

Shortwave History of South Africa

By Colin Miller

During the past few years the world has undergone unprecedented political changes. The Berlin Wall fell, and the Soviet Union with its Communist ideology crumbled. And in South Africa, former president F.W. de Klerk introduced sweeping reforms, including the release of political prisoner Nelson Mandela, and the end of the apartheid policy. After nearly two years, this country seems to be surviving under the new ANC government of President Mandela.

The year 1995 has seen many special anniversaries, the most notable being the 50th anniversary of the end of World War II. Radio, too, has had its share of anniversaries: the 50th birthday of Radio Canada International, 60 years of Radio Japan, 50 years since the founding of FEBC Philippines, 25 years of broadcasting from FEBA Seychelles; the list goes on.

October 1995 also marked the 30th anniversary of the inauguration of the Meyerton shortwave transmitting station near Johannesburg. That is perhaps as good an excuse as any to look at the interesting history of shortwave broadcasting in South Africa.

Like many African countries, South Africa covers a large area, a little more than 471,000 square miles: that's more than 1-1/2 times the size of Texas, or somewhat larger than Ontario. It would require a large number of local stations to adequately cover the whole country. Today, South Africa is indeed served by an extensive FM network, but in the early years it was a different story.

■ The Early Years

The first radio stations opened on medium wave in 1923 and 1924 in the three largest cities of Johannesburg, Cape Town, and Durban. Even though a large proportion of the population was covered, listeners living in the vast country areas could only pick up the broadcasts at night. In addition, at certain times of the year, particularly during the summer, high static levels caused by heavy thunder activity made reception difficult or impossible. Therefore, an alternative mode of transmission was clearly necessary.

On April 1, 1927, the three stations formed the African Broadcasting Company (ABC), and the first experimental shortwave transmissions were made on 40 meters from Durban. The

first regular shortwave transmissions in South Africa began from the ABC in January 1931, using a 250 watt transmitter at Maraisburg, 10 miles west of Johannesburg. In March 1932 the power was increased to 1 kW. Later, the old shortwave unit was scrapped and replaced by a more modern 1 kW transmitter which was built in the SABC workshops and went into service on October 18, 1942. Both these transmitters carried the English program.

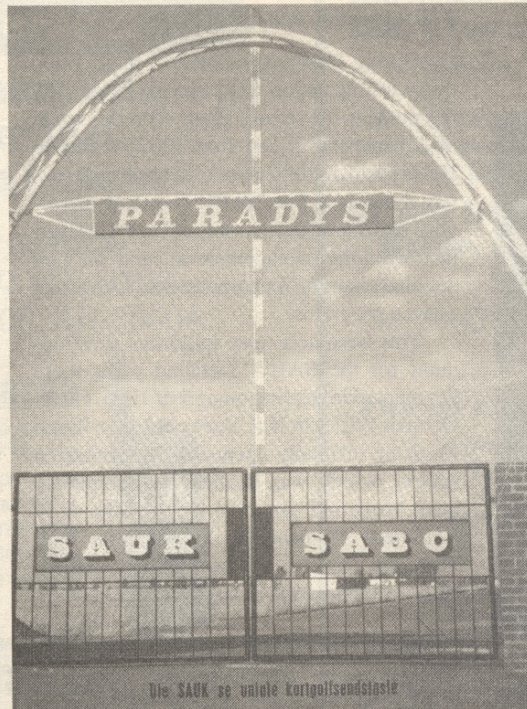
The ABC did little to promote broadcasting in the Afrikaans language, and by the time it was handed over to the South African Broadcasting Corporation (SABC) in 1936, Afrikaans was being broadcast only on one evening a week from the various stations. Consequently, when the SABC took over the existing facilities, it had to face the problem of broadcasting in Afrikaans with little or no equipment at its disposal.

An experiment was made by the SABC in 1936 to start broadcasting bilingual programs from each station. But this did not prove very popular with listeners, which meant that separate transmissions were required. The new Afrikaans service would be called the B Program, in order to distinguish it from the existing service in English, which became the A Program.

A start was made by hiring two 5 kW shortwave transmitters for the Afrikaans service, one from the Overseas Communications Station at Klipheuwel near Cape Town, and the other from the General Post Office station at Roberts Heights (in Afrikaans, Voortrekkerhoogte), near Pretoria. Klipheuwel (ZRK) went into operation on October 25, 1937, and Roberts Heights (ZRH) two months later.

