M.O. 640

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JANUARY, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
2	ZV	iP	02	13	17			2470	
	ZV,Z	ePP		13	54				
	N	eS		17	14	8	$3\frac{1}{2}$		$36\frac{1}{2}$°N., 22°E. Off south coast of Greece. USCGS.
	N	e		17	32				
	NE	eL		20	-				
	N	M		$22\frac{1}{2}$	-	17	4		
	E	M		$23\frac{1}{2}$	-	18	4		Mag. = $5\frac{3}{4}$
		F		35	-				
2	N	e	16	08	-				Very small. $34\frac{1}{2}$°N., 48°E. Iran. USCGS.
		F		20	-				
2	ZV	eP	21	24	18				45°N., 151°E. Kurile Islands. USCGS.
3	ZV	eP	06	31	31				32°N., $41\frac{1}{2}$°W. North Atlantic Ocean. USCGS.
	NE	eL		$41\frac{1}{2}$	-				
	E	M		43	-	20	2		
	N	M		43	-	20	$1\frac{1}{2}$		
		F		55	-				Mag. = $5\frac{1}{2}$
3	E	e	07	07	-				31°N., $40\frac{1}{2}$°W. North Atlantic Ocean. USCGS.
	E	M		$08\frac{1}{2}$	-	20	$1\frac{1}{2}$		
		F		15	-				
√3	ZV	e(P)	07	09	14			4100	Confused by microseisms. $31\frac{1}{2}$°N., $40\frac{1}{2}$°W. North Atlantic Ocean. USCGS.
	NE	e(S)		14	55				
	NE	e(Lq)		17	36				
	NE	eL		$19\frac{1}{2}$	-				
	E	M		21	-	20	$3\frac{1}{2}$		
	N	M		21	-	20	$3\frac{1}{2}$		
		F		50	-				Mag. = $5\frac{3}{4}$

Form 3717.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JANUARY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
3	NE	e	18	42	-				Small. 22°S., 65°E.
		F	19	05	-				Mascarene Islands region. USCGS.
3	NE	eL	22	37	-				
	N	M		39	-	18	1½		
	E	M		40	-	17	1½		
		F		55	-				
4	N	e(LQ)	06	55	05				31½°N., 40½°W. North Atlantic Ocean. USCGS.
	NE	eL		57.0	-				
	E	M		58½	-	17	2½		
	N	M		58½	-	19	2½		
	Z	M		58½	-	16	1½		
		F	07	30	-				Mag. = 5½-5¾
4	NE	eL	08	48	-				17°N., 99½°W. Guerrero, Mexico.
	E	M		53½	-	17	1		Mag. 5¾(Pas). USCGS.
		F	09	10	-				
5	ZV,Z	iP	11	41	08			7030	Confused by strong microseism.
	NE	eS		49	36				56½°N., 121°E. Stanovei Mountains
	NE	eSS		53	37				region, Siberia. USCGS.
	NE	eSSS		56.2	-				
	NE	eL		59½	-				
	E	M	12	07	-	18	17		
	N	M		07	-	17	15		
	Z	M		16	-	11	7		
		F	13	05	-				Mag. = 6½
6	ZV	eP	02	03	35				Confused by strong microseisms.
	ZV	e		03	48				37½°N., 71°E. Hindu Kush. USCGS.
6	NE	e	12	00	-				Confused by strong microseisms.
	E	M		07	-	20	3½		26°N., 96½°E. Burma. USCGS.
	N	M		07	-	22	4½		
		F		25	-				Mag. = 6.
7	ZV	iP	06	14	04				Confused by very strong micro-
	N	eL		26	-				seisms. 39°N., 70°E.
		F	-	-	-				Tudzhik, S.S.R. USCGS.
9	ZV	iP	17	48	55			6130	Compression. Confused by strong
	N	e(S)		56	34				microseisms. 44½°N., 85°E.
	E	M	18	13½	-	16	5½		Sinkiang Province, China. USCGS.
	N	M		13½	-	18	4		
	Z	M		13½	-	15	6½		
		F		25	-				Mag. = 6
11	ZV	iPKP	13	38	44				Confused by strong microseisms.
	ZV	e		38	56				23½°S., 177°W. Tonga Islands region. USCGS.
13	NE	eL	04	02	-				11°S., 166°E. Santa Cruz Islands.
	E	M		15	-	22	2½		h about 100 Km. USCGS.
	N	M		15	-	20	3½		
		F		30	-				

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JANUARY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
13	ZV	iP	20	26	56				
	ZV	i		27	11				11½°N., 92½°E. Andaman Islands.
	NE	eL		57	-				USCGS.
	E	M	21	10½	-	19	2		
	N	M		11	-	20	1½		
		F		25	-				
14	ZV	ePKP	06	14	44				
	NE	eL	07	14	-				22°S., 175°W. Tonga Islands.
	N	M		19	-	20	2		USCGS.
	E	M		21	-	20	1½		
		F		45	-				
14	N	eL	13	49	-				
	E	M		54	-	20	1		39½°N., 41°E. Eastern Turkey.
	N	M		54	-	18	1½		USCGS.
		F	14	15	-				
15	ZV,Z	iP	19	27	33			10350	Compression.
	ZV,Z	ipP		27	53	6	4		Compression.
	Z	i		28	07				Depth = 70 Km.
	Z	iPP		31	14				
	NE	iSKS		38	01	15	33		16½°S., 71½°W. Southern Peru.
	N	eS		38	31	18	23 (SH)		Extensive property damage, 21
	ZNE	iPS		39	43				killed, 90 injured. Mag. 7 (Pas)
	N	eSS		44	46				USCGS.
	N	eLQ		51	-				
	ZNE	eL_2		59½	-				
	E	M	20	04	-	23	105		
	N	M		04	-	22	62		
	Z	M		06	-	19	49		Mag. = 7¼
		F	22	20	-				
15	ZV	ePKP	22	35	21				
	ZV	e		35	27				
	N	ePKS		38	59				13½°S., 167°E. New Hebrides
	N	eL	23	18	-				Islands. USCGS.
	N	M		36	-	22	4½		
	E	M		38½	-	22	5		
	Z	M		40	-	20	2		
		F	24	45	-				Mag. = 6½
16	ZV,Z	eP	04	23	09				
	N	eS		27	06				38.5°N., 26.9°E. Near west coast
	N	eL		29.0	-				of Turkey. BCIS.
	N	M		31	-	12	8		
	E	M		32	-	12	4		
	Z	M		32	-	11	6		
		F	04	55	-				Mag. = 5½-5¾
16	N	e	12	15	-				Very small. 14°S., 167°E.
		F	13	20	-				New Hebrides Islands. USCGS.
17	NE	eL	08	35	-				52°S., 139½°E. Antarctic Ocean.
	E	M		49	-	18	2½		USCGS.
	N	M		49	-	18	4		
		F	09	15	-				

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DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
18	NE	eL	15	50	-				Confused by strong microseisms.
	N	M	16	04	-	18	2½		29°S., 13°W. North of Tristan da
		F		20	-				Cunha. USCGS.
19	ZV,Z	iP	14	19	45			9230	Compression. Ee
	ZE	i!		19	55	8	21		Dilatation. PE 12 sec. 15 μ
	Z	i		20	46				
	ZV,ZE	ePP		22	55	12	13		PPE 18 sec. 11 μ
	N	iS		30	01	18	80		
	E	i		30	24				1½°S., 79½°W. Near coast of
	Z	iPS		30	59				Ecuador. 14 killed, many injured,
	N	eSS		35	27				extensive property damage.
	N	eSSS		37	43				Mag. 7½ (Pas) USCGS.
	N	eLQ		42	-				
	ZE	eLR		47	-				
	E	M		50	..	24	236		
	N	M		53	-	21	170		
	Z	M	15	02	-	18	90		Mag. = 7.3
		F	-	-	-				overlapped by next shock.
19	ZV	iP	14	55	47			9280	
	ZV	i		56	05				1½°S., 79½°W. Near coast of
	ZV	ePP		58	58				Ecuador. Slight damage.
	N	iS	15	06	05				Mag. 6¾(Pas) USCGS.
	E	M		26	-	24	68		
	N	M		29	-	21	44		
	Z	M		39	—	17	30		
		F	18	25	-				Mag. = 6¾-7.
20	NE	eL	03	07	-				Confused by microseisms.
	E	M		18	-	21	5		30½°S., 71½°W. Northern Chile.
	N	M		21	-	19	5½		USCGS.
		F	04	00	-				Mag. = 6¼
20	NE	e	10	50	-				Small. Confused by microseisms.
		F	11	10	-				30½°S., 71½°W. Northern Chile.
									USCGS.
22	NE	eL	19	11	-				23°N., 121½°E. Near east coast
	E	M		18	-	24	5		of Formosa. USCGS.
	N	M		18	-	24	5		
		F		45	-				
23	ZV,Z	iP	02	46	07				Compression. 44½°N., 146½°E.
									Kurile Islands. USCGS.
23	N	eL	06	05	-				30½°N., 84°E. Southern Tibet.
	E	M		06½	-	20	1		USCGS.
	N	M		06½	-	20	3		
		F		15	-				Mag. = 5¾-6.
23	ZV	e(P)	13	38	25				Confused by microseisms.
	ZV,Z	e(PP)		38	36				
	ZV	e		38	56				64¾°N., 7½°E. Off coast of Norway.
	ZV	e		40	59				BCIS.
	NE	eL		42½	-				
	N	M		45	-	20	2½		
	E	M		46	-	18	2		
		F	14	00	-				

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24	NE	eL	05	05	-				Confused by microseisms.
	E	M		16	-	20	2		56½°N., 115½°E. North east of
	N	M		17	-	18	2		Lake Baikal, USSR. USCGS.
		F		35	-				
24	ZV,Z	eP	06	05	22	10	2	7980	
	NE	eS		14	39				56½°N., 163°E. Near east coast
	N	eSS		19.6	-				of Kamchatka. Mag. 6½(Pas) USCGS.
	E	eLQ		25	-				
	E	M		38	-	19	6½		
	N	M		38½	-	20	7½		
	Z	M		40	-	18	3		
		F	07	35	-				Mag. = 6¼
24	ZV,Z	eP	18	15	15				Compression. 54°N., 170°E.
									Komandorskie Islands region.
									USCGS.
24	ZV	eP	23	28	15			7450	Confused by microseisms.
	ZV	epP		28	37				60°N., 152°W. Kanai Peninsula,
	N	eS		37	00				Alaska. Mag. 6¼-6½(Pas). USCGS
	NE	esS		37	36				
		F	24	10	-				Depth = 90 Km.
25	ZV	ePKP	00	12	11				17½°S., 178½°W. Fiji Islands.
									USCGS.
27	ZV,Z	e(PKP)	08	03	45				Confused by microseisms.
	N	eL		50	-				15°S., 174°W. Samoa Islands.
	N	M	09	04	-	20	5½		Mag. 6¾(Pas). USCGS.
	E	M		06	-	20	3		
		F	10	10	-				Mag. = 6½
28	N	eL	17	41	-				Very small. 36°N., 58½°E. Iran.
		F		55	-				USCGS.
30	ZV	ePKP	05	17	47				19°S., 172½°W. Tonga Islands.
									USCGS.
30	ZN	ePKS	06	36	09				
	E	e		54	57				7½°S., 155½°E. Solomon Islands.
	NE	eL	07	12	-				Mag. 6½(Pas). USCGS.
	E	M		24	-	20	5		
	N	M		29	-	22	4½		
		F	08	40	-				Mag. = 6½
31	ZV	e(PKP)	06	52	44				40°S., 176½°E. North Island
	N	M	08	13	-	20	1		New Zealand. USCGS.
		F		25	-				
31	N	eL	22	22	-				
	E	M		32	-	18	1½		
	N	M		32	-	18	1½		
		F	23	00	-				
									All the magnitudes are the "unified magnitudes" denoted by "m".

FORM 3718

DS 89917/11/R94 140 3/58 CL

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR FEBRUARY, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

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CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ $sec.^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	62.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	ZV,ZE	iP	16	22	36	7	8	9190	Compression. Confused by microseisms.
	ZV	i		22	45				
	N	iS		32	50	16	$13\frac{1}{2}$		
	ZE	e		34	00				2°N., 79°W. Near coast of Ecuador. Mag. $6\frac{3}{4}$-7 USCGS. (Pas)
	N	eLQ		45	-				
	ZE	eL$_R$		$51\frac{1}{2}$	-				
	E	M		$52\frac{1}{2}$	-	24	32		
	E	M	17	01	-	19	17		
	N	M		01	-	18	12		
	Z	M		01	-	18	12		Mag. = 6.8
		F	-	-	-				overlapped by next shock.
1	ZV,Z	iP	18	15	00	5	$3\frac{1}{2}$	9250	Compression. Confused by microseisms.
	ZV,Z	e		15	09				
	N	eS		25	17				
	E	eSKS		25	18	9	$6\frac{1}{2}$		2°N., 79°W. Ecuador aftershock. Mag. $6\frac{3}{4}$-7 (Pas) USCGS.
	NE	e		25	30				
	N	eLQ		38	-				
	E	M		45	-	24	11		
	E	M		$53\frac{1}{2}$	-	19	$5\frac{1}{2}$		
	N	M		$53\frac{1}{2}$	-	19	$4\frac{1}{2}$		
		F	19	50	-				Mag. = $6\frac{1}{2}$
1	ZV,Z	iP	20	58	07	6	4	9190	Compression. Confused by microseisms.
	ZV,	i		58	16				
	ZV	e	21	00	21				
	N	eS		08	21				$1\frac{1}{2}^{\circ}$N., 79°W. Ecuador aftershock. Mag. $6\frac{3}{4}$ (Pas). $6\frac{1}{2}$(Berk). USCGS.
	NE	e		08	37				
	N	e		08	53				
	N	eLQ		21	-				
	E	M		28	-	24	7		
	E	M		37	-	19	4		

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SEISMOLOGICAL BULLETIN

FEBRUARY, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
contd.									
1	N	M	21	37	-	18	3		
		F	22	30	-				Mag. $6\frac{1}{4}$-$6\frac{1}{2}$
2	ZV,Z	eP	02	47	21				Ecuador aftershock, USCGS.
2	ZV,Z	iP	08	23	55				Confused by microseisms.
	ZV	e		24	12				
	NE	e		33	53				$48\frac{1}{2}^{o}$N., $154\frac{1}{2}^{o}$E. Northern Kurile
	NE	eL		49	-				Islands. Mag. $6\frac{1}{2}$-$6\frac{3}{4}$(Pas). USCGS.
	E	M	09	$01\frac{1}{2}$	-	20	$3\frac{1}{2}$		
	N	M		$02\frac{1}{2}$	-	20	4		
		F		35	-				
2	ZV,Z	iP	09	01	37				Ecuador aftershock. USCGS.
5	ZV	eP	08	20	21				Confused by microseisms.
	N	M	09	00	-	20	$1\frac{1}{2}$		47°N., 153°E. Kurile Islands.
		F		10	-				USCGS.
7	ZV	ePKP	01	30	29				31°S., 179°W. Kermadec Islands.
									USCGS.
7	N	e	05	25	-				Very small. 55°N., 167°E.
		F		50	-				Kormandorskie Islands. USCGS.
7	N	e	07	48	-				Very small. $27\frac{1}{2}^{o}$N., $128\frac{1}{2}^{o}$E.
		F	08	10	-				Ryukyu Islands. USCGS.
7	ZV,Z	iP	23	35	11			8300	Confused by microseisms.
	ZV	i		35	17				
	NE	eS		44	43				$31\frac{1}{2}^{o}$N., 104°E. Szechwan Province,
	N	eL		55	-				China. USCGS.
	E	M	24	$10\frac{1}{2}$	-	18	6		
	N	M		$10\frac{1}{2}$	-	19	$5\frac{1}{2}$		
	Z	M		$10\frac{1}{2}$	-	16	6		
		F		45	-				Mag. = $6\frac{1}{4}$
9	N	eL	23	15	-				Confused by microseisms.
	E	M		26	-	22	$3\frac{1}{2}$		$12\frac{1}{2}^{o}$N., 121°E. Philippine Islands.
	N	M		26	-	22	3		USCGS.
		F		50	-				Mag. = 6
9	ZV	ePn	23	21	54			330	Confused by microseisms.
	ZV	iP*		21	57.5				Ho = 23h. 21m. 06s., 54°12'N.,
	ZV,Z	iPg		22	06				1°45'E. North Sea. Felt along
	ZV,Z	i		22	11				east coast of England.
		F		$23\frac{1}{2}$	-				
11	N	e	01	30	-				Confused by microseisms.
	N	M		55	-	20	$2\frac{1}{2}$		9°S., $107\frac{1}{2}^{o}$E. Off south coast of
		F	02	20	-				Java. USCGS.
12	ZV	eP	23	43	36				$43\frac{1}{2}^{o}$N., $145\frac{1}{2}^{o}$E. Near Hokkaido,
									Japan. USCGS.
13	N	e	00	05	46				
	N	e(SS)		11.0	-				52°N., 175°W. Andreanof Islands.
	NE	eL		21	-				Aleutian Islands. Mag. 6(Pas)
	N	M		36	-	20	3		USCGS.
	E	M		37	-	20	$2\frac{1}{2}$		
		F	01	15	-				Mag. = 6

FORM 3718

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

FEBRUARY, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLI-TUDE. μ	Δ km.	REMARKS.
√15	ZV	iP	01	58	58				Compression.
	ZV	i		59	08				44°N., 147°E. Kurile Islands.
	N	eL	02	27	-				Mag. 6-6¼(Pas). USCGS.
	N	M		32	-	28	5		
	E	M		36	-	18	3		
		F	03	10	-				
√16	ZV	eP	06	16	38				
	N	e		27	09				39°N., 142°E. Near coast of
	NE	e(PS)		27	20				Honshu, Japan. Mag. 6-6¼(Pas).
	NE	eL		44	-				USCGS.
	E	M		56	-	22	5½		
	N	M		56	-	22	7½		
	Z	M		59	-	18	4½		
		F	07	25	-				Mag. = 6¼
16	N	eL	16	42	-				Very small.
		F		46	-				
16	NE	eL	23	11	-				Confused by microseisms.
	E	M		12	-	20	2		67½°N., 19°W. North coast of
	N	M		12½	-	20	1½		Iceland. USCGS.
		F		25	-				Mag. = 5¼
√17	ZV,Z	iP	05	27	25	5	3½	5730	Compression.
	ZV,Z	ipP		28	09				Depth = 200 Km.
	N	iS		34	27	8	9(SH)		
	N	isS		35	43				35½°N., 70°E. Hindu Kush.
	NE	eScS		36	51				h about 200 Km. USCGS.
	N	eSS		38	31				
	N	eSSS		40	29				
		F	06	25	-				Mag. = 6½
√18	N	eL	20	33	-				Confused by microseisms.
	E	M		41	-	20	3½		20½°N., 120½°E. Batan Islands
	N	M		41	-	20	4		region. USCGS.
		F	-	-	-				overlapped by next shock.
√18	NE	eL	21	07	-				Confused by microseisms.
	E	M		25	-	20	2		Admiralty Islands region. USCGS.
	N	M		25	-	20	4		
		F		40	-				
√19	N	eL	20	15	-				Confused by microseisms.
	E	M		27	-	24	2		8°S., 108°E. Near south coast of
	N	M		27	-	24	3½		Java. USCGS.
		F		55	-				
√20	NE	eL	04	46	-				20½°N., 120½°E. Batan Islands
	N	M		50	-	16	1		aftershock. USCGS.
		F	05	10	-				
20	NE	e	05	30	-				Very small. Batan Islands
		F		45	-				aftershock. USCGS.
20	N	e	09	55	-				Very small. Batan Islands
		F	10	05	-				aftershock. USCGS.

