TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAUL
Earthquake Analysis Rabaul - RAB

Instruments at Rabaul Station

World Wide Standardised Seismograph.

Z.P. - Z Maximum Magnification 12,500 at 0.6 sec.
S.P. - N & E Maximum Magnification 6,250 at 0.6 sec.
L.P. - Z/N/E/ Maximum Magnification 750 at 25 sec.

Strong Motion two-component Omori Seismograph.

L.P. - No Static Magnification 12 To = 3.6 Air Damping 10:1
L.P. - Eo Static Magnification 10 To = 3.8 Air Damping 10.1
S.P. - Zh Helicorder, Geotech Model 2484, coupled to
Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek
Auxiliary Station - SUL

Benioff Small Model three-component Seismograph Zr Nr Er.
Sensitivity set at Zr 20%, Nr, Er 10%.
"c" or "d" indicates initial compression or dilatation of the ground , respectively, from a wave of the compressional type.
"+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N,E,S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.
When readings are given with a decimal figure they are to 1/10 seconds, other readings have been made to the nearest half second.

Pn, Sn Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of field earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

A = Peak to Trough trace amplitude in millimetres.
T = Period in seconds.
C.B.M. = Confused by microseisms.
G.M. = Ground Motion.
Δ = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

30th December 1965 - 5th January 1966.

						A mm	T sec	GM	Dist.	Remarks
30/12	e	Z/	02	17	35					
	e	Z/	06	29	53					
	e	Z/	13	56	47					
31/12	e	Z/	01	44	41					
	iP	Z	10	27	07.0	7.0	0.5	d	1°	H = 10 26 50
	iS	N			19.5					
	iP!	Z	15	09	35.5	52.0	0.5	dSE	1½°	H = 15 09 10.3
	iS	E/			54.5					
	Felt: Rabaul Int. II-III 04°10'S,152°10'E									
	eiP	Z	15	43	59	4.0	0.5			
	iP	Z	19	37	35.0	2.0	0.5	e	1½°	H = 19 37 11
	iS	N			53.0					
	iP	Z	21	04	04.5	5.0	0.5		25°	Telesseism
	iPP	Z/			40.0					
	iS	E/		08	26.5					
	iPcS	Z/		11	21.5					
	iP	Z	21	36	22.3	6.0	0.5	d	1½°	H = 21 35 57.8
	iS	N			41.0					
1/1	eiP	Z	01	51	04.5	7.0	0.4	d	1½°	H = 01 50 36.7
	iS	N			25.5					
	e	Z/	06	02	28					
	iP	Z	12	25	57.1	5.0	0.5	d	8°	Deep shock
	LQ	N/		27	19.5					
	iS	N/			29.5					
	LR	Z/			50					
	ScP	N/		36	04					
	iP	Z	16	11	52.1	1.0	0.5	d	8°	Deep shock
	iS	N/		13	26.5					
	iSS	N/			35.5					
	ScP	N/		20	51					
	ScS	N/		24	19					
2/1	iP	Z	07	41	25.0	7.0	0.4		1½°	H = 07 40 59.8
	eS	N			44					
	e	Z/	15	05	07					
	iP	Z	20	17	31.5	5.0	0.5	e	1½°	H = 20 17 03.1
	iS	N			53.0					

						A mm	T sec	GM	Dist.	Remarks
3/1	iP	Z	02	19	35.0	10.0	0.4	d	1½°	H= 02 19 09.2
	iS	N/			54.5					C.B.M.
	e	Z/	07	15	14					
	e	Z/	13	47	07					
	e	Z/	15	50	38					
4/1	Strong microseismic activity									
	eiP	Z	06	02	31½	4.0	0.5		2½°	H= 06 01 50.7
	eS	N		03	02½					C.B.M.
	eP	Z	09	05	06½					
5/1	Strong microseismic activity									
	e	Z/	04	02	43					
	eP	Z	17	31	26					
	iP	Z	18	15	37	2.0	1.0	d		
	iP	Z	19	09	21.7	10.0	0.4		2°	H= 19 08 49.9
	iS	N			46.0					
	iP	Z	20	02	15.5	47.0	0.5			C.B.M.

Seismograms interpreted by M.Gaiam
Vulcanological Assistant.

6th January - 12th January 1966.

						A mm	T sec	GM		Dist.	Remarks		
6/1	Strong microseismic activity. No L.P. E-W component												
	eiP	Z	01	33	59½								
	eiP	Z	02	11	13					3°	H= 02	10	30
	eiS	N			46								
	e(P)	Z/	04	56	03								
7/1	Strong microseismic activity												
	iP!	Z	11	30	56.6	16	0.4	c					
	iP	Z	14	58	03.5		0.5	d	SE	1½°	H= 14	57	43
	iS	Eo			19.0								
	e	Z	20	33	48								
8/1	iP	Z	05	37	43.6	14	0.5	c			C.B.M.		
	eP	Z	15	32	42½								
	iP!	Z	16	34	23.3	69	0.5	d	SE	1½°	H= 16	34	01
	eS	N/			40								
9/1	iP	Z	03	11	21.2	4.0	0.5	d					
	eiP	Z	09	30	50.2	19.0	0.4						
10/1	Strong microseismic activity												
	iP	Z	08	17	22.2	49.0	0.5	d		1¼°	H= 08	17	02
	iS	E/			38.0								
	eiP	Z	16	13	06½					4½°	H= 16	12	01
	eiS	E/			56½						C.B.M.		
11/1	e	Z	03	17	20						C.B.M.		
	eiP	Z	09	52	48						C.B.M.		
	e	Z	14	24	03						C.B.M.		
	eiP	Z	19	37	58						C.B.M.		
12/1	Nil recorded.												

Seismograms interpreted by D.D.Middleton
Vulcanologist.

13th January - 19th January 1966.

						A mm	T sec	GM	Dist.	Remarks
13/1	eiP	Z	06	58	57½	25	0.5		1½°	H= 06 58 36
	ei	Z		59	02					
	eiS	N		59	14½					
	e	Z	10	59	23					
14/1	eiP	Z	00	19	45				3°	H= 00 19 23
	iS	N		20	18.0					
	iP	Z	02	38	06.0	83	0.5	d	1½°	H= 02 37 42
	eS	N/			24					C.B.M.
	iP!	Z	07	40	15.5	87	0.5	d	4½°	H= 07 39 10
	eiS	N/		41	05½					
	Felt: Rabaul Int I 04°10'S, 152°10'E									
	iP!	Z	10	06	45.0	81	0.5	d NW	½°	H= 10 06 36
	eiS	N/			51½					
	iP!	Z	10	09	42.5	110	0.5	d	¼°	H= 10 09 34
	eiS	N/			49					in coda of preceeding shock.
	eiP	Z	12	57	58½				1°	H= 12 57 38
	iS	N		58	13.5					
	eiP	Z	20	45	33					
15/1	Strong microseismic activity									
	iP	Z	05	07	17.0			d	1½°	H= 05 06 49
	eiS	E/			38					
	iP	Z	06	38	50.8	35	0.4	d	1½°	H= 06 38 25
	eiS	N/		39	10					
	e	Z/	12	04	19					
	e	Z/	12	39	12					
	e	Z/	20	27	47					
	iP	Z	22	13	44.5	21	0.5	d	1°	H= 22 13 24
	iS	N		14	00.2					
16/1	e	Z/	00	19	44					
	iP!	Z	09	23	37.0	39	1.0	d		
	i	Z			44.3					
	eP	Z	14	33	02	4	0.5			
	e	Z	20	41	05					
	eL			47	48					
17/1	eP	Z	16	52	02					
	eP	Z	17	57	35					

						A mm	T sec	GM	Dist.	Remarks
18/1	eP	Z	01	20	43					
	iP!	Z	02	57	08.4	90	0.5	d	1°	H= 02 56 49
	eiS	N/			22½					
	iP	Z	08	00	33.0	4	0.5	c	2°	H= 07 59 59
	eiS	E/			58½					
	eiP	Z	10	28	15				3½°	H= 10 27 25
	eiS	E			53					
	eiP	Z	12	04	58					
	eiP	Z	20	22	37					
	e	N/		25	15					
19/1	eiP	Z	07	58	39½					

Seismograms interpreted by D.D.Middleton
Vulcanologist.

20th January - 26th January 1966.

						A mm	T sec	GM	Dist.	Remarks
20/1	e	Z/	00	51	30					
	eP	Z	04	32	11					
	e	N/		36	17					
	e	Z/	10	47	04					
	iP!	Z	18	39	07.1	83	0.5	d	$1\frac{1}{2}^{\circ}$	H= 18 38 40
	eiS	N/			27					
21/1	iP	Z	22	28	56.2	12	0.5	c	1°	H= 22 28 38
	iS	N		29	09.0					
22/1	e	Z/	04	11	20					
	eiP	Z	07	05	03					
	eiP	Z	14	23	$24\frac{1}{2}$	2	0.5			
	e	Z	14	38	(35)					
	iP!	Z	17	04	40.0	33	0.5	c	$1\frac{1}{2}^{\circ}$	H= 17 04 16
	eiS	N/			58					
	eiP	Z	17	08	21	50	0.5	c	$1\frac{1}{2}^{\circ}$	H= 17 07 58
	eiS	N/			$39\frac{1}{2}$					in coda of preceeding shock.
	eP	Z	23	54	26					
23/1	e	Z	01	49	15					
	iP	Z	12	03	47.0		0.5	d	$1\frac{1}{2}^{\circ}$	H= 12 03 23
	iS	N		04	05.0					
	iP	Z	18	13	19.0	3	0.5		2°	H= 18 12 48
	iS	N			42.5					
24/1	e	Z/	07	47	$15\frac{1}{2}$					
	eiP	Z	16	26	55				3°	H= 16 26 08
	iS	N		27	30.5					
	iP!	Z	17	05	27.0	50	0.4	c	$1\frac{1}{2}^{\circ}$	H= 17 05 04
	iS	N/			44.5					
	iP	Z	18	21	24.2	34	0.5	d	$1\frac{1}{2}^{\circ}$	H= 18 20 59
	eS	N/			43					
	eP	Z	23	52	$21\frac{1}{2}$					
25/1	eP	Z	18	12	42					
26/1	Nil recorded.									

Seismograms interpreted by D.D.Middleton
M.Gaiam

27th January - 2nd February 1966.

						A mm	T sec	GM	Dist.	Remarks
27/1	eiP	Z	06	08	44					
	iP	Z	10	29	57.1	5	0.5	d		(foreshock)
	eiP	Z	10	31	09					in coda of preceeding shock
	iP!	Z	16	19	33.0	7	0.5	d		
	eiP	Z	16	26	13½	2	0.5	d		
28/1	eiP	Z	04	41	50					(foreshock)
	eP	Z/	05	46	52					Teleseism. Large amplitude L
	iP	Z	20	52	22.5					
	iP iS	Z N	21	28	18.4 36.5	52	0.5	d	1½°	H = 21 51 54
	eiP eiS	Z E	21	51 52	54½ 14½	12	0.5	d	1½°	H = 21 51 28
	iP	Z	22	47	40.0	9	1.1	c		
29/1	e(P)	Z/	06	29	07					
	iP! eS	Z N/	12	55	32.0 52	11	0.5	c	2½°	H = 12 11 50
30/1	iP iS	Z N	13	47	11.4 29.5	10	0.5		1½°	H = 13 46 47
	iP	Z	21	02	20.0	52	0.5	c	1½°	H = 21 01 58
	iS	N			36.5					
31/1	e(P)	Z	02	45	10					
1/2	iP	Z	02	25	54.7	4	0.5		4½°	H = 02 24 44
	eS	N		26	48½					
2/2	e	Z/	05	41	10					

Seismograms interpreted by D.D.Middleton
Vulcanologist.

3rd February - 9th February 1966.

						A mm	T sec	GM	Dist.	Remarks.
3/2	eiP	Z	03	19	50	12	0.5		1¼°	H = 03 19 30
	iS	N		20	05.0					
	iP	Z	05	53	56.5	19	1.0	c	29°	H = 05 23 26
	eS	E		58	38					
	iP	Z	10	05	41.7	6	0.5	d	1½°	H = 10 05 20
	iS	N			57.5					
	eP	Z	12	05	49	10	1.0			
	e	Z		06	12					
	iP	Z	13	08	02.4	20	0.5			
	e(P)	Z	17	28	48					
	e(P)	Z	18	05	23					
4/2	iP	Z	00	08	40.5	19	0.5	d	1½°	H = 00 08 13
	iS	E		09	01.8					
	e	Z/	04	15	56					
	e	Z/	05	11	31½					
	eP	Z	10	43	24				19°	H = 10 39 00
	ei(pP)	Z		43	53½					h = about 150 km.
	eS	N/		46	54					Teleseism.
	eLQ	E/		47	22					
	eLR	E/		48	06					
	eiScP	Z		50	56					
	iScS	E		51	44.3					
	e	Z	21	01	17					
5/2	e(P)	Z	02	20	41					
	eiP	Z	04	16	20				5½°	H = 04 15 02
	iS	N		17	24					
	iP	Z	12	22	02.0	10	0.5	c	1½°	H = 12 21 33
	iS	N			24.5					
	eP	Z	15	22	12½				58°	Teleseism
	eS			30	10					
	eP	Z	16	25	17	4	0.8			
	ei				46					
	e	N/		33	39					
	eiP	Z	23	15	30½					
	i	Z			33.3					
	i	N		16	42					
6/2	eiP	Z	02	24	17½					
	iP	Z	04	23	41.0	43	0.5	d	1°	H = 04 23 21
	eiS	N			55					

						Δ	D	CM	Dist.	Remarks		
						KM	DOG					
6/2	iP	Z	13	14	36.0	47	0.5	dSW	1¼°	H = 05	14	13
cont'd	eiS	N			53							
	iP	Z	11	58	26.5	84	0.5	eNW	1½°	H = 11	58	05
	eS	N/			43							
	iP	Z	22	58	37.4	48	0.5	e	1¼°	H = 22	58	16
	eiS	N			54							
7/2	eP	Z	04	38	51					Distant shock		
	i	Z		39	05							
	eiP	Z	09	35	23							
	i	N			25.6							
	i	Z			27.8							
	i	N			33.3							
	eiP	Z	12	24	07	2	0.5					
	eP	Z	15	44	29							
	ei	N			45							
	ei	N			52							
	e	Z	18	25	15							
	iP	Z	19	38	31.0	61	0.5	d				
	iP	Z	23	18	39.0	50	0.5	c	3½°	H = 23	17	45
	i	Z			40.0							
	eiS	N/		19	17							
	Felt: Malindi Int XII 05°25'S.150°05'E											
	iP	Z	23	35	10.8			e	⅝°	H = 23	34	56
	eiS	N/			22	superimposed on previous shock.						
8/2	eiP	Z	03	08	47	3	0.5		2½°	H = 03	08	10
	eiS	N		09	15							
	iP	Z	14	59	17.2	23	0.5	c	1½°	H = 14	58	53
	iS	N			35.5							
	eiP	Z	17	56	31	29	0.5	(c)	3°	H = 17	55	46
	e(L)	N/			48					Bismarck Sea(?)		
	e(S)	N		57	05							
9/2	No Long Period records.											
	e(P)	Z	07	25	40	1	0.5					
	e(P)	Z	15	32	34							
	e	Z			49							

Seismograms interpreted by D.D.Middleton
Vulcanologist.
M.Gaian

10th February - 16th February, 1966.

						A mm	T sec	GM	Dist.	Remarks
10/2	e	Z/	01	32	33					
	iP!	Z	07	33	05.6	16	0.5	d	1½°	H = 07 32 39
	eiS	E			25½					
	eiP	Z	14	26	36	55	1.0		29°	
	ei	Z		26	55					
	ei	Z		27	00½					
	ei	Z		27	13½					
	e	Z/		27	36					
	eS	E/		30	59					
	e	E/		31	27					
	ei	Z		46	42					
	e	Z	15	51	00					
	iP	Z	15	51	58.3	17	0.5	d	3½°	H = 15 51 07
	eiS	N		52	37					
	eiP	Z	20	22	21	2.7	1.0	(c)		
11/2	eP	Z	04	50	21½	7.0	0.5			
	e(P)	Z	13	13	25					
	eP	Z	23	58	04	2.0	0.5			
	i				07.0					
12/2	iP!	Z	09	27	23.4	57	0.5	c	½°	H = 09 27 14
	eiS	E/			30					
	iP!	Z	10	05	27.3	45	0.5	c		
	iP!	Z	10	10	11.5	37	0.5	c	½°	H = 10 10 00
	iS	E			19.5					
	eP	Z	11	46	03	3.0	1.2			
	iP!	Z	13	18	21.5	20	0.5	c		superimposed shock
	iP!	Z	14	00	12.4	52	0.5	c	¼°	H = 14 00 04
	iS	E			18.5					
	eiP	Z	15	33	29				2°	H = 15 32 54
	eiS	N			55					
	iP!	Z	16	21	41.3	26	0.5	c	0°	
	iS	E			45.5					
	iP!	Z	20	15	21.8			eSE		
	Felt: Rabaul Int III 04°10'S, 152°10'E									
	Londolovit Int III 03°10'S, 152°40'E									
	iP!	Z	21	02	26.1			c		superimposed shock
	iP	Z	21	38	17.5	130	0.5	c	0°	
	iS	E			22.0					
	Felt: Rabaul Int II 04°10'S, 152°10'E									

↓ refers to next event

						A mm	T sec	GM	Dist.	Remarks		
12/2 contd.	iP	Zh	23	37	56.0				4°	H = 23	37	48
	iS	Zh		38	02.0							
13/2	iP	Z	02	14	11.5	19	0.5	c	1°	H = 02	14	00
	iS	N			19.5							
	iP	Z	04	01	11.4	8	0.5	c	½°	H = 04	01	00
	iS	N			19.5							
	iP	Z	05	10	26.5	3	0.5	d				
	iP	Z	06	26	43.0	3	1.0	d				
	eiP	Z	06	40	28				19½°			
	ei	Z			38½							
	e(S)	E/		44	04							
	iP!	Z	07	59	04.3	29	0.5	d	0°			
	iS	N			08.2							
	iP!	Z	08	03	53.8	30	0.5	d	0°			
	iS	N			57.5							
	eP	Z	10	54	20	10	1.4		59°			
	eS	N/	11	02	16							
14/2	iP	Z	17	28	29.0	77	0.5	cSW	½°	H = 17	28	18
	eiS	E/			37.0							
	Felt: Rabaul Int III 04°10'S, 152°10'E											
	iP	Z	17	49	30.5	26	0.5	c	1°	H = 17	49	11
	iS	N			45.0							
15/2	eiP	Z	04	20	54.0	5	0.5		2½°	H = 04	20	14
	eiS	N		21	24							
	iP	Z	05	59	43.0	124	0.5		½°	H = 05	59	32
	iS	E/			51							
	e	Z/	10	09	17							
16/2	iP	Z	01	54	14.7	10	0.5	c		C.B.M.		
	iP	Z	03	23	03.9	4.5	1.0	c	22°			
	i(pP)	Z			28.5							
	eiS	N/		26	58							
	iP	Z	13	19	37.1	9	0.5	c	2°	H = 13	19	05
	eiS	N			51							

Seismograms interpreted by D.D.Middleton
Vulcanologist.

17th February - 23rd February. 1966.

						A min	T sec	QM	Dist.	Remarks
17/2	iP	Z	02	37	15.4	104	0.5	d	1½°	H = 02 36 53
	iS	N			31.9					
	ei(P)	Z	08	26	36					
	ei(P)	Z		26	38					
	eiP	Z	11	59	32	30	1.0		72°	
	ePP	Z	12	02	16					
	eS	E/		08	57					
	e(SS)	E/		13	43					
	L	Z/		23	20					
	iP	Z	19	57	07.0	8	0.5	d	1½°	H = 19 56 46
	iS	N			23.0					
18/2	eP	Z/	07	05	12				31½°	
	i	Z			25					
	eS	N/		10	11					
	eiP	Z	09	03	04	1.0	0.5			
	iP	Z	11	25	51.8	2.0	0.5	d	1°	H = 11 25 47
	iS?	N		26	18.5					
	e	Z	14	25	48					
	iP	Z	16	18	04.1	39	0.5	emg	4°	H = 16 17 54 superimposed shock
	iS	N			10.2					
	iP	Z	18	03	02.9	80	0.5	d	1½°	H = 18 02 41 superimposed shock
	eS	N/			19					
19/2	iP	Z	04	44	13.2	22	0.5	d	½°	H = 04 43 57
	eiS	N			25					
	eiP	Z	09	00	10	4.0	0.3	e	½°	H = 08 59 58
	ei	Z			15					
	eiS	N			18½					
	eiP	Z	10	05	50					
20/2	eiP	Z	16	57	14½	2.0	0.5		2°	H = 16 56 54
	iS	N			35.0					
21/2	e	Z/	00	52	43					
	eL	Z/	01	24½						
	e	Z	03	48	59½					
	iP	Z	13	26	11	8.0	1.0			
	iP	Z	17	07	05.5	45	0.4	d	½°	H = 17 06 40
	eiS	E			25					
	e(P)	Z	18	03	40					
	eP	Z	18	46	27					
	L	N/			57					
	M	N/		47	03					
	eiP	Z	23	11	21½	12	0.5			

Date	Phase	Comp.	h	m	s	A mm	T sec.	CM	Dist.	Remarks.
22/2	iP	Z	01	11	33.5			d	1½°	H = 01 11 15
	eS	N/			51½					Superimposed shock.
	iPi	Z	05	03	03.6			[illegible]	1½°	Epicentre: latitude 5.8°S. Longitude 151.7°E h = 50 Km.
	Felt:									
	[illegible]	Int VII - VIII								05°[illegible]'S, 15[illegible]°[illegible]'E
	[illegible]	Int VII								04°[illegible]'S, 152°[illegible]'E
	[illegible]	Int VI-VII								05°[illegible]'S, 15[illegible]°[illegible]'E
	[illegible]	Int V-VI								05°[illegible]'S, 15[illegible]°[illegible]'E
	[illegible]	Int IV								05°[illegible]'S, 152°[illegible]'E
	[illegible]	Int II								05°30'S, 15[illegible]°[illegible]'E
	eiP	Zh	05	08	34				1½°	H = 15 08 06
	eS	Zh			55					
	eiP	Zh	05	34	41					Disturbed records unreadable.
	eiP	Zh	05	[illegible]	56				1½°	H = 15 45 59
	iP	Zh			[illegible]					Disturbed records unreadable.
	eiS	Zh			[illegible]					
	eiP	Zh	05	[illegible]	14				1½°	H = 15 46 46
	iP	Zh			17.5					Disturbed records unreadable.
	eiS	Zh			35					
	eiP	Zh	05	50	26				1½°	H = 05 49 [illegible]
	ei	Zh			30					Disturbed records unreadable.
	eS	Nh			[illegible]					
	eiP	Zh	06	[illegible]	11					
	eiP	Zh	06	12	07					
	eiP	Zh	06	[illegible]	22				1½°	H = [illegible]
	i	Zh			25					Disturbed records unreadable.
	ei	Zh			27					
	eS	N/			44					
	iP	Zh	0[illegible]	[illegible]	26.[illegible]			d	1½°	H = [illegible]
	iS	Zh			[illegible]					
	iP	Z	10	[illegible]	35.0			d	1½°	H = 10 [illegible]
	eS	N/			55					
	iP	Z	10	[illegible]	17.5			d	1½°	H = 10 [illegible]
	eiS	N/			[illegible]					
	iP	Z	10	[illegible]	[illegible]			[illegible]	2°	H = 10 [illegible]
	eiS	N/			[illegible]					
	iP	Z	1[illegible]	[illegible]	[illegible]			[illegible]	1½°	H = 1[illegible]
	iS	N/			[illegible]					
	iPi	Z	1[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	H = [illegible]
	eiS	N/		[illegible]	[illegible]					
	eiP	Z	12	[illegible]	[illegible]			[illegible]	2°	H = 12 [illegible]
	iS	N/		[illegible]	05.0					
	eiP	Z	12	[illegible]	[illegible]				1½°	H = 12 [illegible]
	eS	Zh			30.[illegible]					

22/2 cont'd.											
	iP	Z	12	18	54			c	1½°	H = 13	48 30
	iS	N/		48	17						
	eiP	Z	13	54	05				1½°	H = 14	50 12
	iS	N/			24.5						
	iP	Z	15	21	09.2			a	½°	H = 15	19 50
	eiS	N/		21	19½						
	iP	Z	16	13	25.2			a	½°	H = 16	42 28
	iS	N/		14	13.0						
	iP	Z	16	30	22.0			a	1½°	H = 16	49 03
	iS	N/			42.0						
	eiP	Z	16	53	15			a	1½°	H = 16	52 36
	eiS	N/			34½						
	iP	Z	17	24	35.6			c	½°	H = 17	24 09
	eiS	N/			59						
	iPi	Z	18	19	02.5				1½°	H = 18	18 33
	iS	Zn			25.0						
	eiP	Z	18	23	58						
	iP	Z	18	43	37.8			d	1½°	H = 18	43 11
	eiS	E/			58						
	iP	Z	19	27	17.5			c	1½°	H = 19	26 50
	iS	N/			36.5						
	eiP	Z	20	46	44				1½°	H = 20	46 24
	iS	N/		47	06.5						
	Numerous small aftershocks have not been included.										
	Some aftershocks were felt Intensity II-IV at Palmalmal.										
23/2	eiP	Z	00	09	19	1.3	0.5		1½°	H = 00	08 51
	iS	N			40						
	eiP	Z	00	20	21	4.0	0.5		1½°	H = 00	19 52
	eiS	N			43						
	eiP	Z	01	39	50	5.0	0.5				
	eiP	Z	04	26	51½				superimposed shock.		
	iP	Z	06	41	46.5			d	superimposed shock.		
	eiP	Z	07	15	41	3.0	0.5		1½°	H = 07	15 15
	eiS	N		16	00½						
	eiP	Z	07	16	05	13.0	0.5		1½°	H = 07	17 41
	eiS	N			28						
	iP	Z	08	55	04.5	46.0	0.5	d	1½°	H = 08	54 33
	eiS	N/			24½						
	iP	Z	10	30	46.9	4.0	0.5	c	1½°	H = 10	30 47
	eiS	N		31	06						
	iP	Z	11	43	19.0	28.0	0.5	c	½°	H = 11	43 08
	eiS	E/			27						
	L	E/			33						
	iP	Z	11	55	27.0	11.0	0.5	c	1½°	H = 11	54 59
	eiS	N/			48						

						A mm	T sec.	GM	Dist.	Remarks		
23/2 cont'd												
	iP	Z	12	31	31.4	2.5	0.5	d	1½°	H = 12	31	05
	eiS	N			51							
	iP	Z	18	30	46.7	13.0	0.5		2½°	H = 18	30	08
	eiS	N/		31	16							
	iP	Z	19	54	19.5	70.0	0.5	d	1½°	H = 19	53	57
	eiS	N/			40							

Seismograms interpreted by D.D.Middleton
Vulcanologist.

24th February - 2nd March 1966.

						A mm	T sec	GM	Dist.	Remarks
24/2	iP	Z	00	44	59.9	72	0.4	c	1½°	H = 00 44 37
	eS	N/		45	22½					
	eiP	Z	01	12	18½	45	0.5		1½°	H = 01 11 53
	eiS	N			38					
	iP	Z	02	07	35.0	18	0.4	c	1½°	H = 02 07 07
	e(S)	N/		08	56					
	eiP	Z	03	06	09	70	0.5		1½°	H = 03 05 41
	eS	N/			30					
	eiP	Z	04	16	03½					superimposed shock
	eiP	Z	04	18	04½	82	0.5		1½°	H = 04 17 39
	eiS	N/			24					
	iP	Z	07	54	30.1	15	0.5	c	1½°	H = 07 54 03
	eiS	N/			50					
	iP	Z	08	45	55.5	92	0.5	d	1½°	H = 08 45 33
	eiS	N/		46	16					
	iP	Z	11	19	31.0	5.0	0.5	c	2°	H = 11 18 57
	eiS	N/			57					
	iP	Z	12	45	00.8	61	0.5	d	1½°	H = 12 44 34
	eiS	N/			21					
	eP	Z	14	18	13	2.0	0.5			
	ei	Z			17					
	iP	Z	18	18	41.3			c	2½°	H = 18 18 02
	eiS	N/		19	11					superimposed shock
	eiP	Z	20	09	59			d		
	eiP	Z	20	10	11½	61	0.7			(Deep shock)
	ei	Z			22					
	ei	N			24½					
25/2	iP	Z	02	32	07.0	61	0.5	c	1½°	H = 02 31 40
	eiS	N/			27					
	iP	Z	04	53	22.3	12	0.5	d	1½°	H = 04 53 00
	eiS	N/			43					
	eiP	Z	07	56	53	9.0	0.5		1½°	H = 07 56 28
	eiS	N		57	12					
	iP!	Z	14	09	02.2	44	0.5	d		
	iP	Z	14	12	01.4	4.0	0.5	c	1½°	H = 14 11 36
	eiS	N			21					
	eP	Z	14	15	44½	1.3	0.7		22°	H = 14 06 (56)
	e	Z/		16	18					
	e	Z/		16	30					
	eS	E/		19	45					
	eLQ	N/		20	06					
	e	N/		20	41					
	eiP	Z	14	37	51					
	iP	Z	23	29	16.5			c	1°	H = 23 28 57
	eiS	N/			31					

						A mm	T sec.	GM	Dist.	Remarks		
26/2	iP	Z	01	29	02.5	38	0.5	d	1½°	H = 01	28	35
	eiS	N/			23½							
	iP	Z	01	49	31.6	34	0.5	c	2°	H = 01	49	01
	iS	N/			54.5							
	iP	Z	04	18	53.5	31	0.5	c	1½°	H = 04	18	28
	iS	N/		19	13.0							
	iP!	Z	05	34	51.0	40	0.5	d	½°	H = 05	34	39
	eiS	N/		35	00½							
	iP	Z	06	50	45.5			d	1½°	H = 06	50	19
	eiS	E/		51	05½							
	iP	Z	09	38	18.0	50	0.5	c	½°	H = 09	38	04
	eS	N			28							
	e	Z/	11	28	44							
	eP	Z	12	41	43	1.0	0.5		2°	H = 12	41	10
	i	Z			44							
	eS	N		42	08							
	e	Z/	13	04	52							
	iP	Z	15	12	44.2	77	0.5	c	0°	H = 15	53	06
	iS	E/			52.0							
	iP	Z	21	53	28.5	19	0.5	d	1½°	H = 21	53	06
	iS	N			49.0							
27/2	eiP	Z	00	53	05				1½	H = 00	52	37
	eiS	N			26							
	eiP	Z	04	57	30				1½°	H = 04	57	04
	iS	N			49.5							
	eiP	Z	06	43	06				1½°	H = 06	42	41
	eiS	N			25							
	iP	Z	13	08	27.0	21	0.5	d	¾°	H = 13	08	09
	eiS	N			38½							
	eiP	Z	20	26	35½	3.0	0.5		4½°	H = 20	25	31
	i!	Z			37.3							
	e(S)	N/		27	25							
28/2	eiP	Z	00	15	44							
	iP	Z	02	10	39.0	6.0	1.0					
	iP	Z	02	32	55.4	18	0.5	d	1½°	H = 02	32	29
	eiS	N		33	16							
	iP	Z	03	58	52.0			d	superimposed shock			
	iP!	Z	04	36	16.0	127	0.5	c	½°	H = 04	36	06
	eiS	E/			23							
	iP!	Z	06	19	37.5			c	½°	H = 06	19	28
	eiS	E/			45							
	iP	Z	06	30	26.0			c				
	iP	Z	09	27	36.6	18	0.5	c	½°	H = 09	27	27
	iS	E			43.5							

						A mm	T sec.	GM	Dist.	Remarks
28/2 con'td										
	iP	Z	09	30	26.0	30	0.5	c	½°	H = 09 30 16
	eiS	E/			33½					
	iP	Z	10	29	47.5	5	0.5	d		
	eiP	Z	10	32	10	12	0.5		1½°	H = 10 32 43
	eiS	N			30					
	iP!	Z	12	59	17.8	32	0.9	c		
	eiP	Z	13	43	06	3	1.5	(d)	39°	
	eS	N/		49	08					
	iP	Z	15	02	45.7	16	0.5	c	0°	H = 15 02 36
	eiS	N			53					
	iP	Z	17	19	42.0					
	i!	Z			46.0					
	iP	Z	19	47	06.7			c	2½°	H = 19 45 29
	eiS?	N			35					
	eiP	Z	19	57	48				1¾°	H = 19 57 19
	eiS	N		58	10					
	iP	Z	23	54	46.5	14	0.5	c		superimposed shock
	iP	Z	23	56	22.0	25	0.5	c		in coda of proceeding shock.
1/3	iP	Z	00	55	47.2			c		
	eP	Z	00	58	55					
	eP	Z	00	59	37				1¾°	H = 00 59 08
	eS	N			59					
	L	N/	01	00	01					
	M	N/			30					
	iP	Z	08	04	45.1	5	0.5	d	2½°	H = 08 04 09
	eiS	N		05	12½					
	eiP	Z	14	34	25½					
	iP	Z	14	38	33.8	7	0.5	c	2⅛°	H = 14 37 57
	iS	N/		39	01.5					in coda
	eiP	Z	20	12	43½				2¼°	H = 20 12 08
	iS	N		13	10.5					
2/3	iP!	Z	07	29	39.0			d(SW)	1½°	H = 07 29 14
	eiS	N/			58					Phases of superimposed
	ei	E/		34	04					shock?
	ei	N/			51					
Felt: Rabaul Int III 04°10'S, 152°10'E										
	iP	Z	11	54	01.2	42	0.5	c	½°	H = 11 53 52
	eiS	E/			08					
	iP	Z	20	13	58.0	131	0.5	d	1½°	H= 20 13 31
	eiS	E/		14	18					
Felt: Rabaul Int III 04°10'S, 152°10'E										
	iP	Z	21	14	11.3			d	1½°	H = 21 13 47
	eiS	N/			31					superimposed shock

					A mm	T sec.	GM	Dist.	Remarks
2/3 cont'd									
eiP	Z	21	22	32	64	0.5		1½°	H = 21 32 23
eiS	N/		33	10					
eiP	Z	22	02	09				2°	H = 22 01 35
eiS	N/			35					

Seismograms read by D.D.Middleton
Vulcanologist.

3rd March - 9th March 1966.

						A mm	T sec.	GM	Dist.	Remarks
2/3 cont'd.										
	iP	Z	23	26	35.0	29	0.5	c	1½°	H = 23 26 09
	iS	N			54.5					
3/3	eiP	Z	03	34	37					
	iP	Z	05	31	49.5	15	0.5	c	1½°	H = 05 31 27
	eiS	N		32	10					
	iP	Z	06	15	39.0	3.0	0.5	d	2½°	H = 06 15 03
	iS	N		16	06.0					
	eiP	Z	11	56	53	20	0.5		2°	H = 11 56 19
	iS	N		57	18.5					
	eiP	Z	12	52	28	2.0	0.5		3½°	H = 12 51 39
	iS	N		53	05.0					
	iP	Z	21	08	56.5	15	0.5	c		
	iP	Z	22	30	27.1	26	0.5	d	2°	H = 22 29 55
	iS	N			51.5					
	iP	Z	23	12	21.1	53	0.5	c	1½°	H = 23 11 53
	iS	N/			42.0					
4/3	iP	Z	04	10	32.0	115	0.5	c	1½°	H = 04 10 10
	iS	E/			52.5					
	e	Z/	05	26	52½					
	iP	Z	12	38	27.1	40	0.5	c	2½°	H = 12 37 49
	eiS	E/			56					
	eiP	Z	15	58	57	5.0	0.5		2½°	H = 15 58 17
	iS	N		59	20					
	iP	Z	16	50	46.8	52	0.5			
	iP	Z	19	56	10.5	5.0	0.5	d	1½°	H = 19 55 45
	iS	N			29.5					
5/3	eiP	Z	00	06	41½	29	1.0	c	42°	New Zealand shock.
	eS	E/		12	56					
	iP	Z	04	58	45.5	8.0	0.4	c	2½°	H = 04 58 10
	eiS	N		59	12					
	iP	Z	12	32	34.4	17	0.5	c	1½°	H = 12 32 07
	iS	N			53.8					
	e	Z/	15	57	44½					
6/3	eP	Z	02	27	46	2.0	0.6		78°	Teleseism
	eS	E/		37	42					
	iP!	Z	10	54	30	41	0.4	c	1°	H = 10 54 12
	eS	N			43					

						A mm	T sec.	GM	Dist.	Remarks
6/3 cont'	iP	Z	16	51	28	24	0.5	d	1½°	H = 16 51 01
	iS	N			48					
	e	Z/	18	14	23					
7/3	eiP	Z	09	09	41½	8.0	0.5		3½°	H = 09 08 48
	iS	N		10	02.5					
	eP	Z	21	38	41½				55°	S.S.W. Peking shock
	i	Z/		38	48					
	PcS	Z/		46	43					
	eS	E/		46	19					
	PS	Z/		46	30					
	LQ	N/		51	59					
	LR	Z/		54	34					
	M	Z/		59	57					
8/3	eP	Z	01	17	47				17°	Teleseism
	e(S)	E/		20	47					
	eiP	Z	05	46	42				27½°	Teleseism
	eS	E/		51	13					
	SS	E/		52	26					
	LRor PcS	Z/		53	37					
	iP	Z	11	35	10.9	64	0.4	d	1½°	H = 11 34 45
	iS	E/			30.5					
	iP	Z	18	53	44.7	15	0.5	d	1½°	H = 18 53 17
	iS	N/		54	06					
	iP	Z	19	12	26.6	3.0	0.5	c	2½°	H = 19 11 49
	iS	N			54.6					
	iP	Z	23	14	52.8	15	0.5	c	1½°	H = 23 14 29
	eiS	N		15	11					
9/3	eiP	Z	11	49	16½	2.0	0.5		½°	H = 11 49 15
	eS	N			34½					
	iP	Z	13	50	19.5	14	0.5	c	0°	H = 13 50 10
	eS	N			27					
	iP	Z	19	02	12.8	4.0	0.5		2°	H = 19 01 39

Seismograms interpreted by M.Gaiam
Vulcanological Assistant.

