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**LARGE AIRTANKER SERVICE**

**SCENARIO 3 – DISTANT FIRE**

**Before Completing this Form:**

* Please note, the forms in this document are designed to be completed electronically using *Microsoft Word* on a *Windows PC.*
* The scenario contained in this document describes a typical large airtanker mission comprising one or more sorties delivering fire retardant slurry to a fire, or a ferry to another airbase.
* Please use the instructions listed overleaf under *‘Completing the Large Airtanker Service Scenario Form’* to complete this document.
* Please read and understand all the instructions and scenario specifications contained in this document before entering any data.
* Proposers **must** complete a separate scenario document for each **different model** of airtanker being proposed (e.g. if two different types of aircraft are being proposed please complete this form twice).
* However, where a pair of **same model aircraft** is being proposed, and that have similar performance, please **select one** of the aircraft and complete the scenario document for this aircraft only.
* To save this document, please select **Save As** from the **File** menu prior to entering any data.
* Completed Documents are to be uploaded to the NAFC online tender service (Tenderlink) in the area specified. For information on how to upload your completed document, please refer to instructions found in the ***Request for Proposal*** document.
* In addition to the forms contained in this document, proposers are required to submit additional information via TenderLink in order to complete this RFP.
* As far as possible, proposers are asked to provide the information requested using the space provided in this document. If insufficient space is provided for a particular response, proposers may include further information in the main body of their proposal provided a clear note is made in the appropriate field of this form.

**Completing the Large Airtanker Service Scenario Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| * Proposers are asked to complete each of the forms contained in this document for **each different type** of airtanker being proposed. * Each form in this in this document is displayed on a pale blue background, as per the example opposite. * Proposers are asked to ender the appropriate text or value in each of the grey boxes contained in the forms as per the example below.  |  |  | | --- | --- | |  | < Example grey data entry box | |  |

* Proposers are asked to enter the values the air crew would **actually use** when planning or conducting a mission such as described in the scenario. **Do not** enter best-case or sales brochure values. **Please use real data**. It is **strongly recommended** that the proposers Chief Pilot or Head of Flying Operations assist with the completion of this document.
* If the airtanker(s) being proposed would be restricted or limited in any way when performing this scenario, proposers are asked to enter the restricted or limited values in the appropriate field and then provide an explanation in the field labelled ***Any other information relevant…*** in that particular section.
* Please be careful when calculating the values requested in these forms as the information will be consistency checked, compared with known values for your aircraft type.
* Please note the information provided in this document will be used in NAFC airtanker value and productivity models and may be utilised and made available to members in a de-identified fashion. NAFC will endeavour to remove company and registration information before utilising information, however it may still be possible for readers to derive the identity of an aircraft or operator, particularly for less common makes and models of airtankers.

