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March 31, 1958

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ATOMIC ENERGY COMMISSION

SPECIAL SHOTS FOR HARDTACK

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NW: 972006 B  
By DM LRA Date 8/2/68

Note by the Secretary

The General Manager has requested that the attached report by the Director of Military Application be circulated for discussion by the Commission at the meeting scheduled for 11:00 a.m., Tuesday, April 1, 1958.

W. B. McCool

Secretary

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RC 326 AEC SECRETARIAT  
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DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW

1. REVIEW DATE: 8/27/01

2. DETERMINATION (CIRCLE NUMBER): 1

3. CLASSIFICATION: UNCLASSIFIED

4. AUTHORITY: 50 USC 2884

5. NAME: William L. ...

6. END REVISION DATE: 11/27/01

7. AUTHORITY: ...

8. NAME: ...

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Doc ORDER 5650.28 0  
NAME: Williamson  
DATE: 5/26/95

MI-0A8D NW: 972006 B  
On LRA Date 8/2/68

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This document consists of 24 pages,

Copy No. 1 of 10 Series "A".

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By authority of U.S. Atomic Energy Commission

Per *A. D. Starbuck* Date 3-3-58

Document No. LXI - 4866 - 1A

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ATOMIC ENERGY COMMISSION

SPECIAL SHOTS FOR HARDTACK

Report to the General Manager  
by the Director of Military Application

1. The two high altitude, high yield shots, now planned for HARDTACK are:

- a. TEAK at 250,000 ft., to be fired on or shortly after April 21, at a point to the northwest of Bikini Atoll and with four megatons of yield;
- b. ORANGE at 125,000 ft., to be fired approximately two weeks after TEAK, also to the northwest of Bikini and of four megaton yield.

2. In brief, the purpose of these two shots is as follows:



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3. I do not have the figures as to the number of persons and the costs involved in the high-altitude program. Such costs are almost impossible to segregate in that certain construction and instrumentation is used for several experiments and many personnel work also on more than one experiment. However, I estimate that cost must run between \$10 and \$20 million and I would estimate the maximum numbers of people directly involved in scientific effort and support to be in the range of 1,000 to 1,500. Measurements contemplated are as follows:

a. From pods shed from the Redstone missile rockets, to measure thermal, gamma, and neutron phenomena at various distances from the blast.

b. By rockets emplaced in space around the higher shot, to secure similar measurements.

c. From aircraft, to measure through photography and other instruments the rate of growth, and spectrum, of the fireball together with the intensity of the various phenomena at the aircraft altitude.

d. Through one rocket for the higher altitude shot to capture a debris sample for analysis to determine feasibility of getting yield in this manner. Also from one rocket on the higher altitude shot, to attempt to transport radio signals through, and around, the cloud.

e. From stations on the ground, to photograph the fireball and determine its spectrum and to determine thermal effects, etc., received on the ground near detonation point.

f. From close-in and distant electromagnetic and microbarograph stations, listening stations, and radio and radar transmission receiving stations to determine: detectability through these high altitude detonations, and interference of such detonations with radio and radar activity.

4. The Eniwetok Planning Board reviewed some months ago the thermal effects to be expected from the detonations and judged them to be reasonable. In the briefing of the Commission on February 28, 1958, Dr. Ogle indicated that the danger to eyes was expected to be in the neighborhood of 100 miles, and

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consequently well manageable. On March 13, however, immediately before leaving for the Pacific, he teletyped indicating that his recalculations indicated danger of eye damage to ranges as follows:

- a. On the higher shot, to 560 miles for a person at ground surface; and 900 miles for aircraft at 20,000 ft.
- b. On the lower shot, to a distance of 400 miles for a person on the surface.

The basis for Dr. Ogle's calculations are contained in a report dated March 14, 1958, and now in the hands of DMA. It has been reviewed by Drs. Graves, Bradbury, Dunning and Shelton, all of whom believe the order of magnitude is correct though the ranges are now estimated by all as somewhat less (by a factor of perhaps 25%) than in Ogle's initial calculations.

5. A series of teletypes have been exchanged between DMA and General Luedecke, attempting to establish a recommended course of action. The more important are attached as Appendices "A", "B" and "C." The answer to "C," as of the time of preparation of this memorandum, has not yet been received. It is expected prior to the Commission meeting on this subject at 11:00 a.m. on April 1.

6. In brief, these indicate:

- a. General Luedecke believes that he can establish, through use of Trust Territory officials and Task Force members, an organization which would have a fair chance of preventing eye damage to the natives. He could establish control over air flights to the same end. He could sweep the area to insure that no shipping was within the danger range at the time of the shot. He cannot, however, absolutely guarantee that these or other measures will prevent inadvertent eye damage to some individual or individuals.

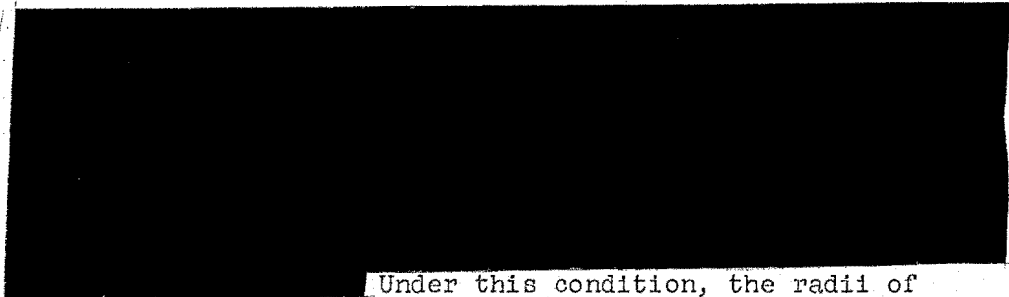
- b. Both TEAK and ORANGE could be fired in the daylight with the yields now planned. This would reduce the estimated range of hazard to 320 miles for personnel at the surface for TEAK and 180 miles for personnel at the

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surface for ORANGE. This would not eliminate the problem, nor provide a positive guarantee against any eye damage. A substantial amount of information would be lost but the experiments would still be extremely well worth while.



