

JAN 1965

FEB 1965

Department of Meteorological Services
Salisbury,
Southern Rhodesia. 1965

SEISMOLOGICAL BULLETIN

The data herewith give the results for a network of seismographs intended particularly for the study of earthquakes occurring in Rhodesia and Malawi. This bulletin, however, is prepared regularly and will be sent to interested organisations on request.

Stat:	<u>Chileka (CLK)</u>	<u>Bulawayo (BUL)</u>	<u>Broken Hill (BHA)</u>
Lat:	15° 40.8' S	20° 08.6' S	14° 26.46' S
Long:	34° 58.6' E	28° 36.8' E	28° 28.08' E
Litho- logic Found- ation:	Charnockitic gran- ulites of the Basement Complex	Hornblend schists of the Bulawayan System	Dolomite and shales of the middle Katanga system.
Hgt:	781 metres	1341 metres	1206 metres
Instrument:	Vertical and Horizontal Willmore S.P.		
Seismo. Officer:	Head of the Malawi Met- eorological Service, Chileka.	Director, Meteorological Services, Salisbury	Director, Meteorological Services, Salisbury.
Obser- ver:	Officer-in- charge, Chileka.	Officer-in- charge, Goetz Obser- vatory, Bulawayo.	Officer-in-charge, Broken Hill Observatory.
Insti- tution	Department of Meteorological Services, Salisbury.		

All times given are G.M.T.

The supervision of this network and bulletin is at present in the hands of the undersigned, to whom all inquiries should be addressed.

H. O. OLIVER
Seismological Officer

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Jan Smuts Avenue,
Johannesburg,
South Africa.

January, 1965.

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/A	Remarks.
1	Bha	e	06	17	05			Kariba
		i			31			
1	Bha	Traces	10	47	00			
1	Bha	eP	13	50	40	900Kn		Probably Lake Tanganyika
		iS ⁿ		52	00			B.P.I. H=13 48 42
	Clk	iS ⁿ			52			
		eP ^l		51	11	1170Kn		
		iS ⁿ		53	00			
		iS ⁿ		54	14			
	Bul	iS ^l			11			
		iS ⁿ		55	45			
1	Bha	e	21	48	02			
	Clk	e			29			
	Bul	i			37			
1	Bha	Traces	22	07	08			
2	Clk	i	07	59	55			
2	Bha	e	14	02	55			
	Bul	i			56			
2	Bha	eP	21	39	16	710Kn		Probably Zambia
		iS ⁿ		40	21			B.P.I. H=19 37 42
		iS ⁿ		41	59			S.O.S, 30.0E
	Clk	eP ^l		39	27	900Kn		
		iS ⁿ		41	03			
		iS ⁿ			51			
2	Bha	eP ^l	22	09	29			Kariba
		iS			50			
3	Clk	i	01	49	00			Seismic probably local
		i			18			
3	Bha	iP	04	50	03			Kariba
		iS			30			
3	Bul	eP		59	21			
		iP ⁿ			30			
		iP ^l		07	01			
		iS ⁿ			15			
3	Bha	e ^l	11	01	41			Seismic Local
		i		02	28			
3	Bha	Traces	15	06	00			
3	Clk	Traces	19	48	00			
4	Bha	iP	01	42	20			80Kn from station
		iS			28			
4	Bha	e	07	28	37			
4	Bha	Traces	13	59	00			
4	Bha	e	14	54	00			
	Bul	Traces		56	01			
5	Bha	e	01	03	20			
5	Bul	iP	02	55	15	900Kn		B.P.I. H=02 53 17
		iP ⁿ		56	35			
		iS ^l		57	26			
	Bha	eP ^l		56	32	1500Kn		Vryheid district Natal S. Africa
		iP ⁿ		58	56			
		eS ^l	03	00	24			
	Clk	eS ⁿ			33			
5	Bha	eP ^l	03	24	00			About 430Kn from station
		iS ⁿ			43			
5	Bul	Traces	03	27	00			
	Clk	Traces		25	00			
5	Bul	Traces	04	23	00			
5	Bul	e	18	25	17			
	Clk	Traces		26	00			
5	Bul	iP	21	56	19			Kariba
		iP ⁿ			30			
	Clk	iP ^l			58			
		iS ⁿ		58	08			

January, 1965. Cont.

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/R	Remarks.
6	Bul	i	10	55	35			
6	Bul	Traces	15	56	00			
7	Clk	iP	14	21	01			Near Station
7	Bul	Traces	20	25	00			
7	Clk	oP	21	38	06			130Km from station
		iS			24			
8	Bul	iS ₁	15	32	50			Probably Zambia
8	Bul	iP ₁	13	59	05	55	R	UTC/GT H=15 49 46.0 59.4S, 24.0W
	Bha	oP			41	60		ht 39Km Sandwich Is. Mag5.9
8	Bha	e	21	27	21			-
8	Bul	i	21	31	59		C	
	Bha	o		32	34			
	Clk	i			50		R	
9	Bul	iS ₁	07	52	08			Vitwatersrand Tremor
9	Bul	i	12	15	30			
9	Bul	iS ₁	23	02	20			Vitwatersrand Tremor
10	Bha	iP ₁	03	02	21	60	C	UTC/GT H=02 52 23.9 45.5W, 26.6E
	Clk	iP			30	61		Rumania ht 128Km Mag5.3
	Bul	oP			56	67		
10	Bul	o	07	43	26			
10	Bul	Traces	12	50	14			
10	Bul	oPKP	13	55	20	127		UTC/GT H=13 56 30.7 13.5S, 16.6E
		i			33			ht 32Km West Hebrides Is. Mag 6.2
	Clk	iPKP			28	125		
	Bha	oPKP		56	31	132		
		i			44			
10	Bul	i	19	51	14			
11	Clk	iP	10	49	51			About 90Km from station
		iS		50	00			
11	Bul	iS ₁		53	44			Kariba
11	Bha	oP ₁	20	31	06			Kariba
		iS			30			
	Bul	Traces		32	00			
12	Bha	iP	10	18	50	52		UTC/GT H=10 08 47.7 56.0E, 27.4W
	Clk	iP		19	06	63	R	ht 33Km S. Sandwich Is. Mag5.8
12	Bha	oP	11	38	00			Kariba
		iS			27			
12	Bha	e	13	16	04			
12	Clk	i	13	43	17			
	Bha	i			44			
12	Bha	iP	13	55	42			Kariba
		iS		59	09			
13	Clk	e	07	06	07	520Km		Probably Mozambique
		i		07	14			
	Bha	e		11	06			
	Bul	Traces		12	00			
13	Bha	o	08	07	00			Probably Zambia
		i			40			
	Clk	e			05			
14	Bha	e	13	15	11			
14	Bha	oP	13	34	07			Kariba
		iS			33			
15	Clk	i	02	35	07			Probably Central Africa
		i		36	26			
15	Clk	iP	06	11	49	76	R	UTC/GT H=05 59 58.5 49.9N, 79.0E
	Bha	iP		12	01	80		ht 0Km Kazakh S.S.R. Mag5.2
	Bul	iP			26	84		
15	Bha	oP	10	16	24	850Km		B.P.I. H=10 14 32
		iP _n		17	41			Republic of the Congo
		iS _n		13	25			
	Clk	iP ₁		16	50	1070Km		
		iS _n		13	32			
		iS ₁		19	25			
	Bul	oP _n			49			

January, 1965. Cont.

