CONFIDENTIAL 19-180

2" 1mp BOL 9/1/02

SCHLUMBERGER

BOREHOLE COMPENSATED SONIC LOG (WITH CALIPER)

COUNTY
FIELD or LOCATION
WELL
COMPANY

COMPANY Shell Oil Company
WELL Grays Harbor LHA 1-15 (Strat Test 21)
FIELD Ocean City Area
COUNTY Grays Harbor STATE Washington
LOCATION SE/4
Sec. 15 Twp. 19N Rge. 12W

Other Services:

Permanent Datum: GL, Elev. 32.8
Log Measured From KB, 12 Ft. Above Perm. Datum
Drilling Measured From KB

Elev.: K.B. 44.8
D.F.
G.L.

Date	6-16-70				
Run No.	1				
Depth—Driller	2034				
Depth—Logger	2029				
Btm. Log Interval	2028				
Top Log Interval	514				
Casing—Driller	9 5/8 @ 514	@		@	
Casing—Logger	514				
Bit Size	8 3/4				
Type Fluid in Hole	Fresh Lignin				
Dens. / Visc.	83 / 51				
pH / Fluid Loss	10.4 / 7.6 ml	ml	ml	ml	ml
Source of Sample	Circulated				
R_m @ Meas. Temp.	2.42 @ 64 °F	@ °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	2.35 @ 59 °F	@ °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	3.81 @ 59 °F	@ °F	@ °F	@ °F	@ °F
Source: R_{mf} R_{mc}	m m				
R_m @ BHT	@ 85 °F	@ °F	@ °F	@ °F	@ °F
Time Since Circ.	3				
Max. Rec. Temp.	85 °F	°F	°F	°F	°F
Equip. / Location	116 / SAC				
Recorded By	[illegible]				
Witnessed By	Hastings				

FOLD HERE

The well name, location and borehole reference data were furnished by the customer.

REMARKS

Changes in Mud Type or Additional Samples					
Date	Sample No.				
Depth—Driller					
Type Fluid in Hole					
Dens.	Visc.				
ph	Fluid Loss	ml			
Source of Sample					
R_m @ Meas. Temp.		@ °F		@ °F	
R_{mf} @ Meas. Temp.		@ °F		@ °F	
R_{mc} @ Meas. Temp.		@ °F		@ °F	
Source: R_{mf}	R_{mc}				

Scale Changes			
Type Log	Depth	Scale Up Hole	Scale Down Hole

Equipment Data			
Run No.	Tool Type	Tool Position	Other
1	BHC	Centered	

SWS-1384-C

R_m @ BHT	@ °F	@ °F					
R_{mf} @ BHT	@ °F	@ °F					
R_{mc} @ BHT	@ °F	@ °F					

C.D.: Used S.O.:
Equip. Used: CART. No. D69
PANEL No. A5-1
SONDE No. A32

Velocity (feet per second) = $\frac{1{,}000{,}000}{\text{Interval Transit Time (microseconds per foot)}}$

SPONTANEOUS-POTENTIAL
MILLIVOLTS

10
− ↔ +

CALIPER
HOLE DIAM. IN INCHES

6" 16"

DEPTHS

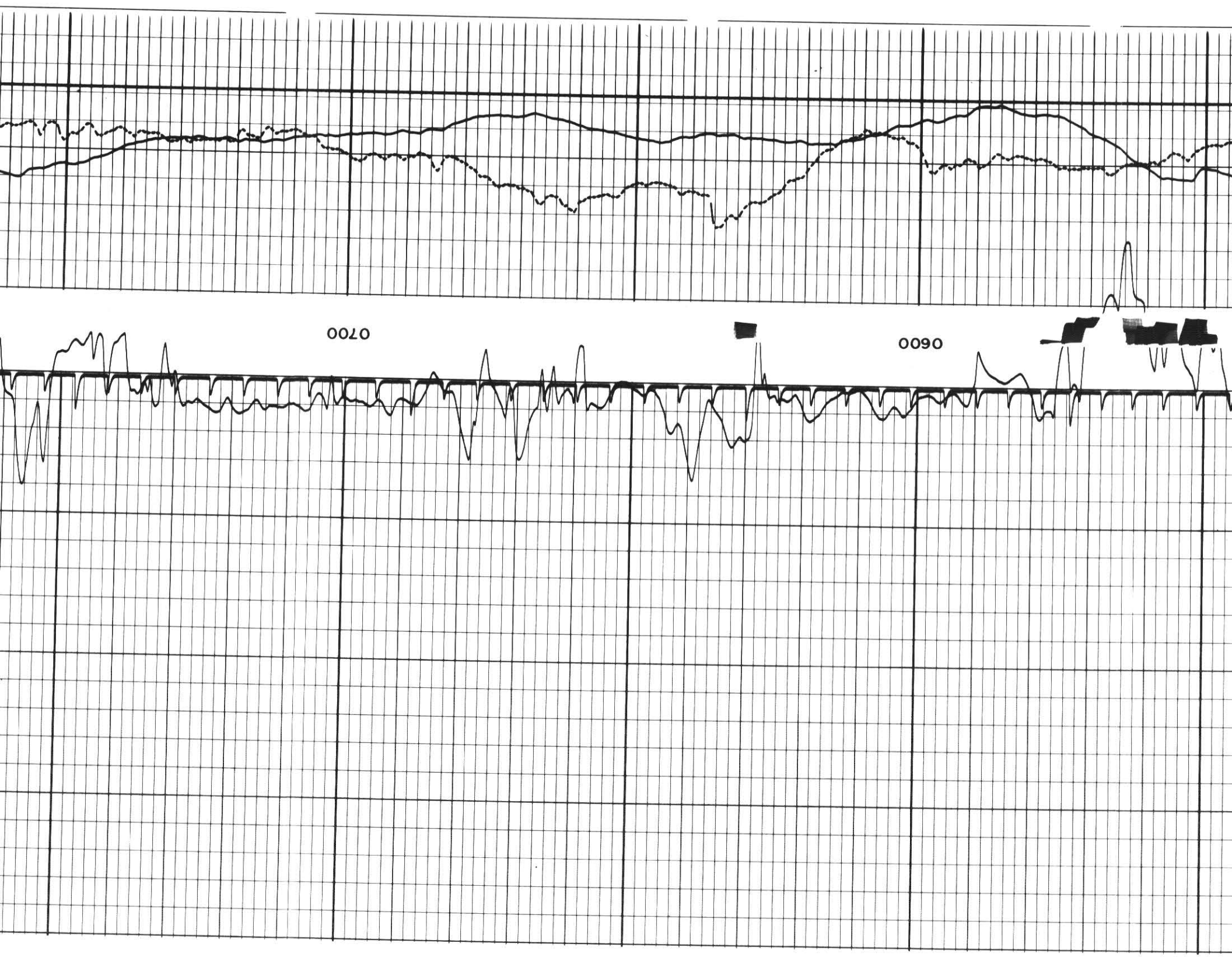
INTERVAL TRANSIT TIME
MICROSECONDS PER FOOT

