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TITLE: POLICY AND ACTIVITIES OF SOUTH AFRICA IN  
ANTARCTIC TREATY AREA.

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4

ANTARCTIC TREATY

Distribution list for information under Article VII(5)  
and Recommendations I-VI, II-VI, III-I, III-II and  
IV-23.

ONE copy of all to:

- 1.(a) Sir V. Fuchs, Director, British Antarctic Survey, 30 Gillingham Street, London S.W.1. ✓
- 1.(b) Officer in Charge, British Antarctic Survey, Stanley, Falklands Islands. ✓
- 1.(c) Master, R.R.S. Bransfield, British Antarctic Survey. ✓
- 1.(d) Master, R.R.S. John Biscoe, British Antarctic Survey. ✓
- 1.(e) Base Commander, British Antarctic Survey station, South Georgia. ✓
- 1.(f) Base Commander, British Antarctic Survey station, Holley Bay. ✓
- 1.(g) Base Commander, British Antarctic Survey station, Signy Island. ✓
- 1.(h) Base Commander, British Antarctic Survey station, Argentine Islands. ✓
- 1.(i) Base Commander, British Antarctic Survey station, Adelaide Island. ✓
- 1.(j) Base Commander, British Antarctic Survey station, Stonington Island. ✓

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2. Dr. D. G. Libby, International Scientific Relations Division, Department of Education and Science, Curzon Street, London W.1. ✓

3. Mr. D. J. Maclean, Natural Environment Research Council, Alhambra House, 27-33 Charing Cross Road, London W.C.2. ✓
4. Mr. G. E. Hemmen, British National Committee on Antarctic Research, Royal Society, 6 Carlton House Terrace, London S.W.1. ✓
5. ~~Mr. A. C. W. Lee, Gibraltar and South Atlantic Department, FCO.~~ ✓  
*South Atlantic, A.I.O.D.*
6. H.E. The High Commissioner for the British Antarctic Territory, Stanley, Falkland Islands. ✓

TWO copies of all to:

7. Mr. P. F. Hobday, DS 5b Navy Department, Ministry of Defence, London S.W.1. ✓
8. Polar Regions Section, American Department, Room 330, Cornwall House, Stamford Street, London S.E.1. ✓

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17 December, 1970.



INFORMATION ON SOUTH AFRICAN ANTARCTIC ACTIVITIES : 1972 :  
EXCHANGED IN TERMS OF ARTICLE VII(5) OF THE ANTARCTIC TREATY

1. Names, types, numbers, description and armaments of ships, aircraft and other vehicles introduced or to be introduced into Antarctica and information on military equipment, if any, and its location in Antarctica.

(a) Ships

(1) Name

The South African supply vessel "RSA" is the only South African ship which will operate in the Antarctic during the 1971/72 summer season.

(2) Description

The "RSA" is a cargo/passenger boat of 1 550 gross tons with one 1560 BHP turbo-charged diesel engine, speed 11 knots. It provides accommodation for thirty-one passengers. The "RSA" is not an ice-breaker, but her construction is in accordance with Lloyd's specification for Ice Class I Ships.

(3) Military Equipment on Board

Except for one .303 rifle which is used for shooting seals for dogs' food, the "RSA" does not carry any armaments.

(b) Aircraft

No aircraft will be introduced into Antarctica.

(c) Other vehicles

See under item 4(a) : Transport Facilities.

(d) Military Equipment

No military equipment of any description will be kept at the South African base or at any other place in Antarctica except those listed below which are used for recreational purposes and for the provision of food for the huskies and the personnel in cases of emergency:

Three .303 rifles.

2. Details a out Expeditions

(a) Base :

(i) Permanent Bases : South Africa maintains only one base in Antarctica known as SANAE. This base is situated at  $70^{\circ} 17' 58'' S, 2^{\circ} 22' 06'' W$ . New buildings were erected and occupied during January/February 1971. An emergency base, capable of accommodating 16 people, was erected during February 1970.

(ii) The establishment of a wintering-over mountain base in the Borg Massif, Western Queen Maud Land, was completed on 6 May 1969. The base is situated at  $72^{\circ} 58' S 03^{\circ} 48' W$  2400 m above sea level and 350 kilometers from the ice coast.

(b) Dates of Expeditions leaving for and arriving in Antarctica

(1) Expeditions

(i) There will be only one South African expedition stationed at SANAE base during 1972.

(ii) A five-man field expedition will proceed to the mountains and winter in the Borg Massif (see paragraph 2(a)(ii)).

(2) Dates of Departure and Arrival

(i) The "RSA" is scheduled to depart from Cape Town between 3 and 6 January 1972.

(ii) The "RSA" will sail direct to SANAE and will make no calls en route. She will remain at the base for approximately four weeks to discharge provisions. Afterwards she will return direct to Cape Town with the home-bound expedition on board. No calls will be made on the homeward voyage.

(c) Details of Personnel

(1) Master of the "RSA" : Captain K.T. McNish

(2) Leader of SANAE 13 : Mr. R.J. Brandt



(3) Members of SANAE 13:

Senior Meteorologist	-	K.J. Moir
Meteorologists	--	J.A. Taljard J.A. Naude
Geologist	--	C.L.J. Minnaar
Surveyor	--	R. Sevcik
Physicist (Cosmic Rays)	--	J.N. Kriel
(Ionosphere)	--	N. Skitt
(Geomagnetism)	--	D. da Silva Almeida
(Whistlers and Micro-pulsations)	--	J.A. Williams
Senior Mechanics	--	G.O. Hollamby W.J.H. Venter
Mechanic	--	D.J. Coetzee
Radio Operator	--	P.J. van Zyl
Radio Technician	--	F.H. Schneider
Technician (radio echo sounding)	--	I.J.H. Bennett
Electronician	--	R.B. van Zyl
Medical officer	--	J.R. Pitcher
Medical orderly	--	J.A. Jacobs

The expedition will not include any personnel designated by other countries, but Mr. C. Read of the British Antarctic Survey will accompany the expedition as an observer for the relief period.