Date	Station	Phase	h. G.	n. M.	s. T.	Arc Dist	C/ R	Remarks.
15	Bha	iP	13	54	42			Kariba
		iS		55	13			
15	Bul	e	23	57	35			
16	Bul	iP	11	41	56	55	R	USCGS H=11 32 37.4 56.6S, 27.4W
	Bha	iP		42	29	59	R	ht 101Km S. Sandwich Is. region
	Clk	iP			45	63	R	Mag 6.1
16	Clk	Traces	17	42	00			
16	Bha	eP	20	14	20			Kariba
		eS			51			
16	Bha	e	21	18	53			
17	Bul	iPKP	11	01	19	126		USCGS H=10 43 17.5 24.5S, 173.4E ht 568Km S. Fiji Is. Mag 5.5
17	Bul	Traces	12	09	00			
17	Bul	Traces	13	32	00			
17	Bul	eP	15	19	07	750Km		Probably S. African
		iS ⁿ		20	22			
		iS ⁿ ₁			56			
17	Clk	i ₁	21	08	47			
	Bul	i		09	21		R	
17	Bul	iS ₁	22	00	22			Probably Tremor
18	Bul	iP ₁	00	15	53	87		USCGS H=00 03 11.9 37.7S, 72.0W
	Clk	eP		16	30	95		ht 52Km. Central Chile Mag 5.3
18	Bul	iP	15	34	29	85		USCGS H=15 21 56.1 37.1N, 95.6E ht 39Km Tsinghai Prov. China Mag 4.9
18	Bul	e	22	46	56			
		i		47	25			
19	Bha	Traces	02	09	56			
19	Clk	iP	08	31	17	800Km		B.P.I. H=08 29 30 Mozambique Channel
		iS ⁿ		32	30			
		iS ⁿ ₁		33	18			
19	Bul	iP ₁	15	31	06	87		USCGS H=15 16 41.6 23.1S, 66.8W
		iPP			42			ht 146Km Catamarca. Prov. Argentina. Mag 5.2
	Bha	iP			19	89		
19	Clk	e	17	07	23			
	Bul	Traces		08	00			
	Bha	i			19			
19	Clk	Traces	21	47	00			
20	Bul	Traces	00	38	00			
21	Clk	e	00	10	16			
21	Clk	e	01	29	14			
22	Bul	eS ⁿ	14	50	41			Seismic Local
22	Bul	Traces	18	44	00			
23	Bul	Traces	21	49	00			
23	Bul	i	22	14	03		C	
24	Clk	i	00	24	17		R	
	Bul	i			42		C	
26	Clk	iP ⁿ	05	10	19			
		iP ₁			23			
		iS ⁿ ₁			43			
26	Bha	i ⁿ	17	17	10			
		i			40			
26	Bha	Traces	17	34	27			Probably Republic of the Congo
	Clk	Traces		34	00			
28	Clk	e	02	45	00		C	
	Bul	i			39		R	
	Bha	i			41		R	
28	Bha	iP	17	56	03	330Km		B.P.I. H=17 55 15 13.0S, 26.0E
		iS			33			Zambia
	Bul	eP ⁿ		57	10	350Km		
		iS ⁿ		58	30			
		iS ⁿ ₁		59	18			
	Clk	eP ⁿ		57	25	1000 Km		
		iS ⁿ		58	56			

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January, 1965.

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/ R	Remarks.
28	Bha	oP	22	12	21			Kariba.
		iS			45			
	Bul	Traces		13	00			
28	Bul	e	23	41	18			
		i			44			
29	Bha	oP	03	30	16			Kariba.
		iS			45			
	Bul	Traces		32	00			
29	Bha	iPKP	09	54	31	127		USCGS H=09 35 25.7 54.8N, 161.7E
	Bul	ePKP			37	131		ht 33Km E. Coast of Kamachka Mag 5.6
30	Clk	Traces	01	06	00			
30	Bha	iP	01	13	07			Kariba
	Bul	iP			51			
		iP ⁿ		14	02			
30	Bha	i ¹	02	31	39			Kariba
		i			32 05			
30	Bha	iP	07	35	41			About 90Km from station
		iS			50			
30	Bul	iS ₁	12	27	25			Probably Witwatersrand tremor
30	Bha	e	18	00	01			
		i			17			
		i		02	47			
	Bul	i		00	11			
		i		02	36			
30	Bul	e	15	24	20			
30	Bul	i	18	26	46			
	Bha	i		27	52			
31	Bul	e	01	00	53			
31	Bul	e	01	04	19			
31	Clk	i	01	14	30	700Km		B.P.I. H=01 12 56 Probably Mozam- bique Channel.
		i		15	33			
		i		16	10			
31	Bul	i	13	10	16	89		USCGS H=12 57 29.1 21.28, 67.8W
		i			53			ht 71Km Chile-Bolivia Border
	Bha	e		11	30	90		Mag 5.6
31	Bha	e	17	35	05			
		i			20			

 H.O. OLIVER.
 H. WAGNER.

February, 1965.

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/R	Remarks.
1	BUL	ePKP i	05	45	13	133		USCGS H=05 27 04.5 18.6S, 178.1W ht 472Km Fiji Is. Mag 5.6
	BHA	ePKP		46	26	138		
	CLK	ePKP			29	135		
1	CLA	e i i	13	00	(40)			Probably central Africa.
	BHA	iS		01	44			
	BUL	iS		02	26			
	BHA	Traces		51	15			
2	BHA	eP iS	04	28	30			About 420Km from station
				29	14			
2	BUL	iP ⁿ iP ¹ iS ¹	09	37	22			Kariba
					31			
				38	13			
2	BUL	e	16	08	07			
2	CLK	e	18	00	40			
		i		01	44			
		i		02	26			
2	BUL	eP ⁿ iP ¹ iS ¹	21	59	56			Kariba
			22	00	05			
					48			
3	BUL	eP ⁿ iS ¹ iS ¹	01	45	15			Witwatersrand Tremor.
				46	50			
	CLK	Traces		50	00			
3	BHA	iP iS	09	38	25			Kariba
					54			
	Bul	eP ⁿ iP ¹ iS ¹		39	27			
					38			
3	BHA	iP ¹ iS	17	56	13			Kariba
					40			
4	CLK	e	04	47	44			
4	BHA	e	04	37	05			
		e		38	12			
	BUL	e		37	44			
4	BHA	Traces	04	53	04			
4	CLK	e	06	13	18			
		i		20	40			
	BUL	e		13	20			
		i		20	43			
	BHA	e		13	25			
		i		20	50			
		i			58			
4	BHA	e	08	59	55			
	BUL	e	09	00	02			
		i			07			
4	BHA	e	12	25	21			
	BUL	e			26			
4	BUL	eP ⁿ iS ¹ eP ¹	13	13	44			Witwatersrand Tremor.
				15	21			
4	BHA	eP ¹	19	55	03	77		USCGS H=19 44 05.6 13.3N, 44.8W ht 33Km. North Atlantic Ridge Mag 5.4
4	BUL	eP	19	56	12			About 20Km from station
4	CLK	iP iS	23	16	45			
					47			
5	BUL	e	09	51	11			
		i			32			
5	BUL	i	13	14	21			About 140Km from station
		i			35			
5	CLK	ePKP	22	07	45	134		USCGS H=21 46 25.8 51.1N, 178.3E Ret. Is. Aleution Is. Mag 5.4 ht 25Km
5	CLK	e	22	35	16			
6	CLK	ePKP i	01	59	53	139		USCGS H=01 40 33.2 53.2N, 161.9W ht 33Km S. of Alaska Mag 6.4
			02	00	02			
	BUL	iPKP ₁	00	10	147		R	

February, 1965.

