

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES

VULCANOLOGICAL OBSERVATORY

RABAU

RECORDS

T.P.N.G. 1964/8

I

SEISMOLOGICAL BULLETIN

1st January, 1959 - ^{30th APRIL} ~~31st December~~, 1959.

Compiled by

G. W. D'Addario.

TORY OF PAPUA AND NEW GUINEA
Vulcanological Observatory, Rabaul.

SEISMOLOGICAL BULLETIN 1959.

The Observatory:

The Observatory is on the rim of Blanche Bay caldera, which is composed of beds of pumice dust and ash with occasional interspersed basalt lava flow. The instrument vault (3.m. deep) is concrete lined and the roof forms part of the floor of the Observatory. The seismometers are mounted on a concrete pier set on basalt 1.5m. below the vault floor. The pier is separated from the floor by a gap 8cm. loosely filled with pumice dust.

$\phi = 04^{\circ}11' 33''$ S., $\chi = 152^{\circ} 10' 16''$ E.

Height above mean sea level 183 m. (600 feet)

The installed instrument is a Benioff, moving-coil 3-component, film recording seismograph.

<u>Component</u>	<u>Symbol</u>	<u>Tg</u>	<u>To</u>	<u>Ground Motion Direction</u>
Z	Z	0.35	1.26	Vertical trace up
NS	N	0.26	1.44	North trace up
EW	E	0.29	1.45	East trace up

Due to microseismic background, sensitivity is set at approximately 10%. The velocity of the film is about 15 mm./min.

Presentation of data: All times are Greenwich Mean Time, from midnight to midnight.

Time corrections are obtained by comparison between the Synchronome Electric Clock which causes time breaks on the record and the WWYH signal. A stop watch is used and correction plotted on a time correction graph. Corrections are given on slips attached to records for starting and finishing times; corrections for earthquake times may be obtained by calculation. The corrections are probably right to within 0.5 seconds.

Time Breaks: Time increases from left to right and from top to bottom. Time breaks occur between 27 and 30 seconds in the first minute after the hour and between 57 and 60 seconds at the end of every minute.

Sulphur Creek formerly Rapindik Station.

No information is available for the year 1959.

Symbols and abbreviations from U.S.C.G.S. nomenclature. "c" or "d" indicates initial compression or dilatation of the ground, respectively, from a wave of the compressional type; "+" or "-" indicates initial upward or downward motion of the ground respectively from a wave not known to be of the compressional type

N,E,S, or W indicates that the initial horizontal direction of the ground motion was towards the north, east, south, or west, respectively.

Intensities on felt earthquakes are extracted from the Monthly reports produced by the Vulcanological Observatory of Rabaul and are given in Roman numerals, based on Modified Mercalli Scale of 1931.

C.B.M. = Confused by microseisms.

R.F. means record failure. No seismogram exists for this earthquake on this component.

Frequently quoted sources of information regarding epicentres, origin times, or shock magnitudes are as follows:

U.S.C.G.S. - U.S.Coast and Geodetic Survey, Washington D.C.

B.C.I.S. - Bureau Central Internationale Seismologique,
Strasbourg, France.

J.M.A. - Japan Meteorological Agency, Tokyo.

Where no source is cited the determination of origin time and distance of the epicentre from Rabaul Observatory has been made at Rabaul.

References.

Jeffreys, H and Bullen, K.E. (1940). Seismological Tables.
Brit. Ass., Gray-Milne Trust.

Richter, C.F. (1958) Elementary Seismology.

U.S.Dept. of Commerce Special Publication No. 254

Eiby, G.A. and Muir, G. (1961). Tables to facilitate the study
of near Earthquakes. Seismol. Obs. Bull. Wellington.

Requests for additional data or for copies of seismograms should be addressed to:

Vulcanologist
P.O.Box 386,
RABAU T.P.N.G.

1st Jan.	eP	Z	07	32	56+	U.S.C.G.S. 19°S., 176°W Tonga Is. region H = 07 26 12 Dist.= 34.5°
	eP	Z	07	56	22-	U.S.C.G.S. 8½°S., 177°W Fiji Is. region H = 07 49 35 Dist.= 33.3°
2nd Jan.	Nil					
3rd Jan.	iP! i!	Z Z	15	12	51 d 58	Local
	iP	Z	22	01	59 c	Local
4th Jan.	iP!	Z	16	05	37 c	Local
	EP	Z	21	14	14 +	U.S.C.G.S. 8°S., 126½°E Timor Is. region H = 21 08 52 Dist. = 26.3°
	iP!	Z	22	38	15 c	Local
5th Jan	eP	Z	02	41	43½d	traces U.S.C.G.S. 11½°N., 141°E Mariana Is region h about 200 H = 02 37 28 Dist. = 19.3°
	eP iPP iS	Z Z N	09	36 36 37	31 + 38 31	U.S.C.G.S. 7°S., 156½°E. Solomons Is. h about 106 H = 09 35 13 Dist.= 5.1°
	MP i iPPP iPcP iS PcS	Z Z Z Z N Z	09	52 24 53 55 56 59	20 d 24 01 47 48 36	Loyalty Is. region U.S.C.G.S. 22°S., 171½°E H = 09 46 42 Mag. Pas 6½ - 6¾, Tac 6. Dist. = 25.8°
	eP i e(S) i i i	Z Z Z Z Z Z	13	06 07 08	34 - 38 48 51 01 12	
6th Jan.	eiP iS	Z N	11	54 55	36 - 20	U.S.C.G.S. 6½°S., 155°E Solomons Is. h about 150 H = 11 53 39 Dist. = 3.5°
	eiP	Z	14	56	30 -	U.S.C.G.S. 105½°E., 7½°S South of Java H = 14 48 03 Dist.= 47° Traces
7th Jan.	iP!	Z	07	21	41	Local. Felt:- Rabaul Int II (M.M.) 04°10'S., 152°10'E
	iP! i(S)	Z Z	15	43	02 18	Local Felt:- Rabaul Int I (M.M.) 04°10'S., 152°10'E

8th Jan.	iPKP(AB)	Z	01	53	20 +	U.S.C.G.S. $15\frac{1}{2}^{\circ}$ N., 61° W. Windward Is. h about 100 H = 01 33 48 Dist. = 146° Mag. Pas $6\frac{1}{2}$ - $6\frac{3}{4}$.
	i	Z		55	09	
	i	Z			37	
	i	Z		56	40	
	iP!	Z	04	07	21 c	U.S.C.G.S. 5° S., $151\frac{1}{2}^{\circ}$ E New Britain h about 150 H = 04 06 46 Felt: Pomio Int 2 (M.M.) $05^{\circ}30'S.$, $151^{\circ}30'E$ Dist. = 1.1°
	iS	N			41.5	
	iP	Z	18	02	50 +	U.S.C.G.S. 7° S., $155\frac{1}{2}^{\circ}$ Solomon Is. h about 150 H = 18 01 37 Dist. = 5°
	iS	N		04	00	
	iP	Z	22	39	32.3 c	U.S.C.G.S. $4\frac{1}{2}^{\circ}$ S., $138\frac{1}{2}^{\circ}$ E New Guinea H = 22 36 08 Dist. = 14°
9th Jan.	iP	Z	12	17	16 d	(Solomon Is?)
	iPP	Z			22	
	iS	N		18	08	
	iSS	N			13	
	i	N			19	
10th. Jan.	iP	Z	02	29	54 d	Local
	iS	N		30	29	
	i	N			31	
	iP	Z	05	53	22 c	Local Felt: Londolovit Int I (M.M.) $03^{\circ}10'S.$, $152^{\circ}40'E.$
11th Jan.	Strong microseismic activity.					
12th Jan.	eP	Z	03	02	13 -	Northeastern New Guinea H = 03 00 38 Felt: Mumeng Int I=II (M.M.) $07^{\circ}00'S.$, $146^{\circ}35'E.$ Wau Int I (M.M.) $07^{\circ}20'S.$, $146^{\circ}43'E.$
	iP	Z	17	45	53 c	U.S.C.G.S. $14\frac{1}{2}^{\circ}$ N., 145° E Mariana Is. h about 150 H = 17 41 29 Dist. = 20° .
	ePP	Z		46	20	
	eS	N		49	18.5	
	ePcP	Z		50	01	
13th Jan.	iP	Z	01	19	48 d	U.S.C.G.S. $13\frac{1}{2}^{\circ}$ N., 146° E Mariana Is. H = 01 15 25 Mag. Pas $6\frac{3}{4}$. Dist. = 19°
	i	Z		20	10	
	iP	Z	11	49	43.5 d	U.S.C.G.S. 5° S., $153\frac{1}{2}^{\circ}$ E. New Britain region Dist. = 1.7° H = 11 49 15
	iS	N			59	
14th Jan.	Strong microseismic activity.					
15th Jan.	iP	Z	21	26	30 d	U.S.C.G.S. $25\frac{1}{2}^{\circ}$ S., 180° E South of Fiji Is. h about 500 H = 21 20 26 Dist. = 24° . Mag. Pas $6\frac{1}{2}$.
	ePcP	Z			49	
	epP	Z		27	54	
	eS	N		31	22	
	eSocP	Z				

