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Letter from Sri Lanka; February 2005

Arthur C. Clarke on the tsunami's aftermath and the roles of science fiction and technology in predicting future disasters.

By Sir Arthur C. Clarke

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WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands



STATE EMERGENCY MANAGEMENT OFFICES
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California Office of Emergency Services
3650 Schriever Ave.
Mather, CA 95655
(916) 845-8510; Fax (916) 845-8910
<http://www.oes.ca.gov/>

Hawaii State Civil Defense, Dept. of Defense
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Honolulu, HI 96816-4495
(808) 733-4300; Fax (808) 733-4287
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Oregon Division of Emergency Management
PO Box 14370
Salem, OR 97309-50620
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<http://www.oregon.gov/OOHS/OEM/>

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Camp Murray, WA 98430-5122
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Review of the tsunami warning and forecast system and overview of the nation's tsunami preparedness

PIN: OSBX-U-)7-04-A

Major Unit: Division on Earth and Life Studies.

Sub Unit: Ocean Studies Board

RSO: Mengelt, Claudia

Project scope

The committee will review progress towards tsunami preparedness in response to "Tsunami Risk Reduction for the United States" (National Science and Technology Council, December 2005) and the Tsunami Warning and Education Act (P.L. 109-424, December 2006). The NSTC report, spurred by the 2004 Indian Ocean tsunami, called for a broad range of federal, state, and local efforts to reduce future losses from tsunamis in the United States. P.L. 109-424 authorized improvements to tsunami warning systems, community-based hazard mitigation programs, public education, scientific research, and international coordination. The committee's task is divided into two parts as described below.

In the first part, the committee will produce an interim report to fulfill the congressional request in P.L. 109-424. The committee will review the National Oceanic and Atmospheric Administration (NOAA) Tsunami Program to assess progress and improvements made since 2005 to strengthen the existing U.S. tsunami detection, forecast, and warning system. The committee will examine the effectiveness of this system for both near- and far-source tsunamigenic events, including:

- Modeling of tsunami generation, propagation, and inundation
- Forecast accuracy, warning notification, and dissemination
- Reliability of observing and monitoring networks
- Strategies to ensure long-term operational reliability and sustainability
- Data quality control, management, archiving, and dissemination
- Data acquisition, processing, and assessment for warning generation
- Further modernization and geographic coverage needs
- Probabilistic assessments of tsunami hazard that include data on the sizes and recurrence intervals of submarine earthquakes and landslides near U.S. shores
- Level of coordination and integration with:
 - State and local level tsunami programs for facilitating mitigation
 - United States ocean and coastal observation systems, including the Integrated Ocean Observing System
 - Global observing systems, including the Global Earth Observing System of Systems
 - Priority areas of targeted research and development in the U.S. to improve performance and guide modernization efforts.

In its assessment, the committee will consider measures in the tsunami detection, forecast, and warning program implemented and planned by NOAA under the Tsunami Warning and Education Act (P.L. 109-424).

In the second part, the committee will provide a general overview of national preparedness, based on existing compilations and national assessments including topics such as the following:

- Adequacy of federal coordination and integration with state and local level tsunami programs for facilitating mitigation
- Approaches to risk assessment that account for such things as levels and trends in human populations, economic assets, and critical facilities within tsunami-inundation zones
- Availability of evacuation maps, routes, and structures
- Education and outreach for children, adults, and tourists

The committee will examine a few federal, state, and local mitigation and education activities, including the National Tsunami Hazard Mitigation Program and TsunamiReady Program, to include as specific examples in their overview of the nation's ability to reduce losses of life and property from future tsunamis.

In the final report, the committee will comment on how to optimize instrumental warning with these other elements of tsunami preparedness to serve the needs of end-users. The report will highlight opportunities to improve the nation's tsunami preparedness in the future and identify novel, promising approaches to risk assessment and instrumental warning systems.

The project is sponsored by the Cooperative Institute For Arctic Research, the National Oceanic and Atmospheric Administration, and the National Academies.

The start date for the project is November 1, 2007. An interim report will be published in spring of 2009 and a final report will be issued approximately 26 months after the project start.

Project duration: 26 months

Provide **FEEDBACK** on this project.

Contact the **Public Access Records Office** to make an inquiry or to schedule an appointment to view project materials available to the public.

From:

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48928>

[Thanks to Dr. Atwater for bringing this information to our attention] ♦

Project title: **Review of the tsunami warning and forecast system and overview of the nation's tsunami preparedness**

PIN: OSBX-U-07-04-A

Major Unit: [Division on Earth and Life Studies](#).

Sub Unit: [Ocean Studies Board](#)

RSO: Mengelt, Claudia

Committee membership, posted 5-22-2008

Dr. John A. Orcutt - (Chair)

Scripps Institution of Oceanography

John A. Orcutt (Chair) is a distinguished professor of geophysics at the University of California, San Diego. Dr. Orcutt earned a B.S. in mathematics and physics from the U.S. Naval Academy, an M.Sc. in physical chemistry as a Fulbright Scholar from the University of Liverpool, and a Ph.D. in geophysics from the University of California, San Diego, Scripps Institution of Oceanography. His research focuses on cyberinfrastructure and geophysical applications; geophysical studies of ocean seismo-acoustics including rough seafloor scattering, acoustic-elastic interactions, and the use of small arrays; structure of the elastic earth using seismology, synthetic seismograms, and geophysical inverse theory; internal structure of ocean spreading centers; genesis of the oceanic lithosphere; and nuclear test-ban verification methods. Dr. Orcutt is a past president of the American Geophysical Union and a Secretary of the Navy/Chief of Naval Operations Oceanography Chair. He is a member of the American Philosophical Society and served briefly as Interim President of the Ocean Drilling Program in 2000. Dr. Orcutt is a former member of the Ocean Studies Board and has served on numerous NRC committees, including the OSB's Committee on Exploration of the Seas.

