



**UNESCO/IOC - NOAA INTERNATIONAL TSUNAMI INFORMATION CENTER (ITIC)
ITIC TRAINING PROGRAMME INTERNATIONAL (ITP-INTL)
WESTERN CARIBBEAN AND MESO-AMERICA**

**Regional Training Workshop on Strengthening Tsunami Warning and Emergency Response
Standard Operating Procedures and the Development of the ICG/CARIBE-EWS Pacific
Tsunami Warning Center (PTWC) New Enhanced Products**

1-5 April 2014

Centro de Estudios Superiores Navales (CESNAV), Mexico D.F., Mexico

**Hosted by the Caribbean Tsunami Information Centre (CTIC)
and the Government of Mexico through its Navy Secretary (Secretaria de Marina SEMAR)**

Supported by UNESCO/IOC, USAID/OFDA/LAC, UNDP regional office for OECS and Barbados

Trainers:

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Organizers:

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This 1-week training workshop will cover essential topics involved in end-to-end tsunami warning. In event time, the topics include event monitoring and detection, threat evaluation and warning, alert dissemination, emergency response, evacuation, and public action. An effective tsunami warning system is achieved when all people in vulnerable coastal communities are prepared to respond appropriately and in a timely manner upon recognizing that a potential destructive tsunami may be approaching. Meeting this challenge requires round the-clock monitoring with real-time data streams and rapid alerting, as well as prepared communities, a strong emergency management system, and close and effective cooperation between all stakeholders. Stakeholders must be able to work in coordination and with good understanding of each other's roles, responsibilities, authorities, procedures, and action during a tsunami event. Planning and preparedness, and practicing in advance of the real event, are important to familiarize agency staff with the steps and decision-making that will need to be carried out without hesitation in a real emergency. In this context, the training emphasizes the development of sound tsunami warning and emergency response standard operating procedures (SOPs) as a key requirement for successful end-to-end warning. The Training includes an information and feedback session on the proposed PTWC Enhanced Tsunami Products. These products were approved for development by the ICG/CARIBE-EWS-VII (2012) and introduced in CARIBE WAVE 2013 and 2014.

PROVISIONAL AGENDA

TWC	TER	Topic
		DAY 1
		MORNING: PLENARY
		Opening Ceremonies
		Course Overview, Logistics and other administrative items
		Tsunami Warning and Emergency Response – Overview, Lessons Learned
		End-to-End Tsunami Warning and Emergency Response – Overview
		End-to-end Tsunami Warning – Stakeholders, Roles and Responsibilities, Standard Operating Procedures, and their linkages
		Lessons Learned from Past Tsunamis - Warning and Response
		AFTERNOON: PLENARY
		Lessons Learned, Country Presentations
		Lessons Learned from Recent Tsunamis - Warning and Response
		Country Presentations - 10 min/country
		Discussion: Challenges for achieving end-to-end TWS: Data, Resources, Communication, Stakeholders, Coordination
		DAY 2
		MORNING: PLENARY
		Science, Tsunami Standard Operating Procedures, Warning Dissemination
		Earthquake and Tsunami Science - generation, propagation, impact
		Caribbean Tsunami Hazards
		IOC Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions
		National Tsunami Warning Centre Standard Operating Procedures – Concept of Operations, Routine and Event Operations
		ICG/ CARIBE-EWS International Tsunami Warning Centers – Current PTWC Standard Operating Procedures (SOP): Monitoring and detection of earthquakes and tsunamis, Evaluation of tsunami threat, Forecasting, TWC Products, and Message Dissemination
		Tsunami Emergency Response Standard Operating Procedures - Overview on Stakeholder Roles and Coordination, Pre-event activities, and Event Operations
		AFTERNOON: PLENARY
		Warning Dissemination, Information Flow SOPs
		Emergency communication considerations and technologies for the downstream transmission of warnings to local governments and communities – TV / FM / HF / Radio, Sirens, Mobile Phones / SMS, Internet email/web, Social Media, etc – robustness, reliability, redundancy
		Warning Dissemination and Public Alerts – Responsibilities to decision-makers, media, and the public – US Emergency Alert System
		Warning Dissemination and Public Alerts – Responsibilities to decision-makers, media, and the public. – JMA-NHK Warning Dissemination
		Breakout Groups and Report Out: Information Flow SOPs - Media and Public Information, and Frequently-asked questions during a tsunami event
		DAY 3
		MORNING: PLENARY
		Exercises, Preparedness, Mitigation
		Use of Exercises in Tsunami Preparedness: International / National / Local Exercises, Types, and Post-Exercise Evaluations, IOC Tsunami Wave Guidance, Exercise CARIBE WAVE 2013 and 2014
		Tsunami preparedness and response - International Perspectives, including NZ Get Ready Get Thru, US TsunamiReady programs, Caribbean TsunamiSmart
		Evacuation Planning: Role and Value of Tsunami Inundation Modeling
		Vertical Evacuation and Refuge: Progress in Designing Tsunami-Resistant Structures
		AFTERNOON (TO BREAK): PLENARY
		Tsunami Warning Decision Support Tools: Earthquake and Sea Level Monitoring, PTWC SMS Alerts, Historical Databases, Tsunami Travel Time Calculation
		PTWC Proposed ICG/CARIBE-EWS Enhanced Products – Overview: Why, What, When
		PTWC Proposed ICG/CARIBE-EWS Enhanced Products: TWC/TWFP and TER Use and Limitations, and Feedback

