

CSM CONTRACT

Value of the North American Rockwell Space Division contract with NASA's Manned Spacecraft Center on the Apollo program is approximately \$2,996,000,000 (\$2 billion, 996 million) as of February 3, 1968. The total is expected to approach \$3.3 billion by July 31, 1970.

The Apollo contract is for development and fabrication of 49 manned or test spacecraft command and service modules, 30 boilerplate (engineering test) vehicles, and 23 full-scale mockups, as well as production of accompanying spacecraft-LM adapters, 5 test fixtures, 4 Apollo mission simulators, 3 evaluators, 5 trainers, 2 miscellaneous spacecraft-LM adapters, and tracking and ground support equipment.

The following lists of major end items produced by the Space Division under the Apollo contract is separated into spacecraft, boilerplates, mockups and other items. The numbers (internal designation) are those assigned to each item by North American Rockwell for development and fabrication purpose. The numbers are not consecutive. For example, the list skips from SC 002 to SC 004. In cases such as this, the contract originally called for a SC 003, but the vehicle later was deleted. Any number missing in a sequence was originally in the contract, but later was deleted. A letter designation following a spacecraft number (i.e., SC 002A) indicates a general refurbishment and re-use of that spacecraft).

The use, site, and plan shown for each item is that planned at the time of printing; all of these are subject to change.

SPACECRAFT – BLOCK II

No.	Units	Use	Site	Remarks
2TV-1	CM SM	Thermal-vacuum tests	MSC	Docked mode test; "pogo" test
105AV	CM SM LES SLA # 2	Acoustic test	MSC	
101	CM SM LES SLA #5	Manned flight	KSC	First manned flight
102	CM SM LES SLA #6	Pad 34 checkout	Downey	Structure refurbished
103 to 119 (Excluding 105)	CM SM LES SLA	Manned flights		

SPACECRAFT – BLOCK I

001	SM	Propulsion tests	WSTF	Tests completed 9-7-68
002	CM SM	Power-on tumbling abort		Modified to SC 002A. Tested 1-20-66; not recovered

SPACECRAFT – BLOCK I

No.	Units	Use	Site	Remarks
	LES			Tested 1-20-66; not recovered
002A	CM	Land drop		Mission cancelled; modified to SC 002B
002B	CM	Land drop	Downey	Assigned to "pogo" test
004	CM SM	Structural test		Modified to SC 004B
004B	CM	Unified hatch model	Downey	
004A	CM	Static & thermal structural test	Downey	In storage
006	CM SM LES	System compatibility	AiResearch, Los Angeles	Block II ECS tests Reassigned as SM 010 Reassigned to BP-14
007	CM SM	Water tests	MSC	Modified to SC 007A Fitcheck of docked model facility
007A	CM	Post-landing tests	MSC	
008	CM SM	Environmental proof test	Downey	Modified to SC 008A In storage
008A	CM	Land tests	Downey	
009	CM SM LES SLA #3	Unmanned reentry flight		Modified to SC 009A Not recovered Not recovered Not recovered
009A	CM	Land impact	Downey	Modified to support structural test
010	CM SM LES	Pad abort		Mission cancelled; modified to SC 004A Not completed Not completed
011	CM SM LES SLA #4	Unmanned reentry flight		Modified to SC 011A Not recovered Not recovered Not recovered
011A	CM	Land impact test	MSC	

SPACECRAFT – BLOCK I

No.	Units	Use	Site	Remarks
012	CM	Was to be first manned flight	Langley Research Center	Damaged
	SM		Downey	In storage
	LES		KSC	
	SLA #5		KSC	Modified for use with SC 101
014	CM	Was to be manned flight		Modified to SC 014A
	SM			Launched on Apollo 6; not recovered
	LES		MSFC	
	SLA #6		Tulsa	Modified for use with SC 103
014A	CM	Land test	MSC	
017	CM	Unmanned reentry (Apollo 4)	Downey	Launched 11/67; slated for Smithsonian Institution
	SM			Damaged by explosion; replaced by SM 020
	LES			Not recovered
	SLA #8			Not recovered
020	CM	Unmanned reentry (Apollo 6)	Downey	Post-recovery test
	SM			Launched on Apollo 4; not recovered
	LES			Launched, not recovered
	SLA #9			Launched, not recovered
2S-1	CM	Impact test		Modified to 2S-1A
2S-1A	CM	Water & land test		Modified to 2S-1C
2S-1C	CM	Water & land test	MSC	
2S-2	CM	Static structural test	Downey	
	SM		Downey	
SLA #7	SLA	LM-1 flight		Launched; not recovered
SLA #7A	SLA	LM-2 flight	KSC	Assigned to "pogo" test
<u>BOILERPLATES</u>				
BP-1	CM	Land & water impact tests	MSC	
BP-2	CM	Land & water impact tests	MSC	
BP-3	CM	Parachute recovery		Tested 9-6-63; not recovered

