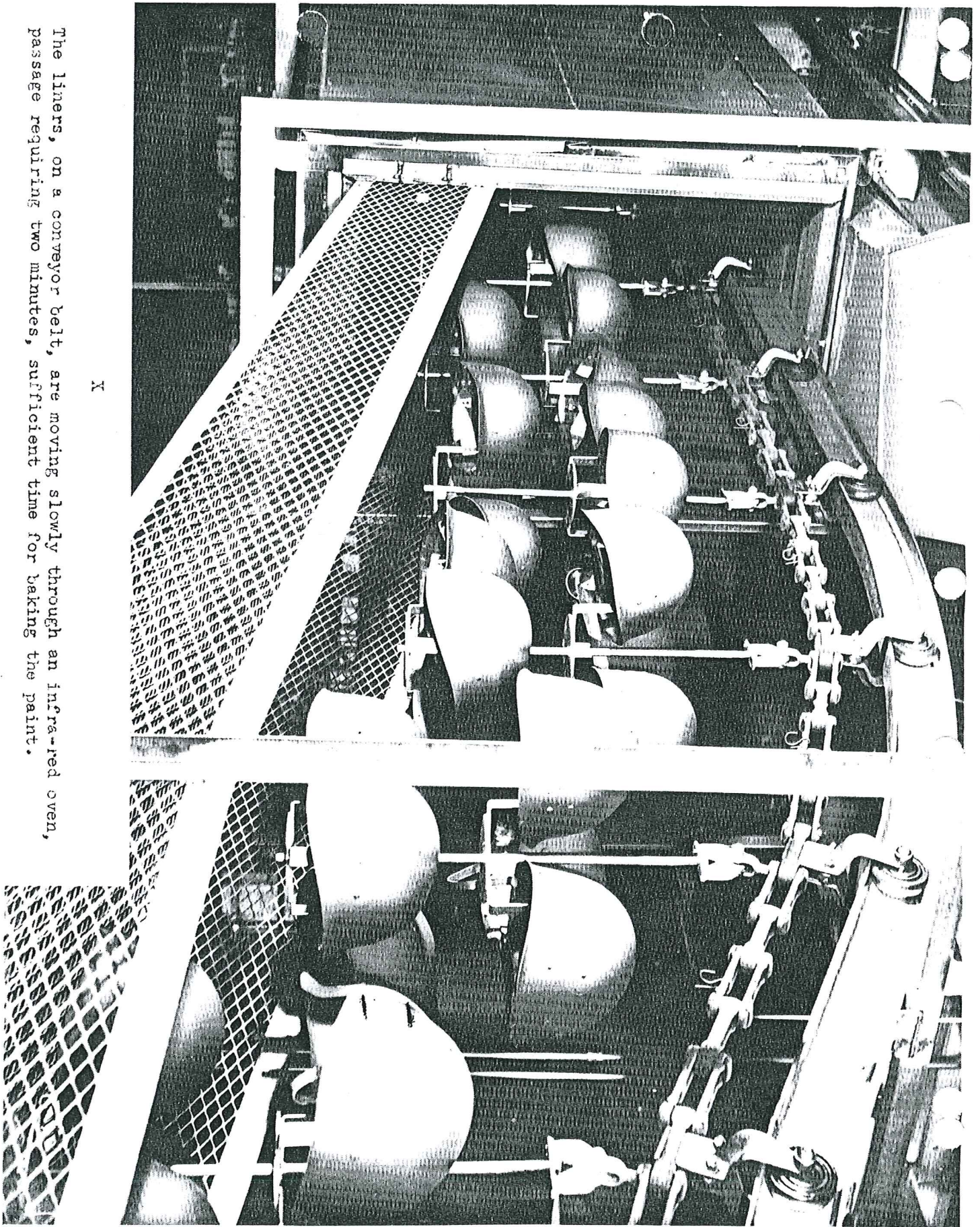


IX

A paint-spray machine handled by one operator coats the liner set on a revolving tray. Some contractors make the coating operation completely automatic, the liners passing on a conveyor belt between two spray guns set to spray at proper intervals.