**Airtanker Scenario**

|  |  |
| --- | --- |
| **Scenario 3** | |
| Name | Distant Fire |
| Time and date | 17th October, 13:30 ACDT (UTC+10:00) |
| Situation | A new fire has been reported near Mt York in the Blue Mountains 150km west of Sydney.  Nearby are the towns of Mt Victoria and Blackheath. Like most of the towns in the vicinity, they are located on a narrow ridge between two gorges. The small city of Lithgow is to the north and the large town of Katoomba to the south.  The Blue Mountains is a mountainous region in New South Wales primarily formed as a dissected plateau carved in sandstone bedrock. Mount York is a 1,061 metres (3,481 ft) peak the highest point in the fire area.  The predominant natural vegetation of the higher ridges is eucalyptus forest. Heath-like vegetation is present on plateau edges above cliffs. The sheltered gorges often contain temperate rainforests.  A number of small and large communities are concentrated on the two main roads that run east-west through the ranges. Very few alternative access routes are available if these roads are blocked by fire or any other reason.  Weather in the area has been hot for a number of days and the weather is set to get hotter and windier over the next few days. The Rural Fire Service has issued a total fire ban continuing until further notice.  The Fire is currently burning under 25kt WNW wind gusting to 40kts.  Multiple spot fires and long lines of uncontained fire edge. Pyro-Cumulus cloud developing over active areas of the fire.  Numerous light, medium and heavy helicopters are operating with rotary wing Air Attack Supervisor above. More aircraft have been called to assist.  A number of other significant fires have broken out in the area west of Sydney.  The incident controller has requested airtanker to support line building on the South Eastern side of the fire to retard its spread towards the towns of Mt Victoria and Blackheath.  Airtanker(s) are initially based at Avalon Airport (YMAV) Victoria, 388nm to the South West. RFS Volunteers and RAAF personnel are setting up an airtanker reload facility at RAAF Base Richmond (YSRI), however this airbase may not be ready for use for a few hours |
| Fire Area | 300+ Hectares across escarpments and burning down into deep valleys either side. |
| Fire behaviour | Active Fire – fragmented, short distance spotting. |
| Fire Location | -33.57, 150.23 |
| Tasking | Deploy tanker aircraft from Avalon airbase (YMAV) to fire immediately.  If it is at all possible to transit direct from Avalon to fire with a load on board. Take maximum possible load of retardant allowing for enough fuel for long initial leg and manoeuvring in the fire area.  If it is not feasible to carry a load from Avalon then plan to fly to Richmond RAAF Airbase (YSRI) 30nm NW of Sydney to load and then deploy to fire.  Expect tactical directions from local air attack supervisor on site(aka ATGS)  Expect one or more requests to reload from Richmond airbase and return to fire. |

|  |  |
| --- | --- |
| Scenario | Aircraft will complete three sorties as per attached descriptions |
| Assumptions | RAAF Richmond airbase is the nearest Multi Engine Airtanker reload facility to the fire. Lead plane, if required, will be based at RAAF Richmond airbase.  No air traffic control delays in clearance to taxi, take-off, climb, descend, or land.  Sortie number 1 is first for the day.  Crew has been required to be on duty from 0900.  Incident controller requires the use of long term retardant.  No retardant load on board tanker at time of initial request  All operations to be conducted in accordance with Australian civil aviation regulations  Use Sydney airport (YSSY) as alternate if required, assume it is CAVOK |
| Attachments | Sortie descriptions x3  Fire information  Airport documentation: Avalon – YMAV, Richmond - YSRI |

