

THE PANAMA CANAL
ENGINEERING AND CONSTRUCTION BUREAU
METEOROLOGICAL AND HYDROGRAPHIC BRANCH

ED 1 1 1952

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

Lat. 8° 57' 39" N.

Long. 79° 33' 29" W.

h = 36 meters.

Lithologic foundation: Basalt.

Time Correction: Within 1.0 sec.

International
Seismological
Centre

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENTS	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Wood-Anderson	I	Photographic	Magnetic	60 mm. per min.	1.3 gr.
Bosch-Omori	II	Smoked Sheet	Air	15 mm. per min.	100 kg.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENTS	COMPONENT	T.	V	C	DETERMINED
Wood-Anderson	N-S	1.0	1370	14 to 1	June 30, 1947
Wood-Anderson	E-W	1.0	1370	18 to 1	June 30, 1947
Bosch-Omori)	Not in operation				
Bosch-Omori)					

Month JANUARY 1952Page No. 1

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#1 Jan. 6	iP	07:48	35				Approximate distance 190 miles
	iS	07:49	15				
	F	07:51					
#2 Jan. 15	iP	07:04	03				U.S.C. & G.S. reports epicenter near 4° Lat., 81° W. Long. (Near Coast of Peru) Approximate distance 950 miles
	F	07:07					
#3 Jan. 18	iP	09:29	07				Approximate distance 255 miles
	eS	09:30	00				
	F	09:32					
#4 Jan. 21	iP	16:21	18				Approximate distance 120 miles
	iS	16:21	43				
	F	16:23					
#5 Jan. 25	iP	21:14	01				Approximate distance 310 miles
	iS	21:15	05				
	F	21:18					
#6 Jan. 26	iP	20:12	24				Approximate distance 185 miles
	eS	20:13	03				
	F	20:15					
#7 Jan. 27	iP	18:24	19				Approximate distance 110 miles
	iS	18:24	42				
	F	18:26					
#8 Jan. 31	eP	20:20	26				Distant
	F	20:28					

W. H. ESSLINGER
Actg. Chief Hydrographer

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Wood-Anderson	E-W	1.0	1370	18 to 1	June 30, 1947
Bosch-Omori)	Not in operation				
Bosch-Omori)					

Month FEBRUARY 1952Page No. 2

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#9 Feb. 5	iP	07:14:57					Approximate distance 250 miles
	iS	07:15:49					
	F	07:18					
#10 Feb. 7	iP	04:33:18					Approximate distance 80 miles
	iS	04:33:35			23.0N		
	F				27.5E		
	-F	04:37					
#11 Feb. 9	iP	08:46:42					Approximate distance 165 miles
	iS	08:47:16					
	F	08:49					
#12 Feb. 11	eP	07:30:51					U.S.C. & G.S. reports epicenter near 6° S. Lat., 110° E. Long. (Java Sea).
	F	07:36					
#13 Feb. 14	eP	16:27:35					
	F	16:29					
#14 Feb. 14	iP	21:03:35			10.0N		Approximate distance 205 miles U.S.C. & G.S. Reports epicenter near 7 1/2° N. Lat., 76 1/2° W. Long. (Northwestern Colombia).
	iS	21:04:18			8.5E		
	F	21:20			22.0N		
#15 Feb. 16	iP	11:53:04					Approximate distance 45 miles
	iS	11:53:13			6.0E		
	F	11:55					
#16 Feb. 16	iP	20:43:23					Approximate distance 215 miles
	iS	20:44:08					
	F	20:47					
#17 Feb. 17	iP	02:46:47					Approximate distance 150 miles
	iS	02:47:18					
	F	02:50					

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

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Month FEBRUARY 1952

No. and Date	Phase	Time G. C. T.			Period s	AMPLI- TUDE mm	REMARKS
		h	m	s			
#18 Feb. 26	iP	11	36	12			Approximate distance 230 miles
	iS	11	37	00			
	F	11	53				
#19 Feb. 26	iP	15	41	10			Distant
	F	16	04				
#20 Feb. 29	iP	11	38	40			Approximate distance 125 miles
	iS	11	39	06			
	F	11	41				
							W. H. ESSLINGER Actg. Chief Hydrographer

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Bosch-Omori)	Not in operation				
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Month MARCH 1952Page No. 4

