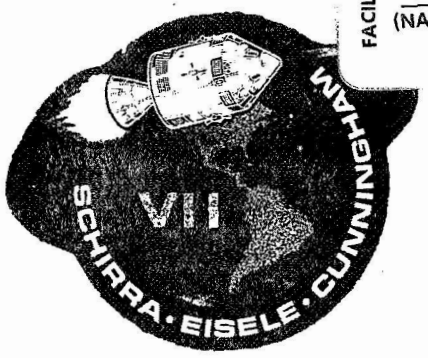


FIRST APOLLO MANNED MISSION

"COLUMBIA"
"EAGLE"

FIRST LUNAR ORBIT MISSION

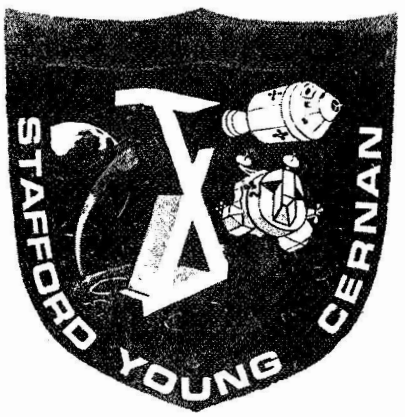
U. S. MANNED SPACE FLIGHT

THE MANNED FLIGHT PROGRAM

THE ASTRONAUTS

"YANKEE CLIPPER"
"INTREPID"

"GUMDROP"
"SPIDER"



"CHARLIE BROWN"
"SNOOPY"

"ODYSSEY"
"AQUARIUS"

INDEX

(Editors: This package contains data on the United States manned space flight program which answer most-asked questions of the public and the communications media. It is suggested that this material be retained in your files.)

-0-

THE MANNED FLIGHT PROGRAM

NASA MANNED SPACE FLIGHTS

Project	Date	Crew | *rank at present	Time in Space	Orbits/Revs
MERCURY				
Mercury Redstone 3 "Freedom 7"	May 5, 1961 Recovery Ship - Champlain (A)**	Naval Comdr. Alan B. Shepard *Capt.	0:15:22	suborbital
Mercury Redstone 4 "Liberty Bell 7"	July 21, 1961 Recovery Ship - Randolph (A)	Air Force Maj. Virgil I. Grissom (deceased)	0:15:37	suborbital
Mercury Atlas 6 "Friendship 7"	Feb. 20, 1962 Recovery Ship - Noa (A)	Marine Lt. Col. John H. Glenn retired	4:55:23	three orbit
Mercury Atlas 7 "Aurora 7"	May 24, 1962 Recovery Ship - Pierce (A)	Naval Lt. Comdr. Scott Carpenter retired	4:56:05	three orbit
Mercury Atlas 8 "Sigma 7"	Oct. 3, 1962 Recovery Ship - Kearsarge (P)	Naval Comdr. Walter M. Schirra retired	9:13:11	six orbits
Mercury Atlas 9 "Faith 7"	May 15-16, 1963 Recovery Ship - Kearsarge (P)	Air Force Maj. L. Gordon Cooper retired	34:19:49	22 orbits
		***		
GEMINI				
Gemini 3 "Molly Brown"	March 23, 1965 Recovery Ship - Intrepid (A)	Air Force Maj. Virgil I. Grissom Naval Lt. Comdr. John W. Young (deceased) Capt. Young	4:53	three orbit

**A or P After Recovery Ship Denotes Atlantic or Pacific

-more-

Project	Date	Crew *rank at present	Time in Space	Orbits/Revs
Gemini 4 EVA - 20 Min.	June 3-7, 1965 Recovery Ship - Wasp (A) **	Air Force Majors James A. McDivitt * Edward H. White II *Col. McDivitt (White is deceased)	97:56	62 revs.
Gemini 5	Aug. 21-29, 1965 Recovery Ship Lake Champlain (A)	Air Force Lt. Col. L. Gordon Cooper Naval Lt. Comdr. Charles Conrad, Jr. retired Capt. Conrad	190:56	120 revs.
Gemini 6	Dec. 15-16, 1965 Recovery Ship - Wasp (A)	Naval Capt. Walter M. Schirra Air Force Maj. Thomas P. Stafford retired, Col. Stafford	25:51	16 revs.
Gemini 7	Dec. 4-18, 1965 Recovery Ship - Wasp (A)	Air Force Lt. Col. Frank Borman Naval Comdr. James A. Lovell retired Capt. Lovell	330:35	206 revs.
Gemini 8	March 16, 1966 Recovery Ship - Leonard F. Mason (P)	Neil A. Armstrong, Civilian Air Force Maj. David R. Scott Col. Scott	10:42	7 revs.
Gemini 9A Umbilical EVA of 2 hrs. 7 min. by Cernan	June 3-6, 1966 Recovery Ship - Wasp (A)	Air Force Lt. Col. Thomas P. Stafford Naval Lt. Comdr. Eugene A. Cernan Col. Stafford Capt. Cernan	72:21	44 revs.
Gemini 10 Umbilical EVA of 39 min. and Standup EVA of 49 min. by Collins	July 18-21, 1966 Recovery Ship - Guadalcanal (A)	Naval Comdr. John W. Young Air Force Maj. Michael Collins Capt. Young retired	70:47	43 revs. (highest altitude 475 statute miles)

-more-

Project	Date	Crew *rank at present	Time in Space	Orbits/Revs
Gemini 11 Umbilical EVA of 33 min. and Standup EVA of 2 hrs. 5 min. by Gordon	Sept. 12-15, 1966 Recovery Ship - Guam (A)**	Naval Comdr. Charles Conrad Naval Lt. Comdr. Richard F. Gordon, Jr. *Capt. Conrad Capt. Gordon	71:17	44 revs. (highest altitude 853 statute miles)
Gemini 12 2 Standup EVAs of 2 hrs 29 min. & 55 min.; Umbilical EVA of 2 hrs. 6 min. by Aldrin	Nov. 11-15, 1966 Recovery Ship - Wasp (A)	Air Force Maj. Edwin E. Aldrin, Jr. Naval Capt. James A. Lovell, Jr. Col. Aldrin Capt. Lovell	94:35	59 revs.