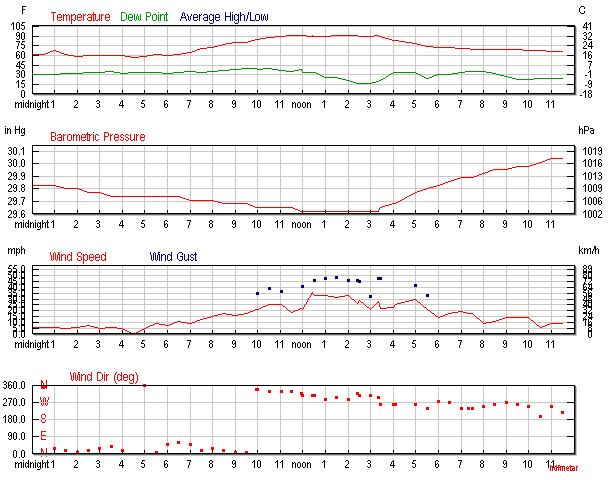


Mt York fire area – note escarpments and valleys

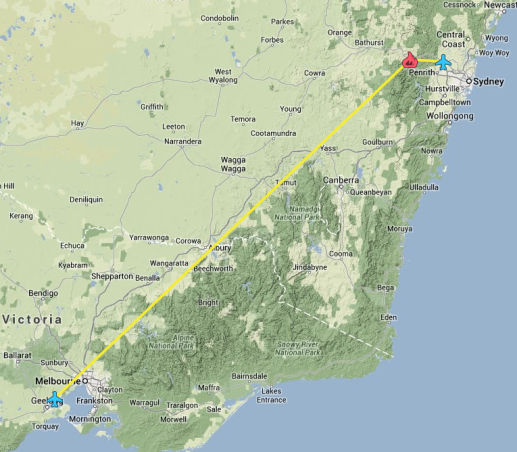


Major fires in area west of Sydney

**Airtanker Scenario**



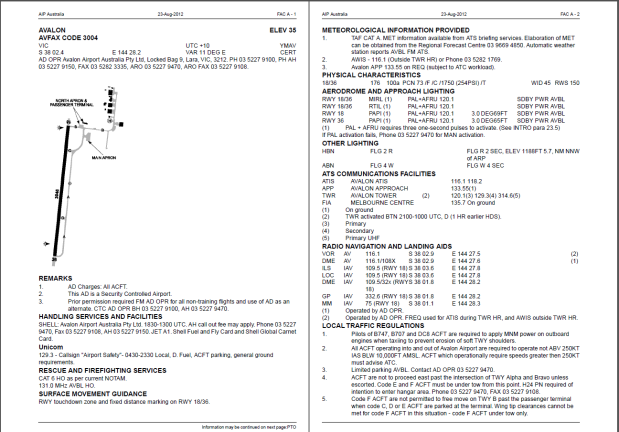
RAAF base Richmond YSRI Weather

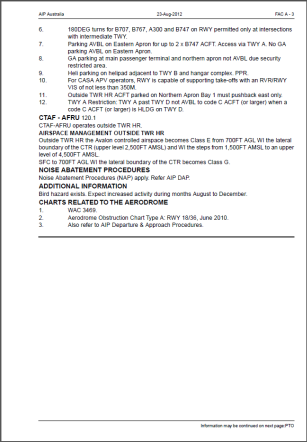


Overview map - Initial deployment – Sortie 1

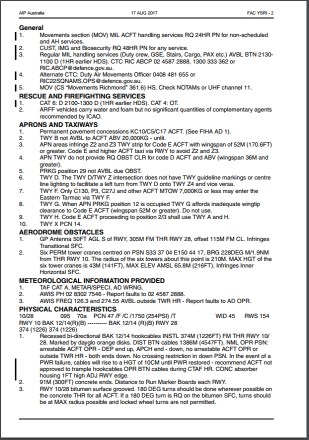
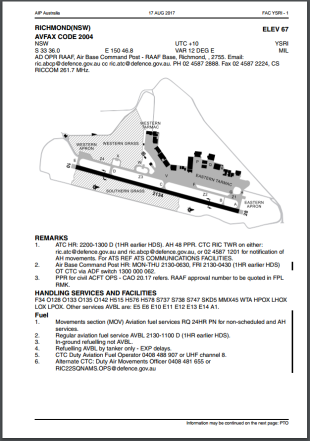
**ERSA**

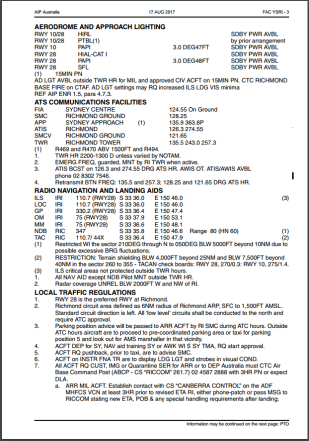
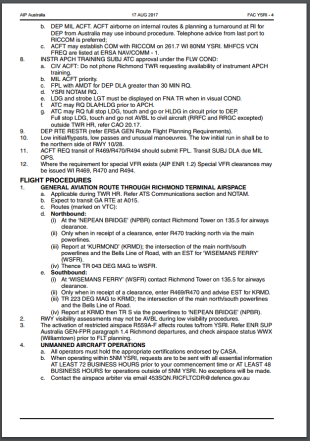
**Note:** For the purpose of this scenario assumetheAirtanker base is located at “MAIN APRON” as shown on diagram

