DEPARTMENT OF THE NAVY
Headquarters of the Commander
Manned Spacecraft Recovery Force, Atlantic
Task Force ONE FOUR ZERO
Naval Air Station
Norfolk, Virginia 23511

30:ts
3000
Ser 188
6 June 1969

From: Commander Manned Spacecraft Recovery Force, Atlantic
To: Department of Defense Manager for Manned Space Flight Support Operations, Patrick AFB, Florida

Subj: Apollo 10 Final Summary Report

Ref: (a) Overall Plan, Department of Defense Support for Project Apollo Operations of 29 DEC 1966
(b) DOD Manager for Manned Space Flight Support Operations OPORD 2-69 of 8 APR 1969
(c) CTF-140 OPORD 2-69 of 15 APR 1969

Encl: (1) TF-140 Task Organization
(2) Chronology of Significant Events, Apollo 10 Mission
(3) Narrative, TF-140 Participation in Apollo 10 Mission
(4) Comments and Recommendations
(5) Force Participation Report

1. The Final Summary Report for Task Force 140 support of Apollo 10 mission is submitted herein in accordance with references (a) through (c).

2. Task Force 140 was activated for operations at 1600Z on 27 April 1969, for the Apollo 10 recovery support mission, and the task organization outlined in enclosure (1) supported this mission. Prior to staging or departure from bases or ports of embarkation, as appropriate, all units had been briefed on the details of the recovery support mission and had undergone training in Apollo recovery operational procedures. Prior to launch day all units perfected their recovery skills by local drills with key units participating in worldwide Simulation Exercises. Ships and aircraft of Task Force 140 were stationed as indicated in reference (c) during the launch phase. USS SALINAN was released shortly after launch and USS RICH and USS CHILTON were released after successful translunar injection of Apollo 10. USS OZARK was employed for deep space secondary landing support along the Atlantic Ocean Line.

30:ts
3000

The operational phase of Apollo 10 recovery support operations was successfully completed on 24 May 1969 when USS OZARK was released from her recovery station. OZARK will be released from TF-140 upon her arrival at Charleston, South Carolina on 6 June 1969.

3. A chronology of significant events related to Apollo 10 mission is forwarded in enclosure (2). A narrative of CTF-140 participation in the mission is forwarded in enclosure (3). Comments and recommendations related to the outstandingly successful Apollo 10 recovery mission are summarized in enclosure (4). Task Force 140 Participation Report for the mission is forwarded in enclosure (5).

P. S. McMANUS

Copy to:
CINCLANTFLT
COMPHIBLANT
COMMSRFPAC (CTF-130)
NASA MSC LRD, HOUSTON
CO, USS OZARK
CO, USS CHILTON
CO, USS RICH
CO, USS SALINAN
HQ ARRS, SCOTT AFB, ILL.

TF-140 TASK ORGANIZATION

TF 140		Manned Spacecraft Recovery Force, Atlantic	Commander Task Force 140 RADM P. S. McMANUS
a.	TG 140.0	Launch Site Area Sea Salvage Group (1 ATF)	Commanding Officer USS SALINAN (ATF 161) LT T. V. TILLINGHAST, JR. 090139-00
b.	TG 140.1	Station 1 Recovery Group (1 DD)	Commanding Officer USS RICH (DD 820) CDR E. C. WHELAN, JR. 004356-30
		1 HC-130H ARRS Rescue Aircraft with pararescue team for launch abort (upon reporting on station)	Rescue Crew Commander
c.	TG 140.2	Station 2 Recovery Group (1 AIS)	Master USNS VANGUARD (T-AGM-19) CAPT D. BAKER
		1 HC-130H ARRS Rescue Aircraft with pararescue team for launch abort (upon reporting to station)	Rescue Crew Commander
d.	TG 140.3	Station 3 Recovery Group (1 LPA)	Commanding Officer USS CHILTON (LPA 38) CAPT W. P. CANTWELL 000937-00
		1 HC-130H ARRS Rescue Aircraft with pararescue team for launch abort (upon reporting to station)	Rescue Crew Commander
e.	TG 140.4	Station 4 Recovery Group (1 MCS)	Commanding Officer USS OZARK (MCS 2) CAPT W. B. HOOFFSTETTER 000995-70
		2 HC-130H ARRS Rescue Aircraft with pararescue personnel if end-of-mission is Atlantic landing (upon reporting on station)	Rescue Crew Commander
f.	TG 140.9	Aerospace Rescue and Recovery Group	Commander Aerospace Rescue and Recovery Group at CTF-140 Recovery Control Center, Atlantic

