

NOAA

# SEISMOLOGICAL REPORT

for

I. G. Y.

July, 1957.

Seismological Observatory,

Tôhoku University.

Sendai, Japan.

STATION

Seismological Observatory (Mukaiyama Observatory),  
Tohoku University, Sendai, Japan.



Longitude : 140° 51' 30" E

Latitude : 38° 14' 32" N

Elevation : 128 m

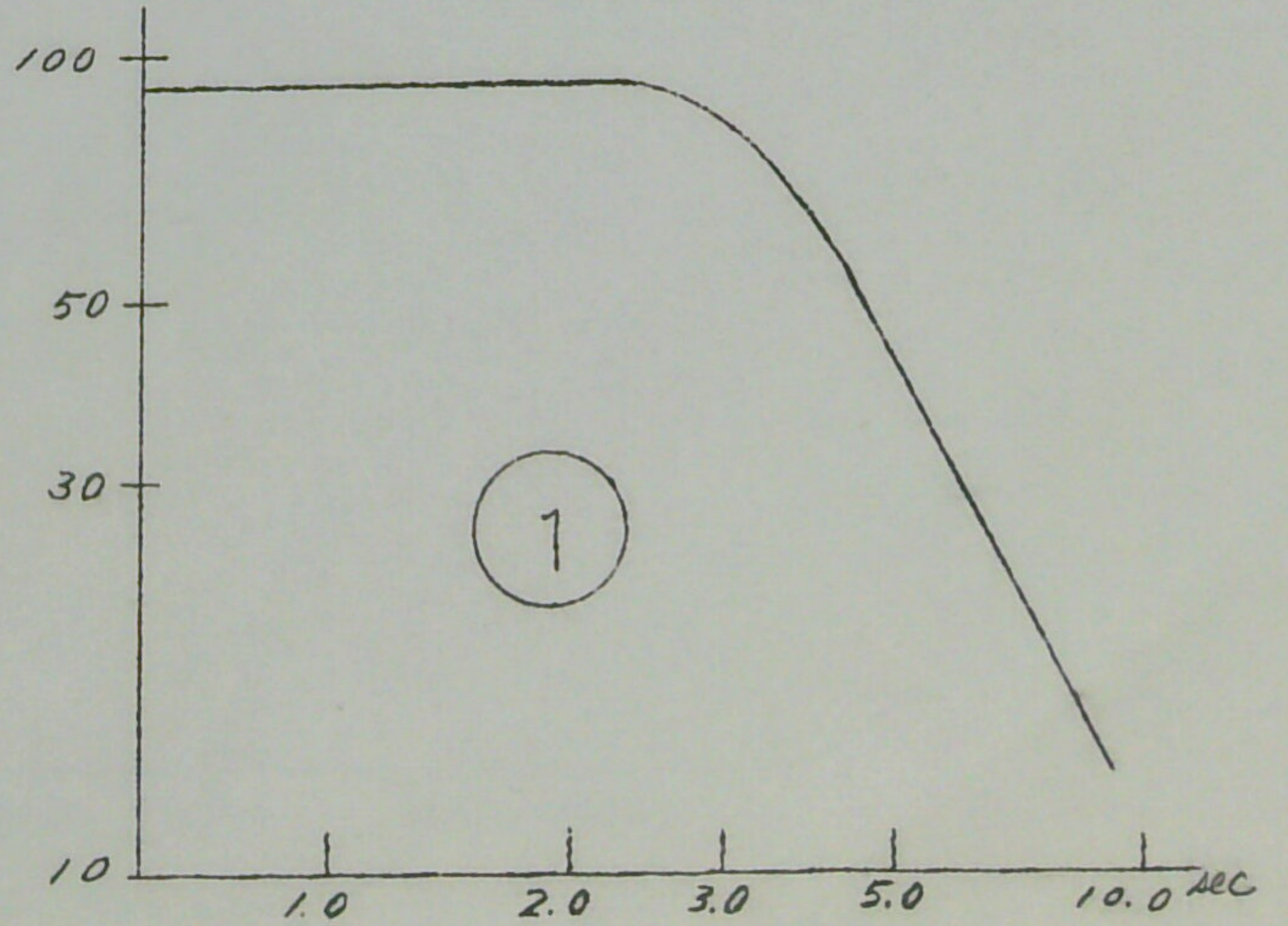
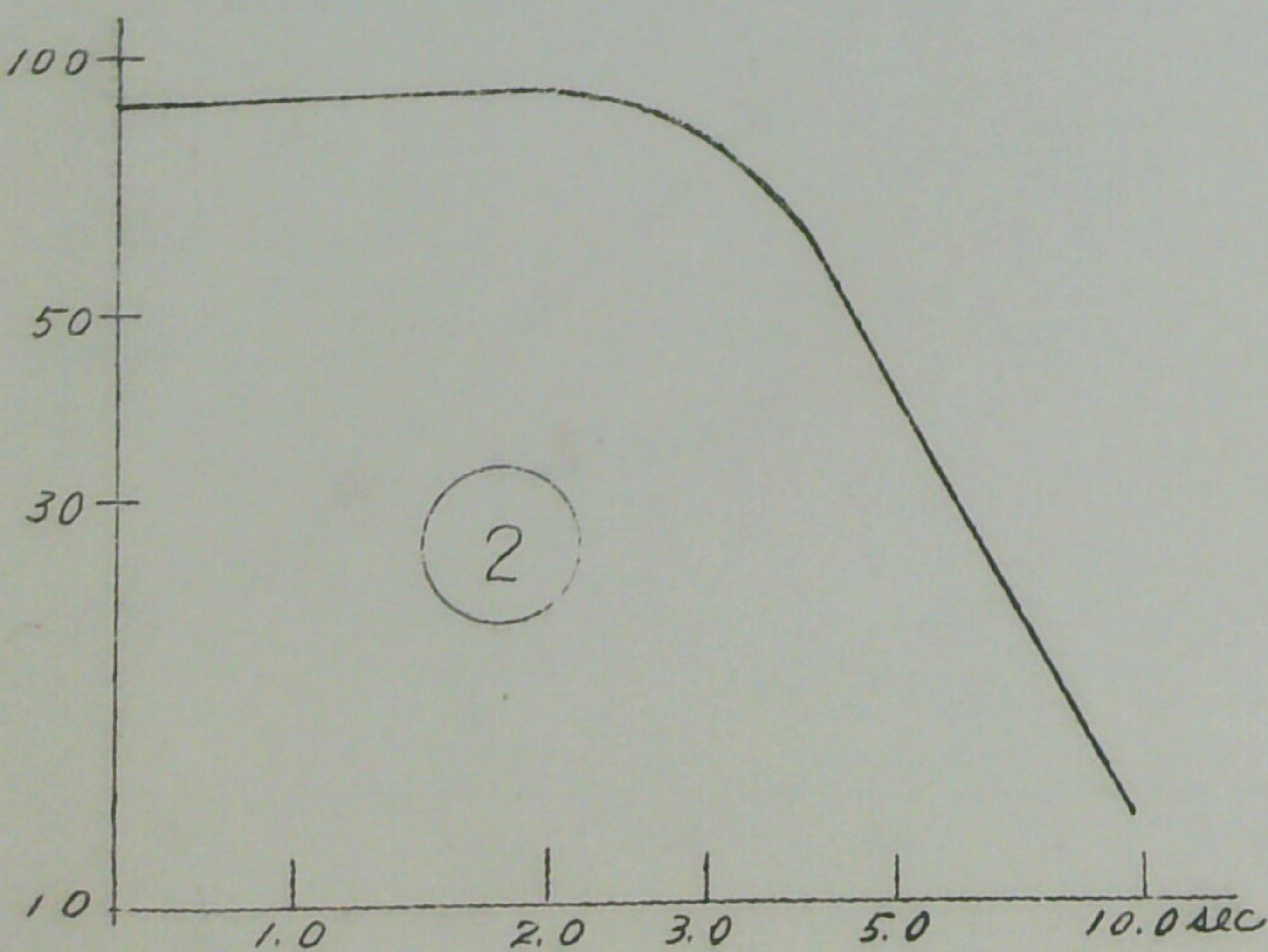
Foundation : Sandstone

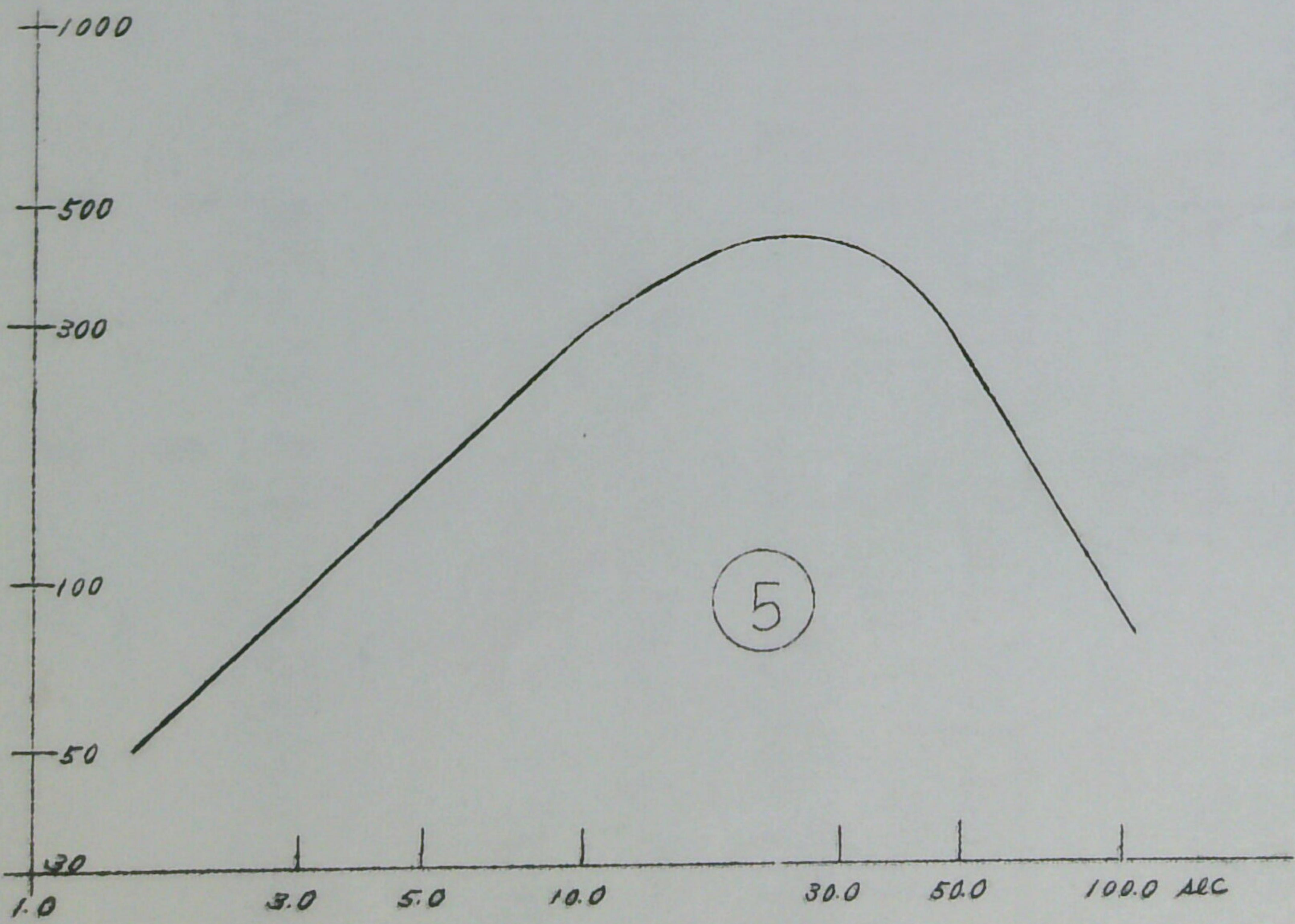
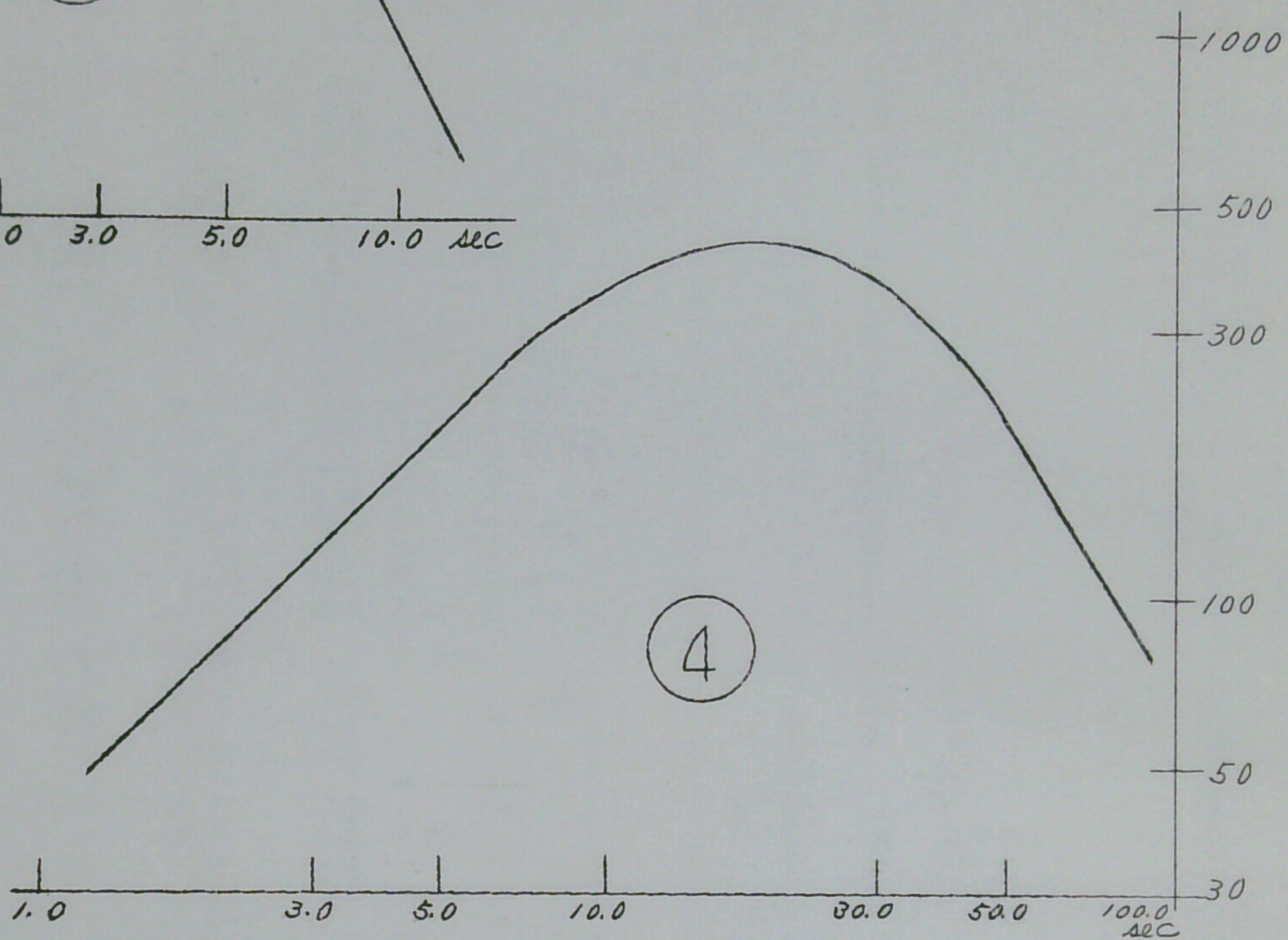
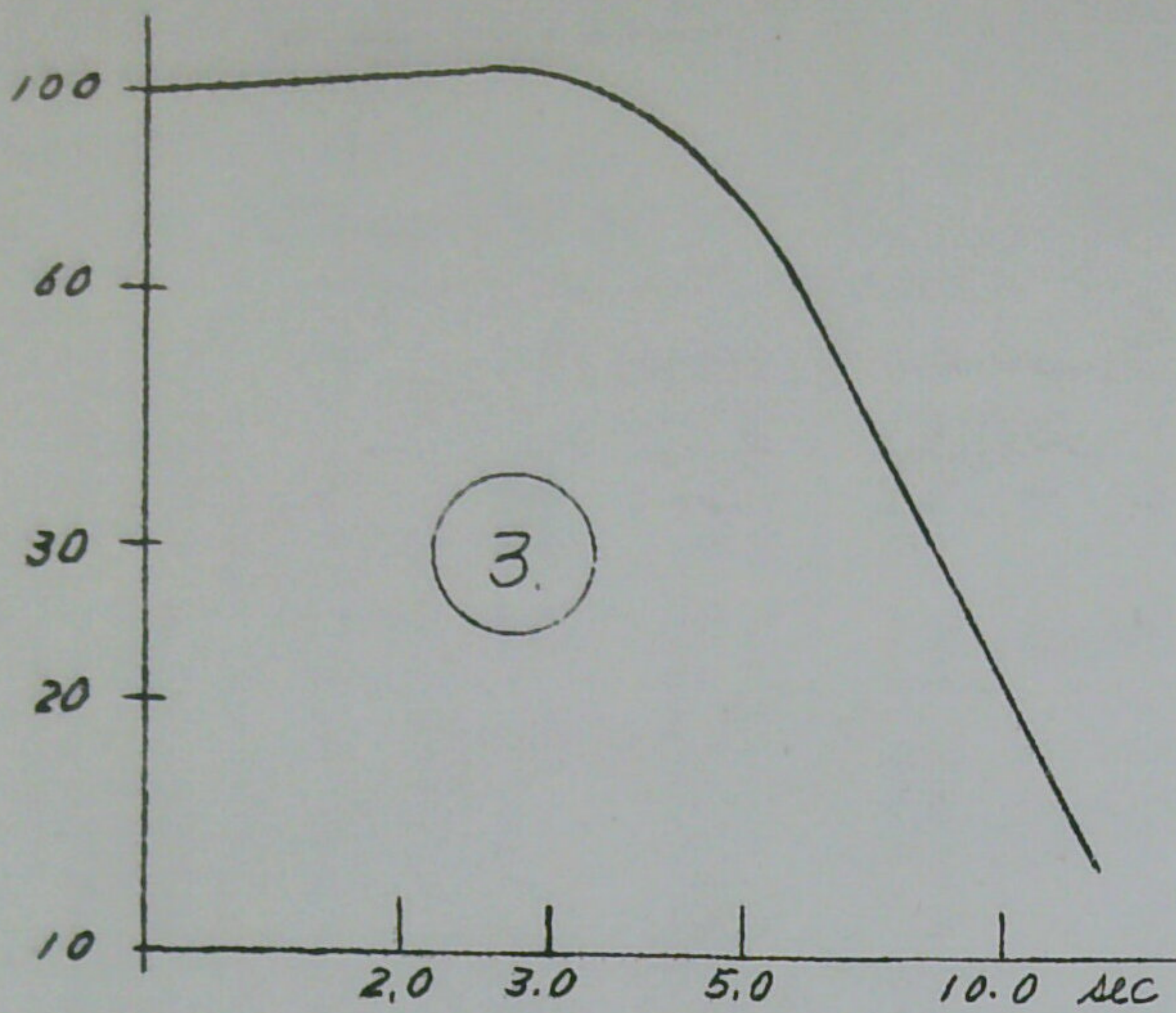
Instrument

