



## MARINE ENVIRONMENTAL NEWSLETTER

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# New Awareness on Port Security Issues

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*While a lot of attention has been focused on airport security since the terrorist attacks on September 11, 2001, the world's seaports are likely at an even greater risk of terrorist activity because of a lack of organized and consistent security.*

For decades, port security has been aimed towards drug interdiction and theft prevention, with less attention given to protecting against the movement of terrorists and the materials they utilize. While baggage and people moving through international airports are subject to intense scrutiny, only 2% of the 6 million cargo containers brought into U.S. ports each year from around the world are screened. More than 7,500 vessels from outside the U.S. make a total of 51,000 calls to the 361 seaports in the United States annually, and nearly one billion tons of petroleum products are brought into U.S. ports every year.

Unlike international airports, which are regulated by the Federal Aviation Administration, U.S. ports have no central authority and are usually managed locally by the private businesses that use them. While the maritime transport system works well to quickly move goods around the globe, it lacks most of the security controls seen at airports all over the world. Various bills have been introduced by the House of Representatives and Senate to fund increased security at U.S. ports, and the President has proposed creating a new Department of Homeland Security that would include the U.S. Coast Guard, one of the agencies primarily responsible for port security. The Coast Guard is currently conducting vulnerability assessments for all U.S. and some foreign ports to paint a coherent picture of what is needed to improve seaport security.

One central question asked when debating port security is how to increase the controls over maritime trade without slowing the international flow of goods and restricting the

movement of people. A common answer to this question is to seek technological solutions. Technologies that can be applied include: automatic identification systems that broadcast the position, identity and other information about a ship to port facilities and to other vessels; information management and intelligence sharing through computers and networks maintained by a central authority that would provide detailed information on a ship's cargo and crew to port authorities prior to arrival in port; and the use of more sophisticated scanning and detection equipment so that cargo can be checked and verified more easily.

*Continued on page 2*



## Port Security Issues continued...

Improving port security also includes increased preparedness in the form of contingency plans and response exercises for port employees and vessel crews. Recent legislation directs the Coast Guard to form Port Security Committees at each U.S. seaport and to conduct a port vulnerability assessment for each port. Contingency plans in the U.S. for oil and hazardous substance releases, response to terrorist acts, search and rescue operations, and marine fire response are commonly based on the Incident Command System (ICS). Model systems that can predict the movement of oil and hazardous substances in the water and the atmosphere can be coupled with contingency plans in an ICS framework to support vulnerability assessments as well as incident response. Environmental monitoring instruments and software applications can be linked to these crisis management systems to incorporate real-time data on currents, winds and other parameters vital to incident response. Present technology can provide some of the tools necessary to help ensure an efficient and safe maritime transport system without slowing international trade and travel.

Chris Galagan, ASA's project manager for ICS implementation, assisted the Coast Guard when they used ASA's OSC<sup>2</sup> (On-Scene Command and Control) following the September 11 attacks. "Although ASA is generally known for its modeling tools, it was actually the use of the ICS modules within our software that was most helpful in assisting responders with resource tracking and management."

Subsequent development at ASA has led to a fully integrated **Crisis Management System (CMS)** which incorporates predictive response models, ICS management, GIS, and cost tracking.

### CMSMAP (Crisis Management System)

- ▲ Simulation
- ▲ Oil Spills
- ▲ Chemical Spills
- ▲ Atmospheric Releases
- ▲ Nuclear Explosions
- ▲ Marine Accidents
- ▲ Hydrodynamic model integration
- ▲ Resource management
- ▲ Response strategies (oil booming, dispersant, skimming etc.)
- ▲ Evacuation
- ▲ Damage Reports
- ▲ GIS (and linkage to existing GIS databases)
- ▲ Real-time environmental data integration
- ▲ Remote communication (wireless)



# Personnel

**Eric Anderson** supported Eduardo and ASATM Brasil's work with the CENPES group at their Petrobras offices in Rio de Janeiro in April. The picture shows the course attendees outside their offices. The sessions were enjoyed by all. The level of examination of the underlying algorithms for the OILMAP advection and weathering routines exceeded any previous OILMAP training. Additionally, the level of skill of the hydrodynamic model inputs being used to support the OILMAP studies is very high. Attending the training were, from left to right, Marco Antonio Correa (ASATM), Marcelo Martinelli (CENPES), Eduardo Yassuda (ASATM), José Edson Pereira (ASATM), Angelo Sartori Neto (CENPES), Andrea Gallo Xavier (ASATM), José Antonio Lima (CENPES), and João Marcos (CENPES).



**Eduardo Yassuda** traveled to Valparaiso, Chile to deliver OILMAP to the DIRECTEMAR, a Division of the Chilean Navy that is responsible for the oil pollution response and regulation. Shown in the picture are: Jose Lopez, Eduardo, Cmd. Claudio Dagach (Head of the Oil Pollution Combat Dept.), Aldo Fedele, and Hector Catalan.



**Craig Swanson** and **Tatsu Isaji** attended a meeting on Cooperative Research on Resuspension due to Dredging at the Waterways Experiment Station in Vicksburg, MS on 15 April. The purpose of the meeting was to review the status of various U. S. Army Engineer Research and Development Center funded projects and coordinate future tasks. One primary focus of the discussion was planning to acquire model verification data sets.

**Craig Swanson** and **Colleen Dalton** traveled to Orlando, FL to attend Dredging '02 from 5-8 May. They exhibited ASA products and services and introduced SSFATE and SSDOSE, two software tools being developed jointly with the Engineer Research and Development Center of the U. S. Army Corps of Engineers to assess water quality and biological effects of dredging operations.

