# 現地報道記事

SINGAPORE'S WORST OIL SPILL

# Tanker like piece of paper ripped apart

It was 15 hours after the collision, at about noon on Thursday, that the full extent of the spill became clear — 25,000 tonnes had leaked, six times the original estimate. **Ginnie Teo** speaks to Captain Chua Eng Kat (right), who figured out the difference.

NEWS of the collision reached Captain Chua Eng Kat just after midnight on Thursday when his office called him at home.

Capt Chua, 49, is deputy controller of the maritime environment and hazardous cargo department at the Maritime and Port Authority of Singapore (MPA).

"The office told me to get ready. They wanted me in earlier on Thursday morning — at daybreak instead of at 8.30 am," he said.

Cyprus-registered oil tanker Evoikos had collided with a very large crude carrier, the Thai-registered Orapin Global.

The damaged Evoikos was leaking marine fuel oil into waters outside Singapore's port limits, while the Orapin Global was unscathed.

By early Thursday morning, 18 ships were already at the scene fighting to contain the spill. But they were working on an estimate given by the ship's master, who said 3,000 to 4,000 tonnes of oil had leaked.

MPA also, in its statement to the media, used the same figure for most of Thursday.

When Capt Chua arrived at Tanjong Pagar Complex at about 7 am on Thursday morning, he was given a quick assessment of the situation and told to board the damaged ship to find out how much oil had leaked.

He hopped onto a fast-response boat and sped to the accident area at 8 am.

First, the boat circled the spot to assess the damage to the vessel and the size of the spill.

"Air reconnaissance by army helicopters may not really see the oil. They may mistake cloud shadows or reefs for slicks," he said.

Throughout, he kept sending updates over the radio to the operations centre at MPA.

With 15 years of port and marine experience, Capt Chua was no stranger to oil spills. He had investigated smaller incidents before as part of his enforcement and emergency duties in the Port Master's Department.

At 10 am, he went on board the 285-m-long Evoikos, which had a 20-m-wide gaping hole in its side.

"It was like a piece of paper that had been ripped apart," he said.

Making it up the gangway was a challenge. "The steps were slippery and the railings oily. I had to tread carefully. I almost slipped a few times."

It was even worse on board. "The whole ship was covered in oil. It smelled strongly of petroleum. The navigation bridge's window was covered with black oil and we couldn't see through it. I was slipping all over the place."

His first contact with the crew of about 20 found them "quite stressed out and tired" as they had been trying to stop the leak and minimise the fire risk.

The ship's captain "was polite but unable to provide any information". So he asked for the chief officer.

Both of them went below deck to examine the ship's tanks, which had been carrying 120,000 tonnes of marine fuel.

Two of the tanks had been torn apart and held nothing, while a damaged third tank still had some fuel in it.

After checking the ship's cargo documents and loading plans, he knew how much the tanks could hold and how much had been loaded.

Next, he had to find out what was left.

A modified dipstick was made using a pipe with a measuring tape attached along its length and weighed down at one end.

It was lowered into the damaged tank to find out how much it held.

For the next two hours, he moved between the ship's office and the navigation bridge as the measurements were being taken and the calculations worked out.

By this time, his clothes were splattered with oil and his shoes caked with a sticky black residue.

Finally, at noon, the results were in.

The new estimate of 25,000 tonnes was radioed back immediately to headquarters.

Then it was confirmed — they were fighting to contain Singapore's worst oil spill ever.

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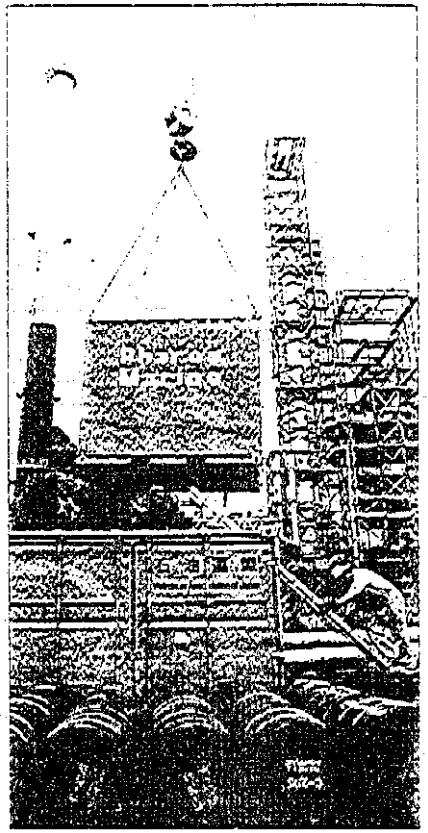
1997.10.19



OIL BUSTERS: Containers from Port Klang carrying skimmers and booms arriving at Sembawang Marine and Logistics yesterday afternoon. The equipment is on loan from the Petroleum Association of Japan. — Picture by TERENCE TAN.

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# Notebook

■ **BEACHES HIT:** Oil slicks have washed ashore at the southern islands of Pulau Pawai, Pulau Sudong and Pulau Semang, which are used as live-firing ranges by the Singapore Armed Forces.

The Environment (ENV) and Defence ministries carried out a joint reconnaissance yesterday to assess the extent of the oil slicks on the beaches there.

An ENV spokesman said: "ENV will provide every assistance to Mindef, including the provision of men, chemicals and equipment, to clear the oil slicks."

■ **LOW FIRE RISK:** Marine fuel oil which leaked from the tanker, Evoikos, does not catch fire easily. Captain Mark Heah, Maritime and Port Authority's port master, said: "It is more difficult for it to catch fire than marine gasoline because it is heavier and thicker. It must reach a much higher temperature before it ignites."

Asked if a lighted cigarette could set the slick on fire, he said it was very unlikely and added that everyone involved in fighting the spill had also been told to observe all safety measures.

■ **SORRY, WRONG DIRECTION:** When news of the collision broke, researchers at the Centre for Remote Imaging, Sensing and Processing went into action.

Having signed an agreement with the Maritime and Port Authority to provide satellite pictures to track the spread of oil spills, the centre at the National University of Singapore tried to snap a shot of the spill as a satellite passed over the area.

However, because the satellite was not facing the right direction, the picture missed the collision scene and the spill.

Mr Kwoh Leong Keong, the centre's assistant director, said that the centre then used another satellite but "because of the haze, we saw the ships, but not the slicks."

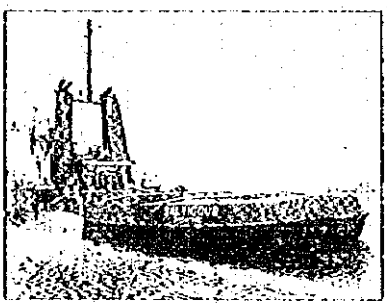
He added: "The earliest opportunity for us to take another photo is on Tuesday, but that might be too late."

■ **INTERNATIONAL HELP:** More help is on the way to fight the spill as a six-member team of environmental protection and maritime experts left Sydney, Australia, yesterday.

Already here is a team of six Japanese oil disposal experts and clean-up equipment, said the Japanese embassy here yesterday.

The oil industry has also chipped in — the Petroleum Association of Japan has already supplied skimmers, which can remove oil from the water's surface.

Four were in action yesterday.



Clean-up job: Spray arms on this boat dispense a chemical which breaks up large oil molecules.

■ **TIME OUT:** Some of the officers at the Maritime and Port Authority have been working round the clock since the collision on Wednesday night, stopping only for baths and catnaps.

Captain Mark Heah, MPA's port master, said: "On the first day, some of us were here for more than 24 hours. This went on until the situation was under control, then we went on shifts."

At the nerve centre at Tanjong Pagar Complex, they did not even have to step out for meals as food was being catered. The menu for the first day: mee goreng, curry puffs and Swiss rolls.

For those out at the scene of the spill itself, a bath was their main concern. But for some, even a long shower did not help.

Captain Chua Eng Kat, 49, deputy controller, MPA, went on board the damaged tanker, Evoikos, which spilled the oil. He said he gave himself a "good scrub" when he got back home, but when he came out of the bathroom, he still smelt of oil.

He said: "My wife asked me if I had bathed. Now I still can smell the petroleum on me. You should have seen my shoes! They were caked with black oil. I had to wear a new pair."

Singapore's worst oil spill

# Big clean-up at Pulau Sudong to clear beach

## Focus still on skimming operations at sea

By Jasbir Singh

A BIG clean-up started yesterday at Pulau Sudong to clear its beaches of the greasy sludge washed up following the oil spill off south-western Singapore last Wednesday.

But the focus is still on oil-skimming operations at sea, which intensified yesterday — the fourth day of the mopping-up.

A total of 45 anti-pollution craft were deployed, up from the 43 boats used on Saturday.

Most of the boats are skimmers, with booms that collect the oil and then pump it into a tank.

About 25,000 tonnes of oil had leaked from the Cyprus-flagged tanker Evoikos after it collided with Thai-registered Orapin Global, a large crude carrier, on Wednesday night.

Last night, the Evoikos' crew, mostly Greek and Filipinos, were still on board the badly damaged tanker.

They have been told to stay put by the tanker's Greek owner until the Maritime and Port Authority (MPA) completes its investigation into the collision.

MPA said the Evoikos "remains stable at its original position, 3 km south of Pulau Sabarok".

The oil slick washed up at Pulau Sabarok and Pulau Hantu for the first time yesterday.

The beaches of the first Southern Islands to be affected on Saturday — Pulau Pawai, Pulau Senang and Pulau Sudong — are still covered by oil sludge.

Sembawang Marine and Logistics, which is in charge of the clean-up at sea off the Southern Islands, had sent out more than 100 men, 20 boats and six skimmer craft to the area by 1 pm yesterday.

Booms extending about 1 km were laid out off the northern coast of Pulau Sudong.

Sembawang Marine's oil spills services manager Chris Richards said they would help prevent the slick from spreading to the Singapore mainland or to Sentosa and Kusu islands.

An additional boom was placed at Sentosa as a precautionary measure yesterday.

There are now four booms off Sentosa.

Mr Richards estimated that the sea around the Southern Islands would be clear of oil in the next few days.

Environment Minister Yeo Cheow Tong said yesterday that he was pleased with the quick response of the authorities in managing the oil spill.

He said: "The accident — and the discharged oil — was one of the biggest ever encountered in Singapore, equivalent to the Exxon Valdez spill.

"That shows the scale of the potential disaster that we face.

"The fact that hardly any of our beaches have been damaged shows the efficiency of the disaster alleviation.

"It shows the capability, it shows the alertness and it also shows the readiness to fight such an oil spill."

The minister added: "A disaster of this scale in most other places would have led to huge areas being contaminated by the oil."

The Japanese government yesterday flew in two more oil-skimming equipment to add to the four already sent here by the Petroleum Association of Japan on Saturday.

# All-out attack

*The cleaning-up of 25,000 tonnes of marine fuel oil, equal to about 200,000 barrels, is being fought on several fronts: from the air, out at sea, near the damaged tanker and at shore*

**Areas affected**

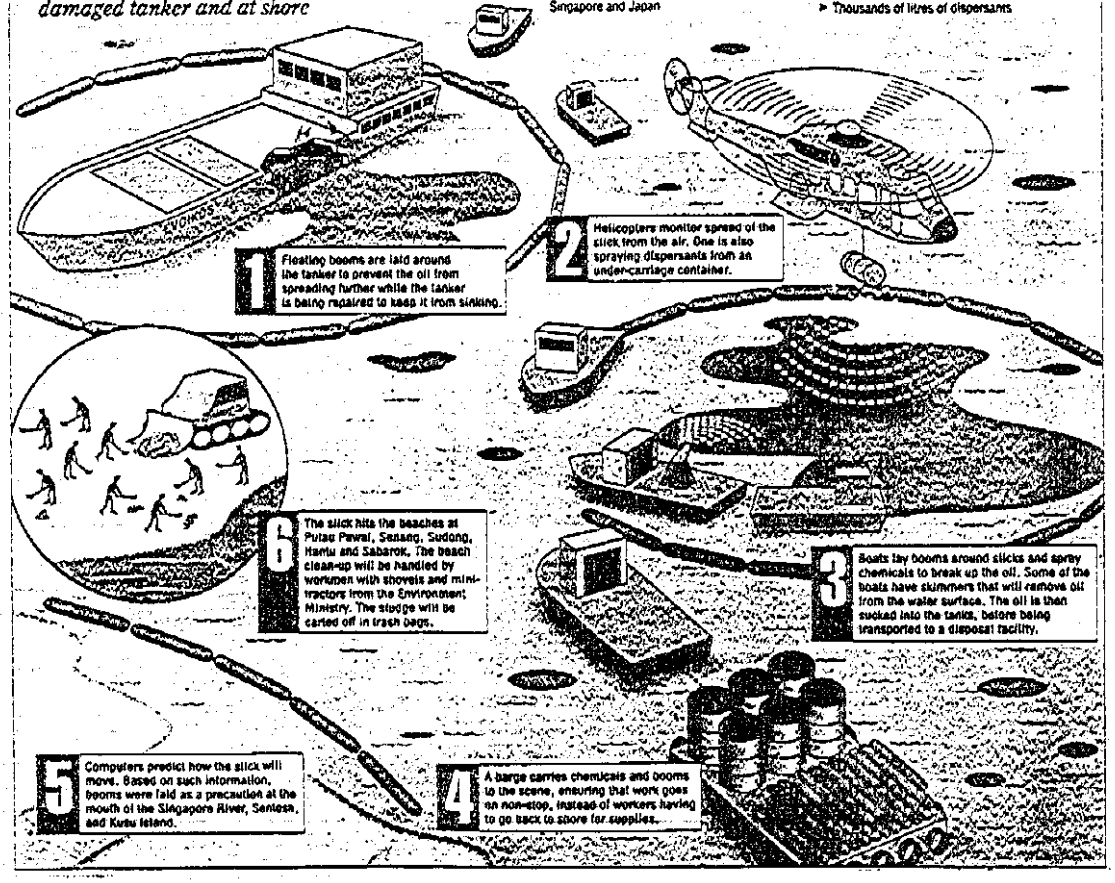
South of Raffles Shoal, South of Pulau Sabarok, Jong Fairway, Sisters Fairway, Sinki Fairway, Pandan Fairway, Western Anchorage and anchorages in the West Jurong area. Also the beaches of Pulau Sudong, Pulau Senang, Pulau Pawai, Pulau Sabarok and Pulau Hantu.

**Countries involved**

Singapore and Japan

**Resources:**

- 340 personnel
- 45 boats from companies such as Shell, Caltex, Esso, Mobil, East Asian Response Ltd, PSA Corporation, salvage company Semco, Hyundai, Keppel Corp, and Singapore Refining Company.
- More than 1.2km of the floating barriers have been laid
- Thousands of litres of dispersants

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SINGAPORE'S WORST OIL SPILL

# Supertanker warned 13 minutes before crash

## But tanker owners' association says this was too late

By Ginnie Teo

THE first warning went out 13 minutes, and not six minutes as earlier reported, before the collision.

The Maritime and Port Authority of Singapore (MPA) said yesterday that this first call went out to supertanker Orapin Global.

The vessel was warned, in all, three times before the collision, the last one coming six to seven minutes before impact.

The Greek oil tanker Evoikos, however, received only one warning — at the same time as the last one received by the supertanker.

These details were revealed during the MPA press conference yesterday.

The warnings came from a radar operator, who was manning the Vessel Traffic Information System then.

MPA director-general Chen Tze Penn, who read out a transcript of the conversation between the operator and the two captains, said: "Before the collision, the Vessel Traffic Information System operator warned the Orapin Global that she was in the wrong lane and also warned her of the presence of the other approaching vessel."

He added: "The VTIS operator also warned Evoikos of the Orapin Global. Both acknowledged receipt of the warning."

The two vessels replied, saying that they could see the other vessel.

Yesterday, the International Association of Independent Tanker Owners commented in a press statement that the warning issued to the two vessels came too late for the accident to be avoided.

It said that "as the two ships were closing on each other at a relative speed of approximately 20 knots", it would have taken at least 15 minutes, or a good 4 to 5 km, to bring the unladen supertanker to a stop.

For the laden tanker, it would have taken about 10 minutes, or 3 km, to stop it.

The association has 260 full and 270 associate members.

In view of the difficulty of manoeuvring large oil tankers and the time needed to stop or put the ships on a new course, it also reminded ports and vessel traffic services to take these hazards into account and have suitable contingency measures.

The Thai-registered empty very large crude carrier (VLCC) Orapin Global weighs 129,702 tonnes and was on its way west.

The east-bound Evoikos, which is Cyprus-registered, weighs 75,428 tonnes and was carrying 120,000 tonnes of marine fuel oil.

Both ships were sailing in the Singapore Strait close to 9 pm last Wednesday.

The Singapore Strait has a Vessel Traffic Separation Scheme, where ships are given lanes to travel in.

### "AT LEAST 15 MIN NEEDED"

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## 13 minutes and 3 warnings

*This is part of the conversation between the operator of the Vessel Traffic Information System (VTIS) and the captains of the two ships. It was read out to a packed press conference yesterday by MPA director-general Chen Tze Penn.*

**8:41 PM**

Vessel Traffic Information System (VTIS): Captain, where are you going to?

Orapin Global (OG): We are west-bound vessel.

VTIS: West-bound vessel? Captain, please check your course, please check your course. You are now navigating on the wrong traffic lane, in the wrong traffic lane. Please check your course and proceed back on the proper west-bound lane.

OG: That's right, we have to overtake the vessel on our starboard side and we continue back to the original course 244.

VTIS: You'd better take precaution because there are a lot of east-bound ships on the east-bound lane coming up.

OG: Yes, we can see the vessel, thank you very much.

**8:46 PM**

VTIS: Orapin Global, this is VTIS, come in, over.

OG: Orapin Global receiving.

VTIS: Roger, sir. For your information, we are now reading in the east-bound one, we have a tanker coming from the west, ahead of you about 2.8 nautical miles. Bearing from your ship is 248. The tanker name is Evoikos. She's heading for past south boarding ground.

**8:47 PM**

OG: Roger, we have on the bow the tanker. Then there are some words that cannot be made out, said Mr Chen.

VTIS: Roger, please check back to the west-bound one when the traffic is clear, over.

OG: Roger, we will keep 260, we will come back to the right lane.

VTIS: Thank you.

VTIS: Evoikos, Evoikos, VTIS calling, over.

