

~~SECRET~~  
TEST PROPOSAL

12 January 1951

UNCLASSIFIED

CL2

RECOVERY OF VISION AFTER SIGHTING FIRE BALL

Ref: "Experiments by H-1 Personnel at Greenhouse", SD-4289

Headquarters

404455

SD- 5113

R

BEST COPY AVAILABLE

I. Object of the Experiment

- A. To obtain a check on an experiment performed to estimate the time required to recover normal vision after sighting the fire ball.
- B. The Health Division was requested by the Operations Analysis Section of Headquarters, Strategic Air Command, to provide information on the above subject, applicable to the pilot, bombardier, etc. of aircraft participating in a hypothetical multiple bomb night attack.

II. Method

- A. One or more observers (using one eye each) will first be dark adapted to the extent of the normal illumination in a pilot's compartment. They will each observe the fire ball until the eye is closed by natural reflex. After the strong light of the fire ball has died out they will be timed until they are able to see typical aircraft panel instruments.
- B. One observation point probably on Parry will be sufficient. At this point will be located a small panel with three typical aircraft instruments and such shelter from external illumination as may be necessary for dark adaptation.
- C. No dependence on yield is expected. Time of tests, at shot time.

REPOSITORY: OS Alamos KLL  
 COLLECTION: CL-2  
 SD No: 11331-1  
 FOLDER: Greenhouse, Eniwetok Personnel  
 12-2-58  
 12-1-58  
 [Handwritten signatures and initials]

CAUTION

UNCLASSIFIED

LAB-J- 1866

This document contains information affecting the national defense of the United States within the meaning of the espionage laws, the transmission or the disclosure of its contents in any manner to an unauthorized person is prohibited by law and may result in severe criminal penalties under applicable Federal laws.

This document consists of 4 page  
 No. 6 of 7 copies. Series

~~SECRET~~

12 January 1951

UNCLASSIFIED

### III. Details of Progress to Date in Experimental and Theoretical Work

On the reasonable assumption that the effect is primarily dependent on the time integral of the intrinsic brightness of the retinal image, the experimental and theoretical work have already been performed using the sun as a test object. The results show that the recovery time is independent of this integral throughout a wide range of values bracketing that expected from a nuclear detonation. It is believed, however, that the Armed Forces would be better satisfied if this work were supported by a direct test involving a nuclear detonation.

### IV. Personnel Requirements

#### A. Required at Test Site

1. Scientific Personnel -- Simon Ehlaer and one or two volunteers.  
These to be provided by TU 3.1.5.
2. Technicians -- none.
3. Laborers and Other Unskilled Help -- none.

#### B. Project Work in Continental United States

See III above.

### V. Instrumentation and Equipment Requirements

A small mock aircraft panel and associated lamps and power converter are ready for shipment at LASL. It is believed that suitable shelter can be found already constructed or that such can be rigged up with minimal effort in the Forward Area.

### VI. Present Status of the Equipment and Instruments Required to Perform the Experiment

See V.

~~SECRET~~ UNCLASSIFIED

~~SECRET~~  
UNCLASSIFIED

12 January 1951

VII. Logistics

A. Sea Lift.

Approximately three cubic feet required. Should reach Forward Area not later than 10 days before second shot. Return shipment will be ready shortly after third shot.

B. Air Lift.

None

C. & D. Sea Lift and Air Lift (Personnel).

None other than appears under TU 3.1.5 requirements.

E. No requirement.

VIII. Collaboration

Health Division and TU 3.1.5, on behalf of Strategic Air Command.

IX. Responsibility

A. Simon Ehlaer, through CTU 3.1.5.

B. T. N. White, LASL, in capacity as Technical Deputy to CTU 3.1.5.

X. Funds (Above Normal Operating Costs)

Costs will be covered under normal operating costs of Health Division.

XI. Facilities

A. Power -- 110 V, 60 cycle, 100 watts (approximately).

B. Communications.

1. a. through f., in audible form.

2. No requirement.

C. No requirement other than indicated under V, plus electric power, time signals, and clear view of fire ball.

~~SECRET~~ UNCLASSIFIED

~~SECRET~~

12 January 1951

Test Proposal

Recovery of Vision

SD- 5113

UNCLASSIFIED

D. Forward Area Transportation.

None

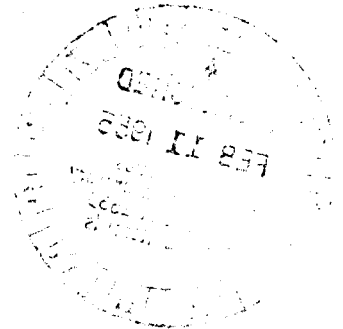
XII. Remarks by Project Officer

Initial proposal, SD-4289, approved by OTU 3.1.5 and OTG 3.1.

TW: jds

Distribution:

- cy 1A - A. C. Graves
- cy 2A - A. C. Graves
- cy 3A - A. C. Graves
- cy 4A - A. C. Graves
- cy 5A - Simon Shlaer
- cy 6A - T. L. Shipman ←
- cy 7A - T. N. White



~~SECRET~~

UNCLASSIFIED