

**PETROLEUM ASSOCIATION OF JAPAN  
OIL SPILL SYMPOSIUM ~98  
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**MALAYSIA'S RESPONSE TO THE EVOIKOS INCIDENT**

**Paper by:  
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## **PETROLEUM ASSOCIATION OF JAPAN OIL SPILL SYMPOSIUM' 98**

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**Paper by : PIMMAG**

#### **1. BACKGROUND**

On the 16 October 1997 at 2100 hours a collision occurred between two oil carriers in the Straits Of Singapore and caused the worst oil spill in Singapore's history. The vessels involved in the collision were MT Evoikos ( GRT 75,428 tonnes ) and MT Orpin Global ( GRT 129,702 tonnes ). An estimated of 25,000 metric tons of marine fuel oil spewed into the sea from MT Evoikos as a result of the damage from the collision.

The oil spill response was spearhead by the Maritime Port Authority of Singapore who co-ordinated all the resources to combat the spill. Both sea and shore clean up operations were carried out to minimise the effect of the spill.

#### **2. OIL SLICK MOVEMENT AFFECTING MALAYSIA**

As a result of the spill, the oil spread into the surrounding waters and islands. Within four days of the collision the oil slick reached Pulau Hantu, Pulau Senang, Pulau Pawai, Pulau Sudong and seemed to be moving into the Straits of Malacca.

The detail oil slick movements affecting Malaysian waters have been observed as follows.

##### **Day 1, on 16 Oct 1997**

MT Evoikos and MT Orpm global collided in the Straits of Singapore and spilled 25,000 tonnes of marine fuel oil. Oil start spreading to the surrounding areas.

##### **Day2-4, on 17- 19 Oct 1997**

The oil was moving slowly towards Tanjung Piai under the influence of the current. Three large patches of black oil and heavy sheen was found south west of Singapore. Chemical dispersant spraying , booming and skimming activities were carried out.

##### **Day5-6, on 20-21 Oct 1997**

The oil was moving towards the Straits of Malacca i.e. black oil observed about 7 n.m off Tanjung Piai.

**Day 7, on 22 Oct 1997**

Large patch of oil was found 4 n.m off Pulau Pisang and 4 n.m off Tanjung Piai. The length was about 25 n.m and width about 4.n.m. The oil slick moved north westerly into the Straits of Malacca forming elongated shape due to the strong current flow through the narrow gap between Tanjung Piai and Pulau Karimun Besar. The oil was in the form of thick slick with minimum effect of wind.

**Day 8 -10, on 23 -25 Oct 1997**

Large patches of black oil and heavy sheen were discovered 1 0 n.m. off Kuala Sungai Batu Pahat. Current direction was north westerly with speed of 0.4 knot.

**Day 11 -12, on 26 -27 Oct 1997**

Large patches of elongated oil slick were found 1 0 n.m off Tanjung Tohor. The length of the oil slick was about 1 5 n.m and width 5 n.m . Oil sheen also noted in several patches off Sungai Batu Pahat and Tanjung Tohor. Current speed was about 0.7 knot.

**Day 13 on 28 Oct 1997**

Five large patches of oil were found 8 n.m off Tanjung Kling and 8 n.m off Pulau Undan . Scattered patches of oil slick were due to heavy traffic flow in the vicinity. The current speed was about 0.6 knot in north-westerly direction.

**Day 14 on 29 Oct 1997**

Three patches of elongated oil slick and streak of oil sheen found at 1 5 n.m off Tanjung Keling and 8 n.m off Pulau Rupert.

**Day 15 on 30 October 1997**

Large patch of oil slick was monitored 1 5 n.m off Malacca . The slick was about 10n.m. from the previous day position and in a form of one large patch.

**Day 16 on 31 October 1997**

Patches of black oil elongated from south of MaLacca to Linggi river about 25 n.m in length and 3 n.m width. The slick was moving toward Tanjung Tuan due to the stronger north westerly current.

**Day 17-18, on 1-2 Nov 1997**

Patches of black oil elongated about 20 n.m. The assumption was patches of oil slick split due to heavy traffic flow.

### **Day26 on 10 Nov 1997**

Patches of oil slick observed 4 n.m off Tanjung Gabang and oil sheen 4 n.m off Port Dickson. The length of the patches was about 1 5 n.m . The slick was moving north westerly due to predominant north westerly current.

### **Day27 -30 on 11-14Nov 1997**

Five patches of oil scattered brown and heavy sheen was found 5 n.m off Tanjung Gabang . Current speed was about 0.3 knot. A few patches of oil and sheen were still found 8 - 10 n.m off Port Dickson.

