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MANUFACTURING METHODS AND TECHNOLOGY (MM&T) SPECIFICATIONS FOR --ETC(U)
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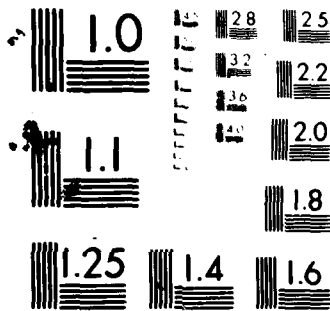
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31 July 1981

Thomas Electronics, Inc.
100 Riverview Drive
Wayne, NJ 07470

THIRD QUARTERLY REPORT

for period

1 April 1981 - 30 June 1981

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**Manufacturing Methods and Technology (MM&T) Specifications for
Miniature Cathode Ray Tube**

prepared by
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ACKNOWLEDGEMENT

This project has been accomplished as part of the US Army Manufacturing Methods and Technology (MM&T) Program which has as its objective the timely establishment of manufacturing processes, techniques, or equipment to insure the efficient production of current or future defense programs.

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TEI placed a hold on fabrication of the 2nd Submission of two (2) Phase I - Engineering Samples until the following EM and vendor problems could be resolved: test of prototype yokes; funnel shield and neck shield maximum allowable concentricity; blemish size and quantity requirement; qualification and reliability test procedures; sensitivity and linearity requirements; focus voltage requirement; and brightness contrast ratio. The status of materials not previously on hand at TEI improved during the reporting period.

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Manufacturing Methods and Technology (MM&T) Specifications for
Miniature Cathode Ray Tube

THIRD QUARTERLY REPORT

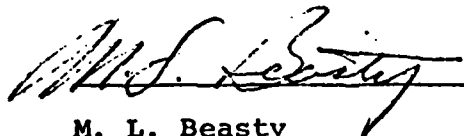
for period

1 April 1981 - 30 June 1981

The object of this study is to develop design, performance, and test specifications for the Miniature Cathode Ray Tube (CRT) assembly suitable for use in the Integrated Helmet and Display Sight System (IHADSS) of the Army Advanced Attack Helicopter (AAH).

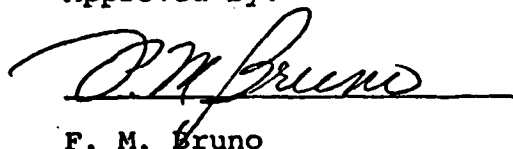
Contract Number: DAAK70-80-C-0168

Approved by:



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Vice President - Engineering

Approved by:



F. M. Bruno
Program Manager

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ABSTRACT/SUMMARY

TEI placed a hold on fabrication of the 2nd Submission of two (2) Phase I - Engineering Samples until the following EM and vendor problems could be resolved: test of prototype yokes; funnel shield and neck shield maximum allowable concentricity; blemish size and quantity requirement; qualification and reliability test procedures; sensitivity and linearity requirements; focus voltage requirement; and brightness contrast ratio. The status of materials not previously on hand at TEI improved during the reporting period.

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1.0 PURPOSE

The purpose of this Manufacturing Methods and Technology (MM&T) contract is to establish production methods and facilities required to produce the Miniature Cathode Ray Tube Assembly required for the Integrated Helmet and Display Sight System (IHADSS) of the Army Advanced Attack Helicopter (AAH).

The primary objectives are to develop vendor sources for the required individual components and establish viable production techniques to meet the necessary monthly production rate.

The product produced will be required to meet the mechanical, electrical, performance, and environmental parameters of MM&T H799838.

2.0 GLOSSARY

AAH..... Advanced Attack Helicopter

CRT..... Cathode Ray Tube

EM..... Equipment Manufacturer

IHADSS..... Integrated Helmet and
Display Sight System

MERADCOM..... Mobility Equipment Research
and Development Command

MM&T..... Manufacturing Methods and
Technology

TEI..... Thomas Electronics, Inc.

TIR..... Total Indicated Range

3.0 NARRATIVE AND DATA

3.1 Problem Areas and Solutions.

3.1.1 1st Submission of Phase I - Engineering Samples.

TEI shipped the 1st Submission of Phase I - Engineering Samples to the designated addressee. The TEI Test Data Form TD-917 contained Category I requirements and tests of MM&T H799838 with values recorded by TEI's Engineering and Quality Assurance Departments during final inspection.

3.1.2 2nd Submission of Phase I - Engineering Samples.

Fabrication and test of the 2nd Submission of Phase I - Engineering Samples have depended upon TEI's receipt from the vendor of (1) a yoke that meets the MM&T specifications, and (2) modified funnel necks. In late April, a yoke was received that had been designed and built to meet MM&T specifications. Delivery of the funnel necks was delayed because of processing problems experienced by the vendor.

TEI performed mechanical and electrical tests on the prototype yoke. It met the sensitivity requirements of the MM&T specification. There was a question, however, about yoke resistance. TEI's interpretation of this parameter was that the resistance pertains only to coil resistance and does not include the flying leads. TEI requested concurrence on its interpretation of the yoke resistance specification from the Contracting Officer's Representative.

TEI also felt it was in the best interests of the MM&T 1" CRT program to put a hold on the manufacture of the 2nd Submission of Phase I - Engineering Samples to produce a CRT assembly using the prototype yoke for shipment to the EM for its evaluation and acceptance. This was accomplished on May 26, 1981.

The EM reported that data on sensitivity tests met the requirements of MM&T H799838. However, the EM wished to tighten the sensitivity specification. TEI contacted the vendor for review and comment about how tight they could hold sensitivity. TEI will review the yoke-to-screen dimensions and determine if range can be tightened.

The vendor also obtained in-spec readings on a second prototype yoke for horizontal and vertical linearity. The yoke with the CRT and data were transmitted to TEI for correlation purposes.

TEI transmitted Fort Belvoir's request to the EM to specify a maximum allowable concentricity specification for the funnel shield and the neck shield and requested written confirmation of the EM's specification. Upon review of the verbally reported specification change, and receipt of the official EM specification document, TEI will respond to the Contracting Officer's Representative.

TEI had planned to make CRTs with the new funnel necks for the 2nd Submission of Phase I - Engineering Samples after review and

acceptance by the EM of the CRT assembly with the prototype yoke. However, the CRT assembly had low focus voltage and contrast ratio. Corrective action is being investigated to resolve these parameters.

3.1.3 Qualification and Reliability Test Procedures.

In preparing a Qualification Test Procedure to cover the environmental tests for the Phase II - Confirmatory Samples, TEI's Quality Assurance Department made suggestions or proposals for consideration concerning MM&T H799838 requirements for fungus test, salt atmosphere, explosive conditions, electro-magnetic compatibility, and reliability testing.

4.0 CONCLUSIONS

The 1st Submission of Phase I - Engineering Samples was shipped with test data to the designated addressee. TEI placed a hold on fabrication and test of the 2nd Submission of Phase I - Engineering Samples until EM and vendor questions could be resolved. TEI estimates that overall progress on major elements of the project is approximately 7% completed.

5.0 PROGRAM FOR NEXT INTERVAL

The program for the next quarter is as follows:

1. Prepare and submit monthly status reports and also the draft and final quarterly report.
2. Commence making CRTs for the 2nd Submission of Phase I - Engineering Samples.
3. Maintain detailed test records for compiling into technical data items required by the contract.

6.0 IDENTIFICATION OF KEY PERSONNEL

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