10th MARCH, 1966 - 15th MARCH, 1966

				A mm.	T sec	G.M.	Dist.	Remarks
10/3	iP	Z	01 19 19.8	5.0	0.5	c		
	eiP	Z	01 22 31½	2	0.4	c	2½°	
	iS	N	59					H=012158 in [illegible]
	iP	Z	04 33 09.6	10	0.5	c		
	e	Z/	12 52 25					
	iP	Z	18 11 04.5	11	[illegible]	c [illegible]	½°	
	iS	E/	11.0					H=18 10 55
11/3	e	Z/	03 14 52½					
	e	Z/	00 22 3[illegible]½					
12/3	iP	Z	01 12 45.5	2	0.5	c		
	iP	Z	01 13 49.1	15	0.5	c	1½°	
	iS	N	14 07					H=01 12 25
	iP	Z	08 16 20.3	22	0.5	c	1½°	
	eiS	E	39					H=08 15 55
	iP	Z	17 53 32	43	0.5	[illegible]	1½°	
	iS	E	53.5					H=17 53 04
	eP	Z	16 38 56				[illegible]°	
	pP	Z	38 59					
	SoP	Z	39 55.5					
	S	N	41 45					L.P. Records
	(e)	Z	54					hard to decipher
	eP	Z	18 07 11	1.0	0.4	-		
	iP	Z	22 42 22	16	0.4	c	1°	
	iS	N	34					H=22 42 05
13/3	iP	Z	00 12 35	11	0.5	d	2°	
	iS	N	13 17					H=00 12 26
	iP	Z	03 22 47.3	4	0.4	c	1½°	
	eiS	N	23 06.5					H=03 22 22
	eP	Z	09 59 59½			+		
	L	E/	10 00 54					
	e	Z/	18 33 48					

						A mm.	T sec.	G.M.	Dist.	Remarks
14/3	iP	Z	04	45	43.5			d S.W.	2°	
	eS	E/		46	07					H=04 45 12
	iP	Z	16	49	52.2	32	1.0	d	½°	
	iS	N		50	02.5					H=16 49 38
	iP	Z	19	34	38.7			e N.W.	½°	
	eiS	E/			47					H=19 34 27
	FELT: Rabaul Int. II ..... 04°10'S, 152°10'E									
	Kondolovit Int. III ... 03°10'S, 152°40'E.									
15/3	iP	Z	00	51	09	15	0.4	d		
	iS	N			30					
	iP	Z	07	22	56.2	3.0	0.3	d	2¼°	
	iS	N		23	15.5					H=01 21 58
	eP	Z	13	03	26½	2.0	0.5	e	3½°	
	e(S)	E		04	49					H=13 02 40
	iP	Z	16	45	04	6.0	0.3	e	1½°	
	iS	N			24					H=16 44 37
16/3	iP	Z	03	28	53.8	19	0.5	d	1½°	
	eS	E		29	12					H=03 28 30
	eiP	Z	10	59	50	2	0.5	d	3½°	
	i	Z		59	51.2					H=10 58 53
	eS	N/	11	00	33½					
	e	Z/	12	20	04			+		
	iP	Z	14	58	10	5	0.5	e	2¾°	
	e(S)				43					H=14 57 26
	e	Z/	20	50	04			+		
	iP	Z	21	47	03.3	24	0.4	d	1½°	
	iS	E			23.0					H=21 46 37

Seismograms interpreted by M. Gaiam
Vulcanological Assistant.

17th MARCH TO 23rd MARCH, 1966

						A mm.	T sec.	G.M.	Remarks Dist.	Remarks
17/3	eip	Z	04	03	00½	3.0	0.5	d		
	eip	Z	08	20	16½	4.0	0.5	c	3½°	H=08 19 22
	es	N/			58					
	iP	Z	13	37	31.3	46	0.4	d	⅘°	H=13 37 15
	iS	N/			43.5					
	eP	Z	15	56	15	2.0	0.5	d	27°	
	PeP	Z/		59	33					
	eS	N/	16	00	45					
	LQ	N/		01	39					
	SS	E/		01	42					
	LR	Z/		02	55					
	PeS	Z/		03	13					
	SeS	N/		07	01					
	iP	Z	16	17	46.3	3.0	0.5	d	2½°	H=16 17 13
	iS	N		18	14.0					
18/3	iP	Z	05	46	11.7	3.0	0.4	c	1½°	H=05 45 46
	eiS	N			30½					
	iP	Z	06	33	14	99	0.5	d	½°	H=06 32 59
	iS	N/			24.5					
	eP	Z	13	33	15½			+		
	L			34	03					
	eiP	Z	14	24	45			-		
	i	Z			50.5					
	eiP	Z	15	25	38½	2.0	1.0	c		
	LQ	N/		26	19					
	M	N/			36					
	eiP	Z	20	51	23	11.0	0.5	d		
19/3	i	Z	07	40	10.5					ship moving in harbour.
	P	Z		45	16					
	eP	Z	13	44	16½	1.0	0.5		11°	
	eS	N/		46	27					
	SS	N/			39					
	LR	Z/			52					
	iP	Z	15	18	51.5	13	0.5	c	1°	H=15 18 32
	iS	E		19	06					

						A mm.	T sec.	G.M.	Dist.	Remarks
20/3	iP	Z	02	01	47	1.0	0.6	d		
	e(S)	E/		13	22					
	iP	Z	07	54	35	8.0	1.0	d		
	i	Z		57	05.7					
	iP	Z	08	21	49	10	0.5	d	$1\frac{1}{2}^{o}$	H=08 21 24
	iS	E		22	08					
	eP	Z	09	11	29					
	eP	Z	18	13	09	1.0	0.5	d	17^{o}	
	e(S)	E/		16	$28\frac{1}{2}$					
	SS	N/			36					
	LR	Z/		17	12					
	PoP	Z/			48					
21/3	iP	Z	00	56	07.3	8	0.5	d	$4\frac{1}{2}^{o}$	H=00 55 03
	eiS	E			57					
	iP	Z	09	57	50	3	0.5	d		
	eiP	Z	11	23	$41\frac{1}{2}$	8	0.5	d	$1\frac{3}{4}^{o}$	H=11 23 12
	iS	N		24	04.0					
	e	Z/	13	38	05			+		
	eiP	Z	15	18	35	3	0.5	e	$1\frac{1}{2}^{o}$	H=15 18 08
	eiS	E			55					
	eP	Z	16	03	$16\frac{1}{2}$			-	14^{o}	
	e(S)	N/		05	44					
21/3	iP	Z	17	03	37.5	34	0.5	d	$1\frac{1}{2}^{o}$	H=17 03 15
	eiS	N			58					
	eP	Z	19	47	09					
	iP	Z	21	05	27.5	1.0	0.5	d	$1\frac{1}{2}^{o}$	H=21 05 01
	iS	E			47.5					
	iP	Z	23	33	30.5	25	0.5	d	$1\frac{1}{2}^{o}$	H=23 33 06
	iS	N			48.5					
22/3	eiP	Z	08	21	01	3.0	0.6	d	55^{o}	S.W. Peking
	eS	E/		28	39					
	PS	Z/			47					
	PPS	Z/			57					
	SoS	E/		30	48					
	SS	E/		32	20					
	LQ	E/		34	15					
	LR	Z/		36	53					

						A mm.	T sec.	G.M.	Dist.	Remarks
23/3	eiP	Z	00	12	06½	3	1.0	d	41°	
	PcP	Z/		14	04					
	PcS	Z/		17	57					
	es	N/		18	11					
	SS	N/		21	13					
	LQ	E/			29					
	ScS	E/		22	09					
	IR	Z/		23	28					
	iP	Z	06	02	37.5	9	0.5	d	½°	H=06 02 23
	iS	E			47.5					
	eiP	Z	18	29	58½	2	0.5	c	2½°	H=18 29 15
	eiS	N		30	31½					

Seismograms interpreted by M. Gaian
Vulcanological Assistant.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

24th March - 30th March, 1966.

						A mm	T sec	GM	Dist.	Remarks
24/3	eiP	Z	05	33	27½	8.0	0.4	d	1½°	H = 05 33 01
	eiS	N		33	47					
	e(P)	Z	08	31	58½	1.0	0.5	-	17°	
	eS	N/		35	16					
	e(P)	Z	11	14	51			-	18°	
	e(S)	N/		18	05					
	eiP	Z	17	34	41	8.0	0.5	c	5½°	H = 17 33 40
	eS	N/		35	28					
	SS	N/			39					
	LR	Z/			47					
25/3	iP	Z	09	00	03.5	1.0	0.5	c	12½°	
	eS	N/		02	25					
	LQ	N/			30					
	LR	N/			53					
	iP	Z	12	13	37.3	6.0	0.5	c		
	i	Z	12	36	15					ship moving in
	P	Z		41	30					harbour
	e	Z/	13	38	31			+		
	iP	Z	20	29	08.2	8.0	0.5	d	1½°	H = 20 28 43
	iS	N			27.5					
26/3	eiP	Z	04	40	40	1.0	0.5	c		
	iP	Z	09	43	49.8	27	0.5	c	2°	H = 09 43 16
	eS	E/		44	15					
	iP	Z	14	16	36.0	2.0	0.6	d		
	eiP	Z	15	28	28	2.0	0.5	d	36°	
	e(S)	N/		36	09					
	iP	Z	22	14	12.5	25	0.5	c	3½°	H = 22 13 19
	eS	E/			53					
27/3	Strong microseismic activity.									
	e	Z/	09	40	57			-		
	iP	Z	16	48	31.3	54	0.5	d	1½°	H = 16 48 09
	iS	N/			52.0					
	e	Z/	19	51	34			+		
	e	Z/	20	49	28			+		
	iP	Z	23	44	18.5	19	0.5	c	1½°	H = 23 43 55
	iS	N/			36.0					C.B.M.
28/3	Strong microseismic activity.									
	e	Z/	07	17	19					
	iP	Z	15	50	50.5	26	0.5	c		
	e	Z/	18	41	16			-		

					A mm	T sec	GM	Dist.	Remarks
29/3	Strong microseismic activity. L.P. Records paper upside down.								
	iP	Z	01	30 44.2	27	0.4	c	1½°	H = 01 30 16
	eiS	N		31 05					
	eiP	Z	02	23 35½	1.0	0.5	c		
	iP	Z	10	36 49.5			d	1½°	H = 10 36 27
	eiS	Zh		37 10					C.B.M.
	iP	Z	11	25 51.0	3.0	0.5	d	1½°	H = 11 25 21
	eiS	N		26 13½					
	iP	Z	19	42 47.3	25	0.5	d	1°	H = 19 42 28
	eiS	N		43 02					
30/3	iP	Z	00	30 20.0	52	0.5	c	1½°	H = 00 29 53
	iS	N/		40.0					
	eiP	Z	01	29 15	2.0	0.5	c		
	iP	Z	13	14 05.0	92	0.5	d	1½°	H = 13 13 44
	eiS	Zh		21.0					
	Felt: Londolovit Int. III - IV 03° 10'S, 152° 40'E								
	e	Z/	20	58 27				-	

Seismograms interpreted by M. Gaiem

G. W. D'ADDARIO
Vulcanologist -in-Charge.

31st March - 6th April, 1966.

						A mm	T sec.	GM	Dist.	Remarks
31/3	iP	Z	03	53	24.5	10	0.5	c	1½°	H = 03 53 04
	iS	N		53	40.0					
	eiP	Z	05	10	39	3.0	0.5	d	21°	
	eS	N/		14	04					
	LQ	N/		14	17					
	SS	N/		14	40					
	LR	Z/		15	23					
1/4	eiP	Z	04	00	35½	2.0	0.5	d		
	e	Z/	04	30	11			-		
	i	Z	04	28	45	2.0	0.5	+		ship moving in
	F	Z		30	43					the harbour
	iP	Z	05	21	01.5	151	0.5	d	SW 3½°	H = 05 20 06
	iS	N/		21	44.0					
	iP	Z	18	44	38.0	16	0.5	d	1½°	H = 18 44 10
	iS	E		44	57					
2/4	eiP	Z	00	27	06½	3.0	0.5	c	1½°	H = 00 26 40
	iS	N		27	26					
	e	Z/	02	43	55			-		
	eP	Z	11	01	59½	7.0	1.0	c		
	LQ:	N/		02	17					
	M	N/		02	26					
	e(P)	Z	17	57	41½	1.0	0.4	(d)		
3/4	e	Z/	05	00	54			-		
	eiP	Z	07	40	09	1.0	0.5	d		
	e	Z/	16	11	55			+		
	iP	Z	19	44	39.3	2.0	0.5	d	1½°	H = 19 44 17
	eiS	N		45	06					
	iP	Z	19	47	23.5	1.0	0.5	d	2½°	H = 19 46 48
	eiS	N		47	50					in coda
	iP	Z	19	52	46.5	2.0	0.5	d	2°	H = 19 52 12
	iS	N		53	12.5					
	e	Z/	20	15	33			-		
4/4	Strong microseismic activity.									
	iP	Z	02	30	38.5	10	0.5	d	1½°	H = 02 30 09
	iS	N		31	01.0					
	e	Z/	05	46	49			-		

					A mm	T sec.	GM	Dist.	Remarks
4/4 cont'd.									
E.W. Short Period Galvo. was out of alignment.									
	iP	Z	06	18 09.5			d	1°	H = 06 17 51
	iS	Zh		18 23.0					
Felt: Rabaul Int. III 04° 10'S. 152° 10'E									
	iP	Z	08	31 46.0			d	1½°	H = 08 31 19
	eiS	E/		32 06					
	iP?	Z	10	30 50.3	100	0.5	c	1½°	H = 10 30 27
	iS	Zh		31 08					
Felt: Rabaul Int. II 04° 10'S. 152° 10'E									
	iP	Z	11	38 35	47	0.5	c	1½°	H = 11 38 08
	iS	N		38 55					
	iP	Z	13	26 23.3	2.0	0.5	d		
	eiP	Z	13	56 27	43	0.5	d	1½°	H = 13 55 59
	iS	N		56 48					
	iP	Z	22	02 33.5	78	0.5	c	1½°	H = 22 02 11
	eiS	E/		02 54					
	iP	Zh	22	18 48	10	0.5	c	1½°	H = 22 19 20
	iS	Zh		19 09					(Double shock?)
	eP	Z	23	35 36½	2.0	0.5	d		
5/4	iP	Z	01	42 11.7	5.0	0.5	c	1½°	H = 01 41 45
	iS	N		42 32.0					
	e	Z/	09	11 40			-		
	e	Z/	12	28 28			+		
	iP	Z	19	01 07.5	49	0.5	d	5½°	H = 18 59 48
	eS	E/		02 09					
	iP	Z	21	54 40.5	7.0	0.5	c	2°	H = 21 54 10
	iS	N		55 03.5					
6/4	eP	Z	03	09 32	3.0	0.5	(d)	64°	Teleseism
	PcP	Z/		09 56					
	PP	Z/		12 55					
	PPP	Z/		14 23					
	eS	N/		19 07					
	LR	Z/		30 12					
	M	Z/		37 26					
	iP	Z	08	22 40.3	58	0.5	c	1½°	H = 08 22 10
	iS	N/		23 03.0					
	iP	Z	08	33 22.5	3.0	0.5	d	4½°	H = 08 32 18
	i	Z		33 50.5					
	iS	N		34 12					
	iP	Z	20	09 02.5	56	0.5	d	1½°	H = 20 08 34
	iS	E/		09 24.0					

					A mm	T sec.	GM	Dist.	Remarks		
6/4 cont'd.											
iP	Z	11	19	21.5	1.0	1.0	d	1¾°	H = 11	18	59
iS	N		19	44.0							
iP	Z	17	03	06.0	110	0.5	d	1½°	H = 17	02	40
iS	N/		03	25.5							
iP	Z	20	09	02.5	56	0.5	d	1½°	H = 20	08	34
iS	E/		09	24.0							

Seismograms interpreted by M. Gaiam

G. W. D'ADDARIO
Vulcanologist-in-Charge.

7th TO 13th APRIL, 1966

Date	Phase	Comp.	Time	A mm.	T sec.	CM.	DIST.	REMARKS
7/4	Strong microseismic activity. N. Long Period paper upside down.							
	iP	Z	00 19 07.4	1.0	0.5	c	19°	
	eS	N/	22 46					
	LQ	N/	22 53					
	SS	N/	23 11					
	SSS	N/	23 26					
	PcP	Z/	23 36					
	PR	Z/	23 47					
	PcS	Z/	27 17					
	e	Z/	05 21 02			+		
	iP	Z	09 49 52.5	15	1.0	c		
	iP	Z	12 35 15.5	17	0.5	d	1¾°	H=12 34 46
	iS	N/	35 37.5					
	iP	Z	15 03 47	2.0	0.5	d	2°	H=15 03 15
	e(S)	N/	04 11					
	iP	Z	16 27 10.4	4.0	0.5	d	2°	H=16 26 38
	e(S)	N/	27 35					
	iP!	Z	17 16 07.0	126	0.5	d	1½°	H=17 15 42
	iS	N/	16 25.5					
8/4	Strong microseismic activity.							
8/4	iP	Z	01 56 16	11	1.0	c	55°	
	PcP	Z/	57 15					
	eS	N/	02 04 01					
	LQ	N/	10 10					
	iP	Z	02 43 28.2	4.0	0.5	d		After shock
	iP	Z	10 33 30.5	2.0	0.5	d	11°	
	LQ	E/	34 51					
	eS	E/	35 02					
	SSS	E/	35 22					
	PcP	Z/	38 57					
	e	Z/	11 25 24					
	e	Z/	14 51 19½			+		
	iP	Z	15 54 10	86	0.5	d	1°	H=16 53 50
	iS	E	54 25					
	iP	Z	16 28 30.2	2.0	0.4	d		(volcanic)
	iP	Z	16 39 47.5	2.0	0.5	e	4¾°	H=16 38 36
	eS	N	40 42.5					

				A mm.	T sec.	GM.	DIST.	REMARKS
8/4 (cont'd)	iP	Z	18 20 07	1.0	0.5	d		
	iP	Z	20 29 29	2.0	0.5	e	1½°	H=20 29 02
	iP	Z	23 44 05.5	15	0.5	d	2°	H=23 43 35
	iS	N/	44 28.5					
9/4	Strong microseismic activity							
	iP	Z	01 21 33	26	0.5	d		
	e	Z/	03 31 25			+		
	iP	Z	11 05 51.3	1.0	0.5	e		
	LQ	N/	06 22					
	M	N/	06 41					
	iP	Z	12 32 03.0	17	0.5	d	1½°	H=12 31 39.7
	iS	E	32 20.5					
	iP	Z	14 49 57.0	6.0	0.5	d		(volcanic)
	e(P)	Z	14 53 26	2.0	0.5	e	19°	C.B.M.
	eS	N/	56 49					
	iP	Z	17 32 15.0	6.0	0.5	e		(volcanic)
	iP	Z	17 52 40	8.0	0.5	e		(volcanic)
	eP	Z	20 06 37	1.0	0.5	d	29°	
	eS	N/	11 20					
	iP	Z	21 36 36.5	5.0	0.5	d		(volcanic)
	iP	Z	22 16 18.8	21	0.5	d	1½°	H=22:15:53
	iS	N	16 38.2					
10/4	iP	Z	02 19 04.5	15	0.5	d		(volcanic)
	iP	Z	09 30 09.0	11	0.5	e		(volcanic)
	e	Z/	10 28 28					
	iP	Z	10 36 06.0	7.0	0.5	d		(volcanic)
	iP	Z	11 27 21.5	4.0	0.5	d		(volcanic)
	iP	Z	12 39 55	2.0	0.5	d	1½°	H=12 39 27
	iS	N	40 16					
	iP	Z	13 09 12.0	1.0	0.5	d		
	iP	Z	13 59 38.5	5.0	0.5	d		(volcanic)
	iP	Z	16 06 34	7.0	0.5	d		(volcanic)
	eP	Z	16 55 11	1.0	1.0	d		

					A mm.	$\frac{3}{T}$ sec.	GM.	DIST.	REMARKS
10/4 continued									
	iP	Z	17	49 05.5	15	0.5	e		(volcanic)
	iP	Z	19	23 04.0	6.0	0.5	d		(volcanic)
	iP	Z	20	43 50.5	7.0	0.5	d		(volcanic)
	iP	Z	21	11 59.0	5.0	0.5	d		(volcanic)
	e	Z/	23	09 21½					
11/4	iP	Z	01	51 54	8	0.5	d	1½°	H=01 51 28
	iS	N		52 13					
	iP	Z	02	54 09	15	0.5	d		(volcanic)
	iP	Z	06	19 36	5.0	0.5	d		(volcanic)
	iP	Z	07	00 40	5.0	0.5	d		(volcanic)
	iP	Z	07	13 53.0	10	0.5			(volcanic)
	iP	Z	09	32 15.5	9	0.5	d		(volcanic)
	iP	Z	10	07 51.0	10	0.5	d		(volcanic)
	iP	Z	10	31 46.5	17	0.5	d		(volcanic)
	iP	Z	11	28 35.0	13	0.5	d		(volcanic)
	iP	Z	12	02 20.3	101	0.5	d	S.E. 1°	H=12 02 01
	iS	N		02 35.0					
	iP	Z	14	44	16	0.5	d		(volcanic)
	e	Z/	18	07 44½			+		
	iP	Z	18	09 43.5	9	0.5	d		(volcanic)
	iP	Z	18	34 46	4.0	0.5	e		(volcanic)
	iP	Z	20	58 35.5	13	0.5	e	2½°	H=20 57 56
	iS	N		59 05.0					
12/4	iP	Z	01	31 09.5	6.0	0.5	e		(volcanic)
	iP	Z	01	50 36	7.0	0.5	d		(volcanic)
	iP	Z	06	08 48.5	28	0.5	e		
	iP	Z	10	16 26	3.0	0.5	d		(volcanic)
	iP	Z	11	23 05.0	5.0	0.4	e	2°	H=11 22 32
	iS	N		23 30.0					
	iP	Z	11	39 45.5	10	0.5	d		(volcanic)

				A mm.	T sec.	GM.	DIST.	REMARKS
12/4 continued								
iP	Z	12 18 17.5		5.0	0.4	c		(volcanic)
iP	Z	12 34 15.5		6.0	0.5	d		(volcanic)
iP	Z	14 14 40.5		22	0.5	c	1½°	H=14 14 16
iS	N		14 59.0					
iP	Z	14 39 31		10	0.5	d		(volcanic)
iP	Z	20 35 47.5		4.0	0.4	c		(volcanic)
iP	Z	23 20 09.0		2.0	0.5	c	20°	
eS	N/		24 05					
e	Z/	23 58 03				+		
13/4								
iP	Z	01 04 49.5		109	0.5	c	2½°	H=01 04 12
iS	E/		05 18.0					
iP	Z	01 59 50.0		6.0	0.5	d	3°	
eS	E/	02 00 24						H=01 59 05
iP	Z	02 37 07.5		10	0.5	d		(volcanic)
e	Z/	04 05 08				+		
eP	Zh	08 21 30½					1½°	H=08 21 08
iS	N		21 51.0					
iP	Z	09 18 06.0		11	0.5	d	1°	H=09 17 49
iS	N		18 18.0					
iP	Z	10 10 38.0		7.0	0.5	d		(volcanic)
iP	Z	10 46 43.0		8.0	0.5	d		(volcanic)
iP	Z	12 10 24.0		3.0	0.5	d		(volcanic)
iP	Z	17 00 18		1.0	0.4	c		(volcanic)
iP	Z	19 50 32.0		8.0	0.5	d		(volcanic)
iP	Z	21 42 25.5		12	0.5	d	1½°	H=21 41 59
iS	N		45.5					

14th April - 20th April 1966.

						A mm	T sec	GM	Dist.	Remarks
14/4	eP	Z	03	40	11½	2.0	0.5	d		
	iP	Z	04	59	16.5	155	0.5	c	1¾°	H = 04 58 38
	iS	N/		59	38.0					
	Felt: Rabaul Int. II 04°10'S, 152°10'E									
	iP	Z	08	10	38.0	2.0	0.8	d		
	Felt: Telefomin Int. IV 05°10'S, 141°35'E									
	iP	Z	08	16	52.5	16	0.5	d	1°	H = 08 16 35
	iS	E		17	05.0					
	iP	Z	11	10	21.0	2.0	0.5	c	1½°	H = 11 09 58
	iS	E		10	38.5					
	eP	Z	17	09	40	1.0	1.0	d		
	Felt: Telefomin Int. IV-V 05°10'S, 141°35'E									
	iP	Z	19	16	13.5	76	0.5	c		
	iP	Z	19	58	56.0	4.0	0.8	d		
	i	Z		59	55.0					
	iP	Z	20	19	02.5			d	1°	H = 20 18 40
	iS	N/		19	19.0					
	During the day 10 shocks volcanic in origin were recorded T 0.5 A 8-20									
15/4	e	Z/	03	01	25½			-		
	iP	Z	04	33	25.3	12	0.5	d	2°	H = 04 32 53
	iS	E		33	49.5					
	e	Z/	06	55	51½			+		
	iP	Z	08	06	41.0	33	0.5	c	1°	H = 08 06 25
	eS	E		06	53					
	iP	Z	08	26	30.7	97	0.5	d	¾°	H = 08 26 15
	iS	N/		26	41.0					
	iP	Z	08	48	52.0	4.0	0.5	d		
	iP	Z	09	48	27.0	31	0.5	d	1¾°	H = 09 47 58
	iS	E		48	49.5					
	During the day 19 shocks volcanic in origin were recorded T 0.5 A 9-18									
16/4	eP	Z	01	38	53½	1.0	0.5	d		Teleseism
	iP	Z	02	30	20.0	9.0	0.5	c		
	iP	Z	09	46	57.0	70	0.5	d	1½°	H = 09 46 27
	iS	N/		47	19.5					

						A mm	T sec	GM	Dist.	Remarks
16/4 cont'd										
	e	Z/	10	20	06			-		
	iP	Z	11	58	30.0	38	0.5	d	1½°	H = 11 58 04
	iS	N/		58	49.5					
	During the day 11 shocks volcanic in origin were recorded T 0.5 A 7									
17/4	e	Z/	06	53	08			-		
	e	Z/	08	41	28			-		
	iP	Z	15	54	41.3	7.0	0.5	d	2½°	H = 15 54 04
	iS	N		55	09.0					
	During the day 20 shocks volcanic in origin were recorded T 0.5 A 5-11									
18/4	eP	Z	02	47	19½	2.0	0.5	d		
	e	Z/	09	13	23			-		
	iP	Z	15	24	39.5	8.0	0.5	d		
	i	Z		25	32.0					
	During the day 21 shocks volcanic in origin were recorded T 0.5 A 8-18									
19/4	iP	Z	00	05	44.5	7.0	0.5	d	1½°	H = 00 05 22
	iS	N		06	05.0					
	iP	Z	00	08	48.5	5.0	0.5	d	1½°	H = 00 08 20
	iS	N		09	09.3					
	iP	Z	12	01	48.5	8.0	0.5	d		
	iP	Z	13	02	02.0	7.0	0.5	d	2¼°	H = 13 01 26
	iS	N		02	29.0					
	iP	Z	19	08	52.5	6.0	0.5	d	2°	H = 19 08 20
	iS	N		09	17.0					
	e	Z/	19	37	38			+		
	iP	Z	21	47	14.0	112	0.5	d	¾°	H = 21 46 59
	iS	E/		47	25.0					
	During the day 10 shocks volcanic in origin were recorded T 0.5 A 6-20									
20/4	iP	Z	01	44	38.5	35	0.5	c		C.B.M.
	iP	Z	02	38	00.8	10	0.8	d	24°	
	eS	E/		42	20					
	LQ	E/		42	44					
	SS	E/		43	05					
	LR	Z/		44	57					
	PcS	Z/		45	25					
	iP	Z	03	40	26.0	40	0.5	c	1¾°	H = 03 39 57
	iS	E		40	48.0					

					A mm	T sec	GM	Dist.	Remarks
20/4 cont'd									
eP	Z	05	38	05	1.0	0.5	d		
eP	Z	06	05	46½	4.0	1.0	d	24°	
eS	E/		10	07					
LQ	E/		10	36					
SS	E/		10	56					
LR	Z/		11	13					
iP	Z	08	08	50.0	80	0.5	c	2°	H = 08 08 18
iS	N/		09	14.0					
iP	Z	14	06	34.5	4.0	1.0	d		
e	Z/	14	32	58			+		
iP	Z	16	31	26.3	13	1.0	c	23°	
PP	Z/		31	54					
PPP	Z/		32	06					
eS	E/		35	43					
LQ	E/		36	01					
SS	E/		36	20					
LR	Z/		36	57					
ScP	E/		39	04					
iP	Z	21	19	40.5	22	0.5	c	½°	H = 21 19 30
iS	E/		19	48.0					

During the day 16 shocks volcanic in origin were recorded T 0.5 A 5-20

Seismograms interpreted by M. Gaiam

G. W. D'ADDARIO
Vulcanologist-in-Charge.

21st APRIL TO 27th APRIL 1966

				A mm	T	Ground Motion	Dist.	Remarks
21/4	iP	Z	05 29 58.0	43	0.5	d	1°	
	iS	E	30 11.5					H=05 29 40
	iP	Z	07 04 11.4	42	0.5	e	1½°	H=07 03 45
	iS	N	04 31.0					
	iP	Z	14 52 10	5.0	1.0	d		
	i	Z	52 12.5					
	eP	Z	15 53 09	1.0	1.0	d	41°	
	i	Z	53 12					
	eS	E/	59 08					
	iP	Z	19 22 49.0	23	0.5	e	1½°	H=19 22 22
	iS	N	23 09.0					
	iP	Z	22 45 35.0			e		

Felt: Rabaul Int. I 04°10'S, 152°10'E

During the day 19 shocks, volcanic in origin, were recorded T0.5 A 4-14.

22/4	e	Z/	03 36 29			+		
	iP	Z	08 39 18.0	12	0.5	d	1½°	H=08 38 56
	iS	N	39 34.5					
	eP	Z	13 06 08½	1.0	1.0	d		
	eiP	Z	18 15 24	1.0	0.5	d		
	e	Z/	23 39 05					

During the day 19 shocks, volcanic in origin, were recorded T 0.5 A 7-18

23/4	eP	Z	00 15 40½	4.0	0.7	d	50°	New Zealand
	i	Z	15 46					
	PeP	Z/	16 47					
	SeP	Z/	20 53					
	eS	E/	22 36					
	LR	Z/	30 06					
	iP	Z	06 57 31.5	5.0	0.5	d	43°	
	eS	N/	07 03 51					
	iP	Z	08 55 22.0	58	0.5	e	½°	H=08 55 11
	iS	N	55 30.0					
	iP	Z	09 02 51.0	26	0.7	d	47°	
	PeP	Z/	04 20					
	PP	Z/	04 50					
	PeS	Z/	08 16					
	eS	N/	09 33					

During the day 15 shocks, volcanic in origin, were recorded T 0.5 A 7-15

				A mm²	T	Ground Motion	Dist.	Remarks
24/4	iP Z	06 50 10.5		5.0	0.5	d	1½°	H=06 49 46
	iS N	50 29.0						
	iP Z	18 29 19		11	0.5	d		
	iP Z	20 56 56.5		3.0	0.5	d	4°	H=20 55 54
	LQ N/	57 26						
	eS N/	57 44						
	SS N/	57 55						
	LR Z/	58 08						
	During the day 6 shocks, volcanic in origin, were recorded T 0.5 A 5-10							
25/4	iP? Z	04 58 47.8		150	0.5	d s.w	4°	H=04 57 49
	eS E/	59 33						
	iP Z	10 03 40.0		22	0.5	e	1½°	H=10 03 13
	iS N	03 59.8						
	iP Z	10 47 47.5		2.0	0.5	d		
	During the day 26 shocks, volcanic in origin, were recorded T 0.5 A 8-20							
26/4	iP Z	08 38 29.0		18	0.5	e	1°	C.B.M. H=08 38 09
	iS N/	38 44.0						
	iP Z	09 54 41.0		20	0.5	d	1°	H=09 54 21
	iS N/	54 56.0						
	During the day 15 shocks volcanic in origin were recorded T 0.5 A 6-16							
27/4	iP Z	04 52 35.6		20	0.5	e	½°	H=04 52 25
	iS E/	52 43.0						
	iP Z	11 32 43.5		30	0.5	d	3½°	H=11 31 48
	eS N/	33 26						
	iP Z	15 01 33.0		7.0	1.0	e		
	During the day 12 shocks volcanic in origin were recorded T 0.5 A 10-20							

TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAUL
Earthquake Analysis Rabaul -- RAB

Instruments at Rabaul Station

World Wide Standardised Seismograph.

E.P. - Z Maximum Magnification 12,500 at 0.6 sec.
S.P. - N & E Maximum Magnification 6,250 at 0.6 sec.
L.P. - Z/N/E/ Maximum Magnification 750 at 25 sec.

Benioff Mylon two-component Quart Seismograph.

L.P. - No Static Magnification 12 To = 3.6 Air Damping 10:1
L.P. - Eo Static Magnification 10 To = 3.6 Air Damping 10:1
S.P. - Sn Helicorder, Geotech Model 2484, coupled to
Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek
Auxiliary Station - SUL

Benioff Small Model three-component Seismograph Zr Nr Er.
Sensitivity set at Zr 20%, Nr, Er 40%.
"c" or "d" indicates initial compression or dilatation of the ground , respectively, from a wave of the compressional type.
"+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N,E,S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.
When readings are given with a decimal figure they are to 1/10 seconds, other readings have been made to the nearest half second.

Ex. Sx Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mezoelli Scale of 1931.

A = Peak to Trough trace amplitude in millimetres.
T = Period in seconds.
C.E.M. = Confused by microseisms.
G.M. = Ground Motion
Δ = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

28th April - 4th May 1966.

						T sec	A mm	GM	Dist.	Remarks
28/4	iP	Z	00	53	44.3	1.0	3.0	c		
	eP	Z	01	23	59½	1.0	4.0	d		
	iP	Z	01	53	06.5	1.0	3.0	d		
	eP	Z	05	29	03½	0.5	1.0	d		
	iP	Z	08	47	23.0	0.5	5.0	d	1°	H = 08 47 05
	eP	Z	16	44	14	1.0	2.0	d		Telesesism
	i	Z		45	50.5					
	iP	Z	19	56	07.5	0.5	4.0	d	1°	H = 19 55 47
	iS	E		56	23.2					
	During the day 14 shocks volcanic in origin were recorded TO.5 A 5-11									
29/4	iP	Z	05	42	12.0	0.5	6.0	c	1½°	H = 05 41 46
	iS	N		42	31.5					
	iP	Z	13	41	54.5	0.5	10	d	2½°	H = 13 41 12
	iS	N		42	27.2					
	eiP	Z	21	56	27½	0.5	1.0	d		
	From 29th April no harmonic shocks recorded									
30/4	iP	Z	03	29	05.8	0.5	7.0	c	1½°	H = 03 29 41
	iS	E		29	25.5					
	e	Z/	06	04	22			+		Traces
	e	Z/	13	47	45			+		Traces
	iP	Z	20	35	25.8	0.5	28	d	½°	H = 20 35 12
	iS	E		35	36.0					
1/5	e	Z/	01	14	15½			-		
	iP	Z	10	51	18.0	0.5	25	dESE	1½°	H = 10 50 51.5 New Ireland deep shock. h=100 km ; Epicentre approximately 5° South 153° East
	iS!	N/		51	38.0					
	eP	Z	12	59	27.5				10°	
	LQ	N/	13	01	19					
	S	N/		01	26					
	eP	Z	13	16	59.7				10°	
	LQ	N/		18	53					
	S!	N/		18	59					
	e	Z	13	50	25			+		Traces

						T sec	A mm	GU	Dist.	Remarks
1/5 cont'd										
	iP	Z	16	41	53	0.8	3.0	c	19°	
	iS	N/		45	26					
	iPcP	Z		46	21					
	(PcS)	E/		50	03					
	iP	Z	19	49	35.4	0.5	3.5	d	1½°	H = 19 49 06
	iS	E		49	57.7					
	iP	Z	19	50	22.0	0.6	4.0	d	1½°	H = 19 49 56
	iS	E/		50	41.6					in coda of preceeding
	iP	Z	20	16	32.6	0.5	13	d	1½°	H = 20 16 05
	iS	N/		16	53.5					
2/5	iP	Z	01	17	46.5	0.5	31	d	1¾°	H = 01 17 17
	iS	N		18	08.5					
	iP	Z	02	57	06.4	0.4	6.0	d	1°	H = 02 56 48
	iS	N		57	19.0					
	iP	Z	03	30	08.0	0.5	19	c	2°	H = 03 29 37
	eS	N/		30	31					
	iP	Z	04	12	16.5	0.5	8.0	d	1½°	H = 04 11 49
	iS	E		12	37.5					
	iP!	Z	09	53	35.2			eNE	3°	H = 09 52 49
	iS	E/		54	10.0					W. New Britain Planet Deep.
	Felt:									
	Walindi Int. IV 05°25'S, 150°05'E									Epicentre approx.
	Talasea Int. III 05°20'S, 150°05'E									07° S, 150° E
	Palmalmal Int. III 05°37'S, 151°28'E									
	Cape Gloucester Int. III 05°25'S, 148°25'E									
	Kilenge Int. II 05°30'S, 148°20'E									
	Rabaul Int. II 04°10'S, 152°10'E									
	iP	Z	11	24	45.0	0.5	52	c	3°	H = 11 23 58
	iS	E/		25	21.0					
	e	Z/	16	59	37½			-		
3/5	iP	Z	00	06	49.2	0.5	25	d	1½°	H = 00 06 25
	iS	N		07	07.0					
	iP	Z	11	40	44.3	0.5	21	d	2½°	H = 11 40 03
	eS	N		41	15½					
	iP	Z	11	58	53.0	0.5	12	d	2°	H = 11 58 21
	iS	N		59	17.5					
	eP	Z	13	13	11½	0.6	2.0	d		
	eP	Z	18	47	46½	0.8	1.2			
	e(S)	E/		51	16					
	e	Z/		52	20					
	e	N/		56	19½					

						T sec	A mm	GM	Dist.	Remarks
3/5 cont'd										
	iP	Z	19	35	39.4	0.5	8.0	c	1°	H = 19 35 20
	iS	E		35	53.2					
	iP	Z	19	37	57.2	0.5	42	d	2½°	H = 19 37 17
	iS	N		38	27.5					in coda of preceeding
4/5	iP	Z	07	13	20.0	0.5	83	c	1½°	H = 07 12 52
	iS	N		13	41.0					
	iP	Z	09	20	27.0	0.5	4.0	d	1½°	H = 09 19 59
	iS!	N		20	48.0					
	eP	Z	17	09	54½			(c)		
	iP	Z	18	17	21.6	0.5	35	d	1½°	H = 18 16 55
	iS	E		17	42.0					

Seismograms interpreted by M. Gaiam
E. Revian

G. W. D'ADDARIO
Vulcanologist -in- Charge.

TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAUL

Earthquake Analysis Rabaul - RAB

Instruments at Rabaul Station

World Wide Standardised Seismograph.