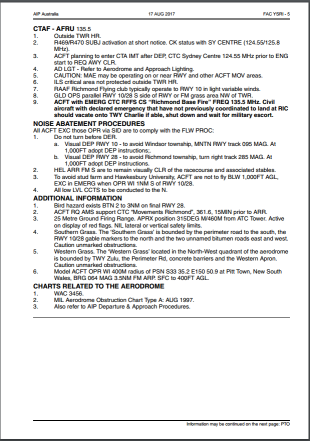




**Note:** For the purpose of this scenario assumetheAirtanker base is located at “EASTERN TARMAC” as shown on diagram





**Sortie 1: Description**

|  |  |
| --- | --- |
| **Sortie 1** | |
| **Departure** |  |
| Airport | YMAV – Avalon Airport Victoria |
| RWY - Length | 3048 metres |
| RWY - Heading | 18/36 |
| Airspace - Class | Class D - tower active |
| Conditions - Temp | ISA + 20 (= 35°C) |
| Conditions - Wind at departure | 10 knots, 300 degrees |
| Conditions - IMC / VMC | IMC then VMC |
|  |  |
| **En route** |  |
| Distance | approx. 400 nautical miles |
| Track | 45 degrees (NE) |
| Conditions - IMC / VMC | IMC departure from YMAV, then VFR enroute until arrival at fire area then smoke |
| Conditions - Turbulence | Moderate turbulence |
|  |  |
| **Fire** |  |
| Conditions - Visibility | 5000 metres visibility in smoke |
| Full - split load | Single drop requested, anchor from where power lines cross St Georges Parade, drop downhill to the north into the valley towards Hartley Vale. Aim is to build a high quality retardant line from anchor point down the ridge to the cleared land in valley floor |
| Coverage level requested | Coverage level 8 |
|  |  |
| **Return** |  |
| Airport | YSRI – RAAF base Richmond (30nm east of fire) |
| Conditions - IMC / VMC | IMC - Instrument approach required – low vis in smoke |

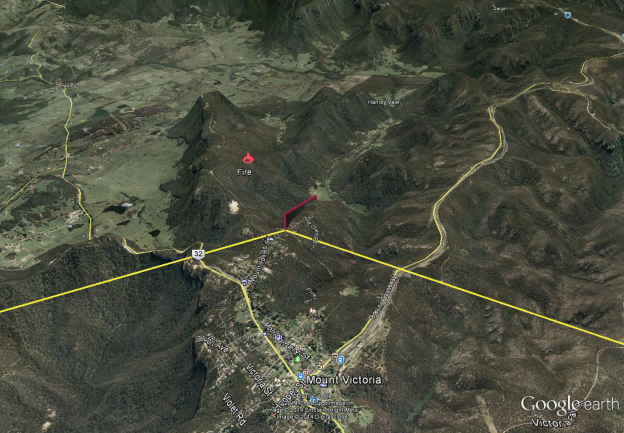
**Note**: assume an immediate request to reload and return occurs after the drop in this sortie.



Reload leg - Sortie 1



Anchor point – note the HV power lines



**Sortie 1: Tanker performance – Loading and departure *Complete all grey boxes on this page*.**

|  |  |  |
| --- | --- | --- |
| **Service Information** | |  |
| **Proposer Organisation Name** |  | |
| **Airtanker registration mark** (As entered in your Proposal Service Summary spread sheet) |  | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Start up and loading** | | | **Time** |
| **Dispatch calls tanker crew with request** | | | **13:30** |
| **Will aircraft require refuelling before this sortie?**  (this will depend on whether normal practice is to leave the aircraft partly of fully fuelled) |  | **Yes / No** |  |
| **How long will refuelling take**  (assume no delay for refuelling services) |  | **minutes** |  |
| **Can refuelling and retardant loading occur simultaneously** |  | **Yes / No** |  |
| **Fuel on board at engine start** |  | **Litres** |  |
| **Engine start** | | |  |
| **Retardant load taken** |  | **Litres** |  |
| **Minimum retardant loading time** |  | **Minutes** |  |
| **Retardant loading complete** | | |  |
| **Time required from completion of retardant loading to take off** |  | **Minutes** |  |
| **What pre take off delays are required**  (warm up, cool down, instrument alignment, checklists, taxi etc) |  | | |
| **Departure** | | | **Time** |
| **Does the IMC departure limit the load carried?** |  | **Yes / No** |  |
| **Does this departure require a balanced field calculation?** |  | **Yes / No** |  |
| **What runway length is legally required** |  | **Metres** |  |
| **Aircraft weight at take off** |  | **Kilograms** |  |
| **Endurance at take-off** (assume endurance at loaded cruise speed and altitude) |  | **Minutes** |  |
| **Wheels off time** | | |  |
| **Any other information relevant to take off phase?** |  | | |

