



# ISCO NEWSLETTER

The Newsletter of the International Spill Response Community

Issue 304, 10 October 2011

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## News

### SHIPOWNERS SUPPORT NEW R&D INITIATIVE



A new R&D initiative, funded by the world's shipowners and their P&I insurers, has been launched by ITOPF.

The ITOPF R&D Award will provide some £50,000 each year to encourage innovative thinking and provide realistic solutions to some of the challenges faced when responding to accidental oil and chemical spills and undertaking environmental monitoring.

The ITOPF R&D Award is available to any organisation or R&D establishment worldwide and will fund students from all academic disciplines, but particularly those with an applied scientific focus. Deadlines for proposals will be twice a year, in June and December.

Proposals will be evaluated by the ITOPF R&D Committee, comprised of objective scientists with a wealth of experience in maritime and environmental issues and a keen focus on developing young talent in these areas.

The initiative is welcomed enthusiastically by the IMO, which has kindly provided staff from its Marine Environment Division to sit on the R&D Committee.

The first applications for the ITOPF R&D Award are invited for the 31st December deadline.

[R&D Award](#) (PDF 308KB)

[ITOPF R&D Award Applicant Instructions](#) (PDF 89KB)

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## NEW ZEALAND: CONTAINER VESSEL STRANDED ON REEF, A SAGA UNFOLDS ...



### October 5 – First reports.

A large cargo ship, the 236-meter Rena, has struck a reef near the Tauranga Port on Wednesday morning, spilling hydraulic oil from the vessel into the water.

The 47,000-ton, Liberian-flagged cargo ship struck the Astrolabe Reef around 2:20 am and while News24 reports that there is a “light sheen” of oil, the vessel’s fuel tanks are still intact without the threat of a major environmental hazard. Maritime New Zealand officials confirmed that all of the crew remain safe and without injury.

Maritime NZ officials stated when only light oil sheen is detected around a vessel, it is assessed as hydraulic engine oil and not a fuel tank rupture. They added that as far as they can tell, the ship is held very firmly aground and is stable despite a 10 degree list. The NZ Herald says that Rena’s captain is in discussion with the owner as well as salvage experts on how to best maneuver the ship off of the reef. Despite swift actions to address the removal, it could be weeks or even months before the ship can be floated off the reef, according to NZ experts. [Read more](#)

**October 5** - Maritime New Zealand activated its Maritime Incident Response Team (MIRT), which is made up of maritime experts, who are providing technical advice and oversight.

MNZ’s Marine Pollution Response Service (MPRS) is setting up an incident command centre in Tauranga, staffed with around 25 members of the National Response Team (NRT). [Read more](#)

### October 7 – New Zealand fears oil spill disaster

New Zealand said it was preparing for an environmental disaster today over fears a container ship stranded off the North Island would break up and spill oil into the pristine Bay of Plenty.

The 47,000 tonne container vessel "Rena", which hit a reef off the North Island earlier this week, has already created an oil slick more than 5km long that has killed a number of seabirds. But the pollution would increase immensely if the ship broke up on the Astrolabe Reef, releasing the 1700 tonnes of heavy fuel oil on board into the sea.

Environment Minister Nick Smith told Fairfax Media the accident "has the potential to be New Zealand's most significant maritime pollution disaster in decades". Transport Minister Steven Joyce said salvage teams were scrambling to remove oil from the stricken vessel to protect the Bay of Plenty, one of the country's top tourist spots and home to whales, dolphins, seals and penguins. [Read more](#)

### October 7 – More information

*Picture: A diver resurfaces after inspecting the Rena off the coast of Tauranga.*

The oil slick from a leaking ship off the Tauranga coast remained a constant size today, Maritime New Zealand said. But the environmental damage from the spill will get worse before it gets better, Transport Minister Steven Joyce said ...

More than 100 people are now in Maritime New Zealand's response team, which is planning for all eventualities, including a large-scale discharge of oil from the ship.

Trials of dispersants were continuing after inconclusive results yesterday, with experts advising against the use of protective booms due to strong currents and rough seas, Maritime NZ said.

The Auckland based fuel ship Awanuia will head to Tauranga shortly in what is likely to be a bid to get bunker oil off the stranded ship Rena ...

From an observation boat the ship's bow could be seen rammed up and onto the reef, listing dangerously to one side. Containers stacked eight-high on the ship's deck looked to be compounding the problem.

Observation flights that began at first light, continued to survey the damage while specialist dive crews were now in the area and inspecting holes in the hull where the ship struck the reef. [Read more](#)



## News (continued)

### October 7 – “Serious risk” of vessel breaking up

Marine risk assessor John Riding told TV ONE's Close Up that a solid plan should be in place to remove the fuel off this vessel. The bunker barge in Auckland should have been already requisitioned, he said, and the sooner they take the fuel off the better.