S.P. - Z Maximum Magnification 12,500 at 0.6 sec.
S.P. - N & E Maximum Magnification 6,250 at 0.6 sec.
L.P. - Z,N,E, Maximum Magnification 750 at 25 sec.

[illegible] Three Component [illegible] Seismograph.

S.P. - Nc Static Magnification 12 To = 1.5 Air Damping 10:1
S.P. - Ec Static Magnification 10 To = 1.8 Air Damping 10:1
S.P. - Zn Helicorder, Geotech Model 2484, coupled to
Seismometer, Geotech Model 4681A.

Instruments at Balbour Creek
Auxiliary Station - BUL

Benioff Small Model three-component Seismograph Zr Nr Er.
Sensitivity set at Zr 20%, Nr, Er 10%.

"C" or "D" indicates initial compression or dilatation of the ground, respectively, from a wave of the compressional type. "U" or "D" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, S, E and W indicates that the initial horizontal direction of the ground motion was towards the north, south, east or west respectively.

When readings are given with a decimal figure they are to 1/10 seconds, other readings have been made to the nearest half second.

Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

a - Peak to Trough trace amplitude in millimetres.
T - Period in seconds.
C.B.M. - Confused by microseisms.
G.M. - Ground Motion
Δ - Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

5th May - 11th May 1965.

						T sec	A mm	GM	Dist.	Remarks
5/5	e	Z/	05	48	14			-		
	e	Z/	06	48	39			-		
	iP	Z	14	28	56.5	0.5	3.0	d	43°	
	iPcP	Z/		30	47.0					
	iS	E/		35	04.0					
	iPS	Z/		35	19.0					
	LQ	N/		38	36					
	LR	Z/		40	45					
	e	Z/	17	07	09			-		
6/5	eP	Z	04	00	25			(d)		
	e	Z/	07	11	37			-		
	iP	Z	07	14	11.7	0.5	130	c	3°	H = 07 13 22
	eS	N/		14	50					
	iP	Z	08	28	34.0	0.5	10	d	1½°	H = 08 28 08
	iS	N		28	53.5					
	iP	Z	16	12	49	0.5	4.0	c		
	iP	Z	17	14	34.5	0.4	10	c	1½°	H = 17 14 12
	iS	E		14	55.0					
	e	Z/	20	12	43			-		
7/5	Lightning damage to console. Secondary time used. Secondary time OK to 082250 faulty until 080051.									
	e	Z/	03	59	37			-		
	iP	Z	09	54	11	0.5	6.0	d		
	i	Z		54	18.5					
	iP	Z	10	53	55.0	0.5	3.0	d		
	i	Z		54	15.0					
	e	Z/	17	37	29			-		
8/5	e	Z/	01	48	30			+		
	iP	Z	03	00	31.0	0.5	35	d	1½°	H = 03 00 06
	iS	E		00	50.0					
	e	Z/	08	53	36			+		
	iP	Z	12	31	03	0.7	2.0	c		
	iP	Z	13	33	36	0.5	10	c	1½°	H = 13 33 11
	iS	E		33	55.0					
	iP	Z	16	05	22.5	0.5	9.0	d	1°	H = 16 05 03
	iS	N		05	37.0					

				T sec	A mm	GM	Dist.	Remarks
9/5	No L.P. records. No records from 082224 to 090620.							
	iP	Z	08 00	16.5	0.5	16	c	2° H = 07 59 42
	iS	E	00	42.5				
	iP	Z	17 19	42.5	0.5	18	c	2° H = 17 19 10
	iS	N	20	07.0				
10/5	Strong microseismic activity. No records from 092232 to 100515.							
	iP	Z	15 45	32.3	0.5	74	c	1° H = 15 45 16
	iS	Zh	45	44.5				
11/5	No L.P. records. No records from 102206 to 110541. Secondary time used after 0611 hours.							
	eiP	Z	14 26	52½	0.5	4.0	c	
	iP	Z	14 35	57.0	1.0	3.5	c	
	iP	Z	20 03	53.0	0.5	11	d	¾° H = 20 03 38
	iS	N	04	04.0				
	iP	Z	20 29	34.5	0.5	19	d	1½° H = 20 29 09
	iS	N	29	53.0				
	eP	Z	21 48	51½	0.8	4.0	d	
	i	Z	53	14.0				

Seismograms read by M. Gaiam

G.W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA AND NEW GUINEA

VOLCANOLOGICAL OBSERVATORY RABAUL

Earthquake Analysis Rabaul - RAB

Instruments at Rabaul Station

World Wide Standardised Seismograph.

S.P. - Z Maximum Magnification [illegible] at 0.6 sec.

S.P. - N & E Maximum Magnification 3,250 at 0.6 sec.

L.P. - Z/N/E Maximum Magnification 750 at 25 sec.

Strong Motion two component Omori Seismograph.

L.P. - No Static Magnification 12 To = 3.6 Air Damping 10:1

L.P. - Eo Static Magnification 10 To = 3.8 Air Damping 10:1

S.P. - Zh Helicorder, Geotech Model 2484, coupled to
Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek

Auxiliary Station - SUL

Benioff Small Model three-component Seismograph Zr Nr Er.
Sensitivity set at Zr 20%, Nr, Er 10%.

"c" or "d" indicates initial compression or dilatation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

When readings are given with a decimal figure they are to 1/10 seconds, other readings have been made to the nearest half second.

Pg, Sg Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

A = Peak to Trough trace amplitude in millimetres.

T = Period in seconds.

[illegible] = Confirmed by microseisms.

G.M. = Ground Motion.

Δ = Distance in central angle degrees.

G. W. D'ADDARIO

Vulcanologist-in-Charge.

12th May - 18th May 1966.

						T sec	A mm	GM	Dist.	Remarks		
12/5	iP	Zh	01	41	16.3			d	3°	H = 01	40	30
	eS	Zh		41	52							
	iP	Z	08	38	05.4	0.5	6.0	c	1¼°	H = 08	37	43
	iS	N		38	22.5							
	iP	Z	12	26	12.2	0.8	3.8	d				
	iP	Z	16	06	51.0	0.5	50	d	1½°	H = 16	06	23
	iS	E		07	12.2							
	iP	Z	19	12	12.0	0.5	2.8	d	1½°	H = 19	11	45
	iS	N		12	32.0							
13/5	e	Z/	11	07	10			-				
	e	Z/	19	23	43			-				
14/5	e	Z/	05	08	28			-				
	e	Z/	17	15	51			-				
	iP	Z	17	27	21.6	0.5	9.0	c	1½°	H = 17	26	57
	iS	N		27	40.0							
	iP!	Z	19	36	27.7	0.4	27	c	1½°	H = 19	36	04
	iS	N		36	45.5							
15/5	iP!	Z	03	38	29.7	0.5	74	dSW	1½°	H = 03	38	02
	iS	E/		38	46.5							
	iP	Z	04	37	11.0	0.4	17	d	1½°	H = 04	36	41
	iS	E		37	33.5							
	iP	Z	14	09	22.5	0.5	12	d	1½°	H = 14	09	00
	iS	N		09	43.0							
	iP	Z	14	56	17.3	1.0	2.0	d	61½°			
	eS	N/	15	04	36½							
	iP	Z	18	51	14.8	0.5	12	c	¾°	H = 18	50	59
	iS	N		51	25.5							
16/5	eiP	Z	00	40	14	0.5	5.5	c	1½°	H = 00	39	46
	iS	N		40	35.0							
	eP	Z	02	51	29	0.8	1.0	d	23°			
	eS	N/		56	05							
	eLQ	N/		56	28							
	eSS	E/		56	49							
	eLR	Z/		57	38							
	iP	Z	12	31	31.0	0.5	3.8	c	1¼°	H = 12	31	08
	iS	N		31	48.0							
	iP	Z	13	08	03.0	0.5	6.0	d	1½°	H = 13	07	36
	iS	N		08	23.0							

						T sec	A mm	GM	Dist.	Remarks
16/5 cont'd										
	iP	Z	23	43	14.0	0.5	31.0	d	1¼°	H = 23 42 51
	eS	E/		43	31					
17/5	iP	Z	00	13	45.0			d		overlapped
	iP	Z	00	50	37.0	0.5	19.0	d	3½°	H = 00 49 46
	eS	N/		51	20					
	iP	Z	02	24	00.5	0.4	9.0	d	1½°	H = 02 23 35
	iS	N		24	19.5					
	eiP	Z	05	24	47.5	0.5	39.0	d	3°	H = 05 23 58
	eS	N/		25	25					
	eiP	Z	05	40	46			(c)	3°	H = 05 39 58
	iS	E/		41	22.0					C.B.J.
	Felt: Rabaul Int. I 04°10'S, 152°10'E									
	iP	Z	15	51	41.0	0.4	4.5	d	1½°	H = 15 51 13
	iS	N		52	02.2					
	e	Z/	17	52	42			-		
	i	Z	21	13	12.0	0.5	4.2	d		ship moving in the
	F	Z		20	13					harbour
18/5	iP	Z	00	15	42.0	0.5	46.0	c	¾°	H = 00 15 27
	iS	N		15	53.0					
	e	Z/	00	17	07			-		
	e	Z/	07	30	29½			-		
	e	Z/	07	57	33			+		
	iP	Z	08	51	42.0	0.5	18.5	d	1¼°	H = 08 51 20
	eS	N/		51	58					
	eiP	Z	13	37	25	0.5	1.0	d		
	iP	Z	20	06	36.5	0.5	18.0	d	1½°	H = 20 06 14
	iS	N		06	57.0					
	Omission from 16/5:									
	i	Z	02	47	51	0.7	4.0	c		ship moving in the
	F	Z		48	40					harbour.

Seismograms read by M.Gaiam
E.Ravian

G.W. D'ADDARIO
Vulcanologist-in-Charge

19th May - 25th May, 1966.

						T sec	A mm	GM	Dist.	Remarks		
19/5	eP	Z/	07	17	25			(c)	69°			
	eS	E/		26	27							
	ePS	Z/		26	55							
	ePPS	Z/		27	07							
	eScS	N/		27	21							
	eLQ	E/		35	19							
	eiP	Z	11	38	55½	0.5	78	d	1½°	H =	11	38 26
	iS	N/		39	18.0							
	iP	Z	14	21	15.0	0.5	9.0	d	1½°	H =	14	20 27
	iS	N		21	36.0							
	iP	Z	17	09	44.0	0.5	4.0	d	2°	H =	17	09 09
	iS	N		10	10.5							
	iP	Z	17	12	00.3	0.5	4.8	d	2½°	H =	17	11 23
	iS	N		12	27.0							
20/5	e	Z/	03	11	09			+				
	iP	Z	05	22	18.0	0.5	31.0	c	1½°	H =	05	21 51
	iS	N		22	38.0							
	eP	Z	09	19	02½	1.0	3.5	d	19°			
	eS	E/		22	31							
	eLQ	N/		22	39							
	eLR	Z/		23	39							
	ePcS	Z/		27	09							
	iP	Z	11	57	53.0	0.4	5.0	d	½°	H =	11	57 38
	iS	N		58	03.5							
	e	Z/	12	08	45			+				
	iP	Z	18	09	49.0	1.0	1.5	d				
21/5	Strong microseismic activity.											
	e	Z/	00	38	10			-				
	iP	Z	04	01	17.2	0.4	5.0	c	1½°	H =	04	00 53
	iS	N		01	35.5							
	iP	Z	07	57	50.8	0.4	9.0	d	1½°	H =	07	57 27
	iS	N		58	10.5							
	e	Z/	11	09	21			-				
	e	Z/	18	55	28			+				
	iP	Z	19	05	43.8	0.5	50.8	d	1½°	H =	19	05 16
	iS	E/		06	04.5							
	iP	Z	20	42	42.4	0.5	24.2	d	1°	H =	20	42 22
	eS	N/		42	57							

					T sec	A mm	GM	Dist.	Remarks
22/5	Strong microseismic activity.								
	iP	Z	02	53 22.3	0.5	46.0	d	4½°	H = 02 52 12
	eS	N/		54 16					Solomon Islands.
	Felt: Buin Int. IV-V 06°51'S, 155°44'E								
	iP	Z	03	26 30.5	0.5	34.0	d	5½°	H = 03 25 11
	eS	N/		27 32					Solomon Islands.
	Felt: Buin Int. III 06°51'S, 155°44'E								
	e	Z/	08	28 33			+		
	eiP	Z	11	12 38	0.5	14.0	d	2°	H = 11 12 04
	eS	N/		13 04					
	iP	Z	13	10 31.0	0.4	39.0	d	¾°	H = 13 10 16
	eS	N/		10 42					
23/5	Strong microseismic activity. Secondary Time from 230048 - 230118.								
	eiP	Z	00	04 02½			c	5½°	H = 00 02 43
	eS	N/		05 04					C.B.M.
	eLR	Z/		05 26					
	M	Z/		09 19					
	e	Z/	06	10 40			-		C.B.M.
	eL	Z/		17 51					
	eP	Z/	08	46 44			+		C.B.M.
	e(S)	E/		55 12					
	e	Z/	12	37 14			-		
	eP	Z/	14	26 49			d	19°	C.B.M.
	eS	E/		30 17½					
	eLQ	E/		30 24					
	eLR	Z/		31 23					
	iPcS	Z/		34 55.0					
	iScS	E/		39 33.0					
	iP	Z	16	13 28	0.5	14.0	d		C.B.M.
	eiP	Z	16	20 08½	0.5	9.0	d		C.B.M.
	eiP	Z	21	01 56½	0.4	2.5	d	4°	H = 21 00 48
	eS	N		02 49					
	iP	Z	21	56 11.5	0.5	54.0	d	½°	H = 21 55 58
	iS	N/		56 21.5					
	iP	Z	22	29 08.6	0.5	25.0	d	¾°	H = 22 28 53
	iS	N/		29 19.0					
24/5	Strong microseismic activity.								
	eiP	Z	01	16 13	0.5	5.0	d	4½°	H = 01 15 06
	eS	E/		17 04					
	Felt: Kieta Int. III 06°13'S, 155°38'E								
	iP	Z	04	23 08.0	0.4	20.0	c	1½°	H = 04 22 40
	eS	N/		23 29					

						T sec	A mm	M	Dist.	Remarks		
24/5 cont'd.												
	e	Z/	08	15	09			-				
	iP	Z	11	54	21.0	0.4	4.5	d	1½°	H = 11	53	57
	iS	N		54	39.0							
	iP	Z	18	00	08.5	0.5	1.5	d	1½°	H = 17	59	44
	iS	N		00	27.0							
	e	Z/	21	06	18			-				
25/5	iP	Z	07	43	07.8	0.5	74	d	1½°	H = 07	42	42
	eS	N/		43	27							
	iP	Z	08	33	44.0	0.5	2.0	d	23°			
	ePP	Z/		33	59							
	ePPP	Z/		34	11							
	eS	N/		37	35							
	eLQ	N/		37	57							
	eSS	N/		38	19							
	eLR	Z/		39	09							
	eScP	N/		40	59							
	iP	Z	10	22	46.0	0.5	9.0	d	1½°	H = 10	22	22
	iS	N		23	04.0							
	eP	Z	12	12	21½	1.0	1.5	d	25½°			
	ePP	Z/		12	58							
	eS	N/		16	44							
	eLQ	N/		17	26							
	eSS	N/		17	45							
	eLR	Z/		18	41							
	eScP	N/		19	33							
	iP	Z	13	29	41.0	1.0	12.5	c	51°			
	ePcP	Z/		30	52							
	ePP	Z/		31	33							
	eS	E/		36	49							
	eScS	N/		39	23							
	iP	Z	16	52	53.0	0.5	3.0	d	¾°	H = 16	52	38
	iS	N		53	04.0							
	iP	Z	18	30	31.8	0.5	3.5	d	¾°	H = 18	30	17
	iS	N		30	43.0							

Seismograms read by M. Vaiam
E. Kavian

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TERRITORY OF PAPUA AND NEW GUINEA.
VULCANOLOGICAL OBSERVATORY RABAUL.

Earthquake Analysis Rabaul Station - RAB.

Instruments at Rabaul Station

World Wide Standardised Seismograph.

Z.P. - Z Maximum Magnification 12,500 at 0.6 sec.

S.P. - N & E Maximum Magnification 6,250 at 0.6 sec.

L.P. - Z/N/E/ Maximum Magnification 750 at 25 sec.

Strong Motion two-component Omori Seismograph.

L.P.- No Static Magnification 12 To = 3.6 Air Damping 10:1

L.P.- Eo Static Magnification 10 To = 3.8 Air Damping 10:1

S.P.- Zh Helicorder, Geotech Model 2484, coupled to Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek
Auxiliary Station - SUL

Benioff Small Model three-component Seismograph Zr Nr Er. Sensitivity set at Zr 20%, Nr, Er 10%.

"c" or "d" indicates initial compression or dilatation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

When readings are given with a decimal figure they are to 1/10 seconds, other readings have been made to the nearest half seconds.

Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

A = Peak - to - Trough trace amplitude in millimetres.

T = Period in seconds.

C.B.M. = Confused by microseisms.
G.M. = Ground Motion.
Δ = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

26th May - 1st June 1966.

						T sec	A mm	GM	Dist.	Remarks
26/5	e	Z/	04	43	04			-		
	iP	Z	06	27	53.0	0.5	29.5	d	1½°	H = 06 27 26
	eS	E/		28	13					C.B.M.
	iP	Z	06	30	36.5	0.5	36.5	d	1½°	H = 06 30 21
	iS	N/		30	55.5					C.B.M.
	iP	Z	09	44	54.0	0.5	4.0	c	1½°	H = 09 44 25
	eS	N		45	15.5					
	iP!	Z	11	38	44.3	0.5	142	c	1½°	H = 11 38 22
	iS	N/		39	05.0					
	Felt: Rabaul Int. II 04°10'S. 152°10'E									
	e	Z/	12	11	39			-		
	iP	Z	17	33	48.2	0.5	4.5	d	2°	H = 17 33 16
	eS	N		34	12					
	e(P)	Z	18	36	37½	0.8	1.0	c	19½°	
	eS	E/		41	44					
	iP	Z	20	12	38.7	0.5	4.2	c	2°	H = 20 12 07
	eS	N		13	03					
	e	Z/	23	17	28			-		
	Strong microseismic activity.									
27/5	iP	Z	00	49	22.0	0.5	43.0	d	1½°	H = 00 48 59
	iS	E		49	39.2					C.B.M.
	e	Z/	02	02	24			+		
	iP	Z	09	13	02.3	0.5	2.0	c	3°	H = 09 12 19
	eS	N		13	35					
	e	Z/	11	05	49			+		
	iP	Z	12	44	49.0	0.5	4.5	d		C.B.M.
	e	Z/	15	14	46			+		
	Strong microseismic activity.									
28/5	eP	Z	00	11	35½	0.6	3.0	c	42½°	
	eS	N/		17	43					
	ePS	Z/		17	48					
	eSS	N/		20	50					
	eLQ	N/		21	14					
	iScS	N/		21	23.0					
	eLR	Z/		23	15½					
	e	Z	02	14	35½	0.5	4.0			Harmonic disturbance
	e	Z	02	21	12	0.5	4.0			Harmonic disturbance
	e	Z	02	26	23	0.5	4.0			Harmonic disturbance
	e	Z/	05	40	35			-		

						T sec	A mm	GM	Dist.	Remarks
28/5 cont'd.										
	iP	Z	22	24	10.3			dSE	1½°	H = 22 23 45
	iS	N/		24	29.5					
	Strong microseismic activity.									
29/5	iP	Z	00	47	27.5	0.5	26.0	d	1½°	H = 00 47 02
	eS	E/		47	47					C.B.M.
	e	Z	00	59	55	0.5	3.5		Harmonic disturbance	
	iP	Z	09	05	54.5	0.5	4.0	c	1½°	H = 09 05 30
	iS	N		06	13.0					
	iP	Z	09	55	46.5	0.5	57	c	1½°	H = 09 55 18
	iS	N/		56	08.0					
	iP	Z	13	50	27	0.5	1.5	c		
	iP	Z	14	09	57.0	0.5	5.0	c	1½°	H = 14 09 33
	iS	N		10	15.0					
	iP	Z	15	21	21.0	0.5	60	d	1½°	H = 15 20 55
	iS	N/		21	40.5					
	iP	Z	16	37	15.5			c	1½°	H = 16 36 53
	eS	N/		37	36					overlapping
	Strong microseismic activity.									
30/5	e	Z	08	49	12	0.5	2.0		Harmonic disturbance	
	iP	Z	17	30	56.8	0.4	4.0	c	1½°	H = 17 30 35
	iS	N		31	13.0					
	iP	Z	17	36	59.2	0.5	36	d	1°	H = 17 36 43
	eS	N/		37	11					
	eiP	Z	19	12	51	0.5	1.0	d	7½°	H = 19 10 58
	eS	N/		14	18					
	eSS	N/		14	26					
	eLR	Z/		14	39					
	iP	Z	19	29	18.3	0.5	4.0	d	1½°	H = 19 28 52
	iS	E		29	38.5					
31/5	iP	Z	03	28	53	0.8	5.0	c		
	e	Z/	12	26	30			+		
	iP	Z	16	26	07.8	0.5	6.0	d	1°	H = 16 25 49
	iS	N		26	22.0					
	iP	Z	18	29	15.3	0.5	7.0	d	1½°	H = 18 28 50
	iS	N		29	34.5					
	e(P)	Z	18	55	53½					
	e	Z/	20	04	14			-		
	iP	Z	20	56	50.7	0.5	26.0	d	1½°	H = 20 56 27
	iS	N		57	09.0					

						T sec	A mm	GM	Dist.	Remarks		
1/6	iP	Z	03	49	19.6	0.4	47	c	2°	H = 03	48	46
	eS	N/		49	45							
	Felt:											
	Rabaul Int. I 04°10'S. 152°10'E											
	Palmalmal Int. IV-V 05°37'S. 151°28'E											
	eP	Z	10	18	48	0.5	1.0	d				
	e(S)	N/		22	05							
	iP	Z	11	16	40.8	0.5	27.5	c	1½°	H = 11	16	14
	iS	N		17	01.0							
	eP	Z	11	54	43	0.8	2.5	d				
	e(S)	N/	12	00	34							
	eiP	Z	12	38	44½							
	iP	Z	17	45	50.6	0.5	23	c	1¾°	H = 17	45	21
	iS	N/		46	12.5							

Seismograms read by M.Gaiam

G.W. D'ADDARIO
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Z.P. - Z Maximum Magnification 12,500 at 0.6 sec.

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L.P. - Z/N/E/ Maximum Magnification 750 at 25 sec.

Strong Motion two-component Omori Seismograph.

L.P.- No Static Magnification 12 To = 3.6 Air Damping 10:1

L.P.- Eo Static Magnification 10 To = 3.8 Air Damping 10:1

S.P.- Zh Helicorder, Geotech Model 2484, coupled to Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek
Auxiliary Station - SUL

Benioff Small Model three-component Seismograph Zr Nr Er. Sensitivity set at Zr 20%, Nr, Er 10%.

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When readings are given with a decimal figure they are to 1/10 seconds, other readings have been made to the nearest half seconds.

Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

A = Peak - to - Trough trace amplitude in millimetres.

T = Period in seconds.

C.B.M. = Confused by microseisms.
G.M. = Ground Motion.
Δ = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

2nd June - 8th June 1966.

					T sec	A mm	GM	Dist.	Remarks
2/6	Strong microseismic activity.								
	No Short Period records.								
	iP	Z	00	30 20.8	0.5	8.0	c	2½°	H = 00 29 44
	eS	N/		30 49					
	iP	Z	01	02 24.7	0.5	5.0	d	3¾°	H = 01 01 27
	eS	N/		03 09					
	e(P)	Z/	03	37 48			+		
	eP	Z/	07	13 55			c	28°	
	eS	E/		18 37					
	e	Z/	17	01 06			-		
	e	Z/	20	04 53			+		
3/6	Strong microseismic activity.								
	iP	Z	13	14 14.5	0.5	16.0	d	1½°	H = 13 13 49
	iS	N		14 34.0					
4/6	iP	Z	04	38 00.8	0.5	12.0	d	2½°	H = 04 37 29
	eS	Zh		38 33					
	e	Z/	15	08 05			+		
	iP	Z	15	16 29.5	0.5	8.0	d	1½°	H = 15 16 01
	iS	N		16 51.0					
	e	Z/	15	47 29½			+		
	iP	Z	23	57 16.0	1.0	14.0	d	51°	
	ePcP	Z/		58 25					
	iPP	Z/		59 09.0					
	iPPP	Z/	00	00 08.0					
	ePcS	Z/		02 26					
	eS	N/		04 29					
	ePS	E/		04 35					
	Strong microseismic activity.								
5/6	Strong microseismic activity.								
	iP	Z	11	12 43.0	0.5	3.0	c		
	eiP	Z	17	47 16	0.5	2.5			
6/6	Secondary Time on at 060555 - 062302.								
	eiP	Z	00	52 42	0.5	3.0	d		
	eiP	Z	01	50 16	0.5	3.0	c		
	iP	Z	02	16 55.0	0.5	14.0	d	1°	H = 02 16 37
	iS	N/		17 08.0					
	iP	Z	02	39 16.5	0.5	21.0	d	1½°	H = 02 38 52
	iS	N/		39 35.0					

						T sec	A mm	GM	Dist.	Remarks
6/6 cont'd.										
	iP	Z	07	58	29.2	0.8	8.0	c	79°	
	iPcP	Z		58	41.0					
	i	Z		59	23.0					
	iPP	Z	08	01	33.0					
	eS	N/		08	29½					
	eScS	N/		08	49					
	ePS	Z/		09	15					
	iP	Z	10	10	52.4	0.5	6.0	d	2½°	H = 10 10 15
	iS	N		11	21.0					
	iP	Z	18	28	44.0	0.5	12.0	d	1½°	H = 18 28 16
	iS	N		29	05.0					
	eP	Z	20	53	08½	0.8	3.0	c	31°	
	ePP	Z/		54	07					
	i	Z		55	42.5					
	iPcP	Z/		55	59.0					
	eS	E/		58	03½					
	eLQ	N/		59	32					
	ePcS	Z/		59	42					
	e	Z/	23	13	26			-		C.B.M.
	eL	Z/		20	34					
7/6	Secondary Time on at 070415 - 072315.									
	e	Z/	01	18	50			+		C.B.M.
	iP	Z	05	59	18.5	0.5	44	d	1½°	H = 05 58 50
	eS	N/		59	40					
	iP	Z	11	52	29.0	0.5	5.0	c		
	iP	Z	14	04	05.5	0.5	64	d NW	20°	
	eS	E/		07	47					
8/6	iP	Z	02	34	04.5	0.5	7.0	d	1½°	H = 02 33 39
	iS	N		34	24.0					
	e	Z/	02	51	58			+		
	iP	Z	03	44	04.5	0.4	3.0	d		
	e	Z/	11	01	10			+		
	iP	Z	11	16	43.3	0.5	7.0	d	3°	H = 11 15 57
	iS	E		17	17.5					
	eP	Z	15	56	15½	0.5	3.0	c		
	eP	Z	20	06	23½	0.6	1.5			
	iP	Z	21	23	07.5	0.5	11.0	c	5½°	H = 21 21 43
	eS	E/		24	13					

Seismogram read by M.Gaiam.

G.W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PA 'A AND NEW GUINEA.
VULCANOLOGICAL SERVATORY RABAUL.

Earthquake Analysis abaul Station - RAB.

Instruments at 'abaul Station

World Wide Standardised Seism graph.

Z.P. - Z Maximum Magnification 12,500 at 0.6 sec.

S.P. - N & E Maximum Magnification 6,250 at 0.6 sec.

L.P. - Z/N/E/ Maximum Magnification 750 at 25 sec.

Strong Motion two-component Omori Seismograph.

L.P.- No Static Magnification 12 To = 3.6 Air Damping 10:1

L.P.- Eo Static Magnification 10 To = 3.8 Air Damping 10:1

S.P.- Zh Helicorder, Geotech Model 2484, coupled to Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek
Auxiliary Station - SUL

Benioff Small Model three-component Seismograph Zr Nr Er. Sensitivity set at Zr 20%, Nr, Er 10%.

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G. W. D'ADDARIO
Vulcanologist-in-Charge.

9th June - 15th June 1966

				T sec	A mm	GM	Dist	Remarks
9/6	e	Z/	00 30 37			-		
	iP	Z	03 46 02.3	0.5	29	d	2½°	C.B.M. H=03 45 23
	eS	N	46 32½					
	eP	Z	09 50 27	0.4	1.0	d		
	e	Z/	11 38 34			+		
	iP	Z	15 48 01.2	0.5	4.5	e		
	i	Z	48 24.5					
10/6	e	Z/	04 50 07			-		
	ei(P)	Z	07 02 06				13½°	
	eS	N/	04 38					
	iP	Z	12 15 54.0	0.5	4.5	e	5½°	H=12 14 30
	iS	E/	16 59.0					
	iP	Z	12 26 09.2	0.5	4.5	d		in coda of preceding shock
11/6	- Secondary time on from 110133 to 112309							
	eP	Z	03 09 04	0.5	1.5	e		
	iP	Z	06 22 43.0	0.5	2.5	d	2½°	H=06 22 07
	eS	E	23 10					
	eP	Z	10 52 30	0.8	2.5	e		
	e	Z/	11 49 29			-		
	iP	Z	18 18 34.0	0.5	6.0	d	1°	H=18 18 18
	iS	N	18 46.5					
	e	Z/	18 36 25			-		
	iP	Z	21 24 57.0	0.5	33.5	d	1½°	H=21 24 30
12/6	e	Z/	02 08 05			-		
	e	Z/	03 41 15			-		
	iP	Z	13 23 16.0	0.5	5.0	d	1½°	H=13 22 54
	iS	N	23 36.5					
13/6	eP	Z	07 38 56			d	28°	
	eS	N/	43 41					
	iP	Z	09 37 42.0	0.5	11	e	2°	H=09 37 09
	eS	N/	38 07					
	iP	Z	14 30 15.0	0.4	3.0	d		

9th to 15th June 1966 (cont.)			T sec	A mm	GM	Dist	Remarks
13/6 continued:-							
iP	Z	15 15 02.1	0.5	2.5	d		
iP	Z	17 50 36.0	0.4	10	e		
eP	Z	18 12 17	0.5	4.5	d	17½°	
iS	N	15 29.5					
14/6 iP	Z	07 51 29.0	0.4	2.5	d		
eiP	Z	12 13 42	0.5	2.5	e	4°	H=12 12 40
iS	N	14 29.5					
eP	Z	16 44 51	1.0	2.5	d		
15/6 - Secondary Time On at 150139 to 150609							
iP	Z	01 02 19.0	0.5	1.5	d SE		L.P. records hard to decipher. Traces overlapping.
eP	Z	06 16 31	0.5	2.0	d		
iP	Z	08 12 44.0	0.5	19.0	e		
iP	Z	13 54 19.0	0.5	2.5	e		
iS	N	54 40.0					
eP	Z	16 20 02½	0.5	1.0	d		
eP	Z	16 39 05	0.5	2.0	d		
eP	Z	20 01 42	0.5	1.0	d		
eP	Z	20 52 00.2			d		

Seismograms read by M. Gaiam.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

1966
16-22 June

TERRITORY OF PAPUA AND NEW GUINEA

VULCANOLOGICAL OBSERVATORY RABAUL

Earthquake Analysis Rabaul - RAB

Instruments at Rabaul Station

World Wide Standardised Seismograph.

Z.P. - Z Maximum Magnification 12,500 at 0.6 sec.

S.P. - N & E Maximum Magnification 6,250 at 0.6 sec.

L.P. - Z/N/E/ Maximum Magnification 750 at 25 sec.

Strong Motion two-component Omori Seismograph.

L.P. - No Static Magnification 12 To = 3.6 Air Damping 10:1

L.P. - Eo Static Magnification 10 To = 3.8 Air Damping 10:1

S.P. - Zh Helicorder, Geotech Model 2484, coupled to Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek

Auxiliary Station - SUL

Benioff Small Model three-component Seismograph Zr Nr Er.

Sensitivity set at Zr 20%, Nr, Er 10%.

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G.M. = Ground Motion.

Δ = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

16th June - 22nd June 1966

				T sec	A mm	GM	Dist	Remarks
16/6	STRONG MICROSEISMIC ACTIVIVY							
	eiP	Z	00 06 30	0.4	1.5	d		
	i	Z	09 02.0					
	iP	Z	01 55 03.8	0.5	9.0	d	1½°	H=01 54 42
	iS	N	55 24.5					
	e	Z/	03 04 09			-		
	iP	Z	07 26 41.8	0.4	2.0	d		C.B.M.
	e	Z/	07 47 45			-		
	e	Z/	09 51 48			-		
	eP	Z	12 03 05	0.5	1.0	c		
	eP	Z	14 34 04	0.5	1.0	c	8°	
	eS	N/	37 28					
	eP	Z	16 39 25	0.5	0.8	d		
	eP	Z	18 42 42	0.5	0.6	d		
	e	Z/	22 49 53			-		
17/6	STRONG MICROSEISMIC ACTIVITY							
	iP	Z	00 47 48.5	0.5	2.5	d		
	i	Z	50 21.0					
	e	Z/	04 04 13			-		
	e	Z/	04 41 17			-		
	eiP	Z	05 49 23	0.5	2.0	d		
	eP	Z	11 50 07	1.0	0.5	d	(19°)	
	eS	E/	53 36					
	iP	Z	15 07 54.0	0.5	4.5	c	4½°	H=15 06 23
	eS	N/	09 04					
	e	Z/	18 25 49			+		
	eP	Z	22 28 42	0.5	1.0	c		

				T sec	A mm	GM	Dist	Remarks
18/6	e	Z/	00 35 14			-		
	e	Z/	02 17 08			-		
	eiP	Z	08 13 37	0.5	1.0	e		
	eiP	Z	08 27 16	0.5	1.0	d	14°	
	iP	Z	12 01 01.0	0.5	3.0	d	1½°	H=12 00 36
	iS	E	01 20.0					
	e	Z/	12 24 39			+		
	iP	Z	16 18 01.5	0.5	1.0	e	1½°	H=16 17 37
	iS	N	18 19.5					
	iP	Z	19 17 39.0	1.0	1.5	e	9½°	
	e(s)	N/	19 24					
19/6	ON SECONDARY POWER							
	eiP	Z	00 19 05½	0.5	1.0	d		
	iP	Z	00 23 10.0	0.5	6.0	e	2°	H=00 22 36
	eS	N	23 36					
	iP	Z	07 53 36	0.5	1.5	d	5°	H=07 52 19
	eS	E/	54 35					
	iP	Z	11 29 31.5	0.5	1.0		2¼°	H=11 28 58
	eS	N/	29 59					
	eiP	Z	11 32 43	0.5	2.0	e		
	eP	Z	11 58 12½	0.5	1.0	e		
	iP	Z	15 57 44	0.5	11.0	e	⅝°	H=15 57 29
	iS	N/	57 55					
	e	Z/	18 31 30			+		
	e	Z/	19 54 49			-		
	SECONDARY POWER ON AT 201448 - 202336.							
20/6	iP	Z	04 15 01.0	0.5	36	d	1½°	H=04 14 36
	iS	E	15 19.5					
	e	Z/	04 53 39			+		
	iP	Z	09 07 13.1	0.5	2.5	d	1¼°	H=09 06 52
	iS	E	07 29.0					

				T sec	A mm	GM	Dist	Remarks
20/6 (CONTINUED)								
	e	Z/	19 24 54			-		
	e	Z/	21 05 19			-		
	e	Z/	22 02 56			-		
21/6	eP	Z	00 46 42	0.5	2.0	c		
	eS	N/	49 35					
	iP	Z	01 17 55.8	0.4	4.0	d		
	e	Z/	07 25 41			-		
	eiP	Z	08 39 07½	0.5	1.0	d		
	eP	Z	13 34 41½	0.5	1.5	c		
	eS	N/	36 21					
	iP	Z	13 43 39.0	0.5	4.0	c	2°	H=13 43 04
	eS	N	44 05.0					
	iP	Z	16 19 58	0.8	2.5	d		
	iP	Z	18 55 39.5	0.5	3.0	d	1½°	H=18 55 15
	iS	E	55 58.0					
	e	Z/	19 04 15			-		
	iP	Z	20 18 03.0	0.4	3.5	c	1½°	H=20 17 41
	iS	E	18 23.5					
	iP	Z	23 07 30	0.5	2.0	d		
	iP	Z	23 08 53.0	0.4	3.0	d	2°	in coda H=23 08 20
	iS	N	09 18.0					
	iP	Z	23 15 55.0	0.4	2.0	d		
	iP	Z	23 25 43.0	0.5	4.0	c	1½°	H=23 25 14
	iS	N	26 05.0					
	iP	Z	23 27 11.0	0.4	4.5	c	1½°	in coda H=23 26 43
	iS	N	27 32.0					

				T sec	A mm	GM	Dist	Remarks
22/6	SECONDARY TIME BETWEEN 220340 - 220410							
	eP	Z	01 54 27	0.8	4.0	d		
	e	Z/	08 03 46			-		
	iP	Z	11 25 19.8	0.5	8.0	c	$3\frac{1}{2}^{0}$	H=11 24 31
	iS	N/	25 58.0					
	e	Z/	18 53 22			+		
	eP	Z	19 15 19	0.5	3.0	c		
	iP	Z	20 34 10.0	0.5	5.0	d		
	e(S)	N/	38 17					

1960

23 - 29 June

TERRITORY OF PA 'A AND NEW GUINEA.
VULCANOLOGICAL OBSERVATORY RABAUL.

