Property of Oil Spill Response	Document Title	Document Number OSRL-OPER-GUI-00192	
Oil Spill Response	B727 Mobilisation and Logistics Plan	Revision	4

B727 Mobilisation and Logistics Plan

REVISION HISTORY

Revision	Date	Description	Author	Reviewer	Approval
0	February 2017	Creation of document	Matt Jeans	Lee Prendergast	Dan White
1	November 2018	Document Update	Matt Jeans	Ajibola Fashola / Fiona Carson	Shane Jacobs
2	January 2019	Document Update	Matt Jeans	Ajibola Fashola	Shane Jacobs
3	November 2022	Various Updates	Simon McCosh	Hon Phui Hang	Shane Jacobs
4	September 2023	Location updates	Simon McCosh	Hon Phui Hang	Shane Jacobs

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Contents

1. Introduction

Oil Spill Response Limited (OSRL) provide one Boeing 727 Aircraft (G-OSRA or G-OSRB) equipped with a TERSUS dispersant spray system. The aircraft is based at London Southend Airport – Southend, UK and is ready to be 'wheels up' 4 hours from mobilisation. The TERSUS system consists of 7 dispersant tanks, one pump module and one service pallet, with ancillaries and dispersant ground-loading equipment. A stockpile of dispersant (Dasic Slickgone NS) is stored adjacent to the aircraft and can be loaded within the 4-hour mobilisation time.

Purpose

This document is a guide to assist the planning and understanding of the processes for the mobilisation and operation of the Boeing 727 TERSUS dispersant delivery system.

2. Technical Specification

Aircraft Type	 B727-2S2F(RE)
Tail Number	G-OSRA and G-OSRB
Operator	2Excel Aviation Ltd
Operational Base	London Southend Airport (LSA/EGMC)
Call Sign	Broadsword 27A or 27B
Crew	Two pilots, 1 flight engineer and 1 task specialist
Range	Approximately 2500nm unladen.
Communication	Aviation VHF (OSRB also has HF[1]), satellite phone

[1] G-OSRA does not have an HF radio and the aircraft maybe subject to some flight restrictions. (See Section 5 for more information).

Other Information	Length 153ft Wingspan 108ft Height (fin) 34 Empty weight 97,471lbs Max payload 56,672lbs Max fuel load 54, 304lbs Max Take-off weight 203,100lbs
Max payload	56672 (lbs) 25,707kg
Cargo Hold	Main deck volume 4667 ft^3 Lower deck volume 1466 ft^3
Useable volume	The main deck consists of 12 freight bays: 11 fitted for 88"x125" pallets and 1 for a 60.4" x 125" pallet.
System installed	TERSUS 15000 litres
Airport requirements	6000ft 1,828m Concrete/Asphalt For Aircraft Classification Number (ACN) and Pavement Classification Number (PCN), please contact the OSRL DM. Smaller airfields to be used will need to confirm the strength of the runway, associated taxiways and parking areas before operational spill use. The B727 requires Fire Category Cover Category 7 from the operational airport.

Table 1: Technical Specification

	Empty	Full	Dispersant configuration
Maximum Range	2500Nm	2250Nm	1400Nm with spray booms fitted
Transit speed	480kts TAS	480kts TAS	250kts
			Spray speed ~150kts

Table 2: B727 Range

Note: Table 2 is indicative; all ranges and speeds depend upon several variables, including location, Forward Operating Base location, temperature, altitude, weather, payload etc. Contact the OSRL Duty Manager for precise timings if required. The spray booms will be fitted upon arrival in the country before the first spray operations.