Dr. Brian F. Atwater

U.S. Geological Survey

Brian Atwater is a geologist employed by the U.S. Geological Survey and based at the University of Washington. Dr. Atwater earned a Ph.D. in geology from the University of Delaware. Having used geology as a long-term advisory of earthquakes and tsunamis in the Cascadia region of western North America, he is now trying to make this strategy helpful to developing countries. He also seeks to mentor scientists in assessing tsunami hazards on the centennial and millennial timescales of great-earthquake recurrence. These overseas efforts now include a UNESCO project at the Makran subduction zone and a Fulbright in Indonesia. Dr. Atwater is exploring earthquake geology in the British Virgin Islands to help guide the Nuclear Regulatory Commission on tsunami hazards of the U.S. Atlantic coast. Dr. Atwater is a member of the National Academy of Sciences.

Mr. George Crawford

Formerly with Washington State Emergency Management Division

George Crawford was the earthquake program manager for the Washington State Emergency Management Division. He was responsible for managing the seismic safety efforts in the state through the earthquake, tsunami, and volcano programs. He co-developed the All-

Hazard Alert Broadcasting Radio, which is now being deployed in the state, nation, and internationally. Mr. Crawford has worked extensively with coastal Native American Tribes to connect scientific evidence and tribal oral history, which has led to the development of the video "Run to High Ground." He has also concentrated his efforts in partnerships with the U.S. Geological Survey, the U.S. Forest Service, and local county emergency managers in developing mitigation, preparedness, and planning strategies for the many communities that surround the state's five volcanoes. He staffed the Seismic Safety Committee, which is charged with providing policy recommendations to the Washington State Emergency Management Council on seismic safety issues related to hazards presented by earthquakes, volcanoes, and tsunamis. He was the chair of the State/Local Tsunami Work Group, which is developing approaches for tsunami preparedness and mitigation efforts in tsunami hazard zones, and is a Washington State representative to the National Tsunami Hazard Mitigation Program.

Mr. Richard K. Eisner

Fritz Institute

Richard Eisner is a government liaison in the Bay-Prep Division of the Fritz Institute. Prior to joining the Fritz Institute, he worked for 23 years as the coastal regional administrator for the California Governor's Office of Emergency Services, where he was responsible for the State's disaster response in the San Francisco Bay Region and north coast counties. He also served as manager for the California Integrated Seismic Network's Tsunami and Earthquake Programs. Prior to that appointment, Mr. Eisner served as the founding director of the Bay Area Regional Earthquake Preparedness Project, providing planning and technical assistance to promote and support earthquake preparedness and hazard mitigation by local governments and businesses throughout the San Francisco Bay Region. In 2007, he received the Lifetime Achievement Award by the Western States Seismic Policy Council. Mr. Eisner recently served on the NRC Panel on Solid-Earth Hazards, Resources, and Dynamics.

Dr. Jian Lin

Woods Hole Oceanographic Institution

Jian Lin is a senior scientist at the Woods Hole Oceanographic Institution. He earned his Ph.D. in geophysics from Brown University. His research focuses on Earth's lithosphere processes that lead to catastrophic events of earthquakes, volcanism, and tsunamis. He has conducted extensive research on stress interaction and triggering of earthquakes in California and elsewhere in the world. He has led and participated in numerous oceanographic expeditions to the Pacific, Atlantic, and Indian Oceans to investigate mid-ocean ridge volcanism, deep-sea hydrothermal vents, underwater earthquakes, and tsu-

namis. He is also currently focusing on two areas of tsunami research: paleo-seismological dating of tsunamis and mega-earthquakes and modeling tsunami sources in the Atlantic.

Dr. Douglas S. Luther
University of Hawaii at Manoa

Douglas S. Luther is a professor in the Department of Oceanography at the University of Hawaii at Manoa, Honolulu, Hawaii. Dr. Luther received his B.S. in geophysics and electrical engineering from Massachusetts Institute of Technology and a Ph.D. in Oceanography from Massachusetts Institution of Technology and Woods Hole Oceanographic Institution Joint Program. His expertise is in circulation variability and dynamics; mesoscale fluctuations; waves in the ocean; flow-topography interactions. He is a Senior Fellow, Joint Institute for Marine and Atmospheric Research, National Oceanic and Atmospheric Administration and the University of Hawaii at Manoa. Dr. Luther is also an Associate Editor, Journal of Physical Oceanography.

Mr. Hugh B. Milburn
National Oceanic and Atmospheric Administration
[Retired]

Hugh B. Milburn is retired from the National Oceanic and Atmospheric Administration and is now an independent consultant. Mr. Milburn worked at NOAA's Pacific Marine Environmental Laboratory for 22 years, last as a supervisory ocean engineer. He earned an MSE in ocean engineering from the University of Washington. His interests include the development of moored systems to serve research and operational requirements of global scale measurements and observation with a focus on materials, sensors, data telemetry, and deployment methodologies. Mr. Milburn is also involved in the development of sea-floor observatories utilizing advanced communications for data acquisition and desktop control. He was part of the team that developed the NOAA Deep-Ocean Assessment and Reporting of Tsunami (DART) system. In 2005, he received the Department of Commerce's Gold Medal for research and development leading to the creation of a tsunami forecasting capability.

Dr. Dennis S. Mileti
University of Colorado at Boulder

Dennis Mileti is a professor emeritus in the Department of Sociology and a research scientist in the Natural Hazards Center at the University of Colorado. Dr. Mileti earned a Ph.D. in sociology from the University of Colorado. His research focuses on environmental sociology, complex organizations, research methods, and collective behavior. In 2007, he earned the Outstanding Civilian Service Medal from the U.S. Department of the Army. Dr. Mileti has served on previous NRC committees, including the Committee on Natural Disasters.

Dr. Emile A. Okal
Northwestern University

Emile Okal is a professor in the Department of Earth and Planetary Sciences at Northwestern University. Dr. Okal earned a Ph.D. in geophysics from the California Institute of Technology. He is currently researching tsunami generation, risk, and warning using post-event field surveys and modeling. Dr. Okal's general research interests include seismology, structure of the Earth's interior, properties of seismic sources, marine geosciences, volcanism, and underwater acoustics.