"The ship is still moving which means there is a tremendous stress on the haul and I have absolutely no doubt that will cause cracking. "If that does turn into the worst case scenario, which would also involve adverse weather and adverse seas, then there is serious risk of the ship splitting in two." [Read more](#)

### October 7 – Oil continuing to leak

If the ship sinks without removal of the fuel, officials forecast that it will be disastrous for the beach and for the wildlife, citing that the oil slick has the possibility to reach the coast in just a few days, after aerial dispersants failed to contain the slick.

Transport Minister Steven Joyce stated the while salvage teams are working hard to remove oil from the ship and to protect the coast, but difficulty lies in the fuel's toxicity to humans, as well as animals. He added that the situation with the oil is going to get worse before it gets any better.

NZ Environment Minister Nick Smith said that the nation is readily preparing for what could be their most significant maritime pollution catastrophe in decades.

Two wildlife rescue centers have been established by the Department of Conservation to clean up the oil-stricken animals of the area. [Read more](#)

### October 8 – Oil leaks stopped “for now”

Oil appears to have stopped flowing for the time being from the stricken container ship Rena off Tauranga's coast, Maritime New Zealand says. Following an observation flight this morning, MNZ says the slick from the ship is now predominantly sheen, or very thinly spread oil.

Three navy ships, Rotoiti, Taupo and Manawanui, are due to arrive at the scene today, with HMNZS Endeavour to arrive on Monday. An Iroquois helicopter also arrives today and around 500 defence force personnel are on standby for a shoreline clean-up if needed. So far no oil has been found on beaches. [Read more](#)

### October 8 – Mobilization of the salvage effort

Salvors are hopeful to begin pumping oil off stricken container ship Rena tomorrow evening but say the job will not be complete before the forecast high winds and large swells descend on the Bay of Plenty.

Maritime New Zealand advisor Captain John Walker, who has flown in from Singapore, has 16 years experience salvaging ships around the world and said the complexity of the task ahead was "very high" due to the 11 degree list of the vessel and the fact the front of the ship was firmly grounded while the rear floated free.

The 20 person salvage team includes experts from the United Kingdom, Australia, Singapore and Holland. "You've got the best salvage team I would say in the world," Mr Walker said. Pumps and hoses will be flown by heavy lift helicopter onto the ship and the oil transferred onto the barge Awanui. "We are hopeful that we may start pumping tomorrow evening," he said. Once the oil has been removed Mr Walker said the draft salvage plan required the removal of the containers on board in order to lighten the ship which continues to crush down on the reef.

Naval architects are currently on board Rena assessing the strength and stability of the vessel. Svitser have also chartered a 747 plane to bring equipment needed for the salvage from their Sydney warehouse. A second RNZAF plane is also being used to bring equipment to the region. [Read more](#)

### October 9 – Oil expected to impact shoreline within days

Oil from the stricken ship in the Bay of Plenty is expected to hit the shoreline in days. Authorities told ONE News they believe the oil will hit the Papamoa coastline by Wednesday or Thursday. "We can expect oil on the beaches, somewhere south of Mt Maunganui. However predicting oil movement is not an exact science," said National On Scene Commander Rob Service. [Read more](#)

### October 9 – Bad weather closes in on salvage

Salvagers of stricken ship Rena off the coast of Tauranga are working against the clock as bad weather approaches the region. Gale-force winds, high swells and rain were expected to hit the area tomorrow, giving salvagers of the cargo ship a window of only 18 hours to make the most of calm conditions, said WeatherWatch.co.nz analyst Richard Green. Strong northeast winds of 40-50 knots were expected, bringing heavy rain and high sea swells until Wednesday. [Read more](#)

**October 9** - The cargo includes four containers of ferrosilicon, a solid substance that can be hazardous when in contact with water and can emit hydrogen. [Read more](#)

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## INDIA: POLLUTION BOARD DRAWS UP PLAN TO TACKLE OIL SPILLS

Alarmed by the damage caused to environment due to oil spills, the Maharashtra Pollution Control Board (MPCB) has drafted an integrated local contingency plan (LCP), on the lines of National Oil Spill Disaster Contingency Plan (NOS-DCP), to tackle such incidents in future.

Tonnes of oil have spilled into the sea around Mumbai in the recent past: In 2010, Panama-flagged MV MSC Chitra collided with MV Khalijia-III; in January, Oil and Natural Gas Commission's Mumbai -Uran Trunk Oil pipeline burst and in August, MV Rak with coal, fuel oil and diesel oil in cargo sank off the city's shore and began leaking. [Read more](#)

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## UK: 'SADNESS' AS AXE FALLS ON MARINE RESCUE COVER IN SW ENGLAND

October 1 - The Westcountry is this morning sat without vital maritime rescue cover after the Government axe finally fell on the country's small fleet of emergency towing vessels.

