

HEADQUARTERS
TASK GROUP 7.1
JOINT TASK FORCE SEVEN

RG 326 US ATOMIC ENERGY COMMISSION
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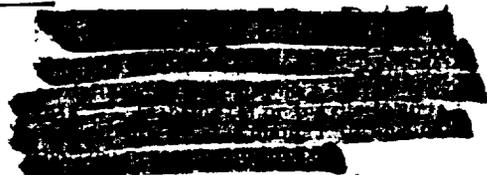
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Brigadier General ~~Howell M. Estes~~,
Commander, Task Group 7.4
Joint Task Force Seven
APO 187, c/o Postmaster
San Francisco, California



Dear General Estes:

BEST COPY AVAILABLE

Thank you for your letter of 3 March 1954 requesting comments on the BRAVO sampling mission and suggestions as to the missions to come. For the record, you may be interested in the data in Appendix I which represent the sample material collected by the aircraft in BRAVO. You will note that only two aircraft returned with less than 10^{16} fissions. This achievement is emphasized by the fact that on MINE Shot only four of the twelve sampling F4G aircraft returned with more than 10^{16} fissions, while in KING Shot, none of them collected this amount.

I wish to reply to your specific questions as follows:

a. The RB-36 was in position at 60 nautical miles at 130° azimuth from zero point on initial position as requested by Project 11.2 and agreed to by Project 9.1. The pressure altitude was 37,500 feet rather than the 40,000 feet requested.

b. Apart from multiple layers of intervening cirrus cloud lying in banks in the southeast quadrant, this position satisfied the directing capability requirement. On approach to initial position at a pressure altitude of 37,500 feet, we were flying in and out of the top of the middle cirrus layer. After completing the photo mission maneuver, we made a 180° turn (to the right) and climbed to 42,000 feet pressure altitude. We cleared the top of the cirrus by approximately 1,000 feet during return to a position south of zero point and rendezvous with the reconnaissance aircraft (Sniffers). Throughout the time required to go to this southerly position, our view of the details of the cloud below 60,000 feet was obscured by the consolidation of the upper and middle layers of cirrus in its vicinity. These circumstances caused us initially to evaluate the probable success of the sampling mission as very poor. The mission would have been a failure if the RB-36 had not been able finally to find a position under the overhanging cloud from which a relatively clear view of its lower portions could be maintained. If the Sniffers had approached over the cirrus, rather than climbing through the cloud deck, they might have assisted in finding a favorable position earlier after shot time.

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c. The photo mission did not interfere with the control mission.

d. The directions to the sampling pilots were properly given and skillfully executed. It would be preferred if directions could be given primarily with reference to right or left of the clouds' consolidated center area as seen from the RB-36's position. General vectors might be used to help clarify these directions with the understanding that such vectors have considerable error.

e. The internal environment on the RB-36 was suitable with the exception of frost on the windows to the rear of the co-pilot's position. This condition caused me to try to look around the co-pilot, an action which was hazardous to the operation of the aircraft. It is requested that the windows on the co-pilot's side on the RB-36, as well as on both sides of FB-36 No. 1083, be fitted with the double window arrangement presently used on the A-C's side of the RB-36. This arrangement was extremely effective in preventing frost formation.

f. The training of the pilots in rad-safety and monitoring procedures was in general adequate to accomplish the mission. Only one pilot read the radiation rate instruments in his aircraft with a decimal point error, and only one failed to operate his gas sampling equipment.

g. The special communications facilities furnished in the RB-36 were excellent.

h. With no intent to carp at an excellent result, I would like to suggest that TG 7.4 might have accomplished some of the minor requirements such as special communications, defrosting fittings, etc., before moving to the forward area. Delayed installation in this case gave neither communications nor visibility capability in the Dry Run of 10 February 1954. Visibility capability was not established until a modification was made on 23 February for a March 1 shot date -- with no chance for flight test. Fortunately, this modification was very successful in eliminating frost. Such delays cause harassment with details in a period when time for them cannot well be spared.

i. It was perhaps a deficiency on my part that the WB-29 remained under Boundary Tare's (CIC) control so long after zero time. It had been intended to have Wilson I com under our control at about H+15 minutes for what essentially was to be a mission of opportunity. Apparently, I had not conveyed this desire effectively. Boundary Tare's direction to the WB-29 were proper under the conditions and this aircraft performed its mission successfully.

JF-
General Estes (Cont'd)

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j. The data mentioned in the introductory paragraph of this letter indicate that the BRAVO sampling mission was very successful. It is my belief that the degree to which such missions are effective reflects the degree to which Air Force operational problems and the scientific problems imposed by the cloud are mutually understood and reconciled. It is noteworthy that your operations were flexible enough to avoid compromise of the sampling mission through a period of temporary loss of your surface control facilities.

There would appear to be few areas in which improvement can be made. Some of these have been mentioned above and are summarized as follows:

- a. Complete defrosting modifications in EB- and F-36's.
- b. Bring in Sniffers at an altitude above cirrus cloud enroute and in the local shot area.
- c. Maintain interim training of sampling pilots on special instruments and equipment between shots.
- d. Transfer control of the WB-29 to the EB-36 at an earlier time.

Sincerely,

HAROLD F. PLANK

Encl: Appendix I

HEP/jrv

Distribution:

- 1A - General Estes
- 2A - General Estes
- 3A - Dr. Ogilvie (Graves)
- 4A - H. F. Plank
- 5A - R. W. Spence (LASL)
- 6A - MER (JF) Files
- 7A - MER (JF) Seq
- 8A - MER - LASL

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APPENDIX I

Total Fissions Collected by Aircraft Type on Castle BRAVO Shot

<u>F84G Type A/C</u>	<u>Fissions Collected</u>
030	1.34×10^{16}
037	1.45
032	0.55
049	1.53
033	1.34
051	1.68
046	1.82
053	2.00
038	1.38
042	1.14
043	2.24
045	2.34
<u>FP-30 Type A/C</u>	
1086	3.16×10^{16}
1083	3.64
<u>WB-29 Type A/C</u>	
7335	0.12×10^{16}