

IHO Capacity Building Programme

TECHNICAL VISIT REPORT

The State of Hydrography and Nautical Charting in Palau



Date: 12-15 August 2019

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ABBREVIATIONS

AtoN	Aid to Navigation
BOMT	Bureau of Marine Transportation
CRRF	Coral Reef Research Foundation
DGPS	Differential Global Positioning System
EAHC	East Asia Hydrographic Commission
EEZ	Exclusive Economic Zone
EQWB	Environmental Quality Protection Board
GIS	Geographic Information System
GMDSS	Global Maritime Distress and Safety System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HO	Hydrographic Office
IHO	International Hydrographic Organization
IMO	International Maritime Organization
IMSAS	IMO Member State Audit Scheme
INT	International
MSI	Maritime Safety Information
NGA	National Geospatial-Intelligence Agency
NHC	National Hydrographic Committee
NHCC	National Hydrographic Coordination Committee
PALARIS	Palau Automated Land and Resource Information System
PCA	Primary Charting Authority
PHCC	Palau Hydrographic Coordinating Committee
RHC	Regional Hydrographic Commission
SOLAS	International Convention for the Safety of Life at Sea
SoN	Safety of Navigation
SPC	Secretariat of the Pacific Community
TTW	Territorial Waters
UN	United Nations
UNCLOS	United Nations Convention on Law of the Sea
WMO	World Meteorological Organization
UNGGIM	United Nations Global Geospatial Information Management
WWNWS	World Wide Navigation Warning Service

EXECUTIVE SUMMARY

This report details the findings and recommendations from a technical visit to Palau in August 2019, focused on understanding and supporting the development of Palau's capabilities related to safe navigation. The Team looked at the current state of nautical charting and hydrographic knowledge within Palau and explored ways to improve communication between all parties involved in ensuring maritime safety. The goal is to help Palau establish a national program to manage and improve collection and promulgation of nautical information.

Following the visit, discussions continued with Palau, confirming their strong interest in building their hydrographic capabilities. There is ongoing work related to safety of navigation, including assessing risks to navigational aids, updating records, and planning investments in these aids over the next five years. Palau has also taken a significant step by formally establishing a coordinating committee dedicated to hydrographic matters. An agreement is also in place that designates the US National Geospatial-Intelligence Agency (NGA) as the Primary Charting Authority (PCA) for Palau.

The recommendations in this report are designed to help Palau take initial steps towards independently managing its nautical information, with the ultimate goal of achieving greater self-sufficiency through collaboration with regional partners.

Currently, Palau is not a member of the International Hydrographic Organization. While awareness of the importance of safe navigation is growing, there is still a need to further promote understanding of international obligations. As it stands, Palau relies on external charting authorities to fulfill these obligations.

There are currently no certified hydrographic surveyors or related specialists within Palau. Capabilities for conducting hydrographic surveys and producing and updating nautical charts are limited. The responsibility for maritime safety information currently resides within the Division of Port State and Navigation within the Bureau of Marine Transportation (BOMT).

It's worth noting that Palau has expressed interest in developing new products for domestic shipping routes and providing advanced training to build local expertise.

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REPORT OF TECHNICAL VISIT TO PALAU

Date: 12-15 August 2019

REFERENCES

- A. SPC Mission Report: Pacific Safety of Navigation Project (June 2019)
- B. Executive Order No. 464: To create a Palau Hydrographic Coordinating Committee

INTRODUCTION

The International Hydrographic Organization (IHO) promotes the safety of navigation and protection of the marine environment through the development and dissemination of hydrographic information. This Technical Visit aimed to assess the current state of hydrography in Palau, identify needs, and provide recommendations for building hydrographic capability.

1. Background

The Technical Visit was initiated to assess the state of hydrography in Palau, identify gaps, and offer recommendations for improvement. Correspondence indicates Palau's interest in developing its hydrographic capability, particularly regarding survey capabilities and S5 CAT-B training. NGA has been involved as PCA in building new products for Palau domestic routes. An SPC Mission Report (June 2019) outlines specific activities conducted by SPC related to Aids to Navigation (AToNs), MSI, and capacity building in Palau. Executive Order No. 464, issued in October 2021, formally established the Palau Hydrographic Coordinating Committee, fulfilling Palau's obligation under the International Convention for the Safety of Life at Sea (SOLAS) to ensure the availability of hydrographic services. The Memorandum of Understanding (MOU) between NGA and BOMT formally establishes NGA as the PCA for Palau. This report is guided by the IHO Capacity Building Strategy, which emphasizes a phased approach to developing hydrographic capabilities.

2. Composition of the Team

- *Mr. John Lowell, NGA, Senior GEOINT Authority – Maritime*
- *Mr. Alberto Costa Neves, IHO, Assistant Director*

PART A - OVERALL ASSESSMENT OF THE SITUATION IN REGION

3. Efficacy of the Technical Visit

The visit was a worthwhile investment. It significantly improved inter-visibility between local agencies and raised awareness of hydrographic issues at various levels of government. There was strong interest in follow-up advice and assistance.

