



In-Flight Bladder Relief

The **AMXDmax** *eliminates* Safety Issues

- USAF/USN Safe To Fly Certified
- Eliminates the Need to Tactically Dehydrate
- Aircrew Wearable, Fully automated, Hands Free



“A chain is only as strong as its weakest link”



Fully Automated In-flight Bladder Relief System

Aviators/Aircrew are facing more sophisticated and lethal air defense systems all over the world. If action is not taken, our Aviators/Aircrew and aircraft will continue to be vulnerable as a result of their loss of Situational Awareness during bladder relief.

Problem Overview

- Current systems for in-flight bladder relief greatly impair the ability to fly the aircraft, are not **Ejection Seat (unbuckled) or Fire (materials) Safe** and result in Aircrew Tactically Dehydrating
- Aircrew **sacrifice performance** by dehydrating prior to and during flight due to lack of effective means for bladder relief
- Dehydration can result in a **57% reduction in flight performance**; loss of spatial cognition, situational awareness and G-tolerance

Solution Key Points

- AMXDmax provides a **Hands Free, automated and Safe Bladder Relief solution**
- USAF, USN and USMC **Safe to Fly APPROVAL 2014 (F-15, F-16, F-22)**
- Fully self-contained system with optional Through Suit Connector (TSC) providing a Sealed solution for **Immersion Suits and CBRN ensembles**
- USAF, USN, USMC **F-35 Safe to Fly APPROVAL 2018**
- Available through DLA and (GSAADVANTAGE.GOV)



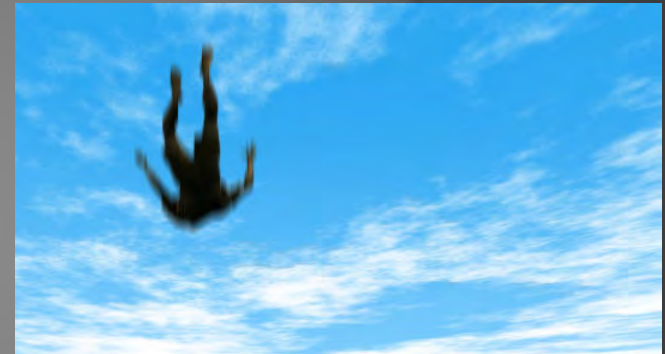
Aircraft Ejection Seat

Ejection Seat Safety

Ejection Seat issues while using other Bladder Relief Devices:

Requires Pilot to Unbuckle and/or loosen Harness, Unzip flight suit/Dry Suit, using both hands

100% Fatal



Ejection while using the AMXDmax:

Pilot remains buckled and secure with both hands free and AMXDmax external components release during ejection seat sequence

SAFE





Situational Awareness

AMXDmax Improves SA

Exposed and Distracted using other solutions: **Loss of SA**
Requires Unbuckling/loosening leg straps, Unzip and use of both hands.

Dressed and on mission using the AMXDmax: **Maintain SA**
Fully Automatic and ready to use without distraction.

Imagine an Aviator/Aircrew:

- Unstrapped / Unzipped / Exposed
- Hands holding
 1. Anatomy
 2. Device

Distracted while urinating into a device and hand(s) off flight controls



AMXDmax Heads Up - No Distraction



Hydration?

Tactical Dehydration practices

If you feel **thirsty** (2%), it's already *too late*.