FORM 3718

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

FEBRUARY, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
22	ZV,Z	iP	11	02	27	8	3(PH)	8850	Dilatation.
	ZV,Z	i		02	30	6	7½		Compression.
	N	iS		12	25	9	9(SH)		
	N	e		12	38				50½°N., 175°W. Andreanof Islands,
	N	ePS		13	14				Aleutian Islands. Mag. 6¾(Pas).
	N	eSS		17	46				USCGS.
	NE	eL		28	-				
	E	M		33½	-	26	8		
	N	M		34	-	24	7		
	N	M		45	-	17	7½		
	E	M		46	-	16	4½		
	Z	M		50	-	16	5		
		F	12	45	-				Mag. = 6¾
23	ZV	iP	08	27	18				27½°S., 63°W. Argentina.
									h = 600 Km. USCGS.
23	ZV	iP	09	24	51				28½°N., 139½°E. Bonin Islands
									region. USCGS.
23	N	eL	09	28	-				
	N	M		34	-	20	1½		
		F		40	-				
23	NE	e	10	55	-				Very small. Batan Islands
		F	11	15	-				aftershock. USCGS.
24	ZV,Z	iP	12	37	27			6950	Compression.
	ZV	i		37	33				
	NE	eS		45	51				45°N., 99°E. Outer Mongolia.
	N	eSS		49	53				USCGS.
	N	eL		56	-				
	E	M	13	06½	-	14	13½		
	N	M		06½	-	16	11		
	Z	M		06½	-	12	10		
		F		35	-				Mag. = 6¼
26	NE	e	18	00	-				Small. 41°N., 143½°E. Off coast
		F		20	-				of Hokkaido, Japan. USCGS.
27	N	eL	08	17½	-				
	E	M		22	-	20	½		
	N	M		22	-	20	1½		
	Z	M		22	-	16	1		
		F		30	-				
27	ZV	eP	23	41	11			9980	
	NE	eSKS		51	35				
	N	eS		51	58				21°N., 120°E. Batan Islands
	N	eSS		57	57				region. USCGS.
	N	eL	24	12	-				
	E	M		20	-	18	12		
	N	M		20	-	18	15		
	Z	M		26	-	14	11		
		F	25	20	-				Mag. = 6½
28	Z	e(P)	10	02	41			(4660)	Confused by microseisms.
	NE	eS		08	57				
	N	eLQ		12	-				27°N., 44°W. Mid-Atlantic Ocean.
	E	eScS		12	31				USCGS.
	E	M		15	-	18	3		
	N	M		15	-	18	4		
		F		55	-				Mag. = 5¾

FORM 3718

DS 90905/1/ R94 140 3/62 CL

M.O. 640

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR MARCH, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	N	e	00	50	-				Very small. 20°, 12°W.
		F	01	05	-				Atlantic Ocean. USCGS.
1	ZV	iP	09	35	25				Very small. 28°N., 54½°E.
	N	F	10	05	-				Southern Iran. USCGS.
3	N	eL	08	08	-				23½°N., 122°E. Near east coast
	N	M		14	-	16	1		of Formosa. USCGS.
		F		30	-				
3	ZV	iP	16	29	48			8170	
	NE	eS		39	14				
	NE	eSS		44	10				55½°N., 166½°E. Kormandorskie
	E	eL		48	-				Islands. Mag. 6¼-6½(Pas). USCGS.
	E	M	17	08	-	18	1½		
	N	M		10	-	16	1½		
		F		35	-				
3	ZV	eP	17	44	19				Very small. 55½°N., 166°E.
	N	eSS		58.7	-				Kormandorskie Islands. USCGS.
		F	18	30					
4	ZV	eP	11	37	31				Dodecanese Islands. USCGS.
4	NE	eL	18	38	-				
	E	M		42	-	20	1		27°N., 130°E. Ryukyu Islands.
		F		50	-				USCGS.

Form 3717.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

MARCH, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
9	ZV	ePKP	10	42	32				34°S., 178½°W. Kermadec Islands region. h about 60 Km. Mag. 6½-6¾ (Pas). USCGS.
	NE	eL	11	47	-				
	E	M		55	-	20	3½		
	N	M		55	-	20	3½		
	Z	M		55	-	20	3½		
		F	12	30	-				Mag. = 6½
9	ZV	iP(PKP)	21	33	17				
11	ZV,Z	iP	00	38	52			9800	P phase very small.
	ZV,Z	ipP		39	10	7	8½		Depth = 65 Km.
	ZV,Z	ePP		42	21				
	ZV,Z	ipPP		42	38				25½°N., 125°E. Ryukyu Islands.
	NE	iS		49	28	9	32(SH)		Several killed and many injured
	ZNE	i(sSKS)		49	48				on Okinawa. h about 60 Km.
	NE	isS		50	02	10	113(sSH)		Mag. 7(Pas). USCGS.
	ZN	iSP		50	46				
	N	eL_Q	01	03	-				
	NE	eL_2		14	-				
	E	M		16	-	30	143		
	N	M		16	-	29	160		
	N	M		23	-	20	76		
	E	M		24	-	18	84		
	Z	M		27	-	16	60		Mag. = 7¼-7½
		F	03	25	-				
11	N	eL	15	12	-				13°S., 167°E. New Hebrides
	N	M		20	-	20	1½		Islands. USCGS.
		F		30	-				
14	N	eL	00	30	-				12½°N., 123½°E. Masbate Islands,
	E	M		45	-	20	3½		Philippine Islands. USCGS.
	N	M		45	-	20	4½		
	Z	M		53	-	18	3½		
		F	01	15					Mag. = 6¼
15	NE	eL	01	06	-				Confused by microseism.
	E	M		15	-	20	6½		23½°N., 122°E. Near east coast
	N	M		15	-	18	7½		ofFormosa. USCGS.
		F		40	-				Mag. = 6¼
15	ZV	iP	06	31	23			(2150)	Confused by microseisms.
	NE	e(S)		34	53				
	NE	eL		36½	-				40°N., 20½°E. Albania-Greece
	E	M		38	-	12	6		border. USCGS.
	N	M		38	-	14	13		
	ZNE	ePcS		39	17				
		F		55	-				
18	ZV	e(P)	22	32	05				Fox Islands foreshock. USCGS.
19	N	eL	16	10	-				Very small. 46½°N., 14°E.
		F		13	-				Austria-Yugoslavia border. BCIS.

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

MARCH, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
20	ZV,Z	iP	01	50	07	6	3½	8800	Slightly deeper than normal.
	ZV	i		50	17				
	NE	eS	02	00	05	10	7(SH)		51°N., 173°W. Fox Islands region, Aleutian Islands. USCGS.
	N	e		00	24				
	N	ePS		00	56				
	N	eSS		05	24				
	NE	eL		15	-				
	N	M		18	-	30	10		
	E	M		30½	-	18	5½		
	N	M		30½	-	18	4		
	Z	M		32	-	16	2½		
		F	04	35	-				Mag. = 6½
20	N	eL	06	32	-				
	E	M		36½	-	16	1		
	N	M		37	-	15	1½		
		F		45	-				
22	ZV	iP	10	23	08			(8200)	Confused by strong microseisms.
	ZV	i		23	28				
	N	e(S)		32	36				
	N	e(PS)		33	10				23½°N., 94½°E. Burma-Pakistan border. USCGS.
	N	eL		42	-				
	N	M		52	-	32	10		
	N	M		59	-	20	3		
	E	M	11	00	-	22	3½		
		F		20	-				Mag. = 6
22	ZV	iP	11	16	46				Confused by strong microseisms.
	E	eSS		27.6	-				35½°N., 67°E. Afganistan. USCGS.
	NE	eL		32	-				
	N	M		39	-	20	5½		
	E	M		41	-	15	4		
	N	M		42	-	14	8		
		F	12	15	-				Mag. = 6
23	N	eL	10	52	-				Confused by microseisms.
	E	M	11	13	-	18	1½		18°N., 120°E. Philippine Islands.
	N	M		13	-	16	2½		USCGS.
		F		30	-				
25	E	eL	19	12	-				Very small. 18°N., 64½°W.
		F		17	-				Virgin Islands. USCGS.
28	ZV	iP	04	18	19				Compression. Depth = 230 Km.
	ZV	ipP		19	10				36½°N., 71°E. Hindu Kush. USCGS.
28	Z	iP	12	15	12	4	4½	(5420)	Compression. Confused by microseisms. Depth = 250 Km.
	Z	ipP		16	07				
	E	e(S)		22	12				
	E	c		23	41				37°N., 71°E. Hindu Kush.
	N	esSS		26.7	-				h about 200 Km. USCGS.
	N	M		38	-	16	1		
		F		50	-				
29	NE	e	16	10	-				Very small.
		F		25	-				
31	N	eL	21	35	-				Very small. 17½°N., 60°W.
		F		50	-				Leeward Islands. USCGS.

FORM 3718

DS92037/1 R94 140 5/58 CL

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M.O. 640

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR APRIL, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
2	N	e	16	43	-				Very small.
		F		55	-				
3	ZV,Z	iP	02	27	48	4	1.7	2000	
	ZV	i		28	11				
	NE	eS		31	06	6	4.0(SH)		41.6°N., 19.8°E. Albania. RCIS.
	NE	e		31	20				
	NE	eL		32½	-				
	N	M		34	-	15	17		
	E	M		37½	-	14	14		
	Z	M		37½	-	14	12		
		F	03	10	-				Mag = 5¾
3	ZV	iP	07	24	08				Compression. Confused by microseisms.
	NE	eL		32	-				
	E	M		36	-	14	5½		35°N., 27½°E. Near Crete. USCGS.
	N	M		36	-	14	3		
	Z	M		36	-	14	3½		
		F		50	-				
3	ZV	eP	08	38	08				1½°N., 79°W. Near coast of Ecuador. USCGS.
4	N	e	08	20	-				5½°S., 152°E. New Britain. USCGS.
	N	M		45	-	20	1½		
		F	09	00	-				
4	NE	e	09	26	-				Very small. Albania aftershock. USCGS.
		F		35	-				

Form 3717.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

APRIL, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
4	NE	eL	16	43	-				
	E	M		56	-	22	3½		5½°S., 152°E. New Britain.
	N	M		56	-	20	3		USCGS.
		F	17	45	-				
7	NE	eL	14	32	-				
	N	M		35	-	10	1		
		F		40	-				
7	ZV,Z	eP	15	41	00	8	4.5	6950	Dilatation.
	ZV,Z	i		41	02				
	ZV,Z	iPcP		41	33				
	ZV,Z	iPP		43	20				66½°N., 157°W. Alaska.
	E	eS		49	23				Felt throughout central Alaska.
	E	iS		49	25	8	22 (SH)		Mag. 7 (Pas) USCGS.
	EN	iSP		49	36	16	69		(SPH)
	E	iSS		53	30				
	E	iLQ		56	58				
	E	MQ		58½	-	34	220		
	N	eLR	16	01	-				
	E	M		06	-	21	90		
	N	M		08½	-	20	150		Mag. = 7
	Z	M		08½	-	18	87		
		F	-	-	-				overlapped by next shock.
7	ZV,Z	iP	18	17	40				Compression.
	ZV,Z	i		17	52				
	ZV,Z	ePP		21	02				38½°N., 143°E. Near east coast
	NE	e		28	12				of Honshu, Japan. USCGS.
	N	eL		46	-				
	E	M	19	02	-	16	23		
	N	M		02	-	17	27		
	Z	M		08	-	13	12		Mag. = 6¾
		F	-	-	-				overlapped by next shock.
7	ZV,Z	eP	18	42	51	6	1		Compression.
	ZV,Z	e		43	01				
7	ZV,Z	eP	18	50	56	6	1		Compression.
	ZV,Z	e		51	06				
7	ZV,Z	eP	19	02	21				
7	ZV,Z	iP	19	23	38				Compression.
	ZV,Z	e		23	48				
	NZ	e		32	10				45°N., 98°E. Outer Mongolia.
	NE	eL		41	-				USCGS.
	Z	M		52½	-	13	42		
	N	M		52½	-	13	94		
	E	M		53	-	14	52		
		F	22	10	-				Mag. = 6¾
8	ZV,Z	eP	00	24	40			6850	
	E	eS		32	57				66½°N., 155½°W. Alaska. USCGS.
	N	eSS		36	49				
	N	eL		44	-				
	E	M		54	-	20	1		
	N	M		54	-	20	1½		
		F	-	-	-				overlapped by next shock.

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

APRIL, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
8	NE	eL	01	29	-				
	E	M		35	-	14	1½		Mongolia aftershock?
	N	M		35	-	13	2½		
	Z	M		35	-	13	1		
		F		55	-				
8	ZV,Z	iP	10	08	30			5820	
	E	eS		15	52				33°N., 67°E. Afganistan.USCGS.
	N	eL		27	-				
	E	M		30½	-	22	1		
	N	M		30½	-	22	3		
		F	11	00	-				Mag. = 5¾
9	ZV,Z	iP	04	44	45				Compression.
	N	eL	05	01	-				Near south coast of Iran. USCGS.
	N	M		06½	-	16	1		
		F		20	-				
9	ZV,Z	iP	06	26	12			(7630)	
	N	e(S)		35	11				
	N	eSS		39.5	-				56½°N., 139°W. Gulf of Alaska.
	Z	M		57½	-	16	1		USCGS.
	E	M		57½	-	16	2		
	N	M	07	00	-	20	1½		
		F		30	-				
10	NE	eL	11	26	-				
	E	M		33	-	16	1½		51½°N., 99°E. Outer Mongolia.
	N	M		33	-	14	3		USCGS.
	Z	M		33	-	14	2		
		F		55	-				Mag. = 5¾-6
10	ZV,Z	e(P)	12	02	42				38½°N., 143°E. Off east coast
	N	eL		36	-				of Honshu, Japan. USCGS.
	E	M		41	-	19	2		
	N	M		42	-	19	1½		
		F	13	15	-				Mag. = 6
10	ZV,Z	iPKP	19	29	35				Depth = 200 Km. 18°S., 174½°W.
	ZV	epPKP		30	26				Tonga Islands. USCGS.
10	N	eL	23	56	-				4½°S., 107°W. West of Galapagos
	E	M	00	11	-	18	1		Islands. Mag. 6(Pas). USCGS.
	N	M		11	-	20	1		
		F		40	-				
11	ZV,Z	iP	01	10	50	5	1.2	9400	Compression.
	ZV,Z	e		11	05				
	Z	ePP		14	12				38½°N., 142½°E. Off east coast
	N	eS		21	13				of Honshu, Japan. USCGS.
	E	iScS		21	18				
	NE	e		21	33				
	N	ePPS		22	20				
	NE	eL		39	-				
	E	M		49½	-	19	9½		
	N	M		49½	-	19	6½		
	Z	M		52	-	18	3½		Mag. = 6½
		F	02	50	-				

FORM 3718

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

APRIL, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
11	ZV,Z	iP	23	23	21	4	3	8560	Compression. Deeper than normal.
	ZV,Z	i		23	25				
	ZV,Z	i		24	05				
	ZN	ePP		26	17				48°N., 152½°E. Kurile Islands.
	NE	eS		33	07				Mag. 6½(Pas). USCGS.
	N	eScS		33	26				
	NE	ePPS		34	07				
	NE	eL		49	-				
	E	M		57	-	22	4		
	N	M		57	-	24	4½		
	Z	M	24	04	-	18	1½		
		F		40	-				Mag. = 6½
12	N	eL	01	20	-				
	N	M		23½	-	22	1½		
		F		35	-				
12	ZV	e(P)	11	59	29			(9000)	
	NE	eS	12	09	33				26½°N., 111°W. Gulf of Baja
	NE	eScS		09	48				California. Mag. 6½(Pas). USCGS.
	N	eL		21	-				
	N	M		30½	-	20	22		
	E	M		35	-	18	16		
	Z	M		35	-	16	11		
		F	13	40	-				Mag. = 6½
12	ZV,Z	eP	13	38	25			10200	
	ZV,Z	ePP		42	00				
	E	eS		49	21				25°N., 126°E. Ryukyu Islands.
	NE	e		49	41				USCGS.
	NE	eL	14	08	-				
	E	M		22	-	21	4		
	N	M		23	-	20	5		
	Z	M		23	-	20	3½		
		F		45	-				Mag. = 6¼.
13	NE	eL	04	42	-				46°N., 98°E. Outer Mongolia.
	N	M		47	-	14	1½		USCGS.
	E	M		48	-	20	1½		
		F	05	00	-				
13	ZV,	eP	09	17	47			6920	
	ZV	e(PcP)		18	22				66°N., 156°W. Alaska.
	E	eS		26	09	9	3½		Mag. 6¾(Pas). USCGS.
	N	eL		36	-				
	E	M		43	-	20	2		
	N	M		44	-	20	3		
	Z	M		45	-	18	1½		
		F	10	30	-				Mag. = 6¼
13	ZV,Z	iP	12	40	50	10	3	8500	Compression.
	ZV,Z	i		41	07				
	E	eS		50	32				53°N., 161°E. Near east coast of
	NE	e		50	47				Kamchatka. USCGS.
	NE	eScS		51	02				
	NE	ePPS		51	36				
	E	eSS		55	14				
	E	eLQ	13	01½	-				
	E	M		17	-	19	10		
	N	M		17	-	18	21		
	Z	M		23	-	15	10		
		F	15	40	-				Mag. = 6½

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

APRIL, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
14	ZV,Z	eP	03	01	50				Compression. 47°N., 152°E. Kurile Islands. USCGS.
14	N	eL	17	01	-				Small. 45°N., 98°E. Outer Mongolia. USCGS.
		F		15	-				
14	ZV,Z	iP	21	44	55	9	$7\frac{1}{2}$	9250	Compression.
	ZV,Z	i		45	00	12	$4\frac{1}{2}$(PH)		
	ZV,Z	i		45	24				
	Z	ePP		48	04	9	$2\frac{1}{2}$		1°N., $79\frac{1}{2}$°W. Near coast of
	N	iS		55	12	12	14		Ecuador. One killed, 12 injured
	NE	iScS		55	27				and minor property damage at
	ZE	i		55	37				Esmeraldas. Mag. $6\frac{3}{4}$-7(Pas).USCGS.
	E	ePPS		56	37				
	NE	eSS	22	00	45				
	N	eLQ		07	-				
	NE	eLR	22	12	-				
	E	M		15	-	24	34		
	N	M		18	-	20	25		
	Z	M		$24\frac{1}{2}$	-	17	15		
		F	25	00	-				Mag. = 6.9
14	ZV,Z	eP	23	01	00			9230	
	N	eS		11	16				1°N., $79\frac{1}{2}$°W. Ecuador aftershock.
	E	eScS		11	32				Mag. $6\frac{1}{2}$-$6\frac{3}{4}$(Pas).
	N	M		32	-	16	$3\frac{1}{2}$		
		F	-	-	-				
15	ZV,Z	iP	01	43	10	6	$2\frac{1}{4}$	9270	Compression.
	ZV,Z	i		43	18				
	ZV,Z	e(PP)		46	32				
	N	iS		53	28	12	3		1°N., $79\frac{1}{2}$°W. Ecuador aftershock.
	N	iScS		53	41				Mag.$6\frac{1}{2}$-$6\frac{3}{4}$(Pas) USCGS.
	E	e		53	56				
	N	eL	02	07	-				
	N	M		$16\frac{1}{2}$	-	20	3		
	E	M		23	-	19	$3\frac{1}{2}$		
	Z	M		23	-	18	3		
		F	03	55	-				Mag. = $6\frac{1}{2}$
15	ZV,Z	iP	04	04	48			8980	Dilatation.
	ZV,Z	e		04	55				
	Z	ePP		07	41				
	N	iS		14	52	8	$2\frac{1}{2}$(SH)		9°N., 84°W. Off west coast of
	E	eSKS		15	00				Costa Rica. Mag. $6\frac{3}{4}$(Pas) USCGS.
	N	eScS		15	09				
	NE	eSS		20	16				
	E	eSSS		23	03				
	N	eLQ		$25\frac{1}{2}$	-				
	E	M		35	-	20	$7\frac{1}{2}$		
	N	M		36	-	19	$9\frac{1}{2}$		
	Z	M		42	-	16	$4\frac{1}{2}$		
		F	06	00	-				Mag. = $6\frac{1}{2}$
17	NE	e	07	28	-				Very small. 6°S., 155°E. Solomon
		F		55	-				Islands. USCGS.

