

The Importance of Hydrography Establishing the Outer Limit of the Continental Shelf

Commander Alexander Tagore Medeiros de Albuquerque (ret'd) of the Brazilian Navy is one of the outstanding hydrographers of the Directorate of Hydrography and Navigation (DHN) of the Brazilian Navy. DHN tasks include the delimitation of the national continental shelf in accordance with UNCLOS. Brazil and its hydrographers have contributed to the text of the UNCLOS since its first draft. It therefore seems appropriate that a Brazilian hydrographer now chairs the Commission. Hydro international was able to interview Mr Albuquerque and it is hoped that the readers shall appreciate not only the importance of the task of the Commission but also the vast amount of work to be performed by its members.

Can you summarise your biography and tell the readers of Hydro international how you started working for the Commission?

I followed the regular courses at the Brazilian Naval Academy at the end of which I graduated in Marine Sciences. I was then assigned to the Directorate of Hydrography and Navigation (DHN) in Rio de Janeiro. After having carried out various tasks in hydrography, I started working in the field of maritime delimitation in 1975. I was eventually named as Head of the Executive Committee in charge of the establishing of the outer limit of the Brazilian continental shelf. I joined the Commission on the Limits of the Continental Shelf (CLCS) in 1997 as an elected member. I was Chair of the Working Group in charge of the preparation of Chapter 9 of the Scientific and Technical Guidelines (STG): Information on the outer limits of the extended continental shelf. After 10 years with the Commission, the Government of Brazil, following a request by the DHN, put forward my name for the chairmanship of the Commission and I was elected to that position in November 2007.

[Editor's Note: Mr Albuquerque has more than 33 years of continuous experience in the field of maritime delimitations. Looking at the last report of the CLCS Chairman (October 2007), it seems that examination of national submissions takes time and that their number is going to increase considerably. Is the CLCS sufficiently equipped to face this task?]

Up to now, the CLCS has received a total of 11 submissions, and it has already issued the recommendations concerning Russian, Brazilian and Irish submissions. In spite of this huge workload, the CLCS, with the assistance of the Division for Ocean Affairs and the Law of the Sea (DOALOS), is sufficiently equipped to discharge its responsibilities in accordance with the dispositions of the United Nations Convention on the Law of the Sea (UNCLOS).

When will a submitting coastal State have its claim about the limits of the continental shelf recognised?

The coastal State, based on these recommendations, can establish the outer limit of the continental shelf, which shall be final and binding. This means that the Commission makes recommendations in accordance with the Convention, but it is up to the coastal State to establish the outer limit of its continental shelf.

How many other coastal States are expected to submit their claims in the future?

The DOALOS requested coastal States to submit to the Secretariat on whether they intend to make a submission to the Commission and by what date. Twenty-seven States responded to that request. It is therefore expected that the Commission will receive around 30 submissions by 13 May 2009.

At the 11th meeting (May 2001) of the States Party of the UNCLOS it was decided that for those States for which the UNCLOS entered into force before 13 May 1999, the time limit for their submission could be delayed to 13 May 2009. At the same meeting it was decided that, particularly in the case of developing States, the ability to fulfil the requirements of article 4 of Annex II be kept under review. Does this decision mean that further delays for the presentation of the applications may be conceded? This kind of decision is up to the States Parties and not the Commission. However, any decision on this matter will of course affect the workload of the Commission.

In article 3 of Annex II of the UNCLOS it states that the commission may co-operate with the IOC and IHO. What are the present connections of the CLCS with these Organisations? We have seen that, for example, in the Scientific and Technical Guidelines published by the Commission in 1999, reference is made to IHO publication S-44: IHO standards for hydrographic surveys (2008 edition, published last February). Does the Commission make use of other IHO-IOC publications?

I would like to clarify that the Standards for Hydrographic Surveys (S-44), 5th Edition, February 2008

"is designed to provide a set of standards for the execution of Hydrographic surveys for the collection of data which will primarily be used to compile navigational charts to be used for safety of surface navigation and the protection of the marine environment".