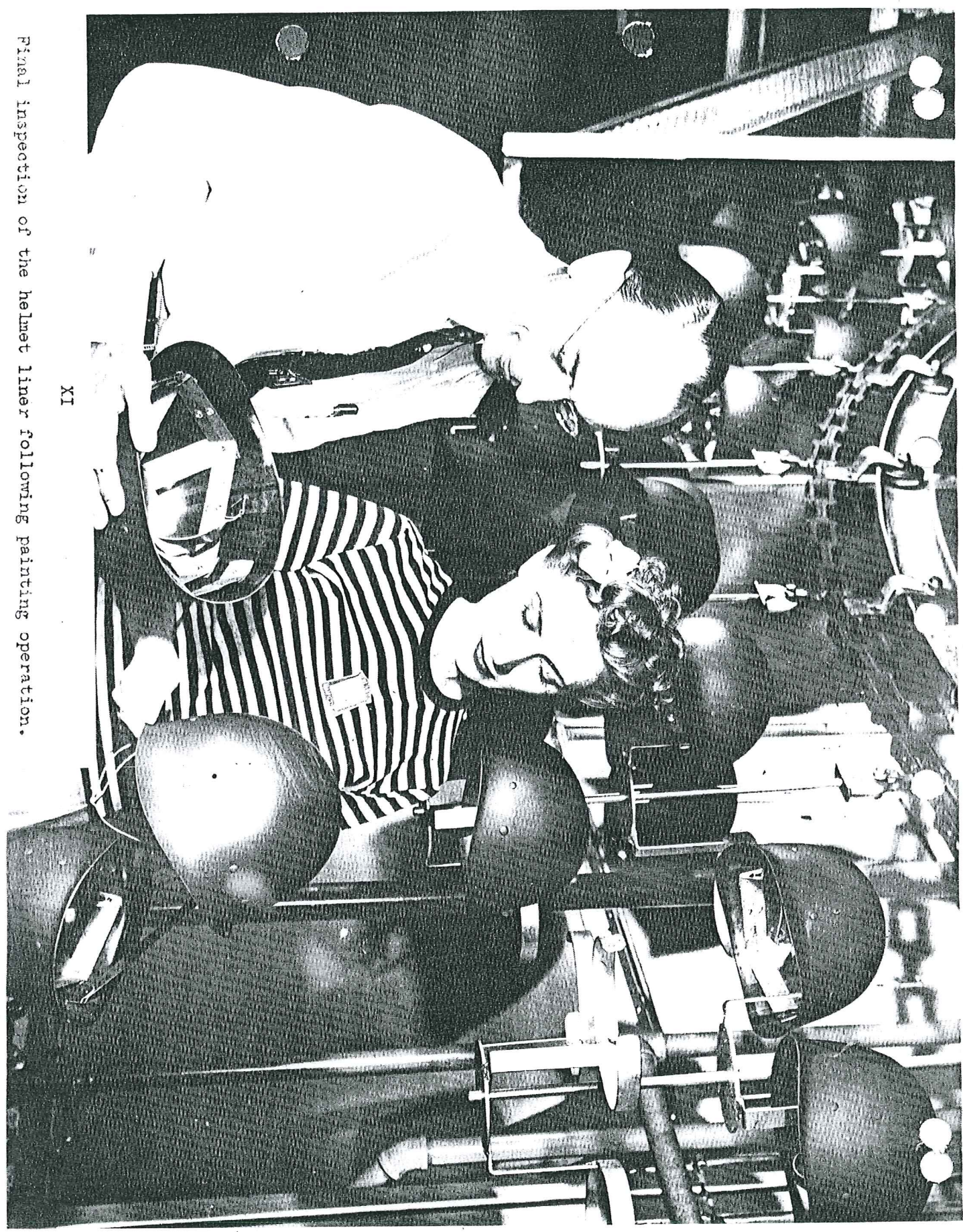
The liners, on a conveyor belt, are moving slowly through an infra-red oven, passage requiring two minutes, sufficient time for baking the paint.