NO.	Name	Comp.	Vmax	T <sub>1</sub>	T <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	ρ	α	Date of Calibration
1	(200kg) Wiechert	E-W	90	3.5		0.59		0.6		26 <sup>th</sup> , July
2	(200kg) Wiechert	N-S	88	3.5		0.59		0.7		"
3	(1,200kg) Wiechert	U-D	100	4.3		0.57		0.35		"
4	Long-Period Electro-magnetic Seismograph	E-W	430	31.7	39.7	1.3	1.0		0.0	9 <sup>th</sup> , July
5	"	N-S	430	32.2	53.2	1.1	1.0		0.0	"

NOTATION

- Vmax : Maximum magnification
- T<sub>1</sub> : Period of pendulum.
- T<sub>2</sub> : Period of galvanometer.
- h<sub>1</sub> : Damping constant of pendulum.
- h<sub>2</sub> : Damping constant of galvanometer.
- ρ : Solid friction
- α : Coupling factor.







Readings :

Serial NO.	Date	Phase	Time (G. M. T)			Period sec	Amplitude			$\Delta$ ca	Instrument	Remarks
			h	m	s		N <sub>mm</sub>	E <sub>mm</sub>	Z <sub>mm</sub>			
1	July 1	ePN	19	38	08.4	1.8	+	—	—	41°	2	
		ePE	"	"	09.0	—	—	—	—			
		ePZ	"	"	08.5	—	—	+	—			
		eSN	"	44	29.0	2.4	+	—	—			
		eSE	"	44	30.0	2.1	—	+	—			
19	14	iPN	06	35	25.0	1.7	+0.25	—	—	74°	2	
		iPE	"	"	25.1	1.4	—	-1.5	—			
		iPZ	"	"	25.1	—	—	—	-2.0			
		iPE	"	"	25.5	9.6	—	+1.0	—			
		iPN	"	"	25.5	7.9	+0.6	—	—			
		eXN	"	"	23.0	1.3	—	—	—			
		eXE	"	"	24.0	1.2	—	—	—			
		iXZ	"	"	24.1	1.5	—	—	—			
		iSE	"	44	42.0	12.0	—	—	—			
		eXN	"	44	53.0	7.9	—	—	—			
		iLE	"	56	47.0	20.0	—	—	—			
iLN	"	"	45.0	20.0	—	—	—					
20	14	ePE	08	22	47.6	3.7	—	+	—		4	
		ePN	"	"	47.8	4.3	—	—	—			
		eSE	"	32	34.0	6.3	—	—	—			
		eSN	"	"	41.0	6.0	—	—	—			
		eXN	"	33	24.0	14.0	—	—	—			
		iLE	"	47	36.0	25.0	—	—	—			
		iLN	"	"	37.0	22.0	—	—	—			
		iXE	"	48	30.0	24.0	—	—	—			
		iXN	"	48	35.0	24.0	—	—	—			
22	17	iPN	11	19	44.4	7.6	-0.4	—	—	55°	5	
		iPE	"	"	44.2	8.0	—	-0.4	—			
		iSN	"	27	18.0	14.8	—	—	—			
		eSE	"	"	18.0	15.6	—	—	—			
26	18	ePE	12	08	46.2	0.8	—	+	—	8°	1	
		iPN	"	"	45.7	2.0	-0.2	—	—			
		iSE	"	10	17.0	2.9	—	—	—			
		iSN	"	"	17.5	3.1	—	—	—			
32	22	iPN	10	17	58.8	0.4	+0.1	—	—	5°	2	
		iPE	"	"	58.8	0.4	—	-0.2	—			
		iPN	"	"	58.9	1.0	+0.2	—	—			
		iPE	"	"	59.5	1.2	—	-0.3	—			
		iSN	"	19	01.4	1.5	+	—	—			
		iSE	"	"	00.3	3.0	—	—	—			
		iXN	"	"	15.6	2.0	—	—	—			
33	23	iPN	00	51	40.8	4.0	+0.2	—	—	32°	5	
		iPE	"	"	40.6	4.1	—	-0.2	—			
		eSE	"	56	30.0	15.0	—	+	—			
		iXE	"	58	40.0	31.0	—	—	—			
		iXN	"	"	39.4	29.0	—	—	—			
		iLN	01	02	16.0	16.0	—	—	—			
		eXN	"	05	54.0	19.0	—	—	—			
		eXE	"	"	58.0	19.0	—	—	—			
41	28	ePE	06	53.8	—	—	—	—	—	102°	4	
		ePPE	"	58	14.0	23.0	—	—	—			
		ePPPE	07	02	34.0	18.0	—	—	—			
		eXE	"	04	43.0	20.0	—	—	—			
		eSE	"	05	55.0	33.0	—	—	—			
		eSN	"	05	51.0	—	—	—	—			
		eSSN	"	12	46.0	30.0	—	—	—			
		eSSE	"	"	48.0	33.0	—	—	—			
		eSSSN	"	16	41.0	28.0	—	—	—			
		eSSSE	"	"	44.0	30.0	—	—	—			
		eXE	"	19	56.0	32.0	—	—	—			
		iLN	"	22	40.0	46.0	—	—	—			
		iLE	"	"	40.1	45.0	—	—	—			
		iXE	"	29	18.0	47.0	—	—	—			
iXE	"	31	38.0	47.0	—	—	—					
iXN	"	"	38.0	33.0	—	—	—					
eXN	"	45	53.0	18.0	—	—	—					
eXN	"	48	38.0	22.0	—	—	—					

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for

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Aug., 1957

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## STATION

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Tohoku University, Sendai, Japan.

Longitude :  $140^{\circ} 51' 30''$  E  
 Latitude :  $38^{\circ} 14' 32''$  N  
 Elevation : 128 m  
 Foundation : Sandstone

## Instrument

NO	Name	Comp.	$V_{max}$	$T_1$ <small>sec</small>	$T_2$ <small>sec</small>	$h_1$	$h_2$	$\rho$	$\alpha$	Date of Calibration
1	Wiechert (200kg)	E-W	90	3.5		0.6		0.6 <sup>min</sup>		26 <sup>th</sup> , July
2	Wiechert (200kg)	N-S	88	3.5		0.6		0.7		"
3	Wiechert (1,200kg)	U-D	100	4.3		0.6		0.4		"
4	Long-Period Electro-magnetic Seismograph	E-W	430	31.7	39.7	1.3	1.0		0.0	"
5	"	N-S	430	32.2	53.2	1.1	1.0		0.0	"
6	Short-Period Electro-magnetic Seismograph	E-W	8.500*	1.0	1.2	2.0	1.0		0.0	20 <sup>th</sup> , July
7	"	N-S	9.000*	1.0	1.2	2.0	1.1		0.0	"
8	"	U-D	8.200*	1.0	1.3	2.0	1.0		0.0	"

## NOTATION

$V_{max}$  : maximum magnification.

$T_1$  : Period of pendulum.

$T_2$  : Period of galvanometer.