Earthquake Analysis abaul Station - RAB.

Instruments at 'abaul Station

World Wide Standardised Seism graph.

Z.P. - Z Maximum Magnifica ic 12,500 at 0.6 sec.

S.P. - N & E Maximum Magni ic ion 6,250 at 0.6 sec.

L.P. - Z/N/E/ Maximum Magn f. ation 750 at 75 sec.

Strong Motion two-component Ogura Seismograph.

L.P.- No Static Magnification 12 To = 3.6 Air Damping 10:1

L.P.- Eo Static Magnification 10 To = 3.3 Air Damping 10:1

S.P.- Zh Helicorder, Geotech Model 2494, coupled to
Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek
Auxiliary Station - SUL

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G. W. D'ADDARIO
Vulcanologist-in-Charge.

23rd June - 29th June 1966.

						T sec	A mm	GM	Dist.	Remarks
23/6	NIL RECORDED									
24/6	iP!	Z	02	27	04.8	0.5	25.0	dSE	1°	H = 02 27 45
	iS	N/		27	20.0					
	iP	Z	02	30	21.0			d	1°	H = 02 30 01
	iS	N/		30	36.0					overlapping
	iP	Z	02	57	56.5			d	3½°	H = 02 57 02
	eS	N/		58	38					overlapping
	iP	Z	05	14	12.5			d	2°	H = 05 13 41
	eS	N/		14	36½					overlapping
	iP	Z	07	25	46.3	0.5	19.5	c		
	eP	Z	08	24	41½	1.0	1.5	d		
	iP	Z	18	49	00.3	0.5	5.0	c		
	iP	Z	19	07	05.3	0.5	18.0	d	1½°	H = 19 07 40
	eS	N/		07	24.5					
25/6	Secondary Power Between 242301 to 250210; on again 250723									
	e	Z/	03	58	18			-		
	e	Z/	10	36	58			-		
	iP	Z	11	09	57.0	0.5	3.5	c	1½°	H = 11 09 28
	eS	N		10	19					
	eP	Z	16	04	02	0.5	2.0	d		
	iP	Z	18	39	01.0	0.5	67	c		
26/6	Secondary Power and Time									
	e	Z/	07	07	40			+		
	iP	Z	09	09	27.0	0.5	5.0	d	1½°	H = 09 08 57
	iS	N		09	49.5					
	iP	Z	20	31	25.5	0.5	7.0	d	1½°	H = 20 31 02
	iS	N/		31	42.5					
27/6	Secondary Power and Time									
	e	Z/	04	43	30			-		
	iP	Z	05	49	50.5	0.5	3.0	d	1½°	H = 05 49 26
	eS	N/		50	09					
	e	Z/	08	41	37			-		
	eiP	Z	10	52	59	0.5	1.5	d		
	eP	Z	11	10	05	0.5	1.0	c		
	e	Z/	18	19	26			+		
	iP	Z	21	54	43.0	0.5	3.0	c		

			T sec	A mm	GM	Dist.	Remarks
28/6	Secondary Power and Time. Strong microseismic activity, S.P. records unreadable.						
	eP	Z/ 01	51	27	d	7°	H = 01 49 45
	eS	N/	52	46			
	e	Z/ 04	50	53	+		
	e	Z/ 07	47	58	-		
	e	Z/ 11	41	48	-		
29/6	Secondary Power and Time. Strong microseismic activity, S.P. records unreadable.						
	e	Z/ 07	51	19	+		
	e	Z/ 15	24	25	+		
	eP	Z/ 21	50	59	c	19½°	
	eS	N/	54	21			

Seismograms read by M.Gaiam

G.W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAUL

Earthquake Analysis Rabaul - RAB

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S.P. - No Static Magnification 10 To = 3.0 Air Damping 10:1
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Auxiliary Station - SUL

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G.M. = Ground Motion.
Δ = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

30th June - 6th July 1966.

						T sec	A mm	GM	Dist.	Remarks
30/6	e	Z/	07	51	05			+		
	e	Z/	12	33	23			-		
	e	Z/	16	02	22			-		
	e	Z/	17	11	55			+		
	Secondary Power and Time. Strong microseismic activity.									
1/7	iP	Z	05	58	11.0	0.5	2.0	e	SE 43°	
	eS	E/	06	04	06					
	e	Z/	10	30	50			-		
	iP	Z	14	46	18.5	0.5	4.0	d	1½°	H = 14 45 53
	iS	N		46	37.5					
	e	Z/	19	33	04			-		
	iP	Z	23	13	20.5	0.5	4.5	d	½°	H = 23 13 09
	iS	N		13	28.0					
	Secondary Power and Time.									
2/7	iP	Z	10	44	47.5	0.5	4.5	d	1½°	H = 10 44 22
	iS	N		45	07.0					
	eiP	Z	14	44	59	0.5	1.0	d		
	iP	Z	20	57	33.0	0.5	4.0	d	2°	H = 20 57 01
	iS	E/		57	57.5					
	iP	Z	22	55	37.5	0.5	2.5	d	2°	H = 22 55 05
	eS	N		56	02					
	Secondary Power and Time.									
3/7	e	Z/	04	16	37			-		
	e	Z/	11	22	48			+		
	iP	Z	11	35	57.8	0.5	3.0	d	1½°	H = 11 35 32
	eS	E/		36	17					
	iP	Z	12	14	39.0	0.5	2.0	c		
	iP	Z	19	48	21.8	0.8	1.0	d		
	Secondary Power and Time.									
4/7	iP	Z	00	10	58.0	0.5	5.0	c	2°	H = 00 10 27
	iS	N/		11	21.0					
	e	Z/	03	20	53			-		
	e	Z/	09	20	37			+		
	iP	Z	12	35	09.0	0.5	1.5	c		
	e	Z/	13	24	57			-		
	iP	Z	17	57	30.0	0.5	11.0	d	1½°	H = 17 57 08
	eS	N/		57	46					

						T sec	A mm	GM	Dist.	Remarks
4/7	cont'd.									
	iP	Z	10	43	49.0	0.5	1.0	d	57°	overlapping
	eS	N/		52	12					
5/7	iP	Z	01	18	54.3	0.5	10	d		
	e	Z/	02	32	06			-		
	iP	Z	07	31	00.4	0.4	6.0	d	1½°	H = 07 30 35
	eS	E/		31	20					
	iP	Z	12	50	19.0	0.5	2.5	d	1½°	H = 12 49 51
	iS	N/		50	40.0					
	iP	Z	14	39	41.0	0.5	3.0	c	2½°	H = 14 39 03
	eS	N/		40	10					
6/7	iP	Z	02	03	45.5	0.5	2.0	d	1½°	H = 02 03 07
	iS	N/		04	05.0					
	e	Z/	03	47	11			-		
	eP	Z	14	23	11	0.5	2.0	c	2°	H = 14 22 41
	eS	N		23	34					
	eiP	Z	14	59	21	0.5	1.0	c	2°	H = 14 58 51
	eS	N		59	44					
	e	Z/	20	12	25			-		

Seismograms read by M.Gaiam

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L.P. - Z/N/E/ Maximum Magnification 750 at 25 sec.

Strong Motion two-component Imori Seismograph.

L.P. - Ns Static Magnification 12 To = 1.6 Air Damping 10:1
L.P. - Ew Static Magnification 10 To = 1.8 Air Damping 10:1
S.P. - Zh Helicorder, Geotech Model 2464, coupled to
Seismometer, Geotech Model 4681A.

Instruments at Sulphur Creek
Auxiliary Station - SUL

Benioff Small Model three-component Seismograph Zr Nr Er.
Sensitivity set at Zr 20%, Nr, Er 10%.

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7th July - 13th July.1966.

						T sec	A mm	GM	Dist.	Remarks
7/7	i	Z	08	26	30.5	0.5	1.5			ship moving in
	F	Z		32	23					the harbour.
	e	Z/	09	50	48			-		
	iP	Z	17	15	49.0	0.5	17	c	3½°	H = 17 48 58
	eS	N/		16	28					
	eP	Z	20	18	12½	0.5	2.0	c		
	e	Z/	21	51	35			-		
8/7	eP	Z	01	42	45	0.8	5.0	d		
	iP	Z	13	11	59.0	0.5	19.0	c	1½°	H = 13 11 32
	iS	E/		12	19.0					
9/7	eP	Z	07	59	12	0.8	1.5	c		
	iP	Z	11	56	10.0	0.5	4.0	c		
	eiP	Z	19	20	45	0.5	1.0	d		
10/7	Secondary Power and Time between 0032 - 0304.									
	eiP	Z	08	23	30½	0.5	2.0	c		
	e	Z/	10	07	58			+		
	iP	Z	16	20	04.3	0.5	2.0	d	40°	
	ePP	Z/		21	36					
	ePcP	Z/		22	06					
	eS	E/		26	03					
	ePS	Z/		26	13					
	iP	Z	19	55	39.6	0.5	9.0	c	1½°	H = 19 55 17
	iS	N		56	00.2					
	e	Z/	22	21	36			-		
11/7	Strong microseismic activity.									
	Auxilary power interruptions between 110351 - 110510.									
	No Mains or Auxilary power between 110320 - 110351.									
	e	Z/	01	54	39			-		
	e	Z/	02	41	51			-		
	e	Z/	22	53	47			-		
12/7	Strong microseismic activity.									
	eiP	Z	00	20	27½			d		C.B.M.
	iP	Z	05	15	42.5	0.5	2.0	c		
	eiP	Z	14	46	59	0.5	2.0	c		
	eiP	Z	17	42	38½	0.4	1.5	d		

						T sec	A mm	GM	Dist.	Remarks
12/7 cont'd.										
	e	Z/	19	49	28			+		
	eiP	Z	21	06	10	0.5	1.0	d		
	e	Z/	21	58	23			-		
	iP	Z	23	09	02.8	0.5	15.0	c	$1\frac{1}{2}^{0}$	H = 23 08 37
	iS	N		09	22.0					
13/7	Strong microseismic activity.									
	e	Z/	09	16	19			-		
	e	Z/	10	44	48			+		
	e	Z/	12	09	04			+		
	iP	Z	14	46	21.0	0.8	2.5	c		

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G. W. D'ADDARIO

Vulcanologist-in-Charge.

14th July - 20th July, 1966.

						T sec	A mm	GM	Dist.	Remarks		
14/7	iP	Z	00	30	22.0	0.5	3.0	d	$2\frac{1}{2}^{o}$	H = 00	29	40
	eS	N/		30	54							
	e	Z/	06	32	36			+				
	e	Z/	10	29	53			-				
	e	Z/	18	36	20			-				
15/7	iP	Z	00	14	27.0	0.4	28	c	$1\frac{1}{2}^{o}$	H = 00	14	02
	iS	N		14	45.5							
	iP	Z	03	58	03.8	0.4	3.0	d	$1\frac{1}{2}^{o}$	H = 03	57	38
	iS	N		58	23.0							
	iP	Z	08	19	30.0	0.5	8.0	c				
	eiP	Z	08	40	$33\frac{1}{2}$	0.5	2.0	c				
	e	Z/	19	12	42			+				
	e	Z/	20	36	29			+				
16/7	Strong microseismic activity.											
	iP	Z	06	20	00.1	0.5	8.0	d	$2\frac{1}{2}^{o}$	H = 06	19	18
	eS	N/		20	32							
	iP	Z	06	30	43.5	0.4	4.0	d	2^{o}	H = 06	30	10
	iS	E/		31	09.0							
	eP	Z	07	23	31	0.5	3.0	d				
	eiP	Z	20	20	48	0.5	4.0	d	$1\frac{1}{2}^{o}$	H = 20	20	20
	iS	N		21	09.0							
17/7	eP	Z	02	29	$20\frac{1}{2}$	0.5	1.0	d				
	iP	Z	06	49	00.5	0.3	2.0	d	$2\frac{1}{2}^{o}$	H = 06	48	16
	eS	E/		49	32							
	iP	Z	09	26	25.5	0.5	4.0	d	$2\frac{1}{2}^{o}$	H = 09	25	48
	eS	N		26	$53\frac{1}{2}$							
	iP	Z	09	48	14.0	0.5	1.8	d	$2\frac{1}{2}^{o}$	H = 09	47	46
	eS	E		48	43.3							
	iP!	Z	13	21	39.0	0.5	46	c	$1\frac{1}{2}^{o}$	H = 13	21	14
	iS	N/		21	58.0							
	iP	Z	15	49	25.5	0.5	1.0	c	$2\frac{1}{2}^{o}$	H = 15	48	53
	eS	N		49	53							
18/7	e	Z/	10	45	30			-				
	iP	Z	15	45	59.8	0.5	56	d	$1\frac{1}{2}^{o}$	H = 15	45	32
	iS	E/		46	21.0							

Felt: Londolovit Int. III 03^{o} 10'S, 152^{o} 40'E

						T sec	A mm	GM	Dist.	Remarks
19/7	eiP	Z	01	51	11½	0.5	2.0	c	61°	
	iPcP	Z/		51	54.0					
	ePP	Z/		53	28					
	ePcS	Z/		55	57½					
	eS	N/		59	24					
	ePS	Z/		59	47					
	eScS	N/	02	00	57½					
	iP	Z	05	25	49.0	0.5	2.5	c	1½°	H = 05 25 27
	eS	N		26	09½					
	iP	Z	11	53	59.0	0.5	1.0	c	9½°	H = 11 51 (41)
	eS	N/		55	46					
	iP	Z	15	00	22.0	1.0	2.5	c		
	e	Z/	19	39	20			-		
20/7	Strong microseismic activity.									
	e	Z/	02	02	17			+		
	iP	Z	04	32	15.5	0.5	13.0	d	1½°	H = 04 31 46
	eS	E/		32	38					
	e	Z/	11	42	41			+		
	e	Z/	14	03	38			+		

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21st July - 27th July, 1966.

						T sec	A mm	GM	Dist.	Remarks		
21/7	Strong microseismic activity.											
	eiP	Z	03	42	47	0.4	6.0	c	$1\frac{1}{2}^{0}$	H =	03	42 22
	eS	N/		43	06							
	e	Z/	03	12	42			-				
	e	Z/	03	43	05			-				
	iP	Z	05	24	50.5	0.5	56	d	4^{0}	H =	05	23 31
	iS	N/		25	36.0							
	e	Z/	06	20	22			-				
	e	Z/	13	11	14			-				
	Felt: Pagei Int. V 03^{0} 02'S, 141^{0} 10'E											
	e	Z/	18	25	10			+				
	iP	Z	18	35	52.0	0.8	17	d				
22/7	e	Z/	07	46	18			-				
	iP	Z	08	30	12.0	0.5	5.0	d	(8^{0})			
	e(S)	N/		33	44							
	e	Z/	10	27	46			-				
	eL	Z/		43	30							
	iP	Z	13	14	49.5	0.5	4.5	d	$1\frac{1}{2}^{0}$	H =	13	14 27
	iS	E/		15	10.0							
	iP	Z	15	43	04.3	0.5	4.0	c	$2\frac{1}{2}^{0}$	H =	15	42 27
	eS	N/		43	32							
	e	Z/	17	31	06			-				
	e	Z/	19	43	46			-				
	Strong microseismic activity.											
23/7	Strong microseismic activity.											
	e	Z/	04	14	29½			+				
	e	Z/	05	49	12			-				
	e	Z/	08	55	17			+				
	e	Z/	10	20	55			+				
	E	Z/	14	42	13			-				
	iP	Z	19	35	14.2	0.5	20	d	$1\frac{1}{2}^{0}$	H =	19	34 50
	eS	N/		35	32							
	iP	Z	20	28	44.3	0.5	14.0	d	$1\frac{1}{2}^{0}$	H =	20	28 19
	iS	E/		29	03.0							
	e	Z/	22	49	33			-				

					T sec	A mm	GM	Dist.	Remarks
24/7	Strong microseismic activity.								
	iP	Z	03	04	06.0	0.5	6.0	c	1° H = 03 03 47
	eS	N/		04	20				
	e	Z/	06	55	45			+	
	e	Z/	08	59	16			-	
	e	Z/	17	25	53			-	
25/7	Strong microseismic activity.								
	iP	Z	07	15	08.3	0.5	11.5	d	1½° H = 07 14 43
	iS	N		15	27.5				
	e	Z/	09	50	17			+	
	e	Z/	13	03	16			+	
	iP	Z	20	51	12.5	0.5	14.0	c	3½° H = 20 50 17
	eS	E/		51	55				
26/7	iP	Z	05	41	21.2	0.5	11.0	c	5½° H = 05 39 59
	eS	N/		42	24				
	eP	Z	11	45	12	0.8	1.0	d	
	iP	Z	15	30	13.0	0.5	2.5	d	
	iP	Z	15	35	49.0	0.5	34.0	c	½° H = 15 35 35
	iS	N/		35	59.0				in coda
	Felt: Rabaul Int. IV 04° 10'S. 152° 10'E								
27/7	e	Z/	03	06	38			-	
	e	Z/	05	05	42			-	
	e	Z/	17	21	18			-	
	e	Z/	17	56	48			+	
	iP	Z	20	21	44.5	0.5	6.0	d	2¼° H = 20 21 12
	eS	N/		22	12				
	eiP	Z	22	30	43	0.5	2.0	d	2° H = 22 30 11
	iS	Zh		31	07.0				
	eiP	Z	22	39	34½	0.5	4.0	c	1° H = 22 39 14
	eS	Zh		39	50				

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VULCANOLOGICAL OBSERVATORY RABAUL

PRELIMINARY EARTHQUAKE PHASES.

28th July - 3rd August 1966.

					T sec	A mm		GM	Dist.	Remarks
28/7	High microseismic activity.									
	e(P)	Z/	01	23	05			d	21°	Teleseism
	eS	E/		26	56					
	eLQ	E/		27	06					
	ePcP	Z/		27	13					
	eSS	E/		27	27					
	eLR	Z/		28	11					
	iP	Z	06	04	19.0	0.5	4.0	d		
	eiP	Z	08	18	06½	1.0	2.0	e		
	e	Z/	11	02	06			+		
	e	Z/	12	21	05			-		
	iP	Z	14	25	44.5	0.5	10.0	d	1½°	H = 14 25 22
	iS	N		26	05					
	iP	Z	16	28	31.0	0.5	2.0	d	½°	H = 16 28 17
	iS	N		28	41.3					
	e	Z/	17	06	47			+		
	e	Z/	20	58	05			-		
29/7	High microseismic activity.									
	eP	Z/	11	49	10			e		
	iP	Z	12	48	49	0.5	19.0	e	½°	H = 12 48 34
	eS	N/		48	59.8					
	e	Z/	14	47	36			-		
30/7	High microseismic activity.									
	iP	Z	01	18	02.0	0.5	9.0	d	1¼°	H = 01 17 33
	eS	E/		18	24					
	e	Z/	17	50	06			+		
	e	Z/	19	40	07			-		
31/7	High microseismic activity.									
	iP	Zh	03	47	57.0	0.4	4.5	d	1½°	H = 03 47 29
	eS	E/		48	18					
	e	Z/	09	29	27			-		
	e	Z/	11	50	23			+		
	iP	Z	16	34	41.5	0.5	3.0	d		

				T sec	A mm		GM	Dist.	Remarks
1/8	Strong microseismic activity.								
	e	Z/	01 47	09			+		
	e	Z/	03 25	34			+		C.B.M.
	e	Z/	04 34	53			-		
	e	Z/	06 54	04			+		
	eiP	Z	12 12	10	0.5	3.5	d	3½°	H = 12 11 15
	eS	N/	12	52					
	iP	Z	12 37	09.0	0.5	6.0	c	1½°	H = 12 36 45
	eS	N/	37	27					
	e	Z/	19 22	40			-		
	e	Z/	20 47	40			-		
	iP	Z	21 15	42.5	0.5	1.5	d		Teleseism
	eS	E/	26	18					
2/8	Strong microseismic activity.								
	iP	Z	18 02	47.0	0.4	3.5	c	1½°	H = 18 02 19
	eS	N/	03	08					
	e	Z/	11 56	53			-		
	e	Z/	14 32	33			-		
	e	Z/	18 32	08			+		
	e	Z/	19 05	56			-		
3/8	e	Z/	04 32	14			-		
	e	Z/	11 19	25			-		
	iP	Z	17 06	27.3	0.5	13.0	d		
	iP	Z	18 10	46.0	0.5	2.0	d	2½°	H = 18 10 06
	eS	Zh	11	11					

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Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

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T = Period in seconds.
H = Origin time.
C.B.M. = Confused by microseisms.
G.M. = Ground motion.
Dist. = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

PRELIMINARY EARTHQUAKE PHASES.

4th August - 10th August.1966.

						T sec	A mm	GM	Dist.	Remarks
4/8	e	Z/	01	58	50			-		
	iP	Z	08	43	16.5	0.5	24.0	c	1½°	H = 08 42 47
	eS	E/		43	39					
5/8	e(P)	Z/	04	35	55			+	15½°	C.B.M.
	eS	N/		38	41					
	e	Z/	07	06	09			+		
	e	Z/	08	15	30			-		
	iP	Z	15	38	45.0	0.5	12.0	d	2½°	H = 15 38 03
	eS	E/		39	16½					
	iP	Z	16	45	08.0	0.5	4.0	c	1½°	H = 16 44 45
	e	Z/	19	59	29			-		
6/8	Strong microseismic activity.									
	iP	Z	00	51	26.3	0.5	4.0	d		C.B.M.
	e	Z/	02	21	49			-		
	e	Z/	04	10	31			-		
	e	Z/	04	49	29			-		
	e	Z/	06	32	49			+		
	e	Z/	19	51	48			+		
	e	Z/	21	32	19			+		
7/8	iP	Z	02	23	30.0	0.8	4.0	c	63½°	Teleseism
	iPcP	Z/		24	05.5					
	ePP	Z/		25	51					
	ePcS	Z/		28	10					
	eS	N/		31	59					
	eScS	N/		33	19					
	eSS	N/		36	13					
	eiP	Z	03	09	58	0.5	2.0	c		overlapping
	iP	Z	06	25	07.0	0.5	4.0	d		
	iP	Z	07	23	22.0	0.5	5.0	d	1½°	H = 07 00 59
	eS	Zh		23	39					
	iP	Z	10	02	36.0	0.5	2.0	c		
	e	Z/	14	52	15			-		
	e(P)	Z/	17	49	53			c		C.B.M.
	eL	Z/	18	19	51					

						T sec	A mm	GM	Dist.	Remarks
8/8	Strong microseismic activity.									
	iP	Z	00	28	44.5	0.5	1.5	c		
	eiP	Z	07	27	27	0.5	1.0	d		
	e(S)	N/		30	25					
	e	Z/	08	30	20			+		
	eL	Z/		50	50					
	e	Z/	12	48	24			+		
	e	Z/	22	46	37			-		
9/8	iP	Z	00	57	45.3	0.4	4.0	d		
	iP	Z	02	02	38.3	0.5	5.0	c	1½°	H = 02 02 15
	eS	E/		02	56					
	iP	Z	17	37	14.0	0.4	21.0	c	½°	H = 17 37 03
	iS	N		37	22.0					
	iP	Z	17	49	31.0	0.4	26.0	c	½°	H = 17 49 20
	eS	E/		49	39					
	iP	Z	18	14	18.0	0.5	43.0	c	½°	H = 18 14 07
	iS	N/		14	26.0					
	Felt: Rabaul Int. II 04°10'S. 152°10'E									
	iP!	Z	18	25	48.0	0.5	70.0	c	½°	H = 18 25 38
	iS	N/		25	55.0					
	iP	Z	19	59	53.5			c	½°	H = 19 59 42
	e(S)	N/	20	00	02					overlapping
	Felt: Rabaul Int. III 04°10'S. 152°10'E									
	iP	Z	20	18	43.0	0.5	31.0	c	½°	H = 20 18 32
	iS	N/		18	51.0					
	iP	Z	20	23	13.5	0.5	9.0	c	1½°	H = 20 22 50
	iS	N/		23	31.0					in coda of preceeding shock.
	eP	Z	22	30	13	0.5	1.0	d		
10/8	iP	Z	01	43	42.2	0.4	9.0	c	½°	H = 01 43 31
	eS	E/		43	50					
	iP	Z	02	02	45.5	0.4	7.0	c		
	iP	Z	03	24	51.5	0.5	41.0	d	1°	H = 03 24 32
	eS	N/		25	06					
	eP	Z	05	07	57	0.5	1.0	(d)		
	iP	Z	05	13	58.3			c	½°	H = 05 13 49
	iS	N/		14	05.5					overlapping
	iP	Z	05	17	51.5	0.4	20.0	c		

					T sec	A mm	GM	Dist.	Remarks
10/8 cont'd.									
iP	Z	07	25	54.5	0.5	19.0	c	¾°	H = 07 25 39
iS	E/		26	06.0					
iP	Z	08	38	07.0	0.5	35.0	c	½°	H = 08 37 56
eS	E/		38	15					
iP	Z	09	56	43.3			c	½°	H = 09 56 32
iS	N/		56	51.0					overlapping
iP	Z	12	34	06.3			d	1¾°	H = 12 33 37
iS	No		34	29.0					overlapping
Felt: Rabaul Int. III 04°10'S. 152°10'E									
iP	Z	12	43	14.0	0.5	31.0	d		
iP	Z	12	54	39.2	0.5	6.0	c	1½°	H = 12 54 12
eS	E/		54	58					
iP	Z	13	07	41.0			d	2¼°	H = 13 07 04
iS	Eo		08	09.0					overlapping
Felt: Rabaul Int. II 04°10'S. 152°10'E									
iP	Z	14	26	07.5			c	½°	H = 14 25 57
eS	N/		26	15					overlapping
iP	Z	14	47	34.0	0.5	34.0	c	1¾°	H = 14 47 05
eS	N/		47	56					
iP	Z	15	58	03.0			d	2°	H = 15 57 33
iS	No		58	26.0					overlapping
Felt: Rabaul Int. III 04°10'S. 152°10'E									
iP	Z	17	18	46.0	0.5	14.0	c	1½°	H = 17 18 18
eS	N/		19	07					
iP	Z	19	02	56.0	0.4	13.0	c	½°	H = 19 02 45
eS	N/		03	04					
iP	Z	23	03	10.3			c	½°	H = 23 02 56
eS	N/		03	20					overlapping

Seismograms read by M.Gaiam

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Earthquake Analysis Rabaul Station - RAB.

Instruments at Rabaul Station

World Wide Standardised Seismograph.
Z.P. - Z Maximum Magnification 12,500 at 0.6 seconds.
E.P. - N & E Maximum Magnification 6,250 at 0.6 seconds.
L.P. - Z/N/E/ Maximum Magnification 750 at 25 seconds.

Strong Motion two-compment Omori Seismograph.
L.P. - No Static Magnification 12 To = 3.6 Air Damping 10:1
L.P. - Eo Static Magnification 10 To = 3.8 Air Damping 10:1
S.P. - Zh Helicorder, Geotech Model 2434, coupled to
Seismometer, Geotech Model 4681A.

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Vulcanologist-in-Charge.

PRELIMINARY EARTHQUAKE PHASES

11th August - 17th August.1966.

						T sec	A mm	GM	Dist.	Remarks
11/8	iP	Z	00	49	19.0	0.5	15.0	c	1½°	H = 00 48 52
	iS	N		49	39.0					
	iP	Z	01	51	54.0	0.5	11.0	c	½°	H = 01 51 40
	iS	E/		52	04.0					
	iP	Z	02	40	49.0	0.5	9.0	c	½°	H = 02 40 38
	eS	E/		40	57					
	iP	Z	03	36	24.5	0.5	18.0	c	½°	H = 03 36 14
	iS	E/		36	32.0					
	eP	Z/	05	19	44			(c)		Teleseism
	eS	N/		25	38					
	iP!	Z	06	44	05.2	0.5	68.0	d	1½°	H = 05 59 38
	eS	N/		44	25					
	iP	Z	09	17	14.8	0.5	45.0	d	1½°	H = 08 59 49
	iS	E/		17	34.0					
	eiP	Z	09	58	20.0	0.4	1.5	c	2½°	H = 09 57 44
	eS	E/		58	47					
	e	Z/	10	56	30			-		
	e	Z/	15	46	16			+		
	iP	Z	17	48	29.0	0.5	31.0	d		
	e	Z/	20	47	04			-		
	e	Z/	23	32	38			+		
	During the day 28 shocks volcanic in origin were recorded T0.5 A5-10									
12/8	iP	Z	03	39	22.0			c	½°	H = 03 39 11 overlapping
	iS	E/		39	30.0					
	iP	Z	06	08	36.0	0.5	33.0	c	1°	H = 06 08 17
	eS	E/		08	50					
	iP	Z	07	08	53.5			c	1½°	H = 07 08 29 overlapping
	eS	N/		09	12					
	iP	Z	11	56	26.0	0.4	21.0	d	1½°	H = 11 55 49
	iS	N/		56	46.0					
	iP	Z	13	14	02.8	0.5	15.0	c	½°	H = 13 13 52
	iS	N		14	10.0					
	eP	Z	14	44	34½	0.5	1.0	c		
	i	Z		44	46.0					

			2/	T sec	A mm	GM	Dist.	Remarks
12/8 cont'd.								
iP	Z	17 21	28.0	0.4	43.0	c	1½°	H = 17 21 06
e(S)	N/	21	44					
iP	Z	17 38	37.5	0.4	16.0	d		
During the day 23 shocks volcanic in origin were recorded TO.5 A5-13								
13/8 Strong microseismic activity.								
e	Z/	02 33	36			+		
iP	Z	05 00	45.2	0.5	21.0	d	1°	H = 05 00 26
eS	E/	00	59½					
e	Z/	05 50	43			+		
e	Z/	06 51	38			+		
e	Z/	09 30	06			-		
e	Z/	12 21	24			+		
During the day 9 shocks volcanic in origin were recorded TO.5 A5-14								
14/8 e	Z/	04 56	25			+		
iP	Z	07 31	00.5	0.5	6.0	c	1½°	H = 07 30 37
eS	N/	31	18					
iP	Z	09 55	36.0	0.5	4.0	d	1½°	H = 09 55 08
eS	N	55	57					
e	Z/	10 12	43			-		
e	Z/	12 01	52			-		
iP	Z	15 10	54.0	0.5	2.0	d	1½°	H = 15 10 27
iS	N	11	14.0					
iP	Z	16 05	27.0	0.4	6.0	c	1½°	H = 16 05 00.5
iS	N	05	47.0					
iP	Z	19 26	42.0	0.5	3.0	d	1½°	H = 19 26 14
iS	N	27	03.0					
e	Z/	21 28	34			-		
During the day 8 shocks volcanic in origin were recorded TO.5 A5-15								
15/8 iP	Z	02 52	29.0	1.0	3.0	d	37°	
ePP	Z/	53	49					
iPcP	Z/	54	45.0					
eS	E/	58	05					
eLQ	N/	03 00	33					
eLR	Z/	02	25					
eScS	N/	02	38					
iP	Z	05 12	53.3	0.5	34.0	c		Seismic Survey
i	Z	12	55.5					Shot I
iS	E/	13	02.0					Location 3
								04°12'48S, 152°10'24E
								Charge 20 lb
								Depth 24 ft.

					3/	T sec	A mm	GM	Dist,	Remarks
15/8	cont'd.									
	iP	Z	05	44	17.8	0.5	40.0	c		Seismic Survey Shot 2 Location 3 04°12'48S, 152°10'24E Charge 10 lb Depth 108 ft. H = 05 44 16
	eS	N/		44	25					
	e	Z/	10	33	32			+		
	e	Z/	14	13	45			+		
	eiP	Z	17	43	12½	0.5	2.5	c	5½°	H = 17 41 49
	i	Z		43	35.0					
	eS	N		44	17					
	iP	Z	21	15	36.5	0.5	6.0	d		
	During the day 10 shocks volcanic in origin were recorded T0.5 A5-12									
16/8	e	Z/	01	20	29			-		
	iP	Z	02	18	00.4	0.5	25.0	c		Seismic Survey Shot 1 Location 4 04°12'33S, 152°09'58 E Charge 20 lb Depth 74 ft. H= 02 17 57.8
	iS	N/		18	05.0					
	iP	Z	03	13	30.5	0.5	7.0	c		Seismic Survey Shot 2 Location 5 04°13'09S, 152°10'56E Charge 20 lb Depth 28 ft. H = 03 13 (27)
	eS	E/		13	40					
	iP	Z	03	44	35.5	0.5	28.0	c		Seismic Survey Shot 3 Location 6 04°14'09S, 152°10'30E Charge 20 lb Depth 144 ft. H = 03 44 31
	i	Zh		44	37.0					
	iP	Z	04	24	04.5	0.5	5.0	c		Seismic Survey Shot 4 Location 7 04°15'27S, 152°10'25E Charge 25 lb Depth 132 ft. H = 04 23 59½
	i	Zh		24	07.4					
	e	Z/	04	59	53			-		

				4/	T sec	A mm	GM	Dist.	Remarks
16/8 cont'd.									
iP	Z	05	06	23.0	0.5	32.0	c		Seismic Survey
eS	E/		06	31					Shot 5
									Location 5A
									04°13'04S, 152°10'50E
									Charge 50 lb
									Depth 60 ft.
									H = 05 06 21 ± 0.1
e	Z/	06	26	32			-		
eP	Z	13	58	16	0.5	1.0	d		
e	Z/	18	37	16			-		
iP	Z	19	51	11.5	0.8	1.5	d	21°	Teleseism
i	Z		51	20.0					
e(S)	N/		54	58					
During the day 16 shocks volcanic in origin were recorded T0.5 A5-15									
17/8 e	Z/	00	30	24			-		
e	Z/	00	59	09			-		
iP	Z	03	08	48.0	0.5	3.5	c		
iP	Z	03	53	07.5	0.5	6.0	c		
iP	Z	06	32	20.8	0.5	13.0	d	1°	H = 06 32 00.7
iS	N		32	36.0					
eP	Z	11	27	30	0.4	1.0	d		
iP	Z	14	44	40.0	0.5	2.5	d	1½°	H = 14 44 10
iS	N		45	02.5					
iP	Z	19	59	10.0	0.4	2.0	d		
i	Z		59	11.0					
eS	E/	20	03	10					
iP!	Z	20	19	53.0	0.5	115	dSE	¾°	H = 20 19 38
iS	N/		20	04.0					
e	Z/	21	16	46			-		
During the day 10 shocks volcanic in origin were recorded T0.5 A10-18									

Seismograms read by M.Gaiam
E.Ravian

G. W. D'ADDARIO
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S.P. - N & E Maximum Magnification 6,250 at 0.6 seconds.
L.P. - Z/N/E/ Maximum Magnification 750 at 25 seconds.

Strong Motion two-component Omori Seismograph.
L.P. - No Static Magnification 12 To = 3.6 Air Damping 10:1
L.P. - Eo Static Magnification 10 To = 3.8 Air Damping 10:1
S.P. - Zb Helicorder, Geotech Model 2484, coupled to
Seismometer, Geotech Model 4681A.

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G. W. D'ANDARIO
Vulcanologist-in-Charge.

PRELIMINARY EARTHQUAKE PHASES

18th August - 24th August, 1966.

