(NASA-TH-84103) REPORT OF APOLLO 204 REVIEW BOARD. APPENDIX F: SCHEDULE OF PHYSICAL EVIDENCE (NASA) 58 p

N82-71806

Unclas 00/18 11541





REPORT OF APOLLO 204 REVIEW BOARD

TO
THE ADMINISTRATOR
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APPENDIX F

(NASA-TH-X-69479) REPORT OF APOLLO 204 REVIEW BOARD, APPENDIX F (NASA) 58 P LIMIT NASA+NASA CONTR.

Inclas 15865 SUBJECT: Removal of Equipment and Facilities from Impounded Status Page $\boldsymbol{6}$

- 12.4 All laboratory reports connected with Task XII will be submitted to and impounded by D/816.
- 12.5 After the impound of above noted quantities destined for laboratory analysis, all balances may be released for use.

XIII. TASK.

All new equipment whose equivalent has not been used on Spacecraft 012 but is now in areas which are controlled by the Board will be released for use.

LOGIC.

- 13.1 D/810 will formulate a list of all new equipment whose equivalent has not been used on Spacecraft 012.
- 13.2 All equipment indicated on said list noted in Paragraph 13.1 above will be immediately released.

XIV. TASK.

IMCC Houston not utilized but for monitoring shall be released.

LOGIC.

This item does not apply to the Florida Facility.

XV. TASK.

OCP's, Checklists, Schematics, etc., both flight and non-flight, being used by the crew at the time of the incident, shall be removed and stored in sealed boxes. Removal must be made under precise conditions, photographs taken to establish the condition of the books. Provide photographs where technically possible, showing the location and condition of these items as found. The only books to be removed are those over the couches.

LOGIC.

 ${\rm D/816}$ will verify in writing the accomplishment of all effort specified in Task XV above.

S. T. Bedding feld

S. T. Bedding*/eld Chief, Mechanical and Ordnance Branch

NASA-KSC

J.M. Moore, Manager Apollo Test Operations Florida Facility, NAA/S&ID SUBJECT: Removal of Equipment and Facilities from Impounded Status Page 5

- 10.2 Upon receipt of this list, D/816 will authorize the release of all such hardware except for communication equipment.
- 10.3 All communication equipment noted in list per Paragraph 10.1 above will have affixed to same an M59-B by D/816. This category of equipment will then be impounded until released by the Board in writing.

XI. TASK.

All non-flight hardware (non-GSE) utilized during chamber run shall be baselined in terms of configuration, copy of records impounded in Room 3344, and released for use (except the communication equipment which will be controlled by the Board).

LOGIC.

- 11.1 D/818, together with D/810, will prepare a list of all non-flight hardware (non-GSE) utilized during chamber run.
- 11.2 Configuration of such hardware shall be accomplished, per paragraph 2.2 above, by D/818 and recorded on applicable documents.
- 11.3 D/816 will provide inspection surveillance according to existing procedures.
- 11.4 D/818, together with D/810, will prepare a list of all communication equipment in this category.
- 11.5 D/816 will affix an M59-B tag to equipment noted in Paragraph 11.4 above and such equipment will be impounded under the control of D/816 pending official release by the Prime Investigation Board.

XII. TASK.

All laboratory supplies used on Spacecraft 012 shall be handled as follows:

LOGIC.

- 12.1 D/818 will prepare a list of all laboratory supplies used on Spacecraft 012 and shall indicate on said list adequate quantities necessary for laboratory analysis. If no remaining quantities exist, said list shall so indicate.
- 12.2 D/816 shall label and impound quantities noted above indicated for laboratory analysis.
- 12.3 D/818 will issue Support Requests as required to accomplish laboratory analyses on such quantities.

APOLLO SPACECRAFT

The spacecraft (S/C) consists of a launch escape system (LES) assembly, command module (C/M), service module (S/M), and the spacecraft/lunar module adapter (SLA). The LES assembly provides the means for rapidly separating the C/M from the S/M during pad or suborbital aborts. The C/M forms the spacecraft control center, contains necessary automatic and manual equipment to control and monitor the spacecraft systems, and contains the required equipment for safety and comfort of the crew. The S/M is a cylindrical structure located between the C/M and the SLA. It contains the propulsion systems for attitude and velocity change maneuvers. Most of the consumables used in the mission are stored in the S/M. The SLA is a truncated cone which connects the S/M to the launch vehicle. It also provides the space wherein the lunar module (L/M) is carried on lunar missions.

TEST IN PROGRESS AT TIME OF ACCIDENT

Spacecraft 012 was undergoing a "Plugs Out Integrated Test" at the time of the accident on January 27, 1967. Operational Checkout Procedure, designated OCP FO-K-0021-1 applied to this test. Within this report this procedure is often referred to as OCP-0021.

TESTS AND ANALYSES

Results of tests and analyses not complete at the time of publication of this report will be contained in Appendix G. Addenda and Corrigenda.

CONVERSION OF TIME

Throughout this report, time is stated in Greenwich Mean Time (GMT). To convert GMT to Eastern Standard Time (EST), subtract 17 hours. For example, 23:31 GMT converted is 6:31 p.m. EST.

APPENDIX F
SCHEDULE OF PHYSICAL EVIDENCE

APPENDIX F

PREFACE

Immediately following the Apollo 204 accident of January 27, 1967, all associated equipment and material were impounded. Release of this equipment and material for normal use was under the close control of the Apollo 204 Review Board. Apollo Review Board Administrative Procedure No. 11, February 11, 1967, established the Apollo 204 Review Board Material Release Record (MRR). This MRR was the official form used to release material from full impoundment and was valid only after being approved by the Board and signed by a Member. The form was used as the authority to place any impounded item into one of the three Categories defined in Administrative Procedure No. 11. This appendix contains all of the authorized MRR's. Each item submitted on an MRR was given a control number; a description, including the part number and serial number; the relevance and location to the accident; any constraints before release; and the control category. The categories placed on the equipment were as follows:

Category A - Items which may have a significant influence or bearing on the results or findings of the Apollo 204 Review Board.

Category B - All material other than Category A which is considered relevant to the Apollo 204 Review Board investigation.

Category C - Material released from Board jurisdiction.

Several classes of equipment were released by special Board action prior to the establishment of the MRR system. The operating procedure for release of these classes is Enclosure F-1 to this appendix.

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0001	White Room Door	None Loc: White Room	None	A	C	Approved 2/15/67
0002	Flow sensor set (RCS)	None Loc: A8 +Z+Y	None	Α	C	Approved 2/15/67
	P/N G-16-858170-201 S/N 7					
	Log #135 PIRR #252					
	(kit for RCS plugs) to measure gas flow					
0003	LC antenna coupler set	None Loc: A8 +Z+Y	None	A	С	Approved 2/15/67
	ME481-0050-0001 Log #132					
	PIRR #257					
	(empty box) (equip out at Pad)					

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APOLLO 204 REVIEW BOARD MATERIAL RELEA	ASE RECORD

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0004	SCS Breakout Box	None A-8 -Z -Y	None	A	С	Approved 2/15/67)
	X00-002					
•	S/N FF-001					
	Log #133					
	PIRR #254					-
	(was not used on this test)			;	·	
0005	Flow Adapter Set (RCS) P/N G16-824499	None Loc: Level A8 +Z+Y	None	A	С	Approved 2/15/67
٠.	S/N 3					
	Log #134 PIRR #253				,	
	(Empty) Plugs in S/C					
0006	Module Leak Test Unit S14-079 Log #255 PIRR #384	None Loc: White Room	Hold TPS GSO 79-3-018 generated to run analysis pending results - then release	A	C	Approved 2/15/67
	(and attached hoses)					