16th Jan.
Strong microseismic activity.

17th Jan.
C.B.M.
iP
Z
11
33
41 d

U.S.C.G.S. 10°S., 162½°E
Solomon Is. H = 11 30 46
Dist. = 12°

18th Jan.
iP!
Z
02
55
51.8 d

New Britain region
Felt: Rabaul Int I (M.M.)
04°10'S., 152°10'E
Gavit Int II (M.M.)
04°13'S., 151°40'E.

iP!
Z
14
41
35 d

U.S.C.G.S. 5°S., 152½°E.
New Britain region
Felt: Rabaul Int III(M.M.)
04°10'S., 152°10'E
Gavit Int II (M.M.)
04°13'S., 151°40'E.
Rangarere Int IV(M.M.)
04°15'S., 151°35'E.
H = 14 41 06 Dist.= 1°

iP
Z
19
26
14 d

U.S.C.G.S. 5°S., 152½°E
New Britain region
Felt: Rabaul Int II-III(MM)
04°10'S., 152°10'E
Gavit Int II (M.M.)
04°13'S., 151°40'E
Rangarere Int III(MM)
04°15'S., 151°35'E
H = 19 25 45 Dist. = 1°

iP
Z
22
29
12 d

U.S.C.G.S. 19°S., 178°W
Fiji Is. h about 450°

ipP
Z
30
32.5

H = 22 23 15 Mag. Pas 6¼

eS
N
33
57

Dist.= 33°

iScP
Z
34
48

iScS
N
38
49

19th Jan.
i(P)
i(S)
Z
17
22
01 -
57

20th Jan.
Strong microseismic activity.

21st Jan.
iP!
Z
06
52
46 c

Local

iP
Z
11
15
43 c

U.S.C.G.S. 19°N., 120°E.
Near North Coast of Luzon
P.I. H = 11 08 10
Dist. = 40°

i
Z
52

iP
Z
16
37
51 d

22nd Jan.
iP
Z
05
18
25 c

U.S.C.G.S. 34°N., 142°E.
Near east coast of Honshu,
Japan. Felt-.
H = 05 10 25
Mag. Pas 6¾-7; Bks 6¾.
Dist. = 40°

iPcP
Z
20
37

iS
N
24
02

iP
Z
05
40
53 c

U.S.C.G.S. 4°N., 132½°E.
About 300 miles north-
east of Halmahera, East
Indies. H = 05 36 06

iS
N
44
49.5

22nd Jan. contd.	iP!	Z	06	22	24 c	Local
	iP!	Z	17	51	31 c	Local
23rd Jan	iP!	Z	06	20	11 d	New Guinea Felt:- Saidor Int II (M.M.) 05°38'S., 146°28'E.
	i!			18		
	iP	Z	09	37	46 c	Local
24th Jan	iP	Z	05	16	28 d	U.S.C.G.S. 37½°N., 141°E Near coast of Honshu, Japan Felt. h about 100 H = 05 08 35 Dist. = 43°
	ipP	Z		49		
	iPcP	Z		18	15	
	iP	Z	15	34	24.6 d	U.S.C.G.S. New Britain region. Felt: Rangarere Int III (M.M.) 04°15'S., 151°35'E. Rabaul Int II (M.M.) 04°10'S., 152°10'E. h about 100 H = 15 33 56
	iP	Z	15	58	39	U.S.C.G.S. 17½°S., 175°W. Tonga Is. region h about 100 H = 15 51 47 Dist. = 35°
	iPKP(BC)	Z	20	14	59 d	U.S.C.G.S. 37½°N., 24½°W Azores Is. H = 19 55 14 Mag. Pas 6¼-6½. Dist. = 147°
	i	Z		15	01	
	i	Z			16	
	e	N		18	10	
	e	Z			16	
	iPP	Z			23	
25th Jan.	eP	Z	06	09	10 c	New Britain region H = 06 08 24 Dist. = 3°
	i	Z			11	
	iS	N			45	
	iP	Z	11	47	39 c	New Britain region H = 11 46 44 Dist. = 3.6°
	iS	N		48	21	
	e	Z	21	19	10 +	Traces
	e	Z	22	02	10 -	Traces
	e	Z			23	
	e	Z	22	32	41 --	Traces
	e	Z			43	
26th Jan.	iP	Z	05	54	53 c	U.S.C.G.S. 16½°S., 174½°W. Samoa Islands region h about 300 H = 05 48 27 Dist. = 35°
	ipP	Z		55	48	
	iS	N	06	00	05	
	e(P)	Z	14	46	57 -	Local
	iP	Z	21	42	34.5 d	Local

27th Jan.	e(P) i	Z Z	20	12	33 34	d	Small Local or regional
	iP i	Z Z	21	11 12	03 03	c	U.S.C.G.S. 4°N., 126°E. Celebes Sea h about 200 H = 21 05 29 Dist. = 27.5°
28th Jan.	iP	Z	08	11	25	c	Small Local or regional
	iP	Z	17	13	15	c	Small Regional ?
29th Jan.	e(P)	Z	11	08	26	c	Local
	e	Z	20	32	06	+	Traces U.S.C.G.S. 52°N., 174°W Andreanof Islands, Aleutian Islands H = 20 21 17 Dist. = 63° Mag. Pas 5 $\frac{3}{4}$ -6.
30th Jan.	iP iPP iS i	Z Z N Z	00	22 24	05 10 04 06	c	U.S.C.G.S. 10°S., 161°E Solomon Island H = 00 19 25 Dist. = 10.5° Mag. Pas 6 $\frac{3}{4}$.
	iP i! iS i i(ScS) i	Z Z N Z N Z	18	16 21 25 25	24 25.2 33 43 43 48	c	U.S.C.G.S. 31°S., 179°W Kermadec Islands. H = 18 09 02 Dist. = 38°
	iP eS	Z N	20	47 54.6	42	d	U.S.C.G.S. 44°N., 144°E Hokkaido, Japan H = 20 38 58 Dist. = 48° Mag. Pas 5 $\frac{3}{4}$ -6
	iP eS	Z N	22	25 32.5	31	d	U.S.C.G.S. 44°N., 144°E Hokkaido, Japan. H = 22 16 47 Mag. Pas 6 $\frac{1}{4}$. Dist. 48°

31st Jan. Nil recorded.

