



Ace Aeronautics UH60 Service Life Extension Program



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- Company Overview
- Black Hawk Program-Our Mission and the Ace Difference
- Evolution
- Revolution



ACE AERONAUTICS COMPANY OVERVIEW

- Aircraft Integration/Manufacturing Company
 - FAA Approved CFR Part 145 Repair Station
 - Cert # **7GVR112D**
 - NAICS/SIC - 336411/3721
 - AS9100D, 9110C Certified
 - DDTC Registered
 - CAGE Code **7F5X5, 62810**
 - NAVAIR KRACEn PRIME **N68520-20-D-0002**
- Capabilities
 - Complete Aircraft MRO
 - Upgrades & Modifications
 - Engineering
 - Prototyping
 - Manufacturing
 - Systems Integration
 - Qualification / Certification
 - Experimental Flight Testing
 - Paint and PMB
 - Pilot and Maintenance Training
- Facilities/Services
 - 25,000 sf offices and logistics space
 - 25,000 sf manufacturing facility
 - 32,000 sf unfueled aircraft hangars
 - 40,000 sf fueled aircraft hangar
 - 6,000 sf maintenance building
 - 9,600 sf Aircraft/Helicopter Blast/Paint Booth
 - Airfield Rescue and Fire Fighter (ARFF)