***

APOLLO

Apollo 7	Oct. 11-22, 1968 Recovery Ship - Essex (A)	Naval Capt. Walter M. Schirra Air Force Maj. Donn Eisele Civilian Walter Cunningham retired Lt. Col. Eisele	260:8:45	163 revs.
Apollo 8	Dec. 21-27, 1968 Recovery Ship - Yorktown (P)	Air Force Col. Frank Borman Naval Capt. James A. Lovell, Jr. Air Force Lt. Col. William Anders retired Capt. Lovell retired	147:00:11	10 revs. of Moon
Apollo 9 (Gumdrop and Spider)	March 3-13, 1969 Recovery Ship - Guadalcanal (A)	Air Force Col. James A. McDivitt Air Force Col. David R. Scott Civilian Russell L. Schweickart Col. McDivitt Col. Scott	241:00:53	151 rev. of Earth

**A or P After Recovery Ship Denotes Atlantic or Pacific

-more-

Project	Date	Crew *rank at present	Time in Space	Orbits/Revs
Apollo 10 (Charlie Brown and Snoopy)	May 18-26, 1969 Recovery Ship - Princeton (P)**	Air Force Col. Thomas P. Stafford Navy Commander John W. Young Navy Commander Eugene A. Cernan *Col. Stafford Capt. Young Capt. Cernan	192:03:23	31 revs. of Moon
Apollo 11 (Columbia, Eagle, Tranq. Base)	July 16-24, 1969 Recovery Ship - Hornet (P)	Civilian Neil A. Armstrong Air Force Lt. Col. Michael Collins Air Force Col. Edwin E. Aldrin, Jr. Col. Collins is retired	195:18:35	Lunar Landing 30 revs. of Moon
Apollo 12 (Yankee Clipper and Intrepid)	November 14-24, 1969 Recovery Ship - Hornet (P)	Navy Comdr. Charles Conrad, Jr. Navy Comdr. Richard F. Gordon, Jr. Navy Comdr. Alan L. Bean Captains Conrad, Gordon & Bean	244:36:25	Lunar Landing 2 EVAs total 7hrs. 39 min. 44 1/2 revs of Moon
Apollo 13 (Odyssey and Aquarius)	April 11-17, 1970 Recovery Ship - Iwo Jima (P)	Navy Captain James A. Lovell, Jr. Civilian Fred W. Haise, Jr. Civilian John L. Swigert, Jr.	142:54:41	Planned lunar landing aborted after service module oxygen tank rupture

Cumulative Man Hours
Total 6,262:50:03

Total Flights: 23 (Atlantic Recoveries: 15
Pacific Recoveries: 8

Aborts: G-8
A-13

THE APOLLO 14 MISSION IS SCHEDULED FOR LAUNCH AT KENNEDY SPACE CENTER, FLA., NO EARLIER THAN JANUARY 31, 1971.

**A or P After Recovery Ship Denotes Atlantic or Pacific

-more-

MANNED SPACE FLIGHT COSTS

MERCURY

Spacecraft	135,300,000
Launch Vehicles	82,900,000
Operations	49,300,000
Tracking Operations and Equipment	71,900,000
Facilities	53,200,000
Total	$392,100,000

GEMINI

Spacecraft	797,400,000
Launch Vehicles	409.800,000
Support	76,200,000
Total	$1,283,400,000

APOLLO MANNED LUNAR LANDING COST ESTIMATE

The estimate carries costs of developing and producing 12 Saturn IB and 15 Saturn V launch vehicles, 18 spacecraft command and service modules and 12 lunar modules configured for manned flight, although some of these will be used for other programs. Also included are costs of all facilities and the manned space flight tracking network. In addition, the cost of all operations in support of manned space flight through fiscal year 1970 is included.

(in billions of dollars)

Apollo spacecraft	$7.795
Saturn launch vehicles	8.770
Engine development	.854
Operations support	1.393
Tracking and data acquisition	.664
Facilities	1.830
Installation operations	2.412
Total	$23.850

Apollo Program accrued costs through July 31, 1969; includes the first manned lunar landing. (Excluding fiscal year 70 funds)

Apollo Spacecraft		6,939
Saturn Launch Vehicles		7,940
Saturn I	767	
Saturn IB	1,127	
Saturn V	6,046	
Engine Development		854
Operations Support		1,137
Mission Control Systems	229	
Launch Operations	219	
Flight and Crew Operations	477	
Technical Support	212	
Tracking And Data Acquisition		541
Facilities		1,810
Manned Space Flight Facilities	1,631	
Tracking And Data Facilities	179	
MSF Center Operations		2,128
Total		$21,349

Launch vehicles and spacecraft on hand or in final production for manned lunar landing missions and other programs after July 1969:

7 Saturn IB Launch Vehicles
9 Saturn V Launch Vehicles
13 Sapcecraft Command and Service Modules
9 Spacecraft Lunar Modules

Value of the space hardware remaining after Apollo 11 was approximately $2 billion. Therefore, the first manned lunar landing was achieved for $19.3 billion.

APOLLO MISSION COSTS

(included in Total Estimated Costs, above)

Apollo 7		
Command & Service Module	$55	million
Saturn IB Launch Vehicle	45	"
Operations	45	"
	$145	"
Apollo 8		
Command & Service Module	$55	"
Saturn V Launch Vehicle	185	"
Operations	70	"
	$310	"
Apollo 9		
Command & Service Module	$55	"
Lunar Module	40	"
Saturn V	185	"
Operations	60	"
	$340	"
Apollo 10		
Command & Service Module	$55	"
Lunar Module	40	"
Saturn V	185	"
Operaitons	70	"
	$350	"
Apollo 11		
Command & Service Module	$55	"
Lunar Module	40	"
Saturn V	185	"
EASEP (lunar surface instruments)	5	"
Operations	70	"
	$355	"
Apollo 12 & 13 (per mission)		
Command & Service Module	$55	"
Lunar Module	40	"
Saturn V	185	"
ALSEP (lunar surface instruments)	25	"
Operations	70	"
	$375	"
Apollo 14 & 15 (per mission)		
Command & Service Module	$55	"
LM	40	"
Saturn V	185	"
ALSEP (same as other)	25	"
Operations	95*	"
	$400	"

* - Increase results from reduced launch rate

APOLLO HISTORICAL SUMMARY

Initial planning for a launch vehicle having a payload capability of the Saturn I began in April 1967. In August 1958, studies concluded that a clustered booster of 1.5 million pounds thrust was feasible and the research and development effort was begun. Initial results proved that the engine clustering technique, using existing hardware, could furnish large amounts of thrust.

Rocketdyne, a division of North American Rockwell Corp., updated the Thor-Jupiter engine, increased its thrust, thus developing the 200,000 pound thrust H-1 engine. Concurrently, from advanced studies, the 1.5 million pound thrust F-1 engine was conceived and subsequently used as the power plant for the even larger boosters.