**8:47 PM**

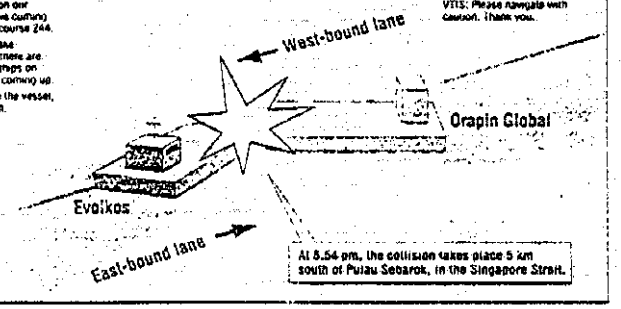
Evoikos (E): Yes, VTIS, this is Evoikos.

VTIS: Good evening, sir. Evoikos, there is a VLCC tanker heading in the wrong lane. Bearing from the vessel is approximately 0.68. Range about 2.4 nautical miles. VLCC is Orapin Global. Over.

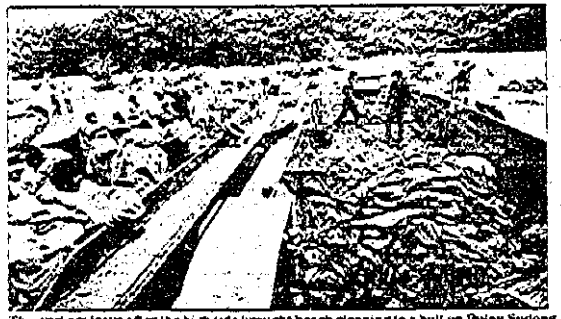
E: OK, I can see it.

**8:48 PM**

VTIS: Please navigate with caution. Thank you.




# 'I have never seen the water like this, so dirty'



The workers leave after the high tide brought beach cleaning to a halt on Pulau Sudong yesterday. The sludge lies in the other vessel. — Picture by CHEW SENG KIM.

By Edmund Tee

THE boat churned up an ugly black froth, a mere hint of the pollution that has spoilt the beaches of Pulau Hantu.

As a scuba diver, I know this place well. But the beach was now coated with a sticky, black residue.

Yesterday, the island was largely deserted, except for a contractor and his 10-man crew of workers cleaning the beach.

They had been scooping sludge and cutting oil-stained creepers on the beach since 8.30 am, and were working to beat the tide, said Mr Kamal Hussain, 26, a worker.

When the tide forced them to stop, at about noon, they switched tasks and began filling the bags with the sticky clumps of sludge.

Since last Saturday, the crew had been working on the island, managed by the Sentosa Development Corporation, to clean the tainted beaches.

Over at nearby Pulau Sudong, which falls in the military's live-firing zone, 41 workers dispatched by the Environment Ministry were battling the sludge.

Since last Saturday, 2,075 trash bags of the foul substance had been collected and disposed of.

As we headed back, boatman Lee Kwang Huat, 54, who has plied the southern islands for 40 years, said: "I used to fish here with my father when I was a teenager, but in all my life, I've never seen the water like this, so dirty.

"It's going to take a long time to clean it up."

# $16 m operations control centre for new terminal

A NEW Port Operations Control Centre costing $16 million will be set up to enhance safety in Singapore's port. It will be ready by the end of next year at the new Pasir Panjang Container Terminal.

The centre will cope with increasing marine traffic, said Mr Chua Lian Ho, director (training division) of the Maritime and Port Authority of Singapore (MPA).

He was delivering the keynote address at a seminar on managing maritime disasters, at the Grand Plaza Hotel yesterday, in place of MPA's director-general, Mr Chen Tze Penn.

The new control centre will serve as a back-up to the main centre at Tanjong Pagar Complex.

They will operate the Vessel Traffic Information System, using a radar network to help vessels move safely through the Singapore Straits and port waters.

An MPA spokesman said last night that the decision to build the new centre was approved by the MPA board on Sept 25, and was not a "reaction to the oil spill incident".

He said: "MPA felt it was necessary to build a new centre to complement the existing one in view of the increasing traffic in the port."

In his speech, Mr Chua also said that because the port was an important lifeline for Singapore's economy, one of MPA's "paramount concerns" was thus to protect Singapore's territorial waters from marine pollution and to ensure the safe navigation of ships calling here.

Mr Chua also outlined other efforts to improve navigational safety here, including the development of Electronic Navigational Charts last year. These will be used with the Electronic Chart Display and Information System that is linked to a ship's radar. Their built-in safety features can forewarn the ship's master if the vessel is heading for a collision or grounding.

The MPA is also upgrading its facilities for search-and-rescue operations, by investing $5 million on a Digital Selective Calling System which allows ships to send distress messages quickly. It will be ready next year.

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# Orapin Global 'was in the correct lane'

By Chang Ai-Lien

THE very large crude carrier (VLCC) Orapin Global did cross lines to overtake another vessel, but its collision with oil tanker Evoikos took place when the ship had returned to its original west bound lane, the VLCC's managers maintained yesterday.

However, Maritime and Port Authority of Singapore (MPA) said yesterday that both vessels collided in the separation zone, which is the highway divider between the east- and west-bound lanes in the Singapore Straits.

Denholm Ship Management Limited, which manages the Orapin Global, said that the tanker had earlier crossed to the east bound lane to overtake a slower, smaller vessel.

The manoeuvre was completed and it had moved back to the west bound lane when the collision happened, it said.

The Evoikos was apparently going to the Southern Pilotage Boarding Ground and would have had to cut across the west bound lane to do so.

A Denholm spokesman did not give the exact speed of the Orapin Global, but said that it had been travelling at a speed of no less than 16 knots.

Under international navigational rules, the Evoikos was obliged to give way to the Orapin Global, and should have altered its course to pass astern to the rear rather than ahead of the vessel, said Denholm.

Evoikos' owners have remained silent so far. Its agent could not be reached for comment yesterday.

A marine consultant told The Straits Times yesterday that based on the international regulations, it was the rule for the Evoikos to give way since the Orapin Global had been travelling to the right of Evoikos.

While crossing the west bound lane on its way to the pilotage boarding ground, it was a practice to do so at a right angle, he added.

However, the Orapin Global should ideally have overtaken on the right of the vessel if it was overtaking, as it would not have to cross the east bound lane then and face oncoming traffic, he said.

Meanwhile, responding to comments by the International Association of Independent Tanker Owners, which said that the warning given as the ships were closing in on each other may not have been timely enough, the MPA said that in this instance, the question was not whether there was enough time or distance for the tankers to stop to avert the collision.

A prudent master could alter the course or reduce the speed in such a situation, and a tanker could respond to a course alteration in a few minutes, it said.

It pointed out that its Vessel Traffic Information Service, which was free, was an aid to ships navigating in the Straits, and not all ports in the world had such a service.

"It is ultimately the responsibility of the Masters and the navigating officers on board the ships to ensure navigational safety of their ships.

"They cannot pass on this critical responsibility to anyone else. If they fail in their duty, they must face the consequences," it said.

COMPENSATION FOR CLEAN-UP

# Claims against ships may be capped at $28 m

By Ginnie Teo

CLAIMS against the tankers involved in the oil spill may be capped at $28 million, because an international convention which allows claims of up to $118 million will only come into effect here next September.

Singapore signed the updated Civil Liability Convention 69 last month. It came into force internationally in May 1996.

Singapore is also not party to another convention on claims — the 1971 Fund Convention — to which both Indonesia and Malaysia already belong.

Shipping and legal sources said that only if the ships were found to have acted in gross negligence can caps on claims be lifted.

Last Wednesday's collision and subsequent oil spill in the Singapore Strait has led to a massive clean-up operation. MPA director-general Chen Tze Penn said he could not give an estimate of how much it would cost as it was still being carried out.

MPA has arrested the captains of the two ships — the Orapin Global and the Evoikos.

Although they may be punished for causing the oil spill, governments can claim compensation from the owners for cleaning up.

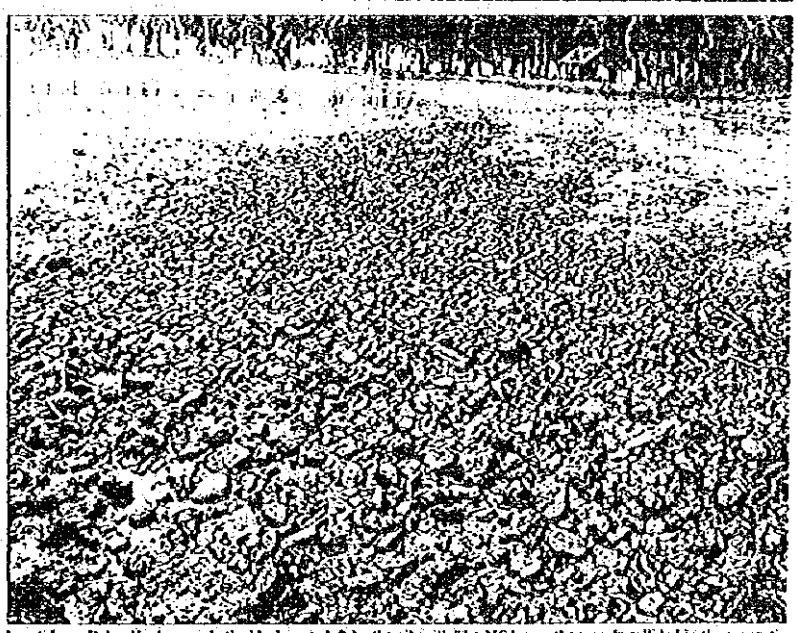
But Singapore may not be compensated fully in the end if the amount exceeds $28 million, because other conventions with higher limits do not apply here, said one shipping expert.

It is unclear, however, if local pollution laws will provide an avenue for claiming full compensation.

Asked if there was a cap on the amount which can be claimed, Mr Chen said: "It is premature to try to come out with a figure at this time."

THE STRAITS TIMES, WEDNESD-

THE BIG CLEAN-UP



Low tide on Pulau Hantu reveals the black mess left by the oil spill. The MPA says the vessels collided in the separatio divider", between the east- and west-bound lanes in the Straits. — Picture by MUHAMMAD SIAH.

THE STRAITS TIMES
1997.10.22

A worker bagging and hauling a load of oil-blackened debris on a beach at Pulau Hantu on Monday. The popular weekend diving destination is hit badly by the slick. Even mooring buoys around the island are coated in oil. — Pictures by CHEW SENG KIM.

# Oil can stay in water for weeks

By Dominic Nathan

OIL spilled from the collision between two tankers in the Singapore Strait could remain in the water for weeks.

And when it finally sinks to the sea floor, it could stay there for five to 10 years, said marine biologist Chou Loke Ming, director of the Tropical Marine Science Initiative at the National University of Singapore.

He held discussions with Maritime and Port Authority officials yesterday to work out details for a study on the immediate and long-term impact of the spill on the marine environment.

The Straits Times understands that the findings will have a bearing on the size of the claims and compensation payable for damages and clean-up operations.

On the impact on corals, Prof Chou said: "By comparing what we find after the spill to what we have going back to 1986, we can see if there has been an immediate impact."

## Study on spill's impact being worked out

Changes in the reproductive patterns of marine creatures or their inability to spawn are possible indicators of long-term effects, he added.

Computer-based oil spill models will be drawn up to predict damage to the marine environment. The research team will also develop an early warning system for pollution, possibly using marine organisms as living indicators.

The waters off the west coast of Singapore near the islands of Sudong, Pesiar, Senang, Hantu and Sebarok, where the slick is at its worst, are also where coral reefs thrive.

There are about 180 species of corals in Singapore waters, which is said to be much more than in popular diving sites such as Tioman and Hawaii.

Said Prof Chou: "But the impact on corals is not as great as on the sea floor. Because of low levels of oxygen and sunlight there, the oil will not break down and can be locked into the sea floor for five to 10 years."

High water temperatures in the tropics help break down the oil, but the process would be faster if the haze were not blocking out sunlight, he said.

Asked whether spraying chemicals to disperse the oil would do as much harm to the environment as the oil itself, he said that spraying is the better management option for spills in open waters.

"If you do this in the shallow area, then of course there is greater environmental damage."

Even before the spill, Singapore's coral reefs were already threatened by the effects of reclamation and dredging works.

To help save some of them, Sentosa's Underwater World Singapore funded a project recently to transplant about 200 sq m of corals by hand from Pulau Seringat, which is part of the Southern Islands, to the waters off Sentosa's eastern shore.

Curator Frederic Chua said: "We are glad that we managed to move them by early October, because the source site is now affected by the oil spill."

Water conditions at Sentosa still remain good, he said. Booms have been placed off the island as a precautionary measure.

The Singapore Underwater Federation has recommended that no diving be done in the areas affected by the spill until environment and health authorities say that it is safe to do so.

Pulau Hantu, the most popular weekend diving destination, is hit badly by the slick. Even mooring buoys around the island are coated in oil.

Mr Chan Miah, a worker contracted by the Sentosa Development Corporation, shovelling oil-tainted sand beside the lagoon at Pulau Hantu.

# Penang looks to S'pore for transport expertise

PENANG — Penang will seek technical expertise from Singapore to improve its traffic management and transport infrastructure system.

Chief Minister Koh Tsu Koon said on Monday that the state could gain much from Singapore's technical expertise in public transport and traffic dispersal.

He was speaking to newsmen after welcoming visiting Singapore High Commissioner K. Kesavapany at his office at the Penang Development Corporation.

Tan Sri Dr Koh is also chairman of the corporation.

The Chief Minister said that he had requested Mr Kesavapany to convey the state's desire to have the Republic's assistance for such things as a Light Transit Rail.

He said Penang was ready to have strong and lasting trade ties with Singaporean businessmen, especially in manufacturing, tourism and heritage-related business.

Dr Koh is expected to lead a state delegation on a fact-finding mission, especially on infrastructural projects, to the Republic soon.

Mr Kesavapany, who was also at the press conference, said he was looking forward to building closer ties.

The Penang-born Singapore High Commissioner on Sunday attended an annual Deepavali party at an orphanage, which he had initiated 35 years ago. — NST.

# Pet dies rescuing owner

JOHANNESBURG — A Staffordshire bull terrier saved its 21-year-old owner from armed car hijackers in this high-crime South African city, but lost its life in the process, a press report said here.

Ms Nicole Russell was leaving for work when she was attacked outside her home by four men, including one with a gun, according to the daily Citizen newspaper.

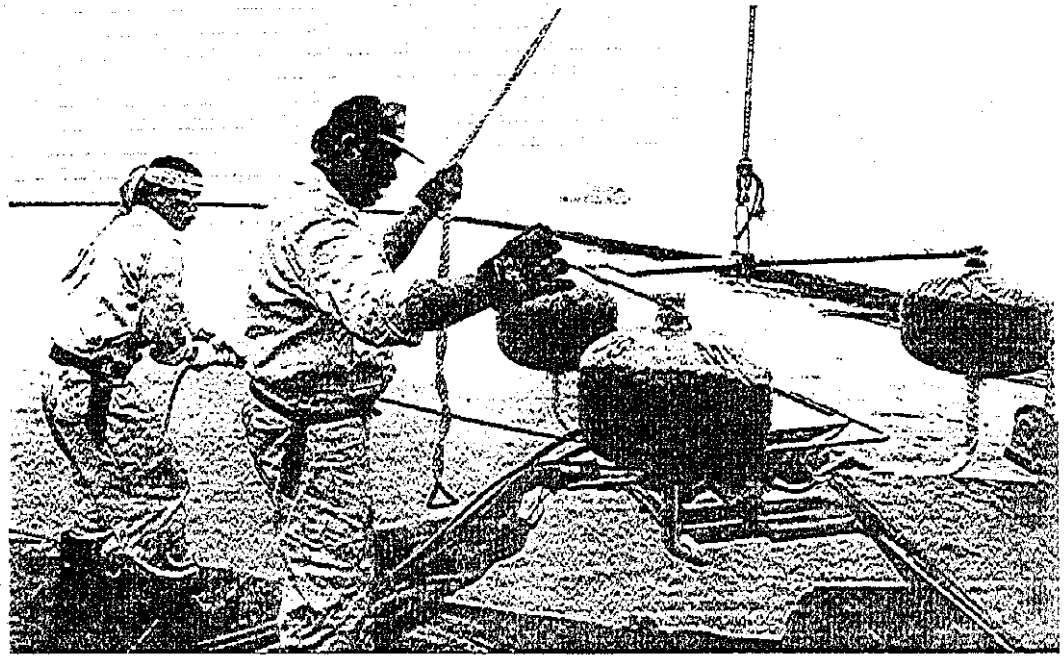
While she and her mother, Dawn, were being held up, their family dog, Bella, began biting one of the robbers, who promptly shot the animal in the head.

The dying terrier, however, continued to attack the would-be thieves who fled in a panic, the paper said.

The attackers got away with a cellular phone and a handbag but failed to get the Russells' car, which they had been trying to unlock.

"Bella was just wonderful and didn't hesitate when I screamed," Ms Russell said later. "She was the most wonderful and friendly dog. We'll miss her very much." — AFP

# Here's a sucker that removes oil effortlessly



■ Picture by GEORGE GASCON

By Karamjit Kaur

THESE giant tubs are part of an oil-sucking machine that weighs a hefty 600 kg, requiring several men to lift it.

But once at sea, the machine works very quickly, clearing the oil floating on the water's surface, sucking it into the little container in the centre.

Called The Skimmer, it can suck up to 50 cu m of oil and water in one hour. The three tubs help keep it afloat.

A dozen skimmers are now at work on the oil spill caused by the collision between a very large crude carrier, the Orapin Global, and oil tanker Evoikos on Wednesday night. It led to 25,000 tonnes of oil being split.

Once removed, the oil is hosed into a huge tank on the vessel and brought to shore.

The Maritime and Port Authority of Singapore said 57 craft, including barges and tugs, are cleaning the waters.

Unlike chemicals, which only disperse the oil, skimmers remove it. Booms are also used to hold the oil for easy removal by the skimmers.

So far, oil patches have not been spotted off Sentosa or the East Coast Park beaches.