					T sec	A mm	GM	Dist.	Remarks
18/8	iP	Z 01	05	06.0	0.5	13.0	c		Seismic Survey
	i	Zh	05	08.5					Shot 1
	i	Zh	05	10.5					Location 1/2
	i	Zh	05	13.0					04°13'56S, 152°12'12E
									Charge 50 lb
									Depth 168 ft.
									H = 01 05 03.9
	iP	Z 01	44	06.4	0.5	13.0	c		Seismic Survey
	i	Zh	44	09.0					Shot 2
	iS	N	44	13.0					Location 1/2
									04°13'56S, 152°12'12E
									Charge 50 lb
									Depth 168 ft.
									H = 01 44 04.2
	iP	Z 03	48	10.0	0.5	2.0	d		Seismic Survey
	i	Zh	48	15.0					Shot 3
	i	Zh	48	18.0					Location 9
									04°19'36S, 152°22'48E
									Charge 150 lb
									Depth 180 ft.
									H = 03 48 04.1
	iP	Z 04	46	10.5	0.5	2.0	d		Seismic Survey
	i	Zh	46	15.0					Shot 4
									Location 9
									04°19'36S, 152°22'48E
									Charge 150 lb
									Depth 240 ft.
									H = 04 46 04.0
	e	Z/ 07	03	04			-		
	iP	Z 09	36	47.5	0.5	10.0	d	1½°	H = 09 36 21
	iS	N/	37	06.0					
	eP	Z 10	52	16	0.5	3.0	d		
	iP	Z 14	39	42.0	0.8	1.5	c		
	iP!	Z 14	43	37.5	1.0	22.0	d		in coda of preceeding shock.
	iP	Z 15	45	51.5	0.8	2.0	c		
	iP	Z 23	27	31.5	0.5	2.5	d		

During the day 10 shocks volcanic in origin were recorded T0.5 A6-17

				T sec	A mm	GM	Dist.	REMARKS
19/8	iP	Z	00 39 04.2	0.5	24.0	c		Seismic survey, shot 1, location 10, 04°12'33" 152°09'58". Charge 25 lb. Depth 60'. H=00 39 03.3
	iS	N	39 07.0					
	iP	Z	03 58 11.0	0.5	2.5	c		Seismic Survey. Shot 2, location 11, 04°21'36, 152°25'18". Charge 300 lb. Depth 300 feet H=03 58 04.5
	e	Z/	04 01 06			+		
	iP	Z	04 37 11.5	0.5	2.0	d		Seismic Survey. Shot 3, location 11, 04°21'36" 152°25'18" Charge 250 lb. Depth 300' H=04 37 04.4
	e	Z/	11 53 05			+		
	e	Z/	12 36 40			-		
	iP	Z	12 41 04.0			d		Teleseism
	i	Z	41 13.0					
	eS	N/	50 48					
	iP	Z	19 33 11.5	0.5	20.0	d	½°	H=19 33 06
	iS	N	33 18.0					
	e	Z/	22 07 38			-		
DURING THE DAY 20 SHOCKS VOLCANIC IN ORIGIN WERE RECORDED TO.5, A3-19.								
20/8	e(P)	Z/	00 41 52			-		
	eP	Z	03 22 22	0.5	1.5	d		
	eL	N/	26 24					
	e	Z/	06 20 09			-		
	e	Z/	08 40 40			+		
	eL	N/	45 23					
	iP	Z	09 40 57.2	0.5	7.0	c		
	e	Z/	12 18 13			+		
	[illegible]							
	iP	Z	14 28 29.5	0.4	1.0	c	2°	H=14 27 58
	iS	N	28 52.0					

				T	A	GM	DIST.	REMARKS
20/8 (cont)								
	eP	Z	23 02 03	0.8	1.0	e		
	i	Z	02 09					
	eS	E/	07 56					
DURING THE DAY 14 SHOCKS VOLCANIC IN ORIGIN WERE RECORDED TO.5 A5-17								
21/8	e	Z/	02 27 09			-		
	iP	Z	05 06 17.0	0.5	2.0	d	29°	Teleseism
	ePP	Z/	07 10					
	eS	N/	11 02					
	eLq	N/	12 14					
	ePcS	Z/	13 05					
	eLR	Z/	13 39					
	iP	Z	07 05 37.8	0.5	9.0	e	3°	H=07 04 49
	iS	N	05 15.0					
	iP	Z	07 43 26.2	0.5	88.0	d		
	iP	Z	13 20 56.0	0.4	12.0	e	1½°	H=13 20 29
	iS	N	21 16.0					
	e	Z/	20 38 56			-		
DURING THE DAY 10 SHOCKS VOLCANIC IN ORIGIN WERE RECORDED TO.5 A6-16								
22/8	iP	Zh	02 12 10	0.5	2.5	d		Seismic Survey, Shot 1, location 9 - 04°19'36", 152°22 40 Charge 200 lbs. Depth 168' H=02 12 03.7
	e	E/	03 51 17			+		
	iP	Z	04 56 07.5	0.5	4.0		d	Seismic Survey, Shot 2, Location 11- 04°18'26"S 152°11' 15"E Charge 100 lb. Depth 210' H=04 56 04.0
	iS	Zh	56 12.0					
	iP	Z	05 33 07.5	0.5	6.0		d	Seismic Survey, Shot 3, Location 12 - 0417198, 152 10 15 Charge 100 lb. Depth 70' H=05 33 03.9
	e	Z/	05 48 57			+		
	iP	Z	07 08 52.2	0.4	7.0	d	6°	H=07 08 06
	eS	N	09 27					
	iP	Z	08 48 26.0	0.5	5.0	d	3°	H=08 47 41
	eS	N	49 00.2					
	iP	Z	17 06 17.0	0.6	2.0	e	20°	Teleseism - superimposed shock
	iS	N/	09 53.5					
	iScP	N/	14 13.0					
	ePcS	Z/	14 14					
	eScS	N/	17 53					

				T sec	A mm	GM	Dist	REMARKS
22/8	iP	Z	17 46 58.2	0.4	5.0	c	26°	Teleseism
	i	Z	47 41.5					Superimposed rock.
	iS	N/	52 04.0					
23/8 - STRONG MICROSEISMIC ACTIVITY								
	e	Z/	00 03 51			+		
	iP	Z	01 57 06.2	0.5	17	c		Seismic Survey, shot 1, Location 13 - 040848, 152 10 24 Charge 20 lb. Depth 180' H=01 57 03.9
	iP	Z	03 14 08.0	0.5	14.0	d		Seismic Survey, shot 2, Location 14 - 04°05'06", 152"06'30" Charge 50 lb. Depth 240' H=031404.2
	iP	Z	03 46 08.1	0.5	3.0	c		Seismic Survey, shot 3, Location 14 - 04°05'06", 152°06'30" Charge 100 lb. Depth 240' H=03 46 04.1
	iP	Z	17 30 39.5	0.4	35.0	d	1°	H=17 30 21
	iS	N/	30 53.0					
	e	Z/	18 30 02			-		
	e	Z/	22 04 22			-		
	e	Z/	22 50 31			+		
24/8 STRONG MICROSEISMIC ACTIVITY								
	iP	Z	00 51 07.5	0.5	23.0	d		Seismic Survey, Shot 1, Location 16, 04°10'24", 152°10'06 Charge 20 lb. Depth 12' H=00 51 04.1
	iP	Zh	01 56 06.5	0.5	48.0	c		Seismic Survey, Shot 2, Location 17 04°11 06, 15209 54 Charge 30 lb. Depth 18' H=01 56 04.5
	eiP	Z	02 03 06	0.5	6.0	c		C.B.M.
	iP	Zh	02 57 06.5	0.4	27.0	c		Seismic Survey, Shot 3, Location 18 - 041154, 152 07 58 Charge 100 lb. Depth 240' H=02 57 04.0

				T sec	A mm	GM	Dist	REMARKS
24/8 (cont.)								
	iP	Z	04 37 08.0	0.4	11.0	c		Seismic Survey, Shot 4, Location 19 - 04°06'18", 152°04'00" Charge 100 lbs. Depth 276 ft. H=04 37 04.0
	e	Z/	08 19 53			+		
	iP	Z	12 01 09.0	0.5	7.0	c		

Seismograms read by M. Gaiam

G.W. D'ADDARIO
Vulcanologist-in-Charge.

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L.P. - Z/N/E/ Maximum Magnification 750 at 25 seconds.

Strong Motion two-component Omori Seismograph.
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G. W. D'ADDARIO
Vulcanologist-in-Charge.

25th August - 31st August, 1966.

						T sec	A mm	GM	Dist.	Remarks
25/8	iP	Z	03	09	18.0	0.5	4.0	d	2½°	H = 03 08 42
	iS	N/		09	45.0					
	iP	Z	03	13	25.0	0.4	17.0	c	½°	H = 03 13 13
	iS	E/		13	34.0					
	iP	Z	04	08	05.2	0.5	4.0	d		Seismic Survey
	i	Z		08	06.5					Shot 1
	eS	E/		08	08					Location 20
										04°10'26S, 152°10'00E
										Charge 20 lb
										Depth 30 ft.
										H = 04 08 04.0
	iP	Z	05	01	06.2	0.4	12.0	c		Seismic Survey
	i	Zh		01	07.0					Shot 2
	i	Zh		01	11.5					Location 21
										04°08'00S, 152°12 12E
										Charge 30 lb
										Depth 10 ft.
										H = 05 01 04.0
	iP	Z	05	43	06.0	0.4	57.0	c		Seismic Survey
										Shot 3
										Location 22
										04°09'10S, 152°13 12E
										Charge 100 lb
										Depth 300 ft.
										H = 05 43 03.9
	iP	Z	06	38	06.0	0.5	32.0	c		Seismic Survey
	eS	E/		38	10½					Shot 4
										Location 23
										04°12'30S, 152°14'48E
										Charge 100 lb
										Depth 180 ft.
										H = 06 38 04.0
	e	Z/	09	25	16			+		
	iP	Z	19	58	49.5	0.4	1.0	d	6½°	H = 19 57 09
	eS	N/	20	00	07					
	iP	Z	20	26	09.5	0.5	4.0	d	½°	H = 20 25 56
	iS	N		26	19.0					
26/8	e	Z/	01	07	37			+		
	iP	Z	04	36	20.0	0.4	2.0	d	1½°	H = 04 35 51
	eS	N/		36	42					

						T sec	A mm	GM	Dist.	Remarks
26/8 cont'd.										
	iP	Z	06	10	05.0	0.5	33.0	c		Seismic Survey
	iS	E/		10	14.5					Shot 5
										Location 13
										04°12'48S', 152°10'24E
										Charge 50 lb
										Depth 84 ft.
										H = 06 10 04.0
	iP	Z	08	06	08.5	0.5	3.5	c		
	iP	Z	09	00	18.0	0.5	2.0	c	3°	H = 08 59 32
	eS	N		00	53					
	eP	Z	09	12	13	0.8	1.0	d	26°	Teleseism
	ePP	Z/		12	50					
	eS	N/		16	41					
	ePcS	Z/		19	21					
	eScS	E/		23	07					
	iP	Z	12	02	39.0	0.5	1.5	d		
	i	Z		02	40.0					
	eP	Z	13	33	29	0.5	1.0	c		
	e	Z/	22	43	53			+		
27/8	iP	Z	02	06	26.0	0.5	2.0	d		
	i	Z		06	35.0					
	iP	Z	02	41	42.5	0.5	1.0	c		
	i	Z		41	44.0					
	iP	Z	03	21	49.0	0.5	2.5	c		
	eP	Z	04	41	25	0.5	1.5	d		
	iP	Z	05	31	03.0	0.5	4.5	c		
	iP	Z	10	38	17.5	0.4	4.0	d		
	iP!	Z	15	01	53.0	0.5	32.0	d		
	e	Z/	17	22	56			+		
	iP	Z	20	17	07.0	0.5	3.0	d	3½°	H = 20 16 14
	eS	E		17	47					
28/8	e	Z/	00	38	05			+		
	e	Z/	02	21	04			+		
	e	Z/	03	41	04			+		
	e	Z/	04	28	05			+		
	iP	Z	07	37	00.2	0.5	25.0	e		

				T sec	A mm	GM	Dist.	Remarks
28/8 (cont.)								
	iP	Z	09 30 29.2	0.5	2.0	c	2°	H=09 29 57
	eS	N	30 53½					
	eiP	Z	10 04 06	0.5	1.0	d	6°	H=10 02 39
	i	Z	04 15.5					
	eS		05 13					
28/8	eP	Z	18 53 16½	0.5	1.0	d		
	i	Z	53 20.0					
	eP	Z	19 04 39	0.5	1.0	d		
	iP	Z	19 50 30.0	0.7	3.5	d		
	iP	Z	22 36 11.5	0.5	4.0	d	25°	Teleseism
29/8	iP	Z	01 29 06.0	0.4	15.0	c		Seismic Survey -Shot 1, Location 30. 04°14'30"S, 152°10'22". Charge 50 lb. Depth 132' H=01 29 03.8
	iP	Z	02 02 06.0	0.5	4.0	c		Seismic Survey, Shot 2, Location 1/2. 04°13'56"S, 152°12'12". Charge 30 lb. Depth 144' H=02 02 03.7
	eP	Z	02 39 51	0.5	1.5	c		
	iP	Z	04 15 06.5	0.5	2.0	d		Seismic Survey, Shot 4. Location 32. 04°14'49"S, 152°11'18"E. Charge 10 lb. Depth 36' H=04 15 03.9
	i	Zh	15 08.0					
	eP	Z	05 23 04	0.5	2.5	c		
	iP	Z	05 40 07.0	0.5	3.0	c		Seismic Survey, Shot 6. Location 34. 04°16'24"S, 152°12'00". Charge 100 lb. Depth 156'. H=05 40 04.1.
	iP	Z	08 00 30.3	0.5	3.0	d	2¼°	H=07 59 53
	iS	N	00 58.5					
	iP	Z	09 08 42.0	0.5	1.0	c	5°	H=09 07 24
	i	Z	08 48.0					
	iS	N/	09 42.0					
	e	Z/	15 29 09					
30/8	iP	Z	02 02 26.8	0.5	12.0	d		
	eS	E/	02 37					

				T sec	A mm	GM	Dist.	Remarks
30/8 (cont.)								
	iP	Z	04 57 07.5	0.5	6.0	d		Seismic Survey, Shot 4, Location 38. 04°17'36", 152°12'10". Charge 100 lb. Depth 48' H=04 57 04.0.
	iP	Z	07 59 16.5	0.5	6.0	e	1½°	H=07 58 53
	iS	N	59 34.0					
	iP	Z	11 11 32.8	0.5	1.5	d		
	i	Z	11 35.3					
	eP	Z	11 15 03½	0.5	2.0	d		
	iP	Z	11 43 50	0.5	1.5	d	¾°	H=11 43 33
	eS	E	44 02					
	eP	Z	12 47 24	1.0	1.0	e		
	i	Z	47 37					
	eP	Z	15 12 31	0.5	1.0	d		
	i	Z	12 45					
	iP	Z	17 20 43.5	0.5	4.0	d	1½°	H=17 20 17
	iS	N	21 03.5					
	iP	Z	18 20 32.5	0.5	1.0	d		
	iP	Z	21 59 00.5	0.5	4.0	e		
	iP	Z	22 08 52.8	0.5	17.0	d	¾°	H=22 08 36
	eS	E/	09 05					
31/8	e	Z/	00 05 21			-		
	e	Z/	10 24 58			-		
	e	Z/	11 04 31			-		
	iP	Z	15 15 44.8	0.5	2.5	e		
	iP	Z	15 18 07.0	0.5	2.5	e		In coda.
	iP	Z	16 22 04.2	0.5	2.0	d	4°	H=16 21 02
	eS	N/	22 53					

Seismograms interpreted by M. Gaiam,
Vulcanological Assistant.

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G. W. D'ADDARIO
Vulcanologist-in-Charge.

1st - 7th SEPTEMBER, 1966

				T sec	A mm	GM	Dist.	Remarks
1/9	iP	Z	06 38 20.0	0.5	80	d	1°	H=06 38 03.7
	iS	N/	38 32.0					
	iP	Z	07 51 20.0	0.5	3.0	d		
	iP	Z	09 01 22.0	1.0	2.5	d		
	e	Z/	14 33 21			-		
	eP	Z	18 26 17	0.4	2.0	c		
	iP	Z	20 08 19.2	0.5	3.0	d		
	iP	Z	20 37 17.5	0.5	2.5	c	2°	H=20 36 44
	eS	N/	37 43					

Short period horizontal components strong microseismic activity associated with S.E. Monsoon T0.6 A3-5.

2/9	e	Z/	01 18 10			+		
	e	Z/	08 26 12			-		
	e	Z/	14 46 32			-		
	eP	Z	16 15 18	0.5	1.5	c		
	iP	Z	20 40 19.5	0.5	3.5	c	1½°	H=20 39 51
	eS	N	40 41					

S.P. Horizontal comp. strong microseismic activity associated with S.E. Monsoon T0.8 A3-6.

3/9	iP	Z	06 02 38.5	0.5	63.0	d	1½°	H=06 02 17
	iS	N/	02 54.5					
	iP	Z	09 02 17.0	0.5	11.0	d	1°	H=09 01 56
	iS	N/	02 32.5					
	iP	Z	11 16 40.5	0.4	9.0	d	¾°	H=11 16 25
	eS	N/	16 52					
	e	Z/	13 14 54			+		
	e	Z/	17 11 46			-		

Strong microseismic activity between 022300 - 031100 hours.

4/9	e	Z/	06 31 30			+		
	iP	Z	09 44 35.5	0.5	3.0	d	1½°	Teleseism
	ePP	Z/	44 49					
	iPPP	Z/	44 58.0					
	eS	N-	47 13					
	eLq	N/	47 21					
	eSS	E/	47 34					
	eSSS	E/	47 46					
	ScP	E/	53 33					
	ScS	E/	57 07					
	e	Z/	13 36 47			-		
	iP	Z	21 26 46.8	0.5	14.0	d		

S.P. Horizontal component strong microseismic activity associated with S.E. Monsoon T0.5 A3-8.

				T sec	A mm	GM	Dist.	Remarks
5/9	iP	Z	02 22 51.0	0.5	52.0	d	1½°	H=02 22 29
	iS	N/	23 07.0					
	iP	Z	06 40 58.0			d	1½°	overlapping.
	iS	N/	41 14.0					H=06 40 36
	iP	Z	06 54 06.0	0.5	6.0	c	5½°	H=06 52 47
	eS	N/	55 07					
	iP	Z	08 55 21.5	0.5	75.0	d	1½°	H=08 55 00
	iS	N/	55 37.5					
	e	Z/	11 36 06			-		
	e	Z/	18 06 09			+		

S.P. Horizontal comp. strong microseismic activity associated with S.E. Monsoon T0.5 A3-8.

6/9	iP	Z	09 09 29.2	0.5	70.0	c	1½°	H=09 09 05
	iS	N/	09 47.5					
	iP	Z	14 20 16.3	0.5	14.0	c	¾°	H=14 20 01
	eS	N/	20 27					
	e	Z/	17 02 29			-		
	e	Z/	18 13 39			+		
	eP	Z	20 56 18	0.5	2.0	c		
7/9	eP	Z	05 55 19	0.5	3.5	c		C.B.M.
	iP	Z	15 38 57.5	0.4	13.5	d	1½°	H=15 38 35
	iS	N/	39 14.0					
	iP!	Z	15 55 55.5	0.5	162	S.E.	2½°	H=15 55 13
	iS	N/	56 28.0					

S.P. Horizontal Comp. strong microseismic activity.

Seismograms interpreted by M. Gaiam,
Vulcanological Assistant.

G. W. D'AUDARIO
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G. W. D'ADDARIO
Vulcanologist-in-Charge.

8th - 14th SEPTEMBER, 1966

				T sec	A mm	GM	Dist.	Remarks
8/9	iP	Z	00 29 55.5	0.5	4.0	d		
	iP	Z	02 24 07.0	0.5	3.5	c		
	e	Z/	10 47 38			-		
	iP	Z	17 23 59.0	0.5	13.0	d		
	iP	Z	21 21 07.3	0.5	6.0	c	24°	Teleseism
	eS	E/	25 30					
9/9	iP	Z	03 37 23.5	0.5	4.0	d		
	iP	Z	07 23 50.3	0.5	45	d	1¾°	H=07 23 20
	iS	N	24 13.0					
	iP	Z	11 11 43.2	0.5	1.0	c	1½°	H=11 11 18
	iS	N	12 02.0					

No time break from 091533 to 092310 hrs.

10/9 Secondary time.

	e	Z/	06 04 48			-		
	e	Z/	10 33 40			+		
	e	Z/	17 44 42			+		

11/9 Strong microseismic activity

	e	Z/	02 26 45			+		
	e	Z/	04 51 55			+		
	iP	Z	07 04 35.5	0.5	3.0	d	5½°	H=07 03 14
	eS	N/	05 39					

No time break from "0826-"2326. Auxiliary power and time off.
Secondary time on 120030.

12/9 Secondary time

	e	Z/	00 45 14			+		
	iP	Z	10 25 44.2	0.5	7.0	c	1½°	H=10 25 19
	iS	N	26 03.2					
	eP	Z	11 35 10	0.6	5.0	c	26°	Teleseism
	ePP	Z/	35 49					
	ePcP	Z/	38 39					
	eS	E/	39 40					
	e	Z/	16 52 30			+		
	iP	Z	22 29 24.2	0.5	8.0	d	1½°	H=22 29 01
	iS	N/	29 41.2					

13/9 Secondary time

	e	Z/	00 37 10			+		
	eP	Z	00 56 15	0.5	1.0	c		
	iP	Z	03 53 25.0	0.5	6.0	c	½°	H=03 53 18
	eS	N/	53 31					

			T sec	A mm	GM	Dist.	Remarks
13/9 continued							
	e	Z/ 07 53 17			+		
	e	Z/ 09 48 14			-		
	iP	Z 11 04 09.3	0.5	7.0	d		
	e	Z/ 16 18 25			-		
	e	Z/ 21 48 41			+		
14/9 Secondary time							
	e	Z/ 00 26 32			+		
	e	Z/ 03 46 11			+		
	iP	Z 13 43 02.5	0.5	1.5	d		
	iP	Z 13 48 54.9	0.5	1.0	c		
	iP	Z 13 50 18.6	0.5	2.5	d		
	iP	Z 20 06 15.5	0.5	1.0	d		

Seismograms interpreted by M. Gaiam,
Vulcanological Assistant.

G. W. D'ADDARIO
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Papua & New Guinea

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G. W. D'ADDARIO
Vulcanologist-in-Charge.

15th SEPTEMBER - 21st SEPTEMBER 1966

				T sec	A mm	GM	Dist.	Remarks
15/9	Secondary time							
	e	Z/	04 07 31			-		
	iP	Z	05 26 35.9	0.5	14.0	e	$1\frac{1}{2}^{0}$	H=05 26 11
	iS	N/	26 54.1					
	e	Z/	07 10 20			-		
	iP	Z	11 07 04.1	0.5	12.0	d	$\frac{3}{4}^{0}$	H=11 06 49
	iS	N	07 15.1					
	e	Z/	12 06 52			-		
	iP	Z	12 27 34.6	0.5	1.0	d		
	iP	Z	13 35 49.5	0.4	2.0	d	$1\frac{1}{2}^{0}$	H=13 35 25
	iS	N	36 08.2					
	iP	Z	16 29 46.2	0.5	1.0	d	$2\frac{1}{2}^{0}$	H=16 29 06
	iS	N	30 16.2					
	iP	Z	17 18 23.4	0.8	4.0	e		
	e	Z/	19 56 09			+		
16/9	Strong microseismic activity - Secondary time							
	e	Z/	00 19 04			+		
	e	Z/	03 22 28			-		
	iP	Z	03 53 22.5	0.5	5.0	d		C.B.M.
	iP	Z	05 13 47.6	0.5	5.0	d	$1\frac{1}{2}^{0}$	H=05 13 19
	eS	E/	14 09					
	eP	Z/	07 54 55			e	$19\frac{1}{2}^{0}$	C.B.M.
	eS	N/	58 29					
	e	Z/	13 22 04			+		
	eP	Z	19 04 22	0.5	1.0	d		
	iP	Z	21 38 38.4	0.5	3.0	d	$1\frac{1}{2}^{0}$	H=21 38 13
	iS	N	38 58.2					
	iP	Z	22 32 42.6	0.5	2.5	e	$1\frac{1}{2}^{0}$	H=22 32 19
17/9	Secondary time							
	e	Z/	04 02 05			+		
	iP	Z	05 28 23.1	0.4	2.0	d		
	e	Z/	06 06 18			-		
	e	Z/	11 24 20			-		
	iP	Z	16 38 59.7	0.5	2.0	e		
	iP	Z	19 09 41.5	0.5	1.5	e	$1\frac{1}{2}^{0}$	H=19 09 19
	iS	E	10 02.2					
	eP	Z	20 22 19	0.5	1.0	e		
18/9	Secondary time							
	iP	Z	11 48 40.6	0.4	21.0	d	2^{0}	H=11 48 07
	iS	N	49 05.7					

18/9	iP	Z	13 35 33.2	0.5	70	c	1^{0}	H=13 35 14
	iS	E/	35 47.2					
	iP	Z	13 41 26.4	0.4	4.0	c		In coda of preceding shock
	eP	Z	14 25 34	1.0	1.0	c		
	e	Z/	16 02 11					
	iP	Z	17 32 30.2	0.5	2.0	c		
	e	Z/	21 34 37			-		
19/9	Secondary time							
	e	Z/	00 58 48			-		
	e	Z/	03 47 07			-		
	eP	Z	06 08 35	0.5	1.0	c	$11\frac{1}{2}^{0}$	
	i	Z	08 45.1					
	eS	E/	10 18					
	e	Z/	07 03 06			+		
	e	Z/	08 22 15			-		
	e	Z/	16 18 32			-		
	e	Z/	19 26 51					
	iP	Z	21 26 31.3	0.5	2.5	d	3^{0}	H=21 25 43
	iS	N	27 07.9					
	iP	Z	22 53 41.6	0.5	8.0	c	$1\frac{3}{4}^{0}$	H=22 53 12
	eS	N/	54 04					

20/9 Records unserviceable - time undertain.

21/9 Records unserviceable - time uncertain.

Seismograms interpreted by M. Gaiam.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA AND NEW GUINEA
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Earthquake Analysis Rabaul Station - RAB.

Instruments at Rabaul Station

World Wide Standardised Seismograph.
Z.P. - Z Maximum Magnification 12,500 at 0.6 seconds.
S.P. - N & E Maximum Magnification 6,250 at 0.6 seconds.
L.P. - Z/N/E/ Maximum Magnification 750 at 25 seconds.

Strong Motion two-component Omori Seismograph.
L.P. - No Static Magnification 12 To = 3.6 Air Damping 10:1
L.P. - Eo Static Magnification 10 To = 3.8 Air Damping 10:1
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G. W. D'ADDARIO
Vulcanologist-in-Charge.

22nd - 28th SEPTEMBER 1966

				T sec	A mm	GM	Dist	Remarks
22/9	RECORDS UNSERVICEABLE - TIME UNCERTAIN							
23/9	eP	Z	01 38 30	0.5	1.0	c		
	iP	Z	02 53 59.0	0.5	4.0	d	1½°	H=02 53 34
	iS	N	54 18.0					
	eP	Z	04 53 28	0.5	1.0	d		
	e	Z/	06 52 34			-		
	iP	Z	16 01 31.1	0.5	1.5	c		
	i	Z	01 32.1					
	e	Z/	19 21 37			-		
24/9	iP	Z	02 53 00.3	0.5	5.0	c	2°	H=02 52 29
	iS	N	53 24.0					
	e	Z/	09 34 24			-		
	eP	Z	12 21 17	0.5	1.0	d		
	eP	Z	13 05 27	0.5	1.0	d	12°	
	eS	N/	07 22					
	iP	Z	13 38 33.0	0.5	1.5	d	3°	H=13 37 48
	iS	N	39 07.7					
	iP	Z	13 50 13.5	0.5	2.0	c	2¾°	H=13 58 30
	i	Z	50 15.7					
	iS	N	50 46.5					
	iP	Z	16 53 54.9	1.0	1.0	d		
25/9	iP	Z	02 01 13.9	0.5	2.5	d	2½°	H=02 00 33
	i	Z	01 15.6					
	iS	N	01 45.0					
	iP	Z	04 54 40.1	0.5	4.5	c		
	eP	Z	06 26 05½	0.5	2.0	(d)		
	e	Z/	06 51 47			-		
	iP	Z	07 31 21.9	0.5	50.0	d	1°	H=07 31 04
	eS	N/	31 35					
	e	Z/	08 46 11			+		
26/9	iP	Z	02 12 04.2	0.5	7.0	d		C.B.M.
	iP	Z	03 10 03.0	0.5	4.0	c	2°	H=03 09 28
	eS	N/	10 29					
	e	Z/	05 44 42			+		
	e	Z/	06 22 05			-		
	iP	Z	11 55 09.8	0.4	13.0	d	1½°	H=11 54 47
	eS	E/	55 27					
	iP	Z	11 57 29.2	0.5	2.0	c	2½°	H=11 56 47. In coda of preceding shock.
	iS	E/	58 00.7					

				T sec	A mm	GM	Dist	Remarks
26/9 (continued)								
	iP	Z	16 57 07.1	0.5	2.5	d		
	iP	Z	18 26 49.6	0.5	2.9	d	2½°	H=18 26 07
	i	Z	26 51.6					
	iS	N	27 21.6					
27/9	eP	Z	03 24 12½	0.5	1.0	c		
	iP	Z	05 49 35.6	0.4	3.5	d	2½°	H=05 48 53
	iS	N/	50 07.4					Felt Rabaul Int. 1
								04°10'S, 152°10'E
	iP	Z	17 38 06.8	0.5	1.0	d		
	eP	Z	18 46 57	0.5	1.0	d		
	iP	Z	19 15 45.0	0.5	41.0	d	1½°	H=19 15 21
	eS	N/	16 03					
	iP	Z	23 03 13.0	0.4	1.0	c	2°	H=23 02 40
	iS	E	03 37.6					
28/9	iP	Z	14 10 23.8	0.8	6.0	d	61°	
	ePcP	Z/	11 05					
	ePP	Z/	12 37					
	eS	N/	18 38					
	eScS	N/	20 09					
	eSS	N/	22 38					
	eLQ	E/	25 32					
	iP	Z	20 21 20.0	0.5	2.0	c	1¾°	H=20 20 51
	iS	N	21 42.0					

Seismograms interpreted by Mager Gaiam

G.W. D'ADDARIO
Vulcanologist-in-Charge.

29 & 30 SEPT. } 1966.
1 & 5 OCT.

TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAUL

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G.W. D'ADDARIO
Vulcanologist-in-Charge.

29th-30th SEPTEMBER; 1st-5th OCTOBER 1966

				T sec	A mm	GM	Dist.	Remarks
29/9	e	Z/	00 53 09			-		
	e	Z/	02 50 45			-		
	e	Z/	09 07 38			-		
	iP	Z	12 35 04.8	0.5	78.0	dN.E	1°	H=12 34 46
	iS	N/	35 19.0					
	e	Z/	15 14 48			-		
30/9	e	Z/	03 00 17			+		
	e	Z/	09 51 35			-		
	iP	Z	10 06 43.2	0.5	2.5	c	1°	H=10 06 25
	eS	E	06 56					
	eP	Z	12 29 18	0.5	1.5	c		
	e	Z/	15 19 11			+		
	iP	Z	22 25 51.8	0.5	4.0	c	2°	H=22 25 16
	eS	E/	26 19					
1/10	S.P. Z and N-S were exposed by light.							
	iP	Zh	02 16 12.0	0.5	2.0	c	1½°	H=02 15 45
	iS	Zh	16 32.0					
	iP	Zh	02 34 42.5	0.4	2.0	c		
	e	Z/	05 52 25			-		
	iP	Zh	07 53 12.0	0.4	2.5	c		
	iP	Zh	07 56 16.5	0.5	2.0	c	1½°	H=07 55 54
	iS	N/	56 37.0					
	iP	Zh	10 33 21.2	0.5	1.0	d		
	iP	Zh	13 23 31.5	0.5	1.5	c	1°	H=13 23 12
	eS	E/	23 46					
2/10	L.P. records paper upside down.							
	iP	Z	12 15 43.0	0.5	44.0	c	1½°	H=12 15 18
	iS	N	16 02.0					
	eP	Z	13 08 15	0.5	1.5	d	2°	H=13 07 42
	eS	N	08 40					
	iP	Z	14 50 02.5	0.5	1.0	d	2°	H=14 49 29
	iS	N	50 27.5					
	eP	Z	20 35 34	0.5	1.0	d		
	eP	Z	21 58 13	0.5	2.0	d		
3/4	iP	Z	02 01 56.5	0.4	5.0	d	2°	H=02 01 23
	eS	N	02 22					
	eP	Z	02 20 35	0.4	1.5	d		
	e	Z/	15 38 25			-		

				T sec	A mm	GM	Dist	Remarks
4/10	eP	Z	00 38 30	0.5	1.5	d	6¼°	H=00 36 57
	eS	N	39 42					
	eP	Z	01 47 20	0.5	1.0	d		
	eP	Z	07 27 15½	0.5	1.5	d		
	e	Z/	16 20 05			+		
	iP	Z	16 43 18.5	0.5	20.0	d	1°	H=16 42 57
	iS	N/	43 34.5					
	iP	Z	05 29 23.5	0.5	1.5	c		
	iP	Z	05 37 40.3	0.5	2.0	c		
	e	Z/	19 54 07			+		
	iP	Z	20 19 41.8	0.5	4.0	d		
	e	Z/	20 35 09			+		

Seismograms interpreted by M. Gaiam

G. W. D'ADDARIO
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G.W. D'ADDARIO
Vulcanologist-in-Charge.

5th - 12th OCTOBER 1966

				T sec	A mm	GM	Dist	Remarks
5/10	continued							
	eP	Z	23 10 17½	0.8	2.0	d	5½°	H=23 09 52
	eS	E/	11 24					
6/10	iP	Z	03 12 33.0	0.5	33.0	d	6°	H=03 11 02
	eS	N/	13 43					
	iP	Z	12 45 52.5	0.5	4.0	d	1½°	H=12 45 26
	iS	N	46 12.0					
	e	Z/	13 22 35			-		
	iP	Z	14 16 15.5	0.8	5.0	d		
	iP	Z	18 21 42.0	0.5	7.0	d		
7/10	e	Z/	03 20 05			-		
	e	Z/	04 38 41			-		
	iP	Z	16 00 19.3	0.8	18.0	cNW	23°	Teleseism
	ePP	Z/	00 49					
	eS	N/	04 27					
	eLQ	E/	04 55					
	eLR	Z/	06 03					
	eScP	N/	07 48					
	iP	Z	16 34 43.2	0.5	16.0	d		
	eP	Z	19 56 55	0.8	5.0	c		
	eP	Z	23 06 15	0.5	1.0	c		Felt AMBOIN Int. 4 AMBUNTI Int. 5, 04°05'S, 144°05'E
8/10	eP	Z	00 18 45½	0.5	3.0	d	35°	Teleseism
	ePP	Z/	19 56					
	ePcP	Z/	21 11					
	eS	N/	24 05					
	eScP	E/	24 58					
	eLQ	E/	26 13					
	eLR	Z/	27 54					
	eP	Z	02 40 07½	0.5	2.0	d	19¾°	C.B.M. Teleseism
	eS	E/	46 01					
	iP	Z	03 57 15.8	0.5	1.0	c		
	iP	Z	04 36 01.0	0.5	11.0	c		
	iP	Z	08 30 15.8	0.5	16.0	d	¾°	H=08 29 59
	iS	E/	30 28.0					
	iP	Z	11 36 22.0	0.5	7.0	d		
	e	Z/	13 37 12			-		
	iP	Z	15 17 13.8	0.4	3.0	d	¾°	H=15 16 58
	iS	N	17 25.0					
	iP	Z	15 25 06.0	0.5	8.5	c		
	e	Z/	18 1245					

				T sec	A mm	GM	Dist	Remarks
9/10	e	Z/	07 22 54			+		
	iP	Z	12 40 08.0	0.5	5.0	d	$1\frac{1}{2}^{0}$	H=12 39 44
10/10	iP	Z	05 25 12.0	0.5	3.0	d	3^{0}	H=05 24 25
	i	Z	25 14.3					
	iS	N/	25 47.5					
	e	Z/	11 02 41			-		
	eP	Z	13 57 55	0.5	2.5	c	2^{0}	H=13 57 22
	eS	N	58 20					
	iP	Z	14 38 24.0	0.5	14.0	d	$1\frac{1}{2}^{0}$	H=14 37 54
	eS	N/	38 46					
Microseismic activity from 100815 to 102300 hours.								
11/10	S.P. Strong microseismic activity							
	e	Z/	00 05 29			-		
	iP	Z	02 12 43.0	0.4	37	d	$1\frac{1}{2}^{0}$	H=02 12 19
	iS	N/	13 00.5					
	e	Z/	06 55 17			-		
	e	Z/	10 33 51			+		
	e	Z/	15 59 24			+		
	e	Z/	20 48 06			+		
	eP	Z/	23 42 55			c		
12/10	S.P. Strong microseismic activity							
	e	Z/	02 56 31			-		
	e	Z/	03 25 40			-		
	e	Z/	04 29 43			-		
	e	Z/	07 48 44			+		
	e	Z/	07 59 30			-		
	eP	Z	10 48 $40\frac{1}{2}$	0.5	2.5	c		
	iP	Z	16 49 43.3	0.5	1.0	d		
	iP	Z	16 52 52.5	0.5	13.0	c		
	iP	Z	18 48 15.2	0.5	2.0	d		
	eL	E/	49 07					
	e	Z/	21 16 41			-		

Seismograms interpreted by M. Gaiam

G. W. D'ADDARIO
Vulcanologist-in-Charge.

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L.P. - Ee Static Magnification 10 To=3.8 Air Damping 10:1

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G.W. D'ADDARIO
Vulcanologist-in-Charge.

