



ISCO NEWSLETTER

The Newsletter of the International Spill Response Community
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International news

ENERGY EXECUTIVES TUNE OUT THE CALL OF THE WILD ARCTIC



Picture: Waves crash over the conical drilling unit Kulluk where it sat aground on the southeast side of Sitkalidak Island, Alaska, Jan. 1, 2013. U.S. Coast Guard photo by Petty Officer 3rd Class Jonathan Klingenberg

May 31 - The high Arctic, once the irresistible frontier for oil and gas exploration, is quickly losing its appeal as energy firms grow fearful of the financial and public relations risk of working in the pristine icy wilderness.

The Arctic may hold 13 percent of the world's undiscovered oil and 30 percent of its gas, but a series of blunders and failures there are making executives fight shy of such a sensitive area and turn their attention back to more conventional resources and the shale revolution.

International news (continued)

The turning point likely came on New Year's eve, when Royal Dutch Shell's drillship ran aground in rough waters off Alaska, setting off a public relations storm that inflicted much pain on the firm, made more acute by how little it had to show for the \$4.5 billion it has spent on the Arctic since 2005.

Shell promptly cancelled plans to drill off Alaska in 2013, and signals about its going back in 2014 are fading.

"The whole Arctic, especially the American Arctic, was set back because of Shell's issue," Choo Chiau Beng, the Chief Executive of Keppel, the world's biggest rig maker, told Reuters in the world's northernmost settlement. *gCaptain* [Read more](#)

THE COLD RUSH: AN EFFORT TO PROTECT THE ARCTIC FROM OIL SPILLS DURING RAPID DEVELOPMENT

May 30 - On May 15th, the U.S. was given an assignment to create a contingency plan for oil and gas spills in the Arctic. Seven other Arctic Council nations – Canada, Denmark, Finland, Iceland, Norway, Russia and Sweden – have to do the same. The need for such a strategy first surfaced due to the Macondo blowout in 2010. The Arctic drilling rig that ran aground in an Alaskan harbor in the early days of 2013 drove it home.

The Arctic Council, an intergovernmental forum, adopted the "Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic," at its biennial meeting this May in Sweden. The eight signatories recognized that should a spill occur and surpass one country's ability to respond, it is wise to have a plan in place detailing how to coordinate and cooperate with each other. This is especially vital since large swaths of the Arctic are deemed international waters.

"The Agreement promotes notification and communications in the event of spills and, if needed, will allow for rapid sharing of resources and equipment across borders. The plan also addresses how spills in the international waters of the Arctic will be handled," said Doug Helton, Operations Coordinator for the Emergency Response Division of the NOAA Office of Response and Restoration, in an email. NOAA was part of the U.S. Arctic Council delegation. *Scientific American* [Read more](#)

REED LAUNCHES OIL SPILL PREVENTION AND RESPONSE SERIES

May 31 - Reed Exhibitions Energy and Marine group (RX Energy and Marine) is launching a series of oil spill prevention and response technology and service zones throughout its global portfolio in collaboration with the U.K. Spill Association (UKSpill) and the European Spill Association (Eurospill).

As commercial operations in the world's oceans continue to develop, the requirement to be able to operate with the least possible environmental impact is an even greater focus than it has ever been for all industries.

Also, as activities move into new and harsher territories, meeting this requirement means the development of new strategies and technologies to cope with different and challenging environments.

The zones will run under a new brand, Spillex, which was developed in consultation with UKSpill and will provide a consistent and prominent identity to focus on the prevention of, and response to, environmental incidents in the marine environment. *MarineLink.com* [Read more](#)

Incident reports

SOUTH AFRICA: FRESH OIL SPILL FROM TURKISH TANKER OFF CAPE TOWN

May 29 - Fresh oil has begun pouring from a Turkish tanker that ran aground four years ago off the coast of Cape Town, South Africa's premier tourist destination, an official said on Wednesday.

An attempted controlled explosion damaged the vessel during clean-up operations, city disaster management spokesman Wilfred Solomons-Johannes said.

One of the tanks ruptured in the explosion "releasing oil that was onboard the wreck," Solomons-Johannes told the national Sapa news agency.

Conservation officials were monitoring the spill, which hadn't put the environment in immediate danger, he added.

This was the second spill from the wreck in a year. In September, it leaked oil onto the city's beaches after breaking up into three pieces. *TerraDaily* [Read more](#)

Incident reports (continued)

USA: EXXON: ARKANSAS OIL CLEANUP COMING ALONG

May 31 - There's been major progress in cleaning up a marsh area soiled by a March 29 oil spill from the Pegasus pipeline in Arkansas, officials said.

About 5,000 barrels of a diluted form of heavy Canadian crude oil spilled from a 22-foot rupture in the Pegasus pipeline in Mayflower, Ark. Operator [Exxon Mobile](#) said it had removed nearly all of the free-standing oil and had shifted efforts to long-term remediation.