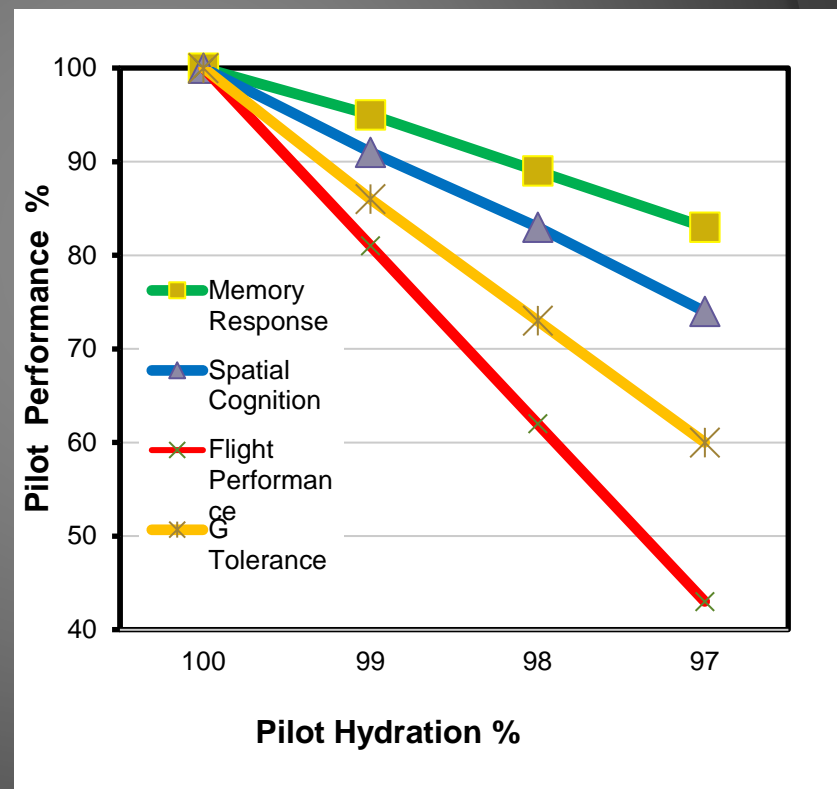
Reduced Abilities

- 57% reduction in flight performance
- 40% reduction in G- Tolerance
- 26% reduction in Spatial Cognition
- 17% in short term Memory Response

Reduced Situational Awareness (SA)

Increases Spatial Disorientation(SD)

Increases Heat stress and Fatigue



Urinary Retention has same effect as Intoxication or 24 hrs Sleep Deprivation



Hydration and G-Tolerance

BY ORDER OF THE SECRETARY OF THE AIR FORCE

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

PAMPHLET 11-419 17 OCTOBER 2014 Operations G AWARENESS FOR AIRCREW

3.5.2. High-G flight requires a physiological system that is operating as close to 100-percent as possible. **Proper sleep, nutrition & hydration** must be emphasized. There will be days when the right answer is to not fly or fly a less demanding sortie. Practice good nutrition and good sleep discipline. Fly nourished and rested to the maximum extent possible. **Don't fly when ill, fatigued, dehydrated**, or while on medications. Regular exercise, good nutrition, and regular sleep allow aircrew to fly at peak condition (peak G capacity).

3.5.3. **Proper hydration is critical for normal G-tolerance.** Don't wait until a feeling of thirst. **Proper hydration starts days, not minutes**, before step/walk. Plan to bring **sufficient water** to the aircraft to meet the demands of **unanticipated extended ground ops or high heat conditions**



Class- A Mishaps

The Blue Threat—Our Deadliest Enemy

“We continue to take ourselves out with **deadly precision**, through errors, lapses and **poor decisions**. The Class-A mishaps are the result of our actions against ourselves.”

by RADM George Mayer

The Naval Air Warfare Center Aircraft Division Report No. NAWCADPAX—96-268-TM “SITUATIONAL AWARENESS GUIDELINES” xi 6.3.4 states: **Flight Gear** should be compatible with personal activities such as drinking water and **relief methods**. If these activities require crewmember attention, **some type of automation should be in place** to take over key aircraft functions.

AMXDmax

Developed and Certified for the USAF,
USN, USMC and used by 20 other countries

Maximizes Aircrew Performance and Safety

Non-invasive, fully automatic, hands free, In-Flight Bladder Relief



AMXDmax - Weight 4 oz.

Easily configured for use with
all aircrew ensembles

Through Suit Connector for
hands free Immersion/Dry Suit
and CBRN ensemble

The Collection Bag can be
located in any orientation

The Cup and Pad are discretely worn under flight gear.

The AMXDmax is approved Safe-To-Fly on all USAF and USN / USMC aircraft.

AMXDmax Immersion and CBRN Suits

Sealed, Hands Free Relief in Immersion and CBRN Suits

The AMXDmax with the Through Suit Connector (TSC)



TSC is a one way check valve



Easy Quick Connect/Disconnect

The TSC maintains suit integrity

The Cup and Pad are discretely worn inside, connected inside ensemble

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System Overview

The AMXDmax Aircrew Flight Equipment

Sustainment supplies (Cup/Pad and Collection Bag)

Male Cup
with Sensor

Inflatable Female Pad
with Sensor

Collection Bag



Reusable system components (Control Unit and Battery Packs)

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Examples of Aircrew Male and Female trained since Jan 2020

