

Article



Hydrographic Surveying in Exclusive Economic Zones: Jurisdictional Issues

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Differences of view exist on whether or not another State might conduct hydrographic surveys in an Exclusive Economic Zone (EEZ) without the prior authorisation of the coastal State. This paper reviews the background to the EEZ regime, relevant international law and developments with hydrographic surveying before reaching the conclusion that trends in recent decades with technology, the utility of hydrographic data and State practice suggest that hydrographic surveys in the EEZ should now be under the jurisdiction of the coastal State.

Introduction

International law is clear on most issues associated with the conduct of marine scientific research and hydrographic surveying. In accordance with Articles 19(2)(j), 21(1)(g), 40, 54 and 245 of the 1982 UN Convention on the Law of the Sea (UNCLOS), these activities require the prior authorisation of the relevant coastal State in internal waters, the territorial sea (including by ships exercising the right of transit passage) and archipelagic waters (including by ships exercising the right of archipelagic sea lanes passage). All States have the 'freedom of scientific research' on the high seas subject to Parts VI and XIII of UNCLOS dealing with the continental shelf and the international regime for marine scientific research respectively.

Hydrographic surveying is listed in UNCLOS Article 21(1)(g), along with marine scientific research, as an activity under the jurisdiction of the coastal State in the territorial sea. UNCLOS Article 19(2)(j) prohibits 'research or survey activities' generally during innocent passage through the territorial sea and Article 40 states that foreign marine scientific research and hydrographic ships may not carry out any research or survey activities during transit passage through a strait used for international navigation without the prior authorisation of the coastal State. This latter article also applies to archipelagic sea lanes passage under UNCLOS Article 54. Hydrographic surveying is not mentioned in Part V of UNCLOS dealing with the EEZ or indeed anywhere else in the Convention.

Part XIII of UNCLOS provides that coastal States have the exclusive right to regulate, authorise and conduct marine scientific research in their EEZ (including the contiguous zone) and on their continental shelf. Part XIII then establishes an implied consent regime that allows other States and competent international organisations to proceed with a marine scientific research project in the EEZ or on the continental shelf under certain circumstances even though the consent of the coastal State may not have been forthcoming. The relevant articles in UNCLOS are 246-252. In normal circumstances, the

coastal State shall grant its consent to marine scientific research projects carried out for peaceful purposes in order to increase scientific knowledge of the marine environment (sometimes characterised as 'pure' scientific research) (UNCLOS Article 246(3)). The coastal State is to ensure that such consent will not be delayed or denied unreasonably although there are a several specific situations under which the coastal State may withhold consent (including when such research is of direct significance to the exploration and exploitation of natural resources, both living and non-living) (UNCLOS Article 246(5)).

This consensual regime is controversial and unevenly interpreted. There has been some reluctance by researching States to resort to implied consent and some coastal States have failed to grant consent in circumstances when it might reasonably have been expected (Roach, 1996) or have applied extra restrictions on marine scientific research beyond those required by UNCLOS (Galdorisi and Vienna, 1997, p.164). However, this paper is not concerned with these controversies. Rather it addresses the right to conduct hydrographic surveying in an EEZ and the extent to which if at all, hydrographic surveying is captured by the UNCLOS regime applying to marine scientific research in the EEZ.

The important issue of concern is whether or not another State might conduct hydrographic surveys in an EEZ without the prior authorisation of the coastal State. The controversy regarding the conduct of hydrographic surveys in an EEZ was succinctly summed up in Memorandum No. 6 issued by the Council for Security Cooperation in the Asia Pacific (CSCAP) on *The Practice of the Law of the Sea in the Asia Pacific* (CSCAP, 2002, pp. 3-4) as follows:

Different opinions exist as to whether coastal State jurisdiction extends to activities in the EEZ such as hydrographic surveying and collection of other marine environmental data that is not resource-related or is not done for scientific purposes. While UNCLOS has established a clear regime for marine scientific research, there is no

specific provision in UNCLOS for hydrographic surveying. Some coastal States require consent with respect to hydrographic surveys conducted in their EEZ by other States while it is the opinion of other States that hydrographic surveys can be conducted freely in the EEZ.