3. Programme of Work and Equipment

Activities during 1971 and planned for 1972

(1) Aurora

A SCAR-pattern 35mm all-sky camera will be operated at SANAE during the winter months and will be supplemented by visual observations wherever feasible. The observing schedule will be 10 secs, 2½ secs, 40 secs exposure during the first two minutes of each 15 minute interval. During active periods this observing schedule is supplemented by a 10 secs exposure every minute. Visual observations will be made by the geological party at their wintering base south of SANAE.

(2) Airglow

Station	Equipment	Intensities measured at	Observing schedule	Data	
April-October 1971					
SANAE	Automatic zenith filter photometer (new instrument, digitized, results on punched tape)	6861 Å	6300 Å	Continuous during polar night, from night to morning twilight at all suitable times. One set of eight readings every five minutes or one set of eight readings every minute when intensities vary rapidly	Complete tabulated data and daily plots
		5577 Å	5300 Å		
		4278 Å	(narrow band)		
		4278 Å	(wide band)		
		3914 Å	(narrow band)		
		3914 Å	(wide band)		

In 1972 a new photometer with extra narrow band interference filters capable of scanning in the n/s direction will be taken into use.

(3) Biology

A new field laboratory will probably be built on Marion Island in 1972 as a base for the long term programme entitled:

Ecological Energetics of the Islands' Ecosystem.

Work on the following parts of this programme will be started during the 1971/72 period:

1. Geochemical Cycles

- (a) geochemical analyses of selected lava samples,
- (b) chemical analyses of replaceable minerals available in soil samples for uptake by plants,
- (c) chemical analyses and osmotic pressure of the cell sap of a number of plants.

2. Primary production in water bodies

With chlorophyll determinations, radiocarbon C<sup>14</sup>, assessment of biomass and cell numbers. The chemical and physical properties of the different water types will also be studied.

3. Autecology

Germination experiments will be done with *Cotula plumosa*, *Tillaea moschata* or *Poa cookii*.



(4) Cosmic Rays

The neutron monitor type 3-64 NM (Chalk River) and the Aerospace Research Type ARI - 100C riometer will continue to be operated at SANAE during 1971 and 1972. Observations using the neutron monitor type 1-64NM (Chalk River) installed on the RSA will be continued during voyages as well as the FM-AM-telemetered magnetic tape recordings of instrumented balloon ascents at SANAE and on voyages of the RSA.

(5) Geodesy and Cartography

Survey activity during 1972 will be restricted to the support work required at the base. Three scientists have been provided with tuition in position-fixing, distance measurement and direction finding to enable them to provide survey support to the geomagnetic, glaciologic and ice-depth measurement programmes planned for the season.

(6) Geology

No prewinter fieldwork was done during 1971. Detailed stratigraphic and structural mapping and collection of samples for geochronology, geochemistry and palaeomagnetism in the rectangle formed by the nunataks Jekselen, Nashornet, Fassetfjellet and Pyramiden in the Ahlmann Ridge and Borg Massif is planned for the 1971/72 season.

The Borga Geological Base will not be occupied during the 1971 winter. A more centrally located temporary base has been established at Grunchogna ( $72^{\circ} 05'S.$   $02^{\circ} 45'W.$ ) and will be manned during the 1971 winter and parts of the 1971/72 summer.

(7) Geomagnetism

Operation of the La Cour three-component storm magnetograph and of the 3-axis fluxgate magnetometer will be continued. Absolute observations for base-line control will be made with the proton magnetometer, fibre declinometer, BMZ magnetometer, and two QHM magnetometers. An automatic three-component (H, Z and D) feedback magnetograph will be installed at SANAE at the beginning of 1972. Recording will be on punched paper tape and penrecorder.

(8) Geophysics and Glaciology

All geophysical and most of the glaciological observations during 1971/72 and 1972/73 will be done on oversnow traverses. A 175-km oversnow traverse from SANAE across the Fimbul Ice Shelf and on to the continent was done during March and April 1971. The traverse will be continued through the Ahlmann Ridge and Borg Massif during the 1971/72 summer and possibly on to the Polar Plateau during the 1972/73 summer. Parts of the traverse will be along the N.B.S.A.E. Seismic line for comparison purposes. Details of the observations are given in the table below.



GEOPHYSICAL/GLACIOLOGICAL TRAVERSE: OBSERVATION PROGRAMME

Type of observation	Programme/ Equipment	Observation schedule
Radio echo sounding	S.P.R.I. Mk II Radio echo sounder	Continuous
Gravity	Worden Master Model Gravity Meter	3 or 12-km intervals
Total magnetic field	Elsec proton magnetometer	3-km intervals
Vertical magnetic field	Askania G.F.Z. magnetometer	12-km intervals
Vertical magnetic field	BMZ magnetometer	60-km intervals
Horizontal magnetic field	QHM magnetometer	60-km intervals
Snow stratigraphy and density	Core and pit observations	12 or 60-km intervals
Surface hardness	Rammsonde	12 or 60-km intervals
Firnchemical studies	Collection of samples	60-km intervals
Barometric pressure (for elevation determination)	Fuess Barolux barometers	Simultaneous readings every few km
Surface meteorological observations	Meteorological instruments	Every 12 hours

(9) Ionosphere

Operation of the ionosonde was resumed on 17th March, 1971 and will continue according to the previous routine.