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Under this condition, the radii of hazard would not extend beyond Kwajalein, although safety measures would probably have to be taken that far out.

e. If, in truth, there must be a positive guarantee against eye damage we should look to other localities in spite of the cost and loss of time involved.

f. ORANGE could be fired first and in the daylight, in which case the radius of hazard extends approximately to Kwajalein. Protective measures would have to be taken there and on the closer islands. This would reduce the possibility of a successful firing of TEAK in that one of the Redstones would be expended. It would not provide a substantial improvement in our knowledge as to the hazard to be expected from TEAK.

g. Appendix "C" gives the result of our preliminary analysis as to alternate locations and asks for supplemental information from the Task Force Commander.

The further information available and a recommendation relative to the further courses of action will be presented to the Commission at its meeting at 11:00 a.m. on April 1.

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APPENDIX "A"

U. S. ATOMIC ENERGY COMMISSION

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DA CRYPTO PASSES DTG 260220Z

FM CJTF SEVEN ENIWETOK MI

TO DIR DIV MIL ALP USAEC WASHDC

INFO

COFS USAF WASHDC

AFSWP WASHDC

AFOAT

THIS MESSAGE IN 6 PARTS. LISTED ARE APPROACHES TO FIRING OF HIGH ALTITUDE SHOTS AND CONSIDERATIONS OF EACH:

IGN FIRING TEAK FIRST AS NOW SCHEDULED. CALCULATIONS INDICATE EYE BURN PROBABLE FOR A DISTANCE OF 435 STATUTE MILES (OUR 211500Z GAVE THIS AS 370.) BASIC CHANGE DUE TO LATER INFORMATION FROM SHIPMAN WHICH INDICATES INCREASE IN EYE SENSITIVITY AS PULSE DURATION SHORTENS. THE 370 MILE RADIUS WAS BASED ON 150 MILLISECOND PULSE. 435 MILES BASED 130 MILLISECOND PULSE EXPECTED. THIS LARGER AREA INCLUDES 14 INHABITED ATOLLS WITH A TOTAL NATIVE POPULATION OF SLIGHTLY OVER 6000 WITH 3 OTHER ATOLLS WITH AN ADDITIONAL 1200 PEOPLE ON THE BORDER OF THE AREA. 4 COURSES OF ACTION APPEAR WORTH CONSIDERING:

A. FIRING BETWEEN 0200 AND 0500 WITH NO ANNOUNCEMENT, WARNING, OR OTHER PROTECTIVE ACTION EXCEPT AT UTERIK, RONGELAP, WOTHO AND UJELANG. FAVORING THIS ACTION:

1. TRUST TERRITORY REPRESENTATIVES HERE ESTIMATE THAT A VERY SMALL NUMBER (PERHAPS 15 TO 25) OF INDIVIDUALS MIGHT BE IN A POSITION TO BE EXPOSED (NOT ASLEEP OR NOT UNDERCOVER) THIS WOULD INCLUDE NATIVE BOATS AND THE PEOPLE WHO MIGHT BE ON DECK.

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2. SINCE THE FIREBALL WILL BE RELATIVELY LOW ON THE HORIZON FOR DISTANCES OF 250 MILES AND BEYOND, AND SINCE INHABITED ATOLLS ARE COVERED WITH VEGETATION, CHANCES ARE GOOD THAT A LARGE PROPORTION OF THOSE FEW AWAKE WOULD BE SHIELDED BY TREES, ETC.

3. CLOUD COVER OVER AT LEAST PART OF THE AREA CAN BE ANTICIPATED. SUCH CONDITION WOULD FURTHER REDUCE THE PROBABILITY OF EXPOSURE OF THOSE NOT OTHERWISE PROTECTED.

4. OF THOSE INDIVIDUALS IN A POSITION TO BE EXPOSED, ONLY A SMALL PROPORTION WOULD POSSIBLY BE LOOKING IN THE DIRECTION OF THE BURST. UNFAVORABLE FACTORS ARE:

1. EVEN THOUGH PROBABILITY IS LOW, THERE IS CERTAINLY NO ASSURANCE THAT AT LEAST A FEW PERSONS WOULD NOT RECEIVE EYE BURN.

2. THIS COURSE OF ACTION WOULD NOT BE INTERPRETED AS AN EFFORT ON OUR PART TO PROVIDE POSITIVE PROTECTION.

3. IF EYE DAMAGE DID OCCUR, THE TIME WOULD HAVE PASSED WHEN TREATMENT COULD HAVE BEEN EFFECTIVE EVEN IN ALLEVIATING PAIN BEFORE WE COULD BECOME AWARE THAT DAMAGE HAD BEEN DONE. WE WOULD BE OPEN TO THE CHARGE THAT IN ADDITION TO NOT PROVIDING POSITIVE PROTECTION, WE HAD MADE NO PROVISIONS FOR TREATMENT OF CASUALTIES.

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B. TO EVACUATE NATIVE POPULATIONS ON SHIPS,  
KEEPING THEM ABOARD AND PROTECTED UNTIL THEY  
COULD BE SAFELY RETURNED TO THEIR ISLAND.

FAVORING THIS COURSE OF ACTION:

1. THIS WOULD CONSTITUTE A POSITIVE  
APPROACH TO THE EYE DAMAGE PROBLEM AND  
WOULD BE THE ONLY APPROACH OF WHICH WE ARE  
AWARE WHICH WOULD MAKE CERTAIN THAT THE  
NATIVE POPULATIONS WOULD RECEIVE NO EYE  
BURN. UNFAVORABLE CONSIDERATIONS ARE:

1. POPULATION IS SO SCATTERED AND  
INACCESSABLE THAT EVEN WITH EARLY  
CONTACT ACTUAL EVACUATION WOULD HAVE TO  
BEGIN AT LEAST 4 OR 5 DAYS PRIOR TO  
EXPECTED DETONATION. DELAY IN SHOOTING  
WOULD FURTHER EXTEND REQUIRED TIME ABOARD  
SHIP.

2. ENTIRE POPULATION AND OCCUPATIONAL  
PURSUITS WOULD BE DISRUPTED TO A  
SIGNIFICANT DEGREE. THEY WOULD HAVE TO  
BE COMPENSATED FOR THEIR LOSS, AND WOULD  
BE QUITE UPSET FROM HAVING TO LEAVE THEIR  
HOMES AND BELONGINGS AT THE MERCY OF THE  
WEATHER OR POSSIBLE INTRUDERS.