In October 1958, the Army team moved to develop a high-performance booster for advanced space missions. Tentatively called Juno V and finally designated Saturn, the booster was turned over to NASA in later 1959.

In July 1960, NASA first proposed publicly a post-Mercury program for manned flight and designated ti Project Apollo. The Apollo goals envisioned at the time were Earth-orbital and circumlunar flights of a three-man spacecraft.

During 1960, Douglas Aircraft Company, Inc. (now McDonnell Douglas) was selected to build the Saturn I second stage (S-IV) and Rocketdyne was chosen to develop the hydrogen fueled J-2 engine for future upper stages of the Saturn vehicles.

On May 25, 1961, President John F. Kennedy proposed to Congress that the United States accelerate its space program, establishing as a national goal a manned lunar landing and return by the end of this decade. In his report to Congress President Kennedy said:

"Now is the time...for this nation to take a clearly leading role in space achievement, which in many ways may hold the key to our future on Earth.

"...this is not merely a race. Space is open to us now; and our eagerness to share its meaning is not governed by the efforts of others. We go into space because whatever mankind must undertake, free men must fully share.

"No single space project in this period will be more impressive to mankind or more important for the long-range exploration of space...

"Let it be clear...that I am asking the Congress and the Country to accept a firm commitment to a new course of action, a course which will last for many years and carry very heavy costs... If we are to go only halfway, or reduce our sights in the face of difficulty, in my judgment it would be better not to go at all."

With endorsement by Congress, the national objective of manned lunar exploration created an immediate need for a considerably more powerful booster -- later designated the Saturn V. Following another six-month study, NASA announced in January 1962 that the Saturn V, using a cluster of five F-1 engines, would generate 7.5 million pounds of thrust, thus providing the liftoff power for the lunar landing program. After announcing that NASA would undertake the task of developing the Saturn V, contracts were awarded to Boeing Company and North American to build the first two stages of the Saturn V.

The second stage has a cluster of five J-2 engines developing a combined thrust of one million pounds. The third stage (S-IVB) and instrument unit were already under development for the smaller Saturn by Douglas Aircraft and IBM, respectively.

Later in 1962, NASA announced it was developing the Saturn IB which combined the first stage of the Saturn I and the top stage of the Saturn V for Earth orbital tests of the Apollo spacecraft.

On August 9, 1961, MIT was selected to develop the Apollo spacecraft guidance and navigation system. Three and a half months later, NASA selected North American Rockwell Corp. for the Apollo spacecraft command and service module program.

In mid-July 1962, the National Aeronautics and Space Administration selected the lunar orbital rendezvous mode for the lunar mission. This called for development of a two-man lunar module to be used for landing on the Moon and returning to lunar orbit. Grumman Aircraft Engineering Corp. was selected to design and build the lunar module on November 7, 1962.

One year later, the first Apollo command module was flown at White Sands Missile Range in a launch pad abort test. The first high altitude abort was successfully demonstrated on May 13, 1964. Fifteen days later a Saturn I placed the first Apollo command module into orbit from Cape Kennedy.

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The first full systems Apollo command module was launched aboard a Saturn IB, and successfully tested the module's reentry heat shield. The February 26, 1966 test was also the first flight of a Saturn IB.

The first phase of the Saturn launch vehicle program was completed in 1965. In ten flights of the Saturn I, ten were successful -- an unprecedented record in rocket development. Much technology was proven in the Saturn I program. The rocket guidance system was developed. The concept of clustered rocket engines was validated and, the program supplied experience in using liquid hydrogen as rocket fuel. Liquid hydrogen provides double the fuel economy of earlier fuels.

The Saturn IB launch vehicle was successfully flown three times in three attempts in 1966. Two of these flights carried spacecraft to space where they satisfactorily completed requirements for Apollo command and service modules in Earth orbital operations.

On January 27, 1967, tragedy struck the nation space effort when a fire erupted inside an Apollo spacecraft during ground testing at Cape Kennedy, resulting in the deaths of Astronauts Virgil Grissom, Edward White II and Roger Chaffee. After two and a half months of investigation, involving 1,500 people, the Board of Inquiry determined that the most likely cuase of the fire was electrical arcing from certain spacecraft wiring. After an extensive investigation by an Accident Review Board, the National Aeronautics and Space Administration followed with detailed descriptions of corrective actions, schedule modifications, and cost estimates necessary to move the program toward its objective.

On November 9, 1967, the first flight test of the Apollo/Saturn V space vehicle was successfully accomplished. Designated Apollo 4, the unmanned flight demonstrated performance of the previously unflown first and second Saturn V stages, the restart-in-orbit capability of its third stage, the Apollo spacecraft ability to reenter Earth's atmosphere at lunar mission return speeds, performance of the integrated space vehicle, and the operational readiness of Kennedy Space Center Launch Complex 39. All mission objectives were met following an on-time launching and an 8-hour 37-minute mission. The Saturn V placed a total weight into orbit of over 278,699 pounds after a near perfect countdown. The spacecraft heat shield performed satisfactorily during the 24,800 mile per hour plunge into Earth's atmosphere.

During the January 22-23, 1968 Apollo 5 mission, lunar module systems and structural performance met all objectives, including two firings of both the ascent and descent propulsion systems. The unmanned Lunar Module I was boosted into Earth orbit by a Saturn IB. Post-flight analysis determined the lunar module ready for manned Earth orbital missions.

The April 4, 1968 flight of Apollo 6 was the second unmanned Saturn V mission to demonstrate launch vehicle and spacecraft systems performance. Two problems were experienced with the rocket systems -- vertical oscillations or "POGO" effect in the first stage and rupture of small propellant lines in the upper stages -- in an otherwise, very successful mission.

The precise reentry and splashdown on October 22, 1968 of the 11-day Apollo 7 flight ended what was called a 101 percent successful mission. Manned by Astronauts Walter Schirra, Donn Eisele, and Walt Cunningham, the Apollo 7 performed flawlessly for more than 780 hours in space, including 8 firings of the spacecraft's primary propulsion system and the first live TV from a manned vehicle.

Apollo 8 lifted off precisely on time, December 21, 1968 from the Kennedy Space Center for history's first flight from Earth to another body in the solar system. Apollo 8 performed flawlessly for 147 hours and over a half mission miles of space flight which included ten revolutions around the Moon, lunar and Earth photography, and live television broadcasts.