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

APRIL, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
17	NE	ePKS	10	27	20				
	NE	eL	11	10	-				$5\frac{1}{2}^{o}$S., 152°E. New Britain. USCGS.
	E	M		23	-	22	1		
	N	M		23	-	20	$1\frac{1}{2}$		
		F	-	-	-				overlapped by next shock.
17	ZV	iP	11	45	27				Compression.
	ZV	e		45	44				
	N	eL	12	08	-				37^{o}N., $145\frac{1}{2}^{o}$E. Near east coast
	E	M		27	-	20	$\frac{1}{2}$		of Honshu, Japan. USCGS.
	N	M		27	-	20	1		
		F		45	-				
18	ZV	eP	03	23	56				$48\frac{1}{2}^{o}$N., $154\frac{1}{2}^{o}$E. Kurile Islands. USCGS.
18	ZV	e(PKP)	07	50	51				
19	ZV	e(P)	04	15	47			(9300)	
	N	e(S)		26	07				$26\frac{1}{2}^{o}$N., $110\frac{1}{2}^{o}$W. Gulf of
	N	eL		37	-				California. Mag. 6(Pas). USCGS.
	E	M		46	-	20	$3\frac{1}{2}$		
	N	M		46	-	20	1		
	Z	M		51	-	16	$1\frac{1}{2}$		
		F	05	25	-				Mag. = 6
20	N	e	22	08	-				Very small. California ?
		F		25	-				
21	ZV	e(P)	05	00	41				
	NE	eL		06	-				
	E	M		08	-	16	1		
	N	M		08	-	14	$\frac{1}{2}$		
		F		17	-				
21	N	eL	06	19	-				$24\frac{1}{2}^{o}$N., 122°E. Near east coast
	E	M		30	-	18	1		of Formosa. USCGS.
	N	M		30	-	18	$1\frac{1}{2}$		
		F		40	-				
21	ZV	ePKP	20	34	37			15800	
	E	eSS		56	21				15°S., $174\frac{1}{2}^{o}$W. Samoa Islands
	E	eSSS	21	01.5	-				region. Mag. $6\frac{1}{2}$(Pas). USCGS.
	N	eL		20	-				
	E	M		38	-	20	$3\frac{1}{2}$		
	N	M		$39\frac{1}{2}$	-	19	$3\frac{1}{2}$		
	Z	M		$39\frac{1}{2}$	-	18	3		
		F	22	45	-				Mag. = $6\frac{1}{4}$
21	ZV,Z	eP	22	51	19			11000	
	ZV	ePP		55	26				$4\frac{1}{2}^{o}$S., 104°E. Sumatra.
	N	eS	23	02	41	10	2		Mag. $6\frac{1}{2}$(Pas). USCGS.
	E	e		02	53				
	N	eSS		09	55				
	N	eL		19	-				
	E	M		45	-	20	$1\frac{1}{2}$		
	N	M		46	-	20	$1\frac{1}{2}$		
		F	25	25	-				Mag. = $6\frac{1}{2}$

FORM 3718

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

APRIL, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
22	N	e	10	12	-				Very small. 37°N., 31°E.
		F		25	-				Southern Turkey. USCGS.
23	ZV,Z	eP	03	10	01			9000	Confused by strong microseisms.
	E	eS		20	05				
	N	eScS		20	17				45°N., 152°E. Kurile Islands.
	NE	eL		35	-				USCGS.
	E	M		46	-	18	4		
	N	M		52	-	16	3½		
		F	04	50	-				Mag. = 6½
23	ZV	eP	05	04	52				45½°N., 152°E. Kurile Islands. USCGS.
23	NE	e	06	35	-				Very small. Confused by
		F		55	-				microseisms. 30½°N., 130½°E. Ryukyu Islands. USCGS.
24	ZV	eP	18	21	33				Confused by microseisms.
	ZV,Z	e		21	38				5°N., 83°W. Pacific Ocean. USCGS.
27	ZV	eP	17	29	49				Depth = 110 Km. 42½°N., 143½°E.
	ZV	epP		30	18				Near Hokkaido, Japan. USCGS.
27	N	e	19	25	59				52½°N., 169°W. Fox Islands.
	N	eL		44	-				Aleutian Islands. USCGS.
	E	M		54	-	18	1½		
	N	M		55	-	20	1½		
		F	20	35	-				
28	ZV,Z	iP	12	00	41	5	1.3	8820	Dilatation.
	NE	eSKS		11	04				
	NE	e		11	16				
	NE	iS		11	22	11	5½(SH)		11°S., 74°W. Peru.
	NE	e		11	34				Mag. 6½(Pas).
	N	eSS		17½	-				USCGS.
	N	eLQ		25	-				
	N	eL		33	-				
	E	M		37½	-	20	7½		
	N	M		37½	-	19	6		
	Z	M		41	-	17	4		
		F	14	35	-				Mag. = 6½
30	ZV	iP	08	25	36				37°N., 71°E. Afganistan. USCGS.
30	ZV,Z	iP	14	12	05	4	1.5	2000	
	ZV,Z	i		12	11				
	ZV,Z	ePP		12	23				
	NE	eS		15	22	6	2½(SH)		37½°N., 14°W. Off coast of
	NE	eLQ		15½	-				Portugal. USCGS.
	E	M		17	-	18	9		
	N	M		17	-	18	8½		
	Z	M		19	-	14	2		
		F	15	15	-				Mag. = 5¾
30	NE	eS	19	51	02				21°S., 67½°W. Bolivia.
		F	20	25	-				h about 150 Km. USCGS.

FORM 3718

DS 93169/1 R94 140 6/58 CL

M.O. 640

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR MAY, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	ZV,Z	ePKP	00	48	20				
	ZV,Z	iPKP		48	25				Compression. Depth = 210 Km.
	ZV,Z	epPKP		49	18				
	ZN	eSKP		51	30				13½°S., 167½°E. New Hebrides.
	N	e		52	01				h about 200 Km.
	NE	esSS	01	09	57				Mag. 6¼ (Pas), 6(Berk).USCGS.
	N	eL		38	-				
	N	M		54	-	22	1½		
	E	M		56	-	20	1½		
		F	02	45	-				
1	N	eL	21	25	-				
	E	M		25½	-	14	½		
	N	M		25½	-	14	1		
		F		35	-				
2	N	e(S)	20	52	06				
	E	e		52	22				17°N., 99½°W. Mexico. Mag.
	E	e(SSS)	21	11.5	-				6¼-6½(Pas). USCGS.
		F		35	-				
2	ZV	iP	21	28	50				
	N	eL		48	-				Very small. Southern Iran.USCGS.
		F	22	20	-				
3	NE	e	07	20	-				
	E	M		41	-	19	1½		4°N., 128½°E. Molucca Passage.
	N	M		41	-	18	1		USCGS.
		F	08	00	-				

Form 3717.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

MAY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
13	N	eL	01	19	-				
	N	M		20	-	12	½		
		F		24	-				
14	N	eL	02	46½	-				
	N	M		47½	-	12	½		
		F		53	-				
15	N	e	14	58	-				V. Small.
		F	15	03	-				
17	E	eL	05	38	-				
	E	M		39½	-	14	1		32°N., 21½°E. Libya. USCGS.
	N	M		39½	-	12	½		
		F		45	-				
17	NE	eL	07	59	-				3°S., 147½°E. Bismarck Sea. USCGS.
	E	M	08	18	-	20	2		
	N	M		18	-	19	3½		
		F		40	-				Mag. = 6¼
18	Z	ePKP	02	52	22				
	Z	e (PP)		55	24				
	N	ePKS		55	58				13°S., 167°E. New Hebrides Islands.
	NE	eL	03	39	-				Mag. 6¼-6½ (Pas). USCGS.
	N	M		50	-	26	5½		
	E	M	04	01	-	19	4½		
	N	M		04	-	19	4		
	Z	M		04	-	19	3		
		F	05	15	-				Mag. = 6½
18	NE	eL	13	29	-				Confused by microseisms.
	E	M		53½	-	20	3½		13°S., 167°E. New Hebrides
	N	M		53½	-	19	3½		aftershock. USCGS.
		F	14	50	-				Mag. = 6¼
19	N	eL	01	15	-				13°S., 167°E. New Hebrides
	N	M		38	-	19	½		aftershock. USCGS.
		F	02	25	-				
22	E	eL	16	03	-				3°S., 146°E. Bismarch Sea. USCGS.
	E	M		20	-	22	2½		
	N	M		22	-	22	3		
		F		55	-				Mag. = 6¼
25	N	e	00	10	33				
	N	eL		22	-				9°N., 43°E. Somali. BCIS.
	E	M		28	-	18	1½		
	N	M		31	-	20	½		
		F		50	-				
25	NE	eL	01	20	-				
	N	M		33	-	17	1½		51°N., 177°W. Andreanof Islands.
	E	M		34	-	20	1½		Aleutian Islands. USCGS.
		F		55	-				

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

MAY, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
25	ZV	eP	15	06	29				
	N	eL		38	-				51½°N., 177°W. Andreanof Islands,
	N	M		51	-	18	1½		Aleutian Islands. USCGS.
	E	M		52	-	18	1		
		F	16	20	-				
25	N	eL	18	10	-				Very small. 14½°S., 174°W.
		F		25	-				Samoa Islands region. USCGS.
25	NE	eL	18	29	-				Very small. 31°N., 129½°E.
		F		45	-				Near Kyushu, Japan. USCGS.
25	ZV,Z	iP	21	24	14			9550	Compression.
	ZV,Z	i(PcP)		24	17				Depth = 110 Km.
	ZV,Z	i		24	23				
	ZV,Z	ipP		24	44				3°S., 77°W. Ecuador-Peru border
	E	eSKS		34	29				region. h about 100 Km. USCGS.
	N	iS		34	38	16	6½(SH)		Ee
	E	e		34	57				Mag. 6½(Pas)
	N	eSS		40	07				
	N	eLQ		48	-				
	E	M		59	-	21	4½		
	N	M		59	-	21	4		
	Z	M		59	-	20	2½		
		F	23	50	-				Mag. = 6½
26	ZV,Z	iP	09	02	16				3°S., 77°W. Ecuador-Peru
	ZV,Z	e		02	23				aftershock. USCGS.
26	ZV	ePKP	16	36	49				17½°S., 178½°W. Fiji Islands.
									USCGS.
27	ZV,Z	iP	18	32	46			2780	Compression.
	ZV,Z	ipP		33	02				Depth = 70 Km.
	Z	e		33	34				36½°N., 27½°E. Dodecanese Islands.
	E	eS		37	03				USCGS.
	N	e		37	47				
		F		50	-				
28	N	eL	00	36	-				5½°S., 146°E. North coast of New
	N	M		47	-	24	½		Guinea. USCGS.
		F	01	45	-				
29	ZV	eP	03	24	53				38°N., 72½°E., Tadzhik S.S.R.
									USCGS.
29	N	eL	07	38	-				Very small. 16½°N., 97½°W.
		F	08	00	-				Oaxaca, Mexico. USCGS.
29	N	eL	08	53½	-				
	N	M		55	-	16	½		
		F	09	05	-				
30	N	e	05	33	-				Very small. 41½°N., 44°E.
		F		45	-				Georgia S.S.R. USCGS.
30	ZV,Z	eP	18	16	38			8690	
	ZV,Z	i		16	43				
	NE	eS		26	29				52½°N., 169°W. Fox Islands,
	NE	e		26	40				Aleutian Islands.
	N	ePS		27	15				Mag. 6-6¼(Pas). USCGS.
	E	eLQ		39	-				

FORM 3718

Contd.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

MAY, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLI-TUDE. μ	Δ km.	REMARKS.
contd.									
✓ 30	N	eLR	18	49	-				
	E	M		59	-	17	4		
	N	M	19	01	-	20	5		
	Z	M		01	-	18	3		
		F	21	10	-				Mag. = 6¼
30	ZV	ePKP	21	39	42				Fiji Islands region. USCGS.
31	N	eL	04	05	-				Very small. 42°N., 44½°E.
		F		25	-				Caucasus. BCIS.
✓ 31	ZV,Z	ePKP	19	52	05			15500	
	ZV,Z	iPKP		52	08	6	3½		
	ZV,Z	i		52	13				
	ZV,Z	iPP		55	08	8	5		
	NZ	ePKS		55	30				15°S., 169°E. New Hebrides
	Z	iPKP		58	08				Islands. Mag. 7½(Pas), 7¼-7½(Berk)
	NE	eSKS		59	06				USCGS.
	Z	ePS	20	05	40				
	E	eSS		13	48				
	N	e		14	56				
	N	e		19	30				
	E	eLQ		32	-				
	N	eL		38	-				
	E	M		55	-	26	38		
	N	M		55	-	24	26		
	Z	M	21	03	-	20	14		
	N	M		03½	-	21	30		
	E	M		08	-	20	22		Mag. = 7
		F	23	20	-				

FORM 3718

M.O. 640

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JUNE, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK. TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY. SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	ZV	e(P)	18	31	57				
	N	eL		45	-				$60\frac{1}{2}^{\circ}$N., $143\frac{1}{2}^{\circ}$W. Alaska. USCGS.
	E	M	19	00	-	18	1		
	N	M		01	-	18	1		
		F		15	-				
3	Z	ePKP	19	51	26	6	$1\frac{1}{2}$	15200	
	ZN	ePKS		54	41				
	N	e		55	09				
	Z	ePPP		57	15				15°S., 168°E. New Hebrides Islands. Mag. $6\frac{1}{2}$-$6\frac{3}{4}$(Berk). USCGS
	Z	e(SKS)		58	39				
	N	e	20	02	33				
	N	eL		44	-				
	N	M		53	-	22	$5\frac{1}{2}$		
	E	M		56	-	22	$4\frac{1}{2}$		
	Z	M		58	-	20	$2\frac{1}{2}$		
		F	22	25	-				Mag. = $6\frac{1}{2}$
4	ZV,Z	iP	14	41	37	6	1	8540	Compression.
	Z	ePP		44	29				
	NE	eS		51	21				$52\frac{1}{2}^{\circ}$N., 167°W. Fox Islands, Aleutian Islands. Mag. 6-$6\frac{1}{4}$(Pas). USCGS.
	NE	eL	15	08	-				
	E	M		21	-	18	6		
	N	M		25	-	19	$6\frac{1}{2}$		
	Z	M		25	-	17	$3\frac{1}{2}$		
		F	17	40	-				Mag. = $6\frac{1}{4}$
5	NE	eL	13	41	-				
	E	M		$42\frac{1}{2}$	-	16	$1\frac{1}{2}$		Mediterranean Sea. USCGS.
	N	M		$42\frac{1}{2}$	-	16	2		
		F		55	-				

