# ANNUAL SAFETY PAUSE TRAINING

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# Military Free Fall Mishaps FY15-FY22

# **Agenda**

- Why are we here?
- FY 15-22 Fatalities
- Common Themes
- FY 18 Incidents
- FY 19 Incidents
- FY 20 Incident
- FY 21 Incident
- FY 22 Incidents

## **Key Events:**

- FY 15 5 MFF Fatalities
- FY 17-22 6 MFF Fatalities
- **2015** 
  - A fatality occurred during a High Altitude High Opening parachute operation. The subsequent accident investigation identified an equipment malfunction with the MC-4 RAM AIR parachute.
  - SOCOM Suspends MC-4 RAM Air Parachute Usage
    - SOCOM Directs GO/FO to send 3-5 MFFJM to recertify at YPG
    - Will be annotated as MFF Safety SDRT in jump log
    - MC-4/MT-2s will be inspected and undergo a reserve repack
  - TACOM Suspends MC-4/MT-2 usage

#### **GENERAL VOTEL**

"Effective risk management and adherence to directives allow us to make the nearly impossible things we do every day seem easy. Applying those same principles to the seemingly ordinary tasks keep the "easy" things we do from becoming tragedies. I'm asking each of you to take a 'safety pause"...to get the word out...that we are all "Quiet Professionals", as such, we follow directives and we apply the principles of good risk management in all we do."...General Votel

- NAVSPECWARCOM
- Event description and suspected cause:
  - While conducting MFF training at a commercial DZ, the Sailor appeared to have a normal exit but became unresponsive while in free fall. His CYPRES activated his reserve parachute, however he hit the ground with sufficient force to cause fatal injuries.
    - There is conflicting evidence whether his reserve fully deployed...CYPRES was set at 750'
    - Medical authorities were unable to determine why the Sailor became unconscious.
    - Sailor was jumping a non-standard parachute.
- Cause(s)? Direct? Root?
- What/who could have prevented this fatality?

#### NAVSPECWARCOM

- Event description and suspected cause:
  - This was a HAHO equipment jump. The Sailor was unstable on exit and activated his main canopy while in an unstable condition. The main canopy bridal cord caught on the Sailor's foot causing a horseshoe malfunction. Sailor was unable to clear the malfunction. He cut away from the main canopy and deployed his reserve which entangled with the main canopy.
    - Sailor's parachute and equipment bag were improperly adjusted and described as very loose.
    - No one on the load could confirm a JMPI had actually been completed and there was no documentation to confirm a JMPI had been accomplished.
- Cause(s)? Direct? Root?
- What/who could have prevented this fatality?

- AFSOC
- Event description and suspected cause:
  - Two Airmen collided in free fall on a day HALO jump. Both landed under their reserve canopies. Both sustained fatal injuries.
    - Both Airman died from injuries sustained in the free fall collision
    - The jump profile may not have been clearly understood by all participants
- Cause(s)? Direct? Root?
- What/who could have prevented this fatality?

- USASOC
- Event description and suspected cause:
  - A soldier experienced catastrophic parachute malfunction due to an early deployment of his reserve parachute as he exited the aircraft.
    - Material malfunction of the left upper harness assembly on reserve
    - Jumper accidently hooked his equipment bag snap hook to his reserve rip cord handle
- Cause(s)? Direct? Root?
- What/who could have prevented this fatality?

#### **Common Themes**

- Common Themes
  - Complacency in regards to the operation
  - Failure to follow approved standards
  - Compromise standards for comfort
  - Developed practices become accepted procedure
- How does that happen?
- How do we prevent it?
- Leadership role in enforcing standards?