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/ R	Remarks
6	CLK	Traces	03	57	00			
6	CLK	e	04	22	05			
	BUL	e			12			
6	BUL	iPKP ₁	17	10	05	147		UTC-11=16 50 29 53.3N, 161.8W ht 33Km South of Alaska Mag 6½
6	CLK	Traces	23	43	00			
7	CLK	i	02	36	18			
	BUL	e			24			
7	CLK	e	04	30	34			Rat. Is. aftershock
7	BUL	e	09	45	14			
7	CLK	iP	21	55	15			About 210Km from station
		iS			36			
8	BUL	Traces	11	04	00			
9	BUL	iP	04	21	36			
		iS ⁿ			23			
		iS ⁿ ₁			24			
9	BUL	i	06	00	40			
11	BUL	e	02	52	13			
		i			24			
11	BUL	i	04	50	22			
	CLK	Traces		51	00			
11	BUL	i	12	25	08			
11	BUL	iS ₁	13	25	30			Witwatersrand Tremor.
13	BUL	eP ₁	10	10	33			Witwatersrand Tremor.
		iS ⁿ			11			
		iS ⁿ ₁			12			
	BHA	e		11	48			
		i		15	10			
14	BUL	iP ₁	04	48	06			
		iS ₁			47			
14	BUL	e	23	12	04			
15	BUL	Traces	00	20	00			
15	BUL	e	01	44	31			
15	BHA	e	02	44	31			
		e	03	51	45			
15	BHA	i	05	20	58			
		i		21	22			
17	BHA	eP	13	00	54			Kariba
		iS		09	29			
18	BHA	eP	04	36	51			Kariba
		iS		38	20			
18	BHA	eP	05	03	14			Kariba
		iS			44			
18	BHA	iP	10	53	33			Kariba
		iS		54	01			
18	BHA	e	23	32	50			
	CLK	e			55			
18	CLK	e	23	36	21			
19	BHA	iP	01	25	50			Kariba
		iS		26	19			
	CLK	Traces		28	00			
19	BHA	i	05	24	51			
20	BHA	eP	19	48	00			Kariba
		iS			26			
20	BHA	Traces	22	45	00			
21	BHA	iS	03	05	07			Probably Zambia
22	BHA	Traces	03	27	00			
22	BHA	iP	12	55	14			Kariba
		iS			42			
22	BHA	Traces	13	42	04			
23	BHA	iS	05	25	06			Probably Central Africa.
		iS ₁			50			

February, 1965			h.	m.	s.	Arc	C/	Remarks.
Date	Station	Phase	G.	M.	T.	Dist	R	
23	Bul	i	22	23	40			
		i			59			
25	Bul	i	03	44	57		R	
25	BUL	i	05	10	15			
25	BHA	iP	10	44	40			USGS H=10 34 06.1 23.8W, 94.8E Ht 87Km Burma-India Border Mag 5.4 Kariba
25	BUL	iP ₁	11	41	02			
		iS ₁			47			
	BHA	i			05			
		i			33			
25	BUL	Traces	12	12	00			
25	CLK	iP	17	55	50			About 150Km from station
		iS			07			
25	BHA	i	19	45	01			
26	CLK	Traces	09	07	00			
	BUL	e			11			
	BHA	e			16			
26	BUL	e	11	33	38			
26	BUL	i	14	20	40			
27	CLK	e	08	06	12			Seismic Local
		o			14			
27	BHA	i	11	38	17		C	
	CLK	i			45		R	
	BUL	i			53			
27	BHA	Traces	11	54	00			
27	BU L	Traces	11	56	00			
27	CLK	iS	23	04	36			
27	Bha	oP ⁿ	23	04	16			Probably Central Africa.
		iS ⁿ			27			
		iS ⁿ			05			
28	CLK	i ₁	02	31	48			
28	BHA	Traces	02	50	00			
28	CLK	iP ₁	04	24	33	530Km		B.P.T. H=04 23 20. W. Lake Nyasa
		iS ₁			50			
	BHA	iP ₁		25	06	500Km		
		iP ⁿ		26	20			
	BUL	e ₁		25	54			
		i		28	48			

H.O. OLIVER.
W. Wagner.

E-MAR 1965

Southern Rhodesia
Johannesburg
 March 1965

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Dup

March, 1965.

Date	Station	Phase	h. C.	m. M.	s. T.	Arc Dist.	C/R	Remarks.
1	BUL	i	07	39	42			
	BHA	e			48			
1	BHA	i	12	25	35			Probably Central Africa
1	BHA	iP	17	24	44			Kariba
		iS		25	12			
1	BUL	i	21	51	02			
	BHA	i			08			
①	BHA	ePKP	22	10	28	128		USCGS H=23 52 32.1 27.3S, 177.9W h=33Km Kermadec Is. Mag 5.0
		i		13	04			
1	CLK	i	22	51	16			
		i		54	29			
2	BHA	iP	02	05	52			Kariba
		iS			20			
	BUL	iS ₁		06	52			
2	BHA	i	03	53	43			
3	BHA	eP	02	17	05			Kariba
		iS			33			
3	BHA	e	15	33	03			
		i			12			
3	BUL	i	11	31	37			Seismic Local
3	BUL	i	15	32	55			
		i		33	06			
	CLK	e			56			
3	BHA	e	17	06	43			
	BUL	Traces		07	06			
3	BHA	e	19	32	30			
	BUL	i			39			
	CLK	e			44			
4	BUL	i	21	13	08			
	BHA	e			47			
	CLK	e			58			
5	BUL	iS ₁	08	19	20			Witwatersrand Tremor.
5	CLK	e	14	01	55			
	BUL	e			58			
5	BHA	Traces	14	27	00			
5	BUL	i	14	43	45			C
	BHA	i			58			R
	CLK	i		44	21			C
5	CLK	e	18	18	23			
5	CLK	iP	18	19	56			About 200Km from station
		iS		20	15			
5	BHA	iS	19	23	50			Probably Zambia
		iS ₁		24	10			
5	BHA	e	23	55	43			
		i		56	18			
6	BHA	eP	05	56	29			
		iS ₁		57	43			
		iS ₁		58	15			
	CLK	Traces		59	00			
⑥	CLK	iS ₁	09	55	30			
		iS ₁			55			
	BHA	eS ₁			47	820Km		B.P.I. = 09 53 59
		e		57	02			Moambique
		i			42			
	BUL	iS ₁		56	30	550Km		
6	BHA	Traces	11	27	00			
	CLK	e		30	34			
		e		31	26			
7	BUL	i	02	02	04			
	CLK	e			06			
	BHA	Traces			26			
7	BUL	i	07	39	42			
7	BHA	eP	15	46	55			
		iS		47	31			

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March, 1965. Cont.

Date	Station	Phase	h. G.	m. M.	s. T	Arc Dist	C/R	Remarks.
8	BHA	iP	03	57	52			Kariba
	BUL	iP		58	08			
		iP ⁿ			16			
		iS ¹			46			
		iS ⁿ		59	00			
9	CLK	e	01	28	37			
		i		31	29			
9	CLK	e	02	35	24			Central Africa
9	BHA	eP	17	22	08			Central Africa
		i		23	11			
	BUL	eP		22	30			
		iS ⁿ		24	44			
	CLK	Traces		28	00			
9	BHA	e	17	48	31			
9	BHA	e	18	07	17			
	CLK	i			30		C	
	BUL	i			56			
10	CLK	ePP	16	14	09	131		USCGS H=15 53 37.8 21.9S, 179.6E
	BUL	iPP			12	129	R	ht 547Km S. of Fiji Is. Mag 5.7
	BHA	ePP			28	135		
10	BUL	i	16	30	40			
		i			52			
10	BHA	iP	17	49	12			Kariba
		iS			37			
	BUL	iP			25			
		iR ⁿ			36			
		iS ⁿ		50	07			
		iS ⁿ			17			
	CLK	eP			05			
		iS ⁿ		51	15			
11	BHA	i	17	15	21			Central Africa
	CLK	i			34			
12	BHA	eS	00	09	01		C	Central Africa
12	BUL	iS ¹	14	46	38			
	BHA	Traces		49	01			
13	CLK	i	04	19	12			
	BUL	e			37			
13	BUL	i	07	53	01			
13	BUL	Traces	14	00	00			
13	BHA	Traces	14	12	00			
	BUL	i			53			
13	BHA	e	22	12	44			
14	CLK	iP	03	24	13	900Km		B.P.I. #03 22 14
		iS ⁿ		25	34			Mozambique Channel
		iS ¹		26	10			
	BHA	i		25	26			
	BUL	e			55	1750Km		
14	BHA	i	06	59	23			
14	CLK	i	16	03	05			
	BHA	i			23			
		i		11	46			
	BUL	i		03	49		C	
		i		12	32			
14	BUL	i	16	31	44			
		i			51			
15	BHA	iP	01	09	58			Kariba
		iS		10	29			
	BUL	iP ¹			14			
		iS ¹		11	00			
15	BHA	eP ¹	01	32	45			Kariba
		eS		33	16			
15	BHA	eP ⁿ	12	30	48			Central Africa
		iP ¹		32	01			
		iS ¹			49			

March, 1965 Cont.

