



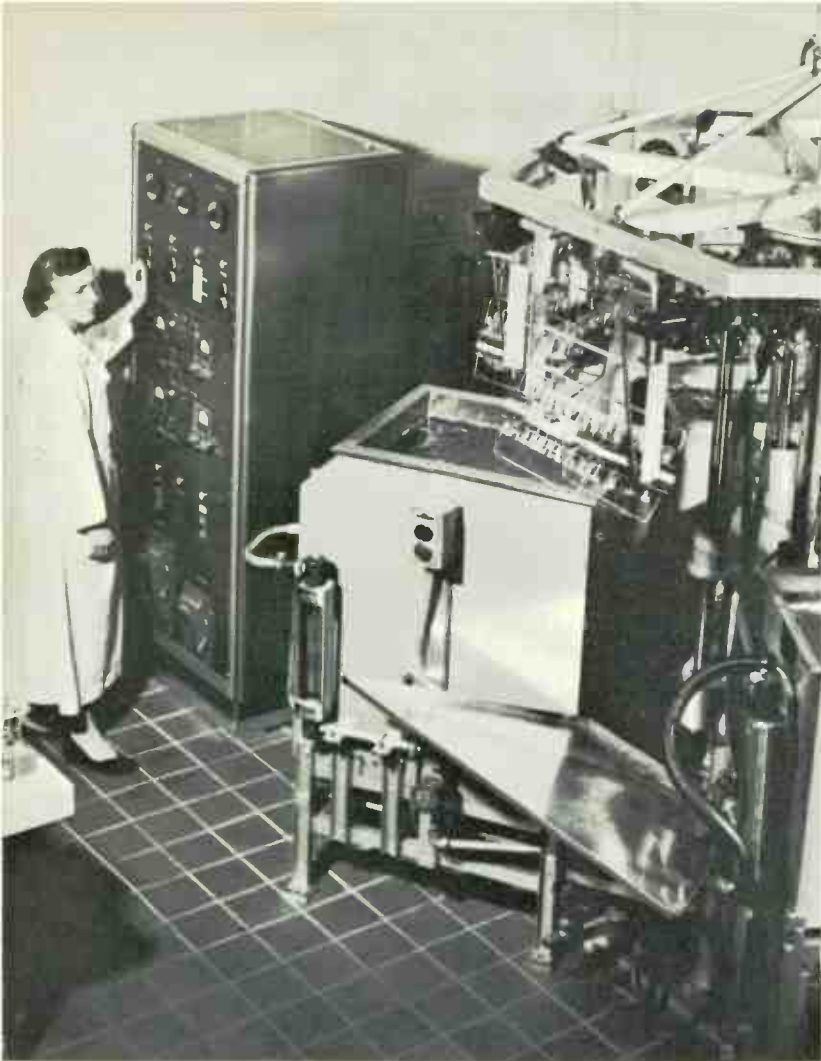
**SILVERAMA[®]
PICTURE TUBES ...
A STORY OF
PRECISION
ENGINEERING**

UNDER ONE ROOF, UNMATCHED EXPERIENCE

In this modern plant in Marion, Indiana, RCA combines research, engineering, and manufacturing experience that is unmatched in the television picture tube industry. Here, tubes produced for initial equipment and replacement markets share the same assembly lines—share the same advances in picture tube technology. Under one roof, RCA designs and produces the many parts needed for its precision electron guns. And, in a factory within a factory, RCA develops and produces its own master blend of phosphors needed for its famous Silverama Picture Tube screens. Result: A replacement picture tube of superior quality, the Precision Engineered RCA Silverama.

