

**UNITED STATES AIR FORCE**  
**GROUND ACCIDENT INVESTIGATION**  
**BOARD REPORT**



**TYPE OF ACCIDENT: High Angle Belay Training Fatality**

**LOCATION: Kathmandu, Nepal**

**DATE OF ACCIDENT: 21 October 2014**

**BOARD PRESIDENT: COLONEL THADDEUS P. ALLEN, USAF**

**Conducted IAW Air Force Instruction 51-507**

**United States Air Force Ground Accident Investigation Board Report**  
**High Angle Belay Training Fatality, Kathmandu, Nepal, 21 October 2014**

**EXECUTIVE SUMMARY**

On 21 October 2014 at 1345 hours local time (L), the Mishap Pararescueman (MPJ) assigned to Blue Team, 320th Special Tactics Squadron (320 STS), 353rd Special Operations Group (353 SOG), Air Force Special Operations Command (AFSOC), impacted a metal beam while belaying on the internal section of the mishap tower (MT) at the Chaunni Military Barracks, Kathmandu, Nepal. At the time of the mishap, MPJ was participating in Exercise Teak Nail 15-01 (Teak Nail), a Special Operations Command Pacific (SOCPAC) directed Joint Combined Exchange Training (JCET). The JCET provided mission essential training for 353 SOG forces while increasing the capability of the Nepalese Army Rangers (Rangers) to operate in a joint and combined environment, by expanding on the Rangers' skills developed during prior JCETs. Teak Nail included, in part, high angle rope climbing, rappelling and belaying techniques utilizing the 60-foot freestanding MT with two metal platforms at 45 feet (Platform A) and 35 feet (Platform B). The training station on Platform B, operated by Belay Pararescueman One (BPJ1) and an additional Pararescueman (PJ), demonstrated the belay of one climber by another climber using various techniques and equipment including friction knots and a metal friction device called a Gri-Gri 2.

At 1340 hours L, MPJ climbed the ladder to Platform B on the MT wearing his personal civilian clothes, gloves, a Black Diamond Half Dome helmet, and an Arc'teryx R320a seat harness with assorted carabineers and gear attached. At 1345 hours L, MPJ attached the rope from the Gri-Gri 2 safety line to his harness using a carabiner, climbed onto to the edge of Platform B, positioned himself in a slightly seated position with his feet on the edge of the platform facing towards the platform, and engaged the camming device on the Gri-Gri 2, a locking mechanism used to apply friction to the rope, by applying his weight to the rope. BPJ1 did not see MPJ attach himself into the belay system until MPJ alerted BPJ1 stating "[C]ome on, come on...I want to go down fast...let's do this." BPJ1 made eye contact with MPJ, confirmed he wanted to "go fast," and asked if MPJ was ready for the belay. MPJ confirmed he was ready, to which BPJ1 replied, "Okay, here we go." BPJ1 moved into position to operate the Gri-Gri 2, which only allowed BPJ1 to see MPJ descend approximately 10 feet. MPJ pushed off the edge of Platform B with his legs, and quickly descended on a trajectory toward the inside wall of the MT, impacting a metal I-beam approximately 17 feet down from Platform B and 18.5 feet from the ground.

MPJ sustained severe head and neck injuries, as well as a lung injury. Three Pararescuemen (PJs) and a Flight Surgeon initially treated MPJ at the scene of the accident, en route to, and at, the Birendra Army Hospital, Kathmandu, Nepal. Personnel from Birendra Army Hospital also assisted in treating MPJ. A few hours later, MPJ was transferred to the Grande International Hospital, Kathmandu, Nepal. On 24 October 2014, MPJ was flown on a commercial medical evacuation aircraft from Kathmandu, Nepal to Bangkok, Thailand, and was admitted to Bumrungrad International Hospital to receive a higher echelon of care. However, MPJ's condition continued to deteriorate. On 30 October 2014, life support was discontinued and MPJ subsequently died.

**SUMMARY OF FACTS**  
**High Angle Belay Training Fatality, Kathmandu, Nepal**  
**21 October 2014**

**TABLE OF CONTENTS**

TABLE OF CONTENTS.....	i
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. Air Force Special Operations Command (AFSOC).....	2
b. 353rd Special Operations Group (353 SOG).....	2
c. 320th Special Tactics Squadron (320 STS) .....	3
d. Pararescuemen (PJs) .....	3
e. Nepalese Army Rangers (Rangers).....	4
f. Exercise Teak Nail 15-01 (Teak Nail).....	4
g. Climbing Hardware.....	5
(1) Belay Device .....	5
(2) Carabineers.....	6
h. Climbing Rope .....	7
i. Helmet.....	7
j. Harness.....	9
k. Medical Facilities.....	10
(1) Birendra Army Hospital, Kathmandu, Nepal.....	10
(2) Grande International Hospital, Kathmandu, Nepal.....	10
(3) Bumrungrad International Hospital, Bangkok, Thailand.....	10
4. SEQUENCE OF EVENTS .....	10
a. Summary of Accident .....	10
5. MAINTENANCE .....	19
a. Forms Documentation.....	19
b. Inspections .....	19
c. Maintenance Procedures .....	19
d. Maintenance Personnel and Supervision .....	20
e. Unscheduled Maintenance .....	20
6. EQUIPMENT, VEHICLES, FACILITIES, AND SYSTEMS .....	20
a. Mishap Tower (MT).....	20
b. Climbing Hardware.....	20
(1) Belay Device .....	20
(2) Carabineers.....	23
c. Climbing Rope .....	23
d. Helmet.....	24

(1) Visual Inspection and Comparative Baseline Analysis of the Internal Suspension Harness.....	25
(2) Visual Inspection of the Chin Strap Buckle.....	25
(3) Visual Inspection and Dimensional Inspection of the EPS Liner.....	26
(4) Visual Inspection and Dimensional Inspection of the ABS Shell.....	27
(5) Rivet, Glue Bond, Headlamp Clip Inspection and Comparison to Baseline.....	28
e. Harness.....	30
f. Birendra Army Hospital, Kathmandu, Nepal.....	30
g. Grande International Hospital, Kathmandu, Nepal.....	31
h. Bumrungrad International Hospital, Bangkok, Thailand.....	31
7. ENVIRONMENTAL CONDITIONS.....	31
a. Forecast Weather.....	31
b. Observed Weather.....	31
c. Other Environmental Conditions.....	31
d. Restrictions, Warnings, and Procedures.....	31
8. PERSONNEL QUALIFICATIONS.....	32
a. Pararescuemen (PJs) Records Review.....	32
(1) Mishap Pararescueman (MPJ).....	32
(2) Belay Pararescueman One (BPJ1).....	33
(3) Belay Pararescueman Two (BPJ2).....	34
(4) Ground Pararescueman (GPJ).....	35
(5) Rappel Pararescueman (RPJ).....	36
b. Flight Surgeon (FS1) Records Review.....	36
9. MEDICAL FACTORS.....	38
a. Qualifications.....	38
b. Health.....	38
c. Injuries and Pathology.....	38
d. Lifestyle.....	39
e. Crew Rest and Crew Duty Time.....	39
10. OPERATIONS AND SUPERVISION.....	39
a. Operations.....	39
b. Supervision.....	39
11. HUMAN FACTORS ANALYSIS.....	40
a. Introduction.....	40
b. Applicable Factors.....	40
(1) Risk Assessment – During Operation.....	40
(2) Communicating Critical Information.....	40
12. GOVERNING DIRECTIVES AND PUBLICATIONS.....	41
a. Publically Available Directives and Publications Relevant to the Mishap.....	41
b. Other Directives and Publications Relevant to the Mishap.....	41
c. Known or Suspected Deviations from Directives or Publications.....	41
13. ADDITIONAL AREAS OF CONCERN.....	42
INDEX OF TABS.....	43

## ACRONYMS AND ABBREVIATIONS

320 STS	320th Special Tactics Squadron	DO	Director of Operations
353 SOG	353rd Special Operations Group	DoD	Department of Defense
353 SOSS	353rd Operations Support Squadron	Dr	Doctor
48 RQS	48th Rescue Squadron	DZ	Drop Zone
720 STG	720th Special Tactics Group	E1VTM1	Eye, 1; Verbal, Tracheostomy; Motor, 1
AAR	After Action Report	ECMO	Extra-Corpeal Membrane Oxygenation
AB	Air Base	ECS	Environmental Control System
ABC	Airway, Breathing, Circulation	EEG	Electroencephalogram
ABG	Arterial Blood Gas	ENT	Ear, Nose, and Throat/Otolaryngology
ABS	Acrylonitrile Butadiene Styrene	EOS	Emergency Oxygen System
ACLS	Advanced Cardiac Life Support	EPS	Expanded Polystyrene
ADVON	Advanced Echelon	ER	Emergency Room
AF	Air Force	ET	Endotracheal Tube
AFB	Air Force Base	FL	Florida
AFE	Air Flight Equipment	FS1	Flight Surgeon One
AFI	Air Force Instruction	FS2	Flight Surgeon Two
AFIP	Air Force Institute of Pathology	GAIB	Ground Accident Investigation Board
AFPAM	Air Force Pamphlet	GCS	Glasgow Coma Scale
AFSOC	Air Force Special Operations Command	GPJ	Ground Pararescueman
AIE	Alternate Insertion and Extraction	HAHO	High Altitude High Opening
ATLS	Advanced Trauma Life Support	HALO	High-Altitude Low Opening
AZRT	Assault Zone Reconnaissance Team	IAW	In Accordance With
BLS	Basic Life Support	ICP	Intracranial Pressure
BPJ1	Belay Pararescueman One	ICU	Intensive Care Unit
BPJ2	Belay Pararescueman Two	ID	Identification Card
BTNCOIC	Blue Team Noncommissioned Officer in Charge	ISOM	Introduction to Special Operations Medicine
BTOIC	Blue Team Officer in Charge	ISOS	International SOS
C1	Cervical Vertebra 1	ISR	Intelligence, Surveillance, and Reconnaissance
C2	Cervical Vertebra 2	IT	Information Technology
Capt	Captain	IV	Intravenous
CASEVAC	Casualty Evacuation	JCET	Joint Combined Exchange Training
CAT	Computed Tomography	JM	Jumpmaster
C-Collar	Cervical Spine Immobilization Collar	JPMRC	Joint Patient Movement Requirements Center
CCT	Combat Controller	JSOC	Joint Special Operations Command
CD	Compact Disc	JSOMTC	Joint Special Operations Medical Training Center
CIP	Core Integrated Processor	JUSMAGTHAI	Joint United States Military Advisory Group Thailand
CME	Continuing Medical Education	L	Local
CO2	Carbon Dioxide	LA	Legal Advisor
Col	Colonel	Lt Col	Lieutenant Colonel
CONOP	Concept of Operation	MA	Medical Advisor
CPP	Cerebral Perfusion Pressure	Maj	Major
Cric	Cricothyroidotomy	MAJCOM	Major Command
CRO	Combat Rescue Officer	MARCH	Massive Bleeding, Airway, Respirations Circulation, Hypothermia
CSAR	Combat Search and Rescue	MAP	Mean Arterial Pressure
CSF	Cerebrospinal Fluid	MC	Multi-Mission; Cargo
CSMU	Crash Survivable Memory Unit		
CSTARS	Center for the Sustainment of Trauma and Readiness Skills		
CT	Computed Tomography		
DART	Disaster Assistance Response Team		
DNR	Do Not Resuscitate		

mEq/L	Milliequivalents per Liter	PJs	Pararescuemen
METL	Mission Essential Tasking Listing	PR	Personnel Recovery
mmHg	Millimeters of Mercury	PT	Physical Training
MPJ	Mishap Pararescueman	Pulse Ox	Pulse Oximeter
MPJS	Mishap Pararescueman Spouse	QA	Quality Assurance
Mr.	Mister	REC1	Recorder One
MRI	Magnetic Resonance Imaging	REC2	Recorder Two
MSgt	Master Sergeant	RPJ	Rappel Pararescueman
MT	Mishap Tower	RQS	Rescue Squadron
NA	Neurosurgeon Advisor	SIMV	Synchronized Intermittent Mandatory Ventilation
NCO	Non-Commissioned Officer	SOCMSS	Special Operations Combat Medical Skills Sustainment
NCOIC	Noncommissioned Officer in Charge	SME	Subject Matter Expert
NFPA	National Fire Protection Association	SNF	Skilled Nursing Facility
NM	New Mexico	SOC PAC	Special Operations Command Pacific
NP	Nurse Practitioner	SOF	Special Operations Forces
NVGs	Night Vision Goggles	SOI	Syllabus of Instruction
O2	Oxygen	SOFME	Special Operation Forces Medical Element
ODA	Operational Detachment Alpha	SOG	Special Operations Group
OEMS	Operational Expeditionary Medical Skills	SOW	Special Operations Wing
OG	Operations Group	SPEAR	Special Purpose, Engagement and Reconnaissance
OI	Operating Instruction	SSgt	Staff Sergeant
OPR	Officer Performance Report	STS	Special Tactics Squadron
Ops Tempo	Operations Tempo	TACON	Tactical Control
ORM	Operational Risk Management	TBI	Traumatic Brain Injury
OSM	Operational Support Medicine	TCCC	Tactical Combat Casualty Care
OSS	Operation Support Squadron	TRS	Tactical Rescue Specialist
PA	Public Affairs	TSgt	Technical Sergeant
PAT	Pacific Augmentation Team	U.S.	United States
PAO	Polyalphaolefin	USSOCOM	United States Special Operations Command
PACAF	Pacific Air Forces	VP	Ventriculoperitoneal
PACOM	Pacific Command	Z	Zulu
PCS	Permanent Change of Station		
PERRL	Pupils Equal, Round, Reactive to Light		
PHA	Physical Health Assessment		
PJ	Pararescueman		
PJA	Pararescue Advisor		

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

**United States Air Force Ground Accident Investigation Board Report**  
**High Angle Belay Training Fatality, Kathmandu, Nepal, 21 October 2014**

**SUMMARY OF FACTS**

**1. AUTHORITY AND PURPOSE**

**a. Authority**

On 18 November 2014, Major General Morris E. Haase, Vice Commander, Air Force Special Operations Command (AFSOC) appointed Colonel Thaddeus P. Allen to conduct a ground accident investigation for the 21 October 2014 mishap of the high angle belay training fatality, in Kathmandu, Nepal (Tab X-3 thru X-4). The ground accident investigation was conducted in accordance with Air Force Instruction (AFI) 51-507, *Ground Accident Investigations*, 28 May 2010, at Kadena Air Base (AB), Japan, Kathmandu, Nepal, and Hurlburt Field, Florida (FL), from 9 December 2014 through 4 March 2015. The following board members were also appointed: a Captain Legal Advisor (LA), a Technical Sergeant Recorder (REC2), and a Staff Sergeant Recorder (REC1) (Tabs X-3, X-5, X-7). Additionally, the following advisors were appointed: a Colonel Neurosurgeon Advisor (NA), a Captain Medical Advisor (MA), and a Master Sergeant Pararescue Advisor (PJA) (Tabs X-9, X-11).

**b. Purpose**

The purpose of the investigation is to inquire into the facts surrounding ground accidents, to prepare a publicly releasable report, and to gather and preserve all available evidence for use in litigation, claims, disciplinary actions, administrative proceedings, and for other purposes.

**2. ACCIDENT SUMMARY**

On 21 October 2014, at approximately 1345 hours local time (L), Technical Sergeant Sean M. Barton, the Mishap Pararescueman (MPJ) assigned to Blue Team, 320th Special Tactics Squadron (320 STS), 353rd Special Operations Group (353 SOG), AFSOC, impacted a metal beam while belaying on the internal section of the mishap tower (MT) at the Chaunni Military Barracks, Kathmandu, Nepal (Tabs O-7 thru O-8, R-4 thru R-5, R-21 thru R-22, R-85, S-3, T-3, V-4.5, V-16.1, BB-8, BB-27). The MT, owned and operated by the Nepalese Ranger Battalion, was used during a Special Operations Command Pacific (SOCPAC) Joint Combined Exchange Training (JCET) program with the Nepalese Army Rangers (hereinafter "Rangers") (Tabs K-2 thru K-56, V-16.2 thru V-16.3, Z-25). MPJ subsequently died on 30 October 2014 (Tabs W-5, Z-37, Z-39). The MT was not damaged (Tab V-16.2). MPJ's government issued helmet was damaged as a result of the mishap (Tabs S-20 thru S-25, Z-35, CC-6). Additionally, his government issued harness was damaged during subsequent medical care efforts (Tabs V-2.18, V-11.8, CC-12).

### 3. BACKGROUND

The MPJ was assigned to the 320 STS, 353 SOG, AFSOC, stationed at Kadena AB, Japan (Tabs O-7 thru O-8, T-3, BB-8). The MT belonged to the Nepalese Army Ranger Battalion, Chaunni Military Barracks, Nepal (Tab V-16.2).

#### a. Air Force Special Operations Command (AFSOC)

AFSOC was established 22 May 1990, with headquarters at Hurlburt Field, FL (Tab BB-3). AFSOC is one of ten major Air Force commands and the Air Force component of the United States (U.S.) Special Operations Command (USSOCOM), a unified command located at MacDill Air Force Base (AFB), FL (Tab BB-3). AFSOC provides Air Force special operations forces (SOF) for worldwide deployment and assignment to regional unified commands (Tab BB-3). The command's SOF are composed of highly trained, rapidly deployable Airmen, conducting global special operations missions ranging from precision application of firepower, to infiltration, exfiltration, and resupply and refueling of SOF operational elements (Tab BB-3).



AFSOC's special tactics squadrons combine combat controllers, special operations weathermen, pararescuemen (PJs), and tactical air control party with other service SOF to form versatile joint special operations teams (Tab BB-3). AFSOC has more than 19,500 active-duty, Air Force Reserve, Air National Guard and civilian personnel (Tab BB-4). The command's forces are organized under three active-duty wings, one Reserve wing, one National Guard wing, two overseas groups and several direct reporting units (Tab BB-4). The two overseas groups include the 352nd Special Operations Group, at Royal Air Force Mildenhall, England, as the Air Force component for Special Operations Command Europe; and the 353 SOG at Kadena AB, Japan, as the Air Force component for Special Operations Command Pacific (Tab BB-4).