Faulkner County Judge Allen Dodson, reviewing the efforts with state and federal environmental officials, said the cleanup effort had progressed well. [UPI.com](#) [Read more](#)

Other news

“YOU COULDN'T MAKE IT UP”

May 28 - Marine PR man and Novelist John Guy has set up a blog for his first work called the Reluctant Pirate. Here is a current extract :-

I'm busy writing my next book, *The Golden Tide*, which is a thriller set in Sicily amidst the greed and corruption which follows a major oil spill on the coast. Whenever there is a big oil spill which TV cameras can get to the news goes mad and everyone pities the fishermen. But in practice once the cameras go they get rich three times over, as do all the other local businesses which get their snouts into the compensation trough. Today's news makes me think I should change the setting and move the book to Louisiana.

Check out the #BBC News report on the ambulance chasing lawyers pitching false claims to a mad compensation scheme which has #BP on the rack for the #Deepwater Horizon spill. An art gallery in New Orleans files a claim and gets paid. An advertising agency does the same, and so it goes on. The Louisiana roads are lined with billboards advertising lawyers who will file a claim on BP for you. And as there is no limit to the claims no-one needs feel guilty they are taking a share of a pot which others who have really suffered damage might deserve more.

It is not just greed. It is not just dishonest. It is disrespectful to the men killed in the incident, to the people who really did suffer harm from the oil and the teams who worked hard to contain and clean it up. Don't think this could only happen in America though. My research has thrown up a pattern of dodgy claims and get-rich-quick schemes wherever there has been a big spill. My problem is that some of the cases would never be believed in a novel. A New Orleans art gallery gets oil spill compensation? You couldn't make it up. With acknowledgement to *The Marine Advocate online* Read more at: <http://www.thereluctantpirate.com/blog/news/> and <http://bbc.in/10uNOIy>

CANADA: B.C. SAYS 'NO' TO NORTHERN GATEWAY ON CONCERNS OVER OIL SPILLS

May 31 - British Columbia has formally rejected Enbridge Inc.'s proposed Northern Gateway pipeline to the West Coast from Alberta, saying the company has failed to adequately explain how to deal with a major heavy oil spill on land or in coastal waters.

In its final written response to the federal panel that has been conducting hearings for the past 17 months, the B.C. government said it cannot support the \$6-billion project as currently presented because its concerns over potential environmental damage, and Enbridge's ability to respond to disasters, have not been addressed. However, the B.C. government says it is possible – though unlikely – that Enbridge can win it over. [The Globe and Mail](#) [Read more](#)

CANADA: OIL SPILL EXPERTS SAY MAJOR LESSONS LEARNED FROM EXXON VALDEZ



Picture: Cleanup workers scrub rocks on the oil-covered beach of Naked Island in Prince William Sound April 2, 1989. Oil spill experts say lessons learned from the disaster have helped make it unlikely a major spill would cause the kind of environmental damage that took place in 1989. Photograph by: CHRIS WILKINS , AFP/Getty Images

May 29 - Technology, experience and emergency planning make it unlikely that a major marine oil spill will cause environmental damage on the scale of the disastrous Exxon Valdez spill in 1989, community groups organized by Enbridge heard on Wednesday.

The spill of 257,000 barrels of oil into Prince William Sound has been described as an industrial accident that degenerated into a technological and organizational

Other news (continued)

disaster.

Three expert observers — all of whom were on-site for extended periods following the Alaska spill confirmed that description in a presentation at the annual general meeting for Enbridge's community advisory boards. *The Vancouver Sun* [Read more](#)

USA: INTERIOR MOVES AHEAD ON OFFSHORE DRILLING SAFETY INSTITUTE

May 29 - The Interior Department is taking steps toward implementing its years-long plan to create an "Ocean Energy Safety Institute," which officials say will provide an independent forum for collaboration and research to improve offshore drilling safety.

It's one of several initiatives since the 2010 BP oil spill that lead to the overhaul of the department's long-troubled offshore branch and tougher regulations.

Interior's Bureau of Safety and Environmental Enforcement (BSEE) on Wednesday published a [solicitation for applications](#) to manage the proposed institute, which Interior has been planning since 2010.

"The Institute will help federal regulators keep pace with new processes employed by the industry as they move into deeper water and deeper geologic plays that require technological innovation to bring projects into production," BSEE Director James Watson said. *The Hill* [Read more](#)

GHANA: GOVERNMENT COMMITTED TO IMPLEMENTATION OF REMEDIATION OF CONTAMINATED SITES -DR HELOO

May 29 - Dr Bernice Adiku Heloo, Deputy Minister for Environment, Science, Technology and Innovation, said government would continue to support the implementation of remediation of contaminated sites to address pollution and contaminations.

Dr Heloo said the country was a party to the Stockholm Convention of Article 6 Section 1 (e), which states that "parties shall endeavour to develop appropriate strategies for identifying sites contaminated by chemicals; if remediation of those sites is undertaken, it shall be performed in an environmentally sound manner".

