SPRING/SUMMER 2025

DROP ZONE

EXPEDITIONARY & SPECIAL WARFARE JUMP SAFETY NEWSLETTER

U.S. Marines assigned to 2nd Reconnaissance Battalion, 2nd Marine Division, jump out of a KC-130J Hercules, assigned to Marine Aerial Refueling Squadron 252, 2nd Marine Aircraft Wing, during a parachute operation at Marine Corps Auxiliary Landing Field Bogue, North Carolina, April 17, 2024. MCALF Bogue, part of Cherry Point's training area, was purposefully configured to mirror real-world operational environments. This immersive training environment equips Marines to tackle the challenges they may encounter during deployment or combat scenarios with confidence and effectiveness. (U.S. Marine Corps photo by Lance Cpl. Landon Lingle)

IN THIS ISSUE

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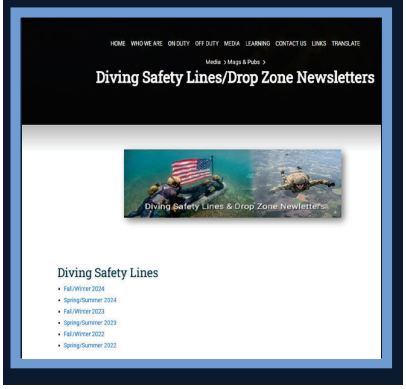


ASSESSMENT KEY FINDINGS & OBSERVATIONS

Naval Safety Command Assessment Teams have identified significant issues with Helicopter Rope Suspension Techniques (HRST) towers and free fall parachute systems.

HRST Tower Engineer Certification and Safety Issues

Issues Identified:

- No up-to-date HRST tower engineering certification for anchor load points.
- Severe corrosion on HRST tower anchor load points.
- HRST tower rope station without a proper guardrail barrier to prevent a fall hazard.

Takeaways:

- Ensure HRST towers are inspected and certified by an engineer per MCRP 3-01B.1 Appendix E, OPNAVIST 3500.43 and Marine Corps Order 3500.42.
- Verify the HRST tower certification periodicity has not lapsed prior to use of tower.
- HRST Masters visually inspect towers and verify tower engineering certifications are current prior to each evolution.

(continued next page)

Above, HRST anchor load point. (U.S. Marine Corps photo by GySgt Patrick Doody)

ASSESSMENT KEY FINDINGS AND OBSERVATIONS

Freefall Parachute System Maintenance

Issues Identified:

1. Military Tandem Vector System:

- Packed with a damaged 60" drogue.
- Improperly installed Automatic Activation Device (AAD).

2. Parachute System-2 (PS-2):

- Two PS-2 reserve parachutes had bent closing pins.

3. Coaches Ram-Air Parachute Systems:

- Reserve free bag safety stow loop 3/4" out of tolerance.
- Incorrectly installed AAD.
- Incorrectly sized main and reserve canopies for harness container.

Due to the high-risk nature of parachute operations, such discrepencies are unacceptable as they compromise both the jumper's safety and the success of the mission. These deviations could lead to catastrophic events such as:

- Partial or total malfunction affecting the proper deployment and functionality of the main or reserve parachute.
- Main parachute deployment issues due to a damaged drogue, requiring an unnecessary cutaway and reserve deployment.

Above, U.S. Marine Corps Sgt. Timothy Skalecki, a machine gunner with Charlie Company, 1st Battalion, 8th Marine Regiment, rappels from a tower during a Helicopter Rope Suspension Techniques Masters Course. (U.S. Marine Corps photo by Lance Cpl. John Allen)

Above, HRST tower access point. (U.S. Navy photo by PRCS Tom Moen)

- Hard pull of reserve parachute due to bent closing pins could lead to a dangerous situation, potentially preventing the parachute from deploying.
- Reserve parachute free bag safety stow loop out of tolerance; could lead to reserve deployment issues.

Takeaways:

- Conduct all corrective maintenance and repacks in accordance with the technical and or manufacturer's manual.
- Ensure Quality Assurance Inspectors are providing direct supervision and performing every quality assurance check.