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15 AUG 1958

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JUNE, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
6	ZV	iP	09	23	30	5	1½	8950	Compression, Ze.
	ZV,Z	i		23	35				
	ZV,Z	i		23	41				
	Z	ePP		26	33	6	1		
	NE	eS		33	33	20	6(SH)		
	NE	e		33	47				
	NE	eSS		39	00				
	N	eL_Q		45.0	-				8°N., 85°W. Off coast of Costa Rica.
	ZE	eL_R		49½	-				
	E	M		52½	-	24	22		Mag. 6½ - 6¾ (Pas)
	N	M		54½	-	20	19		
	Z	M		56	-	20	8		
		F	12	30	-				Mag. = 6¼—6½
6	ZV	eP	19	27	47			9150	
	NE	eS		37	59	15	2½		5½°N., 82½°W. South of Costa Rica.
	N	eL_Q		49	-				Mag. 6(Pas).
	E	M		58	-	23	7½		
	N	M		58	-	22	2		
	Z	M		58	-	22	4		
		F	21	00	-				Mag. 6-6¼
6	ZV	eP	22	56	23			(8900)	
	N	e(S)	23	06	25				8°N., 84½°W. Off coast of Costa Rica. USCGS.
	N	eL		17	-				
	N	M		28	-	22	½		
		F	24	00	-				
7	N	eL	14	15	-				53°S., 140°E. South of Tasmania. USCGS.
	N	M		38	-	20	1		
		F		50	-				
8	NE	e(S)	01	00	13				
	NE	eL		15	-				53°N., 167°W. Fox Islands, Aleutian Islands. 6½-6¾(Pas). USCGS.
	E	M		32	-	18	1½		
	N	M		32	-	18	2		
	Z	M		32	-	18	1½		
		F	02	15					Mag. = 5¾-6
8	ZV,Z	eP	21	18	34			5980	
	ZV	e		18	51				7°N., 34½°W. Atlantic Ocean. USCGS.
	NE	eS		26	04				
	NE	eL		31½	-				
	E	M		34	-	14	1½		
	N	M		35	-	12	2½		
		F	22	20	-				Mag. = 5¾
10	ZV	e(P)	00	22	17				53°N., 167°W. Fox Islands, Aleutian Islands. USCGS.
	N	eL		54	-				
	N	M	01	05	-	18	½		
		F		25	-				
10	ZV	$e(PKP_2)$	04	20	40				30½°S., 177°W. Kermadec Islands. USCGS
	N	eL	05	20	-				
	N	M		32	-	20	1		
		F	06	20	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JUNE, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
10	ZV	e(P)	07	12	07				30½°N., 51½°E. Western Iran.
	N	eL		24	-				USCGS.
	N	M		32	-	18	½		
	E	M		33	-	16	½		
		F		55	-				Mag.= 5½
10	NE	e	08	33.0	-				
	E	M		39½	-	16	½		
	N	M		39½	-	16	1		
		F		50	-				
12	N	eLQ	12	28	-				7½°N., 84½°W. Off South
	E	M		37	-	22	1½		Coast of Costa Rica.
	N	M		38	-	20	1½		Mag. 6-6¼ (Pas). USCGS
		F	13	10	-				
12	ZV,Z	eP	21	04	45	10	2	8550	
	ZV,ZN	i		04	50				
	ZV	i		05	10				
	Z	ePP		07	45	15	1½		53°N., 167°W. Fox Islands,
	E	eS		14	31	18	3½		Aleutian Islands USCGS.
	N	eS		14	35	16	3		
	E	eScS		15	04				
	N	eSS		19	23				
	E	eSSS		22	45				
	N	e		23	32				
	E	eL		26½	-				
	N	M		42	-	18	10		
	E	M		43½	-	18	11		
	Z	M		45	-	16	4½		
		F	24	25	-				Mag. = 6.3
12	ZV	eP	21	45	12				Fox Islands. USCGS.
13	N	eL	12	14	-				Very small.
		F		40	-				
15	N	e	12	45	-				Very small. 9°S., 150°E.
		F	13	10	-				Near New Guinea. USCGS.
15	ZV,Z	ePKP	15	13	17			16100	Depth = 550 Km.
	ZV,Z	i		13	20				
	ZV,Z	epPKP		15	25				
	ZV	e		15	32				18°S., 178½°W. Fiji Islands.
	ZN	eSKP		16	04				h about 500 Km. Mag. 6¼(Pas).
	Z	esPKP		16	19				USCGS.
	Z	ePP		16	47				
	N	e		22	44				
	E	eSS		35.0	-				
		F	16	25	-				
15	NE	eL	18	26	-				9½°S., 150°E. Near North
	N	M		37	-	24	1		coast of New Guinea. USCGS.
		F	19	00	-				
16	NE	e	09	30	-				
	E	M		39	-	20	1		14½°S., 177½°W. Fiji Islands
	N	M		42	-	20	½		region. USCGS.
		F	10	35	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JUNE, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
16	ZV	ePKP	19	11	31				
17	ZV	eP	19	19	54				Depth = 70 Km.
	ZV	epP		20	14				25°N., 142½°E. Volcano
	N	eL		46	-				Islands. h about 60 Km.
	E	M	20	09	-	20	1		USCGS.
	N	M		09½	-	20	2		
	Z	M		09½	-	20	1		
		F		40	-				
18	ZV,ZN	iP	01	19	26	6	2	2210	Compression.
	ZV,Z	i		19	36	10	2½(PH)		
	ZV,Z	ePP		19	52				
	NE	eS		23	03	10	2(SH)		68¾°N., 17¼°W. Arctic
	N	i		23	20				Ocean north of Iceland.
	N	eL		24.2	-				B.C.I.S.
	N	M		25½	-	26	6½		
	N	M		26½	-	16	6½		
	E	M		27	-	14	7		
	Z	M		27	-	14	2½		
		F	02	20	-				Mag. = 5½.
18	ZV,ZN	eP	02	27	53			(2230)	
	N	e(S)		31	32				Iceland aftershock.
	N	eL		33	-				BCIS.
	N	M		35	-	20	3		
	E	M		35½	-	14	2½		
		F	03	10	-				Mag. = 5¼.
18	ZV,Z	iP	04	38	25	6	13	2250	Compression
	ZV	e		38	34				
	NE	eS		42	06	10	1½		
	N	e		42	23				Iceland aftershock.USCGS
	N	eL		43	-				
	N	M		45	-	20	3		
	E	M		46	-	14	3		
	Z	M		47	-	12	2		
		F	05	30	-				Mag. = 5¼
18	N	eL	07	25	-				Very small. 14½°N., 94°W. Off
		F		40	-				south coast of Mexico. USCGS
18	NE	eL	19	54	-				
	E	M		55½	-	13	½		
	N	M		56	-	14	½		
		F	20	10	-				
19	N	e	04	10	-				Very small. 59°N., 136°W.
		F		15	-				Alaska Yukon border. USCGS
19	ZV,ZN	eP	05	29	56			8500	Compression
	N	eS		39	38				49½°N., 156°E. Kurile Islands
	E	eScS		40	06				Mag 6½ (Pas), 6-6¼ (Berk) USCGS
	N	ePPS		40	30				
	NE	eSS		45	08				
	NE	eL		56	-				
	E	M	06	06	-	21	7		
	N	M		10	-	20	7		
	Z	M		10	-	19	3		
		F	07	20	-				Mag. = 6¼

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JUNE 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
19	N	eL	19	25	-				52½°S., 140°E. South of Tasmania. USCGS
	N	M		37	-	18	½		
		F	20	10	-				
20	N	eL	02	06	-				16°S., 173°W. Samoa Islands region. USCGS
	N	M		10	-	19	1½		
	E	M		10	-	19	1½		
		F	-	-	-				Overlapped by next shock
20	ZV	ePKP	01	36	21				17½°S., 168°E. New Hebrides USCGS
	N	M	02	56	-	18	½		
		F	03	25	-				
23	N	e(S)	05	28	31				49°N., 102°E. Outer Mongolia USCGS
	NE	eL		35	-				
	E	M		44	-	21	7		
	N	M		44½	-	22	9½		
	Z	M		50	-	12	4½		
		F	06	35	-				Mag. = 6¼
23	NE	e	07	21	45				
	E	M		23	-	14	½		
	N	M		26½	-	12	1½		
		F		40	-				
24	ZV,Z	eP	04	57	40			5800	Western Sinkiang Province, China. USCGS
	NE	eS	05	05	10				
	N	eL		15	-				
	N	M		19	-	14	2½		
	E	M		22½	-	14	1½		
	Z	M		22½	-	14	1½		
		F		50	-				Mag. = 5¾
24	NE	eL	06	14.2	-				
	E	M		15	-	22	2		
	N	M		15	22	22	3		Italy
	Z	M		16½	-	13	1½		
		F		33	-				
24	N	e	07	17	-				
	NE	eL		32	-				
	E	M		49	-	18	1½		
	N	M		49	-	18	1½		
	Z	M		49	-	17	1½		
		F	08	40	-				
25	N	e	01	35	-				Very small
		F		55	-				
25	N	e	03	35	-				Very small
		F	04	05	-				
25	ZV,Z	e(PKP)	09	55	40			13300	
	ZV,Z	i(PP)		57	22	8	1		Dilatation
	ZN	eSKS	10	02	26				
	Z	eSKKS		03	45				
	NE	e(S)		04	57				
	Z	iPPS		07	56				
	N	e		09	10				3°S., 144½°E. Near north coast of New Guinea. Mag. 6¼ - 6½ (Pas). USCGS

FORM 3718

M.O.....

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JUNE 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
25	NE	eSS	10	13	06				
	NE	e		14	48				
	N	e		18	52				
	NE	eLg		28	-				
	E	eL		33	-				
	Z	M		52½	-	19	41		
	N	M		52½	-	20	61		
	E	M		53	-	19	49		
		F	13	40	-				Mag. =6¾ - 7.
25	ZV	eP	23	34	53				Sea of Okhotsk. USCGS
26	ZV	iP	04	49	43				Deep. 54½°N., 159½°E.
	ZV	e		49	52				Kamchatka. Slightly deeper
	E	eS		59	01				than normal. USCGS.
	NE	e		59	40				
	E	e(L)	05	09	-				Surface waves very small
		F		55	-				and poorly developed.
26	N	eL	08	35	-				14°N., 125½°E.
	E	M		38½	-	16	½		Ryukyu Islands. USCGS.
	N	M		38½	-	16	½		
		F		45	-				
26	E	e	23	53	38				31°N., 141½°E. South of
	NE	eL	24	18	-				Honshu, Japan. USCGS
	E	M		23	-	20	1½		
	N	M		26	-	18	2½		
	Z	M		30	-	16	½		
		F	25	00	-				Mag. = 6.
27	N	eL	06	17	-				13°N., 88½°W. Near coast of
	E	M		26	-	22	2		El Salvador. Mag. 6 (Pas).
	N	M		27	-	20	1½		
		F		40	-				Mag. = 6.
28	NE	e	09	55	-				Very small
		F	10	40	-				
28	N	e	19	35	-				Very small 12°N., 162°E.
		F	20	00	-				Marshall Islands. USCGS
29	E	e(SKS)	03	48	48				Very small 15½°S., 70½°W.
		F	04	30	-				Southern Peru. h about 150Km USCGS
29	N	eL	10	33	-				16½°S., 172°W. Tonga Islands
	N	M		37	-	20	1		SUCGS
		F	11	20	-				
29	N	eL	14	00	-				Very small. 15½°S., 173°W.
		F		15	-				Samoa Islands region USCGS
30	ZV,Z	iP	08	47	56	2	2½	2980	Compression
	ZV,Z	ipP		48	11	2	2½		Depth = 60 km
	ZV,Z	i		48	18				36½°N., 27½°E. Dodecanese
	ZV,Z	ePP		48	38				Islands. USCGS
	ZNE	eS		52	26				
	ZNE	esS		52	52				
	E	M		53.2	-	12	4		

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JUNE 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
30	N	M	08	54.0	-	12	$3\frac{1}{2}$		
	Z	M		$54\frac{1}{2}$	-	10	$2\frac{1}{2}$		
	ZE	eScS		58	48				Mag. = $6\frac{1}{4}$
30	ZV,Z	eP	18	39	26	6 ·	1	10200	
	Z	ePP		43	03				
	N	eSKS		49	57				
	E	eS		50	23	12	4		31°N., 141½°E.
	N	e		50	50				South of Honshu, Japan
	NE	eSPP		51	34				USCGS
	N	eSS		56	20				
	NE	eL	19	09	-				
	NE	eL_2		15	-				
	E	M		$19\frac{1}{2}$	-	20	7		
	N	M		23	-	16	6		
	Z	M		30	-	16	$4\frac{1}{2}$		
		F	21	15	-				Mag. = $6\frac{1}{4}$ - $6\frac{1}{2}$

FORM 3718

D595419/11/R94 140 8/58 CL

M.O. 640

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON R6

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JULY, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION : RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS : (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS : FOR NOTATION SEE FÜRST B. GALITZIN " VORLESUNGEN ÜBER SEISMOMETRIE " (LEIPZIG, 1914) OR G. W. WALKER " MODERN SEISMOLOGY " (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE : MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	Z	e(P)	06	04	58			(8750)	
	N	eS		14	51				51½°N., 176½°W. Andreanof Islands, Aleutian Islands. USCGS. Mag. 6(Pas).
	N	ePPS		15	50				
	N	eSS		20.1	-				
	NE	eL		30	-				
	E	M		45	-	19	1½		
	N	M		45	-	20	1½		
	Z	M		45	-	20	1		
		F	07	30	-				Mag. = 5¾
1	N	e	12	00	-				Very small.
		F		35	-				
2	ZV,Z	eP	00	56	15				52½°N., 158°E. Near Kamchatka. USCGS.
2	ZV	ipPKP	06	08	38				18°S., 177°W. Fiji Islands.USCGS. h about 350 Km.
	ZV	e		08	41				
3	ZV,Z	e(P)	05	58	26			9900	
	ZV,Z	e		58	38				
	N	eS	06	09	10				
	E	e		09	12				18°S., 66°E. Mascarene Islands region. USCGS.
	ZE	ePS		10	26				
	NE	eSS		15	12				
	NE	eLQ		22	-				
	N	M		44½	-	18	2½		
	E	M		46½	-	18	3		
	Z	M		46½	-	18	1½		
		F	07	40	-				Mag. = 6-6¼

Form 3717.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
3	ZV,Z	iPKP$_2$	06	47	34				28½°S., 179°E. Kermadec Islands region. USCGS.
	Z	ePP		51	12				
3	NE	eL	11	34	-				55°S., 126°W. South Pacific Ocean. USCGS.
	E	M		39	-	20	1		
	N	M		39	-	20	½		
		F	12	40	-				Mag. = 6
3	NE	e	19	45	-				Very small.
		F	20	20	-				
4	ZV	e(PKP)	00	39	26				19°S., 173½°W. Tonga Islands. USCGS.
	N	M	01	44	-	20	½		
		F		55	-				
4	N	e	01	15	-				Very small. 9°N., 40°W. Atlantic Ocean. USCGS.
		F		30	-				
4	N	e	03	15	-				Very small.
		F		35	-				
4	E	eSKS	18	58	50				
	NE	eL	19	29	-				6°N., 125°E. Near south coast of Mindanao, P.I. USCGS.
	E	M		40	-	20	2		
	N	M		40	-	22	2½		
	Z	M		40	-	20	½		
		F	20	10	-				Mag. = 6
5	N	e	02	15	-				Very small.
		F		40	-				
6	NE	e	00	10	-				Very small.
		F		30	-				
6	N	eL	04	58½	-				Near shock.
	N	M		59½	-	20	½		
	E	M		59½	-	20	½		
		F	05	15	-				
6	N	e	04	20	-				Very small. 55°N., 160½°W. Alaska Peninsula. USCGS.
		F		30	-				
6	N	e	15	50	-				Very small.
		F		60	-				
6	N	eL	16	38	-				66°N., 155°W. Central Alaska. USCGS.
		F	17	10	-				
6	N	eL	20	36	-				
	N	M		41	-	20	½		
	E	M		42	-	20	½		
		F	21	00	-				
7	ZV	eP	05	28	09				50½°N., 180°W. Andreanof Islands. USCGS.
	N	M	06	05	-	20	½		
		F		20	-				

FORM 3718.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
8	ZV	iPn	05	04	04			830	Compression.
	ZV,ZE	ePg		04	41				
	ZNE	eSn		05	30				50.8°N., 10.2°E.
	ZV	i		05	54				Thüringerwald, Germany. BCIS.
	ZV,ZN	iLg		06	01				
	E	e		06	07				
	ZNE	iSg		06	23				
	ZE	i		06	38				
	ZNE	eL		06½	-				
	N	M		07½	-	5	2½		
	Z	M		07½	-	5	2		
		F		18	-				
8	NE	e	07	20	-				Very small. 21½°S., 174°W.
		F	08	30	-				Tonga Islands. USCGS.
8	N	e	20	50	-				Very small.
		F	21	15	-				
8	N	ePS	23	15	46				
	NE	eSS		21.2	-				43°S., 41½°E. Indian Ocean. USCGS.
	NE	eL		35	-				Mag. = 6 (Pas).
	E	M		48	-	16	1		
	N	M		48	-	19	1		
		F	24	30	-				Mag. = 6
9	N	eL	01	59	-				
	E	M	02	08	-	18	½		
	N	M		09	-	20	½		
		F		30	-				
10	ZV,ZN	eP	06	26	36	6	12	7200	Compression.
	ZV,ZN	i		26	46				— " —
	Z	iPP		29	15	6	9		
	ZN	iPPP		30	29				
	N	iS		35	22	23	104		58½°N., 136°W. South eastern
	N	i!		35	26				Alaska. Several killed, moderate
	Z	iPPS		35	56				damage. Mag. 7¾-8 (Pas) USCGS.
	N	iSS		39	22				
	Z	eL_2		49	-				
	N	M		54	-	—	>800		E-W component instrument out of
	Z	M		54	-	23	760		action.
		F	13	10	-				Mag. = 7¾
10	NE	e	15	16	49				
	N	M		35	-	18	1		
	E	M		37	-	15	1½		
		F	16	15	-				
11	ZV,Z	eP	19	23	44			10200	
	Z	ePP		27	26				21°S., 61°W. Northern Chile.
	ZV,Z	e		27	49				Mag. 6¼ (Berk), 6½ (Pas). USCGS.
	NE	e (SKS)		34	16				
	NE	eS		34	40	10	2½ (SH)		
	E	ePPS		36	29				
	NE	eL		49	-				
	E	M	20	01	-	22	4½		
	N	M		02½	-	20	3		
	Z	M		02½	-	20	3½		
		F		45	-				Mag. = 6¼

FORM 3718.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
12	Z	e(PP)	01	06	36				
	N	e(S)		14	23				5°S., 106½°W. Pacific Ocean.
	N	eL		31	-				Mag. 6 (Pas). USCGS.
	E	M		45	-	23	2		
	N	M		46	-	20	1½		
		F	02	35	-				Mag. = 6
12	NE	e	02	58	-				Very small. 4½°S., 105½°W.
		F	03	40	-				Pacific Ocean. USCGS.
15	ZV	eP	08	04	37			2540	
	NE	eS		08	40	10	1½(SH)		35½°N., 23½°E. Near West coast
	N	eL		12½	-				of Crete, Greece. USCGS.
	N	M		14½	-	14	1½		
	E	M		15	-	14	1		
	Z	M		15½	-	9	½		
		F		27	-				Mag. = 5¼
16	N	e	04	30	-				Very small. 51½°N., 176½°W.
		F	05	00	-				Andreanof Islands. USCGS.
16	N	eSS	13	32.3	-				
	N	eL		53	-				29½°S., 113°W. South Pacific
	E	M	14	05	-	19	1		Ocean. Mag. 6(Berk). USCGS.
	N	M		05	-	18	1½		
	Z	M		05	-	18	½		
		F		40	-				Mag. = 6
16	NE	eL	18	10	-				12°S., 166½°E. Santa Cruz Islands.
	N	M		20	-	20	½		USCGS.
		F		40	-				
16	N	e	19	55	-				Very small. Santa Cruz Islands.
		F	20	20	-				USCGS.
17	ZV,Z	eP	05	41	39	6	2.2	2220	
	ZV,Z	ePP		41	57	6	2.0(PH)		
	NE	eS		45	17	9	5.5(SH)		40½°N., 24½°E. Northern Greece.
	N	eL		46½	-				Minor damage at Salomika. USCGS.
	N	M		48½	-	13	15		
	E	M		49	-	12	7		
	Z	M		49½	-	9	7		
	NZ	ePcS		49	33				Mag. = 5.6
		F	06	30	-				
17	N	eL	19	45	-				51°N., 176°W. Andreanof Islands.
	E	M		54	-	18	1		Mag. = 5¾ USCGS.
	N	M		54	-	18	1		overlapped by next shock.
		F		-	-				
17	ZV	e(P)	19	39	35				51°N., 177°W. Andreanof Islands.
		F	20	45	-				USCGS.
17	ZN	e(P)	21	11	17			8730	
	E	eS		21	10				
	N	ePS		21	41				51°N., 177½°W. Andreanof Islands,
	N	eSSS		30	04				Aleutian Islands. USCGS.
	NE	eL		39	-				Mag. 6(Berk).
	E	M		51½	-	20	2		
	N	M		53½	-	16	1½		
		M		53½	-	16	½		
		F	22	45	-				Mag. = 6