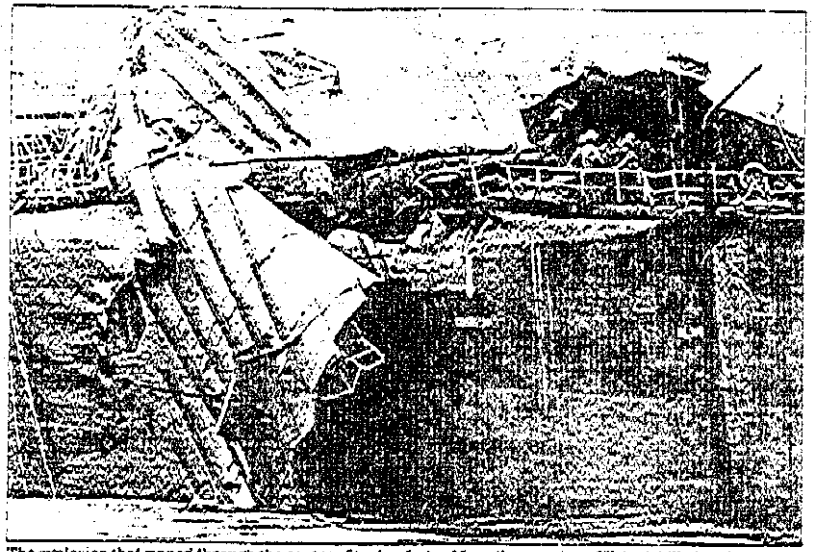
The Environment Ministry has about 100 people cleaning the beaches of sludge and oil-stained creepers.

So far, 3,275 trash bags of debris have been collected.

■ See also Pages 36 and 37

THE STRAITS TIMES
1997.10.22

## FLASHBACK: 1992



The explosion that ripped through the centre of tanker Lotus M, on the morning of Feb 16, killed 10 Sunray Marine workers who were on board the vessel doing repair work. Three of the dead were Singaporeans.

THE STRAITS TIMES
1997.10.23

# Ship repairer can claim $350,000 from tanker owner

By Tan Ooi Boon

A SHIP repairer which sued a tanker owner after an explosion on board its vessel killed 10 repair workers in 1992, has won its case at the Court of Appeal.

Repairer Sunray Marine was not responsible for the blast, said Justice M. Karthigesu, in delivering the judgment.

So Sunray can now claim about $350,000 from the owner of the tanker. This was also the amount that had been paid to the victims of the blast and their families as compensation.

The explosion happened on Feb 16, 1992, while the 16,800-tonne tanker, owned by Easy Shipping Corporation of Liberia, was anchored at the sea off Changi.

The tanker, Lotus M, was carrying petroleum products, including naphtha.

The repairer was asked to carry out "hot work" such as cutting and welding on the vessel.

But before work began, Sunray Marine told the tanker's crew that the vessel's tanks had to be free of gas. It was then given assurance that this would be done.

On Feb 15, 61 Singaporean and Malaysian workers boarded the tanker. They started work later that day after getting the green light from the chief officer of the tanker, who checked the gas reading.

The workers continued working from 8 am the next day.

But at 9.30 am, a huge explosion ripped through the centre of the tanker and killed five repair workers. Another five workers were lost in the sea and presumed dead. Three of the dead were Singaporeans.

The Straits Times also reported that 16 other workers suffered burns or fractures in the blast.

During the High Court trial, Captain Sangameswar of the Ministry of Communications' Marine Department testified that there was inadequate freeing of gas before work started.

As a result, the flammable vapour had escaped up to the deck and was ignited by sparks from the "hot work".

The Court of Appeal, which also comprised Chief Justice Yong Pung How and Justice L.P. Thean, agreed with the High Court's finding that the explosion was solely the fault of the shipowner.

This was because the judges found that the inadequate freeing of gas was due to the chief officer's failure to follow standard safety procedures.

Justice Karthigesu said that the shipowner had to provide a gas-free ship so that the workers could begin their work on board.

He said: "This was the shipowner's responsibility. In this case, Sunray Marine was entitled to rely on the conduct of the shipowner."

# Tanker collision captains charged in district court

## Orapin Global detained by Malaysia

By Dominic Nathan and Ginnie Teo

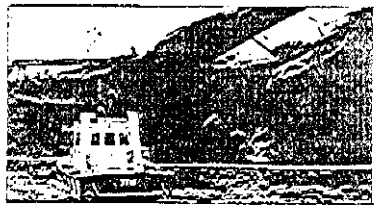
THE captains of the two oil tankers which collided in the Singapore Strait last week were charged in a district court yesterday.

At sea, ships reported sightings of a 33-km long slick moving up the Malacca Straits, just two days after the Maritime and Port Authority (MPA) said that the spill was under control.

In another development, one of the two ships in the collision, the Thai-registered very large crude carrier Orapin Global, was detained by Malaysian authorities when it was found to be in their waters.

In Singapore, all the action was in the courts and around the offshore islands, where clean-up efforts are into the seventh day.

In a district court yesterday morning, the Polish captain of the Orapin Global, Jan Sokolowski, 54, was charged with navigating his ship rashly and endangering human life.



The damaged oil tanker Evoikos.

- **Captain of the Orapin Global, Jan Sokolowski, 54, was charged with navigating his ship rashly and endangering human life.**
- **Captain of the tanker Evoikos, Michael Chalkitis, 58, was charged with omitting to do anything to preserve his ship from serious damage.**

He is alleged to have failed to take appropriate action while he was heading west between 8.41 pm and 8.54 pm on Oct 15, to avoid a collision from taking place in Singapore waters.

Michael Chalkitis, 58, the Greek captain of the Cyprus-registered tanker Evoikos, was charged with omitting to do anything to preserve his ship from serious damage.

He is alleged to have failed to reduce his vessel's speed to avoid a collision with the Orapin Global between 8.47 pm and 8.54 pm that day, when he was heading towards the Singapore port.

The MPA said that a 33-km long slick had been sighted in the southern part of the Straits of Malacca, between Pulau Pisang and Pulau Iyu Kechil Light. No oil was seen off Singapore's mainland or Sentosa, although treated oil was spotted within port limits off the west coast.

A total of 56 boats were out laying booms and skimming the oil off the water yesterday.

The MPA said special absorbent booms were also used to remove light oil from the sea.

On Sudong and Hantu islands, and at Raffles Lighthouse, where oil has come ashore, the Environment Ministry is coordinating the clean-up. Pulau Pawai and Senang, which have also been hit, will be cleaned next, said the MPA.

Thick haze continued to hamper operations. The first satellite picture of an area of about 100 km by 100 km around Singapore was taken on Tuesday, but it was too hazy for the MPA to ascertain the slick's scale.

Over in Malaysia, the slick has hit mangrove swamps off Kampong Pendas and threatened some 70 fish farms off Kukup, Pontian. Booms have already been laid off the Johor coast.

The Straits Times also understands that the Johor Marine Police have detained the Orapin Global.

A spokesman for the ship's managers, Denholm Ship Management, in Hongkong, said that the vessel with its 20-man crew, had been anchored in what was thought to be Singapore waters after the collision, as it was to go to a shipyard here for repairs.

"There was no intention of fleeing. There is no reason to. But the Malaysians are now saying that we are under their jurisdiction. In the middle of the sea, there is no clear boundary lines. The matter is now with our solicitors," he said.

Capping a day of new twists, an American-based international oil pollution newsletter said that the Cypriot-registered oil tanker, Evoikos, which spilled 25,000 tonnes of oil last Wednesday, had been involved in another spill about 20 years ago.

According to Golob's Oil Pollution Bulletin, the vessel ran aground off the Greek island of Crete in 1979, and spilled 24,000 tonnes of crude oil and diesel fuel. It added that the 1997 Guide for Selection of Tankers, gave the vessel the lowest overall safety ranking for tankers.

See Page 38

Worst oil spill

# 2 captains denied bail in court session in morning

## But one gets $100,000 bail offer in the afternoon

By Lim Seng Jin

THE captains of the two oil vessels which collided in the Singapore Strait last week, causing the worst oil spill in Singapore's history, listened calmly as a district judge denied them bail yesterday morning when they were charged.

However, later in the afternoon, $100,000 bail was granted to one of them, Jan Sokolowski, 54, the Polish captain of Thailand-registered Orapin Global, a Very Large Crude Carrier.

The other captain is Michael Chalkitis, 58, a Greek, who was in charge of the Cyprus-registered oil tanker Evoikos.

During the morning session, the judge had granted the Deputy Public Prosecutor's request to keep both men in remand for a week for investigations to be completed.

Sokolowski is being represented by Mr Francis Xavier. Mr Edmond Pereira is acting for Chalkitis.

DPP Anandan Bala, in seeking their remand, said: "The facts are sufficiently complex that computer data has to be obtained from the relevant port authorities. This takes time, and not all the records are ready as yet."

The DPP also said that yesterday's charges were merely holding charges, and the two men could be charged with more offences under the 1972 International Convention for Preventing Collisions At Sea.

Both captains' lawyers objected to the remand request, saying that their charges were for offences where bail could be offered, and that the prosecution should have completed its investigations before charging them in court.

After hearing both sides, District Judge See Kee Oon agreed to have the captains remanded for a week in Geylang police division.

Mr Pereira then asked if their cases could be reviewed on Friday or "they would be languishing in jail over the weekend". The judge allowed this, and fixed their cases for mention tomorrow.

A Straits Times check with the High Court showed that Mr Xavier had made an urgent application before Judicial Commissioner Choo Han Teck in the afternoon, and got bail offered for Sokolowski at $100,000 in one surety, or $50,000 in two sureties.

A spokesman for Denholm Ship Management, the Hong Kong-based managers of Orapin Global, said that he expects bail to be put up today.

While out on bail, Sokolowski would have to report to the investigating officer in charge of his case every morning. Both captains' passports have been surrendered.

If found guilty, Sokolowski can be jailed for up to six months and fined up to $1,000. Chalkitis faces a maximum sentence of two years' jail and a $50,000 fine if he is convicted.

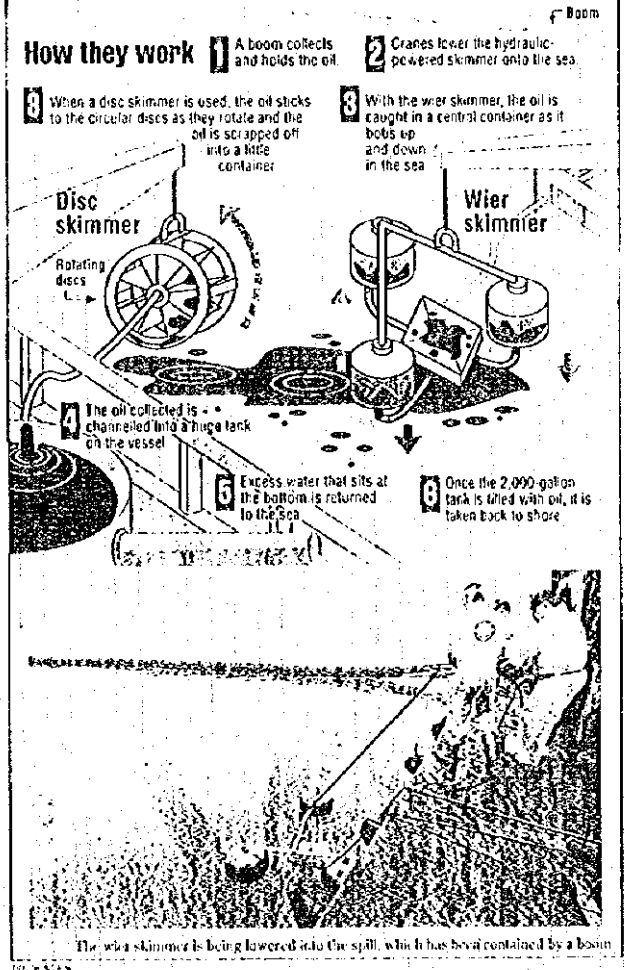
No one was injured in the collision on Oct 15, but the damaged Evoikos spewed 25,000 tonnes of marine fuel oil into the sea off southern Singapore.

# The oil suckers

*Instead of spraying chemicals, boats are now carrying equipment known as skimmers, which act like giant vacuum cleaners, to remove oil from the water surface.*

Two different types of skimmers are used in the clean-up:

| | The disc skimmer | The wier skimmer |
|---|---|---|
| Weight | 500 kg | 600 kg |
| Capacity | up to 7 cubic metres per hour | up to 50 cubic metres per hour |
| Substance recovered | 98 per cent oil and 2 per cent water | 40 per cent oil and 60 per cent water |




The wier skimmer is being lowered into the spill, which has been contained by a boom

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～シンガポール南方の沖合い5キロの海上～

# 大型タンカー同士の衝突事故で原油二万五〇〇〇トンが流出

15日

一五日午後九時ごろ、シンガポールの南方沖合い五キロ程の海域で大型タンカー同士が衝突するなど事故が発生した。この事故によるケガ人は出ていない。

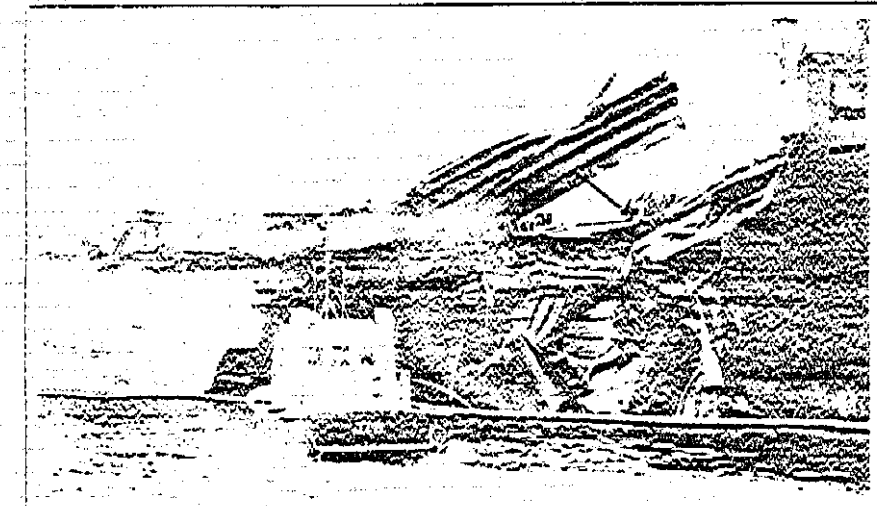
衝突したのはキプロス船籍の原油タンカー「EVOIKOS」（七万五九二トン）と台湾籍の原油タンカー「OREPPIN」（六万トン）とタイ船籍の原油タンカー「LOBNLUANG」（二万九七〇二トン）で、「EVOIKOS号」のタンクが破損して、大量の原油が海上に流出した。

流出量は推定、約二〇万リットルで、現在約二〇数隻の船舶が原油の除去作業にあたっている。さらにオイルフェンスを使用して原油汚染がマリナ・ベイ、シンガポール・ビーチまでに広がるのを防いでいる。シンガポール政府は今回の原油流出の規模が非常に大きいことから、シンガポール海軍の出動を要請する一方、日本、オーストラリア、アメリカ等の各国に原油除去作業の支援を呼びかけた。

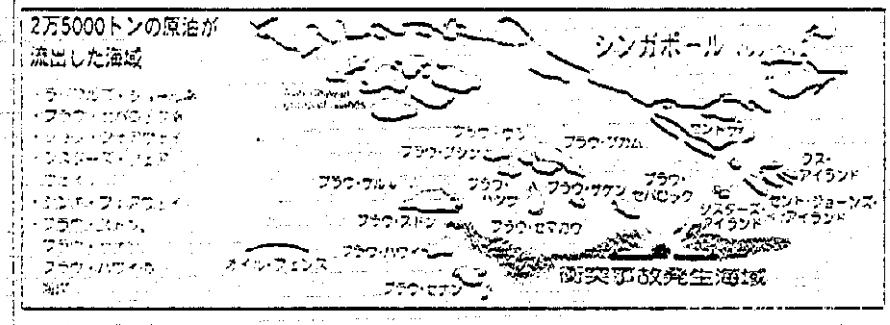
現在、確認されている原油流出海域はラッフルズ・ショール南とブラウ・セバロック南間の海域、ジョンフェアウエイ、シスターズ・フェアウエイ、シンギ・フェアウエイ等の海域である。

さらにブラウ・スドン、ブラウ・ウセナン、ブラウ・パワイ等の海岸にも原油が漂着しているがセントサ島とシンガポールを島への原油漂着は確認されていない。なお、今回のタンカー衝突の事故原因等は、現在調査中で詳らかにされていない。

（5面に関連記事）



衝突事故で原油が流出したキプロス籍の原油タンカー「EVOIKOS号」




主なニュース
原油流出に日本から援助隊派遣 ..... 6
インド人麻薬密売団を逮捕 ..... 8
ヘイズの毒性成分は微量 ..... 12
JBで偽ブランド品を大量押収 ..... 14
16日から関税移転法施行 ..... 20

# 原油が南下すればサンゴと海洋生物に 壊滅的な打撃の恐れも

## NUSの専門家が警告

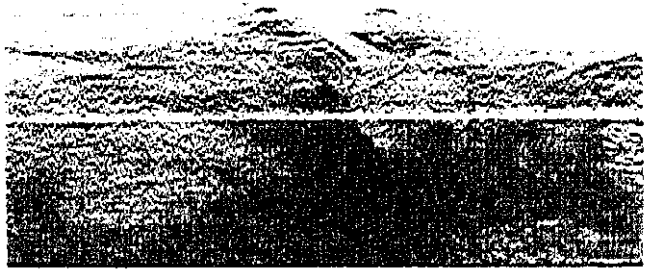
シンガポール国立大学（NUS）の海洋生物学の専門家によると、一五日のタンカー衝突事故で流出した原油がシンガポールの南方諸島の珊瑚礁に向かった場合、サンゴの生育が妨げられ、何らかの措置が施されない限り死滅してしまう可能性が高い。

さらに、原油流出はカニやエビなどの魚類ほどは早く移動出来ない海洋生物にも大きな被害を及ぼす。

しかし、シンガポールの八・二の養殖業者のほとんどはチャンギで養殖を行っているので原油流出の被害は受けないものと見られている。

二万五〇〇〇トンの原油流出はシンガポールで発生したこの種の事故としては過去最大で、一九八九年にアラスカ沖で起き、生態系に大きな被害をもたらした三万五〇〇〇トンの原油流出事故に近い規模のものである。

アラスカ沖で流出した原油の除去には三年かかり、費用も五四億ドルに達した。



ブラウ・ストン付近の海域に広がる流出原油（右上）「Evo-kos号」の内部を調査し油まみれになったウエット・スーツを洗うダイバー（左上）

# 日本政府（星）の原油流出事故に緊急援助隊を派遣

一五日、シンガポールでタンカー同士の衝突により二万五〇〇〇トンの原油が流出する事故が発生したが、シンガポール政府は流出規模が非常に大きいことから日本政府に対しても緊急援助を要請した。

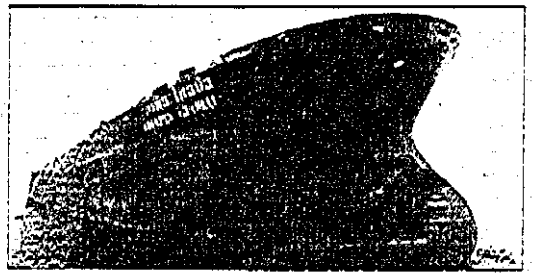
日本政府も今回の事態を重視して、海上保安庁の専門家等から構成された国際緊急援助隊六人の派遣を決定した。援助隊は一八日、日本を出発している。

援助隊派遣に関する問い合わせ先は以下の通り。

■外務省アジア局南東アジア第二課　内線番号三四四六番　担当官　町田事務官

■外務省経済協力局国際緊急援助室　内線番号三九一〇番　担当官　佐藤事務官

# Oil-spill ship's release being sought



Negotiations to secure the release of the Orapin Global from Malaysia is now underway. The bow of the vessel was slightly damaged in the collision with tanker Evoikos last Wednesday. — NST picture.