The goal is always zero discrepancies. Safety in parachute operations is non-negotiable. Please help us help you by passing the word and raising awareness up and down the chain.

Military Free Fall Bottom of the Container Transition Training Incident

As the Navy transitions to a new Military Free Fall (MFF) system to replace the aging MT-2XX inventory, training challenges are inevitable. Leaders must recognize that these transitions will present unfamiliar obstacles for riggers, jumpers and jumpmasters. To ensure safety, all air operations professionals should be treated as if they are recent graduates from basic MFF training, with no assumptions about their proficiency with the new systems. The following lessons learned illustrate the importance of this mindset.

Incident Summary

A service member (SM) was fatally injured while conducting MFF training due to entanglement during a Bottom of the Container (BOC) transition. The SM had completed three mandatory BOC transition jumps—slick, combat equipment and full wall locker—along with nine additional training jumps required for certification. On the night of the incident, the SM participated in a night BOC wall locker jump despite having reported limited range of motion in his shoulder, affecting his ability to reach behind to deploy the RA-1 parachute in the BOC position.

An investigation revealed several contributing factors:

- The SM's parachute harness was improperly fitted.
- The rigged rucksack did not meet the 40-lb regulatory requirement.
- The SM had previously required instructor stabilization during wind tunnel training and earlier BOC jumps.

During the deployment sequence, the SM incorrectly dipped his right shoulder, causing a tumbling motion while attempting to deploy his hand-held pilot parachute. This instability led to a cutaway of the main canopy, but the reserve canopy became entangled with the SM's equipment. The SM ultimately landed 1,168.6 meters from the High-Altitude Release Point and 6.07 miles from the Designated Impact Point, sustaining fatal injuries.

ASSESSMENT KEY FINDINGS AND OBSERVATIONS

Key Safety Lessons Learned

1. Training and Equipment Fit

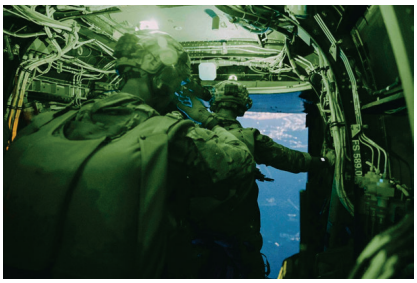
- Proper jump procedures and jumpmaster personnel inspections must be followed with no deviations
- Jumpmasters and riggers must be trained on the correct fit of new parachute systems, including how to identify improper fit indicators such as an inability to reach the BOC or maintain a standing arch.
- Corrective actions must be taken before a jumper is cleared for training jumps.

2. Unit Policy and Guidance

- Personnel must wear all required equipment in accordance with established standards.
- Unauthorized equipment, including additional clothing such as hoodies, must not be worn during jumps

3. Supervision and Leadership

- Unit jumpmasters failed to enforce safety policies related to proper donning and wear of parachute equipment, Jumpmaster Personnel Inspection (JMPI) procedures and post-jump debriefs.
- Multiple warning signs were ignored, including the jumper's difficulty with range of motion and previous stability issues.
- There were at least four missed opportunities for jumpmasters to intervene and correct reported issues.



Above, Republic of Korea (ROK) Marines assigned to 1st Reconnaissance Battalion, 1st ROK Marine Division, and ROK Navy SEALs prepare to parachute out of an MV-22B Osprey attached to Marine Medium Tiltrotor Squadron (VMM) 165 (Reinforced), 15th Marine Expeditionary Unit, during a military free fall jump with U.S. Marines. (U.S. Marine Corps photo by Cpl. Joseph Helms)

Actionable Recommendations

1. Speak Up and Correct Issues

- If something is not right, address it immediately. Do not feel pressured to complete a jump if you cannot properly perform all required tasks.

2. Proper Equipment Sizing

- Ensure parachutes and associated gear fit correctly to minimize stability issues during free fall.