Date	Station	Phase	h. G.	m. M.	s. Arc T. Dist	C/R	Remarks.
16	BHA	e	11	01	32		
16	BHA	iP	11	10	(03)		KARIBA
		iS			24		
16	BHA	eP	12	35	12		
		iS			36		
16	BHA	i	12	58	01		
					22		
16	BHA	e	16	12	55		
		i			29		
16	CLK	e	17	04	53		
		i			44		
	BUL	i		05	06		
	BHA	e		06	03		
16	BHA	iS	19	22	32		Probably Zambia
		iS ⁿ		23	13		
16	CLK	e	19	37	55	600Km	Northern Zambia
		i		39	56		
	BHA	eP			00	870Km	
		iS ⁿ		40	22		
		iS ⁿ ₁		41	03		
	BUL	Traces		40	59		
16	BHA	i	23	14	14		
17	CLK	Traces	01	33	30		
	BHA	eS			43		
		iS ⁿ		34	30		
17	BHA	Traces	01	51	30		
17	CLK	i	05	27	30		
17	BHA	Traces	11	19	59		
17	BHA	e	13	25	07		
	BUL	i			36		
17	BHA	e	14	36	21	R	Probably Northern Zambia
		i		37	55		
	CLK	i		37	42		
17	BHA	Traces	17	17	59		
17	BHA	iP	23	44	55		Kariba
		iS			24		
	BUL	eS		45	52		
		iS ⁿ		46	05		
18	CLK	e	01	15	16		
18	BUL	e	04	46	15		Northern Zambia
		i		48	07		
18	CLK	Traces	06	41	00		
	BUL	i			02		
	BHA	e			03		
18	BUL	iP	12	50	07	55	C
	CLK	eP			58	63	
	BHA	eP		51	11	60	C
19	BHA	iP	01	10	27		Kariba
		iS			53		
19	BHA	e	04	54	27		
19	BUL	eP	14	35	21		Witwatersrand Tremor
		iS ⁿ		36	28		
		iS ⁿ ₁			55		
	BHA	eP			38		
	CLK	Traces		40	00		
19	CLK	e	16	33	21		
	BUL	i			50		
19	BHA	Traces	21	46	00		
19	CLK	iP	23	11	11	89	R
	BUL	iP			39	94	
	BHA	iP			41	95	R
20	BHA	iP	17	59	47		KARIBA
		iS	18	00	12		

March, 1965. Cont.

Date	Station	Phase	h. G.	m. M.	s. Arc T. Dist	C/R	Remarks.
21	Bha	i	09	08	24		North of Lake Nyasa
		i		09	38		
		i		10	18		
21	CLK	i	11	21	21		
	BUL	e			36		
	BHA	e			51		
		i		22	03		
21	CLK	Traces	20	11	00		
22	BUL	c	03	04	01		
		i			09		
	BHA	i			19		
	CLK	c			05		
22	BHA	i	03	18	13		
22	CLK	iP	03	34	52		Probably Mozambique Channel
		iS		35	34		
	BHA	Traces		37	00		
22	BHA	oP	22	00	24		
		iS ⁿ		01	48		
22	BUL	iP ¹	23	09	12 90	R	USCGS H=22 56 26.5 31.9S 71.5W
	BHA	iP			29 92	C	ht 46Km Chile Mag 6.0
	CLK	iP			48 97		
22	BUL	c	23	19	53		
	BHA	Traces		21	00		
24	BUL	Traces	04	30	00		
24	BUL	oP ⁿ	13	45	18		Witwatersrand Tremor
		iS ⁿ			52		
25	BUL	iS ¹	00	21	07		Witwatersrand Tremor
	CLK	Traces		25	00		
26	BUL	oP ⁿ	00	20	09		Witwatersrand Tremor
		iS ⁿ		21	17		
		iS ¹			43		
26	BHA	iP ¹	13	10	31		Kariba
		iS			57		
26	BHA	Traces	16	00	00		
28	BUL	i	16	45	56		
		i		46	16		
	BHA	iP			12		
29	BHA	c	11	06	23		
	BUL	i			28		
29	CLK	i	13	41	56	R	
29	BUL	Traces	14	06	00		
29	CLK	i	16	46	41	R	
30	BUL	i	00	16	07		
	BHA	i			19		
30	BUL	e p	01	56	11	440Km	B.P.I. H=01 55 06
		i			20		Probably Rhodesia / Mozambique border
		i			51		
		i		57	10		
	BHA	i p		58	24	330Km	
		i		59	06		
30	BHA	i	02	46	21		
		i			24		
	BUL	c			26		
		i			35		
30	CLK	c	11	06	16		
30	BUL	i	16	28	37		
31	BUL	i p	09	56	21		
	CLK	i p			55		
				57	16		

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Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/R	Remarks.
1	BHA	iP ¹	14	04	44	480Km		B.P.I. H=04 03.3 8
		iS ¹		05	32			
		iS ⁿ			51			
2	BHA	iP ¹	01	02	11			KARIBA
		iS			39			
	BUL	eP ¹			35			
		iS ¹		03	15			
2	BHA	iP ¹	14	29	50	660Km		BP.I. H=14 28 20 Congo/Zambia border
		iS ¹		30	50			
		iS ⁿ		31	22			
	CLK	eP ¹		30	31	1000Km		
		iS ¹		32	02			
		iS ⁿ			55			
	BUL	Traces		33	00			
3	BHA	i	02	45	58			
		i		47	10			
3	BHA	i	17	54	33			220Km from station
		i			55			
4	BHA	eP	09	18	41			KARIBA
		iS		19	09			
4	BHA	iP	11	07	02			Kariba
		iS			30			
4	CLK	i	12	44	30			
		i		45	01			
4	CLK	Traces	21	44	00			
5	BHA	i	03	22	03			
	CLK	i			19			
	BUL	i			42			
5	BHA	iP	19	17	56			Kariba
		iS		18	20			
6	BHA	eP ¹	00	49	50	1050Km		B.P.I. H=00 47 34 Republic of the Congo
		iS ¹		51	25			
		iS ⁿ		52	30			
	CLK	e		53	45	1350Km		
6	CLK	eP ¹	02	20	57	400Km		Probably Mozambique
		iS ¹		21	36			
		iS ⁿ			50			
	BUL	eP ¹			40	440Km		
		iS ¹		22	25			
		iS ⁿ			40			
	BHA	iP ¹		21	52	800Km		
		iS ¹		23	05			
		iS ⁿ			40			
6	CLK	iPP	09	55	02			
	BUL	iPP			30			
	BHA	ePP			32			
6	BHA	iP ⁿ	19	33	48			Probably Central Africa
		iS ⁿ		35	49			
		iS ⁿ		37	04			
	BUL	eP ¹		34	50			
		iS ⁿ		38	38			
	CLK	iS ⁿ		36	37			
7	BUL	iS ¹	12	52	58			Witwatersrand tremor
7	BUL	iS ¹	13	15	10			Witwatersrand Tremor
7	BUL	iS ¹	19	15	10			Witwatersrand Tremor
7	CLK	i ¹	23	08	20			Probably Zambia
	BHA	i			42			
8	BHA	iS ¹	19	32	45			Probably Zambia
8	CLK	Traces	21	32	00			
10	BHA	iP	00	05	50	50		UNCGS H= 23 57 03.2 35.1N, 24.3E
	CLK	iP		06	05	51		51Km Crete Mag 5.4
	BUL	iP			29	56		

April, 1965. Cont.