Dr. Costas E. Synolakis
University of Southern California

Costas Synolakis is a professor of civil, environmental, aerospace, and mechanical engineering and the director of the Tsunami Research Center at the University of Southern California. Dr. Synolakis earned a Ph.D. in civil engineering from the California Institute of Technology. His research focuses on tsunami run up, computer tomography, vibration, isolation of art objects, and earthquake hazards reduction.

Dr. Nathan J. Wood
U.S. Geological Survey

Nathan Wood is a research geographer at the U.S. Geological Survey. Dr. Wood earned a Ph.D. in geography from Oregon State University. His research focuses on characterizing and communicating societal vulnerability to natural hazards, with emphasis on tsunamis in the Pacific Northwest and Hawaii. He uses GIS software, collaborative community-based processes, and perception surveys to better understand how communities are vulnerable to tsunamis.

Dr. Harry Yeh
Oregon State University

Harry Yeh is the Miles Lowell and Margaret Watt Edwards Distinguished Chair in Engineering and a professor of coastal and ocean engineering at Oregon State University. Dr. Yeh earned a Ph.D. in civil engineering from the University of California, Berkeley. His research focuses on environmental fluid mechanics, ocean and coastal wave phenomena, flow-structure interactions, tsunami induced scour, wind turbulence, structure control (tuned liquid dampers), physical processes in lakes and oceans, and tsunami hazard mitigation.

Dr. Martha R. Grabowski - (Vice Chair)
Le Moyne College

Martha A. Grabowski (Vice-chair) is a professor and the director of the Information Systems program at Le Moyne College and Research Professor of Decision Sciences and Engineering Systems at Rensselaer Polytechnic Institute. Dr. Grabowski earned a MBA, MS in Engineering and a Ph.D. in management and information systems

from Rensselaer Polytechnic Institute and a B.S. from the US Merchant Marine Academy. A licensed former merchant officer and retired LCDR in the US Naval Reserve. Her research focuses the impact of technology in safety-critical systems, risk analysis and risk mitigation in large-scale systems, and the role of human and organizational error in high consequence settings. Dr. Grabowski is currently chair of the NRC's Marine Board and has served on numerous NRC committees, including chairing the Committee for Evaluating Shipboard Display of Automated Identification Systems.

Dr. Ann Bostrom
University of Washington

Ann Bostrom is associate professor and associate dean for research in the Daniel J. Evans School of Public Affairs at the University of Washington. Her research interests include how people understand and make decisions about risks, and how to improve risk communications to support decision making. Bostrom served on the faculty at the Georgia Institute of Technology (Georgia Tech) from 1992-2007, where she most recently was Associate Dean for Research in the Ivan Allen College of Liberal Arts and Professor in the School of Public Policy. From 1999-2001 Bostrom worked as director of the Decision Risk and Management Science Program at the National Science Foundation. Among her book publications are the edited volume Risk Assessment, Management and Decision Support, and co-authorship of Risk Communication: a Mental Models Approach. Bostrom is currently risk communication area editor for Risk Analysis, an associate editor for the Journal of Risk Research, and risk communication editor for Human and Ecological Risk Assessment. Bostrom received the 1997 Chauncey Starr award for a young risk analyst from the Society for Risk Analysis for her work on mental models of hazardous processes, and was named a fellow of the Society in 2007. She is a member of the U.S. EPA Science Advisory Board Committee on Valuing the Protection of Ecosystems and Ecoservices, and has served on several National Academies committees.

[More Project Information and to provide FEEDBACK on the Project](#)

From:

<http://www8.nationalacademies.org/cp/CommitteeView.aspx?key=48928>

[Thanks to Dr. Atwater for bringing this information to our attention] ♦

EMERGENCY MANAGEMENT OFFICES

(added November 30, 2007)

American Samoa Territorial Emergency Management Coordination (TEMCO); American Samoa Government
P.O. Box 1086

Pago Pago, American Samoa 96799
(011)(684) 699-6415; (011)(684) 699-6414 FAX

Office of Civil Defense, Government of Guam
P.O. Box 2877

Hagatna, Guam 96932
(011)(671) 475-9600; (011)(671) 477-3727 FAX
<http://ns.gov.gu/>

Guam Homeland Security/Office of Civil Defense
221B Chalan Palasyo

Agana Heights, Guam 96910
Tel:(671)475-9600; Fax:(671)477-3727
www.guamhs.org

CNMI Emergency Management Office
Office of the Governor
Commonwealth of the Northern Mariana Islands
P.O. Box 10007

Saipan, Mariana Islands 96950
(670) 322-9529; (670) 322-7743 FAX
www.cnmiemo.gov.mp

National Disaster Management Office
Office of the Chief Secretary

P.O. Box 15
Majuro, Republic of the Marshall Islands 96960-0015
(011)(692) 625-5181; (011)(692) 625-6896 FAX

National Disaster Control Officer
Federated States of Micronesia

P.O. Box PS-53
Kolonia, Pohnpei - Micronesia 96941
(011)(691) 320-8815; (001)(691) 320-2785 FAX

Palau NEMO Coordinator, Office of the President
P.O. Box 100

Koror, Republic of Palau 96940
(011)(680) 488-2422; (011)(680) 488-3312

Puerto Rico Emergency Management Agency
P.O. Box 966597

San Juan, Puerto Rico 00906-6597
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Virgin Islands Territorial Emergency Management - VITEMA
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Virgin Islands 00820
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NEWS

The December issue might be a little late.
Editor is visiting Sydney for the month of
November.

Engineers design tsunami-resistant homes

By Mike Kunzelman, Associated Press, 27 May 2005

“CAMBRIDGE, Mass. (AP) _ Not long after the devastating December tsunami, a team of structural engineers from London visited Sri Lanka and noticed a trend as they surveyed destroyed homes: Walls facing the sea were leveled, while those perpendicular to it were standing.