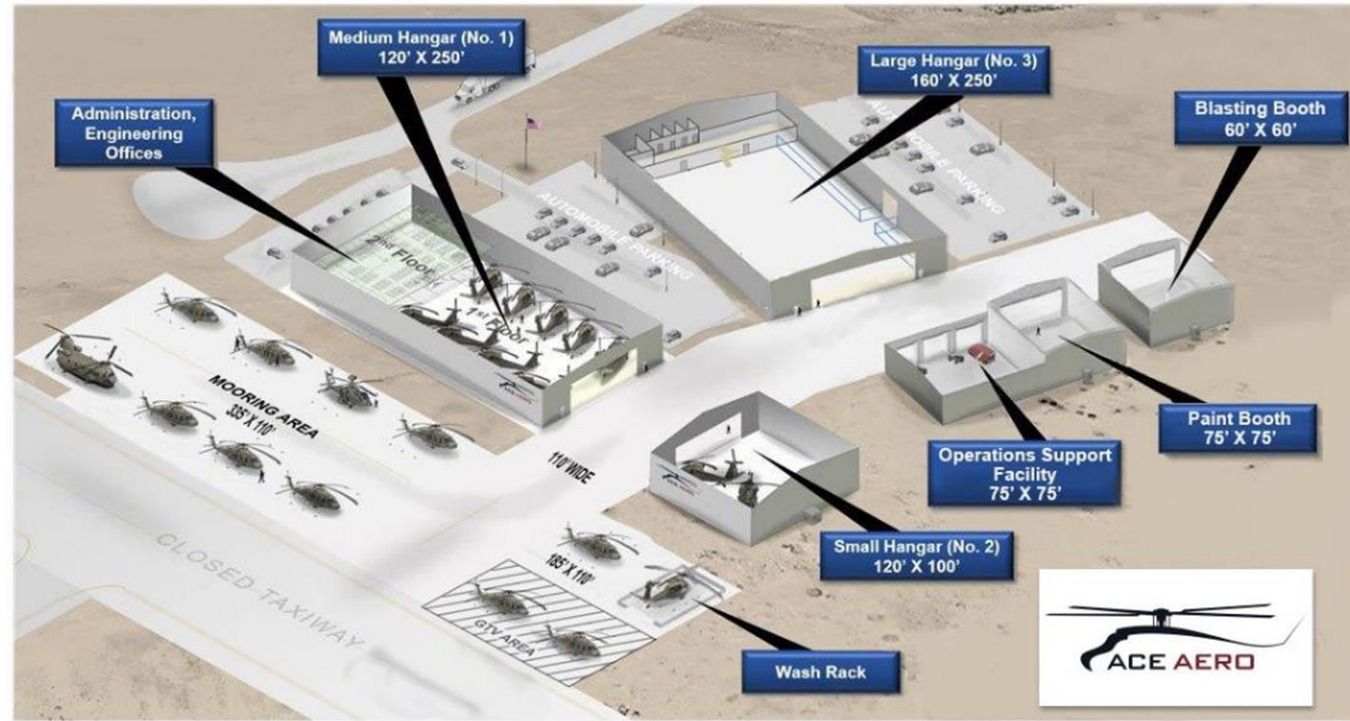
Ace Deck G5000H Integrated Flight Deck



Delivery day for upgraded Austrian S-70A



Ace Guntersville, AL location





THE ACE MISSION

- Ace Aeronautics provides **innovative and long-term airframe and avionics solutions** to commercial and government aviation users worldwide.
- Ace Aeronautics offers both **commercial and military off-the-shelf (COTS/MOTS) products for all rotary wing aircraft** that provide state-of-the-art system solutions to resolve obsolescence and capability gaps.
- Our commercially developed and qualified business model offers customers the **best value, quickest to market and lowest risk approach** to upgrading existing fleets or inducting new aircraft into operation.



- Ace has invested in aircraft, to provide responsive delivery times to customers.
 - Ace currently has 26 UH60A+ and UH60L model aircraft under roof in Guntersville with more arriving every week.



- Full Maintenance, Repair and Overhaul capability
 - Capable and certified to execute under either FAA Part 145 repair station or US Defense Contract Management Agency (DCMA) rules



State-of-the-art Media Blast and Paint Facilities
(large enough for CH-47 or Beech King Air)



ACE AERONAUTICS

Model No. **UH-60A**

Serial No. **80-23439**

Date Mfd. **1980**

Engine Model **T700-GE-700**

Type Cert No. **R00005RC**

Cert Date **October 21, 2016**

Data Plate S/N **2016001**



ACE AERONAUTICS LLC.
DALLAS, TX 75201

DRAWING **40002**

REVISION **-**

CAGE CODE **7F5X5**



United States of America
Department of Transportation
Federal Aviation Administration

Type Certificate

RESTRICTED

Number: R00005RC

This certificate issued to: ACE Aeronautics, LLC

Certifies that the type design for the following product with the operating limitations and conditions therefore as specified in the Federal Aviation Regulations and the Type Certificate Data Sheet meets the airworthiness requirements of Part 21 of the Federal Aviation Regulations. *21.25(a)(2)

Model: UH-60A Helicopter

This certificate, and the Type Certificate Data Sheet which is a part hereof, shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.


Date of Application: February 12, 2016

Date Reissued:

Date of Issuance: October 21, 2016

Date Amended:

By Direction of the Administrator

Signature: 
Matt Couch
Title: Acting Manager, First Watch Aircraft Certification Office
Regional Director
Southwest Region

Any violation of this certificate or the Type Certificate Data Sheet is punishable by a fine not exceeding \$1,000 or imprisonment for 1 year, or both. This certificate may be transferred or made available to third persons by license or agreement in accordance with Title 14 of the Code of Federal Regulations, part 21, section 21.42. (14 CFR 21.42). A transfer must be endorsed as provided on the reverse hereof. A Type Certificate holder who allows or causes to be used the Type Certificate for another use without a valid, current, original, or proper endorsement must provide that person with a written licensing agreement acceptable to the FAA. (14 CFR 21.42)

- Proven UH60 flight and maintenance training capability



- Tailored to each specific aircrew population and set of customer requirements
- Available at established US and European training facilities, or in customer country





Partner Companies

Helicopter Alliance 



1. Base UH-60A/L

- OEM cockpit, but with fresh Preventive Maintenance Inspection (PMI), paint, and refurbished dynamic components. Tremendous capability and value.



2. “Ace Deck” G5000H Integrated Flight Deck (IFD)

- Extensive upgrade of all cockpit controls and displays with the Garmin G5000H IFD



3. “Ace Deck” + Mission Equipment

- Adds control and display of tactical maps on the G5000 IFD, full on-board real-time aircraft performance calculations, and tailored equipment (electro-optical sensor, helmet mounted cueing system (HMCS), tactical radios, etc.)