3. Mobilisation

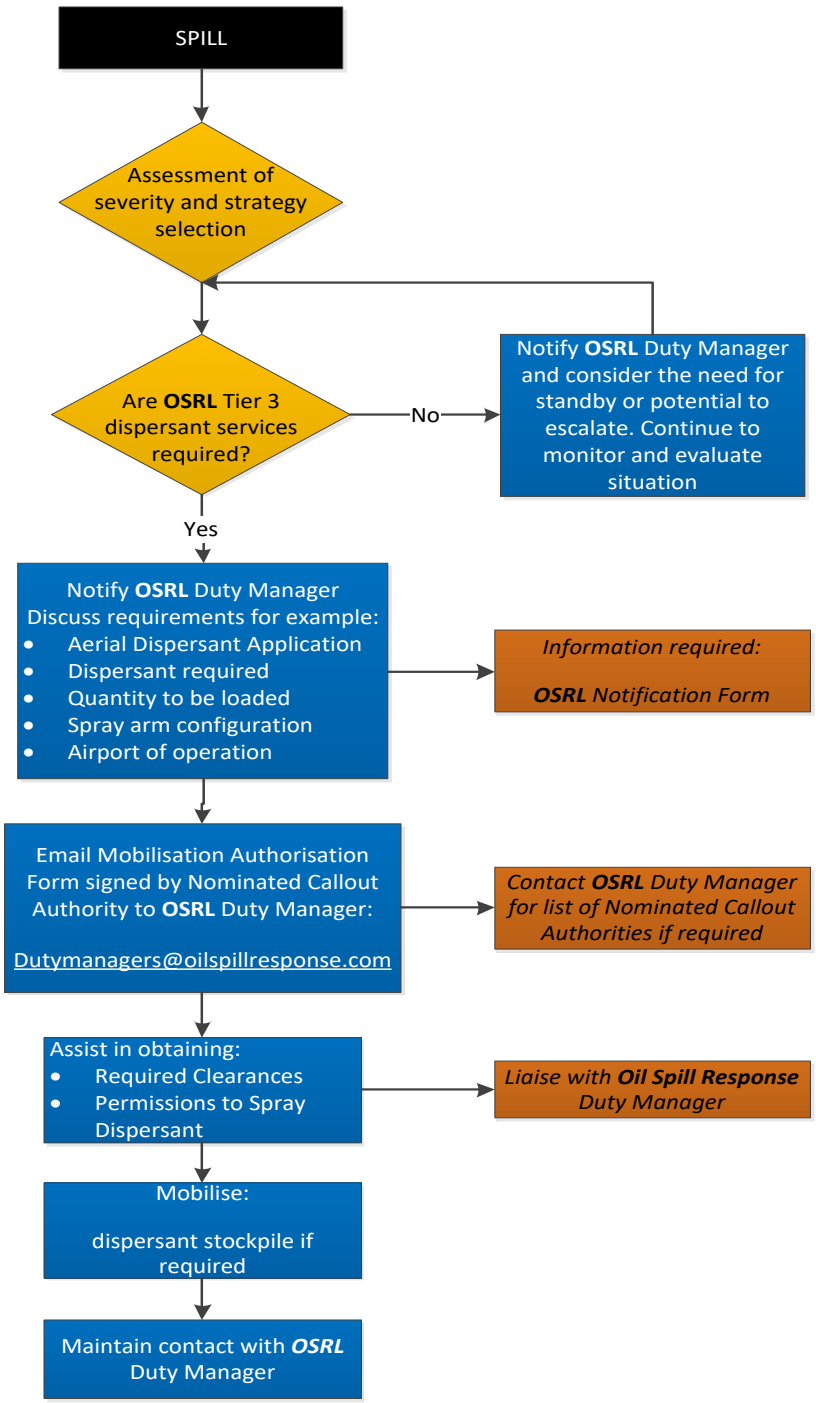

Figure 1 Mobilisation Flowchart

OSRL Members mobilise the aerial dispersant Service by calling the ***Oil Spill Response***

The OSRL Duty Manager (DM) will request all relevant information plus the 'Mobilisation Authorisation Form' **signed by a nominated authority.** A delay in providing these forms may delay the response.

Upon receipt of the signed mobilisation form, the DM will notify and/or mobilise the aircraft. An email will be sent to the member confirming the mobilisation of the aircraft and the aircrafts Estimated Time of Arrival (ETA).

Mobilisation Type

In the case of a potential incident, the OSRL Duty Manager has two options regarding the aircraft.