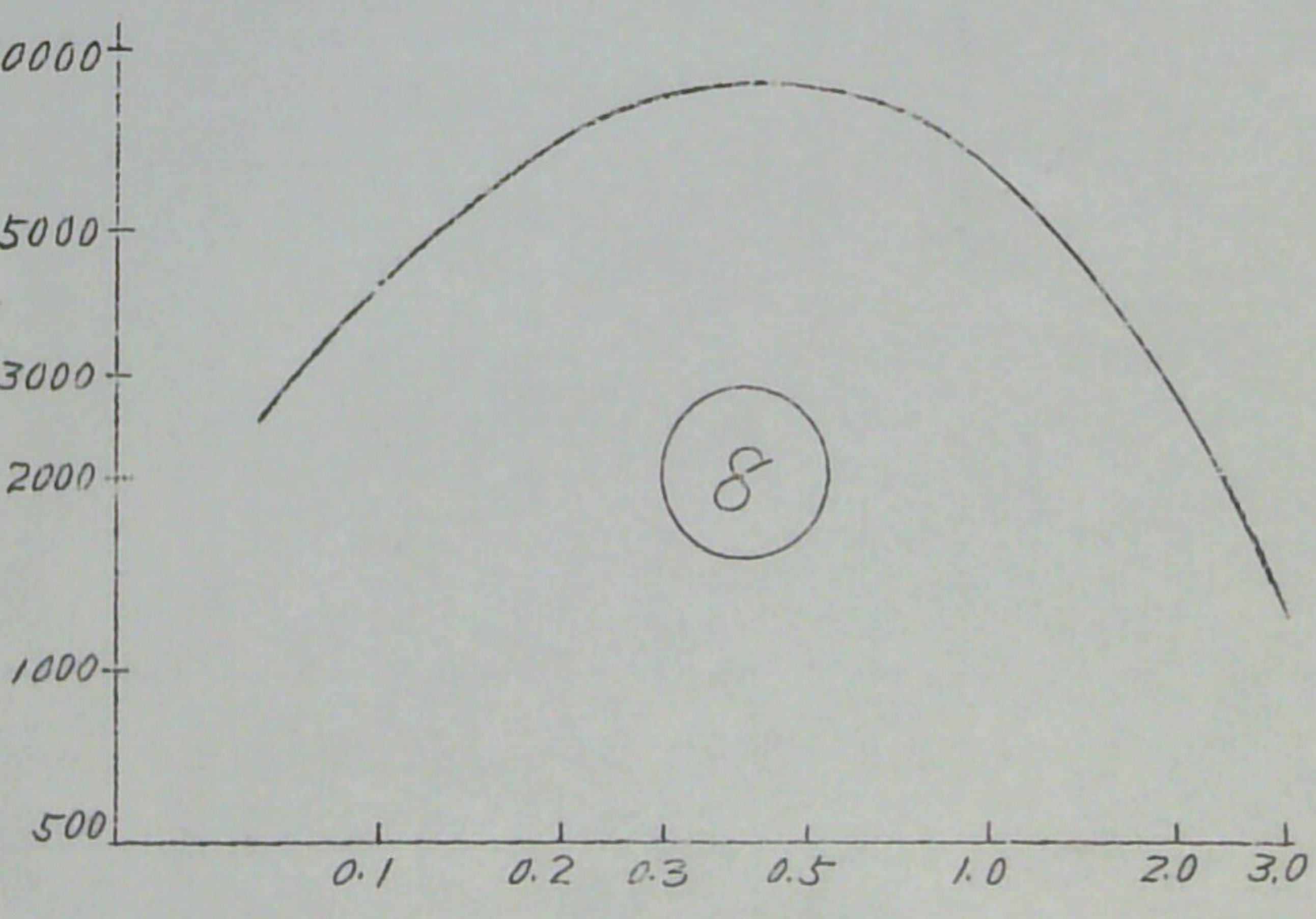
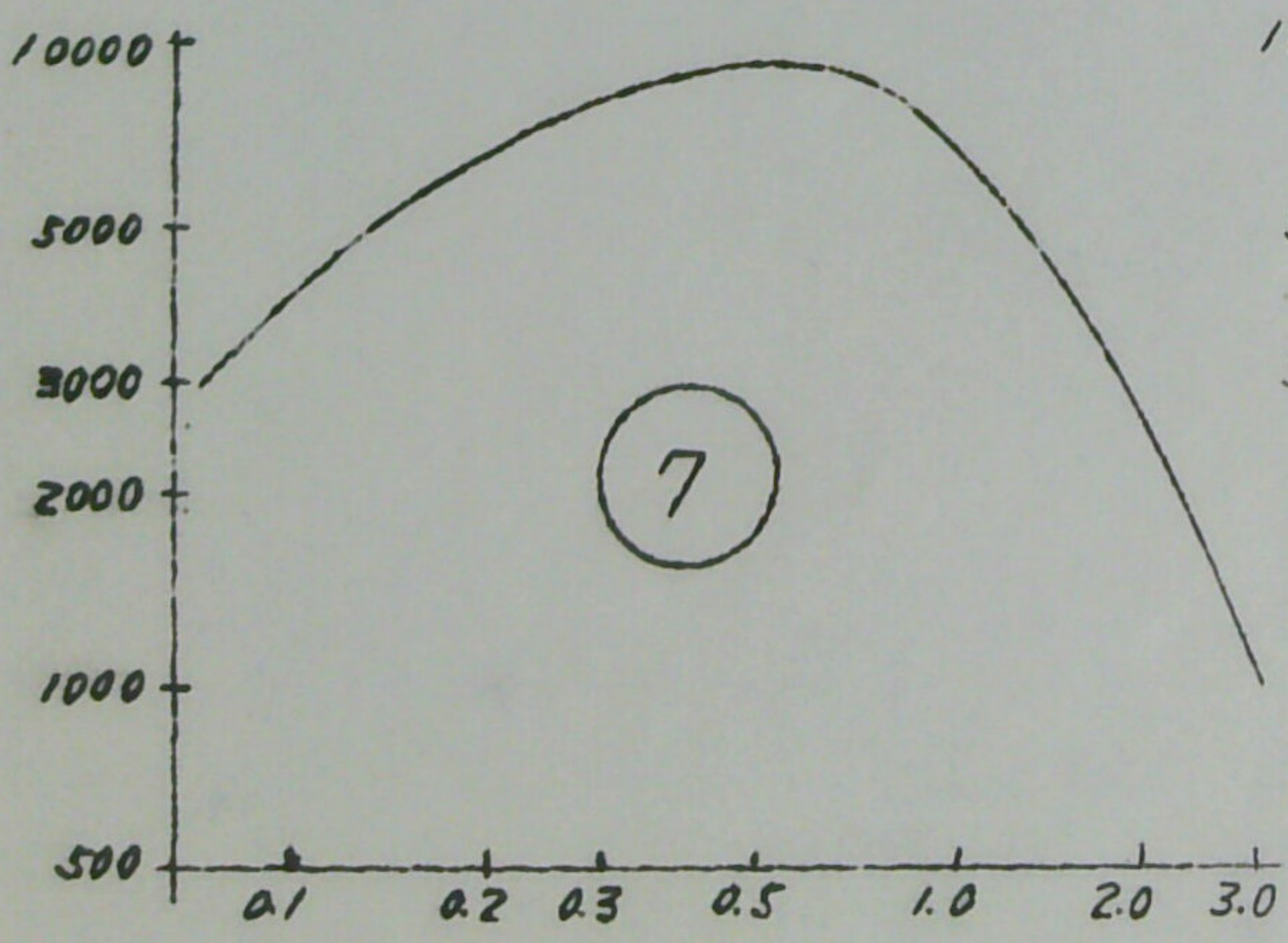
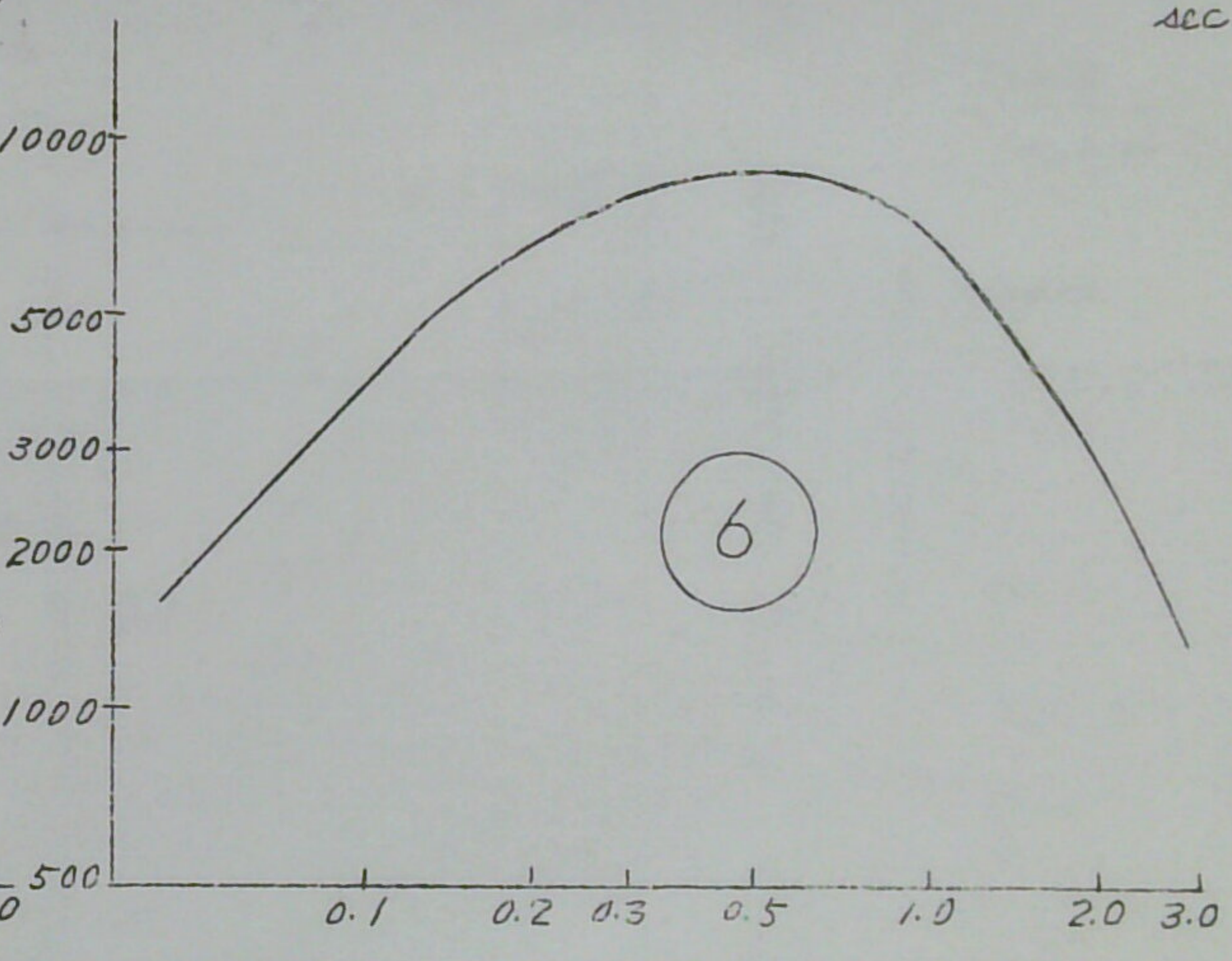
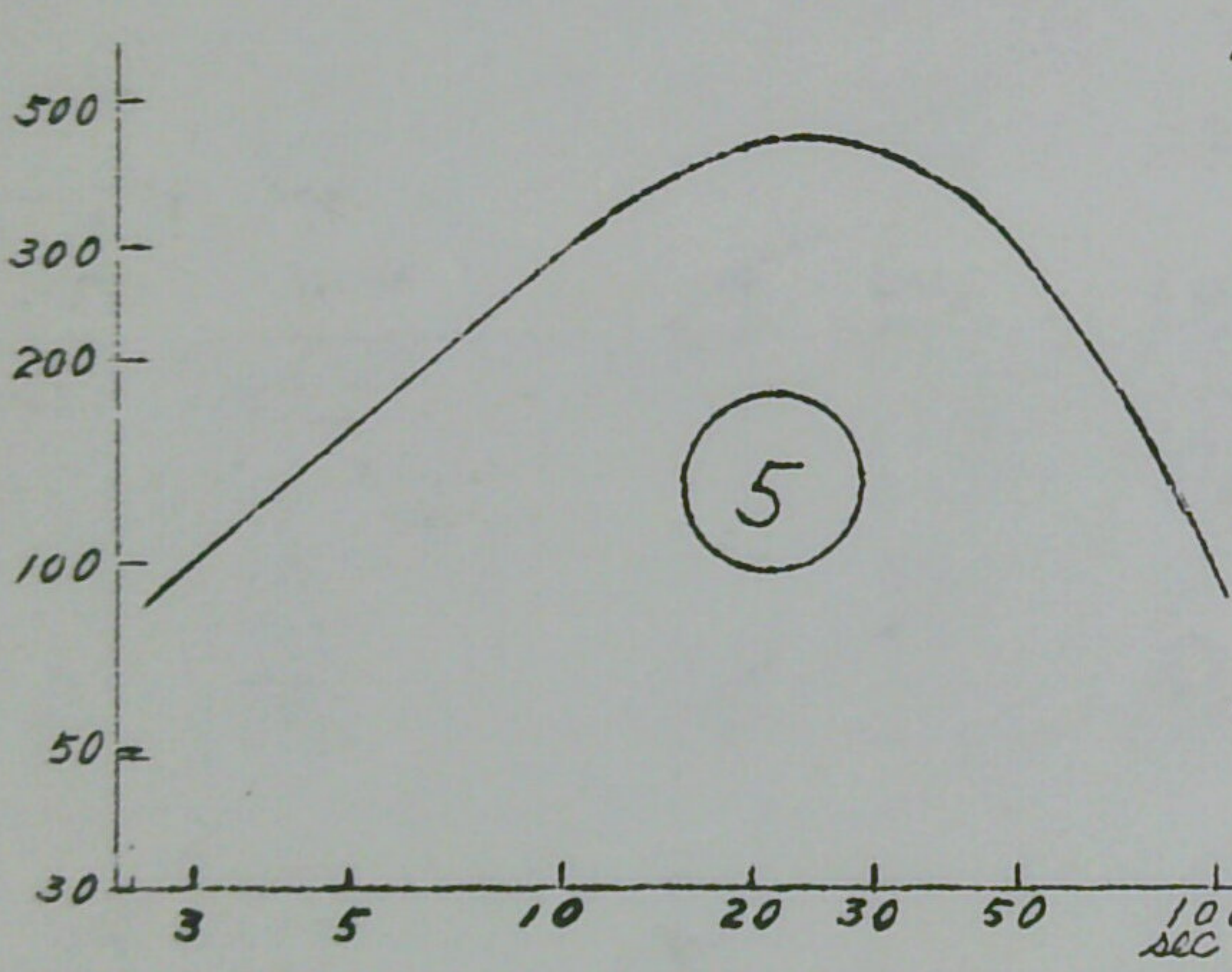
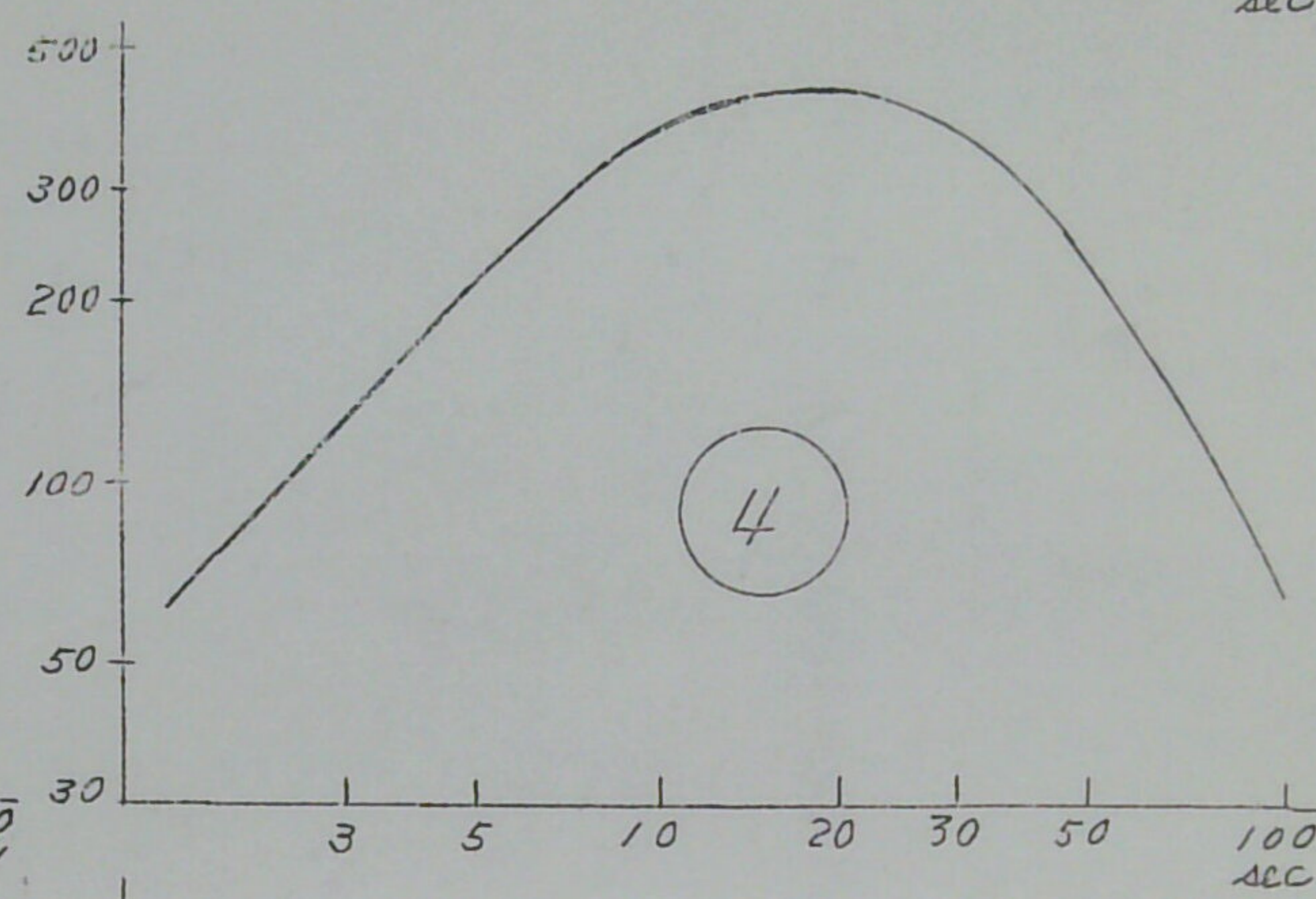
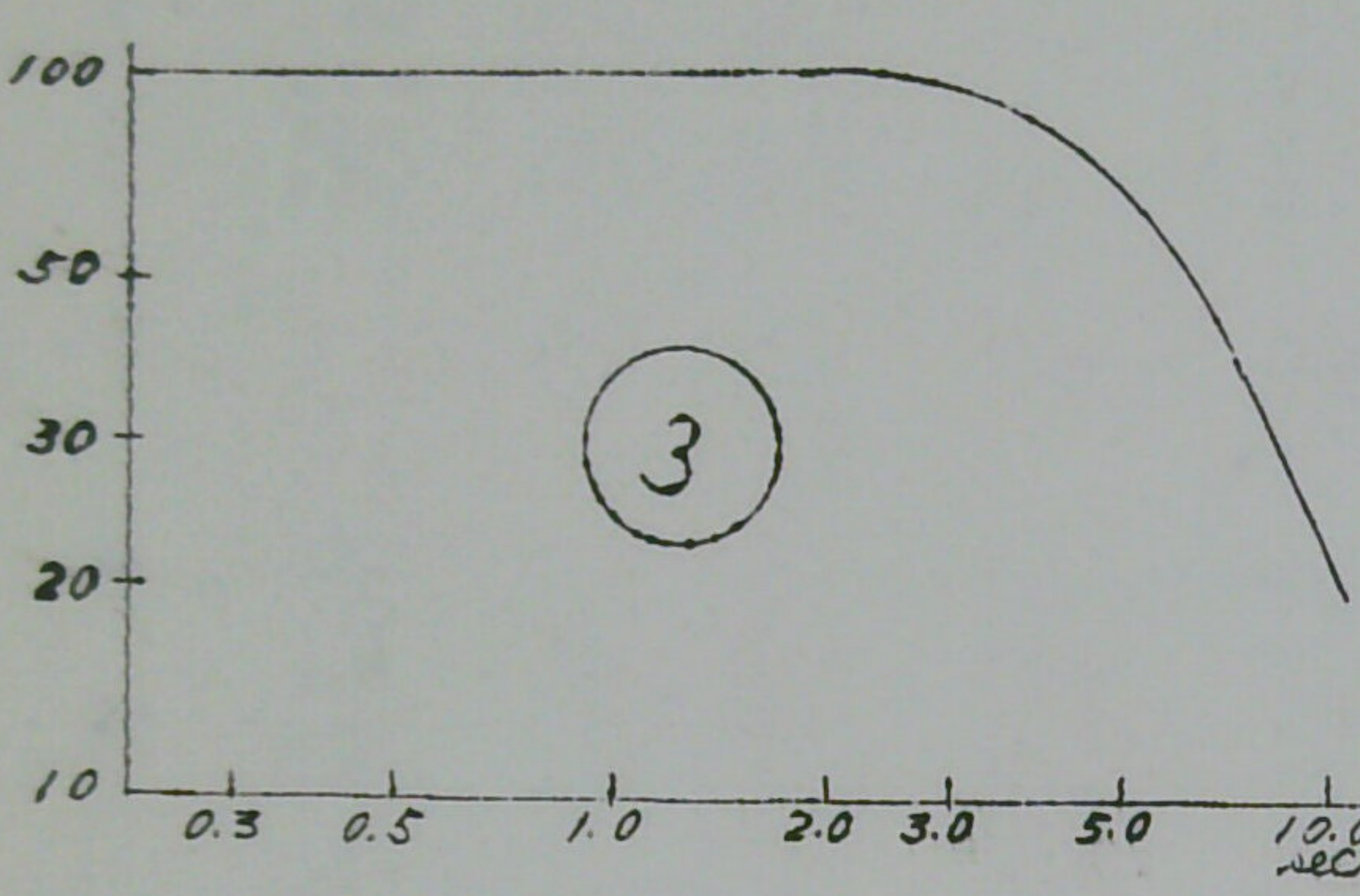
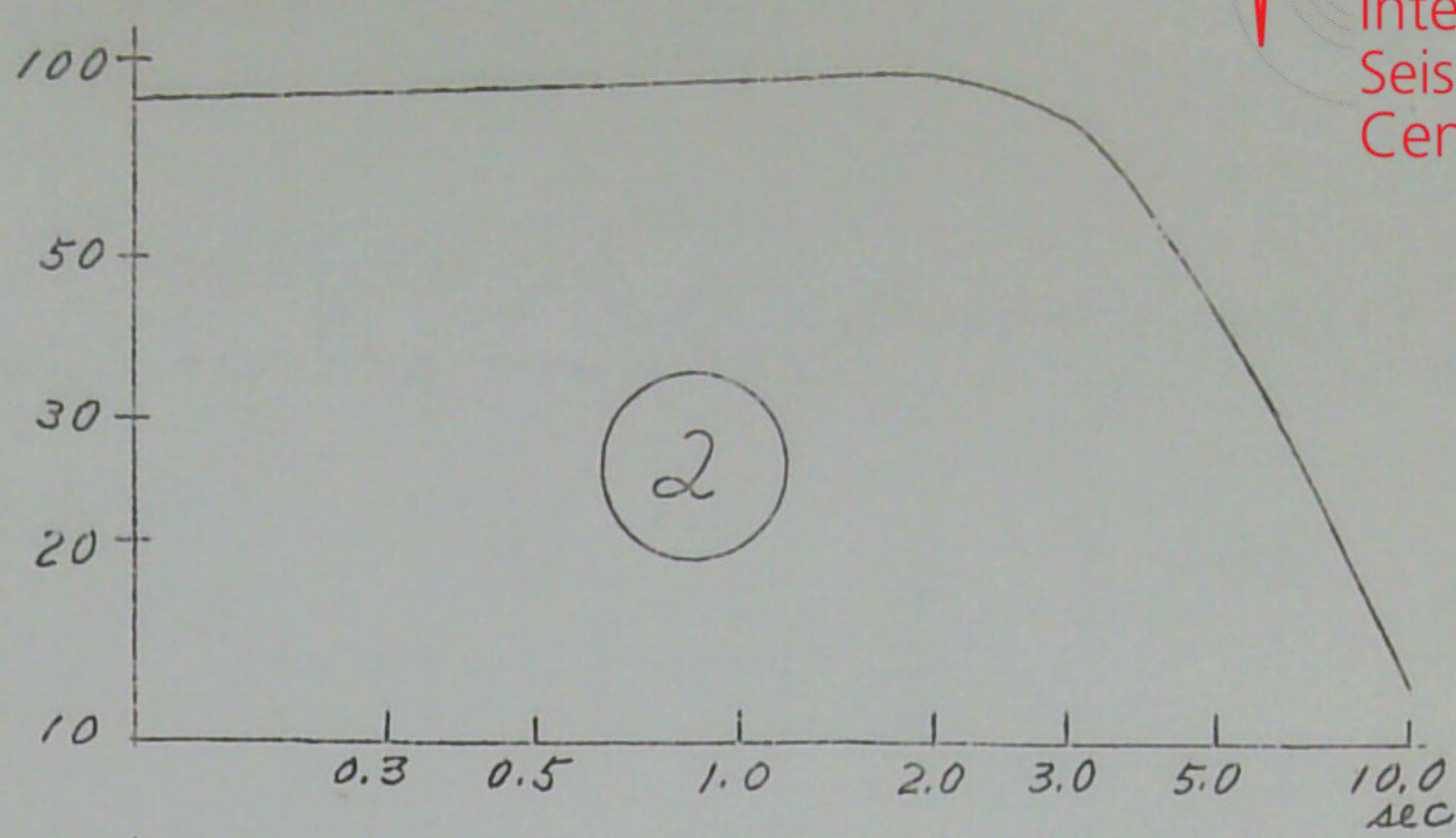
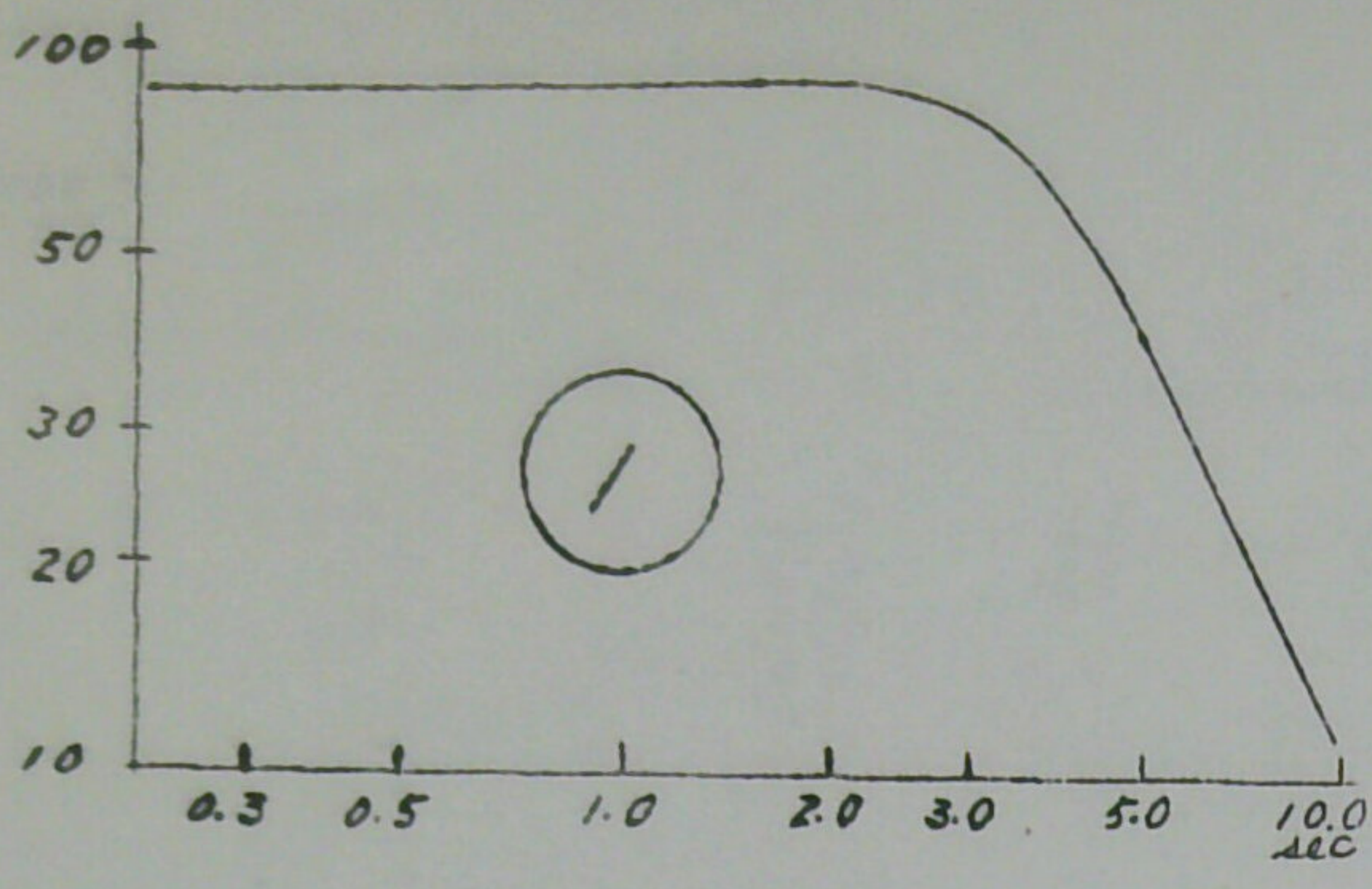
$h_1$  : Damping constant of pendulum.