That inspired a group of researchers from the Massachusetts Institute of Technology and Harvard University to design what they're calling a "tsunami-safe(r) house" that is less likely to collapse under wind and pounding surf.

Instead of having four solid walls, the tsunami-resistant houses have thick concrete-block corners and exterior walls made of bamboo. The houses, about 80 of which have already been built, are designed to be built on top of blocks of concrete or wood, one or two feet above the ground.”

To see the full article, with photo, visit www.livescience.com/technology/ap_050527_tsunami_house.html

No cons in fusion of emergency operations and intelligence center concept

Emergency operations centers (EOCs) could benefit by taking a page from one of the latest chapters in law enforcement’s book—a concept known as the fusion center. According to a recent article in “Government Technology’s Emergency Management,” Fusion centers—which aim to aggregate and disseminate intelligence information, mostly regarding terrorism and other crime—have a lot to offer emergency operations centers in terms of lessons learned and practical assistance in a disaster.

Fusion centers are created for the purpose of collecting information from law enforcement, public safety officials, and private entities, analyzing that information in real time, and sending it out to those who need to know. Many of the 58 centers that now exist are outfitted with technology such as GIS mapping or video surveillance of city streets. Although geared for crime, they could be a treasure trove of needed-knowledge during a disaster, Andrew Lluberes of the Department of Homeland Security (DHS) told the magazine.

“As a conduit to share information and intelligence, they certainly would be used in a future natural disaster,” he was quoted as saying.

Because the fusion center’s work on the same principal as EOCs—with the exception that most are staffed full time—there’s much to be learned about automating data searches, layering information, compiling notification and communication procedures, and coordinating responders. But the centers themselves also have some learning to do. According the article, a Government Accountability Office report released in April found staffing, resources, and sensitive information sharing were a challenge for most of the centers. The lack of a central model for center setup and operation could also cause problems, another federal report stated.

For more on fusion centers, including a list of states that now have centers and a progress report on center activity, visit DHS at http://www.dhs.gov/xinfo/share/programs/gc_1156877184684.shtm.

From: *Disaster Research* 508, Aug. 28, 2008

Los Angeles emergency preparedness weaknesses come to light

The City of Los Angeles is “groping in the dark” when it comes to emergency preparedness, according to City Controller Laura Chick.

An audit released last month outlined the city’s many shortcomings, including outdated emergency plans that don’t meet national standards; disorganized emergency preparedness trainings and exercises; lack of collaboration between the city and non-governmental agencies; and poorly managed public safety grants.

“In audit after audit, I have found that the city does not have a clear vision or strategic plans in areas including our park system, affordable housing, transportation, and gang violence prevention,” Chick wrote in a letter to Los Angeles City Council members. “Emergency preparedness is the number one (area) that cries out for a coordinated, constantly up-dated, state of the art strategic plan.”

The report, which includes information on emergency management staffing, budgets, and recommendations for improvement can be accessed at the [Los Angeles City Controller Web site](#).

From: *Disaster Research* 507, Aug. 14, 2008

Guide preps hospitals to handle dead in mass fatalities

Many hospitals could be unprepared to deal with a deluge of dead bodies in the instance of a mass fatality such as an earthquake or flu pandemic, and most haven’t even formulated a plan, according to those studying death in disaster. In a recent assessment, Los Angeles County learned only eight of 103 hospitals in the county had a written plan to address a mortality surge that would overwhelm morgue capacity.

“Hospitals want to start working on this, but they don’t know where to start,” Los Angeles County Emergency Medical Services Agency Planning Coordinator Tamiza Teja, said at the Natural Hazards Workshop in July. “What we’re trying to do is provide some tools.”

Teja’s agency, in partnership with county emergency services, public health, and coroner departments, just released those tools in the form of a guide called *Mass Fatality Incident Management: Guidance for Hospitals and Other Healthcare Entities*. Although geared to hospitals in Los Angeles County, the guide’s checklists, action plans, organizational charts, fact sheets, and other resources were created to be easily adapted by individual healthcare agencies.

The guide is available on the **Los Angeles County Health Services’ Web site**.

From: *Disaster Research 507*, Aug. 14, 2008

Old ways bring new energy to disaster risk reduction efforts

When it comes to keeping the impacts of disaster at bay, there’s no need to reinvent the wheel—in fact, incorporating old wisdom can keep even efforts on track according to a just-released report from the United Nations’ International Strategy for Disaster Reduction.

The report, called “Indigenous Knowledge for Disaster Risk Reduction: Good Practices and Lessons Learned from Experiences in the Asia-Pacific Region,” looks at 18 examples of how indigenous strategies, oral traditions, and adaptation have reduced disaster risk. Incorporating indigenous techniques—often characterized by self-sufficiency, natural knowledge, and informal but effective dissemination—in disaster reduction strategies can lead to more robust and well-received efforts and a better understanding of local threats and how to address them, according to the report.

From earthquake-safe traditional buildings in Kashmir to flood preparedness in Pakistan, the study provides specific cases and lessons learned from cultures independent of modern technology.

The full report is available online at http://www.unisdr.org/eng/about_isdr/isdr-publications/19-Indigenous_Knowledge-DRR/Indigenous_Knowledge-DRR.pdf.

From: *Disaster Research 508*, Aug. 28, 2008

U.S. organizations need to make preparedness their business

From terrorist to tornadoes to a lack of telephone service, many of the nations businesses and non-profit organizations are ill prepared to deal with crises, according to a new report released by the New York University’s Center for Catastrophe Preparedness and Response (CCPR) and The Public Entity Risk Institute (PERI). Government agencies were also found to be grossly

unprepared, leaving them potentially unable to respond to recovery needs.

The report, “Predicting Organizational Crisis Readiness: Perspectives and Practices toward a Pathway to Preparedness,” reviewed literature, analyzed preparedness recommendations, and evaluated leader opinion surveys before determining organizations are caught off guard by disaster because they fail to make preparedness an important part of their business. Crisis plans often don’t exist and when they do, employees are often unaware of their roles. To remedy the situation, the report recommends organizations give crisis readiness the same budget and priority as other operations and that, “crisis management must be a lasting organizational commitment.”

