

UNITED STATES AIR FORCE
AIRCRAFT ACCIDENT INVESTIGATION
BOARD REPORT



C-130H, T/N 74-1692
36TH AIRLIFT SQUADRON
374TH AIRLIFT WING
YOKOTA AIR BASE, JAPAN



**LOCATION: SUBIC BAY INTERNATIONAL AIRPORT,
PHILIPPINES**

DATE OF ACCIDENT: 7 APRIL 2016

BOARD PRESIDENT: COLONEL ARTHUR W. PRIMAS, JR.

Conducted IAW Air Force Instruction 51-503

**EXECUTIVE SUMMARY
UNITED STATES AIR FORCE
AIRCRAFT ACCIDENT INVESTIGATION**

**C-130H, T/N 74-1692
SUBIC BAY INTERNATIONAL AIRPORT, PHILIPPINES
7 APRIL 2016**

On 7 April 2016, at approximately 1535 hours local time (L), Mishap Jumper (MJ), a member of the 710th Special Operations Wing (710 SPOW), Philippine Air Force (PAF), jumped from a C-130H, Tail Number (T/N) 74-1692, during Operation BALIKATAN 2016, an exercise located in the Republic of the Philippines (Philippines), between American and Philippine armed forces. The mishap aircraft (MA) was assigned to the 36th Airlift Squadron at the 374th Airlift Wing (374 AW), Yokota Air Base (AB), Japan.

The MA took off from Subic Bay International Airport, Philippines. The mishap jump included ten parachutists from the 710 SPOW, who jumped from the MA at an altitude of 1,250 feet Above Ground Level. Approximately 12 minutes after take-off, all ten 710 SPOW parachutists for that group exited the aircraft intending to land within the rectangular FEDEX drop zone (DZ). During the airdrop descent, four of the ten 710 SPOW parachutists, including MJ, drifted toward the bay, north of the intended point of impact on the DZ. Three of the parachutists landed among or near the tree line that separated the airport from the bay shoreline, while MJ landed in Subic Bay approximately 50 yards from shore. The rescue boat and responding swimmers did not immediately know his location and were unable to locate him for approximately 30 to 50 minutes. MJ was unresponsive after he was located and brought to shore, where medical staff performed life-saving measures before transporting him to Unihealth-Baypointe Hospital and Medical Center, Subic Bay Freeport Zone. Hospital staff pronounced MJ deceased at approximately 1725L.

The Accident Investigation Board (AIB) president found, by a preponderance of the evidence that the cause of the mishap was MJ's failure to execute proper water landing procedures. The AIB president also found, by a preponderance of the evidence that a lack of thorough coordination and compliance in accordance with the Pacific Air Forces (PACAF) Commander memorandum, dated 19 February 2016, for foreign military parachute operations on PACAF aircraft, substantially contributed to the mishap.

Under 10 U.S.C. § 2254(d) the opinion of the accident investigator as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report, if any, may not be considered as evidence in any civil or criminal proceeding arising from the accident, nor may such information be considered an admission of liability of the United States or by any person referred to in those conclusions or statements.

SUMMARY OF FACTS AND STATEMENT OF OPINION
C-130H, T/N 74-1692
7 APRIL 2016

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	iii
SUMMARY OF FACTS	1
1. AUTHORITY AND PURPOSE	1
a. Authority	1
b. Purpose.....	1
2. ACCIDENT SUMMARY	1
3. BACKGROUND	2
a. Pacific Air Forces (PACAF)	2
b. 5th Air Force (5 AF)	2
c. 374th Airlift Wing (374 AW)	2
d. 374th Operations Group (374 OG)	2
e. 36th Airlift Squadron (36 AS).....	2
f. C-130 Hercules (C-130H)	3
g. Air Force Special Operations Command (AFSOC).....	3
h. 353d Special Operations Group (353 SOG)	3
i. 320th Special Tactics Squadron (320 STS)	3
j. 710th Special Operations Wing (710 SPOW), Philippine Air Force (PAF)	4
4. SEQUENCE OF EVENTS	4
a. Mission.....	4
b. Planning	4
c. Preflight.....	6
d. Summary of Accident	7
e. Impact.....	9
f. Egress and Aircrew Flight Equipment (AFE)	10
g. Search and Rescue (SAR)	10
h. Recovery of Remains.....	14
5. MAINTENANCE	15
a. Forms Documentation.....	15
b. Inspections	15
c. Maintenance Procedures	15
d. Maintenance Personnel and Supervision	15
e. Fuel, Hydraulic, and Oil Inspection Analyses	16
f. Unscheduled Maintenance.....	16
6. AIRFRAME, MISSILE, OR SPACE VEHICLE SYSTEMS	16
a. Structures and Systems	16
b. Evaluation and Analysis.....	16
7. WEATHER	17
a. Forecast Weather.....	17
b. Observed Weather.....	17
c. Space Environment	17

d. Operations	18
8. CREW QUALIFICATIONS.....	18
a. Mishap Pilot (MP1).....	18
b. Mishap Pilot 2 (MP2).....	18
c. Mishap Navigator 1 (MN1).....	18
d. Mishap Navigator 2 (MN2)	18
e. Mishap Flight Engineer (ME)	19
f. Mishap Loadmaster 1 (ML1).....	19
g. Mishap Loadmaster 2 (ML2)	19
h. Mishap Loadmaster 3 (ML3).....	19
9. MEDICAL	19
a. Qualifications	19
b. Health.....	19
c. Pathology.....	20
d. Lifestyle	20
e. Crew Rest and Crew Duty Time	20
10. OPERATIONS AND SUPERVISION	20
a. Operations	20
b. Supervision	21
11. HUMAN FACTORS analysis.....	21
a. Introduction	21
b. Mission Planning [PP109]	21
c. Supervision–De Facto Policy [SV002]	22
d. Procedural Guidance/Publications [OP003]	22
e. Procedural Error [AE103].....	22
12. GOVERNING DIRECTIVES AND PUBLICATIONS	23
a. Publically Available Directives and Publications Relevant to the Mishap.....	23
b. Other Directives and Publications Relevant to the Mishap	24
STATEMENT OF OPINION	25
1. Background	25
2. Cause.....	25
3. Substantially Contributing Factors	26
4. Conclusion	29

ACRONYMS AND ABBREVIATIONS

A1C	Airman First Class	BK	BALIKATAN
A2C	Airman Second Class	BMC	Basic Mission Capable
A3/6	Operations & Communications Directorate	BP	Board President
A3/6T	Operations and Training Division	C2	Command and Control
A3T	Training Division	CA	Convening Authority
A3Y	Exercise Division	CAPEX	Capabilities Exercise
AB	Air Base	Capt	Captain
AC	Aircraft Commander	CARP	Computed Air Release Point
ACLS	Advanced Cardiac Life Support	CASEVAC	Casualty Evacuation
ADC	Analog to Digital Conversion	CC	Commander
ADVON	Advanced Echelon	CCT	Combat Control Team
AEG	Air Expeditionary Group	CERT	Certified
AETC	Air Education Training Command	Chf	Chief
AF	Air Force	CMA	Control Movement Area
AFB	Air Force Base	CMBT	Combat
AFE	Aircrew Flight Equipment	CMD	Command
AFI	Air Force Instruction	Col	Colonel
AFM	Air Force Manual	COMPACAF	Commander, Pacific Air Forces
AFP	Armed Forces of the Philippines	CPR	Cardio Pulmonary Resuscitation
AFPAM	Air Force Pamphlet	CPX	Command Post Exercise
AFSAS	Air Force Safety Automated System	CRG	Contingency Response Group
AFSEC	Air Force Safety Center	CVR	Cockpit Voice Recorder
AFSOC	Air Force Special Operations Command	DA/GS	Drift Angle/Ground Speed
AFTO	Air Force Technical Order	Dep	Deputy
AGL	Above Ground Level	DEPORD	Deployment Order
AGRS	Aggressor Squadron	DET	Detachment
AIB	Accident Investigation Board	DETCO	Detachment Commander
AMXS	Aircraft Maintenance Squadron	DFDR	Digital Flight Data Recorder
AOC	Air Operations Center	DMC	Deputy Mission Commander
AOR	Area of Responsibility	DNIF	Duties Not Involving Flying
APU	Auxiliary Power Unit	DoD	Department of Defense
AS	Airlift Squadron	DVS	Doppler Vector Sensor
ASOS	Air Support Operations Squadron	DZ	Drop Zone
ATC	Air Traffic Control	DZC	Drop Zone Controller/ Control Officer
ATLS	Advanced Trauma Life Support	DZCO	Drop Zone Controller/ Control Officer
AVAIL	Available	DZSO	Drop Zone Safety Officer
AW	Airlift Wing	EAF	Expeditionary Air Force
AWACS	Airborne Warning and Control System	EAS	Expeditionary Airlift Squadron
BALWDS	Ballistic Winds	ECAS	Emergency Close Air Support
		EMT	Emergency Medical Technician

EPOS	Emergency Passenger Oxygen System	JASDF	Transportability Training Japanese Self Defense Force
ER	Emergency Room	JBPH-H	Joint Base Pearl Harbor-Hickam
ER	Exceptional Release (<i>Maintenance</i>)	JCET	Joint Combined Exchange Training
ERO	Engine Running Off/On Load	JCS	Joint Chiefs of Staff
Eval	Evaluation	JGSDF	Japanese Ground Self Defense Force
Ex	Exercise	JM	Jumpmaster
EXORD	Execution Order	JMPI	Jumpmaster Personnel Inspection
FCIF	Flight Crew Information File	JTAC	Joint Terminal Attack Controller
FDP	Flight Duty Period	JUSMAG	Joint United States Military Advisory Group
FDR	Flight Data Recorder	K	Thousand
FPW	Final Planning Workshop	L	Local Time
FLT	Flight	LA	Legal Advisor
FTX	Field Training Exercise	LCLA	Low Cost Low Altitude
FTD	Forward Travel Distance	LM	Loadmaster
FAM	Functional Manager	LPE	Life Preserver Equipment
FM	Field Manual	LPU	Life Preserver Unit
FOD	Foreign Object Damage	LRS	Logistics Readiness Squadron
FOM	Figure of Merit	Lt Col	Lieutenant Colonel
FPC	Final Planning Conference	LZ	Landing Zone
FW	Fighter Wing	MA	Mishap Aircraft
GPS	Global Positioning System	Maj	Major
GT	Ground Training	MAJCOM	Major Command
HALO	High Altitude Low Opening	MAL	Mishap Tower Liaison
HARP	High Altitude Release Point	MALFO	Malfunction Officer
HCA	Humanitarian and Civic Assistance	MARFORPAC	Marine Forces, Pacific
HFACS	Human Factors Analysis and Classification System	MBR	Member
HN	Host Nation	MC	Mishap Crew
HQ	Headquarters	MD	Medical Officer
HUD	Heads-Up Display	MD	Mishap Doctor
IDMT	Independent Duty Medical Technician	MDZSO	Mishap Drop Zone Safety Officer
IFR	Instrument Flight Rules	ME	Mishap Flight Engineer
IMDS	Integrated Maintenance Data System	MFF	Military Free Fall
INDALT	Indicated Altitude	MJ	Mishap Jumper
INS	Inertial Navigation System	MJM	Mishap Jumpmaster
Inst	Instructor	ML	Mishap Loadmaster
IO	Investigating Officer	MMC	Mishap Medic
IP	Initial Point	MMP	Mishap Mission Planner
IPC	Initial Planning Conference	MN	Mishap Navigator
IPW	Initial Planning Workshop	MP	Mishap Pilot
ISB	Interim Safety Board	MPA	Mishap Physician's Assistant
ISO	Isochronal	MPC	Mission Planning Cell
IV	Intravenous Therapy	MRS	Mishap Rescue Swimmer
JA/ATT	Joint Airborne/Air	MS	Mishap Sortie
		MSgt	Master Sergeant

