

C.G.E. TRIP REPORT

June 22-23, 1967

L.E. Huyler

Distribution: VC Campbell ←  
DL Crawford  
N Danielson, Jr.  
FF Doggett  
HH Gros  
JC Hickle  
ME Jones  
EM Krackhardt  
LC Kunz  
DS Monroe  
CA Perkins  
WD Rublack  
SS Sadowsky  
EF Schilling  
PN Taggett  
CN Tonian

TRIP REPORT - Visit to C.G.E., Rexdale Plant, Toronto, Ontario, June 22 and 23, 1967

SUBJECT - Testing of 15MP22 Color Picture Tube

PERSONS CONTACTED - E. Etches - Manager, Engineering  
B. Duncan - Design Engineer  
M. Robinson - Manager, Quality Control  
V. Grinberg - Application Engineer  
O. Sils - Quality Control Engineer

## 1. Test Equipment:

Application Engineering and Quality Control each have manual test sets made by Joliet Controls Corporation, Joliet, Illinois. The sets were designed originally for testing standard delta gun tubes. They appear to be quite well designed and constructed with fair access to panel controls and tube cubicle. Most low voltage power is supplied by Kepco Power Supplies. Panel meters are Weston type PMS (Projected Moving Scale) and have excellent readability, especially in low ambient light. High impedance delta sweeps are derived from an ordinary Zenith receiver chassis integrated into the test set.

A low impedance in-line sweep and convergence system, designed and built by Syracuse CRO Design Engineering group, is incorporated in the Q.C. test set. Flexible shafts coupled to the horizontal convergence sliders allow the tester to adjust dynamics remotely from the front of the cubicle. Horizontal linearity, while not good, was about the same or perhaps a little better than the same deflection/convergence system in the CRO Design Engineering test set (DeRyder) located in Building 6. The left side of the raster is expanded and right side is compressed. This should not cause much of a problem in tube testing.

They have only one sweep yoke for the 15MP22 and will be badly limited in test capabilities until they receive more yokes.

CGE has no equipment for measuring color. I gave M. Robinson a copy of Mike Jones' letter to Ed Craig regarding plans for building colorimeters for Building 6, and I suggested that he (Robinson) get together with Jones for more details

## 2. Test Procedures:

I reviewed the latest test specifications for 15MP22 with Messrs. Robinson, Sils, and Grinberg and also gave them copies of our test data formats. We then performed each test in detail in accordance with the test specifications on two (2) 15MP22 (one a Syracuse engineering sample, the other made at CGE).

All performance tests, excepting gas and EBU which are done on separate buggies, were made on the two (2) tubes in the QC test set. Aside from poor screen quality - porous dots and desaturated green and blue chromaticity, the CGE tube looked fairly good. It failed for "cutoff difference" (Spec. = 18V maximum - tube measured 22V) and emission was marginal on the green gun. The Syracuse tube had severe grid emission on the blue gun.

M. Robinson agreed to send us test data on all of their first production tubes and at some sample rate later on for correlation and information feedback purposes.

3. Problems:

It was impossible to obtain satisfactory horizontal convergence on the left side of either tube. Convergence at center and right side was O.K., but the green and blue were misconverged with respect to red by as much as .100" on the left side. The green and blue were outboard of the red, thus indicating insufficient dynamic amplitude to reduce the rasters enough for convergence. This will be checked out with CRT0 Design Engineering and coordinated with CGE.

Another problem concerning the measurement of convergence and purity shift may result from the relatively high residual magnetism in the vertical convergence cores and purity core. I suggested that a variable 60 Hz current be passed through the static electromagnet coils to degauss the cores as we have done previously in Building 15. They plan to try this.

Stray magnetic fields in the test cubicle may present a problem in beam landing. The magnitude of stray fields was not known, and we did not evaluate it in terms of spot position due to the fact the sweeps could not be conveniently turned off. CGE people will check this out. I supplied M. Robinson with drawings for a cubicle Helmboltz coil system.

In general, I found that the people concerned with tube testing were very knowledgeable in standard color tube test procedures and were appreciative of any suggestions we had to offer regarding testing of the 15MP22.

L. E. Huyler  
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LEH/kj