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#21 Mar. 2	iP	18:54:59				U.S.C. & G.S. reports epicenter near 11° N. Lat., 86-1/2° W. Long. (Near coast of Nicaragua) Approximate distance 675 miles	
	iS	18:56:51					
	F	19:04					
#22 Mar. 3	iP	17:44:05				U.S.C. & G.S. reports epicenter near 11° N. Lat., 86-1/2° N. Long. (Near coast of Nicaragua) Approximate distance 680 miles	
	iS	17:45:58					
	F	17:55					
#23 Mar. 4	eP	1:43:00				U.S.C. & G.S. reports epicenter near 42-1/2° N. Lat., 143-1/2° E. Long. (Near coast of Hokkaido Japan). Heavy casualties---- extensive damage.	
	F	3:53					
#24 Mar. 4	iP	15:03:41				Approximate distance 75 miles	
	iS	15:03:56					
	F	15:08					
#25 Mar. 8	eP	02:44:13				Distant	
	F	02:46					
#26 Mar. 10	iP	07:51:12				Approximate distance 60 miles	
	iS	07:51:24					
	F	07:54					
#27 Mar. 13	eP	16:29:49				Distant	
	F	16:31					
#28 Mar. 18	iP	20:29:45				Approximate distance 305 miles	
	iS	20:30:48					
	F	20:33					
#29 Mar. 21	e	14:25:53				Indistinct -- nearby.	
	F	14:27					
#30 Mar. 25	eP	21:42:25				Approximate distance 40 miles	
	eS	21:42:33					
	F	21:44					
#31 Mar. 26	iP	3:43:30				Approximate distance 285 miles	
	iS	3:44:29					
	F	3:47					

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

Month MARCH 1952Page No. 5

No. and Date	Phase	Time G. C. T.			Period s	AMPLI- TUDE mm	REMARKS
		h	m	s			
#32 Mar. 26	e F	15:49:59 15:52					Nearby
#33 Mar. 27	iPNE iSNE MN ME LN LE CN CE FNE	22:03:19 22:03:28 22:03:31 22:03:30 22:03:42 22:03:43 22:03:49 22:03:51 22:07			25.0N 58.0E		Approximate distance 45 miles Intensity IV modified Mercalli scale. Felt indoors by many; windows rattled, Walls creaked. Sensation like heavy truck striking building.
#34 Mar. 30	iPNE iSNE MN ME LNE FNE	22:30:06 22:30:48 22:30:52 22:30:50 22:31:10 22:34			7.0N 6.0E		Approximate distance 200 miles

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DEPARTMENT OF OPERATION AND MAINTENANCE
SECTION OF METEOROLOGY AND HYDROGRAPHY

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Bosch-Omori					

Month APRIL 1952Page No. 6

No. and Date	Phase	Time G. M. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#35 Apr. 12	eP	09:43:27					Approximate distance 180 miles
	IS	09:44:05					
	F	09:46					
#36 Apr. 17	1P	05:25:27					Approximate distance 140 miles
	IS	05:25:56			10.0N		
	F	05:29					
#37 Apr. 19	1P	10:00:45					C. & G.S. reports epicenter near the Columbia-Venezuela border. 7° N. Lat., 71½° W. Long. Approximate distance 500 miles
	IS	10:02:12			5.0N		
	eL	10:03:24			6.0E		
	F	10:36					
#38 Apr. 21	eP	12:22:55					Approximate distance 195 miles
	IS	12:23:36					
	F	12:26					
#39 Apr. 21	eP	16:07:59					Approximate distance 220 miles
	IS	16:08:45					
	F	16:11					
#40 Apr. 21	eP	18:59:41					Approximate distance 270 miles
	IS	19:00:37					
	F	19:03					
#41 Apr. 21	1P	23:16:06					Approximate distance 200 miles
	IS	23:16:48			6.5N		
	F	23:23			8.0E		
#42 Apr. 25	1P	06:03:16					Approximate distance 230 miles
	IS	06:04:04			14.0N		
	F	06:14			17.0E		

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Bosch-Omori)					