The coastguard rescue tug charged with protecting the Western Approaches has become a familiar site in Mount's Bay, off the West Cornwall coast, over the last decade. But just after midnight the super-powered tug Anglian Princess was due to sail from Falmouth for the last time, a victim of Department for Transport budget cuts. [Read more](#)

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## USA: BOEMRE ANNOUNCES REGULATORY AUTHORITIES FOR NEW AGENCIES

September 30 - The Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) announced a final rule that separates the federal regulations that govern offshore energy and resource development between the Bureau of Safety and Environmental Enforcement (BSEE) and the Bureau of Ocean Energy Management (BOEM), effective October 1, 2011. The two bureaus will become operational on that date, completing the reorganization of the former Minerals Management Service (MMS). The organization of the regulations reflected in the final rule tracks the set of activities that will now be undertaken separately by BSEE and BOEM. [Read more](#)

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## AUSTRALIA: \$2M FINES FOR FIRMS THAT DELAY REPORTING BREACHES AFTER ORICA SPILL

October 5 - Companies responsible for pollution breaches will have to report them immediately or face a \$2 million fine, the NSW government said, as it released a report into a Newcastle chemical spill.

The state's environmental watchdog would also become independent of the government following the incident at Orica's Stockton plant, Premier Barry O'Farrell announced.

Mr O'Farrell today released the independent report into the hexavalent chromium leak on August 8. [Read more](#)

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## USA: COAST GUARD LOOKING FOR OIL IN SUNKEN WW2 TANKER OFF OF CAMBRIA

The Coast Guard has awarded a contract to Global Diving and Salvage Inc. to determine if oil is present aboard the sunken ship S.S. Montebello, which sits 900 feet below the ocean surface approximately 6.5 miles off the coast of Cambria, Calif.

The S.S. Montebello sank after a Japanese submarine torpedoed the large oil tanker on December 23, 1941. The Montebello broke apart and sank landing upright with her bow broken off and landing apart from the majority of the wreckage.

Multiple dive operations have been conducted between 1996 and 2010 to survey the site and determine the hull's integrity. To date, no signs of leakage have been detected, and from previous scans, the hull appears to be intact. [Read more](#) [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group, for providing the link to this report]

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## USA: INDUSTRIAL SOLVENT TCE EVEN MORE DANGEROUS TO PEOPLE

EPA finds trichloroethylene causes kidney and liver cancer, lymphoma and other health problems. The decision could raise the cost of cleanups nationwide, including in the San Fernando and San Gabriel valleys.

One of the most widespread groundwater contaminants in the nation is more dangerous to humans than earlier thought, a federal agency has determined, in a decision that could raise the cost of cleanups nationwide, including large areas of the San Fernando and San Gabriel valleys.

The final risk assessment for trichloroethylene by the Environmental Protection Agency found that the widely used industrial solvent causes kidney and liver cancer, lymphoma and other health problems. That lays the groundwork to reevaluate the federal drinking-water standard for the contaminant: 5 parts per billion in water, and 1 microgram per cubic meter in air, officials said. [Read more](#)

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## USA: SALAZAR: NATURAL GAS DRILLING AND HYDRAULIC FRACTURING RULES ON WAY SOON



*Picture: Dust permeates the air at a Chesapeake Energy Co. hydraulic fracturing operation at a well site near Carrizo Springs, Texas. (John Davenport/San Antonio Express News)*

October 5 - The Obama administration is poised to swiftly advance plans to stiffen standards governing natural gas drilling on federal lands, Interior Secretary Ken Salazar said today.

A rule that would impose new standards on shale gas extraction from public lands "is still in formation," Salazar told reporters. "We're maybe a month or so out before we actually put the specifics out."

The Interior Department last year launched a broad review of whether it needed to step up its oversight of natural gas drilling on the roughly

700 million acres of public land under the federal government's control. [Read more](#)

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## USA: COMPANIES THAT PARTICIPATED IN GOM OIL SPILL CLEANUP AREN'T IMMUNE FROM HEALTH CLAIMS

October 5 - Nalco, the manufacturer of the Corexit dispersant, and other companies that participated in the oil clean-up aren't immune from claims about worker health problems and other personal injuries, U.S. District Court Judge Carl Barbier has ruled. Under the government's oil spill plan, BP contractors applied dispersant to the Gulf of Mexico, skimmed the oil and burned it. Many workers who helped with the clean-up and people who live in coastal areas now say they have gotten sick from the efforts to get rid of the oil.