13th to 19th October, 1966

				T sec	A mm	GM	Dist	Remarks
13/10	e	Z/	02 53 15			-		
	iP	Z	12 26 48.0	0.5	4.5	e		
	e	Z/	18 54 26			-		
	iP	Z	19 48 42.5	0.4	1.5		$1\frac{3}{4}^{o}$	H=19 48 12
	eS	E/	49 05					
	iP	Z	21 08 59.8	0.5	9.0	d	$1\frac{1}{4}^{o}$	H=21 08 37
	eS	N/	09 17					
14/10	Microseismic activity between 132329-140830							
	e	Z/	01 16 14			+		
	e	Z/	01 25 14			-		
	e	Z/	02 32 23			-		
	e	Z/	06 26 48			+		
	iP	Z	07 36 02.5	0.5	3.5	d		
	e	Z/	09 20 40			-		
	iP	Z	14 45 08.0	0.4	3.0	d	$1\frac{3}{4}^{o}$	H=14 44 39
	iS	N	45 30.0					
	e	Z/	17 54 07			+		
	e	Z/	20 22 56			+		
15/10	microseismic activity from 0000-1000 hours							
	iP	Z	02 21 07.0	0.5	8.0	d	$1\frac{3}{4}^{o}$	H=02 20 38
	iS	E/	21 28.5					
	iP	Z	07 13 16.0	0.5	4.5	e	$1\frac{1}{2}^{o}$	H=07 12 52
	iS	N/	13 34.0					
	iP	Z	15 51 58.1	0.5	19.0	e	$1\frac{1}{2}^{o}$	H=15 51 34
	eS	E	52 16					
	iP	Z	15 55 29.9	0.5	5.0	e		In coda of preceding shock.
	eP	Z	19 46 $26\frac{1}{2}$	0.5	1.0	d		
	iS	N	46 47.9					
	e	Z/	20 43 31			-		
16/10	Microseismic activity between 0600-1400 hours							
	e	Z/	09 24 51			+		
	eiP	Z	13 18 $43\frac{1}{2}$	0.4	6.0	d	$1\frac{1}{2}^{o}$	H=13 18 15
	i	Z	18 44.7					
	eS	N/	19 05					
	e	Z/	21 01 43			-		
17/10	e	Z/	01 55 06			+		
	eP	Z	04 01 41	0.7	2.8	d	25°	
	eS	N/	05 56					
	eLq	N/	06 31					
	eLr	Z/	06 51					
	eSS	E/	06 55					

					T sec	A mm	GM	Dist	Remarks
17/10	(continued)								
	eP	Z	10	19 23	0.5	1.0	c	(16½°)	
	e(S)	N/		22 27					
	eP	Z	12	13 18	0.5	1.0	d	20°	
	eS	E/		16 22					
	eL	E/		17 39					
	eP	Z	12	38 49	0.4	1.2	d		
	iP	Z	13	11 18.0	0.4	2.0	c	2½°	H=13 10 41
	iS	N		11 46.0					
	eP	Z	13	52 41	0.5	1.0	c		
	e	Z/	17	05 43			-		
	eP	Z	18	25 42	0.5	1.5	d		
	eP	Z	20	31 09½	0.5	1.0	d		
	e	Z/	21	57 48			-		
	eP	Z	22	01 05	0.8	2.0	c		L.P. records hard to decipher.
18/10	iP	Z	08	36 22.8	0.5	3.2	d	1½°	H=08 35 57
	eS	N/		36 42					
	iP	Z	19	01 23.6	0.5	8.0	c	1½°	H=19 00 54
	eS	N/		01 45					
	e	Z/	20	14 38			-		
	eP	Z	20	53 33	0.5	2.0	d		
	iP	Z	21	15 32.7	0.5	89.0	eSE		
	iP	Z	21	23 33.0	0.5	3.0	c		in coda
	iP	Z	21	27 56.5	0.5	3.5	c		in coda
19/10	iP	Zh	00	21 03.0	0.5	11.0	c	½°	H=00 20 53
	iS	E/		21 10.5					
	e	Z/	03	14 55			-		
	iP	Z	03	45 20.5	0.4	3.5	d	¾°	H=03 45 05
	iS	Zh		45 32.0					
	e	Z/	05	04 47			+		
	e	Z/	05	31 04			+		
	iP	Z	06	49 36.2	0.4	2.0	c	2°	H=06 49 06
	eS	N		49 59					
	eP	Z	08	00 32	0.4	1.0	c		
	eP	Z	08	21 39	1.0	1.0	c		Teleseism
	iP	Z	10	35 02.3	0.5	3.5	d	1¾°	H=10 34 33
	eS	E/		35 24½					
	iP	Z	11	15 51.0	0.4	3.0	d		

			T sec	A mm	GM	Dist	Remarks
19/10 (continued)							
	eP	Z	11 26 02	0.8	2.0	d	
	iP	Z	12 08 12.5	0.7	2.0	d	
	eP	Z	12 47 31	0.6	1.0	d	
	e(P)	Z	13 27 09	0.8	1.0	(d)	
	eL	N/	29 06				
	e	Z/	13 58 19			~	
	e(P)	Z	22 17 34	0.5	1.0	(d)	
	eL	N/	18 59				

Seismograms interpreted by M. Gaiam

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAUL

Earthquake Analysis Rabaul Station - RAB.
Instruments at Rabaul Station

World Wide Standardised Seismograph
Z.P. - Z Maximum Magnification 12,500 at 0.6 secs.
S.P. - N & E Maximum Magnification 6,250 at 0.6 secs.
L.P. - Z/N/E Maximum Magnification 750 at 25 secs.

Strong Motion two-component Omori Seismograph
L.P. - No Static Magnification2 To=3.6 Air Damping 10:1
L.P. - Ec Static Magnification 10 To=3.8 Air Damping 10:1
S.P. - Zh Helicorder, Geotech Model 2484, coupled to Seismometer, Geotech Model 4681A.

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When readings are given with a decimal figure they are to 1/10 seconds, other readings have been made to the nearest half seconds.

Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

A=Peak-to-Trough trace amplitude in millimetres.
T=Period in seconds.
H=Origin time.
C.B.M. = Confused by microseisms.
G.M. = Ground Motion.
Dist. = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

20th - 26th October 1966

				T sec	A mm	GM	Dist	Remarks
20/10	e	Z/	03 48 16			+		
	e	Z/	11 41 36			-		
	iP	Z	13 17 45.8	0.5	68.0	dS//	1½°	Felt Rebaul 2 04°10', 152°10'E
	iS	E/	18 03.0					
	eP	Z	13 40 01	0.5	1.0	d		
	i	Z	40 06					
	e(P)	Z	15 04 (47)	0.5	1.0	(d)	13°	
	i	Z	05 09.0					
	eLq	E/	06 42					
	eS	E/	06 52					
	iP	Z	16 50 48.5	0.5	3.5	d	1½°	H=16 50 26
	iS	N	51 09					
	e	Z/	17 29 21			-		
	e	Z/	18 16 36			-		
	iP	Z	19 41 06.0	0.5	1.5	e	2°	H=19 40 31
	iS	N	41 32.0					
21/10	L.P. records drifted due to air condition OFF							
	eP	Z	01 48 22½	0.5	1.5	d		
	eLq	N/	49 53					
	e	Z/	11 31 04			+		
	i	Z	11 50 56	0.5	4.5	d		ship moving in harbour.
	P	Z	57 58					
	iP	Z	15 06 23.0	0.5	3.5	e		
	iP	Z	20 22 16.2	0.5	2.0	d	2°	H=20 21 42
	iS	N	22 42.5					
22/10	iP	Z	03 39 11.3	0.5	33.0	e	4°	H=03 38 57
	eS	N/	39 22					
	iP	Z	03 46 21.3	0.5	2.0	e		
	iP	Z	04 20 57	0.5	2.5	d		
	iP	Z	11 28 10.0	0.5	1.5	e	1½°	H=11 27 43
	iS	N	28 30.0					
	iP	Z	12 57 18.5	0.6	3.0	d		
	e	Z/	13 14 05			+		
23/10	e	Z/	00 03 22			+		
	e	Z/	07 26 48			+		
	eP	Z	03 08 20	0.5	1.0	e		
	eiP	Z	09 16 47	0.5	1.5	e	4½°	H=09 15 42
	i	Z	16 51					
	iS	E/	17 37					
	iP	Z	10 55 20.2	0.5	13.5	d		

				T sec	A mm	GM	Dist	Remarks
23/10 (continued)								
	e	Z/	12 41 32			-		
	iP	Z	17 24 50.3	0.5	1.0	c		
24/10 Drifting due to air conditioning unit OFF								
	iP	Z	01 00 23.0	0.5	9.0	c	2°	H=01 59 50
	eS	N/	00 48					
	iP	Z	01 56 03.5	0.5	4.5	c	2°	H=01 55 33
	eS	N/	56 26½					
	iP	Z	05 05 47.2	0.5	13.0	c	1½°	H=05 05 20
	iS	N/	06 07.2					
	e	Z/	16 01 15			-		
	eP	Z	16 10 30	0.5	1.0	d		
	i	Z	10 33.8					
25/10	iP	Z	00 27 57.3	0.5	10.0	c	6°	H=00 26 26 Felt: Lae Int. IV 06°43'S, 147°00'E
	e	Z/	08 03 36			+		
	iP	Z	08 39 56.5	0.5	2.0	c	2°	H=08 39 23
	eS	N/	40 22					
	iP	Z	11 49 27.3	0.5	11.0	d	1°	H=11 49 09
	iS	E/	49 41.0					
	e	Z/	12 53 11			+		
	e	Z/	18 24 56			-		
	eP	Z	22 57 10	0.5	1.5	d	4½°	H=22 55 59
	eS	N	58 04					
26/10 Drifting dve to air-conditioning unit being OFF								
	iP	Z	09 16 20.8	0.4	1.0	d	1½°	H=09 15 55
	iS	N	16 40.5					
	iP	Z	10 43 11.5	0.5	1.0	d	1½°	H=10 42 45
	iS	N	43 31.0					
	iP	Z	18 29 13.3	0.5	105	dSE	½°	H=18 28 58 Felt:Rabaul Int3-4 04°10'S, 152°10'E
	iS	No	29 24.5					
	iP	Z	19 55 07.7	0.5	1.5	d	1½°	H=19 55 46
	iS	N	55 24.0					
	iP	Z	20 16 30.5	1.0	2.0	d		

Seismograms interpreted by M. Gaiam

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAUL

Earthquake Analysis Rabaul Station - RAB.
Instruments at Rabaul Station

World Wide Standardised Seismograph

S.P. - Z Maximum Magnification 12,500 at 0.6 secs.

S.P. - N & E Maximum Magnification 6,250 at 0.5 secs.

L.P. - Z/N/E Maximum Magnification 750 at 25 secs.

Strong Motion two-component Omori Seismograph

L.P. - No Static Magnification 12 To=1.6 Air Damping 10:1

L.P. - No Static Magnification 10 To=1.8 Air Damping 10:1

S.P. - Zh Helicorder, Geotech Model 2484, coupled to Seismometer, Geotech Model 4681A.

"c" or "d" indicates initial compression or dilation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

When readings are given with a decimal figure they are to 1/10 seconds, other readings have been made to the nearest half seconds.

Pg, Sg Crustal phases other than Pn and Sn for Local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

A=Peak-to-Trough trace amplitude in millimetres.
T=Period in seconds.
H=Origin time.
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G.M. = Ground Motion.
Dist. = Distance in central angle degrees.

[illegible]
Vulcanologist-in-Charge.

27th October - 2nd November, 1966

						T sec	A mm	GM	Dist	Remarks
27/10	iP	Z	02	32	08.8	0.7	11.0	d		
	iP	Z	05	53	39.0	0.5	9.0	c		
	iP	Z	06	11	27.3	0.5	2.5	d		
	e	Z/	09	27	52			-		
	iP	Z	14	26	45.0	0.5	5.0	d	27°	
	ePP	Z/		27	28					
	ePPP	Z/		27	42					
	ePoP	Z/		30	18					
	eS	N/		31	19					
	eLq	E/		32	15					
	iScP	N/		33	47.0					
	iP	Z	20	22	39.8	0.4	15.0	d	½°	H=20 22 24
	iS	N		22	51.0					
	iP	Z	20	52	15.0	0.5	3.5	c	3½°	H=20 51 18
	eS	E/		52	58					
	iP	Z	22	27	50.2	0.5	1.5	c	6°	H=22 26 22
	i	Z		27	51.5					
	eS	N/		28	52					
28/10	iP	Z	01	43	40.3	0.6	1.0	d		
	iP	Z	03	24	29.0	0.5	8.0	c	2°	H=03 23 54
	iS	N/		24	55.0					
	iP	Z	09	06	16.0	0.5	2.0	d	1½°	H=09 05 48
	iS	E		06	37.0					
	iP	Z	11	15	14.0	0.5	78.0	dSE	1½°	H=11 14 50
	iS	N/		15	32.0					
	iP	Z	20	12	03.3	0.5	7.0	d	1½°	H=20 11 35
	iS	N/		12	25.0					
	eP	Z	22	16	49	0.5	1.0	d	23°	
	eS	N/		20	55					
	iP	Z	22	55	27.0	0.5	7.0	c	1½°	H=22 55 00
	eS	N		55	47					
29/10	Faulty lamp circuit between 291330-292300 hours									
	e	Z/	01	10	34			-		
	e	Z/	04	49	22			-		
	eiP	Z	07	09	36	0.5	2.0	d	5°	H=07 08 23
	i	Z		09	40.0					
	eS	E/		10	32					
	iP	Z	09	23	22.5	0.5	2.5	c	1½°	H=09 22 58
	iS	N		23	41.0					
	e	Z/	10	47	16			-		
	iP	Z	13	45	53.0	0.5	7.0	c		
	iP	Z	14	41	05.5	1.0	1.5	c		

			T sec	A mm	GM	Dist	Remarks
29/10 (continued)							
eP	Z	18 55 49	0.4	1.0	c		
eP	Z	19 00 33	0.5	1.0	c		
30/10 [illegible] Faulty Lamp circuit between 300500-301700 hours							
iP	Z	00 31 07.0	0.5	1.8	d		
eP	Z	02 45 13	0.5	9.0	c		
eP	Z	18 50 27	0.5	4.0	c		
31/10 Strong microseismic activity. Drifting between 0600-0730 hours due to air-conditioning unit being off.							
e	Z/	02 59 40			-		
e	Z/	04 03 58			-		
e	Z/	05 06 12			-		
1/11 Microseisms increasing on first part of records.							
eP	Z	07 09 28	0.5	4.0	c		
e	Z/	15 48 22			-		
eiP	Z	19 46 04	0.5	15.0	c	4°	H=19 45 00
i	Z	46 05.5					
eS	E	46 53					

2/11 Nil records. Faulty lamp recorder regulator.

Seismograms interpreted by M. Gaiam

G. W. D'Addario
Vulcanologist-in-Charge.

TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAUL.

Earthquake Analysis Rabaul Station - RAB.
Instruments at Rabaul Station

World Wide Standardised Seismograph.
S.P. - Z Maximum Magnification 12,500 at 0.6 seconds.
S.P. - N & E Maximum Magnification 6,250 at 0.6 seconds.
L.P. - Z/N/E/ Maximum Magnification 750 at 25 seconds.

Strong Motion two-component Omori Seismograph.
L.P. - No Static Magnification 12 To = 3.6 Air Damping 10:1
L.P. - Eo Static Magnification 10 To = 3.8 Air Damping 10:1
S.P. - Zh Helicorder, Geotech Model 2484, coupled to
Seismometer, Geotech Model 4681A.

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Pn, Sn Crustal phases other than Pn and Sn for local near earthquakes.

Intensities of felt earthquakes are given in Roman Numerals, based on Modified Mercalli Scale of 1931.

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T = Period in seconds.
O = Origin time.
C.E.M. = Confused by microseisms.
G.M. = Ground motion.
Dist. = Distance in central angle degrees.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

3rd - [illegible] November, 1966

3/11/1966 Tamil [illegible] [illegible] of Regulator [illegible] 0323?2-030?79

			T sec	A mm	CN	Dist	Remarks
e	Z/	12 44 32					
e	Z/	14 1[illegible] [illegible]					
iP iS	Z N	14 5[illegible] 4[illegible].0 54 1[illegible].0	0.5	[illegible].5	c	2°	H=14 53 15
iP	Z	16 31 5[illegible].0	0.4	1.0	d		
eP	Z	16 41 47	0.5	1.0	d		

4/11 Microseisms increasing from 032320-041500 hours

			T sec	A mm	CN	Dist	Remarks
e	Z/	12 12 16					
iP eS	Z N/	04 40 32 [illegible] 41 02	0.5	5.0	d	2[illegible]°	H=04 39 53
iP	Z	07 12 04.6	0.5	[illegible].0	c		
eP	Z	0[illegible] [illegible]1 35	0.5	4.0	(c)		
iP eS	Z N/	17 0[illegible] [illegible].0 30 17	0.5	14.0	d	1[illegible]°	H=17 03 05

5/11

			T sec	A mm	CN	Dist	Remarks
iP	Z	0[illegible] [illegible] 2[illegible]	0.5	[illegible].0	d		
eP	Z	02 [illegible] [illegible]1	0.5	2.0	c	([illegible]°)	
e	Z/	0[illegible] [illegible] [illegible]					
iP	Z	0[illegible] 12 0[illegible].0	0.5	14.5	d		
iP iS	Z N/	10 46 37.5 47 03.0	0.5	2[illegible].0	d	[illegible]°	H=10 46 04
e(P)	Z	12 51 25½	1.0	1.0	c		Teleseism
eP	Z	13 47 44½	1.0	1.0	d		
eP	Z	16 07 34½	0.6	1.0	d		
iP iS	Z N	20 24 02.2 24 24.5	0.5	2.[illegible]	c	1[illegible]°	H=20 23 35
iP iS	Z N/	22 33 02.0 33 13.0	0.5	60	d	2°	H=22 32 4[illegible]

6/11

			T sec	A mm	CN	Dist	Remarks
iP eS	Z N/	01 23 55.2 29 10	0.5	77.0	d	1°	H=01 28 15
i P	Z Z	08 58 54.5 09 01 54	0.5	3.0	c		[illegible]
iP	Z	11 05 53.8	0.5	15.0	c		
eP	Z	14 48 56½	0.5	2.0	d		
eP	Z	19 25 54	0.5	2.5	c		

7/11 Microseisms increasing from 0345-0700 hours

e Z/ 09 06 23

7/11 (continued)

e	E/	13 36 46			+		
iP	Z	16 02 38.5	0.5	20.0	d	1½°	H=16 02 14
eS	E/	02 57					
e	Z/	17 50 53			–		
iP	Z	17 57 31.2	0.5	2.0	d		
eiP	Z	18 41 23	0.5	4.0	c	2°	H=18 40 51
i	Z	41 23.5					
eS	E/	41 47					
iP	Z	20 26 42.4	0.5	13.0	d	2°	H=20 26 10
eS	E/	27 07					
iP	Z	22 52 07.0	0.5	3.0	d		

8/11 L.P. EW faulty lamp recorder regulator.

iP	Z	01 39 17.2	0.5	39.0	d	1°	H=01 38 59
iS	N	39 30.5					
iP	Z	06 45 02.3	0.5	12.0	c	½°	H=06 44 48
eS	E/	45 13					
iP	Z	09 20 26.8	0.5	21.0	d	½°	H=09 20 11
iS	N	20 38.0					
e	Z/	12 03 33			–		
iP	Z	15 42 22.4	0.5	19.0	c	½°	H=15 42 16
iS	N	42 27.5					
iP	Z	21 19 57.0	0.4	9.0	c	½°	H=21 19 44
eS	N	20 05					

9/11 L.P. Z and E-W papers upside down.

iP	Z	02 40 14.0	0.5	2.0	d	2°	H=02 39 43
eS	N	40 37					
eP	Z	02 54 31	0.5	2.0	d		
iP	Z	11 33 59.8	0.5	2.0	c		
eP	Z	17 19 21½	0.5	1.5	d		
iP	Z	18 13 15.8	0.5	9.0	d	1½°	H=18 12 52
iS	N	13 33.5					
iP	Z	20 08 18.0	0.5	3.0	c	2°	H=20 07 46
iS	N	08 42.0					
iP	Z	21 20 03.5	0.5	37.0	c	1½°	H=21 19 41
iS	E/	20 20.0					
iP	Z	21 33 31.8	0.5	2.0	d	2°	H=21 33 00
eS	N	33 56.0					

Seismograms interpreted by Major Caine

[illegible]-in-Charge.

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS CENTRAL OBSERVATORY RABAUL

RABAUL (RAB)

Latitude 04°11'33"0 S., Longitude 152°10'16"0 E, Elevation 184m.
Bedrock: Basalt flow.

Station Instrumentation:

		To sec.	Tg sec.
World Wide Standard System:			
S.P.-Z	Maximum magnification 12,500 at 0.6 sec.	1.0	0.74
S.P.-N&E	Maximum magnification 6,250 at 0.6 sec.	1.0	0.74
L.P.-Z/N/E/	Maximum magnification 750 at 25.0sec.	15.0	100.0
Benioff Seismometer (Geotech Mod. 4681.A)-Helicorder (Geotech Mod. 2484) System:			
S.P. Zh	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm./min., 180mm./min.

Strong Motion Two-Component Omori Seismograph 15 kg.

L.P.-No	Static magnification 12, air damping 10:1	3.6
L.P.-Eo	Static magnification 10, air damping 10:1	3.8

SULPHUR CREEK (SUL):

Latitude 04°13'44"S., Longitude 152°11'48"E. Elevation 3m.
Bedrock: unconsolidated volcanic ash.

Instrumentation:

Benioff Seismometer (Geotech Mod. 4681.A) telemetered by line to a Helicorder (Geotech Mod. 2484) at the Central Observatory:

S.P. Zr	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm./min., drum speed adjustable to 120 mm./min., 180 mm./min.

KERAVAT (KEV):

Latitude 04°20'S., Longitude 152°oo'E.
Bedrock: coastal alluvium.

Instrumentation:

Benioff, moving-coil 3-component, film recording seismograph:

	Z	1.2	0.35
	N	1.4	0.26
	E	1.4	0.29

Sensitivity set at 20% Z, at 10% N&E, drum speed 15 mm./min.

ESA'ALA (ESA):

Latitude 09°44'18"2 S., Longitude 150°48'50"7 E., Elevation 46 m.
Bedrock: granite.

ESA'ALA (ESA) (Continued):

Instrumentation:

3 Benioff Seismometers (Geotech Mod. 1051 Vertical, Mod. 1101 Horizontal):

	To sec.	Tg. sec.
- with film recorder (Geotech Mod. 1301.A), drum speed 15 mm./min.	1.0	0.2
- with photographic recorder (Geotech Mod. 1565.D), drum speed 30 mm./min.	1.0	60.0

S.P.Z. Magnification 36,000
S.P.N. Magnification 18,000
S.P.E. Magnification 17,800
L.P. -
Z/N/E/ Magnification 50,000.

Presentation of data:

All times are reduced to Greenwich Mean Time (G.M.T.), which is 10 hours behind Eastern Standard Time.

The recording drum of seismographs is driven by a synchronous motor. A.C. current with the accurate frequency of 60 cycle/sec. (RAB), 50 cycle/sec (ESA & KEV.) is supplied by an electronic A.C. generator with crystal frequency regulation. At (RAB) time signal is marked every minute on the records from a crystal chronometer and second marks from radio signal VNG (Australia) are recorded on one component according with the W.W.S.S. programme at six-hour intervals.

At (ESA) time signal is marked every minute on the records from crystal chronometer and a second mark from Radio VNG Australia daily.

Direction of motion:

"c" or "d" indicates initial compression or dilation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

Accuracy of readings:

When readings are given with a decimal figure they are to one-tenth of a second, other readings have been made to the nearest half second.

Crustal phases:

Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

Felt intensity:

Information on maximum intensities of shocks reported felt is included. Intensities are given in Roman numerals, based on Modified Mercalli Scale of 1931.

Determination of epicentres:

Where no source is cited the determination of epicentre, origin time, focal depth, distance in central angle degrees for local and regional earthquakes is made at the Central Observatory Batavia.

Symbols:

A	Peak-to-Trough trace amplitude in millimetres.
T	Period in seconds.
C.S.M.	Confused by microseisms.
G.M.	Ground Motion.
Dist.	Distance in central angle degrees.
H	Origin Time.
h	Focal Depth in Km.

[illegible]
[illegible]

10th - 16th November, 1966

					T sec	A mm	GM	Dist	Remarks
10/11	iP	Z	00	12 06.0	0.5	30.0	c	½°	H=00 11 53
	iS	N/		12 15.0					
	iP	Z	00	17 23.0	0.5	3.0	c	½°	H=00 17 10
	iS	N		17 32.0					
	iP	Z	10	42 58.3	0.5	7.0	d	2°	H=10 42 26
	iS	N		43 23.0					
	iP	Z	19	13 23.2	0.5	5.0	d	1½°	H=19 13 01
	iS	N	19	13 40.0					
	i	Z	20	35 50	0.5	2.0	d	ship moving in harbour	
	P	Z		38 06					
11/11	i	Z	01	06 44.2	0.5	1.0	c	ship moving in harbour	
	P			15 03					
	iP	Z	05	40 57.3	0.4	4.0	d	1½°	H=05 40 32
	iS	N		41 16.5					
	iP	Z	07	03 47.3	0.4	2.0	c		Local
	iS	N		03 50.5					
	eP	Z	09	52 24	0.5	2.0	d		
	iP	Z	15	00 07.4	0.5	30.0	c		Local
	iS	N/		00 11.5					
	eP	Z	15	41 41½	1.0	1.8	c		
	eP	Z	16	12 51	1.0	2.0	d		
	iP	Z	18	00 18.0	0.4	9.0	c		Local
	iS	N		00 22.0					
	e	Z/	19	00 12			+		
12/11	iP	Z	01	36 41.5	0.5	4.0	c		Local
	iS	N		36 45.5					
	iP	Z	03	14 58.0	0.5	39.0	c		Local
	iS	N/		15 02.2					
	iP	Z	03	15 32.0	0.5	8.5	d		In coda
	iS	N/		15 36.0					
	e	Z/	07	36 08			-		
	eP	Z	09	03 12	0.5	0.8	d		
	iP	Z	11	46 12.6	0.5	5.5	c		Local
	iS	N		46 16.5					
	eP	Z	12	58 07½	1.0	1.5	d	47°	Telesseism
	eS	N/	13	04 55					
	iP	Z	16	00 13.5	0.6	1.8	c		
	iP	Z	16	18 37.1	0.3	15.0	c		Local
	iS	N		18 41.0					
	iP	Z	17	50 44.5	0.5	14.0	d	1°	H=17 50 24
	iS	N		51 00.0					

						T sec	A mμ	GM	Dist	Remarks
12/11	(continued)									
	eP	Z	18	49	20	1.0	2.0	e	19°	
	eS	N/		52	49					
	e	Z		53	05½					
	e	Z		57	23½					
	iP	Z	22	24	26.0	0.4	2.2	e	1°	H=22 24 08
	iS	N		24	39					
13/11	iP	Z	03	11	19.8	0.5	1.8	d		
	iP	Z	03	41	00.2	0.5	2.0	e	1°	H=03 40 35
	iS	N		41	19.0					
	iP	Z	06	11	02.2	0.4	10.0	d		Local
	iS	N		11	06.3					
	iP	Z	07	33	12.3	0.4	1.3	d		
	iP	Z	11	56	29.0	0.4	3.0	d	1°	H=11 5605
	iS	N		56	47.0					
	eiP	Z	16	30	14	0.5	1.5	e	1¼°	H=16 30 06
	i	Z		30	20					
	iP	Z	17	25	10.5	0.4	2.3	d		Local
	iS	N		25	14.8					
	iP	Z	17	25	47.3	0.4	3.0	e		Local
	iS	N		25	51.0					
	iP	Z	23	50	06.3	0.4	12.5	e		Local
	iS	N		50	10.0					
14/11	eiP	Z	00	52	20½	0.5	1.0	d	1¾°	H=00 51 51
	i			52	21.5					
	eS	N		52	43					
	iP	Z	07	10	34.0	0.4	2.0	d		Local
	iS	N		10	37.6					
	iP	Z	07	48	38.2	0.4	11.0	d		Local
	iS	N		48	42.3					
	iP	Z	09	48	08.8	0.5	31.0	d		Local
	iS	N/		48	13.0					
	eP	Z	13	56	34	0.5	1.0	d		
	iP	Z	14	02	39.0	0.5	3.0	d	1½°	H=14 02 12
	iS	N		02	59					
	eP	Z	14	19	38	0.5	1.0	e		
	e	Z/	15	06	14			+		
	iP	Z	19	51	13.3	0.5	49.0	eNE		Local Melt: Rabaul Int. I; 04°10'S, 152°10'E
	iS	N/		51	17.5					
	iP	Z	21	00	22.3	0.5	5.0	e		Local
	iS	N		00	26.3					

				T sec	A mm	GM	Dist	Remarks
15/11	iP	Z	01 19 33.3	0.5	9.5	o		Local
	iS	N/	19 37.5					
	iP	Z	01 33 20.5	0.5	43.0	d		Local
	iS	N/	33 24.2					
	iP	Z	02 32 19.7	0.4	10.0	o		Local
	iS	N	32 23.0					
	eP	Z	04 24 29½	0.4	1.0	c		
	e	Z/	10 46 43			-		
	e	Z/	16 20 26			-		
	eP	Z	16 46 02½	0.5	1.0	c	2°	H=16 45 29
	eS	N	46 28					
	eP	Z	20 08 03	0.5	1.0	d		
	eP	Z	20 13 07	0.5	1.5	d		
16/11	eP	Z	00 59 22	0.4	3.0	d		
	eP	Z	01 56 08	0.5	0.8	o	4°	H=01 55 05
	eS	N/	56 56					
	iP	Z	02 26 45.0	0.7	4.0	o	2¾°	H=02 26 01
	eS	N/	27 18					
	eP	Z	03 41 06	0.5	1.0	o		
	e	Z/	06 08 38			-		
	eP	Z	08 12 09	0.8	1.0	o		
	iP	Z	14 09 15.4	0.5	12.0	d	1°	H=14 09 56
	iS	N	09 28.2					
	i	Z	14 44 14.3	0.5	2.0	d	ship moving in harbour	
	P	Z	50 08					
	iP	Z	19 10 54.7	0.4	1.5	d	2¼°	H=19 10 19
	iS	N	11 21.3					

Seismograms interpreted by Mager Gaiam

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

From: 17th November, 1966
To: 23rd November, 1966.

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS CENTRAL OBSERVATORY RABAUL

RABAUL (RAB)

Latitude 04°11'33"0 S., Longitude 152°10'16"0 E, Elevation 184m.
Bedrock: Basalt flow.

Station Instrumentation:

		To sec.	Tg sec.
World Wide Standard System:			
S.P.-Z	Maximum magnification 12,500 at 0.6 sec.	1.0	0.74
S.P.-N&E	Maximum magnification 6,250 at 0.6 sec.	1.0	0.74
L.P.-Z/N/E/	Maximum magnification 750 at 25.0sec.	15.0	100.0
Benioff Seismometer (Geotech Mod. 4681.A)-Helicorder (Geotech Mod. 2484) System:			
S.P. Zh	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm./min., 180mm./min.

Strong Motion Two-Component Omori Seismograph 15 kg.			
L.P.-No	Static magnification 12, air damping 10:1	3.6	
L.P.-Eo	Static magnification 10, air damping 10:1	3.8	

SULPHUR CREEK (SUL):

Latitude 04°13'44"S., Longitude 152°11'48"E. Elevation 3m.
Bedrock: unconsolidated volcanic ash.

Instrumentation:

Benioff Seismometer (Geotech Mod. 4681.A) telemetered by line to a Helicorder (Geotech Mod. 2484) at the Central Observatory:			
S.P. Zr	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm./min., drum speed adjustable to 120 mm./min., 180 mm./min.

KERAVAT (KEV):

Latitude 04°20'S., Longitude 152°oo'E.
Bedrock: coastal alluvium.

Instrumentation:

Benioff, moving-coil 3-component, film recording seismograph:			
	Z	1.2	0.35
	N	1.4	0.26
	E	1.4	0.29

Sensitivity set at 20% Z, at 10% N&E, drum speed 15 mm./min.

ESA'ALA (ESA):

Latitude 09°44'18"2 S., Longitude 150°48'50"7 E., Elevation 46 m.
Bedrock: granite.

ESA'ALA (ESA) (Continued):

Instrumentation:

3 Benioff Seismometers (Geotech Mod. 1051 Vertical, Mod. 1101 Horizontal):

	To sec.	Tg. sec.
- with film recorder (Geotech Mod. 1301.A), drum speed 15 mm./min.	1.0	0.2
- with photographic recorder (Geotech Mod. 1565.D), drum speed 30 mm./min.	1.0	60.0

S.P.Z. Magnification 36,000
S.P.N. Magnification 18,000
S.P.E. Magnification 17,800
L.P. -
Z/N/E/ Magnification 50,000.

Presentation of data:

All times are reduced to Greenwich Mean Time (G.M.T.), which is 10 hours behind Eastern Standard Time.

The recording drum of seismographs is driven by a synchronous motor. A.C. current with the accurate frequency of 60 cycle/sec. (RAB), 50 cycle/sec (ESA & KEV.) is supplied by an electronic A.C. generator with crystal frequency regulation. At (RAB) time signal is marked every minute on the records from a crystal chronometer and second marks from radio signal VNG (Australia) are recorded on one component according with the W.W.S.S. programme at six-hour intervals.

At (ESA) time signal is marked every minute on the records from crystal chronometer and a second mark from Radio VNG Australia daily.

Direction of motion:

"c" or "d" indicates initial compression or dilation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

Accuracy of readings:

When readings are given with a decimal figure they are to one-tenth of a second, other readings have been made to the nearest half second.

Crustal phases:

Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

Felt intensity:

Information on maximum intensities of shocks reported felt is included. Intensities are given in Roman numerals, based on Modified Mercalli Scale of 1931.

Determination of epicentres:

Where no source is cited the determination of epicentre, origin time, focal depth, distance in central angle degrees for local and regional earthquakes is made at the Central Observatory Rabaul.

Symbols:

A	Peak-to-Trough trace amplitude in millimetres.
T	Period in seconds.
C.B.M.	Confused by microseisms.
G.M.	Ground Motion.
Dist.	Distance in central angle degrees.
H	Origin Time.
h	Focal Depth in Km.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

17/11/1966 - 23/11/1966

Records on secondary time end power.

					T sec	A mm	GM	Dist	Remarks
17/11	iP	Z	01 00 20.0		0.5	37.0	d	1½°	H=00 59 56.0
	iS	N/	00 38.0						
	iP	Z	10 18 09.7		0.5	1.0	d		
	iP	Z	11 57 56.5		0.5	52.0	d	1⅝°	H=11 57 34
	iS	N/	58 13.5						
	iP	Z	12 37 51.3		0.5	1.0	d	2°	H=12 37 20
	iS	N	38 14.5						
	iP	Z	17 07 48.3		0.4	14.0	d	2°	H=17 07 18
	eS	N/	08 11⅛						
	eP	Z	17 27 09		0.4	1.0	d	2°	H=17 26 39
	iS	N	27 32						
	iP	Z	20 33 12		0.5	2.0	c	2°	H=20 32 40
	iS	N	33 36						
18/11	iP	Z	04 54 53.0		0.4	2.0	d		
	eiP	Z	05 54 33½		0.5	1.0	d		
	i	Z	54 38.2						
	eiP	Z	08 03 12⅛		0.5	4.5	d	1⅛°	H=08 02 44
	i	Z	03 13.0						
	eS	N/	03 34						
	e	Z/	09 39 13				-		
	iP	Z	10 47 17.5		0.5	2.0	c		
	iP	Z	11 13 18.2		0.5	5.0	c	1⅓°	H=11 23 53
	iS	N	13 37.0						
	iP	Z	17 45 59.2		0.5	11.5	d	1¼°	H=17 45 38
	eS	N/	46 15						
	e	Z/	20 55 08				-		
19/11	iP	Z	02 24 43.4		0.5	2.0	c		
	iP	Z	09 17 23.5		0.4	6.0	d	1°	H=09 17 05
	iS	N	17 37.0						
	iP	Z	09 26 59.4		0.5	1.5	c	1⅜°	H=09 26 30.0
	iS	N	27 21.0						
	iP	Z	09 27 51.8		0.4	5.5	c	1°	In coda of preceding shock H=07 27 34.2
	iS	N	28 05.0						
	iP	Z	14 14 09.0		1.0	2.5	c		
	iP	Z	14 51 35.3		0.5	36.5	c	5⅓°	H=14 50 14
	eS	N/	52 38						
	eiP	Z	18 26 04⅓		0.4	1.0	c	2°	H=18 25 31
	i	Z	26 06.2						
	iS	N	26 29.4						
20/11	iP	Z	00 46 52.0		0.5	10.5	d	1½°	H=00 46 25
	iS	N	47 12.0						
	eP	Z	02 16 52⅛		0.5	1.8	c		

				2. T sec	A mm	GM	Dist	Remarks
20/11 (continued)								
	eiP	Z	04 22 35			d	5½°	H=04 21 16
	i	Z	22 45					
	eS	Zh	23 36					
	iP	Z	10 22 27.0	0.5	18.5	d	2¾°	H=10 22 11
	iS	Zh	22 38.8					
	iP	Z	15 44 04.3	0.5	72.0	d	1½°	H=15 43 43
	iS	N/	44 20.0					
	eP	Z	16 38 44	0.5	1.5	c	2¾°	H=16 38 04
	eS	N	39 14					
	e	Z/	17 09 48			-		
	iP	Z	19 02 48.5	0.5	1.5	d		
21/11	iP	Z	02 37 20.5	0.4	5.0	d	1¾°	H=02 36 56.0
	iS	N	37 39.0					
	iP	Z	11 07 30.4	0.4	14.0	c		Local
	iS	N/	07 34.5					
	iP	Z	12 06 30.4	0.5	7.5	c		Local
	iS	N	06 34.3					
	iP	Z	12 28 25.0	1.3	3.5	c		
	iP	Z	15 09 35	0.6	1.5	c		
	iP	Z	17 41 50.3	0.5	2.5	c		Local
	iS	N	41 54.0					
	iP	Z	20 27 40.5	0.5	1.0	d	1¾°	H=20 27 11
	eS	N	28 03					
22/11	L.P. EW records peper upside down.							
	iP	Z	03 27 28.5	0.5	29.0	d	1¾°	H= 0327 04
	iS	N/	27 47.0					
	iP	Z	04 12 03.2	0.7	15.0	c	1¾°	H=04 11 34
	iS	N/	12 25.3					
	iP	Z	06 26 31.5	0.4	1.5	d	1¾°	H=06 26 07
	iS	N	26 50.0					
	iP	Z	06 38 22.1	0.8	20.8	c	(48)	
	eS	N/	45 14					
	iP	Z	07 10 30.2	0.4	1.5	d	1½°	H=07 10 05
	iS	N	10 49.0					
	iP	Z	07 17 41.2	0.5	4.0	d	1¾°	H=07 17 16
	iS	N	17 59.8					
	iP	Z	12 38 19.5	0.4	6.0	c	1¾°	H=12 37 55
	eS	N/	38 38					
	iP	Z	14 53 46.0	0.4	22.2	c	1¾°	H=14 53 21
	iS	N/	54 05.0					
	iP	Z	16 31 42.4	0.5	33.0	c	1½°	H=16 31 16
	eS	N/	32 02					

				3. T sec	A mm	GM	Dist	Remarks
22/11	(continued)							
	iP	Z	16 38 39.5	0.4	13.0	c	1½°	H=16 38 15
	iS	N	38 58.0					
	iP	Z	18 38 26.6	0.5	2.5	c	1½°	H=18 38 02
	iS	N	38 45.2					
	iP	Z	20 53 00.5	0.4	5.0	c	1½°	H=20 52 38
	iS	N	53 21.0					
23/11	eP	Z	02 23 23	0.5	1.5	c	(20°)	
	eS	N/	27 04½					
	eiP	Z	03 53 28	0.4	1.0	d	1½°	H=03 53 03
	i	Z	53 29.2					
	iS	N	53 46.5					
	eP	Z	09 39 36	0.5	1.2	d		
	i	Z	39 54.5					
	iP	Z	10 0313.0	0.5	4.0	c	1½°	H=10 02 48
	iS	N	03 32.0					
	iP	Z	10 36 57.0	0.4	4.0	c	1½°	H=10 36 32
	iS	N	37 16.0					
	iP	Z	12 02 10.8	0.5	20.3	c	1½°	H=12 01 46
	eS	N	02 30					
	iP	Z	17 16 09.0	0.4	6.4	c	1½°	H=17 15 42
	iS	N	16 29.5					
	eiP	Z	23 58 25	0.4	2.0	c	2½°	H=23 57 43
	i	Z	58 26.6					
	eS	N	58 57					

Seismograms interpreted by M. Gaiam.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

From: 24th November, 1966
To: 30th November, 1966.