Apollo 9 splashed down in the Atlantic Ocean, northeast of Puerto Rico, at 12:00:53 EST, March 13, 1969, after a 10-day, 6-million mile Earth orbital mission. All major mission objectives were met in the first five days of flight. Apollo 9 was the first all-up manned flight of the Apollo Saturn V space vehicle, first manned flight of the lunar module, first Apollo EVA, and included rendezvous and docking, live television, photographic surveys of Earth, and observation of Pegasus II satellite and Jupiter. This was the fourth Saturn V on-time launch (11:00 am EST).

Apollo 10 successfully completed man's second lunar orbital flight, passing within 9 miles of the lunar surface in a dress rehearsal for the actual lunar landing mission. Lifting off at 12:49 pm, May 18, Apollo 10 spent nearly 62 hours (31 revolutions) in lunar orbit, sent 19 live color TV transmissions, and splashed down within 7,000 yards of its primary recovery ship in the Pacific Ocean 8 days and 3 hours after launching.

Apollo 11 attained the national goal, set by President Kennedy in 1961, of landing men on the Moon and returning them safely to Earth within the decade of the 1960s. The mission was launched precisely on time from Kennedy Space Center at 9:32 am EDT, July 16, by a Saturn V. The LM touched down in the Moon's Sea of Tranquillity at 4:18 pm, July 20, and Commander Neil Armstrong stepped onto the lunar surface at 10:56 that evening followed by LM Pilot Edwin E. Aldrin, Jr. Their activities were viewed live around the world by the largest television audience in history. The returning spacecraft splashed down in the Pacific, southwest of Hawaii, at 12:51 pm EDT, July 24 after a flight of 8 days, 3 hours, 19 minutes. Scientific instruments were left on the Moon and samples of the Moon's soil and rocks were brought back, along with still and motion pictures.

Exactly four months after the Apollo 11 landing, the Apollo 12 repeated this achievement, landing and exploring at the Ocean of Storms, opening a new era in manned scientific exploration. The November 14 launched Apollo 12 mission demonstrated the poing landing capability, and implaced the first Apollo Lunar Surface Experiments package on the surface for continued science reporting. Two EVA periods were completed by the astronauts, which included experiments emplacement, field geology investigation, and Surveyor III inspection. The crew for the 10 day 4.5 hour mission was commander, Captain Charles Conrad, Jr.; Command Module Pilot, Captain Richard F. Gordon, Jr.; and Lunar Module Pilot, Captain Alan L. Bean.

Apollo 13 was launched April 11, 1970 to land on the Frau Mauro upland area of the Moon where the crew would retrieve surface samples and emplace geophysical instruments during two EVA periods. A rupture of the service module oxygen tank at 10:11 pm EST, April 13 caused a power failure of the command and service electrical system which prevented the lunar landing. The crew used the lunar module as the command post and living quarters for the remainder of the flight. The lunar module descent engine provided propulsion to make corrections in the flight path which sent the spacecraft around the Moon on a free-return trajectory for reentry and splashdown in the Pacific Ocean 142 hours, 54 minutes, 41 seconds after liftoff.

The Apollo 13 Review Board announced on June 30 that a short circuit ignited electrical insulation in the spacecraft oxygen tank No. 2, causing failure of the tank. The Board recommended the command and service module systems be modified to eliminate potential combustion hazards in high-pressure oxygen of the type revealed by the accident.

The spacecraft is being modified in accordance with the Board's recommendations and Apollo 14 is planned to be launched no earlier than January 31, 1971 to land on the Frau Mauro area of the Moon.

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APOLLO FLIGHT CREWS

(Prime, Backup and Support Teams)

Apollo 7 (Saturn 1B)

Commander, Walter M. Schirra, Jr.
CM Pilot, Donn F. Eisele
LM Pilot, Walter Cunningham

Commander, Thomas P. Stafford
CM Pilot, John W. Young
LM Pilot, Eugene A. Cernan

John L. Swigert, Jr.
Ronald E. Evans
William R. Pogue

Apollo 8

Commander,Frank Borman
CM Pilot, James A. Lovell, Jr.
LM Pilot, William A. Anders

Commander, Neil A. Armstrong
CM Pilot, Edwin E. Aldrin, Jr.
LM Pilot, Fred W. Haise, Jr.

Thomas F. Mattingly II
Gerald P. Carr
Vance D. Brand

Apollo 9

Commander, James A. McDivitt
CM Pilot, David R. Scott - Spider
LM Pilot, Russell L. Schweickart - Gumdrop

Commander, Charles Conrad, Jr.
CM Pilot, Richard F. Gordon
LM Pilot, Alan L. Bean

Edgar D. Mitchell
Jack R. Lousma
Alfred M. Worden

Apollo 10

Commander, Thomas P. Stafford
CM Pilot, John W. Young - Charlie Brown
LM Pilot, Eugene A. Cernan - Snoopy

Commander, L. Gordon Cooper
CM Pilot, Donn F. Eisele
LM Pilot, Edgar D. Mitchell

Joe H. Engle
James B. Irwin
Charles M. Duke, Jr.

Apollo 11

Commander, Neil A. Armstrong - Tranquility Base
CM Pilot, Michael Collins - Columbia
LM Pilot, Edwin E. Aldrin - Eagle

Commander, James A. Lovell
CM Pilot, William A. Anders
LM Pilot, Fred W. Haise

John L. Swigert
Ronald E. Evans
William R. Pogue

Apollo 12

Commander, Charles Conrad, Jr.
CM Pilot, Richard R. Gordon, Jr. - Yankee Clipper
LM Pilot, Alan L. Bean - Intrepid

Commander, David R. Scott
CM Pilot, Alfred M. Worden
LM Pilot, James B. Irwin

Gerald P. Carr
Paul J. Weitz
Edward G. Gibson

Apollo 13

Commander, James A. Lovell
CM Pilot, John L. Swigert, Jr.* - Odyssey
LM Pilot, Fred W. Haise, Jr. - Aquarius

Commander, John W. Young
CM Pilot, John L. Swigert, Jr.
LM Pilot, Charles M. Duke, Jr.

Jack R. Lousma
Vance D. Brand

Apollo 14

Commander, Alan B. Shepard, Jr.
CM Pilot, Stuart A. Roosa
LM Pilot, Edgar D. Mitchell

Commander, Eugene A. Cernan
CM Pilot, Ronald E. Evans
LM Pilot, Joe H. Engle

William R. Pogue
Bruce McCandless II
C. Gordon Fullerton

Apollo 15

Commander, David R. Scott
CM Pilot, Alfred M. Worden, Jr.
LM Pilot, James B. Irwin

Commander, Richard F. Gordon, Jr.
CM Pilot, Vance D. Brand
LM Pilot Harrison H. Schmitt

Karl G. Henize
Robert A. Parker

* Substituted for USN LCdr. Thos. K. Mattingly, who had been exposed to but did not contract, measles.

