

DIFFERENTIAL GLOBAL POSITIONING SYSTEM (DGPS)

GENERAL NOTES

The South African Lighthouse Services of PORTNET established a DGPS system at certain lighthouses along the South African Coast in mid 2000 these DGPS Stations are still undergoing their trial transmissions

Further DGPS stations may be established if the need arises. There will initially be 4 transmitters situated in strategically positioned sites where poor visibility, presence of Vessel Traffic Services and high concentrations of traffic can be expected. They will be in operation at the following old Radio Beacon Stations :

<i>Beacon Light List number</i>	<i>Beacon Listing</i>	
a. Cape Columbine	1823	Z5670 (D5810)
b. Cape Agulhas	1831	Z5980 (D6370)
c. Cape Recife	1839	Z6100 (D6390)
d. Cooper Lt. Ho	1857	Z6245 (D6458)

These are intended to provide coverage out to a distance of at least 100 nm. All the stations will initially be transmitting on a trial basis. Details will be promulgated by Coastal NavWarning and/or Notice to Mariners.

Details of the locations, ranges and transmission characteristics are given in the accompanying table.

Such information will be amended as and when necessary as a result of the preliminary trials. Accurate positions of stations will be promulgated when these have been surveyed and the final positions of the station have been accurately established.

The service is being provided primarily for the use in monitoring the integrity of the GPS and to enable greater accuracy for marine navigation as a secondary feature.

In order to make use of the DGPS corrections, users will require a GPS Receiver which can accept differential correction data in the RTCM SC 104 format and an Auto Tuning MSK Beacon Receiver, compatible with conventional IALA-standard radio beacon transmissions.

These receivers will tune into the strongest available DGPS signal. The receiver should meet the technical standards of the International Telecommunications Union (ITU) for such receivers. A combined Beacon/GPS receiver with combined antennae incorporated can also be used. With a field strength throughout the coverage area designed to be at least 75 micro V per metre, the DGPS corrections will be updated at intervals of not more than 10 seconds.

Regular announcements will be made through the normal channels giving further details of the progress of the introduction of the DGPS system.

Station Reference Number	Station Name	DGPS Corrections		Identification No. of		Range in Nautical Miles	Integrity Monitoring	Status	Transmitted Message Types	Remarks
		tx fx (in kHz)	tx rate (in bps)	Reference Station(s)	Transmit Station					
1823	Cape Columbine	310	100	221/ 241	201	150@ 75 V/ m	YES	TRIAL	3, 6,7,9,16	32° 49' S., 017° 51' E
1831	Cape Agulhas	301	100	223/ 243	203	120@ 75 V/ m	YES	TRIAL	3, 6,7,9,16	34° 49' S., 020° 00' E
1839	Cape Recife	291	100	225/ 245	205	150@ 75 V/ m	YES	TRIAL	3, 6,7,9,16	34° 01' S., 025° 42' E
1857	Cooper Lighthouse	292	100	228/ 248	208	100@ 100 V/ m	YES	TRIAL	3, 6,7,9,16	29° 56' S., 031° 00' E