BOILERPLATES

No.	Units	Use	Site	Remarks
BP-6	CM LES	Pad abort Pad abort		Modified to B-6A Tested in launch 11-7-63; not recovered
BP-6A	CM	Parachute recovery		Modified to B-6B
BP-6B	CM	Parachute recovery		Modified to B-6C
BP-6C	CM	Parachute recovery	El Centro	
BP-9	CM SM LES	Dynamic test		Modified to B-9A
BP-9A	LES CM SM LES	Micrometeoroid flight Micrometeoroid flight Micrometeoroid flight		Launched on Pegasus 7-25-65; not recovered
BP-12	CM SM LES	Transonic abort Transonic abort Transonic abort		Modified to B-12A Tested 5-13-64; not recovered Tested 5-13-64; not recovered
BP-12A	CM	Water impact tests		Planned for display
BP-13	CM SM LES	Booster & launch environment compatibility		Launched 5-28-64; not recovered
BP-14	CM SM LES	House spacecraft-Block I	Downey NR Storage	Assigned to BP-23A
BP-15	CM SM LES	Booster & launch environment compatibility		Launched 9-18-64; not recovered
BP-16	CM SM LES	Booster, flight compatibility		Launched 2-16-65; not recovered
BP-18	CM	Structural qualification		CM transferred to BP-30
BP-19	CM	Parachute recovery		Modified to BP-19A
BP-19A	CM	Parachute test Vehicle	Northrup-Ventura	Backup for BP-6C
BP-22	CM SM LES	High-Altitude abort High-Altitude abort High-Altitude abort	MSC	Tested 5-19-65; not recovered Tested 5-19-65; not recovered
BP-23	CM SM LES	High-Q abort High-Q abort High-Q abort		Modified to BP-23A Tested 12-8-64; not recovered Tested 12-8-64; not recovered

