



SOLUTION PROVIDER'S IMPACT ON MRO & AFTERMARKET DISTRIBUTION

GLOBAL DEFENCE HELICOPTER 2024 | November 2024

JEREMIAH J. ARNOLD
Vice President of Strategic Alliances
S3 AeroDefense

ONE
OWNER
SOLUTIONS

JEREMIAH J. ARNOLD (J.J.) **VICE PRESIDENT OF STRATEGIC ALLIANCES** S3 AERODEFENSE

S3's strategy and development leader, capturing and creating new OEM relationships while nurturing and growing our current strategic alliances

- More than 25 years of experience in commercial & military aerospace markets
 - Previously served at Elbit Systems of America as Vice President of Business Development for the Sustainment and Support Solutions (S&SS) Business Unit, spent 10 years with a division of United Technologies, Sikorsky Aircraft, Derco Aerospace, and was the Logistics Sales Executive responsible for designing and implementing Hamilton Sundstrand, Pratt & Whitney, and Sikorsky Aircraft multi-million-dollar Department of Defense and FMS aircraft logistics programs.
- Hold a Bachelor of Arts in Communication, Graduate Certificate in Communication, Master of Science in Business Management, and in the final stages of obtaining a Doctorate of Philosophy (PhD) in Leadership, researching generational differences and leadership trends within an integrated project management team.



JEREMIAH J. ARNOLD
VICE PRESIDENT OF
STRATEGIC ALLIANCES
S3 AeroDefense

WHO WE ARE

S3 AERODEFENSE

Founded in 2005, S3 AeroDefense provides aircraft spares and distribution, repair and overhaul services, and program and logistics management solutions to global military operators.



SPARES

S3 is an authorized stocking distributor for industry-leading OEMs



SERVICES

S3 is an FAA and EASA-approved repair facility, and authorized repair center for: CEF, Collins Aerospace, Moog, and Honeywell. Repair services are performed with the highest integrity and completed to exceed safety and quality regulations



SOLUTIONS

S3 can design an array of custom solutions including aircraft upgrades and modifications, engineering and technical solutions, performance based logistic solutions, managed supply chain solutions and the establishment of organic component level capability solutions

AWARDS & ACCOLADES



FUTURE 50 AWARD, MASTER | 2010

Awarded by the U.S. Small Business Association (SBA) for fastest-growing, privately owned companies in the US



SMALL BUSINESS EXPORTER OF THE YEAR | 2010

Awarded by the U.S. Small Business Association (SBA) in recognition of achieving significant export sales



“E” AWARD FOR EXPORTS | 2016

Awarded by the U.S. Secretary of Commerce for significant contributions in the effort to increase U.S. exports