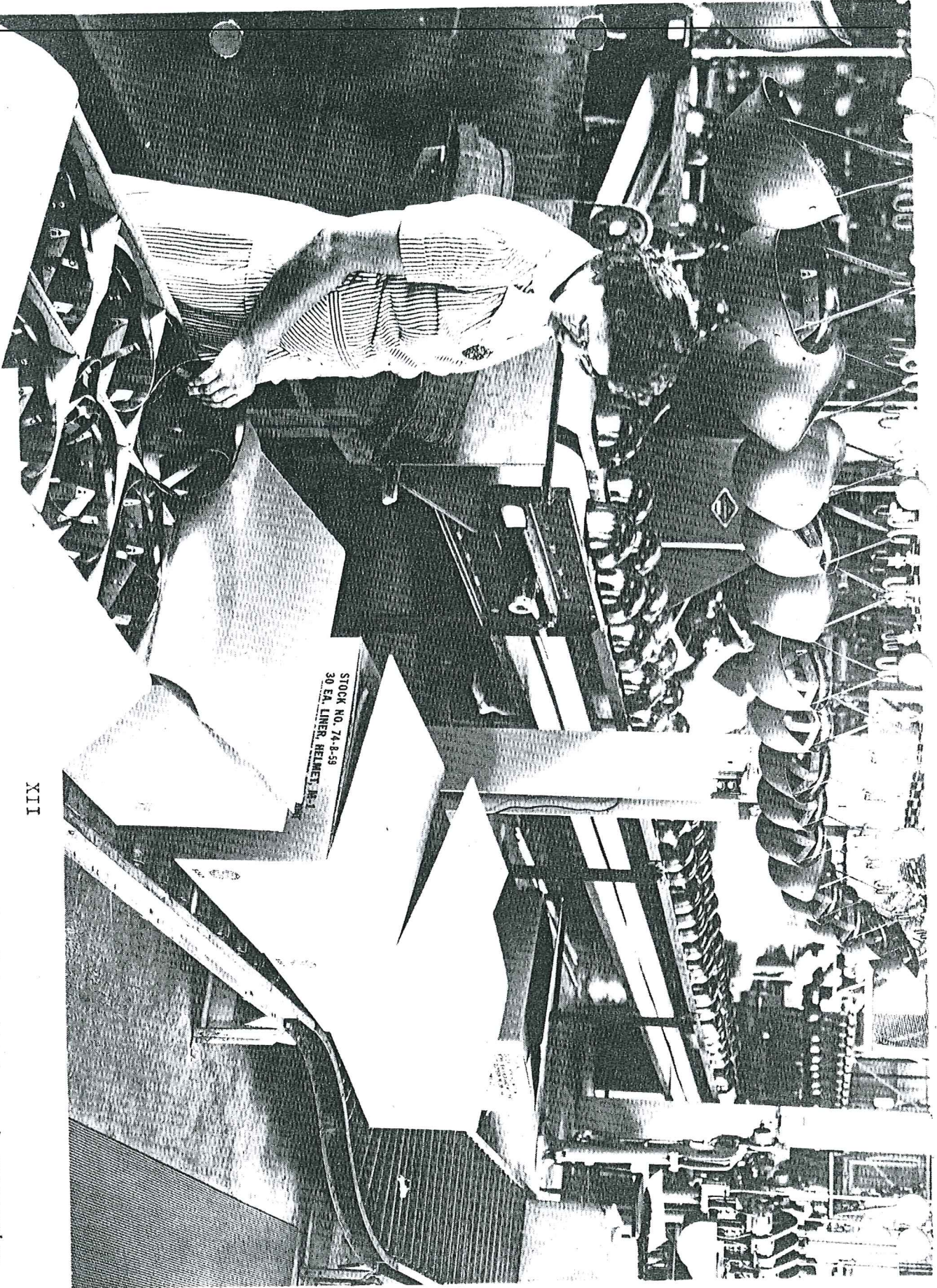
X



Final inspection of the helmet liner following painting operation.

XI

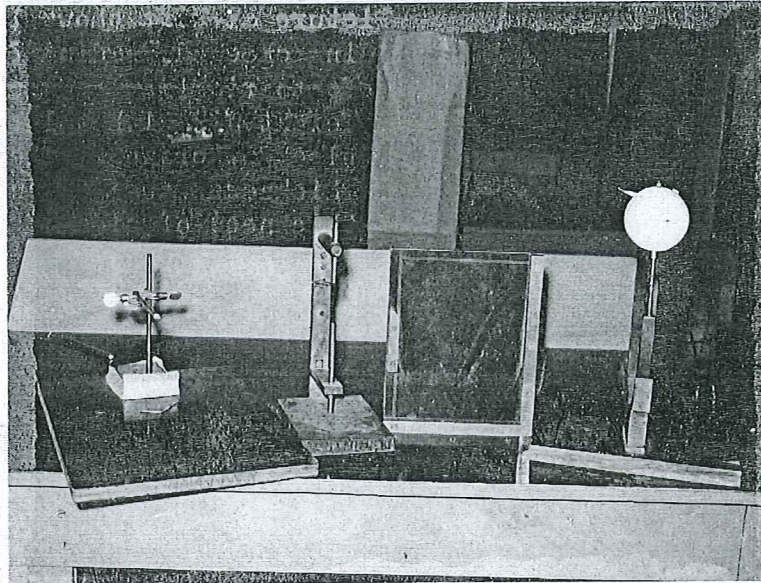




XII

Liners being packed for domestic shipment. Complete with hammock suspension and chinstrap, they are packaged in nested stacks of five, with paper separators between each two liners. Thirty liners are packed in a box.