She said this in Accra yesterday at a national meeting on contaminated sites assessment aimed at offering a unique opportunity to address contemporary pollution and contamination challenges facing the country. *Government of Ghana* [Read more](#)

INDIA: NATIONAL OIL SPILL DISASTER CONTINGENCY PLAN MEETING HELD AT DEHRADUN

May 31 - The eighteenth National Oil Spill Disaster Contingency Plan (NOSDCP) and preparedness meeting was held here on Friday. The Director General Indian Coast Guard and Chairman NOSDCP, Vice Admiral Anurag G Thapliyal, chaired the meeting that was attended by a total of 70 delegates from various ministries, central and state governments, ports and oil companies.

Reviewing the past incidents, the Chairman noted that there has been no major oil spill since the last NOSDCP meeting. He appreciated the efforts put in by various resource agencies and stakeholders for cleanup of oiled mangroves at Sikka and Sarmat in the Gulf of Katchchh, capping of gas leak from ONGC well off Kakinada, and response to the fire onboard M.V. Amsterdam Bridge off Mumbai harbour. *News Track India* [Read more](#)

USA: TEMPLE INLAND ORDERED TO PAY \$3.3 MILLION FINE FOR PEARL RIVER SPILL IN 2011

May 30 - Temple Inland, a subsidiary of International Paper, was ordered by a federal judge Wednesday to pay \$3.3 million and serve two years of probation for polluting the Pearl River in 2011 with illegal discharges from its Bogalusa paper manufacturing plant, killing more than 500,000 fish, federal prosecutors said. *The Times Picayune* [Read more](#)

NEW ZEALAND : FISHING COMPANY FINED FOR THE LARGEST OIL SPILL IN NAPIER IN RECENT MEMORY

The fishing company responsible for the largest oil spill in Napier in recent memory has been fined \$11,250 on top of the \$31,500 cleanup costs that it has already paid. The Mutiara II fishing boat was berthed in the Napier inner harbour after refuelling on September 7 last year when members of the public noticed a strong smell of fuel and reported it to the Hawke's Bay Regional Council. Council staff arrived about 6pm to find the crew trying to capture diesel coming out of the boat. *Hawkes Bay Sun* [Read more](#)

MR JOHN DENHOLM TAKES OVER BIMCO PRESIDENCY



The new president of BIMCO Mr John Denholm has identified environmental pressures facing the shipping industry as some of its most significant current challenges as he embarks upon his two year term. Speaking in Paris, as he took over the presidency of the shipping organisation from Mr Yudhishtir Khatau, Mr Denholm said "environment", with the many diverse challenges it raises, will be his theme for his period in office, with emissions and ballast water issues high on his agenda for action.

The third BIMCO President from the Glasgow family shipping company, Mr Denholm said that the challenges currently being faced by the industry are "more difficult and more complex" than those of the past. While an oversupply of tonnage might be nothing new, the consequences of this, he said, were overshadowed by owners buying energy-efficient designs which will undoubtedly delay the return to a more balanced market. *The Maritime Executive* [Read more](#)

ISCO News

SHOULD READERSHIP OF THE ISCO NEWSLETTER BE RESTRICTED TO FEE-PAYING MEMBERS ?

As announced in last week's ISCO News, the Executive Committee is considering how to increase funds needed for running the organisation and moving forward with its work programme. With the cost of membership remaining very low (for example, individual membership is still only £65/year), it has been proposed that readers of the ISCO Newsletter who are not members should be asked to give their support by becoming members if they want to continue to receive the free newsletter.

The Executive Committee has asked members of the ISCO Council (National Representatives) for comments on the proposal and several responses have already been received -

- **Brazil – Mr John Cantlie**

"You have my full support on this matter and I totally agree what you are saying, I'm sure the membership numbers will increase".

- **Canada – Dr Merv Fingas**

"An excellent idea - there are so many people getting the newsletter now and it is the only good one out there"

- **India – Capt. D. C. Sekhar**

"I read about the issue of raising enough funds to meet the costs. I empathize with the problem but do not have a definitive view on the solution.

I would suggest keep the newsletter free of cost, in the interest of reaching out to more people and grow. If you charge, many may drop out quietly and such people may speak up now.

Perhaps this reduced circulation may be offset by some good collections, but I am sceptical about that outcome.

I am fine with whatever you decide finally.

To meet revenue needs you could consider offering banner advertisement space in the newsletter to response industry".

- **China (Hong Kong) – Captain Davy Lau**

"Yes, I support your proposal to ask non-member reader for a fee. And I have a few potential readers from my contacts in Hong Kong areas. Once the plan is confirmed, I will approach them on behalf of ISCO, please let me know in due course".

- **Australia – Mr John A. Wardrop**

"Just a quick note to say that yes, I support restriction of the Newsletter to paying members of ISCO.

It's progressed way beyond the 1-2 pages that it was when it first came out and must be a lot of work to put out".

Responses from other members of ISCO Council are awaited. The ISCO Council is composed of the National Representatives of ISCO members in many of the 45 countries where ISCO has members. Members of Council are consulted and give their advice to the Executive Committee on important policy issues. You can find the countries currently represented and the names of Council Members on the last page of this Newsletter.