August 1970

HISTORICAL ORIGINS OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The National Aeronautics and Space Administration was born on October 1, 1958. Historically, establishment of NASA followed the launch of SPUTNIK I, the first man-made Earth satellite, which a year before had sparked a worldwide chain reaction of events.

When SPUTNIK I was launched into orbit by the Soviet Union on October 4, 1957, the United States began an intensive consideration of its role as a nation in the exploration and exploitation of space. The first U.S. satellite program, earlier initiated as part of the International Geophysical Year (IGY) and called Project Vanguard, was prematurely judged by many Americans as a propaganda failure in the so-called "space race" instead of the great scientific success ultimately achieved by its three satellites.

EXPLORER I, the first U.S. satellite, was successfully launched into orbit by the Army Ballistic Missile Agency (ABMA) on January 31, 1958. It carried an IGY experiment, conducted by Professor James A. Van Allen of the State University of Iowa, which made the most important discovery of the International Geophysical Year, the radiation belts which carry his name. VANGUARD I, first with solar-powered batteries, was launched on March 17, 1958, and remains to date the only early satellite still transmitting.

The pioneering work of Dr. Robert H. Goddard of Clark University had antedated the spectacular German V-2 rockets of World War II. Rocket technology that made space exploration practical was accruing from the accelerated military missile programs growing out of the "cold war" of the 1950's. Until SPUTNIK I, military security requirements for operational ballistic missiles received highest priorities and support in the United States. After SPUTNIK I, it was clear that the United States must place a sound and long-range space program on a coherent and purposeful basis for its own sake.

President Dwight D. Eisenhower created a Scientific Advisory Committee headed by Dr. James R. Killian, president of M.I.T., on November 7, 1957. This top-drawer committee of specialists sought to determine our national objectives and requirements in space. It sought also to recommend a basic framework in which the role of science and technology would provide assured long-term success in this new area of obvious future importance. After extensive deliberations and study, the Killian Committee submitted its report to President Eisenhower in March 1958. Its recommendations for the creation of a civilian agency to conduct an aggressive space exploration program for its own sake was endorsed by the President and submitted to the Congress on April 2, 1958.

After lengthy investigation and deliberation [illegible] Aeronautics and Space Act of 1958 was passed by the Congress, becoming law on July 29, 1958, when it was signed by the President.

From its first day, NASA pursued its assigned objectives in the national space program. Dr. T. Keith Glennan, president of Case Institute of Technology, was named the first Administrator of NASA. Dr. Hugh L. Dryden, Director of NACA, became the first Deputy Administrator, a position he held until his death in 1965.

The NACA Nucleus

The short history of NASA since 1958 was to [illegible] a story of consolidating a national space program out of Government agencies, the aerospace industry, and the scientific community, some of whose people and programs had long roots in the historical conquest of space. No other new agency of the Executive Branch of the Federal Government has been created by the transfer of as many units and programs of other departments or agencies as was NASA.

The nucleus of NASA under the Space Act was the National Advisory Committee for Aeronautics (NACA) organization. In April 1958, Dr. Abe Silverstein had been called to Washington by Dr. Dryden from the Lewis Laboratory, Cleveland, to help organize the new civilian space agency. Before NASA's first day of business, Dr. Silverstein had pulled together a small, select group of NACA's space-oriented people.

For 43 years NACA had helped ensure American supremacy in aeronautical research and technology. NACA's technical reports and pioneering wind tunnel research had time and again revolutionized basic aircraft design. NACA's research and its applications helped create the world's greatest air transportation system before World War II as well as the world's greatest air force during that conflict.

The Expanded Space Program

While the basic goals of the United States in space exploration remain valid as originally stated in the Space Act, the expansion of the level of effort to be so invested came about in 1961. During the early months of 1961, an analysis and evaluation of the Nation's space program had been undertaken at the direction of the White House.

Upon completion of this study, President John F. Kennedy told the Congress in his historic address of May 25, 1961:

"Now is the time to take longer strides -- time for a greater new American enterprise -- time for this Nation to take a clearly leading role in space achievement which in many ways may hold the key to our future on Earth...

"Space is open to us now; and our eagerness to share its meaning is not governed by the efforts of others. We go into space because whatever mankind must undertake, free men must fully share...

"I believe that this Nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to Earth."

NASA Headquarters was given a new organizational structure effective November 1, 1961, to realign its management for the expanded U.S. civilian space program. Major program offices were created with project management clearly identified, the respective roles of the field centers and supporting activities well defined. Revised Program Evaluation and Review Techniques (NASA's PERT) and an agencywide Quality Assurance system were instituted. Basic contracts were developed with industry as soon as they could be precisely defined under the expanded program. NASA also set about extablishing a long-range program for effective working relations with the academic and scientific communities, which have much to contribute to the national space exploration effort over the long haul. It also continued its efforts to ensure effective interrelationships between the NASA space program and the vital interests of the Department of Defense.

In 1959, NASA, under Dr. T. Keith Glennan as first Administrator, looked well ahead with a broad-based program of advanced research, technological development, scientific exploration, peaceful exploitation of space technology, and manned space flight.

Under James E. Webb, who was named Administrator of NASA January 30, 1961, NASA's organization, planning, and programing were targeted for the decade ahead. When Webb retired in October 1968, Dr. Thomas O. Paine became Acting Administrator and was subsequently appointed by President Nixon to head the Agency and direct its activities during and after the lunar landing.

Manifold Applications And Implications

The great effort by American engineers, scientists, and technicians in carrying forward our entire space program will do much more than place a man on the Moon. The vast effort now under way could provide the basis for the greatest technological harvest man has every known. Accurate global weather forecasting as well as reliable intercontinental TV can be foreseen, while the scientific and engineering breakthroughs inevitably ahead presage profound economic, social and material benefits for all of earth-bound mankind. With the launching of TELSTAR on July 10, 1962, the impact of live transatlantic television demonstrated vividly the rapidity of technological change in international communications. TELSTAR was also the first privately financed Earth satellite. Also in 1962, Congress authorized the creation of the Communications Satellite Corporation to manage the U.S. portion of a global operational communications system.