4. Cooperative Arrangements and Potential

Potential for regional cooperation exists, particularly through the South-West Pacific Hydrographic Commission (SWPHC) and/or the East Asia Hydrographic Commission (EAHC).

PART B – PALAU ASSESSMENT

5. RHC Involvement

Palau is not an IHO member but is an associate member of the SWPHC. There is routine liaison with the SWPHC to include discussions to continue developing Palau's hydrographic capabilities.

6. Preliminary Liaison

Levan Akitaya, Chief, Division of Port State and Navigation, provided significant assistance in coordinating the visit.

William Hayes Moses, Director of the BOMT, was also a key point of contact.

7. Points of Contact

The IHO Yearbook entry for Palau should be updated to reflect the following points of contact:

- William H. Moses, Director of the BOMT
 - whayesm@gmail.com ; wm.moses@palaunet.com
- Levan Toktang Akitaya, Chief of Port State and Navigation – Division of Transportation, Bureau of Commercial Development, Ministry of Public Infrastructure, Industries and Commerce.
 - levanakitaya@gmail.com

There are some difficulties in accountability within the government structure, which can impact top-level awareness and support for national hydrographic capability.

DESCRIPTION OF MARITIME ACTIVITIES

8. National Maritime Affairs

Palau is an island nation heavily reliant on maritime activities for trade, tourism, and transportation. The marine environment is also central to Palauan culture and identity.

9. Trade and Maritime Traffic

Specific statistics not available from the provided documents.

- **a. Through Routes:** *Information not available.*
- **b. Trans-shipment:** *Information not available.*
- **c. Bulk Trades:** *Information not available.*
- **d. Feeder, Coasting and Local Trade:** *Information not available.*
- **e. Offshore Supply and Support:** *Information not available.*
- **f. Tourism Cruise Liners:** Palau is a popular destination for cruise liners.
- **g. Tourism Small Craft:** Leisure cruising is significant, with major cruising areas and marina developments. Mega-yachts are likely visiting.
- **h. Fisheries:** Both local artisanal and pelagic fisheries are present.
- **i. Other information:** *Information not available.*

10. Responsibility for Safety of Navigation

- The Division of Port State and Navigation within the BOMT is responsible for AtoNs.
- SPC has been assisting Palau with AtoN risk assessment and positioning.
- The SPC Mission Report indicates a collaboration between Palau and SPC in undertaking an AtoN risk assessment of the Malakal harbor.

11. Defense Force Responsibilities

NA

12. Coastal Zone Management and Environmental Protection

Koror State has preserved areas, and all of Koror is a world heritage site. There are marine conservation areas.

OUTLINE C 55 ANALYSIS

13. Status of Surveys within the National Maritime Zone

The status of surveys within the territorial sea and EEZ is incomplete. Some coastal areas are likely charted from older lead line surveys. Offshore banks or shoal areas may require side-scan sonar coverage.

14. Collection and Circulation of Nautical Information

The effectiveness of collecting and circulating nautical information is improving due to ongoing efforts to establish a formal system for reporting and disseminating information. MSI dissemination is currently done through emails to Japan (NAVAREA XI coordinator). Charting is accomplished through an external PCA with compilation handled by NGA and dissemination to public through the US National Oceanographic and Atmospheric Association (NOAA) Office of Coast Survey (OCS). Communications are primarily via email and phone with room to improve.

15. Survey Capability

Limited survey capability exists within the government. The Palau Automated Land and Resource Information System (PALARIS) and other organizations have some Geospatial Information Systems (GIS) capabilities. The Coral Reef Research Foundation (CRRF) has a multibeam sonar scanner.

16. Independent Chart Production Capability

Palau does not have an independent chart production capability.

PROPOSALS FOR COORDINATION AND CAPABILITY BUILDING

17. National Hydrographic Committee

The Team advised the creation of a National Hydrographic Committee (NHC) to improve coordination among stakeholders. Executive Order No. 464, issued in October 2021 formally established the Palau Hydrographic Coordinating Committee (PHCC). The committee is composed of representatives from various government agencies and research institutions, including the Chief of the Division of Port State and Navigation (Chairperson), the Chief of the Division of Maritime Security, Fish and Wildlife Protection; the Director of the Bureau of Fisheries; the Meteorologist-In-Charge of the Palau National Weather Service Office; the Executive Director of the Environmental Quality Protection Board (EQPB); the Director of Coastal Management and Law Enforcement, Koror State Government; the Chief Executive Officer of the Palau International Coral Reef Center; and the Program Manager of PALARIS. It is recommended that the current status of the PHCC

be reviewed, and that NGA/US be invited to (virtually) attend committee meetings. The PHCC should embrace the IHO Capacity Building Strategy and work towards achieving the objectives outlined in this report.

18. Phase 1 Hydrographic Capability: MSI Organization and GMDSS

Improve liaison and information flow between national and regional charting agencies.