For the full report online visit PERI at <https://www.riskinstitute.org/peri/images/file/POCR-finalreport.pdf> or CCPR at <http://www.nyu.edu/ccpr/>.

From: *Disaster Research 508*, Aug. 28, 2008

VIDEO GAMES/ONLINE GAMES

Disaster training is fun and games with DHS virtual reality platform

Just when you thought the Department of Homeland Security couldn’t get much more hip, DHS breaks out a cutting edge video game that not only gives responders experience in hard-to-simulate disasters, but will also eventually improve training strategies by collecting information about reactions to the game’s scenarios.

“Zero Hour: America’s Medic” was created in partnership with the National Emergency Medical Services Preparedness Initiative (NEMSPI) at George Washington University to help responders construct strategies in a real-time environment full of the same chaos and resource-tapping constraints they’re likely to deal with in real life.

“Governing Magazine” reported last week that the game, which uses the technology similar to that of the Halo 3 video game and would eventually allow for multiple-player online gaming, was available for \$14.95. A note on the NEMSPI Web site today, though, said overwhelming interest in the game had sent designers back to the drawing board to retest the system. They expect to relaunch in the next few months.

For more information on the project, visit the NEMSPI Web site at <http://inside.gwumc.edu/nemspi/index.htm> or get a glimpse of the game action on YouTube at <http://www.youtube.com/watch?v=uxQ1cEaIeDY>.

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

Disaster in a box: New NIMS training DVD helps simulate emergencies

Emergency responders and others who want to brush up on their National Incident Management System Incident Command System (NIMS/ICS) training will find everything they need to create their own disasters in a DVD kit offered by the Federal Emergency Management Agency.

The NIMS/ICS Simulation Exercise Program for Multi-Discipline Emergency Responders allows those NIMS/ICS-trained personnel to practice skills in a safe setting and train others. Although the training was designed with fire, police, and emergency health and management personnel in mind, public officials and businesses might also find it useful, according to a recent FEMA press release

The training kit including manuals, maps, PowerPoint presentations, and classroom handouts related to six disaster scenarios—including a marine disaster, an explosion and building collapse, a terrorist attack using Sarin gas, and a chemical explosion. Victim cards and incident command charts are included for simulation purposes.

The DVD training does not qualify participants for NIMS certification. For more information on NIMS certification, visit

http://www.fema.gov/emergency/nims/nims_training.shtm. To request a copy of the DVD, e-mail FEMA-NIMS@dhs.gov.

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

Oikos risk management game

This interactive, online game aims to raise public awareness of disaster risk and preparedness issues. As mayor of Oikos city, players learn about disaster impacts and how simple preventative measures and sustainable development can save lives. The fun—and challenges—begin when players develop a new city district in the face of six hazards, while addressing development, financial, and social issues. Be sure to read the game guide before getting started or you might miss out on the game's more sophisticated elements. <http://www.e-oikos.net>

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

PUBLICATIONS

Citizen Preparedness Review (CPR)

The issue 5, Fall 2007 update on *Citizen Preparedness Research* is available online at http://www.citizencorps.gov/pdf/citizen_prep_review_issue_5.pdf

According to the summary from FEMA's *Community Preparedness News* (March/April 2008) "CPR 5, which was recently released on the Citizen Corps website, provides an update on citizen disaster preparedness research conducted since spring 2006. CPR 5 is a product of the

ongoing research Citizen Corps has tasked Macro International Inc. (MACRO), an Opinion Research Corporation company, to undertake. Macro continues to research, track, and cross-analyze household surveys related to individual citizen preparedness. The Citizen Preparedness Surveys Database is the compilation of research used to develop the CPR's, which are prepared and distributed for public consumption. There are now 48 surveys included in this database."

Tsunami reconstruction bad for reefs

<http://www.radioaustralia.net.au/programguide/stories/200807/s2298627.htm>

"Many of Asia's coral reefs were badly damaged by the earthquake that triggered the 2004 Asian tsunami but in Indonesia's worst hit province of Aceh, fears that the subsequent tidal wave [sic] might have caused the same devastation to underwater reefs as on land turned out to be unfounded.

Now, however, new research presented at the International Coral Reef Symposium underway in Florida [July 2008] shows the post-tsunami reconstruction effort has been bad news for the reefs' survival.

To read the panel's summary, visit the website given above.

WEBSITES

<http://www.wirelessfoundation.org/VITAAdvisories/index.cfm>

Wireless Foundation VITA Advisories. VITA advisories can turn an everyday cell phone into a tool that saves lives. VITA—Latin for life—is part of the Wireless Foundation responsible for wireless AMBER Alerts and Text 2HELP. VITA advisories provide information about how to effectively use your cell phone in an emergency. Tips range from knowing your cell phone's many features to preparing for emergencies to knowing how to communicate after disasters.

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

<http://www.nctsnet.org/ncts/>

National Child Traumatic Stress Network. Disasters are stressful for all involved, but children are especially vulnerable to the psychological trauma of large-scale events. The National Child Traumatic Stress network has aggregated a wealth of information in various languages for helping kids who fall victim to terrorist threats and natural disasters, including earthquakes, fires, tsunamis, floods, and others. A handy compilation of hurricane resources on the home page makes timely advice easy to access.

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

http://www.hsus.org/hsus_field/hsus_disaster_center/

Animal Disaster Preparedness. When it comes to disaster preparedness, pets don't plan—and neither do many of their owners. That's why the Humane Society of the United States has put together a series of disaster plans, evacuation tips, and information for preparing household pets, horses, and livestock for a disaster. These useful guides let people know what steps to take before, during, and after an emergency so animals stay safe.