3. EVACUATION WOULD BE OF SUCH  
PROPORTION AND NUMBERS OF NATIVES OF  
SUCH MAGNITUDE THAT IT WOULD APPEAR  
THAT THE POLITICAL IMPLICATIONS WOULD BE  
SUCH THAT THE WISDOM OF THE PROCEDURE  
WOULD BE OPEN TO QUESTION.

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4. DECISION FOR SUCH ACTION WOULD HAVE TO BE TAKEN IMMEDIATELY AND WOULD NOT BE WITHIN THE RESOURCES OF THE TASK FORCE. SUBSTANTIAL ASSISTANCE WOULD BE REQUIRED.

C. TO EXERCISE CONTROL OF NATIVE POPULATIONS BY COLLECTING THEM IN GROUPS OF MANAGEABLE SIZE ON THEIR HOME ISLANDS AND ATOLLS AND PLACING THEM UNDER THE DIRECT SUPERVISION OF TASK FORCE AND/OR TRUST TERRITORY PERSONNEL. THIS APPROACH WOULD INVOLVE AN EARLY VISIT TO EACH SEPARATE INHABITED ISLAND AND PRACTICALLY EVERY ISLAND OF INHABITED ATOLLS BY REPRESENTATIVES OF THE TRUST TERRITORY AND THE TASK FORCE. THIS WOULD PERMIT THE TRUST TERRITORY REPRESENTATIVES TO EXPLAIN THE SITUATION TO THE INHABITANTS AND TO MAKE ARRANGEMENTS FOR THE PEOPLE TO BEGIN THEIR CONCENTRATIONS AT AN APPROPRIATE TIME IN THE FUTURE. A FEW DAYS PRIOR TO SHOT TIME, SUFFICIENT TASK FORCE AND/OR TRUST TERRITORY PERSONNEL WOULD BE PLACED AT APPROPRIATE LOCATIONS AND PROVIDED WITH COMMUNICATIONS TO ENSURE THAT THE NATIVES WERE CONGREGATED, AND, AT SHOT TIME, THAT THEIR EYES WERE SHIELDED. ALL THESE ACTIONS WOULD BE ACCOMPLISHED WORKING IN CLOSE COOPERATION WITH NATIVE CHIEFS WHOSE SUPPORT AND UNDERSTANDING WOULD BE ESSENTIAL. CONSIDERATIONS FAVORING THIS COURSE OF ACTION ARE:

1. IT IS ALSO A POSITIVE ACTION FROM A MORAL AND POLITICAL, AS WELL AS A PHYSICAL STANDPOINT, WHICH COULD, IF THE NATIVES COOPERATE, PROVIDE FULL PROTECTION.

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2. IT WOULD CAUSE MINIMUM DISRUPTION OF NATIVE ACTIVITIES AND WOULD REQUIRE THAT SHIELDING MEASURES BE TAKEN ONLY AT SHOT TIME, EXCEPT IN INSTANCES OF LATE DELAYS.

3. WE BELIEVE TIME IS STILL AVAILABLE TO EFFECT THIS COURSE OF ACTION WITHOUT SUBSTANTIAL DELAY TO THE SHOT SCHEDULE.

UNFAVORABLE CONSIDERATIONS ARE:

1. IT IS JOB OF CONSIDERABLE MAGNITUDE. OUR PLANS FOR THIS APPROACH HAVE NOT BEEN DEVELOPED TO THE EXTENT THAT WE CAN BE CERTAIN THAT IT IS WITHIN THE TASK FORCE CAPABILITY. IF OUTSIDE ASSISTANCE IS REQUIRED, IT SHOULD NOT BE GREAT.

2. IT WOULD INVOLVE ACTUAL STATIONING OF US PERSONNEL WITH THE VARIOUS NATIVE GROUPS. THIS MIGHT CAUSE SOME RESENTMENT, CAUSE SOME DEGREE OF INEFFECTIVENESS WITH CONSEQUENT INCREASED RISK. (SEE PARA. D BELOW).

3. EACH PARTY GOING ASHORE ON THE ATOLL WOULD HAVE TO BE PROVIDED WITH SOME MEANS OF COMMUNICATION, SHELTER AND SUBSISTENCE.

4. EVEN THOUGH DISRUPTION OF NATIVE ACTIVITIES WOULD BE MINIMAL, SOME COMPENSATION WOULD UNDOUBTEDLY BE NECESSARY.

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D. SENDING REPRESENTATIVES OF THE TRUST TERRITORY TO THE SEPARATE GROUPS OF POPULATION ON THE VARIOUS ISLANDS AND ATOLLS, EXPLAINING THE PROBLEM TO THEM, INFORMING THEM OF A TIME PERIOD WHEN EXPOSURE TO EYE BURN WOULD BE POSSIBLE, INFORMING THEM OF THE MEASURES NECESSARY FOR PROTECTION, AND CHARGING THE NATIVE CHIEFS WITH ASSURING THAT THESE MEASURES WERE IMPLEMENTED. THIS APPROACH IS THE ONE WHICH, IN THE JUDGMENT OF THE LOCAL TRUST TERRITORY OFFICIALS, APPEARS MOST FEASIBLE AND PRESENTS THE LESSER RISK OF EYE DAMAGE TO THE NATIVE POPULATION. THEY APPEAR TO FEEL THAT THE NATIVES WILL CARRY OUT THIS RESPONSIBILITY POSSIBLY MORE EFFECTIVELY THAN WE COULD EITHER ON OUR INITIATIVE OR THROUGH THE CHIEFS. THEY RECOGNIZE THAT THIS SYSTEM DOES NOT ELIMINATE THE POSSIBILITY OF EYE DAMAGE TO ALL OF THE INDIVIDUALS. CONSIDERATIONS FAVORING THIS COURSE OF ACTION:

1. IT IS THE FAVORED APPROACH OF THE MOST EXPERT ADVISORS AVAILABLE HERE.
2. IT WOULD BE RELATIVELY SIMPLE OF IMPLEMENTATION AND WITHIN THE CAPABILITIES OF THE TASK FORCE.
3. IT WOULD PROVIDE A WARNING OF POSSIBLE HAZARD IN A DEFINITE TIME PERIOD AND INDICATE MEASURES TO BE TAKEN TO ELIMINATE THE HAZARD. CONSIDERATIONS POSSIBLY UNFAVORABLE:

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1. IN THE EVENT EYE DAMAGE RESULTED, WHETHER THE US COULD CONSIDER THAT ALL PROPER MEASURES HAD BEEN TAKEN TO ASSURE PROTECTION MIGHT BE QUESTIONABLE.

