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DEPARTMENT OF THE NAVY
USS NASSAU (LHA-4)
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From: Commanding Officer, USS NASSAU (LHA 4)
To: Director of Naval History (OP-09BH)

Subj: COMMAND HISTORY

Ref: (a) OPNAVINST 5750.12E

Encl:
(1) Command Composition and Organization
(2) Chronology
(3) Narrative
(4) Air Department End of Cruise Report
(5) Desert Shield/Storm Joint Unit Lessons Learned [IN CLASS FILE]
(6) Communications Historical Data [IN CLASS FILE]
(7) Statistical Summary of Events
(8) Welcome Aboard Pamphlet
(9) Cruise Photo Album
(10) News Releases
(11) Photograph of Ship
(12) Biography of Former Commanding Officer
(13) Photograph of Former Commanding Officer

1. Enclosures (1) through (13) are forwarded in accordance with reference (a).

2. Parts I through III are reflected in enclosures (1) through (3) respectively, and Part IV is reflected in the remaining enclosures.

R. J. McCarthy
R. J. MCCARTHY

Command Composition and Organization

1. The Ship's Mission: The mission of the LHA is to embark, deploy and land elements of a Marine landing force in an assault by helicopters, landing craft, amphibious vehicles or by a combination of these methods; thus possessing the capabilities of the LPH, LSD, LPD and LKA classes of ships. The LHA can operate independently or in conjunction with other units conducting heliborne and surface amphibious operations. The TARAWA class multipurpose, amphibious assault ship was designed to maintain "Tactical Integrity" or to get a balanced force to the same point at the same time.

NASSAU can carry a complete Marine Battalion Landing Team (approximately 1,800 men), supplies and equipment needed in an assault, and the vehicles to land the team ashore either by helicopter and/or small amphibious craft. Furthermore, NASSAU is capable of operating the Marine Corps AV-8B vertical take-off and landing jet for close air support of an amphibious assault.

NASSAU's ability to do this was clearly demonstrated during GTMO REINFORCEX '79 when the President of the United States ordered the Naval Base at Guantanamo Bay, Cuba, to be reinforced by a Marine Amphibious Unit (MAU). This evolution was the first test of this class of ship in a full scale landing operation.

The ship's capabilities were further demonstrated during OPERATION DESERT STORM when NASSAU deployed with only eight days notice. As Flagship for the Commander of the Amphibious Task Force and the Commanding General of the Marine Expeditionary Brigade, NASSAU flew the first combat sorties from an LHA platform. More than 250 combat missions were flown with a record 56 flown in one day.

A secondary mission of NASSAU is that of evacuation and civilian disaster relief. Hundreds of tons of relief materials can be carried aboard and delivered to disaster victims within minutes of the ship's arrival on the scene. Additionally, fresh water and electricity could be provided from the ship's engineering plant until restoration of domestic services. NASSAU's full medical facilities can provide hospitalization for up to 300 patients (including intensive care) and provide out-patient treatment for hundreds of additional sick or injured.

Thus, NASSAU is not only a ship of war, but also a ship of peace.

2. The Ship's Namesake: USS NASSAU is named for the target of the U.S. Navy and Marine Corps' first-ever amphibious landing.

Late in 1775, Captain Esek Hopkins set out to intercept British storeships. Heavy ice, foul weather and smallpox kept the American squadron from getting to sea until February 1776. Finding no worthwhile prizes at sea, Hopkins decided to sail for the Bahamas to capture a "large quantity of powder" reported to be on the Island of New Providence.

Hopkins' squadron arrived off the Bahamas on 1 March 1776. Two days later, Hopkins ordered a landing designed to outflank the English defenses. Two-hundred-thirty Marines and 50 seamen landed on the beach and captured nearby Fort Montague.

Next, the force advanced on Fort Nassau, which surrendered the

following morning. Although most of the powder supply was no longer there, Hopkins and his men captured 103 cannon and mortars -- enough to make the operation worthwhile.

Thus, for the first time American sailors and Marines responded to the equivalent modern command of "Land the Landing Force."

3. The Ship's History: USS NASSAU (LHA 4) is the fourth of the Navy's General Purpose Assault Ships. Like her sister ships, NASSAU fuses complex weapons systems, automated cargo handling and state-of-the-art propulsion into a huge hull, forming a ship with a wide range of mission capabilities including amphibious warfare, anti-air warfare and power projection ashore utilizing helicopters and VSTOL aircraft. NASSAU was commissioned in Pascagoula, Mississippi, on July 28, 1979.

In October 1979, NASSAU deployed to reinforce the U.S. Naval Base at Guantanamo Bay, Cuba, and earned the Navy Meritorious Unit Commendation just 70 days after commissioning.

In April 1981, NASSAU departed for a short-notice Mediterranean deployment and was underway for 68 consecutive days, standing ready to effect the evacuation of U.S. citizens from Lebanon. In January 1982, NASSAU deployed to the Mediterranean Sea/Indian Ocean and participated in four amphibious operations. Returning to Norfolk in June, NASSAU departed in August to take part in NATO exercises BOLD GUARD and NORTHERN WEDDING in Northern Europe.

In 1983 NASSAU participated in the annual amphibious exercise SOLID SHIELD. Marine Corps OV-10 "Bronco" aircraft landed - for the first time - on the flight deck of a ship from the Atlantic Fleet. In August NASSAU embarked 180 vehicles, 36 helicopters and over 1,000 Army personnel for transport to Central America for exercise "AHUAS TARA II" (the "Big Pine"). The transit marked the first time the ship had transported Army units for military exercises.

In January 1984, NASSAU deployed to Northern Europe for TEAMWORK '84 before steaming to the Med for duties off the coast of Lebanon. NASSAU returned to Norfolk in August 1984 and completed an extensive Selected Restricted Availability.

In the spring of 1985, NASSAU served as flagship for a nine-ship Navy task force in exercise UNIVERSAL TREK, highlighted by an amphibious landing near Puerto Castillo, Honduras. NASSAU participated in her second SOLID SHIELD amphibious exercise that same year. NASSAU closed a busy year with participation in NATO exercise OCEAN SAFARI '85 in the North Atlantic.

In early February 1986, NASSAU entered the Norfolk Naval Shipyard in Portsmouth, Va., where she began a 10-month complex overhaul. During the spring and summer, the ship and crew began an intensive series of post overhaul repair availabilities and training periods, including flight deck qualifications for the AV-8B "Harrier" VSTOL jet aircraft. NASSAU then finished Refresher Training at Guantanamo Bay, Cuba, three days ahead of schedule. She then continued work-ups in preparation for deployment as lead ship of MARG 4-87.

On Sept. 29, 1987, NASSAU departed Norfolk as flagship of MARG

4-87. In the ensuing six months, NASSAU participated in five amphibious assaults, including exercise AFRICAN EAGLE with U.S. Air Force and Royal Moroccan Forces.

NASSAU crewmembers also participated in numerous goodwill projects including the repainting of nursing homes in Israel and France, replanting 7,000 trees on a fire-ravaged hillside in France, blood donations in Spain and hosting orphan visits throughout the Mediterranean. NASSAU returned to homeport after this highly successful deployment on March 29, 1988.

NASSAU passed a vigorous INSURV in June and then prepared to deploy for TEAMWORK '88. In August, NASSAU departed for the North Atlantic, acting as flagship for Commander, Amphibious Strike Force/Commander, Amphibious Group TWO and Commander, Marine Striking Force Atlantic/4th Marine Expeditionary Brigade.

After the grounding of a tank landing ship on Sept. 13, NASSAU onloaded the men and equipment of the stricken ship and participated in a highly successful amphibious landing in Northern Norway two days later. After a well deserved port visit in Hamburg, West Germany, where NASSAU was visited by more than 8,000 German citizens, the ship and crew returned to homeport.

In early November, NASSAU again departed Norfolk enroute to Kingston, Jamaica, with 81,000 pounds of relief supplies. During the transit, NASSAU rescued 172 Haitian nationals from an unseaworthy craft and handed them over to the Coast Guard for medical treatment.

Inport at Kingston, NASSAU crewmembers, embarked Marines and SeaBees assisted in re-roofing three primary schools and distributed tons of disaster relief supplies. The Jamaicans were still reeling from the effects of Hurricane Gilbert, which had passed over the island two months earlier. NASSAU returned to Norfolk on Nov. 19, 1988.

As the flagship of Marine Amphibious Ready Group 2-89, NASSAU departed Norfolk on May 30, 1989, and, in company with the amphibious transport dock USS SHREVEPORT and tank landing ship USS BARNSTABLE COUNTY, arrived at Naval Base Rota, Spain, on June 12 for turnover and three days later "assumed the watch" for the amphibious forces of the U.S. Sixth Fleet.

First up on what turned out to be an event-packed schedule was an amphibious assault at Sierra de Retin, Spain, where the men of the 26th Marine Expeditionary Unit and Battalion Landing Team 2/8 were delivered ashore in a smoothly professional evolution. During this exercise, sailors from all three ships were invited ashore to get a close-up look at Marine operations at the beachhead, followed by a cook out on the beach.

The ships of MARG 2-89 then steamed through the Straits of Gibraltar and entered the Mediterranean Sea. Next, it was on to a port call at Monte Carlo, Monaco, where sailors and Marines of NASSAU enjoyed six days in the world of "the rich and famous."