F-6

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0007	Box of A.C. Extension Cords	None Loc: Level A8 +Z+Y	None	A	C	Approved 2/15/67
	Log #105					
	PIRR #235					
	Cannot be plugged into S/C					t Piggil.
8000	Differential Voltmeter J. Fluke Model 803B	None Loc: Level 8-Z-Y under Q.C. Desk	None	A	C	Approved 2/15/67
	S/N 1365					
	Log #221					
	PIRR #344	OCP 0005				
000 9	Decade Resistor (Biddle-Gray)	None Loc: Level A8	None	A	С	Approved 2/15/67
	S/N 31837 used with scope	Inside Cabinet at +Z				
		OCP 0005				

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0010	Power Supply (Hewlett Packard) P/N NASA LOC-AMR #39602	None Loc: Level A8 in cabinet at +Z	None	A	C	Approved 2/15/67
•	S/N 310-18470			·		
	Used with scope for trouble shooting					
0011	Oscilloscope P/N Tektronix - 321 S/N 002906	None Loc: Cabinet A8-1	None	A	C	Approved 2/15/67
0012	PIB (Area 15) Brush recorder P/N RD2522-20	None Loc: Level A8 In cabinet at +Z	None	A		Approved 2/15/67
	(No S/N)	Used in OCP 0005				
0013	Audio Oscillator LOC-AMR-43855 S/N 331-03345	None Loc: Cabinet A8-1	None	A	C	Approved 2/15/67

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0014	CD Milliammeter (HP Clip-on)	None Loc: Cabinet A8-1	None	A	C	Approved 2/15/67
	NASA LOC #AMR 43018 S/N 131-01808	Used in OCP 0005				
0015	Test Set (?) (Shallcross)	None Loc: Cabinet A8-1	None	A	C	Approved 2/15/67
	#6100 S/N 32956					
0016	VTVM Model 410C	None Loc: Cabinet A8-1	None	A	С	Approved 2/15/67
	NASA Property S/N F329730					
0017	Simpson Meter Model Z69 S/N Z13869	None Loc: Cabinet -A8-1	Perform functional & release	A	С	Approved 2/15/67
0018	L&N Test Set P/N 5300 S/N 1644965	None Loc: Cabinet A8-1	None	A	C 3 (1)	Approved 2/15/67
0019	Bag of test leads	None Loc: Cabinet -A8-1	None	A	C	Approved 2/15/67
	Log No:					

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0020	Bag of connector covers	None Loc: Cabinet -A8-1	None	A	C -	Approved 2/15/67
0021	Bracket antenna Coupling Set	None Lec: Cabinet -A8-1	None	A		Approved 2/15/67
	P/N ME481-0050-0001					
0022	Heat Gun Model #751-CD S/N 725277	None Loc: Cabinet -A8-1	None	A	C	Approved 2/15/67
0023	Weber Temp Check P/N 38611 S/N Z00446 (PIB Area Cab #7)	None Loc: Cabinet -A8-1	None	A	. C	Approved 2/15/67
0024	Hard Hat 2 ea. Log #217	None Loc: 1 ea. Bottom left corner of cabinet A8-1 1 ea. bottom left corner of	None	A	С	Approved 2/15/67
	PIRR 334	NASA QC Desk				

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HEM'	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0025	Bolts NAS 1153-C9 (PIB Area Cab. #7)	None Coc Cabinet A8-1	None	A	C	Approved 2/15/67
0026	Head Set	None Loc: Cabinet A-8+Z	None	A	C	Approved 2/15/67
	Log #154 PIRR 287					
	S/N 170A					
0027	Blower 1 ea. Log #112 PIRR #242	None Loc: Level 8A+Y+Z	None	A	C .	Approved 2/15/67
	S/N 100330 Brought up after fire to exhaust smoke					
0028	Water Cooler 1 ea. Log #148	None Loc: Level 8+Z+Y	None	A	С	Approved 2/15/67
	PIRR #259					

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0029	Lock out box (2 ea.) Z00-065 TE 459 S/N FF002	None Loc: In Cabinet on A8 (Cabinet #A8-1	None	А	C	Approved 2/15/67
	FF003 (PIB Area Cab. #7)					
0030	Tool box, personal Mr. J.A. Walters	None Loc: Removed from swing arm	Inventory and release to owner	A	С	Approved 2/15/67
	Log #222 PIRR #347					
	Locked time unknown					
0031	Cardboard box - clean room clothing	None Loc: Front of A8-1 cabinet +Y+Z Axis	Used - hold Clean release	A	С	Approved 2/15/67
	Log #129 PIRR #248					
0000					1 2. 1 2 2 1 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	
0032	Headsets (2 ea.)	None Loc: Removed from White Room	None	A	С	Approved 2/15/67
	Log #81 PIRR #123 S/N A6039 & A6044					

T-1

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0033	Monkey Bar, GSE Ingress egress assist	None Loc: White Room	Visual inspection & release	A	С	Approved 2/15/67
	Log #82					·
	PIRR #128					
0034	Tool pouch	None	Record the contents Release to Owner	A		Appro ved 2/15/67
	Log #98					
	PIRR #198					
0035	Kit, Optical Align S/N 233913	None Loc: Level A8 -Z-Y Axis	Visual Inspection	A	С	Approved 2/15/67
	Log: #127 PIRR #248 (empty)					
	(empty)					·
0036	Gas Mask	None Loc: White Room	Insp. for functional use, examine canister contents from used gas	A	c	Approved 2/16/67
	Log #89		masks, check for functional use and analyze. This work to be			
	PIRR #133		accomplished under cognizance of Norris Gray. Release upon approval of Panel 11 & 13.			
			77 - X - X - X - X - X - X - X - X - X -			
						1.

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0037	3 ea. cardboard Boxes containing used gas masks.	None Loc: Level A8 - +2+Z+Y	Same as previous 0036.	A	С	Approved 2/16/67
	Log #107 108 109					
	PIRR #230 229 231					
0038	Gas Mask 4 ea. Log #117	None Loc: 2 ea. under NAA Q.C. Desk -Y Axis	Same as previous 0036	·		Approved 2/16/67
	118 (2 each) 119	l ea level A-8 +Y l ea under swing arm Step +Y-Z Axis			•	
	PIRR #236 238 234					
	S/N 7-1321 7-1326 7-139 7-1069					
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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0039	Face Portion Gas Mask 2 ea. Log #115 116 PIRR #237 239	None Loc: Swing arm entrance to White Room and under -Y corner of White Room	Same as previous 0036			Approved 2/16/67
0040	Spares for water glycol and oxygen servicing Ground Support Equipment.	None Loc: Impounded to support the investigation of the Apollo 204	None	A	C	Approved 2/15/67
	A14-033 S14-019 S14-053	accident. These components were in storage at the time of, or procured since, the accident and are required as replacements for				
	S14-119* S14-121** S14-125 S14-140	failed items on GSE being used to continue operations in support of AS 501, 502 & 206.				
	*Not used to service water/glycol, only potable water.					
	**Water/glycol primary loop, does not inter-face with spacecraft.					