Notify: Mobilise all resources and apply for overflight clearances but do not call the crew (crew hours do not start counting down)

Scramble: Mobilise all resources (including aircrew) – immediate mobilisation where overflight and landing permits are unlikely to cause a delay.

The B727 is ready to be wheels up within 4 hours of mobilisation, including fuelling and dispersant loading if required. [2]

[2] Slickgone NS is the only dispersant held at Southend, any other dispersant would need to be freighted to the to the aircraft at the Operating or Forward Operating Base

Flight Clearances

Before leaving the UK, OSRL will produce the flight tasking for the aircraft from the information gathered by the client and mission parameters. The aircraft has permission for low-level flying to enable spraying operations. The aircraft operator or its nominated agent will file flight plans and request necessary permits by liaising with the appropriate aviation authorities.

For transit to the spill location, overflight permits will be required for the B727, obtained by the aircraft operator/nominated agent.

> Landing permits and authorisation to operate in-country will be required upon arrival and it is expected that the client/local subsidiary will liaise with the relevant authorities to assist with the necessary permits where possible.

Crew

The Aircraft crews are on standby to respond. When mobilising, the primary aircrew would transit to the spill location with the B727 without the requirement for a visa initially under a General Declaration, which lasts 72 hours from arrival. After this period, the aircrew may require visas to remain in-country. Support may be requested from the client to expedite the visa process. All crew members possess two passports to expedite visa applications.

The EASA Flight Time Limitations stipulate that aircrew can work 12 hours and then must have 12 hours rest before re-commencing work. The crew can work this pattern for a maximum of seven days before they are required to have one day's rest. Having a second crew available will allow for unbroken service to continue. The second aircrew could be mobilised and travel commercially to the designated location.

> There is no charge for the mobilisation of a second crew. However, a Member requiring a second crew will be charged for their travel, accommodation and subsistence.

4. Dispersant

TERSUS has a capacity of 15m^3 and can fly fully laden to the spill location. The weight of the dispersant reduces the overall range from 2500nm to 2250nm; transit airspeed is not affected.

To ascertain whether it is more efficient to fly with dispersant or to send dispersant as cargo on a chartered aircraft will depend upon several variables; during mobilisation, the OSRL Duty Manager will advise the most appropriate means of mobilising dispersant to the spill location.

Dispersant Approval List

TERSUS is approved for spraying nine types of dispersant. Any dispersants other than those listed will **not be permitted** to be loaded into the TERSUS system.

Agma DR379	Slickgone LTSW
Corexit EC9527A	Slickgone NS
Corexit EC9500A	Superdispersant 25
Finasol OSR 51	Inipol IP80
Finasol OSR 52	

Table 3 Dispersant approved for use with TERSUS

Aerial dispersant Authorisation

OSRL will endeavour to assist with regulatory approval for dispersant operations by providing technical support, documentation and logistics.

Dispersant Supply Chain (Logistics)

For an extended response and to ensure the availability of dispersant for ongoing aerial spraying operations, a continual supply of dispersant will be required to be sourced in-country or through OSRL SLA stockpiles (additional OSRL stockpiles are available for subscribers, i.e. GDS). OSRL can organise this through the charter of a cargo aircraft.

OSRL work closely with our air charter broker to ensure that equipment can be mobilised worldwide as quickly as possible; this is regularly tested through drills, exercises and spills. OSRL have a global contract with an aircraft charter broker with agreed charter terms; this means that OSRL can respond when an aircraft is available and the client has given written authorisation for the aircraft. The broker would be expected to deliver flight options in a spill in six hours.

Although it is subject to fluctuating aviation markets and aircraft availability, we would expect to have an aircraft available and loaded with dispersant within 24-48 hours of approval. During this time, all necessary freight documentation would be completed. Support may be required for some locations where supplementary documents are required, such as translated documents and certified certificates of origin; this could impact the mobilisation time.