NASSAU then made transit to the other end of Sixth Fleet responsibility area to Haifa, Israel, for a Selected Restricted Availability and 21-day port stay. While in Israel, crewmembers were able to explore a country which encompasses both the ancient and modern, taking organized tours to such biblical wonders as Jerusalem and Massada while also enjoying some of the comforts

offered by the modern city of Haifa.

Crewmembers and embarked Marines also extended the hand of friendship as volunteers painted orphanages and homes for the elderly or mingled with local citizens at beach parties organized by the local USO.

With the successful Selected Restricted Availability and port visit behind them, NASSAU departed Haifa on July 30, only days after the Israeli abduction of Sheik Abdul Obeid from Lebanon. This incident proved to be a catalyst for NASSAU and its crew as elements of the U.S. Sixth Fleet began to gather in the Eastern Mediterranean.

For the next 35 days, NASSAU and most of the U.S. Sixth Fleet stood ready for any contingency. Early on, NASSAU became a focal point as Vice Admiral James D. Williams, Commander U.S. Sixth Fleet, frequently chose the amphibious assault ship as a meeting place for all his afloat commanders in the battle force.

NASSAU was also a clearinghouse for passengers, mail and cargo making transit to or from ships in the eastern Mediterranean, at times tripling her normal workload in this vital support role.

As tensions in the Middle East gradually resumed their previous status quo, NASSAU took the opportunity to make a brief seven-day portcall at Naples, Italy, for some well deserved rest and recreation. Organized tours were offered to Rome (where 200 uniformed sailors and Marines enjoyed a Papal audience), Pompeii, Vesuvius and other Italian sights. NASSAU also hosted Admiral J.T. Howe, Commander in Chief, U.S. Naval Forces Europe, and officiated a spectacular "sunset parade" ceremony conducted by NASSAU sailors and Marines for over 80 local and NATO dignitaries while the ship was moored to two buoys outside the Naples harbor seawall.

Refreshed, NASSAU's crew, staff and embarked Marines put to sea again, this time in support of DISPLAY DETERMINATION '89, one of the Sixth Fleet's most complex and prestigious exercises. During this exercise, NASSAU was selected by Carrier Task Force Commander as best ship of the exercise.

After conducting amphibious training operations in Turkey, not far from the disastrous British amphibious operation at Gallipoli during World War I, NASSAU headed west and out of the Mediterranean Sea. She arrived at Lisbon, Portugal, for a brief repair period before taking part in the Portuguese Marine and Naval exercise "GALERA '89."

After embarking Portuguese "Fuzileiros" and landing them by helicopter ashore, NASSAU headed for Naval Base Rota again for a three-day stay and, more importantly, to turnover with the helicopter assault ship USS IWO JIMA and the ships of Marine Amphibious Readiness Group 1-90.

The final hurdle of the deployment came as NASSAU successfully completed an Operational Propulsion Plant Examination during her transit across the Atlantic Ocean. NASSAU returned from her Mediterranean deployment on Nov. 10, 1989.

After a well deserved leave and upkeep period, NASSAU was notified it had been selected by Commander, U.S. Surface Force, Atlantic Fleet, as the top LHA/LPH for the battle efficiency competitive cycle ending in September 1989, earning the ship its second Battle "E" in ten years of commissioned service.

With a brief underway period at the end of January, NASSAU left in early February for operations in the Caribbean Sea -- operations that ultimately resulted in supporting a summit meeting between President Bush and the leaders of three South American countries to discuss the worldwide peril of international drug trafficking. For almost a month, NASSAU's sailors and Marines coordinated support for elements of the White House staff to ensure the President's mission was accomplished flawlessly. In a brief radio address to the men of the NASSAU, President Bush thanked NASSAU's crew for their untiring efforts and commended them on a job well done.

"Thank you for what you're doing," he said. "Not just for this special mission that brought great comfort to all of us who were a part of it here, but what you do every single day in defense of the greatest country on the face of the earth. God bless you all!"

This was fitting testimony to the enduring professionalism of the ship that "does it all."

Captain Jack Dow reported as the eighth Commanding Officer of USS NASSAU (LHA 4) on April 7, 1990, and the general purpose amphibious assault ship's crew immediately demonstrated their abilities to the Naval War College graduate during underway training in the Virginia Capes Operating Area.

On April 23, NASSAU departed for the Caribbean for the ship's first assignment with Captain Dow at the helm. Carrying a full contingent of Marines of the 4th Marine Expeditionary Brigade, NASSAU participated in Exercise OCEAN VENTURE.

The ship's Combat Systems Department personnel displayed their skills with qualification at the Vieques Naval Gunfire Range in Puerto Rico during this exercise. NASSAU's qualification score for the two-day gun shoot was 96.2 percent, the highest score ever recorded by an LHA at that facility. With these accomplishments completed, the NASSAU crew enjoyed a brief visit to their ship's namesake, Nassau in the Bahamas.

August 1990 brought another chance for training as NASSAU headed south to Morehead City, N.C., for TYPE COMMANDER'S AVAILABILITY TRAINING (TCAT). This training was designed for upcoming exercises scheduled for TEAMWORK '90. During the 12 days of TCAT, NASSAU'S Deck Department achieved another milestone as the ship received Air Cushion Landing Craft (LCAC) into her well deck for the first time. But as the NASSAU returned to Norfolk, world events unfolded and canceled plans for TEAMWORK '90.

After Iraq invaded Kuwait on Aug. 2, the NASSAU mobilized and onloaded -- the fastest in U.S. naval history -- in preparation of what would become OPERATION DESERT STORM. The NASSAU departed 18 AUG 90 as flagship for the 17-ship AMPHIBIOUS GROUP TWO under the command of Rear Admiral J. B. LaPlante. After embarking with the 4th Marine Expeditionary Brigade under the command of Major General Harry W. Jenkins Jr., the amphibious group set sail for the Middle East.

NASSAU arrived in the Gulf of Oman in early September and remained on station awaiting further tasking. The ship prepared for all contingencies while the amphibious group conducted amphibious rehearsals for exercise SEA SOLDIERS I-IV.

After 99 consecutive days at sea, Captain Dow pulled the NASSAU into Abu Dhabi, United Arab Emirates, for a well deserved liberty port. Although NASSAU's sailors and Marines spent Thanksgiving day thousands of miles away from their homes and families, they had a holiday few would forget.

NASSAU hosted President George Bush and First Lady Barbara Bush for a Thanksgiving day service. The President brought along a contingent of influential members of Congress, including Speaker of the House Tom Foley, Senate Majority Leader George Mitchell, House Minority Leader Bob Michel and Senate Minority Leader Bob Dole.

NASSAU crew finished out 1990 in Dubai, U.A.E., spending Christmas and New Year's Day in Dubai Shipyard. Sailors and Marines contacted families, searched for presents and relaxed while Captain Dow ensured NASSAU's highly tasked engineering spaces accomplished repairs assuring the ship would be ready for all tasking.

As the Jan. 15, 1991 deadline for the pullout of Iraqi forces from Kuwait approached, NASSAU moved into the Persian Gulf and remained poised for the largest amphibious assault since World War II. When OPERATION DESERT STORM began and intensified, NASSAU played a major role in deception operations and maneuvers intended to confuse Iraqi forces, which led to be a key element in the successful liberation of Kuwait.

During OPERATION DESERT STORM more than 250 combat missions were flown by Marine AV-8B Harrier aircraft from NASSAU's flight deck, marking the first time in history that combat sorties were flown from an LHA-1 class ship.

As the Gulf War ended, NASSAU sailed to Haifa, Israel, for a short visit after completion of her mission in OPERATION DESERT STORM. The Israeli people opened their arms and hearts to NASSAU sailors and embarked Marines. While in Haifa, the ship was treated to tours, a children's parade, folklore dancers, a fashion show and a host of other services sponsored by the local USO.

The eight-month deployment ended on April 20, 1991 when the NASSAU came home to Norfolk, Va., to an enthusiastic "Heroes" reception.

After a month of stand down, which allowed NASSAU sailors to take leave and to be with their families, the amphibious assault ship steamed to New York City's Fleet Week Celebration in early June. Free professional baseball games, Broadway shows and a massive fireworks display were just a few of the many events sailors enjoyed. During the "Parade of Heroes," NASSAU sailors marched with pride down Broadway in a cascade of tickertape and confetti as thousands of patriotic Americans cheered and waved flags in support of our nation's armed forces.

NASSAU departed New York City on June 16 to prepare for the ship's maintenance and repair period in the Norfolk Naval Shipyard, Portsmouth, Va.

During the Selected Restricted Availability (SRA), NASSAU underwent more than 95 major jobs that cost more than $23 million. The NASSAU Engineering Department contained the bulk of the work package which included work done on the boilers, damage control panels, aircraft elevators and the stern gate.

Combat Systems Department required work on the close-in weapons system (CIWS), MK-45 gun mounts and numerous ammunition holding areas were overhauled. New planking in the well deck was one of the various jobs that kept Deck Department busy. AIMD, Communications and Air Departments were also involved with major work being done in their areas by shipyard workers.