2. IT INVOLVES A JUDGMENT OF ACTIONS AND REACTIONS OF NATIVE POPULATIONS WHICH WE IN THE TASK FORCE ARE NOT SUFFICIENTLY WELL INFORMED TO MAKE.

II. FIRING TEAK IN DAYLIGHT. RADIUS OF HAZARD ON THE SAME BASIS AS IN PART I IS 320 STATUTE MILES. WHILE POPULATION FIGURE OF CASE IN PART I IS REDUCED BY APPROXIMATELY 2300, REMAINDER OF CONSIDERATIONS ARE ESSENTIALLY THE SAME. UNDER COURSE OF ACTION IN PART IA, A VERY MUCH LARGER PROPORTION OF THE POPULATION WOULD BE IN A POSITION TO BE EXPOSED AND THE PROBABILITY OF EYE BURNS, THEREFORE, QUITE HIGH. COURSE B, C, OR D WOULD BE MANDATORY AND WOULD HAVE THE SAME FAVORABLE AND UNFAVORABLE FACTORS, EXCEPT THAT THE TASKS WOULD BE SLIGHTLY LESS IN MAGNITUDE.

III. FIRING ORANGE FIRST AT NIGHT. RADIUS OF HAZARD IS 270 STATUTE MILES AND INCLUDES OR BORDERS UPON THE SAME POPULATION AS IN PART II, LESS 400 PEOPLE AT AILUK RPT AILUK. THE SAME FACTORS ARE APPLICABLE AS IN PART I, EXCEPT THAT NUMBER OF PERSONS PROBABLY EXPOSED WOULD BE LESS AND THE MAGNITUDE OF THE TASKS UNDER COURSES B, C, OR D WOULD BE LESS. EVEN THOUGH THE PROBLEM IS ONE OF SOMEWHAT LESSER MAGNITUDE, THE HAZARD WOULD STILL EXTEND TO A LARGE PORTION OF THE SAME POPULATION AS IN THE CASE OF FIRING TEAK AT NIGHT. DATA GAINED WOULD NOT BE COMPARABLE.

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IV. FIRING ORANGE FIRST IN DAYLIGHT. THE RADIUS OF HAZARD IS 180 STATUTE MILES ON THE SAME BASIS OF CALCULATION AS IN PART I. THIS AREA WOULD INCLUDE RONGELAP AND WOTHO, AND WE CONSIDER WOULD REQUIRE PROTECTIVE ACTION AT UJAE RPT UJAE, LAE RPT LAE AND KWAJALEIN. AFTER DISCUSSION WITH MR. NEAS RPT NEAS AND TRUST TERRITORY REPRESENTATIVE, KWAJALEIN, IT APPEARS FEASIBLE AND WITHIN THE CAPABILITIES OF THE TASK FORCE AND NAVY STATION, KWAJALEIN, TO TAKE ACTION TO PROVIDE PROTECTION TO THE NATIVES OF THESE ATOLLS BY:

1. ASSEMBLING NATIVES OF KWAJALEIN IN THREE OR FOUR GROUPS, ESTABLISHING COMMUNICATIONS AT THESE ASSEMBLY POINTS, PLACING PERSONNEL OF THE TASK FORCE WITH THE GROUPS, PROVIDING THEM WITH DARK GLASSES, AND ASSURING THAT THEY EITHER WORE THE DARK GLASSES OR WERE ADEQUATELY SHELTERED FROM THE FLASH.

2. POPULATION OF UJAE AND LAE BE ASSEMBLED IN ONE GROUP EACH AND HANDLED IN THE SAME MANNER. COMMUNICATIONS FROM THESE ISLANDS TO KWAJALEIN WOULD HAVE TO BE PROVIDED BY AIRCRAFT OR BOAT, AND TO SHORE BY MOBILE STATION, JEEP, DUCK OR WALKI-TALKIE.

3. SIMILAR ACTION WOULD BE TAKEN AT RONGELAP AND WOTHO.

IT IS THE OPINION OF TRUST TERRITORY OFFICIALS THAT THE NATIVES WOULD COOPERATE AND THAT THE PROBLEM WOULD BE MANAGEABLE; HOWEVER, IT WOULD INVOLVE:

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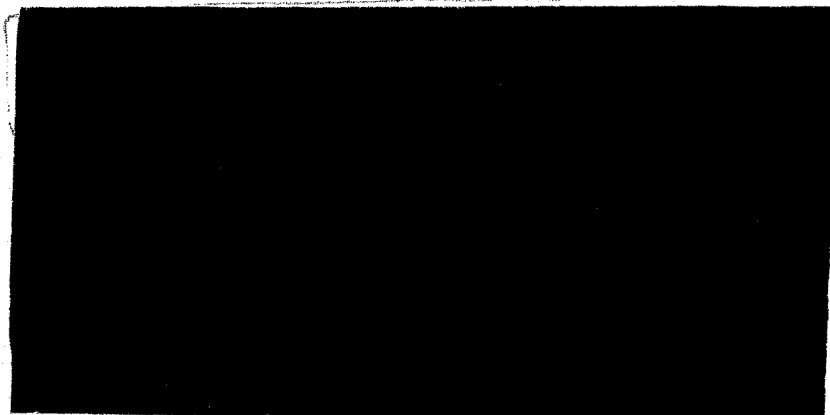
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1. SOME DISRUPTION IN NATIVE PURSUIT OF LIVELIHOOD AND NECESSITY FOR COMPENSATION.
2. PROVISION OF FOOD AND POSSIBLE SOME SHELTER AT ASSEMBLY POINTS.
3. THE POSSIBILITY, PARTICULARLY IF THERE ARE DELAYS, OF CREATING SUFFICIENT ADVERSE REACTION TO CAUSE SOME PROTEST.

SINCE KWAJALEIN ALONE INVOLVES SOME 1350 NATIVES, I FEEL THERE CAN BE NO GUARANTEE THAT NO EYE BURNS WOULD BE RECEIVED.