MSL	Mean Sea Level	SEC	Secondary
MXM	Maintenance Member	SECDEF	Secretary of Defense
N/A	Not Applicable	SIB	Safety Investigation Board
NAV	Navigator	SITREP	Situation Report
NCO	Non-Commissioned Officer	SL	Static Line
NCOIC	Non-Commissioned Officer in Charge	SME	Subject Matter Expert
NOTAM	Notice to Airmen	SMSGt	Senior Master Sergeant
NVG	Night-Vision Goggles	SOCOM	Special Operations Command
OG	Operations Group	SOC PAC	Special Operations Command, Pacific
OIC	Officer in Charge	SOF	Supervisor of Flying
OPS	Operations	SOF	Special Operations Forces
Ops Tempo	Operations Tempo	SOG	Special Operations Group
ORM	Operational Risk Management	SOP	Standard Operating Procedures
OSM	Operations Support Medics	SOPAC	Special Operations, Pacific
OSS	Operations Support Squadron	SOWT	Special Operations Weather Team
PA	Physician's Assistant	SPOW	Special Operations Wing
PA	Public Affairs	SSgt	Staff Sergeant
PACAF	Pacific Air Forces	STOSOPS	Stotsenberg Operations
PACOM	Pacific Command	STS	Special Tactics Squadron
PAF	Philippine Air Force	Supt	Superintendent
PAX	Passengers	SVC	Service
PERS PI	Personnel Point of Impact	TAC	Terminal Attack Controller
PFAC	Philippine Forward Air Controller	TAS	True Air Speed
PHA	Physical Health Assessment	TBA	Training Business Area
PHYS	Physical	TC	Technical Communication
PI	Point of Impact	TCTO	Time Compliance Technical Order
PJ	Pararescuemen	TDY	Temporary Duty
Planner	Mishap Mission Commander	TPFDD	Time Phased Force Deployment Data
PM	Pilot Member	T/N	Tail Number
POC	Point of Contact	TO	Technical Order
PR	Pre-Flight Inspection	TOD	Technical Order Data
PRI	Primary	TOT	Time On Target
PWAC	Practical Work in Aircraft	TSgt	Technical Sergeant
QA	Quality Assurance	TTF	Total Time of Fall
RAM	Raised Angle Marker	UCMJ	Uniform Code of Military Justice
RAMZ	Rigid Alternate Method Zodiac	UH/VH	Ultra High/Very High
RF	Mishap Radio Frequency Transmission Member	US	United States
RJM	Rescue Jumpmaster	USAF	United States Air Force
RPM	Revolutions Per Minute	USAFE	United States Air Forces, Europe
RTB	Return to Base	USEDZ	Usable Drop Zone
SA	Situational Awareness	UTI	Urinary Tract Infection
SAR	Search and Rescue	VCOA	Visual Climb-out Over the Airfield
SCNS	Self-Contained Navigation System	VDZ	Volts Direct Current
SE	Safety	VFR	Visual Flight Rules

VG	Vertical Gyroscope	YAB	Yokota Air Base
VMC	Visual Meteorological Conditions	Z	Zulu Time
WESTPAC	Western Pacific		
WILCO	Will Comply		

The above list was compiled from the Summary of Facts, the Statement of Opinion, the Index of Tabs, and Witness Testimony (Tab V).

SUMMARY OF FACTS

1. AUTHORITY AND PURPOSE

a. Authority

On 14 April 2016, General Lori J. Robinson, Pacific Air Forces Commander (COMPACAF), United States (US) Air Force (USAF), appointed Colonel Arthur W. Primas, Jr., to conduct an accident investigation into the 7 April 2016 mishap fatality involving a C-130H Hercules aircraft, Tail Number (T/N) 74-1692, at Subic Bay International Airport, Republic of the Philippines (Philippines) (Tab Y-3 to Y-4). The investigation occurred at Joint Base Pearl Harbor-Hickam, Hawaii, and Yokota Air Base (AB), Japan, from 10 May 2016 to 2 June 2016. The following board members were appointed: Lieutenant Colonel (Lt Col) Medical Member, Major (Maj) Navigator, Captain (Capt) Legal Advisor, Master Sergeant (MSgt) Loadmaster, MSgt Jumpmaster, MSgt Maintenance Member, and MSgt Recorder (Tab Y-5 to Y-12). A MSgt Parachute Rigger and a Chief Master Sergeant SOCOM Functional Manager were appointed as Subject-Matter Experts (SME) (Tab Y-13 to Y-16).

b. Purpose

In accordance with Air Force Instruction (AFI) 51-503, *Aerospace and Ground Accident Investigations*, 14 April 2015, this Accident Investigation Board (AIB) conducted a legal investigation to inquire into all the facts and circumstances surrounding this United States Air Force aerospace accident, prepare a publicly releasable report, and obtain and preserve all available evidence for use in litigation, claims, disciplinary action, and adverse administrative action.

2. ACCIDENT SUMMARY

On 7 April 2016 at Subic Bay International Airport, Philippines, at approximately 1535 hours local time (L), Mishap Jumper (MJ), a member of the 710th Special Operations Wing (710 SPOW), Philippine Air Force (PAF), jumped from the mishap aircraft (MA), a C-130H, T/N 74-1692 (Tabs D-3, K-6 to K-8, V-24.1, and V-28.1 to V-28.4). The jump occurred during Operation BALIKATAN 2016, an exercise located in the Philippines between American and Philippine armed forces (Tabs V-17.3 and BB-24). The MA was assigned to the 36th Airlift Squadron (36 AS) at the 374th Airlift Wing (374 AW), Yokota AB, Japan (Tabs K-4, V-11.4 and CC-13). The mishap crew (MC) included members from the 374 AW and the 320th Special Tactics Squadron (320 STS), Kadena AB, Japan, and consisted of the mishap pilot (MP1), the mishap copilot (MP2), the mishap navigator (MN1), the mishap instructor navigator (MN2), the mishap flight engineer (ME), the mishap instructor loadmaster (ML1), two mishap loadmasters (ML2, ML3), and two mishap jumpmasters (MJM1, MJM2) (Tabs K-4 to K-7 and Q-5 to Q-6). Also onboard were 23 members from the 710 SPOW, to include MJ (Tabs Q-5 to Q-6, R-187 to R-188 and V-5.11). At an altitude of approximately 1,250 feet Above Ground Level (AGL), MJ exited the MA with nine other 710 SPOW parachutists and landed approximately 50 yards from shore in Subic Bay, Philippines, before drowning (Tabs R-18 to R-22, V-11.10 to V-11.11, V-14.9 to V-14.10, and Z-

27). Following unsuccessful resuscitation efforts, MJ was pronounced deceased at 1725L (Tab V-26.2).

3. BACKGROUND

a. Pacific Air Forces (PACAF)

PACAF is a USAF Major Command (MAJCOM), headquartered at Joint Base Pearl Harbor-Hickam, Hawaii (Tab CC-3 to CC-4). PACAF's primary mission is to provide US Pacific Command (PACOM) integrated expeditionary USAF capabilities to defend the Homeland, promote stability, dissuade and deter aggression, and swiftly defeat enemies (Tab CC-3). PACAF's area of responsibility is home to 50 percent of the world's population in 36 nations and over one-third of the global economic output (Tab CC-3).



b. 5th Air Force (5 AF)

5 AF is headquartered at Yokota AB, Japan (Tab CC-3). The primary mission of 5 AF is to defend Japan, enhance interoperability, maximize reception, staging, onward movement and integration capabilities, and to conduct humanitarian assistance and disaster relief operations (Tab CC-6). The key to 5 AF's presence is the frontline ABs spanning Japan from north to south (Tab CC-6).



c. 374th Airlift Wing (374 AW)

The 374 AW is the primary airlift hub in the Western Pacific (Tab CC-9). The 374 AW is located at Yokota AB, Japan (Tab CC-3 and CC-9). The primary mission of the 374 AW is to provide an airlift hub for the movement of passengers, cargo, and mail to all Department of Defense (DoD) agencies in the Pacific area of responsibility (Tab CC-9).



d. 374th Operations Group (374 OG)

The 374 OG maintains a forward presence by providing rapid responsive movement of personnel, equipment, and operational support in the Asia-Pacific region (Tab CC-11). It ensures the combat readiness of three operational squadrons using C-130H, C-12J, and UH-1N aircraft (Tab CC-11). The 374 OG conducts three distinct missions: intratheater airlift, aeromedical evacuation, and distinguished visitor transport for PACOM and other agencies in support of national security policy (Tab CC-11).



e. 36th Airlift Squadron (36 AS)

The 36 AS is the only forward-based tactical airlift squadron in the Pacific (Tab CC-11). It maintains a forward presence and supports combat operations by providing responsive movement of personnel and equipment through aerial delivery and assault airland operations (Tab CC-11). The 36 AS is comprised



of C-130H mission-ready aircrew to conduct theater airlift, special operations, aeromedical evacuation, search and rescue, repatriation, and humanitarian relief missions (Tab CC-11).

f. C-130 Hercules (C-130H)

The C-130H primarily performs the tactical portion of the airlift mission (Tab CC-15). The aircraft is capable of operating from dirt strips and is the prime transport for airdropping troops and equipment into hostile areas (Tab CC-15). The C-130 variants operate throughout the USAF, serving with Air Mobility Command, Air Force Special Operations Command, Air Combat Command, United States Air Forces in Europe, Pacific Air Forces, Air National Guard, and Air Force Reserve Command, fulfilling a wide range of operational missions in both peace and war situations (Tab CC-15). Basic and specialized versions of the airframe perform a diverse number of roles, including airlift support, Antarctic ice resupply, aeromedical missions, weather reconnaissance, aerial spray missions, firefighting duties for the United States Forest Service, and natural disaster relief missions (Tab CC-15).



g. Air Force Special Operations Command (AFSOC)

AFSOC is a USAF MAJCOM, headquartered at Hurlburt Field, Florida (Tab CC-31). AFSOC's primary mission is to organize, train, and equip Airmen to execute global special operations (Tab CC-31). AFSOC provides USAF special operations forces for worldwide deployment and assignment to regional unified commands (Tab CC-31). The command's special operations forces are composed of highly trained, rapidly deployable Airmen, conducting global special operations missions ranging from precision application of firepower, to infiltration, exfiltration, resupply, and refueling of special operations forces to form versatile joint special operations teams (Tab CC-31).



h. 353d Special Operations Group (353 SOG)

The 353 SOG is the focal point for special operations aviation activities throughout the Pacific (Tab CC-23). Its mission is to provide combat-ready, responsive, specialized airpower and enablers to execute the full spectrum of the special operations forces mission (Tab CC-23). It maintains a worldwide mobility commitment, participates in Pacific theater exercises as directed, and supports humanitarian and relief operations (Tab CC-23).



i. 320th Special Tactics Squadron (320 STS)

The 320 STS consists of Combat Controllers, Pararescuemen, Combat Weather personnel and Survival, Resistance, and Escape specialists (Tab CC-24). Enabled by deploy-ready combat support personnel, these Special Tactics operators can rapidly infiltrate into austere or hostile areas to enable airpower success in support of contingency operations (Tab CC-24).



j. 710th Special Operations Wing (710 SPOW), Philippine Air Force (PAF)

The 710 SPOW is the rapid deployment force of the PAF, which is divided into 10-man airborne attack teams as most of its members are airborne qualified (CC-28). Their primary mission is to conduct contingency operations against hostile elements and civilian mass actions, coordination of air strikes, Explosive Ordnance Disposal operations, and K-9 and handler training on explosives and bomb detection (CC-28).



k. Static Line (SL) Jump

An SL jump is a jump where a static line cord is attached at one end to the aircraft, while the other end is attached to the top of the jumper's deployment bag which contains the parachute (Tab BB-76 to BB-78). The parachutist's jump from the aircraft causes the SL to become taut, which then pulls the deployment bag out of the container on the jumper's back, and causes the parachute to open on its own (Tab BB-77). The SL and deployment bag stay with the aircraft as the jumper leaves, and then both the SL and deployment bag are pulled back into the aircraft by the loadmaster or by using an SL retriever winch (Tab BB-77).

