SOLOY
AVIATION SOLUTIONS

TURBINE TOPICS

SUMMER | 2014

ARIZONA'S PIMA COUNTY SHERIFF'S DEPARTMENT DEPUTIZES ITS SECOND SOLOY MARK II SENTINEL SURVEILLANCE AND SUPPORT AIRCRAFT.

With nearly 9,200 square miles to cover, watching over the seventh largest county in the U.S. requires an aircraft with fast response speeds and long loiter times.

The officials of Arizona's Pima County Sheriff's Department have proven what other operators have known for a long time: If one Soloy Sentinel Mark II is good, two is even better.

"Just last year, the Pima County Sheriff's Department received their first Soloy Sentinel and now, just a few months later, they've taken delivery of their second Mark II," stated Soloy's CEO, Dave Stauffer. "We developed the Sentinel for just this type of mission and we could not be prouder that the aircraft has proven itself yet again to be the best solution."

The Rolls Royce powered Soloy 206 "Sentinel" edition is a specially prepared version of the ever popular Soloy MKII 206 turbine Cessna airframe; offering law enforcement an equally capable yet lower cost alternative for aerial observation than that of slower and more expensive helicopter platforms.

Stauffer explains the specific Sentinel configuration. "The Sentinel is an airborne observation platform designed as much for the Observation Officer riding in the back as the pilot in front. With the Sentinel, we're offering a package of necessary observation accessories for law enforcement airborne surveillance ready for their specific mission equipment. We couple that with the high performance and reliability of a turbine engine. The Sentinel surveillance specific equipment provides a 270 degree articulating seat, full length observation window in the back and a redesigned headliner for more room to work that includes comfortable four-point harnesses for the pilot and co-pilot. We place a camera mount on the left wing that can accept virtually any camera up to 100 pounds and 18" in diameter. With the addition of Soloy's fixed aileron trim tabs, the effects on flight characteristics are minimal."

The Sentinel has been specifically developed to meet both the physical and fiscal needs of today's law enforcement agencies. It is an observation platform that can be airborne in under seven-minutes, travel at over 140 KTAS and then quietly loiter over an area at remarkably low airspeeds for hours. Stauffer further comments, "Operators are finding that helicopters just can't match the Sentinel for its combination of speed and efficiency – two critical points when you are responsible for an area as vast as Pima County."

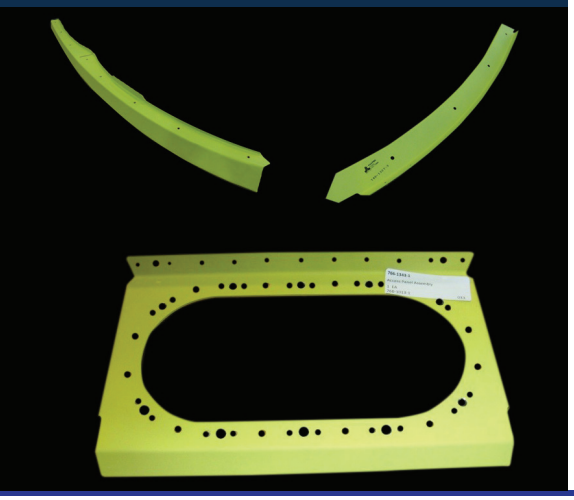
Like its first Mark II, Pima County's newest aircraft will also be equipped with an array of state-of-the-art surveillance electronics and optics. "Another advantage the Sentinel has over a helicopter is its ability to carry the added weight of all the necessary electronics along with full-fuel and three crewmembers," Stauffer said. "And it does it all at an hourly operating cost that is a fraction of a comparable turbine helicopter."

CUSTOMERS NEEDING SMALL QUANTITY SHEET METAL FABRICATION LOOK TO SOLOY

Over the years Soloy has developed its sheet metal parts manufacturing capabilities to a level where it is now satisfying a growing number of customers with small quantities production of high quality aircraft parts.

Soloy originally developed this capability to satisfy its own needs for their conversion kits for the Hiller UH-12, Bell 47, Cessna 206 and 207, Bell 206 and AS350. Each kit requires between 50 and 100 different sheet metal or welded fabrications, produced at low quantities to meet the particular needs of the conversion kits. Low quantity requirements usually present problems for specialty houses that commonly produce parts in very high numbers. The expensive tooling required for high volume production is justified as it becomes a low percentage of the actual per part cost.

To successfully produce low volume parts at reasonable prices, tooling must be simplified without effecting the quality of the finished component. Soloy's versatility in using less complex sheet metal stretch and hydra forming equipment has allowed them to meet their own needs as well as a growing number of aviation industry clients.



ELECTRONIC ENGINE MANAGEMENT SYSTEM NOW AVAILABLE FOR EUROCOPTER A350 SD2

New graphic engine indication system also captures and displays several levels of engine diagnostics.