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1st February	eP i(S)	Z N	05 33	31 16	29 16		U.S.C.G.S. $81\frac{1}{2}^{\circ}$ S., $158\frac{1}{2}^{\circ}$ E Solomon Islands. H = 05 29 31
2nd February	iP	Z	04	01	40	d	U.S.C.G.S. $61\frac{1}{2}^{\circ}$ S., 126° E Banda Sea. C.B.M. h about 150 H = 03 56 12 Dist = 26.5°
	iP	Z	11	58	10	d	Traces Local?
3rd February	iP	Z	01	51	23	d	About 300 Km west of Guam. H = 01 47.0 Dist. = 21°
	iP	Z	23	30	46.4	d	U.S.C.G.S. $39\frac{1}{2}^{\circ}$ S., 175° E. Western Coast, North Island, New Zealand. h about 100 H = 23 23 10 Dist. = 41°
4th February	Strong microseismic activity.						
5th February	iP i i(S)	Z N N	09	11 12	43 04 54	d	Local
	i(P)	Z	19	06	16	(c)	C.B.M.
6th February	iP i iPcP eS	Z Z Z N	14	43 43 41	20 29 32 $34\frac{1}{2}$	c	U.S.C.G.S. 51° N., $175\frac{1}{2}^{\circ}$ W Andreanof Island Aleutian Islands h about 60 H = 14 33 02 Dist. = 62° Mag. Mat $6-6\frac{1}{4}$, Bks $5\frac{1}{2}-5\frac{3}{4}$, Upp, Kir $5\frac{1}{2}-5\frac{3}{4}$, Pas 6, Pra 6.3.
7th February	iPKP	Z	09	55	$57\frac{1}{2}$		U.S.C.G.S. 4° S., $81\frac{1}{2}^{\circ}$ W B.C.I.S. 4° S., $81\frac{1}{2}^{\circ}$ W Near coast of northern Peru, H = 09 36 51. Felt. Mag. Mat. $7\frac{3}{4}-8$, Bks $7\frac{1}{4}-7\frac{1}{2}$ Upp., Kir 7.1; Tac 6.8, Kew 7.3, Mos 7, Pas $7\frac{1}{4}-7\frac{1}{2}$, Pra $7\frac{1}{4}$. Dist. = 128.5°
	iP i eS ePcP	Z N N Z	10	16 20	$26\frac{1}{2}$ $29\frac{1}{2}$ 13 30	d	U.S.C.G.S. 16° N., 146° E. Mariana Is. H = 10 11 39 Dist. = 21°

8th February Strong microseismic activity.

9th February	iP!	Z	21	13	53	c	U.S.C.G.S. 5°S., 154°E. Solomon Is. region h about 100. H = 21 13 18 Mag. Wel. 6½. Dist. = 2° Felt:- Rabaul Int 1V M.M. 04°10'S., 152°10'E. Rangarere Int 11 M.M. 04°15'S., 151°35'E Warangoi Int 111 M.M. 04°30'S., 152°20'E Ulamona Int 1-11 M.M. 05°00'S., 151°15'E. Mag. Wel 6½. Dist. = 2°.
10th February							Strong microseismic activity
11th February							Strong microseismic activity
12th February	iP	Z	17	08	52	c	22°S., 173°E. U.S.C.G.S. Loyalty Is. region H = 17 03 10 Mag. Wel 5½-6 Dist. = 26.5°
13th February	iP i(pP)	Z Z	15	15 16	13 36	c	U.S.C.G.S. 20'S., 177½°W Tonga Is. h about 100 H = 15 09 05 Wellington 20°S., 177°W. h about 600 H = 15 09 18 Dist. = 34°
14th February	eP e	Z Z	04	42 43	20 17		U.S.C.G.S. 7½°S., 122°E Flores Sea. H = 04 36 10 B.C.I.S. 7½°S., 122°E H = 04 36 10 Moskva H = 04 36 20 Port Moresby H = 04 36 18 Mag. Wel. 5¾-6; PMG 6½; Dist. = 30°
	eP	Z	07	32	52		B.C.I.S. 5½°S., 162½°E Solomon Is. region H = 07 29 59 Dist. = 11°.
	i	Z	22	21	07½	+	Traces
	iP iPPP	Z Z	22	36 40	13 02	c	U.S.C.G.S. 28°N., 97°E East Pakistan H = 22 25 50 Moskva 22 25 47 Quetta 27°N., 97°E H = 22 25 50 Shillong H = 22 26 02 Mag. Shl 5.9; Que 6.0. Dist = 62°.
15th February	iP	Z	04	14	25	c	U.S.C.G.S. 44½°N., 83½°E Kinkiang Province China H = 04 02 22 Moskva H = 04 02 33 Quetta 44½°N., 83¾°E H = 04 02 20
16th February	e	Z	14	21	29		Traces

17th February	iP	Z	00	02	45½	c	New Britain region Felt:- Pomio Int II-III M.M. 05°30'S., 151°20'E.
	iP i	Z Z	11	54	41 50	c	U.S.C.G.S. 15°N., 142½°E Mariana Is region H = 11 49 59 Dist. = 21½
	iP i e	Z Z Z	12	13 14	35½ 48 33	d	U.S.C.G.S. 51½°N., 171°W. Fox Is. Aleutian Is. H = 12 03 05 Dist. = 63
18th February	eP i	Z Z	17	33	30 42		U.S.C.G.S. 14°N., 144°E Mariana Is. region h about 250 H = 17 29 07 Dist. = 20
	iP iS	Z N	18	41 42	58½ 25½	d	Rabaul New Britain region H = 18 41 23 Dist. = 2.3
19th February	eP i	Z Z	11	43	28 33		Port Moresby 5½°S., 147°E Nth coast of New Guinea Astrolabe Bay. H = 11 41 48 Dist. = 5°
	eP i e	Z Z Z	21	04 05 07.1	33 08		
	iP iS	Z N	22	48 49	48 10	d	deeper than normal
20th February	iP! iS	Z N	02	54	09 28	d	
	eP iP	Z Z	12	07	36 37	d	U.S.C.G.S. 18°S., 178½°W Fiji Is. h about 600 H = 12 01 57 Dist. = 32°
	iP! iS!	Z N	12	08 09	51 02	d	in coda of preceding Rabaul New Britain region H = 12 08 36 Dist. = 1°
21st February	Nil recorded						
22nd February	iP	Z	10	31	01	d	U.S.C.G.S. 5½°S., 131°E Banda Sea. H = 10 26 06 Moskva H = 10 26 22 Mag. Mat 5½-5½; Que 6.5 Dist. = 21
23th February	iP! i	Z	01	59	34	d	U.S.C.G.S. 5½°S., 150°E New Britain H = 01 58 38 Mag. Mat 6½-6½; Wel 5½- 5½. Dist. = 2.5° Felt:- Kandrian Int V-VI M.M. 06°15'S., 149°35'E Walindi Int IV M.M. 05°25'S., 150°05'E Pomio Int II M.M. 05°30'S., 151°30'E
	iP i	Z	10	40 41	57 23	c	U.S.C.G.S. 52½°N., 159°E. Kamchatka h about 100 H = 10 31 14 Moskva H = 10 31 16 Dist. = 58°