3. Critical Importance of JMPIs

- When jumpers report an issue, jumpmasters must resolve it before the jump. Parachute riggers should be called in if necessary, as most problems can be corrected within minutes on the ground, preventing catastrophic failures in the air.

Conclusion

Military Free Fall operations are inherently high-risk. Taking proactive safety measures, ensuring proper equipment fit and enforcing strict training protocols are essential to preventing future mishaps. Every member of the air operations community must remain vigilant, adhere to established procedures, and prioritize safety above all else.

EVENT REMINDER

The 176th Biannual Airdrop Malfunction Safety Analysis Review Board will be held in-person July 22-25 at Aerial Delivery and Field Services Department, Lewis Auditorium, Room 104, Fort Gregg-Adams, Virginia.

Online registration is required at the following website: https://www.evite.com/signup-sheet/5144011929550848.

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REPORTED MALFUNCTIONS & INCIDENTS BREAKDOWN

The following data provides a breakdown of reported malfunctions and incidents from fiscal year, 2023 through 30 March 2025. Since FY 2023, we have conducted 217, 843 jumps with 56 reported malfunctions or incidents. This is a .02% jump to incident rate.

FY 2023

PLF injury	9
Main parachute failed to open (bag lock)	4
Line over	2
Steamer/snivel	2
Tree landing	2
Riser step through	1
Pilot chute wrapped suspension lines	1
Broken steering line	1
Power line landing	1
Pilot chute activiated in aircraft	1
Reserve parachute activated in aircraft	1
Jumper induced emergency deployment	1
Building impacted (fatality)	1
Dual deployment of main and reserve parachutes	1
Cypress activation	1
TOTAL	**29**

FY 2024

PLF injury	2
Building impacted	1
Main parachute failed to open (bag lock)	3
Canopy entanglement	1
Power line landing	1
Pilot chute line entanglement	1
Jumper exited aircraft prematurely	1
Improper canopy controllability check	1
Burble	2
Off drop zone landing	1
Horseshoe malfunction due to rifle entanglement with lines	1
Line twist and uncontrollable downward spin	1
TOTAL	**16**

FY 2025

PLF Injury	1
Horseshoe due to improper body position	1
Main parachute failed to open (bag lock)	2
Spectator impacted	1
TOTAL	**5**

ASSESSMENT ONE-LINERS

1. HRST tower engineer certification of load points out of periodicity.

2. Three years of HRST/Cast records not kept on file.

3. Verification process (i.e., required reading board) for all HRST/Cast related messages not being used.

4. Not using a HRST rope log on all ropes placed in service.

5. Three years of HRST/Cast records not kept on file.

6. Three years of Jump records not kept on file.

7. Five years of mishap and malfunction reports not kept on file.

8. Individual training record for each person in the command holding HRST/Cast operation qualifications not maintained.

9. Military Tandem Vector System packed with damaged 60" drogue and improperly installed AAD.

10. Parachute System-2 reserve parachute had bent closing pins.

11. Coaches Ram-Air Parachute Systems reserve safety stow loop 3/4" out of tolerance, automatic activiation device incorrectly installed and wrong sized main and reserve canopies for harness container.

12. Inadequate lighting in packing and maintenance area.

13. Jump currency for those receiving SKIP for jump pay.

FUTURE ASSESSMENTS

The NAOP schedule was released via naval message (R 15163Z OCT 24) Oct. 15, 2024. The message listed the following commands due for inspection:

MAY 2025
- EOD MU5 (Guam, Gu.)

- NSW DET GUAM (Guam, Gu.)

JUNE 2025
- NSWG 2 TRADET 2 (Virginia Beach, VA)

- NSWG 2 SEAL TEAM 4 (Virginia Beach, VA)

-NSWG 2 SEAL TEAM 10 (Virginia Beach, Va.)

JULY 2025
-EOD MU 2 (Virginia Beach, Va.)

AUGUST 2025
- NSWG 4 SPECBOAT TEAM 12 (Virginia Beach, VA)

- NSWG 4 SPECBOAT TEAM 22 (Virginia Beach, VA)

Do you have feedback or ideas? Let us know!

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