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/R	Remarks.
10	BHA	iP	01	26	33			Kariba
		iS			50			
	BUL	eP ₁			57			
		iS ₁		27	42			
10	BUL	ePKP	22	50	50	134		USCGS H=22 32 46.6 17.88, 178.8W h± 543Km Fiji Is. Mag 6
		i		51	04			
		i		53	45			
	CLK	ePKP		51	04	135		
		i		53	43			
	BHA	iPKP		51	06	139		
		i		53	59			
10	BUL	i	23	11	04			
		i		13	31			
	BHA	i		11	14			
		i		13	44			
11	BUL	i	17	22	37			
	CLK	e			38			
11	BUL	i	19	09	35		R	
	CLK	e			35			
12	BUL	i	09	31	26			
12	BHA	iP	16	34	34			Kariba
		iS			35 00			
	BUL	Traces			36 00			
12	BHA	iP	17	14	39			Kariba
		i ^o		15	07			
	BUL	iP ₁			02			
		iS ₁			47			
12	BUL	iP ₁	19	49	34	90		USCGS H=19 36 41.7 26.58, 70.8W h± 52Km N. Chile Mag 5.4
12	BUL	Traces	20	45	00			
12	CLK	iPKP	20	59	00	110		USCGS H=20 41 16.3 30.2N, 138.5E h± 421Km S. of Honshu Japan Mag 5.4
	BUL	iPKP			14	118		
12	BHA	iP	22	23	48			Kariba
		iS			24 14			
	BUL	i			24 10			
13	BHA	iP	01	09	30			Kariba
		iS			57			
	BUL	Traces		11	00			
13	CLK	Traces	10	54	00			
	BHA	e			16	500Km		
		i			55 01			
		i			31			
13	BHA	i	13	13	15			Near station
13	BHA	e	23	54	19			
14	BHA	eP	02	04	35			Probably Kariba
		i ^o			58			
14	BUL	iS ₁	12	40	54			
14	BHA	eP ₁	12	55	48			Northern Zambia
		iP ₁			56 38			
		iS ₁			57 02			
16	BHA	iP ⁿ	00	25	39	600Km		B.P.I. H=00 24 28 Republic of the Congo border 9.08 28.0E
		iS ⁿ			26 39			
		i ⁿ			27 03			
	CLK	eP ₁		26	13	940Km		
		i ⁿ			44			
		i ⁿ			28 30			
16	BUL	iS ₁		30	59			
16	BHA	eP ⁿ	01	20	39	600Km		B.P.I. H=01 19 16 after shock of previous shock
		iS ⁿ			21 36			
		iS ⁿ			22 02			
16	BHA	iP ₁	10	44	10			Kariba

April, 1965. Cont.

Date	Station	Phase	h. G.	m. M.	s. T	Arc Dist	C/R	Remarks.
		iS			37			
16	BUL	iS ₁		45	23			
	BUL	e	22	00	53	900Km		B.P.I. H=21 58 55 S. African
		i		02	19			Probably tremor in O.F.S.
		i		03	00			Goldfields
16	CLK	e	23	41	31			
18	BUL	Traces	00	06	00			
18	BHA	oP	05	15	07			Kariba
		iS			35			
18	BHA	e	06	53	38		R	
	BUL	e			45			
18	BUL	iP	09	48	50	56	C	USCGS H=09 39 18.7 59.8S, 26.8W
	BHA	iP		49	26	62		ht 29Km Sandwich Is. region
	CLK	oP			40	65		Mag 5½
18	BUL	iP	12	51	26	56	R	USCGS H=12 41 54.9 59.7S 26.4W
	BHA	iP		52	03	62		ht 25Km Sandwich Is. region
	CLK	iP			17	65	R	Mag 6.
18	BHA	oP	12	59	44			Kariba
		iS		13	00	13		
	BUL	Traces			11	00		
18	BUL	iP	19	36	37	56	R	USCGS H=19 27 05.2 59.8S, 26.5W
								ht 33Km Sandwich Is. Mag 5.5
19	BHA	iS ₁	04	11	35			Probably N. Zambia
19	BHA	oP ₁	06	25	50	600Km		B.P.I. H=06 24 48 Republic of
		iS ⁿ			26	50		Congo border
		iS ⁿ			27	13		
19	BHA	iP ¹	08	17	15	71	R	USCGS H=08 06 00 1.8N, 98.5E
	BUL	iP			13	71	C	ht 55Km N. Sumatra Mag 5.5
19	BUL	iP	23	36	59			Witwatersrand tremor
		iS ⁿ			38	07		
		iS ⁿ				36		
	BHA	Traces		42	00			
	CLK	Traces			00			
20	BHA	iP	02	41	51			Kariba
		iS		42	12			
22	BHA	iP	08	57	00			Kariba
		iS			27			
22	BHA	iP	09	39	42			Kariba
		iS			11			
22	BHA	oP	15	00	48			Kariba
		iS		01	14			
22	BHA	oP	17	35	25			Kariba
		iS			47			
23	BHA	oP	21	12	59			Kariba
		iS			24			
	BUL	Traces		14	00			
23	BHA	oP	23	12	20			Kariba
		iS			48			
24	CLK	e	20	33	56			100Km from station
		e		34	06			
25	BHA	iP	10	04	00	1400Km		B.P.I. H=10 00 56
		iS ⁿ			06	07		Central Africa
		iS ⁿ			07	20		
	CLK	iP ¹		04	31			
		iS ⁿ		09	31			
	BUL	iP ¹		05	12			
	BUL	iS ⁿ		08	30			
		iS ⁿ		10	13			
25	BHA	iP ¹	11	30	54	900Km		B.P.I. H=11 28 56 N. Zambia
		iS ⁿ			32	16		
		iS ⁿ			33	05		
25	BHA	iP ¹	15	36	30			Kariba

April, 1965. Cont.

Date	Station	Phase	h. G.	m. M.	s. T	Arc Dist	C/R	Remarks
		i ^s				56		
	BUL	eP ¹				57		
		i ^s ₁				42		
25	CLK	o P	23	28	20			300Km from station
		i ^s				50		
	BUL	Traces		31	00			
26	BHA	iP	02	54	44			60Km from station
		i ^s				51		
26	BHA	i	11	26	29			
26	BHA	i	13	40	16			
26	BUL	iP	17	11	05			Witwatersrand tremor
		i ^s _n				12		
		i ^s _n				41		
	BHA	iP ¹				21		
		i ^s _n		14	25			
		i ^s ₁		15	38			
	CLK	Traces			00			
26	CLK	iPKP	20	48	30	139	R	USCG ¹ H=20 29 07.4 54.5N, 162.6W
	BUL	iPKP			39	146		H53Km Alaska Mag 5.9
26	CLK	iP	22	28	47	92	C	USCGS H=2 15 42.5 21.1N, 120.7E
	BHA	iP			21	100		h±33Km Taiwanregion Mag5.9
27	BUL	Traces	04	43	00			
27	BHA	iP	14	17	59	50		USCG ¹ H=14 09 07.1 35.7N, 23.5E
27	BUL	iP		18	48	52	C	h±50Km Crete Mag 5.5
27	BUL	i	15	44	36			
		i		45	11			
28	BHA	iP	01	53	24			Probably Lusaka area
	BUL	iP		54	24			500Km
		iP						
		i ^s _n Sn		55	13			
	CLK	iP		54	43			700Km
		i		55	57			
28	BHA	iP	02	02	41			Lusaka area
		i ^s			49			
	BUL	i ^s		05	44			
28	BHA	iP ⁿ	02	03	46			Near Lusaka
28	BHA	iP	02	06	51			Near Lusaka
		i ^s			57			
	BUL	Traces		07	00			
28	BHA	i ^s ₁	12	49	54			Probably W. Zambia
28	BUL	i ^s ₁	13	55	36			
28	BHA	Traces	22	13	00			
	CLK	Traces		14	54			
29	BUL	Traces	07	04	00			Near Lusaka
	BHA	iP			23			
		i ^s			37			
29	BHA	i	15	48	03			
	CLK	i			10			
	BUL	i			13			
29	CLK	iP	15	59	45	75	C	USCG ¹ H=15 48 57.1 5.6S, 110.2E
	BUL	iP	16	00	17	81	R	h±504Km Java Sea Mag6.0
	BHA	iP			20	82	R	
30	BHA	i	18	07	10			Local
		i			19			

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under Johannesburg

Shp

*Assesed
2/11*

7 - MAY 1965

Department of Meteorological Services
Salisbury,
Southern Rhodesia.

