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TRIP REPORT

Place: Lansdale Tube,
Lansdale, Pa.

Date: August 16, 1955

Purpose: Discuss with Philco optical printing problems for POFP tube

Present: Dave Smith - Philco
F. J. Bingley - Philco
K. Ishler - Lansdale (part time)
M. Sadowsky - Lansdale (part time)
J. C. Nonnekens - General Electric

Work on optical printing methods for curved surfaces has been done in the Electronics Park and several methods have been proposed to arrive at the correct geometry and registration. For sandwich tubes optical methods have been used successfully in both Building 3 and 6, with and without intermediate masters.

In Philco, similar problems have been solved, mainly by Mr. Bingley, and therefore we were interested in making his optical experience available for our specific application.

The writer explained the fundamental mathematics of the P.A. field, the correction for converging the desirable parabola-cord lines to a point source, so as to obtain maximum glass tolerances, and the various means of printing by S, s, and compromise methods. The POFP approach, which should be easier, was then discussed.

Dave Smith told me that their engineers and technicians were, right now, putting in as many as 70 - 80 hours per week to meet a September deadline for the corrected transit time approach.

> Note: The idea is to print a non-registered index pattern. The discrepancy between phosphor and index increasing with the deflection angle as to correct for transit time.

I explained to Dave Smith that for the time being we were not thinking about the actual printing, but rather would like Mr. Bingley to give us his help and experience for the optical approach and do some calculations. Dave Smith agreed to making Mr. Bingley available for this work.

We will now check with Mr. Cornfeld and Mr. Estes on the possibility of sending Mr. Bingley the TIS's which have been published here. The writer

feels that these calculations are straight-forward. It was also arranged that Mr. Bingley would visit us here and see our lighthouses.

Briefly, the following are the possibilities:

1. Direct printing using a correction lens, as used for sandwiches, and as proven to give sufficient accuracy.

2. Direct printing using a master of different curvature.

3. Project through a non-linear master, the latter being obtained from an original electron exposure.

Throughout the discussion Dave Smith asked many questions on convergence, spot distortion due to deflection, etc. Also he brought up the possibility of a single-mask post-acceleration tube. We had a frank discussion and the writer was able to show that such a tube would still have less transparency than a grille structure, that therefore there would be more secondaries, and that the gun voltage would be substantially lower, that is the gun would be more difficult. Moreover, we would have less tolerances in the vertical direction.

I was under the impression that Dave Smith was giving the matter of a color tube other than the present Apple serious consideration, and that our meeting was useful to clear up several points of doubt in his mind.

I also was told that Philco noted with interest that we were giving the optical printing method serious consideration.

J. C. Nonnekens

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JCN/fmd
8-18-55

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