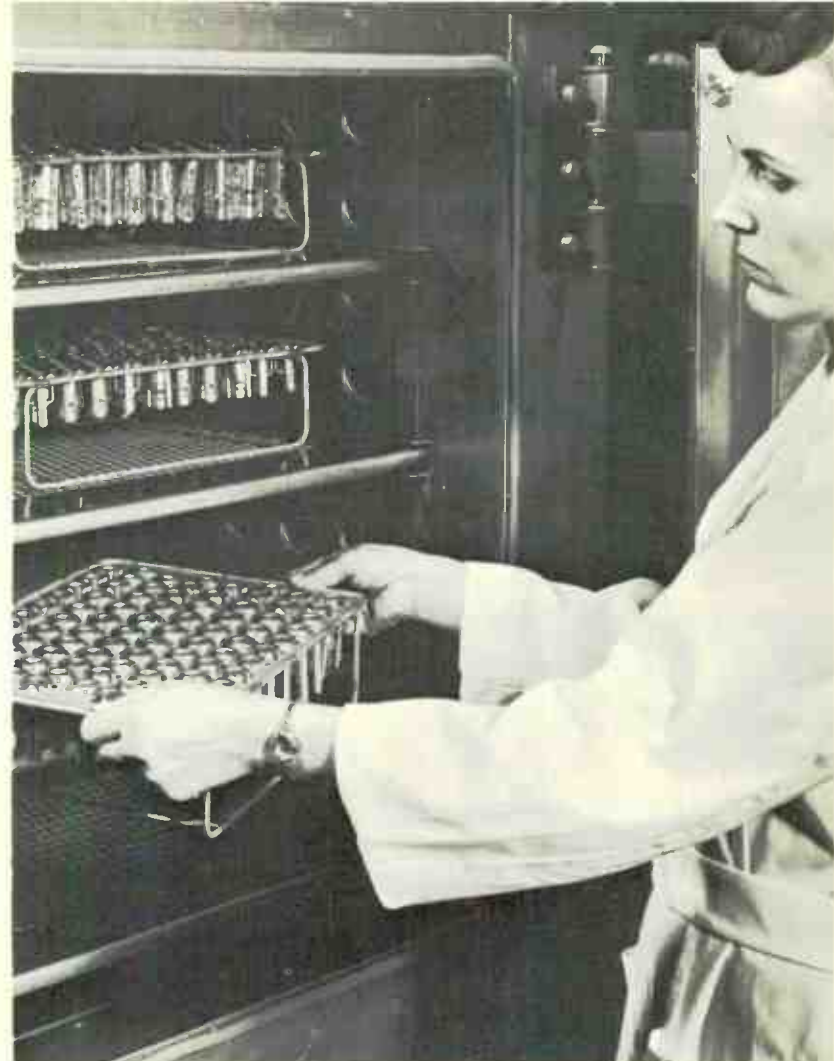






EXTRA CARE MEANS DEPENDABILITY

What price precision engineering? The answer is found throughout the entire manufacture of RCA Silverama Picture Tubes. It is here in this special space-age bath given all electron gun mounts. Mounts are submerged in a cleansing agent vibrated at ultra-sonic frequencies. Possible call-backs are submerged, too, as dust, a prime cause of electron gun failure, is washed away.



GUN MOUNTS SUPER-CLEANED, SUPER-DRIED

After the bath, the super-clean gun mounts are dried in an oven for one hour at 150° centigrade. Not a drop of contaminating moisture is permitted. Care in this stage pays off later in electron guns of highest dependability.



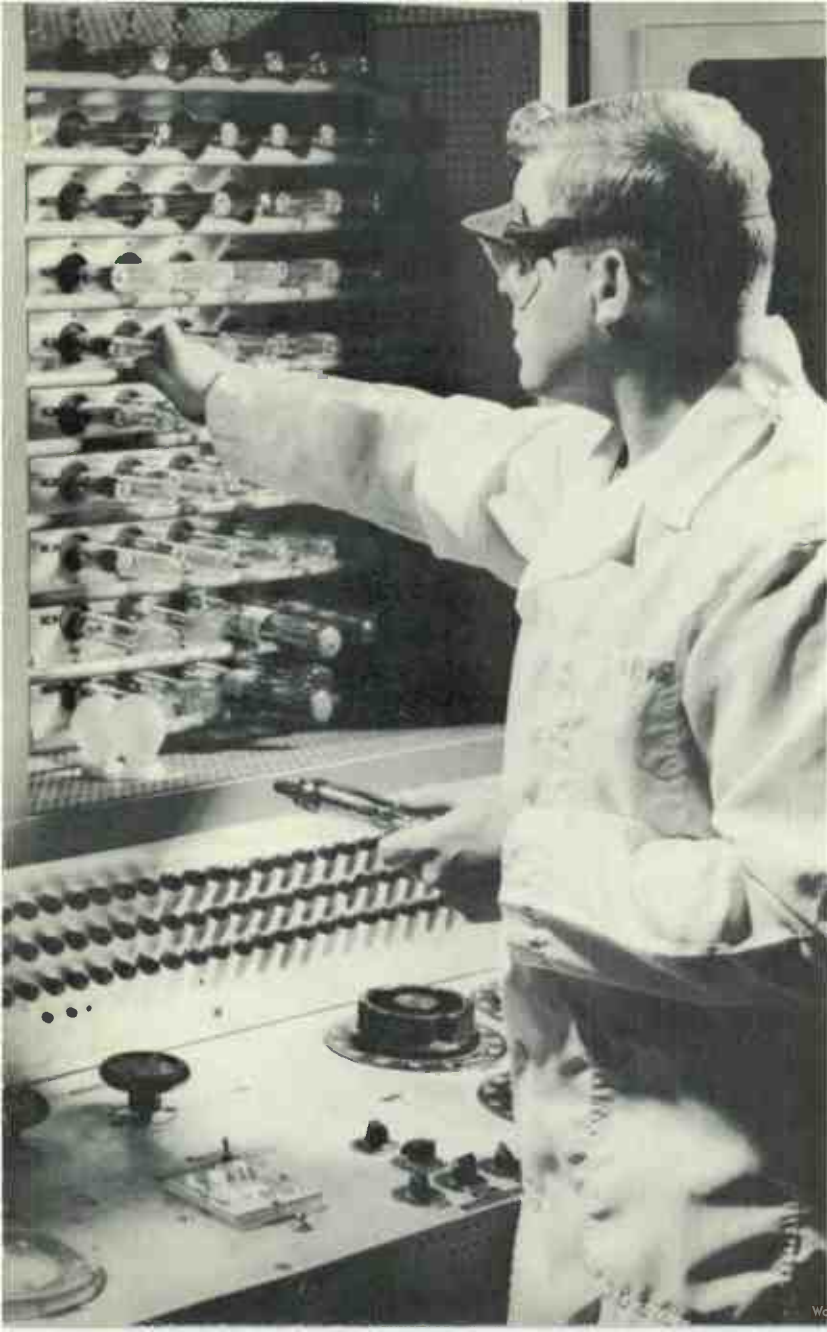
GUN ASSEMBLY IN A DUST-FREE WHITE ROOM

Electron guns are assembled in RCA's ultra-clean white room. The room is kept under constant pressure to keep out any airborne dust. Workers are required to wear finger cots and lint-free smocks. Dust particles, measured in millionths of an inch, are counted and recorded by an automatic digital dust counter.