4. “Ace Deck” + Mission Equipment + Weapons

- Many off-the-shelf, qualified armament options to choose from





ACEDECK UPGRADE PROCESS: INSTALLATION



* ACEDECK upgrade also yields empty gross weight reduction



ACEDECK VL-60 INTEGRATED FLIGHT DECK STC



FAA STC# SR01944WI issued July 2020

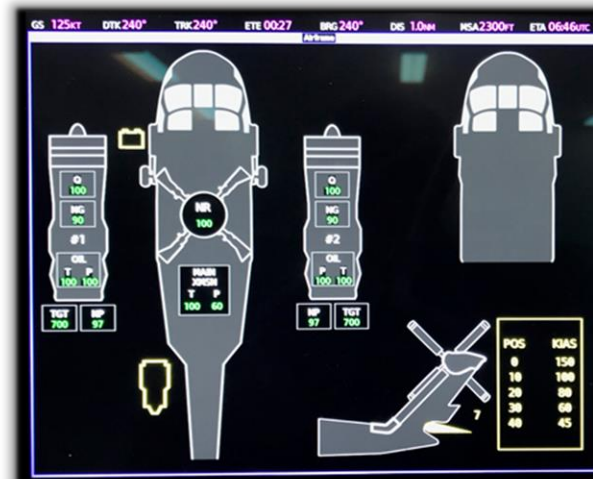
- 1st Part 29 OEM to qualify an integrated digital flight deck for the UH-60 Family of aircraft.
- Ace Deck Vertical Lift-60 or VL-60
 - IFR Certified
 - Fully NextGen Compliant
 - NVG Compatible

PROPRIETARY - ACE AERONAUTICS, LLC

FAA Parts Manufacturing Approval (PMA)
PQ03906SW Issued November 2020

- Native to G5000H:

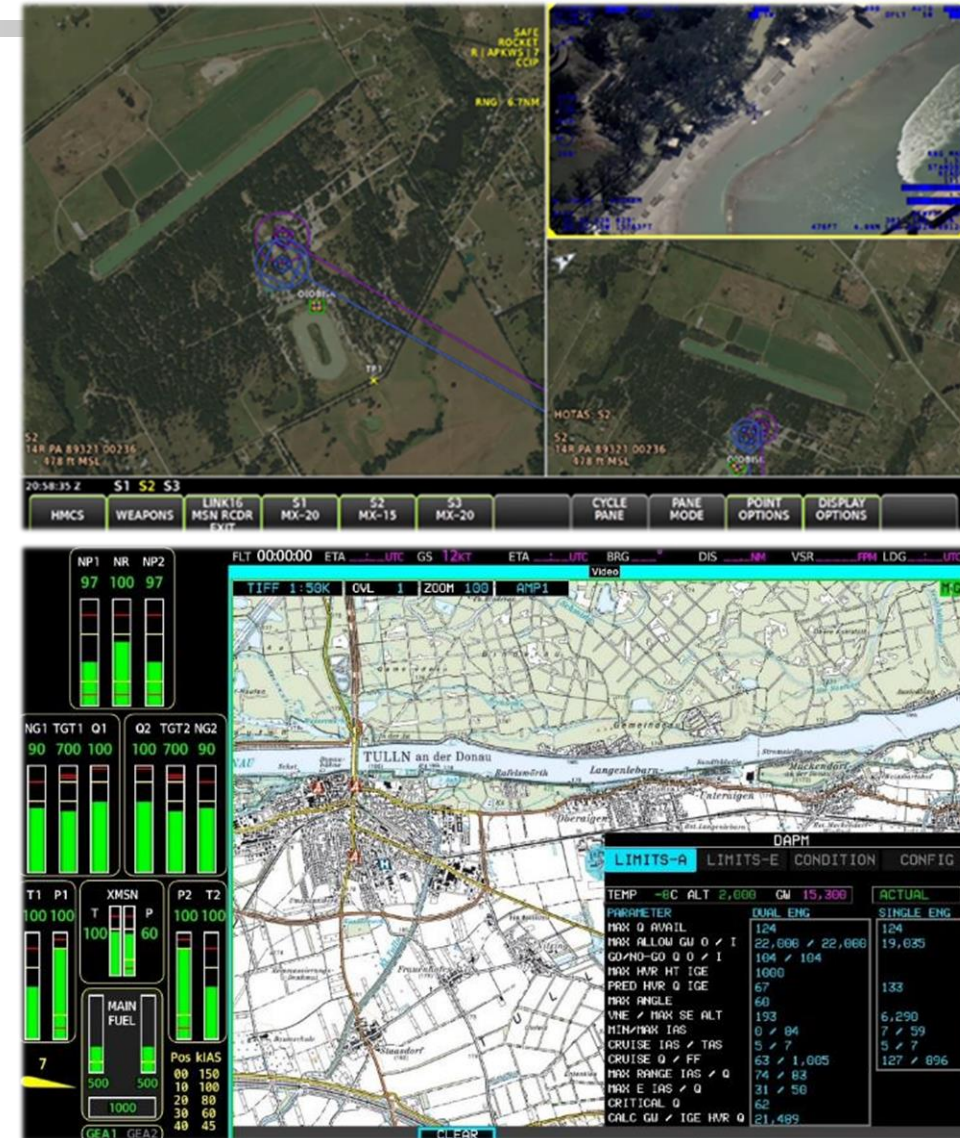
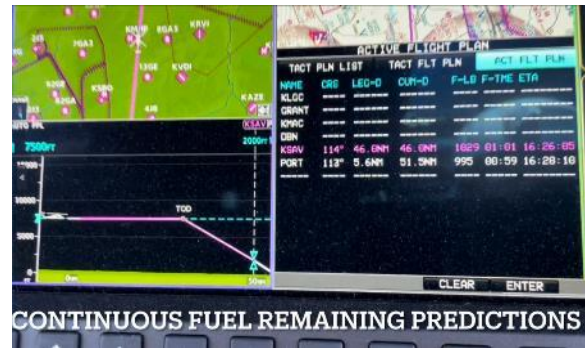
- Touchscreen Flight Management System-glove compatible with Flight Director
 - Area Navigation (RNAV) navigation down to 200 ft ILS equivalent, using SBAS GPS (WAAS or EGNOS)
 - Iridium satellite – telephone, email/SMS text, position reporting, and digital enroute weather
 - Synthetic Vision System (SVS)
 - Helicopter Terrain Awareness and Warning System (HTAWS)
 - ADS-B IN and OUT – traffic display
 - Geo-referenced approach charts
 - Overlay weather and traffic on digital map
 - Many previously certified Garmin options (Wx radar, etc.)
- * Enablements for third-party mission computers to use Garmin displays, buttons, and touchscreens.





