REPORT OF VISIT TO SYLVANIA -- Seneca Falls, N.Y.
April 6, 1951

The purpose of the trip was to observe the sealing of necks and faceplates to McDowell 17" metal rectangular drawn cones. Sylvania had approximately 100 of these cones on hand and were making their first production-style run. One of these cones is available for inspection in the Development Laboratory stock room. The neck was sealed on in the usual (inverted) manner, care being taken to maintain a constant rim-reference line distance. The cone-neck assembly was removed from the neck sealer and while waiting to be loaded on the face sealer it was hung so that the neck and lower portion of the cone projected through a hole in the asbestos cover of a wooden box. A faceplate was placed in position. The assembly remained here for one to two minutes, allegedly to allow heat from the neck seal to partially preheat the faceplate.

The parts were then loaded on a 8-position faceplate sealer (1 position load, 3 seal and 4 anneal). Restraining rods were used similar to those described in the report of a previous trip to R.C.A., Lancaster. A sketch of one of these rod assemblies is shown in Figure 1.

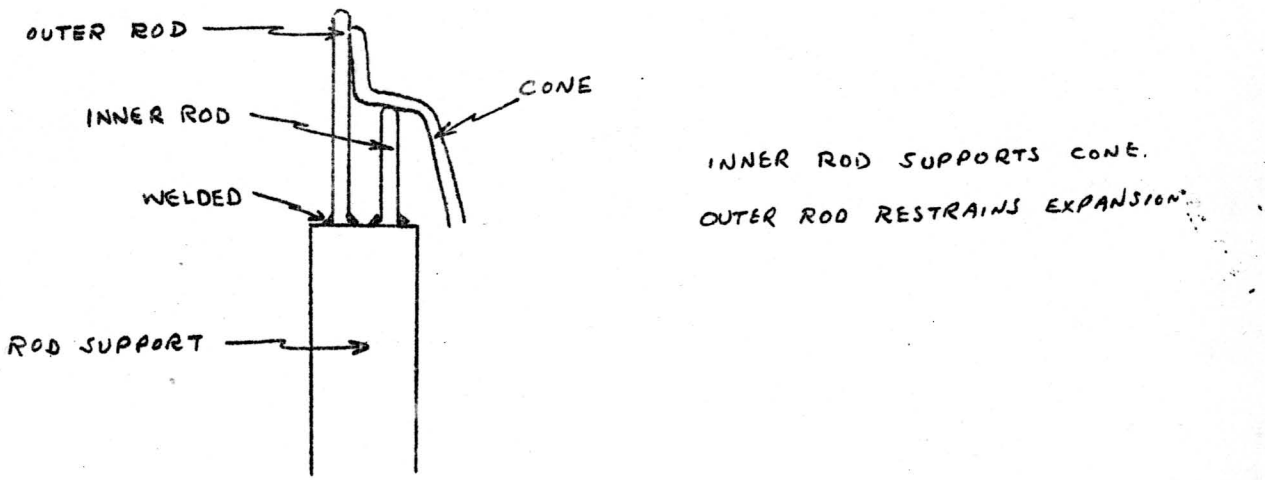

Fig. 1

Slight difficulty was being encountered in the fit of the cones within the rod assemblies because of a slight roll-over along the edge of the cone. McDowell plans to remove this edge in the trimming operation. The first two sealing positions (actually preheat positions) had approximately 36 burners each, 12 in a small arc along one side and 24 in a large arc along the other side of the cone. The third position consisted of a 60-burner ring which was lowered over the face of

the bulb. Strong fires played over the faceplate in all three positions. The bulb was rotated continuously throughout sealing and annealing. The annealing oven was so arranged that the neck of the assembly was not within the heated area. Note that this condition was also observed at the R.C.A. Development Laboratory. The temperature of the oven was 550°C. The machine operated approximately on a 2-minute index. The hot bulb assemblies were allowed to cool to room temperature and then were taken on racks to the bulb washer.

A slight mechanical adjustment of the machine is required to change over from I.T.E. to McDowell cones because of the difference in cone shape. Also, the fires must be reduced somewhat since the McDowell cones are thinner. Otherwise the two cones are handled identically. A few cases were noticed in which the McDowell cone seemed to give a somewhat better corner seal, that is, the glass seemed to run in better.

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I was taken on an inspection tour of the factory. Some of the interesting things I saw are enumerated below.

In their screen settling operation they use a small percentage of potassium permanganate. The reason for this is "to give better screens"! They also use a very deep cushion part of which they siphon off just prior to pouring. The siphoning is done to prevent gurgling during pouroff.

Their electrostatic-focusing guns are very similar to the R.C.A. gun. They are experimenting with a method for close control of grid-cathode spacing: a flow of air through the grid aperture is regulated by the positioning of the cathode. Great accuracy is claimed.

They have a separate dark-room which is used for color, brightness and persistence measurements. Such a setup could be used to advantage in our Development Laboratory.

A system has been instigated at Seneca Falls which is claimed to have paid dividends in two other Sylvania Plants. The third shift in the screening room follows the following schedule: they use the first hour or so finishing up the work which was started by the second shift; they then spend most of the night cleaning up the entire room and equipment very thoroughly; during the last hour they start some work for the first shift to carry on with. They say that the reduction in shrinkage more than accounts for the loss in production.

I received no inquiries concerning any of our late developments in gun design.

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