#### b. 353rd Special Operations Group (353 SOG)

The 353 SOG is an integral part of AFSOC, and is home-based at Kadena AB, Japan (Tab BB-7). The group is comprised of more than 750 Airmen, and is the only AFSOC unit in the Pacific (Tab BB-7). Its mission is air support of joint and allied SOF in the Pacific (Tab BB-7). It maintains a worldwide mobility commitment, participates in Pacific theatre exercises as directed, and supports humanitarian and relief operations (Tab BB-7). Additionally, the group develops wartime and contingency plans, which effectively use the full range of fixed wing capabilities, to include the infiltration, exfiltration, and resupply of U.S. and allied SOF (Tab BB-7). The primary peacetime responsibility of the 353 SOG is to oversee the training and maintenance of its assigned units (Tab BB-7). The group ensures the combat readiness of these units through comprehensive involvement in numerous theatre and Joint Chiefs of Staff – directed military exercises and training activities throughout the Pacific (Tab BB-7).



The group is comprised of five squadrons: (1) the 1st Special Operations Squadron operating the Multi-Mission/Cargo (MC) 130H Combat Talon; (2) the 17th Operations Squadron operating the MC-130P Combat Shadow; (3) the 320 STS PJs and combat controllers; (4) the 353rd Operations Support Squadron (353 SOSS) coordinating the logistics and operations planning



support functions for the entire group; and (5) the 353rd Maintenance Squadron (Tab BB-7 thru BB-8).

### **c. 320th Special Tactics Squadron (320 STS)**



The 320 STS was originally constituted as the 320th Fighter Control Squadron on 30 March 1943 (Tab BB-9). The squadron was disbanded on 8 October 1948, but subsequently reconstituted and redesignated as the 320 STS on 20 February 1992 (Tab BB-9). The 320 STS PJs and combat controllers provide for the establishment of drop and landing zones, air traffic control to the landing zone, combat medical care and evacuation, and combat search and rescue for both fixed and rotary wing assets (Tab BB-8). The 320 STS is further divided into two operational teams and one support team identified as Blue, Silver, and Gold respectively (Tab V-6.2). The Blue Team, the mishap team, was comprised of approximately 15 PJs under the command of a Captain (Tab V-6.2).

### **d. Pararescuemen (PJs)**



Air Force PJs are the only Department of Defense (DoD) elite combat forces specifically organized, trained, equipped, and postured to conduct full spectrum Personnel Recovery (PR) to include both conventional and unconventional combat rescue operations (Tab BB-11). These Battlefield Airmen are the most highly trained and versatile PR specialists in the world (Tab BB-11). Pararescue is the nation's force of choice to execute the most perilous, demanding, and extreme rescue missions anytime, anywhere across the globe (Tab BB-11). The over 500 PJs are assigned to Guardian Angel and Special Tactics Squadrons throughout the Active Duty, Guard, and Reserve Air Force components (Tab BB-11). They operate most often as independent teams but routinely serve alongside other U.S. and Allied Special Operations Forces (Tab BB-11). Operating with the promise to "Leave no Airman, Marine, Soldier, or Sailor behind," the PJs rescue, recover, and return American or Allied forces in times of danger or extreme duress (Tab BB-11).

To execute the PR mission, Pararescue teams assault, secure, and dominate the rescue objective area utilizing any available DoD or Allied, air, land, or sea asset (Tab BB-11). Their qualifications and capabilities are extensive (Tab BB-11). All PJs are qualified experts in Advanced Weapons and Small Unit Tactics, Airborne and Military Free Fall, High Altitude Low Opening (HALO) and High Altitude High Opening (HAHO) parachute operations, Combat Diving, High Angle/Confined Space Rescue Operations, Small Boat/Vehicle Craft utilization, Rescue Swimming, and Battlefield Trauma/Paramedics (Tabs G-2 thru G-8, T-25 thru T-28, AA-39 thru AA-53, AA-99 thru AA-107, BB-11). All PJs can fast rope, rappel, or hoist from any verticle lift aircraft to both land and open ocean rescue objectives (Tab BB-11). Additionally, PJs can beform both static line and HALO jump operations utilizing boats, vehicles, or other equipment from any fixed wing aircraft (Tab BB-11). Further, all PJs can jump in with, and utilize, extrication devices to remove war fighters or civilians trapped in wreckage or collapsed structures (Tab BB-11 thru BB-12).

Since 11 September 2001, PJs have executed over 12,000 life saving, combat rescue missions (Tab BB-12). They have also eliminated and captured numerous enemy combatants during the execution of these missions (Tab BB-12). Additionally, because of their unique capabilities, they have been called upon to rescue over 5,000 civilians worldwide during catastrophic natural disasters and other responses (Tab BB-12). Their motto, “These Things We Do, That Others May Live,” affirms Pararescue’s dedication and commitment to saving lives and self-sacrifice (Tab BB-12).

#### **e. Nepalese Army Rangers (Rangers)**

The Rangers, also known as the “Mahabir” Rangers, formed in 2002 (Tabs V-16.3, BB-13 thru BB-21). The Battalion is comprised of six companies: Alpha serves as the mobility command; Bravo operates in mountainous environments; Charlie operates in jungle environments; Delta operates in urban environments; Echo operates at nighttime; and Foxtrot is responsible for direct action and counter-insurgency (Tab V-16.3). Foxtrot is a specialized cell of the Nepalese SOF established in 2010 as a direct result of coordinated exercises with U.S. SOF (Tabs V-16.3, BB-18 thru BB-19). Foxtrot participates in conventional, unconventional, and disaster relief operations through two subordinate teams: Disaster Assistance and Response Team (DART), and the Special Purpose, Engagement and Reconnaissance (SPEAR) team (Tabs V-16.3, BB-15 thru BB-17). Specifically, DART responds to mass casualty events, and maintains a 15 member standby force ready to respond within 15 minutes to various rescue or disaster operations (Tabs V-16.3, BB-15). SPEAR focuses on the full spectrum of operational capabilities to include reconnaissance and surveillance, analysis, and sensitive site exploitation (Tab BB-17).

#### **f. Exercise Teak Nail 15-01 (Teak Nail)**

At the time of the mishap, MPJ was participating in Exercise Teak Nail 15-01 (hereinafter “Teak Nail”), a SOCPAC-directed JCET (Tabs K-5 thru K-54, V-2.7, V-3.4, V-6.3). The Teak Nail exercises originated in 2003 and continued at a rate of two exercise per year until 2006 (Tab V-16.3). In 2007, Teak Nail expanded to four “exercises” a year led by U.S. Army and U.S. Air Force SOF (Tabs K-10, V-6.3, V-16.3). Teak Nail included members of the 353 SOG and the Ranger Foxtrot Company (Tabs K-5, K-10, V-6.3, V-16.3). The JCET provided mission essential training for 353 SOG forces while increasing the capability of the Rangers to operate in a joint and combined environment by expanding on the Rangers’ skills developed during prior JCETs (Tabs K-6, V-3.10 thru V-3.11, V-16.3). Teak Nail encompassed a number of training iterations on technical rescue, helicopter insertion and extraction, helicopter landing zone surveys, and flood rescue, to include high angle rescue practical exercises (Tab K-14). High angle training is a term used to describe an individual hanging off a rope fully suspended without the ability to stand up on a wall or mountain while suspended (Tab V-2.13). Blue Team Officer in Charge (BTOIC) served as the 353 SOG Deployed Mission Commander for Teak Nail, maintaining tactical control (TACON) of 353 SOG personnel assigned to the JCET (Tabs K-8, V-10.5).

Rappel Pararescueman (RPJ) attended the initial planning conference for Teak Nail from 21-25 July 2014 (Tabs V-3.5, Z-3 thru Z-6). The planning conference provided an opportunity for participating U.S. and Nepalese units to discuss the proposed training, and to develop a framework to meet the training objectives (Tabs V-3.5, Z-3 thru Z-6). RPJ, BTOIC, and Blue

Team Noncommissioned Officer in Charge (BTNCOIC) continued to develop the training schedule, and updated Blue Team as necessary (Tabs V-3.6 thru V-3.7, V-6.4, Z-7 thru Z-9, Z-11, Z-13, Z-15 thru Z-22, Z-23, Z-25, Z-27). Additionally, Blue Team participated in team training to include high angle rope work and physical training in preparation for the exercise and the rigors of the high altitude trekking (Tab V-6.4). MPJ developed the course of instruction on the high-angle training phase and was responsible for teaching the Rangers (Tabs Z-7 thru Z-9, Z-15 thru Z-23). Teak Nail was coordinated through the SOCPAC liaison to the United States Embassy in Nepal and approved by the 353 SOG Commander (Tabs K-5 thru K-6, V-2.9, V-3.7, V-6.3). Originally scheduled from 20 October 2014 to 20 November 2014, the 320 STS discontinued their participation in Teak Nail after the mishap (Tabs K-5, K-12 thru K-24, V-16.3).

BTOIC, BTNCOIC and RPJ developed and distributed an equipment-packing list that articulated the team gear, personal gear, and medical gear necessary for the exercise (Tabs V-3.8 thru V-3.9, Z-29 thru Z-33). The equipment list explicitly required MPJ to bring a helmet for the high angle rope-training phase (Tab Z-31). MPJ's helmet was a government-procured 2007 Black Diamond Half Dome helmet issued to him in 2011 by the 48th Rescue Squadron (48 RQS) (Tabs Z-35, CC-45). Additionally, Blue Team wanted to minimize the perception of U.S. military forces in Nepal due to political considerations (Tab V-6.17). Therefore, Blue Team wore personal civilian clothing during the exercise (Tabs V-6.17, Z-30).

## **g. Climbing Hardware**

### **(1) Belay Device**

In rock climbing, 'belaying' is a term to describe the technique used to manage the rope of a climber (Tabs AA-61, AA-74 thru AA-76). The belayer can catch a climber's fall, provide tension on the rope, and lower a climber back down to the ground (Tabs AA-61, AA-74 thru AA-76). An assisted locking aperture device, called a Gri-Gri 2, controlled the rope's speed (Figure 1, Tabs S-13, S-16 thru S-18, V-2.3, CC-13 thru CC-17).



Figure 1: Front and back view of mishap Gri-Gri 2 (Tab CC-8 thru CC-9)

Specifically, the Gri-Gri 2 utilized friction by adding bends in the rope to “pinch” the rope, increasing the braking action until the rope stops sliding (Figure 2, Tab CC-14).

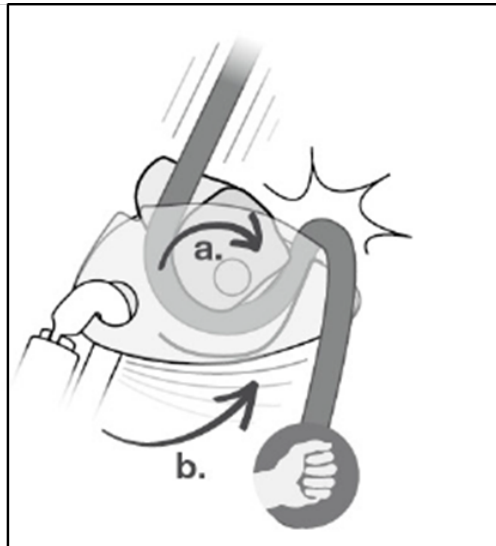


Figure 2: Example of friction applied to Gri Gri 2, or “weighting the device” to increase braking action (Tab CC-14)

Swift pressure directly applied to the Gri-Gri 2 on the climber’s side of the rope engages the camming action subsequently locking the rope and demonstrating the rope is properly routed (Tabs CC-4 thru CC-5, CC-7 thru CC-11, CC-13 thru CC-17). This action is also known as “weighting” the device (Tabs R-5, R-22, V-2.19, V-8.4). An improperly routed rope would immediately cause the rope to slide through the Gri-Gri 2 without friction when weight was applied (Figure 3, Tab CC-4). A properly routed rope is demonstrated by Figure 3 (Figure 3, Tab CC-15).

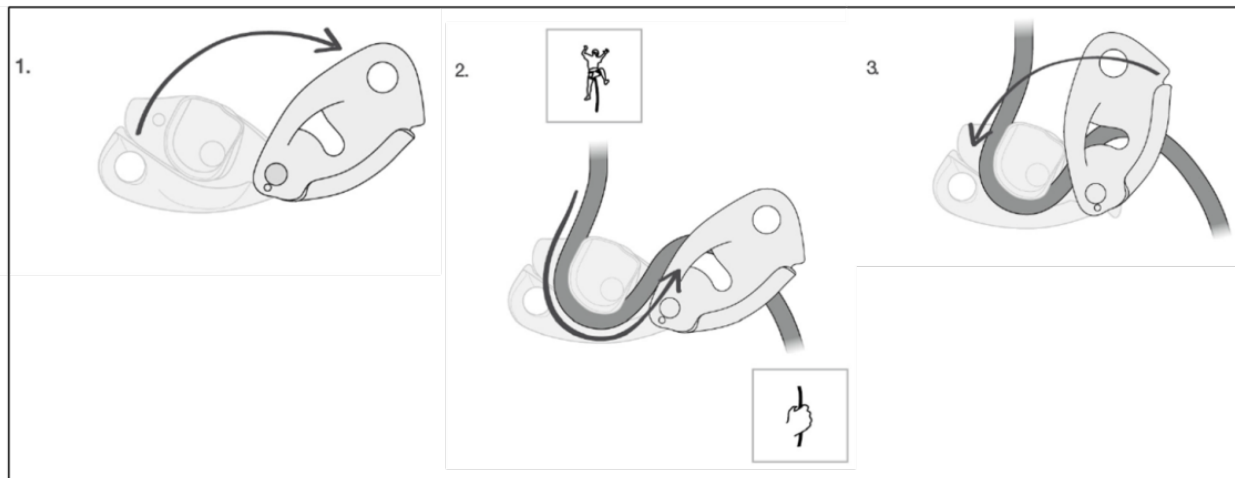


Figure 3: Example of proper routing of the rope through the Gri-Gri 2 system (Tab CC-15)

## (2) Carabineers

A carabiner is a simple piece of gear that enables a critical connection between a climber, his rope, and the protection attaching him to the climbing apparatus (Figure 4, Tab AA-58 thru AA-

60). Carabiners must be strong enough to hold hard falls, yet light enough for the climber to easily carry a quantity of them (Figure 4, Tab AA-58 thru AA-60). Most models can be made with or without a locking mechanism for the gate opening (Figure 4, Tab AA-58 thru AA-60).

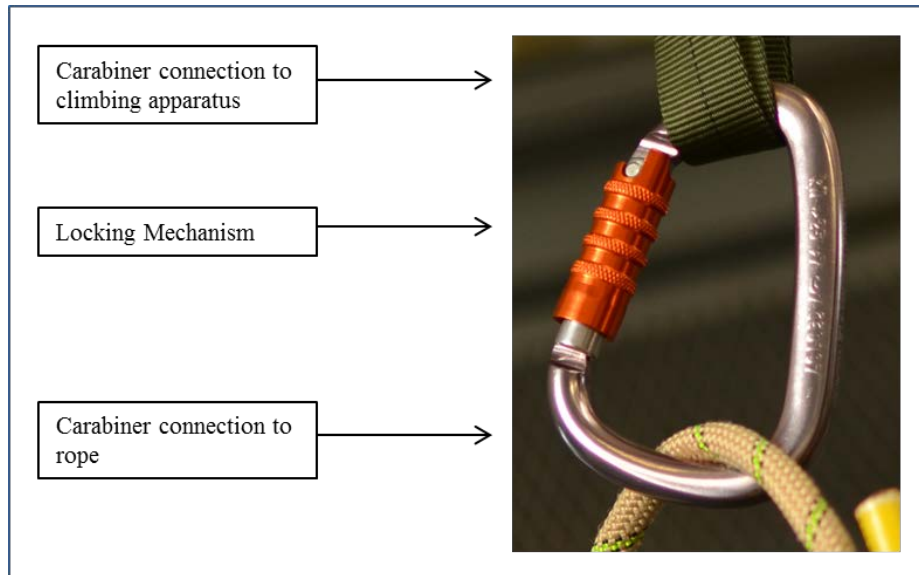


Figure 4: Mishap carabiner (Tab Y-13)

#### **h. Climbing Rope**

Modern climbing ropes are constructed with an inner core and an outer sheath (Tab CC-5). The core is the strong, force-absorbing part of the rope (Tab CC-5). It is made of fibers that are braided into strands, which are in turn braided into larger strands (Tab CC-5). The sheath is a woven cover that protects the core (Tab CC-5). It is abrasion-resistant and has a fine weave to keep dirt and sharp particles out (Tab CC-5). There are two types of modern climbing ropes: static ropes and dynamic ropes (Tab CC-5). Static ropes stretch very little, and are used for rappelling, rigging, rescue, hauling, and even climbing the rope itself (Tab CC-5). Dynamic ropes can stretch up to 10 percent of its length and absorb a quite a bit of force (Tab CC-5). Dynamic ropes are used in situations where a climber or worker might fall (Tab CC-5). The stretching of the rope will stop the fall slowly and cushion the impact (Tab CC-5). The main difference between a static rope and a dynamic rope is that the core of the static rope is braided under tension, while the dynamic rope is left relatively loose (Tab CC-5). The mishap rope was a static rope (Tabs V-2.15 thru V-2.16).

#### **i. Helmet**

The Blue Team primarily uses two types of helmets during training; a Kevlar ballistic helmet used during live fire exercises, and a lighter weight mountaineering helmet otherwise known as a “bump” helmet (Tabs V-2.9 thru V-2.10, AA-60). The Blue Team utilized the bump helmet during multiple activities to include parachuting, static line jumps, free fall, rock climbing, and helicopter iterations both on land and in the water (Tab V-2.10). Several civilian manufacturers produce a bump helmet, identified as a level 2 or 3 mountaineering helmet, suitable for the Blue

Team's use (Tabs V-2.9, AA-60). The mishap helmet was a 2007 Black Diamond Half Dome helmet (Figure 5, Tabs CC-33, CC-45).



Figure 5: Mishap helmet front, bottom, and side view (Tabs S-19 thru S-20, S-25)

The helmet was designed and manufactured in accordance with DIN EN 12492:2003-06, *Helmets for Mountaineers*, a European Standard designed to test and evaluate personal protective equipment (Tabs CC-47 thru 49, CC-51 thru CC-89, CC-91 thru CC-97). The outer shell of the helmet is approximately two millimeters in thickness with nine ventilation holes, four ventilation/headlamp retention holes and a narrow rim along the front and rear (Figure 5, Tabs SS-19 thru S-20, S-25, CC-53). An expanded polystyrene (EPS) liner provides protection as a shock absorbing material (Figure 5, CC-53). The helmet retention system consists of a plastic headband with a mechanical adjustment ring in the dorsal position, or the back of the helmet (Figure 6, Tab CC-53).