The United States regards hydrographic surveying, along with what it refers to as 'military surveying'¹, as part of the high seas freedoms of navigation and overflight and other international lawful uses of the sea related to those freedoms, and conducted with due regard to the rights and duties of the coastal State (CSCAP, 2002, footnote 3, p.3). The position of the United States is that while coastal State consent must be obtained in order to conduct marine scientific research in its EEZ, the coastal State cannot regulate hydrographic surveys conducted beyond its territorial sea, nor can it require notification of such activities (Thomas and Duncan, 1999, p.130). The United States considers that 'survey', 'prospecting' and 'exploration' are primarily dealt with in other parts of UNCLOS, notably Parts II, III, XI and Annex III rather than Part XIII (Thomas and Duncan, 1999, footnote 50, p.21).

Other States, including China, have specifically claimed that hydrographic surveys might only be conducted in their EEZs with their consent (SOF and EWC, 2003, p.7). In December 2002, China announced that it had enacted a new law explicitly requiring Chinese approval of all survey and mapping activities in China's EEZ and stating that unapproved ocean-survey activity will be subject to fines and confiscation of equipment and data (SOF and EWC, 2003, p.39).

China took military action and lodged protests over 'hydrographic survey' operations in its EEZ by the USNS *Bowditch* (AGS-21) in Spring 2000 and fall 2002 (Studeman, 2003, p.266). According to a spokesman for the Military Sealift Command, Far East, 'USNS *Bowditch* was gathering hydrographic acoustic performance data in international waters around the Yellow Sea' (Oliva, 2003). Similarly in March 2001, India lodged protests with the United States and the United Kingdom over violations of

¹ Military surveying can involve the collection of hydrographic, oceanographic, marine geological, geophysical, chemical, biological and acoustic data. While the means of data collection may sometimes be the same as that used in marine scientific research, information from such activities, regardless of security classification, is intended for use solely by the military and not by the general scientific community

its EEZ by military survey ships (SANDNet, 2001). The ships involved were the *Bowditch* and HMS *Scott*. The *Bowditch* was detected 30 nautical miles from Nicobar Island and was reportedly carrying out 'oceanographic survey operations' (Galdorisi and Kaufman, 2002, p.294). After having been sighted 190 nautical miles off Diu and later near Porbandar in the Arabian Sea, the *Scott* indicated it was carrying out military surveys and declined to provide any further information (Galdorisi and Kaufman, 2002, pp.294-5).

Background

The conditions under which marine scientific research might be carried out in the EEZ or on the continental shelf were one of the more controversial issues during the Third UN Conference on the Law of the Sea (UNCLOS III) leading to consensus agreement on UNCLOS (Australian Department of Foreign Affairs, 1977, p.63). The establishment of the EEZ regime in UNCLOS brought under coastal State jurisdiction nearly one-third of the world's ocean space. This was also the part of the world's oceans where the greater part of marine scientific research is conducted as most ocean phenomena occur along the edge of continents. Thus major researching States, particularly the United States, were concerned that with the introduction of the EEZ regime, they might lose access to large areas of ocean that were of great interest to marine scientific research.

As established under UNCLOS, the EEZ is a zone of shared rights and responsibilities. However, it has become 'a zone of tension between coastal State control and maritime State use of the sea' (Galdorisi and Kaufman, 2002, p.257). A coastal State has sovereign rights for the purpose of exploiting, conserving and managing the living and non-living resources of the EEZ and jurisdiction, as provided for in relevant provisions of UNCLOS, in relation to the establishment of artificial islands, installations and structures; marine scientific research; and the protection and preservation of the marine environment (UNCLOS Article 56(1)). But other States also have rights and duties in the EEZ. These are related to freedoms of navigation and overflight, the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to those freedoms (UNCLOS Article 58(1)). In exercising their

rights and duties in an EEZ, the coastal State is required to have *due regard* to the rights and duties of other States (UNCLOS Article 56(2)). Similarly other States should have *due regard* to the rights and duties of the coastal State (UNCLOS Article 58(3)).