#### **ABCs of Accident Prevention**

- A. LEADERSHIP ENGAGEMENT
- B. ENFORCEMENT OF STANDARDS
- C. EFFECTIVE RISK MANAGEMENT

- Non-Tactical COTS
- Event description and suspected cause:
  - Parachutist was conducting duties as an Air Operations Trainer, after his student deployed at 5000ft he gained separation and deployed at 3700ft. parachutist stated he had a hard opening with line twists and was in a hard right turn. After kicking out the twists he remained in a hard right turn. Now at approximately 2700ft, he looked at the lines and canopy. After seeing no obvious problems, he pulled rear risers to stabilize and stopping the turn. At approximately 2100ft He saw both toggles still stowed with no breaks in the lines. Upon letting go of the risers, he immediately went back into hard right turn. He thought about releasing toggles but was below 2000ft so decided to perform cutaway procedures. No problem experienced during EPs. Landed safely.
  - Upon inspection of the main canopy it was found that both brakes were still stowed but the left brake toggle had not been properly routed through the control line cat eye.
- Cause(s)? Direct? Root?
- What/who could have prevented this?

#### MT-2XX

- Event description and suspected cause:
  - While conducting a HALO jump from 12,500ft this person dislocated his left shoulder during a poise exit. The jumper was able to get stable and pull at 6,500ft. After opening and gaining canopy control, the jumper was able to fly the canopy at half breaks making right turns. He turned on final at 1000ft and was able to pull both toggles to slow down using his right hand only. Upon landing, the MFF parachutist was immediately picked up by the medic on site and evaluated. Three attempts were made to relocate his shoulder with no success. Jumper was then taken to Riverside County Hospital for further treatment.
  - After further review, it was discovered that the member had a history of previous dislocations, two times in 2008, and one time in 2009. Member had shoulder surgery in 2009. In the spring of 2013, member dislocated his shoulder for the 4th time.
- Cause(s)? Direct? Root?
- What/who could have prevented this?

#### MT-2XX

- Event description and suspected cause:
  - While conducting a night military free fall training evolution, six jumpers exited the aircraft at 6,000ft AGL with four seconds of separation between each jumper. The fourth and 5th jumper collided after the parachute opening sequence. The 5th jumper (higher jumper) entangled within the 4th jumper (lower jumper) canopy lines at approximately 5,000ft AGL. The line entanglement restricted head, arm, and body movement of the higher jumper creating a narrow field of vision. The lower jumper began to communicate with the higher jumper to confirm he was conscious and able to work the problem. The higher jumper attempted to look around and assess the canopies, but was restricted due to the entanglement. The higher jumper communicated that he was going to cut away first due to the inability to verify if there was a good canopy. The higher jumper then pulled his cutaway pillow initiating the cutaway process and had his NVGs ripped from his helmet by the canopy lines. The lower jumper's canopy did not inflate after SO1 initiated the cutaway, so he began his briefed EP's to gain a functioning canopy. Both jumpers landed as briefed on the target DZ and checked in with the Drop Zone Safety Officer (DZSO) at the DZSO station. Both canopies and SO1's NVGs were recovered shortly after the incident.
- Cause(s)? Direct? Root?
- What/who could have prevented this?

- MT-2XX
- Event description and suspected cause:
  - While conducting a clear and pull water jump from 6,000ft, the jumper stated that on exit he executed his 4 sec delay as instructed, but after activating his main parachute he felt no opening shock. He attempted to clear his burble and saw that some of his canopy was coming out but that it appeared to be stuck inside the deployment bag, and felt that the system had turned him onto his left side. Based on this, he executed his EPs and landed safely in the water as the lead jumper. After parachute recovery was completed, jumper was briefed by Primary Jumpmaster on identifying malfunctions and proper procedures to fix malfunctions before initiating EPs.
- Cause(s)? Direct? Root?
- What/who could have prevented this?

- MT-2XX
- Event description and suspected cause:
  - 18 jumpers boarded a C130E/H at approximately 2101. The aircraft then departed the field. Moments after departing, all 18 jumpers exited the aircraft at 10,000ft. above ground level (AGL) performing a high altitude high opening (HAHO) using night vision goggles. The DZSO and the malfunction officer tried to locate all 18 canopies. The DZSO and Malfunctions Officer located all 18 jumpers and observed their decent under canopy over the DZ until they entered the landing pattern. While the jumpers entered their downwind leg, heavy winds came from the West and pushed the entire stack over the DZ. As the jumpers entered their final leg, they were unable to penetrate into the wind. At 2130 the jumpers descended into the trees. The DZSO and the malfunction officer could not determine who exactly had landed in the trees. The DZSO was able to maintain communications with the Jump Master and awaited a head count for all jumpers. At 2142 the medic and the malfunction officer departed the DZ in search of one of the jumpers. Upon their arrival to the jumper's location, they determined that he had collided with the trees. The medic, with the assistance of other jumpers, placed him on a spine-board and escorted him to the nearest hospital in the ERV. The malfunction officer was able to retrieve the jumper's parachute; he then loaded the chute and himself onto a support truck and returned to the DZ.
- Cause(s)? Direct? Root?
- What/who could have prevented this?