BOILERPLATES

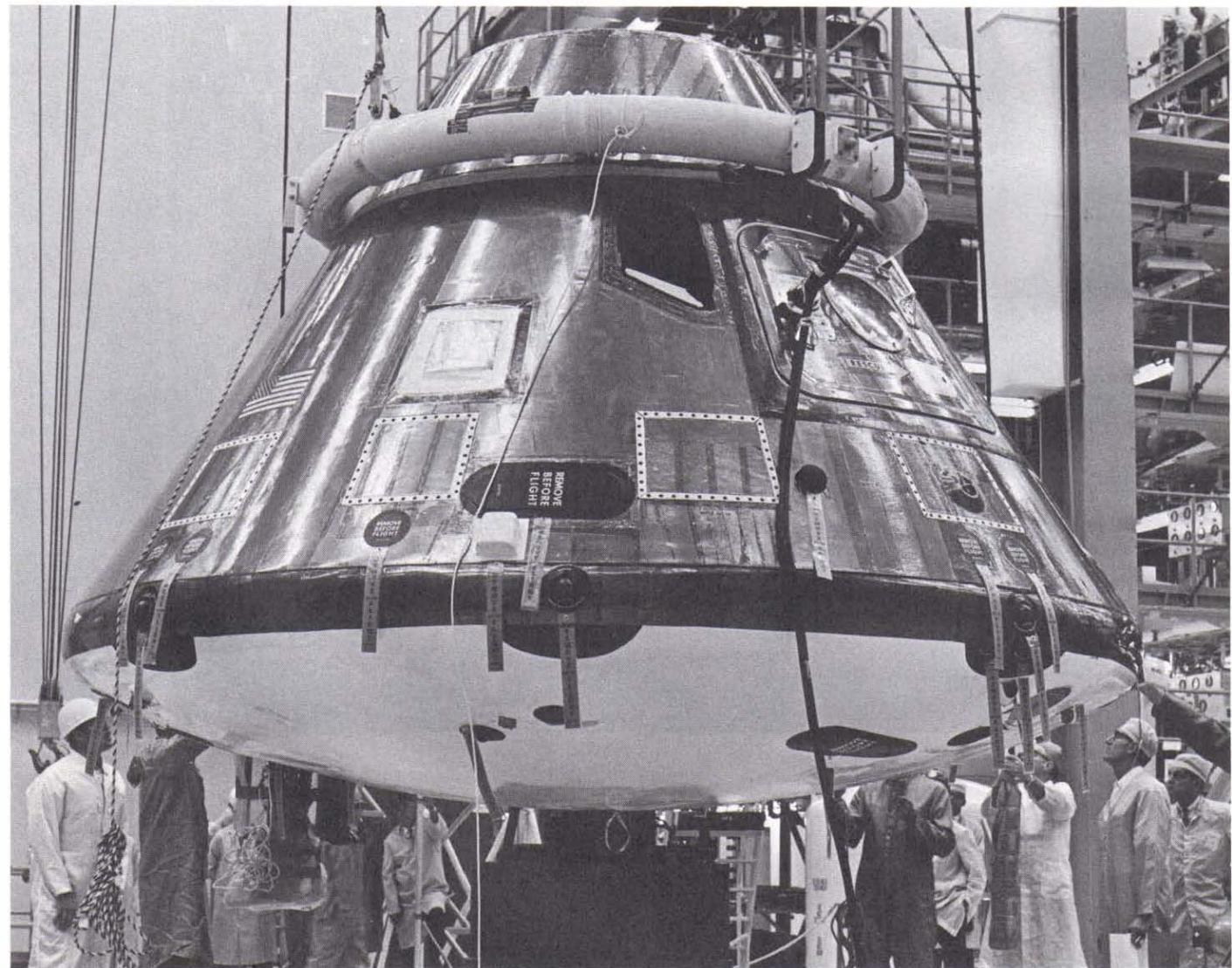
No.	Units	Use	Site	Remarks
BP-23A	CM LES	Pad abort Pad abort	MSC	Tested 6-27-65; not recovered
BP-25	CM	Water recovery and handling equipment tests	MSC	
BP-26	CM SM LES	Micrometeoroid flight		Used in Pegasus launch 5-25-65; not recovered
BP-27	CM SM LES SLA #1	Dynamic tests Dynamic tests Dynamic tests Dynamic tests	MSFC MSFC MSFC MSFC	SM 010 (former SM 006)
BP-28	CM	Land impact tests		Modified to BP-28A
BP-28A	CM	Earth landing tests	MSC	
BP-29	CM	Flotation tests		Modified to BP-29A
BP-29A	CM	Flotation tests	MSC	
BP-30	CM SM (015) LES (014) SLA #10	Unmanned LM test Unmanned LM test Unmanned LM test Unmanned LM test	MSC KSC KSC MSC	Backup for SC 020; to return to MSFC Tests with SC 102
BP-1224-1	CM	Flammability tests	MSC	
BP-1250C	CM	Flammability tests	Downey	Cabin pressure vent valve tests
<u>MOCKUPS, TRAINERS, SIMULATORS</u>				
M-2	CM	Interior arrangement	KSC	Modified to KSC-E
M-3	CM	Interior arrangement	KSC	
M-4	SM (Partial)	Interface studies		Excess - disposed 1-67.
M-5	CM	Exterior arrangement	NR Storage	
M-7	SM	Design studies	MSC	
M-8	CM	Airlock & docking	NR Storage	
M-9	CM	Handling & transportation studies	Tulsa	GSE checkout

MOCKUPS, TRAINERS, SIMULATORS

No.	Units	Use	Site	Remarks
M-11	SM	Handling & transportation studies	KSC	Part of M-11 as launch verification vehicle Used in first Little Joe launch; not recovered Launch verification article
	LES			
	CM			
M-12	SM LES	Crew support studies	Tulsa KSC	GSE checkout Supported SC 009 launch Modified to M-12A
	CM (Partial)			
M-12A	CM (Partial)	Lighting studies	Downey	
M-18	CM	System interface	Downey NR Storage	Modified to MSC-1 Mockup display
	SM LES			
M-22	SLA	Interior & exterior arrangement	KSC	Grumman use Modified to MSC-2; SC 103 configuration
	CM			
M-23	CM (Partial)	Umbilical tests	MSFC	Updated to latest configuration 7-7-67
	SM (Partial)		MSFC	
	LES (Partial)		MSFC	
M-24	CM	Engineering & Manufacturing studies	Downey	Wiring and tubing mockup
M-25	SM	Engineering & manufacturing studies	Downey	Wiring and tubing mockup
M-26	CM	Lower equipment bay	NR Storage	
M-27	CM	Forward compartment	Downey	
M-27A	Docking system	Studies	Downey	Updated to Block II configuration M-27B)
M-27B	Docking System	Studies	Convair, San Diego	Block II; to be shipped to MSC
M-28	CM	Crew compartment reviews	Downey	Converted from CM-B
MSC-1	CM	Configuration review (SC 101)	Downey	Converted from M-18