CHANNEL PARTNER OF THE YEAR | 2019

Award by Honeywell Aerospace for outstanding customer service and partnership



GOVERNOR EXPORT ACHIEVEMENT AWARD | 2023

Awarded by the Wisconsin Economic Development Commission



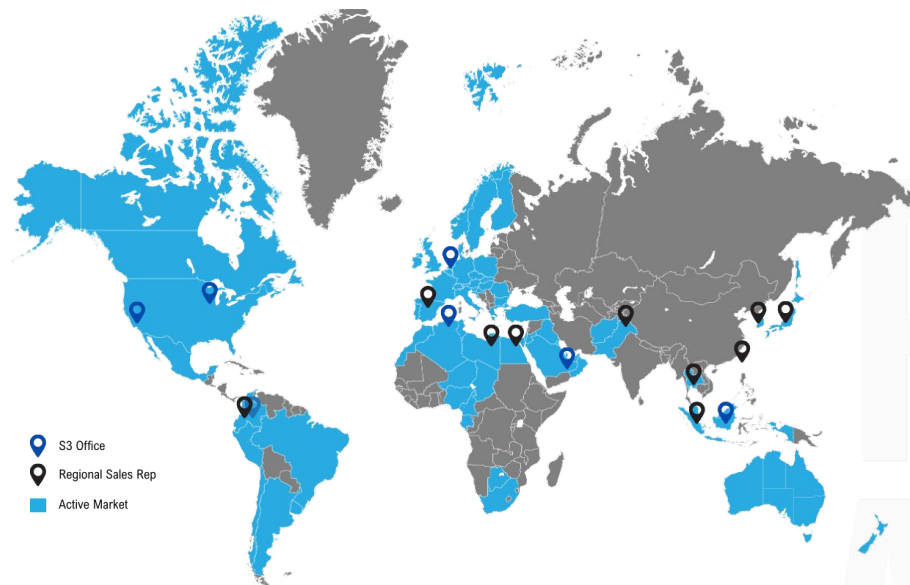
“E STAR” AWARD FOR EXPORTS | 2024

In recognition of sustained contributions to U.S. exports

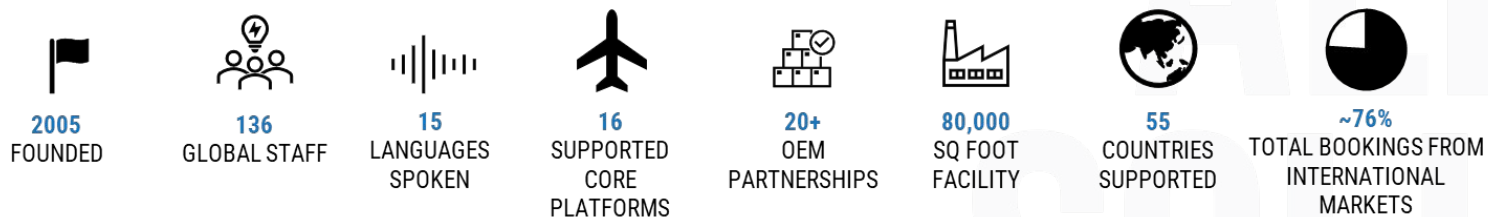
S3 THREE S'S: OEM SPARES STOCKING PARTNER, CERTIFIED REPAIRS SERVICES, AND TAILORED CUSTOMER SOLUTIONS

WHO WE ARE

S3 AERODEFENSE



BY THE NUMBERS



QUALITY & COMPLIANCE



FAA #9S3R896B
Performs all services in compliance with strict requirements of the Federal Aviation Association



EASA #145.6559
Performs all services in compliance with strict requirements of the European Aviation Safety Association



ARSA
An active member of the Aeronautical Repair Station Association



CERTIFIED

TRACE CERTIFIED
S3 is committed to full compliance with all US anti-bribery and corruption laws



ASA 100
Performs all services in compliance with strict requirements of the Aviation Suppliers Association



AS9120B / ISO 9001-2015
Custody, traceability, and control that meet the International Aerospace Quality Group (IAQG)



FEDERAL EXPLOSIVES LICENSE
Certified in handling even the most volatile shipments

OEM-CENTRIC GLOBAL SOLUTIONS PROVIDER

OEM PEDIGREE

S3 AERODEFENSE

OEMs are our business. Which is why we employ a team dedicated to fostering and maintaining relationships with our OEM partners. Our Strategic Alliance Managers are experts in the field of aerospace and defense, who create value by knowing the market, developing strategic growth plans, leading business reviews and owning the business aspects of OEM Partner relationships.