(10) Magnetospheric physics

- (a) Continuous recording of horizontal components of geomagnetic micropulsations at SANAE using two bar fluxmeters.
- (b) synoptic recordings of whistling atmospherics at SANAE.
- (c) Measurement of VLF reception at 27 kHz.

(11) Medical research

A programme of biological research, including inter alia the effect of the Antarctic diet on endocrine studies, blood lipids and changes in the volume of circulating blood.

(12) Meteorology

The programme of observations at SANAE was suspended for a few weeks during March 1971 because of the transfer and installation of the equipment at the new base. Otherwise the programme has remained unchanged as given in the previous report and will remain so during 1972.

(13) Oceanography (1970 and 1971)

Locality	Type of Observation	Equipment/Comments	Observing Schedule
On passage Cape Town to SANAE and return	Sea surface temperatures Depth soundings	Thermograph aboard relief vessel m.v. RSA Deepsea echo sounder	To be continued 1972 To be continued 1972
On passage Cape Town to Marion Island and return	Sea surface temperatures Depth soundings	Thermograph aboard relief vessel m.v. RSA Deepsea echo sounder	To be continued 1972 To be continued 1972
On passage Cape Town to Gough Island and return	Sea surface temperatures Depth soundings	Thermograph aboard relief vessel m.v. RSA Deepsea echo sounder	To be continued 1972 to be continued 1972
On passage Cape Town to 40°S 10°E and return and whilst on station	Sea surface temperatures	Thermograph aboard weather ship	To be continued 1972

(14) Seismology

Due to the building of the new SANAE-base during 1971 and the moving of the instruments to it, the programme was inoperative during 1971. Because of unsatisfactory results the long-period system has been returned to South Africa.

4. Transportation Facilities and Communication Equipment

(a) Transport Facilities

1. 2 D4 Caterpillars
2. 1 Caboose mounted on a Bombardier Muskeg 6 cylinder snow tractor
3. 3 Bombardier Muskeg 8 cylinder snow tractors
4. 1 Bombardier Muskeg 6 cylinder snow tractor
5. 2 Skidoo toboggans
6. 2 B9 Amphicats
7. 1 Modified Volkswagen (1200 cc)
8. 2 Caravans



(b) Communication Equipment

See annexure "A".

5. Facilities for Rendering Assistance

- (a) Since no aircraft are available, it will be most difficult to render any form of assistance at any point away from the base. The expedition will nevertheless be prepared to assist where possible.
- (b) There is a properly equipped surgery at the base and a hospital with accommodation for two patients. A doctor is stationed at the base.

6. Notice of any Expeditions to Antarctica not organized by the Party but organized in, or proceeding from the Party's Territory

The "Gallieni" with the French Antarctic team on board, will call at Cape Town between 11 and 12 December 1971 en route to the Antarctic.

7. Unoccupied Refuges : Name, position and location, date established, date last examined, estimate of accommodation, facilities, food, fuel and supplies.

A. Emergency Base

1. 800 Meters northwest of SANAE Base.
2. Route well marked and within easy reach of SANAE Base, even during storms.
3. Established January 1970.
4. Last examined September 1971.  
Food and fuel in base to last 18 men 2 weeks. Sufficient medical supplies and equipment. Emergency clothing for 18 men. Supplies of fuel and food in immediate proximity of base to last at least a year if needed. Fitted with stove, snowmelter and powerplant.

B. Pingvin Station

1. 15 Kilometers north of SANAE Base.
2. Situated 2 Km from Otterbukta.
3. Established by Norwegian expedition before 1959.
4. Examined September 1971.  
Food for 2 men for 20 days. 10 Drums of petrol.

C. Substation

1. 20 Kilometers northwest of SANAE Base.  
10 Kilometers west of Pingvin.
2. Situated near Tottanbukta.
3. Established by Norwegian expedition before 1959.
4. Visited during 1970. Stocked with moderate supply of food, fuel, a paraffine stove and a PYE VHF transceiver.

D. Grunehogna Geological Base.

1.  $72^{\circ} 05'S$ ,  $02^{\circ} 45'W$  Situated in the Ahlmann Ryggen about 215 kilometers south of SANAE Base en route to Borga Base.
2. Established 8.5.71.
3. Inhabited by a 5-man wintering party 1971, well stocked with fuel, food, vehicles spares and other supplies.

8. Record of Permits issued for Killing and Capturing each Species of Native Mammal and Bird and Statistics of Numbers of each Species killed and captured during the Year 1 July 1970 - 30 June 1971.

See annexure "B".

PRETORIA  
NOVEMBER 1971



1972

## INFORMATION ON TELECOMMUNICATIONS EQUIPMENT AND SCHEDULES FOR THE YEAR

SECRETARY FOR TRANSPORT, PRIVATE BAG 193, PRETORIA.

