Activity for the NRL Program in 1969 (late) during plans & reorganize Mayo's Group.

~~TOP SECRET~~

HARDWARE DEVELOPMENT

I. BTU's

   A. Basic design

   B. Test and checkout

   C. Production

II. Third Generation Cherry Picker

   A. Analysis

   B. Design

   C. Breadboard

   D. Test

   E. Modify

   F. Field test

   G. Make final version

III. Antenna Controller

   A. Bids

   B. Evaluate and order

   C. Checkout

   D. Install and test in field

Handle via ~~Talent Keyhole~~ Control System Only

~~TOP SECRET~~

~~TOP SECRET~~

IV. Control Console

A. Analyse

B. Design and construct breadboard

C. Checkout domestically

D. Install and setup operationally

V. Channel A Receiver

A. Develop

B. Checkout/test

C. Produce

D. Ship and install operationally

Handle via ~~Talent-Keyhole~~
Control System Only

~~TOP SECRET~~

~~TOP SECRET~~

PROBLEMS

I. 7106D

A. Continue study of failure mode.

B. Develop, test and install narrow band receivers.

C. Evaluate new preamp.

II. RETEP

A. Evaluate best mode to try.

B. Test with transmitter and antenna.

C. Analyse results.

III. Administrative

A. Budget.

B. Security (inventory and fining and message control).

C. Space problem.

IV. Receiver RS-1A power supply failures

A. Analyse failure cause.

B. Design and breadboard fix.

C. Check and test fix.

D. Cycle receivers back for retro fitting.

V. High Accuracy Orbit Maker

A. Obtain gravity data (need converters).

B. Obtain station location results and statistically analyse.

TOP SECRET

Handle via ~~Talent-Keyhole~~ Control System Only

~~TOP SECRET~~

C. Develop new 1970 orbit model.

D. Test.

E. Deploy.

VI. 176

A. Test all experiments.

B. Analyse data.

C. Write up conclusions.

VII. Rework Antenna for RFI Reduction

A. Phasing.

B. Polarization sensitivity.

C. Consider spacing change for better side lobes.

D. Consider low horizon screening for specific high interference sources.

VIII. SCU Rework to Provide Test all Widths, LE/TE.

A. Design/breadboard.

B. Produce and ship.

~~TOP SECRET~~

Handle via ~~Talent-Keyhole~~
Control System Only

~~TOP SECRET~~

PROCUREMENTS

I. New Computers

A. Order.

B. Monitor contract, construction.

C. Order spare parts.

D. Acceptance (must be run 30 continuous days, takes 2-3 months).

E. Settle with SEL and adjust differences (last time it was a four month battle).

F. Receive spare parts, count, check, ship.

G. Pack and ship systems.

II. Analog Tape Recorders (14 track, old track wearing out)

A. Test and evaluate new recorder, get NSA concurrance.

B. Run operational tests.

C. Order new recorders.

D. Receive, checkout, align.

E. Ship to field sites.

F. Install at field sites.

III. Video Disk System

A. Procure initial disk.

B. Test and evaluate.

C. Procure follow on disks.

D. Checkout, align, accept.

Handle via ~~Talent Keyhole~~ Control System Only

~~TOP SECRET~~

~~TOP SECRET~~

E. Ship to field sites.

F. Install.

IV. New Time Code Generators

A. Checkout, align, accept.

B. Run long term burn in tests.

C. Pack, ship.

D. Install.

E. Effect change over coordination.

V. PRF Synthesizer

A. Write specifications.

B. Evaluate bids, and buy.

C. Receive, checkout, accept.

D. Test.

E. Ship to field stations.

F. Install.

VI. Short Term [redacted] Antenna Controller (to all collection to continue)

A. Order paper tape reader, interface hardware.

B. Receive, checkout, accept.

C. Interface to antennas.

D. Write software to generate paper tapes.

E. Checkout operationally.

F. Pack, ship, install.

G. Write documentation.

Handle via ~~Talent Keyhole~~ Control System Only

~~TOP SECRET~~

~~TOP SECRET~~

VII. Automatic Control Console Tracker (to remove 15% unprocessed tapes

A. Review entire system.

B. Design overall system.

C. Order desk top computer, accessories.

D. Make display panels, racks, etc.

E. Interface equipment, test, checkout.

F. Produce quantity.

G. Align and checkout.

H. Write documentation on wiring, use, maintenance.

Handle via ~~Talent Keyhole~~
Control System Only

~~TOP SECRET~~

SPACECRAFT AREAS

I. 7105

A. NSA reports cross talk to new band [redacted] plus others. We don't believe it is so, but it is in print. If it is not then there is a new hot ABM signal [redacted]