SPARE S



SERVICES



SOLUTIONS



SYSTEMS APPROACH TO PLATFORM SUPPORT

OPERATIONAL ROADBLOCKS FOR ROTARY OPERATORS

S3 AERODEFENSE



Cost inflation

- Rising labor costs, both operational and labor-wise

Supply chain disruptions

- Material costs and part shortages are exacerbated by geopolitical tensions, straining global supply chain
- Manufacturers struggling with the ramp-up in demand, particularly for spare parts for aging fleets, which increases lead times and limits parts availability



Labor shortages

- Struggle to attract and retain younger talent
- Workforce gap puts pressure on MRO shops to invest in extensive training and development programs to maintain operational efficiency and ensure quality standards are met



Complex regulatory compliance

- MRO shops must navigate an increasingly complex regulatory environment
- Challenges requires agility and expertise to meet evolving compliance demands while maintaining high-quality service



COCOON[®]

ROTARY WING EXTERNAL COVERS

PROBLEM STATEMENT

Corrosion is a pervasive and costly issue, impacting militaries worldwide and costing the U.S. Department of Defense (DoD) an estimated \$20 billion annually. It is exacerbated by environmental factors such as rust, mold, sand, dust, UV radiation, airborne pollution, and extreme temperatures. These elements degrade critical military equipment, leading to compromised performance, increased maintenance costs, and reduced operational readiness.

SOLUTION

S3 AeroDefense and Cocoon can help you protect your Assets with the only protective covers that meet the US Aviation & Missile Command (AMCOM) specification for protective covers.



UH-60 BLACK HAWK



CH-47 CHINOOK



AH-64 APACHE



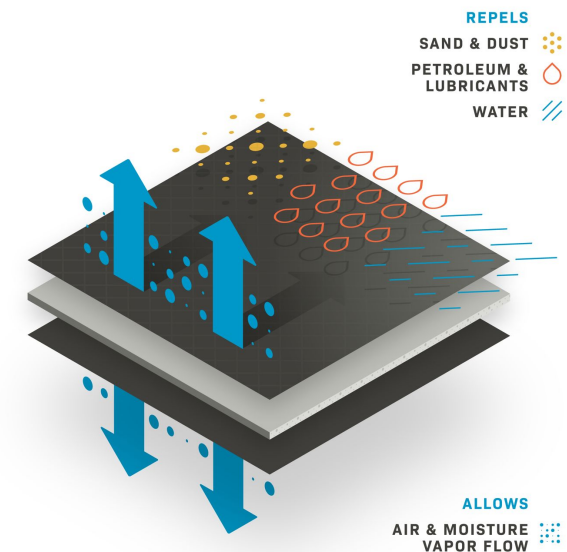
APPLICABILITY

- AH-64 VARIANTS
- CH-47 VARIANTS
- H-60 VARIANTS



KEY BENEFITS & FEATURES EXTERNAL COVERS

- Improved boot material reduces tearing and bearing Technology in a Textile
- Increase Readiness
- Reduce Maintenance Costs
- Extend Asset Useful Life
- Corrosion is a preventable problem if the right covers are used
- Proven performance in every climate



Honeywell

AIR TURBINE STARTER UPGRADE

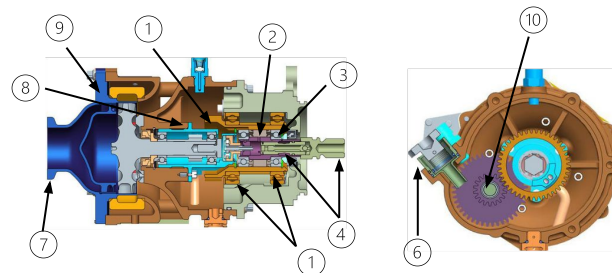
PROBLEM STATEMENT

The UH-60's Air Turbine Starter (ATS) plays a critical role in enabling engine starts and ensuring reliable helicopter operations. Common issues include frequent wear and tear, limited access to OEM-approved repair facilities, and long lead times for replacement parts. Operators require a solution that not only addresses maintenance challenges but also ensures the availability of high-quality repairs, minimizes downtime, and optimizes the ATS's performance.