FIRING ORANGE IN DAYLIGHT WOULD COST APPROXIMATELY 40 PERCENT OF THE THERMAL DATA, MOSTLY AT LATE TIMES AND LARGE DIAMETERS, AND WOULD PROBABLY NEGATE THE LONG RANGE DETECTION SCHEMES USING LIGHT. NO OTHER SIGNIFICANT DATA WOULD BE ENDANGERED. ESTIMATE THAT LESS THAN 10 PERCENT OF THE PROGRAMMED ORANGE DATA WOULD BE LOST; HOWEVER, SUCH ACTION REDUCES THE PROBABILITY OF FIRING TEAK SINCE ONE MISSILE WILL BE USED UP AND SINCE IT OPENS THE POSSIBILITY OF EARLY POLITICAL REPERCUSSIONS.

V. REFERENCE SOME OF THE SPECIFIC POINTS OF YOUR 232140Z:

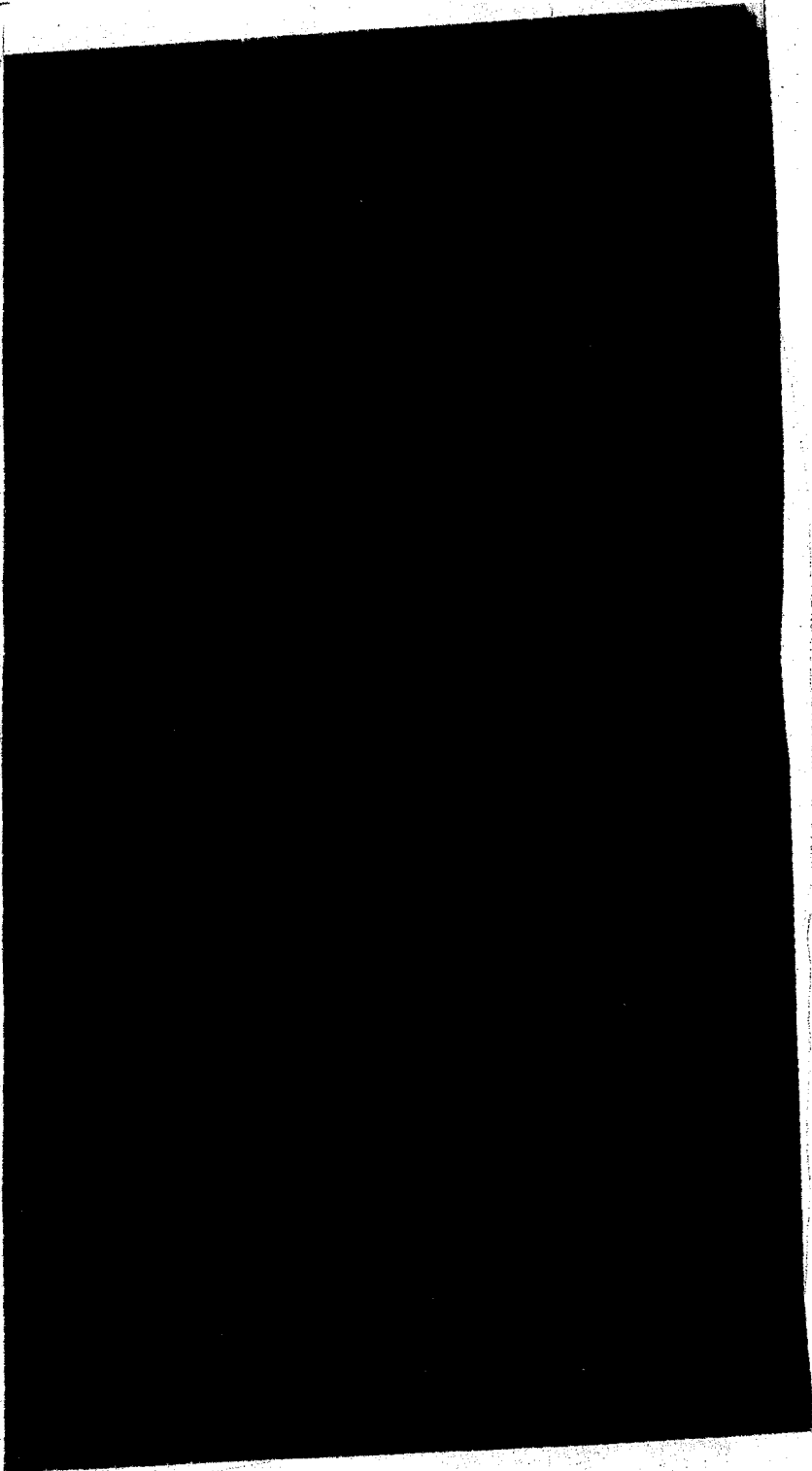


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VI. ACTIONS RECOMMENDED:

A. SUBJECT TO FURTHER DISCUSSIONS WITH THE HIGH COMMISSIONER (PLANNED FOR 27 MARCH AT GUAM) AND WITH CINCPAC (ESTIMATE 30 AND 31 MARCH), IT IS CONSIDERED THAT:

1. PLANS AND PREPARATIONS FOR THE FIRING OF TEAK AT NIGHT AS SCHEDULED SHOULD CONTINUE (EARLIEST DATE NOW APPEARS TO BE 21 APRIL. THIS WILL BE SUBJECT OF SUBSEQUENT WIRE).

2. PLANS AND PREPARATIONS SHOULD GO FORWARD TO PROVIDE PROTECTION FOR NATIVE POPULATIONS FROM EYE BURN HAZARD AS COVERED IN PART ONE CHARLIE. ACTUAL PLAN TO BE CARRIED OUT CAN BE A COMBINATION OF PART ONE CHARLIE AND PART ONE DELTA AS CONTACTS WITH TRUST TERRITORY OFFICIALS AND NATIVES INDICATE.

3. IT WOULD BE NOTED THAT ONLY BY COMPLETE EVACUATION, AS DISCUSSED IN PART ONE BRAVO, CAN WE BE ASSURED THAT NO EYE BURNS WOULD BE RECEIVED.

