

Enhanced Propeller Visibility

Aircraft propellers are dangerous to anyone who approaches them on the ground. Spinning so fast that they're practically invisible, propellers are especially dangerous when light is low or visibility is limited. It's tragically easy to be distracted amid the noise and stress of flight operations, and so people are struck and killed every year.

As the only propeller driven aircraft deployed on U.S. Navy carriers, the E-2C Hawkeye and C-2A Greyhound present a distinct problem. Flight and maintenance crew, used to working with jet aircraft, may be inattentive to the hazards peculiar of propeller-driven aircraft. They need sensory cues to warn them away from a spinning propeller.

DHi® has addressed this problem by applying an innovative Low Light Level Illumination (LLLI) material onto propeller blades, creating a highly effective visual warning indicator: now the crew can see the propellers. This solution (**patent pending**) can also be used on helicopters and a wide array of civilian aircraft.

Enhanced Propeller De-Icing

Today's legacy propeller de-icing systems are outfitted with monolithic carbon brushes that tend to wear unevenly. Uneven brush wear produces a lot of debris that can fracture both brush and holder.

Brush fracture may cause a loss of electrical contact. Left unchecked, it may cause an electrical overload and engine fire.

DHi® has shown that modern Metal Fiber Brush technology provides the ideal solution for propeller de-icing systems. Metal fiber brushes are a cost-effective replacement for failure-prone legacy carbon brushes.

Who is Defense Holdings, Inc.®?

DHi® is a dynamic small business dedicated to helping customers – in government or industry – insert and manage new technology. The DHi staff enjoys a reputation earned over many years for technical, managerial and manufacturing excellence. We support our customers with innovative and timely solutions to the complex problems of implementing and managing technology in a demanding and rapidly changing procurement environment.

Customer questions or concerns can be addressed to:

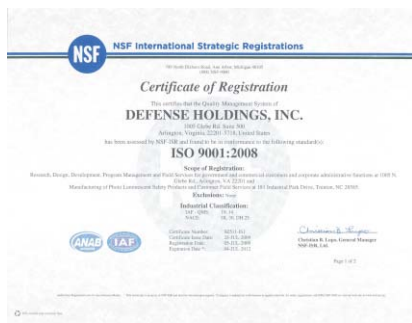
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ISO 9001 Registered Since 2003

DHi has been recognized for its innovative products, expert project management techniques, and attention to detail. DHi has been ISO 9001 registered since 2003. Our QMS requirements cover all aspects of our business including engineering, project management and manufacturing and ensure the consistently high quality of DHi's products and services.



Presents

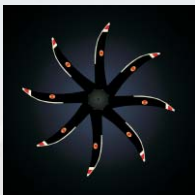


For Improved Military Aviation Safety



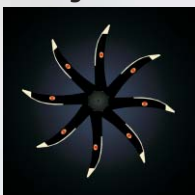
DHi® Engineers Solutions for Improved Aviation Safety

Low Light Level Illumination For Enhanced Visibility



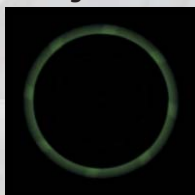
Existing paint used to mark E-2C Hawkeye propellers.

Lights on



AfterGlo® High Performance PL paint on E-2C Hawkeye propellers.

Lights off



E-2C with AfterGlo® PL paint on port NP-2000 propeller



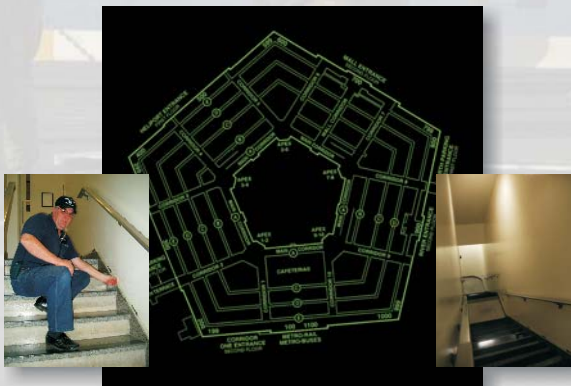
Additional U.S. Navy/ Department of Defense Photoluminescent Applications



A/C MARKINGS
CHAINS
CHOCKS
CRANIALS
DECK EDGE
MARKINGS
GSE

IMRL
MAIN/TAIL ROTORS
TIE DOWN RINGS
TOOL BOXES
TOW BARS
TURNBUCKLES

As a post-9/11 safety improvement, DHi has developed and is installing a comprehensive photoluminescent egress marking system in the Pentagon — the largest such project in the world.



Enhanced Propeller De-Icing Systems



Presently, carbon brushes are inspected and replaced every 400 hours. DHi's Metal Fiber Brushes for the E-2C are predicted to last 2,000 hours before requiring replacement.



DHi designed and manufactured a brush housing that increases the brush length and eases maintenance. The brush holder is a form-fit-function replacement for the existing carbon brush holder.



The DHi E-2C de-icing MFB has been tested under severe propeller de-icing system environmental conditions. It has been satisfactorily tested under vibration, slip ring runout, humidity, altitude and oil-soaked conditions that severely degrade carbon brush systems.



Why does this matter?

- Compared to rotor and stator windings, rotating elements and bearings, brushes are relatively inexpensive, but their impact on life cycle costs is significant!
- Metal fiber brushes excel due to the small volume of non-conductive wear debris they generate, and they last much longer!