SOLUTION

Honeywell provides operators with an optimized Air Turbine Starter System with higher reliability, greater performance, and reduced maintenance costs over the life cycle of the aircraft. S3 AeroDefense can implement this reliability upgrade on all UH-60s and provide drop-in replacement benefits such as:

- 1) Crescent Pump Lube System, 2) 10-Sprag Clutch
- 3) Redesigned, Controlled Orifices and Slotted Seal Rotor
- 4) Crowned Spline, Output Shaft, Increased Spline Length
- 5) Larger Oil Return Passages 6) Fill-To-Spill Oil Neck 7) ~150cc Oil Capacity 8) Open Cavity Design 9) Machined Inlet Stator 10) Upgraded Material Jack Shaft Inner Race 11) Quick Drain Oil Valve



APPLICABILITY

- S-70 VARIANTS
- H-60 VARIANTS



KEY BENEFITS & FEATURES

- 5x More Reliable than -6/-9 Starters
- Improved Containment Features
- Reduced Maintenance Cost and Man Hours
- New Quick Drain Oil Valve Allows The Starter To Be Serviced While Installed On The Aircraft
- New Crescent Oil Pump for Improved Lubrication
- All new 10 Sprag Clutch Replacing 5 Sprag Clutch
- 5x increased service life vs. legacy starters, significantly reducing maintenance costs and time
- Approved via US Army AVIATION MAINTENANCE ACTION MESSAGE, H-60-21-AMAM-10.

PN 3505300-5/6/9	PN 3505300-10
~32 Maintenance Steps	~5 Maintenance Steps
700-800 Hour MTBF	>4,000 Hour MTBF
US Army Approved	US Army Approved
Original Equipment	Drop-in replacement

MOOG

UH-60 PITCH TRIM ACTUATOR UPGRADE

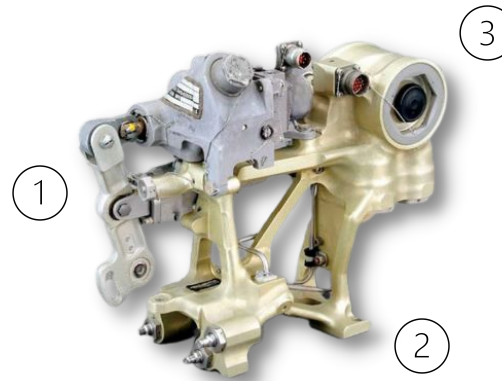
PROBLEM STATEMENT

The UH-60 Pitch Trim Actuator (PTA) was being removed early for unscheduled maintenance due to excessive wear found during inspections. The low Mean Time Between Unscheduled Removals (MTBUR) was driving additional maintenance and costs for operators.

SOLUTION

The PTA reliability upgrade developed and qualified by Moog increases MBTUR and improves wear and tear characteristics in harsh environments such as salt water, humidity and sand.

S3 AeroDefense can implement this reliability upgrade on all UH-60 PTA through an exclusive overhaul program in partnership with Moog. This upgrade has shown improvement to MTBUR of over 38%. The US Army has implemented an upgrade program for their entire fleet.



APPLICABILITY

S-70 VARIANTS
H-60 VARIANTS



KEY BENEFITS & FEATURES

BOOSTER PISTON

- New HVOF-applied Tungsten Carbide coating provides a more durable surface
- Improves resistance to foreign object intrusion, such as dust and sand, into the actuator
- Designed for extended life, which increases MTBUR and reduces depot maintenance costs

FRAME MOUNTING FLEET

- Redesigned to enable the surface to shed moisture, helping to prevent corrosion
- Reduces the maximum stress level
- Increases fatigue margin of safety
- Reduces depot maintenance costs by reducing frame repair and replacement

DUST CAP

- Redesigned with 7075 Aluminum to re-route leakage to a larger internal cavity
- Eliminates the appearance of an out-of-specification leak
- Estimated 70% reduction in removals