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0041	GSE Cable P/N SCH-105026 S/N-1	None Loc: Bonded Locker 2440 MSOB	None	В	С	Approved 2/16/67
·	GSE Cable P/N SCA-105027 S/N-1	None Loc: Bonded Locker 2440 MSOB	None	В	С	Approved 2/16/67
	Chamber-to-Power Supply Adapter P/N SCA-105028 S/N-1	None Loc: Bonded Locker 2440 MSOB	None	В	C	Approved 2/16/67
	Torso Harness P/N 103120E S/N 61	Same type as Astronauts were wearing. Bonded Locker 2440 MSOB	None	В	C	Approved 2/16/67
	Physio-Simulator P/N SOB 105007 S/N 004	Used in past S/C testing prior to OCP-K-0021-1 Loc: Bonded Locker 2440 MSOB	None	В	С	Approved 2/16/67
	CWG Adapter P/N SCA 105020 S/N 1	None Loc: Bonded Locker 2440 MSOB	None	В	С	Approved 2/15/67
	Lightweight headset P/N A2013-000 S/N 102 or 103	Used in past S/C testing Loc: NAA GFE Crib MSOB	Unkown	В	C	Approved 2/16/67
0042	Li OH Canisters P/N ME 901-0218-0001 (2 each)	These canisters are of the same type that were installed in S/C 012 during OCP-K-0021.	Approved TPS for analysis and approval of Panel 5 and 18.	A		Approved 2/16/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0043	Fire Hood 1 ea.	None Loc: Level A8- +Y+Z	Return to Norris Gray upon approval of Panel 13.	A	C	Approved 2/16/67
	Log #114 PIRR #241					
	Left by Firemen					
0044	Mobile Press Unit Assy. (Nitrogen "K"	None Loc: Level A-7	Sample analysis and release upon approval of Panel 18.	A	С	Approved 2/16/67
	bottle and cart).	Loc: Level A-7	upon approval of Fanci 16.			27 107 07
	Log #277 PIRR #415 S/N 2					
0045	Fire extinguishers (16 ea.) 15 lb. CO ² (1 ea.) Dry Chem	None Loc: Levels A7 and A8, LC 34	Fire Dept. to report status of each extinguisher and run functional, and release upon approval	A	. С	Approved 2/16/67
	(20 ea.) 50 lb. CO ² (Cart mounted)		of Panel 11 & 13.			
	16 ea. 15 lb. CO ² Log # PIRR #	S/N #				
	Log # PIRR # 95 214 96 218	G-129200 H-513994				
	96 219 94 213	H-656271 K-382116				
	94 209 93 202	None K-699689				
(Cont.).	93 204 94 208	K-700304 K-381892				

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
00.45	Log # PIRR #	S/N #				
0045 (Cont.)		K-380859				
(Cont.)	93 203	K-380976				
	93 206	None			· .	
	93 207	None				
	95 216	H-657852				
	95 212	None				ļ
	227 346	J-853959				
	228 345	K-381100		16		·
	1 ea. Dry Chem.					
•	94 211	None				
•	94 211	Hone				•
1	2 ea. 50 lb. CO ²			·		
i	95 215	None				
1	94 210	None			1	
ł	34 210					
	Condition: All Fire Ext.					
	used.					
٠ .						1
1						
0046	0 ₂ Analyzer	None	TPS S/C 012-007 and release by	Α	C	Approved
	P/N 52E180113-3	(1) Outside w/r A-8	Panel 18.			2/16/67
1	2 ea. S/N 3 & 4	S/N 4				İ
1				÷	1	•
<u> </u>	Log # 289,290	(2) 02 panel inside w/r			İ	
1		S/N 3				
1	PIRR #109, 108					
	111111111111111111111111111111111111111				1	1.
1	(2 not used)					1
1 '	(2 200 4004)					1
	K bottle was used					
	Hold for more inf.					
					•	

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0047	Trash Cans 7 ea. Log #91 and 239 PIRR #197, 195, 199, 196, 220, 200, 372	None Removed from levels 5,6,7 and 8	Examine contents in presence of fire panel. Store residue. Ship container to pad.	A	С	Approved 2/16/67
0048	Box - Gask Mask Log #104 PIRR 233	None Loc: Level A-8 +Y	Same as previous 0036	A	C	Approved 2/16/67
0049	Foot lockers 2 ea normal purpose of these lockers is for pad storage of crew systems equip.	None Loc: -Z	Visual inspection inventory contents, release upon approval of Panel 13.	A	C	Approved 2/15/67
	Log #130 & 128 PIRR #249 & 246					7-
	GFE Equipment carriers. Not used in test.					
0050	Trash Cans 3 ea. Log #75, 79, 74 PIRR #186, 201, 185	None Loc: 1 eaY 1 ea. level 7 +Z+Y	Examine contents in presence of fire panel and other interested personnel, store residue and return container to pad.	A	С	

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0051	Gas Mask Box #16 Log #111 PIRR #228	None Loc: Level A-8+Y+Z	Same as previous 0036	A	C	Approved 2/16/67
0052	Gas Mask Box #18 Log #110 PIRR #232	None Loc: Level A-8-Y+Z	Same as previous 0036	A	С	Approved 2/16/67
0053	S14-091 S/N 8 Battery Conditioner S14-111 S/N 4 S14-111 S/N 5	Located in Battery Room Bldg. M505. These units were used to charge S/C 012 batteries for OCP 0006				Approved 2/16/67
	Battery Charger Constant Voltage SK818-0019	& OCP 0021 and are needed to support the continued operations in support of AS 501, 502 & 206.				
	FQ 0502 (Battery Test Unit)					
	SK818-2012 FQ 0503 (Load Box)			â		
•	TAIR Book #FF0731 & All TAIR Books for above units	Insp. book for battery shop maintenance.				

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NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0054	Gas Mask Box (seal broken)	None Loc: - Removed from Swing Arm	Same as previous 0036			Approved 2/16/67
	Log #223 PIRR #347 S/N 13A					
0055	Boots, Protective Log #84 PIRR #136	None Loc: White Room	Inventory: Approval required by Panel 13.	A	C	Approved 2/16/67
	(Booties)					
0056	ECU O ₂ Flow-rate Transducer (1 each) (AiResearch P/N 836112-2-2-1)	Same type of units were installed in ECU on S/C 012. (Located in bonded storage in MSOB)	This Transducer will be utilized to determine different failure mode characteristics.	A	C	Approved 2/17/67
0057	ACE Carry-on Uplink C14-264-3 C14-265-3 DTCS	 Used in "Plugs In" Test Disconnected but in the area for "Plugs Out" Test. Location A8 Level 	 No Constraints Necessary to support S/C 017 Testing. 	A		Approved 2/16/67
	C14-266-3	5. Location As Level	3. Needed One Week Prior to re- stacking S/C 017 at VAB			

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0058	ACE Carry-on Downlink C14-203-10 C14-204-10 C14-210-4 PCM Unit C14-211-12 C14-212-12 C14-212-12 Conditioners	 Used in "Plugs In" Test Disconnected but in the area for "Plugs Out" Test Location A8 Level 	 No Constraints The uncontrolled environment at LC34 - A8 Level is detri- mental to the equipment. This equipment is necessary for use on future S/C. 	A	C	Approved 2/16/67
	C14-213-11 Conditioners C14-574-10 Cable Set WO215 PCM Cable					
0059	Tee Adapter P/N V16-601396	Not in Spacecraft 012 at time of accident. Similar configuration.	None	A		Approved 2/18/67
0060	Cobra Cable P/N V16-601263-41	Not in Spacecraft 012 at time of accident. Similar configuration.	None	A		Approved 2/18/67
0061	Noise Limiter P/N V16-601549	Not in Spacecraft 012 at time of accident. Similar configuration.	None	A	С	Approved 2/18/67
0062	PGA Adapter P/N V16-601357-31	Not in Spacecraft 012 at time of accident. Similar configuration.	None	A	C	Approved 2/18/67
0063	Torso Harness P/N 103120E, S/N 69	Not in Spacecraft 012 at time of accident. Similar configuration	Special test to be performed in accordance with RST 3A.	A	С	Approved 2/18/67
0064	Communications GSE Adapter P/N SCA-105029,S/N 1	Not attached to Spacecraft 012 at time of accident. Similar configuration.	Special test to be performed in accordance with RST 3A.	A	C	Approved 2/18/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0065	GSE Power and Distribution Cable P/N SCC-105024, S/N 1	Not attached to Spacecraft 012 at time of accident. Similar configuration.	Special test to be performed in accordance with RST 3A.	A	C	Approved 2/18/67
0066	Mobile Test Rack P/N SCC-100137, S/N 2	Not attached to Spacecraft 012 at time of accident. Similar configuration.	Special test to be performed in accordance with RST 3A.	A	С	Approved 2/18/67
0067	Interconnect Box P/N 688541-1F, S/N HS-GSE-003, and Headset.	Not attached to Spacecraft 012 at time of accident. Similar configuration.	Special test to be performed in accordance with RST 3A.	A	C	Approved 2/18/67
0068	Light Weight Headset P/N A2013-000, S/N 102 or 103.	Not attached to Spacecraft 012 at time of accident. Similar configuration.	Special test to be performed in accordance with RST 3A.	. A	C	Approved 2/18/67
0069	A14-037 S/N-7 Adapter and Duct Set	Used on S/C 012 to supply C/M circulating air and was physically connected prior to hatch closeout. Needed urgently to support S/C 017 operations.				Approved 2/21/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0070	C14-209-4 Spacecraft External Mounting Rack	 Used during "Plugs In" test. Disconnect but in the area for "Plugs Out" test 	 No constraints. Necessary to support S/C 017 testing. The uncontrolled environment 	A		Approved 2/21/67
		3. Location A8 Level	at LC 34 A8 Level is detrimental to the equipment stored in this rack. The equipment has been reassigned to Category "C".			
0071	C14-206-1 Spacecraft External Mounting Rack	 Used during "Plugs In" test. Disconnect but in the area for "Plugs Out" test. Location A8 Level. 	 No constraints. Necessary to support S/C 017 testing. The uncontrolled environment at LC 34 A8 Level is detrimental to the equipment stored in this rack. The 	A	С	Approved 2/21/67
			equipment has been reassigned to Category "C".			
0072	Log Books from Unified S-Band Station:	Used at time of accident and located at station.	None — Obtain copies of pages in use for OCP 0021 then release.	A	С	Approved 2/21/67
	 M & O Log Apollo Displays Log Recorders Log GCC Log Tel Track Log 					
	6. Launch Support Log					