4. SEQUENCE OF EVENTS

a. Mission

The DoD, led by Marine Forces Pacific, conducted Joint Chiefs of Staff exercise Operation BALIKATAN within the sovereign territory of the Philippines in order to increase interoperability and interdependency between US Conventional Forces, US Special Operations Forces (SOF), and the Armed Forces Philippines (Tabs V-11.7, V-17.3, and BB-24). In support of Operation BALIKATAN, PACAF tasked the 36 AS to deploy four C-130H aircraft to Clark AB, Philippines (Tabs V-3.2 and BB-145 to BB-149). The 320 STS was tasked by Special Operations Command, Pacific (SOCPAC) (Tab DD-41). Operation BALIKATAN included a "Friendship Jump" (hereinafter referred to as the Mishap Jump or Friendship Jump) between the USAF and the 710 SPOW, PAF (Tabs V-17.3 and V-18.3).

b. Planning

Two planning conferences occurred prior to the start of Operation BALIKATAN (Tabs V-17.2, V-18.2 to V-18.3, and BB-143). The initial planning conference (IPC) (also known as the initial planning workshop (IPW)) was held from 14 to 19 September 2015 in the Philippines (Tabs V-18.2 and BB-143). During the IPC, jump organizers from the 36 AS, the 320 STS (Mishap Rescue Swimmer 4 (MRS4)), and the 353 SOG discussed with a PAF planner from the 710 SPOW (PAF BK Planner) a coordinated Friendship Jump between the USAF and the PAF at the FEDEX Drop Zone (DZ), Subic Bay International Airport, Philippines (Tabs V-14.3 to V-14.5, and V-22.2). The final planning conference (FPC) (also referred to as the final planning workshop (FPW)) was held from 1 to 5 December 2015 in the Philippines (Tabs V-18.3 and BB-143). Both the Planner and MMP3 requested verification of jump qualifications for the 710 SPOW parachutists from the

PAF BK Planner and were informed verbally that all jumpers were qualified for static line (SL) jumps (Tabs V-18.6 and V-22.4 to V-22.5). During the FPC, the details of the Friendship Jump did not change (Tabs V-14.4 to V-14.5).

At the time of the planning conferences, a memorandum by COMPACAF, dated 20 January 2015, was in effect (but set to expire on 31 December 2015), for all PACAF flying units, which provided the requirements for the airdrop of foreign parachutists from PACAF aircraft (Tabs R-370, and V-20.5). The 20 January 2015 memorandum approved airdrops from USAF aircraft of foreign parachutists who are fully qualified in the type of airdrop performed (Tab R-370). There was also a notice requirement in the 20 January 2015 memorandum that stated the “owning OG/CC [Operations Group Commander] will notify 13 EAF/CC [Expeditionary Air Force Commander] and PACAF/A3/6T [Operations and Training Division] of the details a minimum of one week prior to the planned airdrop” (Tab R-370).

A new memorandum signed by COMPACAF went into effect on 19 February 2016. (Tab BB-63 to BB-64). In the 2016 memorandum, COMPACAF directed additional requirements regarding foreign parachutist operations, which became the controlling guidance for this operation (Tab BB-63). Pursuant to the memorandum airdrop operations were to comply with the following: (1) Mission commanders must ensure all participants comply with US-specific procedures and will verify qualification of parachutists for the type of airdrop being performed; (2) Each aircraft must have a qualified US jumpmaster who is responsible for (a) overseeing jump operations, (b) briefing foreign parachutists, (c) performing aircraft inspection in accordance with US Army Field Manual (FM) 57-220, (d) conducting SL and/or military freefall (MFF) parachuting techniques and training, (e) assisting the aircraft loadmaster in emergency procedures when required, and (f) coordinating with the aircrew and English speaking foreign counterpart or designee; and (3) Each group of foreign jumpers per aircraft must contain at least one English-speaking person to ensure foreign jumpers comply with safety procedures and jumpmaster instructions (Tab BB-63). If the only such person is a jumper, he or she must be the last jumper (Tab BB-63). At the time of Friendship Jump, the 36 AS knew about the new memorandum requirements and attempted to operate under them (Tabs V-17.2, V-18.3 to V-18.4, BB-63, and BB-65).

All identified DZ safety hazards and mitigation techniques during the operational risk management (ORM) were briefed and signed off by MJM2 on 17 March 2016 (Tab BB-61).

Additional coordination for the Friendship Jump occurred at Clark AB, Philippines, on 4 April 2016 (Tabs V-28.4 and V-31.2). That morning, two loadmasters allowed the PAF jumpers to tour the aircraft in order to become familiarized with it (Tab V-21.2 and V-31.2). The loadmasters also reviewed the jumpmaster briefing and conducted a mock jump (Tab V-31.2).

On 7 April 2016, the MA departed Clark AB with 36 members of the PAF and flew to Subic Bay International Airport (Tabs K-8, V-3.9, and V-23.1). The initial flight consisted of a single pass comprised of US jumpers only that consisted of a MFF jump (Tab R-210). An MFF is a parachute maneuver in which the parachute is manually activated at the discretion of the jumper or automatically at a preset altitude (Tab BB-126). The rescue boat was positioned at the southwest side of the island based on the winds at the time of the MFF pass and the direction the plane was coming from (Tab V-24.5 to V-24.6). After landing and picking up the additional jumpers, the

MC planned to conduct several different jump passes on the next flight (Tab R-210). These passes were planned as SL passes with 20 PAF jumpers (10 jumpers in the first pass and five jumpers in the second and third passes each) and one SL pass with three US jumpers (Tab R-19, and R-210 to R-211). The SL jumps were originally planned to drop from 1,000 feet AGL (Tabs R-18, V-3.3, and V-19.3)

After the MC arrived at Subic Bay International Airport, the MP1, MN1, and all of the LMs conducted a pre-jump briefing with the jumpmasters from both the US and the PAF (Tabs R-210, V-5.2, V-5.13, and V-28.2). The PAF MJM requested the PAF jumpers be dropped at 1,250 feet AGL (Tabs R-394, V-5.2, and V-28.2). MJM1 advised against this request, since it would lead to more time floating in the air (Tabs R-189, R-193, V-10.3 and DD-43). The PAF MJM further requested that if the winds were 6 knots or greater, then they would like to reduce the AGL to 1,000 feet (Tabs R-394 and V-28.2 to V-28.4). No 320 STS members or 36 AS members recall this caveat to the request for a 1,250 feet AGL drop (Tabs V-3.3, V-5.3, and V-10.6 to V-10.7). At the time of the briefing, winds were already reported greater than 6 knots (Tabs F-7 and V-5.3). As a result of the altitude change to 1,250 AGL, MN1 recalculated a new Calculated Altitude Release Point (CARP) with the different parachute types, altitudes, and observed winds (Tab V-5.3). The CARP is a computed position in the air where the aircraft turns on a green light signaling to the paratroopers that all airdrop parameters were met, including altitude, speed, and aircraft position over the ground, and it is safe to exit the aircraft (Tab BB-16). The new CARP was approximately 95 yards long and 20 yards left of the intended point of impact (PI) (Tabs V-5.7 and Z-27).

The pre-jump briefing was accomplished in accordance with TO 1C-130H-1CL-1, *Pilot's Flight Crew Checklist*, dated 21 December 2012, and Air Force Manual (AFMAN) 11-420, *Static Line Parachuting Techniques and Training*, dated October 2013 and supplemented on 12 November 2014, and included topics such as performance points, collisions and entanglements, malfunctions, and emergency landings (Tabs R-187, V-5.2, V-8.2, V-10.3, BB-81 to BB-82 and DD-43). After the pre-jump briefing, and during the MFF jump, the USAF jumpmaster and the PAF jumpmaster conducted separate briefings with their own respective jumpers (Tabs R-212, and V-10.3).

PAF MJM conducted the briefing for the 710 SPOW (Tab R-398). The PAF pre-jump briefing included water landing procedures, such as gear removal, but did not cover floatation devices (Tab R-398). According to PAF MJM, floatation devices are generally not worn by PAF jumpers, who instead rely on their water landing training (Tab R-398 to R-399). PAF MJM further stated that during this training, MJ exhibited a failure to tread water (Tab V-28.10). During training, instead of treading water after impact, as was the practiced procedure, MJ immediately swam to the side of the pool (Tab V-28.10).

c. Preflight

The MC accomplished all required preflight activities in accordance with AFI 11-202, Volume 3, *General Flight Rules*, dated 7 November 2014 (Tabs R-138, U-5 and BB-9).

d. Summary of Accident

On 7 April 2016 the 710 SPOW jumpers loaded on to the MA, which started to taxi to the runway, when the Mishap Drop Zone Safety Officer (MDZSO) alerted the MC to return to retrieve three US jumpers, who had not loaded the MA as scheduled (Tab V-3.10 to V-3.11). The MC halted their taxi and loaded the three US SL jumpers (Tab V-3.10 to V-3.11).

The MA departed Subic International Airport at approximately 1523L to conduct the Friendship Jump (Tabs U-5 and V-5.14). After the PAF MJM gave the command to prepare to jump, the first group of 710 SPOW jumpers stood up and prepared to jump (Tabs R-396 and V-28.5). MJM1 identified several significant errors and advised the PAF jumpers of them, but allowed the accompanying PAF jumpmasters to correct their own jumpers (Tab R-188 and V-10.5). As depicted in Figure 4-1, one such error occurred where the PAF jumpers improperly held their static line by using the wrong hand for the side of the airplane from which they jumped (Tab R-188). Additionally, the first three or four jumpers did not maintain proper control of their static line while exiting the MA (Tab R-188).

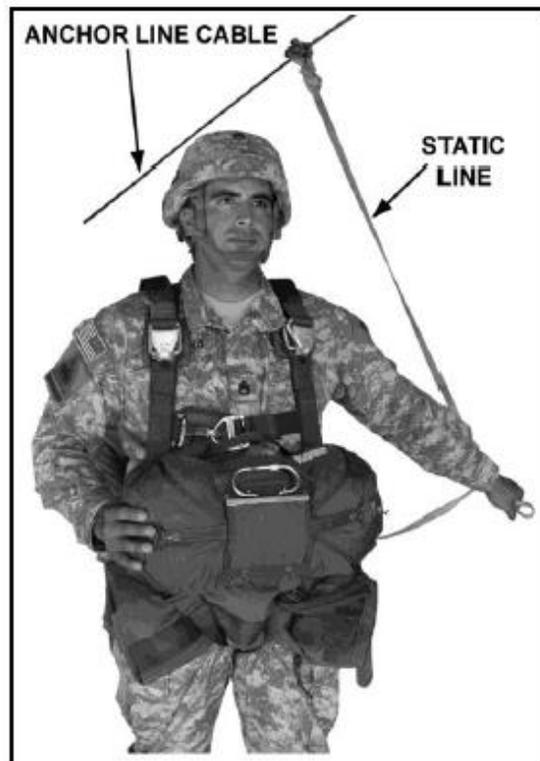


Figure 4-1
(Tab S-10)

Proper Way to Hold Static Line

The PAF jumpers exited the aircraft during the green light that signals to the paratroopers that all airdrop parameters have been met and it is safe to exit the aircraft (Tabs R-194, R-396, V-8.16, BB-16 and DD-43). All 10 PAF parachute canopies opened correctly and without incident (Tabs R-138, V-7.7, and Z-9). Upon nearing the ground, several of the jumpers were seen errantly turning with the wind during the airdrop, while USAF and PAF personnel on the ground yelled at

the jumpers to turn into the wind (Tabs R-229, V-13.5, V-14.11). If a jumper turns with the wind, his or her velocity over the ground will be the combined velocity of the wind speed and forward drive of the parachute (Tabs BB-78 and DD-43). For an MC-1-1B/C parachute, which the 710 SPOW jumpers wore, the forward drive is 8 knots (Tabs R-85 and BB-77).