Many payoffs for society on Earth from the space program will come in areas which cannot now be foreseen. The application of the newly developed knowledge and technology deriving from the space program also offers great possibilities to military space systems, which remain a responsibility of the Department of Defense. The full exploration of space for its own sake by NASA seems to offer additional technological insurance against the hazards of military surprise for the long-range future. The unknowns in space awaiting discovery and evaluation, and subsequent application of the newly acquired extraterrestial knowledge and nascent space transportation technology to the pursuits of society on Earth, foretell future innovations which are not wholly predictable at the present time.

In a little more than 10 short and breathless years, the NASA program as well as the space efforts of the Department of Defense have achieved many "firsts" and milestones in man's conquest of space. These clearly document the United States' full acceptance of the basic challenge of space exploration. But one fact appears certain: NASA's effort to meet this historic challenge has just begun. In the thoughtful words of Astronaut John Glenn: "We are just probing the surface of the greatest advancement in man's knowledge of his surroundings that has ever been made."

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION'S BUDGET AND PERSONNEL STATUS HISTORY

Fiscal Year	Appropriated
1959	$ 330.9 million
1960	523.6 "
1961	966.7 "
1962	1,825.3 billion
1963	3,674.1 "
1964	5,100.0 "
1965	5,250.0 "
1966	5,175.0 "
1967	4,968.0 "
1968	4,588.9 "
1969	3,953.0 "
1970	3,696.6 "
Total	$ 40,051,600,000

1971 (FY 1971 $3.333 Billion request)

NUMBER OF NASA EMPLOYEES ABOARD AND ESTIMATED NUMBER OF CONTRACTOR PERSONNEL ON NASA PROJECTS

(in round figures)

FY	NASA ABOARD	CONTRACTOR(Est)	TOTAL
60	10,000	37,000	48,000
61	17,000	58,000	75,000
62	22,000	116,000	138,000
63	28,000	218,000	246,000
64	32,000	347,000	379,000
65	33,000	377,000	410,000
66	34,000	360,000	394,000
67	34,000	273,000	307,000
68	33,000	235,000	268,000
69	32,000	186,000	218,000
70	31,000	135,000	166,000
71	30,500	113,000	144,000

THE ASTRONAUTS

August 1, 1970

UNITED STATES ASTRONAUTS ON FLIGHT STATUS

Mercury - Gemini - Apollo

ALDRIN, Edwin Eugene, Jr., Air Force Col. (ScD)
ALLEN, Joseph Percival IV, Scientist-Astronaut (PhD)

BEAN, Alan Lavern, Navy Capt.
BOBKO, Karol Joseph, Air Force Major (only USAF Academy graduate astronaut)
BRAND, Vance DeVoe, Civilian

CARR, Gerald Paul, Marine Corps Lt. Col.
CERNAN, Eugene Andrew, Navy Capt.
CHAPMAN, Philip Kenyon, Scientist-Astronaut (ScD)
CONRAD, Charles (NMN) ,Jr., Navy Capt.
CRIPPEN, Robert Laurel, Navy Lt. Comdr.
CUNNINGHAM, Walter, Civilian

DUKE, Charles Moss, Jr., Air Force Major

ENGLAND, Anthony Wayne, Scientist-Astronaut (PhD)
ENGLE, Joe Henry, Air Force Lt. Col.
EVANS, Ronald Ellwin, Navy Comdr.

FULLERTON, Charles Gordon, Air Force Major

GARRIOTT, Owen Kay, Scientist-Astronaut (PhD)
GIBSON, Edward George, Scientist-Astronaut (PhD)
GORDON, Richard Francis, Jr., Navy Capt.

HAISE, Fred Wallace, Jr., Civilian
HARTSFIELD, Henry Warren, Jr., Air Force Major
HENIZE, Karl Gordon, Scientist-Astronaut (PhD)
HOLMQUEST, Donald Lee, Scientist-Astronaut (MD)

IRWIN, James Benson, Air Force Lt. Col.

-more-

KERWIN, Joseph Peter, Navy Comdr., Scientist-Astronaut (MD)

LENOIR, William Benjamin, Scientist-Astronaut (PhD)
LIND, Don Leslie, Civilian (PhD)
LOUSMA, Jack Robert, Marine Corps Major
LOVELL, James Arthur, Navy Captain

MATTINGLY, Thomas Kenneth II, Navy Lt. Comdr.
McCANDLESS, Bruce (NMN) II, Navy Lt. Comdr.
MITCHELL, Edgar Dean, Navy Comdr. (ScD)
MUSGRAVE, Franklin Story, Scientist-Astronaut (PhD) (MD)

OVERMYER, Robert Franklin, Marine Corps Major

PARKER, Robert Allan, Scientist-Astronaut (PhD)
PETERSON, Donald Herod, Air Force Major
POGUE, William Reid, Air Force Lt. Col.

ROOSA, Stuart Allen, Air Force Major

SCHMITT, Harrison Hagan, Scientist-Astronaut (PhD)
SCHWEICKART, Russell Louis, Civilian
SCOTT, David Randolph, Air Force Col.
SHEPARD, Alan Bartlett, Jr., Navy Captain
STAFFORD, Thomas Patten, Air Force Col.
SWIGERT, John Leonard, Jr., Civilian

THORNTON, William Edgar, Scientist-Astronaut (MD)
TRULY, Richard Harrison, Navy Lt. Comdr.

WEITZ, Paul Joseph, Navy Comdr.
WORDEN, Alfred Merrill, Air Force Major

YOUNG, John Watts, Navy Capt.

TOTAL 49

Air Force Officers	13
Navy Officers	15
Marine Corps Officers	3
Civilians	18
TOTAL FLIGHT STATUS	49

-more-

NASA ASTRONAUT STATUS

Total Selected: 73

No Longer on Flight Status	16
Deceased	8
	24

Total Flight Status Astronauts: 49

Selection Dates:		See Following Pages for current status
Group I (7)	April 9, 1959	Carpenter, Cooper, Glenn, Grissom, Schirra, Slayton and Shepard
Group II (9)	Sept. 17, 1962	Armstrong, Borman, Conrad, McDivitt, Lovell, See, Stafford, White and Young
Group III (14)	Oct. 8, 1963	Aldrin, Anders, Bassett, Bean, Cernan, Chafee, Collins, Cunningham, Eisele, Freeman, Gordon, Schweickart, Scott and Williams
*Group IV (6)	June 28, 1965	Garriott, Gibson, Graveline, Kerwin, Michel and Schmitt
Group V (19)	April 4, 1966	Brand, Bull, Carr, Duke, Engle, Evans, Givens, Haise, Irwin, Lind, Lousma, Mattingly, McCandless, Mitchell, Pogue, Roosa, Swigert, Weitz and Worden.
*Group VI (11)	Aug. 4, 1967	Allen, Chapman, England, Henize, Holmquest, Lenoir, Llewellyn, Musgrave, O'Leary, Parker and Thornton
**Group VII (7)	Aug. 14, 1969	Bobko, Crippen, Fullerton, Hartsfield, Overmyer, Peterson and Truly

*Scientist-Astronauts
**Formerly Air Force Manned Orbiting Laboratory Aerospace Research Pilots transferred to NASA 8/14/69

CURRENT STATUS

Group I

1. Comdr. Malcolm Scott Carpenter, USN (Ret.) resigned September 1967 to join U. S. Navy Sealab, retired from U. S. Navy Sealab, retired from U.S. Navy, July 1, 1969.

