Night Fire Suppression Operations (NFSO)

Commander Wayne Rigg

Aviation Capability and Innovation

Working in conjunction with Communities, Government, Agencies and Business

EMERGENCY SERVICES FOUNDATION

A quick plug

- ESF Scholarship in 2016 – USA
- “All hazards, All communities” use of aircraft.
- Experience, knowledge and relationships all contributed to the success of the NFSO program.
- It meant I could draw on others experience and not have to “reinvent the wheel”.
- Particularly thanks to – Eric Pacheco – LA County Air Ops
- If you haven’t considered applying – you should!
- Very worthwhile – personally and professionally

NFSO -Why firebomb at night?

In 2017 Victoria identified a priority to support the development of capability to undertake aerial fire suppressions at night using NVIS.

The most dangerous phrase in the language is “we’ve always done it this way.”

-Rear Admiral Grace Hopper

Why operate at night?

Trial objectives - “crawl, walk, run”

October 2018

- Train additional agency Air Attack Supervisors (NVIS crewman)

November 2018

- Undertake training and development flights.
- Build capability and cohesion between agency AAS and Aircrews (Build the team)
- Refine existing and develop new SOPs to ensure safe systems of work

December 2018 to March 2019

- Deploy the capability to a range of fires through out Victoria
- Trial flights in urban interface
- Assess and understand fatigue management
- Integrate capability into existing Incident Management arrangements
- Integrate capability with ground crews
- Evaluate trial and provide future capability options

HT349
Sikorsky S61N
4000L tank

HT346
Bell 412B
1500L tank

FB322 – S76B
Air Attack Platform IR/EO camera

FB318 – AS355
Air Attack Platform

System of work 18-19

- Day Recce must be undertaken
- Virtual fence established for area of operations
- No Initial Attack for this phase of the trial
- Go/No go checklist – on ground or airborne
- Deploy after dark or transition thorough twilight
- No mission creep into “new areas”
- AAS overhead at all times
- NFSO Management team in place – AO, ABM, N/S Fuel

Summary of deployments 2018-19

- Little River
- Rosedale –(January 4th 2019)
- Little Mt Buller
- Timbarra
- Champions Spur
- Dungeon Gully
- Thomson – Jordan Divide
- Blackwood – McKenzie Tk
- Grantville
- Walhalla
- Gembrook – Sawmill Rd
- Gembrook – Helmet Tk
- Cambarville (March 10th 2019)

Lessons learnt

- Crawl, Walk, Run – philosophy has been wise – “Safety First.”
- The capability has been integrated into existing Ground & IMT operations safely & successfully.
- The interim operational procedures written for the trial have worked.
- Existing agency NVIS & Aviation procedures required minimal change.
- From an agency perspective – this is not much different that what we do in the day.
- NVIS Firebombing is achievable and can be conducted safely.
- The trial has seen essentially the same turnaround times as daytime ops.
- NVIS technology enables accurate targeting and suppression of fire.
- Targets not visible during the day are easily seen at night – burning stags, trees across containment lines etc – The NVIS technology is what makes the difference.
- Turn key package has proven a wise choice – AAS, AO, ABM for night ops.

“It provides the solution not the problem”

EMV

Lessons learnt

• All operations were remote hover fill (just like day ops).
• Ground fill and hover fill (floating collar tank) is a viable option if water is not readily available.
• Double crewing (day & night pilots) of aircraft has increased use and effective of the aircraft, aircraft can start earlier in the day.

• Fire behaviour has generally been observed as reduced during the evening.
• Ongoing discussions about what is the best time to fight the fire on NVIS – straight after last light or earlier in the morning.
• TAF/GAF – can change quickly and affects whether NVIS flight can proceed or not.
• Ground crews are clearly visible using NVIS technology.

•This provides another tool in the toolbox for our fire-fighters to use in protecting our communities at a time where previously aircraft had to be on the ground.

Lessons learnt

Some unexpected outcomes:-

- Increased confidence of night shift crews – “They are feeling loved”
- Increase productivity of night crews – burning out ops and suppression.
- Night Intel provides more accurate and up to date mapping and fire behaviour to IMT’s.
- Assists in better informed decision making for deployment of day resources and objectives.
- Making night shifts more productive.

The trial is not without challenges –

- Culture - “This is how we have always done it, why change?”
- Education and acceptance – Some people don’t like change.
- Large logistics footprint & specific requirements – e.g.. 2 nights accom for each night of operation.
- Transport of personnel & equipment.
- Release of aircraft from fires to enable NFSO ops.
- Day recce and area of operations – 1st night Rosedale limited recce area.
- The “New norm” – this hasn’t been done before.

Next steps – internal

Next steps –

- Continue to capture lessons learnt and feedback.
- Finalise evaluation report and report back to steering committee.
- CSIRO review – Is fire suppression improved during the night.

Provide options to the State for future considerations about policy position:-

- Should NFSO continue?
- If so where and with what aircraft – Type 1 or Type 2?
- Should it expand?
- Currently limited capability for trial – “If only I’d had NVIS ops at Hepburn”
- Understand cost of increasing capability and training – match with budget
- Review policies and procedures.
- Should we undertake NVIS Initial attack (IA)?
- How do we resource the capability appropriately?

Next steps - external

- Rules/Regulations – review, refine and adapt to NVIS firebombing.
- Does one size does fit all in NVIS ops across the sector ? Is firebombing different to law enforcement and HEMs activities?
- Industry and Operators need to lead this discussion with regulator, they are the ones operating and flying the aircraft.

- Are the current standards right?
- What is the pathway for an NVIS Firebombing pilot?
- We have plenty of fire pilots and NVG pilots – but not many with both.
- How do we build capability now and into the future with industry?
- 4-5hrs NVIS time - is it right?
- Weather minima – NVFR 5000m – does this work for NVIS ops?

Lessons learnt

The important principle is that NVIS Operations has the ability to increase the support to communities and fire-fighters to meet our core objective of "protecting life and property", as it provides another tool in the toolbox that wasn't previously available so we must work together to ensure we can undertake NVIS operations at fires and emergencies

Note:- The unique collaborative approach to this trial saw EMV along with Kestrel and Coulson awarded the 2019 International Aerial Firefighting Award in recognition of outstanding contribution to Industry, Innovation and Advancement.
(March 2019 – Nimes – France)



Night firebombing trial – Questions?