MJ approached the preceding jumper in the group, but turned away from the preceding jumper, avoiding a collision, steering toward the bay (Tabs Z-3 and DD-5 to DD-6). MJ maintained his new heading for approximately 30 seconds during which he glided toward and over the bay, before turning around and heading southbound back toward land (Tabs V-21.4 to V-21.9, DD-5 and DD-44). All jumpers landed within the surveyed DZ: six jumpers landed on DZ centerline from the PI to 350 yards down; two jumpers landed in a growth of 15 to 20 foot trees approximately 200 yards north of the PI; one jumper landed in a parking area approximately 300 yards north of the PI; and MJ landed in the bay approximately 350 yards north of the PI (Tab V-24.8, V-25.2, V-26.2, Z-5, Z-13, Z-27, and DD-44). The Mishap Jump airdrop occurred at approximately 1535L (Tab V-24.1).



Figure 4-2
(Tab Z-3)

MJ Approaching Preceding Jumper

Meanwhile, Mishap Rescue Swimmer (MRS) 3 (MRS3) was off the DZ across the airfield on the south side and saw two or three PAF jumpers land near the tree line (Tab V-13.1 to V-13.5). MRS1 observed the airdrop from his position on the DZ while on the safety motorcycle (Tab V-27.1). MDZSO, Mishap Doctor (MD), Mishap Medic (MMC), and Mishap Physician's Assistant (MPA) also observed the airdrop from the DZ (Tabs R-227 and V-30.6). Rescue Boat Operator and MRS2, the safety boat swimmer manned the safety boat (Tab V-24.1 to V-24.2). The safety boat was positioned around the southwest corner of the airfield, in the same location that it was located during the prior MFF jump (Tab V-24.2). MRS1, MRS2, MRS3, and MDZSO noticed that a few of the jumpers' were drifting toward the tree line that separated the airfield from the shoreline

(Tabs R-212, V-13.1, V-23.2, V-24.2, and V-25.2). Figure 4-3 depicts the positions of several USAF and PAF crewmembers.

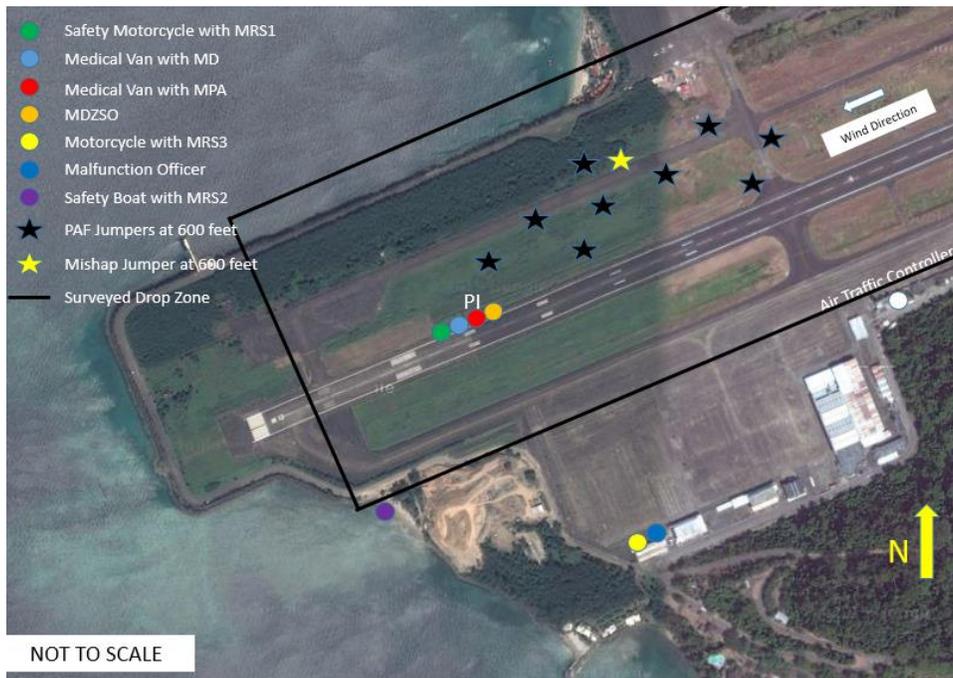


Figure 4-3

(Tabs R-227, S-6 to S-7, S-17, V-13.1, V-24.1 to V-24.2, V-27.1, Z-3, Z-17, and Z-19)
 Location of Ground Party and Jumpers at Approximately 500 feet AGL

Still airborne, the MC was unaware of MJ's location (Tabs N-9 to N-24 and R-15 to R-16). Upon learning that there was a missing jumper in the water, members of the MC decided to slowly fly close to the shoreline to see if they could see MJ (Tab R-15 to R-16). On that low pass, the MC did not observe any jumpers, so the MA landed at Subic Bay International Airport and shut down (Tab R-16).

e. Impact

MJ impacted Subic Bay approximately 50 yards from shore and 200 yards from the beach on the northwest side of the DZ at approximately 1536L (Tabs S-3, V-14.9 to V-14.10, V-21.4 to V-21.12, Z-27, and DD-44). This location was inside the surveyed DZ, but approximately 350 yards north of the PI (Tabs S-3, S-17, and Z-27). MJ wore an MC-1-1C parachute with a reserve parachute but no flotation device (Tabs R-85, R-198, V-10.3 and V-24.9).



Figure 4-4
 (Tabs S-3 and Z-23)
 Location of MJ at 150 feet AGL

f. Egress and Aircrew Flight Equipment (AFE)

All equipment worn by MJ was PAF property (Tab V-10.3, V-28.7, and V-31.5). The AIB requested, but was not provided from PAF any information regarding the inspection currency, shelf life, or condition of the parachute prior to the jump (Tab DD-7).

g. Search and Rescue (SAR)

During the airdrop descent, four of the ten 710 SPOW parachutists, including MJ, drifted toward the bay north of the DZ (Tabs V-13.5, V-16.5, V-26.2, Z-27, and Z-29). After observing the landings off the PI, the MD, two STS personnel (to include Mishap Radio Frequency Transmission member (RF)), and a translator loaded into a van and headed to the backside of the tree line to the north (Tabs R-228, V-16.5, and V-26.2). MRS1's observation of the drifting parachutist also caused him to head toward the tree line on his motorcycle (Tab V-27.1). Approximately four to five minutes after the initial jump, MDZSO asked the safety boat team via radio if they observed anyone land in the water, to which the boat team responded in the negative (Tabs R-228 and V-24.2). The DZ tower communicated that two PAF jumpers had landed near the trees, so the safety boat remained in place (Tabs R-228 and V-24.2). MRS3 noticed that jumpers may have landed in the trees and listed to the recovery effort over the radio (Tab V-13.1).

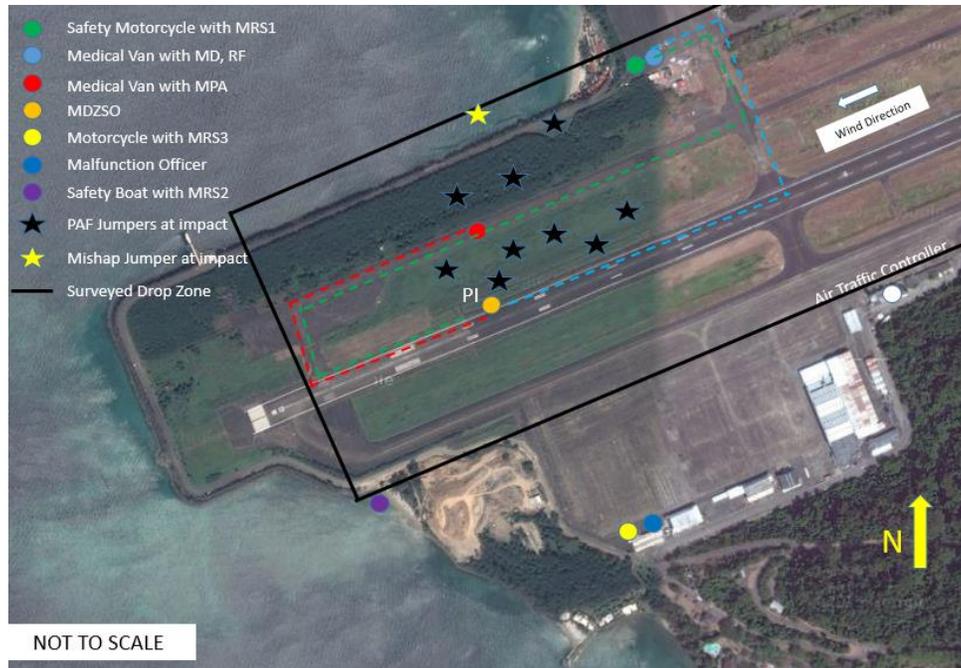


Figure 4-5

(Tabs R-227 to R-228, R-300, S-6 to S-7, S-17, V-13.1, V-13.5, V-16.5 to V-16.6, V-24.2, V-26.2, V-27.1, and Z-23)

Ground Party Initial Movement and Jumpers at Approximate Impact Locations

PAF MJ8, a 710 SPOW parachutist, landed in the trees, unharnessed himself from his gear, climbed over the fence, and swam out to assist MJ in the water (Tab V-23.2). PAF MJ8 attempted to bring the unconscious MJ to shore with help from a civilian, but they were unsuccessful (Tab V-23.2). Upon arrival at the tree line, MRS1 discovered PAF MJ8's deployed parachute without an occupant or gear (Tab V-27.2). Farther down the road, MRS1 observed a group of civilian bystanders gathered near the shoreline, and then observed PAF MJ8 in the water, apparently struggling to stay afloat (Tab V-27.2). MRS1 swam to PAF MJ8 and returned him to the shore (Tab V-16.6, V-23.3, and V-27.2). MRS1 estimated the time between the jump and his arrival at the shoreline was approximately 10 minutes (Tab V-27.3).

While MRS1 swam out to PAF MJ8, the van with MD, RF, and a Philippine medic pulled up to the shoreline, as depicted in Figure 4-6 (Tab V-26.2 and V-27.2). MRS1, as well as MD after his arrival, also noticed a dark mass beneath the surface in that same area (Tab V-16.6 and V-27.2). It was assumed by MD and others at the time that PAF MJ8 was MJ (Tab 16.6). PAF MJ8 via translator told the medical crew that he was in the water trying to save MJ, which was approximately 10 to 20 minutes after the initial drop (Tab V-16.6 and V-26.2). MD called MMC, who was positioned at the DZ with MDZSO, and relayed MJ's location (Tabs V-16.6 and R-213). MDZSO contacted MC and canceled the second airdrop (Tabs R-228 and V-26.2 to V-26.3). Simultaneously, MPA contacted the 710 SPOW mission commander to report accountability (Tab V-30.2).



Figure 4-6

(Tabs R-227 to R-228, V-13.1 to V-13.2, V-16.6, V-23.2 to V-23.3, V-24.2, V-26.2, V-27.1 to V-27.3, V-30.2, and Z-23)
 Ground Party Locations Pre-Rescue

Meanwhile, after MRS3's initial observation, he took a motorcycle and headed north to aid in the search for the missing jumpers (Tab V-13.2). MRS3's path is illustrated in Figure 4-7. MPA, MMC, MDZSO, and MRS4 then drove toward the bay and arrived on scene approximately 20 to 30 minutes after the initial jump (Tab V-14.9 to V-14.11).