One of the major difficulties at UNCLOS III in developing the EEZ regime was to strike a balance between the right of a coastal State to protect its interests in the EEZ and the needs of researching States to preserve conditions conducive to marine scientific research. Prior to the establishment of the EEZ regime, waters in an EEZ had been part of the high seas with no restrictions on the freedom of research. The researching States were concerned at UNCLOS III that an unrestricted right of coastal States to control research in their EEZs would have detrimental effects on the pursuit of scientific knowledge that would not just be limited to the States concerned.

A failure to distinguish clearly between the sovereignty a coastal State exercises in its internal waters and territorial sea (and archipelagic waters in the case of an archipelagic State) and the sovereign rights it exercises in its EEZ and on its continental shelf is at the core of many Law of the Sea related disputes among States (CSCAP, 2002, p.4). There is a clear distinction between the concepts. *Sovereign rights* pertain to a functional jurisdiction (notably over resources and environmental protection) that is more limited in character than *sovereignty*. The EEZ is a zone fundamentally different ('*sui generis*') to both the territorial sea (Australian Department of Foreign Affairs, 1977, p. 67) and the high seas although some of the freedoms of the high seas also apply in the EEZ.

Article 58(1) of UNCLOS provides that, subject to relevant provisions of the Convention, all States enjoy the same freedoms of navigation and overflight in the EEZ that are available on the high seas. The United States and some other major maritime powers argue that hydrographic surveying is not subject to the marine scientific research regime for the EEZ in UNCLOS. They regard hydrographic surveying as fundamentally related to the safety of navigation and part of the freedoms of navigation available in the EEZ.

The argument that marine scientific research and hydrographic surveying are different is based on

the way in which the activities are referred to in several articles of UNCLOS. Article 19(2)(j) includes 'research or survey activities' among those activities that are contrary to the right of innocent passage. Article 21(1)(g) authorises the coastal State to adopt laws and regulations relating to innocent passage through the territorial sea in respect of 'marine scientific research and hydrographic surveys'. This article is linked to Article 245, which gives a coastal State the exclusive right to 'regulate, authorise and conduct' marine scientific research in its territorial sea. Article 40, entitled 'research and survey activities', provides that foreign ships, including 'marine scientific research and hydrographic survey ships', exercising the right of transit passage through an international strait may not carry out 'any research or survey activities' without the prior authorisation of the States bordering the strait.

This prohibition against 'any research or survey activities' is a general one against any kind of research carried out by foreign ships while exercising the right of transit or archipelagic sea lanes passage (Nandan and Rosenne, 1993, p.352). However, the collection of data by a ship during a passage (be it a research vessel or not) that is required for the safe navigation of the ship, such as depth sounding and measurements of wind speed and direction, cannot be regarded as either marine scientific research or a survey activity (Soons, 1982, p.149). A distinction must be drawn between a ship operating its sonar or echo sounding equipment in the interests of safe navigation (and reporting any hazards detected to the appropriate authority) and hydrographic surveying as a purposeful and systematic activity. The former is incidental to the safety of navigation while the latter is obviously within the scope of 'any research or survey activities' as identified in UNCLOS. As with innocent passage in the territorial sea and provided the vessel does not stop or act in any other way that is not in accordance with making a normal direct passage, there is little possibility that a coastal State would be aware of any data collection incidental to normal passage.

Commentaries on UNCLOS and the various sessions of UNCLOS III leading up to agreement on the

Convention throw little light on why 'hydrographic surveying' was introduced into Articles 21(1)(g) and 40 (only 'survey' in Article 19(2)(j)). Basically hydrographic surveying was regarded as a technical activity related to the safety of navigation and not part of the marine scientific research regime². At the earlier Sea-Bed Committee, there were several related proposals all concerned with the activities of warships, including one by the Soviet Union at the 1972 session of the Committee providing that warships in transit were not, *inter alia*, 'to undertake hydrographical work' (Nandan and Rosenne, 1993, p.350). A proposal by Fiji at the second session of UNCLOS III in 1974 became the origin of the final language of Article 40 after an earlier proposal by Fiji at the Sea-Bed Committee provided that foreign warships exercising the right of innocent passage through the territorial sea should not 'undertake any hydrographical survey work or any marine research activities' (Nandan and Rosenne, 1993, pp.350-1).