### **Day40-on 24 Nov 1997**

Oil in the form of tarball landed at the Tanjung Karang beach. Shore clean up party was mobilised to clean the beach manually. More the 1 00 staff took three weeks to clean up the beach. The rest of the oil slick moved northwesterly into Indonesian waters.

Annexe 1 ,2 and 3 show shows the movements of the oil slick from the location of collision through the Straits of Malacca.

## **3. THREAT**

As the oil slick moved from the collision site northwards into the Straits of Malacca the whole west coast of Peninsular Malaysia from Johor to Selangor was exposed to the threat of the oil pollution. Beside the environment in general the followings were under major threat from the pollution : -

1. The mangrove swamps and jungles
2. Fish and prawn farm in the coastal areas
3. The beach resorts along the coast
4. Power plants cooling water intake at Port Dickson and Selangor
5. Fishing grounds and activities

## **4. STRATEGIES**

The following strategies were adopted by Malaysia throughout the incidents:

1. To monitor the oil slick by air and surface surveillance
2. To protect high sensitive areas that were likely hit by the oil

3. To mobilise oil spill equipment and resources to areas under threat
4. To combat the oil only if its threatening to land onshore/beach

## 5. **ACTION**

### 5.1 Malaysian National Oil Spill Contingency Plan ( NOSCP)

On the fourth day of the spill, 18 October 1997 the NOSCP was activated in preparation of the oil slick that was moving into Malaysian waters. The Director of Marine Southern Region was appointed the On- Scene Commander while the Director of Department of Environment Johor appointed as the Area Co-ordinator to co-ordinate all resources at state level. The command centre was set up at the Marine Department Office Johor Bahru.

As the oil moves northwards the command centre was moved to Marine Department Office at Port Dickson on 28 October 1997 and the Director Of Marine Central Region appointed as the On Scene Commander.

On the 11 November 1997 the command centre was moved to the Department of Environment Office in Shah Alam in lieu of the oil that has now moved to offshore Selangor. Throughout the operation Marine Department and Department of Environment played leading roles in co-ordinating the oil spill response activities and resources.

### 5.2 **OIL SPILL RESPONSE**

#### 5.2.1 **OFF JOHOR**

The following actions were taken to combat the oil slick.

1. Monitoring of the oil movements were carried out by the air and surface units. The air unit composed of the Royal Malaysian Air Force and Royal Malaysian Police Air Wing, while surface unit from Marine Department, Marine Police and Fisheries Department vessels.
2. Total of 600 meters of seasentineal booms from PIMMAG and 600 metres of sea curtain booms from Marine Department were deployed to protect the fish farm at Kukup sensitive areas. On top of that plastic sheets were being used to cover the fish cage in further effort to protect the fish from the oil slick.
3. Dispersant (Corexit 9527) was placed on standby on board MV Lang Tiram and skimming was carried out using Foilex skimmer near Pulau Pisang.

4. Meanwhile the beach clean up party was ready to clean up any oil that may hit the shore. More than fifty staffs from the Local Defence Force and other agencies were mobilised for the above.

#### **5.2.2 OFF MALACCA/ NEGERI SEMBILAN**

The following actions were taken:

1. Monitoring of the oil by air and surface units.
2. Booming of cooling water intake point of Port Dickson Power Plant.
3. Local OSR resources of Sungai Udang Port and Port Dickson Esso and Shell refineries were put on stand by.
4. Oil spill equipment from PIMMAG and PAJ mobilised to the areas.
5. PIMMAG Port Dickson base on frill alert.
6. Shore clean up party on stand by to be mobilised if the oil comes closer than 3 n.m to the coast.

#### **5.2.3 OFF SELANGOR**

1. Monitoring of the oil by air and surface units.
2. Local OSR equipment from Marine Department, Port Authorities and PAJ at Port Klang on stand by.
3. On 24 November 1997 oil in the form of tarballs landed on the Tanjung Karang beach. More than 100 staffs of the shore clean up parties were mobilised to clean the oil manually. It took them about three weeks to clean up the beach.