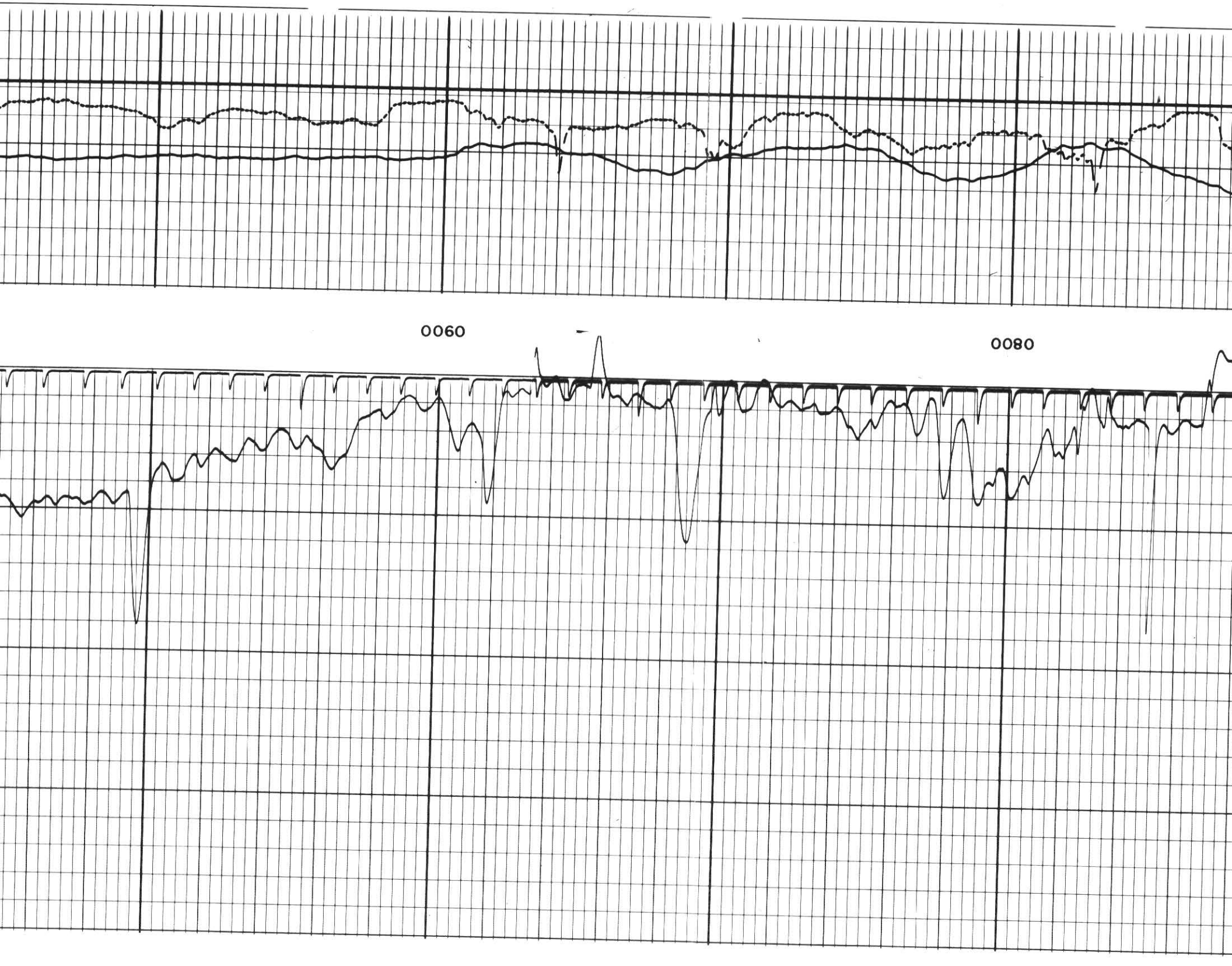
T 3' R1 2' R2

175 125 75

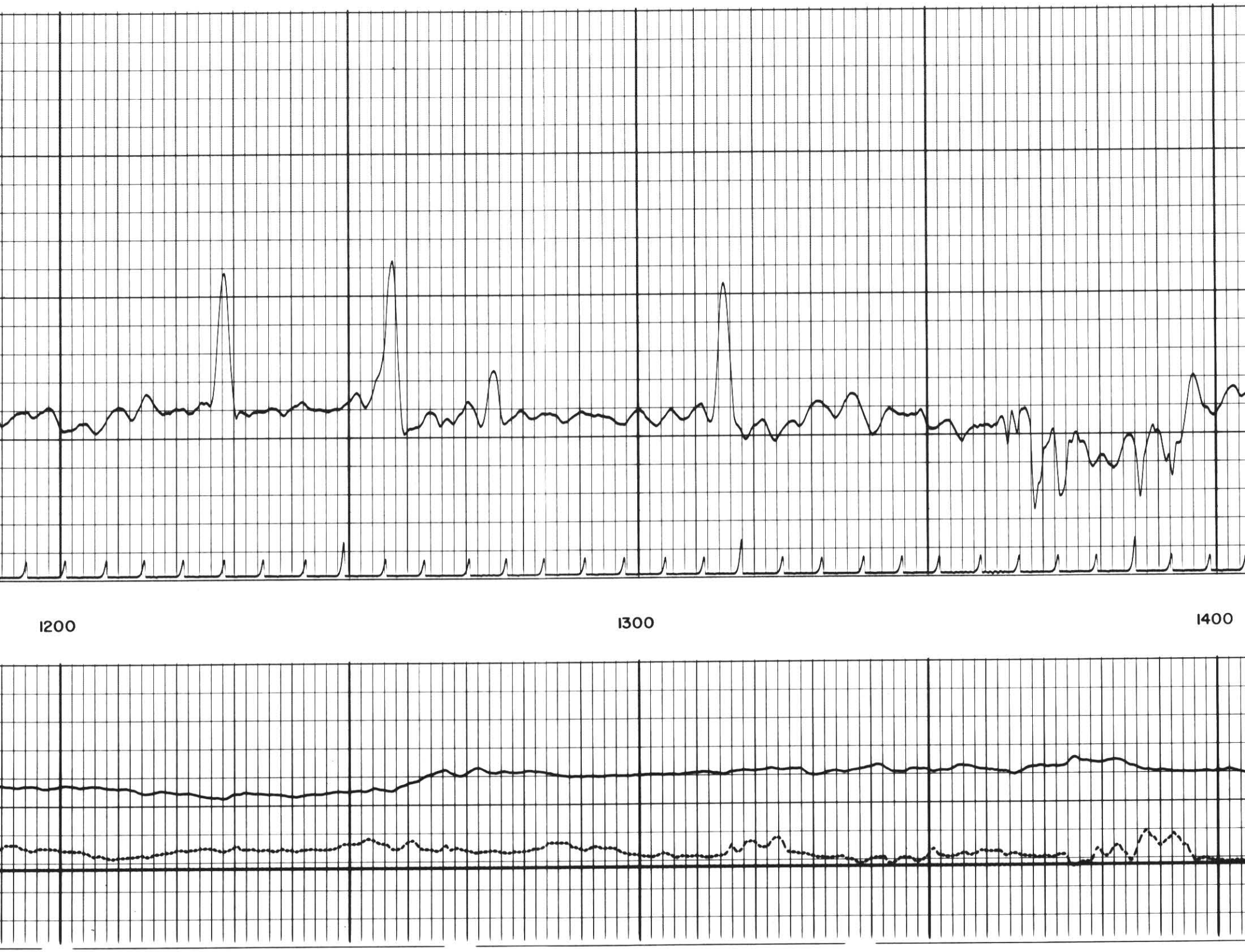