Month MAY, 1952Page No. 7

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE	REMARKS
		h	m	s			
#43 May 4	1P	08:16:13					
	1S	08:16:42					
	F	08:19					Approximate distance 140 miles
#44 May 4	1P	22:05:36					
	1S	22:05:46			15.0E		
	F	22:08					Approximate distance 50 miles
*NOTE: Time clock off. Time within one minute on quakes #43 & #44.							
#45 May 12	1P	08:47:26					
	1S	08:47:58					
	F	08:50					Approximate distance 155 miles
#46 May 13	1P	19:32:51					U.S.C. & G.S. reports epicenter near 10-1/2° N. Lat., 85° W. Long. (Costa Rica)
	eS	19:34:06					
	F	20:00					Approximate distance 450 miles
#47 May 14	eP	21:13:58					U.S.C. & G.S. reports epicenter near 16-1/2° N. Lat., 86-1/2° W. Long. (off north coast of Honduras)
	F	21:28					Approximate distance 690 miles
#48 May 16	1P	20:46:21			42.5N		Felt by many. Intensity IV Modified Mercalli Scale.
	1S	20:46:49			51.0E 78.0N 71.0E		U.S. Coast & Geodetic Survey Reports epicenter near 6-1/2° N. Lat., 79° W. Long (Off coast of Panama)
	L	20:48:40					
	F	21:08					Approximate distance 135 miles
#49 May 16	1P	21:17:01					
	1S	21:17:32					
	F	21:19					Approximate distance 150 miles
#50 May 16	1P	21:58:42					
	1S	21:59:11					
	F	22:01					Approximate distance 140 miles
#51 May 16	1P	22:09:30					
	1S	22:09:58			5.5N		
	F	Merged with #52			7.0E		Approximate distance 135 miles

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Month MAY, 1952Page No. 8

No. and Date	Phase	Time G. C. T.			Period s	AMPLI- TUDE mm	REMARKS
		h	m	s			
#52 May 16	1P 1S F	22:10:45 22:11:12 22:13				9.0N 9.0E	Approximate distance 130 miles
#53 May 16	1P 1S F	22:53:02 22:53:30 22:55					Approximate distance 135 miles
#54 May 17	1P 1S F	13:51:27 13:51:55 13:53					Approximate distance 135 miles
#55 May 17	1P 1S F	15:48:08 15:48:37 15:52				12.5N 17.0E	Approximate distance 140 miles
#56 May 18	1P 1S F	06:11:51 06:12:19 06:14					Approximate distance 135 miles
#57 May 18	1P 1S F	23:19:35 23:20:04 23:22					Approximate distance 140 miles
#58 May 19	1P 1S F	07:12:53 07:13:08 07:16				19.5N	Felt by few. Intensity II Modified Mercalli scale. Approximate distance 75 miles.
#59 May 21	1P 1S F	15:50:23 15:50:52 15:54				9.0N 8.0E	Approximate distance 140 miles
#60 May 25	1P 1S F	15:07:08 15:07:38 15:09					Approximate distance 145 miles
#61 May 25	1P 1S F	23:28:29 23:28:58 23:31					Approximate distance 145 miles
#62 May 28	1P 1S F	03:37:42 03:38:13 03:41					Approximate distance 150 miles
#63 May 28	1P 1S F	10:14:14 10:14:43 10:16					Approximate distance 140 miles
#64 May 28	1P 1S F	23:24:12 23:24:35 23:26					Approximate distance 110 miles

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Bosch-Omori	Not in operation				
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Month JUNE 1952Page No. 9

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#65 June 1	1P	20	51	23			Approximate distance 105 miles
	1S	20	51	45			
	F	20	54				
#66 June 1	1P	23	48	34			Felt. intensity III modified Mercalli Scale. Approximate distance 40 miles
	1S	23	48	42	38.ON		
	F	Merged with #67			37.5E		
#67 June 1	1P	23	50	22			Approximate distance 45 miles
	1S	23	50	31	7.ON		
	F	23	52		11.0E		
#68 June 3	1P	12	24	50			U.S.C. & G.S. reports epicenter near 8 1/2° N. Lat., 77° W. Long. (Northwest coast of Colombia) Approximate distance 145 miles
	1S	12	25	20	17.ON		
	F	12	30		19.5E		
#69 June 4	1P	21	31	42			Approximate distance 205 miles
	1S	21	32	25			
	F	21	41				
#70 June 5	1P	05	57	28			U.S.C. & G.S. reports epicenter near 6° N. Lat., 77 1/2° W. Long. (Near West Coast of Colombia) Approximate distance 205 miles
	1S	05	58	11			
	F	06	13				
#71 June 7	1P	01	33	38			Approximate distance 145 miles
	1S	01	34	08			
	F	01	38				
#72 June 8	1P	06	27	38			Approximate distance 145 miles
	1S	06	28	08			
	F	06	30				
#73 June 8	1P	06	53	32			Approximate distance 145 miles
	1S	06	54	02			
	F	06	56				