Afrikaans coverage on shortwave was subsequently expanded. A 5 kW transmitter was inaugurated from Maraisburg on October 5, 1941. In 1946, a temporary 400 watt shortwave transmitter was in use at the Pietermaritzburg site, about 55 miles inland from Durban, until a medium wave transmitter was installed a few years later.

An experimental 400 watt shortwave transmitter went on the air at Welgedacht, east of Johannesburg, on April 27, 1949, carrying the English Program and using a directional antenna to South West Africa/Namibia. Also at Welgedacht, a 5 kW shortwave transmitter went into operation on May 1, 1950, carrying the new Springbok Radio—the SABC's first and probably most popular bilingual commercial service. Long-time



The Paradys site carried the first Africa service in the 1960s.

DXers may still remember logging Springbok Radio until it left shortwave in 1979.

On checking the information on South Africa in the July 1941 issue of *White's Radio Log*, and the 1950 and 1954 editions of the *World Radio Handbook*, the stations shown in the table on page 16 were listed. Note that in those days it was quite common for stations to broadcast out-of-band and on split frequencies.

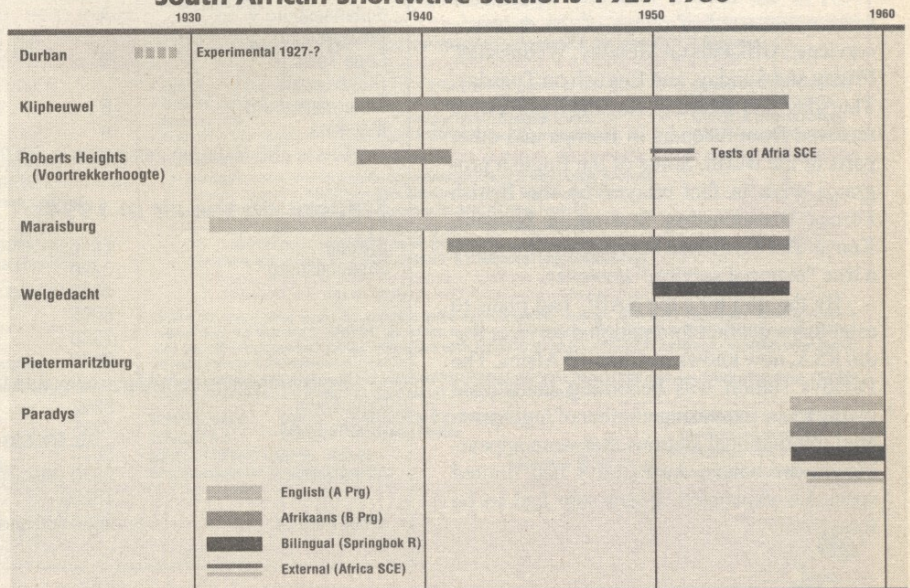
Paradys

Medium wave coverage had expanded after the war, until, by the early 50's, there was a total of 12 transmitting stations, each carrying three programs. But the shortwave transmitters, of relatively low power, still did not provide a satisfactory service. A new, more powerful shortwave station was needed. In September 1952 an order was placed with Marconi for nine 20 kW shortwave transmitters to be used at the planned Paradys site near Bloemfontein, in order to improve reception in the country areas.

Construction began on the new, higher, powered shortwave center, situated about 12 miles south of Bloemfontein on the main road to the Cape. This site was ideally located in flat countryside, almost at the geographical centre of South Africa. The nine modern transmitters were installed, two for each of the four services. The station began regular service on July 1, 1956. There were 18 log periodic antennas for the three national services and seven directional antennas for the new Africa Service.

Two frequencies were always in use simultaneously, so that if reception was poor on one of them, it was usually better on the other. Paradys provided excellent reception over most of the country, as well as good signals in neighbouring countries. The station remained in service until the late 60's. One of the transmitters was donated to the Malawi Broadcasting Corporation, and is still in use

South African Shortwave Stations 1927-1960





Radio RSA literature and equipment in the '80s.



today! It is not unreasonable to believe that some of the others may have been in use by Rhodesia during the mid 60's to jam BBC broadcasts to that country from the station at Francistown, Botswana.