Even during a "simple" mission, monitoring the aircraft's and engine systems as well as staying aware of outside weather and obstacles puts significant pressure on today's helicopter pilots.

To help ease the workload, at least as far as engine management is concerned, Soloy Aviation Solutions has introduced a new Electronic Engine Management System (EEMS) for Eurocopter AS350-SD2 helicopters.

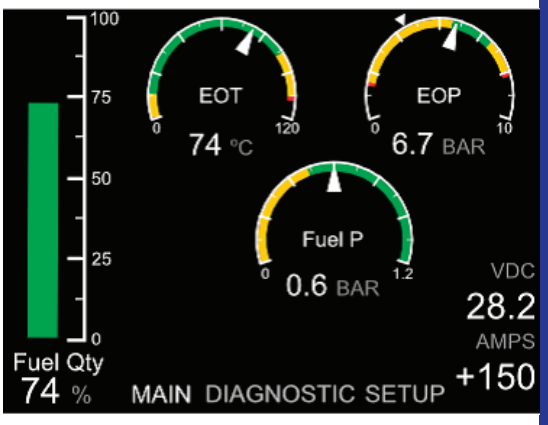
"This new system dramatically reduces pilot workload by providing an easy-to-interpret graphical representation of all primary engine indications," explained Soloy's head of Helicopter Sales, Nick Parkinson. "All critical engine information is now easy to find and understand. No more confusion searching individual mechanical instruments.

"Once configured to the individual airframe and engine combination, the EEMS will provide the most advanced monitoring possible," he added. "Pilots will find it a lot easier to keep track of a lot of information in this new graphical display format."

Soloy's EEMS display unit features two separate, vertically arranged, LCD screens, with the upper screen being the Primary and lower the Secondary display. To provide total system redundancy, these two displays are totally independent.

"Should one display cease communication, the other will automatically initiate reversionary mode operation," Parkinson said. "The reversionary mode still displays all the information from both main screens but in a more concise format with smaller graphics."

Parkinson also explained that in addition to engine displays, the Soloy EEMS provides several levels of diagnostics capture capabilities including engine starts and time, aircraft time, airframe total hours, revenue hours, peak operating exceedance value and cycle counting for the gas producer components and turbine rotor.



TURBINE TIPS: SOLVING LOWER REAR FIRE DETECTOR BRACKET RE-INSTALL INTERFERENCE

By Nick Parkinson

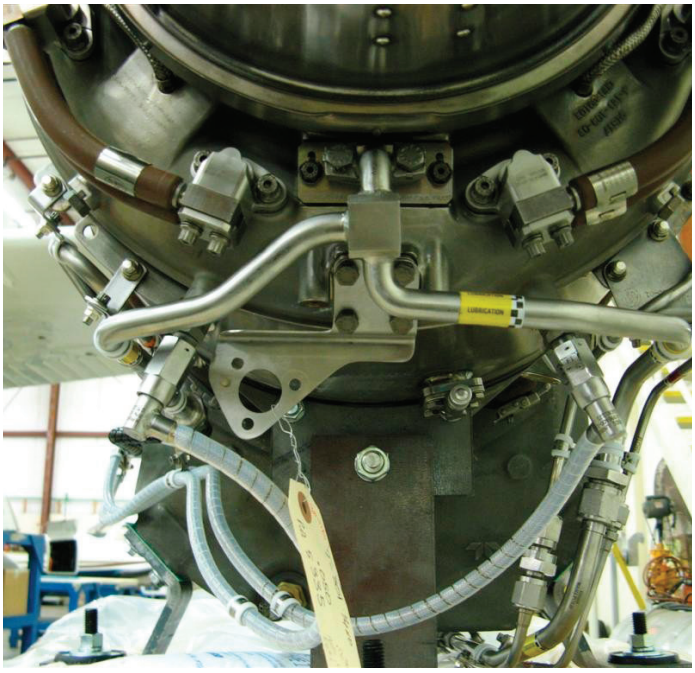


Fig. 1: Showing bracket part number 900-1786-1.