If it is not feasible to take a retardant load from Avalon directly to this distant fire and therefore the requirement is to fly direct to Richmond and load then then complete the question below and skip to section “**Cruise to airbase (RAAF Richmond)”**

|  |  |
| --- | --- |
| **Why is it not feasible to take a load direct from Avalon to fire?** |  |

**Sortie 1: Tanker performance – Cruise to fire and Operations at the fire *Complete all grey boxes on this page*.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cruise to fire** | | | **Time** |
| **Cruise Altitude (as loaded, en route to fire)** |  | **Feet** |  |
| **Can aircraft climb directly to cruise altitude?** |  | **Yes / No** |  |
| **Would aircraft be pressurised at cruise altitude en route to fire?** |  | **Yes / No** |  |
| **Top of climb** | | |  |
| **What cruise airspeed** |  | **Knots-TAS** |  |
| **What cruise fuel consumption** |  | **litres/hr** |  |
| **Time taken from departure to arrival at fire** |  | **Minutes** |  |
| **Arrival at Fire** | | |  |
| **Any other information relevant to cruise phase?** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Operations at Fire** | | | **Time** |
| **What endurance is remaining on arrival at the fire** |  | **Minutes** |  |
| **What is the maneuvring speed in the fire pattern / circuit** |  | **Knots-TAS** |  |
| **Is a lead plane normally required for this type of operation?** |  | **Yes / No** |  |
| **What is the preferred drop speed** |  | **Knots-TAS** |  |
| **What is the stalling speed in drop configuration** |  | **Knots-TAS** |  |
| **What is the estimated time in the fire area to conduct these drops** |  | **Minutes** |  |
| **Drop time** | | |  |
| **What length of retardant line would be produced** |  | **Metres** |  |
| **What width of retardant line would be produced** |  | **Metres** |  |
| **What is the tankers wake turbulence category?** |  |  |  |
| **What restrictions would this operation place on other aircraft in the fire area?** |  | | |
| **How does the low visibility (5000m in smoke) affect operations in the fire area** |  | | |
| **Any other information relevant to drop phase?** |  | | |

**Sortie 1: Tanker performance – Cruise to airbase and reload *Complete all grey boxes on this page*.**

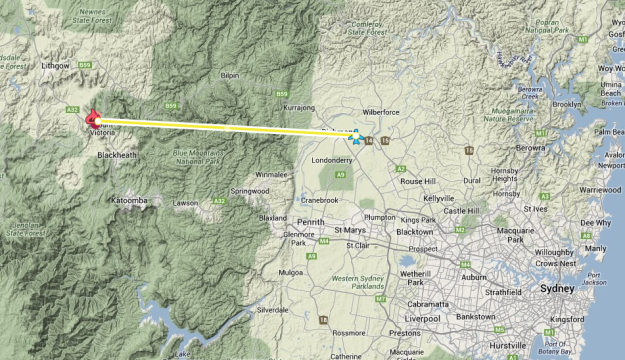
|  |  |  |  |
| --- | --- | --- | --- |
| **Cruise to airbase (RAAF Richmond)** | | | **Time** |
| **Cruise Altitude (no load)** |  | **Feet** |  |
| **Can aircraft climb directly to cruise altitude?** |  | **Yes / No** |  |
| **Would aircraft be pressurised at cruise altitude on this leg?** |  | **Yes / No** |  |
| **What cruise airspeed** |  | **Knots-TAS** |  |
| **What cruise fuel consumption** |  | **litres/hr** |  |
| **Time taken from departing Avalon to landing at Richmond airbase** |  | **Minutes** |  |
| **Arrival time at Richmond airbase** | | |  |
| **How does the instrument approach affect this leg? (eg holding fuel required etc)** |  | | |