The Commission, however, does not have a direct link with the "safety of surface navigation" and with the "protection of the marine environment". Nevertheless, in the scientific and technical guidelines, the STG reference is made to the IHO standards and/or definitions. For example: the definition of nautical mile and its abbreviation M; the recommendation to use the World Geodetic System of 1984 (WGS84) as international hydrographic position standard; the depth error estimate to be done as indicated in the publication Standards for

Hydrographic Surveys ; and the recommendation that bathymetric profiles be run perpendicular to the isobaths. Finally, the STG in its Annex refers to the IOC as an important international organisation that might have access to data and information of potential interest to coastal States during the preparation of submissions in respect to the outer limits of the continental shelf beyond 200M.

The Commission has a Training Committee. To what extent does the activity of that Committee help developing coastal States to submit their continental shelf claims?

In addition to the training included in the functions of the Commission, DOALOS organised seven training courses in different geographical regions. International experts, including members of the Commission in the context of their personal capacity, helped the DOALOS in delivering the training modules.

In your opinion, what are the most effective sea survey and data elaboration techniques used by the coastal States for determining the characteristics of the sea floor?

The foot of the continental slope (FOS) is a key feature in the determination of the outer limit of the continental shelf. To determine the FOS, a coastal State can rely only on bathymetric data. I agree with my colleague Fernando Pimentel (Commander of the Portuguese Navy, specialist in hydrography and member of the Commission), when he says that the option to use geological and geophysical evidence to determine the FOS is also valid but not essential. In order to determine the FOS points, one needs an accurate determination of the sea floor slope. For the purpose of determining the FOS points, it is more important to have an idea of the trend of the depth than to measure the absolute value of the depth. The current, most accurate, bathymetric surveys are carried out by means of swath bathymetric systems, for example multi-beam echosounders. However, and in order to save money, it is my opinion that for the purposes of the Convention single-beam echo-sounders are good enough, provided they are used in accordance with acceptable international standards.

Which, instrument do you think is most suitable for obtaining a reliable definition of the bathymetry and in particular of the fundamental 2,500m depth contour?

The 2,500m depth contour is very important, especially in for establishing the outer limit in the submarine elevations. Multi-beam and single-beam echo-sounding measurements are considered the primary source of evidence for the delineation of the isobath. All other bathymetric measurements will be regarded as complementary information.

Do the coastal States make use of the services offered by private survey and software enterprises? Which are the most common services requested?

Until now, in order to prepare their submissions, coastal States made use of their own national organisations, for example state oil companies, hydrographic offices and geological institutions.

Is it possible that some claims cannot be handled because of lack of reliable data collection or data management?

While examining a submission, the Commission considers all kinds of data and material provided by the coastal State, including any additional data and material delivered to the Commission during the process of examination. During this process, the coastal States are given all the opportunities to provide the Commission with new data and material or to change any data or material already delivered to the Commission.

*Does the Commission foresee any application related to the Arctic by any nation bordering that Ocean??Up to now the Commission received two submissions which include areas in the Arctic region: Russian Federation and Norway. In accordance with the document SPLOS/INF/20 (available in DOALOS website), there might be another two submissions in the near future: Canada and Denmark. ?Do you have the impression that some countries underestimate the significance of establishing or enlarging their offshore limits??The recommendations are made based on the submissions addressed to the Commission. Therefore, it is difficult to say whether the States that have not prepared a submission have underestimated the significance of establishing the outer limit of their continental shelves.

What message would you send to the coastal States on behalf of the Commission?

The Commission designed the STG with a view to help coastal States establish the outer limit of their continental shelves. However, the Commission is aware that there might be other scientific and technical methodologies used by States to implement the provisions of article 76 to prepare a submission, which may not be covered by the STG. In this context, all submissions are considered by the Commission.