- Jan 2020 – Nellis AFB, Female Flying Flight Surgeon, Maj Eisma
- Jan-Feb 2020 – F-35 and F-22 Pilots
 - 5 DCMA Male F-35 Pilots (2 USAF/3 USMC) assigned to Lockheed-Martin
 - 2 Male Test Pilots, Edwards AFB
 - 5 Male Test Pilots, Lockheed-Martin, Ft Worth
 - 32 F-22 Male Pilots, Joint Base Pearl-Hickam
 - Male F-16 Pilots briefed at Ohio Guard Conference; Full System training TBD
- Mar 2020
 - 23 Male and 1 Female F-16 Pilots fully trained; Spandahlem AB
 - 2 Male F-15 Pilots trained; RAF Lakenheath
- Apr 2020-NAS Oceana, Virginia Beach VA
 - 12 Female and 1 Male F-18 Aviators trained
 - New Fleet Replacement Squadron (FRS) AMXDmax Initiative
- May 2020-
 - 1 Male Navy DCMA F-35 Pilot trained at Omni Training Facility, S. Burlington VT
 - 9 Female and 2 Male F-18 Aviators (Pilots and WSO) NAS Whidbey Island
 - Provided TSC install and inspection training for Parachute Rigger Techs
- Jun 2020-MCAS Yuma
 - Trained 17 male F-35 Pilots and modified dry suits with TSC for upcoming deployment
- Jul 2020-MCAS Yuma
 - Trained 19 male F-35 Pilots and modified dry suits with TSC for upcoming deployment
 - Trained 1 Female Harrier Pilot and modified her dry suit with TSC for upcoming deployment
 - Trained Aeromedical Safety Officer (AMSO) and Flying Flight Surgeon

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How to order the FEMALE AMXDmax

The AMXDMax and sustainment supplies can be ordered through the GSA Advantage Website.



Starter Kit (Please specify size)



Supply Kit (Please specify size)



https://www.gsaadvantage.gov/advantage/ws/search/advantage_search?p=1&q=0:2Omni%20Measurement&db=0



How to order the MALE AMXDmax

The AMXDMax and sustainment supplies can be ordered through the GSA Advantage Website.



Starter Kit (Please specify size)



Supply Kit (Please specify size)

https://www.gsaadvantage.gov/advantage/ws/search/advantage_search?p=1&q=0:2Omni%20Measurement&db=0



Female Supplies



Female Pad
(Please specify size)



Reusable
Collection Bag



Disposable
Collection Bag



Reusable Female
Standard Hose



Female
Undergarment
(Please specify size)



Male Supplies



Male Cup



Reusable Collection Bag



Disposable Collection Bag



Reusable Male Standard Hose



Male Undergarment
(Please specify size)

AMXDmax

Certified Safe To Fly

AMXDmax Control Unit

Control Unit
Weighs only 4oz
with battery



Urine sensor contacts
activate 1.5 L/min pump
transferring urine to bag

Collection Bag
Release Button

Includes
2 Rechargeable
Battery Packs
providing power
for up 16 hours
of flight time

NVG Safe Green
Battery Status LEDs



Battery Pack Charger and Wall Adapter.
Not taken on flight

AMXDmax

AMXDmax Collection Bag

The AMXDmax Collection Bag is manufactured from durable medical grade urethane.

- Control Unit connector
- Liquid tight air filters
- Capacity 1200ml or 1600ml
- 500 ml Over Capacity Safety Factor

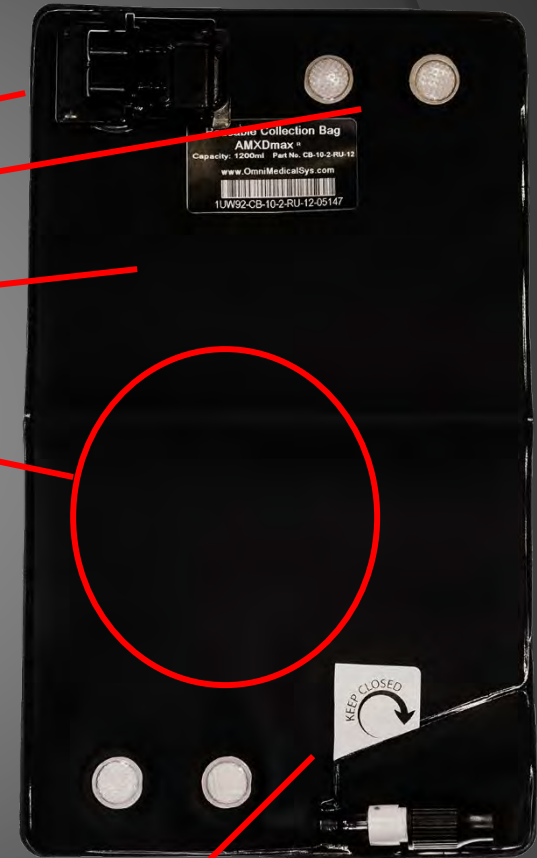
Collection Bag is folded to stow



Control Unit slides onto folded Bag and is easily stowed in G-Suit/Flight suit pocket



Shown with **1200 ml capacity** normal use designed capacity



Both Disposable and Drainable (reusable) Versions available

AMXDmax

TSC Suit Connector is AFE Shop Installable.



Five minute installation into any Flight, Immersion, CBRNE and Cold Weather Gear.