- MT-2XX
- Event description and suspected cause:
  - At approximately 0830, the Jumper exited the ramp of the aircraft to conduct a clear and pull simulated water parachute jump with fins from an altitude of 6,000ft AGL. Upon exit, the Jumper did one 360 degree spin then regained his heading and deployed his parachute. Jumper stated he had 2-3 line twists that he kicked out successfully and conducted post opening procedures. He then proceeded to conduct procedures for a simulated water jump by disconnecting his RSL. After flying his parachute for several thousand feet to approximately 3,000ft, he stated that he heard a pop and felt something hit him from behind. When he looked at his reserve ripcord handle, it was hanging freely from the ripcord cable housing, and his reserve parachute began inflating. Once his reserve fully inflated above him, his main canopy started to down-plane then depressurize on one side causing it to spin twice before re-inflating. This caused the risers to twist and hold his head down. After freeing his head, the Jumper was able to steer the main back towards the reserve into a side by side configuration where he determined his main and reserve parachutes were not entangled before conducting cutaway procedures at approximately 1300ft AGL. SVM landed safely under his reserve canopy on the intended DZ.
- Cause(s)? Direct? Root?
- What/who could have prevented this?

- MT2-XX
- Event description and suspected cause: Member exited, performed 4 sec count, and parachute deployed. Jumper's initial assessment was a hung slider. Jumper performed corrective action, and upon doing this, jumper noticed suspension lines crossed under slider. Member then performed cut away procedures.
- Explanation of suspected cause: Jumper performed proper EP's for a hung slider. Upon talking to him and other jumpers in the stack, lines were over the main canopy.
- What malfunctioned: Line Over
- Suspected cause: Improper pack procedures
- Cause(s)? Direct? Root?
- What/who could have prevented this?

- NON-STANDARD
- Event description and suspected cause: The parachutist collided with a fence upon landing which resulted in injuries to both legs, including fracturing both ankles, and multiple abrasions/ scratches.
- Winds: 12kts
- Number of jumps: 215
- Cause(s)? Direct? Root?
- What/who could have prevented this?

- MT2-XX
- Event description and suspected cause: Jumper initiated EPs after his spring loaded pilot parachute hooked on his right foot resulting in a horseshoe. The pilot chute became entangled with the jumper's foot resulting in a hesitation in the main parachute deployment. This hesitation caused the lines of the main parachute to begin to deploy creating an out-of-sequence canopy deployment. When the main pilot chute became free of his foot, it became entangled in the already deploying main. Upon investigation, it was noticed that several rubber retaining bands were broken on the main deployment bag.
- Type of Jump: HALO
- Number of jumps: Unknown
- Cause(s)? Direct? Root?
- What/who could have prevented this?

## **FY 20 NSW Incidents**

- MT2-XX
- Event description and suspected cause: Canopy collision with jumper at terminal velocity due to inadequate separation at pull altitude resulting in main canopy damage and loss of control of canopy
- Type of Jump: HALO
- Altitude: 12,500
- Number of jumps: 300
- Cause(s)? Direct? Root?
- What/who could have prevented this?

- MT2-XX
- Event description and suspected cause: Parachutist collided with tree during landing;
  fractured Patella; 45 lost workdays
- Type of Jump: HALO
- Altitude: 12,500
- Number of jumps: Unknown
- Cause(s)? Direct? Root?
- What/who could have prevented this?

- MT2-XX
- Event description and suspected cause: Parachutists had a hard landing; fractured left fibula; lost workdays and light duty.
- Type of Jump: HALO
- Altitude: 12,500
- Number of jumps: Unknown
- Cause(s)? Direct? Root?
- What/who could have prevented this?