Toward the end of the NASSAU's shipyard period, the ship completed several major inspections, most notably the Command Inspection, Supply Management Inspection, Engineering Material Assessment and Light-Off Exam. The NASSAU passed every evolution with flying colors due to the dedicated efforts of NASSAU sailors who worked many extra hours and weekends.

On Dec. 5, upon completion of the SRA, NASSAU left the yards for nine days of Sea Trials, Ammunition Onloads and Virginia Capes Operations.

On 11 JAN 92, less than a week after the crew's return to full duty after a holiday standdown, Captain Dow relinquished command of the NASSAU to Captain Richard J. McCarthy during a traditional change of command ceremony held in the ship's hangar bay.

4. Immediate Senior Command: Commander, Amphibious Squadron TWELVE.

5. Commander: John I. Dow, CAPT, USN.

6. Permanent Duty Station: Naval Operations Base, Norfolk, Virginia.

7. Type and Number of Aircraft Assigned: HH-1N, one, BUNO 160827.

CHRONOLOGY

JAN 1-2	PORT VISIT DUBAI, UAE. ZERO REPORTABLE LIBERTY INCIDENTS.
JAN 3	ENROUTE GULF OF OMAN.
JAN 4-7	OPERATIONS GULF OF OMAN.
JAN 8	ENTERED ARABIAN GULF FOR SHOW OF FORCE. ANCHORED 50NM EAST OF BAHRAIN.
JAN 9-10	OPERATIONS ARBIAN GULF.
JAN 11	DEPARTED ARABIAN GULF.
JAN 12-15	OPERATIONS GULF OF OMAN.
JAN 16	ANCHORED NORTH MASIRAH ANCHORAGE.
JAN 17	BOMBING WAR BEGAN. OPERATIONS GULF OF OMAN.
JAN 18-19	OPERATIONS GULF OF OMAN.
JAN 20	RAS AND FAS WITH USS SAN JOSE AND USNS WALTER S. DIEHL. RECEIVED OUR FIRST BOMBING FOOTAGE OF WAR.
JAN 21	AT ANCHOR, GULF OF OMAN.
JAN 22	AT ANCHOR, GULF OF OMAN. MAGIC 11(AV-8B) CRASHED ON BEACH EDGE DURING NIGHT PRACTICE LANDINGS ABOARD NASSAU. CAPT RIVERA KILLED ON IMPACT.
JAN 23-28	EXERCISE SEA SOLDIER IV, NORTH ARABIAN SEA.
JAN 29-31	ANCHORED GULF OF OMAN.
FEB 1	UNDERWAY TO PUMP AND DUMP.
FEB 2-3	ANCHORED IN A.M. 2 FEB, UNDERWAY IN P.M. ENROUTE FUJAIRAH.
FEB 4	ANCHORED OFF FUJAIRAH FOR RECEIPT OF PMC.
FEB 5	COMPLETED PMC ONLOAD, UNDERWAY FOR ARABIAN GULF.
FEB 6	OPERATIONS ARABIAN GULF.
FEB 7	CREW WATCHED CNN LIVE FOR FIRST TIME.
FEB 8	FAS WITH USNS WALTER S. DIEHL.

FEB 9	PMC DAILY FLTS STARTED FROM BAHRAIN AND FUJAIRAH.
FEB 10-16	ANCHORED IN UAE OPAREA.
FEB 17	RAS AND FAS USNS PONCHATOULA AND USS SAN JOSE.
FEB 18-19	OPERATIONS ARABIAN GULF. ANCHORED FOR SHORT PERIOD IN A.M. OF 18 FEB.
FEB 20	AV-8B HARRIERS STARTED BOMBING FOR THE FIRST TIME. IT WAS THE FIRST COMBAT STRIKE FROM AN LHA CLASS SHIP.
FEB 21-22	BOMBING CONTINUED. OPERATIONS ARABIAN GULF.
FEB 23	TWO MINES WERE FOUND IN VICINITY OF ATF, BOTH DESTROYED. EODMU DET 26 ABOARD NASSAU DESTROYED ONE OF THEM.
FEB 24	GROUND WAR STARTED.
FEB 25-26	OPERATIONS ARABIAN GULF.
FEB 27	MAGIC 14(AV-8B) SHOT DOWN OUT OF A FLIGHT OF FOUR BY A MISSLE. CAPT UNDERWOOD KILLED.
FEB 28	CEASE FIRE DECLARED.
MAR 1	OPERATIONS ARABIAN GULF.
MAR 2	RAS AND FAS WITH USS SAN JOSE AND USNS PONCHATOULA.
MAR 3	SPORTS DAY ON THE FLIGHT DECK.
MAR 4-9	PORT VISIT DUBAI, UAE. VISIT WAS SCHEDULED UNTIL THE 8TH BUT HIGH WINDS PREVENTED DEPARTURE AS SCHEDULED. ENROUTE BAHRAIN ON THE 9TH.
MAR 10	ANCHORED OFF BAHRAIN BELL. RECEIVED 8 CH-46 FOR LIFT TO CONUS AND 4 CH-53E'S FOR FURTHER TRANSFER TO RALEIGH.
MAR 11	VADM AUTHUR VISITED. UNDERWAY ENROUTE SUEZ CANAL.
MAR 12-22	TRANSIT ENROUTE SUEZ CANAL. ON MAR 19TH, MAGIC 04(AV-8B) CRASHED ON NIGHT LANDING PRACTICE IN THE RED SEA. CAPT ELLINGTON EJECTED SAFELY, WAS FOUND BY THE CREW OF PENTHOUSE 827 AND PICKED UP BY SMALL BOAT FROM THE MANITOWAC. ON 21 MAR, ADM EDNEY VISITED AND ADDRESSED THE NASSAU CREW.
MAR 23	ATF TRANSITED SUEZ CANAL. WE WERE LATE ENTERING CANAL DUE TO HIGH WINDS.NASSAU HELD MARCH OF DIMES RUN ON THE FLIGHT DECK. OVER $11,000 COLLECTED IN SUPPORT OF THE EVENT.

MAR 24-28	PORT VISIT HAIFA. ATF WELL RECEIVED BY LOCAL COMMUNITY. USO SET UP MANY NICE EVENTS INCLUDING A SWIMWEAR FASHION SHOW, A FOLK DANCE AND A LOCAL SCHOOL SINGING PRESENTATION.
MAR 29- APR 03	UNDERWAY FROM HAIFA ENROUTE HAIFA BUT WAS DELAYED DUE TO MAIN CIRCULATION PUMP VALVE PROBLEM.
APR 4-5	PORT VISIT ROTA, SP. WAS SCHEDULED TO ARRIVE ROTA 5 APR BUT ARRIVED EARLY IN ORDER TO FIX MAIN CIRC PUMP VALVE.
APR 6-16	ENROUTE ONSLOW BAY TO OFFLOAD TANKS. CHOPP CINCLANTFLT ON 07 APR. ON THE 13TH, HAD ROUGH SEAS WITH SEA SPRAY WASHING OVER THE FLIGHT DECK. RAS FROM USNS MISSISSINEWA.
APR 17	STARTED OFFLOAD. FLEW OFF 16 AV-8B'S IN THE A.M. LAST AV-8B FLEW OFF IN THE P.M. AFTER RECEIVING PART FROM THE BEACH. ANCHORED ONSLOW BAY IN THE P.M. TO OFFLOAD TANKS BY LCU. UNDERWAY IN THE EVENING ENROUTE TO MOREHEAD CITY.
APR 18	ANCHORED MOREHEAD CITY TO COMPLETE OFFLOAD. SECNAV, CINCLANTFLT AND FMFLANT VISITED TO RECOGNIZE CREW FOR A JOB WELL DONE. SECNAV AND FMFLANT PARTICIPATED IN AWARDS CEREMONY FOR THE CREW.
APR 19	COMPLETED OFFLOAD, BOARDED TIGERS AND GOT UNDERWAY FOR NORFOLK.
APR 20	MOORED NORFOLK 1219 LOCAL TIME AFTER 8 MONTHS AWAY. VISITED BY SENATOR ROBB, FMFLANT. COMMENCED FIRST LEAVE PERIOD.
APR 20- MAY 20	STANDDOWN.
APR 30	FLEW OFF 8 H-46'S (HMM 774) AND PENTHOUSE 827 TO NAS NORFOLK.
MAY 01	VISITED BY COMMODORE GRINDLE OF UK NETHERLANDS AMPHIBIOUS GROUP.
MAY 06	FIRST LEAVE PERIOD ENDED AND SECOND PERIOD BEGAN.
MAY 20	STANDOWN COMPLETE.
MAY 21-24	UNDERWAY FOR TRAINING.
MAY 25-26	VISIT SHIP.
JUN 04	UNDERWAY FOR NEW YORK CITY FLEET WEEK.
JUN 05	ARRIVE NEW YORK CITY.

JUN 06 RECEIVED VISITORS FOR TOURS.