After confirmation of MJ's position in the water, DZ personnel dispatched the safety boat (Tab V-16.6). MRS2 untied the anchor and left it southwest of the airfield before the boat sped to the scene where MJ was believed to be located, which took approximately one to two minutes (Tab V-24.2). MRS2 put on his diving gear, including a mask, snorkel, fins, and rope-cutting knife, and upon arrival at the scene dived to the location of MJ based on information from a nearby kayaker (Tab V-24.2 to V-24.3). From the shoreline, MRS1 and PAF MJ8 also pointed to the approximate location of MJ (Tab V-23.4, V-24.8 and V-27.2). MRS2 dived approximately 25 to 35 feet and searched for approximately 10 to 15 seconds per dive before he surfaced for air (Tab V-24.3). Visibility underwater was approximately 10 feet and MRS2 began swimming in a zigzag pattern for his search (Tab V-24.3). MRS2 conducted about 20 to 30 dives before MRS3 arrived on scene and entered the water to assist in the search effort (Tab V-13.2 and V-24.3).

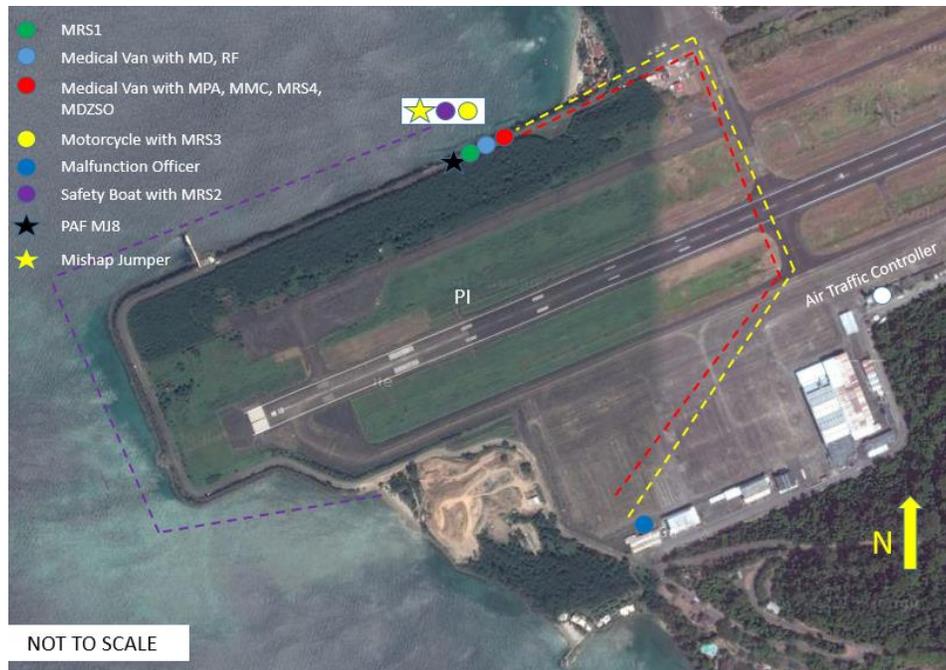


Figure 4-7
 (Tabs V-13.2, V-14.9, V-14.11, V-16.6, V-24.2 to V-24.3, V-24.8, and Z-23)
 Ground Party Locations during Rescue

MRS3 swam toward the safety boat and took a pair of goggles to assist him in the search (Tab V-13.2 and V-24.3). MRS2 and MRS3 began swimming in a coordinated pattern to expand the search (Tab V-24.3). MRS3 took the diving mask and fins from MRS2, then searched the water depths between 30 and 50 feet, while MRS2 searched shallower depths of 20 to 25 feet (Tab V-24.3). MRS3 requested the boat operator to drop its anchor so he had a reference point for the search, so the safety boat team returned to its original location on the southwest side of the airfield to retrieve the anchor (Tab V-13.2 to V-13.3 and V-24.4). MRS3 focused his search based on an observer from the shoreline, but water visibility remained at about 10 to 15 feet (Tab V-13.3). After the boat returned, MRS3 observed a dark spot below the surface (Tabs N-15 to N-16 and V-13.3). He informed the boat team and dived back below (Tab V-13.3). MRS3 discovered MJ's parachute, grabbed the edge of it, and began his ascent, however, let go of the parachute approximately 15 feet from the surface due to his need for air and the weight of MJ and the equipment (Tab V-13.3).

MRS4 was on the shoreline and swam toward MRS3, who told MRS4 where MJ's parachute was located below them (Tab V-13.3, V-13.11, and V-24.4). The location of all responders at this point is depicted in Figure 4-8. Upon confirmation of the discovery of the parachute, MMC had an ambulance dispatched to the area (Tab V-30.2). The safety boat dropped the anchor into the water and began dragging it across the bay floor in an attempt to secure the parachute (Tab V-13.3 and V-24.4). Meanwhile, MRS3, out of breath, gave the diving mask and fins to MRS4 and informed MRS4 that MJ was straight below their location (Tab V-13.2 to V-13.3 and V-24.4). MRS4 dived down approximately 45 to 50 feet and located MJ, but was unable to pull him to the surface before needing air, so returned to the surface (Tab V-13.1 and V-13.3). MRS3 took the diving mask and fins back, and returned to MJ's location, where he observed MJ unresponsive on

the floor of the bay (Tab V-13.3 and V-24.4). MRS3 hooked MJ's parachute to the anchor, then tugged on the rope twice to inform the safety boat team to pull the anchor up (Tab V-13.3 and V-24.4). MRS3 ascended and entered the boat, along with MRS4, and helped pull up the anchor with MJ secured to it (Tabs V-13.3 to V-13.4, V-13.11, V-14.12, and V-24.4). Approximately 50 minutes lapsed from the time of the initial airdrop until the recovery of MJ (Tabs V-13.4 and V-14.13).



Figure 4-8
(Tabs V-13.3 to V-13.4, V-24.4, V-30.6, and Z-23)
Ground Party Locations during Rescue (continued)

h. Recovery of Remains

Upon recovery, MJ's parachute and helmet were still attached and the quick release waistband was still intact (Tab V-13.4, V-24.4, and V-26.3 to V-26.4). MRS3 heard over the radio that the MC planned to initiate a take-off to aid in the search, but informed the DZ tower that MJ had been recovered (Tabs N-24 to N-25 and V-13.4). With the medical team on the shore standing by, MRS2, MRS3, MRS4, and the Rescue Boat Operator brought MJ to shore, which took less than one minute (Tab V-13.4 and V-24.4).

On shore, MRS3 unclipped MJ's reserve parachute and quick release harness, while MRS4 used shears to cut away the main parachute, and MRS2 untangled the lines (Tab V-13.4, V-14.12, and V-24.4 to V-24.5). MRS2, MRS3, and MRS4 placed MJ on a flat board and carried him past a rocky area to a flat surface where medics immediately began applying chest compressions because MJ had no signs of life, no pulse, and was not breathing (Tab V-13.4 to V-13.5, V-24.4, and V-26.2). MRS4 and MJM1 also applied chest compressions (Tabs R-195 and V-14.12). Medics suctioned water from MJ's lungs and inserted a tube into MJ's airway to initiate a breathing machine (Tab V-14.12, V-26.2 and V-30.7 to V-30.8). A civilian ambulance arrived

approximately three to five minutes after the recovery of MJ (Tabs V-13.5 and V-26.2). The ambulance crew administered intravenous therapy and life-saving medication in an effort to resuscitate MJ (Tab V-14.12 and V-30.7).

MJ was loaded into the ambulance while MMC rode along to continue chest compressions, and MD and MPA followed the ambulance to the Unihealth-Baypointe Hospital and Medical Center, Subic Bay Freeport Zone, Philippines (Tab V-14.12, V-14.29, V-16.4 to V-16.6, V-26.2, V-30.3, and V-30.7). Hospital staff pronounced MJ deceased at approximately 1725L (Tab V-26.2). The US medical personnel then briefed the PAF commanders about MJ's passing (Tab V-30.7).

5. MAINTENANCE

a. Forms Documentation

All relevant aircraft maintenance documents were reviewed, including Air Force Technical Order (AFTO) Form 781 Series and the aircraft's 60 day history (Tab U-4). There is no evidence of non-compliance with maintenance actions or forms documentation, nor is there evidence of MA mechanical, structural, electrical discrepancies, or any recurring maintenance problems (Tabs U-4).

b. Inspections

(1) Aircraft

On 7 April 2016, the aircraft had an updated preflight inspection, indicating the aircraft was ready for flight (Tab D-42). The aircraft was not overdue for any inspections or maintenance actions on the day of the mishap (Tabs D-110, D-154, D-170 and U-4).

(2) Parachutes

The AIB was unable to review MJ's equipment (Tab DD-7).

c. Maintenance Procedures

A thorough review of the MA AFTO 781 series forms and G081 revealed all maintenance actions on the MA were accomplished in compliance with standard, approved maintenance procedures and TOs (Tab U-5). There is no evidence to suggest that aircraft maintenance procedures were factors in the mishap.

d. Maintenance Personnel and Supervision

All maintenance activities reviewed were normal and all personnel involved in the PR inspection, launch, and recovery of the MA were qualified and proficient in their duties (Tab U-3). A comprehensive review of the maintenance training records and Training Business Area (TBA) revealed no training deficiencies and all personnel were qualified (Tab U-3).

e. Fuel, Hydraulic, and Oil Inspection Analyses

Not applicable.

f. Unscheduled Maintenance

Not applicable.

6. AIRFRAME, MISSILE, OR SPACE VEHICLE SYSTEMS

a. Structures and Systems

Data obtained from the MA during the impoundment indicated no evidence of mechanical, structural, electrical or any other recurring maintenance problems. (Tab U-4).

b. Evaluation and Analysis

In parachuting, an SL is a cord attached at one end to the aircraft's anchor cable, with the other end attached to the top of the jumper's deployment bag into which the canopy is packed (Tab BB-77). The parachutist's fall from the aircraft causes the SL to become taut, which then pulls the deployment bag out of the container on the jumper's back (Tab BB-77). The SL and deployment bag stay with the aircraft as the jumper leaves, and then both the SL and deployment bag are pulled back into the aircraft by the loadmaster manually or by using an SL retriever winch (Tab V-7.8).

After the SL jumpers exited the MA during the Mishap Jump, the loadmaster attempted to retrieve the SLs using the SL retriever winch (Tabs J-4, V-7.8, and V-8.10 to V-8.11). When the power selector switch was set to rewind, sparks began to emanate from the winch housing (Tabs J-4, V-7.8, and V-8.10 to V-8.11). Following the mishap, the winch was sent to the Air Force Laboratory, Materials Integrity Branch (AFRL), for analysis (Tab J-3 to J-4).

The AFRL performed failure analysis on the right hand SL retriever winch (Tab J-7 to J-9). No failures were identified when electrical measurements were performed on the winch, and visual examination showed no evidence of electrical arcing or excessive temperatures (Tab J-4). The winch operated normally through all in-lab tests and the cause of the sparks could not be determined or reproduced (Tab J-4). There is no evidence to suggest that issues with the SL retriever winch were factors in this mishap.