(75) —— 50

1650

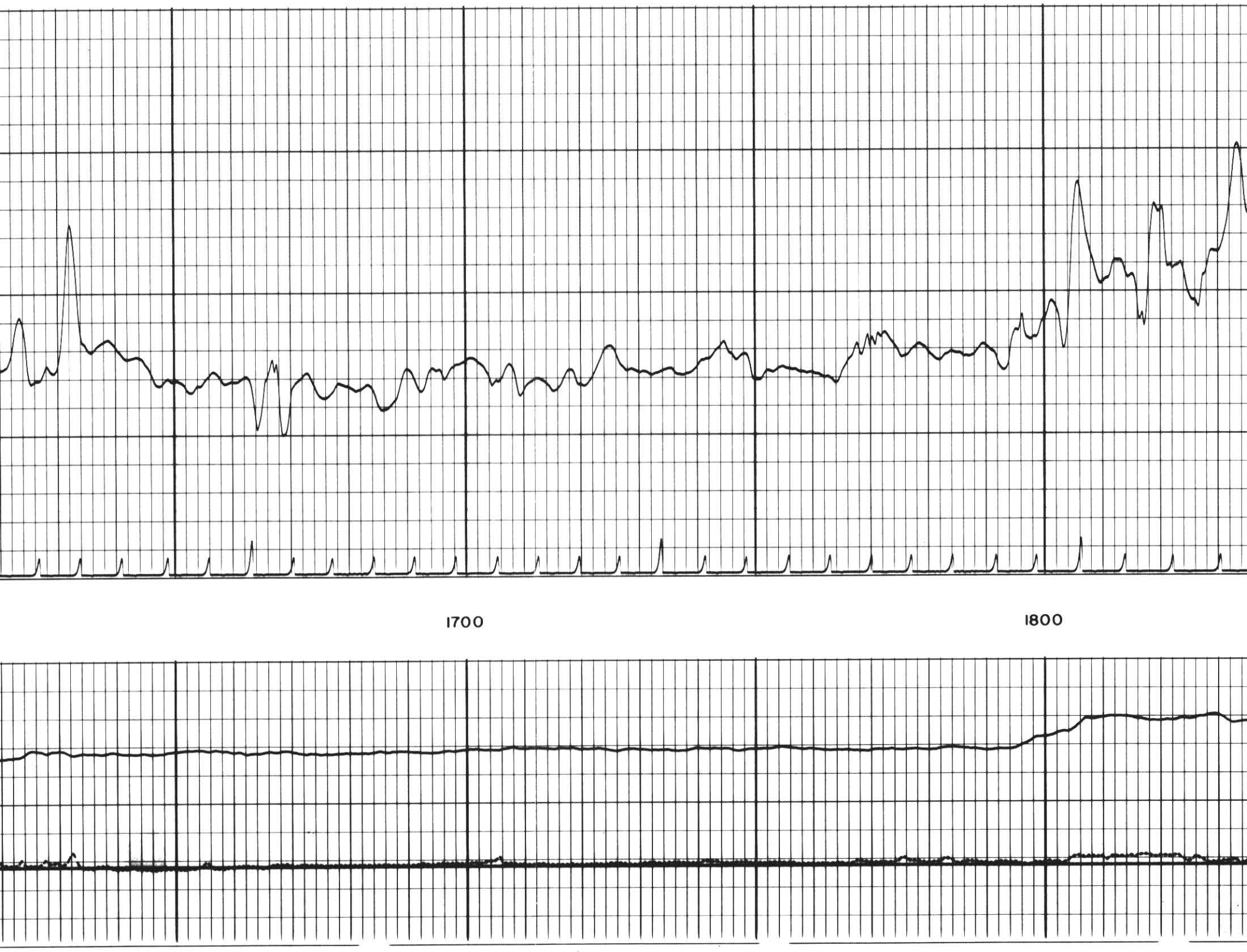

0700
0600