Because hydrographic surveying is mentioned separately to marine scientific research in several UNCLOS articles, some commentators claim that hydrographic surveying is not part of marine scientific research. For example, Soons considers that hydrographic surveying might be regarded as an internationally lawful use of the sea associated with the operation of ships or submarine cables and pipelines in accordance with Article 58 of UNCLOS, and can therefore be conducted freely in the EEZ (Soons, 1982, p.157). However, it would be subject to coastal State jurisdiction if the activity were in connection with the exploration and exploitation of the natural resources of the zone. This would be the case, for example, if the hydrographic survey was being conducted as preliminary to, or in conjunction with, a geophysical investigation of the oil and gas potential of a particular seabed area. Bathymetric charts providing a description of seabed topography are a routine output of hydrographic surveys and a basic tool of resource exploitation.

The distinction between hydrographic surveying and marine scientific research has been an issue with the Advisory Body of Experts on the Law of the Sea (ABELOS) established by the Intergovernmental Oceano-

² Verbal advice from Judge Alexander Yankov of the International Tribunal for the Law of the Sea and Chairman of the Third Committee of UNCLOS III (1973-1982) that addressed marine scientific research issues (advice received in Honolulu 10 December 2003)

graphic Commission (IOC) but no conclusion has been reached. Predictably discussion came down to a debate between the representatives of the United States arguing that surveying activity was not subject to coastal State control while other delegates questioned both the tone and certain contents of the presentation by the United States (IOC, 2001).

Marine Scientific Research

Marine scientific research is the general term most often used to describe those activities undertaken in ocean and coastal waters to expand scientific knowledge of the marine environment (Thomas and Duncan, 1999, p.21). Marine scientific research includes oceanography, marine biology, fisheries research, scientific ocean drilling and coring, geological/geophysical scientific surveying, as well as other activities with a scientific purpose (Roach and Smith, 1994, p.248). There is a tendency in practice to use the term marine scientific research loosely when referring to all kinds of data collection (research) conducted at sea. However, not all data collection conducted at sea necessarily comes within the scope of the marine scientific research regime established by UNCLOS. Many argue that other activities, such as resource exploration, prospecting and hydrographic surveying are governed by different legal regimes. However, these activities may be difficult to distinguish in practice and this is a large part of the problem.

Ships and a variety of other platforms, such as submersibles, installations and buoys or Ocean Data Acquisition Systems (ODAS), aircraft and satellites might conduct marine scientific research. New technologies for marine data collection include Remotely Operated Vehicles (ROVs), Autonomous Underwater Vehicles (AUVs) and seabed landers (Funnell and Barton, 2002, p.12). These systems potentially allow data to be collected within the EEZ without the research ship actually entering the zone itself. For example, AUVs could be launched outside the zone on a pre-programmed mission of data collection.

The ships undertaking marine scientific research might be categorised as oceanographic research vessels, hydrographic surveying vessels, seismic exploration vessels or fisheries research vessels. Hydrographic ships tend to be operated by navies

or defence agencies, although civilian crews may man them, while the other categories of vessel are mostly operated by civilian agencies. However, few of these categories of vessel are exclusive. For example, an oceanographic vessel may conduct what might be classified as fisheries research and a fisheries research vessel might undertake broader oceanographic research. Most hydrographic surveying vessels also have a capability to conduct oceanographic research and indeed may routinely do so as part of hydrographic surveying, e.g. the taking of bottom samples and the collection of data on currents and tidal streams. Many of the technologies used for marine scientific research and hydrographic surveying are substantially the same. Both use precise navigation systems, multi-beam sonars, current meters, seabed sampling devices, etc. However, despite these considerations, a hydrographic surveying vessel is usually just what it says it is.

Hydrographic Surveying

The origins of hydrographic surveying lie in marine scientific research and this partly explains why the boundary between marine scientific research and hydrographic surveying is difficult to draw (Gorina-Ysern and Tsamenyi, 1997, p.7). Early naval explorers such as James Cook, Mathew Flinders, Charles Baudin and George Vancouver were hydrographers themselves and usually had marine scientists embarked with them. Initially their hydrographic work was ancillary to the greater objectives of exploration and scientific research. These intrepid explorer-surveyors delineated the coastline, discovered safe routes for shipping, and fixed as accurately as they could the geographical position of their discoveries although normally they did not search closely for or investigate hidden rocks, reefs and shoals (Ingleton, 1944, p.42). That came later.

