SAU INV 2013 / 02

Inno word

STATE AIRCRAFT UNIT VICTORIA

Forward Looking Infra Red (FLIR) Replacement Project Update

Introduction

In response to Recommendation 20 of the 2009 Victorian Bushfires Royal Commission, the Department of Sustainability and Environment (DSE) was funded to replace their two FLIR 2000 systems with state of the art FLIR systems designed to enhance the agencies Type 3 helicopter capability.

The State Aircraft Unit (SAU) established a project team, comprising personnel from DSE, Country Fire Authority (CFA) and Parks Victoria (PV), to develop system requirements and technical specifications and to conduct a public tender to acquire the new FLIR systems.

FLIR Screen Mounting

This has been a complex and lengthy body of work due to changes in CASA regulations, which now require each aircraft to have individual engineering documentation drawn up for the installation of the system.

The Project to Date

Phase one of the project has seen the following items completed:

Camera Delivery

Two Wescam MX10 systems have been delivered and the camera system installation design has been completed, with both cameras operational this season.

The FLIR 2000 cameras are still available to be used as a surge capacity and also as a back up to the Wescam systems.

MX10 Interface Box Fitted to FB302

System Configuration

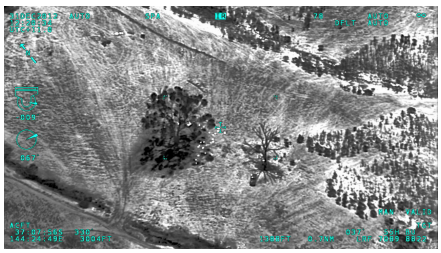
Design and engineering has been completed for the integration of the MX10 system into the Type 3 AS350 Squirrel aircraft in the State Fleet.

This work was carried out after the review into the ergonomics and safety of the previous FLIR 2000 installations by the SAU, Wescam Contractor and CAR 35 engineer.

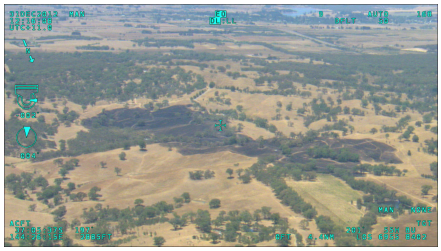
System Capability

The Wescam system is capable of producing the following information:

- IR and Colour Imagery
- Hotspot locations in 8 or 6 figure Military Grid Reference System (MGRS). MGRS is compatible with the 6 figure system used by agency personnel. These locations are recorded on the video and are captured by the operator using a note book. The MGRS coordinates are being well received by the field as they align to basic mapping training and are easily plotted onto map books and incident maps directly in the field. This is different to the FLIR 2000 where the operator used a GPS to collect waypoints of hotspots by hovering in close proximity of the hotspot and marking their location above. This was not a very accurate method but did allow easy usage of the hotspot information by IMT personnel. This method will be improved when the data capture system is up and running.
- HD recording of the camera imagery in .MOV format to Compact Flash (CF) cards. The MOV format is the industry standard for non compressed HD recordings. These recordings are large - an average 5 mins of recording being about 3GB. These can be played by VLC media player, which is a free open source media player.



IR Still Shot – Sourced from IR imagery using VLC Media Player



Still Shot – Sourced from HD imagery using VLC Media Player

Aircraft Configuration

As of the late January 2013, the following State Fleet aircraft are able to carry the Wescam system:

FIREBIRD 302	MOORABBIN
FIREBIRD 307	TRARALGON
FIREBIRD 327	HEALESVILLE

The SAU are currently working with operators to roll out the installation into the following aircraft:

FIREBIRD 303	OVENS
FIREBIRD 304	BAIRNSDALE
FIREBIRD 306	MOORABBIN
FIREBIRD 312	OLINDA

These installations will occur over late January - early February as aircraft are available to be inspected by the CAR35 engineer.

Work is currently being undertaken to fit the equipment to the Bell 206 Jetranger / Longranger State Fleet aircraft. This program is investigating mounting solutions that will resolve issues which have been indentified during the engineering process. This is planned to be completed by mid 2013.

MX10 Fitted to FB302

Re-Accreditation Training

Operator training was undertaken during November 2012 for the existing accredited FLIR operators, focusing on the operation of the MX10 camera using the current operating procedures. 14 operators have now been accredited to operate the Wescam camera. The final reaccreditation course for existing operators is planned to be conducted during March 2013.

Project Delivery - Phase 2

Data Capture System

The goal of the data capture system integration is to allow the data that is camera generated to be captured and used by the agencies' mapping system eMap, with the intention that data will be able to be sent via Next G from the aircraft straight into the system.

The data capture system project commenced in mid 2012 with the purchase of the data capture system, which will enable camera data to be used to create:

- Colour Still imagery
- IR Still Imagery
- Points i.e. Hot Spots
- Lines i.e. Fire control lines
- Polygons i.e. Fire Area.

Delivery of the first system to the contractor occurred in late October 2012, and since then SAU and the contractor have been working on ensuring that the data capture system is working as specified with the camera and ensuring the data generated by the system can be used with eMap.

The preliminary testing is close to completion with initial field testing to commence in early February 2013.

The field testing will test that the system, ensuring that it is functioning in the real world environment and will also be used to develop a SAU standard operating procedure and training package, which will be rolled out to FLIR operators during 2013.

Data Capture System

The software has further capacity to record compressed video which will be also be tested during the field testing.

Increasing FLIR Operator Capacity

The SAU will run 2 FLIR courses for new operators in the second half of 2013 to increase the capacity of the current program to approximately 30 operators across the state. This will ensure there is enough capacity to prove camera and data system operation prior to the 2013-2014 season.

Further Information - Contact

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