There is an advisory on all Boeing aircraft for a limit of 42% of total cargo on liquid cargo. Not all operators adhere to this advisory, and OSRL will identify the most appropriate aircraft for freight dispersant. If the available aircraft are only capable of 42% liquid cargo and the member requires additional response equipment, OSRL will utilise the remaining space with equipment.

Table 4 below indicates dispersant quantities that can be carried in various cargo aircraft:

Aircraft Type	Estimated Number globally for Cargo	Estimated short-notice spill availability	Cargo Capacity (Tons)	Capacity following Service Letter (Tons)	World Coverage (Potential)
Boeing 747 / 777	150	10	100-130	42-50	Global
Antonov 124	24	2-3	100	100*	Global
Antonov 225	1	1	250	250*	Global
Ilyushin IL 76	7**	1-2	45	45	Global – Shorter Transit Distance
MD11	9	1-2	85	85	Africa-centric – some US based

Table 4: Air cargo carrier global availability indicative estimates

* Figures may reduce due to volume constraints and are subject to an ongoing investigation into the pressurisation of holds

** Number that can land in the UK

5. Operations

Upon arrival at the nominated forward operating base, an airfield area will be requested from the ground agent(s)/airfield operator for the storage and subsequent dispersant loading. The size and facilities required for the 727 to operate will vary on several factors, predominantly the intended time spent at the FOB.

Once the aircraft and dispersant have arrived in the country, the aircraft will be configured for spray operations by the flight crew, supported by additional OSRL responders if required. If the spray arms have been removed for transit, they will be re-fitted on arrival in the country upon landing by a flight crew member; connection takes approximately 1 hour. The DM will issue a mission-tasking document to the flight crew for the spray mission.

The TERSUS system must not be modified or operated by anybody except the flight crew or a qualified engineer.

> Support may be requested from the client to expedite the visa process where possible for aircrews, as this a determining factor in getting the crew and aerial dispersant in-country and ready to respond.

There is no provision for passengers to travel onboard the aircraft; CAA licensing prevents carriage of any person not acting as a member of the aircrew. The aircrew consists of two pilots, one flight engineer and a Task Specialist.

The Task Specialist is to assist with dispersant loading, point of contact for the OSRL EOC (Emergency Operations Centre) team, and produce the Dispersant Application Report.

Spotter Aircraft

The B727 can complete spray sorties without a spotter aircraft, but as the spray runs need to be conducted at 150ft, it is challenging for the crew to judge the point to commence spraying. A spotter aircraft will increase the efficiency of the spray runs as it will assist in reducing overspray.

The use of a light aircraft is the primary option for use as a spotter due to the difficulties with vessels observing oil on the water. The main requirement for a spotter aircraft is good communication between the two aircraft. Spotter aircraft will require enough endurance for a single spray operation before needing to refuel and space onboard for an OSRL-trained observer. The aircraft will communicate on normal Aviation Band VHF 118.0-136.975 MHz. Both aircraft will operate in accordance with the B727 Spray/Spotter Mission Operating Procedures.

> If available a spotter aircraft could be used to direct the B727 into location which would increase the effectiveness of the dispersant runs and ensure the B727 is on target. The Client would need to provide this in country where possible, unless they are a subscriber to the WASP or UKCS service. Before conducting any joint operations, the B727 crew would complete a face-to-face briefing with the spotter aircraft crew

Dispersant reload and aircraft Refuelling.

Upon conducting a spray run, if dispersant is available at the airport, the aircraft can be reloaded in 40-60 minutes if filled by individual IBCs, but this will depend on the location of the dispersant stockpile and ground handling assistance. The B727 crew, with support from the Task Specialist, will reload the dispersant and refuel the aircraft if necessary. It is expected that the B727 would typically achieve three sorties a day, but this depends upon dispersant supply, ground handling facilities, distance to the spill site from the runway, airport traffic, weather etc.

If all the dispersant has not been used in a spray sortie, the B727 can land with the remaining dispersant without contravening its operating licence and permits.

Aircraft Tracking

OSRL utilise the programme 'Spidertrack' to track the B727 aircraft(s). The OSRL Duty Manager will issue a link to the client enabling the client to observe the aircraft's flight path.