COUNTRY : SOUTH AFRICA

ADDRESS FOR CORRESPONDENCE ON THIS INFORMATION :

LONG 2° 22' 06" W

STATION : SANAE

LAT 70° 17' 58" S

CALLSIGN : ZRP

REMARKS

TRANSMITTERS				RECEIVERS				REMARKS
Type (1)	Frequency bands (2)	Types of transmission and power (3)	Frequency selection (Crystal VFO, etc.) (4)	Type (5)	Frequency bands (6)	Types of reception available (7)	Frequency selection (Crystal VFO, etc.) (8)	
RACAL TR127	1,5 - 25	A1 A3J A3A F1 1 kW	VFO	Siemens RBL445E 311B1 and FSE30	1,5 - 30	F1 A1 A3 A3A	Cont VFO	Incoming and out- going fed through Marconi Autospec
REDIFON 340D	2- 25	A1 A3 F1 400W	Crystal oscillated	RACAL 1217	1,5 - 30	A1 A3 A3A	Cont VFO	
SSP 3B4,1	2 - 30	A3A A3B F1 1 kW	Synthesizer					To be installed Jan 1972
Collins KVM2A	3,4 - 30	A1 A3J 100 W	14 crystals	Collins KVM2A	3,4 - 30	A1 A3J	14 Crystals	Transceiver Qty 3
RACAL TR28	2 - 7	A1 A3J 25W	8 Crystals	RACAL TR28	2 - 7	A1 A3J	8 Crystals	Transceiver Qty 7

INFORMATION ON TELECOMMUNICATIONS EQUIPMENT AND SCHEDULES FOR THE YEAR 1972  
 COUNTRY : SOUTH AFRICA  
 STATION : SANAE  
 CALL SIGN : ZRP  
 ADDRESS FOR CORRESPONDENCE ON THIS INFORMATION :  
 SECRETARY FOR TRANSPORT, PRIVATE BAG 193, PRETORIA  
 LAT 70° 17' 58" S LONG 28° 22' 06" W

ANTENNA		FACSIMILE		TELEPRINTER		REMARKS	
Type	Azimuth (in degrees or omni)	Index of co-operation	Drum speed	Type	Speed (bauds)		List of available frequencies
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
HEOM TIC send and receive	5 wavelengths Bearing 50° to Pretoria	Nil	Nil	Siemens T100	50	Can be modified to 75	3737, 5727, 5548, 6264, 6780, 8265, 9843, 11435, 12442, 14495, 16395, 16510, 18083, 19910 and those for TR28 2006, 3250, 3390, 3567, 3800, 5000 (time) 6780, 7047 kHz
HEOM TIC send	5 wavelengths Bearing 133° to Mawson						
Double inverted "V" Dipole	Bearing 200°						
Mostly MA33 Junior Tagi	Rotatable						
Assorted Dipoles	(for TR28)						
Assorted 12ft and 12ft Whips	Omni (for TR28)						
Hygain log-periodic	Rotatable (available 1972)						



INFORMATION OF TELECOMMUNICATIONS EQUIPMENT AND SCHEDULES FOR THE YEAR 1972  
 SECRETARY FOR TRANSPORT, PRIVATE BAG 193, PRETORIA.

COUNTRY : SOUTH AFRICA  
 STATION : SANAE  
 CALLSIGN : ZRP

ADDRESS FOR CORRESPONDENCE ON THIS INFORMATION  
 LAT 70° 17' 58" S  
 LONG 2° 22' 06" W

DETAILS OF REGULAR CIRCUITS

## FREQUENCIES USED AND REMARKS

Station worked	GMT		Type of emission (See CCIR 432) (x)	Type of traffic	SX or DX	Side band	FREQUENCIES USED AND REMARKS
	Open	Close					
(18) ZHF 88 Falklands ZRO Pretoria VLV Mawson VLV Mawson ZRO Pretoria	(19) 0045 0120 0145 0620 0645	(20) 0050 0140 0215 0630 0700	FSK FSK FSK/CW/SSB CW/SSB/FSK FSK	Met. Met. Met. Met. Admin/ Scientific	Br DX DX DX DX	- - - - -	(21), (22) and (27)
ZHF 88 Falklands ZRO Pretoria ZHF 88 Falklands VSD Halley Bay VLV Mawson UDY Novolaza- revskaya ZRO Pretoria ZHF 88 Falklands Field Parties	1245 1250 1515 1630 1750 1800 1820 1845 1900	1250 1400 1525 1700 1800 1810 1845 1850 2100	FSK FSK FSK CW/FSK/SSB CW CW	Met. Met/ Admin Met. Met. Met. Met. Met. Met. Admin.	Br DX Br DX DX DX DX Br Br DX SX	- - - - - - - - - -	<p>SANAE Transmitting Frequencies : 3737            5275 5548 6264 6780 8265 9843 12442            14495 16395 16510 18083 19910 plus the 8            TR28 2006 3250 3390 3567 3800 5000 6780            7047</p> <p>Frequencies available from ZUD/ZRO: 4454            5290 6983 7675 9359 14402 18630 20050</p> <p>Frequencies available from VLV: 2720            4040 5835 6850 7922 9940 12255 14415            15845 17480 19255</p> <p>Frequencies available from UDY: 4616            5100 6244 6283 8710 9280 10830</p> <p>With VSD entirely different frequencies            mostly VSD frequencies: 4080 5080 9310            Also 3737 8265</p> <p>Frequencies available from ZHF 88: 5100            9100 18300 19800</p>

ANNEXURE "B"

