

CAPACITY BUILDING FOR COUNTRIES IN TRANSITION

Neil Guy

Independent Maritime Consultant

ABSTRACT

Maritime safety information (MSI) can be related to the economic success of a State. Where the region is developing, or is in transition, the significant difference in the supply and the quality of MSI between developing States and developed States is a key issue. The provision of poor charting and poor safety of navigation information could also result in surcharges being placed on trade that is already disadvantaged. This would be in an effort to offset possible damage and loss.

The major trading States are close to their markets and are usually able to utilise road, rail and sea transportation over relatively short distances, on well-defined and maintained routes. The developing State could be some distance from the market places of the world and additional costs of transportation have to be added to the cost of the products. As stated this trade could be subject to additional risk factors and the cost of the transportation and therefore the products could be still further increased.

In geographical terms many of the developing States are continental States but due to underdeveloped land transport infrastructure they have, in effect, island economies. Their trade is almost exclusively via the ports of that State or through other ports in the region. In the improvement of all aspects of an economy the importance of MSI in the cycle of coastal State development cannot be over-stressed. There are constantly changes and improvements in the related technology and the enormous tasks face project teams in trying to assist a developing State to be competitive

Many developing States ratify conventions that place obligations on them to translate the provisions of the convention into national legislation. This could require the provision of particular services as is the case with most United Nations (UN) and International Maritime organisation (IMO) such as the Safety of Life at Sea Convention (SOLAS)

The cycle of events that prevents a developing State from establishing itself as a major maritime trader has to be broken. Charts, aids to navigation and maritime safety information are a part and possibly the vital elements in providing the opportunities for the development of new and better trade. The assets of the State have to be realised and their utilisation enhanced. The solution has to be seen in a "holistic" manner and any project or development work undertaken has to leave in place the authority and infrastructure to control them, financial planning and mechanisms to ensure viability, and the necessary trained personnel. Anything less is doomed to eventual failure.

1. INTRODUCTION

The relationship and importance of maritime safety information (MSI) to the economic success of a State is not always fully understood. In Europe it is relatively easy for the

economy of a State to improve due to the integration of the transport systems and the proximity of neighbouring States and markets which will facilitate trade. This is also possible in other parts of the world but where the region is developing, or is in transition, the significant distances between developing States and the developed States and their markets is a key issue. The European States are able to utilise road, rail and sea transportation over relatively short, well defined, established and well maintained routes. With the developing State some distance from the market places of the world additional costs of transportation have to be added to the cost of the products.

This is further complicated if the transportation is subject to additional risk factors and the cost of the transportation and therefore the products could be still further increased. Most of these risks are related to poor charting and poor safety of navigation information and these risks could result in surcharges being placed on trade to offset possible damage and loss.

In many developing regions, where either the necessary expertise is not available within the region or where the road, rail and port infrastructures are weak, the trade of that State can be seriously affected. The trade of non-European developing States is almost exclusively via the ports of that State, or through the ports in the region. It has, for instance, been estimated that during the 1990s, 98,3% of all South African imports and exports were by sea, 1% by road or rail and 0,7% by air. The expression “a continental State with an island economy” stills holds good for nearly all States in Africa, also in parts of South America and the Far East as well.

The importance of MSI in the development of any coastal State is important but where it is a developing States, this cannot be over-stressed. Vast strides have been made in technology and will continue at an even greater pace. There are therefore enormous tasks ahead of project teams endeavouring to assist a developing State to close the gap on their rival trading partners.

2. ECONOMIC FACTORS

Sea-borne trade is vital to the development of most States in the world In Western Europe, the Mediterranean, North America, Scandinavia, and parts of the Far East the provision of maritime safety information and good charting has advanced and has kept pace with new technology. Sophisticated ship-borne equipment, such as the Electronic Chart Displays and Information Systems (ECDIS), is now being fitted to many ships. This system integrates nautical charts, produced from hydrographic data, with all the other real-time sensors on the bridge of the vessel to give the mariner a composite and as near complete picture of his environment and its dangers as possible. Research is being undertaken to extend this further to include real time tidal and weather information and data from many other sources.

This is the way that the developed States of the world are progressing and the momentum of the technological advance is such that even States with relatively sophisticated technical infrastructures are finding it difficult to keep pace with the developments. It is inevitable that these States will further benefit from the technology available and the gap between these States and developing States will be forever increasing. Linked to these developments is still greater success for the States concerned and for their standard of living.