External Broadcasts

As mentioned above, the Paradys station carried the Africa Service, the first attempt by the SABC to provide a regular service to listeners in other African countries. Tests had been made at the end of 1950 from the old 5 kW GPO transmitter at Voortrekkerhoogte. Regular transmissions began on January 1, 1957, in the 19 and 11 meter bands. The service consisted of relays of the domestic services: Afrikaans on Monday, Wednesday, Friday and Sunday, and English on Tuesday, Thursday, and Saturday. Regular reports were received from listeners in Europe and other parts of the world. Some of the English programs were in fact relayed by the British Forces Broadcasting Station in Nairobi, Kenya. But the Africa Service was not really a true "external service," however.

By the mid 60's the SABC had plans to establish a distinct international service, Radio RSA, now known as Channel Africa. The Paradys station was becoming inadequate owing to the increasing number of high-powered international stations that were appearing on the bands. As Paradys had limited space for expansion, a new site had to be found.

Bloemendal (Meyerton)

During 1964 the ground for a major radio transmitting station was purchased in a hilly region near Meyerton, about 25 miles south of Johannesburg, and four 250 kW Brown Boveri transmitters were ordered for the external service. The SABC board of governors, under the chairmanship of Dr. P.J. Meyer, instructed the management to carry on with detailed planning for comprehensive external service programs.

This became a very important development for the SABC. Detailed plans were formulated in the first quarter of 1965. On 27 October 1965, Dr. H.F. Verwoerd, then Prime Minister, officially opened the transmission station, which was located at Bloemendal near Meyerton and was named the H.F. Verwoerd Transmitting Station after him. That day the first of the four transmitters came into operation at the station. About six

months later, Verwoerd was assassinated in Parliament.

From Bloemendal, Channel Africa directs programs in English and a number of other languages to the African continent. The programs originate from studios located in Auckland Park, Johannesburg—one of the largest broadcasting centers in the world on one site. In fact, the radio and TV studios, as well as the offices, occupy a suburb known as Uitsaaisentrum (Broadcasting Center).

A multitude of tall, steel columns, towering into blue skies, with rows of antennas are the first signs of the shortwave station when approached from the small village of Meyerton. The main transmitter building, with antenna-switching house, was originally equipped with four 250 kW Brown-Boveri transmitters. The transmitter tuning, antenna selection, and slewing are controlled from

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Stations on the air in July 1941:

Station	Call	kHz
Cape Town (Klipheuwel)	ZRK	6098
	ZRL	9606
		9690
Johannesburg (Roberts Hts) (Maraisburg)	ZRH	6007
	ZRG	9523

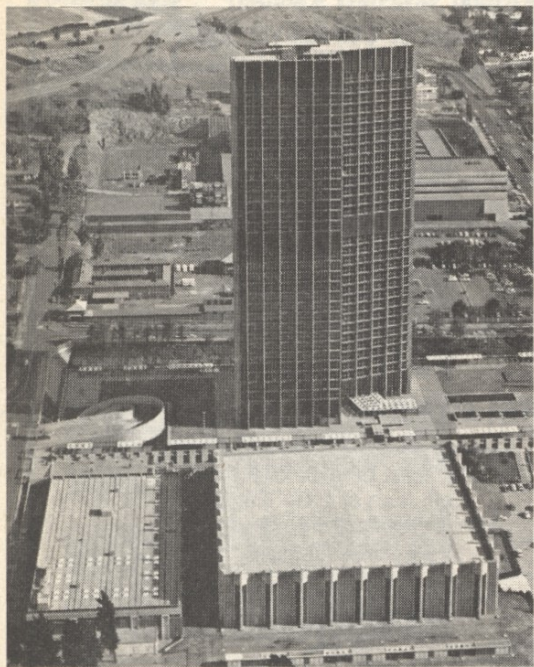
Stations on the air in early 1950:

Johannesburg III (Maraisburg)	B	3450 kHz	5 kW inactive
		4895 kHz	5 kW
		6007 kHz	5 kW inactive
		9523 kHz	5 kW
		11710 kHz	5 kW inactive
Johannesburg IV (Maraisburg)	A	4800 kHz	1 kW
		6095 kHz	1 kW inactive
		9870 kHz	1 kW
Johannesburg V (Welgedacht)	A	4384 kHz	0.2 kW
Cape Town III (Klipheuwel)	B	5880 kHz	5 kW
		9610 kHz	5 kW
Pietermaritzburg	B	4878 kHz	0.2 kW
Mafeking	A	5900 kHz	0.2 kW

(This is ZNB Mafeking, referred to in Feb 95 MT article about Botswana.)

