# Little left of receiving-tube market

60 million units should be sold this year, compared to peak of 182 million in 1957, as RCA closes Harrison plant

*by Bruce Le Boss, New York bureau manager*

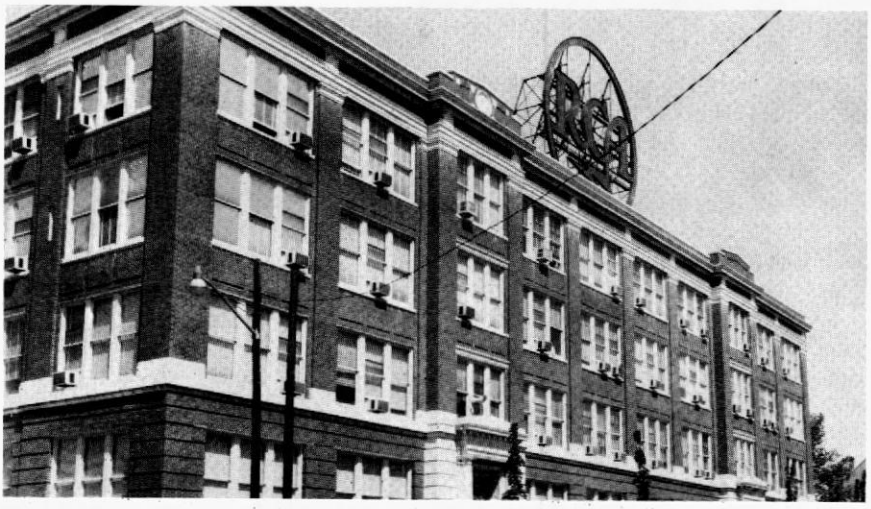
**RCA Corp.'s decision** to close its Harrison, N.J., receiving-tube plant on April 30—three months earlier than planned—not only marked the end of an era that spanned five decades, it also had major ramifications for surviving manufacturers, suppliers, and consumers.

Few can question the decision of RCA, the leading maker of receiving tubes, to cease manufacturing for a market that has declined by almost 80% since 1966. Yet the firm's departure as a producer of most high-use receiving tubes and as the sole source for more than 100 less-used types has led to worries over shortages, longer lead times, higher prices, and deterioration of receiving-tube quality.

What's left of the receiving-tube market today primarily is a renewal/replacement market that is but a shadow of its former self. Still declining from a peak of approximately 182 million units in 1957, the replacement market last year was down to about 68 million units. Estimates for the current year set the market at about 60 million units.

**Decline.** "It's inevitable that the replacement market will continue to decline," says Joseph Haimes, a vice president at RCA's Distributor & Special Products division in Cherry Hill, N.J., and a veteran of the firm's receiving-tube business. "There are no new tube-based TV sets, other than a few hybrids, that are going on the market. And as the public scraps their old TV sets, the replacement market will continue to go down further."

The decline in the replacement market has been surpassed only by that of the OEM market. Since it peaked at an estimated 273 million units in 1953, it has plummeted to approximately 8.6 million units in 1975, and a further drop to 4.6 million units is forecast for this year. "For all intents and purposes the OEM market has been wiped out," says Haimes.



**Out of the business.** With receiving tube sales down to a small fraction of their peak, RCA has closed its Harrison, N.J. tube plant, will phase out its plants in Mexico and Brazil.

The remaining two segments of the receiving-tube business—the export and Government markets—were never actually that big, notes Haimes. The export market hit a peak of 24 million units in 1954, and the Government segment hit its high of 43 million units three years later. The two segments this year are projected at 5 million units and 7 million units, respectively.

In its heyday, RCA's receiving-tube operations encompassed three additional production facilities in the U.S., with plants in Cincinnati, Indianapolis, and Woodbridge, N.J., as well as offshore plants in Mexico and Brazil. The Harrison plant, where RCA produced over 3 billion receiving tubes, was the last and largest of the domestic tube-producing facilities. RCA is trying to sell the Mexican plant, which produced about 7 million tubes annually, and it plans to phase out tube operations in Brazil, where approximately 15 million tubes were made annually, says Haimes.

**Who's left?** RCA's withdrawal as a producer of receiving tubes leaves GTE Sylvania and General Electric as the principal U.S. manufacturers in the business; Westinghouse and Raytheon have previously ceased production. RCA will follow in Raytheon's footsteps by continuing to merchandise tubes—buying and selling RCA-branded units after it depletes its current inventory.