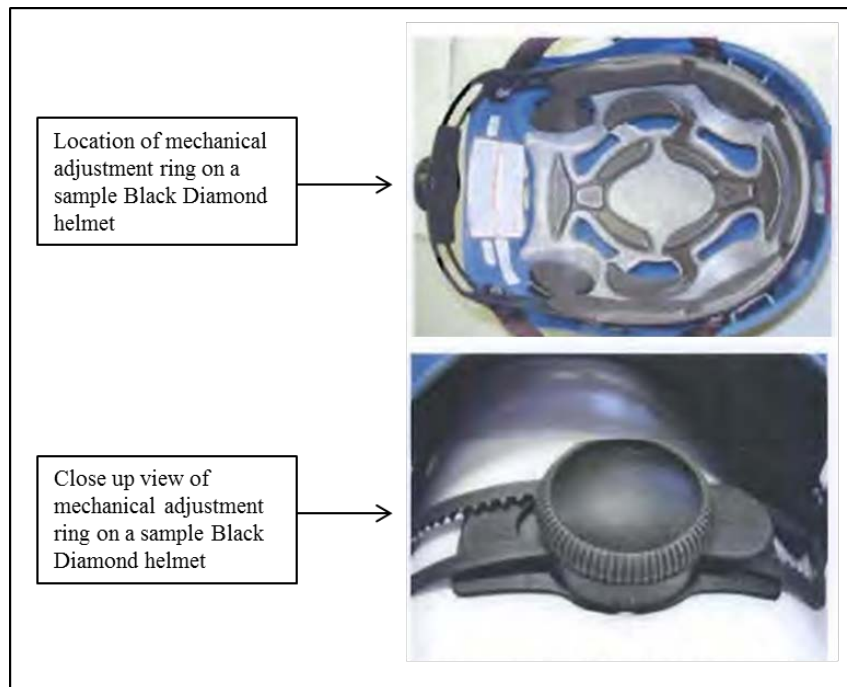


Figure 6: EPS liner and helmet retention system (Tabs CC-49, CC-53)

The headband is covered with an EVA comfort pad with cloth backing, which attaches to the headband with Velcro (Tab CC-53). Each strap goes from the front of the shell to a strap tuner, then to the chin buckle, back to the strap tuner and then to the rear of the shell (Tab CC-53).

Half Dome Helmet Instructions are included with each Black Diamond helmet at the time of purchase (Tabs CC-34, CC-91 thru CC-97). The instructions state the helmet is for rock climbing, ice climbing, and mountaineering only (Tab CC-92). Additionally, the instructions include as a warning that:

Some head injuries cannot be prevented by any helmet. Even very low force accidents can result in serious injury or death. No helmet can protect against all foreseeable impacts; however, the wearing of a certified helmet can reduce the risk of serious injury or death in some impact situations (Tab CC-93 thru CC-94).

The instructions state the lifespan of the helmet depends on how frequently the helmet is used and on the conditions of its use (Tab CC-95). With normal use and proper care, the helmet should be retired after three to five years (Tab CC-95). Factors that reduce the lifespan of the helmet include impact, both severe and mild, abrasions, cuts, wear, heat, sunlight, and corrosives (Tab CC-95).

#### **j. Harness**

Originally, climbers secured themselves to the rope by wrapping the rope around their bodies and tying a bowline-on-a-coil (Tab AA-57). Climbers today can select from a wide range of manufactured harnesses (Tab AA-57). When the harness is fitted properly it rides high on the hips and has snug leg loops to distribute the force of a fall to the entire pelvis (Tab AA-57). The mishap harness was an Arc'teryx R320a seat harness (Figure 7, Tabs CC-5, CC-12).



Figure 7: Arc'teryx R320a mishap seat harness (Tab CC-12)

## **k. Medical Facilities**

### **(1) Birendra Army Hospital, Kathmandu, Nepal**

Birendra Army Hospital is located near the Chaunni Military Barracks adjacent to the Nepalese Ranger's compound (Tab CC-29). The primary purpose of the hospital is to meet the needs of the Nepalese Army Soldiers and their families (Tab CC-29).

### **(2) Grande International Hospital, Kathmandu, Nepal**

In February 2010, Grande International Hospital was established with the motive "Care to Cure," and officially opened in January 2013 (Tab CC-30). The main hospital building is 15 stories and has a 200-bed capacity (Tab CC-30). There are 10 Operating Rooms consisting of eight Modular Operating Rooms (Tab CC-30). Six operating rooms are installed with heap filters and facilities to broadcast live surgery throughout the world to share knowledge, and making live surgical discussions possible (Tab CC-30). There are 18 Intensive Care Units (ICUs) and 12 Critical Care Units (CCUs) with separate medical gas supply for the isolation rooms (Tab CC-30). The ICUs are adorned with heap filters to keep the infection rate low (Tab CC-30). Central monitoring for all rooms is controlled at the nursing station and allows for more efficient care (Tab CC-30).

### **(3) Bumrungrad International Hospital, Bangkok, Thailand**

Bumrungrad International Hospital is a Joint Commission International accredited, multi-specialty hospital located in the heart of Bangkok, Thailand (Tab BB-25 thru BB-26). Founded in 1980, it is one of the largest private hospitals in Southeast Asia, with 580 beds and over 30 specialty centers (Tab BB-25 thru BB-26). Bumrungrad International offers state-of-the-art diagnostic, therapeutic and intensive care facilities in a one-stop medical center (Tab BB-25 thru BB-26). The hospital serves 1.1 million patients annually, including over 520,000 international patients (Tab BB-25 thru BB-26).

## **4. SEQUENCE OF EVENTS**

### **a. Summary of Accident**

Teak Nail commenced with an opening ceremony on 20 October 2014 (Tabs K-24, V-6.6). Following the opening ceremony, Blue Team conducted a "rope corral" with the Rangers in preparation for the 21 October 2014 high angle training events (Tabs K-12 thru K-24, V-2.8, V-2.10 thru V-2.11, V-3.10, V-6.6). The "rope corral" served as refresher training for the Rangers to ensure that the Rangers retained the knowledge and training from previous Teak Nail exercises (Tabs V-2.8, V-2.10 thru V-2.11, V-3.10, V-6.6). On 21 October 2014, BTOIC briefed Blue Team on the day's training iterations in the lobby of their hotel (Tabs V-3.10, V-6.2, V-6.7). MPJ served as the Noncommissioned Officer in Charge (NCOIC) of the 21 October 2014 training (Tab V-2.11 thru V-2.12, V-3.11, V-3.14, Z-25). Blue Team subsequently departed for the Chaunni Military Barracks and briefed the Rangers on the training iterations, which included different high angle rope climbing, rappelling and belaying techniques utilizing the MT (Tabs K-24, V-2.12 thru V-2.14, V-6.6 thru V-6.7, V-7.3).



The MT was a 60-foot freestanding tower constructed of welded and bolted steel and wood with two metal platforms at 45 feet (Platform A) and 35 feet (Platform B) respectively (Figure 8, Tabs S-2 thru S-4, S-8, S-14, S-26 thru S-27, Y-3 thru Y-9, Y-15 thru Y-18). Platform A, located at the top of the MT, extended the entire width and length of the MT (Figure 8, Tabs S-2 thru S-4, S-8, S-14, S-26 thru S-27, Y-3 thru Y-9, Y-15 thru Y-18). Conversely, Platform B extended only four feet within the interior of the MT creating a four foot open air gap (Figure 8, Tabs S-2 thru S-4, S-8, S-14, S-26 thru S-27, Y-3 thru Y-9, Y-15 thru Y-18). The platforms accommodated training of personnel in various high angle rope climbing, rappelling and belaying techniques (Tabs R-4, R-12, R-21, V-2.17 thru 2.18, V-3.14). On 21 October 2014, Blue Team utilized both platforms simultaneously (Tabs V-3.13, Z-25). A sturdy wood wall separated the two areas of training (Figure 8, Tabs Y-3, Y-15). Additionally, two independent ladders provided access to the two separate training platforms (Figure 8, Tabs Y-3, Y-15).

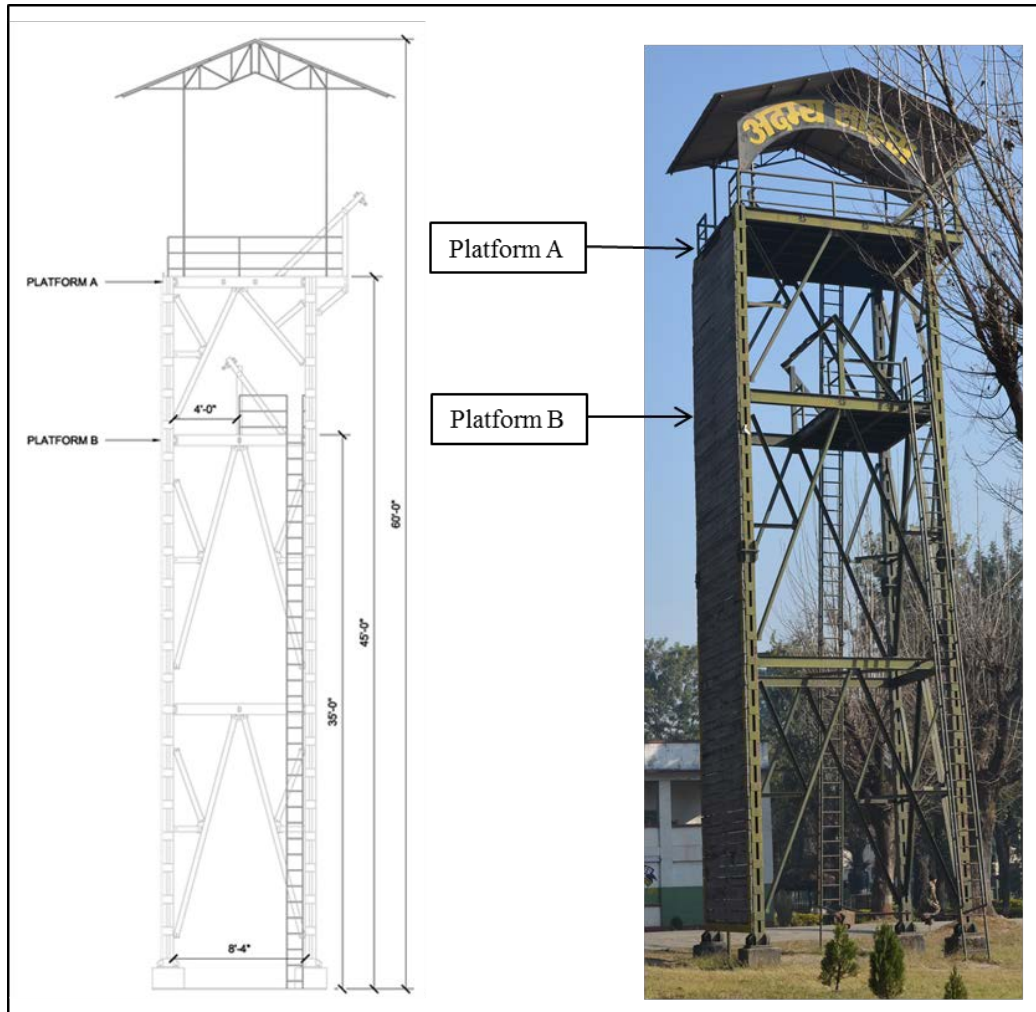


Figure 8: Mishap Tower (Tabs Y-3, Y-15)

The training station on Platform A operated by RPJ, trained personnel in ascending and descending techniques (Tabs R-63, V-3.13, V-3.15). The training station on Platform B operated by BPJ1 and BPJ2, demonstrated the belay of one climber by another climber using various

techniques and equipment including friction knots and a metal friction device called a Gri-Gri 2 (Tabs S-16 thru S-18, V-2.13 thru V-2.14, CC-13 thru CC-16).

The Petzl Gri-Gri 2 attached to, and manipulated, the rope angles to control the descent of the Rangers (Tabs S-8 thru S-13, S-16 thru S-18, V-2.14). BPJ1 and BPJ2 anchored the Gri-Gri 2 to a metal railing on the MT using a yellow Sterling 6.8-millimeter aramid hollow-block runner and a Black Diamond aluminum auto-locking carabiner (Figure 9, Tabs R-4, S-8 thru S-13, V-2.14, CC-3 thru CC-6).

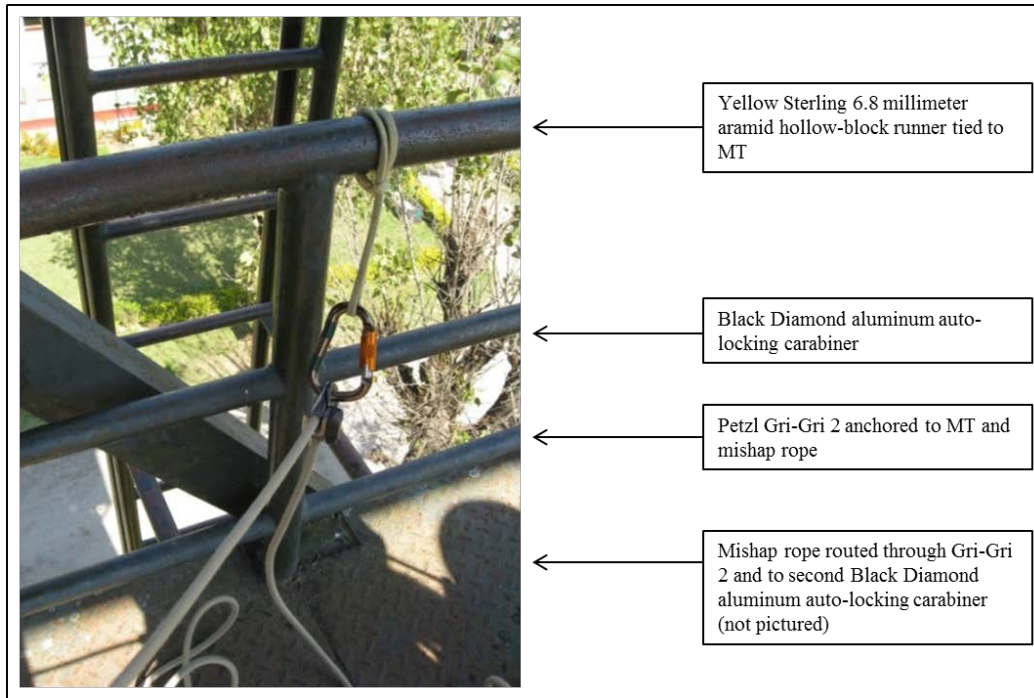


Figure 9: Gri-Gri 2 anchored to MT (Tabs S-11, CC-3 thru CC-6)

BPJ1 and BPJ2 routed the 200-foot Sterling 9.5-millimeter tactical response static rope through the Gri-Gri 2 device and through a second Black Diamond aluminum auto-locking carabiner (Figure 9, Figure 10, Tabs R-4, R-21, R-25 thru R-26, S-8 thru S-13, V-2.14, Y-11 thru Y-14, CC-3 thru CC-6). The second carabiner was secured to a horizontal metal railing on the MT, also known as the “high point,” with a water bend knot formed from an approximately 40 inch by one inch green tubular nylon strap (Figure 10, Tabs R-4, R-21, R-25 thru R-26, S-8 thru S-13, V-2.14, Y-11 thru Y-14, CC-3 thru CC-6).

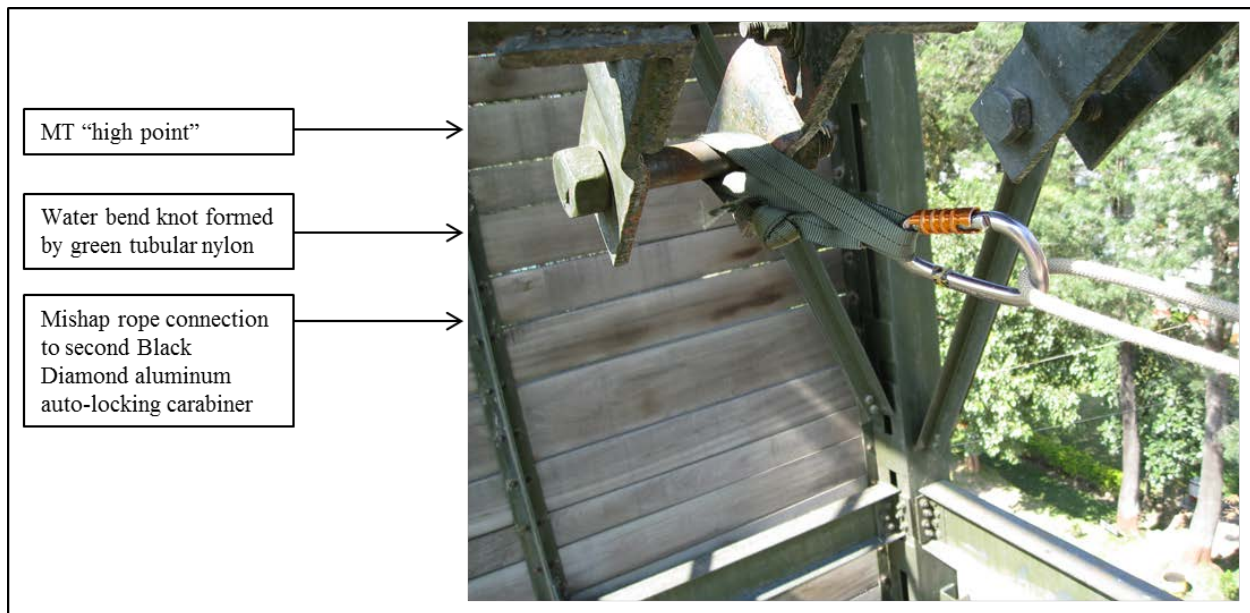


Figure 10: Rope secured to the high point on the MT (Tabs S-10, Y-19)

BPJ1 and BPJ2 tied a figure eight knot on the end of the rope on the belayer's side that was attached to the belayer utilizing an additional auto-locking carabiner (Figure 11, Tabs R-4, R-25 thru R-26, S-10, V-2.14, Y-14).

