

## THE REPUBLIC OF SOUTH AFRICA

South Africa occupies the southern-most portion of the African continent stretching from the Limpopo and the Orange Rivers, in the north, to Cape Agulhas in the south. To the north, the Republic borders Namibia, Botswana and Zimbabwe. Mozambique and the Kingdom of Swaziland lie to the northeast and Lesotho is totally land-locked by the Republic of South Africa. To the west, south and east, south Africa borders on the South Atlantic and South Indian oceans. Isolated in the Southern ocean, approximately 1,200 miles south-east of Cape Town, lie the Prince Edward group of islands which were taken possession of in 1948. The country has a area of 1,123,226 km<sup>2</sup>.

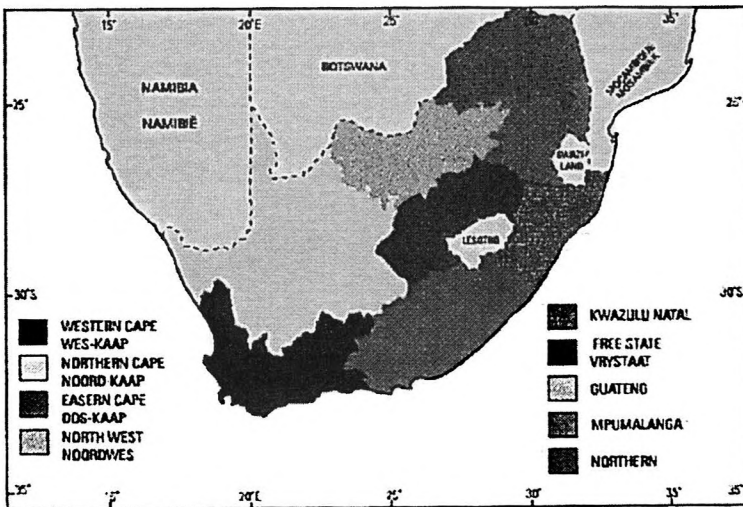


FIG. 1.- South Africa.

South Africa has an even, closed coastline with few bays and indentations as natural harbours. There are seven major commercial ports and one naval port. The majority are man made constructions. Most South African rivers are also unpromising owing to the presence of sand bars. Except for the mouth of the Buffalo River, which is the port of East London, South Africa has no navigable rivers. The total coastline length is 3960 km (2140 nautical miles). Off the east coast, the

continental shelf lies at a depth of some 150 m and is only a few miles wide. Off the west coast, the shelf is much wider  $\pm 50$  miles and deeper at 300-400 m. South of the continent, the shelf broadens to 150 miles forming the Agulhas Bank. The Cape "choke point" passes south of the country requiring a deviation in the boundary of the Summer and Winter Load Line area adding to South Africa's hydrographic responsibility. South Africa is richly endowed with mineral wealth and mineral sales account, for approximately 2/3 of the country's export revenue.