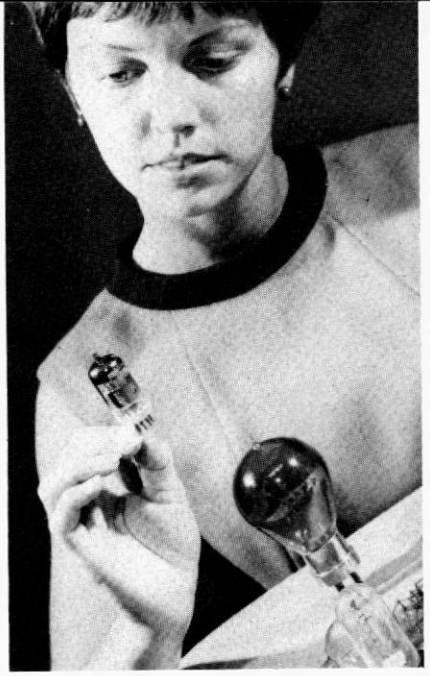
In addition to Raytheon, which sells tubes made by Nippon Electric Co. and Matsushita Ltd., the primary Japanese manufacturers, the U.S. market is filled with a host of

suppliers. Amperex is buying and selling tubes made by its N.V. Philips affiliates and others, and International Electronics Corp. and International Components Corp. are selling tubes produced offshore, as are many others. Also OEMs, such as Zenith, Motorola, and Magnavox, as well as major retailers, such as Sears, Roebuck & Co. and Montgomery Ward, are merchandising tubes.

As a result of the abundance of suppliers, and RCA's arrangements to transfer production to other makers Haimes doesn't consider that RCA's departure as a manufacturer will seriously affect the supply situation. For example, RCA alone made the Nuvistor, a thimble-size, metal-ceramic tube that was RCA's low-cost response to transistors about 12 years ago. Recognizing the need for someone to continue to supply Nuvistors for replacement in television receivers and government equipment, RCA reached an agreement with Sylvania for the sale of machinery, parts, raw materials, work in process, and technical data related to the manufacture of Nuvistors and certain other sole-source receiving tubes that were produced at the Harrison plant. Nuvistor production is being set up at Sylvania's Emporium, Pa., facility, while the manufacture of more than 50 other types of tubes for which RCA was the sole source is being shifted to Sylvania's automated production plant in Altoona, Pa.

Commenting on Sylvania's plans to supply the market with Nuvistors, Roger Slinkman, senior vice president for the Electronic Components group, notes that Sylvania recognized that its ability to serve the market depended on the purchase of certain machinery, tools, and parts. "That taken care of, we have already made delivery comitments to customers. We are proceeding according to plan, with few exceptions, and plan to be making shipments by the end of this year," Slinkman says.

Meanwhile, RCA expects to fill most of the military's requirements this year for Nuvistors, as well as for certain metal tubes, but the military is skeptical. At the Defense Electronics Supply Center (DESC) in Dayton, Ohio, Col. William Warren, the production manager, is concerned about the delivery of certain tubes for which RCA was the sole source, noting Sylvania is "not yet on-stream."



**End of the run.** Some of the billions of tubes made by RCA are five decades old.

This void in some metal tubes critical to military applications will partially be filled by General Electric, says Al M. Penrod, manager of marketing for receiving tubes at GE's plant in Owensboro, Ky. "As a result of the RCA pull-out, GE is going back into the metal-tube business, at least producing the popular ones, to serve the military market," notes Penrod.

Other than for some of those RCA sole-source tubes, Penrod says, there will be no availability problem. "Both Sylvania and GE can supply the world's needs from now on to evermore. And if either one of us decides to drop out, the other could handle the world's requirements by itself," he states.

**Shortages seen.** But Robert Knight, marketing manager at Raytheon's Distributor Products operation in Burlington, Mass., predicts that availability will become a problem and that there will be shortages of many critical types. "As the market shrinks, there will become less of a market for certain low-use tubes. Therefore, manufacturers will become less willing to produce quantities sufficient to achieve manufacturing efficiencies," he says, noting that most factories need at least 10,000 units of a given type to break even on that tube.

"A manufacturing manager who goes out to produce a tube, if he produces just 3,000 or 4,000 units, he's just getting the bugs out. These were the units that used to be taken out for the renewal market, with the debugged units that followed in the run going to the OEMs, who were much more critical," Knight adds.

**Distributors.** So far, RCA's departure as a producer of receiving tubes doesn't seem to have had any immediate effect on distributor operations. Frank Viscomi, president of Westchester Electronics Inc. in White Plains, N.Y., a major RCA distributor, says there has been no impact on tube availability yet, "largely because RCA is still shipping out of inventory." But Viscomi assumes a problem in obtaining an adequate supply of RCA-branded tubes, so he has taken on a second line.

Jack Socolow, president of Northeastern Radio Warehouse Inc. in the Bronx, N.Y., another large RCA-tube distributor, doesn't expect the RCA action to encourage the remaining two U.S. manufacturers to raise prices beyond what might be considered the usual increases. "That's because you have a company like Zenith, which purchases all of its tubes from outside sources, and they're very price-competitive and aggressive in the market."

Raytheon's Knight expects upward price pressure because competition is being decreased. This, in turn, could result in the loss of certain business at the consumer/dealer level. "If people get greedy and prices go up too high, then consumers will begin to throw away their old TV sets. It's already happening to black-and-white TV. Rather than pay $6 to $8 each for several tubes, plus a service charge by a technician, the consumer can go out and buy a black-and-white TV for $70 today."

Helping to temper the rate of expected price increases could be some downward pressure by some of the peripheral suppliers who might dump their products on the market. "This could be the next phase following upward prices," says Knight. □