ANNUAL RETURN OF SPECIES KILLED OR CAPTURED (1 JULY 1970 TO 30 JUNE 1971)  
BY REPUBLIC OF SOUTH AFRICA

Use a separate form for each locality

LOCALITY (1) All seals shot within 15 mile radius of Otter Bixta in the vicinity of SANAE base during first week of February 1971

Species (2)	Sex (3)	Age (4)	Number killed for		Number captured and re-		Number cap- tured and released (6)
			Food	Scientific purposes	Museums, etc.	Scientific purposes	
Leptonychotes	M	A	4	-	-	-	-
Weddelli	F	A	13	-	-	-	-
Leiodon	M	A	4	-	-	-	-
Carcinop- bagus	F	A	10	-	-	-	-

- NOTES : (1) Define as precisely as possible. Analysis will not be possible if the localities are too large.  
 (2) Use scientific name.  
 (3) Enter "M" for male, "F" for female or "U" if sex is unknown.  
 (4) Enter year class, if known, otherwise "A" for adult, or "J" for juvenile.  
 (5) Removed from the Treaty Area.  
 (6) Enter in this column the numbers of species removed from one locality and released elsewhere in the Treaty Area.





Verw: UK/8/52  
Ref:

*Please refer ALZ 2/10  
and p.c. (3)  
-TAT.  
4/3*

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TELEGR.: OPPOSITELY LONDON WC2

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SUID-AFRIKAANSE AMBASSADE  
SOUTH AFRICAN EMBASSY  
TRAFALGAR SQUARE  
LONDON, W.C.2

25 February 1971.

*Dear Dr Heap,*

I have the pleasure of enclosing reports reflecting the results of magnetic observations made at SANAE Station in 1967, 1968 and 1969, which the South African authorities have asked us to forward to the British Government in terms of the Antarctic Treaty.

P.A. GROBBELAAR  
COUNSELLOR.

Dr. J.A. Heap,  
Polar Regions Section,  
American Department,  
Foreign and Commonwealth Office,  
Cornwall House,  
Stamford Street,  
LONDON SE1

*The enclosed reports have  
been sent to the Scott Polar  
Research Institute, Cambridge  
for retention. They are of no  
interest to the FCO. TAT. 4/3*

and Science, Curzon Street, London W.1.

928 7511

Mr. P. A. Grobbelaar,  
Counsellor,  
The South African  
Embassy,  
Trafalgar Square,  
London WC2N 5DP.

ALZ 2/10

29 January 1971

Thank you for your letter of 1 January to Mr. J.K. Hanna, enclosing a copy of your document "Information on South African Antarctic Activities, 1971: Exchanged in Terms of Article VII(5) of the Antarctic Treaty", which has been passed to this Office for my attention.

- 1.(a) Base Commander, British Antarctic Survey station, South Georgia.
- 1.(b) Base Commander, British Antarctic Survey station J. A. Heap.
- 1.(c) Base Commander, British Antarctic Survey station, Signy Island.
- 1.(d) Base Commander, British Antarctic Survey station, Argentine Islands.
- 1.(e) Base Commander, British Antarctic Survey station, Adelaide Island.
- 1.(f) Base Commander, British Antarctic Survey station, Stonington Island.

All copies 1(a) to 1(f) are to be



Registry  
June 29/71  
Done E 8/1/71

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- ② Please acknowledge.
- ③ Please arrange copying as below
- ④ Return to me a.a.

ANTARCTIC TREATY

J.A.H.  
6/1

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- ANTARCTIC TREATY
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  4. Mr. G. E. Hemmen, British National Committee on Antarctic Research, Royal Society, 6 Carlton House Terrace, London S.W.1.
  5. Mr. A. ~~G. W.~~ <sup>Southon</sup> Lee, Gibraltar and South Atlantic Department, FCO.
  6. H.E. The High Commissioner for the British Antarctic Territory, Stanley, Falkland Islands.

TWO copies of all to:

7. Mr. P. F. Hobday, DS 5b Navy Department, Ministry of Defence, London S.W.1.
8. Polar Regions Section, American Department, Room 330, Cornwall House, Stamford Street, London S.E.1.

TOTAL COPIES REQUIRED: 19

[NOTE: All copies (a) to (j) are to be separately enveloped and are to be sent in one bundle to the British Antarctic Survey, 50 Millingham Street, London S.W.1. The Survey will be responsible for onward transmission of copies for their stations and ships and to the ITC Strategy.]

Dr. D. G. Libby, International Scientific Relations Division, Department of Education and Science, Cannon Street, London E.C.4.

17 December, 1970.



Dr. Roberts, Polar Regions  
Section

Verw: UK/8/52  
Ref:



①

TEL: 01-930 4488

TELEGR.: OPPOSITELY LONDON WC2

SUID-AFRIKAANSE AMBASSADE  
SOUTH AFRICAN EMBASSY  
TRAFALGAR SQUARE  
LONDON, ~~WC2N 5DP~~  
WC2N 5DP

RECEIVED IN  
REGISTRY No. 18  
-6 JAN 1971

1st January, 1971.

ALZ 2/10

Dear Mr. Hanna,

I have been requested by the South African authorities to forward to the British Government, in terms of the Antarctic Treaty, a copy of a document entitled "Information on South African Antarctic Activities, 1971: Exchanged in Terms of Article VII(5) of the Antarctic Treaty".

I should be grateful if the publication could be passed to the appropriate quarter.

Yours sincerely,

P.A. GROBBELAAR  
COUNSELLOR

J.K. Hanna, Esq.,  
American Department,  
Foreign and Commonwealth  
Office,  
LONDON, SW1.