REVOLUTION: ACEDECK MODULARITY AND ADAPTABILITY

- The ACEDECK VL-60 is **modular and configurable for user mission requirements**
- Non-Garmin mission computers provide controls and displays for:
 - tactical moving maps
 - tactical radios
 - electro-optical sensor
 - helmet-mounted cueing system
 - weapons management.
- The mission computers use Garmin displays and controls for an integrated look and feel.
- However, **mission capabilities can be upgraded and updated without affecting the certified cockpit. (i.e., no need to recertify Garmin software.)**

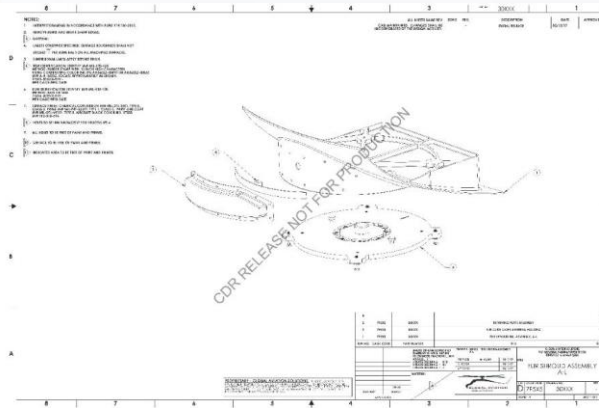
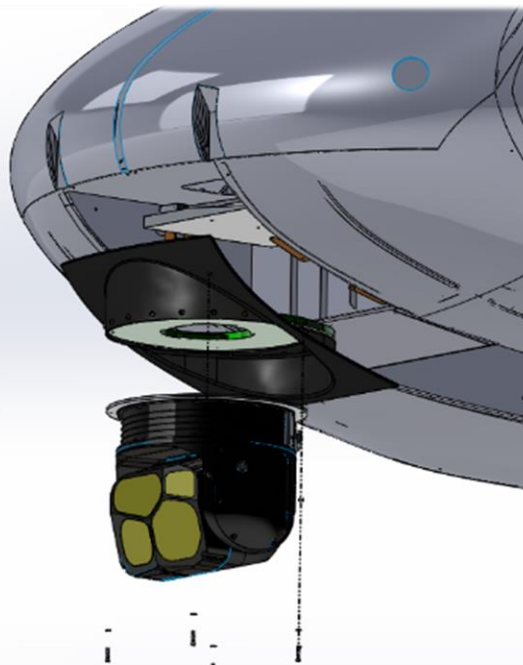
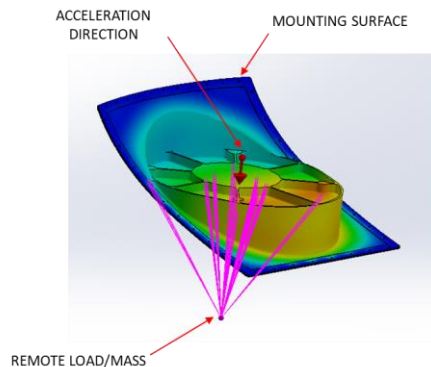