PICTURES TAKEN AT THE REQUEST OF M.C. HART BY WESTINGHOUSE ELECTRIC CORP
 2 FEB 1936. TO SHOW TYPE OF GAUGES & JIGS BEING USED TO MEASURE HELMET
 LINER SHELLS FOR CORCORAN CONTRACT.



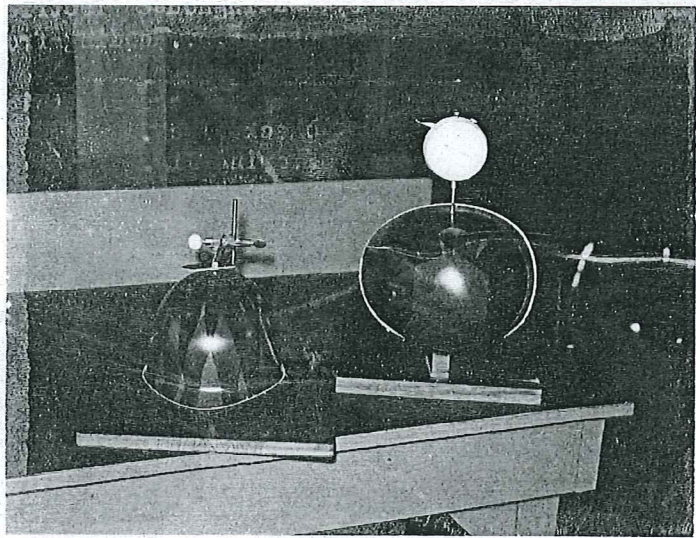
following gauges and jig used
 by Westinghouse Electric Co
 Hampton, S.C. Reading from
 left to right
 1. Height Gauge and toleranc
 check block.
 2. Flexing Jig.
 3. Go no Go Gauge.
 4. Thickness gauge.



Picture at left shows the
 following measuring Gauges
 and Jig used by Westinghouse
 Reading from left to right:
 1. Height Gauge and Toleranc
 block.
 2. Flexing Jig.
 3. Go No Go Gauge.
 4. Thickness Gauge.

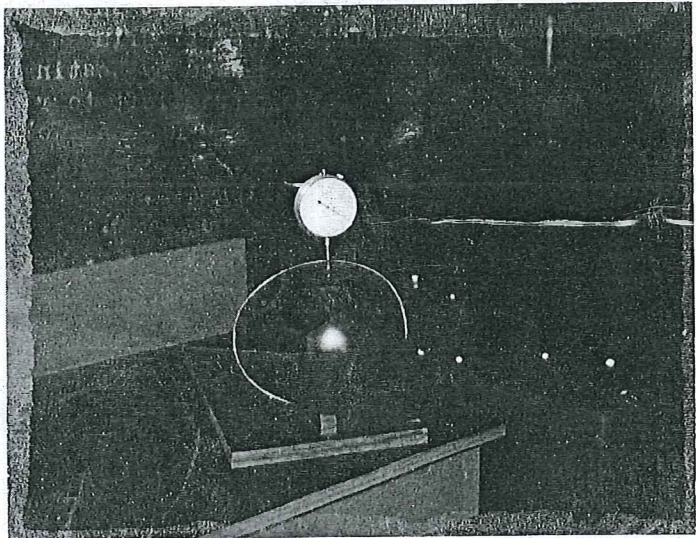


Picture at left shows the
 following Gauges and Jig
 used by Westinghouse to
 measure liner shell for
 Width and length-thickness-
 Flexing. Reading from left
 to right:
 1. Go No Go Gauge.
 2. Thickness Gauge
 3. Flexing Jig.



Picture at left shows liner shells
being checked. Reading from
left to right

1. Height Jig with tolerance
block at crown of shell
2. Thickness Gauge measuring
thickness of side of
liner shell



Picture at left shows liner
shell being checked at side
measurement point for
thickness