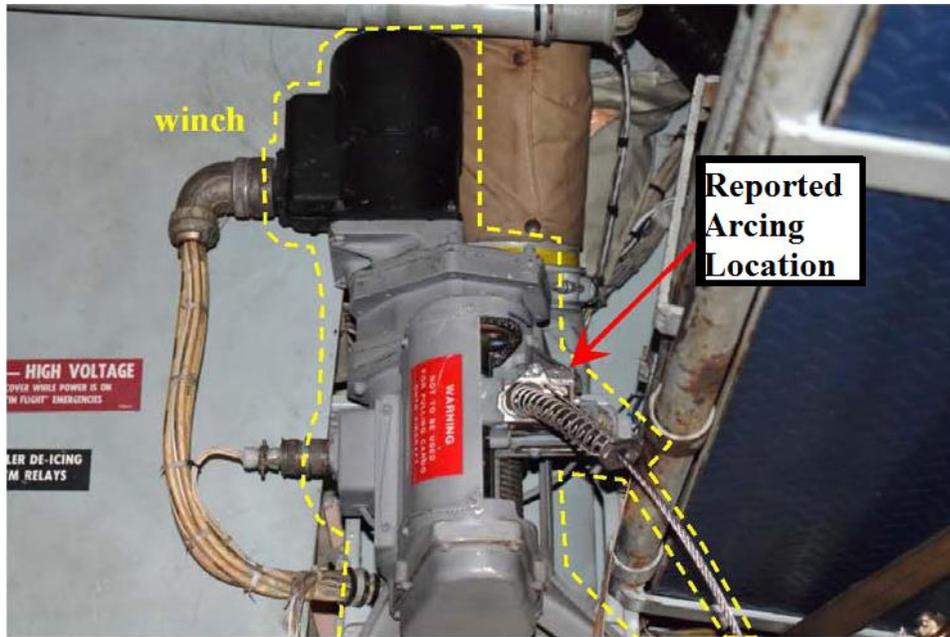


Figure 6-1
(Tab J-11)

Static Line Retriever Winch before Removal from MA

c. MJ Equipment

The AIB was unable to review MJ's equipment (Tab DD-7). There is no evidence that indicated there was any equipment malfunction at the time of the mishap (Tab V-13.12, V-13.4, and V-14.29).

7. WEATHER

a. Forecast Weather

The forecast weather at the FEDEX DZ at Subic Bay International Airport for the scheduled airdrop time was wind from 136 degrees at 5 knots and unrestricted visibility, with no forecast precipitation (Tab F-4). The forecast temperature was 29 degrees Celsius (84 degrees Fahrenheit) (Tab F-4).

b. Observed Weather

The DZ tower observed surface winds from 065 degrees at 8 knots gusting 10 knots to 11 knots (Tab V-5.6). The MC observed altitude winds coming from 070 degrees at 6 knots (Tab R-12).

c. Space Environment

Not applicable.

d. Operations

There is insufficient evidence to suggest weather was a factor in this mishap.

8. CREW QUALIFICATIONS

MC	Last 30 Days		Last 60 Days		Last 90 Days	
	Sorties	Hours	Sorties	Hours	Sorties	Hours
MP1	13	35.8	26	90.5	32	105.8
MP2	18	39.3	22	81.5	23	85.0
MN1	11	36.9	31	110.7	37	122.7
MN2	8	21.6	19	53.6	24	65.2
ME	14	38.1	27	78.1	32	88.9
ML1	10	34.5	16	52.8	21	64.3
ML2	5	14.1	15	43.4	20	63.4
ML3	8	26.1	10	32.1	15	49.3

(Mishap Crew 90-day Flight Time History) (Tab G-6 to G-56)

a. Mishap Pilot (MP1)

MP1 was a current and qualified Instructor Aircraft Commander in the C-130H (Tab G-63). MP1's last Instrument, Qualification, and Mission Evaluations occurred on 20 September 2015 (Tab G-62). MP1 had 1,425.8 total flying hours: 245.4 student hours and 1,180.4 in the C-130H (533.1 primary hours, 405.9 secondary hours, 84.8 instructor hours, and 156.6 other hours) (Tab G-5 to G-12 and G-62 to G-71).

b. Mishap Pilot 2 (MP2)

MP2 was a current and qualified Pilot in the C-130H (Tab G-72). MP2's last Instrument, Qualification, and Mission Evaluations occurred on 21 March 2016 (Tab G-73). MP2 had 487.6 total flying hours: 231.0 student hours and 256.6 in the C-130H (151.2 primary hours, 80.9 secondary hours, and 24.5 other hours) (Tab G-13 to G-18 and G-72 to G-77).

c. Mishap Navigator 1 (MN1)

MN1 was a current and qualified Navigator in the C-130H (Tab G-79). MN1's last Qualification Evaluation occurred on 9 February 2015. MN1's last Mission Evaluation occurred on 12 June 2015 (Tab G-78). MN1 had 198.4 total hours in the C-130H: 195.1 primary hours and 3.3 other hours (Tab G-19 to G-25 and G-78 to G-82).

d. Mishap Navigator 2 (MN2)

MN2 was a current and qualified Instructor Navigator in the C-130H (Tab G-84). MN2's last Qualification Evaluation occurred on 7 April 2015 (Tab G-83). MN2's last Mission Evaluation occurred on 25 September 2015. MN2 had 1,076.0 total hours in the C-130H: 925.9 primary

hours, 9.5 secondary hours, 97.5 instructor hours, and 43.1 other hours (Tab G-26 to G-33 and G-83 to G-94).

e. Mishap Flight Engineer (ME)

ME was a current and qualified Instructor Flight Engineer in the C-130H (Tab G-96). ME's last Qualification and Mission Evaluations occurred on 8 September 2015 (Tab G-95). ME had 898.5 total hours in the C-130H: 848.7 primary hours, 7.3 secondary hours, 12.3 instructor hours, and 30.2 other hours (Tab G-34 to G-40 and G-95 to G-103).

f. Mishap Loadmaster 1 (ML1)

ML1 was a current and qualified Instructor Loadmaster in the C-130H (Tab G-105). ML1's last Qualification and Mission Evaluations occurred on 29 April 2015 (Tab G-104). ML1 had 857.8 total hours in the C-130H: 672.1 primary hours, 2.7 secondary hours, 118.4 instructor hours, and 64.6 other hours (Tab G-41 to G-47 and G-104 to G-112).

g. Mishap Loadmaster 2 (ML2)

ML2 was a current and qualified Loadmaster in the C-130H (Tab G-114). ML2's last Qualification and Mission Evaluations occurred on 18 May 2015 (Tab G-113). ML2 had 120.1 total hours in the C-130H: 119.5 primary hours and 0.6 other hours (Tab G-48 to G-54 and G-113 to G-126).

h. Mishap Loadmaster 3 (ML3)

ML3 was a current and qualified Loadmaster in the C-130H (Tab G-128). ML3's last Qualification and Mission Evaluations occurred on 27 October 2015 (Tab G-127). ML3 had 356.6 total hours in the C-130H: 333.9 primary hours and 22.7 other hours (Tab G-55 to G-61 and G-127 to G-131).

i. Mishap Jumper (MJ)

The AIB was unable to review MJ's training records (Tab DD-7).

9. MEDICAL

a. Qualifications

At the time of the mishap, all members of the MC had current annual physical flight examinations and were medically qualified for worldwide flight duty without restrictions (Tabs BB-8 and DD-3). The AIB was unable to review MJ's medical files (Tab DD-7).

b. Health

There is no evidence to suggest that any medical conditions or illness contributed to the mishap.

c. Pathology

No autopsy was conducted on MJ (Tab X-3). The AIB was unable to review MJ's medical files (Tab DD-7).

d. Lifestyle

The MJs, mishap rescue swimmers, and DZ controllers were not questioned on their 72-hour histories, 7-day histories, and 30-day histories (Tab V-11.3 and V-16.2). The AIB was unable to review MJ's medical files (Tab DD-7). There is insufficient evidence to suggest lifestyle factors were a factor in the mishap.

e. Crew Rest and Crew Duty Time

All 72 hour histories for the MC were reviewed, and revealed crew rest and crew duty time requirements, as specified in AFI 11-410, *Personnel Parachute Operations*, were satisfied (Tabs R-31, R-49, R-67, R-93, R-107, R-125, R-155, and R-173). There is no evidence to suggest crew rest or crew duty time contributed to the mishap.

10. OPERATIONS AND SUPERVISION

a. Operations

The 36 AS deployed to Clark AB, Philippines, on 1 April 2016 (Tab V-19.7). For the Friendship Jump portion of operations, the COMPACAF 2016 memorandum regarding foreign military parachute operations on PACAF aircraft was the controlling authority for the 36 AS (Tab BB-63). Overall, the operations tempo was "normal" and crews were cycled with days off when possible (Tab V-11.3 to V-11.4).

The 320 STS deployed to Subic Bay, Philippines, in support of Operation BALIKATAN on 1 April 2016 (Tab BB-72). The 320 STS deployed to complete a Rescue Jumpmaster (RJM) syllabus of instruction, and to fulfill SOCPAC exercise requirements of combined and joint interoperability with PAF personnel, as well as US forces to include Conventional Forces, SOF, and the Armed Forces Philippines (Tab BB-24). The 320 STS was to conduct the initial portion of the RJM syllabus at Subic Bay International Airport to include all land based curriculum requirements while simultaneously conducting combined air operations with the 710 SPOW from 4 to 9 April 2016 (Tab BB-25). Overall, the squadron leadership stated that the operations tempo was normal (Tab V-11.3).

The 320 STS provided DZ control for their own jumps, and on 4 April 2016, MMP2 asked MRS4 to provide jumpmaster oversight (Tab V-14.8 and V-22.3). The 320 STS believed that the USAF would be responsible for the USAF jumpers and the 710 SPOW would be responsible for the PAF jumpers (Tab V-10.2). The 710 SPOW was to provide their own DZ control officer/DZSO, DZ medical support, and jumpmasters (Tab V-14.16).

b. Supervision

For the 36 AS operations, the mission-planning cell planned the missions and provided crew-scheduling oversight to ensure crews were scheduled equitably and on a cycle that provided the most effective rest cycles (Tabs R-31, R-49, R-67, R-93, R-107, R-125, R-155, and R-173, and BB-6). The 36 AS commander designated Planner as the overall mission commander in accordance with AFI 11-2C-130, Volume 3, *C-130 Operations Procedures*, paragraph 2.6.1 (Tabs R-354 and BB-140). The Aircraft Commander for the Friendship Jump was MP1 (Tab R-355).

For the 320 STS operations, squadron leadership was actively involved in assessing all operations and ORM (Tab V-11.3). MJM2 served as the deployed mission commander and oversaw all aspects of the operation (Tab V-11.3). The leadership was also able to see squadron members on a routine basis to assess any concerns that came out of work and living conditions (Tab V-11.3).

11. HUMAN FACTORS ANALYSIS

The AIB considered all human factors as prescribed in the Department of Defense Human Factors Analysis and Classification System (Tab BB-132). The human factors discussed below were directly involved in this mishap.

a. Mission Planning [PP109]

Mission planning is a factor when an individual, crew, or team failed to complete all preparatory tasks associated with planning the mission, resulting in an unsafe situation (Tab BB-135). Planning tasks include information collection and analysis, coordinating activities within the crew or team and with appropriate external agencies, contingency planning, and risk assessment (Tab BB-135).