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

<http://www2a.cdc.gov/phlp/emergencyprep.asp>

A Framework for Improving Cross-Sector Coordination for Emergency Preparedness and Response

While the need for coordination between public health and law enforcement officials during an emergency might be a given, this report goes a bit further by adding judicial and corrections officials to the mix and providing suggestions for how the four groups might whip up coordination in times of trouble. Aimed at local, state, and tribal governments, "A Framework for Improving Cross-Sector Coordination for Emergency Preparedness and Response: Action Steps for Public Health, Law Enforcement, the Judiciary, and Corrections," this framework is meant to do more to increase response to all-hazards public health emergencies according to the U.S. Centers for Disease Control and Prevention, which partnered with the Department of Justice to create the guide.

From: *Disaster Research 508*, Aug. 28, 2008

http://demographics.apalc.org/wp-content/uploads/2008/07/disaster-report_final.pdf

Disaster Preparedness in Urban Immigrant Communities

This report, subtitled "Lessons Learned from Recent Catastrophic Events and Their Relevance to Latino and Asian Communities in Southern California," found language barriers hinder emergency and disaster response, education, awareness and training efforts and not enough is being done to translate to what the authors have termed "Limited English Proficient" immigrants. The report, published by The Tomás Rivera Policy Institute and the Asian Pacific American Legal Center, used qualitative research conducted in areas with large immigrant Latino, Chinese, and Vietnamese populations, a literature review, and case studies to formulate recommendations.

From: *Disaster Research 508*, Aug. 28, 2008

<http://www.whatsyourrq.org/>

What's your Readiness Quotient (RQ)? Get ready, get set, get your score. This online survey only takes a moment to complete and immediately provides a rating of individual readiness, the average for test taker's zip code, and national scores—along with resources targeted to the particular preparedness deficiencies identified. The RQ site, developed by the Council for Excellence in Govern-

ment, also offers national preparedness data, information on how groups and schools can use the test, and links to preparedness organizations.

From: *Disaster Research 507*, Aug. 14, 2008

<http://www.fema.gov/about/divisions/cpg.shtm>

Interim Comprehensive Preparedness Guide (CPG 101). This interim guide, *Producing Emergency Plans: A Guide for All-Hazard Operation Planning for State, Local & Tribal Governments*, is the first of FEMA's efforts to update their longstanding series of state and local planning guides with a new product—the Comprehensive Preparedness Guide. Designated CPG 101, *Producing Emergency Plans*, is the cornerstone for the series, which will eventually tackle topics of planning for prevention, protection, response, and recovery. A team of more than 30 state, local, and tribal emergency preparedness officials created the interim guide to help public and private emergency planners develop emergency response plans.

Forums and open comment periods will be held before finalizing the document.

From: *Disaster Research 507*, Aug. 14, 2008

http://www.dhs.gov/xlibrary/assets/national_emergency_communications_plan.pdf

National Emergency Communications Plan

Lack of communication among emergency response providers, especially during recent disasters and terrorist attacks, led Congress to direct the Department of Homeland Security (DHS) to get everyone on the same channel. The National Emergency Communication Plan is the DHS answer to that call. The report identifies needs and goals to make the nation's emergency responder communications interoperable and continuous during disasters. Communication recommendations are outlined for all levels of government and the private sector.

From: *Disaster Research 507*, Aug. 14, 2008

<http://incaseofemergencyblog.com/>

In Case of Emergency, Read Blog. Those with any kind of interest in emergency preparedness won't want to wait to break the glass on this useful aggregation that includes education resources, legislative news, advice from experts, a video series on what the public should know and much more. The blog, subtitled A Citizen's Eye View of Emergency Preparedness, began as a way for creator John Solomon to discuss, disperse, and develop research he gathered for his upcoming book, "In Case of Emergency, Read Book: Simple Steps To Prepare You and Your Family For Terrorism, Natural Disasters and Other 21st Century Crises."

From: *Disaster Research 506*, July 31, 2008

Hazctr@Colorado.EDU

<http://www.ngdc.noaa.gov/hazard/hazards.shtml>

NGDC's Historic Hazard Events on Google Earth

The National Geophysical Data Center now offers natural hazard data in a format that will allow Google Earth users to visualize historic disasters such as tsunamis, tsunami run-ups, earthquakes, and volcanic eruptions more easily. In addition to the new technology, the Natural Hazard Data site still allows users to view data sets in other forms, including ArcIMS and old-fashioned photographs.

From: *Disaster Research 506*, July 31, 2008
Hazctr@Colorado.EDU

CONFERENCES AND SYMPOSIUMS

October 14-15, 2008

Ninth International Disaster and Emergency Resilience Conference London, England. Cost: \$1,115. Registration: Open until filled

The conference focuses on issues and challenges affecting the disaster and emergency management community. Government reliance on nongovernmental organizations, the effect of climate change on preparedness and response, and resilient technology are among the topics set for discussion.

http://www.iderweb.org/index.php?&MMN_position=1:1

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

November 3, 2008

Risk and Crisis Communication in the 21st Century—Are We Ready? Washington, D.C. Cost: \$499. Registration: Not posted

The forum will present insights into, analysis of, and forecasts of the current state of risk and crisis communications. Leaders in crisis communication will discuss the goals of effective communication, hurdles that need be overcome, and individual and collective solutions to get there.

<http://www.homelanddefensejournal.com/hdl/Crisis-Communication-21st-Century.html>

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

December 1-4, 2008

Next generation warning services workshop. Norman, Oklahoma. Cost: Free. Registration closes November 26, 2008. The workshop will bring technical and operation experts from private weather enterprise, the broadcast media, emergency managers and academia together to determine needs for accurate, accessible, and timely services from the National Weather Service. Contact: John.T.Ferree@noaa.gov.

<http://apps.weather.gov/partners/index.php>.