- **a. MSI (Navigational Warnings):** There is a need to establish a formal process for reporting and disseminating Navigational Warnings and Notices to Mariners. SPC has assisted in updating the list of 22 technical recommendations on Safety of Navigation (SoN) for Palau. The MOU identifies BOMT as the National Coordinator for Palau and outlines the process for sharing navigationally significant changes with the Navigation Area Coordinator of Region XI, Japan.
- **b. Information on Ports and Harbors:** Better top-level support is needed for collating and disseminating information on new developments to responsible charting agencies.
- **c. GMDSS Status:** *Information on GMDSS status is not available.*
- **d. Other Services:** *Information not available.*

19. Phase 2 Hydrographic Capability: Survey

Increase top-level support and resourcing for hydrographic surveying. Investigate the possibility of a regional burden sharing, e.g. Differential Global Positioning System (DGPS) provision.

- **a. Provision of Survey Data:** Establish accountability for data provision. Commit to passing data to other Hydrographic Offices (HOs) with International (INT) or primary charting responsibility in the area.
- **b. Survey Capability:** Limited current capability. Potential for assistance from RHC members through loans of experts or equipment.
- **c. Potential for Regional Activity:** *Information not available.*

20. Phase 3 Hydrographic Capability: Chart Production

Local chart production is not currently viable.

21. Summary of the Assessment of the National Hydrographic Capability

Table 2: Assessment of National Hydrographic Capability

IHO	RHC	NHC	Phase 1	Phase 2	Phase 3	Notes
No	SWPHC	Yes	Partial	No	No	1. Maritime and Port organizations in the country relate with the national hydrographic authority and/or the charting authority.
			No	No	No	2. Maritime and Port organizations have some survey equipment, and some surveyors trained to IHO standards.
			No	No	No	3. It may be possible to generate/regenerate limited field survey capability.
			No	No	No	4. The RHC advice on equipment management and maintenance is merited.
			No	No	No	5. Any assessment of potential to provide field survey services to other States in the region and recommend scope for RHC consultative support.

PROPOSALS FOR ASSISTANCE

22. Training

Priorities include training in hydrographic surveying, data management, and MSI.

23. Equipment

Palau's BOMT has need for survey equipment, particularly Global Navigation Satellite System (GNSS) units for the precise survey of newly installed AToNs.

24. Funding

Local authorities should be made aware of the information in IHO Publication M-2, The Need for National Hydrographic Services.

FOLLOW-UP ACTIONS

25. Encouragement of Formation of an NHC, Development of a National Hydrographic Strategy, and RHC Membership

26. Encouragement of Effective and Timely Collection and Circulation of Nautical Information

27. Encouragement of Development of Hydrographic Capability

CONCLUSIONS

28. Cooperative Opportunities

Opportunities exist for the RHC and IHO Secretariat to build on the momentum generated by the visit.

29. National Hydrographic Committees (NHCs)

There is a need to promote the concept of a National Hydrographic Committee or equivalent arrangement.

RECOMMENDATIONS

30. Urgent Actions

- Establish a Maritime Safety Information (MSI) National Coordinator and inform the NAVAREA XI Coordinator (Japan). **Complete 18 October 2021**
- Establish appropriate governance and processes for the MSI National Coordinator.
- Establish a National Hydrographic (Coordinating) Committee (NHC/NHCC). **Complete 18 October 2021**
- Make use of the IHO Publication M-2 for raising awareness throughout the country on the importance of hydrography beyond safety of navigation, in particular for economic and social development and for building resilience against natural disasters.
- Establish a formal geospatial products and services agreement with the PCA for Palau, NGA of the United States (Reference IMO Member State Audit Scheme Auditor's Manual, item 3.3 of the Annex). **Complete 17 May 2021**
- Provide permission for the PCA to use data collected by the US Navy for updates to publicly available nautical charts and documents. **Complete 17 May 2021**

- Communicate with data holders and managers of marine data within Palau maritime limits that will enable the PCA to fulfill the shared responsibility for the provision of hydrographic services.
- Join the IHO and participate in its activities including taking benefit of the IHO Capacity Building Programme.

31. RHC Follow up Actions

- **a. Encouragement of NHCs:** Regional Plan is needed. Consider a meeting of the Coordinating Committee linked with the 2026 SWPHC conference. Contact the Chairperson of the PHCC to discuss collaboration and support. The RHC should support Palau in its efforts to achieve Phase 1 of the IHO Capacity Building Strategy.
- **b. Funding:** Advise on the preparation of National Indicative Plans for funding applications.
- **c. Regional and Bilateral Training:** Support training opportunities within the region.

32. Follow up Opportunities

Identify forthcoming openings for follow up actions. Specifically, the 2026 SWPHC conference provides an opportunity to engage with the PHCC.

33. Preparations for the Next RHC Conference

It is recommended to schedule a meeting with Mr. Moses and other members of the PHCC during the conference.

ANNEX LIST:

- A. SPC Mission Report: Pacific Safety of Navigation Project (June 2019)
- B. Executive Order No. 464: To create a Palau Hydrographic Coordinating Committee
- C. Palau ENC Coverages

DISTRIBUTION: Chairs, SWPHC and EAHC

INFORMATION: IHO Secretariat / visited coastal State