4. IF THE IMPLICATIONS OF FIRING TEAK AT NIGHT UNDER THE COURSE OF ACTION OUTLINED IN PARA TWO ABOVE IS NOT ACCEPTABLE, THAT ORANGE BE FIRED FIRST IN DAYLIGHT UNDER THE APPROACH COVER IN PART FOUR NOTING THAT:

A. THIS FIRING WOULD ONLY DECREASE THE PROBLEM OF THE EYE BURN HAZARD FOR TEAK IF IT SHOWED THAT CALCULATIONS OF HAZARDS WE ARE NOW USING WERE SIGNIFICANTLY IN ERROR.

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B. THE LIKELIHOOD OF PUBLIC KNOWLEDGE  
OF THE EVENT AND OF THE PRECAUTIONS TAKEN  
WOULD OPERATE TO JEOPARDIZE FIRING OF TEAK,  
PARTICULARLY IF WE WERE UNFORTUNATE ENOUGH  
TO HAVE EYE DAMAGE.

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APPENDIX "B"

U.S. ATOMIC ENERGY COMMISSION  
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1958 Mar 28 AM 1 27

/VIA LOS ALAMOS S-153R/

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P 280430Z ZNJ

FM C JTF SEVEN ENIWETOK MI

TO RJEPHQ/COFS USAF WASHDC

RUEPAE/USAEC WASHDC

AEC GRNC

BT

/S E C R E T/RESTRICTED DATA

AEC PASS TO STARBIRD. USAF PASS TO AFOAT FROM LUEDECKE.  
REF MY MESSAGE 260220Z AND YOUR MESSAGE 271617Z.

DR. OGLE AND I HAVE JUST RETURNED FROM DISCUSSIONS WITH  
THE HIGH COMMISSIONER IN GUAM. HE RETURNED WITH US AND HAS  
DEPARTED FOR HONOLULU (HIS TRIP NOT RELATED TO THIS PROBLEM)  
ALONG WITH GENERAL DICK, COLONEL JEFFREY AND CAPTAIN SHERRILL,  
WHO WILL DISCUSS THE PROBLEM AND OUR PLANS TO MEET IT WITH  
CINCPACFLT AND CINCPAC TOMORROW. I AM ASSUMING THAT CINCPAC  
WILL PROVIDE HIS VIEWS TO THE JCS AND TO ME AFTER BRIEFING.

I FEEL OUR DISCUSSIONS WITH THE HIGH COMMISSIONER CONCERNED  
THE VALIDITY OF OUR CONSIDERATIONS AS COVERED IN MY 260220Z  
AND OUR VIEW OF THAT MESSAGE, MODIFIED SLIGHTLY AS TO TIMING  
WOULD PROBABLY BE THE BEST ONE. HE CONFIRMED THAT IF THE PLAN  
WAS HANDLED CAREFULLY WE SHOULD BE ABLE TO EXPECT QUITE A HIGH  
DEGREE OF COOPERATION FROM THE NATIVES, AND OFFERED EVERY  
RESOURCE AT HIS DISPOSAL TO ASSIST US IN CARRYING IT OUT.

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WITH RESPECT TO THE GENERAL PROBLEM, HE MADE THE FOLLOWING POINTS:

A. TIMING OF OUR FIRST EXPLANATION WARNING VISIT SHOULD BE NO EARLIER THAN DURING THE WEEK PRECEDING THE ACTUAL DETONATION AND THAT ALL NATIVES SHOULD BE CONTACTED NOT LATER THAN FRIDAY BEFORE THE SUNDAY OF THE WEEK DURING WHICH THE SHOT WOULD BE DETONATED. REASONS: TO RESTRICT SPREAD OF NEWS TO ATOLLS NOT CONCERNED, AND HOPEFULLY, TO DELAY ITS GETTING PICKED UP IN THE PRESS ANY EARLIER THAN NECESSARY; CONVENIENCE TO THE POPULATION AND YET WITH SUFFICIENT TIME TO ASSURE TOTAL NOTIFICATION; AND BECAUSE OF LACK OF SENSE OF TIME ON THE PART OF THE NATIVES.

B. THE FACT THAT IF A SHOT IS FIRED AND NATIVES ARE TOLD OR SUBSEQUENTLY LEARN ABOUT THE EYE HAZARD, A RASH OF CASES WOULD DEVELOP FROM IMAGINATION, ACTUAL EYE TROUBLE FROM OTHER CAUSES, AND POSSIBLY, EVEN IN THE HOPE OF COMPENSATION.

C. IF ANY PLAN WERE IMPLEMENTED, ESSENTIALLY OF HAVING QUALIFIED MEDICAL PERSONNEL AVAILABLE TO ASCERTAIN DAMAGE AND EFFECT TREATMENT AS EARLY AS POSSIBLE (OUR PLAN WILL PROVIDE FOR THIS).

D. IF COURSE OF ACTION INVOLVING EVACUATION WERE ADOPTED, THE CIVIL AUTHORITY TO ORDER INHABITANTS FROM THEIR HOMES AND ON BOARD SHIP PROBABLY DOES NOT EXIST.

E. WORD OF FACT THAT POPULATION WAS BEING WARNED AND PREPARATIONS BEING MADE NOR THEIR PROTECTION WOULD CERTAINLY GET OUT, AT LEAST TO HAWAII, WITHIN A SHORT TIME. MEANS EXIST FOR EARLY COMMUNICATION TO U.N. WITHIN A FEW DAYS.

F. MR. WILD, LAWYER IN HONOLULU REPRESENTING MARSHALLESE IN CLAIMS AGAINST U.S. (PRIMARILY RELATING TO COMPENSATION FOR LAND TAKEN FOR KWAJALEIN NAVAL STATION); WOULD BE

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INFORMED AND WOULD TRY TO CAPITALIZE ON IT IN DOCUMENTING AND PUBLICIZING HIS CASE OR CASES.

G. THE FACT THAT, IN PRACTICE, WE HAD EXTENDED THE DANGER AREA (BY RECOGNIZING POSSIBLE HAZARD AND TAKING PROTECTIVE ACTION) WOULD, IN ALL LIKELIHOOD, RAISE THE QUESTION IN THE U.N., AND THE CHARGE WOULD BE MADE THAT THE U.S. WAS NOT CARRYING OUT ITS RESPONSIBILITIES AS TRUSTEESHIP ADMINISTRATOR IN A MANNER REFLECTING MINDFULNESS OF THE WELL-BEING OF ITS CHARGES.