$h_2$  : Damping constant of galvanometer.

$\rho$  : Solid friction.

$\alpha$  : Coupling factor.

\* The magnification for the amplitudes read on the microfilm-reader (magnification; 8.4).



Readings

Serial NO.	Date	Phase	Time (G.M.T.)			Period sec	Amplitude			$\Delta_{ca}$	Instrument	Remarks
			h	m	s		N <sub>mm</sub>	E <sub>mm</sub>	Z <sub>mm</sub>			
43												---
44	4	ePZ	00	47	04.5	2.0			-0.1	42°	3	
		eXZ	"	48	54.4	2.5			+0.2		3	PDP?
		eSN	"	53	15.	7.3	-0.3				5	
		LE	"	56	24.	22.		+1.1			4	
		LE	"	58	14.	20.2		+1.1			4	
45												trace
46												"
47												---
48												---
49	9	ePN	02	37	07.2	3.5	+0.1			40°	5	
		eXN	"	38	51.	4.3	+0.3				5	
		eXN	"	39	20.	4.1	-0.2				5	
		eSN	"	43	16.	4.1	+0.2				5	
50												trace
51												---
52	15	iPZ	20	52	53.4	0.9			+3.0		8	
		iPZ	"	52	53.8	1.7			+0.2		3	
		iXE	"	58	53.	10.		-1.5			4	
53												trace
54	18	ePZ	08	43	08.0	2.2			+1.5	29°	8	
		ePN	"	43	08.3	1.5	-1.5				7	
		ePE	"	43	07.9	2.2		-1.5			6	
		iXZ	"	44	10.9	1.9					8	
55	18	iPN	21	46	24.2	1.7	+0.2			16°	7	
		iSN	"	49	18.7	0.9	-7.5				7	
		iSZ	"	49	19.1	0.7			-1.5		7	
56												trace
57												---
58												---
59	22	iPZ	08	02	40.7	1.5			-2.5	40°	8	
		ePN	"	02	41.8	1.9	-1.				7	
60												trace
61												---
62	26	ePKPE	11	48	49.2	1.4		+0.5			6	
		iPKPN	"	48	50.1	1.4	+0.8				7	
		ePKPN	"	48	50.5	3.6					5	
		iXE	"	48	56.9	1.4		+2.2			6	
		iXN	"	48	56.3	1.4	-1.6				7	
63												trace
64	26	ePN	20	01	49.4	1.2	-0.2			45°	7	
		ePE	"	01	49.6	1.2		-0.6			6	
		eXE	"	03	13.4	1.2		+0.6			6	PcP?
		eSE	"	08	20.4	1.8		-0.2			6	
65												trace
66												trace
67	28	ePZ	23	21	28.	2.					8	
68	28	ePN	23	26	52.6	0.7	-2.4			17°	7	
		ePE	"	26	49.3	0.6		+2.7			6	
		eSZ	"	29	40.9	1.2			+1.6		8	
		eSE	"	29	42.9	0.8		-1.8			6	
69	28	iPZ	23	54	32.2	0.5			+1.0	17°	8	
		iPN	"	54	32.8	0.8	-1.7				7	
		eSZ	"	57	44.5	0.9			-1.9		8	
		iSE	"	57	42.9	---					6	
70												trace
71												trace

Errata for July, 1957.

Serial NO.	Date	Phase	Time	s
41	28	ePE	08 <sup>h</sup> 53.8	5
		ePPPE	09 02	34.



NOAA

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for

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Sept., 1957

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Station: Seismological Observatory, (Mukaiyama Observatory),  
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Longitude: 140° 51' 30'' E.

Latitude: 38° 14' 32'' N.

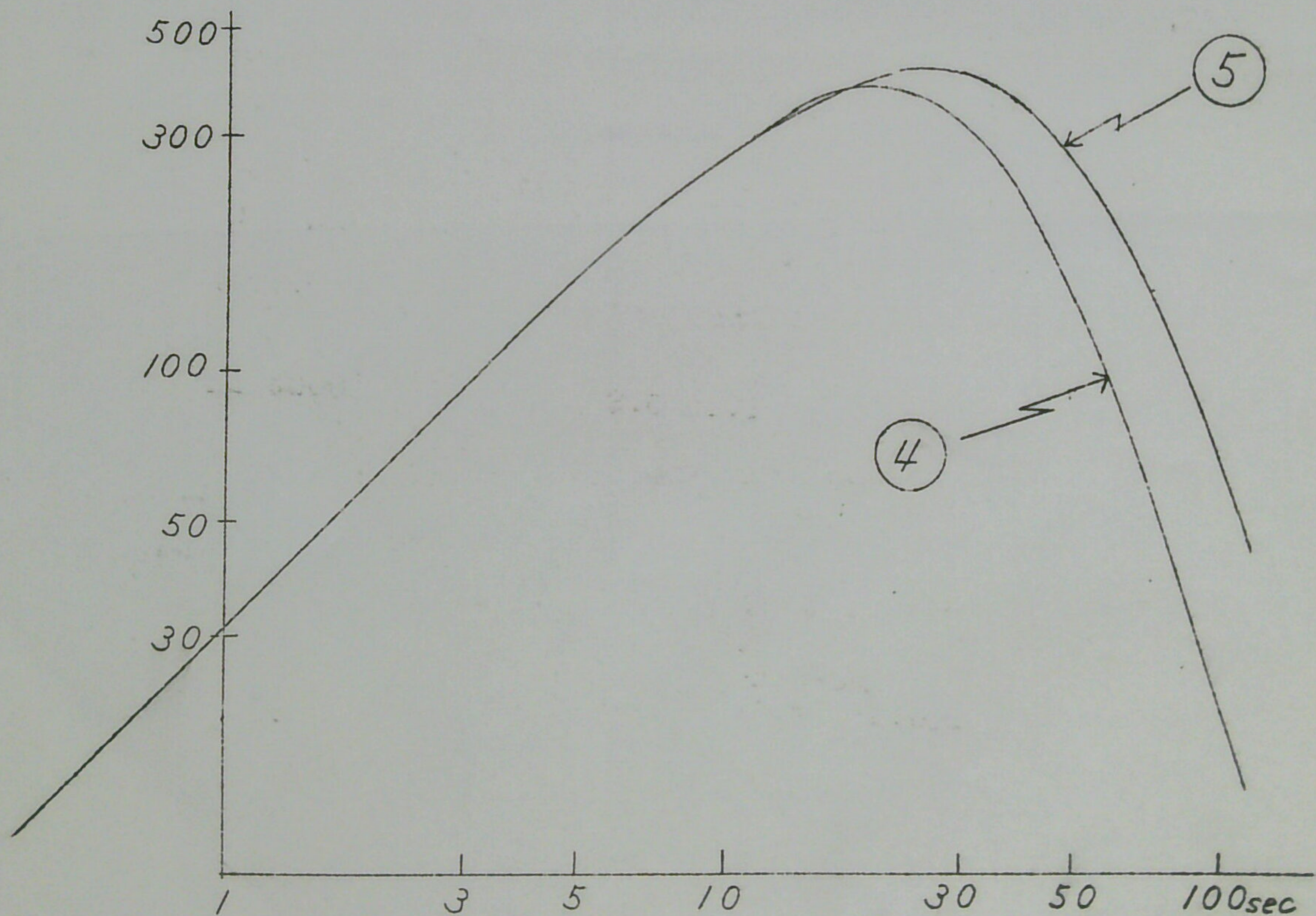
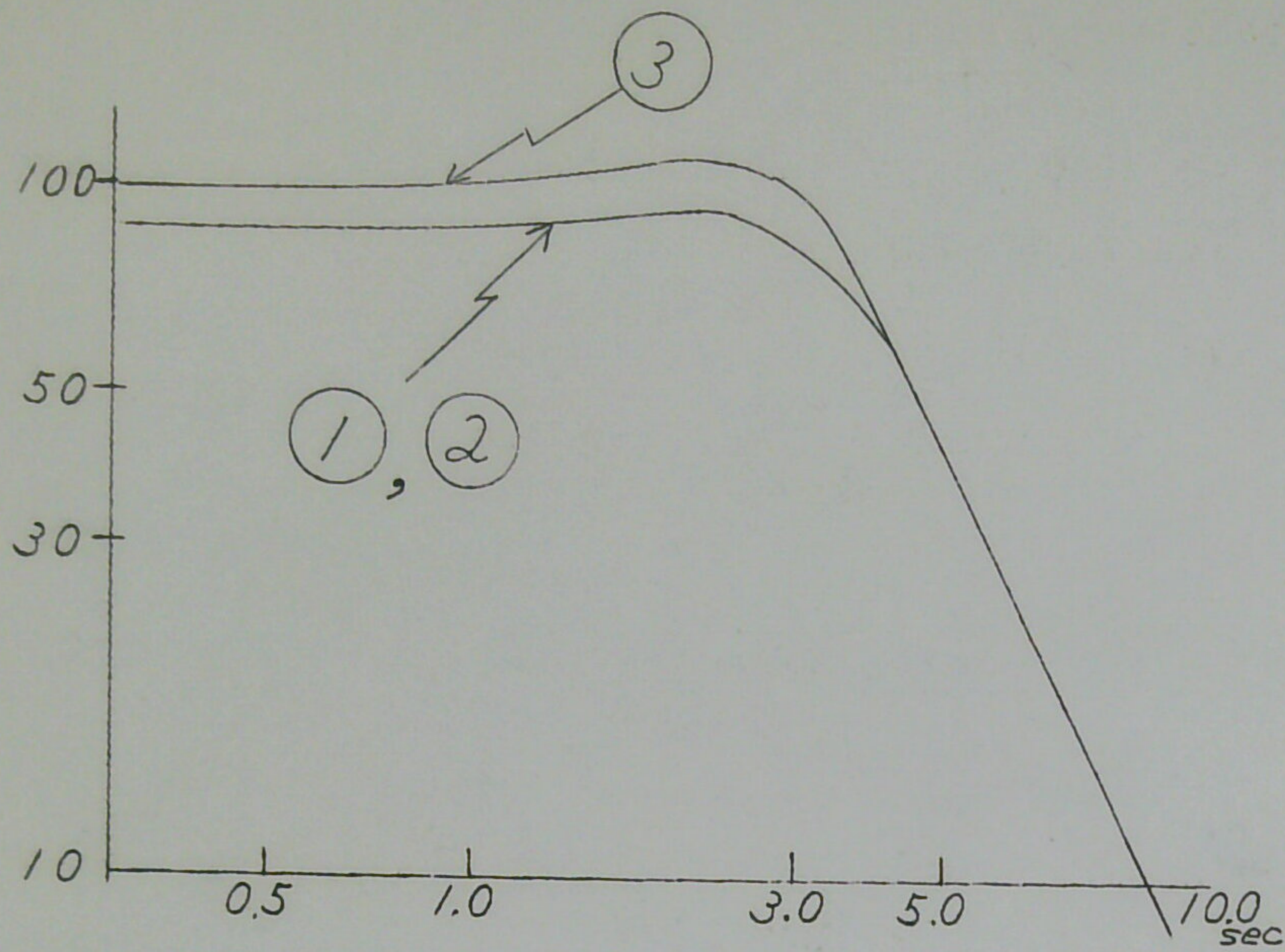
Elevation: 128 m.