9th February	iP!	Z	21	13	53	c	U.S.C.G.S. 5°S., 154°E. Solomon Is. region h about 100. H = 21 13 18 Mag. Wel. 6½. Dist. = 2 Felt:- Rabaul Int 1V M.M. 04°10'S., 152°10'E. Rangarere Int 11 M.M. 04°15'S., 151°35'E Warangoi Int 111 M.M. 04°30'S., 152°20'E Ulamona Int 1-11 M.M. 05°00'S., 151°15'E. Mag. Wel 6½. Dist. = 2°.
10th February							Strong microseismic activity
11th February							Strong microseismic activity
12th February	iP	Z	17	08	52	c	22°S., 173°E. U.S.C.G.S. Loyalty Is. region H = 17 03 10 Mag. Wel 5½-6 Dist. = 26.5°
13th February	iP i(pP)	Z Z	15	15 16	13 36	c	U.S.C.G.S. 20'S., 177½°W Tonga Is. h about 100 H = 15 09 05 Wellington 20°S., 177°W. h about 600 H = 15 09 18 Dist. = 34
14th February	eP e	Z Z	04	42 43	20 17		U.S.C.G.S. 7½°S., 122°E Flores Sea. H = 04 36 10 B.C.I.S. 7½°S., 122°E H = 04 36 10 Moskva H = 04 36 20 Port Moresby H = 04 36 18 Mag. Wel. 5¾-6; PMG 6½; Dist. = 30°
	eP	Z	07	32	52		B.C.I.S. 5½°S., 162½°E Solomon Is. region H = 07 29 59 Dist. = 11°.
	i	Z	22	21	07½	+	Traces
	iP iPPP	Z Z	22	36 40	13 02	c	U.S.C.G.S. 28°N., 97°E East Pakistan H = 22 25 50 Moskva 22 25 47 Quetta 27°N., 97°E H = 22 25 50 Shillong H = 22 26 02 Mag. Shl 5.9; Que 6.0. Dist = 62°.
15th February	iP	Z	04	14	25	c	U.S.C.G.S. 44½°N., 83½°E Kinkiang Province China H = 04 02 22 Moskva H = 04 02 33 Quetta 44½°N., 83½°E H = 04 02 20
16th February	e	Z	14	21	29		Traces

23rd February contd.	eP i	Z	16	14	16 20		U.S.C.G.S. 50°N., 157°E Kurile Is. deeper than normal. H = 16 04 48 Dist. = 55°
	iP	Z	17	31	32½	c	Port Moresby 6°S., 147°E Near N.E. coast of New Guinea H = 17 30 12 PMG 4 Dist = 5.5°
24th February	eP	Z	12	52	11		U.S.C.G.S. 11°N., 122½°E Panay Is. P.I. h about 100 H = 12 45 41 Dist. = 33° Mag. Mat 5½.
25th February	iP i	Z Z	20	13	07 19	c	U.S.C.G.S. 2°S., 129°E. Ceram Sea h about 200 H = 20 08 09 Dist. = 23°
	iP!	Z	23	19	15	c	Local Felt:- Rabaul Int I M.M. 04° 10'S., 152° 10'E.
26th February	iP iS	Z N	00	09	31 43	d	RAB Local H = 00 09 15 Dist. 0.9° Felt:- Taliligap Int IM.M 04° 19'S., 152° 10'E.
	iP	Z	04	42	27½	d	U.S.C.G.S. 5½°S., 147°E. Near N.E. coast of New Guinea H = 04 41 00 Dist. 5.5° Felt:- Finschhafen Int I M.M. 06° 34'S., 147° 51'E. Saidor Int II M.M. 05° 38'S., 146° 28'E. Awelkon Int III M.M. 05° 40'S., 147° 47'E.
	iP	Z	17	18	44	c	
	iP! iS	Z N	17	34	24 30	d	RAB Local H = 17 34 16 Dist. 0.3°
27th February	iP i eS or ScP	Z Z Z,N	21	04	01 09 58	d	U.S.C.G.S. 27½°N., 129°E Ryu Kyu Is. H = 20 56 30 B.C.I.S. H = 20 56 35 Moskva H = 20 56 42 J.M.A. Japon 27½°N., 128½°E H = 20 56 40 Dist. = 39° Mag. Mat 6.0; Kew 6½.
	iP	Z	03	58	58	c	U.S.C.G.S. 3°S., 129½°E. Ceram Is. region H = 03 53 51 Dist. 23.5°

RABAU VULCANOLOGICAL OBSERVATORY

FINAL BULLETIN
March 1959

1st March	eP	Z	16	53	22½	U.S.C.G.S. ½°S., 134½°E Near N. coast of New Guinea Felt. h about 100 H = 16 49 13 Moskva H = 16 49 03 Dist. = 18° Mag. Mat 7-7½; Upp, Kir 7.1; Kew 7; Tac 7; Wel 6.7; Mog 6½; Pas 7; Que 6½; Dist. = 18°
	iP!	Z			23	
	e(S)	N		56	39	
	i(LQ)	N		57.0		
	i(LR)	Z		58.0		
2nd March	e(P)	Z	18	28	01	Traces
	i				08	
	eP	Z	20	46	27½	U.S.C.G.S. ½°S., 135°E Near N. coast of New Guinea H = 20 42 14 Dist. = 17.5°
	e	Z			28	
	i	Z			33½	
	i(P)	Z	08	43	02	(c) Local
	i				14	
	iP	Z	09	19	06	c U.S.C.G.S. 7½°S., 127½°E Timor Is. H = 09 13 37 J.M.A. Japon H = 09 13 46 Mag. Mat 6.0; Wel 6.0; PMG 6½; Dist. = 25°
	e	Z	13	34	35	Traces
	iP	Z	16	03	56	c U.S.C.G.S. 36½°N., 70½°E. h about 250 H = 15 51 41 Hindu Kush, Felt. B.C.I.S. 36.5°N., 70.5°E h about 220 H = 15 51 40 Moskva 36½°N., 71°E h about 200 H = 15 51 44 Shillong 36°N., 70¾°E H = 15 51 44 Quetta 36°N., 70¾°E h about 250 H = 15 51 44 Peking 36°N., 70°E. H = 15 51 38 Mag. Mat 5½-5¾; Upp, Kir 6.3; Kew 6; Que 6.6. Dist. = 86°
	e(P)	Z	21	15	02	Traces
3rd March	Strong microseismic activity					
4th March	Strong microseismic activity					
5th March	e(P)	Z	12	56	29	PMG H = 12 54 55 Off SE tip of Papua. B.C.I.S. 10½°S., 151½°E. H = 12 54 54 Dist = 6°
				"C.B.M"		
	iP	Z	14	18	20½	c U.S.C.G.S. 44½°N., 147°E Kurile Is. h about 100 H = 14 09 47 J.M.A. Japon 43¾°N., 147¼°E h about 80 H = 14 09 48 Dist. = 48°
	i(pP)	Z			53	
	iP	Z	20	34	54	c RAB 5¼°S., 151½°E. New Britain region H = 20 34 29 Dist. = 1.5° Felt:- Pomio Int II=III M.M. 05°30'S., 151°30'E Taliligap Int 11 M.M. 04°9'S., 152°10'E. RAB Local Dist. = 0.7°
6th March	iS!	N		35	13	
	iP!	Z	16	50	52	c U.S.C.G.S. 11°S., 162°E Solomon Is. region foreshock H = 20 28 43 Mag. Mat 5½-5¾; Wel 5½; PMG 5½; Dist. = 12°
	iS	Z		51	02	
	iP	Z	20	31	52	
	iS	N		34	07½	
	iP	Z	20	45	02½	