Members in some countries have not yet elected their own representatives on the ISCO Council and it is therefore open for readers to express their own views by writing to the Secretary – john.mcmurtrie@spillcontrol.org



In this issue of the ISCO Newsletter we are printing No. 129 in a series of articles contributed by Dr Douglas Cormack.

Dr Douglas Cormack is an Honorary Fellow 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](#)

CHAPTER 129: KNOWLEDGE AND COUNTER-BELIEF

The contingency plan referred to in article 128 will be based on knowledge of the fate and effects of oils and so-called hazardous and noxious substances (HNS) as controlled by the interaction of their physicochemical properties with atmosphere, sea and shorelines; the means by which such releases may be curtailed; the effectiveness of release-response techniques and equipment as assisted by natural evaporation, dispersion, solution and dilution in harmony with biodegradation processes of the ecosystem; and the means by which recovered materials may be recycled or processed for recycling/disposal should viscosity so necessitate, all such knowledge having been acquired by laboratory, sea and shoreline experimentation with oil/HNS released for R&D purposes or by incidents.

However, such knowledge-based contingency planning for restoration of the marine environment to its pre-incident state as quickly and as cost-effectively as possible, has thus far been thwarted by belief that organism-contact with oil/HNS causes species-extinction/ecological-disaster; that dispersants increase such contact by increasing natural dispersion rates; that dispersants should thus be prohibited or limited to arbitrary deepwater distances from shore, despite their prevention/reduction of the physical coating of shorelines and organisms; and that oil/HNS and dispersants are toxic, despite their biodegradation to carbon dioxide and water being but a small component of the entire biomass degradation which is interrupted only by the oxygen depletion which forms fossil fuels.

Thus, to prevent knowledge-based planning being thwarted by belief-based objections this time round, I have definitively differentiated belief from knowledge by the reality-evaluation which transforms the former to the latter as in craftsmanship, science and technology.

Again I have definitively differentiated environmental knowledge from environmentalist belief by noting the presence or absence of reality-evaluation. Thus my new plan accepts the environmental knowledge which already refutes some environmentalist beliefs; and suspends/dismisses all remaining beliefs as hypotheses pending their reality-validation to positive knowledge by their believers

As to those believers who would object to this suspension/dismissal, I would pose the following questions. Why should we continue to expect species-extinction/ecological-disaster when neither has arisen in the 45 years since the *Torrey Canyon Incident*? As to physical coating by oil/HNS, why should we believe in such extinction/disaster while the numbers of individuals thus killed per species have yet to be compared with the annual death/birth rates which maintain species populations at current levels? As to exposure-concentrations to oil/HNS, why should we believe in such extinction/disaster while the thickness of floating layers limits them to producing no more than 100ppm were they to be instantaneously dispersed/dissolved into the top metre of the sea, while the actual concentrations in the top metre are of the order of 10ppm oil and 0.5ppm of dispersant at the operational oil: dispersant application ratio of 20: 1, while these diminish to zero by depth-dilution and biodegradation, and while the concentrations needed to measure LC₅₀ values are 2-3 orders of magnitude higher than those only transiently present in the top metre? Again, why should we expect such extinction/disaster onshore while re-colonisation of shorelines by planktonic life-stages is un-ending?

Yet again, why should we believe in anthropogenic global warming while photosynthesis and biodegradation continuously recycle carbon dioxide through the atmosphere and the total sea and land biomass, while the Urey reaction-product and its volcanic decomposition recycle carbon dioxide through the atmosphere and carbonate rock, and while we combust only part of a fossilisation but for which its carbon dioxide equivalent would already be recycling through the atmosphere biologically and geologically?

Thus, my new contingency plan accepts knowledge, rejects beliefs already refuted by knowledge, and expects remaining beliefs to reality-evaluated to positive or negative knowledge or to be suspended pending such reality-evaluation, at which point the plan can be corrected accordingly.

1 *The Rational Trinity: Imagination, Belief and Knowledge*, D.Cormack, Bright Pen 2010 available at 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.

IN SITU BURNING: CHAPTER 21



A short series of articles on In Situ Burning contributed by Dr Merv Fingas of Spill Science, Edmonton, Alberta, Canada T6W 1J6 fingasmerv@shaw.ca

Merv Fingas MSc PhD worked for more than 35 years in the field of oil spill technology at Environment Canada's Environmental Technology Center in Ottawa, Ontario. As head of the Emergencies Science Division at the Centre, he conducted and managed research and development projects. He is currently working independently in Alberta. Dr Fingas is the Member of ISCO Council for Canada.

Summary of the Serial

This is the 21st of a series of articles on in-situ burning of oil spills. This series will cover in-situ burning step-by-step and will present the latest in knowledge on the topic.

21. Ignition devices I

A variety of ignition devices or methods, both commercial and non-commercial, have been used to ignite oil slicks, although the methods of igniting oil on water have not been well documented.^{1,64} Many of the methods used were modifications of ignition devices used for other purposes.