INFORMATION ON SOUTH AFRICAN ANTARCTIC ACTIVITIES : 1971 :  
EXCHANGED IN TERMS OF ARTICLE VII(5) OF THE ANTARCTIC  
TREATY

1. Names, types, numbers, description and armaments of ships, aircraft and other vehicles introduced or to be introduced into Antarctica and information on military equipment, if any, and its location in Antarctica.

(a) Ships

(1) Name

The South African supply vessel "RSA" is the only South African ship which will operate in the Antarctic during the 1970/71 summer season.

(2) Description

The "RSA" is a cargo/passenger boat of 1,550 gross tons with one 1560 BHP turbo-charged diesel engine, speed 11 knots. It provides accommodation for thirty-one passengers. The "RSA" is not an ice-breaker, but her construction is in accordance with Lloyd's specification for Ice Class I Ships.

(3) Military Equipment on Board

Except for one .303 rifle which is used for shooting seals for dogs' food en route and in Antarctica, the "RSA" does not carry any armaments.

(b) Aircraft

No aircraft will be introduced into Antarctica.

(c) Other vehicles

See under item 4(a) : Transport Facilities.

(d) Military Equipment

No military equipment of any description will be kept at the South African base or at any other place in Antarctica except those listed below which are used for recreational purposes and for the provision of food for the huskies and the personnel in cases of emergency :

Three .303 rifles.



2. Details about Expeditions

(a) Bases

- (i) Permanent Bases : South Africa maintains only one base in Antarctica known as SANAE. This base is situated at 70°17'58"S, 2°22'06"W. The buildings at the base were erected at the beginning of 1962 and were occupied on 11 February 1962.

This base is scheduled to be replaced by a new base which will be erected during the coming relief voyage (January/February 1971). An emergency base, capable of accommodating 16 people, was erected during February 1970.

- (ii) The establishment of a wintering-over mountain base in the Borg Massif, Western Queen Maud Land, was completed on 6 May 1969. The base is situated at 72°58'S 03°48'W 2400 m above sea level and 350 kilometers from the ice coast.

(b) Dates of Expeditions leaving for and arriving in Antarctica

(1) Expeditions:

- (i) There will be only one South African expedition stationed at SANAE base during 1971.
- (ii) A five-man field expedition will proceed to the mountains and winter in the Borg Massif (see paragraph 2(a)(ii)).

(2) Dates of Departure and Arrival

- (i) The "RSA" is scheduled to depart from Cape Town on 30 December 1970.
- (ii) The "RSA" will sail direct to SANAE and will make no calls en route. She will remain at the base for approximately six weeks to discharge provisions and enable the team of the Department of Public Works to erect a new base. Afterwards she will return direct to Cape Town with the home-bound expedition on board. No calls will be made on the homeward voyage.

(c) Details of Personnel

- (1) Master of the "RSA" : Captain K.T. McNish
- (2) Leader of SANAE 12 : Mr. J.G. Nel

- (3) Members of SANAE 12:
- |                                    |   |                                 |
|------------------------------------|---|---------------------------------|
| Senior Meteorologist               | - | E.P. Scholtz                    |
| Meteorologists                     | - | J.A. Koch<br>T.I.J. Potgieter   |
| Geologists                         | - | A.W.W. Paterson<br>J.H. Bredell |
| Physicist (Cosmic Rays)            | - | C. Mischke                      |
| (Ionosphere)                       | - | R. Haggard                      |
| (Geomagnetism)                     | - | A.J. Muller                     |
| Senior Mechanics                   | - | M. Martin<br>F.H. Bennett       |
| Mechanic                           | - | T. Kruijs                       |
| Radio Operator                     | - | R. van Mazzyk                   |
| Radio Technician                   | - | J.P. Bothma                     |
| Technician (radio echo<br>sounder) | - | T.G. Schaefer                   |
| Electronician                      | - | H.E. Thompson                   |
| Medical officer                    | - | vacant                          |
| Medical orderly                    | - | "                               |

The expedition will not include any personnel designated by other countries.

3, Programme of Work and Equipment

Activities during 1970 and planned for 1971

(1) Aurora

A SCAR-pattern 35mm all-sky camera will be operated at SANAE during the winter months and will be supplemented by visual observations wherever feasible. The observing schedule will be 10 secs, 2½ secs, 40secs exposure during the first two minutes of each 15 minute interval. During active periods this observing schedule is supplemented by a 10 secs exposure every minute.



(2) Airglow

Station	Equipment	Intensities measured at		Observing schedule	Data
April-October 1971					
SANAE	Automatic zenith filter photometer (new instrument, digitized, results on punched tape)	6861 Å	6300 Å	Continuous during polar night, from night to morning twilight at all suitable times. One set of eight readings every five minutes or one set of eight readings every minute when intensities vary rapidly	Complete tabulated data and daily plots
		5577 Å	5300 Å		
		4278 Å	(narrow band)		
		4278 Å	(wide band)		
		3914 Å	(narrow band)		
		3914 Å	(wide band)		
April-October 1970					
Programme of 1970 to be continued at SANAE					

(3) Biology and Ornithology

No field work was undertaken during the 12 months 1968 - 1969. The results of the "Biological-Geological Expedition to the Marion and Prince Edward Islands" have been described by many specialists and are ready to go to the printers. The printing of the volume has been delayed but it should be issued early in 1971.

The possibility of the establishment of a research laboratory on Marion Island is being investigated.