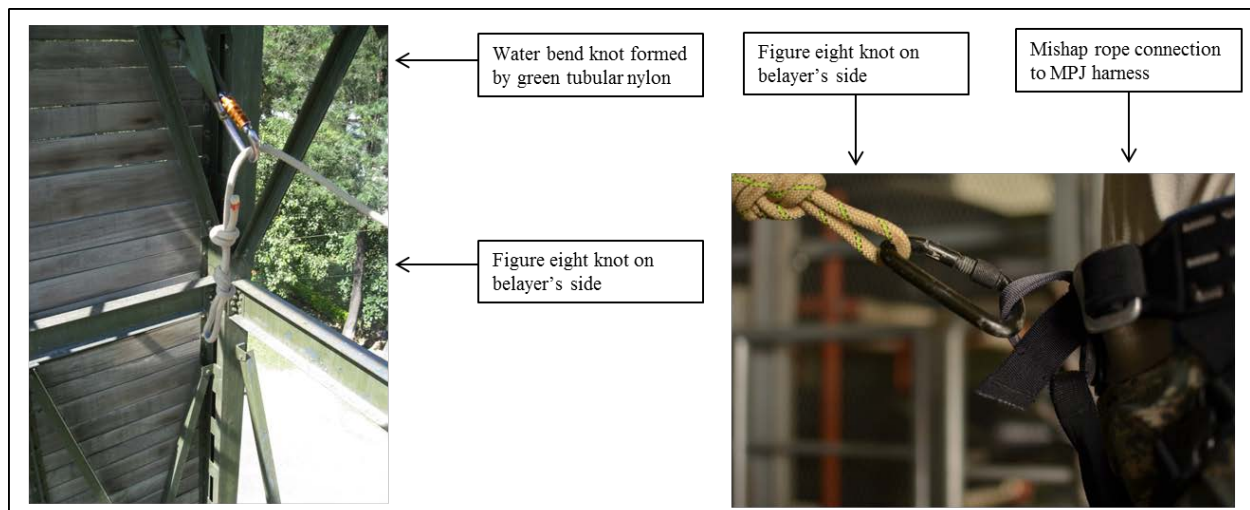


Figure 11: Figure eight knot connection to MPJ's harness (Tabs R-4, R-25 thru R-26, S-10, V-2.14, Y-14)

Additionally, BPJ1 and BPJ2 tied off a predetermined length of the rope equal to the distance from the platform to the ground (Tabs R-4, V-2.14). The tied-off portion of the rope provided a visual indication to BPJ1 and BPJ2 of how far down the belaying Ranger descended when BPJ1 and BPJ2's view was obstructed by the platform (Tabs R-4, V-2.14).

For approximately two hours prior to the mishap, BPJ1 and BPJ2 performed a "buddy belay" technique with the Rangers (Tabs R-4, R-21 V-2.13). The "buddy belay" technique taught the Rangers how to secure one person to a metal bar on the MT to serve as an anchor point while

belaying a second, descending Ranger (Tabs R-4, R-21, V-2.14). The descending Ranger connected their harness to the belay system, lowered down to their stomachs on the platform, slowly maneuvered over the side of the platform, and descended to the ground, otherwise known as “smearing” (Tabs R-4, R-21, V-2.14, V-2.16, V-3.15). The “smearing” technique utilized by the Rangers when maneuvering over the platform prevented them from swinging once fully suspended by the rope (Tabs V-2.16, V-3.15). The Ranger anchored to the MT controlled the actual speed of the descent (Tabs V-2.14, V-7.3). During this training iteration, BPJ1 attached the rope routed through the Gri-Gri 2 to the descending Ranger (Tab V-2.14). BPJ1 controlled the Gri-Gri 2, serving as an additional safety mechanism to prevent an uncontrolled descent should the anchored belaying Ranger lose control of the main rope as he belayed his teammate (Tab V-2.14).

At 1340 hours L, BPJ1 and BPJ2 completed the “buddy belay” technique training and started cleaning up the equipment on Platform B while the Rangers began to assemble on the ground near the base of the tower for their daily tea break (Tabs R-5, R-21, V-2.18, V-7.13, V-16.1, BB-27). RPJ was finalizing the training on Platform A and the remaining Blue Team members were in the gear room approximately 200 yards from the MT (Tabs R-39, V-4.5, V-7.13). MPJ climbed the ladder to Platform B wearing his personal civilian clothes, gloves, a Black Diamond half-dome helmet, and an Arc'teryx R320a seat harness with assorted carabineers and gear attached (Tabs R-5, S-19 thru S-25, V-2.8 thru V-2.9, V-2.18, V-7.4, CC-12). BPJ1 and BPJ2 continued to gather the equipment on Platform B while discussing lunch plans and the afternoon training plan with MPJ (Tabs R-5, V-2.18). However, BPJ1 and BPJ2 had not yet disassembled the Gri-Gri 2 safety line (Tab R-5).

At the same time, Ground Pararescueman (GPJ) walked from the team room to the MT to observe the training (Tabs R-39, V-4.3 thru V-4.4, V-4.8 thru V-4.9, BB-27). From Platform B, MPJ noted GPJ's presence and yelled down “they were about done,” and asked GPJ about the status of their lunch (Tabs R-39, V-4.8 thru V-4.9). After this brief conversation, GPJ walked around to the wall-side of the MT to watch RPJ's ascension training on Platform A, which blocked GPJ's view of Platform B (Tabs R-39, R-63, V-4.3 thru V-4.4).

At 1345 hours L, MPJ attached the rope from the Gri-Gri 2 safety line to his harness using a carabiner, climbed out on to the edge of Platform B, positioned himself in a slightly seated position with his feet on the edge of the platform facing Platform B and BPJ1 (Figure 12, Tabs R-5, R-21 thru R-22, V-2.19 thru V-2.22, V-7.4 thru V-7.6, Y-7, Y-14, BB-27).

MPJ engaged the camming device on the Gri-Gri 2 by applying his weight to the rope (Figure 12, Tabs R-5, R-22, V-2.19, V-7.4).

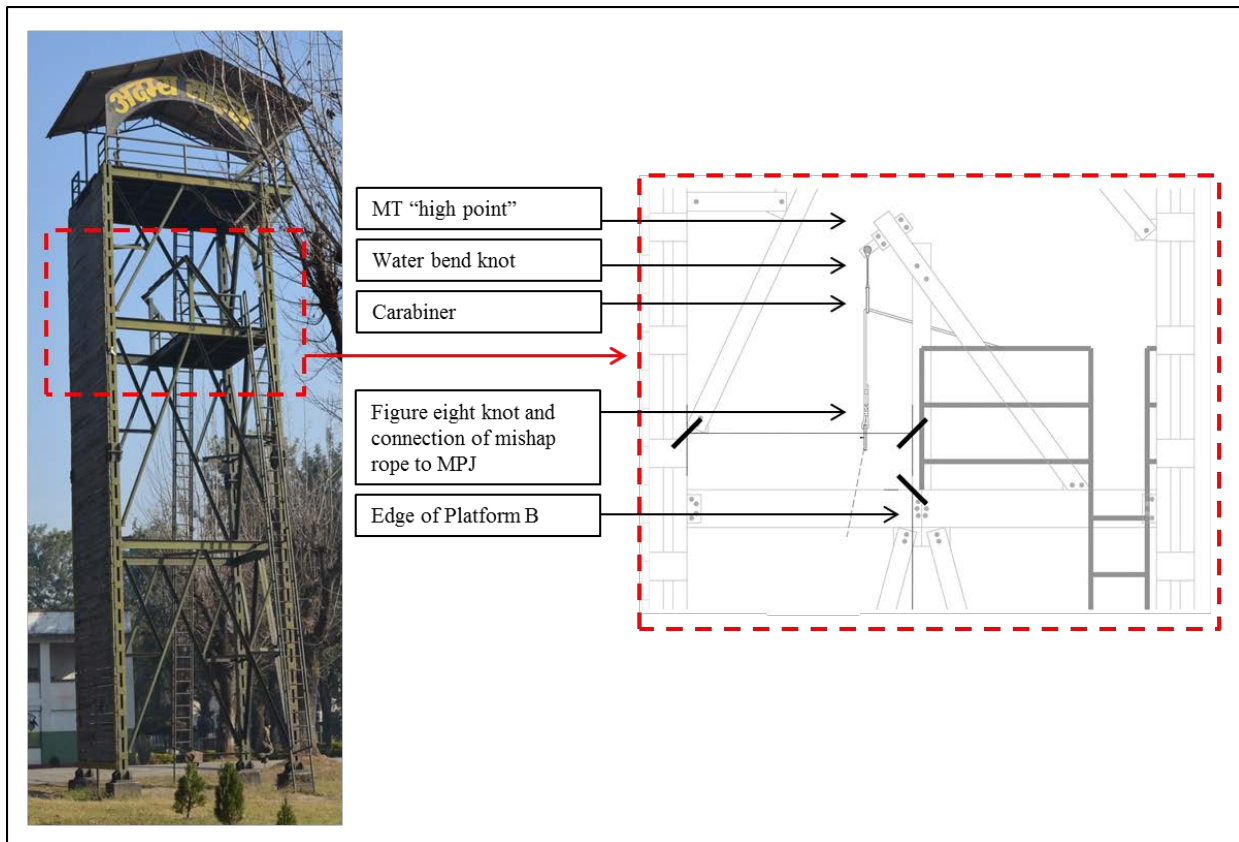


Figure 12: MPJ connection to Gri-Gri safety line on edge of Platform B (Tabs Y-7, Y-15 thru Y-16)

BPJ1 and BPJ2 did not see MPJ attach himself into the belay system until MPJ alerted BPJ1 stating “[C]ome on, come on...I want to go down fast...let’s do this” (Tabs R-5, R-22, V-2.19 thru V-2.20, V-7.4 thru V-7.5). MPJ started bouncing lightly on the rope anxious to go, but his feet did not leave the platform (Tabs R-5, R-22, V-2.20, V-7.5 thru V-7.6). BPJ1 did not utilize an official rappel checklist; however, he “glanced” over MPJ’s helmet, gloves, harness, and equipment and determined it was securely attached (Tab V-2.19). BPJ1 made eye contact with MPJ, confirmed he wanted to “go fast” meaning he wanted to descend from the platform at a higher speed, and asked if MPJ was ready for the belay (Tabs R-5, V-2.20 thru V-2.21). MPJ confirmed he was ready, to which BPJ1 replied, “Okay, here we go” (Tabs R-5, V-2.20).

BPJ1 moved into position to operate the Gri-Gri 2 (Tabs R-5, V-2.21). This position allowed BPJ1 to open the camming device on the Gri-Gri 2 for the fast descent, and concurrently allowed him to slow the rope down when MPJ had descended approximately 20 feet (Tabs R-5, V-2.20 thru V-2.21). However, this position only allowed BPJ1 to observe approximately the first 10 feet of MPJ’s descent due to Platform B’s obstruction of BPJ1’s line of sight (Tab V-2.21).

BPJ1 knew MPJ wanted a “fast belay,” but assumed MPJ would keep his feet on the edge of Platform B until MPJ cleared the platform, because BPJ1 stated that was what he would have done if he were belaying instead of MPJ (Figure 13, Tabs V-2.20 thru V-2.21, Y-3). BPJ1 also

assumed that MPJ would descend straight toward the ground (Figure 13, Tabs V-2.20 thru V-2.21, Y-3, Y-6). However, BPJ1 and MPJ did not gauge the distance from the interior edge of the platform to the interior side of wall, or discuss the plan for the fast belay prior to MPJ descending (Tab R-17).

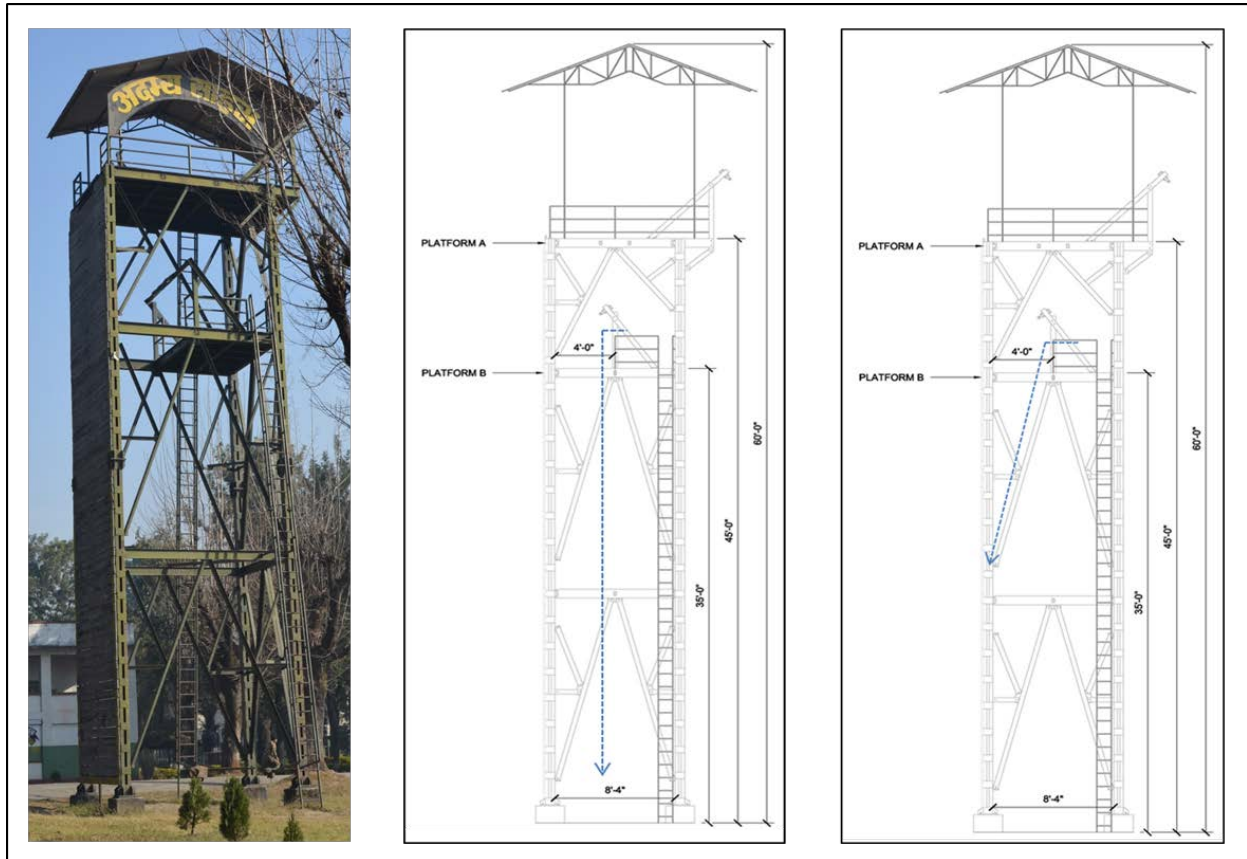


Figure 13: BPJ1 anticipated descent of MPJ (center) versus actual descent of MPJ during high angle belay (right) (Tabs V-2.20 thru V-2.21, Y-3, Y-6)

Instead, MPJ pushed off the edge of Platform B with his legs, and quickly descended on a downward angle toward the inside wall of the MT (Figure 13, Tabs R-5, R-22, V-2.21, V-7.6). The MT is eight feet wide, and Platform B extends four feet internally to the structure (Tabs Y-3, Y-15). However, MPJ's push off the edge of Platform B and the rope's fast rate of descent sent MPJ on a trajectory where he quickly covered the four foot lateral distance between Platform B and the inside wall of the MT (Tabs R-5, R-22, V-2.21, V-7.6). Following the mishap, Rangers located at the base of the tower stated MPJ impacted a metal I-beam approximately 17 feet down from Platform B and 18.5 feet from the ground (Figure 13, Figure 14, Tabs R-71, R-85, V-8.4 thru V-8.5).

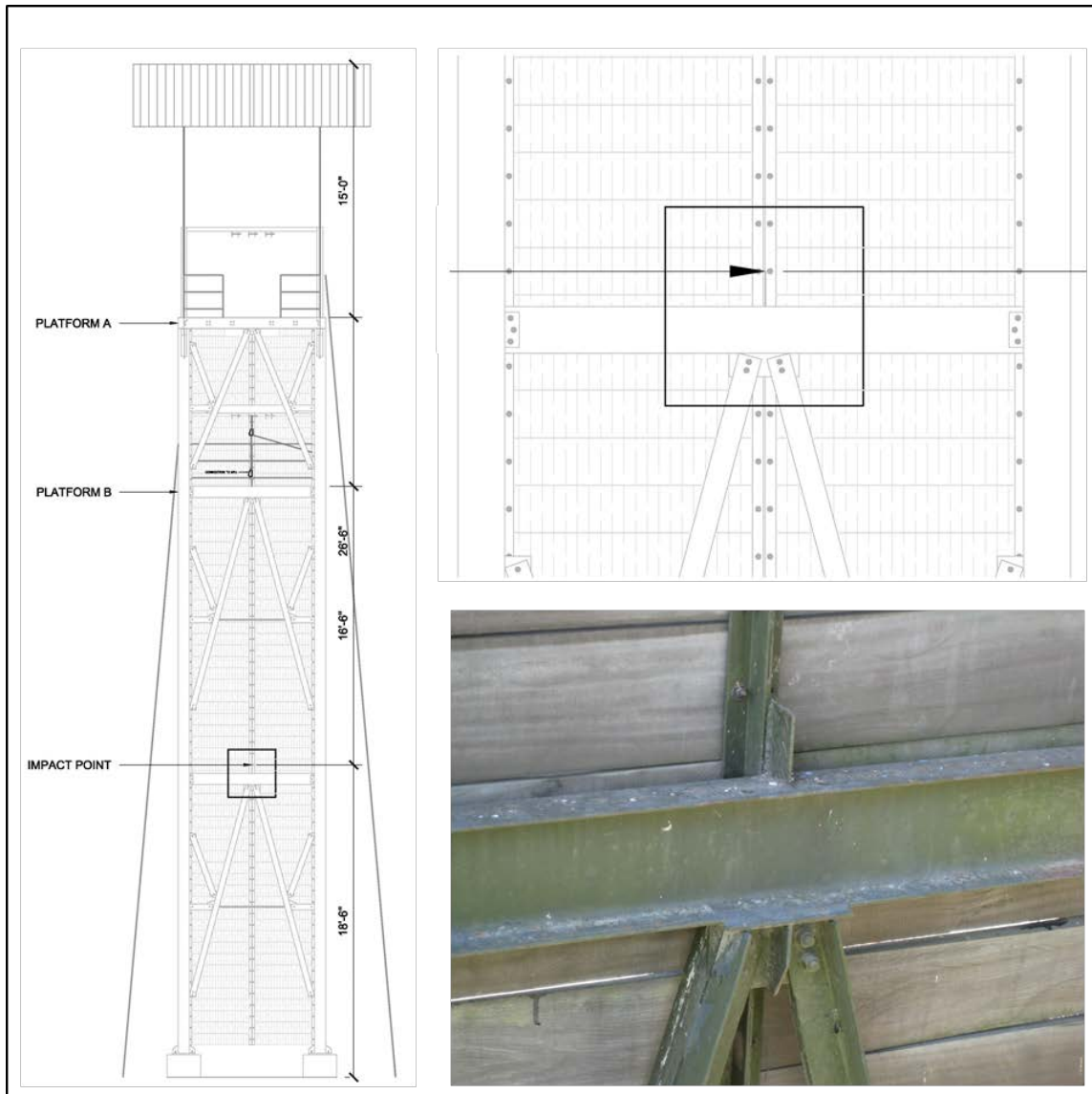


Figure 14: Detailed view of MPJ impact point on MT (Tabs R-85, S-14, Y-9)

BPJ1 did not hear the impact but started slowing MPJ's descent by closing the handle on the Gri-Gri 2, and then heard a commotion coming from the base of the MT (Tabs R-5, V-2.22, V-2.24). BPJ1 stopped MPJ's further descent by locking off the Gri-Gri 2, and looked over the edge of Platform B where he saw MPJ suspended by his harness in a head down position (Tabs R-5, V-2.22 thru V-2.23).