In general, an ignition device must meet two basic criteria in order to be effective. It must be safe to use and it must apply sufficient heat to produce enough oil vapors to ignite the oil. The main factor is that the lighter, i.e., more volatile or less weathered the oil, the more easily it will ignite. For heavy oils, more heating time is required to produce enough ignitable vapors. For heavy oils, a primer, preferably diesel fuel or kerosene is used to soak in the oil for a few seconds before applying an igniter. For many oils the igniter must also transmit the heat to a low spot in the oil. Much of the heat will rise, and thus will not necessarily ignite oils without a significant vapor emission.

Commonly-available devices, such as propane and butane torches, have been used in the past to ignite oil slicks. They are more effective on thick slicks, however, as torches tend to blow the oil away from the flame on thin slicks, thus hampering ignition. Weed burners or torches have also been suggested as an ignition device for in-situ burning.

In the late 1970s, research began into the development of aerial ignition devices for in-situ burning. The various devices or methods available for igniting oil slicks and the operational procedures for their use are summarized below.

Hand-Held ignition devices

Simple ignition methods such as oil-soaked paper, rags, or sorbent have been used to ignite oil at actual and test spills.⁶⁴ For example, gelled fuel in a plastic bag was used to ignite some of the oil from the *Exxon Valdez* spill.¹ The bag was ignited, thrown towards the slick from a boat, and floated into the slick. It should be noted that diesel oil is preferable to gasoline for soaking materials or as a base for the gelled fuels in hand-held igniters because diesel burns slower, making it safer and supplying more pre-heat to the slick.

As noted earlier, ignition of heavier oils is best carried out using a primer such as diesel fuel and kerosene, and a small wick such as a piece of cardboard or sorbent.¹ This enables a start similar to lighting a candle. The flames will then spread to the unprimed oil nearby. In large scale heavy oil ignition might be accomplished by applying a bit of primer and then using the helitorch. Use of a gelled fuel igniter was found inadequate to directly ignite heavy fuels without the use of a primer.¹

A variety of hand-held igniters have been devised for igniting oil slicks.^{1,64} These are meant to be thrown into a slick from a vessel or helicopter. These devices often have delayed ignition switches to allow enough time to throw the igniter and, if required, allow it to float into the slick. These igniters use solid propellants, gelled fuel, gelled kerosene cubes, reactive chemical compositions, or a combination of these, and burn for 30 seconds to 10 minutes at temperatures from 1,000 to 2,500°C.⁶⁴

Some igniting devices use reactive metals and therefore do not have to be lit before being deployed. The Kontax igniter is an example of such a self-igniting device which was tested and marketed in the 1970s.¹ This device consisted of a metal cylinder filled with calcium carbide with a metal bar coated with sodium metal running through the middle. When the device was thrown into the spill, the sodium metal reacted with the water to produce heat and hydrogen. The calcium carbide reacted with the water to produce acetylene. The hydrogen ignited and in turn ignited the acetylene. The flame from the burning acetylene was sustained long enough to heat the oil and produce vapors that were subsequently ignited. The main concern with this type of device is safety. The chemicals must be stored in a very dry place as accidental exposure to water would cause them to ignite.

In the late 1970s, during offshore oil exploration activities in the Beaufort Sea, researchers began investigating the use of aerial ignition devices for in-situ burning of oil spills. This work led to the development of two Canadian igniters - the DREV Igniter and the Dome Igniter. The DREV igniter was initially designed in the early 1980s by the Canadian Defence Research Establishment

Special feature – In situ burning (continued)

in Valcartier, Quebec (DREV) in conjunction with Environment Canada.¹ Several configurations of the igniter were built, some intended for deployment on pools of shallow water on ice. It was manufactured by Astra Pyrotechnics, Ltd. (formerly ABA Chemical Ltd.) of Guelph, Ontario, but is no longer in production. The advantage of this type of igniter is that it was built by a licensed pyrotechnic company using approved components and was licensed to be transported by truck or air freight. The DREV igniter was an air-deployable igniter with a pyrotechnic device sandwiched between two square flotation pads. Before tossing the device from the aircraft into the slick, the operator pulls the firing switch which strikes a primer cap. The system had a 4-second delay mechanism that allows time for the device to be thrown and to settle into the slick. After the delay, an initial fast-burning ignition composition is ignited that in turn ignites a rocket motor propellant consisting mainly of 40 to 70% ammonium perchlorate, 10 to 30% magnesium or aluminum metal, and 14 to 22% binder. This produces a ring of fire with temperatures close to 2,300°C that burns for 2 minutes - long enough for the surrounding oil to vaporize and ignite.

The Dome igniter was developed by Dome Petroleum Ltd. in conjunction with Energetex Engineering.¹ This igniter was intended to be manufactured on site. A wire-mesh fuel basket, which contained a solid propellant and gelled kerosene, was surrounded by two metal floats. An electric ignition system activated a fuse wire allowing about a 45-second delay. The fuse then ignited a thermal igniter wire, which ignited the solid propellant, and finally ignited the gelled kerosene. The gelled kerosene burns at temperatures of 1,200 to 1,300°C for about 10 minutes allowing the oil to vaporize and burn.

