

Office Memorandum • UNITED STATES GOVERNMENT

50X1

TO : Chief, Engineering Division
THRU : Chief, R & D Branch
FROM :

DATE: 28 November 1951

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SUBJECT: Engineering Inspection Report

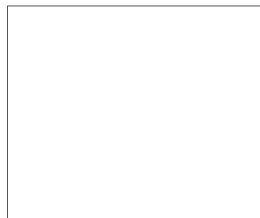
PLACE :

DATE : 26 November 1951

PURPOSE: Discuss Modification of DAQ Directionfinder Equipment

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THOSE PRESENT:



- President -
Manager -
Chief Engineer -
Elec. Engineer -
- CIA, P & C Division
- CIA, R & D Section

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1. The mention of the modification of the 3 DAQ's by the writer to immediately tied in the visit by our of P & CD. It was inferred that also stated that he was representing the Defense Department.

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2. The status of the Navy Contract #52724 for the modification of DAQ's was discussed.

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- (a) The Navy has not yet supplied the basic DAQ equipments.
(b) have not yet received a definitive contract.
(c) Only one mononole has been constructed.
(d) are in the process of designing the antenna

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matching transformers. Several experimental models were shown. Design and tests are not yet complete. They are not sure yet whether it will be necessary to use two types of transformers to cover the frequency range.

(e) Operating frequency range of the Navy Equipment will be 1.5 to 22 mcs.

(f) They hope to be able to use the DAQ goniometer as it stands.

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(g) stated that delivery of the first complete system to the Navy is anticipated in December 1951, followed by the delivery of the second complete system in January of 1952.

(h) later made the statement that they hope to have one complete antenna array erected for the first time for tests in about one month. (This conflicts with item (g) above).

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(i) They are having difficulty procuring the aluminum for the antennas.

3. The Agency's requirements were outlined as follows:

- (a) Modification of DAQ's similar to the Navy Contract.
(b) Produce three complete systems as mentioned in (a) except use a single DAQ for each pair of antenna arrays and provide circuitry for switching to either the High Frequency Array or the Low Frequency Array.

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SECURITY INFORMATION

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(c) The equipment must be transportable.

4. agreed to submit a technical proposal by mail in the next few days which will define their approach to the problem and state when delivery can be made and the total cost of the modification. However, this was his verbal response at the time:

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(a) The Agency will be required to procure the aluminum for the antennas. A detailed list of material required is addended to this memo.

(b) The Agency will be required to supply approximately 8000 feet of RG/24-U double coaxial cable.

(c) From the date of delivery of these above materials and the three DAQ's, the first complete system could be delivered in 60 days, the second and third systems could be delivered at the end of 90 days.

(d) It will probably be necessary for the Agency to deliver three extra goniometers of the type used in the DAQ.

(e) An undetermined number of co-axial switches will be necessary.

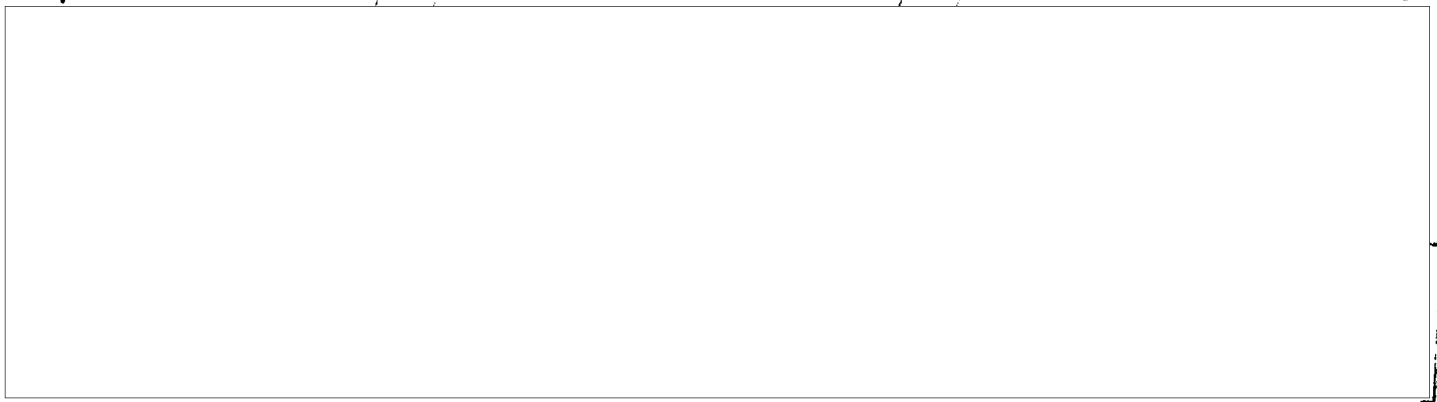
5. It is the writer's opinion that their estimate on delivery may be somewhat optimistic. The opinion is based on their apparent progress on the Navy Contract and a survey of their Engineering facilities.