## **FY 22 NSW Incidents**

- MT-2XX
- Event description and suspected cause: SVM experienced a bag lock at (6000ft AGL). SVM executed cutaway procedures after discovering bag lock and landed safely under reserve parachute.
- Altitude: 10,000 AGL
- Number of jumps: Unknown
- Cause(s)? Direct? Root? Main Parachute packing
- What/who could have prevented this?

#### **FY 22 NSW Incidents**

- COTS Non Tactical SABER 2
- Event description and suspected cause: MV had a hard off DZ landing that resulted in a fractured ankle.
- Type of Jump: HAHO
- Altitude: 6,500
- Number of jumps: Unknown
- Cause(s)? Direct? Root? MV failed to properly assess the risks related to a zero wind environment at the DZ.
- What/who could have prevented this?

#### **FY 22 NSW Incidents**

- MT-2XX
- Event description and suspected cause: MV pulled main ripcord 4 seconds after leaving the aircraft on a 6500ft clear and pull. There was a main pilot chute hesitation. After conducting two checks on main canopy, emergency procedures executed by cutting away main parachute and pulling the reserve ripcord. Reserve canopy opened with no issues. MV landed on the DZ with no injuries.
- Type of Jump: HAHO
- Altitude: 6,500
- Number of jumps: Unknown
- Cause(s)? Direct? Root? Main Pilot Chute hesitation
- What/who could have prevented this?

#### MFF JM Related Accidents

- A bad MFF spot led to a Ranger landing in the Savannah River, and he subsequently drowned.
- A bad spot (coupled with high winds) forced a jumper to fly across a freeway and hit a semi truck resulting in fatal injuries.
- A MFF jumper missed the DZ, hit a concrete piling, and died of massive head trauma.
- A bad DZ spot resulted in a lead jumper crossing a major roadway and landing in a lake, resulting in a drowning.

#### **Common Themes**

- Common themes?
- How does that happen?
- How do we prevent it?
- Leadership role in enforcing standards?

#### **ABCs of Accident Prevention**

- A. LEADERSHIP ENGAGEMENT
- B. ENFORCEMENT OF STANDARDS
- C. EFFECTIVE RISK MANAGEMENT

#### Conclusion

 We must maintain our vigilance while performing Military Free Fall to ensure we are mitigating the risk to our force while keeping our Military Free Fall mission capabilities current and relevant to the battle space now and in the future.

## **Questions/Discussion**



# MILITARY FREE FALL PROPONENCY & REGULATIONS

#### **OBJECTIVE**

Action: Familiarize yourself with MFF regulations in order to know where to reference information

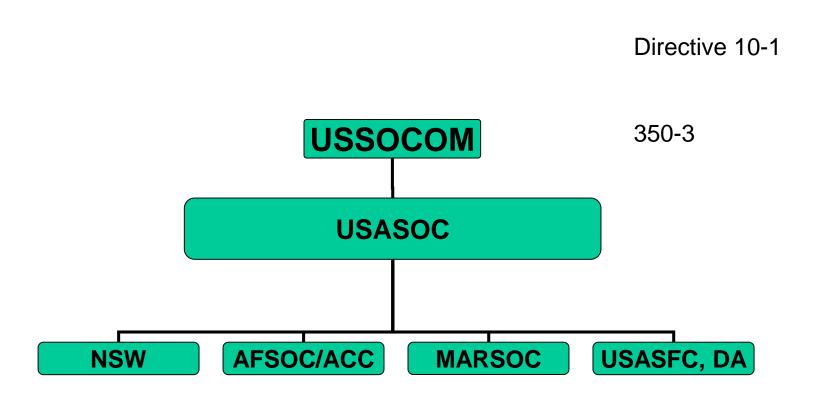
Conditions: Given this class with a USSOCOM M350-3, OPNAVINST 3501.225D, COMNAVSPECWARCOMINST 3000.3C, and NTTP 3-05.26M (ATP 3-18.11)

Standards: Identify and explain the MFF proponent, and applicable MFF regulations

#### REASON

As a MFF Jumper, you should have the knowledge of what regulations govern military freefall and how/where to find the answers to questions that arise. This brief will provide you with references, starting points, and precedence of the manuals stated.