Another technique for igniting in-situ oil fires is the use of lasers. In the 1980s, various laser techniques were tested for igniting a variety of types of oil at different temperatures.¹ The most successful technique in laboratory tests was to use a continuous-wave CO₂ laser to heat a localized area of the oil slick. The laser heated the oil to a temperature above its fire point. The heating time varied from a few seconds to more than 30 seconds depending on the type of oil, degree of weathering, and the oil temperature. The oil vapors were then ignited by a spark produced just above the oil surface by a focused high-power pulse beam from a second laser. A laser-focusing telescope with focusing mirrors was used to aim this second laser. Despite the success of this research, this device was not made operational due to lack of funding.

A hand-held igniter was used during in-situ burning tests in 1996 off the shores of Great Britain.¹ This igniter consists of a 1-L Nalgene bottle filled with gelled gasoline or diesel fuel. The gel was made by mixing 1 L of gasoline with 0.01 kg of SureFire fuel gelling agent. This bottle and a standard 15-cm marine hand-held distress flare are secured side-by-side within two polystyrene foam rings. The flare is lit and thrown into the slick, where it burns for approximately 60 seconds before melting the plastic bottle and lighting the gelled gasoline which in turn lights the oil.

A similar device was used to ignite the burns at the Deepwater Horizon spill. Gelled diesel fuel was used in this set of burns. Such a device, which is relatively easy to make and to deploy, is shown in Figure 22.



Figure 22 Operator activating an ignition device during the Deepwater Horizon spill. The device consisted of a bottle of gelled diesel fuel and a marine flare. The marine flare melts the bottle and lights the diesel fuel which acts both as primer and burn initiator.

References

- 1 Fingas, M., "In-situ Burning", Chapter 23, in *Oil Spill Science and Technology*, M. Fingas, Editor, Gulf Publishing Company, NY, NY, pp. 737-903, 2011
- 64 ASTM F 1990-07, *ASTM Standard Guide for In-Situ Burning of Oil Spills - Ignition Devices*, ASTM, 200

To be continued

STUDY: DISPERSANTS CAN MOVE HYDROCARBONS FASTER AND DEEPER INTO GULF SAND

Photo: Markus Huettel holds a sediment core sample from Pensacola Beach, Florida. Researchers used sands from this area for their study

Scientists studying the fate of oil from the *Deepwater Horizon* incident published their findings in the November 2012 edition of *Public Library of Science (PLoS ONE)*: Dispersants as used in response to the MC252-spill lead to higher mobility of polycyclic aromatic hydrocarbons in oil-contaminated Gulf of Mexico sand.

Researchers concluded that the addition of dispersants can increase the movement of polycyclic aromatic hydrocarbons (PAHs) in saturated (wet) permeable sediments of up to two orders of magnitude.

Researchers collected samples of water, sediment, and sand from Santa Rosa Island, Florida. They conducted laboratory experiments using sand-filled columns of various lengths ranging from 10 to 50 cm, and they conducted *in-situ* chamber experiments in the Gulf to link laboratory results to the natural environment. The column experiments showed that PAHs can move from the water column into sands, and that the addition of dispersants to the water percolating the sand determines the penetration depth of the PAHs. The *in-situ* chamber tests confirmed laboratory findings for natural settings. From the results of these two experiments, researchers concluded that the presence of dispersants allow oil components to permeate faster and deeper into sands. *Gulf of Mexico Research Initiative* [Read more](#) [Paper published in Public Library of Science](#)



RESEARCHER STUDIES OIL SPILL EFFECTS ON OYSTERS

While it has been three years since the Deepwater Horizon oil spill, scientists are still researching to determine its impact on the plants and animals that inhabit the ecosystems of the Gulf of Mexico.

Jerome La Peyre, a scientist who specializes in oyster diseases in the LSU AgCenter School of Animal Sciences, is studying the effect of oil by evaluating biomarkers that are used to assess oyster health.

His research, part of a multi-national consortium studying the impact of the oil spill, is being funded by research money set aside by BP and administered independently through the Gulf of Mexico Research Initiative. La Peyre's three-year research project is receiving approximately \$183,000 in funding.

A variety of confounding variables complicate the evaluation of impacts of oil on oysters in our estuaries, La Peyre said.

"Fluctuating temperatures, changes in water salinity and diseases can have an effect on oyster populations," he said. "All of these make it difficult to unravel the effects of oil."

La Peyre's research has two components.

One examines the effects of the oil and evaluates biomarkers in caged oysters kept at oiled and non-oiled sites. These biomarkers include looking at the whole oyster performance down to its cells, proteins and genes.