THE ELECTRON GUN: BUILT-IN PRECISION

Electron gun assemblies receive individual attention. This precision device controls the spacing between the cathode and grids assuring tighter tolerances in the cutoff characteristics of the picture tube.



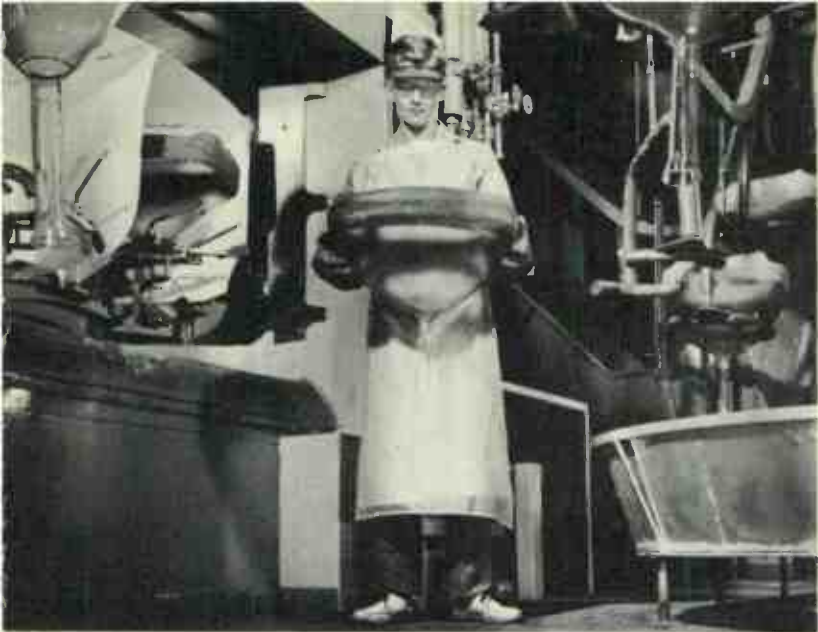
LIFE TESTS ASSURE ELECTRON GUN QUALITY

Sample batches of electron guns are life tested above maximum ratings and closely scrutinized for electrical shorts, opens, and leakages. These tests provide more assurance of gun quality and long life.

FURTHER PROTECTION AGAINST DUST

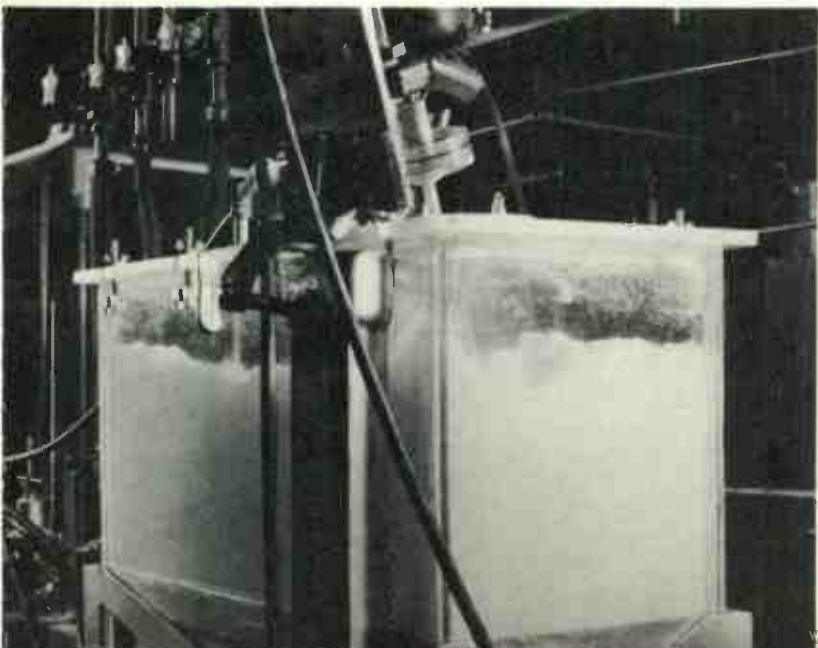
Following their assembly and inspection in the dust-free atmosphere of the white room, the completed guns are stored under air-tight plastic covers prior to being sealed in the neck of the glass bulb.





ENVELOPES MEET RIGID STANDARDS

Prior to re-use envelopes are thoroughly inspected to meet the standards of the original new envelopes. Then they are buffed, polished, reinspected, and given a series of acid baths. This bath, an automatic process, finely etches the interior of the glass bulb, restoring it to its peak of optical capability in readiness for its new screen.