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

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Month JUNE, 1952

Page No. ----

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE	REMARKS
		h	m	s			
#74 June 8	iP iS F	16:00	43				Approximate distance 155 miles
#75 June 11	eP F	00:39	30				U.S.C. & G.S. reports epicenter near 32° S. Lat., 67 1/2° W. Long. (Argentina) Approximate distance 3,000 miles
#76 June 11	iP iS F	05:47	28				Approximate distance 220 miles
#77 June 20	iP iS F	19:30	22		5.ON 6.OE		Approximate distance 120 miles
#78 June 22	iP F	04:10	33				Distant
#79 June 27	iP iS F	19:27	32				Approximate distance 85 miles
#80 June 28	iP iS F	12:12	15		23.ON 36.OE		Approximate distance 40 miles
#81 June 29	iP iS F	09:58	14				Approximate distance 450 miles

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Bosch-Omori					

Month July, 1952Page No. 11

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#82 July 3	iP	00:53:24					U.S.C. & G.S. reports epicenter near 5 1/2° N. Lat., 78° W. Long. (West Coast of Colombia) Approximate distance 230 miles
	iS	00:54:12			6.0N 5.5E		
	F	01:05					
#83 July 9	iP	18:16:11				15.5N 29.0E	Felt by few. Intensity II modified Mercalli Scale U.S.C. & G.S. reports epicenter near 7 1/2° N. Lat., 82° W. Long. (Off coast of Panama) The Master, British M/S AGAMEMNON, reports on 9 July 1952 at 1814 GCT in Lat. 7° 20' N. Lat., 82° 20' W. Long., quote: "The vessel shuddered consider- ably for a total of three seconds." Approximate distance 180 miles
	iS	18:16:52			28.0N		
	F	18:32					
#84 July 9	iP	20:37:41				13.5N 10.0E	Approximate distance 180 miles
	iS	20:38:21					
	F	20:53					
#85 July 10	iP	01:21:30					Approximate distance 200 miles
	iS	01:22:11					
	F	01:24					
#86 July 10	iP	08:23:47					Approximate distance 180 miles
	iS	08:24:26					
	F	08:27					
#87 July 14	iP	06:42:47					Approximate distance 225 miles
	iS	06:43:34					
	F	06:46					

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

Month July, 1952

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No. and Date	Phase	Time G. C. T.			Period s	AMPLI- TUDE mm	REMARKS
		h	m	s			
#88 709 July 21	eP	12:00:28					U.S.C. & G.S. reports epicenter near 35.1° N. Lat., 118.9° W. Long. (Tulare Valley, Southern California) Several killed and extensive damage. Approximate distance 3000 miles
	F	13:00					
#89 July 28	iP	17:32:11				7.0N	Approximate distance 185 miles
	iS	17:32:49				7.0E	
	F	17:38					
#90 July 28	eP	20:12:45				3.0N	Approximate distance 120 miles
	iS	20:13:10				4.5E	
	F	20:15					

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Bosch-Omori	II	Smoked Sheet	Air	15 mm. per min.	100 kg.

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Bosch-Omori					

Month AUGUST 1952Page No. 13

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
# 91 Aug. 1	1P	22	55	43			Approximate Distance 115 miles
	1S	22	56	07			
	F	22	58				
# 92 Aug. 2	1P	06	42	30			Approximate Distance 115 miles
	1S	06	42	54			
	F	06	45				
# 93 Aug. 13	1P	11	56	20			Approximate Distance 255 miles
	1S	11	57	13			
	F	12	02				
# 94 Aug. 23	1P	14	23	28			U.S. CGS - Provisional Epicenter 7° N. Lat. 82° W. Long. Approximate Distance 195 miles
	1S	14	24	09			
	F	14	36				
# 95 Aug. 25	1P	02	57	33			Approximate Distance 54 miles.
	1S	02	57	52			
	F	02	58	44			
# 96	1P	03	16	17			Approximate Distance 115 miles
	1S	03	16	41			
	F	03	18	19			

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

Lat. 8° 57' 39" N.

Long. 79° 33' 29" W.

Lithologic foundation: Basalt.