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	1		APOLLO 204 REVIEW BOARD	MATERIAL RELEASE RECORD	• • • • • • • • • • • • • • • • • • • •		
	ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
	0073	Mechanic's Tool Box	None known.	Inspect and record contents	A	C	Approved
		(SEHORN)	Located on South side of	•	ļ ·-	Ŭ	2/22/67
	• :		Level A-7, Pad 34				2, 22, 0,
	0074	Seven hard hats	None	None	A	С	Approved
			Located on East side of Level A-7, Pad 34				2/22/67
	,				_		
	0075	50 Volt DC Power Supply	Was to have been used during	Perform functional check.	À	c &	Approved
			0021 test to hold ECS coolant	Have electrical systems			2/22/67
			valves open after flyaway	engineers determine that power			
	·		umbilical release. Located	supply could not have caused			
	••		on East side of Level A-7, Pad 34.	the problem.			
	0076	Mechanic's Tool Bag	None known.	Inspect and record contents.			. .
	0070	meenanie 5 1001 pag	Located on East side of	inspect and record contents.	A	С	Approved 2/22/67
	-		Level A-7, Pad 34.				2/22/07
	0077	Three Gas Masks	On hand for emergency use.	Inspect and evaluate func-	Α	С	Approved
			Located on Northeast side of	tionally by Norris Gray, KSC -	•		2/22/67
			Level A-7, Pad 34.	Return to stock			
	2022						
	0078	SSMT OCP Book	In use by technician on Northeast side of Level A-7,	Turn whole book to Panel 6.	A	A	Approved
ı			Pad 34.			` '	2/22/67
•			* uu Ji				
ı							
	0079	Mechanic's Tool Box	None known.	Inspect and record contents	Α	С	Approved
1		(Williams)	Toogtod on Courbinos aids of			1	

2/22/67

Level A-6, Pad 34.

Located on Southwest side of

(Williams)

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0080	Two Hard Hats	No relation Located on South side of Level A-6, Pad 34.	None	A		Approved 2/22/67
0081	Mechanic's Tool Box (Fairman)	None known. Located on West side of Level A-6, Pad 34.	Inspect and record contents.	A	C	Approved 2/22/67
0082	Volt ohm-milliammeter	None - not connected. Located on West side of Level A-6, Pad 34.	None	A	С	Approved 2/22/67
0083	Vacuum Pump and Bell Jar	No relation — used to mix potting compounds. Located on North side of Level A-6, Pad 34.	None	A	С	Approved 2/22/67
0084	SSMT OCP Book	In use by technician on Southwest side of Level A-6, Pad 34	Turn whole book to Panel 6	Α	. С	Approved 2/22/67
0085	Special Clothing for entering the White Room	No relation. Located on Southwest side of Level A-6, Pad 34. Probably not in use at time of accident.	Inspect, document any unexpected conditions — release if none found.	A	С	Approved 2/22/67
0086	Five battery-operated lanterns.	No relation. Used after fire started.	None - units functioned properly.	A	С	Approved 2/22/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0087	Land Line 1TV185 1TV176 1TV186	From LC34 to MSOB ACE S/C Rm. 3436	Lines required to support other testing.	A	C	Approved 2/22/67
	1TV177 1TV187					
	1TV178 1TV184					,
·	1TV077 1TV190					
	1TV 188 1TV 191					
	1TV 189 2DAC-004 thru			•		:
	2DAC-015 2DAC-229 2DAC-230			•		
0088	Z-00692 J Fluke Diff. VM. 803B S/N L57873	On standby in S.E. trailers	None	A	С	Approved 2/22/67
0089	Z-00697 HP Audio Osc. 201C S/N L41167	On standby in S.E. trailers	None	A	C	Approved 2/22/67
						2 22/07
0090	Z-01173 HP Audio Osc. 201C S/N L43852	On standby in S.E. trailers	None	A	С	Approved 2/22/67
0091	Z-01346 HP Pwr. Sup. 4301A S/N L63518	On standby in S.E. trailers	None	A	C	Approved 2/22/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0092	Z-00341 Tektronic Sq. Wave Gen. 105	On standby in S.E. trailers	Non e	A	C .	Approved 2/22/67
0093	Z-00932 Brush Recorder RD2522 S/N L41025	On standby in S.E. trailers	None	A	С	Approved 2/22/67
0094	Z-00364 Tek. Plug In H S/N L54895	On standby in S.E. trailers	Non e	A	С	Approved 2/22/67
0095	Z-00980 Tek. Plug In 1A1 S/N L45419	On standby in S.E. trailers	None	A	C	Approved 2/22/67
0096	Z-00765 Simpson VOM 270	On standby in S.E. trailers	Non e	A	С	Approved 2/22/67
0097	Z-00762 Simpson VOM 270	On standby in S.E. trailers	None	A	С	Approved 2/22/67
0098	Z-00350 Simpson VOM 270 S/N L41120	On standby in S.E. trailers	Non e	A	С	Approved 2/22/67
0099	Z-00759 Simpson VOM 270	On standby in S.E. trailers	None	A	С	Approved 2/22/67
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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0100	Z-00758 Simpson VOM 270	On standby in S.E. trailers	None	A	C	Approved 2/22/67
0101	Z-00728 Simpson VOM 270	On standby in S.E. trailers	Non e	A .	C	Approved 2/22/67
0102	Z-00178 Simpson VOM 270 S/N L41118	On standby in S.E. trailers	Non e	A	С	Approved 2/22/67
0103	Z-00175 Simpson VOM 270 S/N L41114	On standby in S.E. trailers	None	A	С	Approved 2/22/67
0104	All spacecraft spare bulk items located in D/810, Material and Supply Support, Warehouse.	Impounded to support the investigation. These components were in storage at the time of, or procured since the accident and will be used to support S/C 017 operations, as required.				Approved 2/23/67
0105	S14-121-9 Water/Glycol Refrigeration Unit G14-845000	Utilized on S/C 012 during OCP 0006 & 0021. Located at Base of Tower Task #3 Item.	Required for LC-39 Site Activation. Required 2/24/67.	A	Ċ	Approved 2/23/67
0106	S14-019R-8 Water/Glycol Service Set ME901-0092-0002	Utilized on S/C 012 during OCP 0006 & 0021. Located at Base of Tower Task #3 Item.	Required for LC-39 Site Activation. Required 2/24/67.	A , 1	, C	Approved 2/23/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0107	Pyrotechnics initiator substitute unit. G16-820402 A14-139-65 A14-139-66 A14-139-67 A14-139-68 A14-139-69	Used during "Plugs In". Disconnected, but remained in area during "Plugs Out" Level A7 & A8.	 Necessary to support S/C 017 testing. Required by 3/1/67. 	A	С	Approved 2/23/67
	A14-139-70 A14-139-71 A14-139-72 A14-139-73 A14-139-75 A14-139-76 A14-139-77 A14-139-78					
0108 _.	A14-275-1 RCS Quad Simulator	Used during "Plugs In." Disconnected, but remained in area A7 during "Plugs Out".	Necessary to support S/C 017 testing. Required by 3/7/67	A	С	Approved 2/23/67
0109	C14-480-5 Initiators Stimuli Unit G16-850650	Used during "Plugs In." Disconnected, but remained in area A8 during "Plugs Out."	Necessary to support S/C 017 testing. Required by 3/1/67.	A	С	Approved 2/23/67
0110	C14-451-5 Earth Landing System Sequence Controller Pressure Stimuli Generator. G14-854726	Was powered up during "Plugs In" & "Plugs Out," but not utilized. Located at Level A8.	Necessary to support S/C 017 testing. Required by 3/7/67.	A	C	Approved 2/23/67

