



6 February 1959

MEMORANDUM FOR THE RECORD

SUBJECT: Trip Report - Program Review Conference  
WS 117-L and CORONA

1. A briefing concerning the above-mentioned program was held at Palo Alto on 23 January 1959. In addition, the 22nd of January was spent coordinating and discussing CORONA problems with Lt. Col. Matheson, Chief of the Palo Alto Control Center.

2. The highlights of the items presented at the briefing are as follows:

a. Schedule of CORONA shots: Because of a rather serious malfunction while attempting to launch the first test vehicle on 21 January, the ability to meet the present launch schedule was seriously doubted. The exact nature, causes and results of this malfunction were not known at this time. However, following is a brief impression of what happened. The countdown had reached launch minus 60 minutes when the malfunction occurred. At this time the hydraulic system in the Bell Hustler was being tested. When electrical power was applied to this system, several events took place that were supposed to occur in the air, but not during ground test. The Ullage rockets fired, and the explosive bolts that separate the Hustler from the Thor also fired. Fortunately, the Hustler sits in a farring that is attached to the Thor so the Hustler did not fall to the ground. However, the firing of the Ullage rocket did cause some damage. At this time the countdown was stopped. A proposed revision to the present schedule was discussed. The proposed schedule would result in the first CORONA launching occurring in May 1959. The proposed schedule was not fired up.

b. Nose Cone Recovery Test: Project "Tin Soldier" has been cancelled. "Tin Soldier" was a plan to test nose cone re-entry and recovery by firing the nose cone by rocket from Hawaii into the recovery area for an air pick-up. In place of "Tin Soldier"

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a balloon drop of the nose cone is proposed at Holliman AFB, New Mexico. The test will consist of dropping the nose cone from 100,000 feet with an air snatch recovery planned. As discussed below, aircraft dropped recovery tests are being performed in the Hawaiian area.

c. Recovery Vehicle Program: Several items of interest were brought out in the briefing on the recovery system. The first was that the mode 3 parachute has been selected as the chute to be used in the recovery system. The mode 3 chute has a diameter of 23.5 feet and a descent rate of 25 feet per second. These chutes are in production and have been tested. This fact was not discussed at the briefing, but it was learned later from Col. Matheson that three drops had been made in the Hawaiian area from a B-47 aircraft, using the mode 3 chute. Two of the drops were recovered by air snatch. The third was a water recovery. Because of a beacon malfunction on the nose cone, the aircraft was not able to locate the third unit. However, surface ship radar did paint the cone and a water recovery was made. Additional B-47 drops are planned in the Hawaiian area.

Another item of interest in connection with the recovery system is that GE feels they have solved the parachute ejection problem by redesign of the system. Another item discussed was the problem of stability of the nose cone during re-entry because it was originally designed for a film load of 40 pounds and this has been reduced to a half load, or 20 pounds. GE indicated that approximately 3 pounds will be required for ballast. Since the ballast will have to be located near the nose, the addition of more film will not solve the problem. It is planned to use an instrument package for ballast.

d. Power Consumption Estimates: The briefing on power supply vs. power consumption indicates that there is adequate power for 24 hours, but not enough for a two day time in orbit. This is primarily true because 70% of the required power load is estimated to be lost. Also considerable power is required on passive orbits (camera not operating) to keep the satellite stabilized. The watt hours available and required are shown in attachment #1.

e. Component Parts Schedules: Much time was spent in consideration of the present delivery schedules of the component parts. Without going into detail, it appears that the schedules are very

tight and some slippage could occur. The program is so integrated that a slippage in any place would probably cause a slip in the proposed launch schedule. The details of these schedules are contained in the photostatic copy of the briefing aids which is an attachment to this report.

f. Camera Equipment and Film Handling Procedures after Recovery: [REDACTED] is preparing a separate report that will cover these two subjects.

3. The items discussed outside the briefing are as follows:

a. Results of CPX: Neither the people at [REDACTED] nor those at the Palo Alto Control Center experienced any difficulty with the Command Post Exercise conducted between Project Headquarters and [REDACTED] during the week 19 through 23 January. Messages were passed both by phone and courier between [REDACTED] and Palo Alto. In connection with this, Headquarters plans to conduct a CPX approximately every three weeks.

b. Communications at Palo Alto Control Center: The decision was made by Mr. Kucera not to establish a communications center at Palo Alto in view of the security problems involved.

c. Reports Control Manual: A revision to the Reports Control Manual was coordinated with Palo Alto and Col. Sheppard of BMD. The revision to the Progress Report [REDACTED] was made to give Headquarters a more accurate ground track of the orbiting satellite. A proposed addition to the Reports Control Manual was also discussed. The addition [REDACTED] will provide Headquarters with the ephemeris data approximately two weeks prior to each launch. This addition will be published in early February. Since Headquarters desires information on launches other than CORONA, Palo Alto agreed to send the [REDACTED] 9 or 10, and 13 on Test and for Bio-med launches. The above reports will provide Headquarters with estimated time of launch, actual time of launch or abort, and progress of the satellite once it is in orbit.

d. Operational Planning Factors: Several planning factors were discussed that are of operational interest. One of these is the film supply available which will be covered in [REDACTED] report. Another is that if the launch is stopped after fueling has started,

a 48 hour delay is required before another attempt at launch. This presents a serious limitation since the countdown for the present vehicle calls for some fueling at launch minus 5 hours. Undoubtedly this will be reduced in later launches. Also, the present schedule for launch azimuth calls for CORONA units to be launched on a true azimuth of 184°.

Att: Chart

C. L. MURPHY  
Major USAF

CM Murphy:jam