Figure 2: Example spider track of an aircraft on a sortie

6. Responsibility Matrix

Has no responsibility	Assistance may be required	Has full responsibility

Task	OSRL	Subscriber
Completion of Notification & Signed mobilisation form		
Generate flight tasking and aircraft work order		
Overflight clearances/landing permits		
Issuing of Letters of Invitation (LOI)		
Applying for necessary visas and work permits		
Assistance with expediting visa applications		
Airport handling & refuelling		
Chartering aircraft for dispersant resupply		
Maintenance of aircraft		
Formal Reporting		
Aircrew accommodation/travel booking		
Spotter aircraft		
Authorisation to operate in the country		
Demobilisation from the incident, including a signed demobilisation form		

Table 5: Responsibility Matrix

7. Costs

In the event of a mobilisation, fees will be charged in accordance with the OSRL Scale of Fees; these costs are:

- Response flights - applicable on days where flights are carried out - charged hourly (excluding fuel). Subject to a minimum charge of the daily standby fee
- Standby fee - applicable on days where flights are not carried out - charged daily (cost increases after ten days)

The above fees apply for 'normal' response operations where the aircraft is deployed and utilised for up to 10 days. Daily charges for non-flying standby periods greater than ten days duration where the aircraft flies on average for less than 2 hours per day will require special consideration. Additional requirements may be placed on users in these cases. This option is only available to Members.

Direct operating costs will be charged as incurred to Members, including but not limited to fuel and handling charges. Non-members will be charged an additional 15% administration fee for these direct operating costs.

8. Additional Information

Tabletop Exercises

Members are encouraged to exercise the mobilisation of the service during any tabletop exercise. By calling the duty manager, real-time mobilisation and flight times can be obtained to any location free of charge. OSRL can also arrange for the physical participation of the B727 in a client exercise at published response rates.

Training

OSRL are responsible for the training of their contractors, and OSRL conducts operational training sessions each year to simulate aerial dispersant spraying. The training includes:

- Aerial dispersant spraying (using fresh water)
- Use of surveillance equipment
- Coordination with spotter aircraft(s)
- Coordination with vessel operations
- Production of reports
- Data management

The training is supported by six monthly scheduled exercises and no notice drills to ensure the appropriate level of competence is maintained and to ensure that OSRL fulfils the mobilisation times and standards expected from our members.

In addition to the scheduled training, the B727 crews complete a minimum of one spray experience flight each month and three annual overseas training flights to retain route flying proficiency. Twice a year, the spray experience flights are replaced by 16 hours of simulator training to ensure crews are proficient in handling in-flight emergencies and the contingency procedures surrounding spray operations.

9. Example 727 Operations

The OSRL SLA dispersant stockpile contains 700m^3 of dispersant. Under the Service Level Agreement, the client can access 50% of this stock. The B727 system can hold 15m^3 of dispersant per sortie and the table below shows an example mobilisation of dispersant to the Republic of Congo and the availability of SLA dispersant.

Day	Operation (subject to timings)	Dispersant used	Dispersant available
1	Notify OSRL of the spill, Client signs charter agreement B727 mobilised to Congo.	N/A	N/A
2	Mobilisation and loading of cargo aircraft (B727 arrives in Congo)	N/A	42 m^3
3	The arrival of 42 m^3 of dispersant in Congo, 1 x spray sortie with B727 and mobilisation of a second aircraft for transport.	One sortie - 15m^3	27 m^3
4	Mobilisation of the third aircraft for dispersant transport	Two sorties - 27m^3	0
5	The second aircraft arrives in Congo with 42 m^3 of dispersant	Two sorties - 30m^3	12 m^3
6	The third aircraft arrives in Congo with 42 m^3 of dispersant. Mobilisation of the fourth aircraft.	Two sorties - 30m^3	24 m^3
7	Mobilisation of the fifth aircraft	Two sorties - 24m^3	0
8	The fourth aircraft arrives in Congo with 42 m^3 of dispersant. Mobilisation of the sixth aircraft.	Two sorties - 30m^3	12 m^3
9	The fifth aircraft arrives in Congo with 42 m^3 of dispersant	Two sorties - 30m^3	12 m^3
10	The sixth aircraft arrives in Congo with 42 m^3 of dispersant. Mobilisation of seventh and eighth aircraft	Two sorties - 30m^3	24 m^3