GPJ also noticed the Rangers at the base of the MT immediately stand up, yell, and point to the MT (Tabs R-39 thru R-40, V-4.4). GPJ ran around the left side of the Platform A training wall and saw MPJ's helmet bounce past him with the chin strap still buckled (Tabs R-40, V-4.4). GPJ yelled up to BPJ1 to lower MPJ to the ground (Tabs R-40, V-4.5). BPJ1 moved back to the Gri-Gri 2, slowly lowered MPJ to GPJ, and descended the ladder to the ground (Tabs R-5, V-2.22 thru V-2.23, V-4.5).

On top of Platform A, RPJ heard the vibration of an impact through the metal railings on the MT, which caused him to look down under the right side of Platform A where he saw MPJ hanging unnaturally and appeared to have a significant injury (Tabs R-63, V-3.17). RPJ immediately rappelled down the wall-side of the MT and ran around to where GPJ and BPJ1 were assessing MPJ (Tabs R-63, V-3.17).

GPJ noted in his initial assessment that MPJ was unconscious but had a strong pulse, and noted a rise and fall of MPJ's chest (Tabs R-40, V-4.5). BPJ1 and RPJ arrived, assessed MPJ's condition, and observed that MPJ was bleeding (Tabs R-5, V-2.25, V-3.17 thru V-3.18, V-4.5). GPJ and BPJ1 applied a bandage around MPJ's head for a suspected head laceration while RPJ maintained stability of MPJ's neck (Tabs R-40, V-2.25, V-3.17 thru V-3.18, V-4.5). At the same time, a Ranger ran to the team room to notify Flight Surgeon One (FS1) of the incident (Tabs R-40, V-4.5, V-9.2). FS1, BTOIC, BTNCOIC, Intelligence Officer (IO), Combat Controller (CCT), and Aircrew Flight Equipment (AFE) retrieved FS1's medical bag, a stretcher, and other equipment and ran the 200 yards to the MT where BPJ1, RPJ, and GPJ continued to treat MPJ (Tabs R-77, R-80, R-83, V-5.6, V-6.8, V-7.13). When FS1 arrived, he supervised BPJ1 and GPJ as they exercised a military medical protocol identified as tactical combat casualty care, which focused first on controlling bleeding followed by airway management (Tabs V-2.25, AA-89 thru AA-97). Once BPJ1 and GPJ secured an airway for MPJ, BPJ1 provided breaths for MPJ with a manual bag ventilator (Tab V-2.26). RPJ also applied a cervical collar to immobilize MPJ's neck, and prepared the stretcher to transport MPJ (Tabs R-63 thru R-64, V-3.20, V-12.2).

While Blue Team members evaluated and treated MPJ and prepared him for transport, BTOIC initiated the Teak Nail emergency medical plan (Tabs R-6, V-2.29, V-3.20, V-3.22 thru V-3.23, V-6.9, V-7.10, V-9.2 thru V-9.3, V-13.2). The U.S. Embassy in Nepal directed BTOIC to take MPJ to the Birendra Army Hospital adjacent to the Chaunni Military Barracks (Tab V-6.9). FS1, BPJ1, and RPJ utilized the open cargo space in the back of the van to treat MPJ en route (Tabs R-6, R-55, V-2.29, V-3.23 thru V-3.24, V-5.11 thru V-5.12).

At 1415 hours L, FS1, BPJ1, GPJ, and RPJ carried MPJ into the emergency room at Birendra Army Hospital and attempted to find the emergency physicians (Tabs V-5.11 thru V-5.12, V-17.1, BB-27). FS1 began directing additional care with the assistance of RPJ when personnel at the hospital did not immediately present themselves as the physician in charge (Tabs V-3.25, V-4.7, V-5.11 thru V-5.12). GPJ retrieved additional medical supplies from the van for FS1's use, and then escorted BPJ1 away from the emergency room (Tab V-4.7). Medical staff from the hospital appeared and provided additional equipment and support to FS1 (Tab V-17.1). However, the facility did not have trauma equipment or personnel available equivalent to a trauma hospital in the U.S. to include an operational computed tomography (CT) scanner or an in-resident neurosurgeon (Tabs V-2.32, V-5.12, V-5.14, V-5.19). At approximately 1600 hours L, a neurosurgeon who traveled from Grande International Hospital evaluated MPJ, at which point FS1 determined MPJ should be transferred to receive a higher level of care (Tabs V-5.14, V-5.17, V-17.1, BB-27).

FS1 departed with MPJ in a Birendra Army Hospital ambulance at approximately 1700 hours L, and arrived at Grande International Hospital between 1745 hours L and 1825 hours L (Tabs V-5.18, V-17.2, V-18.1, BB-27). During transport, Grande International Hospital mobilized



medical personnel to receive MPJ upon his arrival (Tab V-18.5). MPJ remained at Grande International Hospital from 21 October 2014 through 24 October 2014 and was evaluated and/or treated, in part, by a team of physicians from Emergency Medicine, Internal Medicine, Neurosurgery, Radiology, Pulmonology, and Intensive Care (Tabs V-18.1 thru V-18.6, W-4 thru W-5). Grande International Hospital also performed two procedures to monitor and alleviate complications resulting from MPJ's multiple head injuries (Tabs V-1.7, V-18.1 thru V-18.6). On 24 October 2014, MPJ, Mishap Pararescueman Spouse (MPJS), and Flight Surgeon Two (FS2) were flown on a commercial medical evacuation aircraft from Nepal to Bangkok, Thailand, and MPJ was admitted to Bumrungrad International Hospital to receive a higher echelon of care not available in Nepal (Tabs O-11 thru O-12, V-10.7, V-15.9). A team of physicians at Bumrungrad International Hospital, including Critical Care and Pulmonology, Radiology, Infectious Disease, Neurology, and Neurosurgery, evaluated and/or treated MPJ (Tab W-5). However, MPJ's condition continued to deteriorate (Tabs V-15.12 thru V-15.17, Z-39 thru Z-43). On 30 October 2014, MPJ was removed from life support and subsequently died (Tabs V-15.15 thru V-15.17, Z-39 thru Z-43).

## **5. MAINTENANCE**

### **a. Forms Documentation**

There were no available maintenance forms for review. Specifically, the Rangers do not record the maintenance completed on the MT (Tab CC-3). Additionally, MPJ was personally responsible for inspecting and maintaining his government issued gear to include his helmet and harness (Tabs CC-5 thru CC-6). MPJ was not required to complete any specific maintenance actions on the government issued helmet (Tabs V-12.3 thru V-12.4). Each rope was secured in the Blue Team equipment locker and inspected prior to and upon completion of every training event (Tab V-9.3 thru V-9.4).

### **b. Inspections**

The Rangers conducted an inspection on the MT once a month, as well as prior to the actual use of the MT for training (Tabs V-16.2, CC-3). The MPJ was responsible for inspecting his government issued helmet and harness (Tabs CC-5 thru CC-6). BPJ1 inspected the mishap rope prior to commencement of the high angle belay training (Tab V-2.12).

### **c. Maintenance Procedures**

Maintenance actions on the MT occurred as needed following the monthly inspection (Tabs V-16.2, CC-3). Additionally, the Rangers painted the MT once a year (Tab CC-3). MPJ was not required to complete any specific maintenance actions on the government issued helmet (Tabs V-12.3 thru V-12.4). However, the MPJ was able to request replacement equipment if his issued gear failed to operate correctly (Tabs V-12.3, CC-6). The mishap helmet was certified and was manufactured in May of 2007 (Tab CC-45). This manufacturing date, according to the manufacturer's instructions, puts it outside of the estimate lifespan of the helmet at the time of the mishap (Tab CC-45).

#### **d. Maintenance Personnel and Supervision**

The Rangers conducted the maintenance of the MT as needed (Tabs V-16.2, CC-3). Blue Team maintained the mishap rope in the equipment locker under the direction and control of the BTOIC (Tab V-9.3 thru V-9.4).

#### **e. Unscheduled Maintenance**

There is no documentation of unscheduled maintenance on the MT, the belay equipment or the mishap rope.

### **6. EQUIPMENT, VEHICLES, FACILITIES, AND SYSTEMS**

#### **a. Mishap Tower (MT)**

On 19 December 2014, the Ground Accident Investigation Board (GAIB) visited the Chaunni Military Barracks in Kathmandu, Nepal, to evaluate the mishap tower (Tab CC-3). PJA, a Special Tactics PJ, Static Line Jumpmaster and Instructor PJ trained in assessing and evaluating equipment, conducted the evaluation of the MT (Tab CC-3). PJA evaluated the following: (1) the overall condition of the tower; (2) the foundation of the tower; (3) the construction, safety and suitability of the tower; (4) accessibility through two ladders and the conditions of the ladders, steps and railings; and (5) potential anchor points, high points that aid in edge transitions, platforms and the fall lines (Tab CC-3). There was no evidence of any structural issues or concerns with the mishap tower (Tab CC-3).

#### **b. Climbing Hardware**

##### **(1) Belay Device**

The mishap belay device was a Petzl Gri-Gri 2, serial number 113F12FC7759, made of aluminum side plates, stainless steel cam and friction plates, and a reinforced nylon handle (Tab CC-4, CC-13 thru CC-16). The Gri-Gri 2 included engraved diagrams on the device demonstrating proper rope installation (Figure 15, Tabs CC-9, CC-15). PJA evaluated the Gri-Gri 2 in accordance with published Petzl Gri-Gri 2 procedures to evaluate: (1) the condition of the fixed and moving sidepieces; (2) the condition of the friction components; (3) the condition of the handle; (4) the condition of the locking components; (5) the condition of the black protective piece; (6) the effectiveness of the return spring of the moving pulley/handle assembly; (7) the effectiveness of the return spring of the handle; and (8) the effectiveness of the opening and closing of the moving sidepiece (Tabs CC-4 thru CC-5, CC-7 thru CC-11).

Upon inspection, the Gri-Gri 2 had minor surface scraps and dirt, but minimal wear (Tabs S-16 thru S-18, CC-4 thru CC-5). There was no deformation, crack, or traces of wear or corrosion (Tabs S-16 thru S-18, CC-4 thru CC-5). The diagram instructions were clearly visible on the outside and inside of the Gri-Gri 2 (Tab CC-9).

A functional test of the belay device utilizing the mishap equipment was conducted as follows:

i. PJA utilized a solid metal door as an anchor point by looping a 6.8 millimeter thick hollow block runner to each side of the door handle (Figure 15 - Step 1, Tabs CC-4, CC-7).

ii. PJA attached a Black Diamond aluminum auto-locking carabiner to the 6.8 millimeter thick hollow block runner (Figure 15 - Step 2, Tabs CC-4, CC-7).

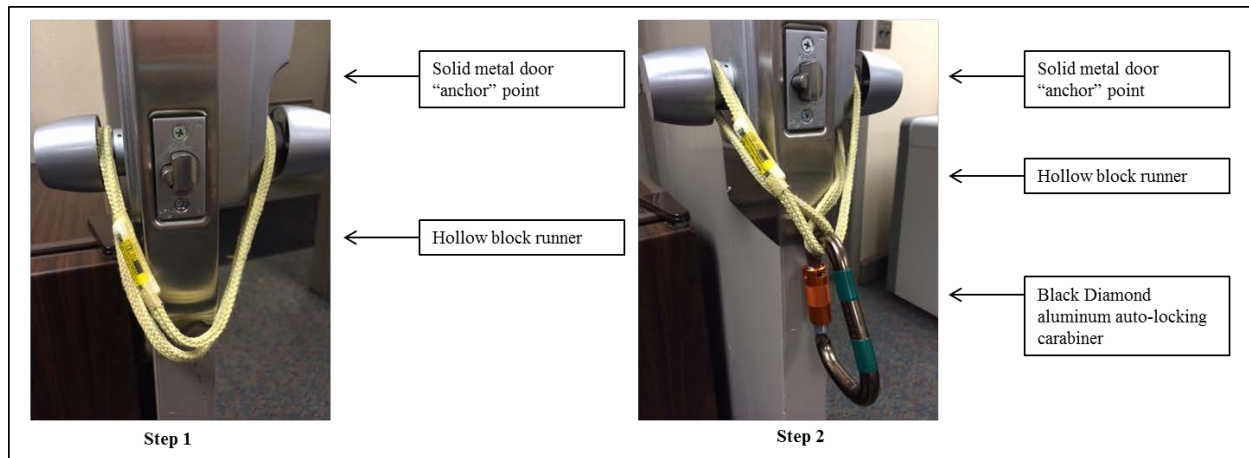


Figure 15: Petzl Gri-Gri 2 evaluation steps 1-2 (Tabs CC-4, CC-7)

iii. Next, the parameters of the Gri-Gri 2 were evaluated to determine the appropriate size of the rope (Figure 16 - Step 3, Tabs CC-4, CC-8). The mishap Gri-Gri 2 was designed for 8.9 millimeter to 11 millimeter dynamic ropes (Figure 16 - Step 3, Tabs CC-4, CC-8). The mishap rope was a 200 foot, 9.5 millimeter Sterling tactical response aramid/nylon rope (Figure 16 - Step 4, Tabs CC-4, CC-8). The mishap rope was within the Gri-Gri 2's parameters of use (Figure 16, Tabs CC-4, CC-8).



Figure 16: Petzl Gri-Gri 2 evaluation steps 3-4 (Tabs CC-4, CC-8)

iv. The mishap rope was routed through the Gri-Gri 2 following the directions etched in the device panels, and then properly closed (Figure 17 - Step 5 thru Step 6, Tabs CC-4,

CC-9). An improperly routed rope would immediately cause the rope to slide through the Gri-Gri 2 without friction when weight was applied (Tab CC-4).

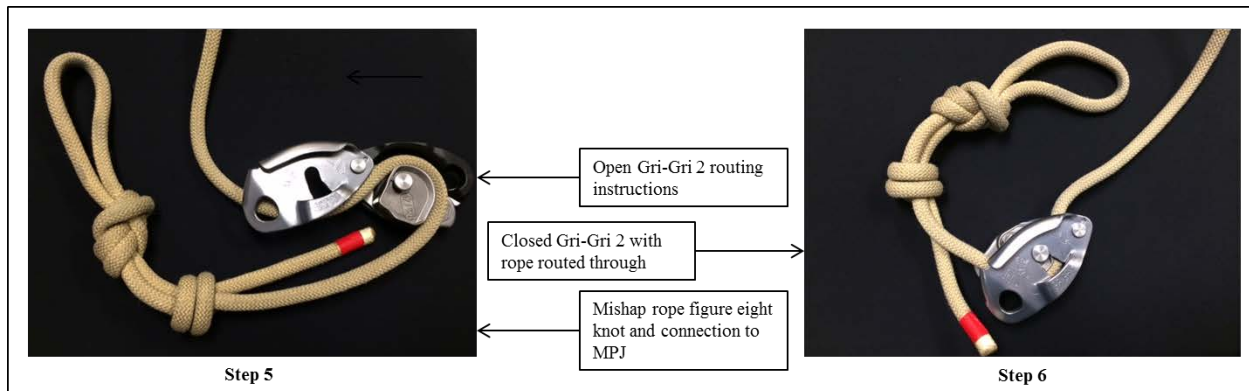


Figure 17: Petzl Gri-Gri 2 evaluation steps 5-6 (Tabs CC-4, CC-9)

v. The Black Diamond aluminum auto-locking carabiner was run through the Gri-Gri 2 device ensuring the orange auto-locking gate on the carabiner was secure (Figure 18 - Step 7, Tabs CC-4, CC-10).

vi. Pressure was directly applied to the Gri-Gri 2 through a swift pull on the climber side of the rope engaging the camming action subsequently locking the rope (Figure 18 - Step 8, Tabs CC-4, CC-10). This is also known as “weighting” the device (Tabs R-5, R-22, V-2.19, V-8.4, CC-4). While the rope was able to freely move with minimal pull on the climber side of the rope, a direct hard pull immediately engaged the camming action (Figure 18 - Step 8, Tabs CC-4, CC-10).

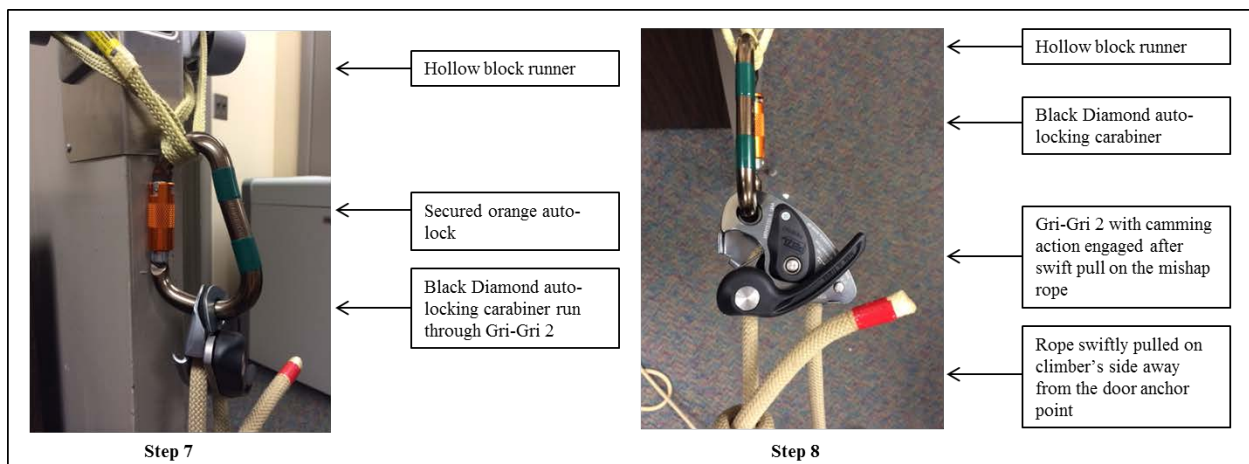


Figure 18: Petzl Gri-Gri 2 evaluation steps 7-8 (Tabs CC-4, CC-10)

vii. After the Gri-Gri 2 was weighted, the handle was maneuvered to release tension off the rope allowing the rope to travel through the Gri-Gri 2 (Figure 19 - Step 9, Tabs

CC-5, CC-11). The camming device reengaged as soon as the handle was released (Figure 19 - Step 10, Tabs CC-5, CC-11).