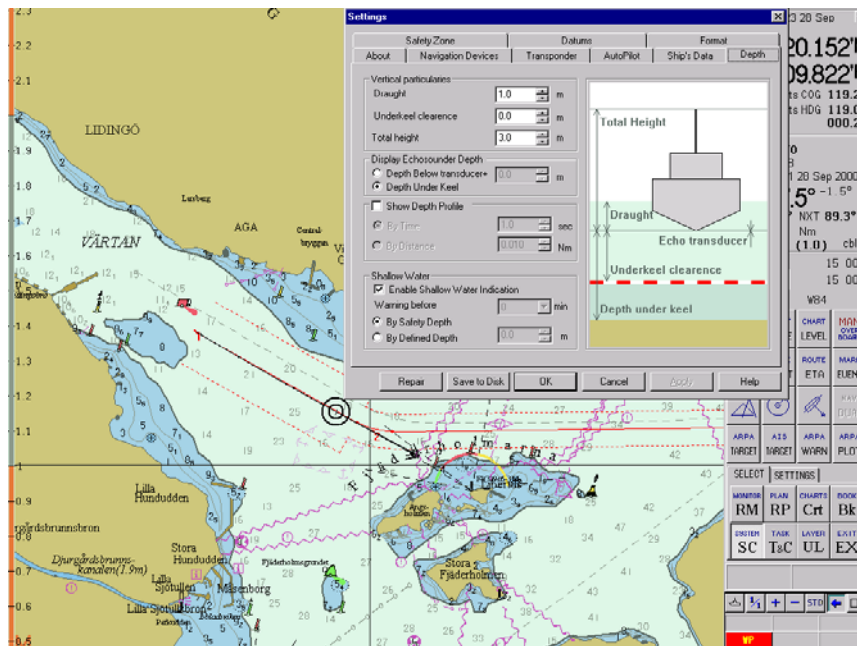
In Africa, during the colonial era, hydrographic surveys were undertaken in many areas, usually where trade was important. At the time these surveys were extensive and the resulting charts and publications were more than adequate to encourage trade to these colonies. The financial power and success of the colonial powers is related to their ability to exploit the resources of the colonies and to do it in the most efficient way possible. At one time, between 1790 and 1820, England had 19 major survey expeditions world-wide, stretching from Canada to Australia with famous surveyors such as Vancouver, Cook, Flinders and Bligh undertaking surveys that were to lay the groundwork for the English trade which was to follow. Hydrographic surveys, the charts they generate and the provision of aids to navigation and maritime safety information are still the vital components necessary for maritime trade to succeed regardless of how developed a State may be.

As the colonies became independent, other priorities claimed the attention of their new governments and their available financial resources. The hydrographic and charting data acquired by the colonialists in the region was rarely left with the new State. Although the information has generally been made freely available to all, the fact that the data was and is held outside of the new State has meant that they would have to develop their own collection of data and establish their own database. With this situation, the lack of expertise and appreciation of the significance of adequate charting, and with the other priorities in the new State demanding attention, it is perhaps understandable that the earlier services and surveys were rarely extended or maintained by the new State. Examples are the surveys on Lake Victoria, which date back to 1900 and were, and in some cases still are, the basis for charting. On the coast in the region of Mombasa and Dar es Salaam the last major controlled hydrographic surveys were undertaken in 1958. When this is viewed against the requirement to update charts daily by radio warnings and monthly by written notices it creates problems for prospective trade by sea. In some cases the priorities that existed in the early days of independence are still present and it is difficult to persuade the appropriate Government Minister to spend money on hydrography when thousands of people are dying from a new strain of malaria or aids or poverty.

3. NECESSITY FOR NEW SURVEYS AND EQUIPMENT

It could be argued that some maritime areas have not changed since the early surveys were undertaken 100 years ago and there is merit in this. Off East London South Africa where the continental shelf is very narrow, less than 5 nautical miles in parts, some of the data from the original surveys of the last century are still being used. The horizontal positioning skills and the technology available to measure depths accurately have required old surveys to be redone and obviously this is done commencing in the areas of greatest importance. It is also possible that gaps in these surveys failed to detect hidden dangers to navigation that should now be detectable.

There are also very distinct requirements for charting indifferent nautical spheres. The international maritime community requires the latest information in critical areas as soon as possible. These areas include harbours, harbour approaches, channels, straits and generally to within about 5 nm of the coast. Coastal trade and the fishing communities require charts that are usually of a larger scale and contain greater detail and in areas that include the coastline. Lastly there is the small craft community that requires similar information but in a slightly different format for use in more confined spaces aboard their vessels.



An electronic chart display indicating the sophistication of the data.