2

6th March contd.	continuation of previous shock						U.S.C.G.S. $10\frac{1}{2}^{\circ}$ S., 162° E Solomon Is. region H = 20 41 53 Mag. PMG $5\frac{1}{2}$ Dist. = 12°
7th March	iP	Z	09	03	18	d	U.S.C.G.S. $5\frac{1}{2}^{\circ}$ S., 153° E New Britain region. H = 09 02 52 Dist. = 1.6° Felt: Rabaul Int 1 M.M. $04^{\circ}10'S.$, $152^{\circ}10'E.$
	iP iS	Z N	10	53	24 47	d	RAB New Britain region Dist. = 1.9°
8th March	e(P)	C.B.M. Z	17	13	16		U.S.C.G.S. 21° S., 170° E Loyalty Is. H = 17 07 55 Mag. Mat $5-5\frac{1}{4}$; Wel 5.4. Dst. = 24
	iP iS	Z N	23	18	$20\frac{1}{2}$ 40		New Britain region RAB. H = 23 17 54 Dist. = 1.6° Felt: Pomio Int II-III M.M. $05^{\circ}30'S.$, $151^{\circ}30'E.$
9th March	Strong microseismic activity						
10th March	Strong microseismic activity						
11th March	iP i	Z Z	07	12	19 32	c	U.S.C.G.S. 6° S., $127\frac{1}{2}^{\circ}$ E Banda Sea H = 07 06 58 Dist. = 25° Mag. PMG $5\frac{1}{2}$.
	iP iS	Z N	20	37 38	36 20	d	RAB H = 20 36 $38\frac{1}{2}$ New Britain region PMG H = 20 36 45 Dist. = 3.8° Mag. PMG $4\frac{3}{4}$.
12th March	eP i eS	Z Z N	01	32 36	23 26 45		U.S.C.G.S. 7° N., 145° E Caroline Is. H = 01 29 07 B.C.I.S. 7° N., 145° E H = 01 29 07 Moskva H = 01 29 22 Peking $7\frac{1}{2}^{\circ}$ 146° E. H = 01 29 09 Dist. = 13.5° Mag. Mat $6\frac{1}{2}-6\frac{1}{2}$; Upp, Kir 6; Wel.6; Mos.6; Pas 6, PMG 6.
	iP iS	Z N	03	41 42	47 08	c	RAB. New Britain region H = 03 41 19 Dist. = 1.7°
	iP!	Z	09	01	05	c	U.S.C.G.S. 5° S., $154\frac{1}{2}^{\circ}$ E Solomon Is. region H = 09 00 30 h about 60 B.C.I.S. 5° S., $154\frac{1}{2}^{\circ}$ E h about 60 H = 09 00 30 Felt: Rabaul Int III M.M. $04^{\circ}10'S.$, $152^{\circ}10'E.$ Warangoi Int IV M.M. $04^{\circ}30'S.$, $152^{\circ}20'E.$ Londolovit Int III M.M. $03^{\circ}10'S.$, $152^{\circ}40'E.$ Dist. = 3°
13th March	iP i	Z Z	16	46	52 57	c	U.S.C.G.S. 21° S., $176\frac{1}{2}^{\circ}$ W Tonga Is. h about 200 H = 16 40 15 Mag. Wel 6 Dist. = 35°

3

14th March	iP iS i	Z N N	07 01 04	06 19 40	d	U.S.C.G.S. 18°S., 166°E New Hebrides h about 500 H = 06 57 08 Dist. = 20°
15th March	iP i	Z Z	22 47	31 35	c	Local
16th March	iP iP	Z Z	12 15	35 03	c d	Local Local
17th March	iP i iPcP eS iScP	Z Z Z N N	08 32 35 38	41 46 02 34 42	c	U.S.C.G.S. 27½°N., 130°E Ryukyu Is. H = 08 25 22 B.C.I.S. idem J.M.A. Japon 27½°N., 129½°E h about 60 H = 08 25 26 Peking 27°N., 130°E Mag. Mat 6, Kew 6¼, Mos 6½; Pas 5¾-6; Stras. 7; PMG 5¾. Dist. = 38.5°
	iP iS	Z N	14 32	57½ 30½	c	RAB New Britain region H = 13 32 14 Dist. = 2° PMG H = 13 32 17 Felt: Kandrian Int II M.M. 05°15'S., 149°35'E.
	iP	Z	17	06	13½	c New Britain region
18th March	No records available					
19th March	iP	Z	07	31	31½	c U.S.C.G.S. 27°N., 130°E H = 07 24 11 Ryu Kyu Is. Moskva H = 07 24 10 Peking H = 07 24 00 Dist. = 38°
	ePKP(AB)Z		08	45	26	U.S.C.G.S. 35°N., 36°W North Atlantic Ocean H = 08 25 32 Dist. = 148° Mag. Bks 6½; Pas 6¼
	iP! iS	Z N	14	29	42 50	RAB Local H. = 14 29 31 Felt: Rabaul Int I M.M. 04°10'S., 152°10'E. Dist. = 0.5°
	iP i	Z Z	17	46	03 09	d Local
	e	Z	18	55	14	Traces
20th March	Nil recorded					
21st March	iP iP iPcP i iS eScS	Z Z Z E N,E N,E	04 33 34 35 37 42	10 40 40 43 47 35	d	U.S.C.G.S. 19°S., 178°E Fiji Is. H = 04 27 21 h about 550. Peking H = 04 27 15 PMG h about 600 H = 04 27 30 Dist. = 32.5° Mag. Wel 5½.
	e(P)	Z	08	40	32	+ Traces
	e	Z	13	07	06	-
	iP! iS	Z N	17	22	23 32½	cNE RAB Local H = 17 22 10 Dist. = 0.7°
	eP iPPP iS	Z Z N	19 52 54 58	42(C) 22 00		U.S.C.G.S. 20°S., 177½°W Fiji Is. H = 19 46 00 B.C.I.S. 19½°S., 179°W H = 19 46 05 Dist. = 34°

22nd March	iP!	Z	12	56	55	cNE	New Britain region Felt:- Rabaul Int 1 M.M. 04°10', 152°10'E
	iP! iS!	Z N	17	35	09 31	c	New Britain region RAB H = 17 34 40 Dist. = 1.8°
23rd March		Nil					
24th March	iP	Z	01	18	12	c	B.C.I.S. 18½°S., 167½°E New Hebrides Is. H = 01 13 37 Dist. = 20°
	eP i i i(S)	Z E	02	39	01 09 52 45		
	eP	Z	17	17	44		U.S.C.G.S. 18½°S., 167°E New Hebrides Is. H = 17 12 51 Dist. = 21.5
25th March	eP	Z	07	06	58		U.S.C.G.S. New Hebrides Is. H = 07 02 12 B.C.I.S. 18½°S., 167½°E H = 07 02 14 Dist. = 20°
26th March	iP! i!	Z Z	02	25	27 30	c	U.S.C.G.S. 7°S., 155½°E Solomon Is. region h about 60 H = 02 24 12 B.C.I.S. H = 02 24 18 Peking 5½°S., 156°E H = 02 24 10 Dist = 5° Mag. Mat 5¼; Peking 5½. Felt:- Rabaul Int 1 M.M. 04°10'S., 152°10'E.
	iP iPP i(S)	Z Z N	05	30 31 35	32 30 10	d	U.S.C.G.S. 0°, 125°E Molucca Passage H = 05 24 42 B.C.I.S. idem Moskva H = 05 24 53 Peking 1°N., 126°E H = 05 24 49 Mag. Mat 5¼ Dist. = 28°
	iP iS	Z E	07	49 50	50 43	c	U.S.C.G.S. Solomon Is. region H = 07 48 28 B.C.I.S. 7°S., 155°E H = 07 48.5 Dist. = 4°
	iP	Z	10	12	44	c	Local. Felt: Rabaul Int I M.M. 04°10'S., 152°10'E
27th March	iP'	Z	07	21	22	d	U.S.C.G.S. 17½°N., 63°W Leeward Is. h about 150 H = 07 02 47 B.C.I.S. idem Trinidad 17.4°N., 63.3°W H = 07 02 13 h about 50 Dist. = 145°
	iP!	Z	09	21	57	d	New Britain region PMG H = 09 29 02 Felt:- Kandrian Int II M.M. 06°15'S., 149°35'E
28th March	iP i iS!	Z Z E	11	36 47 37	46 47 09	d	RAB H = 11 36 16 Dist. = 1.9° New Britain region PMG H = 11 36 18 Mag. PMG 4¼ Felt:- Pomio Int II M.M. 05°30'S., 151°30'E.