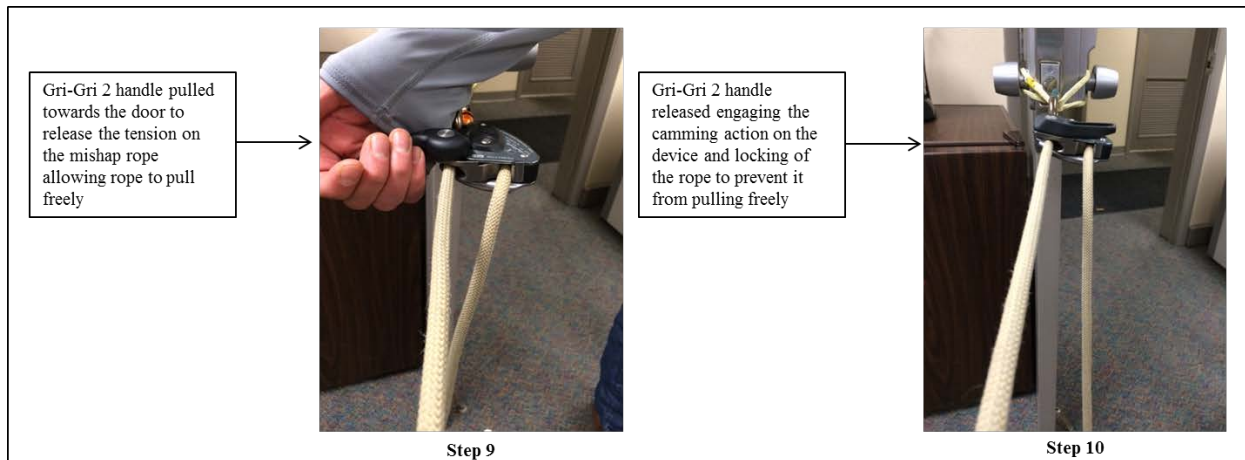


Figure 19: Petzl Gri-Gri 2 evaluation steps 9-10 (Tabs CC-5, CC-11)

The Gri-Gri 2 appeared to be in good working condition, and there is no evidence to indicate it failed to function properly on the day of the mishap (Tabs CC-4 thru CC-5, CC-7 thru CC-11).

## (2) Carabineers

On 21 October 2014, BPJ1 and BPJ2 used a Black Diamond aluminum auto-locking carabiner to secure the Gri-Gri 2 to the anchor point on the MT (Figure 9, Tabs R-4, S-8 thru S-13, V-2.14, CC-3 thru CC-6). Additionally, BPJ1 and BPJ2 used a Petzl Williams tri-lock carabiner and a loop of one-inch tubular nylon tied in a water bend knot to route the mishap rope to the high point on the horizontal crossbeam (Figure 10, Tabs R-4, R-21, S-8 thru S-13, V-2.14, Y-11 thru Y-14, CC-3 thru CC-6).

It is unclear which carabiner MPJ used to secure himself to the high angle belay system as three Petzl attache carabineers and three Black Diamond magna-lock carabineers were secured on MPJ's harness following the mishap (Tabs CC-12). PJA evaluated the carabineers for the open and closed gate-strength, excessive wear, deformation, nicks or deep scratches, and corrosion in accordance with published Black Diamond and Petzl inspection guidance (Tabs CC-5 thru CC-6, CC-23, CC-25 thru CC-28). The carabineers appeared to be in good working condition, and there is no evidence to indicate they failed to function properly on the day of the mishap (Tab CC-5 thru CC-6).

### c. Climbing Rope

The mishap rope was a 200 foot 9.5 millimeter Sterling tactical response aramid/nylon static rope, batch number R18-081412JNG (Tab CC-5). The original figure eight and safety knot used during the mishap were still intact without any vulnerability (Tabs CC-5, CC-9). PJA evaluated the rope and checked to ensure there were no cuts, chafed areas, broken fibers, soft or hard spots, glazed surfaces, discolorations, or diameter variations (Tab CC-5). Additionally, the rope was held tightly in one hand and pulled through in increments of 18 inches, putting a slight tension on the rope (Tab CC-5). As the rope was pulled, the rope was evaluated for soft spots or variations

in diameter (Tab CC-5). Furthermore, the rope was twisted to visually inspect both sides (Tab CC-5). This process was continued for the length of the rope. The rope appeared to be in good working condition, and there is no evidence to indicate it failed to function properly on the day of mishap (Tab CC-5).

#### d. Helmet

The mishap helmet was an adjustable Black Diamond Half Dome helmet, serial number A0568381 (Tabs CC-6, CC-33, CC-45). The GAIB conducted a visual inspection of the mishap helmet (Figure 20, Tab CC-6). The helmet had a 1 ½ inch in length mark and slight compression on the back of the helmet (Figure 20, Tab CC-6).

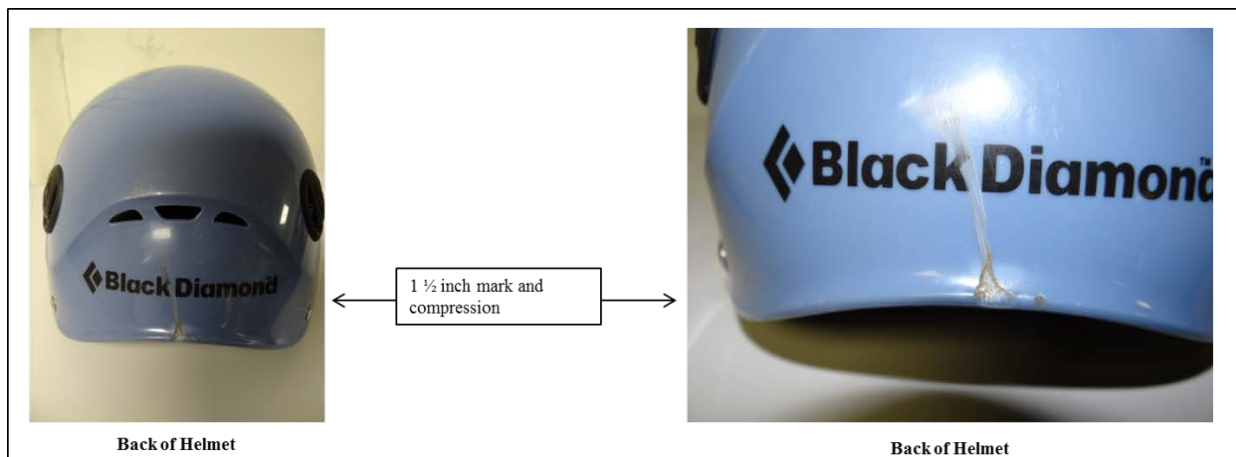


Figure 20: Back view of mishap helmet (Tabs S-20 thru S-21, CC-6)

Additionally, the size adjuster was damaged and non-functional with a piece of the size adjuster missing (Figure 21, Tab CC-6). However, IO used the mishap helmet prior to the mishap and did not note any missing pieces or structural issues with the helmet (Tab V-8.3).

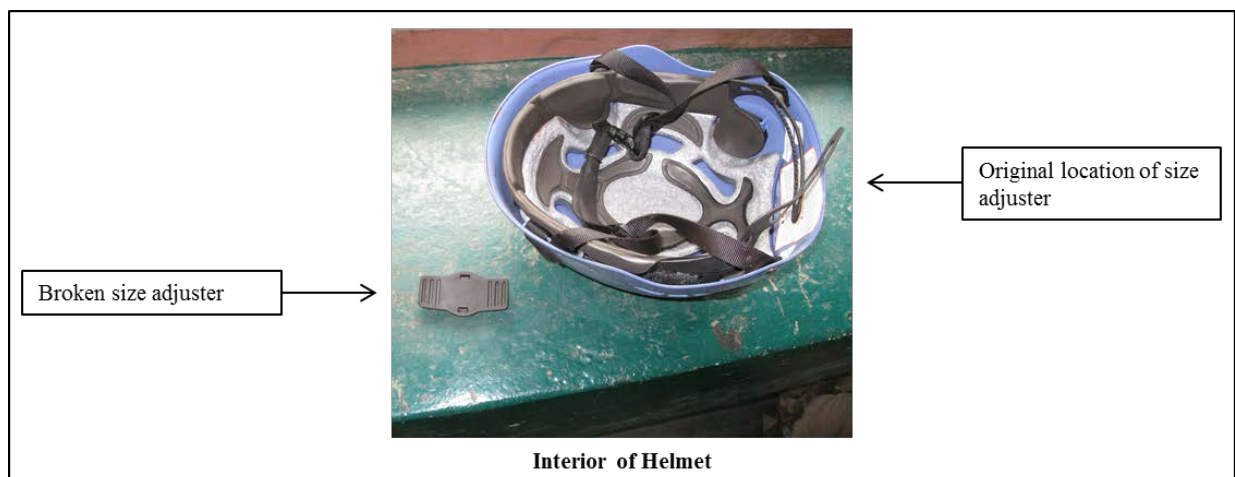


Figure 21: Interior view of mishap helmet (Tabs S-25, CC-6)

The chinstrap buckle remained connected after the mishap and showed no obvious signs of wear and tear (Tab CC-6). There was no other visible damage to the helmet (Tab CC-6).

On 18 February 2015, Black Diamond Equipment Ltd., evaluated the mishap helmet and concluded the following (Tabs CC-33 thru CC-45, CC-47 thru CC-49, CC-51 thru CC-89, CC-91 thru CC-97, CC-99). Upon physical examination, the helmet appeared to have been manufactured within specifications and passed a typical non-destructive finished goods inspection process (Tab CC-34). One component of the adjustment mechanism remained missing after the mishap, and therefore not included with the helmet (Tabs S-25, CC-34). The certification documents and associated test reports for this generation of the Black Diamond Half Dome Helmet were also included in the final evaluation report (Tab CC-34).

### **(1) Visual Inspection and Comparative Baseline Analysis of the Internal Suspension Harness**

A visual inspection and comparative baseline analysis of the internal suspension harness determined the following: (1) the suspension harness was affixed to the acrylonitrile butadiene styrene (ABS) shell securely; (2) all webbing of the suspension harness appeared to be in good condition; (3) the Velcro top pads showed slight curling likely due to exposure to heat during use or storage; (4) the adjustment ring was not attached to the rear suspension fit band; (5) the internal gear mechanism on the adjustment ring was not present with the adjustment ring; and (6) the teeth on the rear suspension fit band appeared to be intact (Figure 22, Tab CC-36).



Figure 22: Visual inspection and comparative baseline analysis of the internal suspension harness on mishap helmet (Tab CC-36 thru CC-37)

### **(2) Visual Inspection of the Chin Strap Buckle**

A visual inspection of the chin strap buckle determined the following: (1) the chin strap buckle showed no signs of wear and was in working order; (2) physically pulling on the chin strap buckle showed it continued to maintain a solid connection; (3) the elastic keeper strap was still

intact and functional; and (4) the chin strap adjustment sliders were still intact and functional (Figure 23, Tab CC-38).



Figure 23: Visual inspection of the chin strap buckle on mishap helmet (Tab CC-38)

### (3) Visual Inspection and Dimensional Inspection of the EPS Liner

A visual inspection and dimensional inspection of the EPS liner determined the following: (1) there were no signs of significant cracking; (2) there was a slight denting and deformation in the front area of the helmet; and (3) the EPS liner remains well adhered to the ABS shell (Tab CC-39). Black Diamond was unable to obtain accurate dimensional checks of the EPS liner without disassembling the EPS liner from the shell (Tab CC-39). However, Black Diamond compared the mishap helmet to a stock helmet and determined that the EPS liner appeared to be in standards and within specifications (Figure 24, Tab CC-39).



Figure 24: Visual inspection and dimensional inspection of the EPS liner on mishap helmet (Tab CC-39)



#### (4) Visual Inspection and Dimensional Inspection of the ABS Shell

A visual inspection and dimensional inspection of the ABS shell determined the following: (1) overall the ABS shell was in good condition; (2) there was slight “crazing” where the fit band attached to the shell on the front right; (3) there was slight “crazing” near the rear right rivet; (4) there was slight “crazing” on the rear of the helmet left of center; and (5) there was an obvious impact point in the center back on the lower edge of the helmet (Figure 25, Tab CC-40 thru CC-41).

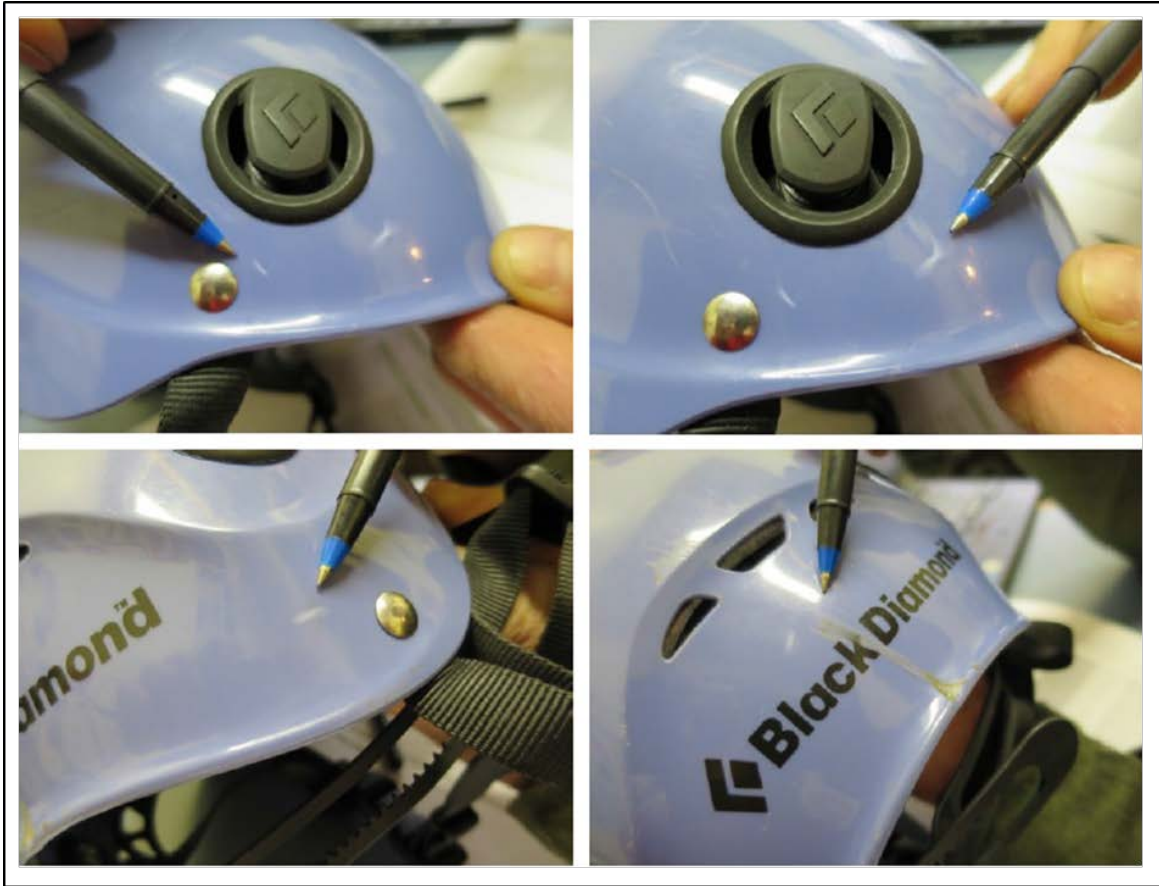


Figure 25: Visual inspection and dimensional inspection of the ABS shell on mishap helmet (Tab CC-40 thru CC-41)

Black Diamond was unable to obtain an accurate dimensional check on the mishap helmet without disassembling the helmet and potentially destructively cutting it (Tab CC-40). However, Black Diamond compared the mishap helmet to stock helmets and determined that the ABS shell appeared to be of the appropriate outside dimension and thickness (Figure 26, Tabs CC-40, CC-42). Additionally, thickness tests of the ABS shell taken at several points along the mishap helmet appear to be similar to a comparative stock helmet (Figure 26, Tabs CC-40, CC-42). Finally, Black Diamond determined that when the mishap helmet was compared to a stock Half

Dome helmet of the same generation, it appeared the mishap helmet was dimensionally comparable (Figure 26, Tabs CC-40, CC-42).



Figure 26: Visual inspection and dimensional inspection of the ABS shell on mishap helmet (Tabs CC-40, CC-42)

#### **(5) Rivet, Glue Bond, Headlamp Clip Inspection and Comparison to Baseline**

An inspection and comparison to a baseline was completed on the rivets, glue bond, and headlamp and determined the following: (1) all four attachment rivets were intact; (2) there was

slight corrosion on the inside of all four rivets; and (3) all headlamp clips were intact and functional (Figure 27, Figure 28, Tab CC-43 thru CC-44).



Figure 27: Rivet inspection and comparison to baseline on mishap helmet (Tab CC-43)



Figure 28: Headlamp inspection and comparison to baseline on mishap helmet (Tab CC-43 thru CC-44)

In general, upon completion of a non-destructive examination, the mishap helmet appeared to have been manufactured within specifications and according to manufacturing standards (Tab CC-45). The mishap helmet was certified and was manufactured in May of 2007 (Tab CC-45). This manufacturing date, according to the manufacturer's instructions, puts it outside of the estimate lifespan of the helmet at the time of the mishap (Tab CC-45).

### e. Harness

The mishap harness was an Arc'teryx R320a seat harness, batch number 08110617272L-13 (Figure 29, Tabs CC-5, CC-12). The construction of the harness dispersed the weight over the entire surface area of the harness to support and cushion the body without the need for heavy padding (Figure 29, Tabs CC-5, CC-12). The leg loops were adjustable and removable (Figure 29, Tabs CC-5, CC-12). Furthermore, the harness contained a double-passed buckle that ensure the waist belt was passed over and back through the main buckle a second time (Figure 29, Tabs CC-5, CC-12).