The COMPACAF memorandum, dated 19 February 2016, provided responsibilities for PACAF mission commanders and jumpmasters to ensure US procedures were followed and proper training with foreign jumpers was conducted (Tab BB-63). The Operation BALIKATAN planners from the 36 AS were aware of this memorandum; however, the 36 AS Planner, who was the designated mission commander, did not enforce these responsibilities or otherwise ensure compliance with the 320 STS team, particularly the jumpmasters (Tab V-10.2, V-10.4, and V-18.4 to V-18.5). The roles and responsibilities per the COMPACAF 2016 memorandum of the 320 STS jumpmasters were not clearly defined by the 36 AS (Tab V-18.4 to V-18). Unclear expectations regarding oversight responsibilities of the 710 SPOW jumpers between the USAF and the PAF also aided in the failure of the 320 STS crew to comprehend mission duties (Tab V-14.7 to V-14.8 and V-14.15 to V-14.17). The 36 AS Planner also failed to ensure that the 710 SPOW jumpers followed proper US safety procedures, such as the use of floatation devices that was required because a water obstacle was present within 1,000 meters (approximately 1,094 yards) (Tabs V-12.4 to V-12.5, V-24.8 to V-24.9, V-26.3, and BB-18).

b. Supervision – De Facto Policy [SV002]

Supervision – De Facto Policy is a factor when unwritten or “unofficial” policy perceived and followed by the individual, which has not been formally established by the properly constituted authority, leads to an unsafe situation (Tab BB-136).

The COMPACAF 2016 memorandum required a US jumpmaster to oversee foreign jump operations, brief foreign parachutists, and perform applicable parachuting techniques and training (Tab BB-63). MRS4, based on guidance from another jumpmaster in his squadron, did not enforce such standards and instead adopted an unofficial policy of not directing the foreign jumpers because of past mishaps involving unqualified foreign parachutists (Tab V-14.5, V-14.7 to V-14.8, V-14.23 to V-14.25, and V-32.2 to V-32.4). Accordingly, the 320 STS jumpmasters who were part of the MC did not brief the 710 SPOW jumpers on proper safety procedures or SL jumping, instead only spot-checking jump deficiencies as observed during the flight (Tab V-10.1 to V-10.5 and V-14.23 to V-14.25).

c. Procedural Guidance/Publications [OP003]

Procedural Guidance/Publications is a factor when written direction, checklists, graphic depictions, tables, charts, or other published guidance is inadequate, misleading, or inappropriate, and this creates an unsafe situation (BB-137).

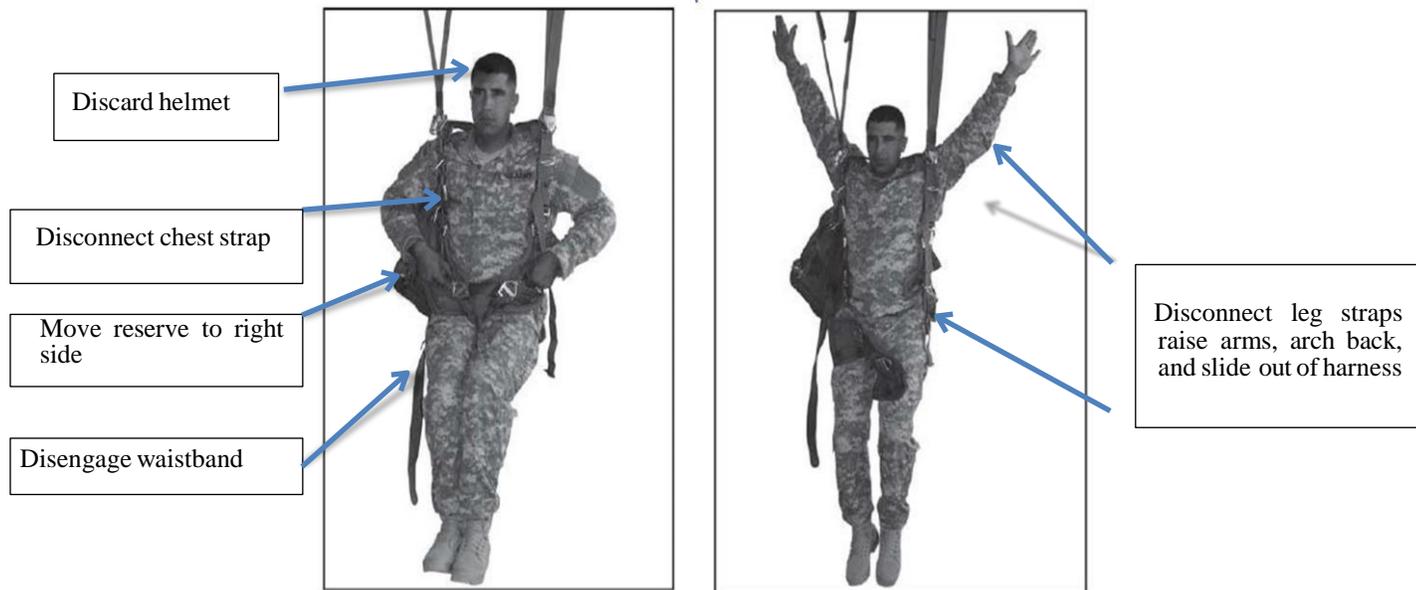
The COMPACAF 2016 memorandum does not provide clear guidance on its execution or define certain key terms, such as “mission commander,” “oversight,” “procedures,” and “training,” to aid in mission planning and compliance (Tabs R-309 to R-313, V-15.2 to V-15.9, V-17.5, V-20.4 to V-20.5, and BB-63). Compliance issues with the COMPACAF 2016 memorandum were further compounded by its implementation date, 19 February 2016, which was less than two months before the start of Operation BALIKATAN and over two months after the FPC (Tabs V-17.3 to V-17.4 and BB-63). During the IPC and FPC, the prior COMPACAF memorandum was still applicable, and responsibilities requiring US-procedure compliance and US jumpmaster oversight were absent from the memorandum’s assigned duties (Tabs R-319, V-20.2 to V-20.4, and BB-63).

d. Procedural Error [AE103]

Procedural error is a factor when a procedure is accomplished in the wrong sequence or using the wrong technique or when the wrong control or switch is used. This also captures errors in navigation, calculation, or operation of automated systems (BB-133).

AFMAN 11-420, *Static Line Parachuting Techniques and Training*, dated October 2013, originally a publication by the US Army (FM 3-21.220) adopted by the USAF, US Navy, and US Marine Corps, provides training guidance on military parachuting, and is the same manual used by the PAF (Tabs V-25.3 to V-25.4 and BB-75 to BB-107). Guidance for emergency water landing procedures while wearing an MC-1 series parachute, such as the one worn by MJ, states that if water cannot be avoided, the parachutist should jettison his or her combat helmet, activate the quick release in his or her waistband, disconnect the left connector snap and rotate the reserve to the right, and activate the chest strap ejector snap (Tab BB-102). In this mishap, MJ failed to follow these emergency water-landing procedures, as he was still wearing his helmet, his quick

release waistband and snaps were still engaged, and he did not release his chest strap, which indicated that he did not attempt to comply with any of the mandated performance points (Tabs V-13.4, V-14.12, V-24.4, and BB-102).



Landing without a Life Preserver
Figure 2-1 (Tab S-10)

12. GOVERNING DIRECTIVES AND PUBLICATIONS

a. Publicly Available Directives and Publications Relevant to the Mishap

- (1) AFI 11-202V3, *General Flight Rules*, 7 November 2014
- (2) AFI 11-401, *Aviation Management*, PACAF Supplement, 18 June 2013
- (3) AFI 13-217, *Drop Zone and Landing Zone Operations*, 10 May 2007
- (4) AFI 21-101, *Aircraft and Equipment Maintenance Management*, 21 May 2015
- (5) AFI 36-2650, *Maintenance Training*, 20 May 2014
- (6) AFI 48-123, *Medical Examinations and Standards*, 5 November 2013
- (7) AFI 48-149, *Flight and Operational Medicine Program*, 12 November 2014
- (8) AFI 51-503, *Aerospace and Ground Accident Investigations*, 14 April 2015
- (9) AFI 91-204, *Safety Investigations and Reports*, 12 February 2014
- (10) AFH 11-203V1, *Weather for Aircrews*, 12 January 2012
- (11) AFI 11-231, *Computed Air Release Point Procedures*, 31 August 2005
- (12) AFI 13-217, *Drop Zone and Landing Operations*, 10 May 2007
- (13) AFI 11-217V2, *Visual Flight Procedures*, 22 October 2010
- (14) Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 8 November 2010
- (15) AFI 51-503, *Aerospace and Ground Accident Investigations*, 14 April 2015

(16) AFI 11-2C-130V3, *C-130 Operations Procedures*, 23 April 2012

NOTICE: All directives and publications listed above are available digitally on the Air Force Departmental Publishing Office website at: <http://www.e-publishing.af.mil>.

b. Other Directives and Publications Relevant to the Mishap. The following TOs are not publicly available and are subject to the Arms Export Control Act of 1976, labeled FOR OFFICIAL USE ONLY, or authorized for distribution to U.S. Government agencies and their contractors only.

- (1) TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*, 1 April 2016
- (2) TO 00-20-2, *Maintenance Data Documentation*, 15 March 2016
- (3) TO 1C-130A-6WC-13, *Pre-Post Inspection*, 15 February 2013
- (4) TO 1C-130A-6WC-15, *Minor And Major Isochronal Inspection*, 1 April 2013
- (5) AFM 11-420, *Static Line Techniques and Training*, October 2013
- (6) TO 1C-130H-1CL-1, *Pilot's Flight Crew Checklist*, 21 December 2012
- (7) COMPACAF Memorandum, *Orientation Flight and Foreign Parachutist Approval for 2015 PACAF Exercises*, 20 January 2015

NOTICE: All instructions listed above are not publicly available and are specific to local installations.

19 April 2017

ARTHUR W. PRIMAS, JR., Colonel, USAF
President, Accident Investigation Board

C. STATEMENT OF OPINION

C-130H, T/N 74-1692 SUBIC BAY INTERNATIONAL AIRPORT, PHILIPPINES 7 APRIL 2016

Under 10 U.S.C. § 2254(d) the opinion of the accident investigator as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report, if any, may not be considered as evidence in any civil or criminal proceeding arising from the accident, nor may such information be considered an admission of liability of the United States or by any person referred to in those conclusions or statements.

1. BACKGROUND

On 7 April 2016, at approximately 1523 local time (L), the mishap aircraft (MA), a C-130H, Tail Number (T/N) 74-1692, took off from Subic Bay International Airport, Philippines, to airdrop parachutists from the United States (US) Air Force (USAF) and the 710th Special Operations Wing (710 SPOW) of the Philippine Air Force (PAF). The first group of scheduled jumpers were ten 710 SPOW parachutists, who were jumping from an altitude of 1,250 feet above ground level (AGL). Approximately 12 minutes after take-off (1535L), all ten 710 SPOW parachutists exited the aircraft from a static line (SL), intending to land within a portion of the rectangular FEDEX drop zone (DZ). During the airdrop descent, four of the 710 SPOW parachutists, including Mishap Jumper (MJ), drifted toward the bay north of the intended point of impact (PI) on the DZ. Two of the parachutists landed among the tree line that separated the airport from the bay shoreline and one parachutist landed in a nearby parking lot, while MJ landed in the bay, approximately 50 yards from shore. The rescue boat and responding swimmers did not immediately know his location and were unable to locate him for approximately 30 to 50 minutes. MJ was unresponsive after he was located in the water and brought to shore, where medical staff performed extraordinary life-saving measures before transporting him to Unihealth-Baypointe Hospital and Medical Center, Subic Bay Freeport Zone. MJ was pronounced dead by hospital staff at approximately 1725L.