From: *Disaster Research 508*, Aug. 28, 2008

December 9-10, 2008

Disability and Special Needs Technical Assistance Conference San Diego, California. Cost: \$495. The

conference will discuss the need for emergency management processes to integrate procedures for special needs populations into the four phases of emergency management. Government officials, emergency managers, first responders, special needs service providers, and community-based organization officials are urged to attend. <http://www.governmenthorizons.org/Disability-Special-Needs-Technical-Assistance.html>

From: *Disaster Research 509*, Sep. 11, 2008
[Hazctr@Colorado.EDU]

June 22-24, 2009

Earthquake & tsunami—Civil engineering disaster mitigation activities, implementing millennium development goals. Istanbul, Turkey. Those interested in various aspects of the seismic risk reduction problem are invited to participate in this conference for civil engineering disaster mitigation activities concerning earthquakes and tsunami. The major objective is the mitigation of life and material losses in earthquake and tsunami through improved civil engineering practice. The emphasis of the conference will be on the Millennium Development Goals, i.e., seismically safe schools, hospitals, dwellings etc., or more generally, a seismically safe and sustainable built environment. The scope of the conference is limited to civil engineering related to disaster mitigation activities concerning the problems of earthquake and tsunami.

duz@imo.org.tr www.imo.org.tr/eqt2009/

From: *Natural Hazards Observer*, v. 32, no. 6, p.22.

JOBS

Subscribe to *Disaster Research* (Hazctr@Colorado.EDU or read the current issue online at <http://www.colorado.edu/hazards/dr.currentdr.html>). Each issue has a JOBS, JOBS, JOBS section. ♦

Good News for Tofino

Tofino [B.C.] to go it alone on tsunami sirens

By Keven Drews

www.Westcoaster.ca

TOFINO — The District of Tofino will have to fund as many as six tsunami sirens through its own municipal budget, says the emergency planning coordinator. Cathy Bernard said the federal government has committed no funds to the project, so the district will begin working on the project with \$75,000 in municipal funds already budgeted.

“We’re proceeding on our own,” she said Thursday. “It’s something the community needs.”

Back in June 2005, a tsunami warning left the town’s emergency officials scrambling. Because the town had no sirens, firefighters were forced go door-to-door, warning locals and tourists.

The district has asked the federal government to pay about \$150,000, half the cost for installing five sirens.

The federal government, however, turned down a funding request in early 2007.

Bernard said Tofino needs six sirens, at the most, and she has identified two potential tsunami siren companies, the Federal Signal Corporation and the American Signal Corporation. She plans to make a recommendation to council in September or October.

Cost estimates range from \$5,000 to \$12,000 for each unit, she added. Not included are the costs for installation, poles and power.

If the district can't purchase all the sirens at once, it may have to phase in the project, said Bernard.

She said installation could begin in early 2009.

"We want to make sure the system we go with is suitable for the resources of our community."

Bernard said the sirens are only part of a larger messaging system, on which emergency officials are working.

She said the district has sent out maps and brochures, showing hazardous areas should a tsunami strike, and Environment Canada has updated its weather radio system to include tsunami warnings.

Tofino plans to hold a community forum on earthquake and tsunami preparedness Sept. 9 [2008] from 6 p.m. to 9 p.m. at the Community Hall.

The agenda includes an earthquake-tsunami presentation by Maiclaire Bolton, a Provincial Emergency Program seismologist, a live demonstration of tsunami modeling results for Tofino, by Bill Johnstone, of Spatial Vision Group, and a weather radio demonstration, by Anne McCarthy and Fred Voglmaier, of Environment Canada.

Participants will also hear an updates on Tofino's emergency program.

"There's no silver bullet to preparedness," said Bernard. "You can't rely on one thing to do everything."

"The more layers to preparedness, the better the response is." ♦

Material added to the NTHMP Library, September - October 2008

Note: These, and all our tsunami materials, are included in the online (searchable) catalog at <http://www.dnr.wa.gov/ResearchScience/Topics/Geology/PublicationsLibrary/Pages/washbib.aspx>. Click on SEARCH DATABASE, then type 'tsunamis' in the Subject field to get a full listing of all the tsunami reports and maps in the collection.

Baba, Toshitaka; Hirata, Kenji; Kaneda, Yoshiyuki, 2004, Tsunami magnitudes determined from ocean-bottom pressure gauge data around Japan: *Geophysical Research Letters*, v. 31, L08303.

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Caplan-Auerbach, Jacqueline; Fox, Christopher G.; Duennebier, Frederick K., 2000, Hydroacoustic detection of submarine landslides on Kilauea volcano: *Geophysical Research Letters*, v. 28, no. 9, p. 1811-1813.

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Fujii, Yushiro; Satake, Kenji, 2008, Tsunami sources of the November 2006 and January 2007 great Kuril earthquakes: *Bulletin of the Seismological Society of America*, v. 98, no. 3, p. 1559-1571.

Geist, Eric L.; Bilek, Susan L., 2000, Effect of depth-dependent shear modulus on tsunami generation along subduction zones: *Geophysical Research Letters*, v. 28, no. 7, p. 1315-1318.

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(continued on page 14)

Tsunamis! Coast Challenge camp

This summer Saturday Academy and the NSF Center for Coastal Margin Observation and Prediction (CMOP) partnered to provide 19 middle school students with the *Tsunamis! Coast Challenge* camp. The students explored the causes of tsunamis and how to inform and prepare local communities if such events should occur along the Oregon coast.

Through hands-on activities, students explored geological structures, plate tectonics, and the physics of wave movement. The students learned of recent volcanic eruptions, earthquakes and tsunamis, and noted their relationship to boundaries in the earth's lithosphere. Students viewed computer models and maps that define inundation zones of several coastal communities within Oregon. Students learned why some areas are dangerous, and where one might find safe-zones, safe-structures, and evacuation routes.

A representative from Oregon State University's Hinsdale Wave Lab spoke to the students about tsunamis, evacuation routes, and tsunami shelters. The students built small structures that were transported to the Hinsdale Wave Center and placed into the tsunami wave tank. Via the internet students were able to view the fate of their structures at various wave heights. Finally, the students worked in tsunami preparedness teams to develop public service announcements to inform the public of the dangers of tsunamis, and how to prepare for them.