By Dominic Nathan and Karamjit Kaur

THE agent for the supertanker Orapin Global started negotiations with the Johor Marine Department yesterday to secure the release of the ship after it was detained for being anchored in Malaysian waters without authorisation.

The Straits Times understands that the release of the Thai-registered tanker, which could involve the agent having to pay Johor port charges, would stave off complications for both the ship's owners and for the Maritime and Port Authority (MPA) here.

Investigations into the collision between the very large crude carrier and the Cypriot-registered tanker, Evoikos, and the subsequent spill of 25,000 tonnes of oil in the Singapore Strait last Wednesday are continuing.

After the collision, the Orapin Global was anchored off Johor, in what its agents believed were Singapore waters. But it was detained by the Johor Marine Department, which said it was in Malaysian waters.

When asked how the ship's detention would affect MPA investigations and if their officials had been on board since its detention early this week, MPA would only say: "We have not received any information from the Malaysian authorities on the arrest of the Orapin Global."

Meanwhile, the captains of the two vessels, who were charged in court here on Wednesday, were both released on bail of $100,000 each yesterday.

Jan Sokolowski, 54, who is Polish, was the captain of the Orapin Global, while Michael Chalkitis, 58, a Greek, was in charge of the Evoikos.

Out at sea, about 100,000 tonnes of marine oil still sits in the tanks of the Evoikos, now anchored off Pulau Bukom.

Several oil terminals have denied the vessel permission to dock to unload its cargo.

It was carrying 120,000 tonnes of marine oil, believed to be worth about $15 million.

The remainder will be transferred to another ship, said Captain Yannis Goros of Hellenic Overseas Maritime, a salvage agent.

"It is not very safe to let the oil remain on the damaged vessel because there is a possibility that it may spill as well," said the captain, whose company is acting on behalf of the owners of the Evoikos. "It is also difficult for us to assess the damage and start repairs if the tanks are not emptied."

He said it would take two to three days to transfer the oil, if MPA approves.

When contacted, MPA said no decision had been taken yet as discussions were still going on with the ship's agent.

Clean-up operations are continuing, with over 2 km in booms laid so far to contain the slick, most of which is now floating up the Malacca Strait.

MPA said no oil has been spotted off the mainland of Singapore, on East Coast Parkway beaches, or off Sentosa.

Thick haze yesterday resulted in a helicopter reconnaissance being called off, but 51 boats were still out at sea laying booms and skimming the oil off the water.

About 160 workers cleaned the beaches at Pulau Sudong and Raffles Lighthouse, where oil had drifted ashore.

■ See Page 4B

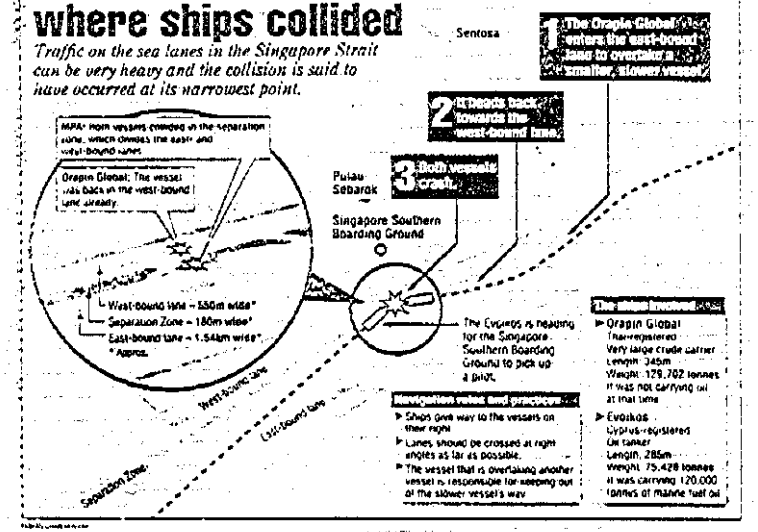
## CAPTAINS OUT ON BAIL

Captains of the two vessels, Jan Sokolowski (left), 54, the Polish captain of the Orapin Global and Michael Chalkitis, 58, the Greek captain of the Evoikos, were both released on bail of $100,000 each yesterday. — Pictures by WONG KWAI CHOW.

THE STRAITS TIMES
1997.10.24

# Two versions of where ships collided

*Traffic on the sea lanes in the Singapore Strait can be very heavy and the collision is said to have occurred at its narrowest point.*




# Chemicals used are 'less toxic than soap'

By Ginnie Teo

MALAYSIAN chemical dispersants are less toxic than ordinary household soap, say oil spill experts involved in cleaning up Singapore's worst spill.

Marine creatures and corals may be stained, but overall, the chemicals are far less harmful than the oil, they said in response to public concern over the effects on the marine environment of spraying over 100,000 litres of chemical dispersants.

The chemicals were used to disperse patches of the 25,000 tonnes of spilled oil from last Wednesday's collision in the Singapore Strait.

The chief executive officer of East Asia Response Pte Ltd (EAR), Mr Seow Hock Jin, said: "Modern dispersants have a much lower toxicity than Palmolive soap."

Over the past week, The Straits Times News Line has also received some calls about a strong chemical smell along the coasts. Mr Seow said it was unlikely that they were smelling the dispersants.

Another oil spill expert, Mr Christopher Richards, oil spills services manager at Sembawang Marine and Logistics, added: "You have to be beside the chemical before you can smell it."

Explaining how dispersants work, he said they contain a solvent and another chemical that coats the oil.

When sprayed on the oil, solvents allow the dispersant to penetrate the slick and break it up. The other component coats the small drops of oil to prevent them from sticking together again.

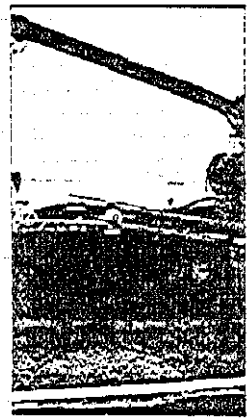
Mr Richards said: "Instead of a large slick, we now have a cloud of little droplets suspended about two to three metres under the surface.

"The micro-organisms in the water will break down the oil naturally. This way they can do it much more quickly."

But dispersants, which cost US$600 (S$942) to US$1,000 per 200-litre drum, have not been sprayed since Sunday because they work only in the early stages of the spill.

Said Mr Seow: "Dispersants work only when the oil is not too thick and gooey. Oil changes with time, parts of the oil evaporate and thicken."

Now, skimmers are used to remove the oil from the sea's surface.



Skimmers are now being used to remove the oil, which is too thick to be dispersed by chemicals. — Picture by GEORGE GASCON.

# Many surface-dwelling sea creatures wiped out

## But reef life deeper underwater more fortunate

By Edmund Tee

MANY sea creatures living along the breakwaters and beaches of some of the Southern Islands have been affected badly by the oil spill.

Small crabs, sea snails and sea cockroaches were mostly wiped out during the first few days of the oil spill, said Mr Jeffrey Low, a marine biologist.

The fish and corals dwelling a little deeper underwater were more fortunate — but only just, he added.

If the tide had ebbed by another half a metre, oil patches would have smothered the reefs, killing corals and displacing animals that lived there, he said.

"We were very, very fortunate that we did not have abnormally low tides these few days. It was a close call," added Mr Low, a research assistant with a team from the Tropical Marine Science Initiative of the National University of Singapore.

The team of marine biologists has been making preliminary trips to the affected islands, to mark out sites for a long-term study of the impact of the oil spill.

Yesterday, the team visited Raffles Lighthouse, Pulau Jong and the Sisters Islands — their fourth trip to the Southern Islands since the oil spill last week — to examine the reefs, breakwaters and beaches.

Although there were only isolated patches of oil left in the waters off these islands, it was clear — from the horizontal black swathes on many of the islands — that they had been hit badly by the oil spill.

At Raffles Lighthouse, several workers were scrubbing oil stains from the jetty. A few others were scooping contaminated sand into bags or spraying chemicals to break up the sludge on the breakwaters.

Associate Professor Chou Luke Ming, who heads the team of marine biologists, said that cleaning everything today did not mean that the sea creatures would recover tomorrow.

"It'll take a long time for a full recovery, if at all," he said.

Research assistant Karrene Tun, 27, collecting marine life samples at the oil-stained breakwaters of Raffles Lighthouse yesterday. — Picture by GEORGE GASCON.

Mr Low said it was not known, for instance, how the chemicals from the cleaning solutions and the oil itself might affect the coral reefs in the long term.

For a first-hand look at the state of the reefs, The Straits Times accompanied the researchers underwater.

Beneath the waves, the aquatic life appeared healthy and robust.

But Prof Chou said this was not unexpected since oil floats.

So, in an oil spill, creatures living in reefs were seldom as badly affected as creatures living on beaches or in mangrove swamps.

# 日救援队将依我国需要留下协助解决油污祸害

## 灾难救援队队长：

林顺华 报道

前来协助清理海上油污的日本灾难救援队队长宫武宜史指出，救援队将依据我国政府需要，继续留下协助解决这场油污祸害，直到我国感到满意为止。

他表示，队伍原先是预定在我国逗留三个星期，然而最后还是得以实际情况的需要，决定逗留期的长短。

宫武宜史（32岁）昨天受访时透露，救援队已接获日本政府指示，要他们根据我国的需要留下来，共同应付新加坡这场20年来最严重的海上漏油污染事件。

### 对于何时清除油污 宫武宜史持保留态度

但是，这名专家对于油污何时能完全被清除的提问，持着保留态度。

他解释说，发生在美国阿拉斯加海域的油污问题，发生至今已有8年却还无法彻底消除。"这是因为周围的环境以及气候等因素，都可影响救灾工作的进展。"

不过，他指出，由于阿拉斯加的气候寒冷，而我国的气候潮湿闷热，因此两者不能相提并论。

至于油污问题能否在今年底完满解决，他认为一切得视我国政府所做出的努力，及各方面如何从旁配合来决定。

### 当局应该注意漂入马六甲海峡燃油

然而，他强调，对于泄漏的燃油已漂入马六甲海峡的事件，当局应该多加注意。

宫武宜史本身曾在6年前参与波斯湾战争油污清理的工作，这是他第二次带领救援队到外国给予专业协助。

他说，过去数天来队员都亲自出海了解漏油污染的程度，以决定如何着手处理。

这支由日本海事安全局人员和日本海岸自卫队人员组成的6人小组，是在上星期六（18日）携带两部油污处理器材抵达新加坡加入拯救行动。

日本大使馆说，日本政府是在考虑到两国的友好关系和力恢复环境生态的因素，而派遣队伍前来支援。

除了灾难救援队，日本石油协会也派遣四艘海上油渣起捞船，同时从印尼海域开进新加坡。

# UPM team to study effects of oil slick in Johor

**By Thanam Visvanathan and Chong Chee Seong**

MUAR, Fri. — The State Government has engaged a team of experts from Universiti Putra Malaysia, to study the effects of the oil slick in Johor waters.

Menteri Besar Datuk Abdul Ghani Othman said that the team will study the possible short and long-term effects of the slick on the mangrove swamps and marine life, particularly off Tanjung Piai and Kampung Pendas, where traces of slick hit the coast.

They will also study the effects of the dispersants used by the Johor authorities, in their bid to prevent the slick from hitting the coastline.

The team, consisting of three professors, arrived here today.

The slick resulted from a collision between two tankers — the Cyprus-registered *Evoikos* and the Thai-registered *Orapin Global* — in Singapore waters on Oct 15.

About 25,000 tonnes of marine fuel oil gushed into the sea, making it one of Southeast Asia's worst ever oil spills.

Ghani added that the Fisheries Department had been directed to compile data on the losses suffered by fishermen.

He said that such statistics were vital to evaluate the compensation that can be claimed from the International Oil Pollution Compensation Fund, of which Malaysia is a signatory.

Pontian district police chief Superintendant Ging-koi Seman Pancras confirmed that two fishermen had lodged reports at the Permas police station yesterday, alleging that 85 pieces of their fishing nets worth RM4,800, had been damaged by the slick off Tanjung Piai.

The slick is now headed for Tanjung Tohor on the border between Muar and Batu Pahat.

NEW STRAITS TIMES

SATURDAY, OCTOBER 25, 1997

《連合早報　1997年10月24日　金曜日》　林　順華　報道　　（仮訳）
災難救援隊隊長・・
日本の救援隊は我が国の需要に基づいて援助し、引き続き、この油汚染災害の解決のために協力する。

海上の油を一掃するため援助に来た日本の災難救助隊隊長宮武宣史は指摘した。「救援隊は我が国政府の需要に基づいて援助し、引き続き、この油汚染災害の解決のために協力する。我が国が満足するまで…。」

彼によると、「最初、我が隊はこの国に３週間滞在する予定でしたが、最終的には、実際の情況の需要から滞在期間の長短を決めなければならない。」

宮武宣史（32歳）は昨日、訪問を受けた際、漏らした。救援隊は日本政府からの指示を既に得て、彼らは我が国の需要に基づいて残留し、共同でシンガポール、この20年来、最も深刻な海上油汚染事件の処理をする。

何時、油汚染が一掃されるかについては、宮武宣史は態度を保留している。

しかし、この専門家が「何時、完全に油汚染が一掃されるか」という問題について、態度を保留している。

彼によると、解りやすく言えば、アメリカのアラスカ海域の油汚染問題が発生し、今日に至るまで既に８年の歳月が流れたが、徹底的に除去する方法が無い。「これは周囲の環境及び気候等の要素により、救援の作業がはかどらない。」

しかし、彼は指摘する。アラスカの寒冷気候と我が国の蒸し暑い気候の違いによって、同一視する事はできない。

油問題が今年中に解決するかどうかに至っては、彼は、すべては我が国の政府の努力と各方面がいかに力を合わせるかを見て、決定するべきである。

当局はマラッカ海峡に流れ込んでいる燃料油に注意すべきである。

しかし、彼は強調する。漏れた燃料油が既にマラッカ海峡に流れ込んでいることについて、当局は注意をすべきである。

宮武宣史自身もかつて、６年前、ペルシャ湾戦争の油汚染除去作業に参加しているので、今回で救援隊を率いて外国に専門的な協力をするのは２回目である。

彼　によると、過去の経験から、隊員各々は海に出て、油汚染の程度を理解し、どんな方法をとるか決定してから処理する。

この日本海事安全局人員と日本海岸自衛隊人員からなる６人の小隊は、先週の土曜日（18日）二つの油処理器材をもってシンガポールに到着し、救援活動に参加した。

日本大使館によると、日本政府は、両国の友好関係と環境回復のための生態系の要素を考慮し、派遣隊に支援に行かせた。

災難救援隊を除いても、日本石油協会も４隻の海上油回収船を派遣、インドネシア海域からシンガポールに入った。

ADAM LEE

■ DESPITE fighting Singapore's worst oil spill ever, the Maritime and Port Authority went ahead with its seminar on Managing Maritime Disaster, but with three of the seven scheduled speakers absent.

Captain Hilbert Fernandez had to deliver not just his own paper, but also read out the absent Captain Muhammed Segar's paper. He said: "Capt Segar told me that he had to continue working out there because of the oil spill. He gave me a choice — either help him deliver his seminar paper, or help him out there."

# Oil-spill captains' case adjourned

## Clean-up operations also scaled down for first time since incident

By Ginnie Teo

THE court case of the two ship captains, whose ships collided in the Singapore Strait last Wednesday, was adjourned yesterday for four weeks.

And for the first time since 25,000 tonnes of oil leaked from one of the damaged vessels, clean-up operations in Singapore waters were scaled down yesterday. Only 26 anti-pollution craft were in action, down from Wednesday — the height of operations — when about 60 boats were laying booms, spraying dispersants and skimming the oil.

The main subcontractor in the operation, Sembawang Marine and Logistics, has been told to recall its over 20 vessels because "the situation has improved substantially", the company said.

But the slick from the collision between the very large crude carrier the Orapin Global and the oil tanker Evoikos continues to move up the Malacca Strait.

In court here yesterday, District Judge See Kee Oon granted the prosecution's request for more time to complete investigations against the ships' captains.

Jan Sokolowski, 54, is the Polish captain of the Orapin Global, while Michael Chalkitis, 58, a Greek, skippered the Cyprus-registered Evoikos.

In an update on the clean-up operation, now in its ninth day, the Maritime and Port Authority (MPA) said yesterday that the remaining 26 boats were concentrating on removing oil from the water. Again, it added, the haze meant a helicopter reconnaissance flight had to be called off.

Working on the affected beaches of Pulau Sudong were 62 men from the Environment Ministry (ENV). About 6 km of its coastline has been cleaned and more than 3,200 bags of oil-stained sand and flotsam removed.

Oil-soaked debris is also being cleared from Pulau Hantu and the Raffles Lighthouse.

An ENV spokesman said that while it was not safe to swim at the southern islands, the beaches at East Coast and Sentosa have not been affected and are safe for swimming.