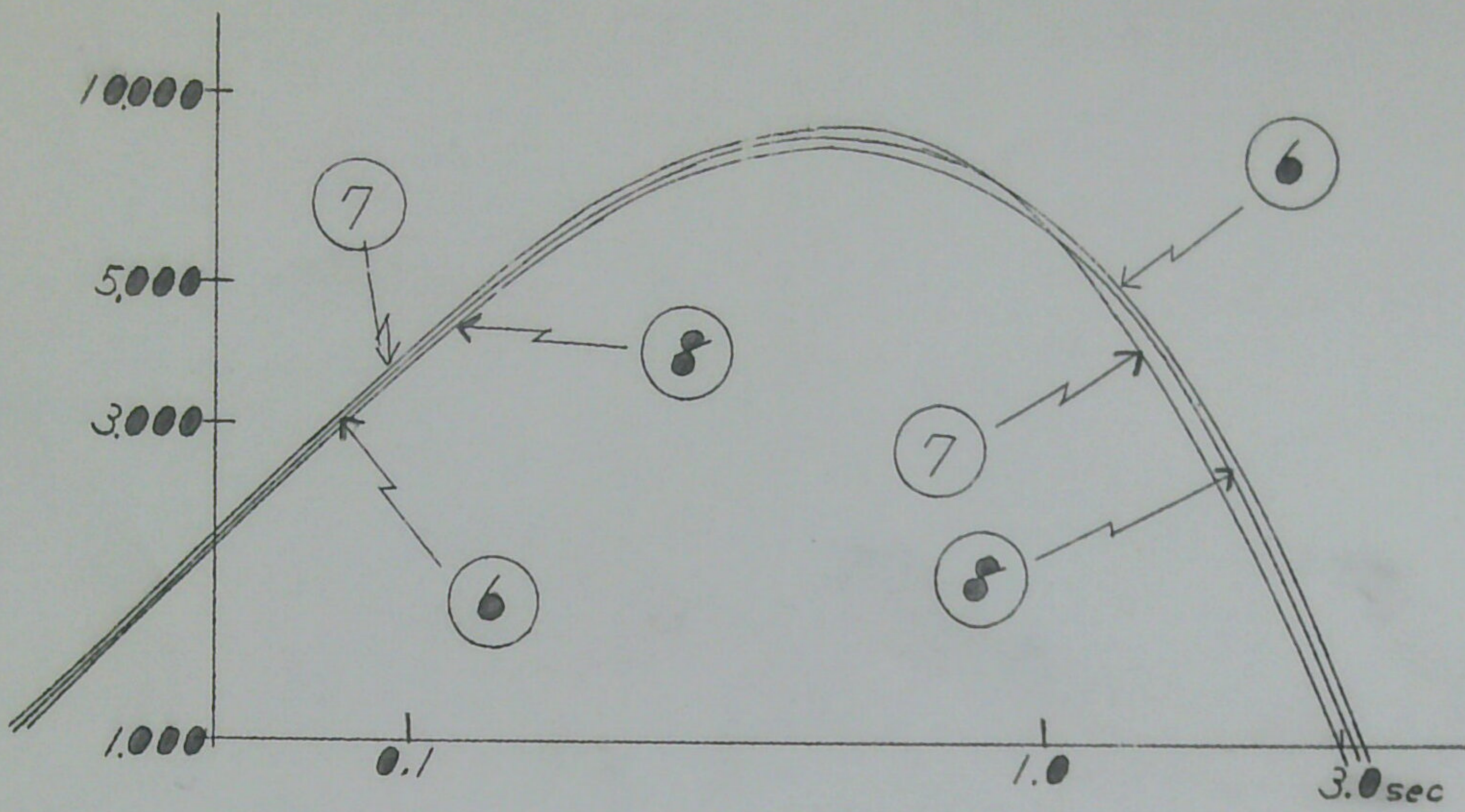
Foundation: Sandstone.

Instrument

No	Name	Component	Vmax	T <sub>1</sub> sec	T <sub>2</sub> sec	h <sub>1</sub>	h <sub>2</sub>	$\rho$ mm	$\alpha$	Date of Calibration
1	Wiechert Seismo- graph (200 Kg)	EW	98	3.3		0.54		0.41		11 <sup>th</sup> , Sept.
2	Wiechert Seismo- graph (200 Kg)	NS	98	3.3		0.56		0.43		"
3	Wiechert Seismo- graph (1,200 Kg)	UD	113	3.2		0.52		0.13		"
4	Long-period Electromagnetic Seismograph	EW	400	38.0	23.2	1.0	1.0		0.0	13 <sup>th</sup> , Sept.
5	"	NS	430	33.0	57.7	1.3	1.0		0.0	"
6	Short-period Electromagnetic Seismograph	EW	8500*	1.0	1.2	2.0	1.0		0.0	16th, Sept.
7	"	NS	9000*	1.0	1.2	2.0	1.1		0.0	"
8	"	UD	8200*	1.0	1.3	2.0	1.0		0.0	"

Vmax : Maximum magnification.  
T<sub>1</sub> : Period of pendulum.  
T<sub>2</sub> : Period of galvanometer.  
h<sub>1</sub> : Damping constant of pendulum.  
h<sub>2</sub> : Damping constant of galvanometer.  
 $\rho$  : Solid friction.  
 $\alpha$  : Coupling factor.  
\* : The magnification for the amplitudes read  
on the microfilm-reader (magnification 8.4).





Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks	
			G.M.T.				sec	N	E			Z
			h	m	s							
72	Sept. 2	ePZ	00	04	42.1	1.5			+1.2	21°	3	International Seismological Centre
		eXZ	00	05	03.0	1.9			-1.5		3	
		eXN	00	05	10.	1.6	+1.4				2	
		eSE		08	31.5	1.2		-1.0			1	
		eSN			31.	1.2					2	
73	2	MN	09	57.8			1.5				2	
		ME		57.8				2.			1	
74	2	ePZ	21	36	41.8	1.3			-1.0	54°	3	
		epPE		37	22.	1.5		+1.3			1	
		epPN			22.1	0.8	+0.7				2	
75												----
76	7	iPZ	03	52	28.5	1.4			+1.1		3	
		ePE			29.0	1.5		-1.3			1	
		ePN			28.7	1.2	-1.0				2	
		eXZ		52	41.4	1.9			-1.5		3	
		eXE			42.0	1.4		+1.2			1	
		eSZ		55	20.3	1.5			+1.2		3	
		eSE			28.8	1.1		+0.9			1	
77												----
78												----
79												----
80												----
81												----
82												----
83	15	iPZ	04	31	30.5	0.5				53°	8	
		iPE			30.3	0.3		-1.3			6	
		iPN			30.4	1.1	+1.3				7	
84	15	ME	19	00	20.	1.8		10.			4	
		MN			25.	2.0	9.				5	
85	24	ePZ	08	28	05.1	2.9			-2.0	35°	8	
		iPN			06.5	3.9	+5.0				7	
		eSZ		33	41.5	1.6			-3.1		6	
		iSE			40.4	16.8		-2.8			4	
		iSN			41.3	9.7	-3.4				5	
		LN		37	21.4	25.3	-29.0				5	
85												----
87	25	iPZ	16	43	29.9	0.6			+2.1	34°	8	
		iPN			30.3	1.3	-1.8				7	
88	25	iPZ	22	23	55.9	1.6			+2.2	34°	8	
		ePN			56.5	2.6	-3.7				7	
89	26	ePZ	18	53	35.1	0.6			+1.4	34°	8	
		ePE			36.0	0.7		+0.9			6	
		ePN			36.7	0.7	+0.7				7	
		eXZ		54	09.6	0.9			+1.7		8	
		iXE			07.6	0.7		-1.1			6	



Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks
			G.M.T.				N	E	Z		
			h	m	s	sec	mm	mm	mm	$\Delta \text{ca}$	
90	27	ePZ	04	16	15.9	1.8			-0.7	41°	8
		iPE			14.9	0.6		-1.6			6
		iKE	16	23.2	0.6		+2.7				6
		iKN		22.5	0.6	-1.4					7
		eSN	22	34.4	4.5	+0.8					5
		LE		27.8	30.2		-1.1				4
		LN		27.7	22.0		+1.3				5
91	27	ePZ	06	04	40.5	1.3			+0.9	41°	8
		ePE			42.6						6
		ePN			45.3	0.7	-1.3				7
92	28	iPZ	00	29	25.4	1.3			+11.8	8°	8
		iPE			25.9	1.3		-0.1			1
		iPN			25.5	2.2	+2.9				7
		eSZ	30	52.	3.2			+1.2			3
		iSE		52.7	7.5		-11.4				4
		iSN		52.9	4.7	-3.1					5
93	28	iPZ	14	30	15.5	1.7			+9.0	70°	8
		iPE			15.1	1.1		-3.7			6
		ePN			17.2	12.9	+3.7				5
		epPE	33	17.0	9.4		-3.2				4
		epPN		17.6	18.	+2.0					5
		eSE	38	32.	10.6		-1.7				4
		eSN		28.	12.1	-1.6					5
		eXE	39	15.7	19.5		-4.4				4
		eXN		13.7	22.6	+4.2					5
		LE	43	31.7	18.0		-14.				4
LN		33.3	32.5	+5.3					5		
94										-----	
95	29	iPZ	08	23	55.4	1.6			+4.4		8
		ePE			55.1	3.8		+0.2			7
		iPN			55.3	0.7	+1.8				7
		eSE	32	34.4	10.5		+1.0				4
		iSN		30.2	12.6	+1.0					5
		eXE	33	03.9	6.8		-0.6				4
		eXN		02.2	1.8	-3.2					7

WORLD DATA CENTER A  
FOR GEOMAGNETISM, SEISMOLOGY, AND GRAVITY



NGIA A

# SEISMOLOGICAL REPORT

for

I. G. Y.

Oct., 1957

Seismological Observatory,

Tôhoku University.

Sendai, Japan.

Station: Seismological Observatory, (Mukaiyama Observatory),  
Tôhoku University, Sendai, Japan.

Longitude: 140° 51' 30'' E.

Latitude: 38° 14' 32'' N.

Elevation: 123 m.

Foundation: Sandstone.

Instrument

No	Name	Component	Vmax	T <sub>1</sub> sec	T <sub>2</sub> sec	h <sub>1</sub>	h <sub>2</sub>	$\rho$ mm	$\alpha$	Date of Calibration
1	Wiechert Seismo-graph (200 Kg)	EW	98	3.3		0.54		0.41		11th, Sept.
2	Wiechert Seismo-graph (200 Kg)	NS	98	3.3		0.56		0.43		"
3	Wiechert Seismo-graph (1,200Kg)	UD	113	3.2		0.52		0.13		"
4	Long-period Electromagnetic Seismograph	EW	400	38.0	23.2	1.0	1.0		0.0	13th, Sept.
5	"	NS	430	33.0	57.7	1.3	1.0		0.0	" "
6	Short-period Electromagnetic Seismograph	EW	8500*	1.0	1.2	2.0	1.0		0.0	16th, Sept.
7	"	NS	9000*	1.0	1.2	2.0	1.1		0.0	"
8	"	UD	8200*	1.0	1.3	2.0	1.0		0.0	"

Vmax: Maximum magnification.

T<sub>1</sub>: Period of pendulum.

T<sub>2</sub>: Period of galvanometer.

h<sub>1</sub>: Damping constant of pendulum.

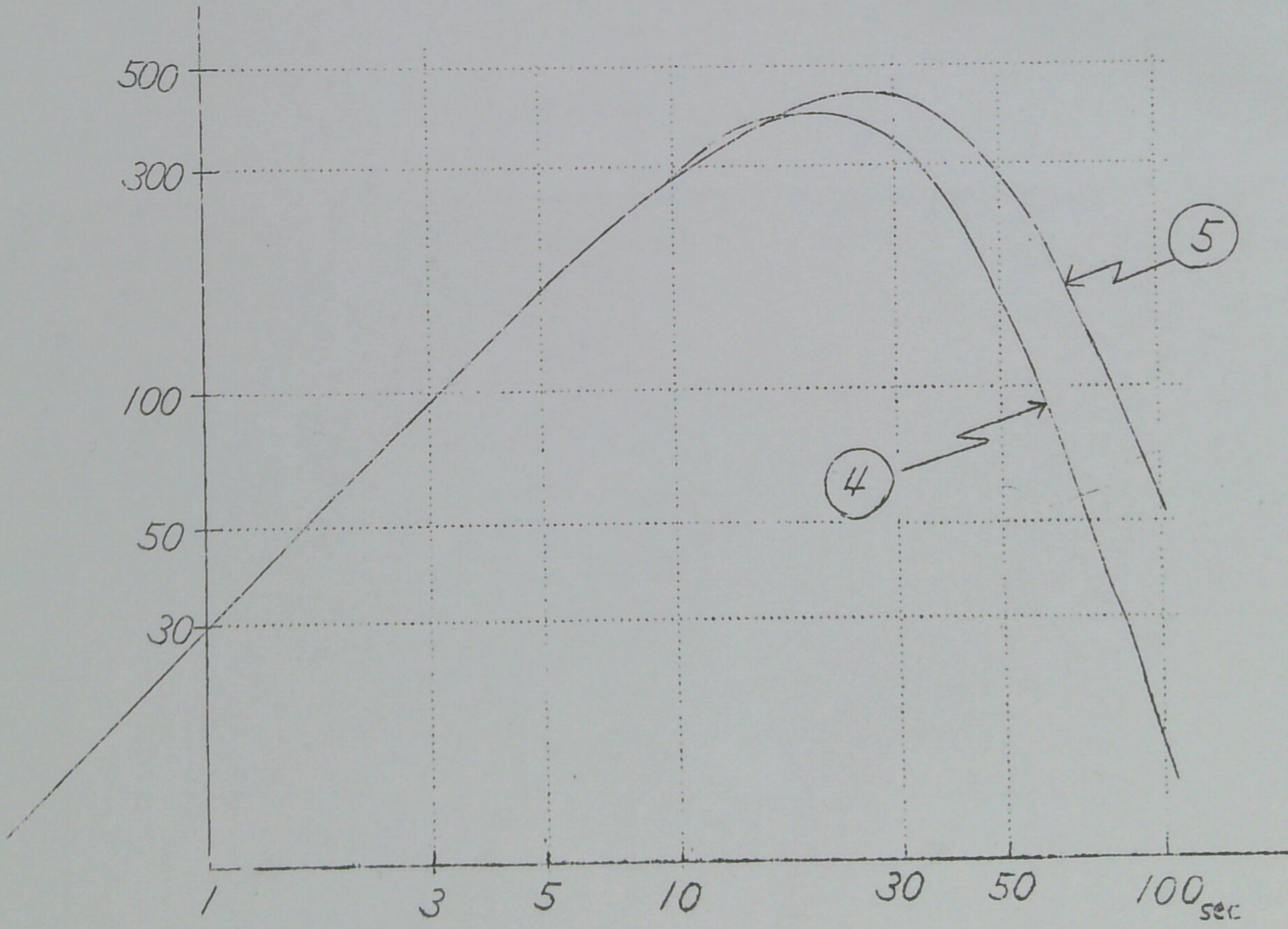
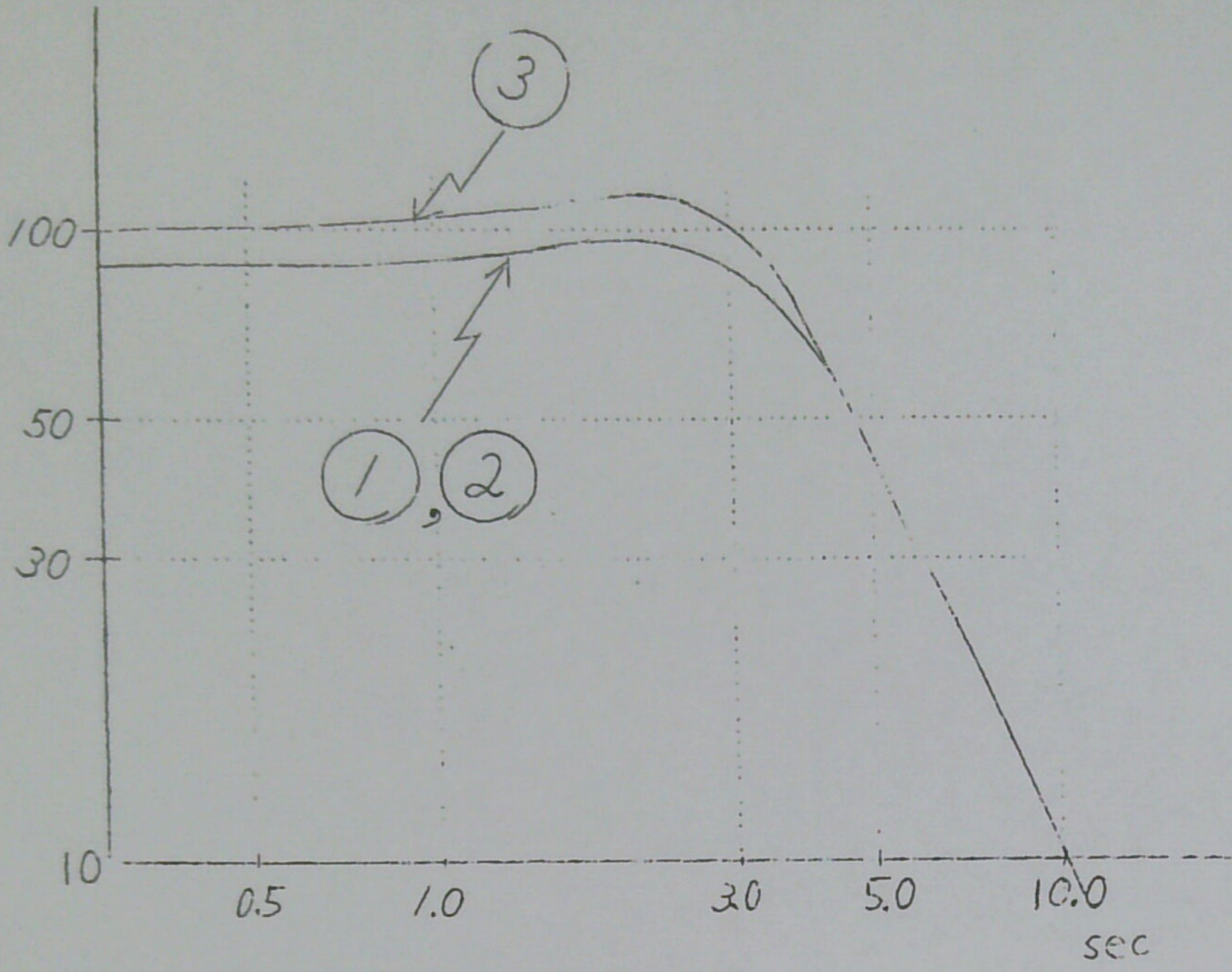
h<sub>2</sub>: Damping constant of galvanometer.