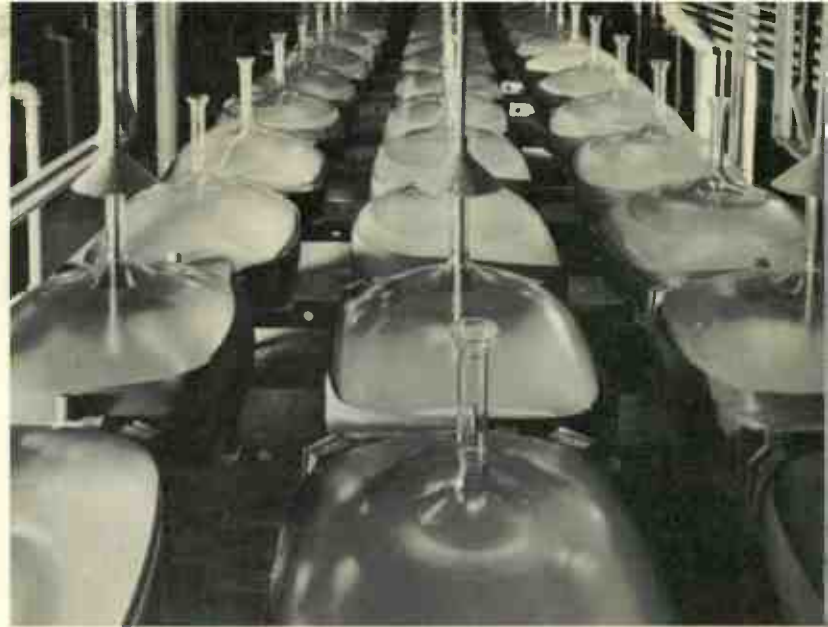


SCREEN QUALITY SECOND TO NONE

RCA Silverama screen smoothness begins with the proper blend and quality of phosphors. RCA develops and produces its own superior blend of phosphors. Result: picture tube screen quality that is second to none.

PHOSPHOR, THE VITAL SCREEN INGREDIENT

Phosphor, in a solution of demineralized water, is dispensed into the bulb over a cushion of chemical solutions. Bulbs then travel on vibration-free belts at the rate of ten inches per minute as phosphor, the vital screen ingredient, slowly and gently settles, covering the entire faceplate of the bulb.



CRITICAL EYES CHECK SCREEN QUALITY

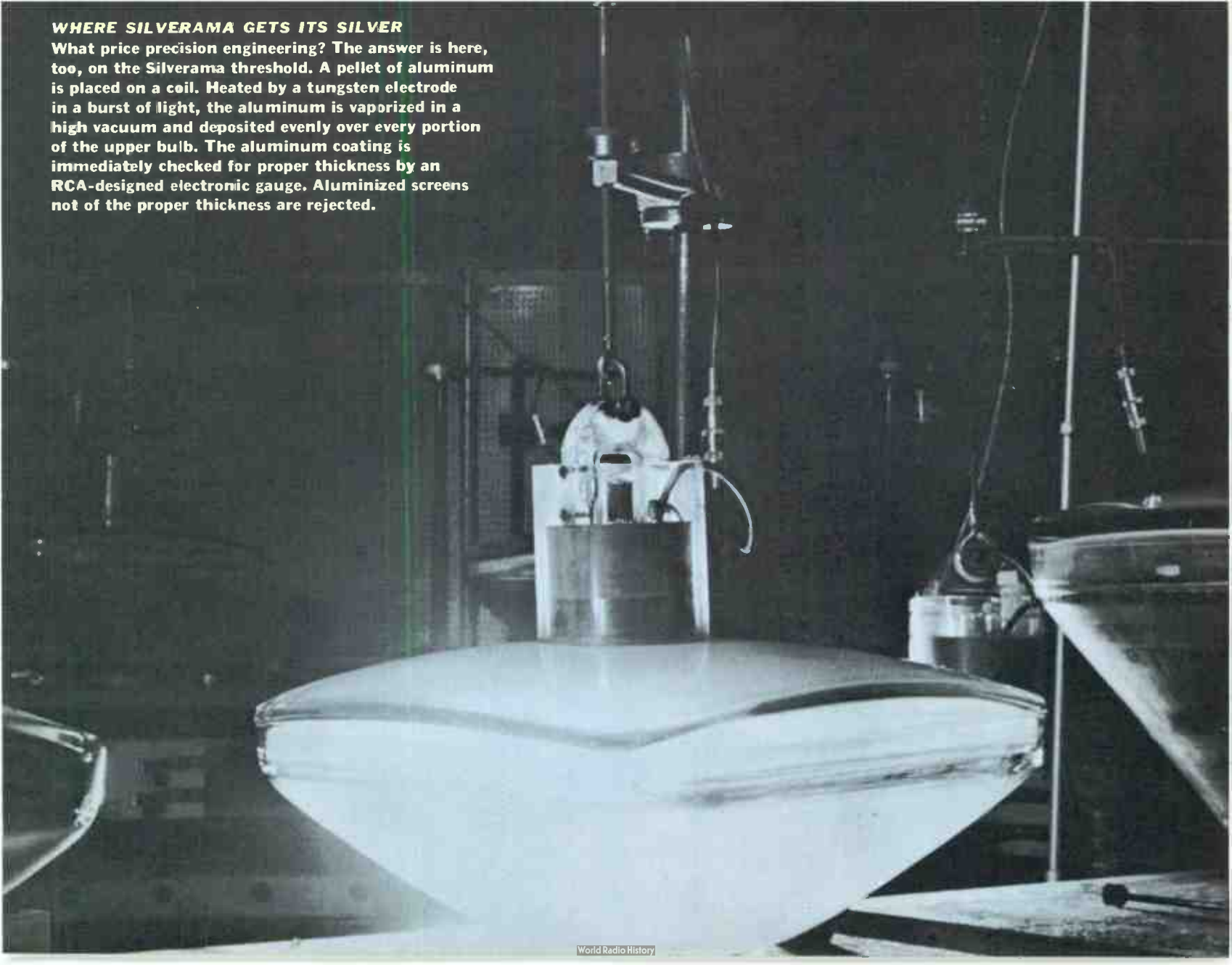
An inspector using transmitted light checks the newly applied phosphor screens for pin holes and other flaws. The slightest imperfection in screen color or smoothness is reason for rejection of the bulb.