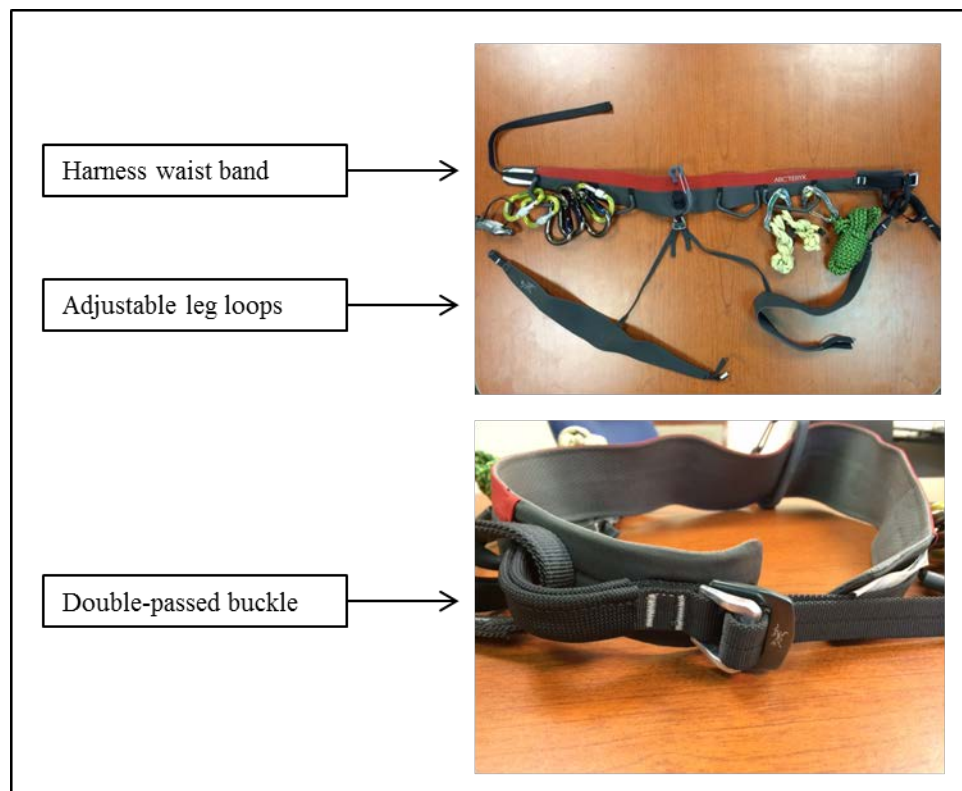


Figure 29: Arc'teryx R320a mishap seat harness (Tab CC-12)

Other than the post-mishap cutting of the leg loops, the harness appeared to be in working condition, and there was no evidence to indicate it failed to operate properly on the date of this mishap (Tabs CC-5, CC-12).

### f. Birendra Army Hospital, Kathmandu, Nepal

The hospital was an older two-story brick building that showed obvious signs of heavy use (Tabs Y-21 thru Y-22, CC-29). The area immediately surrounding the hospital was muddy, heavily trafficked, and strewn with litter and remnants of what appeared to be materials from various stages of construction efforts (Tabs Y-21 thru Y-22, CC-29). The lobby was heavily trafficked by various personnel including patients and hospital workers (Tabs Y-21 thru Y-22, CC-29). The floors were free of debris, but dirty and dusty (Tabs Y-21 thru Y-22, CC-29). The emergency room was a narrow room off the main entrance and lobby area (Tabs Y-21 thru Y-22, CC-29 thru CC-30). The room was crowded with a number of open beds and various medical

personnel (Tabs Y-21 thru Y-22, CC-30). The room had monitors, a machine for suction, and an oxygen canister in place; however, the equipment appeared dated (Tabs Y-21 thru Y-22, CC-30).

**g. Grande International Hospital, Kathmandu, Nepal**

The area immediately external to the hospital appeared relatively new, neat, and organized (Tabs Y-23, CC-30). The GAIB toured areas relevant to MPJ's care to include the emergency room, the ICU, the CT Scanner/Radiology, and the Laboratory (Tabs Y-24 thru Y-26, CC-30). The areas allocated for patient care were generally clean, organized, and well illuminated (Tabs Y-24 thru Y-26, CC-30). The equipment appeared mildly dated, although not obsolete, and otherwise well-maintained (Tabs Y-24 thru Y-26, CC-30).

The emergency room had a designated ambulance bay with a reception/triage area, and separate areas for patient care based upon the type and the severity of the illness (Tab CC-30). The emergency room was strategically placed adjacent to the CT Scanner (Tab CC-30). There were measures in place for radiation mitigation in the CT Scanner/Radiology area, and staff was employing appropriate precautions (Tab CC-30). Radiologists used modern computers to examine results of radiology studies (Tab CC-30). The ICU had individual rooms surrounding a central nurses' station, each with monitors for patients and sinks for hand washing (Tabs Y-24 thru Y-26, CC-30).

**h. Bumrungrad International Hospital, Bangkok, Thailand**

The GAIB did not tour the Bumrungrad International Hospital (Tab CC-30).

**7. ENVIRONMENTAL CONDITIONS**

**a. Forecast Weather**

Not applicable.

**b. Observed Weather**

On 21 October 2014, the weather in Kathmandu, Nepal was as follows: surface winds were variable with wind speeds between 4-11 miles per hour; visibility was generally unrestricted with isolated rain between 1535 hours L and 1735 hours L; temperatures ranged throughout the day from 60 degrees Fahrenheit to 75 degrees Fahrenheit (Tabs F-2, Z-47 thru Z-48).

**c. Other Environmental Conditions**

Not applicable.

**d. Restrictions, Warnings, and Procedures**

Not applicable.

## 8. PERSONNEL QUALIFICATIONS

### a. Pararescuemen (PJs) Records Review

Blue Team members MPJ, BPJ1, BPJ2, GPJ, and RPJ's training and qualifications were reviewed in accordance with AFI 10-3502, *Pararescue and Combat Rescue Officer Training*, Volume 1, 16 February 2011; Air Force Special Operations Command Instruction (AFSOIC) 48-101, *Aeromedical Special Operations*, 30 November 2012 (Incorporating Change 1, 3 November 2014; Certified Current on 5 September 2014); and the Air Force Specialty Code 1T2X1: *Pararescue Specialty Career Field Education and Training Plan (CFETP)*, Parts I and II, 15 May 2008 (hereinafter CFETP) (Tabs G-2 thru G-14, T-25 thru T-28, AA-3 thru AA-18, AA-23 thru AA-37, AA-39 thru AA-53).

#### (1) Mishap Pararescueman (MPJ)

MPJ entered the Air Force in 2003 (Tab T-3). He was a Pararescue Craftsman assigned to the 320 STS, 353 SOG, Kadena AB, Japan (Tabs T-3, BB-7 thru BB-9). MPJ completed the arduous PJ pipeline and graduated the PJ Apprentice course in 2006 (Tab T-3). He went on to assignments at the 41st Rescue Squadron, Moody AFB, Georgia; the 24th Special Tactics Squadron, Pope Army Air Field, North Carolina; and the 48 RQS, Davis-Monthan AFB, Arizona before moving to Kadena AB Japan in May 2014 (Tab T-3). MPJ was also master static-line and military free-fall parachutist, a combat dive supervisor, and a combat search and rescue (CSAR) Team Leader (Tab G-9 thru G-14).

MPJ deployed multiple times to Afghanistan and Iraq earning multiple awards and decorations including: one Meritorious Service Medal; seven Air Medals; one Aerial Achievement Medal; two Air Force Commendation Medals; one Air Force Achievement Medal; and one Army Achievement Medal (Tabs T-3, T-5 thru T-17). During his combat deployments, MPJ often executed high-risk missions into adverse terrain and territory contested by determined enemy and with friendly troops taking enemy fire (Tab 19 thru T-20). On one occasion, MPJ was a key member of a team that rescued three patients critically injured by blast and gunshot wounds (Tab T-19). He was subsequently lauded by the treating physicians upon transferring the injured personnel to higher medical care (Tab T-19). On a separate mission, MPJ executed a dangerous 50-foot hoist operation from a hovering helicopter onto the deck of a British Naval ship to save a Sailor (Tab T-19). MPJ also garnered numerous accolades including the 2012 48 RQS PJ of the Year, Non-Commissioned Officer category, and the coveted Leadership Award at the Airman Leadership School in 2009 (Tab T-19).

MPJ completed his Community College of the Air Force Associates Degree in Personnel Recovery, and posthumously attained a Bachelor's Degree from Trident University in Health Management (Tabs T-3, V-1.16) MPJ also displayed great initiative by completing the Non-Commissioned Officer Academy in 2014 (Tab T-3).

According to his friends and family, MPJ loved all outdoor activities including boating, dirt bikes, sand rails, camping, and hiking but most of all was passionate about skydiving (Tabs V-1.7 thru V-1.8 , DD-5). His teammates described MPJ as dedicated, professional, and passionate not only about being a PJ, but also extremely committed to MPJS (Tabs V-2.33 thru V-2.35, V-

3.30 thru V-3.31, V-9.5). Specifically, BTNCOIC stated, “He loved and supported his wife and lived his life with a passion” (Tab DD-7). MPJ is survived by MPJS, his mother, father, brother, sisters, step-sisters, step-mother, and step-father (Tab DD-5).

AFSOCI 48-101, Paragraph 4.10 Certifications, Qualifications, Evaluations, and Training	
Date Completed:	
National Registry Emergency Medical Technician (EMT) Paramedic (NREMT-P) Certification	14 February 2005
United States Special Operations Command (USSOCOM) Advanced Tactical Practitioner (ATP) Certification	06 May 2010
Special Operations Forces Medical Skills Sustainment Program (SOFMSSP)	06 May 2010
Tactical Combat Casualty Care (TCCC)	19 November 2013
Medical Situational Exercise (MEDEX)	06 July 2014
Medical Situational Evaluation (MEDEVAL)	06 July 2014
Perform Alternate Insertion Extraction (AIE) Duties Using: AFI 16-202; AFTTP 3-1.8, AFTTP 3-3.8, SOCOM M350-6, FM 31-20-5, STS Operator Checklist	
Date Completed:	
3.2.14 Day Fast Rope Insertion and Extraction System (FRIES) Insertion	01 September 2008
Low- and High-Angle Rescue Fundamentals: AFTTP 3-3.8; FM 3-97.61	
Date Completed:	
6.3.1 Knot Classifications	01 September 2008
6.3.2 Tie Knots	01 September 2008
6.3.3 Perform Rope Management	01 September 2008
6.3.7 Care for Climbing Equipment	01 September 2008
6.3.8 Use Belay Systems	01 September 2008
6.3.9 Use Climbing Communications	01 September 2008

## (2) Belay Pararescueman One (BPJ1)

BPJ1 was current and qualified in all training requirements as required by AFI 10-3502, AFSOCI 48-101, and CFETP (Tabs G-5 thru G-8, G-12 thru G-14, T-25 thru T-26, AA-3 thru AA-18, AA-23 thru AA-37, AA-39 thru AA-53).

AFSOCI 48-101, Paragraph 4.10 Certifications, Qualifications, Evaluations, and Training	
Date Completed:	
NREMT-P Certification	15 December 2008
USSOCOM ATP Certification	01 March 2013
SOFMSSP	12 September 2014
TCCC	13 November 2012
MEDEX	26 September 2014
MEDEVAL	15 October 2013
Perform AIE Duties Using: AFI 16-202; AFTTP 3-1.8, AFTTP 3-3.8, SOCOM M350-6, FM 31-20-5, STS Operator Checklist	
Date Completed:	
3.2.14 Day FRIES Insertion	18 February 2010
Low- and High-Angle Rescue Fundamentals: AFTTP 3-3.8; FM 3-97.61	

Date Completed:	
6.3.1 Knot Classifications	29 January 2010
6.3.2 Tie Knots	29 January 2010
6.3.3 Perform Rope Management	29 January 2010
6.3.7 Care for Climbing Equipment	29 January 2010
6.3.8 Use Belay Systems	29 January 2010
6.3.9 Use Climbing Communications	29 January 2010
Triage and Mass Casualty Incidents: Pararescue Medications and Procedures Handbook	
Date Completed:	
7.2.1 Triage Principals	15 January 2010
7.2.2 Perform Team Member and Command Responsibilities	24 November 2009
7.3 Treat Wounds	17 April 2010
Perform Advanced Life Support Emergency Procedures Using: Pararescue Medications and Procedures Handbook	
Date Completed:	
7.6.5 Surgical Cricothyroidotomy	15 January 2010

### (3) Belay Pararescueman Two (BPJ2)

BPJ2 was current and qualified in the training requirements as required by AFSOCI 48-101, and CFETP (Tabs T-25, T-27, AA-23 thru AA-37, AA-39 thru AA-53).

AFSOCI 48-101, Paragraph 4.10 Certifications, Qualifications, Evaluations, and Training	
Date Completed:	
NREMT-P Certification	31 May 2010
USSOCOM ATP Certification	09 September 2013
SOFMSSP	31 March 2014
TCCC	29 August 2013
MEDEX	27 March 2014
MEDEVAL	27 March 2014
Perform AIE Duties Using: AFI 16-202; AFTTP 3-1.8, AFTTP 3-3.8, SOCOM M350-6, FM 31-20-5, STS Operator Checklist	
Date Completed:	
3.2.14 Day FRIES Insertion	02 March 2011
Low- and High-Angle Rescue Fundamentals: AFTTP 3-3.8; FM 3-97.61	
Date Completed:	
6.3.1 Knot Classifications	08 March 2011
6.3.2 Tie Knots	08 March 2011
6.3.3 Perform Rope Management	08 March 2011
6.3.7 Care for Climbing Equipment	08 March 2011
6.3.8 Use Belay Systems	07 March 2011
6.3.9 Use Climbing Communications	07 March 2011

However, AFI 10-3502, Volume 1, Chapter 5, defines PJs required continuation training (Tabs T-28, AA-9 thru AA-17). AFI 10-3502, Volume 1, Table 5.1 articulates the specific requirements (Tab AA-10 thru AA-11). BPJ2 was current with all requirements with one exception (Tab T-28). BPJ2 was required to complete PJ25: Paramedic Medical Refresher every 365 days (Tabs T-28, AA-10). Non-completion of the continuation training resulted in an “N-CMR,” or Non-Combat Mission Ready status (Tabs T-28, AA-10). AFI 10-3502, Volume 1,



Attachment 1 defines Non – Combat Mission Ready as a failure to attain or maintain the minimum training required for PJ personnel to be current in all primary missions tasked to their weapons system and assigned combat unit (Tab T-28). In accordance with AFI 10-3502, Volume 1, paragraph 5.1.1.2, N-CMR status currencies are a go/no go for that current event only (Tabs T-28, AA-9). However, the N-CMR status does not prevent an individual from participating in the exercise (Tab AA-9 thru AA-10). BPJ2’s relevant training is detailed below: (Tab T-28)

	ARMS ID	Event	Status if Overdue	Frequency	Due Date	Last Completed Date
BPJ2	PJ25	Pararescue Medical Refresher	N-CMR	365 days	28 August 2014	28 August 2013

There is no evidence to indicate BPJ2’s training and qualifications had an effect on the mishap (Tabs T-25, T-27).

#### (4) Ground Pararescueman (GPJ)

GPJ was current and qualified in the training requirements as required by AFSOCI 48-101, and CFETP (Tabs T-25, T-27, AA-23 thru AA-37, AA-39 thru AA-53).

AFSOCI 48-101, Paragraph 4.10 Certifications, Qualifications, Evaluations, and Training	
Date Completed:	
NREMT-P Certification	28 August 2009
USSOCOM ATP Certification	09 September 2013
SOFMSSP	21 December 2014
TCCC	09 January 2014
MEDEX	02 December 2013
MEDEVAL	02 December 2013
Triage and Mass Casualty Incidents: Pararescue Medications and Procedures Handbook	
Date Completed:	
7.2.1 Triage Principals	27 August 2010
7.2.2 Perform Team Member and Command Responsibilities	22 February 2011
7.3 Treat Wounds	22 November 2010
Perform Advanced Life Support Emergency Procedures Using: Pararescue Medications and Procedures Handbook	
Date Completed:	
7.6.5 Surgical Cricothyroidotomy	01 September 2010

However, GPJ was not current in accordance with the requirements of AFI 10-3502, Volume 1, Table 5.1 discussed in paragraph 8(a)(3) above (Tabs T-28, AA-10 thru AA-11). GPJ’s relevant training is detailed below: (Tab T-28)

	ARMS ID	Event	Status if Overdue	Frequency	Due Date	Last Completed Date
GPJ	PJ25	Pararescue Medical Refresher	N-CMR	365 days	21 July 2013	21 July 2012

The N-CMR status does not prevent an individual from participating in the exercise (Tab AA-9 thru AA-10). There is no evidence to indicate GPJ's training and qualifications had an effect on the mishap (Tabs T-25, T-27).

**(5) Rappel Pararescueman (RPJ)**

RPJ was current and qualified in the training requirements as required by AFSOCI 48-101, and CFETP (Tabs T-25, T-27 thru T-28, AA-23 thru AA-37, AA-39 thru AA-53).

AFSOCI 48-101, Paragraph 4.10 Certifications, Qualifications, Evaluations, and Training	
Date Completed:	
NREMT-P Certification	20 June 2009
USSOCOM ATP Certification	12 September 2014
SOFMSSP	12 September 2014
TCCC	13 June 2012
MEDEX	12 September 2014
MEDEVAL	02 May 2014
Triage and Mass Casualty Incidents: Pararescue Medications and Procedures Handbook	
Date Completed:	
7.2.1 Triage Principals	21 May 2010
7.2.2 Perform Team Member and Command Responsibilities	16 April 2010
7.3 Treat Wounds	05 August 2010
Date Completed:	
7.13 Pack Medical Kits: AFI 16-1204	25 May 2010

However, RPJ was not current in accordance with the requirements of AFI 10-3502, Volume 1, Table 5.1 discussed in paragraph 8(a)(3) above (Tabs T-28, AA-10 thru AA-11). RPJ's relevant training is detailed below: (Tab T-28)

	ARMS ID	Event	Status if Overdue	Frequency	Due Date	Last Completed Date
RPJ	PJ25	Pararescue Medical Refresher	N-CMR	365 days	13 June 2013	13 June 2012

The N-CMR status does not prevent an individual from participating in the exercise (Tab AA-9 thru AA-10). There is no evidence to indicate GPJ's training and qualifications had an effect on the mishap (Tabs T-25, T-27 thru T-28).

**b. Flight Surgeon (FS1) Records Review**

FS1 was assigned to the 353rd Special Operations Support Squadron, Kadena AFB, Japan, and provided medical support for Teak Nail (Tab V-5.2 thru V-5.4). FS1's medical training and qualifications were reviewed in accordance with the state of New Mexico civilian licensing requirements and AFSOCI 48-101 (Tabs T-21 thru T-24, AA-23 thru AA-37). FS1 received his medical license from the state of New Mexico in 2011 (Tab T-23). FS1 renewed his license in 2014 and it remains valid until 1 July 2015 (Tab T-23). Public service physicians licensed in New Mexico are not required to complete the typical 75 hours of Continuing Medical Education

(CME) during each triennial renewal cycle (Tab T-23). However, FS1 completed 67.5 hours of CME in 2014 (Tab T-23). FS1 completed the Aerospace Medicine Primary Course, an Air Force Flight Surgeon Certification requirement, in 2011 (Tab T-23). FS1 retains active credentials as a physician through the 18th Medical Group, Kadena AB, Japan (Tab T-24). FS1 was further current in Advanced Trauma Life Support, Advanced Cardiac Life Support, and Basic Life Support (Tab T-24).