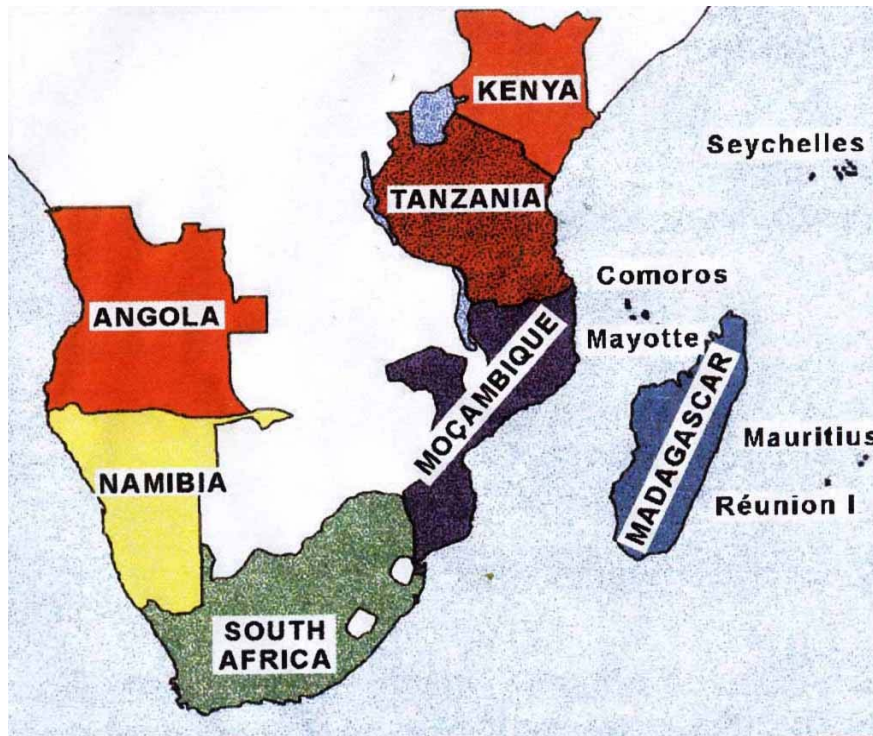
In many instances the standard of aids to navigation is unreliable. Lights and buoys cease to function or become displaced and notification is not given to the mariner. Many of the installations required repair or upgrading and many new installations are required.

The standard internationally accepted maritime safety information is often not provided and in many instances the international mariner is unsure of any dangers or circumstances that could place his vessel in jeopardy.

4. STATUS OF MARITIME SERVICES IN AFRICA

A Conference on Regional Co-operation in Hydrography, Aids to Navigation and other Services for the Safety of Navigation in Southern Africa was held in Maputo (Mozambique) in 1995. National Reports of more than eleven States in the region indicated the dire need for a new approach to the problem to be made.

It became very clear at this conference that a concerted effort was necessary to upgrade all the services in the fields of the provision of maritime safety information, aids to navigation and charting. Some States requested Study Team visits to assist with their planning and this was undertaken in both Kenya and Tanzania during May 1996. From these visits it was apparent that not only was the upgrading of all services necessary to improve trade, but it was vital to ensure the safety of life in the prevailing circumstances. Three days after the Study Team's visit to Tanzania during which the drastic need for all services to be provided was identified and, although it was not directly related, a ferry capsized on Lake Victoria with the loss of more than 700 lives. There were no services or infrastructure neither to prevent such a disaster nor to deal with once it had happened.



States that attended the 1995 maputo conference on regional cooperation in hydrography, aids to navigation and other services for the safety of navigation in Southern Africa.

It can be safely stated that with the exception of Algeria, Namibia, South Africa and parts of Egypt, Morocco, Mozambique and Tunisia, most ports, port approaches and critical areas in Africa need hydrographic surveys to be undertaken and upgrading of the aids to navigation. Some projects have been started but generally the confidence of international shipping in the information available is low. It has been reliably established that insurance charges on cargoes and vessels trading with Madagascar is 20% higher than the norm.

Many developing States have signed and ratified United Nations (UN) or International Maritime Organisation (IMO) conventions that relate to the safety of vessels, their crews, their cargoes and of the environment. This requires compliance with the articles of these conventions and impose obligations on a developing State that may not yet have been translated in national legislation and regulations.

5. IMPACT ON TRADE

In modern maritime trade the smallest operational detail is examined and considered, many decisions for the navigator are prescribed in economic terms. The routes for vessels, time in port, types of cargo, ships' complements and many other factors that were previously the prerogative of the master are now decided for him and only the safety decisions are left to him. In this scenario it is difficult to foresee how international shipping can be induced to service many ports in Africa and the development of these States therefore must be seriously impaired.