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL (RAB)

Latitude 04°11'33"0 S., Longitude 152°10'16"0 E., Elevation 184m.
Bedrock: Basalt flow.

Station Instrumentation:

		To sec.	Tg sec.
World Wide Standard System:			
S.P.-Z	Maximum magnification 12,500 at 0.6 sec.	1.0	0.74
S.P.-N&E	Maximum magnification 6,250 at 0.6 sec.	1.0	0.74
L.P.-Z/N/E/	Maximum magnification 750 at 25.0 sec.	15.0	100.0
Benioff Seismometer (Geotech Mod. 4681.A)-Helicorder (Geotech Mod. 2484) System:			
S.P. Zh	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm./min., 180 mm./min.

Strong Motion Two-Component Omori Seismograph 15 kg.		
L.P.-No	Static magnification 12, air damping 10:1	3.6
L.P.-Eo	Static magnification 10, air damping 10:1	3.8

SULPHUR CREEK (SUL):

Latitude 04°13'44"S., Longitude 152°11'48"E. Elevation 3m.
Bedrock: unconsolidated volcanic ash.

Instrumentation

Benioff Seismometer (Geotech Mod. 4681.A) telemetered by line to a Helicorder (Geotech Mod. 2484) at the Central Observatory:			
S.P. Zr	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm./min., drum speed adjustable to 120 mm./min., 180 mm./min.

KERAVAT (KEV):

Latitude 04°20'S., Longitude 152°00'E.
Bedrock: coastal alluvium.

Instrumentation:

Benioff, moving-coil 3-component, film recording seismograph:

Z	1.26	0.35
N	1.44	0.26
E	1.45	0.29

Sensitivity set at 20% Z, at 10% N&E, drum speed 15 mm./min.

ESA'ALA (ESA):

Latitude 09°44'18"2S., Longitude 150°48'50"7 E., Elevation 46m.
Bedrock: granite.

ESA 'ALA (continued):

Instrumentation:

3 Benioff Seismometers (Geotech Mod. 1051 Vertical, Mod. 1101 Horizontal):

	To sec.	Tg. sec.
- with film recorder (Geotech Mod. 1301.A), drum speed 15 mm./min.	1.0	0.2
- with photographic recorder (Geotech Mod. 1565.D), drum speed 30 mm./min.	1.0	60.0

S.P.Z. Magnification 36,000
S.P.N. Magnification 18,000
S.P.E. Magnification 17,800
L.P. - Z/N/E Magnification 50,000.

Presentation of data:

All times are reduced to Greenwich Mean Time (G.M.T.), which is 10 hours behind Eastern Standard Time.

The recording drum of seismographs is driven by a synchronous motor. A.C. current with the accurate frequency of 60 cycle/sec. (RAB), 50 cycle/sec (ESA & KEV) is supplied by an electronic A.C. generator with crystal frequency regulation. At (RAB) time signal is marked every minute on the records from a crystal chronometer and second marks from radio signal VNG (Australia) are recorded on one component according with the W.W.S.S. programme at six-hour intervals.

At (ESA) time signal is marked every minute on the records from crystal chronometer and a second mark from Radio VNG Australia daily.

Direction of motion:

"c" or "d" indicates initial compression or dilation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

Accuracy of readings:

When readings are given with a decimal figure they are to one-tenth of a second, other readings have been made to the nearest half second.

Crustal phases:

Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

Felt intensity:

Information on maximum intensities of shocks reported felt is included. Intensities are given in Roman numerals, based on Modified Mercalli Scale of 1931.

Determination of epicentres:

Where no source is cited the determination of epicentre, origin time, focal depth, distance in central angle degrees for local and regional earthquakes is made at the Central Observatory Rabaul.

Symbols:

A	Peak-to-Trough trace amplitude in millimetres.
T	Period in seconds.
C.B.M.	Confused by microseisms.
G.M.	Ground Motion.
Dist.	Distance in central angle degrees.
H	Origin Time.
h	Focal Depth in Km.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA AND NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL

				T sec	A mm	GM	Dist	Remarks
Nov. 24	e	Z/	07 51 11			+		
	iP	Z	10 47 24.0	0.3	2.8	d	$\frac{1}{2}^{0}$	H=10 47 10
	iS	N	47 34.3					
	i	Z	14 53 39.5	0.5	3.8	ship moving in harbour		
	F	Z	55 53					
	e	Z/	17 19 37			-		
	eP	Z	19 15 42	0.5	1.0	d	(22)	
	i	Z	15 44.5					
	eS	N/	19 47					
Nov. 25	iP	Z	02 52 47.5	0.4	2.5	d		
	eP	Z	02 58 08	0.5	1.8	c		
	e	Z/	03 18 55			+		
	eiP	Z	05 12 29	0.5	1.8	c	2°	H=05 11 58
	i	Z	12 30.5					
	iS	N	12 52.5					
	eP	Z	11 35 37	0.5	1.0	c		
	iP	Z	15 22 36.0	0.3	3.8	c	$1\frac{1}{2}^{0}$	H=15 22 11
	iS	E	22 55.0					
	iP	Z	17 53 49.0	0.4	6.8	c	1°	H=17 53 31
	iS	N	54 02.0					
	e(P)	Z	18 14 42	0.4	1.0	c		
	iP	Z	20 59 29.8	0.5	2.0	d		
Nov. 26	i	Z	11 22 10.5	0.5	6.8	ship moving in harbour		
	F	Z	26 14					
	iP	Z	22 29 33.0	0.3	4.5	c	$\frac{1}{2}^{0}$	H=22 29 18
	iS	E	29 43.5					
Nov. 27	iP	Z	00 18 26.0	0.3	6.0	d		Local
	iS	N	18 30.0					
	iP	Z	02 23 55.7	0.4	9.8	c	$1\frac{1}{2}^{0}$	H=02 23 30
	iS	N	24 15.0					
	iP	Z	04 16 31.2	0.4	2.2	d		Local
	eS	N	16 35					
	eP	Z	10 30 35½	0.4	1.5	c		
	iP	Z	13 46 02.0	0.5	18.0	c		
	iP	Z	14 22 03.5	0.4	2.2	c	$1\frac{1}{2}^{0}$	H=14 21 41
	iS	N	22 20.0					
	e	Z/	20 01 22			+		

						T sec	A mm	GM	Dist	Remarks
RABAUL										
Nov. 28	iP	Z	03	04	36.0	0.5	120.0	dSW	1½°	H=03 04 08
	iS	E/		04	57.0					Felt: Rabaul
										Int. II 04°10', 152°10E.
	eiP	Z	08	18	02½	0.4	1.0	e	4°	H=08 17 00
	i	Z		18	06.5					
	iP	Z	16	13	53.2	0.4	1.0	d	3°	H=16 13 05
	iS	N		14	30.0					
	iP	Z	19	51	57.0	0.5	23.5	d	1½°	H=19 51 32
	iS	N/		52	16.0					
	iP	Z	20	02	14.0	0.4	4.2	e	1½°	H=20 01 47
	iS	N		02	33.8					
	iP	Z	20	41	14.0	0.4	5.0	e	1½°	H=20 40 49
	iS	N		41	32.5					
Nov. 29	L.P. N=S records unserviceable									
	e	Z/	03	25	32			-		
	e	Z/	06	21	07			-		
	eiP	Z	06	32	07	0.4	1.5	e	2½°	H=06 31 26
	eS	N		32	38					
	iP	Z	08	50	17.2	0.5	2.5	d	2½°	H=08 49 34
	eS	N		50	50					
	e	Z/	20	00	07			+		
	eP	Z	22	21	35½	0.5	1.0	d	19°	
	ePP	Z/		21	55					
	ePPP	Z/		22	06					
	iS	E/		25	01.5					
	eLQ	E/		25	10					
	eSS	E/		25	27½					
	iPcP	Z/		26	04.0					
	eScP	E/		29	46					
Nov. 30	iP	Z	00	07	12.5	0.4	8.0	e	1°	H=00 06 56
	iS	N		07	24.3					
	iP	Z	01	26	41.2	0.5	2.2	d	2°	H=01 26 07
	eS	N		27	07					
	iP	Z	14	27	40.5	0.7	2.5	e	3½°	H=14 26 47
	eS	N/		28	21					
	iP	Z	16	45	39.0	0.5	5.0	d	1°	H=16 45 21
	iS	N		45	52.5					
	iP	Z	20	10	40.5	0.5	1.5	d	1½°	H=20 10 14
	iS	N		11	00.5					
	iP	Z	22	10	45.5			dSE	1½°	H=22 10 22
										Felt: Rabaul
										Int. III, 04°10'S, 152°10'E
										Upper Warangoi, Int. IV, 04°22'S, 152°06'E.

				T sec	A mm	GM	Dist	Remarks
ESA'ALA								
(Analysis of Long Period records only)								
No readings between 1800 hours and 2200 hours owing to overlapping traces. Drifting caused by airconditioning plant switched off during night.								
Nov.	8	iP	Z	00 30	03.5	dSW		
		iS	E/		08.0			
		iP	Z	12 56	15.0	d	$1\frac{1}{5}^{o}$	
		i	Z		19.5			
		iS	E/		30.0			
Nov.	9	eP	Z	00 59	06.5	d	$2\frac{1}{2}^{o}$	
		eS	N/	59	38			
		eP	Z	02 41	10.2	e	$6\frac{1}{2}^{o}$	
		eS	N/	42	26			
		iP	Z	11 34	16.0	e	$3\frac{1}{2}^{o}$	
		eS	N/	34	59			
Nov.	10	eP	Z	10 43	23.9	d	$4\frac{3}{4}^{o}$	
		eS	E/	44	19.9			
		iP	Z	11 37	03.9	e	$\frac{3}{4}^{o}$	
		iS	E/		15.9			
Nov.	11	iP	Z	09 52	05	d	$4\frac{1}{2}^{o}$	
		eS	N/	55	55			
		iP	Z	11 02	23.8	eSW	$2\frac{3}{4}^{o}$	
		iS	E/	02	58			
		iP	Z	16 56	24.0		2^{o}	
		iS	E/	56	50			
Nov.	12	iP	Z	02 34	13.0		$5\frac{1}{4}^{o}$	
		iS	E/	35	14.0			
		eP	Z	07 36	01.9		$9\frac{1}{2}^{o}$	
		e(S)	E/	37	49.9			
		eP	Z	09 03	12.9			
		iS	E/		37.9			
		eP	Z	12 09	06.9			
		iS	Z		19.9			
		iP	Z	16 00	10.6			Arafura Sea 10°S., 135°E. approximately.
		i			28.8			
		i(S)	E/	03	45.8			

Seismograms interpreted by: M. Guyam
D. Hoiard
P. Leitao

G. W. D'ADDARIO
Vulcanologist-in-Charge.

See 1967 Bulletin.

RAB

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL From: 1st December, 1966
To: 7th December, 1966.

ESA'ALA From: 14th Nov., 66.
To: 20th Dec., 66.

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT
PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL (RAB)

Latitude 04°11'33"0 S., Longitude 152°10'16"0 E., Elevation 184m.
Bedrock: Basalt flow.

STATION INSTRUMENTATION

WORLD WIDE STANDARD SYSTEM:

		To sec.	Tg sec.
S.P.-Z	Maximum magnification 12,500 at 0.6 sec.	1.0	0.74
S.P.-N&E	Maximum magnification 6,250 at 0.6 sec.	1.0	0.74
L.P.-Z/N/E/	Maximum magnification 750 at 25.0 sec.	15.0	100.0

BENIOFF SEISMOMETER (GEOTECH MOD. 4681.A)-HELICORDER (GEOTECH MOD. 2484) SYSTEM:

S.P. Zh	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm./min., 180 mm./min.

STRONG MOTION TWO-COMPONENT OMORI SEISMOGRAPH 15 kg.

L.P.-No	Static magnification 12, air damping 10:1	3.6	
L.P.-Eo	Static magnification 10, air damping 10:1	3.8	

SULPHUR CREEK (SUL)

Latitude 04°13'44"S., Longitude 152°11'48"E. Elevation 3m.
Bedrock: unconsolidated volcanic ash.

STATION INSTRUMENTATION

BENIOFF SEISMOMETER (GEOTECH MOD. 4681.A) TELEMETERED BY LINE TO A HELICORDER (GEOTECH MOD. 2484) AT THE CENTRAL OBSERVATORY:

S.P. Zr	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm./min., drum speed adjustable to 120 mm./min., 180 mm./min.

KERAVAT (KEV)

Latitude 04°20'S., Longitude 152°00'E.
Bedrock: coastal alluvium.

STATION INSTRUMENTATION

BENIOFF, MOVING-COIL 3-COMPONENT, FILM RECORDING SEISMOGRAPH:

Z	1.2	0.35
N	1.4	0.26
E	1.4	0.29

Semsitivity set at 20% Z, at 10% N&E, drum speed 15 mm./min.

ESA'ALA (ESA)

Latitude 09°44'18"2 S., Longitude 150°48'50"7 E., Elevation 46m.
Bedrock: granite.

STATION INSTRUMENTATION

SEISMOMETER
1 GEOTECH MOD. 1051 VERTICAL
2 GEOTECH MOD. 1101 HORIZONTAL

	To sec.	Tg. sec.
Film Recorder System (Geotech Mod. 1301-A) drum speed 15 mm/min.	1.0	0.2
Photographic Recorder System (Geotech Mod. 1565-D) drum speed 30 mm/min.	1.0	60.0

S.P.Z. Magnification 36,000
S.P.N. Magnification 18,000
S.P.E. Magnification 17,800
L.P. - Z/N/E Magnification 50,000.

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FELT INTENSITY:

Information on maximum intensities of shocks reported felt is included. Intensities are given in Roman numerals, based on Modified Mercalli Scale of 1931.

DETERMINATION OF EPICENTRES:

Where no source is cited the determination of epicentre, origin time, focal depth, distance in central angle degrees for local and regional earthquakes is made at the Central Observatory Rabaul.

SYMBOLS:

A.	Peak-to-Trough trace amplitude in millimetres.
T	Period in seconds.
C.B.M.	Confused by microseisms.
Dist.	Distance in central angle degrees.
H	Origin time.
h	Focal Depth in Km.

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TERRITORY OF PAPUA-NEW GUINEA
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VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

				T sec	A mm	GM	Dist	Remarks
RABAUL								
1st Dec								
Dec. 1st	eP	Z	00 37 59½	0.5	1.5	c		
	iP	Z	05 00 57.●	0.4	1.5	d	17½●	
	ePP	Z/	01 13½					
	ePPP	Z/	01 20					
	eSorLq	E/	04 14					
	eSS	N/	04 31					
	eScP	N/	09 18					
	iP	Z	09 50 09.0	0.5	13.0	c	1½°	H=09 49 42.5
	iS	E/	29.0					
	iP	Z	12 25 39.3	0.4	14.0	d	½°	H=12 25 25.5
	iS	N	25 49.0					
2nd	iP	Z	09 36 36.5	0.6	12.8	c		
	iP	Z	14 05 56.5	0.4	13.0	d	1½°	H=14 05 34.4
	iS	N/	06 17.0					
	iP	Z	21 58 58.4	0.5	4.5	c	1½°	H=21 58 33
	iS	N	59 17.0					
3rd	iP	Z	09 31 44.0	0.5	22.0	d	1½°	H=09 31 18
	iS	E	32 03.5					
	eP	Z	14 19 23½	0.4	1.0	c		
	i	Z	21 51.3					
	i	Z	24 50.4					
	iP	Z	22 16 13.5	0.5	3.0	c	2°	H=22 15 41
	eS	E	16 38					
4th	iP	Z	03 33 33.5	0.4	7.0	d	2°	H=03 32 59
	eS	N	33 59½					
	iP	Z	12 25 53.2	0.4	34.0	d	1°	H=12 25 37
	iS	N/	26 05.0					
	e	Z/	18 15 25			-		
	iP	Z	23 24 11.2	0.5	10.8	d	3½°	H=23 23 16
	iS	N	24 53.0					
5th No records from 050519-052335 due to power failure								
	iP	Z	01 02 11.5	0.4	15.0	d	1½°	H=01 01 46
	iS	E	02 30.3					
6th No records from 052336-060154 due to power failure.								
	eP	Z	03 26 48½	0.5	1.0	c		
	iP	Z	11 41 15.0	0.5	65.0	dNW	1½°	H=11 40 49
	iS	N/	41 34.5					
	eP	Z	21 53 28½	0.4	1.0	c		
7th Drifting due to air-conditioning unit being off.								
	iP	Z	17 03 26.0	0.8	7.5	d	21°	
	eS	N/	07 34					
	eP	Z	17 26 25½	0.8	1.0	d		
	i	Z	26 32.5					

RATS

				T sec	A mm	GM	Dist	Remarks
ESA'ALA								
Nov. 14th	eP	Z/	23 29 09.0				4¾°	H=23 28 56
	eS	N/	30 05					
	eP	Z/	13 57 13.0				3¾°	H=13 56 14
	iS	E/	58.0					
	eP	Z/	15 24 18.0				2½°	H=15 23 37
	iS	E/	49.0					
15	iP	Z/	16 30 14.0				1¼°	
	iS	E/	30.0					
16th	eP	Z/	00 56 35.5				16½°	H=00 52 47. 17°S., 165°E Solomon Islands Region.
	iS	N/	59 52.0					
	eP	Z/	01 58 23.0				18½°	
	eS	N/	02 01 08					
	iP	Z/	02 27 26.0				4°	
	iS	E/	28 14.0					
	iP	Z/	03 41 13.0				4½°	
	iS	E/	42 05.0					
	iP	Z/	08 12 20.0				16°	H=08 08 32 16°S., 165°E Solomon Islands Region
	eS	N/	15 27					
17th	iP	Z/	08 43 04.0				3°	H=08 42 27
	iS	E/	41.0					
	eP	Z/	10 17 54.5				3°	H=10 17 17
	iS	E/	18 32.0					
	iP	Z/	17 08 52.0					traces overlapped.
18th	Nil recorded.							
19th	iP	Z/	14 52 08.0				5½°	H=14 51 47 6°S, 147°E East New Guinea Region.
	iS	E/	53 10.0					
20th	iP	Z/	04 23 19.5				4¼°	H=04 22 15 9°S., 154°E D'Entrecasteaux Is. Region
	iS	E/	24 10.0					
	eP	Z/	14 35 19.0				3½°	H=14 34 20.
	iS	E/	36 02.0					

Seismograms interpreted by: M. Gaiam
D. Howard
P. Leitao
E. Ravian

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL	From:	8th December, 1966.
	To:	14th December, 1966.
ESA'ALA	From:	21st November, 1966.
	To:	5th December, 1966.

TERRITORY OF PAPUA-NEW GUINEA
GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT
PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL (RAB)

Latitude 04°11'33"0 S., Longitude 152°10'16"0 E., Elevation 184m.
Bedrock: Basalt flow.

STATION INSTRUMENTATION

WORLD WIDE STANDARD SYSTEM:		To sec.	Tg sec.
S.P.-Z	Maximum magnification 12,500 at 0.6 sec.	1.2	0.74
S.P.-N&E	Maximum magnification 6,250 at 0.6 sec.	1.0	0.74
L.P.-Z/N/E/	Maximum magnification 750 at 25.0 sec.	15.0	100.0

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S.P. Zh	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm./min., 180 mm./min.

STRONG MOTION TWO-COMPONENT OMORI SEISMOGRAPH 15 kg.		
L.P.-No	Static magnification 12, air damping 10:1	3.6
L.P.-Eo	Static magnification 10, air damping 10:1	3.8

SULPHUR CREEK (SUL)

Latitude 04°13'44"S., Longitude 152°11'48"E. Elevation 3m.
Bedrock: unconsolidated volcanic ash.

STATION INSTRUMENTATION

BENIOFF SEISMOMETER (GEOTECH MOD. 4681.A) TELEMETERED BY LINE TO A HELICORDER (GEOTECH MOD. 2484) AT THE CENTRAL OBSERVATORY:			
S.P. Zr	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm./min., drum speed adjustable to 120 mm./min., 180 mm./min.

KERAVAT (KRV)

Latitude 04°20'S., Longitude 152°00'E.
Bedrock: coastal alluvium.

STATION INSTRUMENTATION

BENIOFF, MOVING-COIL 3-COMPONENT, FILM RECORDING SEISMOGRAPH:

Z	1.2	0.35
N	1.4	0.26
E	1.4	0.29

Sensitivity set at 20% Z, at 10% N&E, drum speed 15 mm./min.

ESA'ALA (ESA)

Latitude 09°44'18"2 S., Longitude 150°48'50"7 E., Elevation 46m.
Bedrock: granite.

STATION INSTRUMENTATION

SEISMOMETER
1 GEOTECH MOD. 1051 VERTICAL
2 GEOTECH MOD. 1101 HORIZONTAL

	To sec.	Tg. sec.
Film Recorder System (Geotech Mod. 1301-A) drum speed 15 mm/min.	1.0	0.2
Photographic Recorder System (Geotech Mod. 1565-D) drum speed 30 mm/min.	1.0	60.0

S.P.Z. Magnification 36,000
S.P.N. Magnification 18,000
S.P.E. Magnification 17,800
L.P. - Z/N/E Magnification 50,000.

PRESENTATION OF DATA:

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When readings are given with a decimal figure they are to one-tenth of a second, other readings have been made to the nearest half second.

CRUSTAL PHASES:

Px, Sx Crustal phases other than Pn and Sn for local near earthquakes.

FELT INTENSITY:

Information on maximum intensities of shocks reported felt is included. Intensities are given in Roman numerals, based on the Modified Mercalli Scale of 1931.

DETERMINATION OF EPICENTRES:

Where no source is cited the determination of epicentre, origin time, focal depth and distance in central angle degrees for local and regional earthquakes are carried out at the Central Observatory Rabaul.

SYMBOLS:

A	Peak-to-Trough trace amplitude in millimetres.
*	Amplitudes from seismographs with different response to the W.W.S.S.
T	Period in seconds.
C.B.M.	Confused by microseisms.
Dist.	Distance in central angle degrees.
H	Origin time.
h	Focal Depth in Km.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA-NEW GUIN__
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

			T sec	A mm	GM	Dist	Remarks
RABAUL							
8th December							
iP	Z	03 09 07.0	0.4	4.5	d	1½°	H=03 08 39
iS	E	09 28.0					
iP	Z	05 15 04.8	0.5	13.5	d	1¼°	H=05 14 43
iS	E	15 21.2					
e	Z/	06 34 48			+		
iP	Z	12 38 49.0	0.8	2.0	c	3°	H=12 38 03
eS	E/	39 24					
iP	Z	13 47 26.5	0.5	1.8	c	1½°	H=13 47 (01.3)
i(S)	E	47 45.3					
iS	Zh	51.5					
iP	Z	15 13 22.2	0.6	2.2	d		
e	Z/	15 30 58			-		
iP	Z	16 47 28.3	0.4	6.0	d	1½°	H=16 47 03
iS	N/	47 47.0					
eP	Z	16 57 38	0.4	1.0	c	6°	H=16 56 07
i	Z	57 47.4					
iS	Zh	58 31.0					
9th December							
e	Z/	01 16 36			-		
iP	Z	14 56 45.5	1.0	3.0	c	10½°	H=14 54 12
eS	N/	58 45					
iP	Z	17 34 15.5	0.8	2.5	c	4¾°	H=17 33 03.3
i	Z	34 19.4					
eS	E/	35 11					
10th December							
iP	Z	01 50 09.0	0.5	4.2	c		
e	Z/	09 29 12			-		
e	Z	11 00 54½					
e	Z/	13 21 34			-		
eP	Z	16 02 57	0.8	1.0	c		
eP	Z	18 09 47	0.7	2.0	d	18°	L.P. records hard to decipher - large surface waves.
i	Z	50.0					
i	Z	10 03.0					
iS	N	11 28.2					
iP	Z	19 09 56.3	0.8	1.5	c		
eP	Z	19 27 27	0.8	1.0	c		
iP	Zh	20 29 42.5	0.5	1.0*	c		
i	Zh	44.0				½°	H=20 29 30
iS	Zh	52.1					
11th December							
iP	Z	02 23 32.6	0.5	17.0	c	2°	H=02 23 02
iS	N/	23 55.0					
eiP	Z	08 07 16	0.5	2.3	d	2¾°	H=08 06 33
i	Z	07 18.5					
eS	E/	07 49					
iP	Z	09 59 51.0	0.5	27.8	d	1½°	H=09 59 27
iS	N/	10 00 09.0					

			T sec	A mm	GM	Dist.	Remarks
11th December (cont.)							
iP	Z	10 18 46.8	0.4	1.8	d	½°	H=10 18 33
iS	E	18 57.0					
eiP	Z	14 31 07	0.5	5.8	d	3½°	H=14 30 11
i	Z	31 09.0					
eS	N/	31 50					
eP	Z	17 38 46	0.5	0.8	d		
eP	Z	19 56 21	0.8	2.0	d	18½°	
eS	E/	59 51					
ePcP	Z/	00 55					
ePcS	Z/	04 32					
eP	Z	20 12 35.8	0.8	1.0	c		
e	N/	16 08					
e	Z/	09½					
eM	E/	17 57					
18th December							
eP	Z	11 47 59½	0.5	1.0	d	2½°	H=11 47 20
eS	N	48 29½					
iP	Z	18 43 05.5	0.5	3.5	d	1¼°	H=18 42 44
iS	N	43 21.5					
iP	Z	19 19 35.1	0.4	38.0	cSW	¼°	H=19 19 27
iS	E/	19 41.5					
iP	Z	21 37 08.2	0.5	4.0	c	¼°	H=21 37 00
iS	N	37 14.2					
13th December							
iP	Z	01 35 11.0	0.5	8.0	c	¼°	H=01 35 08
iS	N	35 17.0					
eP	Z	14 49 39	0.5	1.0	d	3°	H=14 48 53
iS	E	50 14.0					
iP	Z	22 17 47.0	0.4	4.2	d	1¼°	H=22 17 24
eS	N	18 04					
14th December							
iP	Z	17 53 51.0	0.4	25.0	cNW	1°	H=17 53 33
iS	N/	54 04.0					
iP	Z	18 47 52.5	0.3	1.5	d	1½°	H=18 47 28
iS	N	48 10.5					
eiP	Z	21 09 50½	0.5	1.5	c	8½°	H=21 07 46
i!	Z	52.2					
iS!	N/	11 27.0					

Felt: Angoram Int. IV 04°05'S, 144°05'E
Dreikikir Int. IV 03°34'S, 142°47'E
Manam Is. Int.III 04°05'S, 145°05'E

ESA'ALA - (analysis of Long Period records only). No readings between 1400 and 2200 hours owing to overlapping traces. Drifting caused by airconditioning plant switched off during night.

		T sec	A mm	GM	Dist	Remarks
21st November - Nil recorded						
22nd November						
iP	Z/	04 13 21.0				
iS	N/	54.0			2¾°	H=04 12 37
23rd November						
iP	Z/	02 23 07.0				
iPP	Z/	45.0			17°	H=02 19 08
iS	E/	26 19.0				23°S, 159°E Coral Sea normal depth.
iSS	N/	26 41.0				
iSpS	N/	26 54.0				
iLR	Z/	27 24.0				
M	N/	29 48				
ScP	N/	31 17				
ScS	E/	34 58				
24th November		Nil recorded.				
25th November						
iP	Z/	02 52 45.0			3°	H=02 51 59 7°S, 150°E - New Britain Region.
iS	N/	53 20.0				
iP	Z/	02 58 09.0			3°	H=02 57 29 23°S, 151°E. Planet Deep New Britain Region.
iS	N/	46.0				No Delta
26th November - Nil recorded						
27th November - Nil recorded						
28th November						
iP	Z/	03 05 17.0				
iS	E/	06 06.0			4°	H=03 04 13 22°S, 152°E. New Britain Region.
iP	Z/	08 18 34.0				
iS	E/	19 32.0			5°	H=08 17 19 21°S, 154°E Solomon Islands
						No Delta
29th November					¼°	
iP	Z/	06 34 14.5				
iS	E/	20.0				
iP	Z/	14 20 21.0				
30th November						
eP	Z/	14 28 32.0				Z/ record trace overlapped
1st December						Delta
eP	Z/	00 38 04			1½°	H=00 37 38 17°S, 153°E. New Ireland Region
eS	N/	24				
iP!	Z/	05 00 47.0			16¼°	H=04 56 40.5 Teleseism. 16°S, 166°E. Solomon Islands.
eS	E/	03 55				

		T sec	A mm	GM	Dist	Remarks
1st December (cont)						
iP	Z/	09 50 54.2			4½°	H=09 49 49
iS	N/	51 48.0				5°S, 151°E. New Britain Region.
2nd December						
eP	Z/	09 36 50.0			4¼°	H=09 35 43
iS	N/	37 41				
3rd December						
iP	Z/	09 32 30.0			4½°	H=09 31 20
iS	E/	33 24.0				7°S, 153°E. New Britain Region.
4th December						
eP	Z/	12 27 17			3½°	H=12 26 21
iS	E/	27 59.5				
eP	Z/	23 24 37			4¼°	H=23 23 25
iS	E/	25 32.5				

5th December - Nil recorded.

Seismograms interpreted by: M. Gaiam
E. Ravian
D. Howard
P. Leitao

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA AND NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL	(RAB)	From: 15th December, 1966 To: 21st December, 1966.
SULPHUR CREEK	(SUL)	- Not operational
KERAVAT	(KRT)	- Not operational
ESA'ALA	(ESA)	From: 6th December, 1966 To: 13th December, 1966
AGENAHAMBO	(AGE)	From: 27th November, 1966 To: 30th November, 1966.
TABELE	(TBL)	From: 27th November, 1966 To: 29th November, 1966.

TERRITORY OF PAPUA AND NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

CENTRAL OBSERVATORY RABAUL

RABAUL (RAB)

Latitude 04°11'33".0 S., Longitude 152°10'16".0 E., Elevation 184m.
Bedrock: Basalt flow.

STATION INSTRUMENTATION

WORLD WIDE STANDARD SYSTEM:		To sec.	Tg sec.
S.P.-Z	Maximum magnification 12,500 at 0.6 sec.	1.0	0.74
S.P.-N&E	Maximum magnification 6,250 at 0.6 sec.	1.0	0.74
L.P.-Z/N/E/	Maximum magnification 750 at 25.0 sec.	15.0	100.00

BENIOFF SEISMOMETER (GEOTECH MOD. 4681-A VERTICAL)-HELICORDER (GEOTECH MOD. 2484) SYSTEM:

S.P. Zh	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.

STRONG MOTION TWO-COMPONENT OMORI SEISMOGRAPH 15 kg.

L.P.-No	Static magnification 12, air damping 10:1	3.6
L.P.-Eo	Static magnification 10, air damping 10:1	3.8

SULPHUR CREEK (SUL)

Latitude 04°13'44".S., Longitude 152°11'48".E. Elevation 3m.
Bedrock: unconsolidated volcanic ash.

STATION INSTRUMENTATION

BENIOFF SEISMOMETER (GEOTECH MOD. 4681-A VERTICAL) TELEMETERED BY LINE TO A HELICORDER (GEOTECH MOD. 2484) AT THE CENTRAL OBSERVATORY:

S.P. Zr	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.

KERAVAT (KRT)

Latitude 04°20'.S., Longitude 152°00'.E.
Bedrock: coastal alluvium.

STATION INSTRUMENTATION

BENIOFF, MOVING-COIL 3-COMPONENT, FILM RECORDING SEISMOGRAPH:

Z	1.2	0.35
N	1.4	0.26
E	1.4	0.29

Sensitivity set at 20% Z, at 10% N&E, drum speed 15 mm/min.

ESA'ALA (ESA)

Latitude 09°44'18"2 S., Longitude 150°48'50"7 E., Elevation 46m.
Bedrock: granite.

STATION INSTRUMENTATION

		To sec.	Tg sec.
SEISMOMETER 1 Geotech Mod. 1051 vertical 2 Geotech Mod. 1101 horizontal	Film Recorder System (Geotech Mod. 1301-A) drum speed 15 mm/min.		0.2
	Photographic Recorder System (Geotech Mod. 1565-D) drum speed 30 mm/min.	1.0	60.0

S.P.Z. Magnification 36,000.
S.P.N. Magnification 18,000
S.P.E. Magnification 17,000
L.P.-Z/N/E/ Magnification - to be determined.

AGENAHAMBO (AGE)

Latitude 08°48'30"S., Longitude 148°06'12"E, Elevation 303m.
Bedrock: unconsolidated volcanic tuff.

STATION INSTRUMENTATION

VERTICAL WILLMORE SEISMOGRAPH

Attenuator setting $\frac{1}{10}$, drum speed 60 mm/min. 0.6 0.25
S.P.Z. magnification 1,000.

TABELE (TBL)

Latitude 04°06'S., Longitude 145°02'E., Elevation 197m.
Bedrock: basalt flow.

STATION INSTRUMENTATION

		To sec.	Tg sec.
SEISMOMETER 1 Geotech 1051 vertical	Helicorder System (Geotech Mod. 2484) Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.		0.02
	Photographic Recorder System (Geotech Mod. 1563-D), drum speed 30 mm/min.	1.0	90.0

S.P.-Z.N.E. magnification 1,000
L.P.-Z/N/E/ magnification 700

coupled to Willmore Recorder attenuator setting 1/100, drum speed 60 mm/min. 0.25
S.P.-Z_W magnification 860

PRESENTATION OF DATA:

All times are reduced to Greenwich Mean Time (G.M.T.), which is 10 hours behind Eastern Standard Time.

The recording drum of seismographs is driven by a synchronous motor. Alternating current with the accurate frequency of 60 cycle/sec. (RAB), 50 cycle/sec. (ESA, TBL, KRT, AGE) is supplied by an electronic A.C. generator. A.C. generators have crystal frequency regulation at RAB, ESA, TBL only. At (RAB) time signal is marked every minute on the records from a crystal chronometer and second marks from radio signal VNG (Australia) are recorded on one component according with the W.W.S.S. programme at six-hour intervals.

At (ESA) and (TBL) time signal is marked every minute on the records from crystal chronometer and a second mark from Radio VNG Australia daily.

DIRECTION OF MOTION;

"c" or "d" indicates initial compression or dilation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

ACCURACY OF READINGS:

When readings are given with a decimal figure they are to one-tenth of a second, other readings have been made to the nearest half second.

CRUSTAL PHASES:

Px, Sx Crustal phases other than Pn and Sn for local and near earthquakes.

FELT INTENSITY:

Information on maximum intensities of shocks reported felt is included. Intensities are given in Roman numerals, based on Modified Mercalli Scale of 1931.

DETERMINATION OF EPICENTRES:

Where no source is cited the determination of epicentre, origin time, focal depth, and distance in central angle degrees for local and regional earthquakes are carried out at the Central Observatory Rabaul.

GEOGRAPHICAL DESIGNATION OF EPICENTRES:

The regional names which follow the coordinates of epicentres located at the Central Observatory are meant only to supplement the coordinates and normally follow well-known geographical rather than geological features. Use is made of the full degree blocks according to the method defined by

E.A. Flinn and E.R. Engdahl in "A Proposed Basis for Geographical and Seismic Regionalization", Seismic Data Laboratory Report No. 101, adopted by the U.S.C.G.S. for computer requirements.