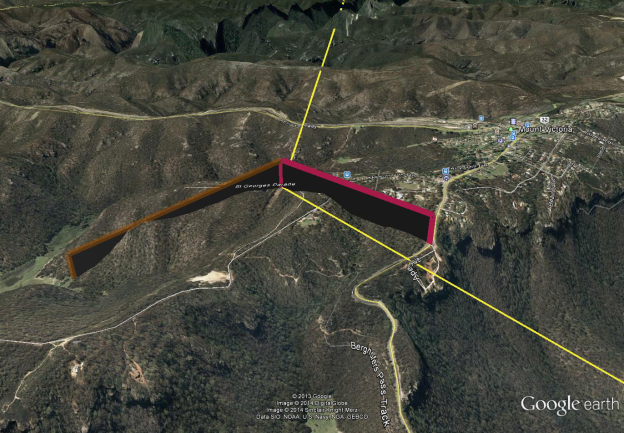
|  |  |  |  |
| --- | --- | --- | --- |
| **Load at RAAF Richmond** | | | **Time** |
| **How much fuel would be remaining on arrival at airbase** |  | **litres** |  |
| **Remaining endurance on arrival at airbase** |  | **Minutes** |  |
| **Will aircraft require refuelling before the next sortie?** |  | **Yes / No** |  |
| **How much fuel would be taken on** |  | **litres** |  |
| **Can retardant be loaded with all engines running?** |  | **Yes / No** |  |
| **Retardant load taken** |  | **Litres** |  |
| **How long will reloading and refuelling take** |  | **Minutes** |  |
| **What other turn around delays might be expected before the next sortie. (eg: cool down, crew change etc)** |  | | |
| **Reload and refuel complete time** | | |  |
| **What equipment would be required at this airbase?**  **(apart from retardant loading equipment)**  **(eg Air stairs, ground power unit etc)** |  | | |
| **Any other information relevant to return and reload phase?** |  | | |

**Sortie 2: Description**

|  |  |
| --- | --- |
| **Sortie 2** | |
| **Departure** |  |
| Airport | YSRI |
| RWY - Length | 2143 metres |
| RWY - Heading | 280 |
| Airspace - Class | Military CTR - tower active |
| Conditions - Temp | ISA + 20 (= 35°C) |
| Conditions - Wind at departure | 25 knots, gusting 40 knots, 290 degrees |
| Conditions - IMC / VMC | VMC |
|  |  |
| **En route** |  |
| Distance | 30 nautical miles |
| Direction | 275 degrees |
| Conditions - IMC / VMC | VMC – areas of heavy smoke nearby |
| Conditions - Turbulence | Moderate turbulence |
|  |  |
| **Fire** |  |
| Conditions - Visibility | 5000 metres visibility in smoke |
| Full - split load? | full load requested , one drop extending from Great Western Hwy through to anchor point from Drop 1 on St Georges Pde |
| Coverage level requested | Coverage level 6 |
|  | Warning: Significant turbulence over escarpment at start of drop. Tall HV power line at end of drop. Previous exit path down the valley now obscured by smoke. |
|  |  |
| **Return** |  |
| Airport | YSRI |
| Conditions - IMC / VMC | VMC |