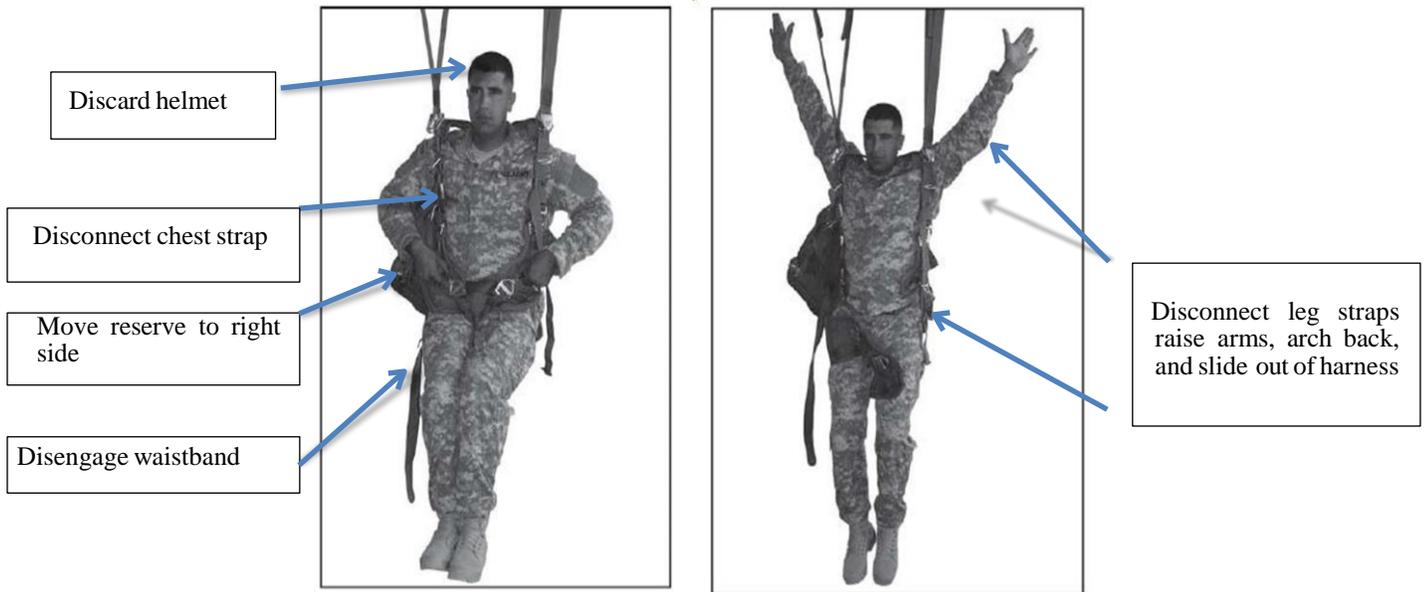
2. DISCUSSION OF OPINION

a. Cause: Procedural Errors

A preponderance of evidence supports that the cause of the mishap was the failure of MJ to properly execute water landing procedures. The PAF incorporated US Army Field Manual (FM) 3-21.220/Air Force Manual (AFMAN) 11-420, *Static Line Parachuting Techniques and Training*, as their operating manual for parachute operations, which is the same operating manual used by US armed forces. FM 3-32.220, paragraphs 3-42 to 3-43, describes actions to be taken “[a]s soon as the parachutist realizes he may land in water” (Figure 2-1). Guidance for emergency water landing procedures while wearing an MC-1 series parachute, such as the one worn by MJ, states that if water cannot be avoided, the parachutist should jettison his or her combat helmet, activate the quick release in his or her waistband, disconnect the left connector snap and rotate the reserve

to the right, and activate the chest strap ejector snap. Proper parachutist performance is essential to mitigate the risk of injury or death.

Numerous witnesses stated that MJ was pulled out of the water still connected to his equipment, indicating that he did not execute any of the standard water landing actions required when entering the water without a life preserver, despite the fact that he was reportedly trained on these procedures. MJ was wearing his helmet, did not release his quick release waistband, and was securely fastened in his harness, so he did not release chest strap or leg strap ejector snaps. I find by a preponderance of the evidence that the failure to execute emergency water landing procedures was causal to this mishap.



Landing without a Life Preserver
Figure 2-1

b. Substantially Contributing Factors

(1) Mission Planning

Foreign military parachute operations on PACAF aircraft are directed by the COMPACAF memorandum, dated 19 February 2016. The memorandum is “FOR ALL PACAF AND PACAF-GAINED FLYING UNITS.” The first three paragraphs detail the requirements needed to approve foreign parachute operations from PACAF aircraft. Per the memorandum, the 36th Airlift Squadron (36 AS), to which the MA was assigned, met all requirements for PACAF approval of PAF parachutists jumping from their aircraft.

After approval, paragraph 4 of the memorandum directs that all foreign military parachute operations will comply with the following:

a. Mission commanders must ensure all participants comply with US-specific procedures and will verify qualification of parachutes for the type of airdrop being performed.

b. Each aircraft must have a qualified US jumpmaster who is responsible for (1) overseeing jump operations, (2) briefing foreign parachutists, (3) performing aircraft inspection in accordance with FM 57-220, (4) conducting static line and/or military freefall parachuting techniques and training, (5) assisting the aircraft loadmaster in emergency procedures when required, and (6) coordinating with the aircrew and English-speaking foreign counterpart or designee.

c. Each group of foreign jumpers per aircraft must contain at least one English-speaking person to ensure foreign jumpers comply with safety procedures and jumpmaster instructions. If the only such person is a jumper, he or she must be the last jumper.

As a PACAF unit, the 36 AS was responsible to ensure compliance with the COMPACAF memorandum. Although the memorandum's predecessor, dated 20 January 2015, was used and referenced in the planning of the Friendship Jump, the 36 AS was aware of the more stringent 2016 memorandum shortly after it was released. This is evidenced by the 36 AS compliance with the notification requirement directed by the new memorandum when the 374th Operations Group commander (374 OG/CC) notified the PACAF Operations and Training Division (A3T) of the planned jump and how the 36 AS was going to mitigate risks in accordance with the memorandum.

The 320 Special Tactics Squadron (320 STS) provided jumpmasters and DZ controllers for the Friendship Jump. The 320 STS aligns under the 353d Special Operations Group (SOG), which falls under the authority of Special Operations Command, Pacific (SOCPAC). The 320 STS was not a PACAF unit nor a PACAF-gained flying unit during the Friendship Jump. They do not fall under the authority of PACAF and they are not directed to comply with the COMPACAF 2016 memorandum, unlike units that fall under PACAF authority.

Planners from the 36 AS and the 320 STS confirmed that the memorandum requirements were discussed between the 36 AS and the 320 STS, however, these requirements were only passed verbally and were not discussed in enough detail to ensure that all requirements in the memorandum were understood and acknowledged by the 320 STS. To meet the memorandum requirements, the 36 AS requested US jumpmaster presence on the Friendship Jump, but they did not ensure that items in the memorandum such as briefing foreign parachutists and conducting SL and/or military freefall parachuting techniques and training, were in compliance. The 36 AS also failed to ensure that "all participants comply with US-specific procedures," such as the wear of life preservers when an SL jump is within 1,000 meters (approximately 1,094 yards) of a water hazard as required by Air Force Instruction 13-217, *Drop Zone and Landing Zone Operations*, paragraph 2.5.9.6.2. Several members of the 320 STS testified that they understood the role of the US jumpmaster was to provide full oversight of the US jumpers, but to serve only as a "safety" observer for the Philippine jumpers.

The PAF jumpmaster and parachutists testified that the PAF jumpmaster briefed and reviewed SL procedures and emergency procedures, and that this was accomplished in a separate PAF-only briefing. The 36 AS also conducted a walkthrough with the PAF jumpers that covered jumper techniques and aircraft familiarity, but a US jumpmaster was not present during this walkthrough. Ultimately, although critical items were briefed and pre-jump training was accomplished, it was not conducted by the US jumpmaster as directed by the COMPACAF 2016 memorandum, nor were US-specific procedures briefed or enforced. A full understanding of the COMPACAF requirements, sufficiently conveyed and understood by the 320 STS jumpmasters, may have placed added emphasis on DZ hazards, water landing procedures, and addressed the quantity of life preservers on board. Although the 36 AS and the 320 STS operated with the understanding that each unit was fulfilling their respective roles and responsibilities, there was a lack of sufficient understanding and coordination between all agencies to ensure full compliance with a new memorandum with greatly enhanced requirements. The lack of complete, thorough mission planning substantially contributed to the sequence of events that resulted in the mishap.

(2) Supervision – De Facto Policy

One reason 320 STS personnel did not unilaterally perform several functions contemplated in the COMPACAF 2016 memorandum was due to the perception that an unofficial policy prevented USAF personnel from directly guiding foreign jumpers. Testimony from several members of the 320 STS indicated that experience with foreign jumpers who were not qualified jumpers and which resulted in mishaps, created an informal policy whereby US members did not take responsibility for training foreign jumpers. In this case, the 320 STS jumpmasters did not brief the 710 SPOW jumpers on proper safety procedures or SL jumping, and instead only spot-checked jump deficiencies when observed during the flight. This misperception in following unofficial policy not to train foreign jumpers substantially contributed to creating an unsafe situation in which the 710 SPOW jumpers may not have been reminded of proper water landing procedures.

(3) Procedural Guidance/Publications

A key factor in the inadequate coordination was a lack of a clear understanding of the requirements in the COMPACAF memorandum. Numerous testimony pointed to varying interpretations of key components of the memorandum such as “ensure all participants comply with US-specific procedures,” “conducting...techniques and training,” and “overseeing jump operations.” The memorandum does not clearly define what is required in these areas or other key terms, such as “mission commander,” “oversight,” “procedures,” and “training.” Without this clear, concise direction, the 36 AS and the 320 STS took actions to comply with what they interpreted, albeit differently, to be the requirements of the memorandum, much of which was based on previous jump operations with foreign parachutists. Compliance issues with the COMPACAF 2016 memorandum were further compounded by its implementation date, 19 February 2016, which was less than two months before the start of Operation BALIKATAN and over two months after the final planning conference. During the planning phase, the COMPACAF 2016 memorandum’s predecessor was still applicable, and responsibilities requiring US-procedure compliance and US jumpmaster oversight were absent from the memorandum’s assigned duties. The lack of clarity in execution of the COMPACAF 2016 memorandum made it difficult for preventative measures to

be followed as intended, and substantially contributed to the sequence of events that resulted in the mishap.

3. CONCLUSION

I find, by a preponderance of the evidence, that the mishap was caused by MJ failing to properly execute water landing procedures.

Additionally, I also find, by a preponderance of the evidence, three factors that substantially contributed to the mishap: (1) A lack of thorough mission planning in compliance with the COMPACAF memorandum, dated 19 February 2016; (2) Improper adherence to perceived informal policies that were not actually in force or effect; and (3) Unclear procedural guidance.

19 April 2017

ARTHUR W. PRIMAS, JR., Colonel, USAF
President, Accident Investigation Board

INDEX OF TABS

Safety Investigator Information A

Not used B

Not used C

Maintenance Report, Records, and Data..... D

Not used E

Weather And Environmental Records and Data..... F

Personnel Records..... G

Egress, Aircrew Flight Equipment, and Impact Crashworthy Analysis H

Deficiency Reports..... I

Releasable Technical Reports and Engineering Evaluations J

Mission Records and Data K

Factual Parametric, Audio, and Video Data From On-Board Recorders L

Data From Ground Radar And Other Sources M

Transcripts Of Voice Communications N

Any Additional Substantiating Data and Reports O

Damage Summaries P

AIB Transfer Documents Q

Releasable Witness Testimony R

Releasable Photographs, Videos, Diagrams, and Animations S

Personnel Flight Records Not Included In Tab G..... T

Maintenance Report, Records, And Data Not Included In Tab D U

Witness Testimony And Statements V

Weather And Environmental Records, and Data Not Included In Tab FW
Statements of Injury or Death X
Legal Board Appointment Documents Y
Photographs, Videos, Diagrams, and Animations Not Included In Tab SZ
Flight Documents.....AA
Applicable Regulations, Directives, and Other Government Documents BB
Fact Sheets CC
Memorandums for RecordDD