THE HIGH COMMISSIONER WAS NOT SUGGESTING THAT, FROM HIS POINT OF VIEW, ANY OR AP OF THESE CONSIDERATIONS SHOULD CAUSE A CHANGE IN PLANS NOR SUGGESTING ANY RELUCTANCE ON HIS PART TO FACE THE CONSEQUENCES. HE JUST FELT THEY WERE VALID POINTS.

WITH RESPECT TO THE MATTER OF SHIPPING IN THE HAZARD AREA AND OUTSIDE THE DESIGNATED DANGER AREA, I HAVE PROCEEDED ON THE ASSUMPTION THAT THE U.S. WOULD NOT FIND IT TO BE POLITICALLY EXPEDIENT OR ADVISABLE TO ENLARGE THE CURRENT DANGER AREA. (AS PREVIOUSLY STATED, I AM NOT IN POSITION HERE TO MAKE A RECOMMENDATION IN THIS REGARD.) I FEEL SURE THAT CINCPACFLT, THROUGH SHIPPING CLEARANCE AND CONTROL OF ROUTING, CAN ASSURE THAT NO U.S. NAVY OR MERCHANT SHIPS WOULD BE IN THE AREA AT SHOT TIME. THE AREA APPEARS TO BE OTHERWISE PRACTICALLY DEVOID OF SHIPPING EXCEPT FOR NATIVE CRAFT. WE HAVE RECEIVED INFORMATION OF ONLY ONE SURFACE VESSEL IN RECENT WEEKS NEAR THE AREA, AND REPORTS TO THE TRUST TERRITORY OF ITS ACTIVITIES ARE SUCH AS TO CAUSE US TO INVESTIGATE. IT APPEARS TO BE A MOTHER SHIP OF SOME KIND REPORTEDLY MANNED BY CAUCASIANS FLYING AN AMERICAN FLAG, SEEN IN THE AREA SOUTH OF NAMU ATOLL AND AILINGLAPALAP ATOLL. IT HAS REPORTEDLY BEEN SENDING SMALL BOATS ASHORE TO ISLANDS IN THESE GROUPS, MANNED BY JAPANESE, TRADING FISH AND

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TOBACCO FOR FRESH FRUIT AND WATER IN VIOLATION OF THREE MILE LIMIT. WE WILL KNOW MORE ABOUT IT SHORTLY.

WE WILL HAVE THE CAPABILITY OF AND OUR PLAN WILL REQUIRE CAREFUL SEARCH OF ALL THE AREA FOR SURFACE VESSELS SUFFICIENTLY IN ADVANCE OF THE OPERATION TO KNOW THEIR LOCATION. SUBJECT TO CONCURRENCE BY CINCPAC, I WOULD IN THE CASE OF AMERICAN FLAGSHIPS, REQUEST A CHANGE OF COURSE TO TAKE THEM OUT OF THE AREA. IN THE CASE OF FOREIGN SHIPS, WE PROBABLY HAVE TO AWAIT THEIR PASSAGE BEFORE CLEARANCE TO FIRE. THIS, TOO, WILL BE A SUBJECT OF DISCUSSION WITH CINCPAC. NATIVE CRAFT CAN BE CONTROLLED BY TRUST TERRITORY IN CONSONANCE WITH OUR PLANS FOR WARNING AND PROTECTION.

IF IT IS DETERMINED NECESSARY AND FEASIBLE TO EXTEND THE DANGER AREA, NOTICE OF SUCH EXTENSION WOULD NEED TO BE HANDLED IN THE SAME MANNER AS THE ORIGINAL DESIGNATION AND OUR ACTIONS WITH RESPECT TO IT WOULD BE ON THE SAME BASIS.

WE HAVE CARRIED OUT DETAILED PLANNING FORWARD SUFFICIENTLY TO DETERMINE THAT THE TASK FORCE, WITH THE ASSISTANCE OF THE TRUST TERRITORY OFFICIALS AND ENGLISH-SPEAKING MICRONESEANS AVAILABLE TO THEM, CAN CARRY OUT A PLAN SOMEWHAT MORE COMPREHENSIVE THAN PART I C OF MY 260220Z WITH THE RESOURCES AVAILABLE TO THE TASK FORCE, EXCEPT FOR SOME COMMUNICATIONS EQUIPMENT BELIEVED TO BE AVAILABLE IN HONOLULU AND KNOWN TO BE AVAILABLE IN THE U.S. SPECIFIC DETERMINATION OF AVAILABILITY WILL BE MADE AT AFARPAC TOMORROW.

INHERENT IN A DECISION TO GO AHEAD WITH THE FIRING WITH EITHER OR BOTH HIGH ALTITUDE SHOTS AS NOW SCHEDULED MUST BE A DETERMINATION OF U.S. POSITION SUBSEQUENT THERETO WHICH GIVES RECOGNITION TO THE POSSIBILITY OF A FEW EYE BURN CASUALTIES AND TO THE IMPACT OF THIS CONDITION UPON US. IN OTHER WORDS, WE

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SHOULD HAVE DETERMINED BEFOREHAND THAT WE WOULD NOT PERMIT REPERCUSSIONS OF OUR EARLY ACTION TO PLACE US IN A POSITION NOT TO BE ABLE TO CONTINUE WITH THE REMAINDER OF THE TEST SERIES. IF WE CANNOT TAKE SUCH A POSITION IT MIGHT BE BETTER, EVEN THOUGH EXTREMELY COSTLY IN MONEY AND TIME, TO START TAKING ACTION NOW TO FIRE THE ALTITUDE SHOTS IN ANOTHER LOCATION.

IF THE EYE BURN IS VALID OR IF WORRY ABOUT IT CAUSES US TO CANCEL NOW, THE SITUATION WOULD BE NO DIFFERENT LATER, AND THE ALTITUDE SHOTS UNDER CONSIDERATION FOR 1959 AND 1960 COULD NOT BE FIRED AT THIS PROVING GROUND.

I HAVE NO RECOMMENDATION AS TO SUCH LOCATION, ALTHOUGH JOHNSTON ISLAND, CHRISTMAS ISLAND AND EVEN MIDWAY APPEAR TO BE POSSIBILITIES.

