



# DEFENSE LOGISTICS AGENCY

## THE NATION'S COMBAT LOGISTICS SUPPORT AGENCY



### SMALL BUSINESS INNOVATION PROGRAMS EXPLORED INNOVATIONS

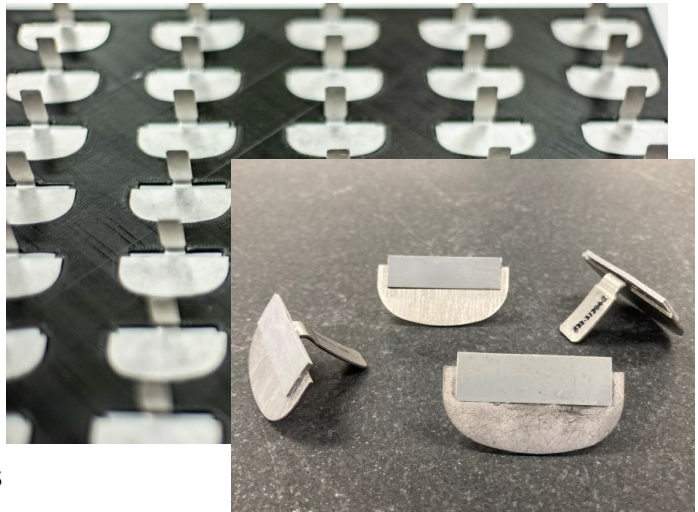
## SECURING RESOURCES FOR US DEFENSE & COMMERCIAL INDUSTRIES

### NUCLEAR ENTERPRISE SUPPORT

## PARTS LIFE QUALIFIES AS AN ALTERNATIVE SOURCE FOR MODERNIZED MISSILE COMPONENTS

The Elevon Barrel Seal is small, complex and essential component used in the Air Launched Cruise Missile (ALCM) platform. In partnership with the DLA and the U.S. Air Force, Parts Life, Inc. manufactured these seals ensuring availability for the life of the asset and supporting mission readiness of DLA's top priority weapon's system.

In under a year, Parts Life quoted the seals, modernized the technical data package, manufactured prototypes, produced first articles, and filled two contracts with a total quantity of 415 units delivered to DLA.



The Elevon Barrel Seal is a stainless-steel bracket designed from high strength, corrosion resistant stainless steel.

**BACK:** 3D printed precision assembly fixture used to position the rubber seal into place before adhesion IAW the drawing specifications. **FRONT:** Assembled seals demonstrating the rubber adhered into position IAW the drawing. Images provided by Parts Life, 2021.

A specialized silicon rubber sealing is affixed to the bracket in position using a specially designed, 3D printed assembly template. Using the Original Equipment Manufacturer's (OEM) partial technical data, Parts Life converted the documents to modernized material and finished the specifications. The drawings were re-created in Solidworks 3D modeling software and new drawings were produced with modernized specifications, improving both tolerancing and clarity for manufacturability. During prototyping, Parts Life used its X-Ray Fluoresce and Fourier Transform Infrared material scanners to verify the chemical composition of both the acquired metal and rubber samples before assembly could take place.

Specialized bending equipment and dies were required to produce the complex

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#### TOPIC NUMBER:

DLA181-009

#### TOPIC TITLE:

Reverse Engineering  
Technical Data  
Packages for  
Development of  
Alternate Sources of  
Supply for DLA  
Nuclear Enterprise  
Support Office  
(NESO)

#### CONTRACT

#### NUMBER:

SP4701-18-P-0087

#### SBIP COMPANY

#### NAME:

Parts Life, Inc.  
Moorestown, NJ

#### TECHNICAL

#### PROJECT

#### OFFICE:

DLA J68 SBIP

#### PUBLISHED:

2021

Made in the USA





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radii defined in the part drawings. First samples were produced before the pieces were inspected for adherence to drawing dimensioning and tolerancing. This was completed using a Keyence 3D Optical Measurement Machine to inspect the first pieces for increased accuracy over hand measuring tools.

Parts Life produced first articles for testing and modified the drawings based on Engineering Support Activity (ESA) requirements. 3D samples were printed throughout this process to validate all changes made in the 3D models and 2D drawings.

Following these engineering changes, Parts Life carried out the full production of the elevon seals. This included the forming of the metal bracket portion of the seal, the passivation of the stainless-steel component, the adhesion of the specialized silicon rubber onto the assembly, the part marking, and the custom packaging of all 415 units required. Parts Life fulfilled two acquisitions contracts within the year and resolved another DLA obsolescence limited source requirement.

For more information, please contact [DLASBIR2@dla.mil](mailto:DLASBIR2@dla.mil)

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