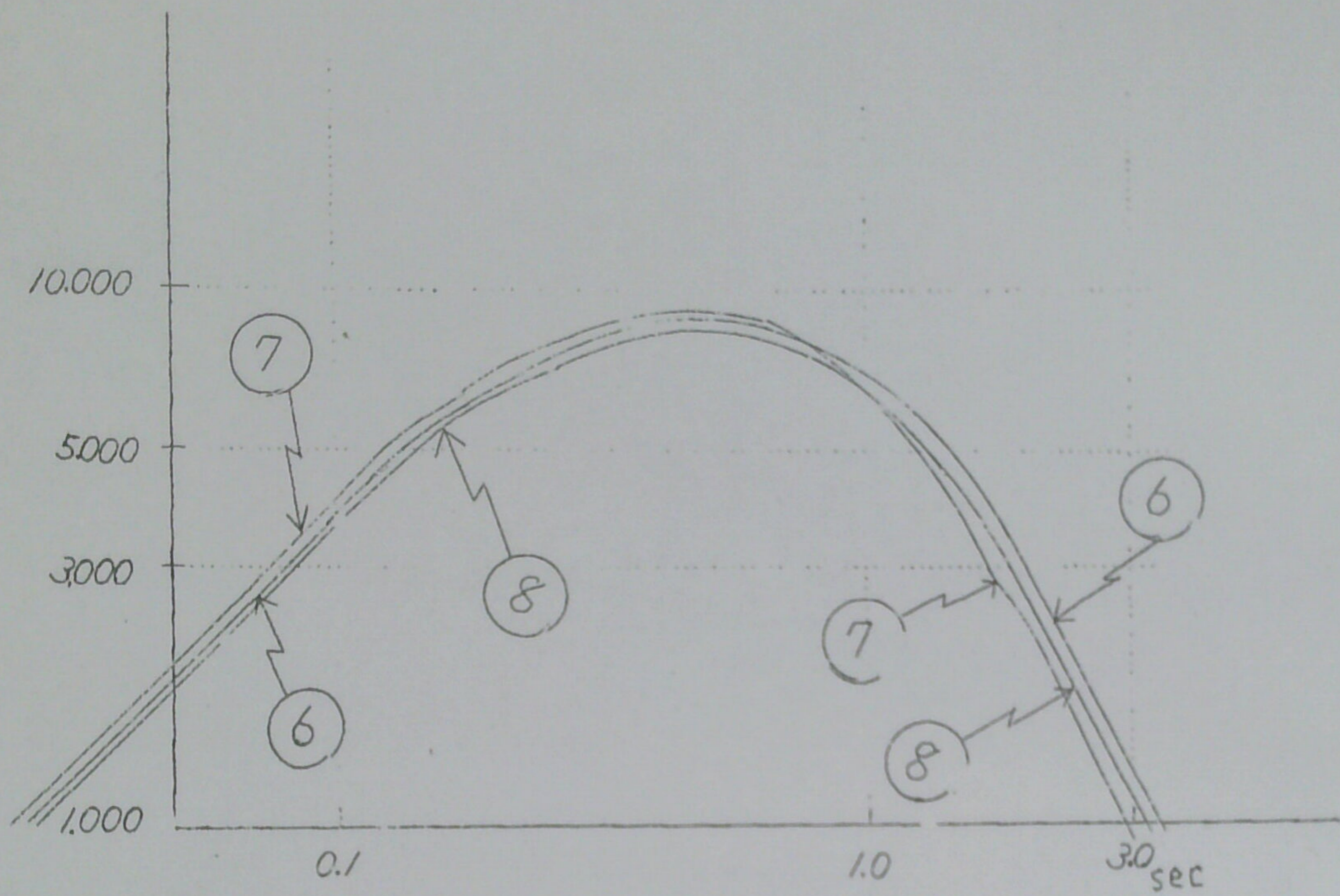
$\rho$ : Solid friction.

$\alpha$ : Coupling factor.

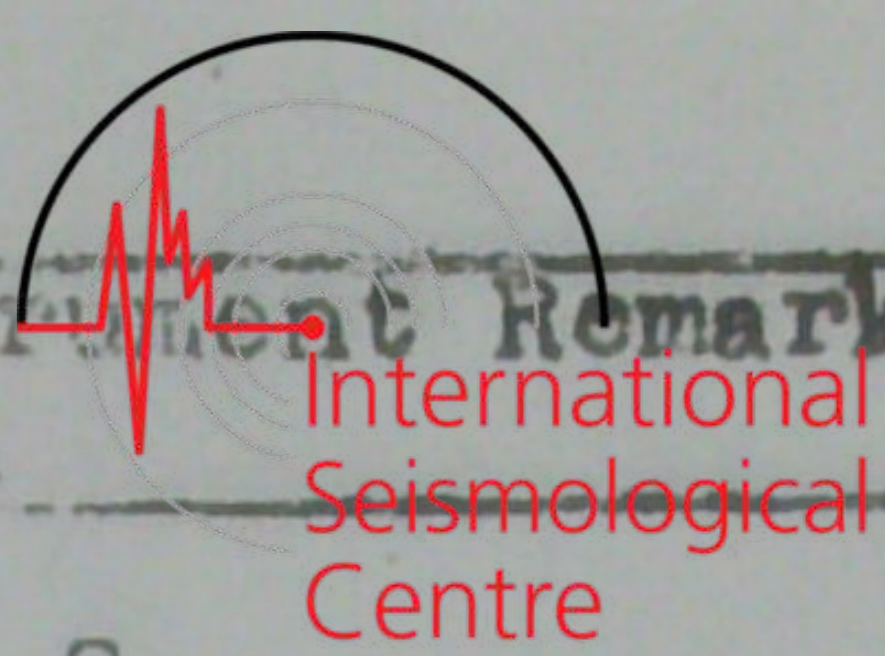
\*: The magnification for the amplitudes read  
on the microfilm-reader (magnification 8.4).







Serial No.	Date	Phase	Time			Period sec	Amplitude			Instrument $\Delta ca$	Remarks
			G.M.T.				N	E	Z		
			h	m	s		mm	mm	mm		
96	Oct. 2nd	MN	12	36	10.	24.	0.6		126°	5	
		ME		32	30.	24.		0.5		4	
97	2nd	MN	21	41	25.	20.	0.5		80°	5	
		ME		36	40.	39.		0.9		4	
98	3rd	ePN	03	06	12.7	1.5	-1.0		42°	7	
		eKN			21.9		+2.5			7	
		eLN	12	58.		10.	+0.5			5	
		eSE			38.	13.				4	
99	4th	ePPN	05	47	09.9	8.9	+1.3		126°	7	
		ePPE			04.	9.9		+0.3		4	
		ePPZ			09.7					8	
		iLN	06	28	07.4	39.	+1.9			5	
		iLE			16.7	35.		-1.2		4	
		iXN	33	24.		29.5	+2.6			5	
		iXL	34	17.		25.6		-2.5		4	
100	7th	iPN	13	24	08.9	1.4	-4.3		18°	7	
		iPE			09.4	1.2		+4.6		6	
		iPZ			06.6	1.6			-3.5	8	
		eSN	27	41.9		13.1	+0.5			5	
		eSE		41.9		15.8		+0.3		4	
		iXN	30	19.		19.7	-2.2			5	
		iXN	31	45.		13.2		-1.1		4	
		eXN	38	00.		13.4	-1.1			5	
eXE	37	59.		13.4		-1.4		4			
101	12th	iPN	18	06	31.3	0.6	+1.4		54°	7	
		ePE			33.1	1.7		+1.2		6	
		iPZ			31.9	1.3			-1.2	8	
		eXN			50.4	4.1	-0.2			5	
		iXZ			49.5	1.1			-2.1	8	
		eSN	14	04.0		9.8	-0.4			5	
		eSE		04.6		5.9		-0.4		4	
		eLN	28	48.		27.	-0.2			5	
102	13th	iPN	04	23	43.6	2.4	-0.7		20°	7	
		ePE			45.5	3.3		-1.0		6	
		iPZ			45.9	2.2			-1.3	8	
		iXN			58.0	2.7	-3.2			7	
		iXE			58.0	1.3		-3.9		6	
		eSN	27	27.5			+0.5			5	
		eSE		24.1		4.9		-0.6		4	
		eXN	28	14.3		2.6	+3.0			7	
		eXE		09.5		2.9		-0.8		6	
		iLN	05	00	04.0	20.6	-0.9			5	
		iLE		01	37.9	20.6		-1.5		4	
		iLE		03	21.0	15.9		+1.3		4	
eLN		18.		20.0	-2.0			5			
103	13th	ME	21	24	25.4	21.	0.4			5	
104	19th	eFN	18	35	46.4	0.4	-0.4		21°	7	
		ePE			46.5	0.5		+0.8		6	



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Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks
			G.M.T.				N	E	Z		
			h	m	s		mm	mm	mm		
	19th	iXZ	18	34	01.5			+3.0		8	
		iSSSN		38	24.4	15.3	-3.9			5	
		iSSSE			16.0		+5.0			4	
		iLN	39	20	00.0	28.6	+9.5			5	
		iLE			22.8	11.1	-0.9			4	
105	19th	iPN	21	43	40.9	0.5	+1.0		7°	7	
		iPE			41.2	0.4		-1.2		5	
		iPZ			40.9	0.5				8	
		iSN	44	54	54.6	6.3	+5.6			5	
		iSE			54.8					4	
		iSZ			54.7	2.6		+4.0		3	
106											No trace
107											No trace
108	23rd	ePN	06	04	04.8	3.2	-0.1		37°	2	
		ePE			04.7	1.3		+0.8		5	
		ePZ			03.0	1.1				8	
		iXN	06	09	09.7	2.4	+2.2			7	
		eXE			11.2	1.4		-0.9		6	
		eXZ			24.0	2.0				8	
109	24th	ePZ	00	28	22.6	1.5				8	
		MN		48		14.	0.8			5	
		ME		47		14.9		0.9		4	
110	24th	ePN	22	17	53.3	0.7	-1.1		59°	7	
		iPE			52.9	1.1		+1.4		6	
		iPZ			53.3	0.7				8	
		iXN	18	04	04.8	0.5	+2.0			7	
		iXE			02.6	0.7		+3.0		5	
		iXZ			00.3	0.7				8	
		eSN	26	20	20.4	2.5	-0.7			7	
		eSE			21.5	5.5		+0.4		4	
111											No trace
112	24th	MN	23	33		22.	0.4			5	
		ME	22	45		25.		0.3		4	
113	25th	ePN	10	07	28.4	0.6	+1.5		17°	7	
		iPE			27.7	0.5		+1.5		6	
		iPZ			27.1	0.6				8	
		eSN	10	45	45.3		-3.6			5	
		eSE			39.6	14.3		+1.7		4	
		eSZ			45.	1.3				8	
114											No trace
115	25th	iPN	14	25	25.0	0.9	-2.4		46°	7	
		iPE			25.3	1.5		-3.6		5	
		ePZ			23.9	0.5				8	
		eLN	43	00	00.	27.5	+2.0			5	
116	27th	iPN	22	37	28.3	1.8	-2.1		22°	7	
		ePE			26.1	1.3		-1.2		5	



REVISED

WORLD DATA CENTER A  
FOR GEOMAGNETISM, SEISMOLOGY, AND GRAVITY

1407A

# SEISMOLOGICAL REPORT

for

I. G. Y.

Nov., 1957

Seismological Observatory,

Tôhoku University.

Sendai, Japan.

Nov. 1957 .

Station: Seismological Observatory, (Mukaiyama Observatory),  
Tôhoku University, Sendai, Japan.

Longitude: 140° 51' 30'' E.

Latitude: 38° 14' 32'' N.

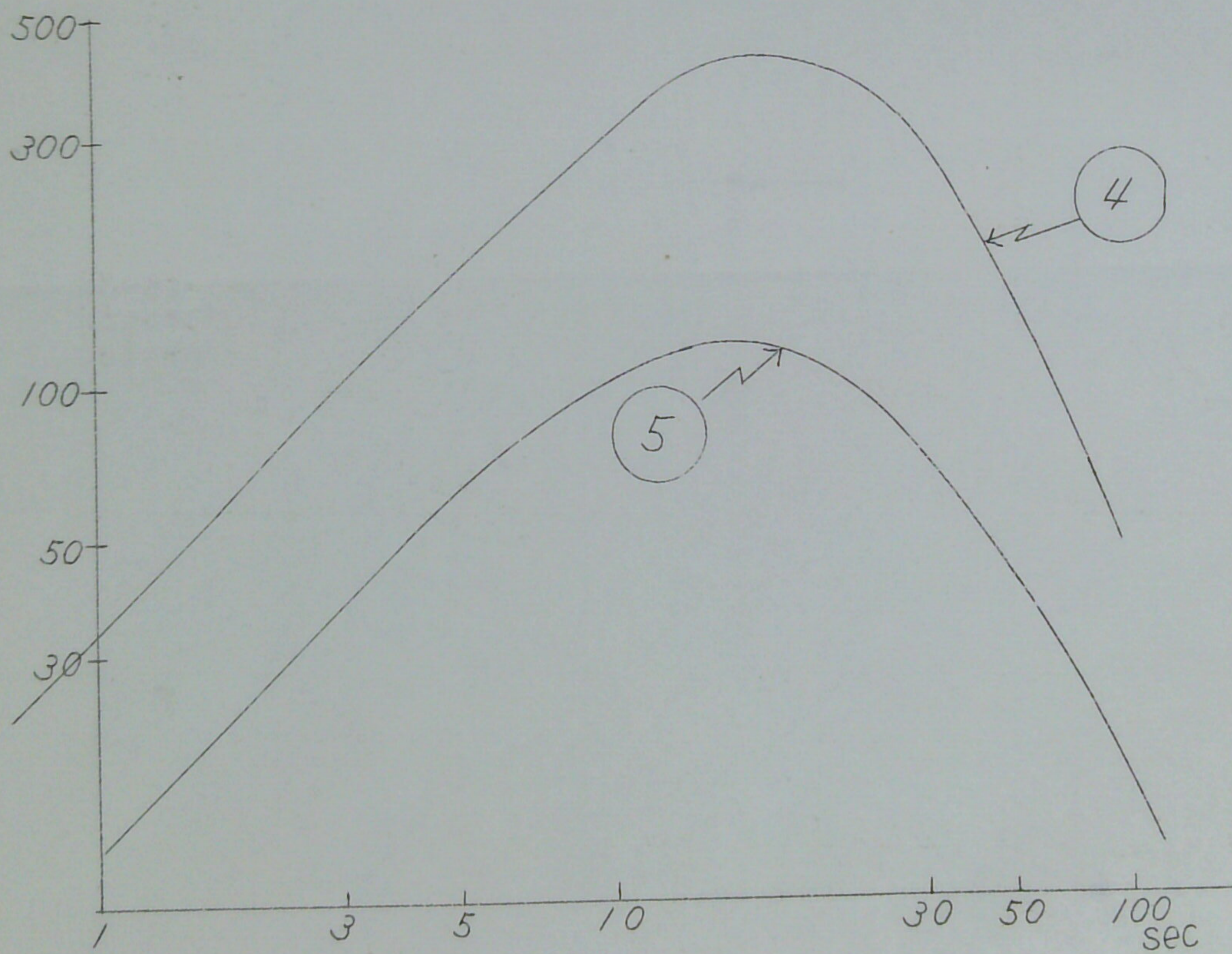
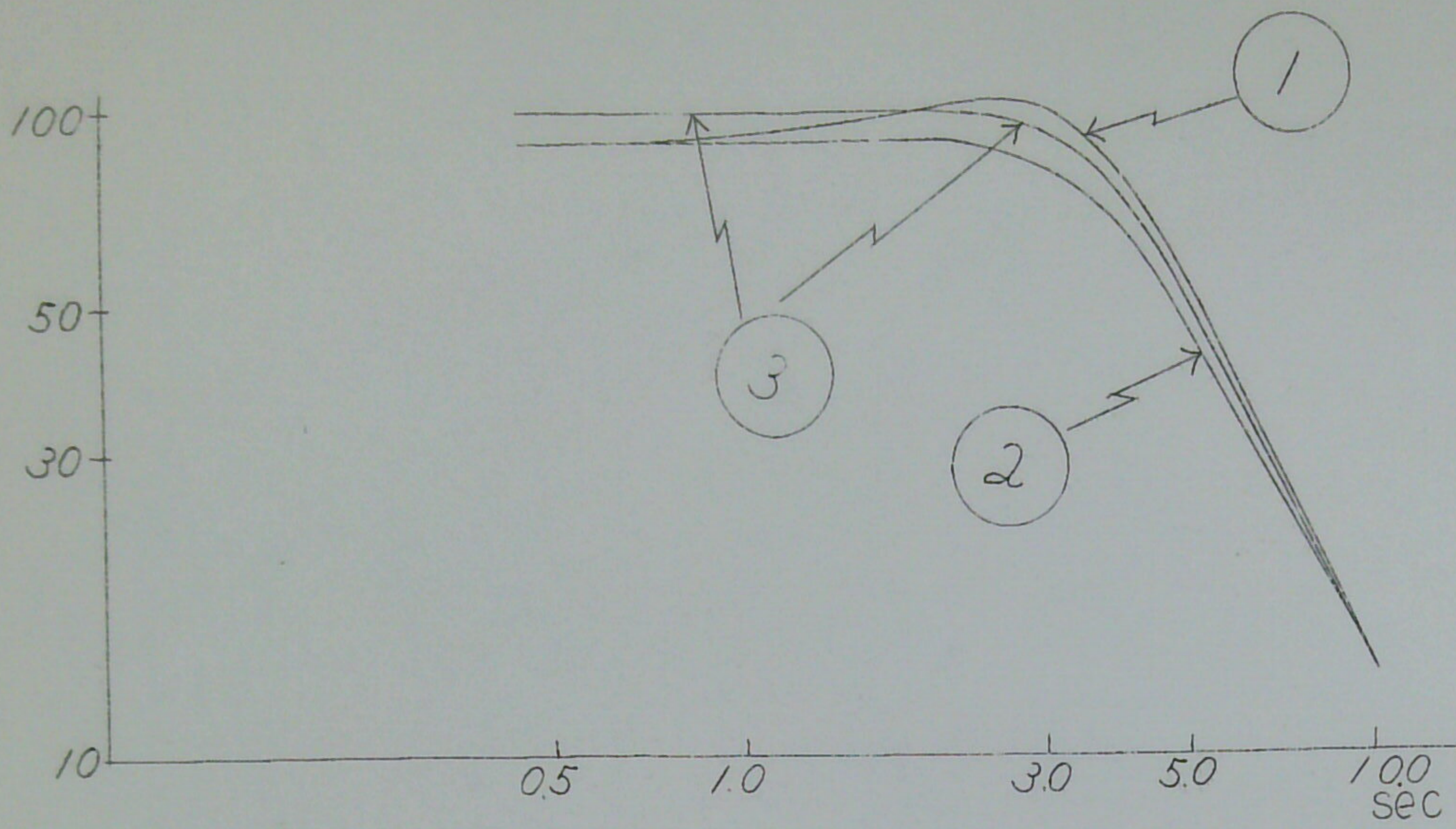
Elevation: 128 m.

