BELLCOMM, INC.

SUBJECT: Trip Report - Attendance at Hazardous Egress and Evacuation Working Group Meeting, September 26, 1967 - Case 330

DATE: October 3, 1967

FROM: L. G. Miller

MEMORANDUM FOR FILE

A meeting of the Hazardous Egress and Evacuation Working Group of the Apollo Launch Operations Committee was held at the Kennedy Space Center on September 26, 1967. The following information was reported:

1. LES Protection System for AS 501

The LES protection system, which had not been installed at the time of the meeting, is due prior to hypergolic loading of the spacecraft. At the next ALOC meeting, the HEEWG will recommend that installation of this system be a constraint to the performance of spacecraft hypergolic loading. It was reported that inserts for the LES-motor nozzles had been installed. It is presently planned to remove the inserts at T-27 hours, although there is an effort under way to have this delayed until T-16 hours. There were indications that a new, fly-away insert might be developed by the time CM 101 is launched.

2. AS 501 Evacuation Procedure

This document has been signed by the Director of Launch Operations and is being reproduced for distribution.

3. AS 501 Rescue Team

A rescue team has been designated for duty during the AS 501 launch. Prior to deployment, the personnel will be trained in methods of escaping from a stalled, mobile-launcher elevator.

4. LC-39 Blast Room Life-Support Equipment

Action is under way to establish the organizational element which will be responsible for procurement and maintenance of blast-room equipment. The Support Operations Directorate is the most likely candidate.

(NASA-CR-90823) TRIP REPORT - ATTENDANCE AT HAZARDOUS EGRESS AND EVACUATION WORKING GROUP MEETING, SEPTEMBER 26, 1967 (Bellcomm, Inc.) 6 p

N79-73032

Unclas
00/54 11038

[redacted]

5. Blast-Room Qualification Test

A qualification test was performed, and a report is being prepared. The seven persons involved in the test reported that it was hot and uncomfortable, but not unbearable. During the course of the test, it was discovered that the blast-room door seals leaked air. This is a potentially serious problem since the air appeared to be leaking into the room. A solution is being investigated.

6. M-113 Support

The Air Force will no longer use the M-113 armored vehicles in their launch-site recovery force. The vehicles are owned by the Air Force, and there appears to be an action under way to have them shipped to the Pacific Missile Range. However, KSC still plans on using the M-113's for pad contingencies and has requested that the Air Force take no action to ship the vehicles until the situation can be clarified.

7. Use of CM Mockup No. 28 at Downey

Because of continuing slips in the CM 101 delivery date, it now appears that egress procedure development can be scheduled at KSC instead of Downey. The KSC CM mockup should be available for this purpose in mid-December.

8. LC-34 Slidewire Review

A final design review of the LC-34 slidewire will take place at KSC on October 5. A discussion of slidewire harnesses will be included.

9. LC-39 Blast-Room Intensive Training

It was requested that the names of those personnel who will require intensive blast-room training for AS 501 be supplied to the Bendix training organization. Support Operations reported that over 700 people have been given familiarization training on the LC-39 blast room so far. Bendix expects to train some 1,000 persons eventually.

10. LC-39 Pad A Fire Protection - 320 Foot Level

Two hoses have been installed: A 100-foot line is located on the 320 foot level of the mobile launcher, and a 25 foot line is located just outside the environmental chamber at the end of the CM access arm. Together, the two lines could supply 50-60 g.p.m. for use in the event of a spacecraft fire.

11. Blast Room OIS and RF Systems

A phone line is presently installed in the LC-39 blast room, but it is desirable that two separate communications systems be available. A support request has been submitted for an RF backup to the telephone.

12. Command Module and Environmental Chamber Requirements at the AMS Building

Fabrication of an environmental chamber mockup for use in the Apollo Mission Simulator Building has been delayed 15 days, until mid-December. This represents no problem since there have been longer delays in the scheduled delivery of the first manned CM. Air and AC power requirements for the CM mockup are being coordinated, as are the power requirements of the environmental chamber.

13. Bail-Out Bottles

Representatives of the Astronaut Office reported on the development of bail-out bottles for use in an egress situation. They displayed a model consisting of five life raft inflation bottles (as reported in the writer's last HEEWG Trip Report) and associated valving. At a pressure of 3,000 psi, each bottle will supply 3 1/2 c.f.m. for 1.16 minutes. Thus, the configuration would represent a 5 1/2 minute air supply For an unaided egress, this appears to be adequate for getting to safety.

At 3,000 psi, the bottles have a safety factor of approximately 2.3. Increasing the pressure to 4,000 psi would yield approximately seven minutes worth of air. This will be considered if the decreased safety factor is adequate.

14. LC-34 Umbilical-Tower Elevator

It was reported that only six people in street clothes will fit in the LC-34 umbilical-tower elevator. When wearing the Block II suits, the elevator will only hold three astronauts. As a result, egress procedures from LC-34 may have to be re-evaluated with regard to using the elevator as a primary egress path during an aided egress.

15. Use of Freon 1301

A representative of the Astronaut Office reported on a Freon 1301 conference which took place at MSC on September 19, 1967. Some mention was given to the possibility of using the Freon in a fire-suppression role in the spacecraft. While a water-deluge system has been selected for fire suppression in vacuum chambers, it was suggested that parallel development of a Freon 1301 system would be very desirable. It was mentioned that the FAA is recommending the use of Freon 1301 in aircraft passenger cabins, and that significant headway is being made in the development of infrared and ultraviolet fire detectors.

2032-LGM-gmp

L. G. Miller

BELLCOMM, INC.

SUBJECT: Trip Report - Attendance at Hazardous Egress and Evacuation Working Group Meeting, September 26, 1967 - Case 330

DATE: October 3, 1967

FROM: L. G. Miller

ABSTRACT

This memorandum reports items of interest from a meeting of the Hazardous Egress and Evacuation Working Group of the Apollo Launch Operations Committee. Hazardous evacuation procedures for AS 501 have been approved and are in reproduction, and associated training activities are progressing. A potentially serious problem was discovered during the LC-39 blast room qualification test in that air leaked into the room. Installation of an LES protection system has not yet been accomplished and may delay spacecraft hypergolic loading for AS 501.

Representatives of the Astronaut Office reported on the development status of bail-out bottles for use in an egress situation and on recent activities associated with the use of Freon 1301 as a fire extinguishing agent.

BELLCOMM, INC.

Subject: Trip Report - Attendance at Hazardous Egress and Evacuation Working Group Meeting, September 26, 1967 - Case 330

From: L. G. Miller

DISTRIBUTION LIST

NASA Headquarters

Messrs. F. B. Benjamin - NASA/MM
L. E. Day - NASA/MAT
J. K. Holcomb - NASA/MAO
T. A. Keegan - NASA/MA-2 ← COPY TO
J. Lederer - NASA/MY
C. M. Lee - NASA/MO-1

Bellcomm

Messrs. C. Bidgood
A. P. Boysen, Jr.
D. R. Hagner
J. J. Hibbert
W. C. Hittinger
B. T. Howard
J. A. Llewellyn
J. Z. Menard
I. D. Nehama
J. J. O'Connor
T. L. Powers
I. M. Ross
G. B. Troussoff
R. L. Wagner
Central Files
Department 1023
Department 2032
Library