**Sasha Zigic** of Asia-Pacific ASA traveled from Australia through ASA's home office in Rhode Island and on to Atyrau, Kazakhstan during the week of 10 June to give OILMAP training to three AGIP Kazakhstan North Caspian Operating Company personnel. Atyrau is on the Ural River at the north end of the Caspian Sea. The trainees for the two day workshop were: Rick McCubbin, Head of Environmental Engineering, Greg Wabanski, Oil Spill Project Manager, and Mark Sheppard, Oil Spill Coordinator. We are now upgrading the model system to include new bathymetry generated by the client, remotely sensed locations of reed beds in the North Caspian, and updated wind-forced hydrodynamics. Sasha will be returning next month to complete the training.



**Eoin Howlett** provided training to Alyeska Pipeline Service Company and BP in Valdez, Alaska in April. The training highlighted the use of the Alyeska Tactical Oil Spill Model (ATOM) as a tool for oil spill response, GIS, and drill support.



**Craig Swanson** participated in the Thames River Water Quality Symposium in New London, CT on 30 April. This symposium was organized to review the history and present status of water quality in the river and discuss what remains to be done. His presentation, *Early Monitoring and Modeling Efforts in the Thames River*, highlighted studies in the river over the past 35 years, including those by ASA for the Connecticut Department of Environmental Protection and the U. S. Navy.

**Matt Ward** recently passed the Professional Engineering examination and is currently registered to practice in the state of Rhode Island.



**Eduardo Yassuda** and **José Edson Pereira** visited ASA with Angelo Sartori Neto of Petrobras. Angelo received training in CHEMMAP and SIMAP, ASA's chemical and oil spill impact models, and José Edson worked closely with Tatsu Isaji on linkages between the Princeton Ocean Model (POM) hydrodynamics being implemented for a large project in Brazil and ASA's OILMAP application.



**Matt Ward** delivered the Madaket Harbor – Long Pond hydrodynamic and flushing model to the Nantucket Marine Department. Due to high fecal coliform content within the Madaket Harbor – Long Pond system, the shellfisheries have experienced frequent conditional closures since 1998. The Madaket Harbor – Long Pond model, in conjunction with ASA's Water Quality Management and Analysis Package (WQMAP), will be used by the Town of Nantucket in developing water quality management plans to assist in the recovery of the local fisheries.



**Deborah French McCay** and **Jill Jennings** provided training on the SIMAP oil spill impact model to Petrobras in May. They enjoyed visiting Rio de Janeiro and the beautiful beaches of Ipanema.

**Sasha Zigic** traveled to Tokyo in mid-June to give a lecture on water quality modeling to Science & Technology environmental managers. The lecture series presented the theory and typical applications of ASA's WQMAP system within Japan's waters.

On 11-13 June, **Deborah French McCay** and **Eric Anderson** attended the 25th annual Arctic and Marine Oilspill Program (AMOP) Technical Seminar in Calgary, Alberta. Debbie presented the results of an oil spill modeling study to estimate bio-economic impacts of hypothetical oil spill scenarios in San Francisco Bay. Eric presented a paper on CMSMAP, the crisis management system now installed in Singapore for the Maritime and Port Authority of Singapore.

Applied Science Associates, Inc.  
70 Dean Knauss Drive  
Narragansett, RI 02882-1143  
Phone: +1 (401) 789-6224  
Fax: +1 (401) 789-1932  
Email: asa@appsci.com  
URL: <http://www.appsci.com>  
ADDRESS CORRECTION REQUESTED

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SAUNDERSTOWN, RI 02874

PERMIT NO. 15

ASATM Brazil  
São Paulo, Brazil  
+55 11 3444 3748

Asia-Pacific Applied Science Associates  
Gold Coast, Australia  
+6 17 5574 1112  
Perth, Australia  
+6 18 9382 1468

ASA Aquitaine  
Pyrenees Atlantiques, France  
+33 5 59 66 23 78

## ASA establishes a new office in Europe

ASA UK Limited has established a new office in France. Based near Biarritz in southwest France and operating beginning 18 July 2002, the office will trade under the name ASA Aquitaine. **Roddy Thomas** will be moving to France to set up and manage the office. Contact details are as follows:

ASA Aquitaine  
Maison Naba  
64190 Castetbon  
Pyrenees Atlantiques  
France  
Tel: (0033) 5 59 66 23 78  
Fax: (0033) 5 59 66 23 79  
e-mail: [RThomas@ASAAquitaine.com](mailto:RThomas@ASAAquitaine.com)

ASA homepage: Visit us at <http://www.appsci.com>

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## Conferences

**Deborah French McCay** and **Matt Ward** will be presenting papers at the 5th International Marine Environmental Modelling Seminar (IMEMS) on 2-4 September 2002 in Trondheim, Norway. IMEMS 2002 will focus on concepts and tools to support better environmental management. The meeting is a forum for presentation of analysis tools, concepts, exchange of ideas, and technology transfer, and will be of interest to environmental managers, researchers, and consultants.

**Asia-Pacific ASA** will be exhibiting their services and software at the 9<sup>th</sup> International Oil Spill Conference, SPILLCON 2002. SPILLCON 2002 will be held 16-19 September 2002, in Manly Sydney, Australia. SPILLCON 2002 is the Asia-Pacific region's premier oil spill conference, offering delegates the best advice and latest information concerning oil spill prevention and response technologies. A trade exhibition and on-water demonstration of the latest in oil spill response equipment will also be held during the conference.