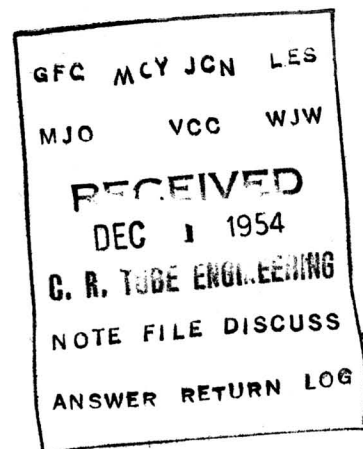


File in Trip report C. Nonnen
TRIP REPORT

DESTINATION: Lansdale Tube Plant
Lansdale, Pennsylvania

DATE OF CONTACT: November 24, 1954

PERSONS CONTACTED: Mr. Sadowsky
Mr. Ishler
Mr. Pratt
Mr. Parsons
Mr. Colgate



The purposes of this visit were twofold: to wit

1. To introduce Mr. Mayer as the General Electric Cathode Ray Tube Design Engineering liaison on apple tube design and processing.
2. To review current apple tube bulb preparation techniques.

In connection with Item 2 above, our version of the Lansdale process instructions will be revised and published in the conventional form, in order to reflect the current situation at Lansdale. However, the following general comments are in order at this point.

a) Lansdale is currently producing approximately one good tube per day, from fifteen starts. Current objective is to attain five tubes per day from fifteen starts, by the end of the year.

b) Processing additions and changes, particularly in connection with the "dichromating" process, have very appreciably improved screen quality. This process, which involves locking in the individual colors with a barrier layer of P.V.A. before proceeding with the application of the next color, has essentially doubled the screen process time; however, it has also reduced the shrinkage by an equivalent factor, with an improved overall screen quality (less "contamination").

c) Additional processing has also been introduced in the form of an additional barrier silicate layer after screening but before film-aluminizing. This has materially reduced blistering problems, and its effectiveness has given some proof to the theory that blisters in the past have been due basically to the water content of the P.V.A. underlayers. (Water, of all the process material employed, was found to be the only one which could be added artificially to induce blisters.)

d) Changes in the MgO processing, by reducing the Solox and dichromate percentages in the underlayer and by elutriation have improved the signal yield, primarily by reducing agglomeration of the MgO and by reducing holes in the index resulting from the attack of dichromate on the aluminum.

e) Lansdale is no longer experiencing emission troubles, the improvement being primarily due to -

(1) Cathodes are being processed by the color group.

(2) An extensive program of control on pumping conditions has been undertaken. All exhaust buggies are tested weekly and must pump to 5×10^{-6} mm within one hour, to be acceptable; an average figure is 3×10^{-6} within one hour.

f) Emphasis on vacuum check has been increased; correlation tests between vacuum check and finished tubes have been made and it has been determined that altho screen-uniformity defects are not nearly as obvious at vacuum check as at test, they can be observed. A mirror, located approximately four feet above the bulb under test, effectively increases the viewing distance and is of considerable assistance in making an overall evaluation.

g) All screens are evaluated for uniformity on an arbitrary 1-10 scale, where 10 represents the degree of excellence common with monochrome tubes, 8 represents an average for shadow mask tubes. At the moment scale 6 tubes are shipped altho with the improved processing introduced recently scale 8 is a good possibility.

h) Mr. Parsons demonstrated a computer for the line measuring equipment; this will read directly in electrical degrees.

He has also developed an umbrella for aluminum shielding which will be demonstrated on the next visit.

i) A set of 38 masters with geometric curves was brought back. The curves indicate a great improvement over any previous masters.

Mr. Parsons would like to have the 36 x 14 set returned.

G.L. Case
F.J. Mayer
Color Tube Design

mm

cc: EA Baines
HR Hemmings
W Highfield
FJ Mayer
C Dichter
LC Maier
PJ Marapodi
EF Schilling
JC Nonnekens