SYMBOLS:

A	Peak-to-Trough trace amplitude in millimetres.
A*	Amplitudes from seismographs with different response to the W.W.S.S.
T	Period in seconds.
C.B.M.	Confused by microseisms.
Dist.	Distance in central angle degrees.
H	Origin time.
h	Focal Depth in Km.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA-NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT
PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

			T sec	A mm	GM	Dist	Remarks
RABAUL							
15th December							
eP	Z	02 18 17.5	0.4	1.0	d		
iP	Z	02 50 10.6	0.4	2.0	c	4°	H=02 49 12
iS	E/	51 06.0					
e	Z/	04 41 51			-		
iP	Z	09 28 09.0	0.3	2.0	c	6°	H=09 27 42
i	Z/	47					
eS	E/	29 16					
e	Z	13 42 40½			-		
eiP	Z	14 33 35	0.5	131	cENE	5¼°	H=14 32 16
i	Z	35.3					
iS	N/	34 36.0					
eP	Z	16 43 19.0	0.5	0.5	d		
16th December							
e	Z/	03 30 56			+		
iP	Z	08 27 21.8	0.4	2.0	c	2°	H=08 26 50
iS	E	46.0					
eiP	Z	12 15 01	0.4	2.8	c	1½°	H=12 14 39
i	Z	02.0					
iS	N	21.5					
iP	Z	16 00 15.0	0.5	3.2	d	3½°	H=15 15 20
eS	N	57					
iP	Z	21 04 06.3	0.5	2.3	d		
17th December							
iP	Z	07 51 15.0	0.5	2.0	c		
iP	Z	07 52 37.0	0.4	7.0	d	1½°	H=07 52 13. In coda of preceding shock.
iS	N	55.0					
eP	Z	13 33 21	0.5	1.0	c		
eP	Z	19 13 54½	0.6	0.6	c	1½°	H=19 13 31
iS	N	14 12.6					
iP	Z	19 19 54.0	0.5	1.0	d		
iP	Z	22 22 00.3	0.4	1.0	c	4¼°	H=22 20 55
iS	E	50.5					
18th December							
iP	Z	00 38 44.5	0.5	3.0	c	1½°	H=00 38 17
iS	E	39 05.5					
i	Z	03 15 27.2	0.5	2.5			ship moving in harbour
F	Z	22 46					
iP	Z	03 52 07.5	0.4	4.0	d	1½°	H=03 51 39
iS	N	29.0					
iP	Z	09 45 25.3	0.4	1.2	c		
eP	Z	09 51 06	0.4	1.0	c	14°	
eS		53 36					
iP	Z	22 17 57.0	0.4	3.2	d	1½°	H=22 17 32
iS	N	18 16.0					

			T sec	A mm	GM	Dist	Remarks
RABAUL (cont)							
19th December							
iP	Z	01 19 06.5	0.5	1.5	c	1½°	H=01 18 40
iS	N	26.8					
eP	Z	11 32 40½	0.5	1.0	d		
eP	Z	11 45 59½	0.4	1.0	d		
eP	Z	13 24 48	0.4	1.0	d	5°	H=13 23 30
eS	N	25 48					
iP	Z	20 12 16.6	0.4	70.0	dSE	1¼°	H=20 11 54
iS	N/	33.5					
20th December							
iP	Z	02 46 15.5	0.5	1.2	d	2½°	H=02 45 35
iS	E	46.5					
eP	Z	12 47 23½				1½°	H=12 47 01
eS!	N/	47 44					
eLQ	N/	49					
eLR	Z/	48 35					
iP	Z	14 02 21.2	0.5	26.0	c	1½°	H=14 01 53
iS	N/	42.5					
eiP	Z	15 43 17	0.5	4.5	c		
i	Z	17.5					
iP	Z	16 25 04.2	0.5	1.5	c		
i	Z	05.5					
eP	Z	18 46 33	0.5	1.5		21½°	
eS		52 05					
iP	Z	21 46 46.0	0.4	4.8	c	1½°	H=21 46 20
iS	N	47 05.5					
21st December							
iP	Z	01 13 41.0	0.5	1.8	c	7°	H=01 12 00
eS	E	14 59					
eiP	Z	08 56 46	0.5	2.5	d	21½°	Deep
i	Z	47.2					
ePP	Z/	57 13					
iS	N	09 00 41					
ePcP	Z/	57					
eSS	N/	01 16					
iP	Z	16 57 52.7	0.4	1.0	d	2¼°	H=16 57 16
iS	N	58 20.5					
eiP	Z	18 31 40	0.5	1.2	c	2°	H=18 31 08
i	Z	40.8					
iS	N	32 04.0					

			T sec	A mm	GM	Dist	Remarks
TABELE							
27th - 29th November - Nil recorded.							

ESA'ALA			T sec	A* mm	GM	Dist	Remarks
6th December							
iP	Z	03 26 51.0	1.0	1.5		1½°	H=03 26 28
eS	N/	27 08½					
7th December							
iP	Z	01 24 02.0	0.3	1.0			
i	N/	55.5					
eP	Z	17 04 43½	0.8	0.3			
i	E	05 09.0					
eP	Z	17 27 17	0.8	0.5			Teleseism.
i	N	26.5					
8th December							
iP	Z	12 38 02.0	0.5	1.0		2½°	H=12 37 21
iS	N/	33.0					
9th December							
eP	Z	14 56 51	0.5	0.3			
i	N/	57 20.5					
eP	Z	17 34 11	0.3	0.5		4°	H=17 33 08 6°S, 148°E approx New Britain Region
iS	N/	35 00.4					
10th December							
iP	Z	18 10 07.0				10°	H=18 07 43 7°S, 161°E. Solomon Is. Region
iS	E/	11 59.0					
eLR	Z/	12 18.0					
11th December							
iP	Z	02 24 07.0				4°	H=02 24 04 5°S, 150°E New Britain Region
iS	E/	56.0					
iP	Z	16 25 54.6				1½°	H=16 25 28
iS	E/	26 15.0					
eP	Z	19 57 14½			c		
e(P)	Z	20 13 32	1.0	1½			In coda of previous shock.

12th December - Nil recorded.

13th December							
iP	Z/	02 19 33.0				¾°	H=02 19 18
iS	E/	44.0					

AGENAHAMBO			T sec	A* mm	GM	Dist	Remarks
27th November							
iP	Z	00 42 58.5	0.2	1.0	d	3°	H=00 42 14
iS	Z	43 32.8					
28th November							
iP	Z	02 59 17.6	0.4	3.0	c	4¼°	H=02 58 12
iS	Z	03 00 07.5					
iP	Z	08 14 08.0	0.6	1.0	c		Local shock
iS	Z	14 10.9					

29th November - Nil recorded.

30th November - Nil recorded.

Seismograms interpreted by M. Gaiam
E. Ravian
D. Howard
P. Leitao

Central Observatory Rabaul
23rd December, 1966.

G. W. D'ADDARIO
(Vulcanologist-in-Charge)

TERRITORY OF PAPUA AND NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL	(RAB)	From: 22nd December, 1966 To: 28th December, 1966.
SULPHUR CREEK	(SUL)	- Not operational.
KERAVAT	(KRT)	- Not operational.
ESA'ALA	(ESA)	- [redacted] Records not received.
AGENAHAMBO	(AGE)	- From: 4th December, 1966 To: 10th December, 1966.
TABELE	(TBL)	- Nil recorded.

TERRITORY OF PAPUA AND NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

CENTRAL OBSERVATORY RABAUL

RABAUL (RAB)

Latitude 04°11'33"0 S., Longitude 152°10'16"0 E., Elevation 184m.
Bedrock: Basalt flow.

STATION INSTRUMENTATION

WORLD WIDE STANDARD SYSTEM:		To sec.	Tg sec.
S.P.-Z	Maximum magnification 12,500 at 0.6 sec.	1.0	0.74
S.P.-N&E	Maximum magnification 6,250 at 0.6 sec.	1.0	0.74
L.P.-Z/N/E/	Maximum magnification 750 at 25.0 sec.	15.0	100.00

BENIOFF SEISMOMETER (GEOTECH MOD. 4681-A VERTICAL)-HELICORDER (GEOTECH MOD. 2484) SYSTEM:

S.P. Zh	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.

STRONG MOTION TWO-COMPONENT OMORI SEISMOGRAPH 15 kg.

L.P.-No	Static magnification 12, air damping 10:1	3.6
L.P.-Eo	Static magnification 10, air damping 10:1	3.8

SULPHUR CREEK (SUL)

Latitude 04°13'44"S., Longitude 152°11'48"E. Elevation 3m.
Bedrock: unconsolidated volcanic ash.

STATION INSTRUMENTATION

BENIOFF SEISMOMETER (GEOTECH MOD. 4681-A VERTICAL) TELEMETERED BY LINE TO A HELICORDER (GEOTECH MOD. 2484) AT THE CENTRAL OBSERVATORY:

S.P. Zr	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.

KERAVAT (KRT)

Latitude 04°20'S., Longitude 152°00'E.
Bedrock: coastal alluvium.

STATION INSTRUMENTATION

BENIOFF, MOVING-COIL 3-COMPONENT, FILM RECORDING SEISMOGRAPH:

Z	1.2	0.35
N	1.4	0.26
E	1.4	0.29

Sensitivity set at 20% Z, at 10% N&E, drum speed 15 mm/min.

ESA'ALA (ESA)

Latitude 09°44'18"2 S., Longitude 150°48'50"7 E., Elevation 46m.
Bedrock: granite.

STATION INSTRUMENTATION

	To sec.	Tg sec.
SEISMOMETER 1 Geotech Mod. 1051 vertical 2 Geotech Mod. 1101 horizontal — Film Recorder System (Geotech Mod. 1301-A) drum speed 15 mm/min.	1.0	0.2
— Photographic Recorder System (Geotech Mod. 1565-D) drum speed 30 mm/min.		60.0

S.P.Z. Magnification 36,000.
S.P.N. Magnification 18,000
S.P.E. Magnification 17,000
L.P.-Z/N/E/ Magnification - to be determined.

AGENAHAMBO (AGE)

Latitude 08°48'30"S., Longitude 148°06'12"E, Elevation 303m.
Bedrock: unconsolidated volcanic tuff.

STATION INSTRUMENTATION

VERTICAL WILLMORE SEISMOGRAPH

	To sec.	Tg sec.
Attenuator setting $\frac{1}{10}$, drum speed 60 mm/min.	0.6	0.25

S.P.Z. magnification 1,000.

TABELE (TBL)

Latitude 04°06'S., Longitude 145°02'E., Elevation 197m.
Bedrock: basalt flow.

STATION INSTRUMENTATION

	To sec.	Tg sec.
SEISMOMETER 1 Geotech 1051 vertical — Helicorder System (Geotech Mod. 2484) Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.		0.02
— Photographic Recorder System (Geotech Mod. 1563-D), drum speed 30 mm/min.	1.0	90.0

S.P.-Z.N.E. magnification 1,000
L.P.-Z/N/E/ magnification 700

— coupled to Willmore Recorder attenuator setting 1/100, drum speed 60 mm/min. 0.25
S.P.-Z_W magnification 860

PRESENTATION OF DATA:

All times are reduced to Greenwich Mean Time (G.M.T.), which is 10 hours behind Eastern Standard Time.

The recording drum of seismographs is driven by a synchronous motor. Alternating current with the accurate frequency of 60 cycle/sec. (RAB), 50 cycle/sec. (ESA, TBL, KRT, AGE) is supplied by an electronic A.C. generator. A.C. generators have crystal frequency regulation at RAB, ESA, TBL only. At (RAB) time signal is marked every minute on the records from a crystal chronometer and second marks from radio signal VNG (Australia) are recorded on one component according with the W.W.S.S. programme at six-hour intervals.

At (ESA) and (TBL) time signal is marked every minute on the records from crystal chronometer and a second mark from Radio VNG Australia daily.

DIRECTION OF MOTION;

"c" or "d" indicates initial compression or dilation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

ACCURACY OF READINGS:

When readings are given with a decimal figure they are to one-tenth of a second, other readings have been made to the nearest half second.

CRUSTAL PHASES:

Px, Sx Crustal phases other than Pn and Sn for local and near earthquakes.

FELT INTENSITY:

Information on maximum intensities of shocks reported felt is included. Intensities are given in Roman numerals, based on Modified Mercalli Scale of 1931.

DETERMINATION OF EPICENTRES:

Where no source is cited the determination of epicentre, origin time, focal depth, and distance in central angle degrees for local and regional earthquakes are carried out at the Central Observatory Rabaul.

GEOGRAPHICAL DESIGNATION OF EPICENTRES:

The regional names which follow the coordinates of epicentres located at the Central Observatory are meant only to supplement the coordinates and normally follow well-known geographical rather than geological features. Use is made of the full degree blocks according to the method defined by

E.A. Flinn and E.R. Engdahl in "A Proposed Basis for Geographical and Seismic Regionalization", Seismic Data Laboratory Report No. 101, adopted by the U.S.C.G.S. for computer requirements.

SYMBOLS:

A	Peak-to-Trough trace amplitude in millimetres.
A*	Amplitudes from seismographs with different response to the W.W.S.S.
T	Period in seconds.
C.B.M.	Confused by microseisms.
Dist.	Distance in central angle degrees.
H	Origin time.
h	Focal Depth in Km.

G. W. D'ADDARIO
Vulcanologist-in-Charge.

TERRITORY OF PAPUA-NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

			T sec	A mm	GM	Dist	Remarks
RABAUL							
2nd December							
iP	Z	16 06 19.4	0.4	7.0	c	1½°	H=16 05 54
iS	E	39.0					
eP	Z	18 39 12.5	0.4	2.0	(d)	¾°	H=18 38 57
eS	N	24					
iP	Z	19 33 15.4	0.8	2.8	c		
23rd December - Microseismic activity between 2317 - 0615 hours.							
iP	Z	01 16 53.6	0.4	1.0	d		C.B.M.
iP	Z	03 44 14.2	0.5	9.0	d		C.B.M.
iP	Z	07 31 53.5	0.4	9.0	d	1°	H=07 31 37
iS	N	32 06.0					
iP	Z	09 43 15.0	0.5	8.8	d	¾°	H=09 43 00
iS		26.0					
iP!	Z	15 51 33.0	0.4	32.8	dSW		
Felt: Cape Gloucester, Int. III, 05°25'S., 148°25'E.							
iP	Z	16 57 25.3	0.5	1.5	d		
iP	Z	17 28 50.4	0.3	15.5	d	1°	H=17 28 30
iS	E	29 06.0					
24th December							
e	Z/	05 42 53			-		
iP	Z	11 16 04.0	0.4	2.8	c	2¼°	H=11 15 31
iS	N	31.5					
iP	Z	22 40 38.0	0.6	3.0	c		Teleseism.
e	Z	42 38					
e	Z	43 34					
25th December - S.P.-EW light bulb failed at 250201 hrs.							
iP	Z	11 33 33.2	0.5	5.0	c	2°	H=11 32 58
eS	N/	59					
iP!	Z	14 26 49.2	0.5	83.0	d	1°	H=14 26 30
iS	E/	27 03.0					
iP	Z	15 13 02.8	0.5	74.0	d	1°	H=15 12 46
eS	E/	14.5					overlapping.
eP	Z	15 43 59.5			-		overlapping.
iP	Z	18 35 12.5	0.5	1.2	d	2½°	Double shock.
iP	Z	23.0					
eS	N/	42					
eP	Z	20 22 42½	0.8	2.0	d	2°	H=20 22 10
eS	N/	23 07					
iP	Z	23 19 55.5	0.5	2.0	c	2°	H=23 19 24
eS	N/	20 19					
26th December - S.P.-EW light off.							
iP	Z	01 10 23.7	0.5	25.0	d		
eP	Z	13 58 55	0.4	1.0	c	2°	H=13 58 21
iS	N	59 21.5					
eP	Z	14 17 47	0.4	1.0	c	2¼°	H=14 17 11
iS	Zh	18 14.0					

			T sec	A mm	GM	Dist	Remarks
RABAUL (Cont.)							
26th December (cont.)							
eP	Z	17 19 51	0.5	1.0	d		Teleseism
eP	Z	18 31 10	0.3	1.0	d	6°	H=18 29 41
eS	N/	32 19					
27th December - S.P.-EW light off.							
iP	Z	01 30 08.5	0.2	0.8	d		
iP	Z	05 43 59.5	0.8	6.5	d	11¾°	H=05 41 09
iS	E/	46 11.0					
iP	Z	07 58 08.0	0.4	2.5	d	3°	H=07 57 17
iS	N/	42.5					
iP	Z	09 41 42.1	0.5	1.0	c	2°	H=09 41 10
eS	Zh	42 06½					
eiP	Z	13 58 16	0.5	11.0	(d)		
iP	Z	15 58 05.0	0.5	1.5	c		
iP	Z	16 3100.9	0.3	2.0	d	1¼°	H=16 30 37
iS	E/	19.0					
i	Z	19 32 23.8	1.0	1.0	ship moving in harbour.		
F	Zh	42.8					
iP	Z	21 33 03.5	0.3	1.0	c		
28th December							
iP	Z	00 27 25.8	0.4	1.0	d		Local.
e(P)	Z/	08 34 05½	06.0	11.0	d		Teleseism.
i	Z	37 04.2					
i(PKP)	Z	13.7					
i	Z	38 45.7					
i	Z	39 22.0					
i	Z	40 32.0					
i	Z	41 38.2					
i	Z	50 25.0					
i	Z	51 04.0					
iP	Z	16 41 26.0	0.5	12.0	c	1¾°	H=16 40 57
iS	E/	50.0					
iP	Z	21 18 11.2	0.5	14.0	d	4°	H=21 12 33
iS	N/	13 40.0					

		T sec	A* mm	GM	Dist	Remarks
AGENAHAMBO						
4th December	- Nil recorded.					
5th December						
eP	18 47 03.0	0.4	1.0			microseism.
6th December	- microseismic activity between 2256 and 0710 hours.					
7th December	- Nil recorded.					
8th December	- Nil recorded.					
9th December						
P	02 24 59.5	0.4	1.1			harmonic waves.
M	5.5					
F	02 40 01.5					
10th December	- Nil recorded.					

		T sec	A* mm	GM	Dist	Remarks
TABELE						
30th November to 6th December	- Nil recorded.					
7th December to 13th December	- Nil recorded.					

Seismograms interpreted by M. Gaiam
E. Ravian
D. Howard
P. Leitao

G. W. D'ADDARIO)
(Vulcanologist-in-Charge).

Central Observatory
Rabaul.

30th December, 1966.

RABAUL CENTRAL OBSERVATORY

CORRIGENDUM

In the bulletin for Esa'ala Station for the period 21st November to 5th December, 1966, the following corrections need to be introduced:

On page 1

					Dist.	Remarks
28th November						
iP	Z/	03	05	17.0	4°	H=03 04 13. 7°S, 152°E. New Britain Region.
iS	E/		06	06.0		
1st December						
iP!	Z/	05	00	47.0	16¼°	H=04 59 53. 16°S, 166°E. New Hebrides.
eS	E/		03	55		

On page 2

1st December						
iP	Z/	09	50	54.2	4½°	H=09 49 49. 5°S, 149°E. Bismarck Sea Region.
iS	N/		51	48.0		

Please delete all the information on page 1 under remarks for the following shocks:

25th November						
iP	Z/	02	58	09.0	3°	√ DELETE: H=02 57 20. 23°S, 151°E. Planet Deep New Britain Region.
iS	N/			46.0		
28th November						
iP	Z/	08	18	34.0	5°	√ DELETE: H=08 17 19. 21°S, 154°E. Solomon Islands.
iS	E/		19	32.0		
1st December						
eP	Z/	00	38	04	1½°	√ DELETE: H=00 37 38. 17°S, 153°E. New Ireland Region.
eS	N/			24		

TERRITORY OF PAPUA AND NEW GUINEA
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VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

RABAUL	(RAB)	-	From: 29th December, 1966 To: 4th January, 1966.
SULPHUR CREEK	(SUL)	-	Not operational.
KERAVAT	(KRT)	-	Not operational.
ESA'ALA	(ESA)	-	Records not received.
AGENAHAMBO	(AGE)	-	From: 11th December, 1966 To: 23rd December, 1966.
TABELE	(TBL)	-	Nil recorded.

TERRITORY OF PAPUA AND NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

CENTRAL OBSERVATORY RABAUL

RABAUL (RAB)

Latitude 04°11'33".0 S., Longitude 152°10'16".0 E., Elevation 184m.
Bedrock: Basalt flow.

STATION INSTRUMENTATION

WORLD WIDE STANDARD SYSTEM:		To sec.	Tg sec.
S.P.-Z	Maximum magnification 12,500 at 0.6 sec.	1.0	0.74
S.P.-N&E	Maximum magnification 6,250 at 0.6 sec.	1.0	0.74
L.P.-Z/N/E/	Maximum magnification 750 at 25.0 sec.	15.0	100.00

BENIOFF SEISMOMETER (GEOTECH MOD. 4681-A VERTICAL)-HELICORDER (GEOTECH MOD. 2484) SYSTEM:

S.P. Zh	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.

STRONG MOTION TWO-COMPONENT OMORI SEISMOGRAPH 15 kg.

L.P.-No	Static magnification 12, air damping 10:1	3.6
L.P.-Eo	Static magnification 10, air damping 10:1	3.8

SULPHUR CREEK (SUL)

Latitude 04°13'44".S., Longitude 152°11'48".E. Elevation 3m.
Bedrock: unconsolidated volcanic ash.

STATION INSTRUMENTATION

BENIOFF SEISMOMETER (GEOTECH MOD. 4681-A VERTICAL) TELEMETERED BY LINE TO A HELICORDER (GEOTECH MOD. 2484) AT THE CENTRAL OBSERVATORY:

S.P. Zr	Maximum magnification 3,240 at 1.0 sec.	1.0	0.02

Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.

KERAVAT (KRT)

Latitude 04°20'.S., Longitude 152°00'.E.
Bedrock: coastal alluvium.

STATION INSTRUMENTATION

BENIOFF, MOVING-COIL 3-COMPONENT, FILM RECORDING SEISMOGRAPH:

Z	1.2	0.35
N	1.4	0.26
E	1.4	0.29

Sensitivity set at 20% Z, at 10% N&E, drum speed 15 mm/min.

ESA'ALA (ESA)

Latitude 09°44'18"2 S., Longitude 150°48'50"7 E., Elevation 46m.
Bedrock: granite.

STATION INSTRUMENTATION

	To sec	Tg sec.
SEISMOMETER 1 Geotech Mod. 1051 vertical 2 Geotech Mod. 1101 horizontal → Film Recorder System (Geotech Mod. 1301-A) drum speed 15 mm/min.		0.2
→ Photographic Recorder System (Geotech Mod. 1565-D) drum speed 30 mm/min.	1.0	60.0

S.P.Z. Magnification 36,000.
S.P.N. Magnification 18,000
S.P.E. Magnification 17,000
L.P.-Z/N/E/ Magnification - to be determined.

AGENAHAMBO (AGE)

Latitude 08°48'30"S., Longitude 148°06'12"E, Elevation 303m.
Bedrock: unconsolidated volcanic tuff.

STATION INSTRUMENTATION

	To sec	Tg sec.
VERTICAL WILLMORE SEISMOGRAPH Attenuator setting $\frac{1}{10}$, drum speed 60 mm/min. S.P.Z. magnification 1,000.	0.6	0.25

TABELE (TBL)

Latitude 04°06'S., Longitude 145°02'E., Elevation 197m.
Bedrock: basalt flow.

STATION INSTRUMENTATION

	To sec	Tg sec.
SEISMOMETER 1 Geotech 1051 vertical → Helicorder System (Geotech Mod. 2484) Heat sensitive recording paper 60 mm/min., drum speed adjustable to 120 mm/min., 180 mm/min.		0.02
→ Photographic Recorder System (Geotech Mod. 1563-D), drum speed 30 mm/min.	1.0	90.0
S.P.-Z.N.E. magnification 1,000 L.P.-Z/N/E/ magnification 700		
→ coupled to Willmore Recorder attenuator setting 1/100, drum speed 60 mm/min. S.P.-Z_W magnification 860		0.25

PRESENTATION OF DATA:

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At (ESA) and (TBL) time signal is marked every minute on the records from crystal chronometer and a second mark from Radio VNG Australia daily.

DIRECTION OF MOTION;

"c" or "d" indicates initial compression or dilation of the ground, respectively, from a wave of the compressional type. "+" or "-" indicates upward or downward motion of the ground, respectively, from a wave not known to be of the compressional type. N, E, S and W indicates that the initial horizontal direction of the ground motion was towards the north, east, south or west respectively.

ACCURACY OF READINGS:

When readings are given with a decimal figure they are to one-tenth of a second, other readings have been made to the nearest half second.

CRUSTAL PHASES:

Px, Sx Crustal phases other than Pn and Sn for local and near earthquakes.

FELT INTENSITY:

Information on maximum intensities of shocks reported felt is included. Intensities are given in Roman numerals, based on Modified Mercalli Scale of 1931.

DETERMINATION OF EPICENTRES:

Where no source is cited the determination of epicentre, origin time, focal depth, and distance in central angle degrees for local and regional earthquakes are carried out at the Central Observatory Rabaul.

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E.A. Flinn and E.R. Engdahl in "A Proposed Basis for Geographical and Seismic Regionalization", Seismic Data Laboratory Report No. 101, adopted by the U.S.C.G.S. for computer requirements.

SYMBOLS:

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A*	Amplitudes from seismographs with different response to the W.W.S.S.
T	Period in seconds.
C.B.M.	Confused by microseisms.
Dist.	Distance in central angle degrees.
H	Origin time.
h	Focal Depth in Km.

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Vulcanologist-in-Charge.

TERRITORY OF PAPUA-NEW GUINEA
RESIDENT GEOLOGICAL SECTION
VULCANOLOGICAL-SEISMOLOGICAL UNIT

PRELIMINARY EARTHQUAKE ANALYSIS
CENTRAL OBSERVATORY RABAUL

			T sec	A mm	GM	Dist	Remarks
RABAUL							
29th December							
e	Z/	02 33 32			-		
eP	Z	12 09 34	0.5	1.0	d		
e	Z/	12 18 08			+		
iP	Z	14 58 57.1	0.8	1.0	c		
iP	Z	16 44 40.4	0.5	5.2	c	$1\frac{1}{4}^{o}$	H=16 44 17
iS	N	58.8					
eP	Z/	17 50 56			+		
eP	Z	19 19 00½	0.5	1.0	d		
eLQ	N/	59					
iP	Z	21 01 17.0	0.5	1.5	d	$1\frac{3}{4}^{o}$	H=21 00 48
iS	N	39.0					
e	Z/	21 40 12					
iP	Z	22 29 34.4	0.8	1.5	d		
30th December							
e	Z/	00 29 56			+		
e	Z/	04 31 13			-		
iP	Z	15 23 43.5	0.5	2.0	d	$1\frac{3}{4}^{o}$	H=15 23 14
iS	Zh	24 05.5					
31st December							
iP	Z	02 48 14.5	0.5	2.0	c	$3\frac{1}{4}^{o}$	H=02 47 25
i	Z	17.8					
iS	E	52.5					
iP	Z	03 36 54.2	0.4	12.0	c	$\frac{1}{2}^{o}$	H=03 36 40
iS	N/	37 04.5					
iP	Z	10 49 18.0	0.4	4.0	d	1^{o}	H=10 48 58
iS	E	33.0					
iP	Z	12 10 23.0	0.5	2.0	d		
iP	Z	12 19 33.2	0.5	1.8	d	$2\frac{1}{4}^{o}$	H=12 18 57
iS	N	20 00.3					
eP	Z	12 47 36½	0.5	1.2	c	2^{o}	H=12 47 02
iS	N	48 02.5					
iP	Z	16 41 07.5	0.5	15.0	d	$1\frac{1}{2}^{o}$	H=16 40 44
iS	E/	25.5					
iP	Z	18 26 52.0	0.5	1.0	c		Teleseism L.P. records hard to decipher. Large surface waves.
eP	Z	19 27 09	0.6	1.0	d		Superimposed shock.
iP	Z	22 18 37.0	0.5	1.2	d		Teleseism. L.P. records hard to decipher. Traces overlapping.
iP	Z	22 23 47.7	0.5	4.5	c	$1\frac{1}{4}^{o}$	H=22 23 25
iS	E	24 04.5					In coda of preceding shock.

			T sec	A mm	GM	Dist	Remarks
RABAUL (Cont.)							
1st January - L.P. N-S galvanometer jammed.							
iP	Z	00 24 51.5	0.5	1.5	d		
i	Z	25 06.2					
i	Z	29.0					
iP	Z	04 07 51.5	0.5	1.8	d	23½°	Teleseism.
ePcP	Z/	11 12					
eS	E/	12 13½					
eSS	E/	13 15					
eScP	E/	14 52					
eP	Z	07 12 44	0.5	1.0	c	19°	Teleseism
eS	E/	16 13					
eLQ	E/	21					
eSS	E/	38					
ePcP	Z/	17 04½					
eScP	E/	20 47					
iScS	E/	24 22					
iP	Z	07 59 06.0	0.5	15.0	d	1½°	H=07 58 38
iS	E/	27.0					
i!	Zh	49.6					
e	Z/	08 54 47			+		
iP	Z	09 44 30.5			c	1½°	overlapping.
eS	E/	51					H=09 44 03
iP	Z	12 02 39.0	0.4	3.5	c	1½°	H=12 02 12
iS	E	59.0					
e	Z/	12 56 53			+		
e	Z/	13 23 13			+		
e	E/	26 10					
eP	Z	14 22 34	0.5	1.0	d		
e(S)	E/	27 22					
iP	Z	18 35 35.8	0.5	2.0	d	¾°	H=18 35 21
iS	N	47.0					
iP	Z	19 11 14.6	0.4	2.0	c	1½°	H=19 10 51
iS	N	33.0					
eP	Z	20 49 09	0.5	0.8	c		
iP	Z	21 27 05.0	0.5	10.0	d	1½°	H=21 26 38
iS	N	24.9					
eP	Z	22 02 30	0.5	1.0	d	16°	Teleseism.
ePP	Z/	44					
ePPP	Z/	54½					
eS	E/	05 27½					
eSS	E/	46½					
eLR	Z/	06 22					
2nd January							
e	Z/	01 24 38			-		
eP	Z	02 33 25½	0.4	1.0	d		
e	Z/	03 50 17			-		
eiP	Z	05 09 53	0.4	1.0	c	1½°	H=05 09 25
i	Z	53.4					
iS	N	10 14.0					
e	Z/	06 29 07			-		
e	Z/	07 34 31			-		
eP	Z	07 50 08	0.5	0.8	c		
e	Z/	10 10 56			-		
e	Z/	15 05 22			-		

			T sec	A mm	GM	Dist	Remarks
RABAUL (cont.)							
2nd January (cont.)							
e	Z/	15 19 22			-		
eP	Z	20 03 45½	0.5	1.0	d	17°	Teleseism
ePPP	Z/	04 10					
eS	E/	07 04½					
eLQ	E/	10					
eSS	E/	27					
ePcP	Z/	08 27½					
ScP	E/	12 12					
e	Z	16 11½					
e	Z/	23 57 06			+		
3rd January - L.P. N-S galvanometer adjusted: 03 01 44 hrs.							
iP	Z	02 47 43.5	0.3	2.0	d	½°	H=02 47 31
iS	N	52.5					
e	Z/	04 44 07			-		
eP	Z	05 39 18½			d(SE)	1.5½°	Teleseism.
ePP	Z/	31					
eLQ	N/	42 03½					
eS	N/	09					
eLR	Z/	43 28					
M	Z/	06 02 23					
eP	Z	10 46 54	0.4	1.0	c		Teleseism.
eS	N/	51 03½					
eP	Z	11 08 46½	0.5	1.0	c	22½°	Teleseism.
e(PPP)	Z/	09 26½					
eS	N/	12 10					
eLQ	N/	39					
eSS	N/	54½					
eLR	Z/	13 19					
eP	Z	11 35 04	0.5	0.8	d		
eP	Z	12 35 39	0.8	1.8	d	16°	Teleseism
eS	N/	38 52					
e	Z	17 50 21			-		
iP	Z	18 48 02.0	0.3	4.0	c	1½°	H=18 47 34
iS	N	23.5					
e	Z	20 33 49			-		
eP	Z	21 27 09½	0.5	1.0	d	17½°	Teleseism
eS	N/	30 23					
eP	Z	21 36 49	0.5	1.0	c		
4th January							
eP	Z	00 18 09½	0.4	1.0	c		
eP	Z	02 49 28½	0.4	1.0	c		
iP	Z	02 54 20.0	0.8	6.0	c	3°	H= 02 53 36.6
eS	E/	53					
e(ScP)	E/	03 05 25½					
e	Z/	13 14 50			+		
iP	Z	16 32 55.5	0.8	2.0	d	14½°	
i	Z	33 12.4					
eS	N/	34 59					
eiP	Z	16 57 24½	0.5	2.0	d		
i	Z	38.5					
eiP	Z	20 35 25½	0.3	1.2	c		
i	Z	26.0					

			T sec	A* mm	GM	Dist	Remarks
AGENAHAMBO							
11th December							
iP	Zn	02 25 9.5	0.1	2.4			
i	Zw	55.0					
eiP	Zw	13 18 (35.5)					
i	Zw	29.5					
i	Zw	56.5					

12th December - harmonic shocks between the hours of 0019-0707.
Average period T: Between 0.3 and 0.4.
Average amplitude A*: Between 1.0 - 1.2.

13th December - Discreet harmonic shocks from 2300 - 0732 hrs.
Average period T: Between 0.2 and 0.4.
Average amplitude A*: Between 1.9 and 1.2.

14th December							
iP	Zw	20 10 15.5	0.5	1.0			Teleseism.
15th December							
e(P)	Zw	09 28 38.6					
e	Zw	40.1					
iS	Zw	29 15.1					

16th December - Discreet number of shocks between 2321 and 0720. (Man-made noise).
Average period T: 0.3
Average amplitude A*: Between 1.9 and 2.6.

17th December - Nil recorded.

18th December - Nil recorded.

19th December - Harmonic shocks between 2222 and 0208 hrs.
Average period T: 0.4
Average amplitude A*: 0.9.

20th December							
eP	Zw	16 25 26	0.8	2.0		d	Teleseism.
eP	Zw	16 52 12½				+	
(iS)	Zw	24.0					

21st December - Harmonic shocks between 2327 and 0709 hrs.
Average period T: 0.1
Average amplitude A*: 0.3.

eP	Zw	08 57 52	0.4	0.5		d	Teleseism.

22nd December - Nil recorded.

23rd December - Harmonic shocks between 2141 and 0030 hrs.

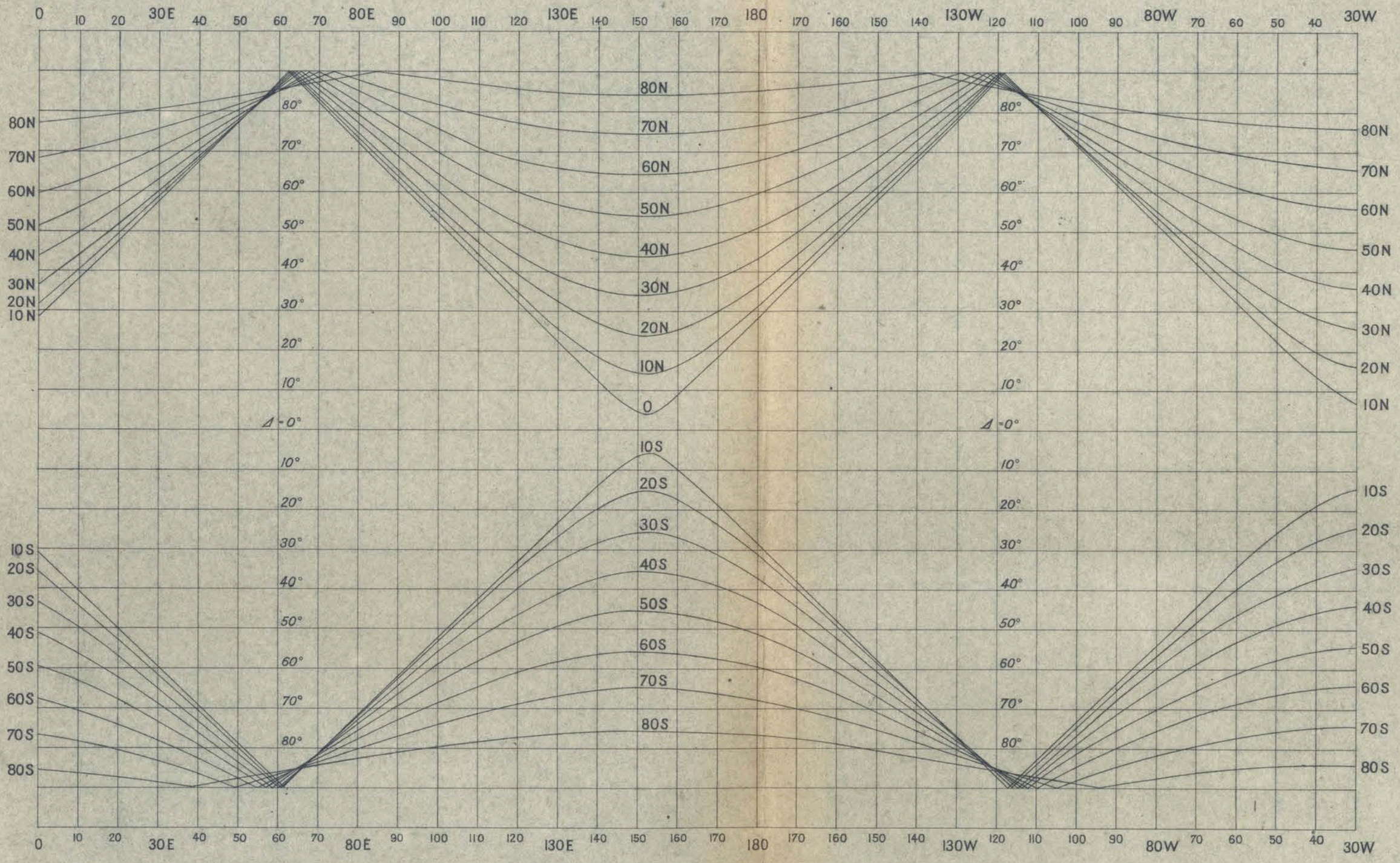
iP!	Zw	15 52 50.1					

Seismograms interpreted by: M. Gaiam
E. Ravian
D. Howard
P. Leitao

G. W. D'ADDARIO
(Vulcanologist-in-Charge)

Central Observatory
Rabaul.

5th January, 1967.



EPICENTRAL DISTANCES FROM RABAUL CORRESPONDING TO GIVEN EPICENTRE COORDINATES