28th March
contd

iP Z 14 49 38 d

RAB New Britain region
Felt:- Taliligap Int III M.M.
04°19'S., 152°10'E
Pomio Int II-III M.M.
05°30'S., 151°30'E
Rangarere Int II-III M.M.
04°15'S., 151°35'E
Rabaul Int II-III M.M.
04°10'S., 152°10'E
Numerous foreshock and
aftershocks. all with
S-P = 25 secs.

International
Seismological
Centre

eP Z 17 18 58 d

U.S.C.G.S. 21°N., 120°E
off N. coast of Luzon Is.P.I.
H = 17 11 16
Moskva H = 17 11 18
Peking 20½°N., 120°E
H = 17 11 08 Dist. 41°
Mag. Mat 4¾-5

iP Z 19 52 58 d
i Z 54 25
i Z 35
iPcP Z 55 25
iS N 57 37
i N 46
iPcS Z 59 19
i Z 20 01 38
iScS E,Z,N 02 20

U.S.C.G.S. 20°S., 178½°W
Fiji Is. h about 600
H = 19 47 07
PMG H = 19 47 12
Moskva H = 19 47 10
Peking h about 550 H = 19 47 06
Mag. Mat 5½-5¾; Wel 6; Pas
5¾-6. Dist. = 33.5

29th March eP Z 09 32 56 (d)
i Z 58
i(S) N 34 10½

U.S.C.G.S. 7°S., 149½°E
New Britain region
H = 09 31 56
PMG 7½°S., 149½°E
H = 09 32 01 Mag. PMG 4¾;
Dist. = 4°.

iP Z 09 44 23 c
i(S) E 45 16

RAB New Britain region
H = 09 43 14 PMG 4½ (Mag)
Dist. 4.6°
PMG H = 09 43 21.

30th March iP Z 12 51 02 d
iP! Z 15 01 16 cNNE
iS E 30

RAB New Britain region
H = 15 00 47 Dist. 1.1°

31st March Nil recorded

COMMONWEALTH OF AUSTRALIA \

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES

VULCANOLOGICAL OBSERVATORY

RABUL

RECORDS

T.P.N.G. 1964/8

SEISMOLOGICAL BULLETIN

1st January, 1959 - 31st December, 1959.

Compiled by

G. W. D'Addario.

TORY OF PAPUA AND NEW GUINEA
Vulcanological Observatory, Rabaul.

SEISMOLOGICAL BULLETIN 1959.

The Observatory:

The Observatory is on the rim of Blanche Bay caldera, which is composed of beds of pumice dust and ash with occasional interspersed basalt lava flow. The instrument vault (3.m. deep) is concrete lined and the roof forms part of the floor of the Observatory. The seismometers are mounted on a concrete pier set on basalt 1.5m. below the vault floor. The pier is separated from the floor by a gap 8cm. loosely filled with pumice dust.

$\phi = 04^{\circ}11' 33''$ S., $\lambda = 152^{\circ} 10' 16''$ E.

Height above mean sea level 183 m. (600 feet)

The installed instrument is a Benioff, moving-coil 3-component, film recording seismograph.

<u>Component</u>	<u>Symbol</u>	<u>Tg</u>	<u>To</u>	<u>Ground Motion Direction</u>
Z	Z	0.35	1.26	Vertical trace up
NS	N	0.26	1.44	North trace up
EW	E	0.29	1.45	East trace up

Due to microseismic background, sensitivity is set at approximately 10%. The velocity of the film is about 15 mm./min.

Presentation of data: All times are Greenwich Mean Time, from midnight to midnight.

Time corrections are obtained by comparison between the Synchronome Electric Clock which causes time breaks on the record and the WWYH signal. A stop watch is used and correction plotted on a time correction graph. Corrections are given on slips attached to records for starting and finishing times; corrections for earthquake times may be obtained by calculation. The corrections are probably right to within 0.5 seconds.

Time Breaks: Time increases from left to right and from top to bottom. Time breaks occur between 27 and 30 seconds in the first minute after the hour and between 57 and 60 seconds at the end of every minute.

Sulphur Creek formerly Rapindik Station.

No information is available for the year 1959.

Symbols and abbreviations from U.S.C.G.S. nomenclature. "c" or "d" indicates initial compression or dilatation of the ground, respectively, from a wave of the compressional type; "+" or "-" indicates initial upward or downward motion of the ground respectively from a wave not known to be of the compressional type

N,E,S, or W indicates that the initial horizontal direction of the ground motion was towards the north, east, south, or west, respectively.

Intensities on felt earthquakes are extracted from the Monthly reports produced by the Vulcanological Observatory of Rabaul and are given in Roman numerals, based on Modified Mercalli Scale of 1931.

C.B.M. = Confused by microseisms.

R.F. means record failure. No seismogram exists for this earthquake on this component.

Frequently quoted sources of information regarding epicentres, origin times, or shock magnitudes are as follows:

U.S.C.G.S. - U.S.Coast and Geodetic Survey, Washington D.C.

B.C.I.S. - Bureau Central Internationale Seismologique,
Strasbourg, France.

J.M.A. - Japan Meteorological Agency, Tokyo.

Where no source is cited the determination of origin time and distance of the epicentre from Rabaul Observatory has been made at Rabaul.

References.

Jeffreys, H and Bullen, K.E. (1940). Seismological Tables.
Brit. Ass., Gray-Milne Trust.

Richter, C.F. (1958) Elementary Seismology.

U.S.Dept. of Commerce Special Publication No. 254

Eiby, G.A. and Muir, G. (1961). Tables to facilitate the study
of near Earthquakes. Seismol. Obs. Bull. Wellington.

Requests for additional data or for copies of seismograms should be addressed to:

Vulcanologist
P.O.Box 386,
RABAU T.P.N.G.

Vulcanological Observatory
Rabaul T.P.N.G.