SOUTHERN RHODESIA

May 1965

SEISMOLOGICAL BULLETIN

The data herewith give the results for a network of seismographs intended particularly for the study of earthquakes occurring in Rhodesia and Malawi. This bulletin, however, is prepared regularly and will be sent to interested organisations on request.

Stat:	<u>Chileka (CLK)</u>	<u>Bulawayo (BUL)</u>	Broken Hill (BHA)
Lat:	15° 40.8' S	20° 08.6' S	14° 28.46' S
Long:	34° 58.6' E	28° 36.8' E	28° 28.08' E
Litho- logic Found- ation:	Charnockitic gran- ulites of the Basement Complex	Hornblend schists of the Bulawayan System	Dolomite and shales of the middle Katanga system.
Hgt:	781 metres	1341 metres	1206 metres
Instrument:	Vertical and Horizontal Willmore S.P.		
Seismo. Officer:	Head of the Malawi Met- eorological Service, Chileka,	Director, Meteorological Services, Salisbury	Director, Meteorological Services, Salisbury.
Obser- ver:	Officer-in- charge, Chileka.	Officer-in- charge, Goetz Obser- vatory, Bulawayo.	Officer-in-charge, Broken Hill Observatory.
Insti- tution.	Department of Meteorological Services, Salisbury.		

All times given are G.M.T.

The supervision of this network and bulletin is at present in the hands of the undersigned, to whom all inquiries should be addressed.

H.O. OLIVER
Seismological Officer

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South Africa.

May, 1965

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/R	Remarks.
3	BUL	iP	02	22	08	88		USCGS H=01 09 31.5 32.5S, 70.6W
	BHA	iPcP			24	90		h+ 77Km Chile-Argentine border Mag 5.6
3	BHA	eP ⁿ	03	01	36	1100Km		B.P.I. H=02 59 12 Republic of the Congo
		iS ⁿ		03	14			
		iS ⁿ		04	16			
	CLK	eP ^l		02	10	1440Km		
		iS ⁿ		04	18			
		iS ⁿ		05	33			
	BUL	eP ^l		02	48	1700Km		
		iS ⁿ		05	27			
		iS ⁿ		07	17			
3	BHA	iP ^l	15	16	03	1300Km		B.P.I. H=15 13 15 Probably Central Africa
		iS ⁿ		18	05			
		iS ⁿ		19	13			
	BUL	eP ^l		17	07	1800Km		
		iS ⁿ		21	49			
3	BUL	iPKP	16	21	47	121		USCGS H=16 02 14.5 18.5N, 146.0E h+ 123Km Mariana Is Mag 4.7
4	BHA	e	08	46	13		C	
5	BHA	eP	23	04	40			
		iS		05	08			
6	BHA	Traces	03	21	00			
	CLK	Traces		23	00			
6	BHA	iS ^l	07	18	39			Probably Central Africa
6	BHA	iP ^l	11	04	09			Near Station
		iS			12			
6	BHA	iP	12	38	53	850Km		B.P.I. H=12 37 00 Central Africa
		iS		39	51			Central Africa
6	BHA	eP ⁿ	12	57	17			
		iS ⁿ		59	36			
		iS ⁿ		13	01	05		
6	BHA	e ^l	13	55	52			
		i		56	34			
6	BHA	eP ⁿ	14	20	44			Probably Central Africa
		iS ⁿ		22	46			
		iS ⁿ		23	00			
6	BHA	Traces	14	48	00			
6	BHA	iS ⁿ	14	52	30			Probably Central Africa
		iS ^l		53	53			
6	BHA	Traces	16	01	00			
7	BHA	Traces	00	01	00			
7	BHA	Traces	01	57	00			
7	BHA	Traces	02	01	00			
7	BHA	eP	12	23	23			Probably Kariba
		iS			47			
7	BHA	Traces	13	09	01			
8	BHA	e	04	25	40			Probably Local
		i		26	21			
8	CLK	e	16	44	59			
		i		45	26			
	BHA	Traces		46	00			
9	BHA	Traces	00	09	00			
9	CLK	Traces	14	41	00			
	BHA	e			15			
		i		42	07			
9	CLK	iP	18	10	34			
		iS		12	12			
9	BHA	Traces	18	41	00			
10	BHA	iP	20	43	26			Kariba
		iS			53			
11	BHA	iP	03	28	50			Kariba
		iS		29	18			

May, 1965 Cont.

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/R	Remarks.
12	BHA	iP	08	53	40	1300Km	C	B.P.I. H=08 50 54 Probably Central Africa
		iS ⁿ		55	43			
		iSⁿ		56	53			
	BUL	iP ¹		54	43	1700Km		
		iS ⁿ		58	07			
		iSⁿ		59	33			
12	BHA	Traces	09	30	00			
12	BHA	Traces	14	26	00			
12	BHA	iS	15	36	29			
12	BHA	eS ⁿ	18	21	50		Central Africa	
		iS ⁿ		22	42			
12	CLK	Traces	19	35	00			
	BHA	Traces		36	00			
12	BUL	i	19	47	54			
13	BUL	iP	02	35	04	87	C	USCGS H=02 23 23 19.3S, 63.8W S. Bolivia h _t 589Km Mag 5.1
	BHA	iP			13	88		
	CLK	iP			37	90		
13	BUL	Traces	03	49	00			
13	BHA	Traces	16	30	00			
13	CLK	iS	23	18	26		Probably Central Africa	
	BHA	iS ¹			46			
14	BHA	iS ¹	04	54	10		Probably Central Africa	
15	BHA	Traces	04	36	00			
15	BHA	Traces	05	30	00			
15	BHA	iP	06	17	10		Kariba	
		iS			37			
16	BHA	e	08	52	48		Kariba	
		i		53	16			
16	BHA	e	09	59	26			
		i	10	00	11			
16	CLK	Traces	12	27	00		Probably Central Africa	
	BHA	iS ¹			31			
16	CLK	e ¹	22	13	19		Probably Kariba	
17	CLK	e	00	25	49			
		i		26	22			
	BUL	i		27	41			
	BHA	iS ¹		28	33			
17	BHA	traces	02	28	00			
17	CLK	iPcP	17	32	36	92	R	USCGS H=17 19 25.9 22.5N, 121.3E h _t 21 Taiwan region Mag 6.2
	BHA	ePcP		33	02	98		
	BUL	iPcP			09	99		
17	BHA	e	01	08	57			
18	CLK	i	01	07	36			
19	BUL	ePKP	23	50	09	131	R	USCGSH =23 32 14.0 20.8S, 178.5W Fiji Is. region h _t 552Km Mag 5.4
	BHA	ePKP			23	136		
	CLK	iPKP		53	24	132		
20	BUL	ePKP	00	59	15	126	R	USCGS H=00 40 10.9 14.7S, 167.4E New Hebrides Is. h _t 16 Mag 5.6
		i			29			
	CLK	ePKP			15	125		
	BHA	ePKP			21	130		
	BHA	iP	02	32	18			
		iS			41			
20	BHA	eP	08	11	49		Kariba	
		iS		12	14			
20	BHA	eP ⁿ	08	51	10	580Km	B.P.I. H=08 49 51 Republic of the Congo	
		iS ⁿ		52	08			
		iS ⁿ			30			
	BUL	iP ¹			28	1000Km		
		iS ⁿ		53	34			
		iS ⁿ		54	27			
20	BHA	e ¹	14	18	13			
20	BUL	i	18	22	38		Witwatersrand Tremor	

MAY, 1965 Cont.