JUN 07 LIVE FOOTAGE ABOARD NASSAU BY FOX TELEVISION (WNYW), PRESENTING "GOOD DAY NEW YORK." INTERVIEWED ADMIRAL LAPLANTE, CAPT DOW AND SAILORS AND MARINES OF NEW YORK ORIGIN, TWO OF THE HARRIER PILOTS ACTIVE IN THE ARABIAN GULF AIR WAR. THE "SUNSET PARADE" (MARINE PERFORMANCE) WAS HELD ONBOARD IN THE EVENING WITH MANY GUESTS AND DIGNITARIES ATTENDING. CREW NOTIFIED OF SOUTHWEST ASIA MEDAL

JUN 08-09 RECEIVED VISITORS.

JUN 10 RECEIVED VISITORS. BEAUTIFUL FIREWORKS VIEWED ON NEW YORK SKYLIGHT BY CREWMEMBERS AND GUESTS ABOARD NASSAU. OVER 13,000 VISITORS RECEIVED ON THE FIVE DAYS OF OPEN HOUSE.

JUN 11 U/W FOR NORFOLK. A SPECTACULAR TIME FOR ALL SAILORS AND MARINES. ALL WERE WELL RECEIVED AND WERE CONSTANTLY GREETED WITH A GENUINE "THANKS" AND "WELCOME HOME."

JUN 12 ARRIVED NORFOLK FROM FLEET WEEK.

JUN 13 DEPENDENTS DAY CRUISE.

JUN 24-27 AMMO OFFLOAD. RETURNED NORFOLK 2200 ON THE 27TH.

JUL 09 COMPHIBGRU TWO CHANGE OF COMMAND ONBOARD NASSAU. RADM GRANUZZO RELIEVED RADM LAPLANTE.

JUL 10-12 COMMAND INSPECTION. GRADE OF OUTSTANDING.

JUL 17 TOWED TO NORFOLK NAVAL SHIPYARD TO COMMENCE SRA.

JUL 22-24 ANNUAL UH-1N NATOPS EVAL. GRADE OF OUTSTANDING.

AUG 14 MESSAGE RECEIVED AWARDING CREW NAVY UNIT COMMENDATION.

OCT 07-10 SUPPLY MANAGEMENT INSPECTION WITH SATISFACTORY RESULTS.

OCT 21-25 ENGINEERING MATERIAL TRAINING TEAM WITH SATISFACTORY RESULTS.

NOV 05-07 LIGHT OFF EXAM. SATISFACTORY RESULTS.

DEC 02-04 AVIATION CERTIFICATION. SATISFACTORY RESULTS.

DEC 03-04 FAST CRUISE. CREW REMAINED ONBOARD NIGHT OF 03 DEC.

DEC 05-06 UNDERWAY FOR CONTRACTORS OPERATIONS TRIALS.

DEC 06 SRA COMPLETE

DEC 07-08 UNDERWAY FOR INDIVIDUAL SHIP EXERCISES. FIRST STEP

IN SHAKING THE RUST OFF THE CREW AND EQUIPMENT.

DEC 09-12 AMMO ONLOAD FINISHING ONE DAY AHEAD OF SCHEDULE.

DEC 12 INPORT NORFOLK.

DEC 18 COMMENCED HOLIDAY LEAVE PERIOD.

DEC 21 VISIT SHIP, 144 VISITORS.

DEC 22 VISIT SHIP, 314 VISITORS.

DEC 27 FIRST LEAVE PERIOD ENDED AND SECOND BEGAN.

DEC 31 END OF YEAR, AND WHAT A GREAT WAY TO END IT WITH ZERO ACCIDENTS OR INCIDENTS.

USS NASSAU (LHA-4) NARRATIVE

NASSAU finished out 1990 in Dubai, U.A.E., spending Christmas and New Year's Day in Dubai Shipyard. Sailors and embarked Marines of the 4th MARINE EXPEDITIONARY BRIGADE (4th MEB) contacted families, searched for presents and relaxed while CAPT John I. Dow, NASSAU's Commanding Officer, ensured his ship's highly tasked engineering spaces accomplished repairs assuring the general purpose amphibious assault ship would be ready for all tasking.

NASSAU got underway Jan. 3, enroute to the Gulf of Oman for tactical operations. NASSAU, the flagship of a 13-ship amphibious task force under the command of RADM John B. LaPlante, COMMANDER, AMPHIBIOUS GROUP TWO (COMPHIBGRU TWO), throughout *Operations Desert Shield* and *Desert Storm*, sailed into the Arabian Gulf for a show of force and anchored 50 nautical miles east of Bahrain.

As the Jan. 15th deadline for the pullout of Iraqi forces from Kuwait approached, NASSAU moved into the Persian Gulf and remained poised for the largest amphibious assault since World War II. On Jan. 16, NASSAU anchored at the North Masirah Anchorage as the amphibious task force awaited the start of the bombing war against Iraqi forces. NASSAU continued tactical operations in the Gulf of Oman through Jan. 17 as allied coalition forces began air strikes against the forces of Saddam Hussein.

While at anchor in the Gulf of Oman on Jan. 22, NASSAU suffered her first casualty of *Operation Desert Storm* as Marine Corps CAPT Manuial "Buick" Rivera was killed on impact as his Magic

11(AV-8B) Harrier jet crashed on the beach edge during night practice landings aboard NASSAU.

NASSAU and 4th MEB conducted their fifth major exercise in five months, *Sea Soldier IV*, in the North Arabian Sea Jan. 23-28 before returning to the Gulf of Oman.

NASSAU anchored off the coast of Fujairah Feb. 4 to receive passengers, mail and cargo. On Feb. 7, NASSAU's crew watched the ship's closed circuit television system (CCTV) intently as the Cable News Network was cablecast live over the CCTV system for the first time. NASSAU began receiving daily passenger, mail and cargo (PMC) flights from Bahrain and Fujairah on Feb. 9.

On Feb. 20, AV-8B Harriers began air bombings on Iraqi targets from NASSAU's flight deck, marking the first time that combat strikes were flown from the deck of an LHA Class ship.

As the bombing war continued, two mines were found in the vicinity of the amphibious task force. Both mines were destroyed, one by EXPLOSIVE ORDNANCE DETACHMENT MOBILE UNIT 26 (EODMU DET 26) embarked aboard NASSAU.

Feb. 24 marked the beginning of the ground war against Iraqi troops. On Feb. 27, Marine Corps CAPT Reginald "Woody" Underwood was killed as his Magic 14(AV-8B) was shot down out of a flight of four by a missile, one day before the cease fire was declared.

As *Operation Desert Storm* began and intensified, NASSAU had played a major role in deception operations and maneuvers intended to confuse Iraqi forces -- a key element in the successful liberation of Kuwait. During *Operation Desert Storm* more than 250

combat missions were flown by Marine AV-8B Harrier aircraft from NASSAU's flight deck.

The day after replenishment at sea (RAS) and fueling at sea (FAS) with USS SAN JOSE and USNS PONCHATOULA on March 2, NASSAU held Sports Day on her flight deck with numerous athletic competitions and a feast of barbecued chicken and ribs with all the trimmings.

NASSAU returned to Dubai, U.A.E., on March 4 for a brief port visit. After being delayed a day by high winds, NASSAU departed Dubai enroute to Bahrain March 9. While anchored off Bahrain Bell on March 10, NASSAU received eight CH-46 helicopters for transportation to Continental Limits, United States (CONUS) and four CH-53s for further transfer to USS RALEIGH.

On March 11, prior to getting underway enroute to the Suez Canal, VADM Stanley R. Arthur, COMMANDER, UNITED STATES NAVAL FORCES CENTRAL COMMAND, visited NASSAU to congratulate the crew on a job well done.

NASSAU was underway on March 12 for a ten-day Red Sea transit to the Suez Canal. On March 19, Marine Corps CAPT Gregory "Duke" Ellington safely ejected from the cockpit of his Magic 04(AV-8B) as it crashed during night landings in the Red Sea. CAPT Ellington was found by the crews of PENTHOUSE 827 and picked up by a small boat from the USS MANITOWAC.

On March 21, ADM Leon A. Edney, U.S. COMMANDER-IN-CHIEF, ATLANTIC (USCINCLANT), visited NASSAU and addressed sailors and Marines, giving them Bravo Zulus for their participation in the

Gulf War.

After a delay due to high winds, NASSAU entered the Suez Canal March 23. While making transit through the Suez, NASSAU held a March of Dimes Run on her flight deck raising more than $11,000.

On March 24, NASSAU arrived for a port visit in Haifa, Israel. The Israeli people heartily welcomed NASSAU sailors and embarked Marines. While in Haifa, the ship was treated to tours, a children's parade, folklore dancers, a fashion show and a host of other services sponsored by the local USO.

A problem with NASSAU's main circulation pump valve resulted in a delayed departure from Haifa. NASSAU was scheduled to arrive in Rota, Spain, for a port visit on April 5, but due to the problem with the main circulation pump valve, she arrived on April 4.

NASSAU departed Rota April 6 enroute to Onslow Bay, N.C., to offload embarked Marines and their equipment. During the morning of April 17, NASSAU began offloading AV-8B Harriers and landing crafts, utility (LCUs) and, that afternoon, offloaded tanks. The offload was complete in the evening and NASSAU continued enroute to Morehead City, N.C., where the crew was greeted by the Secretary of the Navy H. Lawrence Garrett III, ADM Paul David Miller, COMMANDER-IN-CHIEF, U.S. ATLANTIC FLEET, and MGEN William M. Keys, FLEET MARINE FORCE, ATLANTIC (FMFLANT).