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0111	3 ea. GSE Physio Simula- tors – P/N SCB 105007 PIRR – 244	Not used during 0021 Located in suitcase on Southeast side of Level 8A, Pad 34.	None 1 ea. has been sent to MSOB per TPS S/C 012 MA 014. 2 ea. presently located in PIB.	A	С	Approved 2/23/67
0112	3 ea. GSE Physio Simula- tor Adapter Cables — P/N 105018-A PIRR — 244	Not used during 0021. Located in suitcase on Southeast side of 8A Level, Pad 34.	None	A		Approved 2/23/67
0113	Empty. 2 ea. Suitcases (Color Charcoal) PIRR – 244	Used only to transport equipment to Pad. One located on Southeast side of 8A Level, Pad 34.	None	A	C	Approved 2/23/67
0114	1 ea. DSEA Recorder GSE Check Out Fixture with Storage Box S/N 104 PIRR - 249	Used to transport DSEA Recorder to Pad. Located on Southwest side of Level 8A, Pad 34.	None	A	С	Approved 2/23/67
0115	T. V. Camera Box Log #178 PIRR #322 (Empty)	LOC: Cabinet A8-1 Camera Onboard S/C	None	A	С	Approved 2/23/67
0116	Support Bracket P/N DTT 101161-13 Log #185 PIRR #329	LOC: Cabinet A8-1 GSE - Not Installed	None	A	С	Approved 2/23/67

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0117	S/C Window Cover (2 each) P/N MK394-10061-021 Log #191 PIRR #331	LOC: Cabinet A8-1 GSE - Not Installed	None	A	C	Approved 2/23/67
0118	Window Cover GSE 3 each MK 394-1001-032 MK 394-10061-31 MK 394-10061-017 Log #246, 247, 248 PIRR #380,381,382	A-8 in Cabinet Not Installed During Test	None	A	С	Approved 2/23/67
0119	Oscilloscope TechTronic 555 S/N 008004 with Scope Camera C-13 SN 006452, and Type L Plug-In Unit S/N 016499 Log #122 PIRR #255	LOC: Level A8 +Z -Y Used OCP 0005	None	A	C	Approve 2/23/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0120	Power Supply S/N 4020 Log #125 PIRR #255	LOC: LEVEL A-8 +Z+Y AXIS Was a stand by unit	None	A	С	Approved 2/23/67
0121	Box of Body Shrouds Log #226	LOC: Removed from Level A-8 in front of C-14-451	None	A	С	Approved 2/23/67
	PIRR #343 (Plastic Bags) Not used by medical people					
0122	Box - RCS Nozzle Plugs w/flow sensor Log #218 PIRR #323	LOC: Cabinet A8-1 GSE Not Installed	None	A	С	Approved 2/23/67
0123	Launch Complex 34 — All areas below adjustable Level 5, not to include spacecraft GSE.	As Noted	Walk down of all levels involved.	A *	С	Approved 2/24/67
0124	Tool Bag (Mechanics)	N.W. corner of tower Level A-7 (Relevance to Accident – NONE)	Inspect contents, record each item in inventory form, and release to owner.	A	С	Approved 2/24/67
0125	C14-385-3 Test Set ACE	Used to check out C14-231 per IDR-026 during OCP-K-0006	Unit has been released for use at VAB per Investigation TPS GC 385-3-004	A	C	Approved 2/24/67

APOLLO 204 REVIEW BOARD MATERIAL RELEASE RECORD RELEVANCE TO ACCIDENT **CONSTRAINT PRIOR** CURR. DESIR. ITEM BOARD DESCRIPTION (INCLUDE LOCATION) TO RELEASE **CATEGORY** CATEGORY ACTION NO. 0126 One (1) Belt Type LOC: On 220' Level during None \mathbf{C} A Approved Tool Kit with the following the accident, now in the PIB. 2/28/67 tools: (Personal - Givens) A. Screw Driver - 8 in. Common B. Screw Driver - 14 in. Common (2 each) C. Pair of Side Cutters D. Pair of Water Pump **Plyers** E. 8 in. Crescent Wrench F. Screw Driver - 6 in. Reed & Fringe G. Open End-Box wrench H. Small roll of black plastic tape Pressure Test Stand Utilized during 0021 in LC 34 0127 None A Approved Z00-025-401 White Room Has been sampled per TPS-013. 3/1/67 (Used to reduce the pressure be-TPS complete and no unusual FF001 tween the K bottle and S/M FF0803 amount of contaminants were entrance) not located in white found. Analysis has been in the room - located in S.E. corner of hands of Panel 16 for several 8A level of service structure.) days.

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0128	The entire voice Operational Intercomm System (OIS) used for the AS-204,	The Operational Intercomm System (OIS) has been thoroughly documented by the Voice Communica-	None	A	C	Approved 3/1/67
	Plugs Out Test, except the following items not to be released. 1. Launch Complex 34 OIS	tions Group of Panel 9 as to configuration (submitted to Panel 1), performance, and tests simulating the "plugs-out" configuration.				
	2. Launch Complex "CAST" Panel 3. Umbilical Communications Link	These circuits are urgently needed to support other areas and to proceed with modifications to Launch Complex 39 communications.				•
0129	S14-099-3 Protective Pressure Unit G14-848540	Utilized to Maintain Pressure on SPS Tanks. S/M Required for S/M 012 Investiga- tion Effort.	None	A	C	Approved 3/1/67
0130	(1) ea. mirror personal (L. D. Reece)	Log Card 225 LC-34 White Room	None	A	С	Approved 3-1-67
0131	(1) length of 12 gage (approx.) 18 ft.	Log Card 225 LC-34 White Room	None	A	С	Approved 3-1-67
0132	(1) length of single strand wire (no ID) white approx. 100 ft.	Log Card 225 LC-34 White Room	None	A	С	Approved 3-1-67
0133	Transfer Van	Used to transport astronauts from MSOB to LC-34	Non e	A	С	Approved 3-1- 67