6. If the aluminum for the antennas is not available, stainless steel might be substituted with a resulting increase in weight and cost.

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Materials Necessary for Three High and Three Low
Adcock Antenna Arrays

Item 1 - 3 1/2" O.D. x 1/4" wall - 13'-2" (30 lengths required) Total - 265 feet

Item 2 - 2 1/2" O.D. x .083" wall - 11' (15 lengths required) Total - 165 feet

Item 3 - 2 7/8" O.D. x .218" wall - 7'-10" (90 lengths required) Total - 638 feet

All aluminum is 61ST6 alloy.

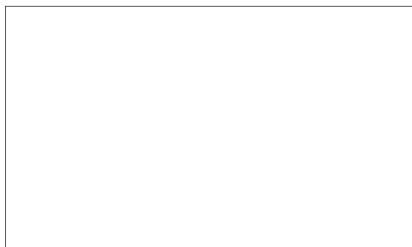
63 ST6 may be substituted for leg material.

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CUSTOMER'S INDEX

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SEE COMPANY BROCHURE FOR FACILITIES AND QUALIFICATIONS

ACCELEROMETERS

ADAPTERS:

- Panoramic
- Phase
- Short Wave for Radio
- Test

AF FILTERS

AIRBORNE COMMUNICATIONS EQUIPMENT

ALARM SYSTEMS:

- Automatic Radio

AMPLIFIERS

- AF
- Audio Frequency
- Audio Input Systems
- Channel
- d-c
- Decade
- Differentiating
- f-m & a-m antenna
- Facsimile
- Indicator
- Intermediate Frequency
- Interphone
- Keying
- Magnetic
- Medical Instruments (electronic)
- Microwave
- Peak Limiting
- Photocell

- Power
- Radio Frequency
- Recording Rack Mounting
- Servo
- Strain Guage
- Television
- Ultrasonic
- Vibration Pickup
- Video
- Bridge Video
- Wideband

ANALYZERS:

- Audio Amplifier
- Capacitor
- Circuit
- Frequency
- Harmonic
- Intermodulation
- Magnetic
- Noise
- Pulse
- Servo
- Signal
- Sound
- Spectrum
- Ultrasonic
- Video
- Wave

ANTENNA:

- All Wave Receiving
- Antenna Feed Systems
- Antenna Pedestals (Gear Driven Radar)

ANTENNA (cont'd.)

- Directional Antenna Coupling and Phasing Units
- Dummy Loads
- Fixed Station Antenna Systems
- Impedance Measuring Equipment
- Loop
- Multicouplers
- Orientation Indicator
- Radio Fixed
- Reels
- Rotators
- Tuning Units

ATTENUATORS:

- Audio (Low Frequency)
- Microwave Coaxial Fixed
- Microwave Step
- Microwave, Fixed and Variable

AUDIOMETERS

BANDPASS FILTERS

CALIBRATORS:

- Range
- uhf

CAMERAS:

- Cathode Ray Oscillograph
- Pulse Recording

CHART RECORDER STRIP

COMMUNICATION SYSTEMS:

- Aircraft
- Airport Traffic Control
- Carrier Current
- Facsimile
- Induction
- Marine Radio-Telephone
- Microwave
- Portable Installation
- Railroad
- Vehicular

COMMUTATORS:

- Telemetering

COMPUTERS (Other than radar)

- Electronic

CONSOLES - Control

CONTROL UNIT - Radio Receivers

CONTROLS:

- Alarm System
- Auto Radio Remote
- Automatic Tuning
- Counting and Sorting
- Dimension
- Frequency
- Photoelectric
- Radio Remote

CONVERTERS:

- f-m
- Frequency
- Frequency shift
- High Frequency
- Low Frequency

COUNTERS:

- Decade Electronic
- Electrical
- Radiation: *Electron & Nuclear*

COUNTERMEASURES:

- Receivers (RADCM)
- Transmitters (RADCM)
- Pulse Analyzers
- Pan Adapters
- Direction Finders

COUPLERS: Directional

COUPLING & COUPLING ASSEMBLY

COUPLING UNITS: Antenna

DATA TRANSMISSION-REMOTE CONTROL & TELEMETERING EQUIPMENT

DETECTORS:

- Amplifier
- Crystal
- Fire
- Flaw & Defect
- Null
- r-f Null
- Radiation
- Vibration

DEVICES:

- Coaxial Matching
- Electronic
- Integrating
- Receiving
- Recording
- Telemetering

DIATHERMY

DIELECTRIC HEATING

DIRECTION FINDERS

DIRECTION FINDERS (Countermeasures)

DIRECTION FINDERS (Radio)

EQUIPMENT:

Antenna
Communication
Electronic
Electronic Survey
High Frequency
Measuring
Measuring Impedance
Monitoring
Receiving
Test

FILTERS:

AF & Bandpass
Antenna
Band Elimination
Crystal (with circuitry as units)
Electric Wave Section
Equalizer
Lighting (for radio towers)
Microwave
Radio Interference
RF
Television
uhf and vhf

GENERATORS:

Electronic Variable Frequency
Electronic Wave
Harmonic Frequency
Induction & Dielectric Heating
Pulse
Signal a-f
Signal r-f
Signal sweeping
Signal uhf
Square Wave
Ultrasonic

GROUND RADAR EQUIPMENT

GROUND RADIO EQUIPMENT

HEATING:

Dielectric
Electronic
Induction

HOMING EQUIPMENT (Radio)

INDICATORS:

Antenna Orientation

Loran Receiver
Materials Thickness
Ocean Depth
Panoramic
Power Level
Standing Wave (Slott line)
Telemetry

INDUCTION HEATING EQUIPMENT

INSTRUMENTS:

Graphic Recording
Industrial Electronic System Instruments
Nuclear
Radio Service

LINES:

Delay
Slotted

LOAD-DUMMY

LOCATORS:

Radio Interference

LORAN NAVIGATIONAL DEVICES

MACHINES:

Electronic Computing
Instrument Shock Testing

MAGNETIC AMPLIFIERS

MARKER BEACON RECEIVERS (Radio Navigational Aid)

MATCHING UNITS IMPEDANCE

MEASURING EQUIPMENT - Sound

MEGAPHONES - Electronic

METEOROLOGICAL SETS (Radiosonde)

METERS:

Crystal Impedance
Decibel Indicator (Power Level)
f-m Deviation
Field Intensity
Frequency
Frequency Indicator
Impedance and Phase Angle Audio
Modulation
Multi-Meters
Noise
'Q' Meters
Standing Wave Ratio

MICROWAVE TEST EQUIPMENT

MOBILE ELECTRONIC TEST EQUIPMENT

MODELS:

Electronic

Electro-Mechanical
Mechanical Working

RADIO:

- (1) Navigational Aide
 - (a) Marker Beacon Receivers
 - (b) Direction Finders
 - (c) Homing Equipment
 - (d) Altimeters
- (2) Receivers
 - LF, HF, MHF, VHF, UHF