The second component exposes oysters to oil-contaminated sediment under controlled laboratory conditions and measures the effect it has on the oysters. *TheNewsStar.com* [Read more](#) [Thanks to ISCO Member of Council for Canada, Dr Merv Fingas]

Publications

FOR YOUR INTEREST – LINKS FOR RECENT ISSUES OF PERIODICALS

[ASME EED EHS Newsletter](#)
[Bow Wave](#)
[Cedre Newsletter](#)
[The Essential Hazmat News](#)
[USA EPA Tech Direct](#)
[USA EPA Tech News & Trends](#)
[Technology Innovation News Survey](#)
[Intertanko Weekly News](#)
[CROIERG Enews](#)
[Soil & Groundwater Product Alert](#)
[Soil & Groundwater Ezine](#)
[Soil & Groundwater Newsletter](#)
[Soil & Groundwater Events](#)
[IMO Publishing News](#)
[Pollution Online Newsletter](#)
[EMSA Newsletter](#)

News and commentary on HSE issues from George Holliday
Sam Ignarski's Ezine on Marine & Transport Matters
News from Cedre in Brittany, France
Alliance of Hazardous Materials Professionals
Remediation of contaminated soil and groundwater
Contaminated site clean-up information
From US EPA - Contaminated site decontamination
International news for the oil tanker community
Canberra & Regions Oil Industry Emergency Response Group
From Environmental Expert
Articles, papers and reports
From Environmental Expert
Upcoming events compiled by Environmental Expert
New and forthcoming IMO publications
News for prevention & control professionals
News from the European Maritime Safety Agency

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Publications (continued)

[JOIFF "The Catalyst"](#)
[Int'l Environmental Technology](#)
[HELCOM Newsletter](#)

Int'l Organisation for Industrial Hazard Management
Environmental Monitoring, Testing and Analysis
Baltic Marine Environment Protection Commission

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EASY TO USE LAMINATED FIELD RE-USABLE JOB AIDS

David Cooper wrote the following in the Linked-in Oil Spill Professionals Group Website.

We are pleased to announce the upcoming release (scheduled for July 1, 2013) of our Oil Spill Job Aids; these easy to use laminated field re-usable Job Aids include booming, damming and vectoring. Each will dramatically increase the speed the deployment, improve safety and improve the effectiveness of oil spill countermeasures. Smart phone and tablet applications will be released later this year.

The Booming Job Aid is a comprehensive aid to appropriate boom deployment which includes Booming Worksheet, Boom Deployment Angle by Velocity Table, Minimum Total Boom & Rope Required Table (based on width & angle), Oil Spill Time & Distance Travel Table, Current Drag Force per One Foot Boom Profile Table, Mooring Line Load Worksheet, Danforth® Anchor Holding Strength / Polysteel® Rope Strength / Earth Anchor Strength Chart (combined) and Boom Angle Protractor.

The Damming Job Aid is a comprehensive aid to appropriate dam building as an oil spill countermeasure; it includes Underflow / Overflow / Throughflow Dam Worksheet, Sluice Gate Dam Worksheet, Sharp-Crested Weir Worksheet, Broad-Crested Weir Worksheet, Stream Channel Profile Worksheet, Feet per Second & Knots Water Velocity Table and Pipe Diameters for Damming Chart (Pipe Area and Equivalent Pipe Size Chart).

The Vectoring Job Aid is a comprehensive aid for determining the appropriate boom deployment angle in the presence of currents and wind which includes Current Vector Worksheet, Boom Deployment Angle by Velocity Table, Wind Vector Table, Compass Directions and Degree Equivalents w/ Compass Rose and Estimating Wind Speed and Visual Clues (from NOAA).

Also to be released is Improving Oil Spill Containment and Recovery – A Lessons Learned Study Guide which includes hundreds of actual photographs of ineffective spill tactics and countermeasures with explanations on how and why they were ineffective. Great for all responders, but especially Owners who don't deal with spills every day and wish to learn how to save time, money, environmental impact and reputation and better manage contractors, spill managers and other responders.

Our Spill Site Management Poster will also be released in July. This laminated management poster is designed to be used at all spill sites to post and track site specific parameters so managers and planners can effectively manage dynamic spill sites and keep up to date on changing site conditions.

ESCO's proven tactics, countermeasures and Job Aids bring valuable results and meaningful understanding to our clients. We remove the lack of understanding of even the most basic spill response techniques and tactics which over time has created a fertile breeding ground for many well-intentioned, but otherwise misguided "experts" in spill response. Outside observers have stated response technology isn't suitable for the challenges we face in the field, but the real issue is not with response technology (boom, skimmers, damming, etc.); it is the implementation of that technology. The very foundation of education and training is to provide an understanding of how to properly implement appropriate response strategies, tactics and countermeasures.

Our methods, tactics and countermeasures provide real and practical solutions to everyday response issues so responders work safer, more effectively and more efficiently while providing real value to owners and real protection to the environment.

Go to www.escoinfo.com to contact us, learn how we can help you improve your response capabilities and for updates on the specific release date of our Job Aids.

Events

OIL SPILL PREPAREDNESS, RESPONSE AND RECOVERY MENA 2013

16 - 19 June, 2013 - Beach Rotana - Abu Dhabi, Abu Dhabi, United Arab Emirates

The Oil Spill Preparedness, Response and Recovery MENA 2013 Conference will bring together all key industry players who will address common challenges with respect to political co-operations and legal aspects to prevent and respond to oil spills. They will also update themselves about new technologies by hearing case-studies from around the world and learn how they can apply these to minimise the adverse effect on the environment.