FORM 8718. Z

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JULY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
18	ZV,Z	e(P)	00	51	35				51°N., 176½°W. Andreanof Islands
	N	eSS	01	06	46				Aleutian Islands. USCGS.
	NE	eL		20	-				Mag. 5¾(Berk).
	E	M		30	-	20	1½		
	N	M		33	-	17	2½		
	Z	M		33	-	16	1½		
		F	02	50	-				Mag. = 6
18	ZV	iP	01	59	59				Dilatation. Depth = 80 Km.
	ZV	ipP	02	00	21				4°S., 78°W. Ecuador-Peru border. USCGS.
18	NE	eSKS	22	01	15				Very small. 25½°N., 124°E.
	NE	eS		01	37				Ryukyu Islands region. USCGS.
		F		50	-				
19	Z	e(PP)	06	50	38				
	Z	e(pPP)		51	16				4°S., 138½°E. New Guinea,
	NE	eL	07	27	-				h about 150 Km. USCGS.
	E	M		47	-	20	1		
	N	M		47	-	20	1½		
	Z	M		47	-	20	1		
		F	08	05	-				Mag. = 6½
19	NE	eL	15	41	-	16	½		41°N., 143½°E. Near south coast
	E	M		53	-	18	1½		of Hokkaido, Japan. USCGS.
	N	M		53	-	16	1		
	Z	M		53	-				
		F	16	35	-				Mag. = 5¾
19	N	e	18	15	-				Very small. 51½°N., 176°W.
		F		35	-				Andreanof Islands. USCGS.
19	Z	ePP	18	36	32			12400	
	E	eSKS		42	25				
	NE	eSKKS		43	36				0°., 129½°E. Spice Islands.USCGS.
	Z	ePS		46	12				
	NE	e		46	29				
	N	e		51	33				
	N	eL	19	03	-				
	E	M		22	-	22	17		
	N	M		34	-	20	16		
	Z	M		34	-	18	7		
		F	21	20	-				Mag. = 6¾
19	N	e	23	15	-				Very small. Spice Islands
		F		35					aftershock. USCGS.
20	NZ	ePn	19	29	02			720	
	ZN	e(Pg)		29	39				
	EN	i		30	12				
	ZNE	iSn		30	16	3	8(SH)		46.0°N., 01.2°W. Isle of Oléron
	ZNE	eL		30	19				region, France. BCIS.
	E	M		30½	-	9	7½		
	N	M		30½	-	8	2½		
	Z	M		30½	-	4	2		
		F		38	-				

FORM 3718

M.O. 040

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

JULY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
21	Z	eP	07	37	13	6	1½	9000	Compression.
	N	eS		47	18				44½°N., 147½°E. Kurile Islands
	E	e(ScS)		47	39				region. Mag. 6-6¼(Berk). USCGS.
	NE	eL	08	08	-				
	E	M		10	-	24	4		
	N	M		10½	-	27	6		
	Z	M		19	-	16	1½		
		F	09	25	-				Mag. = 6¼
21	NE	e	10	25	-				Very small. 12°N., 89°W.
		F		35	-				Near El Salvador. USCGS.
21	ZV,Z	iP	14	49	15	6	1	8600	Compression.
	ZV,Z	ePP		52	13				51½°N., 178°W. Andreanof Islands,
	E	eS		59	03				Aleutian Islands. Mag. 6¼(Berk).
	N	ePS	15	00	03				USCGS.
	E	eL		09½	-				
	Z	M		24	-	20	1½		
	N	M		25	-	21	3½		
	E	M		26	-	21	2		
		F	16	30	-				Mag. = 6.1
23	ZV,Z	eP	10	40	28			10300	
	Z	e(PP)		44	07				
	N	eSKS		50	59				
	E	eS		51	27	10	7		31°N., 142°E. South of Honshu,
	N	e(ScS)		51	40				Japan. USCGS.
	ZE	ePS		52	41				
	N	e		52	42				
	N	eSS		57	31				
	E	eL	11	12	-				
	E	M		23	-	17	9½		
	N	M		31	-	16	12½		
	Z	M		31	-	15	6		
		F	13	15	-				Mag. = 6½
24	E	eL	13	46	-				
	E	M		59½	-	20	½		52½°N., 170°W. Fox Islands,
	N	M		59½	-	20	1		Aleutian Islands. USCGS.
		F	14	30	-				
26	Z	ePP	06	31	36			11100	
	NE	eSKS		38	30				
	ZE	ePPS		41	29				40°S., 45½°E. South Indian Ocean.
	NE	eSS		46	00				USCGS.
	NE	eL		56	-				
	N	M	07	16½	-	17	5		
	E	M		17	-	17	3		
	Z	M		17	-	16	2½		
		F		55	-				Mag. = 6¼
26	ZV	eP	17	48	56			10060	
	ZV,Z	iP		48	58	7	16		Dilatation.
	ZV,Z	i		49	06				
	ZV,Z	i		49	31				Depth = 620 Km.
	ZV,Z	ipP		51	11				
	ZV,ZN	isP		52	17				13½°S., 69°W. Peru-Bolivia
	ZV,ZN	iPP		52	41	7	12		border. h about 650 Km.
	ZV,Z	ipPP		54	35				Mag. 7-7¼(Pas), 7½(Berk).
	ZV,Z	iPPP		54	57				USCGS.
	E	i		58	30				

FORM 3118

Contd.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
contd.									
26	NE	iSKS	17	58	41	13	30(SKSH)		
	N	i		59	01				
	NE	iS		59	13	12	34(SH)		
	E	isSKS	18	02	41				
	NE	isS		03	15				
	NE	iSS		06	26				
	NE	iSSS		09	13				
	E	i		13	27				
	N	i		14	42				
	N	M		34	-	20	12		
	E	M		35	-	17	16		
	Z	M		35	-	18	13		
		F	21	30	-				Mag. = 7-7¼
26	ZV,Z	eP	18	14	53				Peru-Bolivia aftershock.
	ZV	epP		17	15				Depth = 680 Km.
26	ZV	e(P)	18	35	17				Peru-Bolivia aftershock.
	ZV	e		35	43				
27	ZV	ePKP	00	41	15				20½°S., 178½°W. Fiji Islands.
	ZV,Z	i		41	19				h about 600 Km. USCGS.
27	NE	eL	04	03	-				Very small. 45½°N., 148°E.
		F		35	-				Kurile Islands. USCGS.
27	N	eL	18	09	-				28½°S., 62°E. South Indian Ocean.
	N	M		21	-	20	½		USCGS.
		F		35	-				
27	ZV,Z	eP	18	35	25			2370	
	ZV,Z	e		35	41				
	NE	eS		39	15	12	1.7(SH)		55°N., 34½°W. North Atlantic
	N	i		39	22				Ocean. USCGS.
	N	eL		40½	-				
	N	M		41½	-	18	2½		
	E	M		43½	-	13	2		
	Z	M		43½	-	12	½		
		F	19	05	-				Mag. = 5¼
28	NE	eL	16	05	-				
	N	M		08	-	19	3½		
	E	M		09	-	18	3		
	Z	M		10	-	16	2		
		F		25	-				
29	ZV,Z	iP	21	46	39	5	1.3	5950	Compression.
	NE	eS		54	08	10	3(SH)		
	N	eL		59	-				4°N., 26½°W. Atlantic Ocean.
	N	M	22	03½	-	25	4½		USCGS.
	E	M		04½	-	20	2		
	Z	M		06	-	16	½		
		F		50	-				Mag. = 6.1
30	ZV,Z	eP	02	59	31			(8980)	
	NE	e(S)	03	09	35				44½°N., 148½°E. Kurile Islands.
	NE	eL		24	-				USCGS.
	E	M		33	-	24	2		
	N	M		37	-	20	1½		
		F	04	00	-				Mag. = 6

FORM 3718.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
30	NE	eL	05	41	-				
	E	M		58	-	22	2		$2\frac{1}{2}^{o}$S., 140°E. New Guinea. USCGS.
	N	M		58	-	22	2		
	Z	M		58	-	20	$\frac{1}{2}$		
		F	06	35	-				Mag. = 6

All the magnitudes are the "unified magnitudes" denoted by "m"

FORM 3718.
D595889/1 R94 140 9/58 CL

M.O. 640

41

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR AUGUST, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION : RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS : (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS : FOR NOTATION SEE FÜRST B. GALITZIN " VORLESUNGEN ÜBER SEISMOMETRIE " (LEIPZIG, 1914) OR G. W. WALKER " MODERN SEISMOLOGY " (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(II) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE : MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	ZV,Z	iPKP	05	56	41	5	1.3		Compression.
	ZV	e(pPKP)		58	45				16°S., 176½°W. Fiji Islands
	N	e(pSP)	06	12	13				region. h about 450 Km. USCGS.
	E	eSS		18	13				
		F	07	10	-				
3	ZV	iPKP	01	25	16				Depth = 570 Km.
	ZV,Z	epPKP		27	31				21½°S., 179°W. Fiji Islands
	E	eSS		47	27				region. h about 550 Km.
		F	02	40	-				Mag. 6¼-6½(Pas) USCGS.
4	Z	ePP	04	33	17	5	1.1	12900	
	Z	e(sPP)		34	13				6°S., 130°E. Banda Sea.
	NE	eSKKS		39	51				h about 150 Km. USCGS.
	NE	eS		41	07				
	NE	eSSS		54	07				
	E	M	05	20	-	21	1½		
	N	M		21	-	22	1		
		F		40	-				
6	NE	e	17	22	-				Very small. 59½°N., 5½°E.
		F		28	-				Near coast of Norway. USCGS.
6	Z	ePKP	21	28	50	5	1.4		Compression.
	N	eL	22	18	-				17°S., 173°W. Tonga Islands.
	N	M		29	-	20	4		Mag. 6¾(Pas), 6½(Berk). USCGS.
	E	M		30	-	20	2		
	Z	M		30	-	20	3		
		F	23	40	-				Mag. = 6¼

Form 3717.

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

AUGUST, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
7	NE	e	00	51	-				Very small.
		F	01	00	-				
8	ZV	e(Lg)	05	34	53				42°N., 2½°E. France-Spain border region. USCGS.
	ZV,ZNE	e		35	13				
	ZN	i		35	25				
	ZV	e(Rg)		35	45				
	ZN	e		36	21				
	N	M		36½	-	6	1½		
	Z	M		36½	-	6	1½		
		F		40	-				
8	N	e	13	12	-				Very small.
		F		25	-				
8	ZV	e(P)	20	39	57			(1100)	
	ZV	e(Lg)		42	45				
	ZV,ZNE	e		43	04				42°N., 2½°E. France-Spain border region. USCGS.
	ZN	i		43	17				
	ZV	e(Rg)		43	37				
	ZV,ZNE	e		44	11				
	N	M		44½	-	6	3		
	Z	M		44½	-	6	2½		
		F	20	52	-				
9	N	eL	09	43½	-				
	N	M		44	-	14	1		
	E	M		45	-	10	1		
	Z	M		45	-	10	1		
		F		50	-				
9	NE	e	13	20	11				
	N	eI		37	-				
	E	M		42	-	18	1		
	N	M		42	-	22	2		
		F	14	30	-				
10	NE	e	04	03	-				Very small.
		F		15	-				
10	N	eL	19	11	-				3½°S., 150½°E. New Britain region. USCGS.
	N	M		22	-	20	½		
		F		35	-				
11	ZV,Z	iPKP	08	12	53				18°S., 168½°E. New Hebrides Islands. USCGS.
12	NE	eL	17	07	-				
	N	M		10	-	17	1		27°N., 110½°W. Gulf of California. USCGS.
	E	M		11	-	16	½		
	Z	M		11	-	15	½		
		F		25	-				
√12	Z	ePKKP	19	53	53				
	NE	e		53	59				
	NE	eSS	20	00	51				0°, 126½°E. Molucca Passage. USCGS.
	NE	eL		16	-				
	E	M		37	-	21	12½		
	N	M		37	-	22	15½		
	Z	M		37	-	20	7		Mag. = 6½
		F	22	10	-				

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SEISMOLOGICAL BULLETIN

AUGUST, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
13	NE	e	00	15	–				Very small. 6°S., 152°E.
		F		30	–				Near coast of New Britain. USCGS.
13	N	eL	04	42	–				½°N., 126°E. Molucca Passage.
	N	M	05	01	–	21	1½		USCGS.
	E	M		02	–	21	1		
		F		30	–				
13	E	e(S)	07	49	23				
	NE	eL	08	02	–				36½° N., 66½°E. Northern
	E	M		07	–	16	3		Afganistan. USCGS.
	N	M		07½	–	16	2		
	Z	M		09	–	13	3		
		F		25	–				Mag. = 5¾
13	ZV,Z	eP	20	25	03	7	1.1	8760	
	N	eS		34	57	8	1.0		
	N	e		35	09				51°N., 177½°W. Andreanof Islands,
	N	eSS		40	17				Aleutian Islands. USCGS.
	NE	eL		47	–				
	N	M	21	05	–	20	1½		
	E	M		05	–	20	1		
		F		40	–				Mag. = 5.9
14	ZV,Z	e(P)	11	34	28			(4250)	
	Z	ePP		35	59				
	NE	eS		40	39	14	1.6(SH)		34½°N., 48°E. Iran. USCGS.
	N	eSS		43	05				
	N	eL		44½	–				
	E	M		51	–	20	5		
	N	M		51½	–	19	9½		
	Z	M		52½	–	16	2½		
		F	12	40	–				Mag. = 5¾-6
14	ZV,Z	eP	15	07	07	7	1.3	8650	Compression.
	Z	e		07	25	12	1.5(H)		
	NE	eS		16	56				
	NE	e(SKS)		17	13				52°N., 175°W. Andreanof Islands,
	N	e		17	49				Aleutian Islands. Mag. 6½(Pas).
	N	eSS		22	25				USCGS.
	N	eSSS		25	53				
	NE	eL		34	–				
	N	M		47½	–	19	10½		
	E	M		48½	–	20	7½		
	Z	M		50	–	17	4½		
		F	18	20	–				Mag. = 6.3
14	ZV,Z	eP	15	33	44				34°N., 47½°E. Iran. USCGS.
14	ZV	iP	23	35	56			5650	Ze.
	ZV	ipP		36	18				Depth = 90 Km.
	NE	eS		43	10				
	N	M	00	01	–	20	½		
		F		30	–				
15	NE	eL	03	30	–				
	E	M		44	–	20	½		
	N	M		46	–	20	½		6°S., 150½°E. New Britain. USCGS
		F	04	30	–				

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DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLI-TUDE. μ	Δ km.	REMARKS.
15	ZV	eP	16	10	35				
15	ZV,Z	iP	20	07	15	9	1.8	8100	
	ZV,Z	i		07	19				
	ZV,Z	iPcP		07	29				
	ZN	ePP		09	57				53°N., 160½°E. Near east coast of Kamchatka. h about 60 Km. Mag. = 6¾(Pas). USCGS.
	NE	eS		16	35				
	N	e		16	57				
	NE	eScS		17	19				
	NZ	e		18	00				
	N	eSS		21	27				
	E	eLQ		27	-				
	N	eL2		35	-				
	N	M		36	-	30	23		
	E	M		37½	-	30	30		
	N	M		43	-	20	18		
	E	M		44	-	20	18		Mag. = 6½
	Z	M		49	-	16	6		
		F	-	-	-				overlapped by next shock.
15	ZV,Z	eP	22	43	29			11900	Depth about 200 Km.
	ZV,Z	e		46	47				
	ZV,Z	e(PKP)		47	10				
	ZV,ZE	ePP		47	55				
	ZV,Z	i		48	32				1½°N., 125°E. Celebes. h about 200 Km. Mag. 6¾-7(Pas). USCGS.
	ZV,Z	ipPP		48	42				
	ZV,Z	i		49	14				
	ZV,Z	i		49	31				
	Z	iPPP		50	29				
	NE	iSKS		53	50	16	10(SKS)		
	NE	e		54	43				
	NE	eS		55	11				
	ZNE	e(pS)		56	13				
	NE	isS		56	53				
	Z	iSP		57	09				
	E	iPPS		58	15				
	NE	isSS	23	04	33				
	N	eLQ		12	-				Surface waves are very well developed.
	NE	eL		20	-				
	NE	eL2		26	-				
	E	M		27	-	26	71		
	N	M		27	-	27	106		
	Z	M		31	-	18	10		
		F	26	00	-				Mag. = 7
16	ZV,Z	e(PKP)	11	33	57				
	N	eL	12	34	-				
	E	M		45	-	19	2		
	N	M		45	-	20	1½		
	Z	M		45	-	19	1		
		F	13	30	-				
16	Z	eP	13	29	50				
	N	eL	14	00	-				51½°N., 176°W. Andreanof Islands, Aleutian Islands. USCGS.
	N	M		10	-	19	3		
	E	M		11	-	20	3		
	Z	M		11	-	18	2½		
		F	15	20	-				Mag. = 6

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SEISMOLOGICAL BULLETIN.

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DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
16	NE	e	15	37	–				
	N	M	16	01	–	20	½		
		F		25	–				
16	N	e	17	26	–				
	E	M		34	–	18	1		
	N	M		34	–	20	1½		
		F		50	–				
16	ZV	e(P)	18	05	08			(2470)	
	NE	e(S)		09	05				
	NE	eL		10½	–				
	Z	M		12	–	16	½		
	E	M		12	–	17	1		
	N	M		12½	–	15	1		
		F		25	–				
16	ZV,ZE	iP	19	21	09	6	5.5	4240	Compression. PH=8 sec. 2.8 μ
	ZV,ZN	iPP		22	37	7	6.7		" PPH=9 " 5.4 μ
	ZV,ZE	iPPP		22	55				
	ZE	e		23	47				
	N	iS		27	00	20	14.5(SH)		34½°N., 48°E. Iran.
	E	i		27	05				Many killed, major property
	NE	i		27	51				damage. USCGS.
	NE	eSS		29	45				
	N	eL1		31	–				
	N	M		34	–	36	150		
	EZ	eL2		35	–				
	E	M		38	–	21	57		
	N	M		38	–	20	90		
	Z	M		38	–	20	21		
		F	23	35	–				Mag. = 6.5
17	N	e	04	07	–				Very small.
		F		20	–				
17	ZV,Z	e(P)	04	55	23			(2480)	
	NE	e(S)		59	21				
	N	M		01	–	19	½		
	E	M		02½	–	16	1		
	Z	M		02½	–	16	½		
		F	–	–	–				overlapped by next shock.
17	NE	e(S)	05	10	15				
	N	M		12	–	19	½		aftershock of preceding shock.
	E	M		13½	–	16	1		
	Z	M		13½	–	16	½		
		F		25	–				
17	N	e	06	39	–				aftershock of preceding shock.
	E	M		40½	–	16	½		
		F		45	–				
17	ZV,Z	e(P)	09	20	37				
	N	eSS		36.0	–				51½°N., 176°W. Andreanof Islands.
	N	M	10	00	–	18	1½		USCGS.
	E	M		02	–	18	1½		
	Z	M		02	–	18	1		
		F	11	20	–				Mag. = 5¾

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DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
17	NE	e	11	45	-				51½°N., 176°W. Andreanof Islands. USCGS.
	N	M		59	-	18	½		
		F	12	40	-				
17	Z	e	18	20	-				
	NE	e		28	57				
	NE	eLQ		52	-				3°S., 145½°E. Bismark Sea. USCGS.
	E	M	19	10	-	20	6½		
	N	M		14½	-	21	10		
	Z	M		14½	-	20	3½		
		F	20	55	-				Mag. = 6½
17	ZV,Z	ePKP	21	31	14				
	ZV,Z	$ePKP_2$		32	09				35½°S., 179½°W. Kermadec Islands. USCGS.
	ZV,Z	ePP		35	53				
		F	22	25	-				
17	NE	eL	22	30	-				
	E	M		57½	-	20	½		
	N	M		57½	-	20	½		
		F	23	40	-				
18	ZV	eP	10	27	31				7½°N., 78°W. Panama-Colombia border. USCGS.
18	Z	e(P)	15	31	16				
	NE	eL		58	-				48°N., 155°E. Kurile Islands. USCGS.
	N	M	16	11	-	20	½		
		F		30	-				
18	ZV	e(PKP)	23	59	27				
19	N	eL	05	55	-				19°S., 175°E. Fiji Islands region. USCGS.
	N	M	06	13	-	20	½		
		F		45	-				
19	ZV,Z	eP	16	41	15				53½°N., 161°E. Near Kamchatka. USCGS.
19	NE	eSKS	22	14	16				
	NE	e(S)		15	48				1°S., 149½°E. New Ireland Island. USCGS.
	NE	eL		45	-				
	E	M	23	00	-	20	1½		
	N	M		00	-	22	1½		
		F		40	-				
19	NE	e	23	50	-				Very small. 1°S., 149°E. New Ireland Island. USCGS.
		F	24	20	-				
20	Z	e(PKP)	03	59	34				
	Z	e(PP)	04	02	45				14°S., 167°E. New Hebrides Islands. Mag. 6¼-6½(Pas). USCGS.
	ZN	ePKS		03	26				
	E	eSS		21	14				
	NE	eL		45	-				
	N	M		58	-	24	4½		
	E	M	05	05	-	20	3		
	Z	M		10	-	20	1½		
		F	06	25	-				Mag. = 6¼
20	N	eL	06	56	-				Very small. 45°N., 99½°E. Outer Mongolia. USCGS.
		F	07	08	-				