Time Correction: Within 1.0 sec.

h = 36 meters
International Seismological Centre

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENTS	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Wood-Anderson	I	Photographic	Magnetic	60 mm. per min.	1.3 gr.
Bosch-Omori	II	Smoked Sheet	Air	15 mm. per min.	100 kg.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENTS	COMPONENT	T.	V	C	DETERMINED
Wood-Anderson	N-S	1.0	1370	14 to 1	June 30, 1947
Wood-Anderson	E-W	1.0	1370	18 to 1	June 30, 1947
Bosch-Omori					
Bosch-Omori	Not in operation				

Month SEPTEMBER, 1952

Page No. 1

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#97 Sept. 5	1 P	10	49	34			
	1 S	10	50	12			
	F	10	51	56			Approximate distance - 165 miles
#98 Sept. 7	1 P	12	55	17			
	1 S	12	55	36			
	F	12	59				Approximate distance - 90 miles Felt, Intensity IV
#99 Sept. 9	1 P	12	55	57			U. S. G. S. preliminary determination of epicenter 9°N, 84-1/2°W.
	1 S	12	56	40			
	F	13	19				Approximate distance 205 miles.
#100 Sept. 10	P	20	40	01			
	S	20	41	10			
	F	20	46				Approximate distance - 330 miles
#101 Sept. 11	P	5	29	36			U. S. G.S. preliminary determination of epicenter 9°N, 85-1/2°W.
	S	5	30	45			
	F	5	38				Approximate distance - 330 miles
#102 Sept. 18	1 P	1	58	50			
	1 S	1	54	59			
	F	1	58				Approximate distance - 43 miles



SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

Month SEPTEMBER 1952

No. and Date	Phase	Time G. C. T.			Period s	AMPLI- TUDE mm	REMARKS
		h	m	s			
#103	1 P	16	02	57			
Sept. 19	1 ES	16	03	29			
	F	16	05				Approximate distance - 95 miles
#104	1 P	2	36	57			
Sept. 21		2	42	11			
	F	2	58				Approximate distance - 2240 miles

W. H. ESSLINGER
Chief Hydrographer

ENGINEERING AND CONSTRUCTION BUREAU
METEOROLOGICAL AND HYDROGRAPHIC BRANCH

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

Lat. 8° 57' 39" N.

Long. 79° 33' 29" W.

h = 36 meters.

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International
Seismological
Centre

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENTS	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Wood-Anderson	I	Photographic	Magnetic	60 mm. per min.	1.3 gr.
Bosch-Omori	II	Smoked Sheet	Air	15 mm. per min.	100 kg.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENTS	COMPONENT	T.	V	€	DETERMINED
Wood-Anderson	N-S	1.0	1370	14 to 1	June 30, 1947
Wood-Anderson	E-W	1.0	1370	14 to 1	June 30, 1947
Bosch-Omori)	Not in operation				
Bosch-Omori)					

Month OCTOBER, 1952Page No. 16

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
Oct. 3 #105	1P	07:31:36					
	1S	07:32:19					
	F	07:35				43 sec. approx. distance 210 M.	
Oct. 3 #106	1P	07:37:51					
	1S	07:38:35				U.S.C.G.S. preliminary determination of epicenter 6-1/2° N., 83° W.	
	F	07:47				44 sec. approx. distance 210 M.	
Oct. 8 #107	1P	05:33:21					
	1S	05:33:47					
	F	05:35				26 sec. approx. distance 125 M.	
Oct. 14 #108	1P	20:41:08					
	1P	22:39:35					
	1P	23:57:00					
#109	1S	23:57:50					
	F	24:00:09				50 sec. approx. distance 240 M.	
	1P	02:12:38					
Oct. 21 #111	1S	02:13:41				U.S.C.G.S. preliminary determination of epicenter 9-1/2° N., 84-1/2° W.	
	F	02:19				63 sec approx. 300 M.	
	1P	02:32:00					
#112	1S	02:33:03				U.S.C.G.S. preliminary determination of of epicenter 9-1/2° N., 84-1/2° W.	
	F	02:40				63 sec. approx. 300 miles.	
	1P	06:10:19					
#113	1BS	06:11:42				U.S.C.G.S. preliminary determination of epicenter 9-1/2° N., 84-1/2° W.	
	F	06:15					
	1P	06:36:58					
#114	F	06:45				U.S.C.G.S. preliminary determination of epicenter, 9-1/2° N., 84-1/2° W.	
	1P	04:32:33					
Oct. 28 #115							
Oct. 30 #116	1P	09:19:39					
	1S	09:20:13					
	F	09:22				Approx. distance 160 M.	
Oct. 31 #117	1P	21:11:29					
	1S	21:12:00					
	F	21:14				Approx. distance 150 M.	