ACE ELECTRO-OPTICAL SENSOR MOUNT STC



FLIR SS 380-HDc on the
Ace EO/IR Mount



United States of America
Department of Transportation
Federal Aviation Administration
Supplemental Type Certificate

Number: SR01957WI

This certificate issued to: ACE Aeronautics, LLC
105 Buck Island Road
Guntersville, AL 35976

Certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of 29 of Code of Federal Regulations

Original Product: R0005RC
Type Certificate Number: _____
Make: ACE Aeronautics, LLC
Model: UH-60A

Description of Type Design Change:

- Installation of the HD Sensor Mount
- 1) ACE Aeronautics, Master Data List (MDL) 3S18-018-1001, Revision IR, Dated: 12/18/2020 or later FAA approved revision.
 - 2) ACE Aeronautics, Rotorcraft Flight Manual Supplement (RFMS) 030-RFMS-30011, Revision B, dated 11/18/2020 or later FAA approved revision.
 - 3) ACE Aeronautics, Instructions for Continued Airworthiness (ICA) 030-ICA-36012, Revision D, dated 11/24/2020 or later FAA accepted revision.

Limitations and Conditions:

- 1) Compatibility of this design change with previously approved modifications must be determined by the installer.
- 2) If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission. (continuation of limitations on page 3).

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of Application: July 18, 2018 Date Reissued: _____

Date of Issuance: December 18, 2020 Date Amended: _____

By Direction of the Administrator

Signature: *Steven K. Simpson*
Steven K. Simpson
ODA administrator
Title: ODA-833355-CE

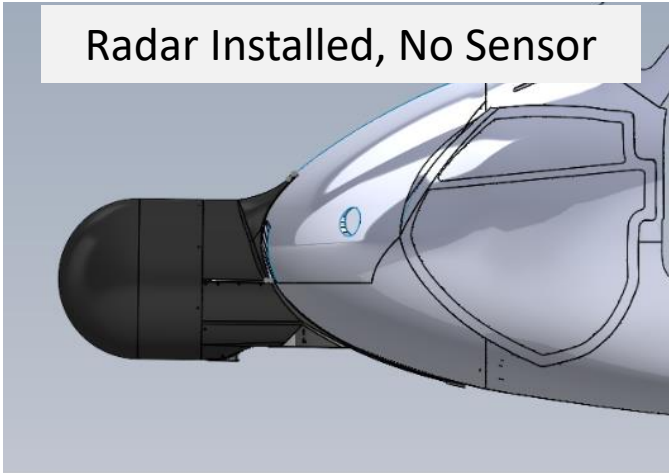
Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both. This certificate may be transferred or made available to third parties by licensing agreements in accordance with 14 CFR 21.47. Possession of this Supplemental Type Certificate (STC) document by persons other than the STC holder does not constitute rights in the design, data set or to alter an aircraft, aircraft engine, or propeller. The STC's supporting documentation (drawings, instructions, specifications, flight manual supplements, etc.) is the property of the STC holder. An STC holder who allows a person to use the STC to alter an aircraft, aircraft engine, or propeller must provide that person with written permission acceptable to the FAA. (Ref: 14 CFR 21.123)