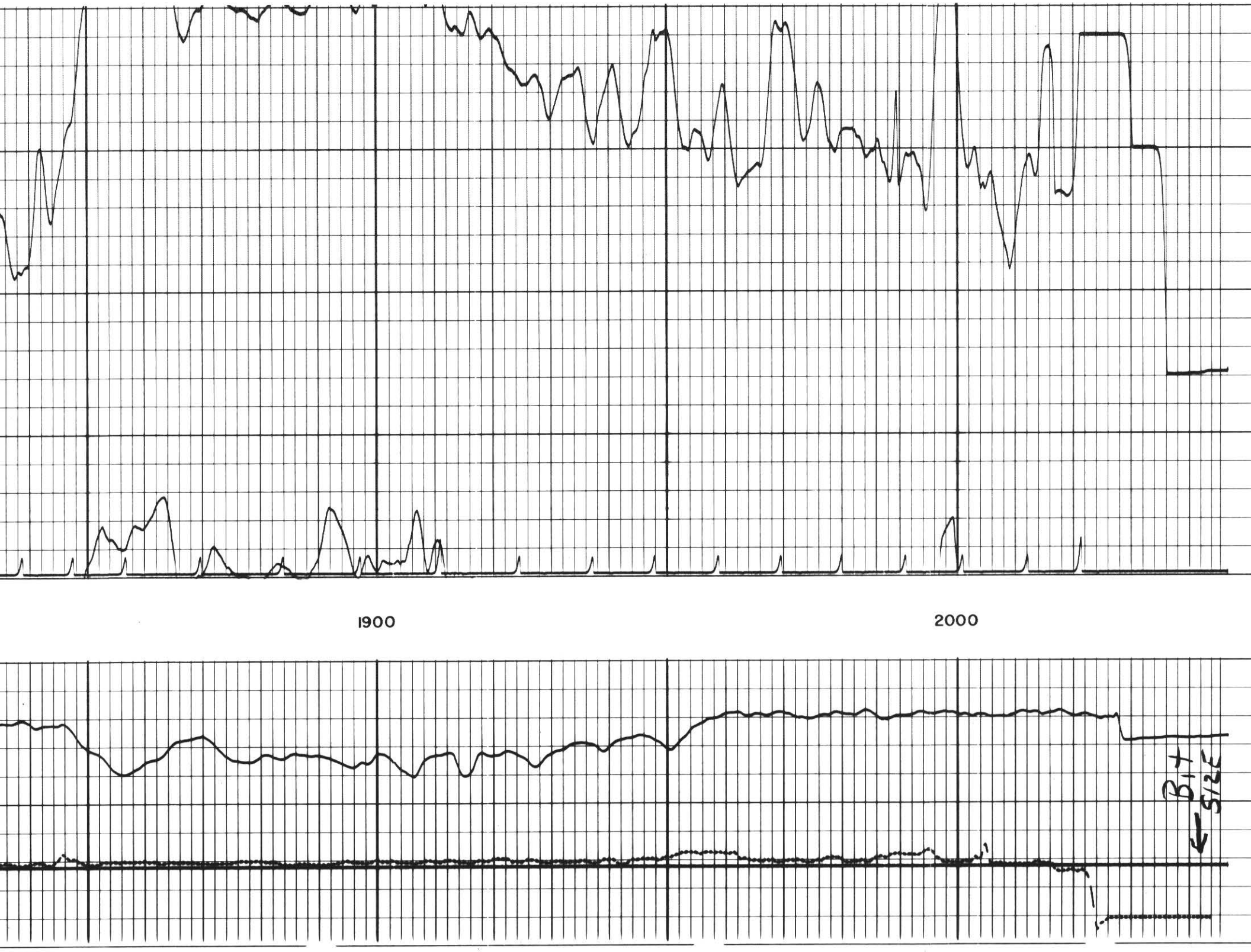

0060
0080

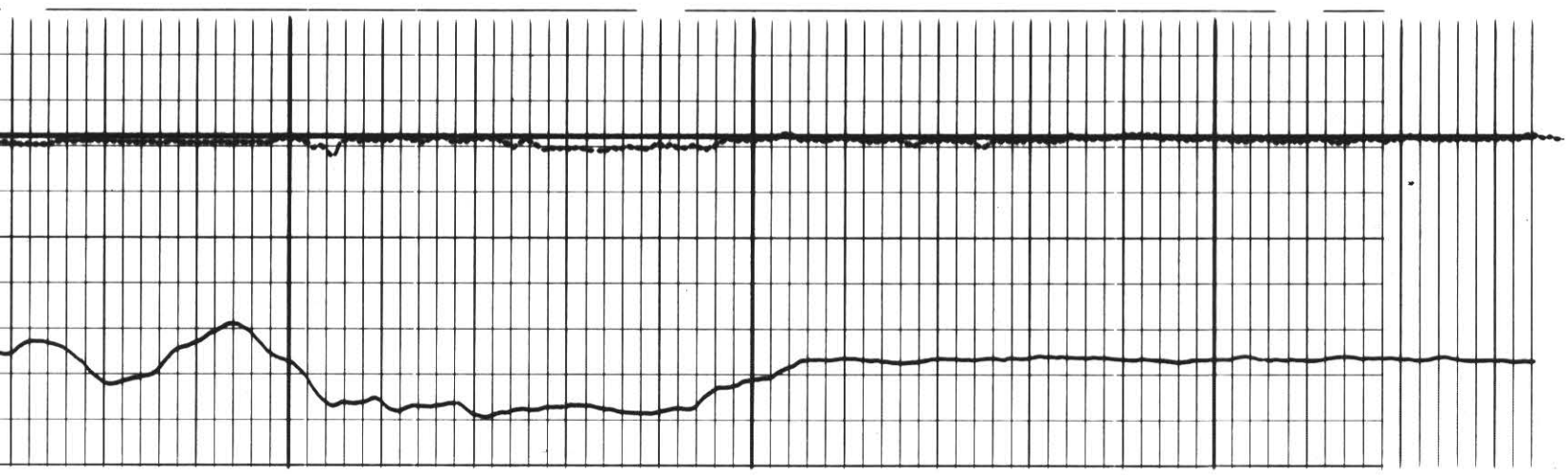
0011
0001