Until the advent of the Navstar Global Positioning System (GPS) in 1994 and the later Differential GPS (DGPS), it was extremely difficult for a hydrographic survey to be conducted without the support of the adjacent coastal State(s). Shore control was essential for accurate position fixing and this required the establishment of shore stations, including those to support long-range positioning systems such as Loran-C, Lambda and Hi-Fix. Thus it was probably sufficient that UNCLOS should

establish the jurisdiction of the coastal State over hydrographic surveying in the territorial sea without bothering with surveys further offshore. It is possibly not a coincidence that hydrographic surveying in the EEZ has only become controversial over the last decade or so with the introduction of GPS. Prior to that time, most hydrographic surveys in the EEZ would only have been possible with the support of the coastal State because the accuracy of the survey depended on having shore stations in the vicinity of the survey area.

Although it could be argued that using airborne light detection and ranging (LIDAR) equipment to conduct a hydrographic survey in an EEZ without the permission of the coastal State is part of the high seas freedom of overflight, it is unlikely that any coastal State would accept such an argument. The low altitude of the aircraft, its repetitive flight pattern and the likely relatively shallow waters of the area being surveyed are all factors that would concern the coastal State and lead to its questioning of the purpose of the activity.

Hydrographic surveying is invariably a clear and distinct activity that, despite its use of similar equipments to that used with other forms of marine scientific research, is not easily confused with other marine scientific research activity. And as mentioned earlier, hydrographic surveying needs to be distinguished from the routine collection of data during the normal passage of a vessel. It is fairly obvious when a ship is conducting a hydrographic survey. It will be underway and following a regular pattern of sounding lines whereas a ship undertaking other activities, including oceanographic research and military surveys, may be more random in its movements stopping regularly to conduct experiments or to take bottom samples.

Need for Hydrographic Data

The primary use of the data collected by hydrographic surveys is to compile nautical charts and other documents to facilitate and ensure the safety of navigation and for use by others concerned with the marine environment such as ocean engineers, oceanographers, marine biologists and environmental scientists. Hydrographic surveying, virtually by definition, is conducted for peaceful purposes although some work by naval hydrographic surveying

ships, such as the collection of bottom topography data and deeper water surveys, may not immediately have relevance to the safety of surface navigation or be released internationally. The secret surveys of the South China Sea conducted by the United States, United Kingdom and Japan in the 1920s and 1930s are fine examples of hydrographic surveys that were not released to the public for many years (Hancox and Prescott, 1997).

Apart from navigational safety, important applications of hydrographic knowledge include planning the exploration and exploitation of marine resources, the determination of seaward limits of national jurisdiction, coastal zone management, national development (including building new ports and harbors), and the delimitation of maritime boundaries (Maschke, 1999, p.9). Requirements have shown no sign of lessening over the years. Deeper draught vessels, greater recognition of the need to protect the marine environment, new patterns of maritime trade, the growing importance of seabed resources, increased exploitation of offshore oil and gas, and the new limits of national jurisdiction allowed under UNCLOS are all factors that have served to highlight the inadequacies of existing hydrographic knowledge.

As indicated, for example in the discussion of the need for a national hydrographic service in the International Hydrographic Organization (IHO) publication M-2 - *National Maritime Policies and Hydrographic Services* (IHO, 2001, Chapter 1), there is a trend now to think of hydrographic knowledge of adjacent waters as an element of national infrastructure and sustainable development. Nautical charts provide for the safety of navigation and facilitate maritime economic activity generally, including fishing, tourism and oil and gas exploration and exploitation. Roach (1996, p.40), a leading advocate of the position of the United States on hydrographic surveying in the EEZ, has noted the relevance of hydrographic data and knowledge to national development:

In many areas of the world, the production of up-to-date charts has had a positive impact on economic development in coastal areas, stimulating trade and commerce and the construction or modernisation of harbour and port facilities. By helping safety of navigation for ships transiting offshore, up-to-date charts also play a role in protecting coastal

areas from the environmental pollution which results from wrecks of freighters and tankers carrying hazardous cargoes. Data collected during hydrographic surveys may also be of value in coastal zone management and coastal science and engineering.