Foundation: Sandstone.

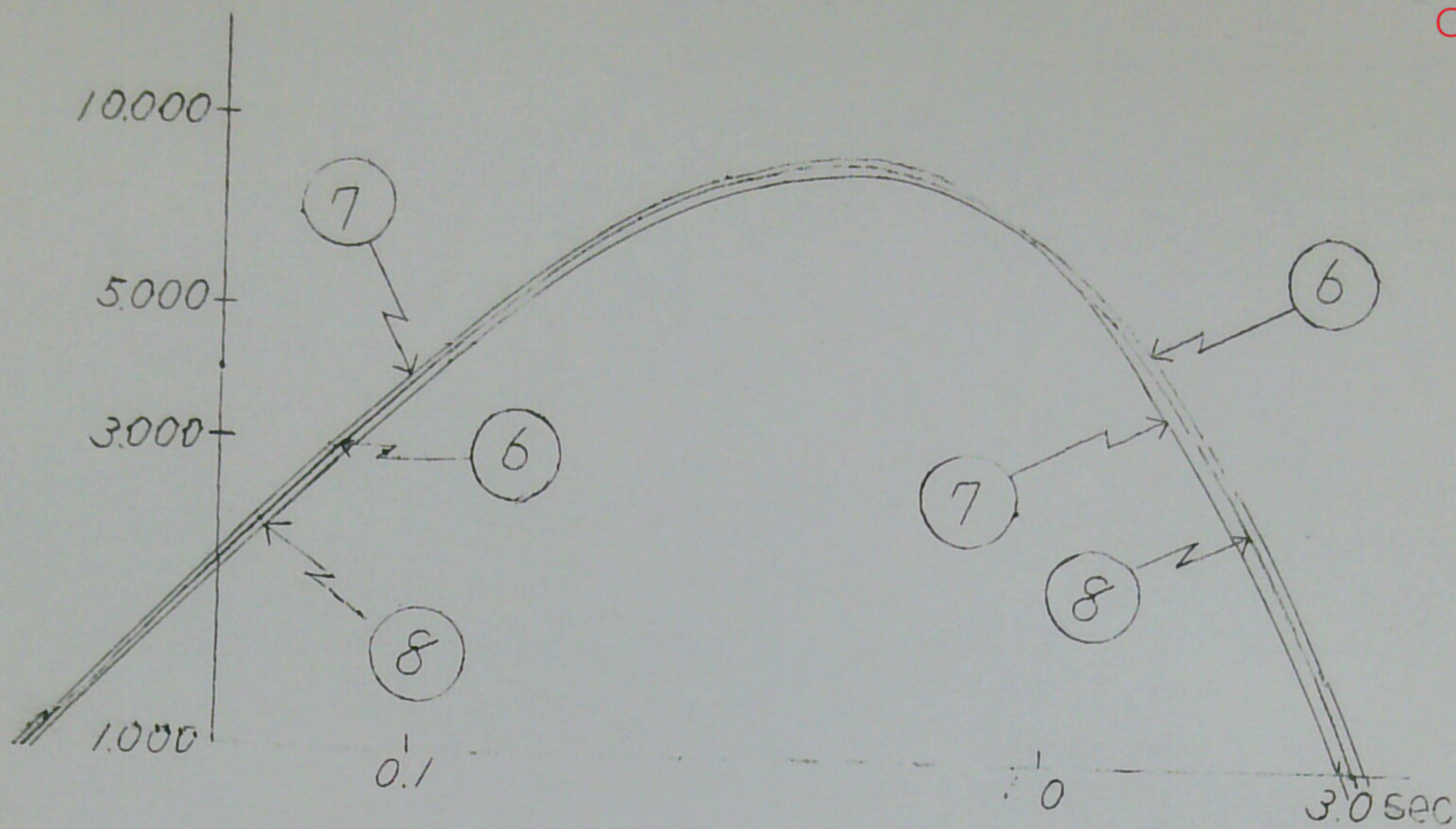
Instrument

No	Name	Component	Vmax	T <sub>1</sub> sec	T <sub>2</sub> sec	h <sub>1</sub>	h <sub>2</sub>	$\rho$ mm	$\alpha$	Date of Cali- bration
1	Wiechert Seismo- graph (200 Kg)	EW	105	3.7		0.50		0.34		2nd, Dec.
2	Wiechert Seismo- graph (200 Kg)	NS	95	3.7		0.60		0.39		"
3	Wiechert Seismo- graph (200 Kg)	UD	105	3.7		0.60		0.31		"
4	Long-period Electromagnetic Seismograph	EW	400	25.3	27.2	1.1	1.0		0.0	28th, Nov.
5	"	NS	123	34.7	41.5	1.5	0.9		0.0	"
6	Short-period Electromagnetic Seismograph	EW	8500*	1.0	1.2	2.0	1.0		0.0	16th, Sept.
7	"	NS	9000*	1.0	1.2	2.0	1.1		0.0	"
8	"	UD	8200*	1.0	1.3	2.0	1.0		0.0	"

Vmax: Maximum magnification.  
T<sub>1</sub> : Period of pendulum.  
T<sub>2</sub> : Period of galvanometer.  
h<sub>1</sub> : Damping constant of pendulum.  
h<sub>2</sub> : Damping constant of galvanometer.  
 $\rho$  : Solid friction.  
 $\alpha$  : Coupling factor.  
\* : Magnification for the amplitudes read  
on the microfilm-reader (magnification 8.4).







Serial No.	Date	Phase	Time			Period	Amplitude			$\Delta$ ca.	Instru- ment	Remarks
			h	m	s		sec	N	E			
			G.M.T.									
			h	m	s	sec	mm	mm	mm			
122	2nd	iPN	18	40	14.7	1.9	-1.1			57°	7	
		ePE			14.4	1.5		+0.6			6	
		iPZ			14.3	1.3			-2.4		8	
		eXN			59.2	2.0	+0.2				2	
		iXZ	41	00	0.7	1.5			+1.5		8	
		iSE	48	06	0.8	8.4		+0.5			4	
123	5th	iPN	10	03	24.1	0.7	+0.9			58°	7	
		ePE			25.0	0.7		-0.3			6	
		iPZ			23.6	0.7			+1.0		8	
124												No trace
125	10th	ePN	02	45	00.9	1.8	-1.0			47°	7	
		ePE			01.0	0.9		-0.7			6	
		iPZ	44	59	9.9	1.5			-1.4		8	
		eXE	55	41		22.5		-0.4			4	
126	10th	ePZ	05	57	15.3	2.6			-0.2	45°	8	
		MN			58.3	2.4	0.1				2	
		ME			58.4	2.6		0.1			1	
127	10th	iPN	19	21	14.7	2.0	+9.9			4°	7	
		ePE			13.3	1.3		-0.1			1	
		ePZ			12.5	1.3			-1.0		8	
		iXZ			14.5	2.0			+9.9		8	
		eSN	22	20	0.9	8.2	+4.4				5	
		eSZ			22.3						3	
128	13th	ePE	17	34	53.0	8.9		+0.2		80°	6	
		ePZ			53.2	2.4			-0.7		8	
		eXN	18	00	23.	16.5	+1.8				5	
		eXE			20.5	36.6		+3.2			4	
		iXN	05	36	4	22.2	+4.0				5	
		eXE			57.2	21.6		+1.5			4	
129	15th	ePN	07	59	09.5	1.8	-0.4			38°	7	
		ePE			11.7	1.7		-0.3			6	
		ePZ			08.3	1.5			+0.5		8	
130	15th	ePN	16	34	34.8	0.6	-0.2			18°	7	
		ePE			35.3	1.1		-0.2			6	
		ePZ			32.6	0.9			-0.2		8	
		iXN			40.2	1.1	-4.4				7	
		iXE			40.5	0.9		+1.6			6	
		iXZ			39.4	1.1			+3.0		8	

Serial No.	Date	Phase	Time			Period sec	Amplitude			$\Delta$ ca.	Instru- ment	Remarks
			G.M.T.				N	E	Z			
			h	m	s		mm	mm	mm			
131	17th	iPN	06	00	23.3	0.6	-3.1			12°	7	
		ePE			22.3	0.7		-0.2			6	
		iPZ			22.5	0.9			-3.6		8	
		iXE			23.3	-		-			6	
		iXE	01	50	00.0	3.5		-1.5			4	
		eSN	02	22	22.7	1.6	-0.7				2	
		iSE			21.9	2.4		-0.6			1	
		iSZ			22.8	2.5			-1.5		3	
132	20th	ePN	12	48	01.6	1.7	+1.0			40°	7	
		ePE			00.9	1.5		+0.5			6	
		ePZ			01.8	1.1			+1.6		8	
		eXE	54	29	29.9	18.0		-1.0			4	
		eXN	57	41	41.9	20.5	+2.1				5	
		eXE			41.2	-		+3.2			4	
		iLE	59	36	36.4	26.8		+4.2			4	
		133	23rd	ePN	01	06	00.3	1.5	+1.2			38°
ePE					05 59.6	1.1		+0.2			6	
iPZ					05 57.7	1.5			-0.6		8	
iXN					06 26.5	1.6	-1.9				7	
134	25th	ePN	22	43	28.3	1.5	-1.1			46°	7	
		iPZ			27.5	0.9			-1.4		8	
		iXN			29.2	0.5	+2.0				7	
		eXE			29.4	-		+			6	
		eXN			57.4	1.7	+0.3				2	
		eXE			57.4	1.5		+0.2			1	
		iSN	50	13	13.7	6.0	+0.5				5	
		eSE			14.7	3.5		+0.3			4	
		eLE	23	00	09.	21.2		-1.0			4	
		eLE			01 09.2	22.4		-0.8			4	
135	26th	ePE	05	18	29.4	0.5		+0.3		47°	6	
		iPZ			28.5	0.7			-1.7		8	
		eSN			25 16.0	3.7	+0.3				5	
136	26th	ePE	11	42	20.1	4.1		-0.2		32°	4	
		ePZ			19.9	0.7			-0.6		8	
		eLN	49	47	47.5	27.2	+0.5				5	
		eLE			55.	25.2		+0.7			4	
137	28th	ME	21	01	38.	39.8		1.1			4	
138	29th	ePN	22	39	14.6	2.4	+0.1			151°	2	
		ePE			11.7	1.6		+0.2			6	
		iPZ			10.1	2.6			+2.0		8	
		eXN			16.1	1.3	-2.7				7	
		iXE			18.5	1.3		-2.3			6	
		iXZ			16.7	2.2			-24.3		8	
		iXN	41	24	24.4	20.8	-2.0				5	
139	30th	ePN	21	57	59.7	2.0	+0.2			14°	5	
		ePE			58.0	1.3		+0.1			1	
		ePZ			57.5	2.7			+0.1		3	
		eSN	22	00	00.2	2.0	-0.3				1	
		eSZ			00.4	1.6			-0.1		3	
		iLN			48.4	20.6	-1.6				5	



International  
Seismological  
Centre

WORLD DATA CENTER  
FOR GEOMAGNETISM, SEISMOLOGY, AND GRAVITY

NOAA

# SEISMOLOGICAL REPORT

for

I. G. Y.

Dec., 1957

Seismological Observatory.

Tohoku University.

Sendai, Japan.

Dec., 1957.

Station: Seismological Observatory, (Mukaiyama Observatory),  
Tohoku University, Sendai, Japan.

Longitude: 140° 51' 30" E.

Latitude: 38° 14' 32" N.

Elevation: 128 m.

Foundation: Sandstone.

Instrument:

No	Name	Component	Vmax	T <sub>1</sub> sec	T <sub>2</sub> sec	h <sub>1</sub>	h <sub>2</sub>	$\int$ mm	$\alpha$	Date of Calibration
1.	Wiechert Seismograph (200 Kg)	EW	128	3.8		0.56		0.29		27th, Dec.
2.	Wiechert Seismograph (200 Kg)	NS	126	3.8		0.56		0.26		"
3.	Wiechert Seismograph (1,200 Kg)	UD	105	3.8		0.60		0.29		"
4.	Long-period Electromagnetic Seismograph	EW	141	23.3	25.7	1.1	1.0		0.0	26th, Dec.
5.	"	NS	127	25.9	41.3	1.4	1.0		0.0	"
6.	Short-period Electromagnetic Seismograph	EW	8,500*	1.0	1.2	2.0	1.0		0.0	16th, Sept.
7.	"	NS	9,000*	1.0	1.2	2.0	1.1		0.0	"
8.	"	UD	8,200*	1.0	1.3	2.0	1.1		0.0	"

Vmax: Maximum magnification.

T<sub>1</sub> : Period of pendulum.

T<sub>2</sub> : Period of galvanometer.

