

## **The development and introduction of a Regional Tier 2 Aerial Dispersant Service in West Africa**

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**Abstract:** *In many areas of the world the Oil Industry is required to have a Tier 2 response capability as a result of legislation within their area of operation. In others, the response capability is created through oil industry mutual aid agreements.*

*Most oil facilities have some form of Tier 1 response relevant to their operational risk assessment, and in many cases the Industry is covered globally by Tier 3 centres to deal with major incidents. However, response times to different areas of the world vary greatly depending upon logistical arrangements and the chosen strategy. In some cases when there is an increased risk and / or a delay in delivering a response to an area, an alternative 'gap filling' solution may be required. For this reason it was decided to develop a response at Tier 2 level in the rapidly expanding oil provinces of West and Central Africa (WACA), to support the local capability and augment any Tier 3 response.*

*In this paper the author examines the process followed in establishing a Regional Tier 2 aerial dispersant Service to the offshore operators in the Gulf of Guinea. The drivers behind the project will be discussed and how support from industry was canvassed. The paper will describe the technical advancements that had to be made to existing technology, and how diplomatic and logistical hurdles were overcome.*

*The Service is planned to commence in late 2003, and could prove to be a cost effective response model for other Regions.*

## **The Development and Introduction of a Regional Tier 2 Aerial Dispersant Service in West Africa**

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**Background**

There have been dramatic developments in West Africa during the past five years with the introduction of many new oil fields throughout the region. These developments have been 'fast tracked' through the use of FPSO and FSO technology. Indeed the rate of progress has been so rapid that in many cases the oil spill response capability has lagged behind the risk factors of the oil production activity. This, combined with the practical and political difficulties of operating in the region has led to inertia in the comparative development of a comprehensive response structure. In the main the operations are conducted some distance offshore, as a result the response structure at a Tier 1 level has been focused on dispersant application from vessels capable of dealing with small hose spills from SBM, FPS operations. The shoreline response capability has in the main been limited to responding to small utility oil spills around the supply bases.

The accumulation of all of these Tier 1 capabilities from the various operators does not amount to a substantive Tier 2 capability to respond to larger spills. In addition the access time for Tier 3 resources exceed credible time / costs limits. A response time of 36 hours with an attendant cost of US 500, 000 leaves a difficult response decision for a country manager when say, he is responding to a 200 ton oil spill. The situation clearly presented opportunities for improvement for the industry. The Alliance had identified this gap in capability some eighteen months previously, and as set out in its mandate, looked for solutions to the problem.

**Response Philosophy**

Operations in West Africa can present problems by virtue of the administrations, particularly when considering transboundary issues of movement of equipment and personnel and those of security and control of equipment. This, coupled with an understanding of the operating environment that makes the acquisition of response vessels for at sea operations difficult, and problems in the processing and disposal of any recovered oil, suggested that an aerial dispersant capability would be the most useful contribution to the regional capability. Aircraft by their very nature operate on a transboundary level and are the most mobile of the resources available in the region.

The down side of this approach is that aircraft are expensive commodities. A cost effective solution had to be achieved, bearing in mind the response was being adopted by the industry in a genuine desire to improve the response capability, not as a result of any legislative requirement. This solution had to appeal to country managers at a business unit level who would ultimately carry the cost.

The solution to this dilemma is one that the Alliance has used before. That is, where possible, to use aircraft that are operating in the region on other duties and role change them. In this case the aircraft available was the Bandeirante EMB P1, contracted by the industry for the local carriage of freight and passengers from a company called Naturelink. This company, an industry approved carrier, was willing to enter into an Agreement with the Alliance to provide the service and had the capacity within its fleet to ensure that response times could be met.

### **Description of service**

The aim of the service was to provide regional coverage for the West African operators particularly in the developing regions from Côte d'Ivoire to Angola. The aircraft based in Malabo, Equatorial Guinea is centrally placed to be able to respond across the operational area within six hours, this is a credible response time for a Tier 2 response.

The aircraft has a custom-built aerial spray system, developed by Naturelink and approved by the South African Civil Aviation Authority, which can deliver 2 tons of dispersant. The aircraft has a transit speed of 200 knots when the system is installed.

In addition to the aerial dispersant system, the aircraft can be operated as a surveillance aircraft using a fully portable infra red Explorer IR camera. This system can be used to detect the thicker layers of oil to ensure the optimum efficiency when spraying. This system is supported by a GPS navigation system and the output is recorded on a domestic quality video unit. The reason for selecting such equipment is that it can be easily and cheaply replaced if needed and the quality is adequate for the purpose.

To support the spray system, four dispersant depots have been established in the region, in Malabo, Angola, Côte d'Ivoire, and Gabon. These bases supported by the oil industry provide the initial dispersant stocks. Four tons of Corexit 9500 dispersant is located in each of these bases, additional stocks if required can be sourced from local operators in country.

## **Gaining support**

Having identified the problem and the potential solution, the next challenge was to gain support from the oil industry for its implementation. At a corporate level there was unanimous support. But the oil industry structure has changed over the past few years. The business units and the country operators are very autonomous in their operations, being responsible for their own bottom lines. This means that the benefits of any initiative have to be attractive and the costs acceptable. This meant that a lot of lobbying and dialogue was needed with country operators to show the benefits of the system. As in many cases, the most potent example of the benefits was the occurrence of a number of oil spill incidents that clearly demonstrated that the current situation could be improved at a very reasonable cost.

One other key component was the benefit of the collective membership of the Alliance. With the Alliance acting as a focal point it became easier for the members to all agree to the proposal, and the combined membership of all of the industry has a dramatic effect on the cost of providing the service. The cost is borne by the regional operators, as the service is unique to their operating environment.

## **Into Action**

The system was fully completed in October 2003 and the service entered into being on 23<sup>rd</sup> October. It was not very long before the service was deployed in response to small oil spills that required its input. One in Equatorial Guinea and the other in Nigeria. The response demonstrated the clear advantage of a localised tier 2 in the management of the spill and that its presence contributed positively to the cost management of the response.

The project shows how the problems facing the industry can be solved at reasonable cost through co-operation and the use of innovative technology.

Further challenges remain for other types of response in the region but they are currently being assessed and will be solved using other strategies that not only apply to operations in West Africa but also to other operating areas around the globe.