NASSAU completed her offload of Marines on April 19 and boarded guests for a Tiger Cruise to Norfolk, Va.

NASSAU moored at 12:19 p.m., April 20 -- eight months after leaving Norfolk enroute to the Persian Gulf. The crew of the

amphibious assault ship received an enthusiastic "Heroes" welcome by family and friends, supporters, U.S. Sen. Charles S. Robb (D-VA), and Gov. L. Douglas Wilder of Virginia.

NASSAU began a period of standdown during which eight CH-46s from Marine Corps Reserve Detachment, MARINE MEDIUM HELICOPTER SQUADRON 774 (HMM 774) and PENTHOUSE 827 flew off to Naval Air Station, Norfolk. On May 1, NASSAU was visited by Commodore Grindle of the United Kingdom/Netherlands Amphibious Group.

On May 21, after a month of standdown that allowed NASSAU sailors to take leave and to be with their families, the amphibious assault ship departed Norfolk for four days of training off the Virginia Capes.

On June 4, NASSAU steamed to New York City's Fleet Week Celebration. Free professional baseball games, Broadway shows and a massive fireworks display were just a few of the many events sailors enjoyed. On the morning of June 7, NASSAU hosted a live remote broadcast of Fox Television's "Good Day, New York" on her flight deck. New York personality Dick Oliver interviewed ADM John B. LaPlante, CAPT Dow, and two Harrier pilots who participated in the air war against Iraq. Later that evening, Marines from the 4th MEB held a "Sunset Parade" on NASSAU's flight deck with many distinguished guests in attendance.

NASSAU continued to receive visitors June 8-9 from the New York area as thousands flocked to get a glimpse of the amphibious warship.

During the "Parade of Heroes," NASSAU sailors marched with

pride down Broadway in a cascade of ticker tape and confetti as thousands of patriotic Americans cheered and waved flags in support of our nation's armed forces. That evening NASSAU sailors and Marines invited guests aboard to view the spectacular fireworks display from the ship's flight deck. More than 13,000 visitors were received during the five days of open house while in New York.

NASSAU departed New York City on June 11 and arrived home in Norfolk on June 12. On June 13, NASSAU boarded family and friends and left Norfolk once again for a Dependent's Day cruise.

On June 24, NASSAU departed Norfolk for ammunition offload and returned on June 27 at 2200.

NASSAU rolled out the red carpet July 9 as RADM Andrew Granuzzo relieved RADM LaPlante as COMPHIBGRU TWO.

NASSAU underwent a command inspection July 10-12 and received a grade of outstanding. On July 17, NASSAU departed Naval Operating Base (NOB), Norfolk, and was towed into Norfolk Naval Shipyard, Portsmouth, Va., for a Selected Restricted Availability (SRA). NASSAU received a grade of outstanding July 22 for the annual UH-1N Naval Air Training and Operating Procedures Standarization (NATOPS) Evaluation.

On Oct. 23 CAPT Dow was recognized for his heroic achievement during *Operation Desert Storm* and awarded the Bronze Star Medal by RADM Granuzzo, COMPHIBGRU TWO. Cited for his "unfailing good judgment, resolute effectiveness, and total devotion to duty," CAPT Dow was praised for his role in the NASSAU's record onload in August 1990, the Gulf of Oman amphibious exercises, and over 22,000

launch/recovery evolutions, which represented 40 percent of the sorties flown by nine aviation ships in the amphibious task force, that were executed from the NASSAU's flight deck.

Toward the end of her yard period, NASSAU completed several major inspections -- receiving satisfactory results on her Light Off Exam on Nov. 5 and satisfactory results again for her Aviation Certification on Dec. 4.

During the SRA, NASSAU underwent more than 95 major jobs that cost more than $23 million. The NASSAU Engineering Department contained the bulk of the work package which included work done on the boilers, damage control panels, aircraft elevators and the stern gate.

Combat Systems Department required work on the close-in weapons system (CIWS), MK-45 gun mounts and numerous ammunition holding areas were overhauled. New planking in the well deck was one of the various jobs that kept NASSAU Deck Department personnel busy while sailors in Air Intermediate Maintenance Department (AIMD), Communications and Air Departments were also involved with major work being done by shipyard workers.

On Dec. 5 upon completion of the SRA, NASSAU left the yards for a week of contractors operations trials, ammunition onloads, individual ship exercises and Virginia Capes operations.

NASSAU began the ammunition onload Dec. 9 and finished Dec. 12, one day ahead of schedule. During Dec. 21-22, NASSAU acted as NOB's host ship and welcomed 458 visitors before commencing a Christmas/New Year's Day holiday leave period.

AIR DEPARTMENT END OF CRUISE REPORT

(OPERATION DESERT SHIELD AND DESERT STORM)

Enclosure (4)

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From: Air Officer
To: Commanding Officer

Subj: AIR DEPARTMENT END OF CRUISE REPORT (OPERATION DESERT SHIELD AND DESERT STORM)

1. Operations Desert Shield and Desert Storm featured an unprecedented aircraft mix of twenty AV-8B's, seven UH-1N's and three AH-1T's aboard an LHA. This was the first time combat air operations have been conducted from a LHA.

During the eight months deployment in support of Operations Desert Shield/Storm, numerous exercises, demonstrations and contingency operations were conducted. With the exception of helo launches to feign attack against Faylaka and Bubiyan, NASSAU's air combat missions were BAI and CAS in support of MARCENT ground forces. Strike missions were received via NAVCENT ATO in the manner of and on a par with the four CV's operating in the Gulf. Approximately 250 AV-8 BAI/CAS sorties flown between 20-27Feb91.

Deck multiple (36.7 Aircraft) for the deployment was roughly that of a typical MARG. However, the number of AV-8 launch/recoveries conducted were four times that of a MARG. Requirement to maintain a clear deck for Harrier launches combined with space requirements for ordnance build-up, logistic movements, maintenance actions, receipt of mass casualties, and chemical/biological decontamination placed huge demands on ground handling crews.

Combat contingencies consisted of rotary wing assets in the roles of command/control/communications, escort for troop carriers, close in fire support, and night target illumination. Fixed wing assets were tasked with BAI and CAS. Contingencies were rehearsed that included pre-staging assets from other decks n the ATF aboard NASSAU to alleviate a shortage of deck spots needed for airborne assaults/raids.

2. **ORDNANCE:** It is likely that an LHA employed with a similar number of AV-8B's may be tasked to function as or augment a CV. Especially in a case where relatively few first echelon ground troops are embarked. LHA ordnance facilities, handling criteria, L-Form, manning and support equipment do not readily accommodate this contingency. Waivers were necessary from COMNAVSURFLANT and COMNAVSEASYSCOM for the following items (annex B):

- Bomb build up rate for LHA
- Live ordnance drills
- Training flights with AIM-9/B6M-71 installed

Capability for aviation ordnance assembly, stowage and handling in weapon hold No. 9 needs to be increased.

Safety features such as lighting and fire fighting (sprinkler) systems in weapon staging areas are insufficient.

3. **BAI and CAS OPERATIONS:** Conducted pre-dawn to dusk. Typical ordnance loads were 4 MK-82/MK-20 or 2 MK-83s and 300 rd 25MM. Theater CAP precluded the need for AIM-9s. Missiles were removed to provide better aircraft performance.

- During surge operations, as many as 56 sorties were flown per day. Poor weather over the target area resulted in a number of mission cancellations; therefore, full surge capability was never tested. It is estimated that full surge capability lies between 66 -70 sorties. The sustained sortie rate is estimated at 40 per day.

- Space required to perform ordnance build up in the hangar limited access to spare aircraft. A minimum of 14 AV-8s were kept on the flight deck. During solely fixed wing operations, helos were struck below. For mixed operations, it was necessary for helos to be launched prior to commencing fixed wing operations. (Specific spotting diagrams provided annex C).

- Planned turn around/arming time from AV-8 recovery to launch was 1 hour and 10 minutes. A good planning figure, but it was normally bettered by 10-15 minutes.

- Turn around/rearm time for the AH-1s was approximately 45 minutes. To prevent a disruption of fixed wing operations, helo sorties were scheduled in sections and the deck spotted to allow helo turn around/rearming on the starboard perch and spot 3.

4. **LHA MANNING:** LHA manning is based on a required operational capability of 10 hours of flight operations per day. Flight operations exceeded 10 hours routinely throughout the deployment. Personnel management accommodated the prolonged flight windows rather easily. However, maintenance requirements driven by high airframe utilization and extraordinary ground handling requirements mandated a 24-hour work effort. This was accomplished by forming a night crew capable of conducting aircraft moves, elevator operations, high -power engine turns, fuelings/defuelings and single aircraft flight operations, if necessary, after normal hours. (Specific personnel augmentation provided annex D).

5. **HANGAR BAY:** Space in the hangar was at an absolute premium. Load plans should not rely on storage room in the hangar for other than aircraft, essential yellow gear and tool boxes.

- Some Squadron equipment was pre-staged on board prior to deployment and the remainder brought aboard via LCU at Morehead City. An inadequate number of personnel were assigned to remove equipment, causing a considerable delay before aircraft could be placed in the hangar. The deluge of equipment brought on board in such a short time resulted in a back-log in moving the equipment to its assigned storage space. Squadron personnel should arrive in advance of equipment in large enough numbers to ensure proper training and expeditious storage of equipment.