Although no estimates are in yet for the cost of the clean-up, dispersants alone already cost more than $700,000, said Cramoil Singapore Pte Ltd, which has supplied MPA 1,630 drums of chemicals produced at its Tuas factory. Its managing director, Mr Tan Kim Seng, said: "The oil spill means boom time for us. Normally, we sell 50 drums a month."

Dispersants and booms are also being prepared across the Causeway as the 33-km long slick moves up the Malacca Strait, threatening fishing grounds near the Muar and Batu Pahat coasts.

It had earlier passed some 70 floating fish farms near Pontian without inflicting much damage, said Malaysian news reports.

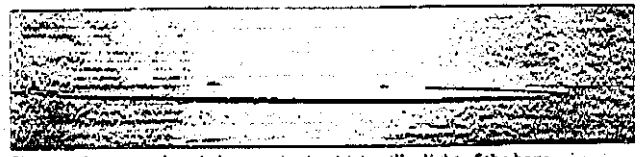
MPA said it has not received any Malaysian request for help to clean up the spill there, but said that it would relay any useful information it had to them.

As for the Orapin Global, which still remains anchored off Johor after being detained by the Johor Marine Department, MPA said it has not received any official confirmation from Malaysian authorities about the ship being arrested for being in Malaysian waters illegally.

An official from the ship's agent in Johor Baru, Kudrat Maritime Services, told The Straits Times in a telephone interview that port dues of RM$20,000 (S$9,005) had been paid on Thursday on the owner's behalf. "But the authorities still want the tanker's documents and certificates, which we have not been able to produce."

The agent has until the weekend to tell Johor authorities its next course of action.

THE STRAITS TIMES
1997.10.25

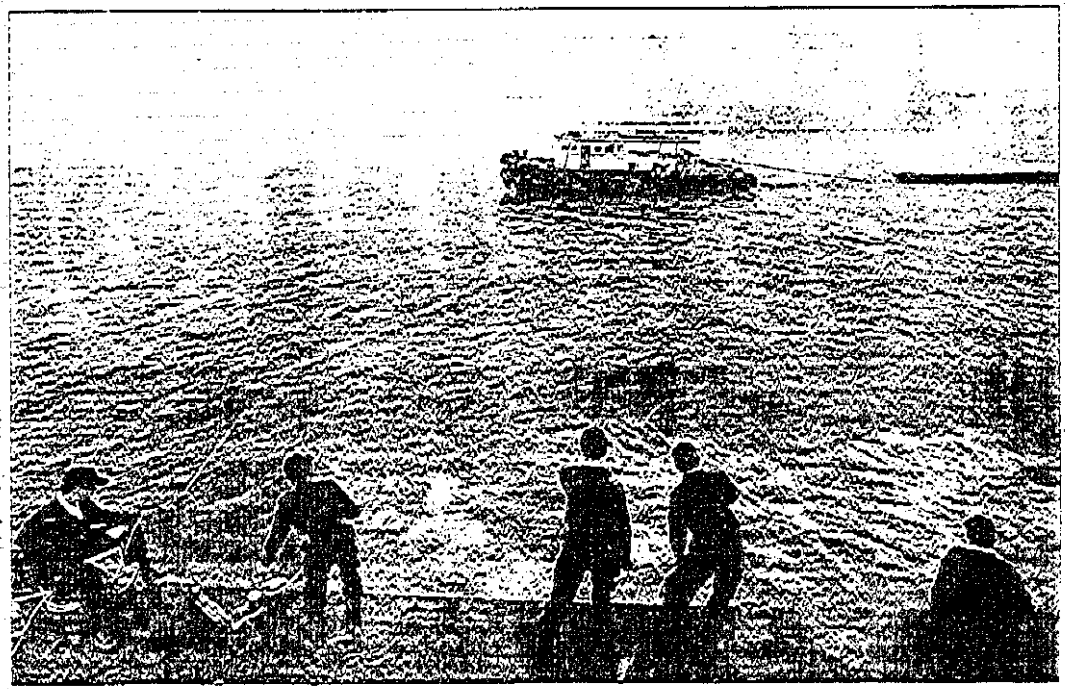


Clean-up boats can barely be seen in the thick milky light of the haze.

# Worst oil mess

WHILE the captains of the two oil tankers await their fates, the 25,000 tonnes of oil that leaked into the Singapore Strait after last Wednesday's collision is still wreaking destruction in water and on land. Life! takes a look at the fight to contain and clean up Singapore's worst-ever oil spill.

Pictures by STEVEN LEE, GEORGE CASCON and MUHAMMED SHAH



Men at work: Civil Defence officers spraying chemical dispersants into the oil-spill area.

THE STRAITS TIMES
1997.10.25
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# Higher premiums led oil firms to oppose convention

## So S'pore is limited to claiming only up to $28m for oil spill

By Ginnie Teo

SINGAPORE did not sign an international convention which would allow it to claim up to $118 million in compensation for oil spills because oil companies here did not want to pay higher insurance premiums, said sources.

They say that Singapore is now limited to claiming only up to $28 million for the 25,000-tonne spill in the Singapore Strait more than a week ago.

The Maritime and Port Authority of Singapore (MPA) said it was close to signing another convention, which could raise the cap on claims to $400 million.

But it will come too late for the spill that is now being cleaned up.

The two main international funds available to cover the costs of pollution caused by spills from oil tankers are the Civil Liability Convention 1969 (CLC 69) and the Fund Convention 1971.

The 1969 convention caps compensation at a fixed amount, based on the size of the vessel, and the money is paid by the shipowner and his Protection and Indemnity Club.

The cap was raised from $28 million to $118 million last year when an updated version of the convention came into effect. Singapore signed the updated version last month and it will come into force here next September.

So for Singapore, the limit stays at $28 million.

Asked why Singapore had signed the updated protocol late, Mr Zafrul Alam, second assistant director of the international department in MPA's policy division, said: "We had to write to the affected parties such as shipowners because they are the ones who will pay higher insurance. We did it as fast as we could. Normally, a convention comes into force after years."

He added: "Of course, if we had had it slightly earlier, it would be better."

Countries which are party to the 1971 Fund Convention can claim more money if the claims exceed what was paid out under the 69 convention.

The 1971 convention, which Indonesia and Malaysia have signed, provides up to $118 million. But Singapore does not belong to this fund.

A shipping source told The Straits Times that this was because the major oil companies here did not want to pay higher premiums.

The international fund is financed by contributions from oil companies, which import more than 150,000 tonnes of oil per year.

The source said that the companies did not want to pay because they were already contributing to voluntary schemes, such as the Tanker Owners Voluntary Agreement concerning Liability for Oil Pollution, and the Contract Regarding a Supplement to Tanker Liability for Oil Pollution.

To address these shortfalls, an updated version of the 1971 Fund Convention came into force internationally last year, raising the compensation limit to $400 million.

MPA said it was preparing the groundwork for Singapore to become a member of this updated fund.

A legal source said that the major oil companies would then have no choice but to join this updated convention because the voluntary schemes would no longer be valid.

The Exxon Valdez spill in Alaska eight years ago saw about 35,000 tonnes of crude oil pour into the waters of Alaska's Prince William Sound.

That spill took three years and US$3.5 billion (S$5.5 billion) to clean up, and the oil company Exxon is appealing against another US$5 billion in fines.

### TWO WAYS TO PAY FOR THIS

**CIVIL LIABILITY CONVENTION 1969**

■ Compensation is at a fixed amount based on the size of the vessel, and the money is paid by the shipowner and his Protection and Indemnity Club. The cap was raised from $28 million to $118 million last year. Singapore signed the updated version last month, and it will go into force here next September.

**1971 FUND CONVENTION**

■ Members can claim more money if the claims exceed what was paid out under the 1969 convention. Singapore does not belong to this fund.

*The Sunday Times, October 26, 1997*

THE STRAITS TIMES
1997.10.25
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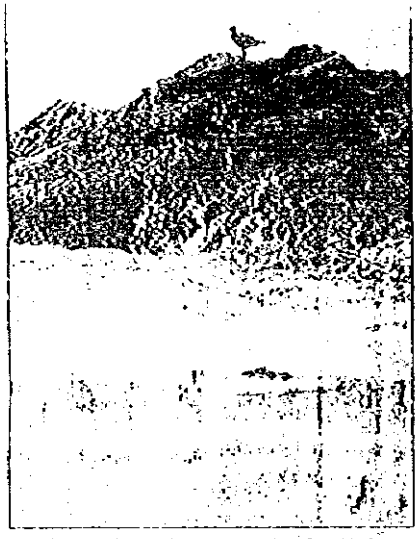
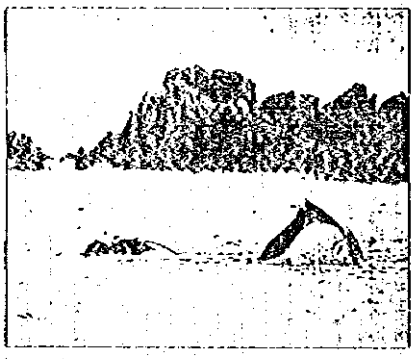
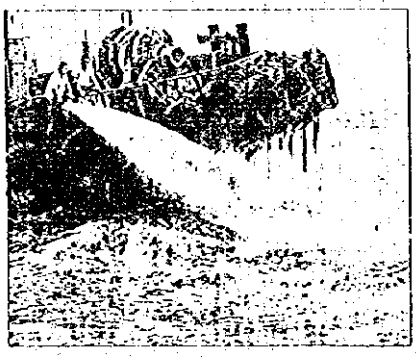


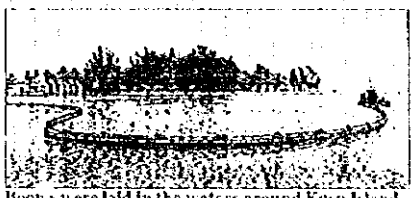
A bird perches atop the oil-stained rocks of Pulau Jong. Although there have been no dramatic scenes of oil-soaked birds and dead mammals washing ashore, the spill has taken its toll on marine life.



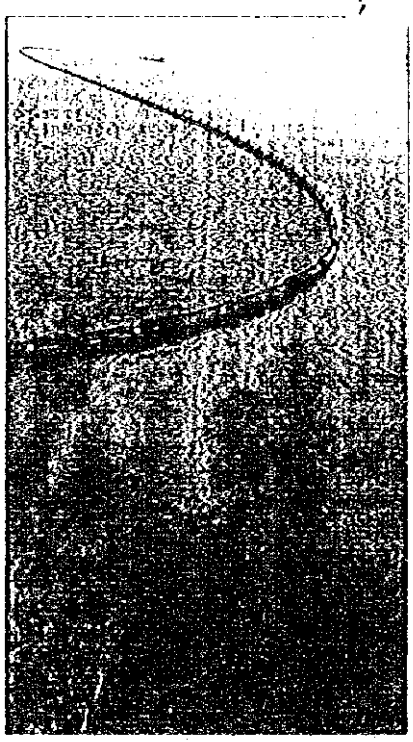
Nessie the Loch Ness monster has not surfaced around the Raffles Lighthouse. This is research assistant Karrene Tun, 27, collecting samples of marine life for a study on the impact of the spill.



A chemical spray mists the air before it hits the water. These detergents are used to break up the oil particles into thousands of tiny droplets, making it easy for micro-organisms to 'eat' the oil.

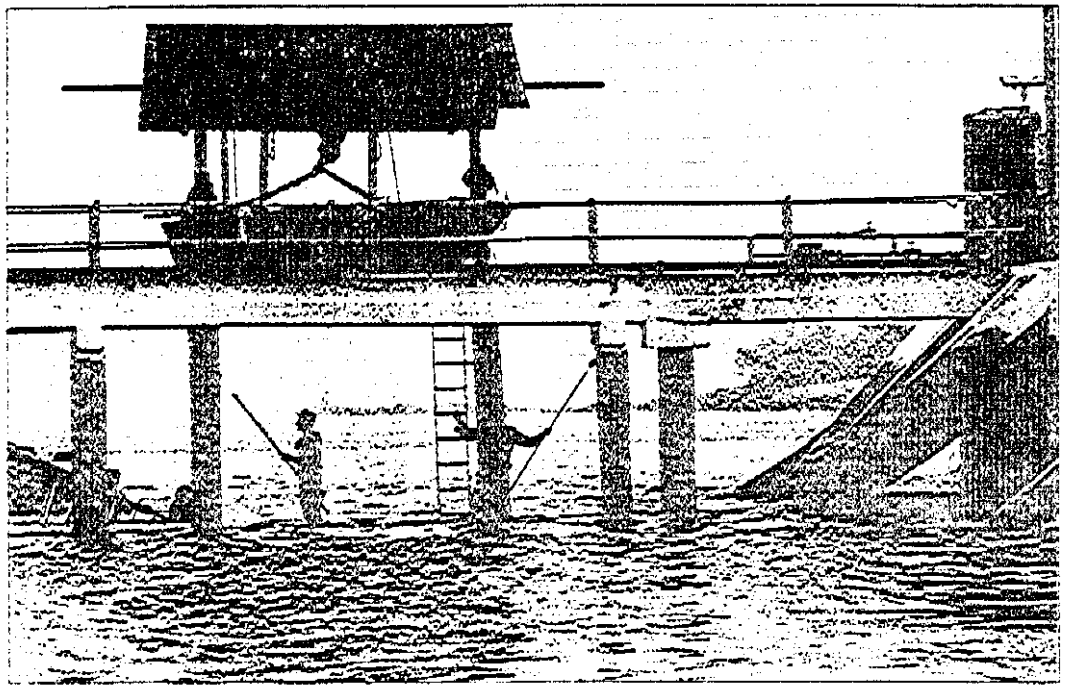


Booms were laid in the waters around Kusu Island to keep the oil slick out.

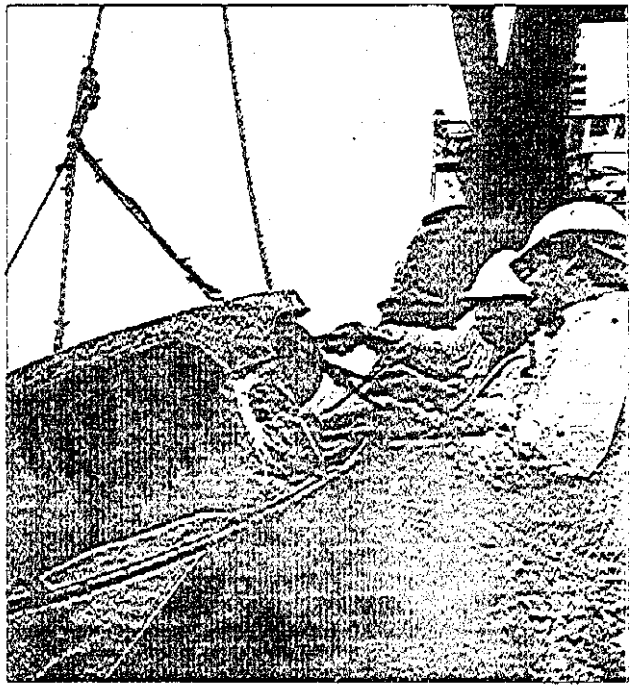


The multi-hued swirl of the oil slick on one side, turquoise tranquillity on the other. Booms are used to contain the spill which surfaced as large greasy patches up to 50 m wide in parts.

## Life!



Under the boardwalk: Workers scraping the thick, black sludge coating the pillars of the Raffles Lighthouse jetty.



This 'giant vacuum cleaner', called a skimmer, sucks oil floating on the water.

THE STRAITS TIMES 1997.10.25 ③

Singapore's worst oil spill

# Orapin Global freed after paying $9,400 port fee

## Tanker to remain in Johor till repair yard is found

By Ginnie Teo

THE oil tanker that was detained by Malaysia last week for entering its waters illegally has been freed after it paid a M$20,000 (S$9,400) port fee and produced the relevant papers.

The Orapin Global is now looking for a shipyard to repair damage caused by its collision with another oil tanker in the Singapore Strait on Oct 15.

The accident caused the worst oil spill in Singapore's history, spewing 25,000 tonnes of oil into the sea.

The Maritime and Port Authority of Singapore (MPA) said yesterday that the spill is now almost gone.

Only 10 craft were used yesterday, the 12th day of the clean-up operation — down from the 60 craft that swamped the affected seas last week.

The agent for the Thai-registered tanker told The Straits Times yesterday that the oil tanker would remain in Johor until a yard was found.

Said a spokesman for the firm, Denholm Ship Management: "We have to consider the costs of anchoring the tanker.

"We'll decide sometime this week."

He said the owners paid the port dues and produced the vessel's documents for inspection over the weekend.

"The ship is still in touch with the Singapore port authorities.

"To move, we have to get permission from both sides.

"But no one expects any big problem in receiving permission," he added.

About 24 crew members and a few officers are on board the very large crude carrier, which damaged its bow in the accident with the Cyprus-flagged Evoikos.

Meanwhile, the MPA, in its daily update, said that aerial reconnaissance during the last three days had shown encouraging results.

The clean-up effort had successfully confined the oil pollution to the Southern Islands.

And no oil pollution had been found in the beaches and waters of Sentosa, Kusu Island, East Coast Park or the mainland.

The six Japanese spill experts who had been helping with skimming the oil and laying oil booms will be leaving for home this week, the MPA added.

The oil booms which were set in Marina Bay and the East Coast lagoon were removed yesterday.

At sea, 10 craft still continued to keep the booms in position and monitor the clean-up, while the cleaning of Pulau Sudong, Pulau Hantu and Raffles Lighthouse continued.

Though the situation has improved here, the oil spill appears to be moving up the Malacca Strait towards Malacca and Port Dickson.

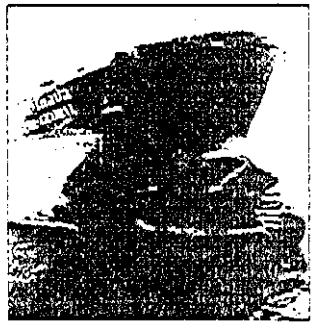
Johor's State Department of Environment has alerted the district offices of Batu Pahat, Muar and Malacca, Port Dickson and Port Klang about the slick, according to the New Sunday Times.

The department, the area coordinator under Malaysia's National Oil Spill Contingency Plan, has been monitoring the movement of the oil slick, which is now a thick mess.

While the slick has not hit any areas in Johor, the State Environment and Consumer Affairs Committee feared that changing sea currents and winds might still give cause for concern, the paper added.