Studies on primary production of fresh water, brackish water and ocean water are planned for the 1971/72 season. Similar studies on terrestrial vegetation are also considered. A survey will probably be made of the periglacial phenomena of Marion Island.

(4) Cosmic Rays

The neutron monitor type 3-64 NM (Chalk River) and the Aerospace Research Type ARI -100C riometer will continue to be operated at SANAE during 1970 and 1971. Observations

using the neutron monitor type 1-64NM (Chalk River) installed on the RSA will be continued during voyages as well as the FM-AM-telemetered magnetic tape recordings of instrumented balloon ascents at SANAE and on voyages of the RSA.

(5) Geodesy and Cartography

Survey activity during 1971 will be restricted to the support work required at the base.

(6) Geology

Owing to very bad weather and mechanical problems, the Borga Base personnel for 1970 did not manage to reach the base before winter and had to return to SANAE. After winter field work from SANAE is planned for selected areas in the Ahlmann Ridge.

Data processing : Geological and Geochemical studies (1960 - 1969) to be completed and published during 1970.

(7) Geomagnetism

Operation of the La Cour three-component storm magnetograph and of the 3-axis fluxgate magnetometer will be continued. Absolute observations for base-line control will be made with the proton magnetometer, fibre declinometer, BMZ magnetometer, and two QHM magnetometers.

(8) Glaciology and Geophysics

SANAE Base : Continuation of bugetry studies on the Fimbul Ice Shelf. Re-establishment of the Radial and Bukta networks.

Borga Base : Extention of oversnow glaciological gravity, magnetic and radio-sounding traverses, from Ahlmann Ridge onto inland plateau up to northernmost turning point of the United States South Pole - Queen Maud Land Traverse, planned for 1971.

Data processing : Processing of geophysical data (1960 - 1967) to be completed and published during 1970.

(9) Ionosphere

Operation of the vertical incidence ionosonde at SANAE will be continued.



(10) Magnetospheric physics

- (a) Continuous recording of horizontal components of geomagnetic micropulsations at SANAE using two bar fluxmeters.
- (b) Synoptic recordings of whistling atmospherics at SANAE.

(11) Medical research

No programme available pending the appointment of a successor to Dr. A. le R. van der Merwe.

(12) Meteorology

The activities during 1970 are identical with those for 1969, except that the 20 m high mast at SANAE was blown over during a storm and cannot be replaced before the 1971 relief expedition. No extensions to the programmes are planned for 1971.

(13) Oceanography

Extension of radar coastline-survey towards the east to determine the northerly limit of the Trolltunga ice tongue. Continuation of the surface temperature and bathymetric sounding projects.

(14) Seismology

The U.S.C.G.S. seismograph will be moved approximately 3 km to the site of the new South African base. It will be maintained there and scaled data will be transmitted to Washington D.C. Only short period waves are being recorded at present.

4. Transportation Facilities and Communication Equipment

(a) Transport Facilities

- 1. 2 D4 Caterpillars
- 2. 1 Caboose mounted on a Bombardier Muskeg 6 cylinder snow tractor
- 3. 3 Bombardier Muskeg 8 cylinder snow tractors
- 4. 1 Bombardier Muskeg 6 cylinder snow tractor
- 5. 1 Polaris K95 toboggan

6. 2 Skidoo toboggans
7. 2 B9 Amphicats
8. 1 Modified Volkswagen (1200 cc)

(b) Communication Equipment

See annexure "A".

5. Facilities for Rendering Assistance

- (a) Since no aircraft are available, it will be most difficult to render any form of assistance at any point away from the base. The expedition will nevertheless be prepared to assist where possible.
- (b) There is a properly equipped surgery at the base and a hospital with accommodation for two patients. A doctor is stationed at the base.

6. Notice of any Expeditions to Antarctica not organized by the Party but organized in, or proceeding from the Party's Territory.

The "Gallieni" with the French Antarctic team on board, will call at Cape Town between 9 and 12 December 1970 en route to the Antarctic.

7. Unoccupied Refuges

- \* (a) Tottenbukta ( $70^{\circ}11'6''S$   $2^{\circ}38'5''W$ ) is an unoccupied refuge where food, a generator and radio communication are available.

(b) There is a hut at Marsteinen ( $72^{\circ}26'1''S$   $1^{\circ}41'W$ ).

(c) Pingvin, at Otter Bukta ( $70^{\circ}11'8''S$   $2^{\circ}25'W$ ).

- \* See map : U.S. Navy Operation Deep Freeze 65 (H.C. 2562 -D) on which the substation is indicated as Tottenbukta.

8. Record of Permits issued for Killing and Capturing each Species of Native Mammal and Bird and Statistics of Numbers of each Species killed and captured during the Year 1 July 1969 - 30 June 1970.

See annexure "B".



INFORMATION ON TELECOMMUNICATIONS EQUIPMENT AND SCHEDULES FOR THE YEAR 1970/71.  
Secretary for Transport, Private Bag 193, PRETORIA.