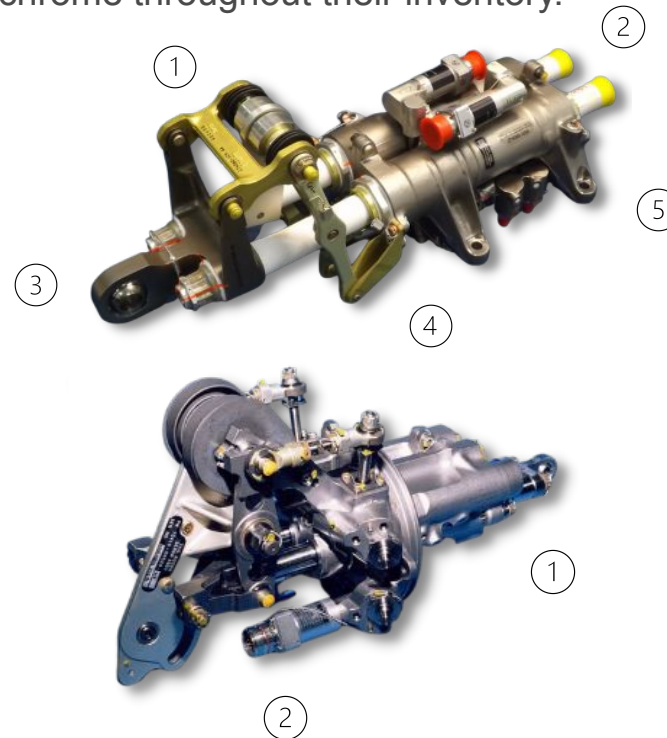
UH-60 MAIN ROTOR SERVO UPGRADE

PROBLEM STATEMENT

The UH-60 flight controls must operate in harsh conditions. The Mean Time Between Failure (MTBF) for key flight controls was low due to hydraulic external leakage. Additionally, the US mandated replacement of chrome throughout their inventory.

SOLUTION

S3 AeroDefense in partnership with Parker offer upgrades for Main, Tail, Yaw, Collective Boost Servo, and Hydraulic Pump systems. These upgrades focus on replacing chrome parts and improving seal technology to reduce the need for removals due to external leaks. These enhancements provide increased durability against environmental factors, including corrosion, leading to a significant boost in reliability with leakage rates improving by 50% to 75%.



APPLICABILITY

S-70 VARIANTS
H-60 VARIANTS



KEY BENEFITS & FEATURES

MAIN ROTOR

1. Improved boot material reduces tearing and bearing life
2. Tungsten Carbide Cobalt Chrome replaces chrome on piston rods improves leakage performance and reduces piston rework
3. New higher strength Stainless steel rod end
4. New input crank spline reduces wear and free play
5. Improved dynamic seals/scrapper and end glands improves leakage

TAIL ROTOR SERVO

1. Improved dynamic seals/scrapper and end glands improves leakage
2. Tungsten Carbide Cobalt Chrome replaces chrome on piston rods improves leakage performance and reduces piston rework

BENEFITS OF A COMPREHENSIVE SOLUTIONS PARTNER

S3 AERODEFENSE



Tailored Solutions

- Can build custom repair cycle for parts or setting up specific logistics channels to meet operational needs
- Flexibility is key when every minute of downtime counts



Simplified Supply Chain Management

- Reduced complexity for operators who have a single point of contact (not multiple) in the supply chain
- Streamlined communication / administrative management



Risk Mitigation

- Can easily shift sourcing strategies and leverage network to ensure continuity
- Mitigated supply chain and lead time issues



Strategic Leverage and Advocacy

- Ability to negotiate better terms, pricing, warranties or access to new innovations / upgrades on behalf of customers because of OEM relationships



Market Knowledge

- Customers benefit from distributor's knowledge of regional regulations, logistics and business customs



Cost Efficiency

- Leverage purchasing power (aka buy more, save more) to offer better pricing on parts, repairs, and logistics services