AFSO CI 48-101, paragraph 4.6, directed FS1’s medical training pipeline (Tab AA-34). AFSOCI 48-101, Table 4.5: AFSOC Training for Special Operations Force Medical Element (SOFME) Flight Surgeons, articulated the specific requirements for pipeline completion (Tab AA-34). At the time of the mishap, FS1 was complete and current in AFSOCI 48-101, Table 4.5 initial training pipeline requirements with the exception of the casualty evacuation (CASEVAC) (Tabs T-21 thru T-22, AA-35). Following an initial CASEVAC course, which provides training for treatment of injured personnel, AFSOCI 48-101, paragraph 4.6.4.3, required FS1 to complete a CASEVAC mission, real world or training, every 30 days (Tab AA-35). FS1’s CASEVAC training dates were as follows: (Tab T-21 thru T-22).

Quarter 1	Quarter 2	Quarter 3	Quarter 4
29 January 2014	3 April 2014	29 July 2014	21 October 2014 (Kathmandu mishap)
February: Listed in Quarterly Report as Exempt	14 May 2014	August: Completed training at the Center for Sustainment of Trauma and Readiness Skills (C-STARS)	
27 March 2014	19 June 2014	9 September 2014	

An evaluation of FS1’s training records indicates that with the exception of February 2014, FS1 was trained on CASEVAC monthly rather than on the required 30-day schedule (Tabs T-21 thru T-22, AA-35). Additionally, FS1 did not receive CASEVAC training within the 30-day period immediately preceding the mishap (Tab T-21 thru T-22). After FS1 went non-current, he was required to be thoroughly evaluated for proficiency regarding CASEVAC equipment, procedures using appropriate standards of medical care, and the approved CASEVAC checklist (Tab AA-35). However, there is no evidence to indicate FS1’s CASEVAC training and qualification had an effect on the mishap (Tab T-21 thru T-24).

AFSO CI 48-101, paragraph 4.3.3.1, established the minimum clinical currency requirements to attain mission readiness (Tab AA-27). AFSOCI 48-101, Table 4.1: Mission Ready Clinical Currency Requirements for Flight Surgeons, enumerated core mission events FS1 needed to complete quarterly (Tab AA-28 thru AA-29). AFSOCI 48-101, Table 4.1, Note 1, also states that a non-currency in any core mission event constituted a failure resulting in the immediate loss of mission qualification status (Tab AA-29). In accordance with AFSOCI 48-101, Table 4.1, Note 2, the quarterly Flight Medical Clinic Patient Examinations requirements were prorated when the member was deployed in support of an operational mission tasking order or other required temporary duty or training event (Tab AA-29). AFSOCI 48-101, Table 4.1, Note 2, is ascribed specifically to Flight Medicine Clinic patient examinations (Tab AA-29). The 353 OSS utilizes a standard practice of proration for all quarterly AFSOCI 48-101, Tab 4.1, Clinically Currency Requirements (Tab T-22). FS1’s currencies for the three quarters preceding the

mishap were evaluated utilizing this standard of practice (Tab T-22 thru T-23). Fractional values were rounded using standard arithmetic to determine the prorated number required (Tab T-22 thru T-23). The quarter immediately preceding the mishap is as follows: (Tab T-23)

Requirement	Frequency Q = Quarterly	Prorated Number Required	Number Performed	Current (Y/N)
Flight Medical Clinic Patient Examinations	Q	13	12	N
Other Acute Care Patient Encounters (Defined as Peer Reviewable Encounter Outside of the Military Treatment Facility)	Q	9	22	Y
Annual Flight Physical Examinations	Q	3	2	N
Air Force (AF) Form 1041 Review Meetings	Q	2	3	Y
Occupational Health Shop Visits	Q	1	1	Y
Public Health Sanitation Inspections	Q	1	1	Y
Mission Qualified July – September 2014: No				

There is no evidence to indicate FS1’s minimal clinical currency training and qualifications had an effect on the mishap (Tab T-21 thru T-24).

## 9. MEDICAL FACTORS

### a. Qualifications

Based on their individual health reviews, MPJ, BPJ1, BPJ2, GPJ, RPJ, and FS1 were medically qualified for duty with a current Periodic Health Assessment at the time of the mishap (Tab W-3 thru W-4).

### b. Health

MPJ was medically qualified at the time of the mishap for training and instructor duties, to include rappelling and belaying (Tab W-3). Additionally, MPJ was worldwide qualified and had no duty restrictions at the time of the mishap (Tab W-3). MPJ, BPJ1, BPJ2, GPJ, RPJ, and FS1 did not have any medical conditions relevant to the mishap (Tab W-3 thru W-4).

### c. Injuries and Pathology

MPJ sustained severe head and neck injuries, as well as a lung injury (Tab W-4). BPJ1, GPJ, RPJ and FS1 initially treated MPJ at the scene of the accident (Tab W-4). They continued medical care en route to, and at, the Birendra Army Hospital, Kathmandu, Nepal (Tab W-4). Medical personnel from Birendra Army Hospital also assisted in treating MPJ (Tab W-4). After approximately three hours, MPJ was transferred to the Grande International Hospital, Kathmandu, Nepal (Tab W-4 thru W-5). On 24 October 2014, MPJ, accompanied by MPJS, and Flight Surgeon Two (FS2) was flown on a commercial medical evacuation aircraft from Nepal to Bangkok, Thailand, and was admitted to Bumrungrad International Hospital to receive a higher echelon of care (Tabs O-11 thru O-12, V-10.7, V-15.9). However, MPJ’s condition continued to deteriorate (Tabs V-15.12 thru V-15.17, Z-39 thru Z-43). On 30 October 2014, MPJ was

removed from life support and subsequently died (Tabs V-15.15 thru V-15.17, W-5, Z-39 thru Z-43).

A review of the autopsy report and post-mortem toxicology studies performed on 1 November 2014 by the Regional Medical Examiner of United States Forces Korea Army Mortuary, Republic of Korea, showed no signs of alcohol or drugs (Tab W-5). Drug and alcohol tests were not conducted on BPJ1, BPJ2, GPJ, RPJ, or FS1 following the mishap (Tab W-4). There were no other personnel injured as a result of this mishap (Tab W-5).

#### **d. Lifestyle**

No lifestyle factors were identified as relevant to the accident (Tabs R-86 thru R-152, W-3 thru W-4).

#### **e. Crew Rest and Crew Duty Time**

Not applicable.

## **10. OPERATIONS AND SUPERVISION**

### **a. Operations**

Blue Team members previously deployed in support of operations in Afghanistan, Africa, and Italy (Tabs V-2.6, V-4.3). At the time of the mishap, MPJ was participating in Teak Nail (Tabs K-5 thru K-54, V-2.7, V-3.4, V-6.3). Blue Team had approximately four months to prepare for the mission while still participating in other ongoing operations (Tab V-10.4). The 320 STS evaluated the risks associated with each phase of training in an overall Operational Risk Management (ORM) worksheet in accordance with the 720th Special Tactics Group (720 STG) Operating Instruction (OI) 90-903, *Operational Risk Management*, dated 8 July 2009 (Tabs V-6.8, V-10.2, V-14.2, Z-27, AA-77 thru AA-87). BTOIC briefed the ORM worksheet to the 353 SOG Commander as part of the Mission Commander pre-brief (Tabs K-2 thru K-107, V-3.6, V-6.3). The 320 STS did not complete an ORM worksheet for each specific training iteration on 21 October 2014; however, MPJ's belay was not planned for or evaluated during the formal ORM process (Tabs V-3.12, Z-27). The 320 STS utilized more resources than just the ORM form when evaluating the operational risks (Tab V-10.3). Specifically, the 320 STS considered each phase of training to determine which events may be problematic to apply measures to mitigate the risk of that event (Tab V-14.3). The 320 STS considers the ORM form as a method to communicate the evaluation process (Tab V-14.3). Medium risk operational activities are approved by the 320 STS/CC, and high risk operational activities are approved by the 353 SOG Commander (Tabs V-14.2, Z-27). Teak Nail was coordinated through the SOCPAC liaison to the United States Embassy in Nepal, and approved by the 353 SOG Commander (Tabs K-5 thru K-6, V-2.9, V-3.7, V-6.3).

### **b. Supervision**

BTOIC served as the 353 SOG Deployed Mission Commander for Teak Nail, maintaining tactical control of 353 SOG personnel assigned to the JCET (Tabs K-8, V-10.5). 320 STS

leadership viewed BTOIC as a professional leader, and the Blue Team as a tested, proven, and well-trained team capable of accomplishing the training mission in Nepal (Tabs V-10.9, V-14.3).

## **11. HUMAN FACTORS ANALYSIS**

### **a. Introduction**

AFI 91-204, *Safety Investigations and Reports*, 24 September 2008, Attachment 6, contains the Department of Defense Human Factors Analysis and Classification System, listing potential human factors that can play a role in mishaps (Tab AA-19 thru AA-21).

### **b. Applicable Factors**

#### **(1) Risk Assessment – During Operation**

Risk Assessment – During Operation is a factor when the individual fails to adequately evaluate the risks associated with a particular course of action and this faulty evaluation leads to inappropriate decision and subsequent unsafe situation (Tab AA-20). This failure occurs in real-time when formal risk-assessment procedures are not possible (Tab AA-20).

The 320 STS evaluated the risks associated with each phase of training in an overall ORM worksheet in accordance with the 720 STG OI 90-903 (Tabs V-6.8, V-10.2, V-14.2, Z-27, AA-77 thru AA-87). The 353 SOG Commander approved the overall mission; however, MPJ's high angle belay internal to the MT was not specifically evaluated during this formal process (Tabs K-5 thru K-6, V-2.9, V-3.7, V-3.12, V-6.3 thru V-6.4, Z-27).

On 21 October 2014, MPJ attached the rope from the Gri-Gri 2 safety line to his harness using a carabiner, climbed onto the edge of Platform B, positioned himself in a slightly seated position with his feet on the edge of the platform, and engaged the camming device on the Gri-Gri 2 by applying his weight to the rope (Tabs R-5, R-21 thru R-22, V-2.19 thru V-2.22, V-7.4 thru V-7.6, Y-7, Y-14). MPJ told BPJ1 “[C]ome on, come on...I want to go down fast...let’s do this” (Tabs R-5, V-2.20). MPJ started bouncing lightly on the rope anxious to go, but his feet did not leave the platform (Tabs R-5, R-22, V-2.20, V-7.5 thru V-7.6). BPJ1 and MPJ did not gauge the distance from the interior edge of the platform to the interior side of wall, or discuss the plan for the fast belay prior to MPJ descending (Tabs R-17, V-2.20 thru V-2.21). The MT is eight feet wide, and Platform B extends four feet internally to the structure (Tabs Y-3, Y-15). However, MPJ's push off the edge of Platform B and the rope's fast rate of descent sent MPJ on a trajectory where he quickly covered the four foot lateral distance between Platform B and the inside wall of the MT, impacting the metal I-beam (Tabs R-5, R-22, V-2.21, V-7.6, Y-4 thru Y-5).

#### **(2) Communicating Critical Information**

Communicating Critical Information is a factor when known critical information was not provided to appropriate individuals in an accurate and timely manner (Tab AA-21). MPJ and BPJ1 did not have a congruent perception of the plan for the belay iteration (Tabs R-5, V-2.20, V-7.5 thru V-7.6). MPJ told BPJ1 “[C]ome on, come on...I want to go down fast...let’s do this”

(Tabs R-5, V-2.20, V-7.6). BPJ1 made eye contact with MPJ, confirmed he wanted to “go fast” meaning he wanted to descend from the platform at a higher speed, and asked if MPJ was ready for the belay (Tabs R-5, V-2.20 thru V-2.21). BPJ1 assumed MPJ would keep his feet on the edge of Platform B until MPJ cleared the platform (Figure 13, Tabs V-2.20 thru V-2.21, Y-3). BPJ1 also assumed that MPJ would descend straight toward the ground, but BPJ1 and MPJ did not discuss their plan prior to MPJ descending (Figure 13, Tabs R-17, V-2.20 thru V-2.21, Y-3, Y-6). Instead, MPJ pushed off the edge of Platform B with his legs in a manner different from what BPJ1 expected (Figure 13, Tabs R-5, R-22, V-2.21, V-7.6).

## **12. GOVERNING DIRECTIVES AND PUBLICATIONS**

### **a. Publically Available Directives and Publications Relevant to the Mishap**

- (1) AFI 10-3502, Volume 1, *Pararescue and Combat Rescue Officer Training*, 16 February 2011;
- (2) AFI 51-507, *Ground Accident Investigations*, 28 May 2012;
- (3) AFI 91-204, *Safety Investigations and Reports*, 24 September 2008
- (4) AFSOCI 48-101, *Aeromedical Special Operations*, 30 November 2012 (Incorporating Change 1, 3 November 2014; Certified Current on 5 September 2014);
- (5) Career Field Education and Training Plan 1T2XX, *Pararescue Speciality*, 15 May 2008;
- (6) Field Manual (FM) 3-97.61, *Military Mountaineering*, August 2002

**NOTICE:** All directives and publications listed above are available digitally on the AF Departmental Publishing Office internet site at <http://www.e-publishing.af.mi>, or are publically available via the internet.

### **b. Other Directives and Publications Relevant to the Mishap**

- (1) 720 STG OI 90-903, *Operational Risk Management*, 8 July 2009;
- (2) United States Army Institute of Surgical Research Tactical Combat Casualty Care Guidelines, 2 June 2014;
- (3) USAF Pararescue EMT – Paramedic Course, *Advanced Life Support Procedures Lesson Plan*;
- (4) USAF Pararescue EMT – Paramedic Course, *Triage Lesson Plan*; and
- (5) DIN EN 12492:2003-06, *Helmets for Mountaineers*

### **c. Known or Suspected Deviations from Directives or Publications**

AFI 10-3502, Volume 1, Chapter 5, defines PJs required continuation training (Tabs T-28, AA-9 thru AA-17). AFI 10-3502, Volume 1, Table 5.1 articulates the specific requirements (Tab AA-10 thru AA-11). BPJ2, RPJ, and GPJ were current with all requirements with one exception (Tab T-28). BPJ2, RPJ, and GPJ were required to complete PJ25: Paramedic Medical Refresher every 365 days (Tabs T-28, AA-10). Non-completion of the continuation training resulted in a N-CMR status (Tabs T-28, AA-10). AFI 10-3502, Volume 1, Attachment 1 defines N-CMR as a failure to attain or maintain the minimum training required for PJ personnel to be current in all

primary missions tasked to their weapons system and assigned combat unit (Tab T-28). However, there is no evidence to indicate BPJ2, RPJ, and GPJ's training and qualifications had an effect on the mishap (Tabs T-25, T-27 thru T-28)

At the time of the mishap, FS1 was complete and current in AFSOCI 48-101, Table 4.5 initial pipeline training requirements with the exception of the CASEVAC course (Tabs T-21 thru T-22, AA-35). An evaluation of FS1's training records indicates that with the exception of February 2014, FS1 was trained on CASEVAC monthly rather than on the required 30-day schedule (Tabs T-21 thru T-22, AA-35). Additionally, FS1 did not receive CASEVAC training within the 30-day period immediately preceding the mishap (Tab T-21 thru T-22). However, there is no evidence to indicate FS1's CASEVAC training and qualification had an effect on the mishap (Tab T-21 thru T-24).

AFSOCI 48-101, paragraph 4.3.3.1, established the minimum clinical currency requirements to attain mission readiness (Tab AA-27). AFSOCI 48-101, Table 4.1, enumerated core mission events FS1 needed to complete quarterly (Tab AA-28 thru AA-29). AFSOCI 48-101, Table 4.1, Note 1, also states that a non-currency in any core mission event constituted a failure resulting in the immediate loss of mission qualification status (Tab AA-29). An evaluation of FS1's clinical currencies indicates that he was not mission qualified in the preceding three quarters prior to the mishap (Tabs T-22 thru T-23, AA-27 thru AA-29). However, there is no evidence to indicate FS1's minimal clinical currency training and qualifications had an effect on the mishap (Tab T-21 thru T-24).

### **13. ADDITIONAL AREAS OF CONCERN**

Not applicable.

*Thaddeus P. Allen*

6 April 2015

THADDEUS P. ALLEN, Colonel, USAF  
President, Ground Accident Investigation Board



**United States Air Force Ground Accident Investigation Board Report**  
**High Angle Belay Training Fatality, Kathmandu, Nepal, 21 October 2014**

**INDEX OF TABS**

DISTRIBUTION MEMORANDUM AND SAFETY INVESTIGATOR INFORMATION .....	A
NOT USED.....	B
PRELIMINARY MESSAGE REPORT .....	C
MAINTENANCE REPORTS, RECORDS, AND DATA .....	D
NOT USED.....	E
WEATHER AND ENVIRONMENTAL RECORDS AND DATA .....	F
PERSONNEL RECORDS .....	G
EGRESS, IMPACT, AND CRASHWORTHINESS ANALYSIS .....	H
DEFICIENCY REPORTS .....	I
RELEASABLE TECHNICAL REPORTS AND ENGINEERING EVALUATIONS.....	J
MISSION RECORDS AND DATA.....	K
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 AND INJURY SUMMARIES .....	P
LEGAL BOARD TRANSFER DOCUMENTS .....	Q
RELEASABLE WITNESS TESTIMONY.....	R
RELEASABLE PHOTOGRAPHS, VIDEOS, AND DIAGRAMS .....	S
INDIVIDUAL RECORDS AND ORDERS NOT INCLUDED IN TAB G .....	T

MAINTENANCE RECORDS NOT INCLUDED IN TABS D OR O .....	U
GAIB WITNESS TESTIMONY AND STATEMENTS.....	V
STATEMENTS OF INJURY AND DEATH.....	W
GAIB APPOINTMENT DOCUMENTS.....	X
PHOTGRAPHS NOT INCLUDED IN TAB S .....	Y
ACCIDENT-RELATED DUTY DOCUMENTS.....	Z
APPLICABLE REGULATIONS, DIRECTIVES, AND OTHER GOVERNMENT DOCUMENTS.....	AA
FACT SHEETS.....	BB
RELEASABLE TECHNICAL REPORTS AND ENGINEERING EVALUATIONS NOT INCLUDED IN TAB J .....	CC
MEDIA ATTENTION.....	DD