For more information on the conference agenda and speaker line-up, simply [download the event brochure](#), email enquiry@iqpc.ae or phone +971 4 364 2975.

To register your interest of attending the event, please [click here](#).

Events (continued)

OFFSHORE ASSET INTEGRITY MANAGEMENT CONFERENCE

25-28 June, 2013 at the Sheraton Towers, Singapore.

IBC's Offshore Asset Integrity Management (AIM) Conference is Asia's FIRST offshore asset integrity event covering quintessential design, technical and operational integrity challenges and solutions.

The conference offers an outstanding occasion for offshore industry players to explore strategies in advancing operational efficiency and safety, while targeting maximum investment return. [More info](#)

Company news

TWO RAW GROUP SPILL RESPONSE CENTRES GAIN ISAA ACCREDITED STATUS

Raw Group's spill response bases at Cellbridge, County Kildare, Ireland and at Belfast, Northern Ireland have just been awarded the highest level of accreditation for freshwater, groundwater and on-land oil spill response capability.

The awards were given by the International Spill Accreditation Association following successful completion of comprehensive assessments by the Accreditation Scheme's Assessor.

The Accreditation Scheme is applicable to Spill Response Organisations (SROs), defined as Spill Response Contractors in the private sector and other Spill Response Organisations including those operated by government agencies and industry.

In the private sector the purpose of the Accreditation Scheme is to raise standards of performance within the oil spill response industry and thus to give customers confidence that they will receive a high standard of professional and cost effective performance from those contractors who have gone to the trouble and expense of seeking and achieving accreditation.

For governments and industry operators of spill response organisations, the Accreditation Scheme also provides a means of verifying that their directly managed spill response operations are continuing to provide the required high standard of response capability.

NEW ALNMARITEC POLLUTION CONTROL BOATS WITH INNOVATIVE DESIGN



Picture: ALN 122/123 'Elastec III' Wave Skimmer Pollution Control Boats

The new class is an innovative design which was developed in conjunction with Elastec; it has a hydraulically operated garbage scoop at the bow for floating waste collection which can deposit up to two cubic metres into a removable skip on deck. In addition to trash recovery the boats have proprietary dynamic oil collection chambers matched with Elastec skimmers for oil recovery. The boats are fitted with 5m³ of recovered oil storage capacity together with a ballast system that ensures their trim remains optimal at all stages of the oil recovery. The propulsion package consists of two inboard 115 bhp diesel engines driving Hamilton 213 waterjets that give the boat exceptional manoeuvrability as well as a shallow draft which make her ideal for working in confined and awkward waters. She is very

robustly built to take the bumps and scrapes that will inevitably come with the work she is designed to carry out and she will make a very versatile addition to any harbour fleet. [More info on these and other Alnmaritec Pollution Control Boats](#)

The ISCO Newsletter is published weekly by the International Spill Control Organisation, a not-for-profit organisation established in 1984 and supported by members in 45 countries. ISCO is dedicated to raising worldwide preparedness and co-operation in response to oil and chemical spills, promoting technical development and professional competency, and to providing a focus for making the knowledge and experience of spill control professionals available to IMO, UNEP, EC and other organisations. ISCO is managed by an elected executive committee members of which are **Mr David Usher** (President, USA), **Mr John McMurtrie** (Secretary, UK), **Mr Marc Shaye** (USA), **Mr Dan Sheehan** (USA), **Rear Admiral M. L. Stacey**, CB (UK), **M. Jean Claude Sainlos** (France), **Mr Kerem Kemerli** (Turkey), **Mr Paul Pisani** (Malta), **Mr Simon Rickaby** (UK), **Mr Li Guobin** (China), and **Captain Bill Boyle** (UK). The Executive Committee is assisted by the non-executive ISCO Council composed of the following national representatives – **Mr John Wardrop** (Australia), **Mr Namig Gandilov** (Azerbaijan), **Mr John Cantlie** (Brazil), **Dr Merv Fingas** (Canada), **Captain Davy T. S. Lau** (China, Hong Kong), **Mr Li Guobin** (China, Mainland), **Mr Darko Domovic** (Croatia), **Eng. Ashraf Sabet** (Egypt), **Mr Torbjorn Hedrenius** (Estonia), **Mr Pauli Einarsson** (Faroe Islands), **Prof. Harilaous Psarafitis** (Greece), **Captain D. C. Sekhar** (India), **Mr Dan Arbel** (Israel), **Mr Sanjay Gandhi** (Kenya), **Mr Joe Braun** (Luxembourg), **Chief Kola Agboke** (Nigeria), **Mr Jan Allers** (Norway), **Capt. Chris Richards** (Singapore), **Mr Anton Moldan** (South Africa), **Dr Ali Saeed Al Ameri** (UAE), **Mr Kevin Miller** (UK), and **Dr Manik Sardessai** (USA). More info on Executive Committee and Council Members can be found on the ISCO website at www.spillcontrol.org

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