Paradoxically this relevance of hydrographic surveying to economic development now supports the view that hydrographic surveying in an EEZ should come within the jurisdiction of the coastal State. Hydrographic data in the EEZ has economic value to the coastal State and the coastal State should be in a position to manage and control the release of such data, regardless of how and by whom it was collected. It is very hard these days to identify any hydrographic data, including that collected by military surveying ships, which would not have some potential value to the coastal State. The coastal State requires such data to support developmental activities in the EEZ, both now and in the future, related to its sovereign rights for economic exploitation and its obligation to preserve and protect the marine environment of the zone. It might even be argued that hydrographic surveys come within the scope of 'other activities for the economic exploitation and exploration' of the EEZ (UNCLOS Article 56(1)(a)).

The provision of hydrographic services in adjacent waters is now an obligation under Regulation 9 of the International Convention for the Safety of Life at Sea (1974) (SOLAS Convention). This regulation requires that Contracting Governments provide hydrographic services including surveying and the issue of nautical charts and the IHO is now pursuing an active capacity building program whereby developed country members assist developing country members with developing their hydrographic capacity. While the geographical area of responsibility for surveying and charting is not specified, there is a clear implication that it extends beyond the territorial sea and archipelagic waters.

This argument can be taken further. Hydrographic data is a *tradable* commodity, as well as an essential element of the national infrastructure of the coastal State. The IHO has recognised this through the recent attention it has been giving to the issue of copyright over hydrographic data. Navigational and hydrographic information on nautical charts issued by one country may no longer be freely copied by another State on to its own nautical

charts. In these days of economic rationalism, the free exchange of hydrographic data is not regarded as an acceptable way of doing business. Just as the coastal State regards marine scientific research data as within its control and jurisdiction, the same might be said about hydrographic data. It is not just the intended functional use of marine scientific research or hydrographic data (i.e. for economic purposes) that establishes the principle of coastal State jurisdiction but also recognition that such data has value in its own right.

The distinction between different categories of surveying and marine scientific research hinges on more than the *intent* and the purpose of collecting the data (e.g. for military or other non-resource-related purposes). The potential economic value and utility of the data to the coastal State must also be considered. It is very difficult to say that hydrographic data collected today will not have some value in the future. The 'secret' surveys of the South China Sea already mentioned are examples of surveys conducted in the past that came to have significant value in the future.

There may be liability implications for a coastal State if a nautical chart it publishes of its adjacent waters does not contain the best available information. The rights and obligations of a coastal State in its EEZ suggest the leading role of the coastal State in the production of nautical charts for those waters and thus its interest, indeed a responsibility, in ensuring that published charts of those waters are accurate. This responsibility is evident in law suits about groundings that have been caused by inaccurate charts published by other States that were out of date compared with those issued by the coastal State. Even if the coastal State does not have an effective national hydrographic service, this is not justification for another State to presume a right to conduct hydrographic surveys in the EEZ of the coastal State.

Arguments to support the unrestricted conduct of hydrographic surveying in an EEZ are often based on its close relationship with the safety of navigation. However, the fact that hydrographic surveying is not permitted in the territorial sea or during transit or ASL passage would appear to run against the argument that it is required for the safety of navigation and thus might be conducted in an EEZ without the permission of the coastal State. Safety of

navigation is equally of concern in the territorial sea or in archipelagic waters yet hydrographic surveying in those waters without the consent of the coastal State is specifically prohibited.

State Practice

While the United States and the United Kingdom take the position that hydrographic surveying in the EEZ is not within the jurisdiction of the coastal State, other States apparently do not share this view. For example, both Australia and Canada are understood to seek permission of the coastal State before conducting hydrographic surveys in the EEZ of the other State and other countries, including China, have specific legislation on the issue.

UNCLOS Article 255 exhorts States to adopt reasonable rules, regulations and procedures to promote and facilitate marine scientific research, including access to harbours and assistance for research vessels. Although a thorough survey has not been conducted of State practice, it would seem that States in implementing this UNCLOS article usually do not refer separately to hydrographic surveying. Based on a survey conducted by the United Nations (United Nations, 1989, pp.143-154), national legislation governing the conduct of marine scientific research in waters under national jurisdiction generally does not specifically identify hydrographic surveying as different to marine scientific research.