Date	Station	Phase	h. G.	m. M.	s. T.	Arc Dist	C/R	Remarks.
20	BHA	eP	23	42	15			Kariba
		iS			36			
21	BHA	eP	12	04	51	770Km		B.P.I. H=12 03 08 Republic of the Congo
		iS ⁿ		06	00			
		iS ⁿ			40			
21	BUL	iP ⁿ	16	59	36	320Km		B.P.I. H=16 58 49 Probably S. Rhodesia Mozambique border
		iPⁿ			43			
		iSⁿ		17	00	19		
21	CLK	e		02	22	770Km		
22	BUL	ePKP	10	49	33	130		USCGS H=10 31 39.5 21.1S, 178.7W Fiji Is. region ht+578 Mag 5.8
		i			49			
	BHA	iPKP			48	136		
		i		50	(02)			
22	BUL	e	16	17	09		R	
22	BHA	eP	19	34	52			Kariba
		iS		35	19			
23	BHA	iP	01	28	00			Local
		iS			41			
23	BHA	iP	04	40	44			Kariba
		iS		41	11			
	BUL	iS ₁		43	10			
	CLK	Traces		44	00			
23	BHA	eP	12	43	22			Kariba
		iS			44			
23	BUL	Traces	13	33	30			
23	CLK	iP	14	33	59			About 180Km from station
		iS		34	17			
24	CLK	i	00	05	27		C	
	BHA	e			31			
24	BUL	iP	16	21	23	700Km		B.P.I. H=16 19 50 Witwatersrand Tremor
		iS ⁿ		22	32			
		iSⁿ		23	02			
	BHA	iP ⁿ	16	22	34	1300Km		
	CLK	Traces			30			
24	CLK	iPcP	23	34	23	93	R	USCGS H=23 21 10.6 13.0N, 124.5E Samar Phillipine Is. ht+ 33Km Mag 5.9
	BHA	oPcP			51	99		
	BUL	iPcP			53	99		
25	BHA	iP	17	22	04			Kariba
		iS			34			
25	BHA	iP	17	31	12			Kariba
		iS			42			
25	BHA	iP	17	37	01			Kariba
		iS			29			
26	BHA	e	09	54	13			Probably Republic of the Congo
		i		55	00			
26	BHA	e	13	41	58			Republic of the Congo
		i		42	19			
26	BHA	e	14	11	56			
		i		12	19			
26	BHA	i	19	54	03			
	CLK	i			19		C	
	BUL	i			29		R	
27	BHA	iP	03	55	28			Kariba
		iS			58			
27	BHA	e	06	54	23	1350Km		B.P.I. H=06 51 28 Central Africa
		i		57	35			
	BUL	e		55	35			
		i	09	00	10			
27	BHA	Traces	07	28	00			
27	BHA	e	07	45	30			Central Africa
		i		46	30			
27	BHA	Traces	08	01	00			

May, 1965 Cont.

Date	Station	Phase	h. G.	m. M.	s T.	Arc Dist	C/R	Remarks
27	BHA	iP	08	27	51			Kariba
		iS		28	18			
	BUL	iS ₁			58			
27	BHA	iP ₁	11	19	32	870Km		B.P.I. H=11 17 36
		iS ⁿ		20	53			Republic of the Congo
		iS ⁿ		21	39			
27	BUL	eS ₁	11	23	04			Republic of the Congo
		iS ₁		24	31			
27	BHA	e	11	54	25			Probably Republic of the Congo
27	BHA	Traces	14	22	00			
27	BUL	iS ₁	20	55	13			Witwatersrand Tremor
27	CLK	i	21	08	59			Probably Republic of the Congo
	BHA	iS ₁		09	23			
27	CLK	i	22	08	50			Probably Republic of the Congo.
	BHA	iS ₁		09	17			
28	BHA	Traces	00	35	00			
	CLK	Traces			00			
28	BHA	iS ₁	05	10	08			Probably Republic of the Congo
29	CLK	eP	01	38	51	57		USCGS H= 01 28 59.0 45.3S, 95.9E
	BUL	iP		39	01	58		S.E. Indian Rise h=66 Mag 5.8
29	BHA	iS ₁	05	05	45			Probably Republic of the Congo
29	BUL	E	05	55	00			
29	BHA	i	12	43	22			
29	BHA	eP	18	25	38			Kariba
		iS		26	04			
29	CLK	eP	21	22	07			About 150Km from station
		iS			22			
29	BHA	iS ₁	22	58	37			Probably Republic of the Congo
30	BHA	iP	01	54	13			Kariba
		iS			41			
	BUL	iS ₁		55	25			
30	BHA	e	18	02	53			Probably Local
		i		03	30			
31	BHA	Traces	02	15	33			
	BUL	i			56			
31	BHA	e	07	50	07			Probably Central Africa
31	BHA	eP	09	21	56			Probably Central Africa
		iS ⁿ		24	22			
		iS ₁		25	18			
31	BHA	Traces	15	22	00			

H.O. Oliver.
W. WAGNER.

Southern Rhodesia

June 1965

-- JUN 1965

Department of Meteorological Services
Salisbury,
Southern Rhodesia.

SEISMOLOGICAL BULLETIN

The data herewith give the results for a network of seismographs intended particularly for the study of earthquakes occurring in Rhodesia and Malawi. This bulletin, however, is prepared regularly and will be sent to interested organisations on request.

Stat:	<u>Chileka (CLK)</u>	<u>Bulawayo (BUL)</u>	<u>Broken Hill (BHA)</u>
Lat:	15° 40.8' S	20° 08.6' S	14° 26.46' S
Long:	34° 58.6' E	28° 36.8' E	28° 28.08' E
Litho- logic Found- ation:	Charnockitic gran- ulites of the Basement Complex	Hornblend schists of the Bulawayan System	Dolomite and shales of the middle Katanga system.
Hgt:	781 metres	1341 metres	1206 metres
Instrument:	Vertical and Horizontal Willmore S.P.		
Seismo. Officer:	Head of the Malawi Met- eorological Service, Chileka.	Director, Meteorological Services, Salisbury	Director, Meteorological Services, Salisbury.
Obser- ver:	Officer-in- charge, Chileka.	Officer-in- charge, Goetz Obser- vatory, Bulawayo.	Officer-in-charge, Broken Hill Observatory.
Insti- tution	Department of Meteorological Services, Salisbury.		

All times given are G.M.T.

The supervision of this network and bulletin is at present in the hands of the undersigned, to whom all inquiries should be addressed.

H. O. OLIVER
Seismological Officer

Address:
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South Africa.