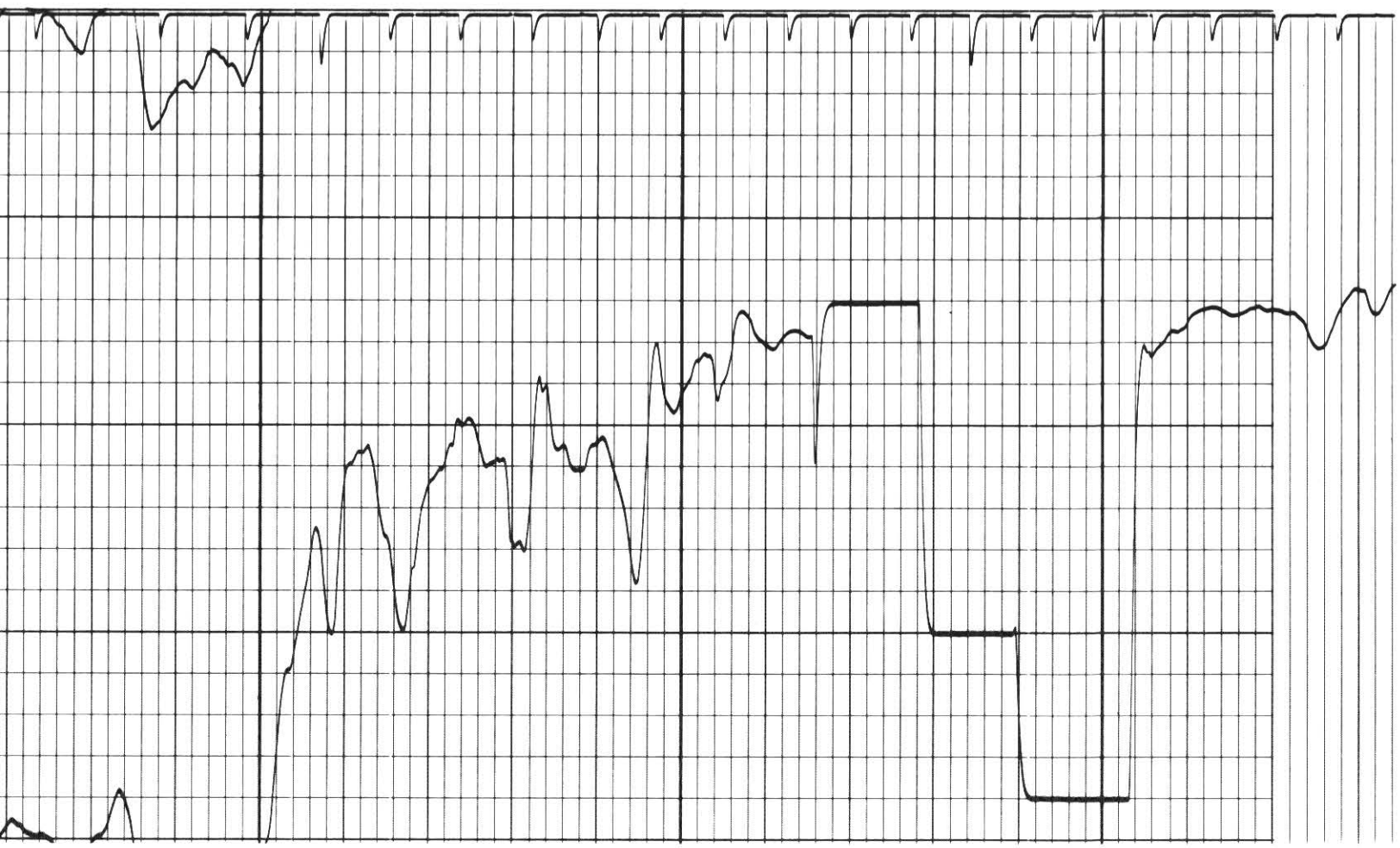

1200
1300
1400

1500
1600


1700
1800


1900
2000
Bit