### **5.3 RESOURCES MOBILISATION**

Throughout the exercise equipment were being mobilised from the following sources:

#### **1. Marine Department**

Surface Craft, Oil Booms, skimmers, manpower and other equipment

#### **2. Department of Environment**

Manpower, communications and resource sourcing and co-ordination

3. Royal Malaysian Police  
Surface craft, Air surveillance and manpower
4. Petroleum Industry Malaysia Mutual Aid Group ( PIMMAG)  
Oil Booms, Skimmers, dispersents, absorbents, manpower and other equipment
5. Royal Malaysian Air Force  
Air surveillance
6. Petroleum Association of Japan ( PAJ)  
Oil Booms, Skimmers and other equipment
7. Local Authority and Local Defence Force  
Manpower and shore clean up equipment
9. Maritime Enforcement Co-ordination Centre  
Enforcement agencies resources and co-ordination
10. Port Companies  
Surface craft, communication and tier one oil spill equipment.
11. Fisheries Department  
Surface crafts, manpower and fisheries' experts.

## 6. **LESSON LEARNED**

Although the pollution occurred outside Malaysian waters, the threat and effect to Malaysia were real and effective measures were vital to minimise any effect on Malaysian sensitive areas.

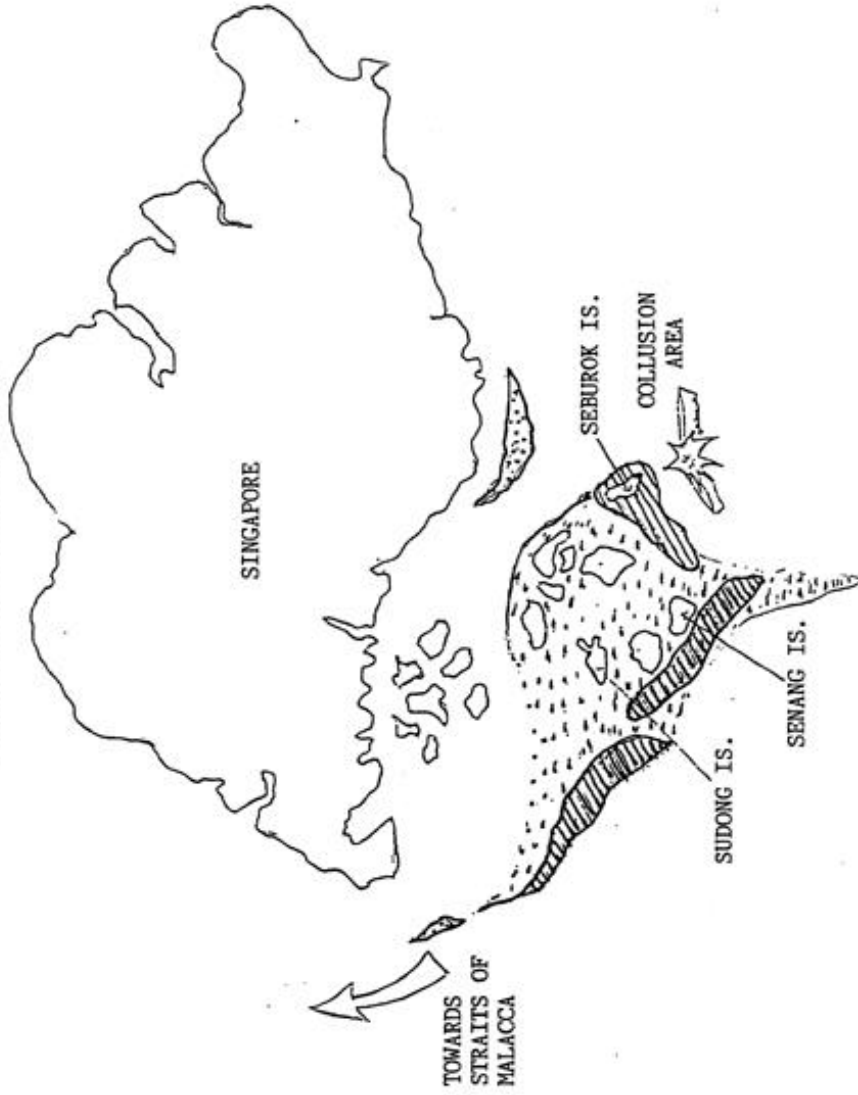
Some of the lesson learned during the incident were:

1. Effective information sharing between neighbouring states in oil spill incident is vital.
2. Monitoring, tracking and simulation of the oil slick movements will determine correct strategies for combating the oil slick.

3. Using of dispersent does not fully eliminate the oil slick threat instead it will be transferred to other areas as the slick moved on.
4. OSR plan has to be fully exercised and improved to ensure effectiveness in real incident.



AFFECTED AREA AND OIL MOVEMENT



PATCHES OF THICK OIL



SHEEN

OIL SLICK MOVEMENT



EVOIKOS INCIDENT - OIL MOVEMENTS