Stations on the air in 1954:

Station	English	Afrikaans	Springbok R
Johannesburg	3290	3370	3356
	4800	4895	4945
	6095	6007	7295
	7230	7275	9600
	9870	9523	
(English/Afrikaans from Maraisburg, and Springbok from Welgedacht)			
Cape Town (Klipheuwel)	5892		
	7255		
	9610		
Africa Service	9870 (Maraisburg)		
	15230		
SWA Service	9680 (Welgedacht)		



Broadcasting Centre is one of the largest broadcasting sites in the world. Radio South Africa has been renamed Channel Africa to reflect the country's changing image (see brochure below right).

two consoles in the control room.

From here the transmitters may be coupled to any of the station's high-gain antenna arrays to cover the target areas. The consoles also have preselection facilities so that a new frequency and antenna with appropriate orientation may be selected within seconds.

The cooling of the transmitters is by the vapodyne system which utilizes the latent heat of steam in order to obtain more efficient cooling. The vapodyne system uses a small amount of distilled water. The steam is condensed on the mezzanine level of the building by heat exchangers and returns to the transmitter tube anodes as water, from where it is once more circulated in the closed cooling system.

From the top of the large transmitter cabinets the antenna feeders go by way of ducts down to vertical shafts which connect up with two tunnels to the round antenna feeder switch-house. This unique system of an underground route for ducted feeders had to be used due to the large surface area which would have presented a hazard in strong gusts of wind in the case of overhead ducted feeders. The antenna feeders are switched vertically and leave from the top of the building to the appropriate overhead feeder and accompanying antenna.

The directional antenna arrays each consist of two curtains spaced a quarter of a

wavelength apart. Each curtain is made up of three or five stacks of four half-wave dipole elements in a chain. When power from the transmitter is fed into the front curtain, the radiations from the individual dipoles are additive in the direction of the main transmitting zone, the total power gain achieved in some instances being as much as 20 dB, which is equivalent to a magnification factor of 100. By phasing, it is possible to slew the beam electrically 15 or 30 degrees away from its center position to a different target area.

In 1977, three Telefunken 500 kW transmitters were added, which enabled the external service to expand further. For example, during the early 80's, a service in Spanish was inaugurated to Latin America.

Sadly, on April 30, 1990, Radio RSA discontinued services to all target areas except Africa. This was caused by severe financial constraints, and a reduction in staff. On October 1, 1992, the station was renamed Channel Africa, and gradually changed its image, eventually reflecting the new South Africa. Some of the original 34 antennas were taken down, but apart from this, not too much has changed over the years at Bloemendal.

■ International Relays

As is the case with several other international stations, South Africa has been renting transmitter time to other stations from the Meyerton facility. The BBC was the first broadcaster to take advantage, relaying some of its African services. Then in July 1994 Deutsche Welle made temporary use of the Meyerton station, after its Kigali relay had become inoperative due to the crisis in Rwanda. They ceased transmissions from South Africa at the end of 1994.

Then in December 1994 Trans World Radio began using the station for some of its services to East and West Africa. The VOA now uses Meyerton to supplement some of its transmissions to Africa. TWR may take up some more transmitting time later this year, and VOA will add a further hour to West Africa in the mornings.

■ Domestic Relays

A second, separate transmitter building can be found at Bloemendal, as this site is also the home of SABC shortwave domestic services (Radio 2000, Afrikaans Stereo, and Radio Oranje). The building is located about three miles away from the first transmitter building, and houses four 100 kW Thomson transmitters for these services, the target area being the North-West Cape. Log periodic antennas are in use. The North-West Cape is predominantly a rural area and not very densely populated. This area has had limited FM coverage, hence the shortwave domestic service. It is not known how long shortwave will continue, as there are continual budget cuts at the SABC.

A lot of changes have occurred in shortwave broadcasting in South Africa during the past 50 years. Let's hope that, despite the present economic situation and technological developments with satellites, shortwave will continue from this part of the African continent for many years to come.