Enclosure (1)

TU	140.9.1	Aerospace Rescue and Recovery Control Center Unit, Kindley (1 HC-130H with pararescue teams)	55th ARRS Squadron Commander, Kindley AFB, Bermuda
TU	140.9.2	Aerospace Rescue and Recovery Control Center Unit, Ramstein	Recovery Control Center, Commander Ramstein AB, Germany
TE	140.9.2.1	Aerospace Rescue and Recovery Sub-Control Center Element, Lajes (1 HC-130H with para-rescue team)	Sub-Control Center Command, Lajes Field Azores
TE	140.9.2.2	Aerospace Rescue and Recovery Sub-Control Center Element, Ascension (2 HC-130H with pararescue team)	Sub-Control Center Commander, Ascension Island
TE	140.9.2.3	Aerospace Rescue and Recovery Sub-Control Center Element, Mauritius (2 HC-130H with pararescue team)	Sub-Control Center Commander, Mauritius Island
TE	140.9.2.4	Aerospace Rescue and Recovery Sub-Control Center Element, Moron (1 HC-130H with pararescue team)	Sub-Control Center Commander, Moron AB, Spain
TU	140.9.3	Aerospace Rescue and Recovery Unit at CTF-140 RCCA (1 HC-130H with pararescue team)	Commander Aerospace and Recovery Unit at RCCA
TU	140.9.9	Apollo Range Instrumentation Aircraft Unit (1 EC-135 at end-of-mission if end-of-mission is Atlantic landing)	Commander Air Force Eastern Test Range representative at CTF-140 Recovery Control Center, Atlantic

CHRONOLOGY OF SIGNIFICANT EVENTS, APOLLO 10 MISSION

DATE	EVENT
26-27 MAR	YORK COUNTY conducted four day-training retrievals in Norfolk area. One boat-assisted retrieval and three retrievals using UDT-22 personnel deployed from ship's boat were conducted. The requirement for employment of the YORK COUNTY in support of this mission was subsequently deleted, following a determination that the size of the ocean areas requiring pre-position launch retrieval support was to be reduced.
15-16 APR	OZARK conducted five day-training retrievals in the Charleston OPAREA. Three boat-assisted retrievals and two using the 54th ARRSQ air-sea deployed pararescuemen were conducted.
21-24 APR	CHILTON conducted three day and two night training retrievals in the VACAPES OPAREA assisted by air-sea deployed pararescuemen of the 67th and 57th ARRSQ.
22 APR	Apollo 10 Pre-Mission Review, Patrick AFB, Florida.
25 APR	Pre-Sail briefing for OZARK.
27 APR	CTF-140 OPORD 2-69 executed at 1600Z.
28 APR	OZARK underway for recovery support station via Rio de Janeiro for fueling and CHOPPED to CTF-140.
6 MAY	Pre-Sail briefing for CHILTON/RICH/ARRS.
8-9 MAY	RICH conducted four day-training retrievals in the Norfolk area. Two boat-assisted retrievals and two retrievals using UDT-22 personnel deployed from ship's boat were conducted.
8 MAY	CHILTON underway for launch abort station 3 via EASTLANT SIMEX station and CHOPPED to CTF-140.
11 MAY	USNS VANGUARD departed Bermuda for launch abort station 2.
12 MAY	RICH underway for Bermuda via scheduled 55th ARRSQ Pararescue Exercise station and CHOPPED to CTF-140.
13 MAY	Two 57th ARRSQ (Lajes) HC-130H aircraft deployed to Mauritius.

