SPECIAL EDITION



MARCH 10 - 12, 2015



#### Moog NASS - The world's leading provider of military navigation systems

Moog's experience in Navigation and Surveillance systems dates back to the 1960s with a long history of product excellence and support in both the civil and military markets. Our product heritage is based on supplying innovative system solutions to the US Department of Defense. By the 1980s, we were supplying complete fixed-site, shipboard, mobile and man-portable TACAN systems to the US and its allies.

#### Man-Portable TACAN System - MM-7000MP



Moog has leveraged decades of lessons learned developing the MM-7000 Transponder Platform. All modules include the most current technology using state-of-the-art components and devices including extensive use of Surface Mount Technique (SMT) components, Field Programmable Gate Arrays (FPGA), Digital Signal Processors (DSP) and other microprocessors. This approach significantly reduces vulnerability to future component obsolescence, improves reliability/maintainability, and virtually eliminates the need for on-site routine/preventative maintenance.

Calibration and alignment procedures associated with initial installation, start-up, restart and channel frequency change operations are eliminated by use of wideband RF circuitry, frequency synthesizers and modern digital components. Remote Maintenance Monitor (RMM) circuitry and embedded firmware allow both local and remote users to configure/adjust system-level and module parameters using a simple, graphical user-interface.

The man-portable TACAN system consists of the Model MM-7000MP Beacon-Transponder, AS-4502 man-portable TACAN antenna, and Antenna Tripod. The complete system fits into three two person carrying cases that fit easily onto the bed of transport vehicles. It is easy to setup and fully operational within minutes of arrival at a forward, unprepared tactical position. The MM-7000MP is the world's lightest, smallest, and most mobile/portable TACAN ground-station. A Remote Control and Status Unit (RCSU) and external Azimuth Monitoring System are also optionally available.

### **INNOVATIVE SOLUTIONS AND DEDICATED SUPPORT**

## **Tarsier Provides Continuous Scanning to Automatically Detect Runway Hazards**

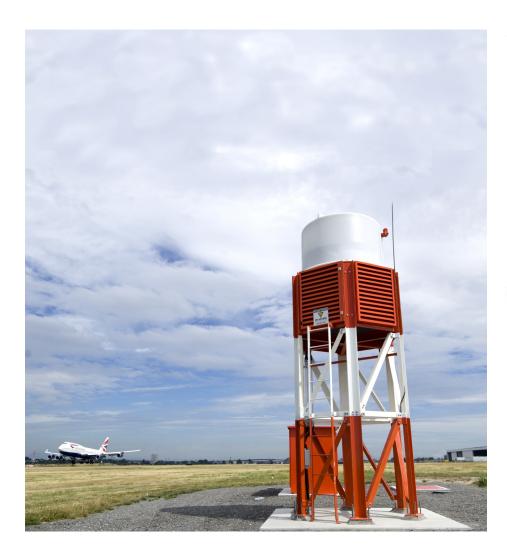
Moog has entered an Exclusive Co-Operation Agreement with QinetiQ, a world renowned research and development company, for marketing and delivering their Tarsier Foreign Object Debris (FOD) automatic detection system. Tarsier is the global market leading solution for management of potential hazards on airport runways. It complements and enhances airport Safety Management Systems mitigating risks on the runway. Tarsier combines the latest in sensor technology with advanced digital signal processing to provide round-the-clock monitoring of designated runway surfaces.

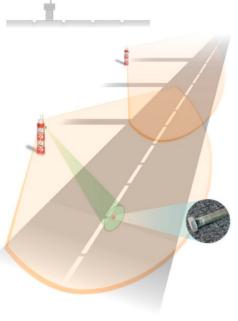
For airports seeking to maximize safety on the runway with no adverse impact on aircraft operations, Tarsier provides:

- · Continuous runway inspections, giving certainty over runway cleanliness and availability.
- · Rapid alert to any potential threat or hazard.
- · Ability to immediately assess the nature and seriousness of potential hazards.
- Detailed data records, allowing ongoing risk assessment and risk management, in line with best practices in airport Safety Management Systems.

Tarsier's long range sensor design minimizes the number of units needed to cover a runway, critical for airports with parallel runways and taxiways which limit the space available to place towers. Tarsier's millimeter wave radars constantly scan the runway for potentially dangerous items. Robust and operational proven digital signal processing techniques automatically alert an operator. Long-range cameras can be cued directly to the alarm location, to allow operator "eyes- on" confirmation and assessment of the risk. Highly accurate location data allows rapid removal of debris from the runway.

Provided with the system is the Tarsier Toolbox a database and reporting system which allows trends and hotspots to be identified and overall FOD risk managed in line with the airport's Safety Management System.





## **COMPREHENSIVE SOLUTIONS AND INNOVATIVE PRODUCTS**

#### **Successful Tradition in India**

Moog's success in India continues to strengthen with sales of navigation aids to the Air Force and Navy. India has ordered 60 model 2030 Direction Finders, 62 model 2020 Distance Measuring Equipment beacons and 31 model 2010 TACAN beacons. Moog is currently delivering these systems across the country and is confident we can continue to be a major navigation aid supplier to this valuable customer. Moog's strong position in India reinforces our existing presence in the region with systems in neighboring countries such as Singapore, Vietnam, Indonesia, Thailand and the Philippines.



# AN/URN-32 Upgrades Now Exceed 128

Moog's delivery of MM-7000 based AN/URN-32 TACAN systems to the U.S. Navy continues to upgrade Navy's fleet. Moog's upgrade kit has exceed required performance and offers an optimal solution for modernizing Navy's shipboard navigation capabilities. U.S. Navy relies on Moog to support their peace-keeping and wartime efforts and Moog delivers with pride. This program is key to Moog's MM-7000 success and Moog is proud to be a valued supplier to the Navy.



# **Continued Orders for Littoral Combat Ships**

Moog continues to supply TACAN equipment for U.S. Navy's Littoral Combat Ship program. Over 9 systems have been delivered to the two prime contractors for installation on Navy's newest vessels. These systems have high availability and proven performance and offer the Navy the best navigation capabilities available under all conditions.









#### For more information contact:

Andy Blyth, Director of Sales and Marketing Phone: +44 1582 748661 E-mail: ablyth@moog.com

John Willey, General Manager
Phone: +1 801 974 7421 E-mail: john.willey@moog.com