FAA Form 8110-2 (11/20) SUPERSEDES PREVIOUS EDITION

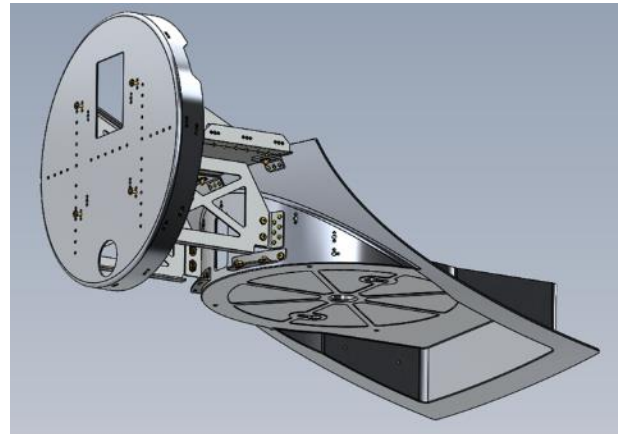
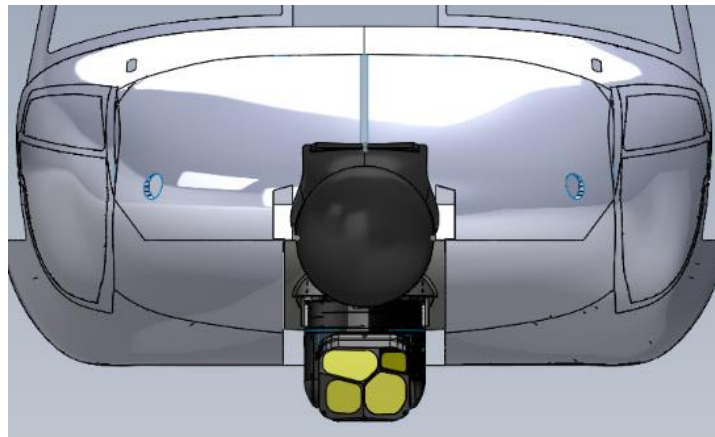
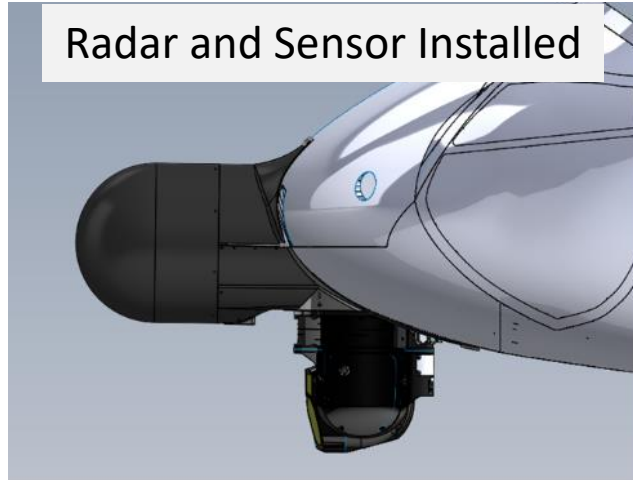
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EO-IR SENSOR MOUNT CONFIG WITH WX RADOME

Radar Installed, No Sensor



Radar and Sensor Installed



STC Amendment (In Work) Adds
Nose Radome for Color Weather
Radar to support the Austrian Fleet
Expansion Program (3 Aircraft) and
the Portuguese Air Force Fleet
Program (9 aircraft)

- Autopilot development
 - Four-axis development of coupled autopilot (civil-certified, dual-redundant)
- Expansion of integrated tactical capabilities, capitalizing on the Ace-Garmin open architecture
- New (Onboard Mission System) + (Mission Planning / Rehearsal / Debrief System)
- ACEDECK VL-47 Integrated Flight Deck



OVERARCHING GOAL

Our goal is to provide the End User with a complete modernization plan and long-term sustainment partnership for your UH-60 Fleet. We offer the following services:

- Turn-key aircraft delivery
- Avionic upgrades
- Engine upgrades
- Pilot & Crew Chief training (IP, MTP, PI, NRCM)
- Maintainer training
 - Including Virtual Maintenance Trainer
- Full motion / non-motion Simulation
- Publications / Technical Manuals
- Field Service Representatives
- Spares management





CONTACT INFORMATION

- Ace Aeronautics is located at:
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Guntersville AL, 35976
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- Technical POC, Evan Brown, ebrown@aceaero.com
- Business POC, Bob Caldwell bcaldwell@aceaero.com
- www.aceaero.com