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DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
20	N	eL	09	28	-				
	N	M		42	-	20	1½		24°N., 122°E. Near east coast
	E	M		43	-	19	1½		of Formosa. USCGS.
	Z	M		45	-	16	1½		
		F	10	10	-				
21	Z,ZV	e(PKP)	01	29	16				
	NE	eL	02	30	-				
	N	M		44	-	18	1		24°S., 176°W. Tonga Islands
	E	M		45	-	18	½		region. USCGS.
		F	03	35	-				
21	N	e	05	25	-				Very small. Tonga Islands region.
		F		45	-				USCGS.
21	N	e	13	00	-				Very small. 53°N., 168½°W.
		F		20	-				Fox Islands. USCGS.
21	ZV,Z	ePKP	21	18	23	6	2.8		Dilatation.
	ZV,Z	i		18	26				Depth = 230 Km.
	ZV,Z	epPKP		19	22	7	2.2		
	ZV,Z	i		19	26				
	E	eSS		40	43				18°S., 176°W. Fiji Islands
	E	e		41	53				region. h about 250 Km. USCGS.
	E	M	22	23	-	18	½		
	N	M		23	-	20	1		
		F	23	10	-				
22	NE	e	01	25	-				Very small. 48½°S., 115°E.
		F		35	-				South Indian Ocean. USCGS.
24	NE	e	04	15	-				Very small.
		F		40	-				
24	N	e	08	25	-				Very small. West-central Iran.
		F		35	-				USCGS.
25	N	e	04	25	-				
	N	M		29	-	20	½		
		F		35	-				
26	NE	eL	05	48	-				
	N	M		59	-	18	½		37½°N., 142°E. Near east coast
		F	06	15	-				of Honshu, Japan. USCGS.
26	Z	ePKS	18	18	23				
	N	eL	19	00	-				
	N	M		18	-	20	½		14°S., 167°E. New Hebrides Islands.
		F	20	15	-				USCGS.
26	Z	e(PKP)	23	51	09				
	Z	e(PP)		54	08				14°S., 167°E. New Hebrides Islands.
	ZN	ePKS		54	51				USCGS.
	NE	eL	24	50	-				
	E	M		59	-	20	½		
	N	M		59	-	20	½		
		F	25	45	-				

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DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
27	N	eL	03	07	-				4½°S., 104½°W. Southwest of
	E	M		21	-	20	1		Galapagos Islands. USCGS.
	N	M		26	-	20	½		
		F	04	05	-				
27	ZV	iP	13	20	40				53½°N., 159½°E. Kamchatka. USCGS.
27	ZV,ZNE	iP	15	21	11	6	5.5	2260	Dilatation.
	ZNE	i		21	26	8	4.0(PH)		
	Z	i		22	13				
	E	eS		24	53	10	18.0		
	N	iS		24	56	10	17.5		38°N., 20½°E. Near west coast of
	N	i		25	12				Greece. USCGS.
	Z	iPcP		25	22				
	NE	eL	15	26½	-				
	N	i(PcS)		28	49				
	E	M		31½	-	16	57		
	N	M		31½	-	12	53		
	Z	M		31½	-	12	38		
		F	17	40	-				Mag. = 6.1
27	N	e	18	20	-				Very small.
		F		40	-				
28	N	eL	10	30	-				23½°S., 69½°W. Chile-Argentina
	N	M		36	-	20	½		border. USCGS.
		F		45	-				
29	NE	e	13	05	39				14½°S., 167°E. New Hebrides
	N	eL		32	-				Islands. Mag. 5¾-6 (Pas).
	N	M		41	-	24	1		USCGS.
	E	M		50	-	20	1		
		F	-	-	-				overlapped by next shock.
29	N	e	14	15	-				14°S., 167°E. New Hebrides
	N	M		23	-	20	½		aftershock. USCGS.
		F		50					
30	ZV	eP	07	40	28				
	N	eL		48	-				Greece.
	E	M		50½	-	16	½		
	N	M		50½	-	12	1		
		F	08	05	-				
30	ZV,Z	eP	18	50	38			(9000)	
	NE	e(S)	19	00	42				
	NE	eLQ		12	-				27½°N., 112°W. Gulf of California.
	N	M		21½	-	23	5½		USCGS.
	E	M		26	-	16	4½		
	N	M		26	-	14	2½		
	Z	M		26	-	16	2½		
		F	20	15	-				Mag. = 6
31	ZV	iP	09	27	24				Dilatation.
	ZV	ipP		27	46				

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DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
31	ZV,Z	iP	23	10	40	4	1.5	7050	Compression.
	ZV,Z	i		10	51				
	NE	eS		19	09	8	1.8 (SH)		
	N	e		19	25				63°N., 144½°W. Central Alaska. USCGS.
	NE	eSS		23	07				
	NE	eL		30	-				
	Z	M		38½	-	19	1½		
	N	M		38½	-	19	2½		
	E	M		40	-	16	3		
		F	24	35	-				Mag. = 6.2
31	ZV,Z	iP	23	47	09				

All the magnitudes are the "unified magnitudes" denoted by "m"

FORM 3718

DS 96634/1/R94 140 10/58 XL

M.O. 640

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR SEPTEMBER, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{mi}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	ZV,Z	e(PKP$_2$)	01	17	11				
	N	eL	02	17	-				24°S., 175½°W. Tonga Islands region. USCGS.
	E	M		25	-	20	½		
	N	M		25	-	19	½		
		F	03	10	-				
1	ZV	iP	08	46	06				Western Baluchistan (Upsala)
1	N	e	16	10	-				Very small. 38°N., 134½°E. Sea of Japan. USCGS.
		F		25	-				
2	ZV,Z	eP	01	18	(02)			2280	In time break.
	NE	eS		21	45	10	1.6(SH)		
	N	e(PcS)		25	39				37.7°N., 20.9°E. Ionian Sea. BCIS.
	E	M		28	-	14	4		
	N	M		28½	-	12	4½		
	Z	M		28½	-	12	3		
		F	02	05	-				Mag. = 5¼
2	N	eL	03	21½	-				
	E	M		23½	-	16	½		
	N	M		23½	-	16	1		
		F		35	-				
2	N	e	03	58	-				Very small. 6½°S., 155°E. Solomon Islands. USCGS.
		F	04	25	-				
2	Z	e(P)	20	19	23				
	NE	eL		45	-				15°N., 92½°W. Near coast of Oaxaca, Mexico. USCGS.
	E	M		56	-	18	2½		
	N	M		56	-	19	1½		
	Z	M		56	-	18	2		
		F	21	20	-				Mag. = 5.9

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

SEPTEMBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
3	Z	e(P)	01	39	41				
	N	eL		49	-				
	E	M		58½	-	18	½		
	N	M		58½	-	18	1½		
		F	02	15	-				
3	N	e	03	11	-				
	N	M		12	-	16	½		
		F		18	-				
3	Z	iP	03	53	48	6	1.2	6000	Ne, Compression.
	Z	ePP		55	52				
	NE	iS	04	01	20	13	8.5(SH)		0°, 18°W. Atlantic Ocean. USCGS.
	ZN	ePS		01	30				
	E	eScS		03	38				
	N	eSS		05	02				
	E	eLQ		06½	-				
	N	eLR		10	-				
	E	M		13	-	20	12		
	N	M		13	-	19	11		
	E	M		14	-	14	15		
	Z	M		16	-	13	5		
		F	05	45	-				Mag. = 6.2
3	Z	eP	08	22	49			9200	
	NE	e(S)		33	05				40½°N., 143°E. Off northeast coast of Honshu, Japan.
	N	eL		45	-				
	E	M		59½	-	19	5		h about 60 Km. USCGS.
	N	M		59½	-	20	4½		
	Z	M	09	04	-	16	2		
		F		35	-				Mag. = 6.2
4	Z	eP	00	08	14			2890	
	Z	ePP		08	44				37°N., 26½°E. Dodecanese Islands.
	NE	eS		12	40	10	3.6(SH)		h about 60 Km. USCGS.
	Z	e		12	47				
	N	eL		15	-				
	N	M		17	-	16	3½		
	E	M		18	-	20	2		
		F		35	-				Mag. = 5.6
4	Z	eP	02	56	14			2870	
	E	eS	03	00	39	11	1.1		Dodecanese Islands aftershock.
	N	M		05	-	16	½		
		F		13	-				Mag. = 5
4	N	e	18	05	-				
	N	M		12	-	18	½		
		F		20	-				
4	Z	ePP	22	09	42	7	1.1	11500	
	NE	eSKS		15	59				33½°S., 69½°W. Chile-Argentina border. 3 killed and major property damage. Mag. 6¾-7(Pas), 6¾(Berk). USCGS.
	NE	e(S)		17	20				
	ZNE	ePS		18	59				
	NE	eSS		24	49				
	NE	e		28	19				
	N	eL		36	-				
	NE	eLR		40	-				
	E	M		50½	-	20	31		
	N	M		50½	-	20	35		
	Z	M		50½	-	20	21		
		F	25	20	-				Mag. = 6.7

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

SEPTEMBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
5	N	eL	13	55	-				5°S., 102°E. Near coast of
	N	M	14	11	-	20	½		Sumatra. USCGS.
		F		35	-				
7	N	eL	05	47	-				Very small. 10°S., 153°E.
		F	06	30	-				Solomon Sea. USCGS.
8	ZV,Z	iP	05	37	15	6	1.1	8300	Compression.
	ZV,Z	ipP		37	36				Depth = 70 Km.
	ZN	eS		46	43				53½°N., 159°E. Near east coast
	NE	ePS		47	11				of Kamchatka. Depth slightly
	N	eL	06	01	-				greater than normal. USCGS.
	E	M		13½	-	20	2½		
	N	M		16	-	20	2½		
	Z	M		16	-	19	1		
		F		45	-				Mag. = 6¼
8	NE	e	15	41	-				Very small. 33½°N., 131½°E.
		F		55	-				Kyushu, Japan. USCGS.
8	NE	eL	23	19	-				
	E	M		24½	-	20	1½		34°S., 70°W. Chile-Argentina
	N	M		25½	-	20	1		border. USCGS.
		F		40	-				
9	ZV,Z	iP	11	44	16			(8800)	Compression.
	N	e(S)		54	14				46°N., 151°E. Kurile Islands.
	N	M	12	24	-	20	½		USCGS.
		F		35	-				
9	N	e(S)	22	44	53				
	N	eSS		49	59				54°N., 171°E. Near Islands,
	N	eL		59	-				Aleutian Islands. USCGS.
	N	M	23	18	-	16	½		
		F		45	-				
10	N	eL	04	09	-				
	N	M		14	-	18	½		
		F		25	-				
11	N	eL	18	50	-				7½°N., 126½°E. Near coast of
	E	M	19	08	-	20	2		Mindanao, Philippine Islands.
	N	M		08	-	20	2½		USCGS.
	Z	M		08	-	20	1		
		F		45	-				Mag. = 6
12	N	eL	06	40	-				
	E	M		51	-	18	½		42°S., 80°E. Indian Ocean. USCGS.
	N	M		51	-	18	1		
		F	07	15	-				
13	N	e	04	35	-				Very small.
		F		55	-				
14	NE	e	04	33	-				
	N	M		35	-	16	½		
	E	M		36	-	14	½		
		F		40	-				

FORM 3718

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

SEPTEMBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
14	ZV	iP	14	32	00	6	2.5	6980	Ze, Dilatation.
	ZV,Z	i		32	02				Compression.
	ZV,Z	e(PcP)		32	42				
	ZV,Z	ePP		34	14	6	1.2		56½°N., 120½°E. Stanovoi
	ZNE	ePPP		35	50				Mountains region, Siberia.
	N	iS		40	25	10	2.6(SH)		Mag. 6¼-6½ (Pas). USCGS.
	ZN	eSP		40	38				
	N	eSS		44	26				
	N	eSSS		47	12				
	NE	eL		50½	-				
	E	M		58	-	19	18		
	N	M		58	-	17	15		
	Z	M	15	06	-	10	5		
		F	16	15	-				Mag. = 6.4
14	N	e	20	25	-				Very small. 31°N., 133°E.
		F		45	-				Off Kyushu, Japan. USCGS.
14	ZV,Z	eP	21	44	20			9100	
	ZV,Z	e		44	26				8½°S., 67°E. Chagos
	ZV,Z	ePP		47	29				Archipelago region. USCGS.
	N	eL	22	20	-				
	E	M		25	-	20	1		
	N	M		25	-	20	1½		
		F		55	-				
14	N	eL	21	55	-				Near shock superimposed on
	N	M		56½	-	12	1		preceding one.
		F	22	02	-				
15	NE	e	06	20	-				Very small. 8½°N., 103½°W.
		F		40	-				Pacific Ocean. USCGS.
15	Z	eP	19	58	56	6	1.4	11800	Depth = 670 Km.
	ZV	ePKP	20	03	02				PH = 8 sec. 1.3 μ
	ZE,ZV	ePP		03	34	8	1.6		PPH = 11 sec. 1.2 μ
	ZE	epPP		05	36				
	NE	iSKS		08	32	10	3.6(SKSH)		
	NE	iS		10	00	12	6.2(SH)		
	ZE	eSP		11	36				2½°N., 120½°E. Celebes Sea.
	ZE	eSPP		12	48				h about 600 Km. Mag. 6-6¼(Pas).
	N	esS		14	18				USCGS.
	NE	eSS		17	54				
	N	eSSS		21	44				
	NE	eL		44	-				
	E	M		50	-	19	3½		
	N	M		54	-	18	3½		
	Z	M		54	-	16	1½		Mag. = 6.5
		F	21	50	-				
16	N	eL	14	50	-				
	E	M		53½	-	18	1		Eastern Iran. USCGS.
	N	M		54	-	16	2		
		F	15	15	-				
17	N	eL	13	05	-				48½°N., 155°E. Kurile Islands.
	N	M		16	-	20	½		USCGS.
		F		25	-				

FORM 3718

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

SEPTEMBER, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
18	N	e	08	00	-				Very small. $2\frac{1}{2}^{\circ}$S., 141°E. Near
		F		10	-				New Guinea. USCGS.
18	ZV,Z	e(P)	14	51	27			(6400)	Confused by microseisms.
	NE	eS		59	23	20	4.4(SH)		
	N	eSS	15	02	59				
	NE	eSSS		05	37				$0\frac{1}{2}^{\circ}$N., 30°W. Mid-Atlantic Ocean.
	NE	eL_R		08	-				USCGS.
	N	M		$09\frac{1}{2}$	-	24	$8\frac{1}{2}$		
	E	M		10	-	22	$4\frac{1}{2}$		
	Z	M		10	-	20	$3\frac{1}{2}$		
		F	16	05	-				Mag. = 6.0
20	N	e	06	00	-				Very small. $20\frac{1}{2}^{\circ}$N., 105°E.
		F		15	-				North Vietnam. USCGS.
20	NE	eL	10	56	-				Confused by microseisms.
	E	M	11	$00\frac{1}{2}$	-	18	$1\frac{1}{2}$		$15\frac{1}{2}^{\circ}$N., 46°W. Atlantic Ocean.
	N	M		$00\frac{1}{2}$	-	18	$1\frac{1}{2}$		USCGS.
		F		25	-				
20	NE	ePKS	17	32	05				Confused by microseisms.
	NE	eL	18	03	-				
	E	M		23	-	23	4		$6\frac{1}{2}^{\circ}$S., $154\frac{1}{2}^{\circ}$E. Solomon Islands.
	N	M		26	-	22	$5\frac{1}{2}$		USCGS.
	Z	M		26	-	22	3		
		F	19	35	-				Mag. = 6.4
21	NE	e	06	27	-				Confused by microseisms.
	N	M		37	-	20	1		38°N., 143°E. Honshu, Japan.
	E	M		38	-	20	$\frac{1}{2}$		USCGS.
		F		50	-				
22	ZV,Z	iPKP	19	25	46			17900	Compression. Confused by
	ZV,Z	ipPKP		25	58				microseisms. Depth = 45 Km.
	ZV,Z	$iPKP_2$		26	32				
	ZV,Z	$ipPKP_2$		26	44				
	ZV,Z	i		26	54				
	ZV,Z	iPP		30	14				$33\frac{1}{2}^{\circ}$S., $177\frac{1}{2}^{\circ}$W. Kermadec Islands
	Z	e		30	40				region. Mag. $6\frac{3}{4}$(Pas). USCGS.
	E	eSS		50	35				
	N	eL	20	22	-				
	E	M		$35\frac{1}{2}$	-	22	$4\frac{1}{2}$		
	N	M		37	-	21	$4\frac{1}{2}$		
	Z	M		40	-	19	3		
	N	M		48	-	20	$5\frac{1}{2}$		
		F	21	35	-				Mag. = 6.6
24	ZV	e(P)	03	54	57				Confused by microseisms.
	E	e	04	04	03				
	N	e		04	09				$59\frac{1}{2}^{\circ}$N., $143\frac{1}{2}^{\circ}$W. Gulf of Alaska.
	NE	e		04	17				Mag. $6\frac{1}{4}$(Pas).
	NE	eL		12	-				
	E	M		$18\frac{1}{2}$	-	26	7		
	N	M		19	-	26	$7\frac{1}{2}$		
	Z	M		$25\frac{1}{2}$	-	16	$2\frac{1}{2}$		
	N	M		$25\frac{1}{2}$	-	16	5		
	E	M		26	-	15	5		
		F	05	30	-				Mag. = 6.1

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

SEPTEMBER, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
25	ZV	iP	07	29	25	5	2.3	6070	Confused by strong microseisms.
	ZV,Z	i		29	32				
	ZV	ePP		31	25				
	NE	eS		37	01	20	24		9°N., 39½°W. Atlantic Ocean.
	NE	i		37	10				Mag. 6½(Pas), 6¼(Berk). USCGS.
	N	eSS		40	31				
	NE	eL		42	-				
	E	M		47	-	22	43		
	N	M		48	-	21	29		
	Z	M		48	-	19	22		
		F	09	20	-				Mag. = 6.6
25	N	e(S)	23	56	51				Confused by microseisms.
	N	eL		58	-				
	E	M		59½	-	14	1½		
	N	M	24	00	-	10	1½		
		F		08					
26	N	e(S)	00	10	19				Confused by microseisms.
	N	eL		11½	-				
	N	M		13	-	10	1		
		F		20	-				
27	NE	eL	10	50	-				66°N., 17°W. Near north coast
	N	M		52	-	14	1		of Iceland. USCGS.
		F		56	-				
27	NE	eL	13	25	-				37°N., 141½°E. Near Honshu,
	N	M		32½	-	19	1		Japan. USCGS.
		F		45	-				
29	NE	eL	15	02	-				Confused by microseisms.
	E	M		06	-	20	1½		39½°N., 143½°E. Near Honshu,
	N	M		06	-	20	1		Japan. USCGS.
		F		25	-				
30	NE	eL	07	58	-				Confused by strong microseisms.
	N	M	08	11	-	20	1½		3½°N., 128°E. Molucca Passage.
		F		30	-				USCGS.
30	ZV	iP	08	47	35			1000	Confused by strong microseisms.
	ZV	i		47	59				
	ZV	i		48	11				
	ZE	e(S)		49	18				
	ZV	e(Lg)		49	58				47°10'N., 10.9°E.
	ZV	e(Lg)		50	12				Austrian Alps. BCIS.
	N	M		50.8	-	9	5½		
	E	M		51.3	-	8	3		
	Z	M		51.3	-	8	4½		
		F		56	-				
									All the magnitudes are the "unified magnitudes" denoted by "m"

FORM 3718

DS 98530/1/ R 94 140 11/58 XL

M.O. 640

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR OCTOBER, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1 sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{ml}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	N	eL	06	11	–				Confused by microseisms.
	E	M		20½	–	18	1		19½°N., 121°E. Off north coast
	N	M		20½	–	18	1½		of Luzon, P.I. USCGS.
		F		30	–				
1	NE	eSS	10	14	21				Confused by microseisms.
	NE	eL		45	–				57°S., 147°E. Antarctic Ocean.
	N	M	11	04½	–	20	6		Mag. 6¼ (Pas). USCGS.
	E	M		07	–	19	5		
		F	12	10	–				Mag. = 6.4
1	NE	e	16	52	–				Confused by microseisms.
	N	M		55	–	16	½		71½°N., 03½°W. Jan Mayen Islands
		F	17	00	–				region. USCGS.
2	NE	eLQ	05	10	–				Confused by microseisms.
	E	M		16½	–	26	3		58½°S., 10°W. Sandwich Islands
	N	M		21	–	20	1½		region. USCGS.
		F		40	–				Mag. = 6.1
4	N	e	01	58	–				Very small. 4½°S., 143½°E.
	N	F	02	15	–				New Guinea. USCGS.
6	N	e	09	52	–				Very small. 37½°N., 54½°E.
		F	10	08	–				Iran-Turkmen S.S.R. border. USCGS.
6	ZV	iP	19	04	11				Compression.
	N	eL		32	–				55½°N., 162½°E. Near east coast of
	E	M		40	–	16	½		Kamchatka. USCGS.
	N	M		40	–	18	½		
		F		50	–				

Form 3717.

