

COMPLETION OF THE CHARTING COVERAGE OF THE INTERIOR WATER'S COMMERCIAL NAVIGATION ROUTE

By the Chilean Navy Hydrographic and Oceanographic Service (SHOA)

Background

The Chilean Navy Hydrographic and Oceanographic Service (SHOA) is the official technical and permanent agency of the State of Chile in charge of production and maintenance of the national Nautical Charts. In this role, SHOA contributes directly to national development, providing safety to navigation on the different navigation routes that interconnect the Chilean ports, and connect these ports with others abroad. One of the most important routes is known as "Interior Water's Commercial Navigation Route", which allows navigation through the numerous channels and narrows that exist between the Chacao Channel and Punta Arenas in the Strait of Magellan.

In January 2017, SHOA accomplished the challenging goal of completing the paper chart and ENC cartographic coverage to improve safe navigation through the Interior Water's Commercial Navigation Route, (from now on described as the "Commercial Route"). The availability of the ENCs now enables ships to comply with IMO requirements set in SOLAS regulations. These regulations require that all ships over 500 tons must be fitted with a compliant ECDIS prior to July 2018.

The charting of the commercial route comprises 198 ENC cells, equivalent to 113 paper nautical charts and compiled at different scales. To achieve the completeness of the commercial route, it was necessary to conduct several hydrographic surveys to gather the data to enable the Lab Work to compile, validate and publish the new editions of the corresponding nautical charts. All this took SHOA several years of hard and coordinated work.

The Commercial Route

The Commercial Route is the route established by the Pilotage's Regulation. This identifies the channels and other water bodies authorized to be navigated continuously by vessels from the occidental entrance to the Chacao Channel, to the oriental access to the Strait of Magellan (see [Figure 1](#)). This route is divided into 5 components:

- ⇒ Route to Puerto Montt through Chacao Channel
- ⇒ Route Interior Channels of Chile
- ⇒ Route through Chonos' Archipelago
- ⇒ Channels' Route from Tamar Cape to San Pedro Island
- ⇒ Strait of Magellan Route

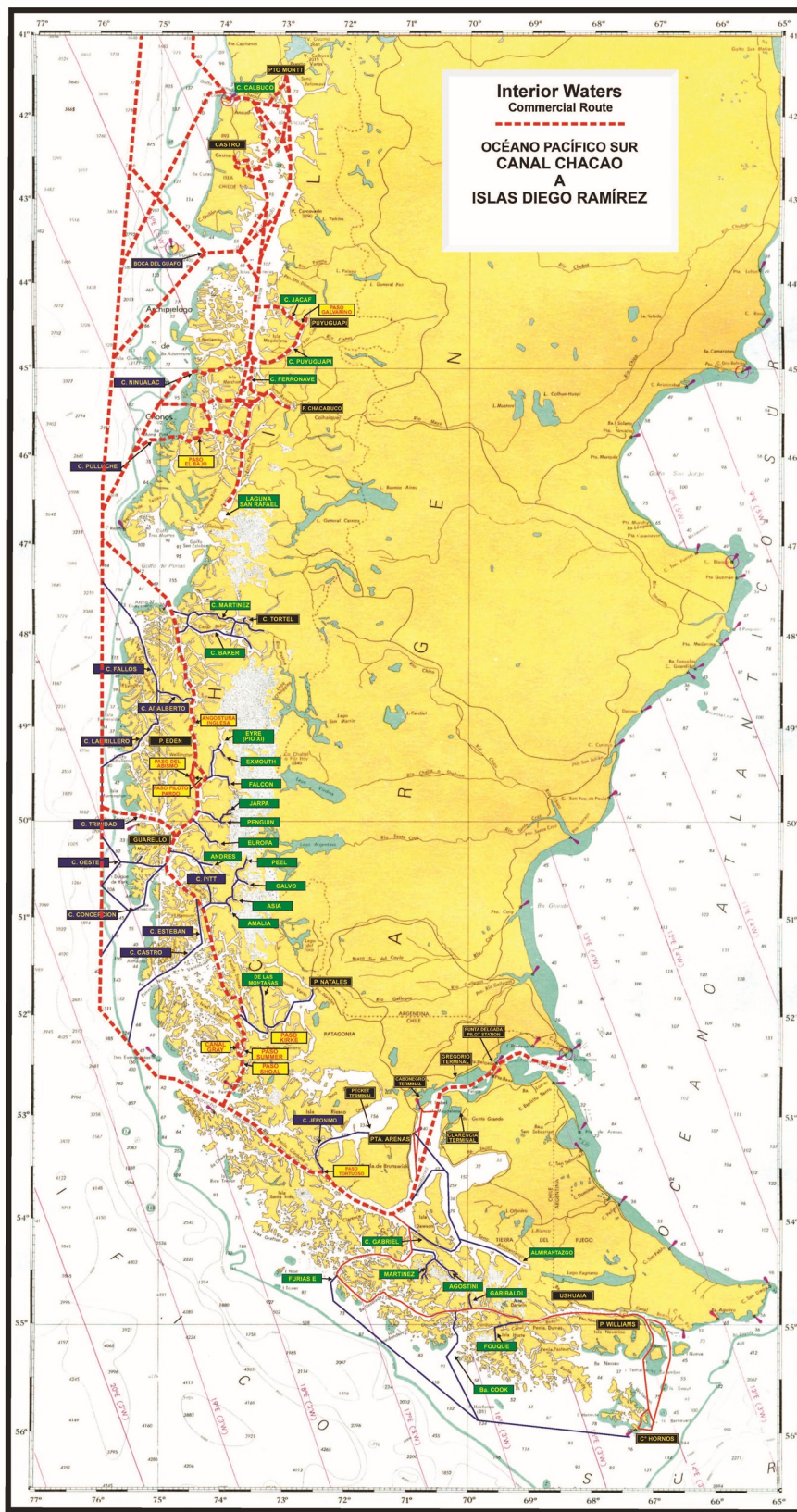


Figure 1: Navigation Routes from occidental entrance to Chacao Channel to the oriental access to the Strait of Magellan.

To achieve this goal, updated information was obtained during several hydrographic surveys conducted by the Navy Hydrographic units. The field data was then merged with information obtained from processing satellite images. This data was then included in the hydro-cartographic database, where it was validated and finally compiled in the new edition processes for both the paper chart and the ENC.

With the publication of the new charts that complete chart coverage of the Commercial Route, all merchant vessels can benefit from the availability of the paper charts as well as their ENC versions. The improvement to navigational safety now allows shipping from Chacao Channel to and through the Strait of Magellan route and vice-versa. This avoids the need to navigate through open seas where it is normal to experience unpleasant sea conditions.

Having achieved this goal does not mean that the work is over. Future tasks include updating the coverage of the main commercial route as well as the execution of new hydrographic surveys to establish an alternative commercial route.

Conclusions

New technologies allow a more effective and efficient way to gather the relevant information to meet cartographic needs. In SHOA's case, when combined with well trained and qualified personnel, the survey and charting coverage of the main commercial route of the Chilean southern channels has been achieved successfully. The resulting outcome constitutes a direct contribution to safety of navigation.

This experience is both motivational and also a challenge. It shows that progress can be reached if the knowledge level and access to technology are given priority. Some years ago, it would not have been possible to collect, interpret, manage and process the volumes of data to the required quality of the information.

Finally, fulfilling this goal, places SHOA much closer to fully achieving its mission and objectives as the State of Chile's technical and permanent service with responsibilities to provide data, information, products and services associated to hydrography, nautical cartography and other related disciplines, thus contributing to national and international policies in force.

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