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APPENDIX "C"

ATOMIC ENERGY COMMISSION  
OUTGOING TELECOMMUNICATION MESSAGE

March 29, 1958

FROM: USAEC, WASHINGTON, DC

TO: CJTF-7 ENIWETOK, MI

PERSONAL AND EYES ONLY TO GEN LUEDECKE FROM STARBIRD

YOUR 260220Z AND 280430Z ARE SUPERIOR ANALYSES. COMMISSION HAS REVIEWED IN DETAIL AND WILL ATTEMPT TO FIRM ITS POSITION TUESDAY 1 APRIL. THEY HAVE DIRECTED THAT I ATTEMPT TO DETERMINE BY THAT TIME IMPACT ON MOVING TO ANOTHER LOCATION IN LINE WITH THE FINAL PORTION OF YOUR 280430Z. THIS DOES NOT REPRESENT THEIR POSITION AS OF NOW BUT A DESIRE TO HAVE ALL INFORMATION BEFORE TAKING ONE.

FROM OUR RAPID ANALYSES HERE IT WOULD APPEAR THAT ONLY FOUR PLACES ARE REAL CANDIDATES. EACH IS DISCUSSED BRIEFLY IN THE FOLLOWING PARAGRAPHS.

WAKE. SOME BUT NOT INSURMOUNTABLE DISRUPTION WOULD BE CAUSED TO SHIPPING AND AIRLINES (AIR MIGHT REROUTE ON SHOT DAYS THROUGH KWAJELEIN). EVACUATION OF GARRISON, BELIEVED TO BE ABOUT 300, TO MES TYPE VESSEL, OR EVEN BY AIR, AT SHOT TIMES WOULD NOT BE TERRIFICALLY DIFFICULT. LAND MASS, THOUGH SMALLER THAN DESIRED, MIGHT BE ADEQUATE FOR ESSENTIAL INSTRUMENTATION. DISTANCE FROM PRESENT BASE WOULD BE LEAST OF THE FOUR LOCALES. HALF OF TEMPORARY-DANGER AREA WOULD BE WITHIN EXISTING DANGER AREA. SECURITY WOULD BE LOST WHEN CONSTRUCTION FORCES ARRIVE.

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MIDWAY. MORE DISRUPTION TO SHIPPING AND ESSENTIALLY NONE TO AIR LINES. EVACUATION AT SHOT TIME, BECAUSE OF LARGE GARRISON, BECOMES A MAJOR PROBLEM. IN THIS REGARD, I AM ASSUMING SHOT ISLAND OR ATOLL IN ALL CASES MUST BE EVACUATED AT SHOT TIME AND LOGISTIC DIFFICULTIES WOULD PREVENT FIRING FROM KURE. LAND MASS PROBABLY ADEQUATE FOR ESSENTIAL STATIONS. SECURITY COULD BE HELD UNTIL JUST BEFORE SHOT, BUT ENTIRELY NEW TEMPORARY-DANGER AREA MUST BE SET UP. ESSENTIAL NORMAL MILITARY PATROL ACTIVITIES FROM MIDWAY WOULD BE DISRUPTED SOMEWHAT.

JOHNSON. IMPORTANT DISRUPTION TO AIR AND SEA TRAVEL IN VIEW OF CLOSENESS TO HAWAII PORTS. EVACUATION MANAGEABLE. LAND MASS SMALL BUT PERHAPS ADEQUATE. NEW TEMPORARY-DANGER AREA NEEDED. SECURITY COULD BE KEPT UNTIL LATE. CLOSENESS TO HAWAII MIGHT LEAD TO SOME SERIOUS REPERCUSSION THERE, PARTICULARLY IF NECESSARY RIGIDLY TO CONTROL AIR FLIGHTS AT SHOT TIME.

CHRISTMAS. MOST FAVORABLE FROM POINT OF VIEW OF LAND MASS, ISOLATION FROM NORMAL AIR AND SEA LANES, AND EVACUATION OF SHOT AREA. SECURITY PROBABLY COULD BE HELD LONGEST. SOME 300 TO 500 PERSONS ON PALMYRA, WASHINGTON, FANNING, VARVIS AND MALDEN WOULD NEED BE CONTROLLED, BUT THESE ARE WARDS OF US AND UK AND NOT OF THE UN AS A WHOLE. PROBLEM APPEARS MANAGEABLE. TIME WOULD BE LOST IN NEGOTIATING FOR USE AND FITTING INTO UK ACTIVITIES THERE. TEMPORARY-DANGER AREA ESTABLISHMENT WOULD PROBABLY CAUSE LESS IMPACT THAN FOR OTHER SOLUTIONS.

COULD YOU PROVIDE ME BY TUESDAY AS MUCH INFORMATION AS POSSIBLE ON THE FOLLOWING:

A. IS WAKE OUT OF THE QUESTION FOR SOME REASON I DO NOT SEE.

B. WHAT WOULD BE YOUR ESTIMATE AS TO THE DELAY IN FIRING ENTAILLED IN MOVING TO EACH OF THE FOUR LOCATIONS NAMED.

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C. COULD THE MAJOR PORTION OF ESSENTIAL DATA BE GOTTEN AT EACH LOCATION OR WHAT WOULD BE LOST.

D. WHAT IS THE ORDER OF THE CUT-OF-POCKET COSTS AT PROVING GROUND WHICH WOULD BE LOST.

E. WHAT IS THE ORDER OF THE NEW COSTS TO AEC AND DOD INVOLVED IN SETTING UP AT THE NEW LOCALE. (I REALIZE THIS CAN BE ONLY VERY ROUGH.)

F. WHAT MAJOR MEANS NOT NOW AVAILABLE TO YOU WOULD BE NECESSARY.

I HOPE THAT BY WEDNESDAY COMMISSION AND DOD CAN MEET AND AGREE ON WHAT FUTURE COURSE SHOULD BE. I HAVE INFORMED GEN LOPER I AM REQUESTING INFORMATION ALONG THE ABOVE LINES THOUGH HE HAS NOT SEEN THIS TELETYPE.

Alfred D. Starbird  
Brigadier General, USA  
Director of Military  
Application

~~EYES ONLY~~

DECLASSIFIED  
E.O. 12958, Sec. 3.3

AW 972 006 B  
B.P.M. /sa Date

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