SIZE





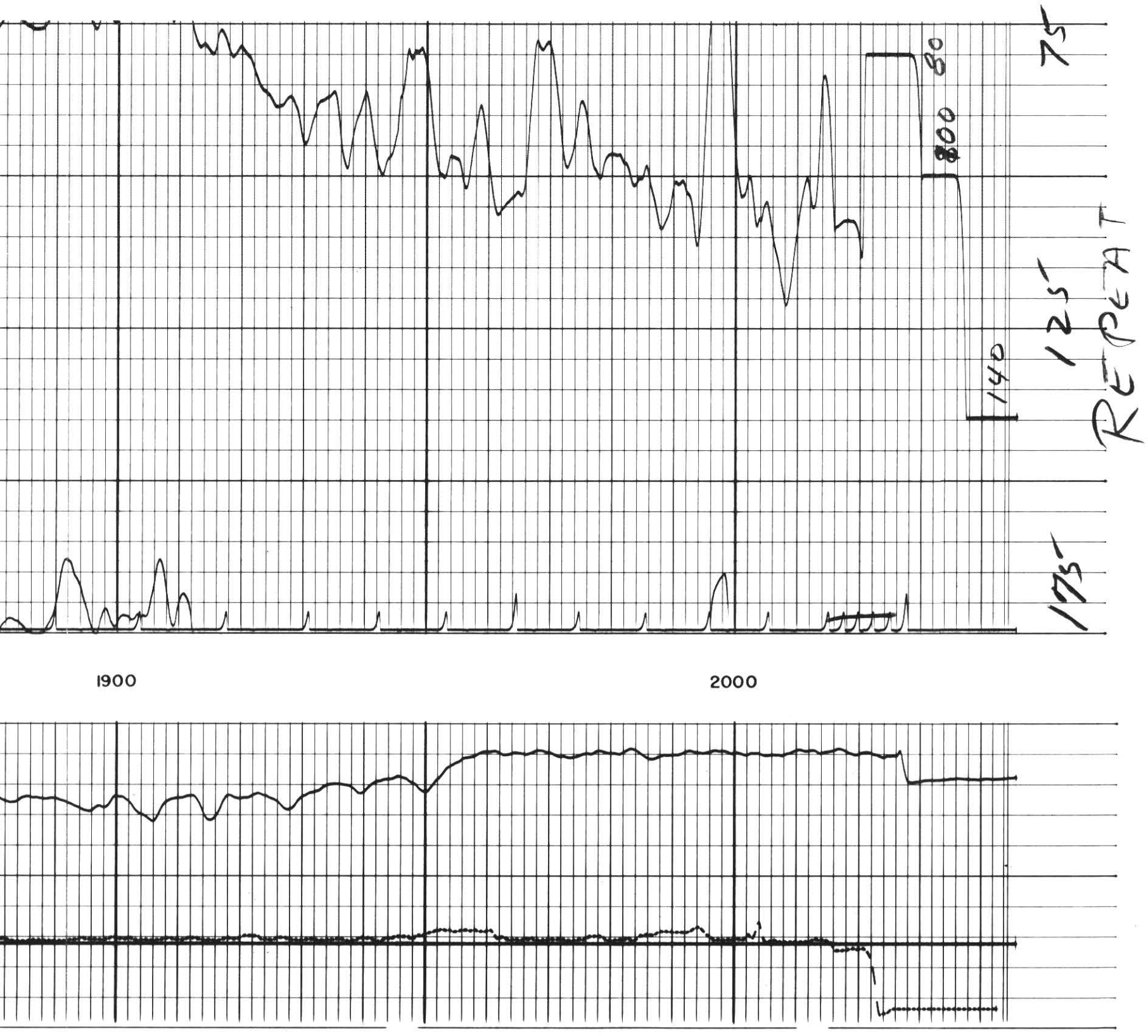
6"

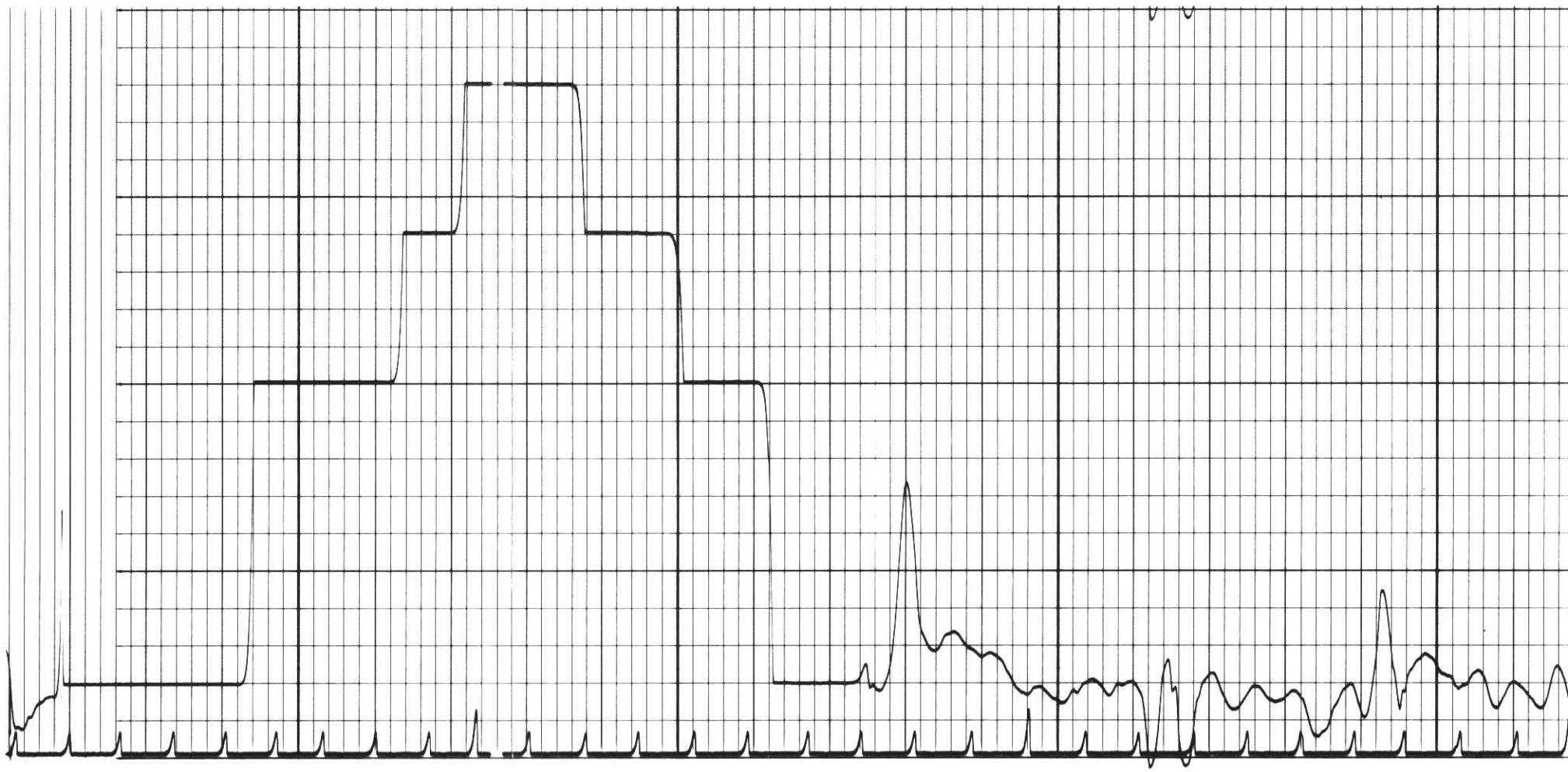
16"