- The absence of an overhead crane for AV-8 engine changes/wing pulls caused extensive work around because of the space required to set-up a cobra crane.

- Brackets were manufactured on board to allow for the storage of AV-8 drop tanks in the overhead. Similar brackets were produced for AH-1 drop tanks. Drawings provided in annex C).

- The hangar mezzanine normally used for ancillary aircraft ordnance support equipment/IMRL was insufficient by half.

- Space was not available for a gig in the Hangar.

- Much GSE was kept in AIMD spaces.

During daily flight operations, Hangar Bay aircraft spotting configuration included nine AV-8B's and at least one H-1. Typical set-up is illustrated in annex F).

When not at flight quarters and if no major maintenance was being performed (e.g. AV-8B engine change or wing pull; H-1 transmission removal/replacement) ten AV-8B's and three H-1's could be stored in Hangar Bay. The deck edge elevator was primarily used to deliver aircraft to flight deck; Stern elevator was also used to deliver aircraft but on a more infrequent basis. Ground support equipment (GSE) was staged in forward portion of Hangar Bay.

Ordnance build-up requirements during Operations Desert Storm bombing campaign severely restricted normal Hangar Bay functions. To support ordnance build-up and provide prompt ordnance delivery to flight deck, following changes had to be made to normal Hangar Bay configuration:

- A bomb build-up table was constructed aft of deck edge elevator.

- Deck edge elevator was primarily used for ordnance delivery to flight deck; stern elevator became primary means of delivering and returning AV-8's to Hangar Bay. (When possible, H-1's were switched using deck edge elevator).

- No major maintenance on Hangar Bay could be accomplished during combat flight operations or when bombs were being built. Port side aft was used to position cobra crane to change AV-8B engines or pull wings. No other portion of Hangar Bay was suitable due to space limitations and insufficient overhead heights. During combat operations the first ready spare was positioned in front of the stern elevator for delivery to flight deck. Once the initial spare was replaced by a down AV-8B, subsequent stern elevator runs necessitated both down aircraft and ready spare to be sent to flight deck. An additional AV-8B on flight deck reduced space available for takeoffs/landings.

- Both cargo elevators 9&10 open to the port side. This design precluded six AV-8B's from being parked along starboard bulkhead. To allow a clear path for forklifts to deliver bombs and components from either cargo elevator to the build up table, a staggered spotting arrangement was necessary. (Depicted in annex C). Although a proposed ship alteration to change cargo elevator doors to starboard opening will remedy some space limitations, the area needed for ordnance build up cannot be reduced.

6. **Aircraft Maintenance**: Coordination between Maintenance Control/Flight Deck was streamlined so as to involve only aircraft handling officer and maintenance coordinator. All planning/execution was negotiated at this level, eliminating confusion, duplication of efforts and adherence to maintenance schedule developed prior to Flight Quarters. The flight deck maintenance coordinator handled both AV-8B's and H-1's. He was present in flight deck control at all times during flight quarters. Direct communication between flight deck control and maintenance control was maintained via intercom, allowing for real-time changes and/or modification to original schedule.

Flight operations limited deck space for maintenance turns. A requirement to clear the entire launching area for Harrier launches reduced time H-1's could spend trouble shooting. Early spotting of test aircraft (immediately after FOD walk down) and use of starboard perch (when the ship's helicopter was airborne) mitigated time constraints.

There are four high power fittings on LHA Flight Deck: Stern elevator; aft of landing spot 7; and two on spot 9 (aft and forward). Due to flight deck aircraft parking requirements, spot 9 high power fittings were never available. Placing an aircraft on spot 7 would interrupt AV-8 ops and limit access to the deck edge elevator. The stern elevator was only location capable of performing high power engine turns without affecting flight operations (high powers were only conducted while at flight quarters). However, use of the stern elevator created the following problems:

- Last aircraft in aft starboard bone was not accessible.

- Stern elevator could not be used to deliver aircraft to/from flight deck or hangar bay.

- During wet-well operations, high powers were not authorized due to jet blast.

- Stern elevator was routinely used to align (sins) and launch AV-8's; high powers eliminated already scarce parking space.

Although deck space was extremely limited, including a huffer as part of deployment pack-up would greatly reduce the number of high power turns required.

AV-8 maintenance requirements limited H-1 access to the Cobra Crane. Due to overhead height constraints, aft portion of hangar bay was the only feasible location to remove AV-8 engines or pull wings. Once maintenance was initiated, the Cobra Crane could not be repositioned in the hangar bay or sent to flight deck. H-1 rotor head removal/replacement would be delayed until completion of AV-8 needs. Numerous times multiple requirements existed and the Cobra Crane could not be reached. In these cases the Helicopter Crash Crane (HCC-30) was used to remove/replace rotor heads on flight deck.

- Spots 6 and 7 were normally used.

- HCC-30 was parked approximately 20 feet abeam aircraft, crane arm was positioned over rotor head.

- Using a rotor head sling, the rotor system was lifted and placed on stand between aircraft and crane.

Entire evolution was completed in less than thirty minutes. Although HCC-30 does not have the refined movement of a Cobra Crane, simple removal/replacement jobs were quickly and safely accomplished.

7. **REFUELING OPERATIONS:** 3.7 Million gallons of JP was issued during 6510 fueling evolutions. This was three times the rate of a typical MARG. JP-5 monthly samples were accomplished in accordance with PMS MRC and shipped to Baharain for laboratory analysis. It took 2 months for results to reach the ship.

- Shipping of JP-5 and MOGAS monthly samples for laboratory analysis resulted in a sample bottle shortage. 56 sample bottles and 14 cans were not returned to the ship.

- Quarterly MOGAS samples where accomplished in accordance with PMS MRC and shipped to Baharain for laboratory analysis. Laboratory analysis took 3-4 months.

- Insufficient portable inertness analyzer (PIA) calibration availability in theater resulted in an uncalibrated portable inertness analyzer (PIA). Periodicity (4 months) for PIA calibration is too short.

- V-4 manning did not support the magnitude of Harrier operations. Four TAD personnel were assigned to augment V-4.

- 4 boxes of millipore filters were used per week. 120% stock was insufficient. It took 120 days to receive resupply.

- Water detector pads were used at a rate of 2-100 count cans per week. Resulted in a shortage. It took 120 days to receive this resupply.

- Experienced high fuel hose consumption (18), due to usage and high temperature, this was mitigated by obtaining (20) 2 1/2 inch hoses before deployment and receiving 8 while underway.

- Had to CASREP purifier flexible hose due to no COSAL support. Asked for COSAL support of purifier flexible hose.

- Excessive use of flight deck refueling stations resulted in many ruptured pilot valve diaphragms and mainbody diaphragms.

- Ship did not carry enough propane bottles for flash point tester on board to support operations.

- During Harrier Operations, the JP-5 system lost pressure with more than 4 hoses on line. JP-5 system works better in quadrants during Harrier Operations. This also reduces reaction time needed to isolate the system in case of a casualty.

- Drain tanks forward and aft were insufficient for the degree of fueling operations. The ship normally operated within 50 miles of land.

- Daily average issue of JP-5 was 17,000 gallons during Harrier operations. This figure reached 50,000 gallons during surge operations.

8. **JP-5 System Damage Control**: Operating in a high threat area, procedures were needed to ensure fuel service to the flight deck and to auxiliaries in the event of casualties. There were none, other than isolating the JP-5 service system into quadrants for aircraft refueling, and fore and aft for the auxiliaries.

Although use of quadrants and isolating a fuel system are viable means of preventing a total loss of fueling capability, the loss of a section of piping in a quadrant does not mean the loss of that entire quadrant.

Fuels division identified and cataloged each separate section of piping located between 2 valves. The system was drawn onto ship's compartmentation drawings with valve location and identification noted. Each section of piping between 2 valves was assigned a number. Valves and piping located in spaces manned by other than fuels division personnel were identified. The IVCS numbers for those spaces were noted on the system diagram and the personnel briefed on the location, purpose and operation of those valves. A matrix was developed which identified how loss of any particular pipe would affect the system, the steps needed to isolate that section, what the resulting actions of isolation would be and what could be done to possibly regain a lost fueling capability. (The matrix are contained in annex F).

9. **Refueling LCAC's in LHA Well Deck**: Procedures for refueling LCAC(s) in a LHA Well Deck are not published. This was conducted safely and efficiently during Operation Desert Storm.

Fueling station #10, in compt. 1-115-2-L was used. The hose reel was equipped with 3 lengths of 2 1/2" hose (150 feet). The hose was lowered down scuttle 1-113-2 located in compt. 1-113-2-L, to walkway (wing wall) 4-89-01-A, then lowered down into the well deck. The LCAC was located on the starboard side of the well deck. The LCAC port side refueling connection was used. Upon completion of refueling, the refueling nozzle was taken to the starboard side refueling connection to ensure it would reach without over stretching the hose. 150 feet of hose was sufficient to reach both refueling connections.

- Large grounding clips are required due to the size of the gripe tracks.

- Comms between the well deck and wing wall are non-existent. Radios are required due to the noise produced by the LCAC APU's.