		DAY 3 AFTERNOON and DAY 4: TWC and TER (DMO) MEET SEPARATELY FOR SPECIFIC TOPICAL AND TECHNICAL DISCUSSIONS
		DAY 3: SESSION -TWC
		AFTERNOON (AFTER BREAK): TWC/TWFP SESSION
		Earthquake Seismology (Special Topics) - Magnitudes, Centroid Moment Tensors, Finite Fault Rupture, Slow Earthquakes, Great and Gigantic Earthquakes
		TWC Operations: Real-time seismic monitoring and earthquake source characterization - Techniques - 'Tricks of the Trade', Challenges and Limitations
		DAY 4: SESSION -TWC
		MORNING: TWC/TWFP SESSION
		TWC Operations: Sea level monitoring, tsunami confirmation - Techniques - 'Tricks of the Trade', Challenges and Limitations
		TWC Operations: Wave forecasting - Techniques - 'Tricks of the Trade', Challenges and Limitations
		Creating Timeline-driven SOPs - How to Guidance, Explanation of Warning Center Templates for Analysis Processes, Flow Charts and Checklists.
		AFTERNOON: TWC/TWFP SESSION, PLENARY
		Breakout Groups and Report Out: Using Templates to create Timeline of Processes and Actions SOPs, including pre-scripted Messages, quick-response Checklists, Information Dissemination flow charts
		Table Top Exercise – Background and Scenarios for Day 5
		DAY 3: SESSION - TER
		AFTERNOON (AFTER BREAK): TER SESSION
		Public Coastal Evacuations: Alerting and Moving People, Inundation maps, Evacuation Routes and Signage, Safe return
		Community-level preparedness and education – Schools and businesses, Special Needs Populations, Tourism Sector
		Small Groups Exercise - Evacuation Mapping
		DAY 4: SESSION - TER, 6
		MORNING: TER SESSION
		Lessons Learned from Recent Tsunamis - Emergency Response – Acting on TWC messages, Timeline-driven DMO Actions to save lives
		Tsunami Emergency Response – Distant and Local Tsunami Threat – Wakayama, Japan Case Study
		Creating Timeline-driven SOPs - How to Guidance, Explanation of Response Templates for Distant and Local Threats, Flow Charts and Checklists
		AFTERNOON: TER SESSION, PLENARY
		Breakout Groups: Using Templates to Response SOPs, including General Roles and Responsibilities, Evacuation Checklists, and Timeline of Processes and Actions SOPs
		Tsunami Exercise – Background and Scenarios for Day 5
		DAY 5
		MORNING: PLENARY
		Table Top Exercise
		Table Top Exercise Set-up according to Stakeholder Warning and Response Groups
		CARIBE-EWS Tsunami Exercise
		AFTERNOON: PLENARY
		Post-Exercise Evaluation
		Post-Exercise Evaluation Preparation and Report Out
		Summary Next Steps, Closing Ceremony
		Toward Building National and Regional Capabilities - Summary Discussion and Next Steps
		Presentation of Certificates, Closing Ceremony