

PROGRESS REPORT - RELIABILITY & QUALITY ASSURANCE - TD 11-5

- I. CONTRACT: NASw-410
Paragraph A3.2.4.11
- II. TASK TITLE: Program Guidelines Development
- III. SUB TASK TITLE: Apollo Calibration Program

IV. SUB TASK DESCRIPTION:

Investigate the requirements for developing a full and complete set of calibration documents to be used as the basis for a standardized Apollo Calibration Program.

V. RELATED PAST ACTIVITIES:

On September 4, 1964, a Status Report was submitted to MAR-Q.

The following items were included:

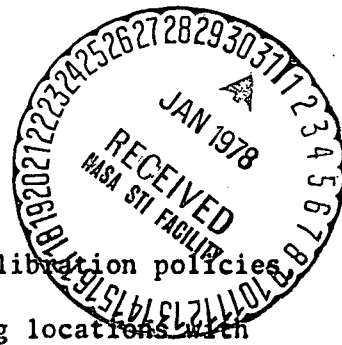
- A. Outline of Task Program
- B. Milestone Chart of Events
- C. Calibration Systems Checklist
- D. Analysis matrix

VI. PRESENT STATUS:

Visits were made to investigate current calibration policies, procedures, and facilities at the following locations with results as indicated:

- A. MAR-Q was visited on September 3 to discuss the status and to review the requirements of the Apollo Calibration Program (TD 11-5)

Results: General agreement was obtained on the method of accomplishing TD 11-5. The priority for visits to calibration facilities was established as



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(1) MSF centers, (2) Navy Laboratory, Pomona and (3) RASPO and NAA at Downey, Calif. D. G. Spokely contacted MSFC to arrange for ASD personnel to review their Quality Laboratory calibration system. The Department of Commerce Office of Technical Services was researched for documents pertinent to calibration programs.

B. Ordnance Department/GE, Pittsfield, Mass. was visited on September 22, to research equipment, procedures and records that are in use for the Secondary Standards calibration program established for BUWEPS Polaris project in accordance with Standards Laboratory Information Manual (SLIM).

Results: (1) Obtained information for methods of establishing traceability to primary standards, i.e., National Bureau of Standards (NBS). (2) Obtained information pertinent to developing data accumulating and processing systems for the determination and the revision of calibration recall cycles for specific test equipments, and to provide equipment historical data. (3) Obtained current copies of Quality Standing Instructions (QSI's) for general calibration procedures as well as calibration procedures for specific pieces of test equipment. In addition, received other informational calibration documents, and titles of DOD procedural documents which will be obtained through other channels. (4) Inspected laboratory facilities and accumulated additional knowledge of calibration practices as they are currently being performed.

C. Advanced Technology Laboratories/GE, Schenectady, N. Y. was visited on September 23 to research equipment, procedures and records that are in use at a Primary Standards Laboratory, and their methods for traceability to NBS.

Results: (1) Observed the equipment that is periodically standardized at NBS and inspected the certificates issued by NBS. (2) Obtained reprints of calibration procedure write-ups by S. C. Richardson for Instrument Society of American and other journals. (3) Obtained listings of nineteen GE Laboratories and their capabilities for calibrating specific types of test equipment and instruments. (4) Obtained catalog of 250 categories of calibrated instruments which can be rented. (5) Ascertained Advance Technology Laboratory's capacity to provide calibration services. (6) Obtained names of cognizant calibration personnel at several West Coast laboratories.

D. MSFC Quality Evaluation Branch of the Quality and Reliability Assurance Laboratory was visited on September 24 and 25 to research the MSFC calibration system.

Results: (1) Toured present calibration laboratories under the jurisdiction of the Calibration Section to become familiar with present facilities and traceability to National Bureau of Standards (NBS). (2) Reviewed relationships with other NASA Laboratories (Aero-Astroynamics, Astrionics, Manufacturing Engineering, etc.) concerning the facilities of each. (3) Reviewed the recall system used by the Calibration section and its coordination with the other NASA laboratories. (4) Reviewed the association of the Calibration Section with the U.S.

Army Missile Support Command (AMSC) Calibration Center. (5)

Obtained copies of six (6) detailed calibration procedures developed by the Calibration Section for specific items.

VII. FUTURE PLANS:

This task, as presented in the September 4, 1964 Status Report, will be continued under Sub Task B.4.3.15-Q-7 of A.S.D. Work Plan for Contract period 1 October 1964 through 31 December 1965.