Ruling on motions to dismiss personal injury claims, Barbier said Friday that the companies involved in the clean-up aren't immune from health claims. Although the federal government oversees oil spill clean-up efforts through the Federal On-Scene Coordinator, contractors didn't have specific government approval to use Corexit and BP was responsible for getting rid of the oil.

But Barbier also said that because court is restricted to considering these issues in light of material contained in the motions to dismiss, the companies are free to raise their defenses again at a later date with more information.

"Private entities can derive immunity from the government under the Clean Water Act...if the facts revealed that the Clean-Up Defendants were using dispersants as directed by the federal government, then they would be entitled to derivative government immunity," he said. [Read more](#)

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## USA: EPA REQUIRES ENBRIDGE TO SUBMIT OIL SPILL CLEAN UP PLANS

October 7 - The U.S. Environmental Protection Agency issued a directive Thursday requiring Enbridge to take additional steps to clean up the July 2010 oil spill that damaged over 35 miles of the Kalamazoo River system.

The directive requires Enbridge to submit plans by October 20, 2011 for cleanup and monitoring work expected to last through 2012. Failure to comply could result in civil penalties.

The EPA directive lays out a performance-based framework for assessing and recovering submerged oil in the river and cleaning up oil-contaminated river banks. [Read more](#)

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## USA: ENBRIDGE'S ESTIMATED COST OF KALAMAZOO RIVER OIL SPILL CLEANUP EXCEEDS ITS \$650 MILLION INSURANCE POLICY

September 27 - For the first time Enbridge Energy's estimate of the cost for the cleanup of the Kalamazoo River oil spill has surpassed the \$650 million that the company can be reimbursed through its pollution liability insurance policy.

The company has been paying for all of the cleanup-related costs and is working with its insurance company to get reimbursed.

Enbridge spokeswoman Terri Larson said it remains to be seen how much will be reimbursed.

Enbridge submitted a report to the Security and Exchange Commission on Monday that the entire cleanup is estimated to cost about \$700 million — 20 percent more than their previous estimate of \$585 million.

The cleanup estimate also does not include any fines or penalties from the government. [Read more](#)

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### CYPRUS: ANTI POLLUTION EXERCISE A SUCCESS

October 7 - An anti-pollution exercise, named "NIRIIS 2011", was fulfilled successfully on Thursday. It was organized by the Ministry of Communications and Works in cooperation with the European Maritime Safety Agency aiming to examine the national capability of the Republic of Cyprus to mobilize its anti-pollution resources, respond to a major oil spill and also to test the communication and emergency response mechanism.

It was the first anti-pollution exercise in Cyprus, which took place with the participation of sea vessels and aircrafts of the Republic of Cyprus and the anti-pollution vessel "Alexandria", chartered by the European Maritime Security Authority (EMSA).

The exercise was conducted according to an imaginary scenario involving an oil spill. The scenario involved a Cyprus-bound tanker suffering serious structural damage. A tank containing about 1,800 tons of oil is damaged, immediately beginning to release heavy fuel oil only 22 nautical miles away from Limassol port. [Read more](#)

### ROYAL CARIBBEAN CRUISES LTD. WINNER OF NAMEPA'S MARINE ENVIRONMENT PROTECTION AWARD

Clay Maitland, Founding Chairman of the North American Marine Environment Protection Association (NAMEPA), announced that the world's second largest cruise company, Royal Caribbean Cruises, Ltd., is the recipient of NAMEPA's 2011 Marine Environment Protection Award. The award will be presented at NAMEPA's Awards Dinner to be held at Chelsea Piers' The Lighthouse in New York following NAMEPA's seminar on Corporate Risk Management, which will focus on the need of the maritime industry to evaluate risk in a challenging operating environment. [Read more](#)

## People in the news

### NEW PRESIDENT FOR INTERNATIONAL SALVAGE UNION



Picture: Mr. Andreas A. Tsavlis

The 57th General Meeting of the International Salvage Union (ISU) was held in Cartagena, Colombia, 27-28 September 2011. The meeting confirmed Mr Andreas Tsavlis as the new President of the ISU.

Mr Tsavlis, who has been a member of the ISU Executive Committee since 2006, succeeds Mr Todd Busch, who will continue as a member of the ISU Executive Committee.

Mr Tsavlis is a Principal of TSAVLIRIS SALVAGE GROUP, whose origins go back to the 1920s.

At the same meeting, Captain Leendert Muller was elected as Vice President of the ISU. Mr Muller is the Chief Executive of Dutch salvage company, MULTRASHIP and

has been a member of the ISU Executive Committee since 2006. [Read more](#)

### NEW APPOINTMENTS AT UK MARITIME & COASTGUARD AGENCY

In the picture: Colin Mulvana

With effect from 10 October 2011 Colin Mulvana will take up the position of Deputy to the SOSREP.