**Note**: changes from previous sortie shown in red





**Sortie 2: Tanker performance – Departure and cruise to fire *Complete all grey boxes on this page*.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Departure** | | | **Time** |
| **Does this VMC departure require a balanced field calculation?** |  | **Yes / No** |  |
| **What runway length is legally required** |  | **Metres** |  |
| **Aircraft weight at take off** |  | **Kilograms** |  |
| **Endurance at take-off** (assume endurance at loaded cruise speed and altitude) |  | **Minutes** |  |
| **Wheels off time** | | |  |
| **Any other information relevant to take off phase?** |  | | |
| **Cruise to fire** | | | **Time** |
| **Cruise Altitude** (as loaded, en route to fire) |  | **Feet** |  |
| **Can aircraft climb directly to cruise altitude?** |  | **Yes / No** |  |
| **Would aircraft be pressurised at cruise altitude en route to fire?** |  | **Yes / No** |  |
| **Top of climb** | | |  |
| **What cruise airspeed** |  | **Knots-TAS** |  |
| **Time taken from departure to arrival at fire** |  | **Minutes** |  |
| **Arrival at Fire** | | |  |
| **Any other information relevant to cruise phase?** |  | | |

**Sortie 2: Tanker performance – at the fire *Complete all grey boxes on this page*.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operations at Fire** | | | **Time** |
| **What endurance is remaining on arrival at the fire** |  | **Minutes** |  |
| **What is the manoeuvring speed in the fire pattern / circuit** |  | **Knots-TAS** |  |
| **Is a lead plane normally required for this type of operation?** |  | **Yes / No** |  |
| **What is the preferred drop speed** |  | **Knots-TAS** |  |
| **What is the stalling speed in drop configuration** |  | **Knots-TAS** |  |
| **What is the estimated time in the fire area to conduct these drops** |  | **Minutes** |  |
| **Drop time** | | |  |
| **What length of retardant line would be produced** |  | **Metres** |  |
| **What width of retardant line would be produced** |  | **Metres** |  |
| **What is the tankers wake turbulence category?** |  |  |  |
| **What restrictions would this operation place on other aircraft in the fire area?** |  | | |
| **How does the low visibility affect operations in the fire area**  (5000m in smoke) |  | | |
| **Any other information relevant to drop phase?** |  | | |

**Note**: There is some repetition of questions here from Sortie 1 as it is not known if your tanker would have carried a load from Avalon

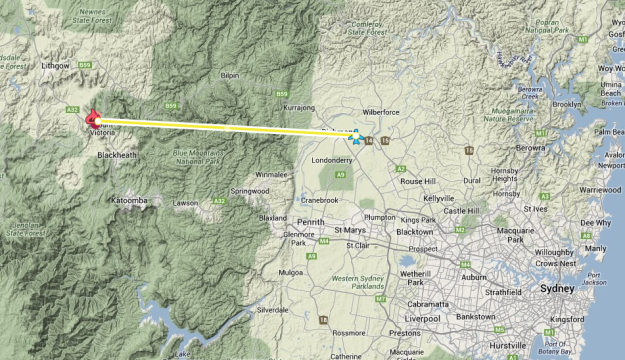
**Sortie 2: Tanker performance – return and reload *Complete all grey boxes on this page*.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Return from Fire** | | | **Time** |
| **Cruise Altitude (no load)** |  | **Feet** |  |
| **What cruise airspeed** |  | **Knots-TAS** |  |
| **Time taken from departing fire to landing back at airbase** |  | **Minutes** |  |
| **Arrival time back at the airbase** | | |  |
| **Reload** | | | **Time** |
| **How much fuel would be remaining on arrival back at airbase** |  | **litres** |  |
| **Remaining endurance on arrival back at airbase** |  | **Minutes** |  |
| **Will aircraft require refuelling before the next sortie?** |  | **Yes / No** |  |
| **How much fuel would be taken on** |  | **litres** |  |
| **Can retardant be loaded with all engines running?** |  | **Yes / No** |  |
| **Retardant load taken** |  | **Litres** |  |
| **How long will reloading and refuelling take** |  | **Minutes** |  |
| **What other turn around delays might be expected before the next sortie. (eg: cool down, crew change etc)** |  | | |
| **Reload and refuel complete time** | | |  |
| **Any other information relevant to return and reload phase?** |  | | |