The clean-up team in Malaysia had already laid about 1,150 m of oil booms off the coast of Kukup Island to protect the 76 fish and prawn farms there.

EVOIKOS
■ It was rated low by the Tanker Advisory Centre.



ORAPIN GLOBAL
■ Received a fair rating from same group.

## Top spills

*The fight to clean up Singapore's worst oil spill continues. But the 30 million litres spilt in the Singapore Strait – enough to fill 1d Olympic-sized swimming pools – does not come close to the world's worst spills.*

| Date | Source | Location | Litres (approx) | Cause |
|---|---|---|---|---|
| **▸Biggest marine oil spill** | | | | |
| Jan-June 1991 | Five tankers plus oil terminals | Kuwait | 353 to 1,271 million | Intentional discharge by Iraq during war with Kuwait. |
| **▸Most oil lost from a tanker** | | | | |
| August 1983 | Tanker – Castillo de Heliver | Northwest of Cape Town, South Africa | 299 million | Crude oil was spilled, burned in a fire and lost when the tanker sunk. |
| **▸Biggest spill from a tanker** | | | | |
| March 1978 | Tanker – Amoco Cadiz | Off coast of Brittany, France | 257 million | Tanker grounded. |
| **▸Singapore's biggest spill** | | | | |
| October 1997 | Tanker – Evoikos | Singapore Strait | 30 million | Collision with tanker Orapin Global. |

SOURCE: GOLDEN'S OIL POLLUTION BULLETIN, PUBLISHED BY WORLD INFORMATION SYSTEMS

THE STRAITS TIMES
1997.10.28

# Tanker which spilled oil had lowest rating for safety

'Massive oil spills are relatively rare events, so it is highly unusual for a tanker to be involved in even one massive spill during its lifetime, much less two such spills.'

-- **Golob's Oil Pollution Bulletin on the Evoikos, which was called Messiniaki Frontis 20 years ago. It spilled up to 24,000 tonnes of crude oil and diesel fuel off Crete in Greece.**

By Dominic Nathan

THE 20-year-old oil tanker Evoikos, which spilled 25,000 tonnes of marine fuel two weeks ago, obtained the lowest rating in an international ranking of tankers.

The Orapin Global, the very large crude carrier which it collided with on Oct 15 in the Singapore Strait, faced slightly better with a "fair" rating. That is one grade higher.

These rankings were done by the Tanker Advisory Centre in New York, which publishes an annual Guide for the Selection of Tankers, now in its 15th year.

It rates tankers on a five-point scale, according to their age, the number of past accidents and the owner's safety record.

Its 1997 listing ranks 3,341 tankers, of which less than than 5 per cent received the highest rating of five, while about 15 per cent were rated "low", or one, on the scale.

Said the guide: "The user should select tankers with higher ratings to avoid casualties and total losses."

Among the vessels given a "one" rating was the Evoikos (75,428 gross tonnage).

The Evoikos is registered in Cyprus and owned by Zebra Shipping Pte Ltd.

According to an American-based newsletter, Golob's Oil Pollution Bulletin, the same vessel was involved in another massive spill almost 20 years ago, off the Greek island of Crete.

Registered in Liberia then under the name of Messiniaki Frontis, the tanker spilled up to 24,000 tonnes of crude oil and diesel fuel in the island's coastal waters after running aground.

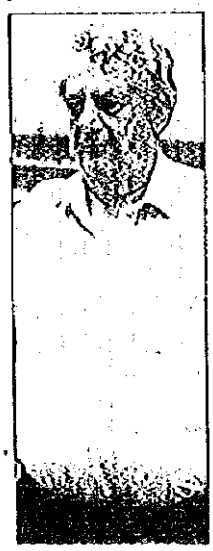
"Massive oil spills are relatively rare events, so it is highly unusual for a tanker to be involved in even one massive spill during its lifetime, much less two such spills," said the bulletin.

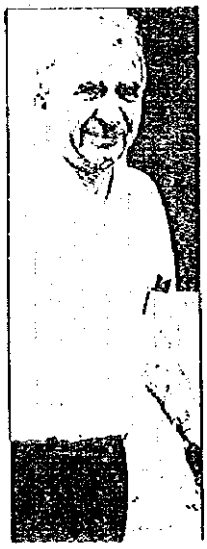
The Orapin Global (129,702 gross tonnage), rated "fair", or two, on the Tanker Advisory Centre's scale, is registered in Thailand and owned by Thai International Tankers -- Bangkok.

Its manager, Denholm Ship Management, said that its Polish captain, Jan Sokolowski, 54, was a very experienced master, having joined the company in 1982 as a chief officer.

It added: "He has been master of very large crude carriers since 1986, with numerous trips to and from Singapore to his credit and is well acquainted with Singapore waters and regulations."

**THE TWO CAPTAINS**





THE STRAITS TIMES
1997.10.28

# Japan's oil-spill fighters faced unusual problems

'We couldn't carry out aerial surveys. In Japan, we normally carry out aerial surveys in the morning, so we know where to direct our vessels.'

— Mr Miyatake, on how the haze made their job more difficult.

Mr Yoshifumi Miyatake, 32, the team leader of the Japanese team, relating his experiences at an interview yesterday at the Tanjong Pagar Complex. — Picture by STEVEN LEE.

'We wanted to eat whatever the rest were eating. We were working hand-in-hand so we didn't want to be treated differently.'

— Mr Miyatake, on how his team was not used to the spicy food served.

By Ginnie Teo

JAPAN has given Singapore $1 million worth of equipment to tackle oil spills, on top of sending six disaster relief officers to help in the massive clean-up of the country's worst oil spill.

The equipment — two skimmers and a set of oil booms measuring 250 m long — were used in the clean-up of the spill that resulted from the collision between the very large crude carrier (VLCC) Orapin Global and the oil tanker Evoikos in the Singapore Strait.

The Japanese team arrived on Oct 18, just three days after the collision which spewed 25,000 tonnes of marine fuel oil into the sea, and will leave for home today.

Team members Yoshifumi Miyatake, 32, and Yoshihisa Kasuya, 29, told The Straits Times about their experiences in an interview yesterday.

For five days from Oct 21, they were out at sea for eight to 10 hours a day. They worked along the Sinki Fairway, using skimmers to suck the oil from the water and booms to contain the spread of the spill.

When it got dark and it was hard to see, they would head back for land to hold meetings with the Maritime and Port Authority of Singapore (MPA).

They were usually back at their hotel at 7 pm.

They were free to have their dinner or to watch television, but as the team leader, Mr Miyatake, said: "We were busy writing our reports, so we had time to eat only a light dinner."

The haze was an obstacle. Said Mr Miyatake: "We couldn't carry out aerial surveys. In Japan, we normally carry out aerial surveys in the morning, so we know where to direct our vessels."

The haze also irritated their throats, while Mr Kasuya, the coordinator, suffered from sore eyes.

Food was another surprise. The Japanese were not used to the spicy food served.

Said Mr Miyatake: "We wanted to eat whatever the rest were eating. We were working hand in hand so we didn't want to be treated differently.

"We were out at sea 10 hours at a stretch without a toilet on the barge. But even though we drank a lot of mineral water, we didn't need a toilet because the heat made us sweat a lot."

These problems aside, cleaning up the spill was easy in comparison with two spills they had handled in Japan, said Mr Miyatake. The weather conditions were very different then, he added.

In January this year, the Russian tanker Nakhodka split in the Sea of Japan in a heavy storm, spilling 6,240 tonnes of oil.

In July, the Japanese-operated tanker Diamond Grace scraped a reef in shallow water, damaging three of its storage tanks and spilling 1,315 tonnes of oil.

Mr Miyatake said: "Although the Nakhodka accident involved only 6,240 tonnes of oil, we took three months to clean it up because it was winter time. The temperature was minus 10 degrees and the waves reached up to six metres."

They took a month to tackle the Diamond Grace spill.

He said of the Singapore spill: "The amount of oil was huge, but much of it flowed out of Singapore waters into the Malacca Strait. We have never experienced such calm seas, it was easy to operate our oil spill plan."

Meanwhile, MPA said in its daily update yesterday that patches of oil were seen at Pulau Sudong, Raffles Lighthouse and at Selat Puah Anchorage. It deployed 15 craft to monitor and clean up these patches.

# 本邦報道記事

平9.10.16　産経（夕刊）

# タンカー同士が衝突

## マラッカ海峡　燃料油4000トン流出か

【シンガポール支局＝16日】シンガポール港湾当局者は十六日、シンガポール沖約五〇〇のマラッカ海峡で十五日午後九時（日本時間同十時）、二隻のタンカー同士が衝突し、最大四千トンの船舶用燃料油が流出したと発表した。

衝突したのはタイ船籍のタンカー「オラビン・グローバル」号（一二九、七〇二トン）とキプロス船籍のタンカー「イボイコス」号（七五、四二八トン）で、このうち燃料油を積載していた「イボイコス」号の二つのタンクが破損し、油が流出した。

衝突の原因は不明。現在、燃料油が流出した海域ではオイルフェンスを張るなどして、除去作業が続けられている。

「イボイコス」号は十二万トンの燃料油を積載していた。

平9.10.16　読売（夕刊）

◉タンカー同士衝突

【シンガポール支局16日】シンガポールの港湾当局によると、マラッカ海峡の東端にあるシンガポール海峡で十五日夜、タイ船籍とキプロスのタンカー同士が衝突、破損したキプロス船から三千一四千トンの燃料油が流出した。けが人などはいない模様で、地元当局では油の除去作業を始めた。

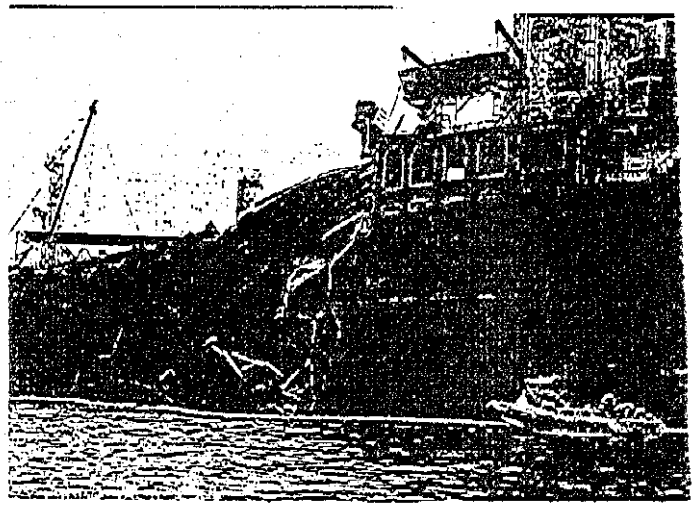
平9.10.16　毎日（夕刊）

## タンカー同士衝突、油流出

### マラッカ海峡

【クアラルンプール16日共同】シンガポール港湾局は16日、シンガポール沖合のマラッカ海峡で15日午後9時（日本時間同10時）、タンカー同士が衝突、最大4000トンの燃料油が流出したと発表した。

16日午前段階で既に流出は止まっている。負傷者はなく、2隻とも沈没の危険もないという。



タイ船籍タンカーとの衝突で積載していた燃料油が流出した、キプロス船籍のタンカー「イボイコス」号　＝シンガポール沖（ロイター）

## 流出油は2万5000トン

タンカー同士衝突　東南アで過去最悪

【クアラルンプール16日＝共同】シンガポール沖合のシンガポール海峡で起きたタンカー同士の衝突事故で、シンガポール港湾局は十六日、燃料油の流出量が約二万五千トンに達したと発表、東南アジアの油流出事故としては過去最悪の規模となった。

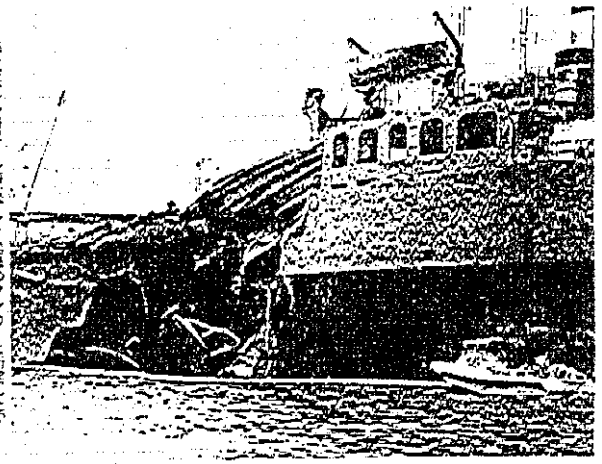
破れたキプロス船籍のタンカー「イボイコス」からの新たな油流出は食い止められており「状況はコントロール下」にあるという。シンガポール政府は、事故で海峡を閉鎖することはないと説明している。

しかし、現場付近は浮いた油膜に覆われており、シンガポール本土南にある小島の中には、海辺に油が到達している所もあるという。港湾局は日本、米国、オーストラリアに油除去作業に必要な機器の送付を要請。いずれの国も前向きの返答をした。

イボイコスはシンガポール本島の南約十三キロの海上で、タイ船籍のタンカー「オラピン・グローバル」と衝突。当初衝突場所はマラッカ海峡とされていたが、その後、シンガポール海峡に変更された。

広告　長州屋

平9.10.17　産経（朝刊）



15日夜、シンガポール海峡でタイ船籍のタンカーと衝突したイボイコス＝ロイター共同

## 流出油2万5000トンに

シンガポール沖　タンカー衝突

【シンガポール16日＝上原正稔】シンガポール沖約十五キロのシンガポール海峡で十五日に起きたキプロス船籍のタンカーとタイ船籍の貨物船タンカーの衝突事故で、シンガポール海事・港湾庁（MPA）は推定二万五千トンの燃料油が流出した、と発表した。当初は三千～四千トンと見積もられていた。シンガポール沖の事故としては過去最大規模という。

現時点ではシンガポール本土には流出油は接近していないが、海岸の民間の給排水口、海水から燃料油を吸い上げる取り入れ口などを守り抜く作業を続けている。

MPAでは日本、オーストラリア、米国に協力の援助を求め、海岸の民間の給排水口を防ぐ機器・物資の供給を要請した。

平9.10.17　日経（朝刊）

## タンカー衝突　油25万トン流出

シンガポール海峡

【シンガポール16日＝原井正秀】シンガポール港湾局によると、シンガポール海峡で十五日午後九時ごろ、タイ船籍のタンカー・オラピンクローバル（二二万、HOIT）とキプロス船籍のタンカー・エボイコス（三五、四二八トン）が衝突し、エボイコスから破れ目の燃料油二万五千トンが流出した。同港湾局が付近で油の回収にあたり、他のタンカーなどの航行を一時禁じた。

現場はシンガポールの南約五キロ。

平9.10.17　朝日（朝刊）

平9.10.17　産経（朝刊）

# シンガポール沖タンカー衝突

## 流出燃料油2万5000トン

## 東南アジアで最大規模に

（マニラ16日共同）シンガポール沖合で15日夜起きたタンカー同士の衝突事故で、シンガポール港湾局は16日、当初見込みを大きく上回る約2万5000トンの燃料油が流出したと発表。東南アジアでは最大規模の油流出事故になった。

（7面に関連記事）

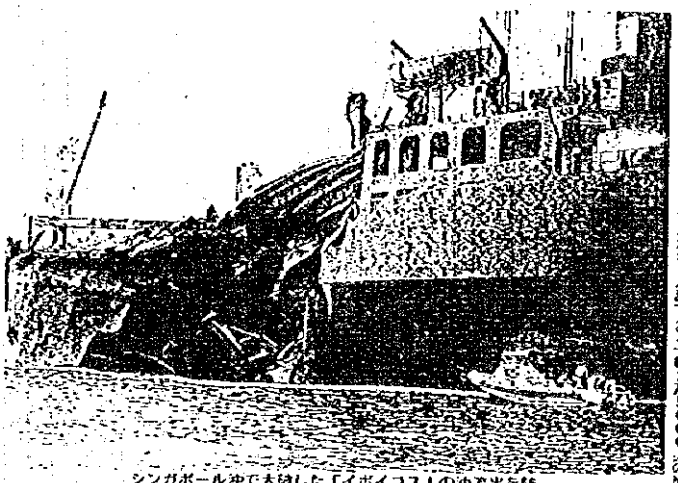
衝突したのはタイ船籍の「オラピン・グローバル」（12万9702トン）と、キプロス船籍のイボイコス（7万5438トン）。油はアラブ首長国連邦（UAE）から12万トンの原油を積みシンガポールに向う途中のイボイコスから流出した。オラピン・グローバルは油を積んでいなかった。

同港湾局は当初、流出量は3000～4000トンと見込んでいたが、現場からの情報によると、流出した油は約8キロ、長さ約1キロにわたっており、一部はシンガポール本島沖合の島々に漂着した。港湾局は船舶とヘリコプターを出して油の除去と拡散防止に当たり、日本、韓国、米国にも支援を要請、各国は専門家を派遣した。油流出に伴う船舶航行への影響はないとのこと、出ていない模様だ。

シンガポール港湾局によると、事故現場はシンガポール本島の南約13キロの海上で、イボイコスが西から東、オラピン・グローバルが東から西へ航行している途中に衝突した。当時の視界は約8キロと良好で、東南アジアに広がっている浅瀬の影響はなかったという。

ナホトカは6千トン級

今年1月のロシア船籍のタンカー「ナホトカ」号の事故では約5800トンの重油が流出。1980年代末からのまとまなタンカーからの油流出事故としては▽約3万2000トン▽96年2月、英国領水沖で約9万6000トン▽96年2月、英国領3月、米アラスカ沖で約4万2000トン▽92年12月、スペイン北西岸で約7万3000トン▽95年7月、などがある。比重で異なるが、1トンは約0・9キロ。



シンガポール沖で大破した「イボイコス」の油流出を防ぐため、周辺にはオイルフェンスが張られた＝ロイター

### 油流出 シンガポール沖 燃料

## 本土南の小島に漂着

## 広域被害の恐れも

（マニラ支局16日）15日、シンガポール沖でタンカー同士が衝突した事故は約2万5000トンの油が流出する東南アジア最大規模のものに発展した。流出した油は潮流に乗ってシンガポール本土の南にある小島に漂着しはじめており、今後、周辺の生態系に深刻な影響を与える可能性が出ている。