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

OCTOBER, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
7	N	eSS	13	09.0	-				Confused by microseisms.
	NE	eL		34	-				
	E	M		50½	-	20	5		5°S., 151½°E. New Britain.
	N	M		50½	-	20	5½		Mag. 6¼-6½(Berk). USCGS.
	Z	M		50½	-	20	3½		
		F	14	50	-				Mag. = 6.4
9	NE	eL	12	05	-				Confused by strong microseisms.
	E	M		19	-	20	2½		55½°S., 27½°W. Sandwich Islands
	N	M		20	-	21	4½		region. USCGS.
		F	13	15	-				Mag. = 6.2
10	ZV,Z	iP	08	41	57				Compression.
	N	eL	09	03	-				53°N., 160°E. Near east coast of
		F		40	-				Kamchatka. USCGS.
11	ZV	iP	02	12	18				Compression. 53°N., 159½°E. Near Kamchatka. USCGS.
12	N	eL	08	11	-				Confused by microseisms.
	E	M		14	-	22	1		
	N	M		14	-	22	1		Nuclear explosion. West of
	N	M		18	-	12	1½		Novaya Zemlya. 74.0°N., 51.8°E.
	Z	M		18	-	12	1		Ho = 07 53 43 (Upsala).
		F		20	-				
12	ZV,Z	iP	15	31	10	6	1.1	9780	Dilatation.
	ZV,	epP		32	11				Depth = 260 Km.
	ZV	e		32	52				
	ZV,Z	iPP		34	42	6	1.7		27½°N., 125½°E. East China Sea.
	ZV,Z	epPP		35	38				h about 250 Km. Mag. 6¾(Pas).
	NE	eSKS		41	11				USCGS.
	NE	eS		41	30	12	1.8(SH)		
	NE	esS		43	19	12	3.3(sSH)		
	NE	esSS		49	09				
	NE	eL	16	04	-				
	N	M		08	-	22	2		
	E	M		13	-	20	1½		
		F		40	-				Mag. = 6.1
13	ZV,Z	iP	09	07	14				41½°N., 75°E. Kirghiz S.S.R. USCGS.
15	N	eL	08	08½	-				Confused by microseisms.
	N	M		13	-	22	1		Nuclear explosion. West of
	N	M		15½	-	12	2		Novaya Zemlya. Ho = 07 51 14
	Z	M		15½	-	12	1½		(Upsala)
		F		18	-				
18	NE	e	07	10	-				Very small. 7°N., 66½°W.
		F		20	-				Colombia-Venezuela border.USCGS.
18	NE	eL	10	08½	-				Confused by microseisms.
	E	M		10½	-	24	1		
	N	M		11½	-	22	1½		Nuclear explosion. West of
	N	M		15½	-	13	2½		Novaya Zemlya. 74.0°N., 51.8°E.
	Z	M		15½	-	12	3½		Ho = 09 51 10. (Upsala)
		F		19	-				

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

OCTOBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
18	ZV,Z	ePKP	02	13	41				Confused by microseisms.
	ZV,Z	e		13	49				
	ZV,Z	e		13	57				19°S., 172½°W.
	NE	eL	03	15	-				Tonga Islands. USCGS.
	E	M		21	-	20	1		
	N	M		21	-	20	1		
		F		45	-				
19	ZV,Z	$ePKP_1$	12	02	48				Confused by microseisms.
	ZV,Z	$ePKP_2$		02	37				
	NE	eL		50	-				34½°S., 178°W. Kermadec Islands
	E	M	13	20	-	20	½		region. USCGS.
	N	M		20	-	20	½		
		F	14	00	-				
20	N	eL	01	35	-				Confused by microseisms.
	N	M		47	-	20	1½		52°N., 175°W. Andreanof Islands.
		F	-	-	-				USCGS.
20	ZV,Z	e(PP)	01	31	43				Confused by microseisms.
	NE	e		39	19				
	N	eL		57	-				9½°S., 112½°E. Off south coast
	N	M	02	17	-	26	4½		of Java. USCGS.
	E	M		21	-	21	3½		
		F	03	05	-				Mag. = 6¼
20	N	M	08	41⅓	-	22	¾		Nuclear explosion. West of
	N	M		44¾	-	12	¾		Novaya Zemlya. (Upsala)
		F		47	-				
21	NE	e	07	15	-				Very small. 5½°S., 147°E.
		F		30	-				Near New Guinea.
22	E	eL	04	36.0	-				
	E	M		36½	-	14	1		
	N	M		38.0	-	11	½		
		F		39	-				
22	N	eL	08	38	-				
	E	M		41⅓	-	24	1		Nuclear explosion. West of Novaya
	N	M		41½	-	24	1½		Zemlya. 74.0°N., 51.8°E.
	E	M		44½	-	14	1		Ho = 08 21 11. (Upsala)
	N	M		45½	-	13	2½		
	Z	M		45½	-	13	1½		
		F		48	-				
23	N	eL	00	56	-				
	N	M	01	06	-	22	1		14½°S., 168°E. New Hebrides
		F		45	-				Islands. USCGS.
23	NE	eL	06	53½	-				
	E	M		54½	-	12	¾		
	N	M		54½	-	13	¾		
		F		59	-				
23	ZV,Z	eP	15	50	18			(4200)	
	NE	e(S)		56	02				34½°N., 47°E. Iran. USCGS.
	N	eL	16	01	-				
	N	M		05	-	22	1		
		F		20	-				

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SEISMOLOGICAL BULLETIN

OCTOBER, 1958

DATE	COMPT.	PHASE	G.M.T. h.	m.	s.	PERIOD sec.	AMPLITUDE μ	Δ km.	REMARKS
24	N	eL	08	21	-				
	N	M		26.0	-	20	1		Nuclear explosion. West of Novaya
	N	M		27½	-	14	1		Zemlya. (Upsala)
	E	M		27½	-	12	½		
		F		30	-				
24	NE	eL	22	10	-				
	E	M		26	-	20	½		0°., 125°E. Molucca Passage.
	N	M		26	-	20	1½		USCGS.
		F		35	-				
25	NE	eL	07	01	-				
	E	M		04	-	18	½		22½°S., 11°W. South Atlantic Ocean.
	N	M		09	-	18	1½		USCGS.
		F		20	-				
25	N	e	08	44	-				
	N	M		45½	-	12	¼		
		F		48	-				
26	NE	eL	03	11	-				
	E	M		25½	-	18	1½		5½°N., 117°E. Northern Borneo.
	N	M		25½	-	18	1½		USCGS.
		F		40	-				
26	N	eL	12	57	-				Iraq. USCGS.
	E	M	13	02½	-	20	½		
		F		10	-				
26	N	eL	13	37	-				
	N	M		42	-	20	1		
		F		46	-				
27	N	e	10	19	-				
	N	M		21½	-	14	¼		Italy.
		F		23	-				
27	ZV	iP	18	29	09				44½°N., 147½°E. Kurile Islands.
									USCGS.
27	ZV	e(P)	19	32	25				56°N., 162°E. Near Kamchatka.USCGS.
28	N	eL	05	42	-				62½°S., 157°W. Pacific Ocean.USCGS.
	E	M		54	-	20	½		
	N	M		55	-	20	1½		
		F	-	-	-				overlapped by next shock.
28	ZV	eP	05	34	31				Northern Burma. (Upsala).
		F	06	25	-				
28	ZV,Z	iP	10	57	04	8	1.5	7140	Dilatation. Confused by
	NE	eS	11	05	38	10	3.3(SH)		microseisms.
	E	ePS		05	58				
	E	eScS		06	58				30½°N., 85°E.
	N	eL		12½	-				Southern Tibet. USCGS.
	E	M		23	-	20	21		
	N	M		23	-	20	51		
	Z	M		28	-	16	7		
		F	12	30	-				Mag. = 6.4

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SEISMOLOGICAL BULLETIN

OCTOBER, 19 58

DATE	COMPT.	PHASE	G.M.T. h.	m.	s.	PERIOD sec.	AMPLITUDE μ	Δ km.	REMARKS
29	ZV	eP	00	02	05			8800	
	N	eSS		17.5	-				52°N., 179½°E. Andreanof Islands.
	E	M		42	-	19	½		USCGS.
	N	M		45	-	20	1		
		F	01	10	-				
29	ZV,Z	iP	07	56	08	7	1.7	8800	PN 16 sec. 2.4 μ
	E	eS	08	06	04	22	5.4		
	N	eScS		06	22				51½°N., 179½°E. Andreanof Islands,
	N	iSPP		06	58				Aleutian Islands. Mag. 6¼(Pas)
	N	eSS		11	30				6½(Berk). USCGS.
	E	eLQ		17	-				
	E	M		36	-	20	11		
	N	M		38	-	20	14		
	Z	M		41½	-	18	9		
		F	10	40	-				Mag. = 6.3
29	ZV	iP	08	07	13				51½°N., 179°E. Andreanof Islands.
									USCGS.
29	ZV	eP	08	18	16				51°N., 179°E. Andreanof Islands.
									USCGS.
30	ZV	iP	15	11	45.6				Nevada. Underground nuclear explosion.
31	N	eL	07	48	-				
	E	M		58	-	20	1½		22°N., 109°W. Gulf of California.
	N	M		58	-	18	1		USCGS.
		F	08	15	-				
31	N	eL	19	54	-				3½°S., 143½°E. New Guinea. USCGS.
	E	M	20	08	-	20	1½		
	N	M		08	-	24	2		
		F		40	-				Mag. = 6
31	N	eL	24	20	-				25°N., 122½°E. Near Formosa.
	N	M		36	-	20	½		h about 100 Km. USCGS.
		F		45	-				

FORM 3718

DS99822/1/R94 140 12/58 XL

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON. 21 JAN 1959 R. 6

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

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SEISMOLOGICAL BULLETIN FOR NOVEMBER, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	+0.05	121

(ii) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1	NE	e(S)	04	06	36				
	NE	e(PPS)		10	18				
	E	e		16	38				3°S., 150°E. Bismarck Sea. USCGS.
	N	e		21	18				
	NE	eL		34	-				
	E	M		55	-	20	$7\frac{1}{2}$		
	N	M		55	-	21	$9\frac{1}{2}$		
	Z	M		55	-	20	$3\frac{1}{2}$		
		F	06	15	-				Mag. = 6.5
1	NE	e	06	58.3	-				
	NE	eL	07	05	-				$3\frac{1}{2}$°S., $145\frac{1}{2}$°E. New Guinea
	E	M		11	-	26	2		aftershock. USCGS.
	N	M		11	-	26	$2\frac{1}{2}$		
		F		45	-				
1	ZV,Z	iPKP	12	36	15	7	3.4		
	ZV,Z	e		37	22				
	ZN	ePKS		39	49				
	NE	eSS		58	33				17½°S., 168°E. New Hebrides
	E	e		59	49				Islands. Mag. 6-6¼(Pas). USCGS.
	NE	eL	13	28	-				
	E	M		$45\frac{1}{2}$	-	20	2		
	N	M		$45\frac{1}{2}$	-	20	3		
	Z	M		$48\frac{1}{2}$	-	18	1		
		F	14	15	-				Mag. = 6.2
1	ZV,Z	ePKP	16	09	52	6	1.9		
	NE	eSS		32	03				
	E	M	17	20	-	20	$\frac{1}{2}$		17½°S., 168°E. New Hebrides
	N	M		20	-	20	1		Islands aftershock. USCGS.
		F	18	15	-				

Form 8717.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

NOVEMBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
2	NE	eL	11	26	-				
	E	M		38	-	19	1		51½°N., 175°W. Andreanof Islands.
	N	M		38	-	20	½		USCGS.
		F	12	10	-				
3	ZV,Z	iP	14	42	11				Dilatation.
	N	eL	15	03	-				30°N., 84½°E. Tibet. USCGS.
	E	M		08	-	20	½		
	N	M		08	-	20	1½		
		F		18	-				Mag. = 5¾
4	E	M	09	28	-	18	1½		28°N., 141°E. Bonin Islands
	N	M		28	-	20	1½		region. USCGS.
		F	10	00	-				Mag. = 6.0
4	N	eL	21	06	-				11°S., 166°E. Santa Cruz Islands.
		M		15	-	20	½		USCGS.
		F		30	-				
4	NE	eSS	23	35	37				
	NE	eL		55	-				50°S., 115°W. South Pacific
	E	M	24	05	-	26	4½		Ocean Mag. 6(Pas). USCGS.
	N	M		05	-	28	2		
	E	M		08	-	20	2½		
	N	M		08	-	20	1½		
	Z	M		08	-	20	1		
		F	25	15	-				Mag. = 6.2
6	ZV,Z	iP	23	10	20	3	35(ZV)	9000	Compression.
	ZV,Z	iPP		13	18	2	4(ZV)		44½°N., 148½°E. Kurile Islands.
	ZV,E	iS		20	19				Mag. 8-8¼(Pas) h about 100 Km.
	ZV,E	i		20	24				USCGS.
	E	eL		30	-				Galitzin record too faint for
	ZV	M		48½	-	22	650		proper analysis.
		F	04	40	-				Mag: m = 7.6, M = 8.1
6	ZV	iP	23	26	32				Kurile Islands aftershock.
	ZV	i(pP)		26	45				
6	ZV	iP	23	28	31				" " "
6	ZV	iP	23	36	59				" " "
	ZV	e		39	50				
6	ZV	iP	23	58	52				" " "
	ZV	i(pP)		59	05				
7	ZV	eP	00	24	45				" " "
7	ZV,Z	iP	00	48	32	1.2	0.4(ZV)		Compression. 44°N., 149°E.
	ZV	i(pP)		48	49				Kurile Islands. USCGS.
									Mag. = 6.0
7	ZV	iP	00	50	08				Kurile Islands aftershock.
7	ZV	eP	00	51	41				" " "
7	ZV	eP	00	53	17				" " "

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

NOVEMBER, 19 58

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLI-TUDE. μ	Δ km.	REMARKS.
7	ZV	iP	01	14	19				44°N., 148½°E. Kurile Islands. USCGS.
7	ZV	iP	01	26	05				45°N., 149°E. Kurile Islands. USCGS.
7	ZV	iP	01	26	54				Kurile Islands aftershock.
7	ZV	iP	01	55	14	1.8	0.5		Compression. 44½°N., 149½°E.
	ZV	i		55	40				Kurile Islands. USCGS. Mag. = 6.0
7	ZV	iP	01	57	18				Kurile Islands aftershock.
7	ZV	eP	02	07	52				44½°N., 149°E. Kurile Islands.
	ZV	i		07	57	1.4	0.3		Dilatation. Mag. = 5.9 USCGS.
7	ZV	eP	02	22	34				Kurile Islands aftershock.
7	ZV	eP	02	29	12				" " "
		e		29	25				
7	ZV	eP	02	47	59				" " "
7	ZV	eP	03	03	07				44½°N., 149½°E. Kurile Islands.
	ZV	i		03	32				USCGS.
7	ZV	eP	03	39	12				Kurile Islands aftershock.
7	ZV,Z	iP	05	12	10	5	1.2		PZV 1.6 sec. 0.6 μ. Confused by microseisms.
	E	e		22	29				44½°N., 149°E. Kurile Islands.
	N	eSS		27	55				USCGS.
	NE	eL		43	-				
	E	M		50	-	18	2½		
	N	M		50	-	18	2½		
		F	06	35	-				Mag. = 6.2
7	ZV,Z	iP	07	52	53	1.7	0.5(ZV)		
	NE	eL	08	22	-				44½°N., 149°E. Kurile Islands.
	E	M		26½	-	18	3		USCGS.
	N	M		26½	-	18	1½		
		F		45	-				Mag. = 6.1
7	ZV	iP	10	41	36				44°N., 148°E. Kurile Islands.
	NE	M	11	15	-				USCGS.
		F		25	-				
7	ZV,Z	iP	11	36	41				Confused by microseisms.
	ZV,Z	i		36	53				
	NE	eS		46	53				44½°N., 149½°E. Kurile Islands.
	NE	eL	12	06	-				USCGS.
	E	M		14	-	20	2		
	N	M		14	-	18	2		
		F		55	-				Mag. = 6.0
7	ZV	iP	11	43	21				
7	ZV,Z	iP	17	45	01				Confused by microseisms.
	NE	eL	18	16	-				44°N., 148½°E. Kurile Islands.
	N	M		20	-	20	1½		USCGS.
	E	M		25	-	18	1		
		F		45	-				Mag. = 5.8