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APOLLO 204 REVIEW BOARD MATERIAL RELEASE RECORD DESIR. RELEVANCE TO ACCIDENT CONSTRAINT PRIOR CURR. BOARD ITEM DESCRIPTION CATEGORY ACTION (INCLUDE LOCATION) TO RELEASE CATEGORY NO. A C ACE - S/C Computer Room Required to provide latitude Approved 0134 Ground Station used to con-3-1-67 duct OCP-0021, but specific in present testing schedules. (MSOB, 4452) configuration documented and submitted to 204 Review Board. Approved Ground Station used to con-Required to provide latitude Α C 0135 ACE-S/C Control Room 3-1-67 duct OCP - 0021, but specific in present testing schedules. (MSOB, 3446) configuration documented and submitted to 204 Review Board. \mathbf{C} Ground Station used to con-Required to provide latitude A Approved 0136 ACE S/C Signal in present testing schedules. 3-1-67 Distribution Room duct OCP - 0021, but specific configuration documented and (MSOB, 3436) submitted to 204 Review Board. \mathbf{C} A Approved Spares for Ground None None 0137 3-1-67 Support Equipment Location: These components were in storage at the time of, or A14-011 procured since, the accident and S14-120 are required as replacements for S14-088 failed items on GSE used to \$14-041 continue operations in support AS A14-019 501, 502, & 206. Ä \mathbf{C} Approved ME435-0013-0035 0138 3-2-67 Item utilized as spare. Did not V16-714385-11 see S/C 012. Required to S/N 0014 Data Storage Eqpt. support S/C 017. Tape Recorder - DSE

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0139	ME435-0026-0002 V16-714394 F1t. #8 S/N Flight Qual. Tape Recorder FQ T/R	None Item utilized as spare. Did not see S/C 012. Required to support S/C 017		A	С	Approved 3/2/67
0140	SPS Nozzle Extension	The constraints listed have been satisfied and no discrepancies Were noted.	(1) Inspection (2) Nozzle removed (5) Cover Nozzle	A ·	C	Approved 3/2/67
0141	1 Tube DuPont PR-240 AC Lube	In Storage Cabinet on Level A-6	Identify Sample and Release upon Approval of Panel #18.	A		Approved 3/2/67
0142	Spacecraft LEM Adapter (SLA)	No discrepancies were noted in satisfying any of the constraints listed.	 SM/SLA demate Electrical Ringout Inspection 	A	C	Approved 3/4/67
	PYROS	None	None	A	С	Approved 3/4/67
0143	Gemini Suit Check-out Console P/N SE-AE-000504 S/N S-15638	None Location: Suiting White Rooms	Communication Checkout Calibration Checkout	A	С	Approved 3/4/67
0144	Gemini Suit Check-out Console P/N SE-AE-000504 S/N S-15639	None Location: Suit White Rooms	Communication Checkout Calibration Checkout	A	C	Approved 3/4/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0145	Spacecraft Parts Trailer containing parts for open TPS's & DR's on S/C 012	Located at LC-34-Parts in trailer were not installed on S/C 012		A	C	Approved 3/6/67
0146	Tool Box (Wingfield)	None. Located lev. A-6 LC-34	Inventory and record contents	A	C	Approved 3/4/67
0147	C14-599-1 Radio Frequency Switching Console G16-850130 Connects one of three identical transmission lines from the S/C to the radio frequency system c/o unit.	Located MSOB Seq. Lab. Room 3412. Required to support S/C 017 operations.	None	A	С	Approved 3/6/67
0148	Release LC 34 to Operational Status		TPS LC 34-577 (Investigation) removes remaining items of concern from LC 34 to PIB. Upon completion of this removal, release LC 34 to operational status.	A	C	Approved 3/6/67
	X00-040-1 FF 0710 SK818-0608 TM Breadboard Assy.	Utilized on S/C 012 during OCP 0006 or OCP 0021. Cat. III LC 34 Required to Support S/C 017.		A	C	

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ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
	C14-472-1 G16-85305 Provides the necessary cabling to interconnect the S/C under test, the associated GSE and the facility services at Launch Complex 34.	Utilized during OCP 0006 & OCP 0021 Located at LC 34 Required by Quality Control personnel to document existing discrepancies at Launch Complex 34.		A	С	
0149	Q-Ball Part #50M12580 Serial #7	None Loc: Top of Launch Escape System	None	A	С	Approved 3/7/67
0150	A14-056-5 ME127-0007-0002 S/M Propulsion Eng. Gimbal Locking Links	None Install per OCP 0006 Installed on Service Module MSOB Required to Support S/C 012 Operation		A	С	Approved 3/7/67
0151	Spacecraft Spares Pitch Electronic Control Assy. ME901-0166-0324 S/N 10028 DAE 1020	None Units were in warehouse stock during accident. These units to be returned to vendor for mod, to be used on S/C 017		A	C	Approved 3/9/67
0152	Roll Electronic Control Assy. ME901-0167-0334 S/N 10028 EAG 1014	None Units were in warehouse stock during accident. These units to be returned to vendor for mod. To be used on S/C 017.		A	C	Approved 3/9/67

APOLLO 204 REVIEW BOARD MATERIAL RELEASE RECORD BOARD DESIR. RELEVANCE TO ACCIDENT **CONSTRAINT PRIOR** CURR. ITEM DESCRIPTION CATEGORY | CATEGORY | ACTION (INCLUDE LOCATION) TO RELEASE NO. \mathbf{C} S/C Tool Box (Gray) Located on Lev. A-8 Inventory & record contents. Α Approved 0153 3/9/67 Contained special tools for working on the S/C. Now in PIB Α C Approved S/C Tool Box (Red) Located on Lev. A-8 Inventory & record contents. 0154 3/9/67 Contained special tools for working on the S/C. Now in PIB À Approved 0155 Tool Kit In the transfer van and not used. Leventory 3/10/67 NASA Suit Tech. A. Rochford Α C Approved Tool Kit In the transfer van and not used. 0156 Inventory 3/10/67 NASA Suit Tech. W. Salyer Batteries from Spacecraft. These batteries were in the deep freeze in the battery shop at the 011 (4) time of the incident. None Α C Approved 0157 4090-11A S/N 0886A 3/13/67 C Α 4090-11A S/N 0887A None Approved 0158 3/13/67 A C None Approved 0159 4095-3A S/N 0906A 3/13/67 C None À Approved 0160 4095-3A S/N 0910A 3/13/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR.	BOARD ACTION
NO.		(MCEOPE EOORITON)	I O ILLLAND	CATEGORI		
	YOO-057-1	Utilized on S/C 012 during OCP 0006 or OCP 0021. Cat. III		A	C	
	FF 1459 DTT-101137	LC 34				
1 100	Cable hook-up for X99-025	Required to Support S/C 017				
	YOO-057-2	Utilized on S/C 012 during OCP		A	C	
	FF 1461	0006 or OCP 0021. Cat. III				
	DTT-101137	LC 34				
	Cable hook-up for XOO-025	Required to Support S/C 017				•
	YOO-057-3	Utilized on S/C 012 during OCP		A -	С	1 · · · · · · · · · · · · · · · · · · ·
1	FF 1462	0006 or OCP 0021. Cat. III				
	DTT-101137	LC 34				
1	Cable hook-up for XOO-025	Required to Support S/C 017				
					C	
1	XOO-004-1	Utilized on S/C 012 during OCP 0006 or 0021. Cat. III		A	, c	
1	FF 0770 TE 270	LC 34				
	EPS Battery Control Box	Required to Support S/C 017			•	
	XOO-025-1	Utilized on S/C 012 during OCP		A	C	
	FF 0707	0006 or 0021. Cat. III				
	DTT-101133	LC 34 Required to Support S/C 017		1		
	TE 396 Battery Substitute Unit	Required to Support 37 C 017				
	Battery Substitute On It					
1	YOO-085	Cat. III was utilized during		A	С	
	FF 001	OCP 0006 or 0021				
	TE 490	LC 34				
	EPS Cable Assy.	Required to Support S/C 017				
		Operations.				