2. Col. Leroy Gordon Cooper, USAF (Ret.) President, National Exhibits Inc. Director, Intersales, Inc., Washington, July 31, 1970.

3. Col. John Herschel Glenn, Jr., USMC (Ret.), resigned 1964 to enter business, politics.

4. Lt. Col. Virgil Ivan Grissom, USAF, DECEASED. Died in Apollo 204 fire, Cape Kennedy, January 27, 1967.

5. Capt. Walter Marty Schirra, Jr., USN (Ret.) now associated with Regency Corp., Denver, Colorado, July 1, 1969.

6. Donald Kent Slayton, Director, Flight Crew Operations, NASA Manned Spacecraft Center, Houston, November, 1963.

7. Capt. Shepard - Flight Status.

Group II

8. Neil A. Armstrong, Deputy Associate Administrator, Aeronautics, NASA Headquarters, Office of Advanced Research and Technology, July 1, 1970

9. Col. Frank Borman, USAF (Ret.) Vice President, Eastern Air Lines, July 1, 1970.

10. Capt. Conrad - Flight Status.

11. Col. James Alton McDivitt, USAF, Manager, Apollo Spacecraft Program, MSC, Sept. 25, 1969.

12. Capt. Lovell - Flight Status.

13. Elliot McKay See, Jr., DECEASED. Died in T-38 jet crash Feb. 28, 1966, St. Louis' Lambert Municipal Airport.

14. Col. Thomas Patten Stafford, USAF, Chief, Astronaut Office, NASA MSC, Houston, 1969. Flight Status.

15. Lt. Col. Edward Higgins White II, DECEASED. Died in Cape Kennedy Apollo 204 fire January 27, 1967.

16. Capt. Young, USN - Flight Status.

-more-

Group III

17. William Alison Anders, Executive Secretary, National Aeronautics and Space Council, September 1, 1969. (Resigned from Air Force in rank of Lt. Col.)

18. Col. Aldrin - Flight status

19. Maj. Charles A. Bassett II, USAF, DECEASED. Died in T-38 jet crash with See Feb. 28, 1966 at St. Louis.

20. Capt. Bean - Flight Status

21. Capt. Cernan - Flight Status

22. Lt. Comdr. Roger Bruce Chaffee, USN, DECEASED. Died in Cape Kennedy Apollo 204 fire January 27, 1967.

23. Michael Collins, named Assistant Secretary of State for Public Affairs, December 12, 1969. (Resigned from Air Force in rank of Colonel.)

24. Mr. Cunningham - Flight Status

25. Lt. Col. Donn Fulton Eisele, USAF, Technical Assistant (Manned Flight), NASA Langley Research Center, Hampton, Va.

26. Capt. Theodore C. Freeman, USAF, DECEASED. Died in T-38 jet crash at Ellington AFB, Houston, October 31, 1964.

27. Capt. Gordon - Flight Status

28. Mr. Schweickart - Flight Status

29. Col. Scott - Flight Status

30. Maj. Clifton Curtis Williams, Jr., USMC, DECEASED. Died in T-38 jet crash near Tallahassee, Fla., October 5, 1967.

Group IV

31. Mr. Garriott - Flight Status

32. Mr. Gibson - Flight Status

33. Duane E. Graveline, Scientist-Astronaut, resigned for personal reasons in 1965.

34. Comdr. Kerwin - Flight Status

35. Frank Curtis Michel, Scientist-Astronaut, resigned August 4, 1969, to return to full-time scientific research.

36. Mr. Schmitt - Flight Status

Group V

37. Mr. Brand - Flight Status

38. Lt. Comdr. John Sumter Bull, USN, withdrew because of pulmonary disease, July 16, 1968.

39. Lt. Col. Carr - Flight Status

40. Maj. Duke - Flight Status

41. Lt. Col. Engle - Flight Status

42. Comdr. Evans - Flight Status

43. Maj. Edward Galen Givens, Jr., USAF, DECEASED. Died in an automobile crash near Houston, June 6, 1967.

44. Mr. Haise - Flight Status

45. Lt. Col. Irwin - Flight Status

46. Mr. Lind - Flight Status

47. Maj. Lousma - Flight Status

48. Lt. Comdr. Mattingly - Flight Status

49. Lt. Comdr. McCandless - Flight Status

50. Comdr. Mitchell - Flight Status

51. Lt. Col. Pogue - Flight Status

52. Maj. Roosa - Flight Status

53. Mr. Swigert - Flight Status

54. Comdr. Weitz - Flight Status

55. Maj. Worden - Flight Status

Group VI

56. Mr. Allen - Flight Status

57. Mr. Chapman - Flight Status

58. Mr. England - Flight Status

59. Mr. Henize - Flight Status

60. Mr. Holmquest - Flight Status

61. Mr. Lenoir - Flight Status

62. Mr. John Anthony Llewellyn - Scientist-Astronaut, resigned for personal reasons, August 23, 1968.

63. Mr. Musgrave - Flight Status

64. Brian Todd O'Leary, Scientist- Astronaut, resigned for personal reasons, April 23, 1968. Now on Cornell U. faculty.

65. Mr. Parker - Flight Status

66. Mr. Thornton - Flight Status

Group VII

67. *Maj. Bobko - Univ. of Calif., working toward Master's degree in Astro-physics.

68. Comdr. Crippen - Flight Status

69. Maj. Fullerton - Flight Status

70. *Maj. Hartsfield - Univ. of Tennessee, working toward Master's degree.

71. Maj. Overmyer - Flight Status

72. *Maj. Peterson - Univ. of Tennessee, working toward Doctor's degree in physics.

73. Lt. Comdr. Truly - Flight Status

*(Bobko, Hartsfield and Peterson are expected to report for duty at the Manned Spacecraft Center late this year.)