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

NOVEMBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
7	ZV	eP	19	26	50				
	ZV	i		27	01				44½°N., 149½°E. Kurile Islands.
	E	M	20	05	-	18	½		USCGS.
	N	M		05	-	20	½		
		F		20	-				
8	ZV,Z	iP	09	34	41	2.5	0.4	8300	Compression; PZV 1.5 sec. 0.5 u
	ZV	i		34	58				
	N	eS		44	14	6	1.4		52°N., 159½°E. Off southeast
	NE	eL	10	01	-				coast of Kamchatka. USCGS.
	N	M		11½	-	18	4		
	E	M		12	-	18	4½		
	Z	M		17½	-	12	1½		
		F	11	20	-				Mag. = 6.1
8	ZV	iP	12	20	48				44½°N., 149°E. Kurile Islands.
									USCGS.
8	N	eL	20	22	-				
	N	M		33	-	19	1		11½°N., 93°E. Andaman Islands.
		F		45	-				USCGS.
9	N	e	00	50	-				
	N	M	01	06	-	16	½		
		F		15	-				
9	ZV	iP	03	27	06				44°N., 148½°E. Kurile Islands.
	NE	eL		59	-				USCGS.
		F	04	25	-				
9	ZV	iP	14	45	36				44°N., 148°E. Kurile Islands.
									USCGS.
9	ZV	eP	18	05	14				
	NE	eL		36	-				44°N., 148°E. Kurile Islands.
	E	M		39	-	24	1		USCGS.
	N	M		39½	-	22	1		
		F	19	10	-				
9	ZV	eP	21	17	05				44°N., 148°E. Kurile Islands.
	ZV	i		17	20				USCGS.
10	NE	eL	12	07	-				
	E	M		17	-	20	1½		9°S., 110°W. Pacific Ocean.
		F		40	-				USCGS.
11	NE	eL	11	56	-				
	E	M	12	04	-	26	1		
	N	M		04	-	26	1½		
		F		20	-				
11	NE	eL	23	27	-				22°S., 69°W. Near coast of
	E	M		30	-	20	½		northern Chile. USCGS.
	N	M		30	-	20	½		
		F		37	-				
12	NE	eL	04	49	-				19½°N., 122°E. Off coast of
	E	M		58	-	16	½		Luzon, P.I. USCGS.
	N	M		58	-	16	½		
		F	05	15	-				

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
12	ZV,Z	iP	20	35	45	9	10.1	9000	Compression. Confused by strong microseisms.
	ZV,Z	iPP		38	40	7	4		
	N	iS		45	49	18	43		PZV 1.9 sec. 3.8 μ
	E	iS		45	50	18	11		PH 16 sec. 8.0 μ
	NE	eSS		50	50				
	N	eSSS		55	56				
	NE	eLQ		57	-				44½°N., 149°E. Kurile Islands.
	NE	eL	21	06	-				Mag. 6¾-7(Pas). USCGS.
	E	M		08½	-	26	215		
	N	M		09	-	25	120		
	E	M		13	-	19	104		
	N	M		15	-	20	102		
	Z	M		21	-	18	40		
		F	24	25	-				Mag.: m = 7.0, M = 7.3
12	ZV	eP	23	11	53				45°N., 149½°E. Kurile Islands. USCGS.
13	ZV	eP	03	08	45				Confused by strong microseisms.
	NE	eL		30	-				
	E	M		49½	-	18	2½		44°N., 148½°E. Kurile Islands.
	N	M		51	-	18	2		USCGS.
		F	04	20	-				Mag. = 6.0
13	ZV,Z	iP	04	16	54	5	2.6	9000	Compression. PZV 1.1 sec. 0.4 μ
	NE	eS		26	59				Confused by strong microseisms.
	NE	eL		43	-				
	E	M		49½	-	26	4½		44½°N., 148°E. Kurile Islands.
	N	M		50	-	26	4½		USCGS.
	E	M		57	-	20	3½		
	N	M		57	-	20	3		
		F	05	35	-				Mag. = 6.3
13	ZV	iP	06	11	59				Confused by strong microseisms.
	NE	eL		40	-				43½°N., 139°E.
		F	07	10	-				Off Hokkaido, Japan. USCGS.
13	ZV	eP	18	46	41				44°N., 148°E. Kurile Islands. USCGS.
14	ZV	iP	05	47	11				Dilatation.
	N	e(S)		57	18				44°N., 149°E. Kurile Islands.
	NE	eL	06	09	-				USCGS.
	E	M		23½	-	18	1½		
	N	M		26	-	20	1½		Mag. = 5.8
		F	07	00	-				
14	ZV	iP	14	08	38				
14	NE	eL	14	36	-				
	E	M		57	-	21	3		6°S., 131°E. Banda Sea. USCGS.
	N	M		58½	-	19	2		
		F	15	30	-				Mag. = 6.2
14	N	eL	15	54	-				
	N	M	16	01½	-	20	1½		
	E	M		04	-	18	1		
		F		25	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND

SEISMOLOGICAL BULLETIN

NOVEMBER, 1958

DATE	COMPT.	PHASE	G.M.T. h.	m.	s.	PERIOD sec.	AMPLITUDE μ	△ km.	REMARKS
15	ZV	iP	05	47	25			(2400)	
	ZV	i		47	35				37.5°N., 21.5°E. (BCIS)
	ZV	i		47	49				Southern Greece.
	ZV	i		48	21				
	NE	e(S)		51	18				
	NE	e		51	38	12	3.2(H)		
	N	M		56½	-	16	1		
	E	M		57½	-	16	1		
		F	06	05	-				
15	ZV,Z	iP	09	13	03	5	2.1		PZV 1 sec. 0.2 μ
	NE	eL		36	-				
	N	M		45	-	28	5		44°N., 149°E. Kurile Islands.
	E	M		46½	-	26	6		Mag. 6½–6¾(Pas) USCGS.
	N	M		53	-	22	2		
	E	M		53	-	20	1		
		F	10	20	-				Mag. = 6¼
15	NE	e	24	00	-				Very small. 44°N., 148°E.
		F		20	-				Kurile Islands. USCGS.
16	ZV	eP	04	59	50				
	N	M	05	40	-	18	½		
		F		55	-				
16	ZV	iP	06	27	48				Confused by microseisms.
	ZV	i		27	59				44°N., 148½°E. Kurile Islands.
		F	07	20	-				USCGS.
16	N	eL	18	52	-				16°S., 172°W. Samoa Islands region.
	N	M	19	03	-	20	3		USCGS.
	E	M		06	-	20	2		
	Z	M		06	-	20	1½		Mag. = 6¼
		F	-	-	-				overlapped by next shock.
16	ZV,Z	ePKP	18	22	13				
	NE	eL	19	22	-				28°S., 169°E. Loyalty Islands.
	E	M		30	-	18	1		USCGS.
	N	M		30	-	20	½		
		F	20	10	-				
16	ZV	e(P)	20	34	52				42°N., 106°E. Outer Mongolia.
									USCGS.
17	NE	eL	10	53	-				
	E	M	11	10	-	20	½		10½°S., 162½°E. Solomon Islands.
	N	M		12	-	20	½		USCGS.
		F		30	-				
18	N	e(SS)	08	12½	-				Confused by microseisms.
	N	eL		25	-				
	E	M		35	-	22	1½		50½°N., 179°E. Andreanof Islands.
	N	M		41	-	20	1½		USCGS.
		F	09	15	-				
18	NE	eL	19	17	-				Confused by microseisms.
	E	M		23	-	20	½		44°N., 149°E. Kurile Islands.
	N	M		23	-	20	½		USCGS.
		F		45	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

NOVEMBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
19	NE	e(S)	09	46	18				Confused by microseisms.
	N	eL		59	-				
	E	M	10	09	-	26	5½		44°N., 149°E. Kurile Islands.
	N	M		09	-	26	2½		USCGS.
	E	M		16½	-	19	2		
	N	M		16½	-	20	2½		
		F		50	-				Mag. = 6
19	ZV,Z	iP	15	12	57				60½°N., 150½°W. Alaska. USCGS.
20	ZV	eP	05	48	21				Confused by microseisms.
	NE	eL	06	18	-				52°N., 159½°E. Off east coast of
	N	M		25	-	20	2½		Kamchatka. USCGS.
	E	M		26	-	19	2		
		F	07	10	-				Mag. = 6
20	NE	e	07	20	-				Very small. 44°N., 149°E.
		F		30	-				Kurile Islands. USCGS.
20	ZV,Z	iP	14	30	14	4	0.9		Compression. Depth 60 Km.
	ZV	ipP		30	30				PZV 1.3 sec. 0.3 μ
	N	eL		52	-				45°N., 149½°E. Kurile Islands.
	E	M	15	08	-	19	1		USCGS.
	N	M		08	-	20	1½		
		F		35	-				Mag. = 6.1
22	NE	e	01	00	-				10½°S., 112½°E. South of Java.
	N	M		08½	-	26	2½		USCGS.
		F		35	-				
23	ZV	eP	20	26	41				29°N., 87°E. Southern Tibet.
	ZV	e		26	46				USCGS.
	E	M		53½	-	24	½		
	N	M		53½	-	24	1½		
		F	21	05	-				
24	NE	eL	07	50	-				
	E	M	08	02½	-	20	1		57½°S., 65½°W. Drake Passage.
	N	M		02½	-	20	1		USCGS.
		F		20	-				
25	ZV	ePn	02	26	10			930	Pn very faint.
	ZV, NE	eSn		27	51				
	ZV	i(L_g)		28	25				
	E	e		28	31				43°N., ½°W. South western France.
	ZN	i		28	37				USCGS.
	ZV,ZNE	iS_g		28	45	4	7 (S_gH)		
	E	M		29	-	10	2		
	ZV	i(R_g)		29	14				
	ZN	eL		29	27				
	N	M		29½	-	9	2½		
	Z	M		29½	-	8	2½		
		F		33	-				
25	N	eL	09	54	-				36½°N., 141½°E. Near Honshu, Japan.
	N	M	10	09	-	18	1		USCGS.
		F		20	-				

FORM 3718

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN

NOVEMBER, 1958

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
26	ZV	eP	09	25	53				45°N., 149°E. Kurile Islands. USCGS.
27	NE	e	07	45	-				
	E	M		51	-	16	½		
	N	M		51	-	16	½		
		F	08	00	-				
27	NE	e	15	00	-				Confused by microseisms.
	N	M		14	-	22	1		
		F		30	-				
30	ZV	iP	01	45	48	6	1.7	9600	
	N	eS		56	20				
	N	eL	02	10	-				32°N., 137½°E. South of Honshu, Japan. Mag. 6 (Pas). USCGS.
	NE	eL		17	-				
	N	M		25½	-	20	2		
	E	M		26	-	20	3½		
	E	M		32½	-	18	3		
	N	M		32½	-	18	2½		
	Z	M		32½	-	16	½		
		F	03	10	-				Mag. = 6¼

All the magnitudes are the "unified magnitudes" denoted by "m".

FORM 3718

M.O. 640

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR DECEMBER, 1958

Lat. 51° 28′ 6″ N, Long. 0° 18′ 47″ W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2.	$\frac{Ak}{\pi l}$ sec.$^{-1}$
N.	1st August 1957	21.2	21.2	0.00	62.5
E.	1st August 1957	21.1	21.1	0.00	52.0
Z.	17 December 1957	10.7	11.4	-0.05	121

(II) VERTICAL SEISMOGRAPH, PERIOD 1·5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE.	Δ km.	REMARKS.
1	N	eL	03	57	-				
	E	M	04	04½	-	20	1½		32.3°N., 115.8°W. California-Mexico Border. USCGS.
	N	M		05	-	18	1½		
		F		30	-				
2	ZV	e(P)	01	24	43				Very small. 44°N., 149°E. Kurile Islands. USCGS
	N	eL		55	-				
		F	02	10	-				
2	N	eL	23	18½	-				
	N	M		20	-	14	½		
		F		23	-				
3	NE	eL	10	36	-				Confused by microseisms. 19°N., 121½°E. Near coast of Luzon, P.I. USCGS.
	N	M		47½	-	17	5½		
	E	M		48	-	17	4½		
	Z	M		48	-	16	3		
		F	11	15	-				Mag. = 6¼
4	NE	eL	19	52	-				Confused by strong microseisms. 11½°N., 86½°W. Near coast of Nicaragua. USCGS. Mag. = 6¼
	N	M	20	02	-	20	2		
	E	M		03	-	20	4		
		F		30	-				
6	ZV,Z	iP	09	46	05				Confused by strong microseisms. 6½°N., 83°W. South of Panama. Mag. = 6-6¼(Pas). USCGS.
	N	eL	10	07½	-				
	E	M		15	-	24	2½		
	N	M		16	-	24	1½		
	N	M		21	-	18	1½		
		F		45	-				Mag. = 6

Form 3717.

M.O. 040

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND

SEISMOLOGICAL BULLETIN

DECEMBER, 19 58

DATE	COMPT.	PHASE	G.M.T. h.	m.	s.	PERIOD sec.	AMPLITUDE μ	Δ km.	REMARKS
7	N	eL	02	00	-				Confused by strong microseisms.
		F		20	-				21½°N., 121°E. Off Formosa.
									USCGS.
7	NE	e	03	41	-				Small. Confused by microseisms.
		F	04	15	-				4°N., 127°E. Taland Islands.USCGS.
7	NE	e(S)	18	21	17				Confused by microseisms.
	N	eL		36	-				18°N., 105°W. Off coast of Mexico.
	N	M		48	-	20	1½		h about 100 Km. USCGS.
	E	M		48½	-	18	2½		
		F	19	15	-				Mag. = 6
8	ZV,Z	iP	12	20	40	2	0.7		Compression. PZV 1.2 sec. 0.3 μ
	NE	eL		48	-				44°N., 149½°E. Kurile Islands.
	E	M		58½	-	18	2		USCGS.
	N	M		58½	-	18	2		
		F	13	25	-				Mag. = 6.2
9	NE	eL	20	56	-				Confused by microseisms.
	N	M		57	-	17	1½		Dodecanese Islands region. USCGS.
		F	21	10	-				
10	ZV,Z	iP	03	51	42	2	0.9		Compression. 37°N., 71°E. Hindu
									Kush. USCGS. Mag. = 6¼
10	ZV,Z	iPKP$_1$	07	22	31	6	3.3	18200	Compression.
	ZV,Z	ipPKP$_1$		23	52	6	3.7		Depth = 310 Km.
	ZV,Z	iPP		27	16	7	6.8		
	ZV,Z	epPP		28	28				37°S., 176½°E. Off North Island,
	Z	iPPP		31	11				New Zealand.
	Z	epPP		32	19				h about 300 Km. Mag. 6¾(Pas).USCGS.
	ZN	e		35	33				
	NE	ePSKS		37	42				
	ZN	ePPS		40	59				
	E	M	08	44	-	20	3		
	N	M		46	-	20	3½		
		F	09	20	-				Mag. = 6.7
10	N	eSS	22	17.2	-				Confused by strong microseisms.
	NE	eL		23	-				
	N	M		34	-	17	5		24½°N., 109°W. Gulf of California.
	E	M		36½	-	17	9		Mag. 5¾(Pas.)
	Z	M		37	-	17	5		USCGS.
		F	23	35	-				
14	NE	e	08	10	-				Confused by very strong
		F		45	-				microseisms. 35°S., 108½°W.
									Pacific Ocean. USCGS.
17	NE	eL	16	22	-				
	E	M		25	-	20	3½		27½°N., 128°E. Ryukyu Islands.
	N	M		25	-	20	3		USCGS.
	N	M		32	-	15	6		
	Z	M		32	-	14	2½		
		F	16	50	-				Mag. = 6.1
18	ZV	iP	07	41	59				

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND

SEISMOLOGICAL BULLETIN

DECEMBER, 1958

DATE	COMPT.	PHASE	G.M.T. h.	m.	s.	PERIOD sec.	AMPLITUDE μ	Δ km.	REMARKS
19	N	e	03	39	-				Confused by very strong
	N	M		42	-	15	3		microseisms. 38°N., 30°E.
		F		50	-				Western Turkey. USCGS.
19	ZV,Z	iP	11	27	58	1.5	0.4(ZV)		Confused by very strong
	NE	eL		53	-				microseisms. 16°S., 72°W.
	E	M	12	04	-	24	4		Southern Peru. h about 100 Km.
	N	M		04	-	24	3		USCGS.
		F		25	-				Mag. = 6½
20	NE	eL	20	08	-				Confused by very strong
	E	M		16	-	20	3½		microseisms. 28½°N., 127½°E.
	N	M		16	-	20	3½		Ryukyu Islands.region. USCGS.
	N	M		18½	-	16	9½		
	E	M		19½	-	13	4½		
	Z	M		19½	-	12	4		
		F		35	-				Mag. = 6.1
21	ZV,Z	iP	05	55	40	1.5	0.7(ZV)	5860	Confused by very strong
	N	eS	06	03	04	12	2.6		microseisms.
	NE	eSS		06	55				
	N	eL		10	-				44½°N., 81°E. Western Sinkiang
	E	M		16	-	18	26		Province, China. USCGS.
	N	M		16	-	17	67		
	ZE	i(Lg2)		16	43				
	Z	M		19	-	14	16		
		F	07	30	-				Mag. = 6.5
23	ZV	eP	06	39	33				2°N., 79°W. Near coast of Columbia.
	ZV	e		39	43				USCGS.
24	NE	eL	07	320	-				Small. 35½°N., 29°E. Off coast of
		F		40					Turkey. USCGS.
25	ZV,Z	ePKP	08	24	43				
	ZV	e		24	56				5½°S., 151½°E. New Britain.
	NE	ePKS		28	05				Mag. 6¾(Pas). USCGS.
	NE	eL	09	00	-				
	E	M		20	-	20	4		
	N	M		20	-	22	8½		
	Z	M		20	-	20	3½		
		F		30	-				Mag. = 6½
25	ZV	eP	18	42	02				
28	ZV,Z	iP	05	44	54	3	1.1	6970	Compression. PZV 1 sec. 0.6 u
	ZV	iPP		47	08				
	N	eS		53	13				
	N	eL	06	01	-				29½°N., 80°E. Western Nepal-India
	E	M		11½	-	17	4½		Border. USCGS.
	N	M		11½	-	16	5½		
	ZNE	eRg		14	07				
	E	M		14½	-	14	7		
	N	M		14½	-	14	6½		
	Z	M		14½	-	13	5		
		F		45	-				Mag. = 6½

FORM 3718

M.O. 640

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND

SEISMOLOGICAL BULLETIN

DECEMBER, 1958

DATE	COMPT.	PHASE	G.M.T. h.	m.	s.	PERIOD sec.	AMPLITUDE μ	Δ km.	REMARKS
28	ZV,Z	e(P)	11	51	37				Confused by strong microseisms. $71\frac{1}{2}^{o}$N., $7\frac{1}{2}^{o}$W. Jan Mayen Island. USCGS.
	E	e(S)		55	20				
	NE	eL		57	-				
		F	12	10	-				
30	NE	e	09	35	-				Small. Confused by microseisms. $35\frac{1}{2}^{o}$S., $105\frac{1}{2}^{o}$W. Pacific Ocean. USCGS.
		F	10	00	-				
31	ZV,Z	iPKP	02	05	05				23^{o}S., $178\frac{1}{2}^{o}$W. Tonga Island region. USCGS.

All the magnitudes are the "unified magnitudes" denoted by "m".

FORM 3718

DS39181/11/R94 140 2/59 XL