東南アジア各国は、インドネシアの森林大火災を原因とする深刻な煙害に見舞われており、住民にも健康被害が出ている。油流出事故がシンガポール周辺のマレーシアやインドネシアなどにも影響を及ぼし、漁業など同国の広域型の環境汚染に発展する恐れもある。

シンガポール当局は、日本、米国、オーストラリアに油拡散防止に必要な資材の提供を要請、被害拡大の阻止に全力を傾けている。

事故現場近くのインドネシア・スマトラ島沖では1992年9月、リベリア籍のタンカー「ナガリキ・スピリット」（5万2800トン）がコンテナ船と衝突し、約5000トンの原油が流出、周辺の漁業に大きな被害を与えた。

平9.10.17

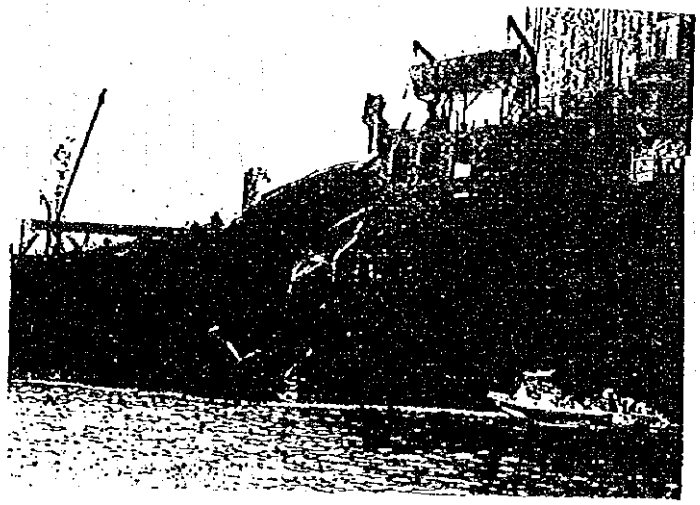
読売（朝刊）

# 原油2万5000トン流出

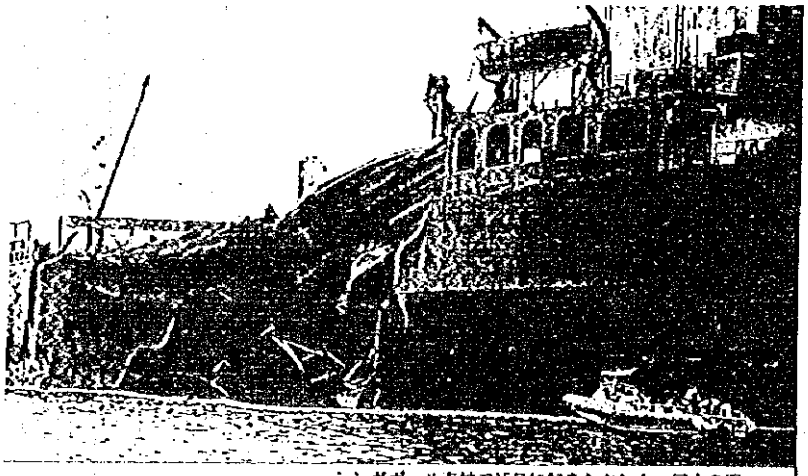
## シンガポール タンカー事故

（シンガポール支局16日）シンガポール沖で15日夜、生じたタンカー同士の衝突事故で、シンガポール港湾局は16日、当初予測を大幅に超え、東南アジアで最大規模の2万5千トンに達したことを明らかにした。

衝突したのは、タイ船籍の大型タンカー「オラピン・グローバル」（12万9702トン）とキプロス船籍のタンカー「イボイコス」（7万5438トン）。「イボイコス」が積載していた原油（ロイター）も、積んでいた原油の一部が流出し始めた。



平9.10.17　　朝日（朝刊）



**東南アジア最悪**

シンガポール海峡で15日に起きたタンカー同士の衝突事故＝ロイター＝で、キプロス船籍のタンカー、エボイコスから流出した積み荷の燃料油は17日までに2万5000トンにのぼり、東南アジアでも過去最大級の燃料流出事故になることがわかった。34隻の船が、漏れた燃料油の回収にあたっている

9.10.18
朝日新聞（　）
総　合

## 油流出事故に緊急援助隊

政府は十七日、シンガポール海峡でのタンカー衝突による油流出事故で、海上保安庁の油防除対策の専門家ら六人でつくる国際緊急援助隊を派遣することを決めた。十八日に出発する。

9.10.18
産経新聞（　）
総　合

## タンカー衝突で援助隊を派遣へ

政府、シンガポールに

政府は十七日夜、シンガポール海峡で十五日に起きたタンカー同士の衝突事故で、燃料油の流出被害に見舞われているシンガポールに対し、海上保安庁の油回収対策の専門家など六人からなる国際緊急援助隊の派遣を決めた。シンガポール政府の要請にこたえたもので、十八日に出発する。

流出油の量は一月に日本海でおきた「ナホトカ号」の重油流出事故の四、五倍の規模にあたる約二万五千トンといわれている。

# 海に黒々重油の帯

## シンガポール タンカー事故 4—5キロに広がる

【シンガポール17日・林田裕道】十五日夜、大型タンカー同士が衝突したシンガポール沖の現場付近の海は流れ出た重油のどす黒い帯で覆われていた——。

記者は十七日、衝突現場一帯を船で回ったが、流出油は約二万五千トンに上っており、四—五キロにわたって油膜が広がっているのが目撃された。

事態を重視したシンガポール政府は十六日、重油の除去作業を急ぐため、日本、米国、オーストラリアの三か国に救援を要請、十七日、日本から汚染防止機材が搬入された。

シンガポールに石油精製基地を持つ主な石油会社が三十八隻の船を出動させるなど、油膜の回収作業を行っている。

一帯には重油のにおいが猛烈に立ち込める。茶褐色となった海面のあちこちに出来た黒い油膜の帯は、シンガポールの代表的リゾート地セントーサ島にも近づきつつある。油膜を処理するために化学薬品を放出する煙の姿が見られたほか、シンガポール本土への漂着を防ぐために、要所にはオイル・フェンスが張られた。

### 緊急援助を 政府が決定

政府は十七日、シンガポール沖で発生したタンカー衝突による大量の重油流出事故に対し、シンガポール政府の要請を受け、緊急援助を実施することを決めた。十八日に海上保安庁職員など六人で構成する国際緊急援助隊専門家チームを現地に派遣。併せて油回収装置などの資機材を送る。

9.10.18
読売新聞（　）
総　合

9.10.18
東京新聞（　）
総　合

## 政府、油回収の緊急援助隊派遣

タンカー事故で決定

政府は十七日、シンガポール沖で十五日、タンカー二隻が衝突して大量の重油が流出した事故で、シンガポールに緊急援助隊の派遣を決めた。十八日午前、日本を出発する。海上保安庁の油回収の専門技術者ら総勢六人で構成し、現地で回収作業を指導するとともに、オイルフェンスなどの器材を提供する。

外務省によると、今回の衝突事故でこれまでに、日本海で座礁したロシア船籍タンカー「ナホトカ」の四倍以上に当たる二万五千トンの重油が流出しており被害の拡大が懸念されている。

9.10.18
毎日新聞（　）
総　合

## シンガポール沖へ緊急援助隊を派遣

油流出で政府

シンガポール沖で15日、タンカー同士が衝突し大量の油が流出した事故で政府は17日、海上保安庁の専門家ら6人による国際緊急援助隊を18日に派遣することを決めた。油回収装置やオイルフェンスなどの資機材も送る。

平9.10.18 読売（朝刊）

シンガポール沖で17日、薬剤をまいて流出重油の処理にあたる作業員（ロイター）

# 海に黒々重油の帯

## シンガポールタンカー事故 4―5キロに広がる

【シンガポール17日＝林田裕章】十五日夜、大型タンカー同士が衝突したシンガポール沖の現場付近の海は流れ出た重油のどす黒い帯で覆われていた――。

記者は十七日、衝突現場一帯を船で回ったが、流出油は約二万五千㌧に上っており、四―五㌔にわたって油膜が広がっているのが目撃された。

事態を重視したシンガポール政府は十六日、重油の撤去作業を急ぐため、日本、米国、オーストラリアの三か国に救援を要請、十七日、日本から汚染防止機材が搬入された。

シンガポールに石油精製基地を持つ主な石油会社が三十八隻の船を出動させるなど、油膜の回収作業を行っている。

一帯には重油のにおいが猛烈に立ち込める。茶褐色となった海面のあちこちに出来た黒い油膜の帯は、シンガポールの代表的リゾート地セントーサ島にも近づきつつある。油膜を処理するために化学薬品を放出する船の姿が見られたほか、シンガポール本土への漂着を防ぐために、要所にはオイル・フェンスが張られた。

### 緊急援助を政府が決定

政府は十七日、シンガポール沖で発生したタンカー衝突による大量の重油流出事故に対し、シンガポール政府の要請を受け、緊急援助を実施することを決めた。十八日に海上保安庁職員など六人で構成する国際緊急援助隊専門家チームを現地に派遣。併せて油回収装置などの資機材を送る。

平9.10.19　　日経（朝刊）

# 被害100億円規模

## シンガポール油流出事故　環境汚染も懸念

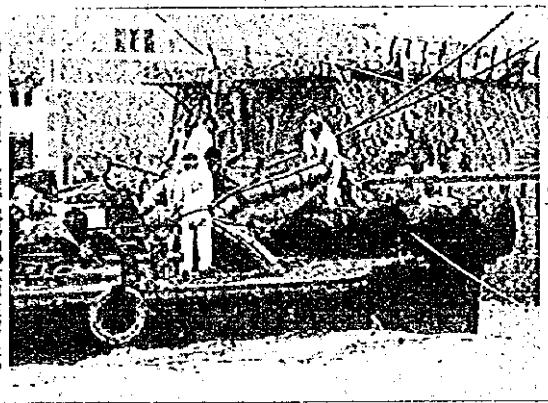
【シンガポール18日＝上原正路】シンガポール沖で十五日に起きたタンカーの衝突事故は、油の流出規模では八九年三月に米アラスカ沖で起きたタンカー「エクソン・バルディズ」座礁事故に近い規模で、サンゴ礁など周辺の環境に悪影響を及ぼす恐れが出てきた。十八日午後には日本政府が派遣した油回収専門家六人も到着し、十九日から本格的な調査に入る。被害総額は約百億円規模になるとの報道もあり、シンガポール政府はオイルフェンスなどを使って被害の拡大防止に努めている。

今回の油流出量は推定二万五千トンで、十八日付の地元紙ストレーツ・タイムズによれば、八年前のタンカーのアラスカ沖座礁事故の三万五千トンに近い規模であるという。ロイター通信によると保険会社の推定では被害総額は一億ドル（一ドル＝約一二二円）になる可能性があるという。アラスカ沖の事故の被害総額は三十五億ドルだった。

シンガポール沖で過去に起きた事故では七五年に四千トンの油が流出したことがあり、被害総額は八百万ドル（一ドル＝約七八円）だった。シンガポール海軍・漁業庁によれば、合計四十三隻の船舶でオイルの拡散を防ぐ作業を続けている。

被害は一部の島の海岸に漂着しているが、本土及び観光名所のセントーサ島には達していないという。

ただ油だけでなく回収作業に使用する化学品などがサンゴ礁やマングローブの林など周辺の生態系に被害を与える可能性も指摘されており、日本の海上保安庁などの協力を仰いで事故被害の拡大防止に努める。



18日、シンガポール港で流出油の拡散を防ぐためのオイルフェンスを張る準備をする作業員ら＝ロイター共同

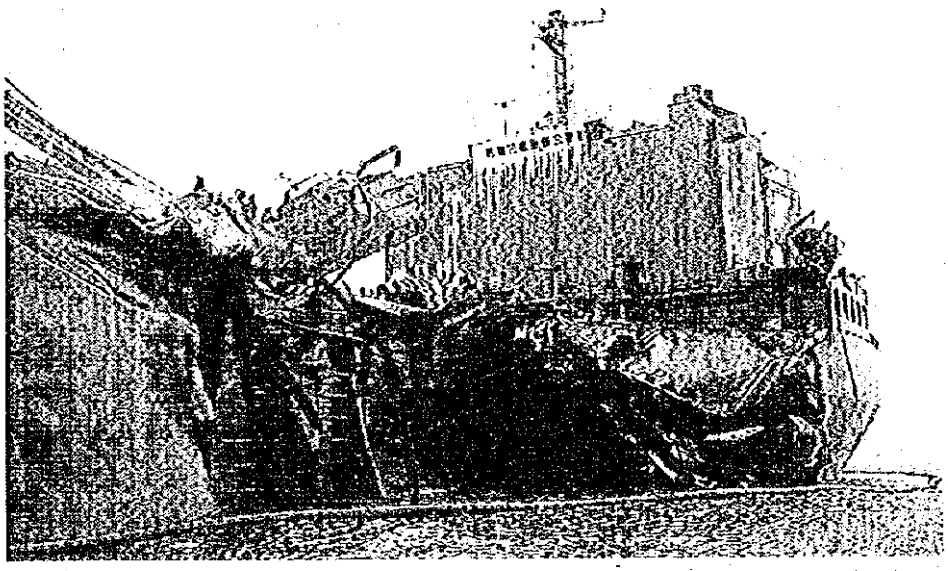
9.10.19
毎日新聞(　)

総　合

# 迫る油膜 風前のサンゴ礁

## シンガポール沖タンカー衝突

## 徹夜の防除続く



【シンガポール18日加藤暁子】空からは煙霄、海には油の膜が広がっている。シンガポールは人間のもたらした開発のつけで、人間も、サンゴ礁もマングローブも、動物園のオランウータンも息苦しさにあえいでいる。

18日昼、シンガポールの岸壁からと目と鼻の先の石油コンビナートのある島々を巡った。タンカー衝突事故で流出した船舶用燃料油で海面は一面コーヒーのような色。重油のにおいが鼻を突き、頭のしんが痛くなる。

流出した重油は2万5000㌧と東南アジア最大の規模となった。夜を徹しての防除作業が続く。同日夕には観光地として名高いシンガポール対岸のセントサ島まで50㍍に迫っている。

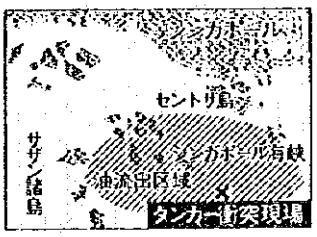
事故は15日午後9時に発生した。タイ船籍の「オラピン・グローバル」（12万9702重量㌧）と、キプロス船籍の「イボイコス」（7万5428重量㌧）が衝突、イボイコスのタンク2基が破損し、重油が流れ出した。

港湾庁は午後10時に緊急対策会議を開き、重油の拡散を最小限に食い止めるための油防除活動にとりかかった。現在、300人の救援隊員は、政府の役人とシェル、エッソなど近くの石油精製基地から派遣されたボランティア。3日間不眠不休で、40隻の船から約6万㌧の化学薬品を海にまき、重油の膜を分離している。

シンガポールの岸壁やリゾートにはオイルフェンスが張られた。18日夕には、日本から海上保安庁などの専門家6人による緊急援助隊が到着し、19日以降、日本から運んだ油回収装置で重油の回収にあたる。

流出した油の量は、日本海沖の「ナホトカ号」事故で流出した重油の約5倍。しかし、当初の予想より油の広がり方が拡散していないのは、海事庁が開発した「油流出モデルシステム」をもとにオイルフェンスを張るなど先回りしての対策が功を奏しているという。

今後の問題は、事故現場の西側にあるサザン諸島内のマングローブの林やサンゴ礁への影響だ。シンガポール国立大のチョウ・ローク准教授（海洋生物学）は「油が含む毒素がサンゴ礁の組織を破壊するので影響が心配」と指摘する。



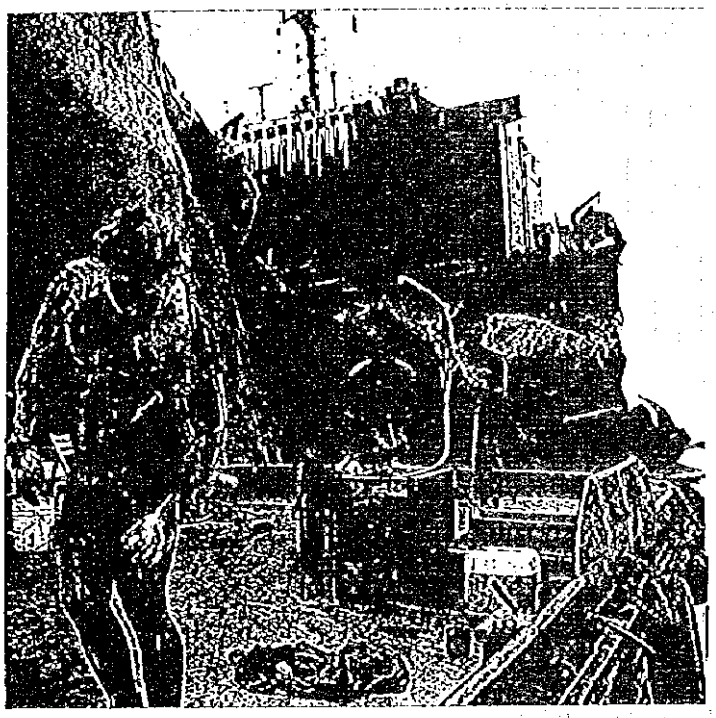

⬇油が流出した「イボイコス」＝18日、加藤暁子写す⬆17日、衝突現場近くで油の溶解剤をまく救援隊員＝ロイター

平9.10.19　朝日（朝刊）

# 重油流出、生態系への影響懸念

## 国際的支援の動き

シンガポール沖

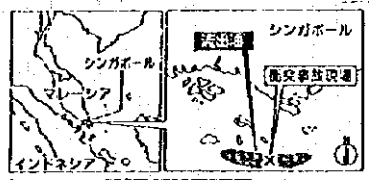


【シンガポール18日＝平井正夫】シンガポール沖で十五日夜起きたタンカー衝突事故は、広範囲に重油が流出し、海の生態系など環境への影響が懸念される事態になってきた。流出量二万五千㌧は、今年一月に日本海で沈没したロシアのタンカー「ナホトカ」事故の四倍。シンガポール政府は油回収のために国際的な支援を要請、十八日には日本の国際緊急援助隊として海上保安庁の専門家ら六人が到着、オーストラリアからも専門家が現地に出発した。さらに米国が機材提供の準備をするなど、東南アジア最大級の流出事故に支援も国際的な広がりを見せてきた。