In his previous position as Counter Pollution and Salvage Officer, Colin has in recent times been extremely busy with incidents, the National Exercise and the Deepwater Horizon review. The name of his successor in the CPS Branch has not yet been advised.

Former RN Commander, Stan Woznicki, has been appointed as the new Head of the Counter Pollution and Salvage Branch.



## Science and Technology

### SCIENTISTS IDENTIFY MICROBES RESPONSIBLE FOR CONSUMING NATURAL GAS IN DEEPWATER HORIZON SPILL

October 5 - In the results of a new study, scientists explain how they used DNA to identify microbes present in the Gulf of Mexico following the Deepwater Horizon oil spill--and the particular microbes responsible for consuming natural gas immediately after the spill.

Water temperature played a key role in the way bacteria reacted to the spill, the researchers found.

*Proceedings of the National Academy of Sciences (PNAS)* published the results in this week's journal.

David Valentine and Molly Redmond, geochemists at the University of California at Santa Barbara (UCSB) conducted the study. The National Science Foundation (NSF) and the Department of Energy supported it.

The Deepwater Horizon oil spill was unique, according to Valentine and Redmond, because it happened at such great depth and contained so much natural gas--predominantly methane, ethane and propane.

Those factors influenced the way bacteria responded to the spill.

In earlier studies, Valentine, Redmond and colleagues showed that ethane and propane were the major hydrocarbon compounds consumed in June 2010, two months after the April spill.

By September 2010, the researchers discovered that these gases and all the methane had been consumed.

In May and June of 2010, the scientists found that bacterial communities in the submerged plume were dominated by just a few types--*Oceanospirillales*, *Colwellia* and *Cycloclasticus*--and were very different from control samples without large concentrations of oil or gas.

The bacteria were also very different from the microbial communities in surface oil slicks collected at the same time.

"It's much warmer at the surface than in the deep water--around 80 degrees Fahrenheit versus 40 F, which is pretty close to the temperature in your refrigerator," said Redmond, the *PNAS* paper's lead author.

"There was very little natural gas in the surface samples, suggesting that both temperature and natural gas could be important in determining which bacteria bloomed after the spill," she said.

The bacteria she and Valentine saw in the deep-water samples in May and June were related to types of psychrophilic, or cold-loving bacteria.

"Most bacteria grow more slowly at cooler temperatures--that's why we keep our food in the refrigerator," said Redmond. "But psychrophilic bacteria actually grow faster at cold temperatures than they would at room temperature."

To provide additional evidence of the importance of temperature, the scientists added oil to water from the Gulf, and incubated it at 40 F and at room temperature (about 70 F). They looked at which bacteria grew at the different temperatures.

In the 40 F samples, *Colwellia* were most abundant, but were only found in low numbers in the room temperature samples, suggesting that the bacteria have an advantage in cold water.

"To figure out which bacteria were consuming methane, ethane, and propane, we used a technique called stable isotope probing, in which we incubated fresh seawater samples from the Gulf with isotopically labeled methane, ethane, or propane," Redmond said.

The bacteria that grew as they consumed the methane, ethane or propane converted the labeled gases into biomass, including their DNA. By sequencing the DNA, the scientists were able to identify the bacteria.

The bacteria that consumed the ethane and propane were the same *Colwellia* in the samples from May and June, when ethane and propane consumption rates were high. They were abundant when the researchers incubated oil at 40 F, but not at room temperature.

This suggests, say Valentine and Redmond, that the *Colwellia* grow well at low temperatures, and can consume ethane and propane.

"The ability of oil-eating bacteria to grow with natural gas as their 'foodstuff' is important," said Valentine, "because these bacteria may have reached high numbers by eating the more-abundant gas, then turned their attention to other components of the oil.

"We've uncovered some of the relationships between hydrocarbons released from Deepwater Horizon and the bacteria that responded," he said.

But questions remain about how the bacteria interacted with one another, and how this affected the fate of the oil.

"This work continues to remind us that the ocean, its microbes, and petroleum hydrocarbons share an ecological history that extends far into the geological past," said Don Rice, director of NSF's chemical oceanography program, which funded the research.

"Our ability to respond to marine oil spills is enormously advanced by this kind of basic research."

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In this issue of the ISCO Newsletter we are printing No. 46 in a series of articles contributed by Dr Douglas Cormack.