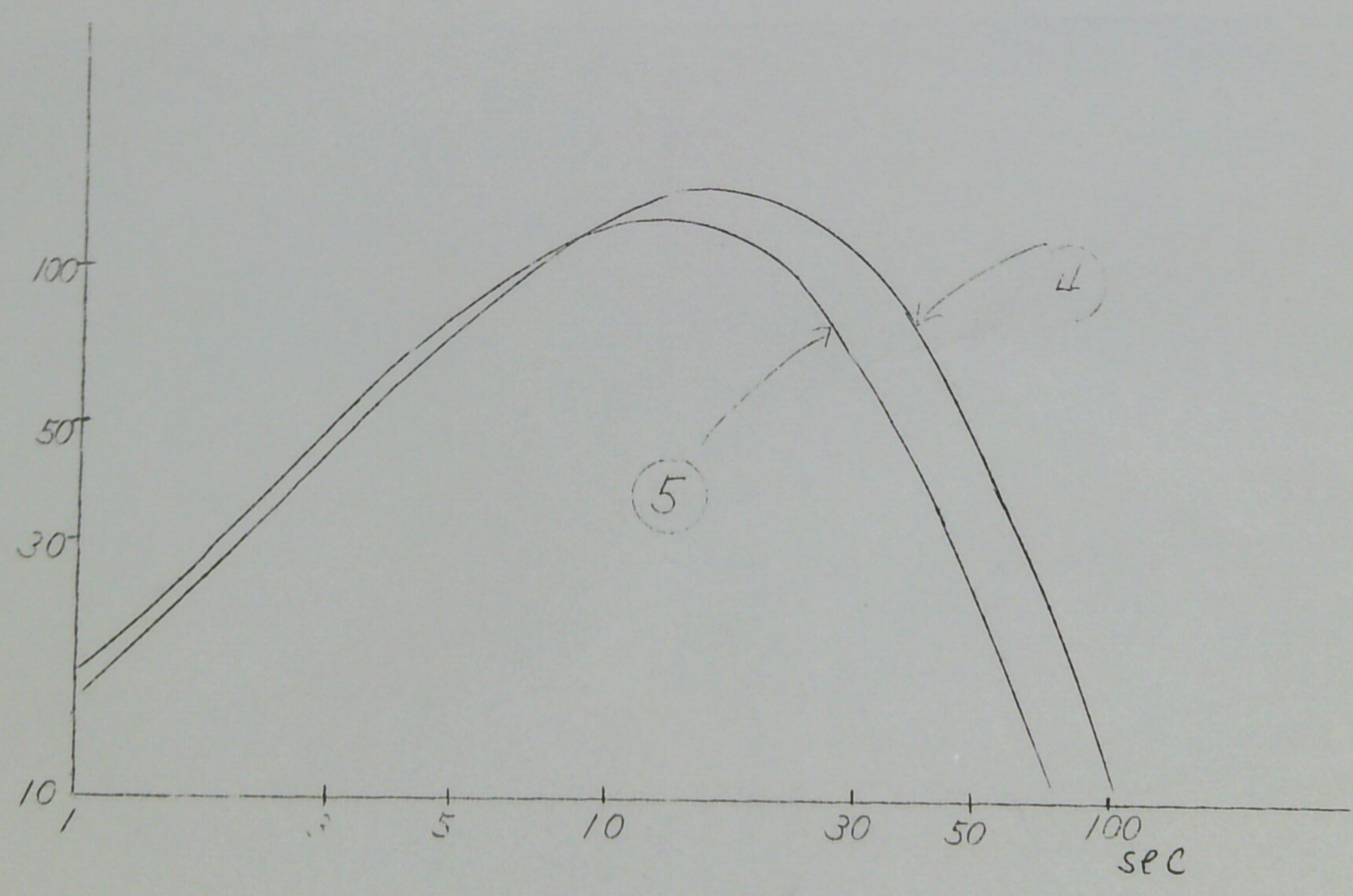
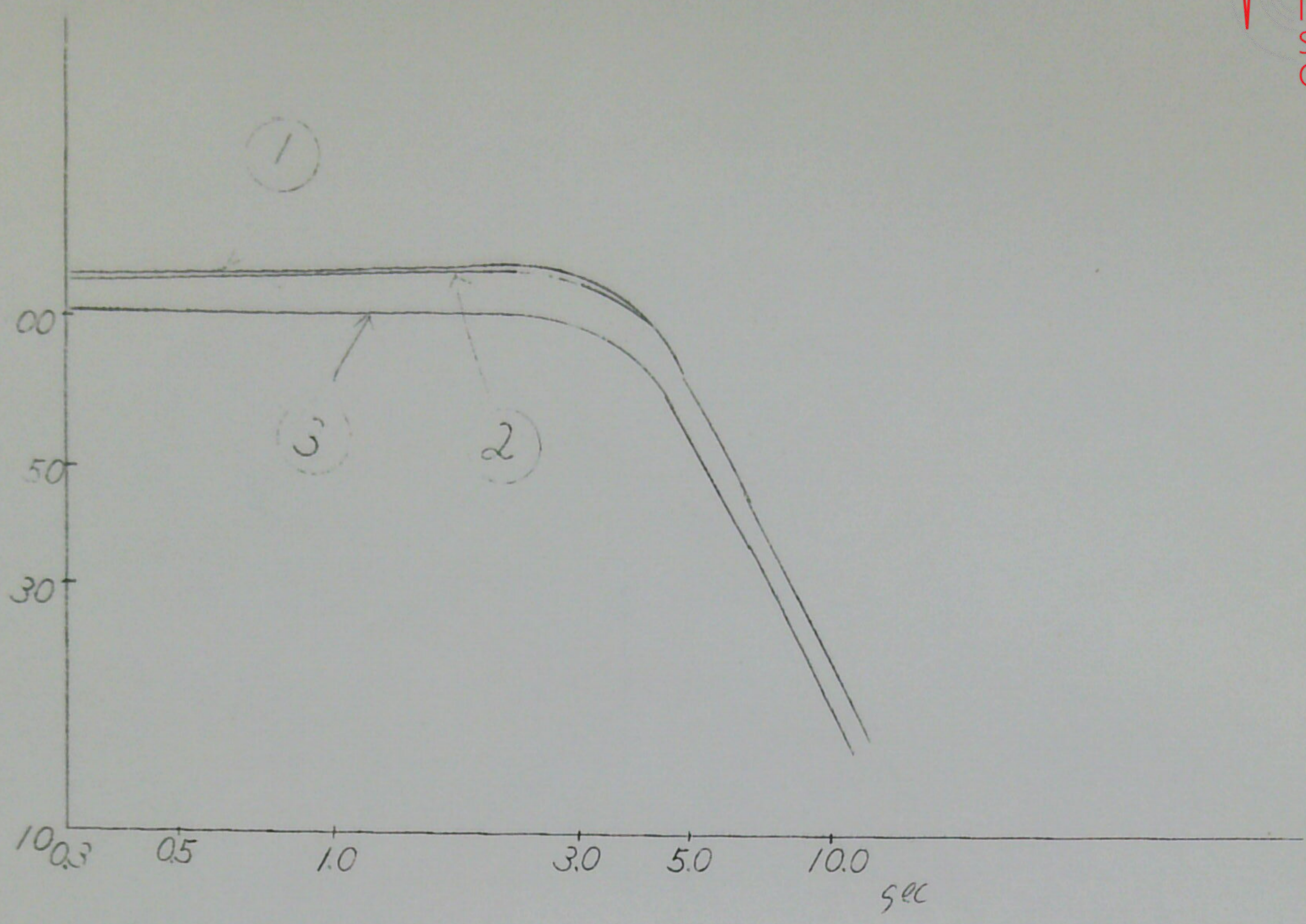
h<sub>1</sub> : Damping constant of pendulum.

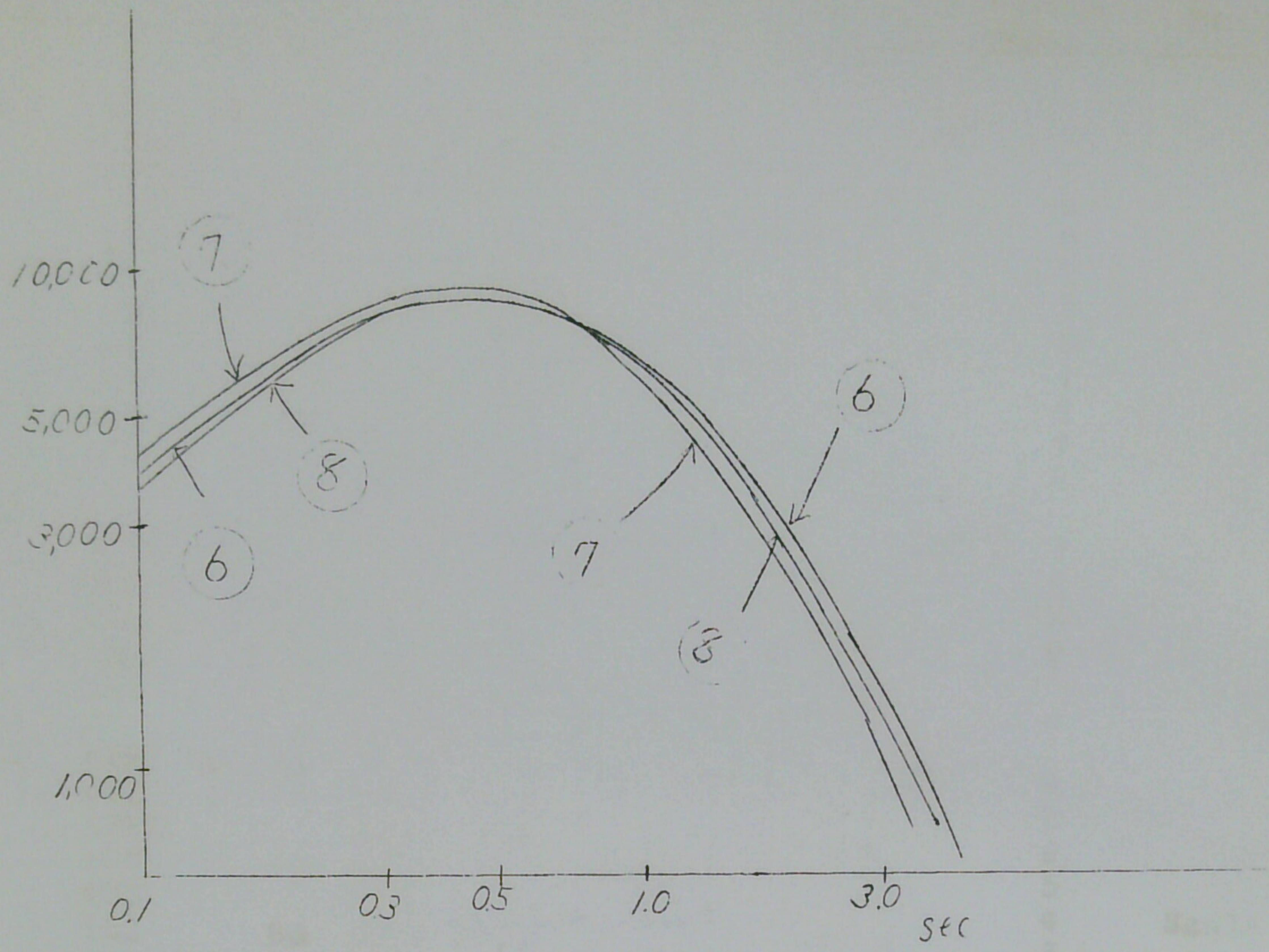
h<sub>2</sub> : Damping constant of galvanometer.

$\int$  : Solid friction.

$\alpha$  : Coupling factor.

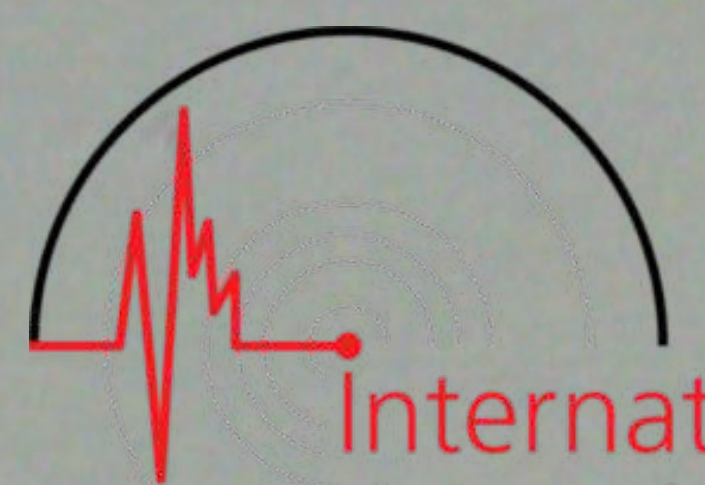
\* : Magnification for the amplitudes read on  
microfilm-reader (magnification 8.4).





Serial No.	Date	Phase	Time G.M.T.			Period sec	Amplitude			Instrument	Remarks	
			h.	m.	s.		N mm	E mm	Z mm			
140	1st	ePN	01	03	39.0	0.9	-0.6			14°	7	No trace.
		ePE			38.5	0.5		+0.8			6	
		ePZ			32.9	1.6			-0.5		8	
		eXE	05		54.7	1.1		-1.0			6	
		iXN			54.5	1.7		-1.0			7	
		eXZ			54.5	1.1			+1.2		8	
		eSN	06		10.7	2.0		+0.2			5	
		eSE			10.9	1.6			+0.2		4	
		eSZ			07.8	1.7				+1.2	8	
		iXN	08		28.9	1.5		+1.3			7	
eXZ			25.2	1.3				+0.6	8			
141	1st	ePE	01	12	09.3	0.4		+0.4		13°	6	
		ePZ			06.7	0.4			-0.3		8	
		eSN	14		10.2	2.2		-0.2			5	
		eSZ			11.6	0.4			+0.9		8	
		iXZ	15		39.6	1.1			+3.1		8	
		iXZ	16		24.9	2.0			-2.0		8	
142	4th	ePE	03	44	12.8	5.3		+0.2		31°	4	Scale out.
		ePZ			15.3	0.7			+0.5		8	
		iPPZ			29.1	2.7			+4.4		8	
		iSN	49		22.5			+32.			5	
		iSE			22.8				+		4	
		iLZ	53		59.1	27.6				+13.3	3	
143	7th	ePN	03	24	39.					48°	7	
		ePE			34.4	2.2		+0.4			6	
					34.9	1.4			-0.7		8	
144	10th	iPN	14	44	27.7	13.1		-0.6		46°	5	
		iFE			34.2	17.7			-0.9		4	
		ePZ			28.1	1.5			+1.0		8	
		iXN	45		30.7	1.6		-3.8			7	
		iXZ			25.2	1.6				-1.1	8	
		eSN	51		37.0	22.2		+1.6			5	
		eSE			13.6	16.7			-0.7		5	
		iSSN	54		50.7	24.1		-1.0			5	
iSSE			49.7	24.2			-2.1		4			
145	12th	ePN	18	48	11.9	0.7		-1.2		57°	7	
		ePZ			10.5	2.0			-0.9		8	
146											No trace.	
147	13th	ePN	01	56	31.2	2.4		-0.1		72°	2	
		ePE			22.5	1.5		+0.9			6	
		iPZ			24.9	2.2			-1.7		8	
		iSN	02	05	43.5	12.1		-1.3			5	
		iSE			42.5	8.2		+1.1			4	
		iXN	06		30.1	15.6		+2.4			5	
		iXE			26.0	11.7		+1.9			4	





Serial No.	Date	Phase	Time G.M.T.			Period sec	Amplitude			$\Delta ca$	Instrument	Remarks		
			h.	m.	s.		N mm	E mm	Z mm					
147 (cont'd)	13th	iLN	23		48.5	35.2	-2.1				5			
		iLE			28.7	35.		+1.8		4				
148												No trace.		
149	16th	ePZ	17	38	27.6	2.5			-0.1	63°	3			
150	17th	iPN	05	14	58.8	2.4	+1.1					7		
		iPE			59.5	1.5		-1.0			6			
		iPZ			58.3	1.8			-3.6		8			
		ePPN	15	14.6	2.4	+0.4						2		
		iPPZ		11.4	1.9			-1.4		3				
		iXN		43.7	12.1	+0.9						5		
		iXE		44.9	17.5		-3.8					4		
		iSSSN	19	04.3	19.8	+7.6						5		
		iSSSE		00.5	8.7		+1.1			4				
		eLN	26	01.0	17.1	-3.0						5		
		iLN		34.6	15.0		-2.6			4				
151	17th	ePN	13	59	45.1	0.7	+1.0			56°		7		
		ePE			44.8	0.7		-1.2			6			
		ePZ		44.4	0.9			+1.4				8		
		iXN		50.1	3.7	+11.0						7		
		iXE		48.4	3.1		+7.9					6		
		iXZ		48.2	2.9			-8.1				8		
		iSN	14	07	25.0	25.6	-24.0						5	
		iSE			24.2	21.6		+6.8					4	
		iSSSN	13	30.6	24.0	-13.3							5	
		iSSSE		57.3	24.2		+17.0				4			
		152	23rd	eXZ	12	53	13.6	2.5			+0.1	107°		3
eXZ	39.0			2.1				-0.1			3			
eXZ	56			07.0			2.4		-0.1			3		
153	25th	ePN	02	14	09.9	1.5	-0.1			21°		2		
		ePE			12.8	1.7		+0.1			1			
		ePZ			05.5	1.4			-0.1		3			
		eXN			21.8	2.1	-0.1				2			
		eXZ			19.3	1.9			+0.1		3			
154												No trace.		
155	28th	ePKPN	14	56	40.7	1.8	-0.8			150°		7		
		iXN			57.1	1.6	-2.1				7			
		eXE			57.2	1.9		+0.1			1			
156	31st	ePE	14	41	02.1	2.0		+0.1		86°		1		
		ePZ			40	58.1	1.6			+0.2		3		
		eXN			41	12.1	2.2	-0.1				2		
		eXZ				12.7	1.6			-0.2		3		