SPECIAL QUALIFICATIONS

Sixteen flight status astronauts have doctoral degrees, including four medical doctors -- Holmquest, Kerwin (a Navy commander), Musgrave (also a PhD) and Thornton. PhDs are Allen, England, Garriott, Gibson, Henize, Lenoir, Lind, Musgrave, Parker and Schmitt. Aldrin, Chapman and Mitchell hold Doctor of Science degrees.

SPACE FLIGHT VETERANS NO LONGER ON FLIGHT DUTY

Of the former flight status astronauts, Carpenter, Cooper, Glenn, Grissom, Schirra, Armstrong, Borman, Collins, Eisele, McDivitt, Stafford, White and Anders had participated in space flights.

ASTRONAUT FATALITIES

Astronauts Grissom, See, Bassett, Chaffee, Freeman and Williams were buried in Arlington National Cemetery with full military honors (See was a member of the USNR). Astronaut White was buried at U.S. Military Academy; Astronaut Givens was buried in Quanah, Texas, his home town. Memorial services were held for each at local churches in the Manned Spacecraft Center, Houston, area.

THE FLIGHT OF APOLLO 11

COLUMBIA EAGLE TRANQUILLITY BASE

LIFTOFF: 9:32 a.m., July 16, 1969, Pad 39-A, Kennedy Space Center, Fla., aboard a Saturn V launch vehicle.

SPLASHDOWN: 12:50:35 p.m. EDT, July 24, 1969, Pacific Ocean 169:09° W longitude by 13:18° N latitude, 13 nautical miles from the prime recovery ship the aircraft carrier USS Hornet. The splashdown site was 920 miles southwest of Hawaii and 210 miles southwest of Johnston Island.

RECOVERY: The Apollo 11 crew was recovered from the spacecraft by helicopter and flown to the deck of the Hornet where they entered the Mobile Quarantine Facility. President Nixon, aboard the recovery ship to watch the splashdown, congratulated the crew by intercommunication.

MISSION DURATION: 195 hours 18 minutes 35 seconds (eight days, three hours, 18 minutes and 35 seconds).

THE CREW: Neil Alden Armstrong, then 38, 39th birthday Aug. 5, a civilian, Commander of Apollo 11, born in Wapakoneta, Ohio.

Command Module (Columbia) Pilot Michael Collins, 38, then a United States Air Force lieutenant colonel, promoted to colonel July 24, born in Rome, Italy.

Lunar Module (Eagle) Pilot Edwin Eugene Aldrin, Jr., 39, colonel, United States Air Force, born in Montclair, New Jersey.

Armstrong flew as command pilot of Gemini 8; Collins was pilot on Gemini 10; Aldrin was pilot of Gemini 12, all in 1966.

TOTAL MILES TRAVELED: 952,700

DISTANCE TO MOON: 238,857 miles

MOON TEMPERATURES: 243°F with Sun at Zenith, minus 279°F at lunar night (the lunar night is the equivalent of 14 Earth days).

MISSION HIGHLIGHTS
(all times Eastern Daylight)

Wednesday, July 16

9:32 a.m. Liftoff

Sunday, July 20

4:17 p.m. Lunar Module (Eagle) touches down on Moon in the Sea of Tranquillity; Astronaut Armstrong reports: "Houston, Tranquillity Base here--the Eagle has landed."

10:56 p.m. Astronaut Armstrong places his left foot on the Moon and says: "That's one small step for a man, one giant leap for mankind."

11:14 p.m. Astronaut Aldrin joins Armstrong on lunar surface.

11:24 p.m. Astronauts read plaque which was left on Moon.
"Here Men From the Planet Earth
First Set Foot Upon the Moon
July 1969 A.D.
We Came in Peace for All Mankind."
(The plaque bears the signature of President Nixon and the three Apollo 11 crew members).

11:41 p.m. Armstrong and Aldrin erect an eight foot aluminum staff with a three-by-five foot nylon United States flag.

11:48 p.m. President Nixon speaks to the astronauts from Washington. During their stay on the lunar surface, the astronauts placed a microdot disc on the surface containing messages from numerous world leaders.

Monday, July 21

12:57 a.m. Astronaut Aldrin reenters Eagle.

1:09 a.m. Astronaut Armstrong reenters Eagle.

1:34 p.m. Eagle lifts off of lunar surface.

Thursday, July 24

12:50 p.m. Splashdown in Pacific Ocean.

2:12 p.m. Arrive aboard Hornet.

RECORDS AND FIRSTS

As might be expected from the nature of the mission, Apollo 11 established a number of records and "firsts." It put the largest payload ever in lunar orbit. In the 8-day mission, the TV networks beamed abroad, via satellite, telecasts totaling 230 hours. Comsat estimated viewers totaled 500 million. It was the healthiest flight. None of the crew had to resort to the medical kit for any reason. All phases of the lunar touchdown, the moon walk, and the ascent to 50,000 feet were "firsts." A record number of people watched the launch. Local Civil Defense officials estimated 1,000,000. Watchers pitched tents on nearby beaches and dunes, filled the motels and hotels and created a massive traffic tie-up. More than 3,000 newsmen from 55 countries besides the U.S. were on hand to report the event. Japanese news media were represented by a press corps of more than 100 correspondents.

NATIONAL OBJECTIVE MET

The completion of Apollo 11 met the national objective of a lunar landing and safe return to earth before the end of the decade set by President Kennedy in 1961.

Four manned missions preceded the Apollo 11 lunar landing and tested out equipment and procedures. The first manned mission in the Apollo program was the Apollo 7 Earth orbital flight in October 1968. This was quickly followed by the first Moon-orbital mission, Apollo 8 in December 1968. Final checkouts were made during Apollo 9, another Earth orbital mission in March, 1969, and a second Moon-orbital mission, Apollo 10 in May 1969.

The Apollo 11 spacecraft command module, in which the astronauts returned to earth, took 2-1/2 years to build. Fitted with more than 2 million individual functional parts (not including wiring or structural components), it hummed to the moon and back with near perfection, depositing its three astronauts safely in the Pacific Ocean.

A PHONE CALL FROM THE WHITE HOUSE

On July 20, 1969, Mission Control put through to the crew the longest long-distance telephone call in man's history. It originated in the White House and was relayed by the facilities at Mission Control to one of the giant dish antennas handling ground-moon communications, and thence to the LM crew. Advised that President Nixon wanted to talk to them, Armstrong responded, "That would be an honor."

President Nixon told the astronauts, "As you talk from the Sea of Tranquillity, it inspires us to double our efforts to bring peace and tranquillity to earth. For one priceless moment in the whole history of man, all the people on this earth are truly one."

-end-