National legislation is required to implement the UNCLOS regime and to specify requirements for national participation and the reports required by the coastal State. Australia has established Foreign Research Vessel Guidelines (FRVG) as part of implementing Part XIII of UNCLOS but these make no reference to hydrographic surveying or other types of survey (Gorina-Ysern and Tsamenyi, 1997, p.20). While the fact that hydrographic surveying is not specifically mentioned could support the argument that it is different to marine scientific research, it seems rather more likely that coastal States in not mentioning it, are assuming that it is self-evident that it is captured by the marine scientific research legislation.

Due to the political sensitivity of the issue, it is unlikely that the IHO would take a position on such

matters. Decision-making in that organisation is by consensus and it is most unlikely that consensus could be reached on this issue unless it was to accept a position, contrary to the views of the United States and some of its allies, that hydrographic surveying is outside the scope of the marine scientific research regime in UNCLOS.

Military Surveys

This paper has given relatively little attention to the issue of military surveys in the EEZ and where there is overlap with hydrographic surveying. Some hydrographic surveys might be conducted for military purposes, particularly to support safety of submarine navigation and submarine operations, but unlike military surveying, hydrographic surveying can be precisely defined. Most hydrographic surveying activity is readily identifiable as such whereas military surveys might involve a range of activities the precise purpose of which might be difficult to determine. This ambiguity might even be introduced intentionally by the researching State to confuse the real purpose of the work.

The considerations that apply to the rights to conduct hydrographic surveys and military surveys in an EEZ are essentially different. Paradoxically the arguments for purely military surveys in the EEZ being outside the jurisdiction of the coastal State appear stronger than those supporting an unrestricted right to conduct hydrographic surveying in the EEZ. Military surveys might be more easily argued as an ancillary activity to the high seas freedoms of navigation and overflight available in the EEZ. The data collected is for military purposes only and is not normally released to the public. On the other hand and although naval vessels might be involved, hydrographic surveying has a certain 'non-military' quality to it. Its association with the safety of navigation may now be more a reason for hydrographic surveys in the EEZ coming within the jurisdiction of the coastal State rather than for them being outside coastal State purview.

Conclusions

This paper concludes that hydrographic surveying in the EEZ can no longer be seen only in the context of being a freedom of the high seas associat-

ed with navigation and overflight. Hydrographic data now has much wider application than just the safety of navigation. It has many uses associated with the rights and duties of a coastal State in its EEZ. Trends over the years with technology and the greater need for hydrographic data have brought hydrographic surveying and marine scientific research closer together and similar considerations would now seem to apply to the conduct of hydrographic surveying in the EEZ as apply to the conduct of marine scientific research in that zone. Furthermore, our understanding of the concept of the EEZ, including an appreciation of the rights and duties of different States in that zone, has come a long way since the concept was originally formulated at UNCLOS III.

Effectively hydrographic surveying is captured by the marine scientific research regime in UNCLOS. Discussion in this paper supports the view that hydrographic surveys in the EEZ, including those conducted for military purposes, require the prior authorisation of the coastal State and should only be conducted with some involvement of that State. The coastal State should normally consent to the hydrographic surveys if they relate purely to the safety of navigation but consent might be withheld if the surveys relate to resource exploration or exploitation. Much State practice, including the working principles of the IHO (albeit unstated and not formalised), appears to support the conclusions of this paper.

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Biography

Dr Sam Bateman retired from full-time service in the Royal Australian Navy in 1993 with the rank of Commodore (one-star) and became the first Director of the Centre for Maritime Policy at the University of Wollongong where he is now a Professorial Research Fellow. His naval service included four ship commands (including a frigate and a destroyer). His current research interests comprise regional maritime security, the strategic and political implications of the Law of the Sea, and maritime co-operation and confidence-building. Early in his naval career, he was awarded the Royal Navy's Shadwell Testimonial Prize for high quality hydrographic survey work undertaken by a non-qualified surveyor.

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