



## JSWAG in the Spring

The next action chit working JSWAG is scheduled for May 12-14 in Lexington Park, Md. This is an invitation only meeting. Please contact your committee lead if interested in attending. Visit [www.navair.navy.mil/jswag](http://www.navair.navy.mil/jswag) for more information.

## JSWAG in the Fall

The next fall JSWAG is scheduled for Nov. 2-5 in Virginia Beach. All interested members of the armed services are invited to attend. This is your opportunity to address your wiring & fiber optics concerns and issues, and get informed on recent updates. Visit [www.navair.navy.mil/jswag](http://www.navair.navy.mil/jswag) for more information.

## Newsletter Contacts

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# Products being tested to counter wire chafing

According to Naval Safety Center reports, chafing conditions contribute to a high percentage of wiring system safety issues.

System failures and electrical fires can result from an electrical short caused by exposed conductors coming in contact with each other or to aircraft structure. The current method to prevent chafing conditions can be found in the Joint Service General Wiring Maintenance Manual NA 01-1A-505-1. This installation and repair practices manual provides a very limited amount of abrasion protection products for the various aircraft-wide applications. The need for improved chafe protection for cables/harnesses was identified by JSWAG members and maintenance professionals from the fleet.

Several products were identified as potential replacements for the obsolete product Expando FR TW 9mil and several additional products were identified for: high temperature, electromagnetic interference (EMI) and fiber optic applications as well. After reviewing different products from various vendors, an operational and engineering evaluation was performed on selected products to identify the most suitable to protect against chafing. The products evaluated were Expando 686 DM, Roundit PPS, Roundit 2000 NX, Roundit 2000 NX EMI, and Roundit 2000 NX HT.

Testing was performed at the Pax River AIR 4.4 Propulsion System Evaluation Facility (PSEF) where these products passed the required testing and will be incorporated in the NA 01-1A-505-1 in the upcoming change.

The continuous Expando type products are to be used in two basic configurations during the initial harness fabrication; one low and one high temp application. During follow-on repair, when the sleeving has to be wrapped around the harness, the Roundit products offer protection for low and high temperature, fiber optics and shielded harness applications. Most of these new products have a self-wrapping design that is innovative, and reduce the mean time to repair. For extreme

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high temperature applications the product Roundit 2000 NX HT constructed of Nomex and Polyetheretherketone (PEEK) is rated up to 260 degrees Celsius. For low temperature applications the Roundit PPS is a very lightweight and effective solution. For medium temperature applications that require abrasion protection Roundit 2000 NX and Expando 686 DM will be the products to be used. If EMI protection is needed, Roundit 2000 NX EMI will be the solution that meets EMI requirements while providing excellent chafing protection.

These newly approved products are wire harness chafe protection tools available for all platforms based on the suitable need and application. Wiring systems protection directly impacts mission readiness, improves reliability and systems safety, as hazardous reports over the last year identified that 39 percent of wiring failures were attributed to chaffing as the root cause.



Michael Zaborsky uses test equipment in the NAVAIR Wiring Systems Branch of the Propulsion and Power Engineering Department.

# PRODUCTS IN WORK

\* *Wrap-around & Expandable Wire Protection*

\* *Shielded Application*