DATE		EVENT
14 MAY		RICH conducted two day-training retrievals with 55th ARRSQ east of Bermuda. The second retrieval was conducted as part of the WESTLANT SIMEX.
14 MAY		OZARK underway from Rio de Janeiro for initial translunar coast and lunar orbit abort station on the Atlantic Ocean Line in the vicinity of 25°S Latitude, 25°W Longitude.
15 MAY		Two 67th ARRSQ (Moron) HC-130H and one 55th ARRSQ (Kindley) HC-130H aircraft deployed to Ascension.
16 MAY		CHILTON conducted EASTLANT SIMEX with 57th ARRSQ (Lajes Rescue) aircraft.
16 MAY		RICH departed Bermuda for launch abort station.
17 MAY		CTF-140 CHOPPED to DOD Manager.
18 MAY	1235Z	All TF-140 surface units on station and ready to support Apollo 10 launch.
	1545Z	RICH/CHILTON reported no surface contacts.
	1639Z	All TF-140 aircraft reported on station and ready.
	1649Z	Apollo 10 lift-off.
	1654Z	SALINAN released to normal OPCON.
	1659Z	RICH released from launch abort station to cover TP 2-1.
	1703Z	55th and 57th ARRSQ aircraft released from launch abort station to return to home station.
	1810Z	Pease aircraft released to return to home station.
	1820Z	RICH departed for TP 3-1.
	1929Z	RICH released from recovery support station.
	1930Z	USNS VANGUARD departed station enroute Port Canaveral.
	1933Z	CHILTON released from recovery support station.

DATE		EVENT
	1942Z	RICH reported crew member with appendicitis required medical evacuation and was directed to proceed to position 17 miles west of Bermuda for medical evacuation.
19 MAY	1010Z	SD1 L.A. EVANGELISTA transferred from RICH to Bermuda via Navy MEDEVAC helicopter.
20 MAY		RICH arrived Norfolk and CHOPPED to normal OPCON.
20 MAY		OZARK set course for transearth coast abort recovery support station in the vicinity of Latitude 14-12S, Longitude 25W on the Atlantic Ocean Line.
24 MAY		OZARK released from Atlantic Ocean Line recovery support station.
26 MAY		Apollo 10 abort recovery support task completed, CTF-140 CHOPPED to OPCON CINCLANTFLT with Forces assigned.
31 MAY		OZARK arrived BARBADOS for fueling and departed on 2 June 1969.
6 JUN		OZARK will arrive Charleston, S.C. and CHOP to normal OPCON. Apollo 10 recovery support mission will be concluded.

NARRATIVE, TF-140 PARTICIPATION IN APOLLO 10 MISSION

1. General

a. TF-140 participation in Apollo 10 mission consisted of staff planning for operations, arranging for the assignment of support forces, training and deploying other forces for mission support in the Atlantic Command Area prepared to locate and retrieve the Command Module and to recover the astronauts had this been required and exercising command control of the support forces assigned. The force was ready in all respects to perform the assigned mission.

b. Launch date for Apollo 10 slipped from 17 to 18 May 1969 after ships were designated and scheduled to provide support for the mission. No launch delays were encountered subsequent to commencement of force deployment to recovery stations, and a successful launch occurred at 181649Z MAY 1969. OZARK required one refueling stop at Rio de Janeiro while enroute to station and one stop subsequent to mission at BARBADOS, BWI, while returning to Charleston, South Carolina. RICH refueled at Bermuda before proceeding to her launch abort station on F-2.

c. Recovery of the astronauts and Command Module was successfully achieved by USS PRINCETON (LPH-5) and support units in the Pacific Ocean as planned.

2. Force Training, Deployment and Readiness. Force training and deployment were accomplished as outlined in enclosure (2). All units were ready for recovery operations when they arrived at their launch abort stations.

