

~~TOP SECRET~~
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Project GRAB is a U.S. Navy electronic satellite experiment. This project, which is designed to fulfill an urgent electronic requirement, was developed by the Navy Research Laboratory and is sponsored by the U.S. Navy.

1. OBJECT

The object of this project is to determine the average galactic radiation background at 1200 angstroms. By extrapolating the results, a prediction for noise levels at any frequency can be determined.

2. IDENTIFICATION

To identify this project, all written correspondence or communications will be prefaced with the words "Project GRAB" (Galactic RADIATION Background).

3. SECURITY CLASSIFICATION

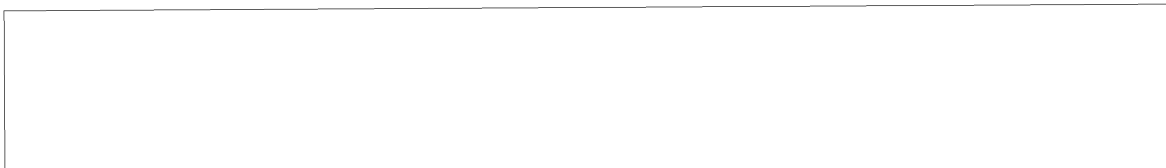
The word "GRAB" is unclassified but its meaning is Top Secret.

4. CONCEPT OF OPERATION

A ball, approximately 20" in diameter, and containing a series of special radiation detectors, will be put into orbit with the second shot of "Project TRANSIT". The launch will take place from the Pacific Missile Range, Vandenberg Air Force Base, California, on a desired 70° orbit. The launch will be at 200° and will pass in the vicinity of the southern tip of New Zealand.

The ball will contain two transmitters; the first to be used for tracking the ball and the second for the purpose of transmitting the desired radiation data. (The specific frequencies of these transmitters will be provided at a later date.)

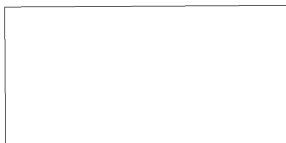
To provide as wide a coverage as possible around the world, the following U.S. stations will intercept and record the transmitted radiation data:



To assist the stations in this effort, the Naval Security Group Headquarters Activity will provide the following by message:

1. Ephemeris of the ball - normally, this will be at least one week in advance.

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2. Date and time of intercept - only at specific dates and times will a particular station be directed to record the radiation signal. Normally, this will never occur more than twice in a single day, nor for a period of more than twenty (20) minutes each occurrence.

Each station will maintain and forward to the Headquarters, Naval Security Group, a detailed log and the magnetic tapes of the recorded signal.

The analysis and data reduction will be performed by a Task Force type of operation with participation by NRL and NSA(NTPC).

Studies will be constantly in progress and day-to-day analysis will be made by a technical group to determine the exact times the radiation signal should be recorded, when the ball is on the correct orbit, and which station is best able to hear the signal.

5. TRAINING

The Naval Research Laboratory will train all personnel required to operate and maintain the equipment in the huts. A civilian engineer will be located at each station during the first week of operation, during which time instruction will be given on the details of types of logs to be maintained and methods of recording, identifying and shipping the tapes.

6. TECHNICAL

The collection equipment will be housed in a Craig Helicop-Hut. Eight (8) huts have been ordered (Model #150). This hut weighs 950 lbs empty, and is expected to have a total weight, including antenna and equipment, of about one (1) ton. Outside dimensions are: Length - 102 5/8"; width - 82 5/8" and height - 80 11/16". The inside will house one complete position consisting of two (2) K-390 specially modified receivers, a magnecord recorder (7½ IPS), steering apparatus for the antennas, and will be equipped with three (3) fans for hot air removal. (No air conditioners.)

Power requirements are (220- 3-wire, single phase, at 50 or 60 cycle supply) between 5 and 6 KW. Power must be available for the timing system 24-hour/day.

The huts should be located on the ground; be as inconspicuous as possible, have free scan of horizon and be free from influence of other antennas.

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7. TIME TABLE

In September 1959, Mr. LORENZEN and one civilian NRL engineer will visit each site selected. He will brief proper people, set up general concept of operations, and provide details for training of operation/maintenance personnel.

In early December 1959, the huts will be forwarded to the stations for installation and for training of operating personnel. Certain NRL personnel will conduct a training program.

In early 1960, the ball will be placed in orbit and operations commence. It is estimated that operations will continue for a period of one year.

8. ORGANIZATIONS DIRECTLY INVOLVED AND RESPONSIBILITIES:

A. NAVAL RESEARCH LABORATORY:

- (1) Responsible for overall experiments.
- (2) Will provide all equipment required.
- (3) Will provide funds for transportation of equipment and technical expendables required, ex., spare parts and tapes.
- (4) Will provide for training of all personnel.
- (5) Will arrange for operational orbital data to be provided.
- (6) Will provide for instrumentation of the ball.
- (7) Will participate in Task Force group for data processing.

B. NAVAL SECURITY GROUP (Op-94G):

- (1) Will provide operating personnel at Navy stations.
- (2) Will provide site and facilities at certain naval establishments for the huts. This to include physical security and utilities.
- (3) Will provide for expendables at Navy stations, i.e., paper, pencils, etc., and any transportation of naval personnel required.
- (4) Will provide or arrange to provide for all communications facilities required.

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(5) Will provide headquarters organization for directing all operations. This to be accomplished with guidance and consultation of NRL and NSA (National Technical Processing Center) technical personnel when desirable.

(6) Will provide directive services to all stations involved.

(7) Will receive recorded tapes from stations and provide technical feedback.

C. [REDACTED] ARMY SECURITY AGENCY (ASA),
AND AIR FORCE SECURITY SERVICE (AFSS):

(1) Will provide for operating personnel at own station.

(2) Will provide site and facilities at own station for hut. This to include physical security and utilities.

(3) Will provide for expendables at own station, i.e., paper, pencils, etc., and funds for any transportation of own personnel that may be required for the project.

(4) Will provide name of one qualified individual in headquarters who may act with authority and provide required liaison with NAVSECGRU and NRL.

D. NATIONAL SECURITY AGENCY (NSA) (NATIONAL TECHNICAL PROCESSING CENTER) (NTPC):

(1) Will receive tapes from NAVSECGRU, breakout technical data and forward information to NRL.

(2) Will participate in Task Force group for final data processing.

E. BUREAU OF ORDNANCE (BUORD):

Will provide vehicle by which ball will be raised into space.

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