June, 1965.		Phase.	h. G.	n. H.	s. T.	arc Dist.	C/R	Remarks.
1	Bha	i	04	44	17			
	BUL	i			40			
		i			30			
		i			52			
1	BHA	i	08	03	24			
1	BHA	i	08	33	30			Probably Central Africa
1	BHA	i	11	10	15			
1	BHA	oP	13	32	41			Kariba
		iS		33	05			
	BUL	iP ₁		44	15			
		iS ₁		45	14			
1	BHA	oS ₁	13	45	40			Probably Central Africa
		iS ₁		46	20			
1	BHA	i	14	19	30			
2	BUL	i	15	03	53			
		i		04	05			
		e		06	34			
	BHA	i		04	02			
		i		06	48			
2	BHA	i	18	10	30	900Km		B.P.I. H=18 08 36 Central Africa
		i		11	50			
		i		12	35			
2	BHA	iP	23	52	34	80	R	USCGS H=23 40 24.4 16.0N, 46.8W h+33Km North Atlantic Ridge Mag 5.6
	BUL	oP			42	84		Probably Central Africa. Witwatersrand Tremor
3	BHA	Tracos	08	53	13			
3	BUL	oP	12	40	08			
		oS ₁		41	18			
		iS ₁			50			
3	BHA	iS ₁	13	24	36			Probably Central Africa
3	BUL	Tracos	14	39	00			
3	BUL	i ₁	17	30	40			
4	BHA	Tracos	08	26	00			
5	BHA	iS ₁	07	18	23			Central Africa
5	BHA	i ₁	21	19	17			
5	BUL	iS ₁	22	47	13			
5	BHA	iP ₁	22	46	06			Kariba
		iS			33			
5	BHA	iP	22	50	26			Kariba
		iS			56			
	BUL	oP			42			
		iS ₁ ⁿ		51	33			
6	BHA	i	18	22	05			
		i			28			
7	BHA	i	01	21	34			Probably Central Africa.
7	BHA	iS ₁	05	15	27			Probably Central Africa.
8	BHA	i ₁	23	05	24			Kariba
		i			53			
	BUL	iS ₁		06	33			
9	BHA	iP ₁	05	36	36			Kariba
		i ^c		37	02			
9	BHA	iP ₁ ⁿ	15	21	14	900Km		B.P.I. H=15 19 12 Northern Gambia
		iS ₁		22	31			
		iS ₁ ⁿ		23	20			
9	BHA	iP ₁	16	51	33			Kariba
		iS			59			
9	BHA	iS ₁	19	23	00			Probably Central Africa
9	BHA	iS ₁	19	31	58			Probably Central Africa.
10	BHA	Tracos	00	54	00			
	BUL	e	02	54	00			
10	BUL	i	03	10	16			
10	BHA	e	19	16	33			
		i		17	07			

June, 1965 Cont.

Date.	Station.	Phase.	h. G.	m. N.	s. T.	Arc Dist.	C/R	Remarks.
10	BHA	oP	19	23	10			Kariba
		iS			37			
11	BHA	i	03	52	37			
	BUL	i			42			
11	BHA	e	04	02	35			
11	BHA	oP	20	31	56			Kariba
		iS			32	23		
11	BHA	o	22	00	30			Kariba area
		i			51			
11	BHA	i	23	05	51			
12	BHA	e	00	03	14			
12	BUL	i	19	03	01			
	BHA	e			15			
13	BHA	iP	20	29	47		600Kn	B.P.I. H=18 27 30
		iS ⁿ			31	01		North Lake Nyasa
		iS ⁿ			45			
	BUL	oP ⁿ			30	47		1300Kn
		iP ⁿ			32	43		
		iS ⁿ			33	55		
14	BUL	iP	07	36	01		24	USCGP H=07 30 43.6 39.8S
	BHA	iP			45		30	45.8E. Atlantic Indian Rise
		i			37	26		Mag 5.5 h= 33Kn
14	BUL	i	13	23	52		C	
14	BUL	Traces	13	36	53			
14	BUL	iS ₁	14	17	46			Witwatersrand Tremor
14	BHA	i ₁	20	23	26			
15	BUL	iPKP	09	39	05		116	USCGP H=09 20 29.8 37.9S,
	BHA	iPKP			15		121	177.5E off East Coast N
								Island New Zealand h=50Kn
								Mag 6.2
15	BUL	iS ₁	11	31	42			Witwatersrand Tremor
15	BUL	i ₁	16	43	52			
16	BHA	e	09	19	51			Probably Zambia
		i			20	50		
16	BHA	iP ⁿ	11	16	04			Central Africa.
		iS ⁿ			13	02		
		iS ⁿ			19	09		
	BUL	Traces			21	57		
16	BHA	iP	17	40	41			Probably Kariba
		iS			41	13		
17	BHA	iP	02	54	22			Kariba
		iS			50			
17	BUL	i	03	57	24			
17	BUL	i	11	10	07			
	BHA	i			37			
17	BHA	iP	20	26	23		74	USCGP H=20 14 43.6 32.0N,
	BUL	iP			42		77	37.8E Tibet h=3 K Mag 5.4
17	BHA	iP	23	04	06			Kariba
		iS			34			
18	BHA	iP	06	35	15			Kariba
		iS			45			
	BUL	iP			32			
		iP ⁿ			41			
		iS ⁿ			23			
18	BHA	i _n	08	29	15			
	BUL	i			31			
	BUL	iP	22	53	39		99	USCGP H= 22 45 16.4 11.1S,
								73.6W Peru h=9Kn Mag 4.8
								Probably Northern Zambia
19	BHA	i	10	45	59			
19	BHA	Traces	20	19	00			
20	BHA	Traces	02	25	00			
20	BHA	i	13	24	11			
21	BHA	o	00	04	37			

0034(35/)

June, 1965 Cont.

Date.	Station.	Phase.	h. G.	h. N.	s. T.	Arc Dist.	C/R	Remarks.
21	BHA	iP	00	30	06	51		USCGS H=00 21 14.5 28.1N, 56.0E S.Iran ht 28Km Mag6.0
	BUL	iP			42	56	C	
21	BHA	Traces	01	12	00			
21	BHA	i	03	03	05			N. Zambia
21	BHA	cP	11	14	54			Central Africa.
		i		17	07			
		i			55			
	BUL	cP		16	04			
		i		19	42			
		i		21	23			
21	BHA	iP	15	24	22			Kariba
		iS			43			
	BUL	Traces		26	00			
23	BHA	c	00	01	32			
23	BHA	iP	01	50	51			Kariba
		iS		51	18			
23	BHA	cPKP	11	28	41	139		USCGS H=11 09 15.3 56.6N, 152.9W Kodiak Is. region h=29Km Mag 4.8
		c		31	17			
	BUL	iPKP		28	45	145		
23	BHA	iP	12	50	10			Kariba
		iS			37			
23	BHA	iP	20	40	15	740Kn		B.P.I. H=20 38 37 N. Lake Nyasa
		iS ⁿ		41	25			
		iS ⁿ		42	00			
	BUL	cP ¹		41	07	1180Kn		
		iS ⁿ		42	56			
		iS ¹		43	54			
25	BHA	iP ¹	02	18	26	740K		B.P.I. H=02 16 43 W. Lake Nyasa
		iS ⁿ		19	38			
		iS ⁿ		20	13			
	BUL	iP ¹		19	17	1180Kn		
		iS ⁿ		21	08			
		iS ⁿ		22	09			
25	BHA	iS ¹	22	26	19			Probably Lake Nyasa
	BUL	Traces		28	00			
27	BHA	i	01	15	32			
	BUL	i			42			
27	BUL	iP	09	53	07	37		USCGS H= 09 45 48.0 54.5S, 5.6E Bouvet Is. region h=33Km Mag 5.9
	BHA	iP ^p			51	43		
28	BUL	i	03	52	26			
	BHA	i			32			
28	BUL	i	23	10	00			Seismic Local
					16			
29	BHA	c	03	49	34			
		i			45			
29	BHA	i	13	25	46			
29	BUL	i P	23	58	23			Probably Witwatersrand Trenor
		i		59	33			
		i		00	04			
30	BHA	c	01	50	23	600Kn		B.P.I. H=01 49 02 Probably Lake Nyasa region
		i		51	23			
		i			45			
	BUL	Traces		54	00			

H. J. Oliver.

W. Wagner. 5/8/65