#### PROPONENT FOR OPERATIONS



#### PROPONENT FOR OPERATIONS

- Commander, USASOC is the Lead Component (LC) for SL and MFF operations.
- CDR USASOC serves as the senior advisor on all matters pertaining to SL and MFF training, doctrine, safety, equipment, and interoperability for USSOCOM.

#### PROPONENT FOR OPERATIONS

- Standardize TTP for MFF operations
- Validate POIs for SL and MFF training
- Test, validate, and standardize SL and MFF equipment
- Develop, publish, and distribute safety messages, newsletters, equipment bulletins, and quality deficiency report reviews

# USSOCOM APPROVED COMMERCIAL OPERATORS

- All aircraft supporting SOF airborne training & operations will be
  - DOD certified
  - USSOCOM J-31 approved & inspected
- Clarification of Part 91/135 verification against the DOD commercial operator listing

#### PARATROOP COMMERCIAL OPERATOR LISTING Created by Jennifer Perry on Oct 20, 2016 1:18 PM. Last modified by Scott Lockwood on Aug 31, 2021 3:28 PM THE CONTENTS ON THIS WEB PAGE ARE FOR OFFICIAL. INTERNAL DOD USE ONLY AND CANNOT BE RELEASED OUTSIDE THE DOD WITHOUT WRITTE APPROVAL FROM HQ AMC/A3B, SCOTT AFB, IL. PARATROOP COMMERCIAL OPERATORS ARE NOT CARB-APPROVED/ACCREDITED UNLESS OTHERWISE STATED AIRDROP PROCEDURES ARE NOT EVALUATED BY THE CARB. ATTENTION ALL USSOCOM, SUBORDINATE COMMANDS AND UNITSCONTRACTING OFFICERS: Effective immediately ALL SOF forces engaging in parachute operations and/or training will ONLY use those vendors on this list approved by USSOCOM J-31. Any questions please contact LtCol Larry Hoffman at 813-826-3554 or email "lawrence.hoffman@socom.mil Questions Regarding Paratroop Operators: Mr. George McDoviell. (618) 229-2075 Mr. Christopher Harbison, (618) 229-209 To Request Update to Paratroop Operators: Mr. Scott A. Lockwood, III scott lockwood 2@us af.mil, (618) 229-2068 Mr. Brian Guy, Whitan.guy@us.af.mil, (618) 229-3020 FLEET-TYPE EVALUATED Airborne Support Group Mr. Billy Johnson Last 31 Mar 2020 SC7 Sky Vans: N28LH, N39LH, N41LH, N52LH, (Approved for Day & Night Static Line & MFF Operations USSOCOM J31-Air Next: 31 Mar 2022 SC7 Shr Vans: N114LH (Approved for Day & Night MFF Only DHC-6 Twin Otters: N204ED, N924I/A (Approved for Day MFF Only) CM4 Agron Wolker Last 28 Nov C-208B Cessna Grand Caravan: N1128L N716NM, N626LM, PAC N750XL (Approved for Day/Night FF Only) Arme Freefall Solutions, USSOCOM J31-Air 2019 Skyvan N78LA (Approved for Day/Night MFF/SL) 1200 Gen Bolton Drive, Com: Suffolk VA 23434 Com: (757) 809-4485n