Dr Douglas Cormack is an Honorary Member of ISCO. As the former Chief Scientist at the British Government's Marine Pollution Control Unit and head of the UK's first government agency, the Warren Spring Laboratory, Douglas is a well known and highly respected figure in the spill response community. He is the Chairman and a founder member of the [International Spill Accreditation Association](#)

## KNOWLEDGE OF THE FATE OF RELEASED OIL / HNS (CHAPTER 46)

In article 45, we saw that:  $-dN/dt = K/N$  leads by mathematical analysis to  $T_{1/2} = 0.6931/K$  where  $T_{1/2}$  is the half-life of the dispersion process. Again, from previous articles, we saw that dispersion proceeds through droplet formation induced by the energy supplied by wave turbulence at the slick/seawater interface; that the need for dispersion energy increases with increase in viscosity from one oil to another, and again when water-in-oil emulsions are individually formed by this same turbulence; that for any energy level, the rate of dispersion depends on the number of droplets formed per unit time, the ratio of the number small enough to remain dispersed to the number large enough to re-coalesce with the slick; and that for a given energy level this ratio decreases as viscosity increases.

With respect to droplet size distributions, it has been shown by Liebovich that the probability of an oil droplet at a depth  $Z$  at time  $t = 0$  still being dispersed at time  $t$ , is  $p(t) = \frac{1}{2} \operatorname{erf}(U - Z) / 2Kt)^{1/2}$  where  $U$  is the terminal velocity at re-coalescence and  $K$  is the turbulence diffusivity which in turn is related to sea state. It was also noted earlier that the maximum diameter of droplets is equal to the thickness of the slick though of course some or all will be smaller depending on the prevailing level of turbulent energy. Thus, for slicks of water-in-oil emulsion greater than 0.5mm in thickness, droplets small enough to avoid re-coalescence occur with 0% frequency, while for thicknesses of 0.1 mm and less the frequency of occurrence of non-coalescing droplets increases towards 100%..

Thus, for trial releases of Ekofisk oil at Phase II spreading thicknesses of around 0.1mm, it appears that droplet sizes were distributed above and below the size limit for non-coalescence at the energy levels then prevailing, while at the Ekofisk Blow-out the droplet sizes under the post-Phase II sheens were probably small enough for 100% non-coalesce. Thus, an Ekofisk emulsion of 70% water content and ~ 1000cSt viscosity, appeared to produce droplets of sizes above the non-coalescence limit in the Phase II region and ever greater frequently below this limit in the Phase III region to produce the observed half-life of 10-12 hours overall, while those oils and emulsions with higher viscosities would be expected to exhibit longer half-lives/slower dispersion-rates and *vice versa* for lower viscosities. In any case, the Ekofisk slicks whether released for trial purposes or by the blow-out were observed to diminish to around 1% of their initial amount in about 7.5 half-lives of 10-12 hours duration.

Thus, while we cannot predict dispersion rate directly from viscosity by means of a mathematical equation or from a mathematical model involving viscosity, droplet size and turbulence energy, we can expect to estimate half-lives from observing the times required for slicks of known viscosity to disperse across the whole viscosity range, by grouping all known oils into viscosity-related half-life ranges as presented in previous articles, by interpolation within and between these ranges, and by narrowing and increasing the number of such groups as observational opportunity permits in all future incidents, as has already been done for heavy fuel oils on the basis of the *Katina Incident*. As to estimating half-life by observing the progress of natural dispersion, reference might be made to the following Tabulation in respect of the Ekofisk Blow-out before and after capping.

Hypothetical Half-Life Hours	Equilibrium Tonnage at Discharge Rate of 150 tonnes h <sup>-1</sup>	Tonnage Remaining 60 hours after capping
5	1080	0.28
10	2160	34
12	2600	80
20	4320	540
60	12960	6480

The equilibrium tonnage is the amount on the sea surface when the dispersion rate equals the discharge rate *i.e.* when  $0.6931T_{1/2} = N = 150$  (tonnes h) *i.e.* when  $N = 150T_{1/2}/0.6931$ . Thus, by estimating the equilibrium amount to have been around 2500 tonnes through measurement of the post-capping visible area of the slick and by estimating the amount remaining 60 hours after capping to be less than 100 tonnes, it was concluded that the half-life of Ekofisk oil was 10 - 12 hours as previous experimental releases had indicated. Again we see that such a slick cannot be expected to spread beyond the area it actually reached during the blow-out this being the equilibrium area of ~ 80 km x35 km; and that the equilibrium amount of ~ 2500 tonnes would reduce in 10 half-lives to about 2.5 tonnes.

1 *The Rational Trinity: Imagination, Belief and Knowledge*, D.Cormack, Bright Pen 2010 available at [www.authorsonline.co.uk](http://www.authorsonline.co.uk)  
 2 *Response to Oil and Chemical Marine Pollution*, D. Cormack, Applied Science Publishers, 1983.  
 3 *Response to Marine Oil Pollution - Review and Assessment*, Douglas Cormack, Kluwer Academic Publishers, 1999.