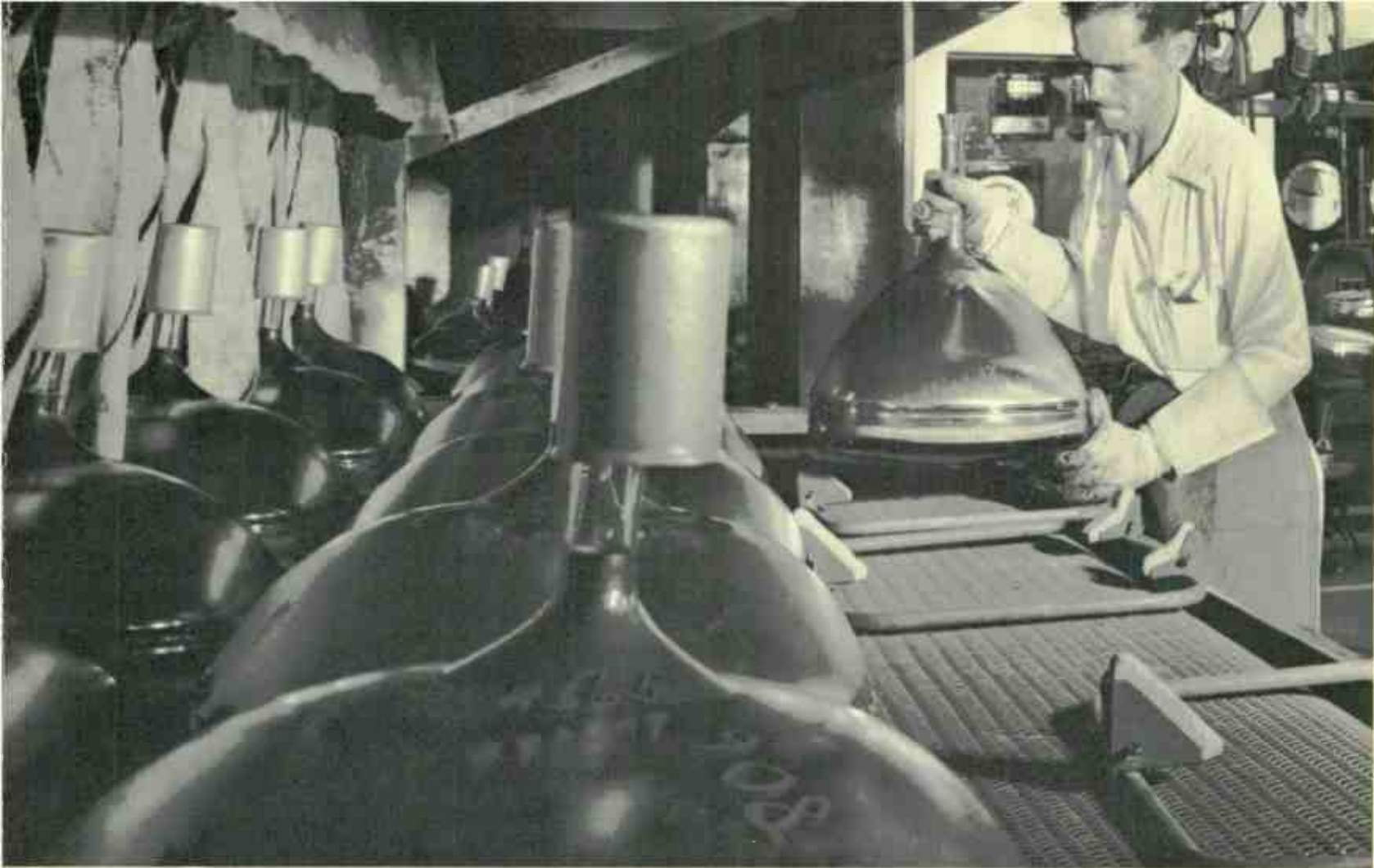




WHERE SILVERAMA GETS ITS SILVER

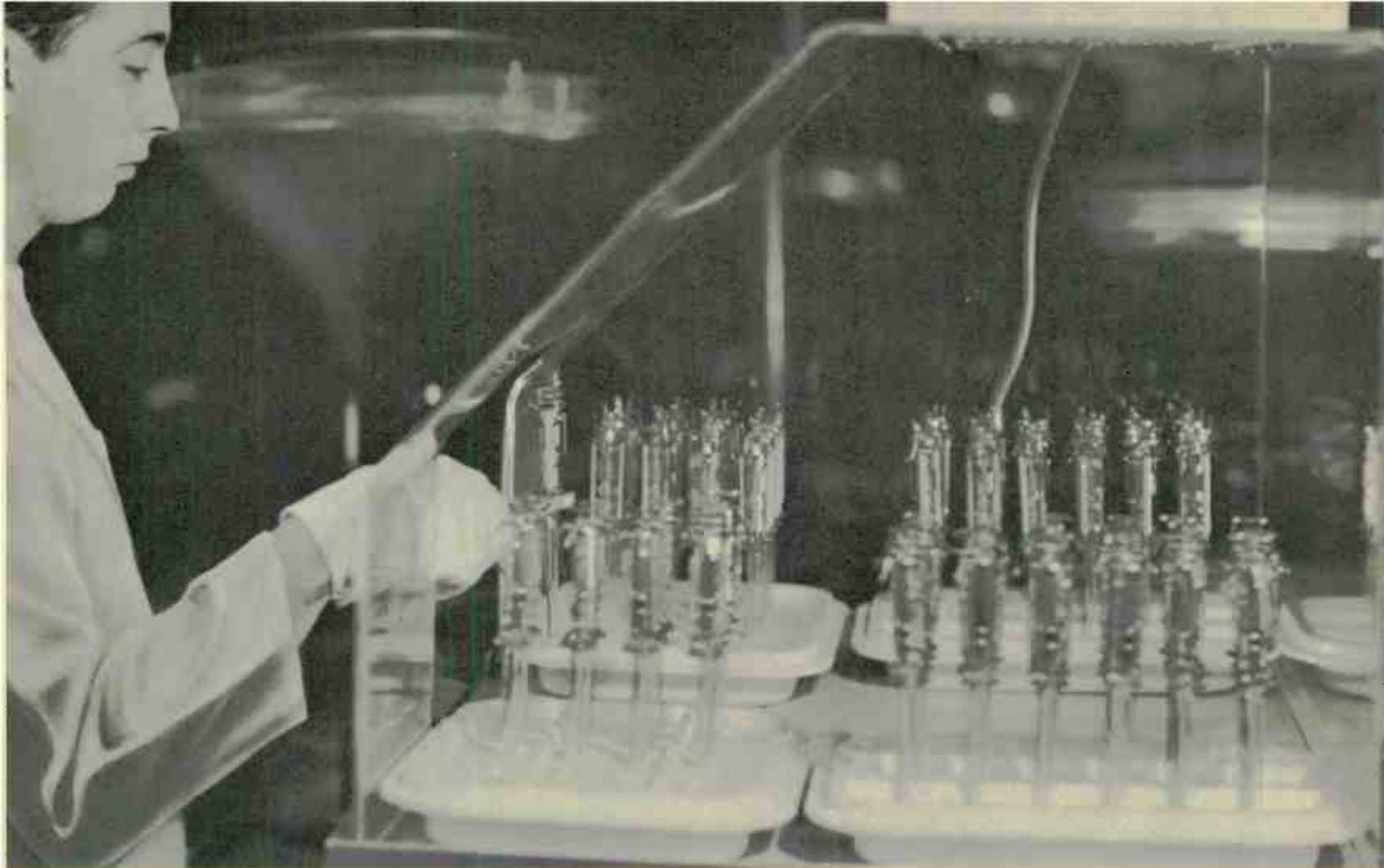
What price precision engineering? The answer is here, too, on the Silverama threshold. A pellet of aluminum is placed on a coil. Heated by a tungsten electrode in a burst of light, the aluminum is vaporized in a high vacuum and deposited evenly over every portion of the upper bulb. The aluminum coating is immediately checked for proper thickness by an RCA-designed electronic gauge. Aluminized screens not of the proper thickness are rejected.





OVEN-BAKED FOR LONGER TUBE LIFE

Bulbs are loaded into mammoth ovens that bake out all moisture and decompose all organic material within the bulbs. Ultimate result: longer tube life. At the completion of bakeout all bulbs are inspected under ultra-violet light for screen, coating, aluminizing and possible glass defects.



A LASTING ELECTRONIC PARTNERSHIP BEGINS

Electron guns are kept dust-free in pressurized hoods after they arrive from the white room for an important and final stage: accurate positioning and sealing of the gun in the neck of the bulb. As bulb and gun join forces, a lasting electronic partnership begins.



FROM BULB TO PICTURE TUBE AT JOURNEY'S END

Newly sealed bulb-and-gun units are loaded on individual carts in preparation for their journey through the straight-line exhaust machine. Processing includes baking gases out of all elements of the electron gun; activating the cathode; pumping the gases out of the bulb; and vacuum-tight sealing of the bulb. At Journey's end it is a picture tube.

SCREEN INSPECTION FOR QUALITY AND FOCUS

And now, the new tube is treated as an RCA Silverama Picture Tube. What price precision engineering? The answer is in this overall examination beginning with a check for screen quality and focus. A signal generator provides the picture, Silverama's first TV program.