ENGINEERING AND CONSTRUCTION BUREAU
METEOROLOGICAL AND HYDROGRAPHIC BRANCH

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

Lat. 8° 57' 39" N.

Long. 79° 33' 29" W.

h = 36 meters.

Lithologic foundation: Basalt.

Time Correction: Within 1.0 sec.

International
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INSTRUMENTS—FIXED CONSTANTS

INSTRUMENTS	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
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INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENTS	COMPONENT	T.	V	G	DETERMINED
Wood-Anderson	N-S	1.0	1370	14 to 1	June 30, 1947
Wood-Anderson	E-W	1.0	1370	18 to 1	June 30, 1947
Bosch-Omori)	Not in operation				
Bosch-Omori)					

Month NOVEMBER, 1952Page No. 17

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#117 Nov. 4	eP F	17:16:09 19:00					
#118 Nov. 9	eP IS F	13:50:05 50:21 13:52				Approx. distance 75 miles	
#119 Nov. 9	IP IS F	17:56:49 57:23 17:59:				Approx. distance 160 miles	
#120 Nov. 18	IP IS F	04:35:26 36:11 04:38				Approx. distance 215 miles	
#121 Nov. 19	IP IS F	15:51:13 51:26 15:53				Approx. distance 70 miles	
#122 Nov. 20	eP F	15:39:25 15:56				(U.S.C.G.S. Provisional determination of epicenter 12-1/2° N., 88° W.)	
#123 Nov. 22	eP F	16:33:07 16:36					
#124 Nov. 26	IP IS F	09:26:12 09:26:40 09:28				Approx. distance 135 miles	
#125 Nov. 28	IP IS F	01:13:34 01:14:02 01:22				Approx. distance 135 miles, felt, Intensity II	
#126 Nov. 28	eP IS F	03:10:55 03:11:24 03:13				Approx. distance 140 miles	

W. H. ESBLINGER
Chief Hydrographer

THE PANAMA CANAL
ENGINEERING AND CONSTRUCTION BUREAU
METEOROLOGICAL AND HYDROGRAPHIC BRANCH

SEISMOLOGICAL RECORD AT BALBOA HEIGHTS, CANAL ZONE

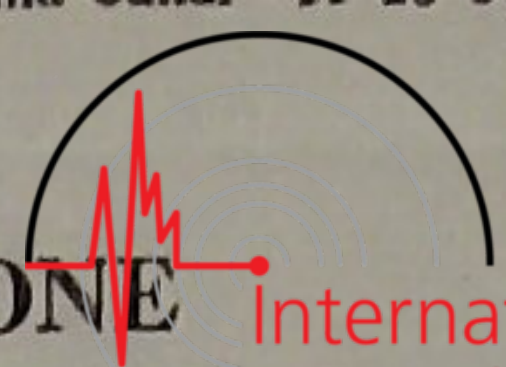
Lat. 8° 57' 39" N.

Long. 79° 33' 29" W.

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Lithologic foundation: Basalt.

Time Correction: Within 1.0 sec.



International
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INSTRUMENTS—FIXED CONSTANTS

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INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENTS	COMPONENT	T ₀	V	G	DETERMINED
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Wood-Anderson	E-W	1.0	1370	18 to 1	June 30, 1947
Bosch-Omori)	Not in operation				
Bosch-Omori)					

Month DECEMBER, 1952Page No. 19

No. and Date	Phase	Time G. C. T.			Period	AMPLI- TUDE mm	REMARKS
		h	m	s			
#128 Dec. 4	eP IS F	22:14:09 - 14:28 22:16				Approximately 90 miles	
#129 Dec. 14	eP IS F	10:56:28 57:16 11:02				Approximately 150 miles	
#130 Dec. 18	eP eS F	23:37:28 23:37:47 23:39				Approximately 40 miles	
#131 Dec. 25	IP IS F	09:42:42 42:50 09:46				Approximately 40 miles FELT - INTENSITY II	
#132 Dec. 30	IP eS F	12:08:10 09:30 12:25				Approximately 380 miles	

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