COUNTRY : SOUTH AFRICA  
 ADDRESS FOR CORRESPONDENCE ON THIS INFORMATION  
 STATION : SANAE  
 CALSIGN : ZRP  
 LAT 70° 17' 58" S  
 LONG 2° 22' 06" W

TRANSMITTERS					RECEIVERS			REMARKS
Type	Frequency bands	Types of trans- mission and power	Frequency selection (Crystal VFO, etc.)	Type	Frequency bands	Types of reception available	Frequency selection (Crystal VFO, etc.)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
R A C A L T A I 2 7	1.5-25.0MHZ	FSK, CW, SSB, (upper, lower and double side bands) Output power normally 1KW in all modes	Continuous Freq. Selection by beat freq. VFO.	S I M P L E	1.5-30MHZ	FSK, CW, SSB, DSB	Cont. VFO	Auto spec. equipment will be installed 1971

INFORMATION ON TELECOMMUNICATIONS EQUIPMENT AND SCHEDULES FOR THE YEAR 1970/71.

ADDRESS FOR CORRESPONDENCE ON THIS INFORMATION Secretary for Transport, Private Bag 193, Pretoria

COUNTRY : SOUTH AFRICA  
 LAT 70° 17' 58" S LONG 2° 22' 06" W.

STATION : SANAE

CALLSIGN : ZRP

ANTENNA		FACSIMILE		TELEPRINTER		REMARKS	LIST OF AVAILABLE FREQUENCIES
Type	Azimuth (in degrees or omni)	Index of co-operation	Drum speed	Type	Speed (bauds)		
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
R H O M B I C	Beamed to Pretoria (S.A.) and Mawson	-	-	S I E M E N S T I L O O	50	Can be modified to 75	3737, 6274, 6780, 9843, 12442, 13560, 14446, 14495, 16395, 16471, 17342, 18083, 19910, 22085 KHZ.



1970/71.

INFORMATION ON TELECOMMUNICATIONS EQUIPMENT AND SCHEDULES FOR THE YEAR  
 COUNTRY : SOUTH AFRICA  
 ADDRESS FOR CORRESPONDENCE ON THIS INFORMATION : Secretary for Transport, Private Bag 193, Pretoria  
 LAT 70° 17' 58" S  
 LONG 2° 22' 06" W

STATION : SANAE  
 CALLSIGN : ZRP  
 DETAILS OF REGULAR CIRCUITS

Station worked	GMT		FREQUENCY USED		Type of emission (See CCIR 432) (x)	Type of traffic	SX or DX	Side band	REMARKS
	Open	Close	Transmitting	Receiving					
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
VIV Mawson	0620	0630	13560	12255	CW or SSB	Met. Admin/Scientific	DX	-	-
ZRO Pretoria	0645	0800	16395	14402/ 18630	FSK	"	"	-	-
ZRO Pretoria	0900	1030	"	"	"	"	"	-	-
VIV Mawson	1130	1155	14495	15845	CW/FSK/SSB	Met.	"	-	-
UDY Novolazarevskaya	1200	1215	6780	6244	CW	Met.	"	-	-
ZRO Pretoria	1230	1240	16395	14402/ 18630	FSK	Met.	"	-	-
VSD Halley	1630	1700	10970	10970	CW, FSK, SSB	Met.	"	-	-

INFORMATION ON TELECOMMUNICATIONS EQUIPMENT AND SCHEDULES FOR THE YEAR 1970/71.

COUNTRY : SOUTH AFRICA ADDRESS FOR CORRESPONDENCE ON THIS INFORMATION : Secretary for Transport, Private Bag 193, Pretoria

STATION : SANAE LAT 70° 17' 58" S LONG 2° 21' 06" W

CALLSIGN : ZRP

DETAILS OF REGULAR CIRCUITS

Station worked	GMT		FREQUENCIES USED		CIRCUIT CONDUCT			REMARKS	
	Open	Close	Transmitting	Receiving	Type of emission (See CCIR 432) (x)	Type of traffic	SX of DX		Side band
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
VIV 1 <sup>st</sup> Wison UDY Kovolaza- revskaya ZRO Pretoria	1745 1800	1755 1810	13560 6780	12255 6244	CW CW	Met. Met.	DX DX	- -	- -
Field Parties	1900	2100	12442	6983/ 14402	FSK	Met. Admin.	DX SX	- -	- -
ZRO Pretoria VIV Mawson	0120 0145	0140 0215	3567/ 7047 6274 12442	3567/ 7047 6780 9940	SSB FSK FSK	Met. Met.	DX DX DX	- -	- -



ANNEXURE "B"  
 ANNUAL RETURN OF SPECIES KILLED OR CAPTURED (1 JULY 1969 TO 30 JUNE 1970)  
 BY REPUBLIC OF SOUTH AFRICA.

Use a separate form for each locality  
 LOCALITY (1) Position 16 mile radius of LAT 70° 05' S LONG 02° 00' W

Species (2)	Sex (3)	Age (4)	Number killed for			Number captured and removed (5) for		Number captured and released (6)
			Food	Scientific purposes	Museums, etc.	Scientific purposes	Zoos, etc.	
Leptonychotes	M	A	8	-	-	-	-	-
Weddelli	F	A	8	-	-	-	-	-
Lobodon Car-	M	A	11	-	-	-	-	-
cinophagus	F	A	11	-	-	-	-	-
Hydrurga	M	A	11	-	-	-	-	-
Leptonyx	F	A	1	-	-	-	-	-

NOTES : (1) Define as precisely as possible. Analysis will not be possible if the localities are too large.  
 (2) Use scientific name.  
 (3) Enter "M" for male, "F" for female or "U" if sex is unknown.  
 (4) Enter year class, if known, otherwise "A" for adult, or "J" for juvenile.  
 (5) Removed from the Treaty Area.  
 (6) Enter in this column the numbers of species removed from one locality and released elsewhere in the Treaty Area.