### X PRIZE ORGANISERS NOW POSTING VIDEOS OF TESTS ON ENTRIES OF FINALISTS

The videos can be viewed on youtube and the link is –

[http://www.youtube.com/watch?v=oEoDGzBcxol&feature=autoplay&list=SP396ED23B31C60B3A&f=list\\_related&playnext=1](http://www.youtube.com/watch?v=oEoDGzBcxol&feature=autoplay&list=SP396ED23B31C60B3A&f=list_related&playnext=1)

The various videos that can be viewed are displayed on the right hand side of the page.

Thanks to Stewart Ellis of Elastec / American Marine for providing this information.

## Events

### INTERSPILL 2012 – CALL FOR PAPERS

The 2012 Interspill Conference and Exhibition takes place at ExCel, London on 13-15 March, 2012 and is one of the trio of international conferences that take place in Australasia, Europe and North America in successive years.



The poster is for the Interspill 2012 Call for Papers. It features a vertical banner on the left that reads "Spill prevention, preparedness, response and restoration". The main content area is divided into several sections. At the top, it says "interspill LONDON 2012" with three icons above the text. Below this, it says "SPILL CONFERENCE & EXHIBITION" and "Interspill 2012 is being held alongside oceanology international 2012 13-15 MARCH 2012, LONDON, EXCEL". A red oval highlights the dates "13-15 March 2012" and location "ExCeL • London • UK", with the handwritten text "Save the date" below it. A large orange banner across the middle says "Call for Papers". Below this, the text reads: "The Organising Committee for Interspill 2012 is pleased to announce the Call for Papers for the Conference, Offshore Seminar, and Spill Industry Seminar." It then lists the submission details: "Authors are requested to submit a short abstract, up to 250 words, to the Committee by email at info@interspill.com. The closing date for submission of abstracts is Tuesday 15 November 2011. Authors will be notified of acceptance by 15 December 2011, and Full Papers should be received by 31 January 2012." The poster also lists the topics for the Conference and Offshore Seminar: "The Conference and Offshore Seminar will cover the following session topics, and authors are requested to submit abstracts related to these topics -" followed by a bulleted list: "• Legislation / Regulation", "• Claims / Compensation", "• Response Operations", "• Dispersants", "• Oil in Cold Climates", "• HNS", "• Regional Developments", "• Logistics / Waste Management", "• Technological Monitoring & Developments", "• Training Exercises", "• Social Media / Real Time Information", "• Offshore Issues", "• Wild Life Response". It then states: "The Spill Industry Seminar is led by the Eurospill Association, in tandem with the Conference, and offers opportunities to manufacturers, and service companies to make short presentations on the latest developments in the spill industry." At the bottom, it says: "Interspill 2012 is taking place between 13 and 15 March 2012, at ExCel, London. For further information see www.interspill2012.com or contact Roger Mabbott, Director, Interspill Ltd at info@interspill.com or on +448456259890. Release date - 3 October 2011". The footer contains logos for "Supported by" (IMO, ICAO, IATA, Cedre) and "Steering Committee" (EuroSpill, NACE, SRCH, UK Spill Association, IPIECA).

**Spill prevention, preparedness, response and restoration**

**interspill**  
LONDON 2012

SPILL CONFERENCE & EXHIBITION

Interspill 2012 is being held alongside  
oceanology  
international  
2012  
13-15 MARCH 2012, LONDON, EXCEL

**Call For Papers**

**13-15 March 2012**  
ExCeL • London • UK

*Save the date*

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Steering Committee

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## Events (continued)

### THE 14TH ANNUAL SALVAGE AND WRECK REMOVAL CONFERENCE AND SALVAGE LAW AND PRACTICE SEMINAR.

The organizers of this event have asked ISCO to pass on updated information.

For **Salvage and Wreck Removal Conference** highlights include:

- The conference has been held annually for 14 years; the event continues to be the largest international gathering of Salvage experts in London, attracting over 150 Maritime executives.
- Listen to industry experts including: Andreas Tsavlis, from Tsavlis Salvage, Richard Janssen from SMIT and Mauricio Garrido from T&T Bisso.
- The conference features a unique series of practical case studies such as MSC CHITRA and WEST ATLAS, which highlight recent, well-publicised Salvage operations.
- With hot topic roundtable discussion forums, the event provides an ideal opportunity to learn from your colleagues' experiences and develop new business strategies for your own company.
- Encounter new and unique elements, which have not previously been seen at the conference. Including an exclusive to Lloyd's list intelligence analysis of global casualty figures and new Salvage and Wreck Removal technology focus session.