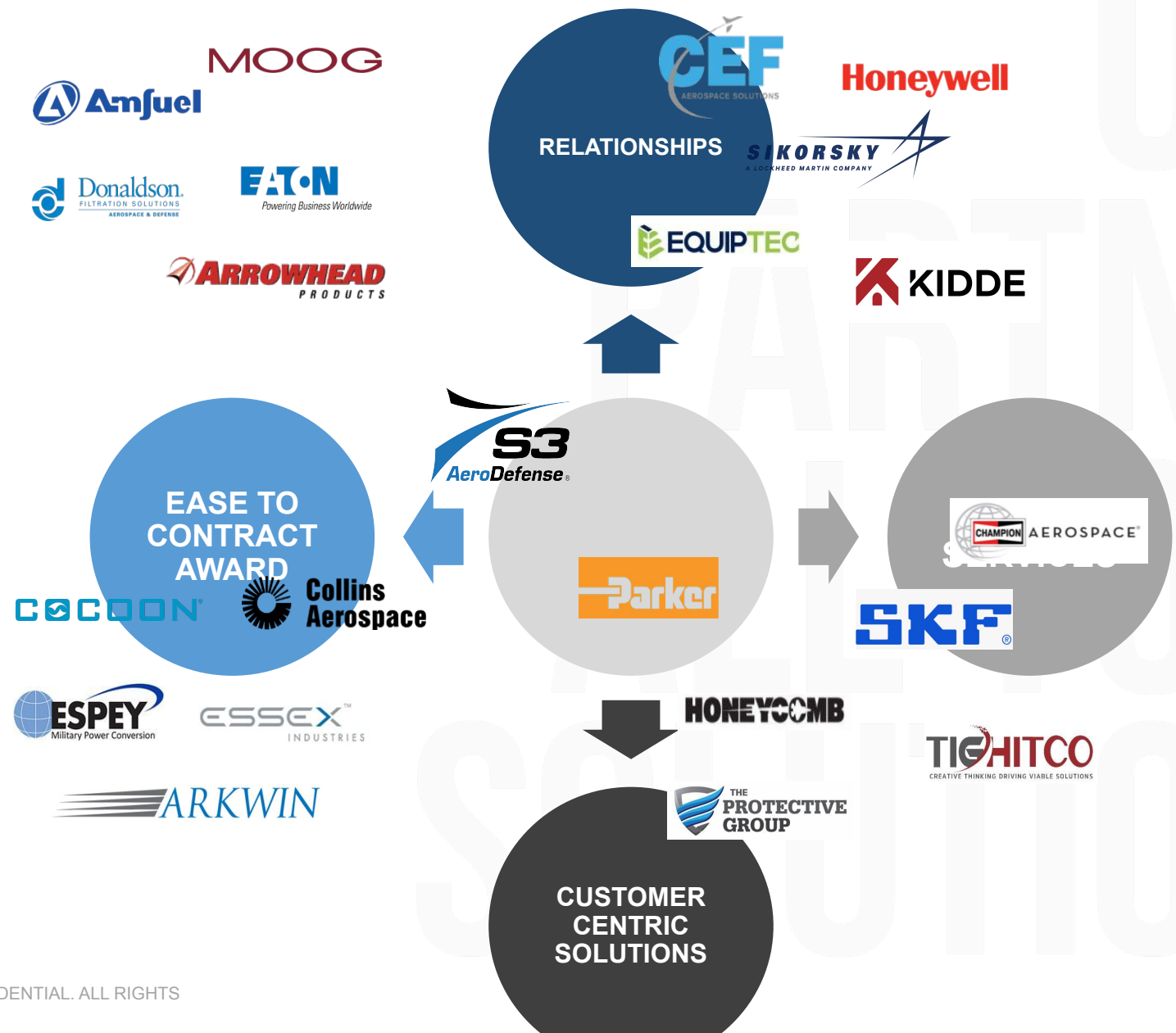


OEM Relationships

- Direct relationships benefit operators by giving them early access to innovations, and upgrades, ensuring they remain competitive and technologically up-to-date.

RIGHT PART, RIGHT PLACE, RIGHT TIME = BEST VALUE

IN SUMMARY
S3 AERODEFENSE



THANK YOU FOR YOUR TIME

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