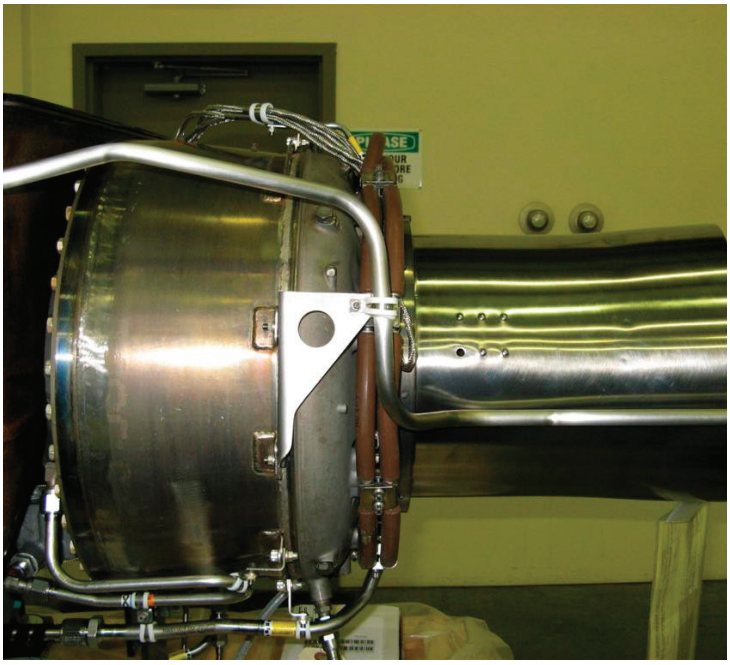


Fig. 2: Showing new bracket part number 900-2855-1.

We continue to hear from our operators about a problem they encounter with the lower rear fire detector bracket when re-installing the LTS101 engine after upgrades. The issue is that upon installation it is immediately apparent that the lower rear fire detector bracket causes interference with the T/R drive shaft.

While most engines have had the LTS101-79-20-0248 (new RBSH 4-143-029-17/R34/R35) incorporated for some time, some engines are still being returned to the operators in this new configuration.

Soloy has introduced a new bracket (Fig. 1) that will alleviate this issue and have made it a standard part of the kit. The new bracket can be used with either RBSH.

Alternative to oil box vent line clamp.

Another current issue that operators encounter when adopting this configuration is that the hardline used to clamp the engine box oil vent line in place is no longer present. A new bracket has been introduced to allow the vent line to be secured to two new tabs welded to the RBSH case (see Fig. 2).

Soloy SD Series Helicopters

Another, slightly less relevant issue facing some operators is the replacement of the exhaust clamp used initially on the AS350D models. This clamp, which after the introduction of the 600A-3/3A engines, incorporated notches that are required to provide clearance for two bolts installed to retain the PT nozzles.

This clamp installation included two safety plates used to hold the clamp in place in the event of a clamp bolt failure. A new clamp has been approved that incorporates its own method of safety retention so the two external safety plates are no longer required (Fig. 3).

Current exhaust stacks do not include the two bolt holes needed for the plate installation and when the new clamp is used with older stacks these bolt holes should be filled with suitable stainless steel hardware.

Additional information on these matters can be found on the following Soloy SD2 and SD1 Service Publications: SB 04-900, SB 0001-920, SIL 03-900 and SIL 02-920.

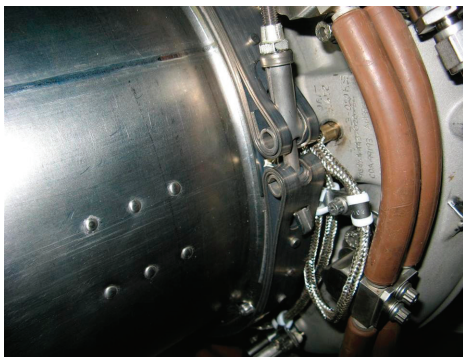


Fig. 3: Showing new clamp part number NH10009828-10

SEE BETTER, FLY SAFER!

Soloy Aviation Solutions has received an FAA STC for an enhanced, LED-based aircraft lighting upgrade kit for Cessna 206G and 206H model aircraft.

The kit features the Sunspot 36HX lights from AeroLED, which deliver an amazing 1,000 lumens of lighting. "It's comparable to a 100 watt halogen, but at only 45W, the LEDs require half as much power. Additionally, the LED bulbs are rated for 50,000 hours of operation."

Dave Stauffer added that Soloy's upgrade kit not only enables the conversion of the standard left wing taxi and landing lights to LED, it also includes the installation of a second, high-intensity LED light source on the leading-edge of the right wing.

As part of the kit each wing will feature a two-LED bulb configuration for the taxi and landing/takeoff light.

"The taxi light uses a diffused lens to cast a wider light path for ground operations, while the landing/takeoff light projects a much narrower beam that is far more penetrating than the current OEM lighting configuration," Stauffer said. "Soloy is proud to offer this lighting upgrade that provides Cessna 206 pilots with significantly improved lighting and greater situational awareness for all nighttime and reduced visibility operations."

AIRCRAFT FOR SALE

1994 AS350SD2 S/N 2789, N350ST

20 Hours since conversion and 12 year, Gold LTS101-700D-2, Soloy EEMS engine panel. Cargo swing hook with load cell, Squirrel cheeks, VR window, AFS filter

2001 Cessna T206H Turbine Powered Mark II S/N 20608256, N579DD

975.0 Total Time Since New

2003 Cessna T206H Turbine Powered Mark II S/N 20608396, N5270L

1,100 Total Time Since New

UPCOMING SHOWS

ALEA (Booth #902)	July 16-19	Phoenix, AZ
EAA Airventure Oshkosh (Booth #167)	July 28-Aug 3	Oshkosh, WI