Table 6: Example mobilisation of dispersant to the Republic of Congo

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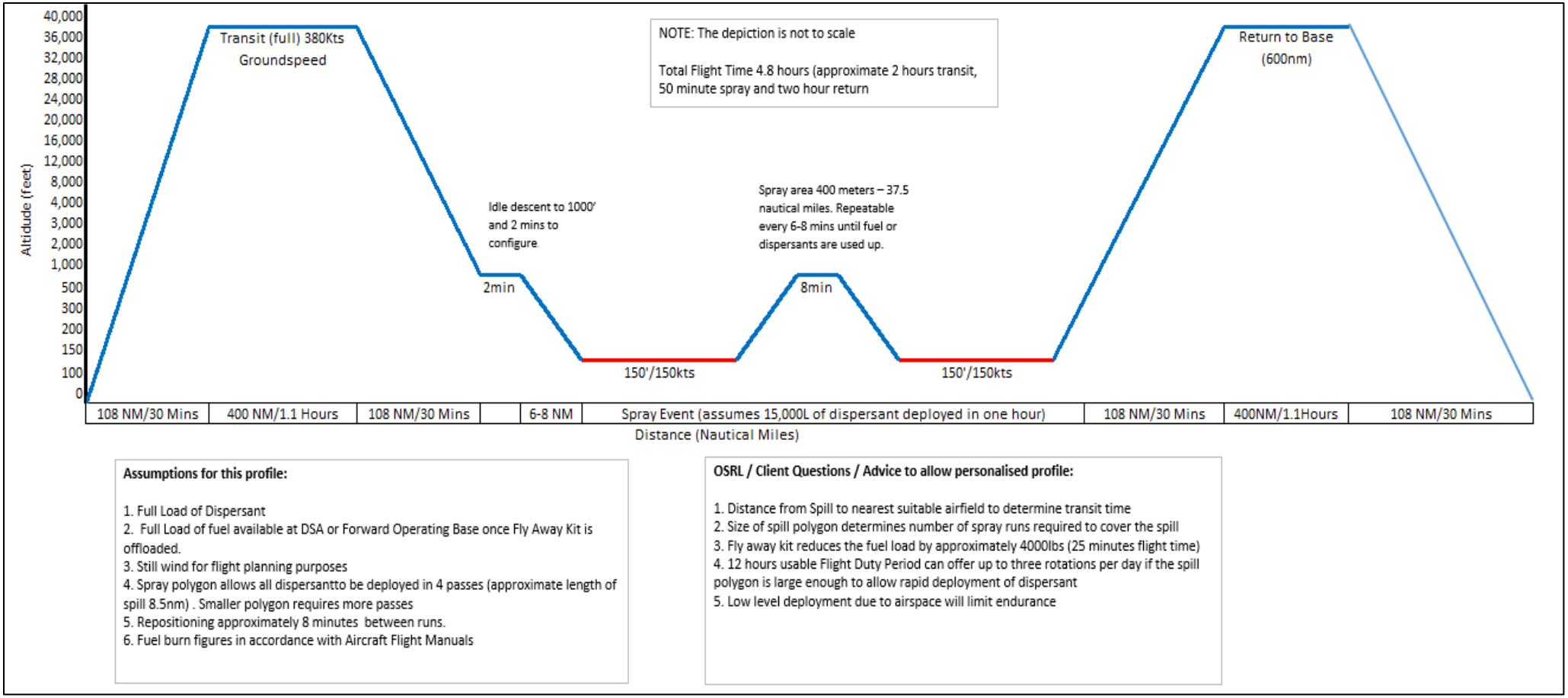

Figure 3 – Example Spray Mission from a Forward Operating Base