B. 152 has developed "squitter". This needs to be looked at to determine the cause and to see if this is the cause of some unpredicted changes in spacing.

C. All the payloads drop some pulses. This is the same condition that the 130's and 140's failed in. It is possibly due to the loss video amplifier capacitors which provide the low frequency response.

D. There have been continuous reports of tasking problems. These need full investigation for 7107 design.

E. Payload usage is very low. The birds are only collected over digital stations. The general search capability over analog stations is not used. Even over digital stations the usage is so low that an entire transmitter is not tasked.

II. 7106

A. Mission description - Needs completion and should include a general statement on overall data observed and processing improvements.

B. Tasking

1. Density information which was not available prior to launch should now be used for making new tasking groups based on realistic band combinations and on the USIB directives for weapons systems.

2. There are a large number of wrong commands, some endangering the payloads. These should be studied and a commanding procedure based on [redacted] using delayed modes should be implemented. This will have several advantages:

a. The tasking can be done in an unhurried manner, checked and redone;

Handle via ~~Talent-Keyhole~~ Control System Only

b. The important ABM passes for [redacted] will be on when the payloads come over the horizon.

C. SLX- [redacted] data analysis should be done to provide the sensitivity information for 7107, also, unless NSA gets going, the basic radar families should be analysed for [redacted]

D. Polarization options - This data is most important for the antenna design on the 7107 payloads with the new structure and is needed early so that Vince can have a clear picture of the polarization patterns.

E. [redacted]

F. Density variations - Large variations were observed between four payloads tasked with the same R.F. bands. These should be looked at with snesitivity, R.F. filter skirts, antenna patterns in mind.

III. 7107

A. Re-do proposal.

B. Use density information to establish new R.F. band bandpass limits.

C. Use SLX information to extablish the porper sensitivity of each band. (For example, we are not getting [redacted] but it is a high powered [redacted] which we got in quantity on 04.

D. Look in detail at the change over to a new frequency for the following reasons:

1. A NRO message requesting such an evaluation;

2. The large number of interfering signals which have come up on our frequencies in the last year which if the rate continues will wipe out all of our frequencies in 2-3 more years;

3. Our largest source of uncorrectable inaccuracy is the ionosphere and due to these ionospheric errors we cannot do good [redacted] locations;

4. [redacted]

Handle via ~~Talent Keyhole~~ Control System Only

E. [redacted] in line with Dr. Naka's interests.

F. Write full requirements for a new command system which will:

1. Allow all possible commanding options of selectable sensitivity, [redacted]-SLX, frequency measuring, all RF bands, timing control to allow domestic tasking;

2. Reduce the commanding errors by using a more selective commanding technique;

3. Allow adding options such as high sensitivity SLX, [redacted] without resetting primary band.

G. Develop readout system for the TM (Housekeeping) data to privide the field stations with a full readout capability instead of being primarily a payload construction device. The on board stored ephemeris should be considered to be read out.

H. Review in detail [redacted] and whether an improved version should be included in 07.

I. Review in detail a stable T.M. oscillator of the timation type.

J. Do "first cut" systems engineering to establish rough system definition, what accuracy will we need in spacecraft by 1971.

K. Layout attack on frequency measuring systems. What bands, accuracy, etc.

L. Define thresholders stability, reliability, etc.

M. Obtain initial ideals on R&D package.

N. Do a rough model evaluation from the various standpoints to obtain information for comparing the multiface vs. the washing machine structures.