175

125

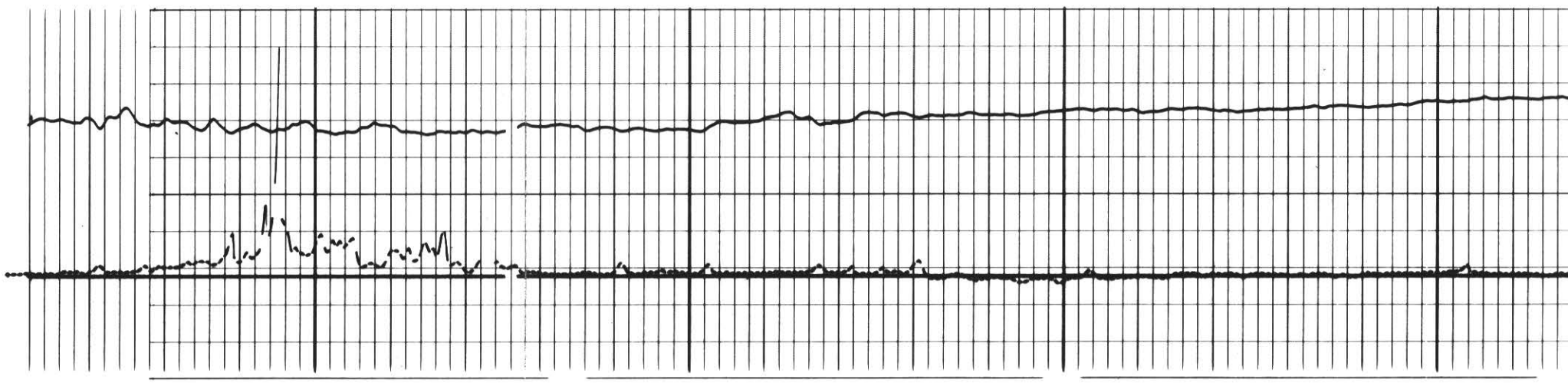
75

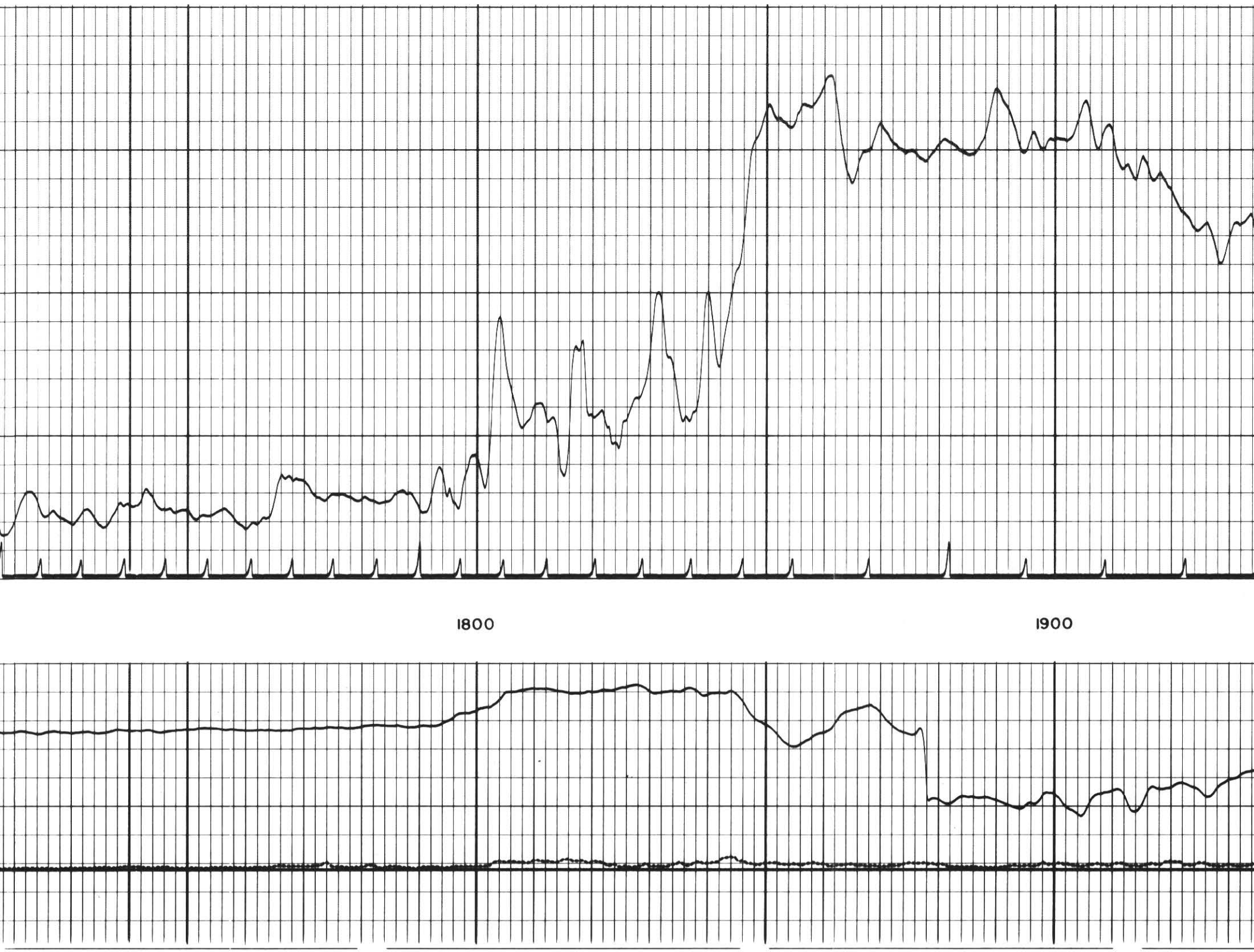