Final Bulletin
April 1959

1st April	iP	Z	12	41	27	d	
	iP	Z	14	21	58	d	U.S.C.G.S. 48°S., 98½°E
	i	Z		22	19		Indian Ocean H = 14 11 30
							Dist. = 63°
							P.M.G. H = 14 11 33
	iP	Z	14	53	11	d	U.S.C.G.S. 18°S., 169°E
	ipP	Z		54	31		New Hebrides Is. H about 150
							H = 14 48 28 Dist. = 21.5°
							P.M.G. 14 48 18
	e(P)	Z	22	52	31	-	U.S.C.G.S. 17°S., 168½°E
							New Hebrides Is. h about 100
							H = 22 47 54 Dist. 20.5°
							P.M.G. h about 140 H = 22 47 47
	iP	Z	23	34	34	d	U.S.C.G.S. 6°S., 154½°E
	i(S)			35	14		Solomon Is. region H = 23 33 36
							Dist. = 3°
							Felt: Pomio Int II-III M.M.
							05°30'S., 151°35'E
							Rabaul Int 1 M.M.
							04°10'S., 152°10'E
2nd April	iP!	Z	16	26	07	d	Local RAB H = 16 25 57 Delta = 0.4°
	iS	E			14		
	iP	Z	19	29	06½	c	U.S.C.G.S. 20½°N., 121°E
							Batan Is. region H = 19 21 34
							Dist. 39.5°. P.M.G. H = 19 21 31
3rd April	Strong microseismic activity.						
4th April	e(P)	N	18	55	41		
	i	N			44		
	e	N		56	30		
5th April	iP	Z	21	10	16	d	U.S.C.G.S. 15½°S., 167½°E
	iPP	Z			50½		New Hebrides Is. h about 150
	eS	E		13	36½		H = 21 05 54 Dist. = 19°
							PMG H = 21 05 50
	iP	Z	23	30	55	d	U.S.C.G.S. 5½°S., 146°E
	i	Z		31	50		Near N.Coast of New Guinea
	i(S)	E		32	01		H = 23 29 25. Dist. 6°
							PMG H = 23 29 21 Mag. PMG 6½
							Felt: Saidor Int V M.M.
							05°38'S., 146°28'E
							Kundiawa Int III M.M.
							06°02'S., 144°58'E
							Gumine Int IV M.M.
							06°10'S., 144°5'E
							Kaiapit Int II M.M.
							06°16'S., 146°16'E
							Lufa Int IV M.M.
							06°20'S., 145°15'E
							Aiome Int II M.M.
							05°10'S., 144°45'E
							Awelkon Int II M.M.
							05°40'S., 147°47'E.
							Wau Int I M.M.
							07°20'S., 146°43'E
6th April	eP	Z	08	42	59		PMG H = 08 42 18 Mag. PMG 3¼.
	iP	Z	13	11	17	c	
	eP	Z	14	19	06	c	U.S.C.G.S. 10°S., 120½°E
	iPcP	Z		21	56½		Sumba Is. H = 14 12 36
	eS	E		24	17		PMG H = 14 12 46 Mag. PMH 6½;
	eScP	Z		25	40		Pas. 6¼. Dist. 32°
	eLQ	E		26	01		
	eLR	Z		27	18		

7th April	Strong microseismic activity									
8th April	iP	Z	01	30	14	c	U.S.C.G.S. 32½°S., 179°E			
	ipP	Z		31			Kermadec Is. region			
	iPcP	Z		32	20		h about 400 H = 01 23 36			
	ScP	Z		35	28		Mag. Pas 6-6¼. PMG H = 01 23 33			
	S	E			37		Dist. = 38.5°			
	ScS	E		39	46					
	iP	Z	08	08	28	c	U.S.C.G.S. 17°S., 174½°W			
	i	Z		35	29		Tonga Is. region h about 100			
	i	Z		35	36		H = 08 01 36 Dist. 25.1°			
9th April	e(P)	Z	06	30	23	c	U.S.C.G.S. 36°N., 76°E			
							Indian Ocean H = 06 18 30			
							PMG H = 06 18 36 Dist. = 77°			
	iP	Z	17	57	35	c	Local			
	iP	Z	18	03	57½	d	Local			
	i(S)			04	46					
	iP!	Z	20	36	45	c	RAB Local H = 20 36 31 Dist. 0.8°			
	iS	E			55		Felt: Taliligap Int II M.M.			
							04°19'S., 152°10'E			
							Warangoi Int II M.M.			
							04°30'S., 152°20'E			
							Rangarere Int II M.M.			
							04°15'S., 151°35'E			
10th April	Strong microseismic activity									
	eP	Z	05	53	26	d	U.S.C.G.S. 25°S., 178½°E			
	iS	Z		58	(41)		Sth of Fiji Is. h about 600			
	iScS	E	06	02	43		H = 05 47 34 PMG H = 05 47 34			
							Dist. = 33°			
11th April	iP	Z	11	34	08	c	U.S.C.G.S. 1°S., 128°E			
	iS	E		38	28		Spice Is. H = 11 28 50			
							PMG H = 11 28 53 Mag. PMG 5½.			
							Dist. = 24.5°			
12th April	no records - power failure									
13th April	Strong microseismic activity									
14th April	Strong microseismic activity									
15th April	iP!	Z	09	44	55	c	RAB Gazelle Peninsula H = 09 44 31			
	iS	E		45	13		Dist. = 1.5°			
							Felt: Taliligap Int II M.M.			
							04°19'S., 152°10'E			
							Rabaul Int I M.M.			
							04°10'S., 152°10'E			
	iP!	Z	16	41	55	d	RAB. Local H = 16 41 43 Dist. = 0.6°			
	iS	E		42	04					
	iP	Z	19	21	17	c	U.S.C.G.S. 54°N., 160½°E			
	i	Z			19		Near E. coast of Kamchatka			
	iS	E		29	29		H = 19 11 20 Dist. 58°			
16th April	iP	Z	07	33	16	d	U.S.C.G.S. 23½°S., 179°E			
							S. of Fiji Is. H = 07 27 27			
							h about 550. PMG H = 07 27 34			
							Dist. 32.5°			
	iP	Z	16	18	16	d	U.S.C.G.S. 12½°N., 143°E			
	iS	E		21	49		h about 100. H = 16 13 56			
	iScP	E		26	06		Mag. Pas 6½. Dist 19°			
	i(P)	Z	16	57	43	c				
17th April	iP	Z	06	10	40	c	Local			
18th April	iP!	Z	06	18	23	d	U.S.C.G.S. 4½°S., 154°E			
	i	Z		23.9			New Ireland H = 06 17 51			
							PMG H = 06 17 58 Mag. PMG 5¾.			
							Dist. = 2°			
							Felt: Rabaul Int IV M.M.			
							04°10'S., 152°10'E			
							Warangoi Int III-IV M.M.			
							04°30'S., 152°20'E			

3

Taliligap Int III M.M.
 04°19'S., 152°10'E
 Londolovit Int III M.M.
 03°10'S., 152°40'E

	iP	Z	08	48	46	d	
	i	Z			47		
	iP!	Z	13	54	55	d	
	e(P)	Z	15	41	29		
	i	Z			38		
	i	Z			45		
	i	Z		42	14		
19th April	iP	Z	07	54	09	d	PMG 5°S., 157½°E Solomon Is. region H = 07 53 40 Mag. PMG 5½ Dist. = 5.5
	eP	Z	15	40	33		
	i				35		
	i			41	42		
	i				51		
	i				53		
	i			43.2			
	iP!	Z	15	55	51	d	
	i			59	48		
	eP	Z	16	13	14		
	i				16		
	i				19		
	i			14	06		
20th April	eP	Z	01	09	26		
	eP	Z	03	28	52		
	iP!				53	c	U.S.C.G.S. 6°S., 149°E New Britain region h about 100 H = 03 27 52.PMG H = 03 27 54 Dist. 3 Felt: Lingalinga Int V M.M. 05°32'S., 149°45'E Walindi Int III M.M. 05°25'S., 150°05'E Kandrian Int III-IV M.M. 06°15'S., 149°35'E Awelkon Int III M.M. 05°40'S., 147°47'E
	iP	Z	12	02	55	d	
21st April	eP	Z	09	35	31		
	i				35		
	i			36	40		
22nd April	iP	Z	11	26	15	c	RAB New Britain region H = 11 25 48½ Dist. = 1.6° Felt: Pomio Int 2 M.M. 05°30'S., 151°30'E
	iS	E			35		
	iP	Z	16	43	46½	d	Local
	iP	Z	16	49	47½	c	Local
23rd April	iP!	Z	02	13	48	c	RAB New Britain region H = 02 13 15 Dist. = 2°
	iS	E		14	13		
24th April	iP!	Z	13	52	04	d	RAB Gazelle Peninsula H = 03 53 39 Dist. = 1.5° Felt: Taliligap Int 1 M.M. 04°19'S., 152°10'E
	iS	E			23		
	iP	Z	18	05	30	c	U.S.C.G.S. 31°S., 178°E Kermadec Is. H = 17 57 58 PMG 17 58 01 Mag. 6¾-7, Bks 6½-6¾. Dist. = 39° (Pas)
	ScP	Z	18	11	30		
25th April	iP!	Z	06	59	04	c	Local
	iP!	Z	15	48	10	c	Gazelle Peninsula H = 15 47 51 Dist. 1.1
	iS	E			24		

25th April contd.