- 5 men are required for this evolution.
  1 at the refueling station, radio equipped.
  2 on the wing wall, 1 radio equipped.
  2 in the well deck, 1 radio equipped.

- The hose can not be lowered into the well deck until the LCAC is off cushion due to heat. For back to back refueling, the hose must be pulled back up to the hangar deck level and re-lowered after the first LCAC is gone and the second is off cushion.

10. **Back-up Communications for Primary Flight Control**: The LHA UHF radio system takes a great deal of time to restore after a casualty. Currently, Primary Flight Control has no back-up UHF radio capability. All UHF communications in Primary Flight Control would be lost whenever the ship conducted a mainspace fire drill and at other occasions. During times the radios were out, no control of the air space could be effected resulting in potentially dangerous situations.

Some contingency scenarios required the Air Officer to be able to contact other ship's on their land/launch or monitor a tactical frequency for launch of embarked aircraft. There is currently only limited capability to accomplish this.

The ship's MARCOMM Officer, working with embarked Marine Communications unit, was able to provide the Air Department 2 AN/PRC-113 radios. These radios allowed continued communications when the rest of the ship's UHF system was down. Additionally, these radios provided the flexibility of using any UHF frequency. These portable radios had a very limited range.

Its recommended that at least one AN/PRC-113 or similar radio be provided as a back-up to the ship's system for Primary Flight Control. These radios should be hard mounted and connected to an antenna that would provide increased range.

11. **Hangar Bay Communications**: Communications between Hangar Deck Control and the Hangar Bay PO on the Hangar Bay was limited to the use of sound powered phones and hand signals. This proved inadequate. To facilitate moves, a direct link between Hangar Deck Control and the Bay PO is needed. The best method for communication appears to be a permanent base station.

As a temporary measure, 2 radios and a frequency were provided Hangar Deck Control and the Bay PO. Metal and glass between the two areas prevented clear radio communication. This was overcome by running a copper antenna through a stuffing tube out into the Hangar Bay and connecting it to the radio in Hangar Deck Control.

12. **ALIGNMENT OUT BOXES** (AOB) AV-8B Harriers receive inertial navigation system update prior to launch. Accomplished through flight deck alignment out boxes (AOB) and sea inertial navigation system (SINS) cables, ship's gyros provide critical instrument reference information including geographic location. There were six AOBs located on the flight deck: one port side aft of deck edge elevator; three starboard side aft of deck edge elevator; and two starboard side forward of island (an additional two AOBs are located in the Hangar Bay).

Unprecedented use of AOBs and SINS cables resulted in the following:

- Single AOB port side aft limited simultaneous alignment to only two aircraft; typical surge operations deck spotting four AV-8s on the port side aft.

- Began deployment with eight cables, excessive normal wear and lack of spare parts reduced RFI cables to low of three.

- AOB parts attrition rate was significant. Spare parts were cannibalized from Hangar Bay AOBs.

- After long periods of inactivity such as port visits or consecutive no fly-days, the system must be checked prior to commencing operations. Inadvertent systems shutdown occurred on three occasions.

- Minimal experience level of AOB repairmen (ICs); few people have worked on system and it was necessary to train a resident "expert" during the deployment.

- Ship does not posses equipment to analyze the quality of AOB signal. Primary technique used to troubleshoot was a voltmeter to verify output.

Critical nature of AV-8 alignment necessitates a viable primary back-up system. If LHA is used as a Harrier platform, an additional AOB should be added to port side aft and SRC-40 reliability improved.

13. **AV-8 REFUELING OPERATIONS**

Although there are a myriad possible combinations, most frequent refueling operations were based on the following conditions:

- Four-plane launch cycles at approximately 30 minutes intervals. Each sortie lasted 50 minutes.

- Launch distances varied with ambient temperature, winds across the deck and aircraft weight. Standard take off distance was 450 feet.

- Deck operated on the average, with 11 AV-8s: two in forward starboard bone; six in aft starboard bone; one on stern elevator and two parked port side, aft of the deck edge elevator.

To quickly and efficiently refuel the first 4-plane division, two aircraft were parked in the aft starboard bone, the other two AV-8s were positioned on the tram line (450 feet mark) and directly over spot 7.

This configuration provided the following:

- Four aircraft refueled by two fuel stations, minimizing fuel crews.

- Simultaneously received water from two spickets.

- Allowed smooth taxi flow onto tram line for launch.

- Keep aft portion of flight deck clear for AV-8 recoveries in the event of an emergency

If launch distances were greater than 450 feet, and second division aircraft were still air borne, same method could be used; however aircraft parked on tram line and spot 7 must be back-taxied into position for proper launch distance. If no other Harrier aircraft were in flight the tram line and spot 8 were used for fuel/water evolution.

14. AV-8 Day/Night Practice Deck Landing Evolutions

Standard deck landings (DL) involved up to four aircraft, launching from a 300-350 foot take-off distance. Day landings were conducted with aircraft positioned on stern elevator and most aft spot port side; However, night operations were performed with a maximum of ten AV-8s on deck (including those involved in DLs) leaving the areas port side aft of deck edge elevator and stern elevator clear. When fuel and water were necessary, an aircraft was parked on the 300-350 foot line, another slashed slightly forward of spot six and two slashed on spot seven. (Slashed parking allowed sufficient space to taxi aircraft past fueling AV-8s and into position for launch). The slash angle was critical due to the distance between aircraft and island. When possible, up to two aircraft - normally those parked on spot

seven - were refueled/watered in starboard aft bone. Water hoses were placed in three locations to reach aircraft: Forward bone to reach 300-350 foot line; adjacent spot five for AV-8 slashed on spot six; and two hoses were connected beneath the boat deck to water aircraft slashed on spot seven. Fueling stations four and six adequately reached all four parking spaces; station three was used when fueling AV-8s in aft bone. At night, if an aircraft went down, it was slashed on spot six, still allowing AV-8s to launch and be serviced on spot seven and 300-350 foot marks.

15. **CRASH AND SALVAGE.** It was common practice to have a Twin Agent Unit (TAU) manned in addition to the P-16 requirement found in NAVAIR 00-80R-14. The TAU unit would be positioned just aft of the island under the boat deck. This proved beneficial to the nature of our particular flight operations. It could respond exipidisously to incidents occurring from spot 6 aft. Fuel spills were common with the AV-8B's. The TAU units quick response to those spills increased the safety factor on the flight deck.

- The Hangar Bay TAU was positioned at the top of false beach during LCAC refueling evolutions.

- AV-8 low power turns after flight quarters were accomplished by positioning a manned P-16 on scene.

- The ship does not carry AV-8B lifting slings. These must be provided by the squadron.

16. **FLIGHT OPERATIONS VS SCREEN KILO:** The size of the ATF and associated ship formations required special consideration when conducting AV-8 and helo flight operations. Sectors with 50-60 degree arcs and from 6-8000 yds in sector depth seem to work best. These sectors are usually better if aligned in the after semi-circle of the formation with reference to the base course. Then, if it's necessary to bail out of formation for any reason, it can be done with less disruption to the rest of the formation.

The factors that effect fox corpen and speed for Harriers are true wind, ambient temperature, basic weight, deck run available, specific aircraft engine performance, external stores and fuel loads. As aircraft gross weights increase towards combat weights/loads, the launch wind envelopes narrow to plus or minus 10 degrees from the bow, while relative wind velocity needed increases to 15-20 kts. Helos generally fit into the AV-8 wind requirements except for UH-1 from spots one and three. It helps if the air plan accommodates repositioning in the formation between launch cycles. During helo NVG operations, greater separation between ships is needed to prevent other ships' navigation lights from interfering with NVG adaptation. Consideration must be given to the possibility of over lapping or conflicting with other air capable ships in the formation.

17. **MISCELLANEOUS:**

-Approximately 4000 sq ft of non skid along the Tram Line and aft of spot 7 broke down under pressure of extensive AV-8 operations. Surface corrosion was removed and bare metal treated with "bar rust" and covered with deck paint. Ship yards in theatre are not properly equipped for extensive non-skid work.

-VLA required refurbishment on three occasions. Tram Line zipper was repainted monthly. Insufficient supply of stain was carried onboard.

-An exorbitant number of Tram Line light bulbs and transformers were used.

-The amount of the flight quarters devoted to AV-8 operations and the requirement to keep the CAI MOD II on while the Harriers were airborne led to a high usage rate of bulbs for both the Datum and Source lights. The only other failure mode noted was Circuit Cards that went bad, giving false indications of bulb or cell failure. Additionally, the system was only certified for six months and required an extension twice.

-The SPN-47 system was highly accurate when it was in working order, allowing AV-8 pilots to fly precision Case III approaches to the ship without the difficulties encountered in the ship's air traffic control radar suite. The system was of limited use with the ship at anchor due to the rapid heading changes that were common. However, there were no trained technicians and little parts support on board to maintain the system in an up status.

-EMCON/ZIP LIP procedures were used routinely. However, combat operations were conducted plain voice as part of OPDEC. Procedures addressed annex G.

-Aircraft decontamination was of concern because of an imminent CBR threat. Procedures discussed annex H.

-Mass Casualty drills, especially those featuring contaminated casualties were rehearsed extensively. Procedures are discussed annex I.