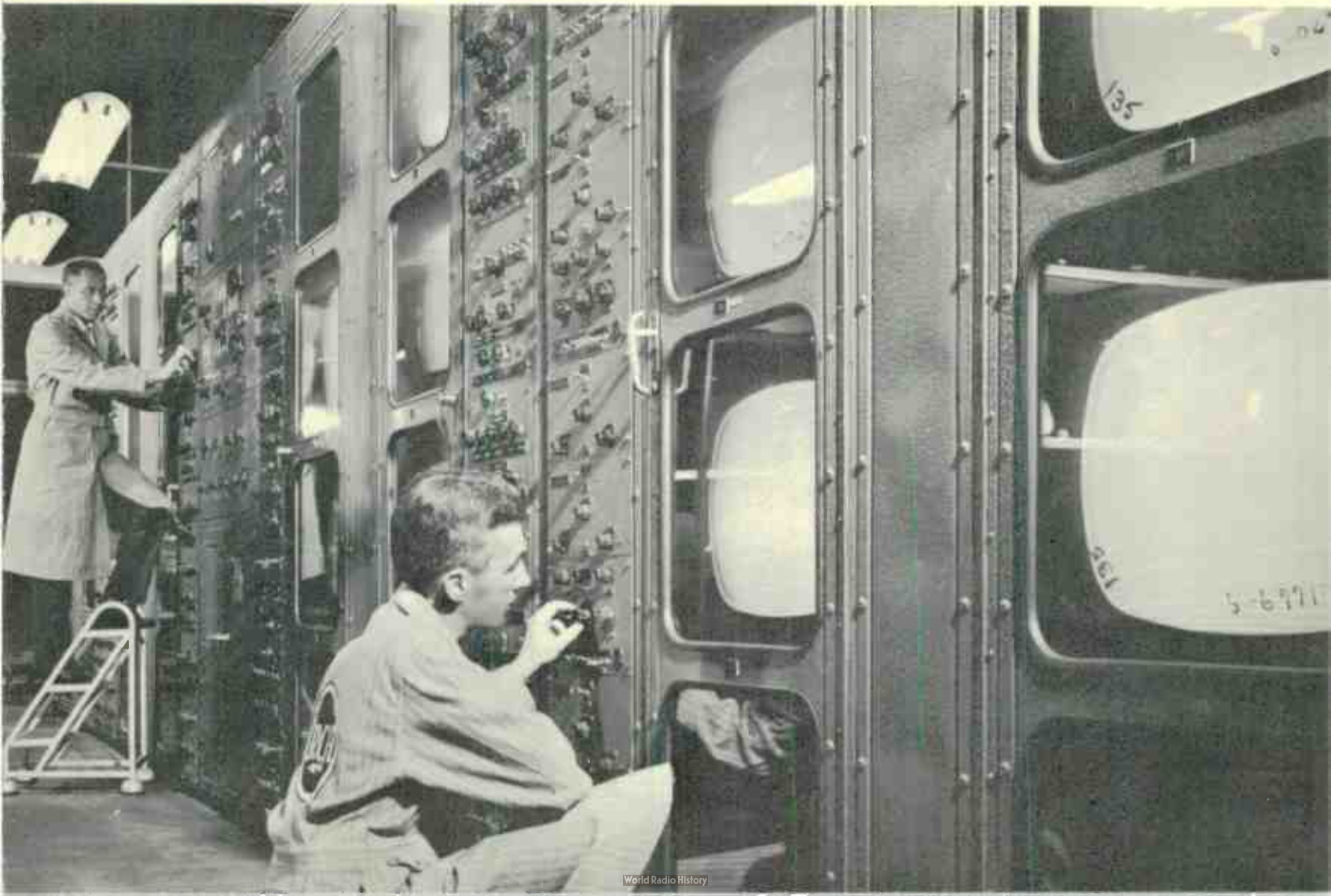
A SINGLE FAILURE MEANS AUTOMATIC REJECTION

The new Silverama Picture Tube is further relentlessly examined in 26 separate automatic tests which include, warm up, emission, gas, leakages and electron gun performance. If a tube fails a single test, it is automatically rejected.



GRUELLING LIFE TESTS, THE FULL MEASURE OF PERFORMANCE

Life tests are carried on continuously in the RCA laboratories. Samples of all Silverama tube types are operated for 500 hours and are monitored for all performance characteristics. In another series of life tests, tubes are operated in complete receivers for 2000 to 4000 hours without letup.



PACKAGING: FINAL STEP FOR SILVERAMA

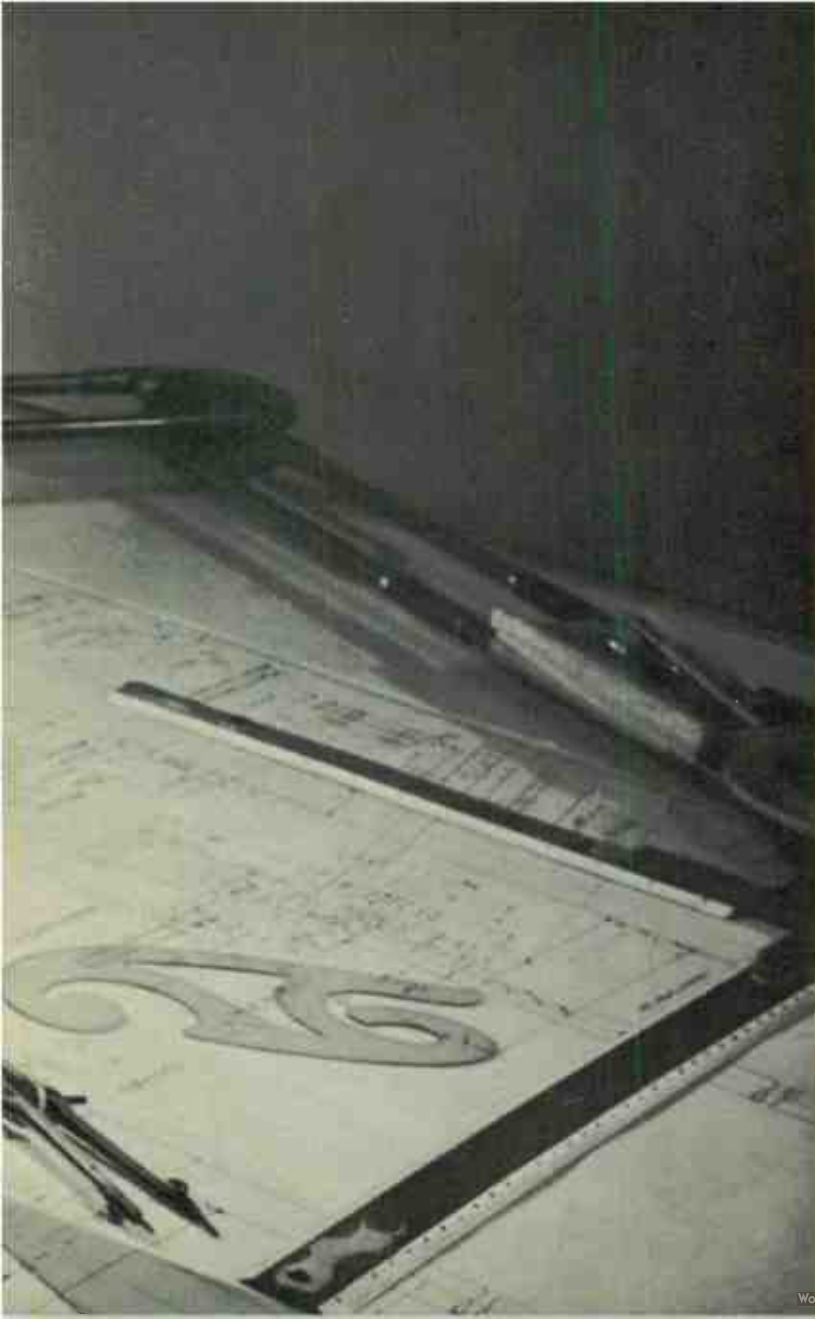
And finally, after dozens of rigorous tests and inspections, the finished RCA Silverama Picture Tubes are packaged and moved to a quality holding area.



