



US Air Force and Omni

2002 - 2014

AMXDmax Development History

1997 - Air Force issues CAF (USN) 003-94-I-A, Female Bladder Relief Capability ORD dated 10 February.

2001 - Safety issues identified with Piddle Pak causing 9 Class A mishaps including loss of life and aircraft

Air Force ACC issues RFQ for advanced Bladder Relief for Ejection Seat Aircrew.

AF02-069 TITLE: Aircrew Bladder Relief Capability

TECHNOLOGY AREAS: Human Systems

OBJECTIVE: Develop and demonstrate a novel bladder relief capability for both male and female aircrew members flying in aircraft that have no toilet facilities. The proposed solution must significantly improve the capability of all aircrew members to obtain relief on long-duration missions without adverse side effects.

2002 Omni receives 1 year Phase I, US Air Force development contract

2003 Omni Receive 2 year Phase 2, US Air Force development contract to development the AMXD®.

2004 - ACC MAJCOM/CVs validates Aircrew Performance Requirement.

2005 – US Air Force makes Female Bladder Relief number two priority for US Air Force Aircrew Operations.

2005 - Omni receives funding from Air Warfare Battle Lab, ACC and the US Air Force for Safety & Environmental Testing, Clinical Trials and Flight Trials.

2005 – Air Force and JSF perform AMXD cockpit integration evaluation at Lockheed Martin AMXD with Male and Female Pilots in F-35 Mock Cockpit

2006 - Omni received FDA Approval AMXD.

2006 - AMXD is Certified “Safe to Fly” on all US Air Force Aircraft.

2007 – Omni receives RTOC (Reduction in Total Ownership of Cost) contract to develop smaller (F-35), AMXDmax and lower operational costs.

2007 – 2008 USAF, Air National Guard, production contracts for AMXD

2008 PMA 202 Certifies AMXD for use by USN and USMC Aviation

2008 US ARMY development contract for AMXDmax CBRN version

2009 – 2010 Air Force and Army contracts to development AMXDmax

2009 – 2010 Navy, Air Force, Army and NATO, production contracts for AMXD

2010 - 2013 Navy funds and conducts Flight worthiness on AMXDmax for Legacy and F-35.



2012 Swedish Defense Ministry Purchases AMXDmax for Gripen Fighter w/ 5 ptn Simplified Combined Harness (Same as F-35)

2012 JSF funds and conducts successful cockpit integration evaluation of AMXDmax in F-35

2013 JSF purchases AMXDmax systems and funds Flight Trials after successful Cockpit integration.

2013 – 2014 Navy purchases new AMXDmax for deployed aircrew through Upgrade Incentive Program.

2013 – 2014 Air Force conducts ECP and issues new Safe to Fly for the new AMXDmax, sends out briefing addressing Tactical Dehydration Practices. Calling AMXDmax, Cockpit Essential Equipment.

2014 JSF starts and completes successful Flight Trails of F-35. Pilots “Love it”.

2014 Air Force commands purchase AMXDmax for Aircrew to combat Tactical Dehydration and for Deployed Air Crew.

2014 Australian Defense Ministry purchases AMXDmax for Legacy Aircrew.

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OBJECTIVE: Develop and demonstrate a novel bladder relief capability for both male and female aircrew members flying in aircraft that have no toilet facilities. The proposed solution must significantly improve the capability of all aircrew members to obtain relief on long-duration missions without adverse side effects.

DESCRIPTION: Present bladder relief capability for male aircrew consists of a plastic tubing and bag assembly that depends on gravity to collect the urine. Females use commercially available adult diapers. Both of these solutions have serious drawbacks. Male F-16 aircrew often put the aircraft into a dive to ensure that urine does not leak onto their clothing. Additionally, they have to partially undress in order to use the device. High-g maneuvers assure that females will have wet clothing. The new solution must resolve the problems of leakage and adverse aircraft orientation for use and also address the issues of fit and comfort. The proposed solution should be a full-dress solution (in other words, it should provide hands-free operation). The proposed device should be easy to don, comfortable to wear and remove, and fit so that leakage is eliminated. It should also be compatible with current aircrew protective ensembles, such as the Advanced Technology Anti-G Suit (ATAGS). The design should use as much commonality as possible between the male and female systems. A single device is preferable but proposals for separate devices will be considered.

PHASE I: Laboratory demonstrations will be conducted to indicate the feasibility of the method proposed to improve bladder relief capability. Specifically, the new approach shall focus on designs for the male and female systems and materials that demonstrate acceptable levels of comfort. It should also address issues of capacity (enough to handle current long duration missions for fighter aircraft), flow rates and other performance factors.

PHASE II: Provide prototype systems for both male and female and test those systems under various flight conditions. Tests shall address comfort of wear and removal, ease of installation, leakage prevention, and performance issues such as flow rate and capacity. Different materials and designs may be tested to determine which provides the best solution. A final prototype and technical documentation will be delivered.

PHASE III DUAL USE APPLICATIONS: Phase III military applications include use by both male and female aircrew especially on long duration missions. Phase III commercial applications include medical applications for non-ambulatory patients. Commercial applications could also include replacement of diapers for incontinent adults.