For **Salvage Law and Practice Seminar** highlights include:

- The only training seminar tailored made for Salvage professionals. The class offers a comprehensive guide to Salvage Law, including an in-depth explanation of Salvage contract design and administration.
- The seminar is delivered by a panel of practising Salvage professionals and Lawyers from Law firms such as Clyde & Co, Thomas Cooper and Waltons & Morse. These mentors will provide first-hand practical and legal experience of Salvage incidents.
- Whilst day one focuses on the updates surrounding LOF, day two puts these revisions into practice. This whole day exercise will feature the main stages that are processed when making a claim. The mock arbitration hearing features an arbitrator from Quadrant Chambers and three other Counsels from Stone and Quadrant Chambers. The role play will provide unique understanding, which will naturally be translator into Salvage operations.

Both events will take place in London. The Salvage Law and Practice takes place over 5-6 December, 2011 and the Salvage and Wreck removal conference over 7-8 December, 2011.

[More information](#)

## Publications

### FROM ITOPF – NEW EDITION OF OCEAN ORBIT



ITOPF has just published a new edition of its newsletter Ocean Orbit. This year's issue features three incidents – the OLIVA, GODAFOSS and MSC CHITRA – that due to their location, environment or cargo were particularly challenging for our technical staff and the response effort as a whole. The newsletter also looks at the impact of ship groundings on coral reefs and the restoration techniques commonly used, highlighting ITOPF's role in damage and claims assessment, and reports on some R&D initiatives ITOPF is supporting to enhance "best practice" in spill response.

Copies of the newsletter are available free from ITOPF (contact [Terry Goodchild](#)) or can be downloaded in PDF format from the [Publications](#) page of our website.

If you would like to join the Ocean Orbit mailing list, please email [Terry Goodchild](#), indicating your preference for an electronic or printed version or both.

## Publications (continued)

### US EPA PUBLICATIONS

#### Technology Innovation News Survey

The August 16-31, 2011 *Technology Innovation News Survey* has been posted to the CLU-IN web site. The *Survey* contains market/commercialization information; reports on demonstrations, feasibility studies and research; and other news relevant to the hazardous waste community interested in technology development. The latest survey is available at: <http://www.clu-in.org/products/tins/>

#### TechDirect Issue of October 1

New technical, policy and guidance resources related to the assessment and remediation of contaminated soil, sediments and ground water. [Download](#)

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### TANKER ROLLOVER PREVENTION VIDEO

The [National Tank Truck Carriers](#) (NTTC) is making its cargo tank rollover prevention video free to anyone interested in techniques to help prevent tanker rollovers.

“National Tank Truck Carriers is pleased to offer free access to the cargo tank rollover prevention video that we developed with the [U.S. Dept. of Transportation](#) with Spanish subtitles added,” said NTTC Chairman Greg Hodgen, Groendyke Transport. “While it is a requirement that a tank truck driver be able to speak English, we believe that there is a real safety benefit to providing training in the person’s native language. Rollovers happen around the world and we hope that this video also will be used in Spanish speaking countries.”

The video focuses on the causes of tank truck rollovers and what actions drivers can take to prevent rollovers. It features tank truck equipment and comments from professional tank truck drivers.

The video can be viewed from the NTTC website at [www.tanktruck.org](http://www.tanktruck.org). Click on ‘news and links’ to access the video. A free copy of the video can also be reproduced.

[Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group, for passing on this information]

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## Training

### NIGERIA: OIL SPILL MANAGEMENT TRAINING COURSE

Abuja, 25-28 October 2011.

For more information contact - **Comfort Asokoro-Ogaji (Mrs.)** Mobile: +234 8034517767, +234 8086678433  
Suite B04, PEB 04 Plaza, Dalaba Street, off Michael Okpara Street, Wuse Zone 5, Abuja, Nigeria  
Email: [richfloodinternational@yahoo.com](mailto:richfloodinternational@yahoo.com), [competencytraining@gmail.com](mailto:competencytraining@gmail.com)

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## Company News

### BATTELLE WINS CONTRACTS WORTH NEARLY \$100 MILLION TO SUPPORT U.S. EPA

Battelle won five contracts worth nearly \$100 million with the United States Environmental Protection Agency (EPA) in September.

Battelle's Energy, Environment and Material Sciences Global Business (EEMS) will lead the way on performing the work. The five contracts will assist the EPA by providing Battelle research and technical services ranging from water infrastructure/resource improvement to assessing toxicological effects from biological contaminants to ensuring the confidence of data used to assess the nation's air quality. The large-scale prime task orders will build on Battelle's successful 30-year history in supporting the EPA.

[Read more](#)

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Legal disclaimer: Whilst ISCO takes every care to ensure that information published in this Newsletter is accurate unintentional mistakes can occur. If an error is brought to our attention, a correction will be printed in the next issue of this Newsletter. Products and services featured in the ISCO Newsletter and/or the ISCO website, including the International Directory of Spill Response Supplies and Services, have not been tested, approved or endorsed by ISCO. Any claims made by suppliers of products or services are solely those of the suppliers and ISCO does not accept any liability for their accuracy.

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