BEFORE SHIPMENT TO CUSTOMER: A QUALITY RETEST

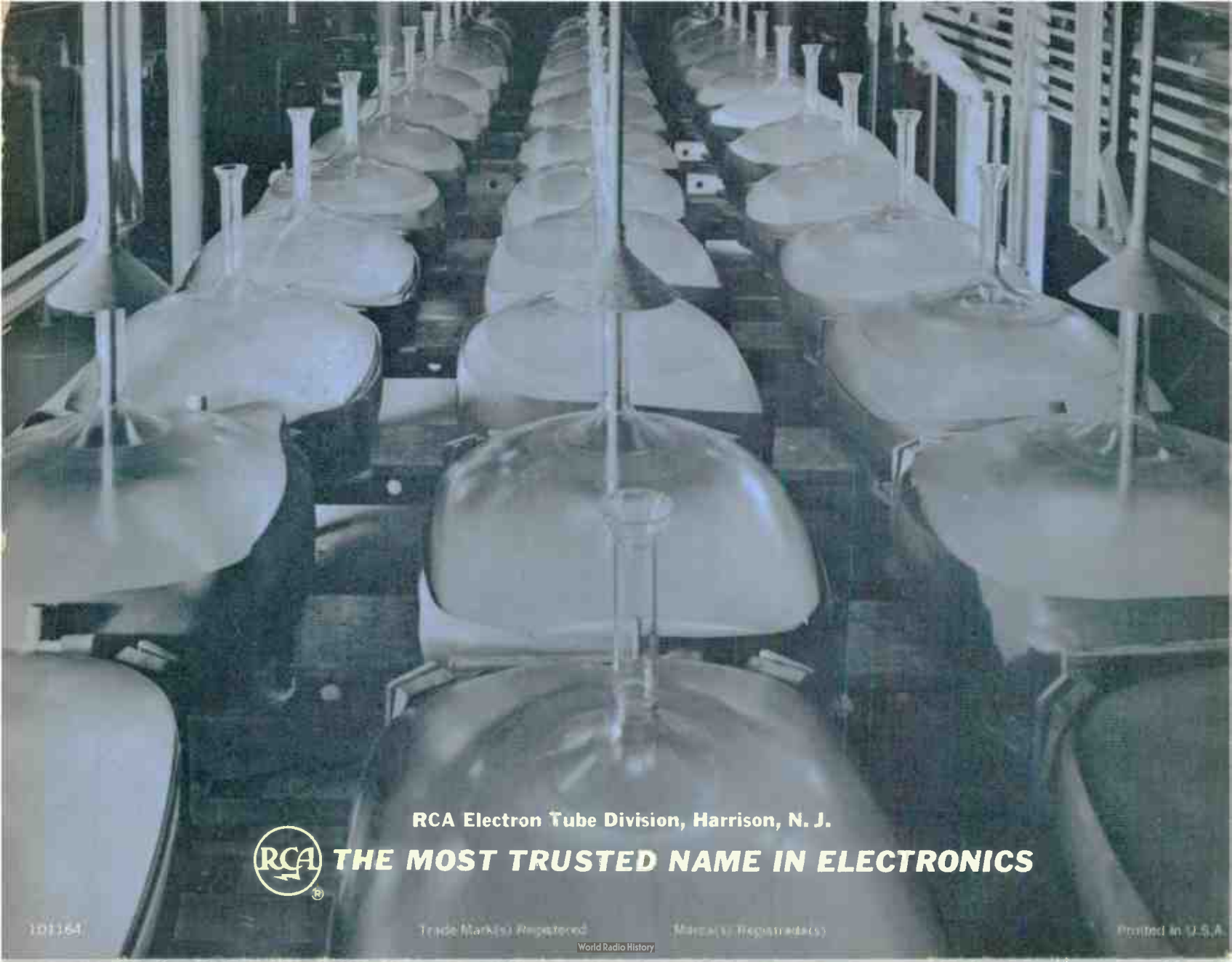
Before shipment to the customer, a random sample of all Silverama tube types are selected from the quality holding area and given additional visual, mechanical and electrical tests—precision engineering right down to the warehouse!





QUALITY, WHERE IT COUNTS MOST

Precision engineering is in every type and every tube in the RCA Silverama line. It is in the integrity of every component; in the perfect combination of all the parts. What price precision engineering? The answer can ultimately be found where Silverama Picture Tubes continue to demonstrate their superiority—the place where it counts most—in millions of the nation's television receivers.



RCA Electron Tube Division, Harrison, N. J.



THE MOST TRUSTED NAME IN ELECTRONICS