O. Start component ordering, testing, antenna measurements, etc.

Handle via ~~Talent Keyhole~~
Control System Only

~~TOP SECRET~~

OPERATIONS

I. 6th Fleet Exercise

A. Concept Evaluation

B. Detailed operational planning

C. Run operations

D. Run analysis

E. Attend weekly meetings

F. Write reports

II. NSA Software Evaluation

A. Study basic problem

B. Obtain background data

C. Attend weekly meetings

D. Write initial report

E. Develop plan for detailed approach

F. Implement detailed approach

III. ADM Harlfinger Staff

A. Meet with Hoffman Bldg. people

B. Attend interagency NIC meetings

C. Write reports

Handle via ~~Talent Keyhole~~
Control System Only

~~TOP SECRET~~

~~TOP SECRET~~

IV. Monitor of Field Station Activities

A. Loaction results, accuracy checks, quantity checks

B. Tasking changes and problems

C. Payload status (reindeer reports, ATCON activity summary)

D. General signal activity for feedback and future design

E. Monitor Ephemerisis, thrusting changes, spacecraft stability

V. General

A. TOG's

B. Program reviews

C. Visitors

D. Briefings

E. Preparing and planning data and briefing aids.

Handle via ~~Talent Keyhole~~
Control System Only

~~TOP SECRET~~

TOP SECRET

MAJOR DEPLOYMENTS

I. [redacted] (March installation)

A. Set up racks, make new cables, collect and checkout equipment.

B. Put the system together at [redacted] cut cables to proper length, check operationally, disassemble, ship.

C. Take down existing racks at [redacted] install new racks and equipment, align and checkout.

D. Ship removed gear back.

E. Refurbish or survey old gear as required.

F. Write station documentation and wiring report.

II. [redacted] - Dec. computer installation (with summer antenna work)

A. Start layouts, etc.

B. Order power distribution system, raised floor storage racks, new antenna cables, anchor bolts, etc.

C. Layout new antenna runs, etc.

D. Schedule summer excavation of antenna cable runs, etc.

E. Assemble logistical support system.

F. Checkout computer and support gear, ship.

G. Unpack, install, checkout.

H. Document layout wiring.

Handle via Talent-Keyhole Control System Only

TOP SECRET

~~TOP SECRET~~

III. [redacted] (April changeover)

A. Buy racks, gear, etc.

B. Setup racks, make new cables, collect and checkout equipment.

C. Put system together at [redacted] cut cables, check operationally, disassemble, ship.

D. Take down existing racks and equipment, install new racks and equipment, align and checkout.

E. Ship removed gear back.

F. Refurbish or survey old gear as required.

G. Write documentation on layout and wiring.

IV. [redacted] (Nov. computer installation)

A. Start layouts, etc.

B. Order power distribution system, raised floor, storage racks, new antenna cables, anchor bolts, etc.

C. Layout new antenna runs, pads, etc.

D. Assemble logistical support system.

E. Receive computer, checkout, accept, ship.

F. Unpack, install, checkout.

G. Write station documentation on layout and wiring.

V. [redacted]

A. Build auto controller, automatic receiver control, new layout, racks.

B. Assemble, checkout, run operationally, ship.

C. Unpack, install, checkout.

D. Write station documentation on layout and wiring.

Handle via Talent-Keyhole Control System Only

~~TOP SECRET~~

TOP SECRET

VI. [redacted]

A. Ship gear to site.

B. Site survey

1. Power

2. Spaces

3. R.F.I.

4. Field of view

C. Write summary report.

VII. [redacted]

A. Setup red complex, assemble gear, cables.

B. Wire equipment, cut cables, install equipment.

C. Check out operationally.

D. Setup new building.

E. Order power distribution system, furniture, fixtures, etc.

F. Order raised floor for the computer, air conditioner.

G. Make layout, cable runs for computer.

TOP SECRET

Handle via Talent-Keyhole Control System Only