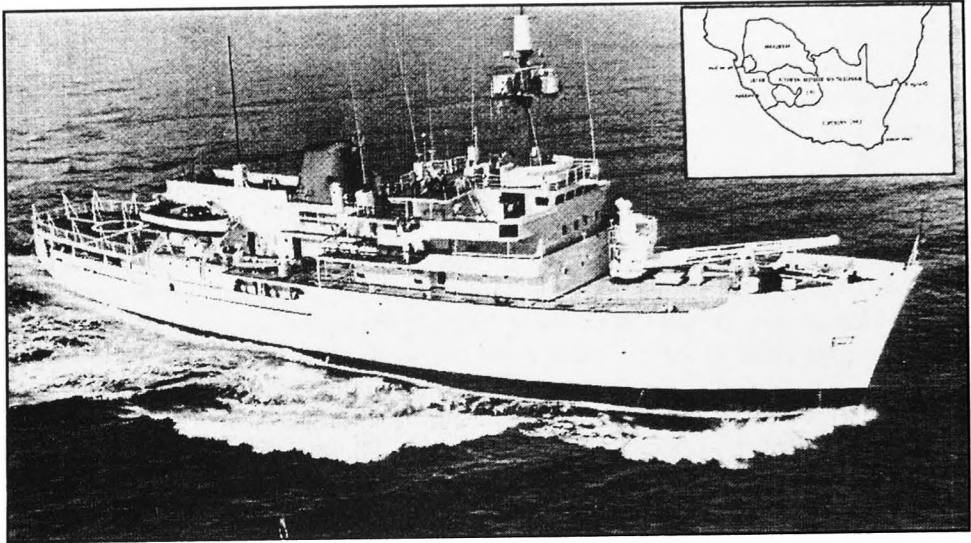


FIG. 2.- SAS PROTEA.

In view of the climate, terrain and soils, South Africa is not well endowed with natural agricultural resources and it has an extensive semi desert, "Karoo", interior which can only support sheep or goat farming. It has nevertheless a well-developed and commercially orientated agricultural sector with exports accounting for about 5% of the GDP. It has limited water resources which will only sustain the present population growth until the year 2050.

South Africa has claimed a territorial sea of 12 nautical miles, a 24 nautical mile contiguous zone, an exclusive zone of 200 nautical miles and it has maximised its continental shelf claim. The economy is dependent on imports and exports, which together with fishing, underline the importance of the sea. The white-fish sector is being exploited close to the maximum sustainable yield. The pelagic fish industry, supported by the upwelling phenomenon on the west coasts, is more uncertain and research is only just beginning to show the sustainable yield. Since the 1960's diamonds have been recovered along the northern part of the west coast. The exploration is now proceeding further offshore. Commercially viable oil and gas reserves discovered on the Agulhas Bank are being developed. Approximately 14,000 ships use South African Harbours annually.

## Hydrographic Service

The history of hydrographic survey in South Africa dates back to the early Portuguese navigators. However, systematic surveys only began in the 1820's, and up to 1922 were undertaken by the British Admiralty. About 200 nm of the north-west coast have never been surveyed, whereas the entire north-east coast has only been surveyed by lead-line. Only the south-west and south coasts have been surveyed by echo sounder.

In 1922, the first South African survey ship HMSAS PROTEA, was presented to the South African Defense Department and until 1933, when she was paid off for economic reasons, she undertook many echo sounder surveys. PROTEA was replaced by AFRICANA, a sea fisheries research ship on a loan basis, which surveyed for 6 months per year primarily on the south and east coasts until 1939.

After World War II, a converted corvette, the 3rd HMSAS PROTEA, continued survey work until she was replaced in 1957 by a converted frigate, SAS NATAL. South Africa's present survey ship - also SAS PROTEA - was commissioned in 1972. She was extensively modernized for computer-assisted hydrography.

South Africa became a member of the International Hydrographic Organization in 1951. The South African Hydrographic Office was established in Cape Town in 1955 and the first Hydrographer, Captain J.K. MALLORY, attended the I.H. Conference in 1957 and 1962. Until 1955, all original survey documentation was supplied to the British Hydrographic Office.

The current portfolio includes 94 charts of South African and adjacent waters as well as a three-volume set of Sailing Directions and various other publications. The Hydrographic Office plays an active role in the scientific community and in regional hydrography and aids to navigation.

The Hydrographic Office, in conjunction with the IHB was responsible for the formation of a Regional Hydrographic Commission as a result of the Maputo Conference which was organised by the Hydrographic Office. The Republic of South Africa has taken part in all the ongoing international research projects, i.e. the International Geophysical Year 1957/58, International Indian Ocean Expedition 1963/64, the Bio-mass experiment in Antarctica 1978, etc.

In 1987, the Hydrographic Office commenced a project to introduce computers to assist with the existing cartographic processes. This system is now being upgraded to produce electronic charts and digital publications by 1997. Non-equivalent electronic charts have been produced for internal naval use for some years.

The Hydrographic Office is an integral part of the SA Navy and is located at Tokai, Cape Town. The present Hydrographer is Captain B.D. LAW, who was appointed to this post in December 1995. He is responsible to the Chief of Naval Staff Operations. The Hydrographic Office supports the activities of the IHB and serves on many Working Groups and Committees.