APOLLO 204 REVIEW BOARD MATERIAL RELEASE RECORD RELEVANCE TO ACCIDENT **CONSTRAINT PRIOR** CURR. DESIR. BOARD ITEM **DESCRIPTION** CATEGORY CATEGORY ACTION (INCLUDE LOCATION) TO RELEASE NO. 1) Board approval of Panel 21 C Approved No discrepancies were noted in Α 0161 Servi ce Module 3/14/67 Final Report of 204 Review satisfying any of the constraints Board. listed. Gen Assy 2) No additional testing in sup-V17-000002-131 port of CM investigation A \mathbf{C} Approved Rate Gyro Assembly These items were stored in the None 0162 3/17/67 warehouse or procured since. P/N ME - 493 - 0005 - 0314 Were not installed on S/C 012. S/N 10028EAB1015 Required to support S/C 017 Approved Attitude Gyro/Accelerooperation. 0163 3/17/67 meter Assembly P/N ME - 493 - 0006 - 0314 S/N 10028EAC1018 Approved Auxiliary Electronic 0164 3/17/67 Control Assembly P/N ME-901-0169-0314 S/N 01128EAH1017 Approved 0165 Displays Electronic 3/17/67 Control Assembly P/N MF - 901 - 0170 - 0334 S/N 10028DAD1019 Approved Gimbal Position/ 0166 3/17/67 Attitude Set Indicator P/N ME - 432 - 0056 - 0304 S/N 10028EAJ1021

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0167	A14-019 Umb. Disconnect	Connected to S/C	None	A	С	Approved 3/20/67
0168	S14-112 Scupper Set	Connected to S/C	None	A	C	Approved 3/20/67
0169	G17-828107-41 S/N 8 S/M Radiator Protective Cover Log 695	None. Sent to PIB	None	A	С	Approved 3/20/67
0170	2 ea LCQ - 2 Lights Log 369	Used to Work in C/M after the Accident.	None	1 1 1 A	G	Approved 3/29/67
0171	Nylon Sling S/N 002 LEM Handling Log 404	Borrowed to Transport C/M to PIB	None	A	C	Approved 3/20/67
0172	Hatch Closeout Tool Kit. Log 86	In White Rm. Used to Close Hatches	None	A	С	Approved 3/20/67
0173	Fiber Glass Container. (Contains V16-601356-21 Cable S/N AAG014 and CWG Helmet S/N 103) Log 92	On Tower Level	None	A	С	Approved 3/20/67
0174	Z-00924 H/P Counter	Standby Log 216	None	*	C	Approved 3/20/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0175	Z-00368 NJE Pwr. Sup.	Standby Log 215	None	A	C	Approved 3/20/67
0176	Z-00878 Webber Temp. Meter	Thermocoupler Connected to S/M Isolation Valve During Test. Log 381	None	A	С	Approved 3/20/67
0177	Z-00439 Triplet VOM	Standby Log 992	None	A	С	Approved 3/20/67
0178	Z-00683 Simpson VOM	Standby Log 992	None	A	С	Approved 3/20/67
0179	Z-01175 Simpson VOM	Standby Log 992	None	A	C	Approved 3/20/67
0180	Mod. 594 Thermograph Log 87	None. Records temp. & Humidity of C/M During Normal Work. Remove Prior to Hatch Closeout.	Remove any data and turn in to Room 3344 and release item	A	С	Approved 3/20/67
0181	BB8BB144-60G	None	None	A	С	Approved 3/20/67
	Flex Hose Log 417					

F-44

435

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0182	Adapter Duct Part of A14 - 037 Log 380	Used to Furnish Air to C/M Prior to Closeout.	None	A	С	Approved 3/20/67
0183	5 ea. 800328-1-1 Suit Ventilators Log 260-262-263 264-265	Not Used	Previously sampled	A	С	Approved 3/20/67
0184	3 ea. Head Rest Pads Log 152	None. On Tower Level.	None	A	С	Approved 3/20/67
0185	G16-824415 Hatch Prot. Seal. S/N LAY0116 Log 416	None. Used to Protect Hatch Edges During Normal Work	None	A	С	Approved 3/20/67
0186	Velostat Covered Pads Log 146	Used as Protective Pads in C/M During Normal Work	None	A	С	Approved 3/20/67
0187	G02 K - Bottle S/N AF8837 Log 725	On Level 8	Sample and turn in results to Panel 4	A	С	Approved 3/20/67
0188	G02 K - Bottle S/N TH1833 Log 231	On Level 8 Sampled per TPS S/C 012- S/C 013	Sample and turn in results to Panel 4	A	С	Approved 3/20/67
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TOTAL

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0189	G02 K - Bottle S/N 199699 & Reg. S/N 661. Log 412	On Lev. 8	Sample and turn in results to Panel 4	A	С	Approved 3/20/67
0190	G02 K - Bottle S/N EL 17652 Log 415	On Lev. 8	Sample and turn in results to Panel 4	A	С	Approved 3/20/67
0191	2 ea. GN2 K-Bottles 1 with Reg. Log 137 and 253	On Lev. 8	Sample and turn in results to Panel 4	A	C .	Approved 3/20/67
0192	2 ea. GHE K-Bottles Log 138 and 271	On Lev. 8	Sample and tum in results to Panel 4	A	С	Approved 3/20/67
0193	Engine Pneumatic Actuation Package S/N XX0057, P/N 1119600-149	None. In Apollo Warehouse. Required per TPS S/S 320.		A	С	Approve 3/20/67

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
0194	Velostat Covered Board Log 140	None. Level 8 of Tower		A	C	Approved 3/22/67
0195	Scott Air Pack Log 106	None. Used after accident.		A	С	Approved 3/22/67
0196	Sample Bottle Log 832	None. On Tower at Time of accident.		A	С	Approved 3/22/67
0197	Box Asst'd. Items Log 992	Collected off Tower. Inventoried per TPS PI-047		A	C .	Approved 3/22/67
0198	19024 31 - 031 PSAAM Log 207	Removed from C/M Prior to Hatch Close Out.		A	. C	Approved 3/22/67
0199	Trash Can Log 672	On Umb. Tower. Contents Checked by Dr. Carhart.		A	C	Approved 3/22/67

APOLLO 204 REVIEW BOARD MATERIAL RELEASE RECORD **CONSTRAINT PRIOR** CURR. DESIR. BOARD RELEVANCE TO ACCIDENT ITE... DESCRIPTION ACTION **CATEGORY** CATEGORY (INCLUDE LOCATION) TO RELEASE NO. \mathbf{C} Α None Crew Couches from S/C None 0200 014 (3 ea.) Following is a listing of part numbers and quantities of equipment requested for release and subsequent shipment to: Link Group, GPI 1740A NASA Blvd. Houston, Texas, 77058 Attn: Mr. Wayne Shotwell P/N Description Quantity C Crew couch installation complete 1. V16-531501 Α (Perspective) Pads, Back C 2. V16-601472-11 Α 3. V16-601472-81 C Pad, back A 4. V16-601472-92 RH Pad, hip and thigh C A Center pad, hip and thigh 5. V16-601472-71 ٠C A 6. V16-601472-111 Center pad, hip and thigh C Α 7. V16-601472-101 Pad, hip and thigh C A LH Pad, hip and thigh \mathbf{C} 8. V16-601472-91 Α 9. V16-601472-41 Pads, control arm C Α 10. V16-601472-61 Pads, control arm \mathbf{C} A