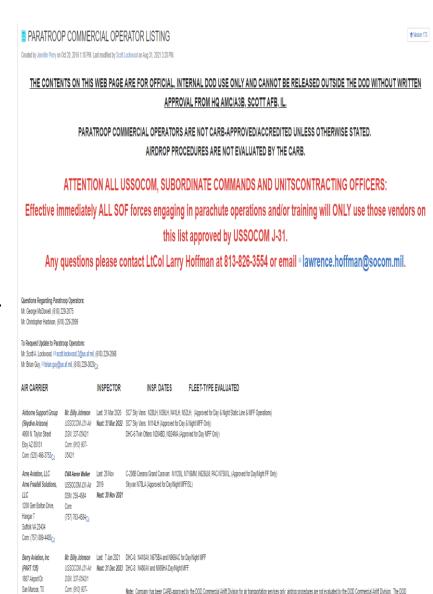
Note: Company has been CAPB approved by the DOO Commercial Ariff Division for air transportation services only, airdrap procedures are not evaluated by the DOO Commercial Ariff Division. The DOO commercial Ariff Division for air transportation services only, airdrap procedures are not evaluation of the DOO Commercial Ariff Division. The DOO commercial Ariff Division for air transportation of the procedures are not evaluated by the DOO Commercial Ariff Division for air transportation services only, airdrap procedures are not evaluated by the DOO Commercial Ariff Division. The DOO commercial Ariff Division for air transportation services only, airdrap procedures are not evaluated by the DOO Commercial Ariff Division. The DOO commercial Ariff Division for air transportation services only, airdrap procedures are not evaluated by the DOO Commercial Ariff Division. The DOO commercial Ariff Division for air transportation services only, airdrap procedures are not evaluated by the DOO Commercial Ariff Division for air transportation services are not evaluated by the DOO Commercial Ariff Division. The DOO commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the DOO Commercial Ariff Division for air transportation are not evaluated by the

Mr. Billy Johnson Last. 7 Jan 2021 DHC-8: N418AV, N675BA and N969AC for Day/Night NFF USSOCOM J31-4ir Neut: 31 Dec 2023 DHC-8: N480AV and N869HA Day/Night NFF.

San Marcos, TX

# USSOCOM APPROVED COMMERCIAL OPERATORS

- JMs must indicate if A/C is Part 91/135 certified into ORM/Risk assessment & verify aircraft tail numbers against commercial operator listing during JM brief.
- Part 91 verification: Must have J31 Air listed as the inspector (if not, it is not a valid inspection) / if there is NO note about CARB... Then it is Part 91 Certified.
- Part 135 Verification: Must have J31 Air listed as the inspector (if not, it is not a valid inspection) / if there is a note saying it is on the CARB list...Then it is Part 135 Certified.



#### REGULATIONS

- ALL SERVICES:
  - USSOCOM M 350-3
  - NTTP 3-05.26M/ATP 3-18.11
- USN:
  - COMNAVSPECWARCOMINST 3000.3D
  - OPNAVINST 3501.225C
- USA:
  - USASOC REG 350-2
- USMC: TM 70244A-OI & Unit SOP
- USAF:
  - AFI 11-410 AUG 08 Parachute Operations
  - AFI 13-217 MAY 07 Assault Zone Procedures

#### **SCENARIO**

- You are going to a jump training trip or currency jump. What paperwork and information do you need to bring for the MFFJM to verify in order to participate in the training evolution?
  - You must bring the following:
    - Current MFF physical (5 year expiration)
    - Current HAPPS (5 year expiration)
    - NPC/MFFPC qualified
    - Jump log
      - Verifies currency
        - Refresher training is mandatory after 180 days
          - If over two years since last jump refresher training must be conducted by an AOT or AOT/E
      - If you do not have a jump log you will have to go through as if you are 2+ years out of currency

#### **SCENARIO**

- What administrative documents must you provide to the PJM prior to participating in an MFF evolution?
- You must bring the following:
  - Current MFF physical (5 year expiration)
  - Current HAPS card (5 year expiration)
  - Current command LOD or permissive jump orders
  - Jump log
    - Verifies currency
      - Refresher training is mandatory after 180 days
        - If over two years since last jump refresher training must be conducted by an AOT or AOT/E
    - If you cannot provide a current jump log or DJRS printout, you must complete refresher training with an AOT or AOT/E (over two years).

#### REFERENCES

- NSW P3 Website (ANU and All Publications)
  - https://flankspeed.sharepointmil.us/sites/NAVSEA\_PMS340/Service%20Common%20Support%20(SCS)/ p3/SitePages/Home.aspx
- MRB MilSuite
  - https://www.milsuite.mil/book/groups/airdrop-malfunction-and-safetyanalysis-review-board
- MFFJM MilSuite
  - https://www.milsuite.mil/book/groups/mffs
- DOD Commercial Airlift MilSuite
  - https://www.milsuite.mil/book/groups/dod-commercial-airlift-division-amca

## **QUESTIONS?**