流出したのは、キプロス船籍のタンカーの積み荷の一部。風と波が弱く、十八日現在、衝突現場から北約五㌔にあるシンガポール本島には漂着していない。しかし、油は十六日の段階でも衝突現場を中心に東西約十二㌔、南北約五㌔の範囲にわたって流れており、さらに広がっている。風向きによっては、シンガポール本島や観光地として知られるセントーサ島に漂着する可能性もある。

シンガポール港湾局は、事故直後から、石油会社の協援を得て三十八隻の船を出して回収にあたっているほか、オイルフェンスを張り、処理剤をまくなどしている。しかし、量が多く、粘度が高いため処理が遅れている。時間がたてば海水と混ざってボール状になり、さらに処理が困難になる。シンガポール環境省は「処理が遅れれば、海洋生物に深刻な影響が出る」との見解を示した。

事態が深刻さを増すとともに、シンガポール政府は十六日、日本、米国、オーストラリアに対して油処理の機材提供や支援チーム派遣を求めた。日本は、専門家を派遣したほか、四隻の油回収船を提供した。



9.10.20
読売新聞(　)
国際面

## 油の流出状況 日本隊が検分

### シンガポール沖

【シンガポール19日＝林田裕章】シンガポール沖で十五日に起きた大型タンカー同士の衝突事故による大量の重油流出は、十九日、沖合の小島群を中心に少なくとも数十㌔四方の範囲に広がり、生態系など環境への被害も懸念され始めた。海面の油膜は衝突現場から最大二十㌔までに拡大した。シンガポール政府の要請を受けて、日本から派遣された海上保安庁職員などで構成する国際緊急援助隊専門家チームは十九日午後、約五時間にわたり現場一帯の状況を検分した。

9.10.20
毎日新聞(　)
総合

重油回収のための調査活動を行う日本の国際緊急援助隊＝シンガポールで19日、加藤暁子写す

日本援助隊

## シンガポール沖タンカー事故 現場で調査活動開始

【シンガポール19日加藤暁子】シンガポール沖で起こったタンカー事故で広がっている重油の回収作業を支援するためシンガポール入りした日本政府の国際緊急援助隊は19日、事故現場で調査活動を始めた。20日にシンガポール港湾庁と合同会議を開き、今後の作業手順などを協議する。

15日にタンカー同士の事故で流れ出した重油は2万5000㌧と東南アジア最悪の流出量となった。近くにはサンゴ礁やマングローブ林の島々があり生態系への影響が心配されている。シンガポール政府は、オイルフェンスなどを張ると同時に、海上に化学薬品をまき、重油を拡散する作業を行っているが、重油回収の機材などの不足から日本政府に援助を求めていた。

援助隊団長の海上保安庁警備救難部の宮武育史専門官は「予想より広範囲に広がっており、油膜が固く塊になっている。どのように油を回収していくのが効果的かをシンガポール当局と検討したい」と話している。

重油は、4日間でシンガポール南部のリゾート、セントサ島周辺まで広がり、事態は深刻化している。緊急援助隊は早ければ20日にも、日本から持ち込んだ10㌧級の油移送装置で重油の回収などに当たる。

平9.10.20

日経(朝刊)

## 日本援助隊 現場を視察

シンガポール重油流出

【シンガポール19日＝共同】シンガポール海峡のタンカー衝突事故で流出した重油二万五千トンの処理を指導するため、シンガポール入りした日本政府の国際緊急援助隊のメンバー十九人は十九日午後、現場を海上から視察した。援助隊メンバーは第三管区海上保安本部（横浜）機動防除隊員ら六人。

9.10.20

東京新聞(　)

社会面

## 日本の援助隊が視察

シンガポール重油流出

【シンガポール19日共同】シンガポール海峡のタンカー衝突事故で流出した重油二万五千トンの処理を指導するため、シンガポール入りした日本政府の国際緊急援助隊のメンバーが十九日午後、現場を海上から視察した。

援助隊メンバーは第三管区海上保安本部（横浜）機動防除隊員ら六人。

流出油の状況を見て今後の対策を立てるのが目的で、シンガポール港湾局の船で汚染が激しい地域や衝突現場などを五時間余り視察した。

9.10.20
朝日新聞( )

—国—際—面

# 潮流複雑 除去に荒波

## シンガポール沖・重油流出

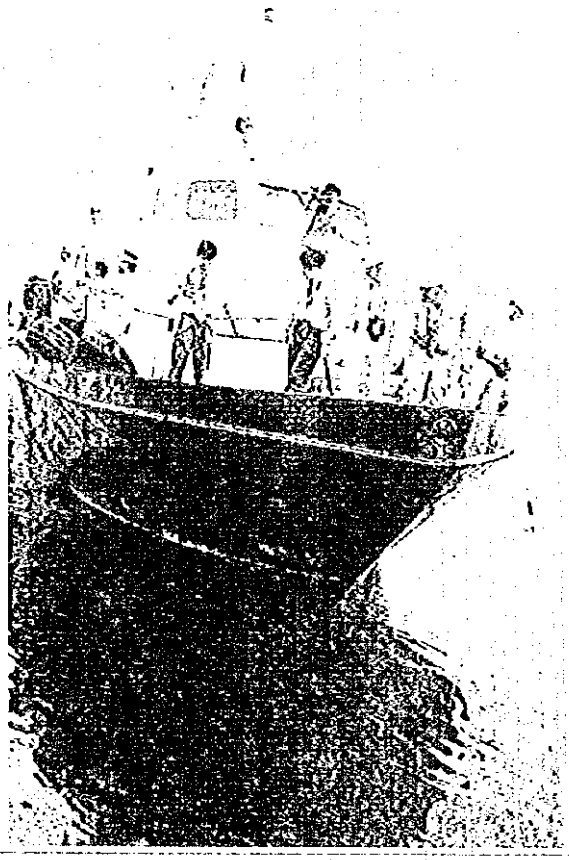
## 汚染の広さ当局沈黙

【シンガポール19日＝平井正夫】流れ出した重油は、薄い油膜となって漂っていた。ところどころ粒状に小さくかたまった油も見える。シンガポール沖で起きた東南アジアで最大級の二万五千㌧の石油流出事故の発生から五日目の十九日、現場では汚染海域がさらに広がり、処理が一層難しい段階に入っているように見えた。シンガポール政府の発表が限られ、上空からの取材も許可されないことなどから、汚染の状況は詳しく知ることができない。

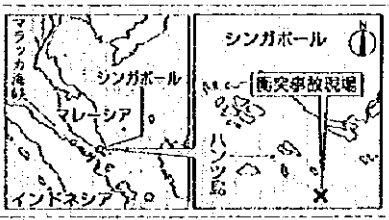
タンカーの衝突現場から北西約五㌔。ハンツ島の入り江の護岸は、流れ着いた重油が真っ黒く帯状に付着していた。付近の海面には重油が漂っている。波も腕も弱く、水面は静かだ。やや油の厚い層が帯状になっている部分もあるが、ほとんどは薄い膜になって、幾重にも波紋を描いていた。

シンガポールは物資の世界的な集積地で、中東から日本などに向かうタンカーが通行するマラッカ海峡に近く、年間に約十万隻が寄港するという。事故は、この港のすぐ外側で発生した。

衝突現場に近づくと、左舷に大きな穴を開けたタンカー・エボイコスが停泊していた。オイルフェンスで囲まれ、油の流出は止まっている。付近の海上には油が浮いているが、油の除去作業が行われている様子はない。



シンガポール沖で衝突したキプロス船籍のエボイコスから流出した重油の状況を調査する日本の緊急援助隊＝時事




油は、このエボイコスから主に西の方に広がった。シンガポール海峡は潮流が複雑で、油が常時動いており、油の除去が難しい。

流出した油は、エボイコスの積み荷の一部で、衝突でできた長さ約五十㍍の亀裂から漏れた。事故から四日たっても、油がどの海域まで広がったのか、はっきりしていない。シンガポール港湾局の発表は、シンガポール本島に油が漂着しておらず、沖合の小島の岸に油が流れ着いたとしているが、汚染海域の広さなどについては沈黙している。

ある外国のテレビ局が、ヘリコプターなどによる上空からの取材をしようとしたが、「油の処理作業のじゃまになる」として飛行許可がおりなかった。

日本の海上保安庁の専門家ら六人からなる国際緊急援助隊も十九日、シンガポール港湾局から説明を受けた後、現場海域を視察した。説明で油が多く浮いているとされた場所も、実際に行ってみるとすでになくなっているなど、油の移動が激しいことを知らされた。

同行した関係者は「ヘリコプターなどで空から油の状況を実際に見ながら、同時に海上で作業を進めるなどしないと、効果的な回収が難しいかも知れない」などと話した。

9.10.21
東京新聞(　)

社会面

# 海に黒い帯 空には煙霧

重油流出ルポ

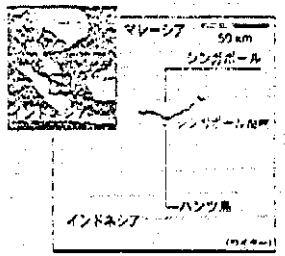
## シンガポール海峡 環境汚染ダブルパンチ

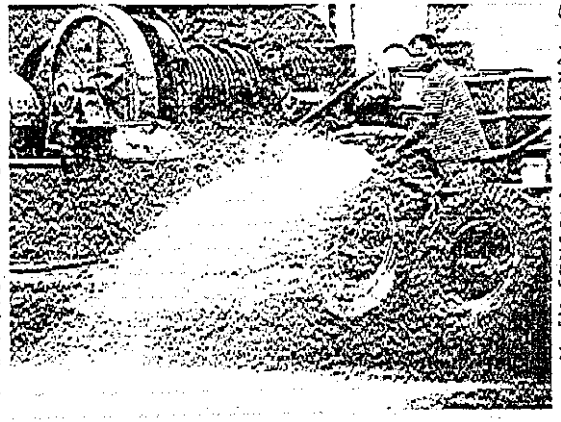
【シンガポール20日華多義意】タンカー同士の衝突による重油流出が広がるシンガポール海峡を、日本政府派遣の緊急援助隊に同行してチャーター船で航行した。小島の防波堤には真っ黒な油がこびりつき、入り江のあちこちに帯状の油膜が漂っていた。インドネシアの森林火災による煙霧に次ぐ、もう一つの環境汚染が海岸線にひたひたと押し寄せていた。

十九日、海上保安庁の油防除専門家ら六人による援助隊は午後二時シンガポール港を出発。十分ほど南下したところで、海面よりやや盛り上がったとす黒い帯を発見。さらに二番目に汚染がひどい（シンガポール港湾局）というラッフルズ諸島ハンツ島の白い防波堤は約二百㍍にわたって重油で真っ黒に。付近には、ごみがまじったオイルボールが浮かんでいた。

十五日に起きたタンカー衝突では、一月の日本海でのナホトカ号事故の四倍以上の重油二万五千㌧が流出したとされているが、海洋汚染というマイナスイメージを恐れてか、同政府は詳しい被害状況を明らかにしていない。

煙霧が立ち込める海上で約四時間、浮遊重油の採集などの調査を行った援助隊の宮武宜史団長（海上保安庁）は「今後の防除の進め方は地元当局と話し合って決めたい」と語った。



シンガポール海峡で19日、タンカーの衝突事故で流出した重油を除去する器品をまく作業員＝ロイター

## 当局、マイナスイメージ恐れ被害明かさず

写

平9.10.21

日経（朝刊）

# タンカー船長逮捕

## シンガポール沖衝突事故　油回収、来週まで

【シンガポール20日＝上原正詩】シンガポール沖で十五日に起きたタンカー衝突事故で、シンガポール海事・港湾庁（MPA）は二十日、事故後初めて記者会見し事故の経緯を明らかにするとともに、二隻のタンカーの船長を逮捕したことを発表した。流出した油の回収作業は来週までかかる見通しで、油の一部がマレーシアとインドネシアの領海内に到達したという。

事故はタイ船籍の超大型タンカー「オラピン・グローバル」（一二九、七〇二トン）がシンガポール海峡を東から西に航行している最中にコースを外れ、キプロス船籍のタンカー「イボイコス」（七五、四二八トン）とセバロク島の南方五キロの地点で衝突した。MPAは事故の十三分前から両船に警告を発した。

「イボイコス」の三つのタンクが破損し約二万五千トンの燃料油が流出した。「イボイコス」は十二万トンの油を積んでおり、「オラピン・グローバル」は空だった。

事故直後から民間の船舶などの協力も働き、油の拡散・回収作業を進めたが、油はストン、セナン島など五つの島の海岸に到達した。シンガポール港や観光名所のセントーサ島はオイルフェンスを敷設して油の到達を防いでいる。現在は油を海水から回収する作業に重点を置いているが、油の拡散範囲がさらに広がる可能性もある。

MPAは「状況はコントロール下にある」ことを強調しており、船舶の航行には影響は出ていない模様だ。ただ環境への影響や汚染が広がった海積などについては詳細を明らかにしなかった。

平9.10.21

朝日（朝刊）

## 衝突タンカー　両船長を逮捕

シンガポール沖事故

【シンガポール20日＝平井正夫】シンガポール沖で大量の重油を流出させたタンカー事故で、シンガポール港湾当局は二十日、初の記者会見を開き、衝突した二隻のタンカーの船長二人を逮捕したと発表した。また、流出した重油の一部はすでにインドネシア、マレーシアの領海に入っている模様で、両国の沿岸に流れ着く可能性があるという。

平9.10.21

産経（朝刊）

## 両船長を逮捕

タンカー同士衝突で

シンガポール当局

【シンガポール20日＝時事】シンガポール海事港湾庁のチェン・ツェペン長官は二十日、記者会見し、十五日のタンカー同士による衝突事故で流出した重油二万五千トンの除去・回収作業に全力を挙げる方針を示した。流出油は西に向かって拡散しており、隣国のマレーシアやインドネシアの領海内にも及ぶ可能性があるという。

同長官はまた、衝突したキプロス船籍の「イボイコス」とタイ船籍の「オラピン・グローバル」の両船の船長をそれぞれ逮捕したことを明らかにした。

同長官はさらに、シンガポール港の管制塔が事故前、航路の間違いをオラピンに数回警告したと指摘、衝突が人的ミスによる公算が大きいことを示唆した。

# 沖合の島でも重油除去作業

【シンガポール21日＝平井正夫】シンガポール沖のタンカー事故で流れ出した重油の処理は、海上だけでなく、油が漂着した沖合の小島でも始まった。二十一日、事故で大量の油が流れ着いたハンツ島に上陸し、浜辺の除去作業を見た。

白いゆ浜にはえた草が油で真っ黒に染まっている。満潮の時に打ち上げられた油だ。その油まみれの草を六人の作業員がクワで掘り起こしていた＝写真、平井写す。海岸線は五百メートル以上もあり、気の遠くなるような作業だ。

付近の海は、二日前に回ったときより油膜がさらに薄まっていた。油の拡散が進み、汚染の中心がさらに西に移ったように見えた。シンガポール港湾当局によると、ハンツ島のほか、シンガポール軍の演習場があるスドン島など四島に油が漂着した。

平9.10.22

朝日（朝刊）

【配信番号　5175☆　10／10　P】No．3
●シンガポール海峡流出油事故　資源エネルギー庁などが回収協力
◎化学工業日報　97年10月22日　朝刊◇12面

# エネ庁などが回収協力

## シンガポール海峡流出油事故

十五日にシンガポール海峡でタンカー二隻の衝突による流出油事故が発生したが、通産省資源エネルギー庁はシンガポール政府当局に対して、オイルフェンス三百尺、油回収機十二基、ビーチクリーナー六基、仮設タンク二十四基の資機材を貸し出し、流出油回収の協力体制に入った。

油流出機は、今年わが国で発生したナホトカ号の三倍に当たる三万五千トンに上るだけに早急な回収が急がれている。

タンカー衝突事故は、タイとキプロス船籍がバッティングしたが、当初油流出量は三千～四千トンと見込まれていた。しかし、その後シンガポール当局から二万五千トンに達すると発表された。このためシンガポール政府や英国海事保険から通産省へ石油連盟に対して油濁防除資機材の貸し出し要請がなされた。

二十日現在の油回収状況は、処理剤散布を中心に進めている。石油連盟供出機材は回収機八基とオイルフェンス二千尺が活用されている。今後は処理剤散布の効果をみながら物理的回収作業に移行する予定。連盟スタッフは現地で回収作業と回収作業の助言を行っている。

また、資源省は海上保安庁、第三管区副上保安本部、国際協力事業団の六人から構成される「国際緊急援助隊専門家チーム」を派遣するとともに原油の油回収機、保安庁所有のオイルフェンスなどの資機材も送付している。

# 供与機材目録及び受領書

JAPAN INTERNATIONAL COOPERATION AGENCY
Singapore Office
Room 801, RELC Building,
30, Orange Grove Road, Singapore 258352.
Tel : 7340706, 7340477, 7340460, 7341247, 7341949
Fax : 7322675

# LIST OF THE EQUIPMENTS DONATED TO THE GOVERNMENT OF SINGAPORE BY JICA

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1 SET OF VIKOMA HI-SPRINT

2 SETS OF BARGE

## Acknowledgement Receipt

This serve as an acknowledgement receipt of the following equipments handed over by Japan International Cooperation Agency to Maritime And Port Authority of Singapore.

2 SETS OF OIL SKIMMER GT-185

1 SET OF VIKOMA HI-SPRINT

2 SETS OF BARGE

received by: date: 31/10/97

KHONG SHEN PING
DIRECTOR (PORT)
MARITIME AND PORT AUTHORITY OF SINGAPORE

# 主要面会者リスト

主要面会者リスト

MPA

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| Director-General | Chen Tze Penn |
| Director, Port Division | Khong Shen Ping |
| Port Master | Mark Heah Eng Siang |
| Liaison Officer | Rahman Bin Kamin |
| | Ong Eng Cheng |
| | Sng Kiah Huang |

在シンガポール日本大使館

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| 公使 | 高原　寿一 |
| 一等書記官 | 中原　邦之 |
| 一等書記官 | 平田　純一 |
| 一等書記官 | 當麻　維也 |

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| シンガポール事務所所長 | 伊藤　英明 |
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（社）日本海難防止協会

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| シンガポール連絡事務所所長 | 則包辰男 |
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