26th April eP Z 08 48 54
i E 49 23
iS E 57
iP Z 17 30 50

iP Z 20 48 10
ipP Z 37
iPcP Z 50 12
iScP Z 53 52
iS E 54 17½

27th April iP Z 09 53 20
iPP Z 47
iPcP Z 57 08
iS E 30
iLQ E 10 00 29
iP Z 12 53 12
ipP Z 50

28th April ePKP Z 11 28 14
iPP Z 29 37
i(PS)Z 38 56

iP! Z 13 01 13

iP Z 15 59 39½
i Z 44
iS E 16 00 59

29th April iP! Z 03 29 01½
iP Z 12 14 33½

iP Z 12 47 58

iP Z 12 48 26
iS E 45

eP Z 15 40.3

iP Z 17 55 16

30th April iP Z 09 15 30
i Z 32
iS E 59

iPKP Z 13 44 27
(DE)

iP Z 17 16 50½
iS 59

Felt: Taliligap Int 11 M.M.
04°19'S., 152°10'E

U.S.C.G.S. 7½°S., 157°E
Solomon Is. region H = 08 47 28
Mag. PMG 5. Dist. = 5.5°

d PMG H = 17 29 23 New Britain region
Felt: Awelkon Int II M.M.
05°40'S., 147°47'E

c U.S.C.G.S. 25°N., 122½°E
Near N.E.coast of Formosa.
2 killed. Damage at Taipei.
h about 150 H = 20 40 38 Mag. Bks
7¼-7½; Pas 7½-7¾. Dist = 41°

d U.S.C.G.S. 7°S., 129°E Banda Sea.
H = 09 48 09 Dist. = 23.5°

d U.S.C.G.S. ½°S., 124°E.
Celebes region. h about 200
H = 12 47 27 Dist. = 28.5°

d U.S.C.G.S. 15°N., 93°W
Mexico-Guatemala border
H = 11 09 30 Dist. = 117.5°
Mag. Bks 6½; Pas 6¾.

c U.S.C.G.S. 5°S., 152½°E
New Britain region. h about 100
H = 13 00 57. Dist. = 1°.
Felt: Rangarere Int II-III M.M.
04°15'S., 151°35'E.
Karlai Int II M.M.
05°05'S., 152°00'E.
Rabaul Int II M.M.
04°10'S., 152°10'E

c U.S.C.G.S. 6½°S., 150°E. Near
S.coast of New Britain.
PMG. H = 15 58 09
RAB H = 15 57 56½ Dist. = 3°
Felt: Awelkon Int 1 M.M.
05°40'S., 147°47'E

Local

PMG 3½°S., 151½°E. H = 12 14 16
Mag. PMG 4¼. Felt: Rangarere Int MEM
04°15'S., 151°35'E

c Local

d RAB New Britain region
H = 12 48 01 Dist. = 1.5°

U.S.C.G.S. 16½°N., 145°E
Mariana Is. H = 15 34 45 Dist. = 22°

d Local

c RAB New Britain region
H = 09 14 52 Dist = 2.4°

d U.S.C.G.S. 55½°S., 26°W
Sandwich Is. H = 13 25 35 Dist. 120°

RAB Gazelle Peninsula
H = 17 16 39 Dist. = 0.9°
Felt. Taliligap Int 1 M.M.
04°10'S., 152°10'E.

RABAU

T.P.N.G.

dry

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1st May.	eP i	Z Z	07 23	13 17	d	U.S.C.G.S. $3\frac{1}{2}^{\circ}$ S., $135\frac{1}{2}^{\circ}$ E H = 07 19 16 Dist. = 16.5° Western New Guinea PEK 4° S., 135° E H = 07 19 18 Mag. Mat $5\frac{3}{4}$; PMG $5\frac{3}{4}$.
	eP	Z	08	49	11 c	B.C.I.S. 3° S., 141° E New Guinea H = 08 45.4 Dist. = 11 PMG H = 08 45 23 Mag. PMG 5.9
	iP! Felt:	Z	14	57	26 c	U.S.C.G.S. 5° S., 154° E Solomon Is. region H = 14 56 57 h = 60 Dist. = 2°
	Taliligap Int IV M.M. 04 $^{\circ}$ 19'S., 152 $^{\circ}$ 10'E Rabaul Int 111 M.M. 04 $^{\circ}$ 10'S., 152 $^{\circ}$ 10'E Londolovit Int 11 M.M. 03 $^{\circ}$ 10'S., 152 $^{\circ}$ 40'E					
	iP! iS	Z N	15	01	26 c	RAB 5° S., 154° E Solomon Is. region H = 15 00 59 Dist. = 2°
	iP i! i(S)	Z Z N	23	20	50 c	RAB Solomon Is. region H = 23 20 21 Dist. 1.8°
2nd May	i(P)	Z	10	11	39 c	B.C.I.S. Off NE coast of New H = 10 10.3
	iP! iS	Z E	21	30	54 d	RAB Solomon Is. region H = 21 30 22 Dist. 2°
3rd May	Nil recorded					
4th May	iP i i iS i i e i i	Z Z Z E E E E E E	07	25	29 d	U.S.C.G.S. $52\frac{1}{2}^{\circ}$ N., $159\frac{1}{2}^{\circ}$ E Near E. coast of Kamchatka h = 60 H = 07 15 42 Dist. = 58° Moskva 53° N., $160\frac{1}{2}^{\circ}$ E H = 07 15 45 J.M.A. H = 07 15 47 TAC h = 50 H = 07 15 49 Mag. Kew 7.5; Wel $7\frac{3}{4}$; Mos $7\frac{3}{4}$; Pas 8; Pra 8.3; Bks $8\frac{1}{4}$; Rey 8.4; PMG $7\frac{3}{4}$. 1 killed 13 injured.
5th May	eP eS	Z E	19	14	07 c	U.S.C.G.S. 53° N., 159° E Kamchatka aftershock H = 19 04 16 Dist. 58° Moskva H = 19 04 (12) PEK 52° N., 160° E H = 19 04 16 Mag. Mat $6\frac{1}{2}$ - $6\frac{3}{4}$; Kew $6\frac{1}{4}$; Mos $6\frac{1}{4}$; Pas 6; Pra 6.7
6th May	eL iP eL iP	Z Z Z Z	18	17.9		
			18	39	25 c	Local
			18	57	44 d	U.S.C.G.S. 3° S., 128° E Ceram Is. H = 18 52 22 Dist. = 24° Mag. Mat $5\frac{1}{2}$;
	i(P)	Z	19	59	28 d	
7th May	iP i eLR	Z Z	00	04	26	U.S.C.G.S. $3\frac{1}{2}^{\circ}$ S., $148\frac{1}{2}^{\circ}$ E Bismark Sea. H = 00 03 24 Dist. = 4° Moskva H = 00 03 22 PEK H = 00 03 24 Mag. Mat $6\frac{1}{2}$; Upp, Kir 6.2; Mos 6; Pas 6 - $6\frac{1}{4}$; Str 6.4 ; PMG $5\frac{3}{4}$.
	i(P) eLR	Z Z	04	42	17 d	Bismark Sea aftershock 43.1
	iP eLR	Z Z	04	49	37 d	Bismark Sea aftershock 50.3

STR $6\frac{1}{2}$; PMG $6\frac{1}{2}$;