While SA classes are tuition-based, approximately 37% of the 6,000+ kids served annually take courses for free or at a reduced rate. Bonneville Power Administration made it possible for 17 Native American youth to participate in this camp by providing free class scholarships. Through a partnership with the organization Native American Youth & Family Center (NAYA), Saturday Academy is able to actively engage this under-served population in exciting educational opportunities such as the Tsunami Camp.

Karen Wegner, Director for K-12 Programs at CMOP and Misty Scevola a teacher at Meek Pro-tech, in Portland were the camp instructors. See the CMOP website at <http://www.stccmop.org/education/K12/tsunamicamp> for more information on this camp.

The camp ran from Monday, August 11th through Friday, August 15th from 9:00 to 3:00 pm at OHSU's West Campus.

Saturday Academy is a non-profit organization that provides educational enrichment to young people in the Portland metro area. SA offers unusual classes such as philosophy for 2nd graders and nanotechnology for middle schoolers. Classes are small and instructors are experts in their fields. Scholarships are available for low income and underrepresented students. The organization also arranges science and engineering internships for high school students. Visit the SA website at

www.saturdayacademy.org. Executive Director, Joyce Cresswell, can be reached directly at 503-200-5850.

The Center for Coastal Margin Observation & Prediction (CMOP) is a multi-institutional [National Science Foundation Science and Technology Center](#). The center is dedicated to researching the health of the ocean and the impact of human activity in the Oregon-Washington coastal margins, where the Columbia River meets the Pacific Ocean. CMOP is developing a thriving education program based on current research being conducted at the center. For more information regarding CMOP K-12 education program, contact Karen Wegner at 503.748-1099.

Thanks to Courtney Francis, Saturday Academy, for providing this article. ♦

Materials added to the Library – Sept – Oct 2008

(continued from page 13)

Shaw, Rajib; Uy, Noralene; Baumwoll, Jennifer, editors, 2008, Indigenous knowledge for disaster risk reduction-- Good practices and lessons learned from experiences in the Asia-Pacific region: U.N. International Strategy for Disaster Reduction, 84 p.

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Infrequently Asked Questions

October 2008

Can tsunamis be scattered?

“We use a scattering index to identify the regions in the Pacific Ocean where topographic features scatter significant tsunami energy. ...The Pacific Ocean contains a wide variety of topographic features that interact with tsunami waves as they pass by. When the horizontal scales of these features are less than a wavelength, the interaction results in wave scattering.”

“...shows that tsunamis traversing the Pacific Ocean will interact strongly with scattering topography. Open-ocean scatterers complicate the wave patterns of tsunamis and reduce the amplitudes of the first waves.”

From: Mofjeld, H. O.; Titov, V. V.; Gonzalez, F. I.; Newman, J. C., 2001, Tsunami scattering provinces in the Pacific Ocean: Geophysical Research Letters, v. 28, no. 2, p. 335-338.

How many communities have been awarded TsunamiReady status so far in fiscal 2008? (as of Aug. 2008)

Eleven. Congratulations to all of them!

Valdez, Alaska
Half Moon Bay, CA
Imperial Beach, CA
Laguna Beach, CA
Orick, CA
Samoa, CA
San Mateo County, CA
Seal Beach, CA
Naval Station Mayport, FL
New Hanover County, NC
Douglas Co. OR

According to the National Emergency Communications Plan (July 2008) by DHS, what do these acronyms stand for?

(The Plan is online at http://www.dhs.gov/xlibrary/assets/national_emergency_communications_plan.pdf)

CASM
COP
FLEWUG
GETS
IRAC

CASM is Communications Asset Survey and Mapping Tool
COP is Committee of Principals
FLEWUG is Federal Law Enforcement Wireless Users Group
GETS is Government Emergency Telecommunications Service
IRAC is Interdepartment Radio Advisory Committee ♦

Western States Seismic Policy Council 2008 National Awards in Excellence

Awards were presented at the National Earthquake Conference
Awards in Excellence Luncheon
Thursday April 24, 2008

WESTERN STATES SEISMIC POLICY COUNCIL HONORS

WALTER J. ARABASZ WITH A 2008 LIFETIME ACHIEVEMENT AWARD IN EARTHQUAKE RISK REDUCTION

The Western States Seismic Policy Council is pleased to announce that Walter J. Arabasz has been awarded the 2008 WSSPC Lifetime Achievement Award in Earthquake Risk Reduction. WSSPC created the Award to recognize outstanding leaders in earthquake risk reduction. This person will have demonstrated throughout his or her career an extraordinary commitment, level of service, and contribution of the application of earthquake risk reduction to public policy.

Lifetime Achievement Award
Walter J. Arabasz

WESTERN STATES SEISMIC POLICY COUNCIL ANNOUNCES RECIPIENTS OF THE 2008 NATIONAL AWARDS IN EXCELLENCE

Overall Award In Excellence

Outreach

Washington Military Department, Emergency Management Division

[Map Your Neighborhood: Building & Strengthening Disaster Readiness Among Neighbors](#)

Awards In Excellence

Mitigation

Oregon Department of Geology and Mineral Industries

[Statewide Seismic Needs Assessment of Oregon Schools and Emergency Facilities](#)

Mitigation

Capitol Preservation Board

[Utah State Capitol Seismic Retrofit and Restoration](#)

Response & Recovery

Washington Military Department, Emergency Management Division

[Broadcasters Tsunami Emergency Guidebook](#)

Innovations

Ridg-U-Rak, Inc.

[Ridg-U-Rak Seismic Base Isolation System](#)

Outreach

Washington Military Department, Emergency Management Division and Earthquake Engineering Research Institute

[Seattle Fault Earthquake Scenario Project](#)

Outreach

Cascadia Region Earthquake Workgroup

[Cascadia Subduction Zone Earthquake: A Magnitude 9.0 Earthquake Scenario](#)

Plans/Materials

[Emergency Preparedness for Industry and Commerce Council \(EPICC\)](#) ♦