ITEM NO.	DESCRIPTION	RELEVANCE TO ACCIDENT (INCLUDE LOCATION)	CONSTRAINT PRIOR TO RELEASE	CURR. CATEGORY	DESIR. CATEGORY	BOARD ACTION
	P/N	Quantity	Description			
0200	11. V16-601472-131	12	Pads, head rests	A	С	
	12. V16-601472-121	3	Pads, head rests	. A	C	
	13. V16-601495	2	Cover	A	С	
	14. V16-601494		Cover, upper protective	A	C	
	15. V16-601496-1	1	LH cover, side protective	A	С	
	16. V16-601496-2	$oldsymbol{1}$	RH cover, side protective	A	С	·
•	17. V16-571314-31	2	Struts, Z-Z axis	A	С	
	18. V16-571412-41		RH Struts, X-X axis (head)	A	С	
•	19. V16-571412-51	1	LH Struts, X-X axis (head)	A	С	1
	20. V16-571411-41	2	Struts, X-X axis (foot)	A	C	
	21. ME 901-0257-0002			A	С	
	22. ME 901 - 0257 - 0004		Harness assembly restraint,	Α	C	f ,
	23. ME 901 - 0257 - 0006		Crewman (Spec. control part)			
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APOLLO 204 REVIEW BOARD MATERIAL RELEASE RECORD CONSTRAINT PRIOR RELEVANCE TO ACCIDENT CURR. **BOARD** ITEM DESIR. **DESCRIPTION** (INCLUDE LOCATION) TO RELEASE CATEGORY CATEGORY ACTION NO. Trash, being held per Fire panel and interested parties \mathbf{C} Approved 0201 Α 3/28/67 MRR 0047 and 0050. have checked thru the residue and find nothing relevant to the accident. All items are dirty from normal Approved Clean RM clothing 0202 Α . 3/28/67 Ref. MRR 0031 use Spacecraft Spare -0203 P-/N ME478 - 0027 - 0003 None \mathbf{C} S/N 013100050016 was in warehouse at time of "C" Band Transponder accident. Part to be returned to vendor and modified Ref. MCR A1943 Req. to support S/C 017.

Revised: February 10, 1967

February 7, 1967

TO:

Those Concerned

FROM:

S. Beddingfield, KSC J. M. Moore, NAA/FF

SUBJECT:

Removal of Equipment and Facilities from Impounded Status

In accordance with the Accident Investigation Board's direction, the equipment and facilities noted herein may be released from Impounded Status in accordance with the procedures defined in this letter.

When the specified procedures for release from impoundment have been executed, a copy of the configuration records, where applicable, will be forwarded to Data Records for impoundment.

Each NAA and NASA-KSC supervisor of applicable equipment or areas involved will maintain the status of equipment or facilities released from impoundment and will be accountable to the Board for the proper and accurate execution for this plan.

This direction applies:

PLAN OF ACTION

<u>PURPOSE</u>: To delineate and delegate specific tasks to departments of NAA to accomplish compliance with, and completion of, certain conditions set forth in a letter from Prime Investigation Board governing the release from impound of selected groups of material and GSE/STE connected with Spacecraft 012.

 $\underline{\text{LOGIC}}$: Sequentially numbered, 1 through 15, under the heading "TASK", is a verbatim statement of the task as spelled out by the Prime Investigation Board.

Directly following the statement of task, under the heading "LOGIC", and numbered in steps, 1.1, etc., will be found specific instructions to individual departments within NAA.

Text follows:

I. TASK.

All GSE/STE and facility equipment on Launch Complex 34 which was not utilized for checkout or servicing of Spacecraft 012 will be released immediately.

LOGIC.

D/818 will provide to D/816 a list of above equipment signed by J. M. Moore. No TPS will be required.

SUBJECT: Removal of Equipment and Facilities from Impounded Status Page 2

II. TASK.

All GSE/STE and facility equipment on Launch Complex 34 utilized prior to Plugs In and removed prior to Plugs In, but which is still in the Complex area, shall be statused in terms of configuration, copies made and retained in Room 3344, and then released for further use.

LOGIC.

- 2.1 D/818 will provide a list of all GSE/STE and facility equipment utilized on Launch Complex 34 prior to Plugs In and removed prior to Plugs In.
- 2.2 Configuration of the end item will be referenced to the exact configuration at the time of the incident. Copies of TPS's, DR's, and DRS's in the TAIR Book will be reproduced and stapled together with a cover sheet. The cover sheet will specify open work items at time of S/C 012 incident. This package will be placed in a special folder in the Acceptance Data Package.
- 2.3 Any deviations will require the initiation of a DR indicating discrepancies in detail.
- 2.4 D/816 will provide inspection coverage as required to verify all efforts involved in the above noted tasks.

III. TASK.

All GSE/STE and facility equipment on Launch Complex 34 utilized during Plugs In or later will require Board approval for release.

LOGIC.

- 3.1 All GSE/STE and facility equipment on Launch Complex 34 utilized during Plugs In or later will require an official letter from the Prime Investigation Board approving the release of all, or any part of, subject equipment. No TPS will be required.
- 3.2 Configuration will be established in accordance with the provisions outlined in paragraph 2.2 above.

IV. TASK.

All GSE/STE and facility equipment on Launch Complex 34 utilized in build-up prior to arrival at Launch Complex 34 of Spacecraft 012 shall be released immediately.

LOGIC.

4.1 D/818 shall submit a list to D/816, with copies to those concerned, indicating all GSE/STE and facility equipment indicated in Task IV above.

SUBJECT: Removal of Equipment and Facilities from Impounded Status Page 3

4.2 Upon receipt and approval by D/816 of items called out in said list, such items will immediately be released for use.

V. TASK.

All GSE/STE and facility equipment outside of Launch Complex 34 utilized prior to arrival at Launch Complex 34 of Spacecraft 012 shall be checked for configuration status, per paragraph 2.2 above, and the fluids sampled for future records. These records will be impounded in Room 3344. Equipment may then be released.

LOGIC.

- 5.1 Task V. above requires the establishment of a configuration status, per paragraph 2.2 above.
- 5.2 D/819, under the surveillance of NAA and NASA QC, will take three fluid samples from each of the above noted items of GSE/STE and facility equipment which contain fluids. A Support Request will be initiated to obtain laboratory reports and such reports will be filed in the pertinent TAIR Book with a copy of said report impounded in Room 3344, MSOB. The following statement will be on the Support Request: "NAA and NASA Inspection Coverage Mandatory." Equipment may then be released.

VI. TASK.

All BME Equipment outside of Launch Complex 34 utilized on Spacecraft 012 hardware prior to completion of chamber run will be released for use. (Suit BME will remain under Board cognizance.)

LOGIC.

- 6.1 D/818 will prepare and submit a list to D/816 of all BME Equipment outside of Launch Complex 34 utilized on Spacecraft 012 hardware prior to the completion of the chamber run.
- 6.2 All Suit BME will be separately identified.
- 6.3 Upon verification of the list by D/816, all BME Equipment except that listed in paragraph 6.2 above will be immediately released.
- 6.4 All Suit BME (listed in paragraph 6.2 above) will not be released without written Board approval.
- 6.5 Above lists will identify equipment by model and serial number.

VII. TASK.

Spacecraft spares which were utilized in Spacecraft 012 shall stay impounded.

SUBJECT: Removal of Equipment and Facilities from Impounded Status Page 4

LOGIC.

7.1 D/816 will affix M59-B Withholding Tags to all spacecraft spares which were utilized in Spacecraft 012 and such spares will be impounded under the cognizance of D/816, and will not be released without written Board approval.

VIII. TASK.

Spacecraft spares which did not see Spacecraft 012 shall be dispositioned as follows:

- 8.1 Items of large quantity production (more than 50) impound three of each lot and release the balance.
- 8.2 Small production items (less than 50) impound one of each lot and release the balance.

LOGIC.

8.1 Release of all impounded items will be accomplished by written approval of the Board.

IX. TASK.

All GSE spares shall be released, except those utilized to service oxygen and water glycol.

LOGIC.

- 9.1 D/818 and D/810 will identify all GSE spares utilized to service oxygen and water glycol and will present a list of such items to D/816.
- 9.2 D/816 will affix an M59-B tag to such items and such items will be impounded in the NAA Warehouse, Building M7-505/KSC.
- 9.3 All GSE spares not included on list noted in paragraph 9.1 above will be released immediately.

X. TASK.

All non-flight hardware (non-GSE) not utilized after chamber test, will be released except for the communication equipment which will be controlled by the Board.

LOGIC.

10.1 D/818, together with D/810, will submit a list to D/816 identifying all non-flight hardware (non-GSE) not utilized after chamber test.