A busy harbour heralding a prosperous city.

It is equally difficult to concentrate on one aspect of the problem, namely hydrographic surveying, charting, and safety of navigation information. It would serve little purpose for accurate charts and information to be made available only to find that other harbour services are not. The problem should be seen in a “holistic” sense and consideration should be given to the problems as a whole.

6. SERVICES REQUIRED

6.1 Survey Related Services

- a) Accurate and up-to-date charts of harbour approaches and harbours are absolutely essential, as are the charts of difficult areas and features that have to be traversed for a vessel to enter and leave a port safely. These should be at scales of between 1:5,000 to 1:50,000;
- b) Charts of the vessel routes to ports and harbours at scales 1:100,000 to 1:300,000 are the next charting priority;
- c) Charting of the remainder of the coastal region could be essential for fishing and other activities but this will have to be assessed and prioritised against the requirements to improve the economy by international trade. These charts should also be at scales between 1:100,000 and 1:3,000,000.
- d) Charts of areas beyond those mentioned above are not a priority as they would be at small scales of between 1:500,000 and 1:600,000. These charts are also available through a number of Hydrographic Offices who provide world folio of charts.
- e) All charts have to be maintained by the provision of coastal radio navigation services (Coastal Navigation Warnings) through which urgent messages are related to the mariner advising him of newly discovered dangers or of any changes to the environment that could affect the safety of his vessel.
- f) Where these changes become permanent the mariner has to be provided with regular up-dating services whereby he is able to amend or correct the chart that he is using. The charts and their updates or corrections would have to be available on a world-

wide basis. For this reason it is advisable that the coastal State becomes a member of the relevant international organizations such as the IMO, IHO and IALA.

6.2 Additional Services

a) Buoys and lights are needed to guide the mariner and to advise him of dangers or have preferred routes. The provision of these services would be under the guidance of IALA but the positions and characteristics of these buoys and lights have to be displayed on the charts and in any allied publication necessary for the service to succeed.

b) In addition to the Coastal Navigation Warnings mentioned in e) above, it should be possible to provide a NAVAREA Coordinator with urgent information about dangers or changes over a wider area than the immediate coastal area of the State.

6.3 Steps to be Taken

In many States in Africa the problem has not been considered as an issue of major priority as there so many other issues that have required attention and whatever funding is available has been directed to these needs. As a result, the importance of hydrography and MSI to trade, which in turn will generate funds, has not been appreciated. In most developing States the responsibility for the provision of charting and safety of navigation information is fragmented amongst a number of Government Departments. These could include the Departments of Transport, Communication, Land Surveys, and Interior. In addition the control could be held by a number of authorities such as Ports and Harbours, the Navy or the Dredging Authority. In one instance part of this was allocated to a university. Sophisticated equipment is not necessarily required immediately and it should be possible to provide efficient basic services within the normal budgets of a coastal State

The steps that should be considered therefore are as follows:

a) Sensitise the Government of a coastal State to the benefits of navigational information.

b) Identify a project that will include the product that will benefit the land transportation necessary, the harbour facilities needed, the charts necessary, the navigational safety information that should be provided and its frequency and the infrastructure necessary to maintain the standards of the services once they are in place.

c) Prepare a "holistic" appreciation and plan.

d) Obtain support for the plan from the relevant international organisations responsible for the various disciplines involved, such as the International Hydrographic Organisation (IHO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Association of ports and Harbours (IAPH) and the International Maritime Organisation (IMO). In addition, regional associations, technical committees and authorities of these bodies should be involved, both in the preparation of the plans and in obtaining acceptance.

e) Presentations should be made to the various donor and funding agencies such as the World Bank, NORAD, DANIDA, USAID and many others. These presentations will achieve greater success with the support of the various international organisations.

f) Project managers and contractors should be appointed both to undertake the necessary survey and compilation work and to assist the coastal State in establishing the required streamlined authorities to have the future control of the services and be able to maintain them.

g) Training is as ever an extremely vital aspect and all of the international organisations have schemes whereby training can be undertaken. The training should be sufficient for the current task and then developed to eventually handle the most sophisticated systems if necessary.

7. CONCLUSION

The cycle of events that prevents a developing State from establishing itself as a major maritime trader has to be broken. Charts, aids to navigation and maritime safety information are a part and possibly the vital elements in providing the opportunities for the development of new and better trade. The problem has to be seen in a “holistic” manner and any project or development work undertaken has to leave in place the authority and infrastructure to control them, financial planning and mechanisms to ensure viability, and the necessary trained personnel. Anything less is doomed to eventual failure.



A possible result of poor maritime safety information.