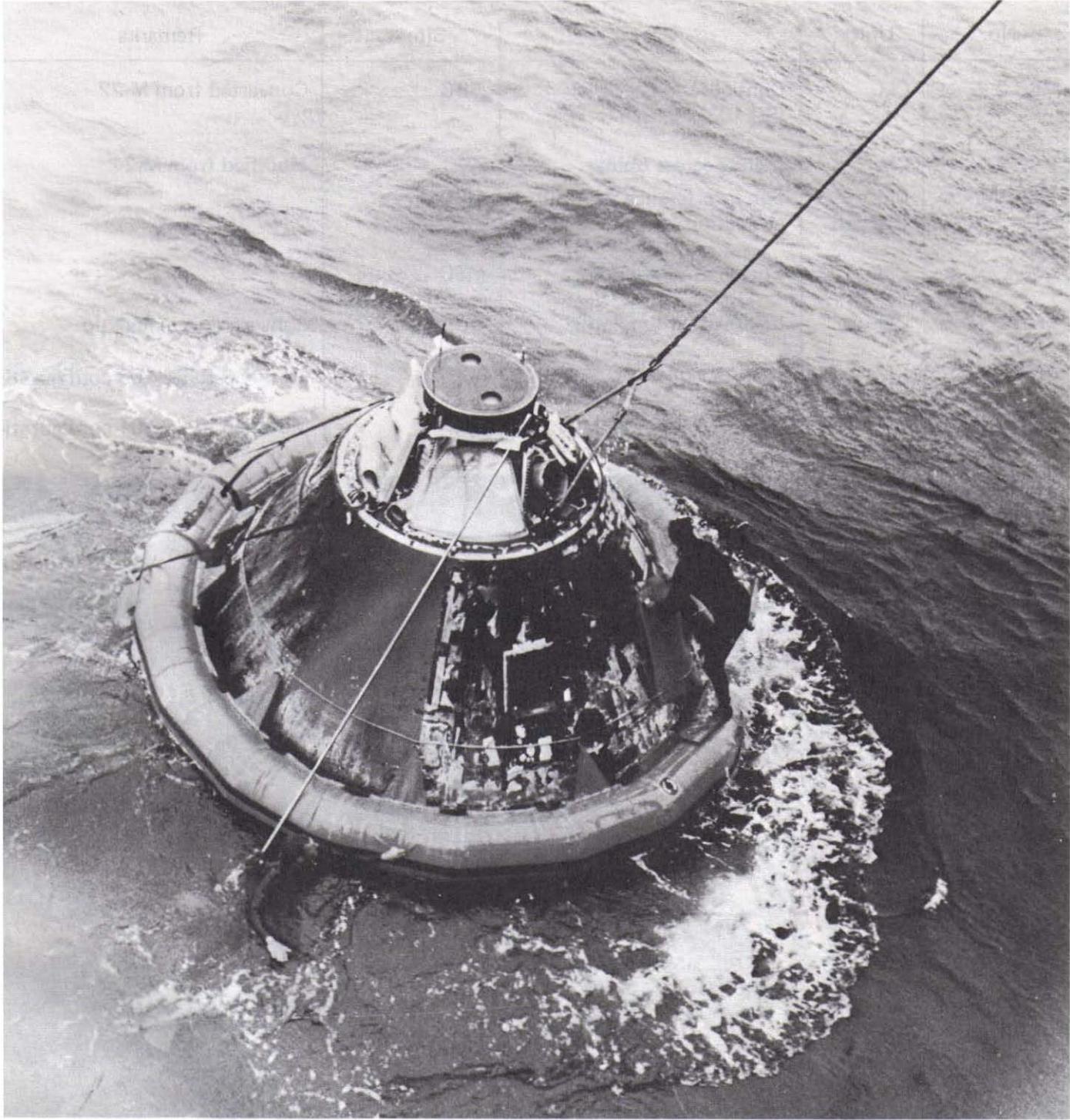
MOCKUPS, TRAINERS, SIMULATORS

No.	Units	Use	Site	Remarks
MSC-2	CM	Configuration review (SC 103)	MSC	Converted from M-22
KSC-E 180/CM/ MU	CM	Ingress-egress trainer	KSC	Modified from M-2
	CM (Partial)	Sun interference evaluation	MSC	
CM-A	CM	Engineering simulator	MSC	
CM-B	CM	Engineering simulator	Downey	Converted to a mockup
AMS-1		Mission simulator	MSC	Modified to SC 103 configuration
AMS-2		Mission simulator	KSC	Modified to SC 101 configuration



P-299a

Spacecraft command module for first manned flight readied for shipment



P-300

Frogmen secure helicopter lines to command module after successful entry from space flight