3. Mission Support Operations

a. At lift-off of Apollo 10 at 1649Z on 18 May 1969, all Task Force 140 units were deployed to designated launch abort stations as set forth in reference (c). USS SALINAN (ATF-161) was standing by at Mayport, Florida to provide Launch Site Sea Salvage Support if required.

b. Upon completion of the successful Apollo 10, SALINAN was released to her normal operational commander. USNS VANGUARD, Station 2 ship, was not required for launch abort support and therefore did not CHOP to the operational control of CTF-140 at anytime during the mission.

c. Upon the successful earth parking orbit insertion of Apollo 10, RICH was released from launch abort Station 1 to proceed as required to cover assigned target points for the second and third revolutions.

RICH and CHILTON were released subsequent to successful translunar injection. OZARK maintained assigned stations throughout the mission covering deep space secondary abort landing areas along the Atlantic Ocean Recovery Line until released from station coverage assignments after the mission had progressed to the point where it was no longer possible to target the spacecraft for a landing on the Atlantic Ocean Line.

4. Weather. Weather conditions in the recovery support stations for Apollo 10 were entirely favorable throughout the mission.

5. Public Affairs. TF-140 public affairs operations in support of the Apollo 10 were highly successful. All operations, including individual ship and ARRS training and mission deployments, were treated as major events and resulted in excellent coverage. Pre-positioning of basic releases on recovery forces permitted rapid response to national and international news requirements at NASA's Cape Kennedy and Houston News Centers. Refinement of basic information kits and increased distribution of master information kits to key news media was very well received.

6. Communications

a. Voice communications via side band radio circuits to ship and aircraft were outstanding. Particularly noteworthy is that the recovery common circuit had an outage of only 50 minutes from the time the OZARK left Rio de Janiero until she was released from her AOL station. This was over a radio path of 4600 NM.

b. Teletype circuits with the ships were excellent at launch time. However, toward the end-of-mission the ship shore TTY link to OZARK via Ascension was subjected to numerous outages.

COMMENTS AND RECOMMENDATIONS

1. The following comments and recommendations concerning the Apollo 10 mission are applicable for improvement of future operations.

a. CTF-140 Comment. Initial planning for the Apollo 10 mission included requirements to station units at four planned launch abort stations and forces were assigned, scheduled and trained to fulfill these initial planning requirements. Subsequently, on F minus 30, coordinated reduction to a lesser requirement resulted in rescheduling USS YORK COUNTY to other employment after the ship had been scheduled for and satisfactorily completed her pre-mission training. The resultant unnecessary pre-mission training employment and the concomitant necessity for rescheduling the detailed employment of the ship during the month of May mitigated against achieving the optimum use of this resource during the period involved.

CTF-140 Recommendation. In order to husband scarce resources and to preclude unnecessary late juggling of Fleet schedules, it is recommended that firm determination concerning final recovery requirements for each Apollo mission be made sufficiently early so to be included in the regular Fleet schedule planning cycles.

b. CTF-140 Comment. NASA MSC, Houston msg 211709Z MAY 69 established the safe tension hoisting loading for the CM at 32,200 lbs. NASA MSC, Houston msg 261829Z MAY 69 requested development of a plan for proof loading (static testing) of cranes to at least 48,300 lbs. CTF-140 msg 171700Z MAY 69 reported the following static test data: USS SALINAN - 44,800 lbs; USNS VANGUARD - 28,000 lbs; USS CHILTON - 134,400 lbs; USS OZARK - 54,000 lbs. It is noted that the heavy hoisting equipments installed in Naval vessels are not fitted with tension limiting devices which would assure that hoisting tensions are limited so as not to exceed specified values. Rather the hoisting rigs are sized and tested to preclude hoisting failure when hoisting specified maximum loads under adverse conditions.

CTF-140 Recommendation. It is recommended that an early determination be made as to the most suitable flexibly practicable means for limiting hoisting tensions applied to the CM so that ships assigned for recovery support operations may be especially trained as required.

c. CTF-140 Comment. The media demand for press kits exceeded the supply available.

CTF-140 Planned Action. The number of press kits to be stocked for the Apollo 11 mission will be increased two to three fold over previous stocking.

2. Various other comments and recommendations of less significance than those discussed in paragraph 1 above will be treated at the Force level by CTF-140.