**Sortie 3: Description**

|  |  |
| --- | --- |
| **Sortie 3** | |
| **Departure** |  |
| Airport | YSRI |
| RWY - Length | 2143 metres |
| RWY - Heading | 280 |
| Airspace - Class | Military CTR - tower active |
| Conditions - Temp | ISA + 25 (= 40°C) |
| Conditions - Wind at departure | 15 knots, gusting 25 knots, 190 degrees |
| Conditions - IMC / VMC | VMC |
|  |  |
| **En route** |  |
| Distance | 30 nautical miles |
| Direction | 275 degrees |
| Conditions - IMC / VMC | VMC – areas of heavy smoke nearby |
| Conditions - Turbulence | Significant turbulence |
|  |  |
| **Fire** |  |
| Conditions - Visibility | CAVOK |
| Full - split load? | Split load requested. 2 drops 50% of load on each drop |
| Coverage level requested | Coverage level 6 |
|  | Two drop requested to tie in with dozer trails under construction to prevent new spot fire from impacting housing |
|  | Warning: HV Power lines across valley. Crews in close to drop zone |
|  |  |
| **Return** |  |
| Airport | YSRI |
| Conditions - IMC / VMC | VMC - CAVOK |

**Note**: changes from previous sortie shown in red





**Sortie 3: Tanker performance – Departure and cruise to fire *Complete all grey boxes on this page*.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Departure** | | | **Time** |
| **Does this departure require a balanced field calculation?** |  | **Yes / No** |  |
| **What runway length is legally required** |  | **Metres** |  |
| **Aircraft weight at take off** |  | **Kilograms** |  |
| **Endurance at take-off** (assume endurance at loaded cruise speed and altitude) |  | **Minutes** |  |
| **Wheels off time** | | |  |
| **How does the cross wind limit airtanker performance?** |  | | |
| **How does the high temperature limit airtanker performance?** |  | | |
| **Any other information relevant to take off phase?** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Cruise to fire** | | | **Time** |
| **Cruise Altitude** (as loaded, en route to fire) |  | **Feet** |  |
| **Can aircraft climb directly to cruise altitude?** |  | **Yes / No** |  |
| **Would aircraft be pressurised at cruise altitude en route to fire?** |  | **Yes / No** |  |
| **Top of climb** | | |  |
| **What cruise airspeed** |  | **Knots-TAS** |  |
| **Time taken from departure to arrival at fire** |  | **Minutes** |  |
| **Arrival at Fire** | | |  |
| **Any other information relevant to cruise phase?** |  | | |

**Sortie 3: Tanker performance – at the fire and return *Complete all grey boxes on this page*.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operations at Fire** | | | **Time** |
| **What holding time is available on arrival at the fire** |  | **Minutes** |  |
| **What is the maneuvring speed in the fire pattern / circuit** |  | **Knots-TAS** |  |
| **What is the preferred drop speed** |  | **Knots-TAS** |  |
| **What is the stalling speed in drop configuration** |  | **Knots-TAS** |  |
| **What is the estimated time in the fire area to conduct these drops** |  | **Minutes** |  |
| **Drop time** | | |  |
| **What total length of retardant line would be produced** |  | **Metres** |  |
| **What width of retardant line would be produced** |  | **Metres** |  |
| **How long would it take to set up and conduct second drop after the first? How long would other aircraft in fire area need to stay clear?** |  | | |
| **Any other information relevant to drop phase?** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Return from Fire** | | | **Time** |
| **Cruise Altitude (no load)** |  | **Feet** |  |
| **What cruise airspeed** |  | **Knots-TAS** |  |
| **Time taken from departing fire to landing back at airbase** |  | **Minutes** |  |
| **Arrival time back at the airbase** | | |  |
| **How much fuel would be remaining on arrival back at airbase** |  | **litres** |  |
| **Remaining endurance on arrival back at airbase** |  | **Minutes** |  |
| **Any other information relevant to return phase?** |  | | |

|  |  |  |
| --- | --- | --- |
| **Totals** | | |
| **Drops** | **4** | **number** |
| **Retardant delivered** |  | **litres** |
| **Fuel used** |  | **litres** |
| **Time from deployment call to wheels stop**  (estimate) |  | **Minutes** |