-Three man on-the-move radio frequencies are used during normal flight operations and are assigned to flight deck aircraft handlers, flight deck fuels handlers and flight deck combat cargo handlers.

All LHAs are configured the same. When USS Tarawa joined the ATF and the two decks were operating in close proximity, bleed over of transmissions caused interruptions of flight operations and severely eroded safety of personnel operating on both decks. Direct communications

with USS Tarawa was initiated with the following changes made, USS Nassau flight deck would combine fight deck handling communications with flight deck fuels on channel one, while USS Tarawa would combine flight deck fuels communcations with flight deck handling on channel two. This arrangement provided necessary communication network to ensure safe deck operations.

Mass Casualty exercises were conducted with variations of two basic scenarios; while conducting combat flight operations and with Nassau serving as a primary casualty receiving ship after the airwing was redeployed ashore to advance operating bases.

In all scenarios, there were limitations associated with use of the flight deck battle dressing station (BDS) and triage areas. The size of the space limited the number of patients that could be treated at one time. Access to the main triage/casualty receiving area is by a 6-stretcher capacity elevator.

While conducting flight operations, patient assessment in flight deck triage was hampered by high noise levels.

In an effort to overcome the noise and space problems, space was made available in the forward portion of the hangar bay at the bottom of the vehicle ramp leading to the flight deck. Ambulatory patients were assembled in this area, and stretcher patients who were not triaged into Cas-Rec were to be treated and continually reassessed on the forward portion of the hangar. Resuscitation and initial therapy was started appropriately. The area was supplied similar to Cas-Rec and resupplied as needed.

While conducting combat air operations, this area was limited because of ordnance build-up on the hangar. Once the airwing is redeployed, the hangar area is virtually unlimited.

When chemical contaminated patients were introduced to the scenarios, they were carried/directed to the starboard side of the island to decontamination stations. They would rejoin non-contaminated casualties for processing at the top of the vehicle ramp. This necessitated keeping the area at the top of the ramp, as well as a 10-15 ft. area directly in front of the island, clear of aircraft, yellow gear; chains, etc.

The starboard side of the island is also used as a bomb farm. In order to deconflict casualties and ordnance movements, it is imperative to maintain the space under the boat deck, aft of the island free of obstacles.

During combat air operations there exist a competition for deck space between AV-8s and Medevac helos. This however is not

a dire conflict. The sustainable rate for combat sorties is approximately eight AV-8s per hour. The medical facilities onboard can accomodate approximately 2 H-46 with 14 casualties (28 total) per hour. During combat operations, the AV-8s dominate the flight deck for approximately 16 minutes per hour. This leaves about 44 minutes per hour to receive Medevac helos.

The following is a statistical summary of events aboard USS NASSAU (LHA-4) for the Calendar Year 1991

Days Underway	104
# of Vertical Replenishments	4
# of Connected Replenishments	12
# of Well Deck operations	236 Hours
# of Amphibious Assault landings	1

ENGINEERING STATISTICS

Hours steamed	No. 1 Boiler-2855.6 Hours
	No. 2 Boiler-2938.0 Hours
Fuel consumed	5,262,732 Gallons
Potable water distilled	669,331 Gallons
Feed water distilled	549,304 Gallons

MEDICAL STATISTICS

Sickcall visits	3579
Inpatients	27
Physical Exams	306
Immunizations	3044
Pharmacy units	4295
Audiograms	609
X-rays	1762
Lab tests	11471

Additionally, there were 36 lateral transfers of patients from other ships and units to Nassau for inpatient care. Five were lifesaving Medical Evacuations (MEDIVACS).

Major Surgical cases: 27

SUPPLY DEPARTMENT STATISTICS

Food service:	
Wardroom meals served	75,061
Wardroom food costs	$149,632.43
EDF meals served	1,357,600
Food consumed	2,036,400 lbs
EDF food costs	$2,319,980.00
Disbursing:	
# of disbursing vouchers	1,350
Amount of disbursments	$9,000,000.00
# of collection vouchers	120
Amount of collections	$1,100,000.00
Total checks issued	$9,600,000.00

Retail Operations:	
Ship's store sales (gross)	$1,752,236.85
Gross profits	$ 353,188.48
Laundry washed	201,746
Cans of soda sold	875,894
Stock:	
# of receipts	29,179
# of issues	7,123
Line items carried	45,081
Inventory cost	$39,837,246
Funds expended	$14,067,851

POST OFFICE STATISTICS

Mail totals for months of 1991	
January	31,000
February	48,000
March	60,000
April	13,400
May	2,000
June	2,300
July	2,200
August	2,500
September	2,400
October	2,500
November	2,300
December	2,600
Total Weight for CY 91	171,200

Money Orders:				
First Quarter	Sold	3432	at $	581,879.00
	Cashed	314	at $	50,509.00
Second Quarter	Sold	485	at $	77,353.00
	Cashed	96	at $	20,941.00
Third Quarter	Sold	506	at $	59,372.00
	Cashed	24	at $	2,467.00
Fourth Quarter	Sold	540	at $	63,328.00
	Cashed	41	at $	3,683,00
Totals	Sold	4963	at $	781,932.00
	Cashed	475	at $	77,600.00

Stamps sold:	
First Quarter	$ 20,520.00
Second Quarter	$ 15,743.00
Third Quarter	$ 6,174.00
Fourth Quarter	$ 2,099.00
Total	$ 44,536.00

SECURITY STATISTICS

Number of Incident/Complaint Reports (ICRs) processed	86
Number of Non-Judicial Punishments (NJPs)	155

LEGAL STATISTICS

Admin discharges	14
Special courts-martial	3
Summary courts-martial	9
Last will & testaments prepared	200
Power of Attorneys	700 (General)
	125 (Special)

AIR DEPARTMENT STATISTICS

Embarked Flight Hours Day/Night	825/192
Fixed Wing Landings Day/Night	1505/214
Helo Landings day/Night	3196/451
Aviation fuel consumed	1,806,212 Gallons

Milestones

First Av-8B Combat sortie from an LHA class ship

Unprecedented 256 combat sorties with 56 in one day

Over 2000 Aircraft moves in four months

WEAPONS STATISTICS

Ammunition expended:

Ordnance expended in Desert Storm 256 Tons

COMBAT CARGO STATISTICS

Passengers	11,052
Cargo	11,108,000 lbs

1. USS NASSAU Departed Norfolk, VA on 18 AUG 90. The following aircraft were embarked, at sea, 19 AUG - 20 AUG 90:

SQUADRON	TYPE	#ONBOARD
VMA-331	AV-8B	*20
HMLA-269	UH-IN	6
HMLA-269	AH-1T	3
HMM-774	CH-46	8 (Embarked 10 MAR 91)
NASSAU	UH-1N	1

*Three AV-8B aircraft were lost: #11 Crashed during training; #14 lost in combat; and #04 crashed during training mission.

2. The following is a month by month list of the ship's employment:

MONTH	DAYS AT SEA	DAYS IN PORT
AUG 90	13	17
SEP 90	30	0
OCT 90	31	0
NOV 90	28	2
DEC 90	20	11
JAN 91	28	3
FEB 91	28	0
MAR 91	21	10
APR 91	17	03

3. Monthly Fuel Consumption

Month	JP-5 Issued	Recieved
AUG.	182,807	142,394
SEPT.	482,204	405,989
OCT.	625,998	598,585
NOV.	448,197	453,742
DEC.	471,383	407,246
JAN.	596,406	585,298
FEB.	536,081	570,944
MAR.	191,290	201,839
APR.	120,785	91,035

MOGAS USAGE

MONTH	MOGAS ISSUED	RECIEVED
AUG.	0	2,300
SEPT.	0	0
OCT.	35	0
NOV.	51	0
DEC.	0	0
JAN.	0	0
FEB.	85	0
MAR.	0	0
APR.	0	0

4. Air Department operations:

DAY OPERATIONS

AIRCRAFT	RECOVERIES	LAUNCHES	EVOLUTIONS
UH-1	2868	2888	5764
AH-1	930	955	1893
AV-8	3372	3362	6634
CH-46	2797	2789	5586
CH-53	702	702	1404
H-60	14	14	28
H-3	36	36	72
TOTALS:	10,704	10,741	21,441

NIGHT OPERATIONS

AIRCRAFT	RECOVERIES	LAUNCHES	EVOLUTIONS
UH-1	934	906	1840
AH-1	454	426	880
AV-8	302	295	597
CH-46	105	105	210
CH-53	23	23	46
H-3	3	3	6
H-60	2	4	4
TOTALS:	1,823	1,760	3,583

Total flight quarter hours: 1794:43

Desert Shield/Storm recovery numbers:

(D) 10,704*
(N) 1,823*
TOTAL RECOVERIES: 12,275*

*TOTALS ARE FROM 18AUG90 TO 20APRIL91

AIRCRAFT DECK MOVEMENT

Flight deck aircraft moves = 15,718#
Hangar deck aircraft moves = 2,859#
Total aircraft moves = 18,577#

as of 20 APR 91

HANGAR BAY MOVEMENT

Month by month breakdown:

August	129
September	307
October	294
November	247
December	254
January	350
February	281
March	144
April	97

Total moves: 2133