MONITORS:

Frequency
Modulation
(FS) Transmitters

MOUNTS:

Antenna

MULTI-COUPPLERS - Antenna

NAVIGATION SYSTEMS: (Evaluation, Analysis)

Long Range
Short Range

OSCILLATORS:

Audio Frequency
Crystal
Crystal Control
Crystals Test
Grid Dip-High Frequency
Low Frequency
Microwave Power
Radio Frequency
Ultrasonic

OVEN, CRYSTAL UNIT, QUARTZ

POWER SUPPLIES:

High Voltage
Regulated

PRE-AMPLIFIERS FOR COMMUNICATION RECEIVERS

PRECISION FREQUENCY CONTROL EQUIPMENT

PRECISION POSITIONING AND LOCATING EQUIPM'T.

PRE-SELECTORS

RADAR NAVIGATIONAL DEVICES

RADAR SIMULATORS & TRAINERS

RADAR SUB-ASSEMBLIES:

Transmitters
Transponder (Meteorological)
Transportable Plotting System

RADIO FREQUENCY AMPLIFIERS

RADIO FREQUENCY OSCILLATORS (for Transmitters)

RADIO INTERFERENCE:

Design of Interference Reduction Systems
Measurements Facilities

RADIO SET - Relay Link

RADIO SET - " " (Transportable)

RADIOSONDES

RECEIVERS:

Aircraft
a-m Fixed Frequency
a-m/f-m Communication and Recorder
Automatic Radio Alarm
Fixed Frequency
fm

RECEIVER-INDICATOR:

Loran
Marine
Microwave
Panoramic
Portable and Mobile
Radio Direction Finder
Railroad
Search
uhf
vhf

RECORDERS:

Camera
Electronic Self-Balancing Recorders and Indicators
Facsimile
Frequency
Magnetic Tape
Recorder-Amplifier
Telemetry
Temperature
Wire

REGULATORS - VOLTAGE

REMOTE CONTROL UNITS AND ADAPTER (for radio transmitters)

REMOTE CONTROL UNITS (Transportable and Transceivers)

SERVO UNITS:

Control Amplifiers
Control Drive Units

SONOBUOYS

SOUND MEASURING EQUIPMENT

SOUND SYSTEMS, COMPLETE

SUPPRESSORS, ELECTRICAL NOISE

SWITCHES, ELECTRICAL

SYSTEM - ANTENNA

SYSTEM - COMMUNICATING

TELEGRAPH ELECTRONIC EQUIPMENT

TELEMETERING SYSTEMS:

- Electronic
- Indicators
- Pickups
- Receivers
- Recorders
- Transmitters

TEST EQUIPMENT - ELECTRONIC

TESTERS:

- Continuity
- Crystal Testing
- Distortion

TIMER ELECTRIC FREQUENCY DIVIDERS

TRANSCEIVERS:

- Aviation
- Back-Pack
- Hand-Pack
- Lifeboat
- Shipboard and Small Shore
- uhf-vhf

TRANSDUCERS

- Sound
- Ultrasonic
- vhf

TRANSFORMERS:

- Impedance Matching (RF)

TRANSMITTERS:

- Broadcast
- Citizens Radio
- Countermeasures
- Direction Finding
- f-m
- Facsimile
- Fixed Frequency
- Fixed Station Communication

High Frequency

Low Frequency

Portable and Mobile Radio Telephone

Radio Range

Railroad

Shipboard and Small Shore

Telemetry

uhf - vhf

TRANSMITTING/RECEIVING EQUIPMENT
(Portable, Emergency and Rescue)

TRANSMITTING/RECEIVING EQUIPMENT
(Portable and Transportable)

TRAPS - WAVE

TUNERS - RF

- fm
- fm/am
- Television rf

UNIT ANTENNA COUPLING

UNIT ANTENNA TUNING

UNIT ANTENNA LOADING

WATTMETERS: RF (uhf, shf, ehf)