80
800
140
75'
125'
REPEAT
175'
1900
2000

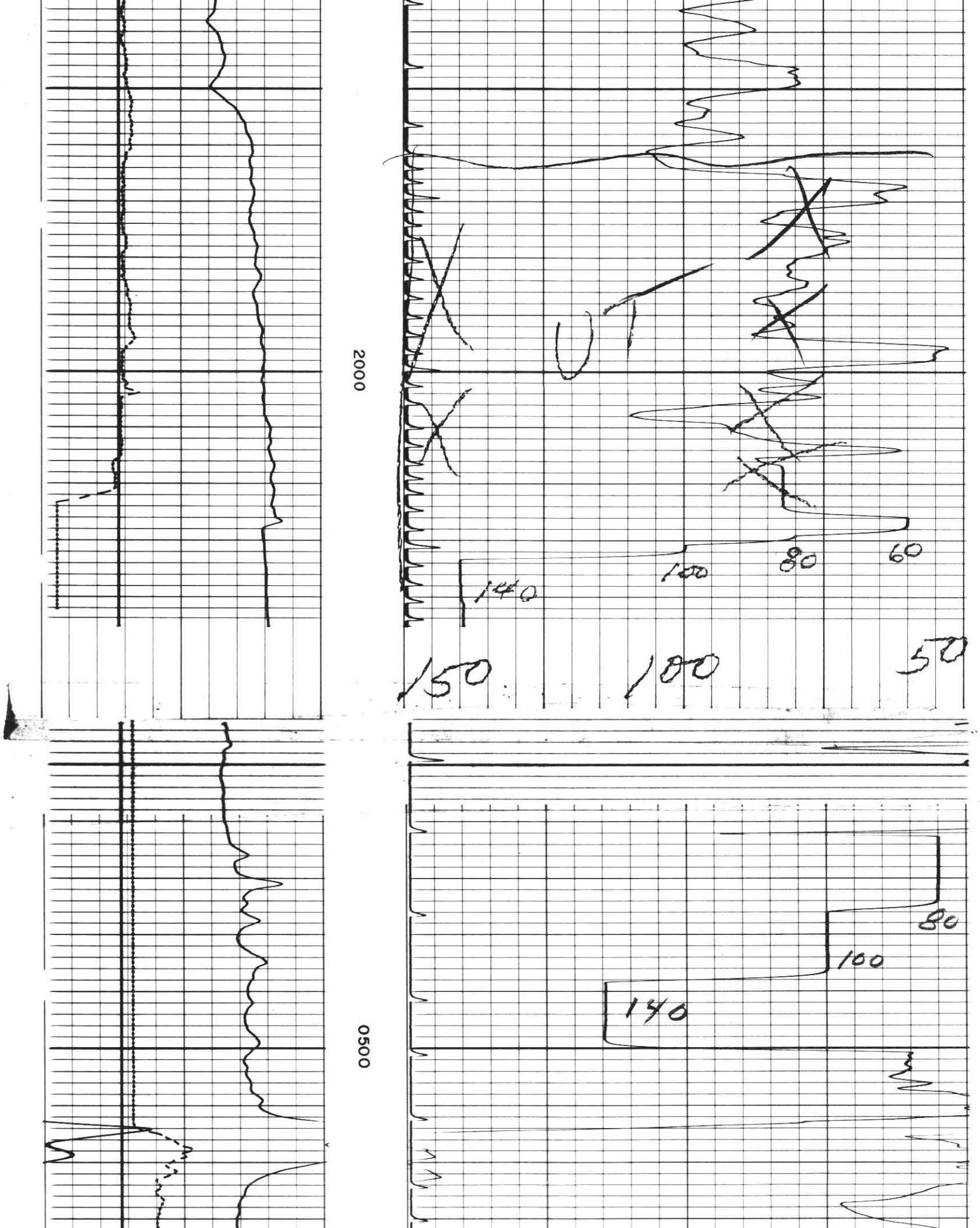


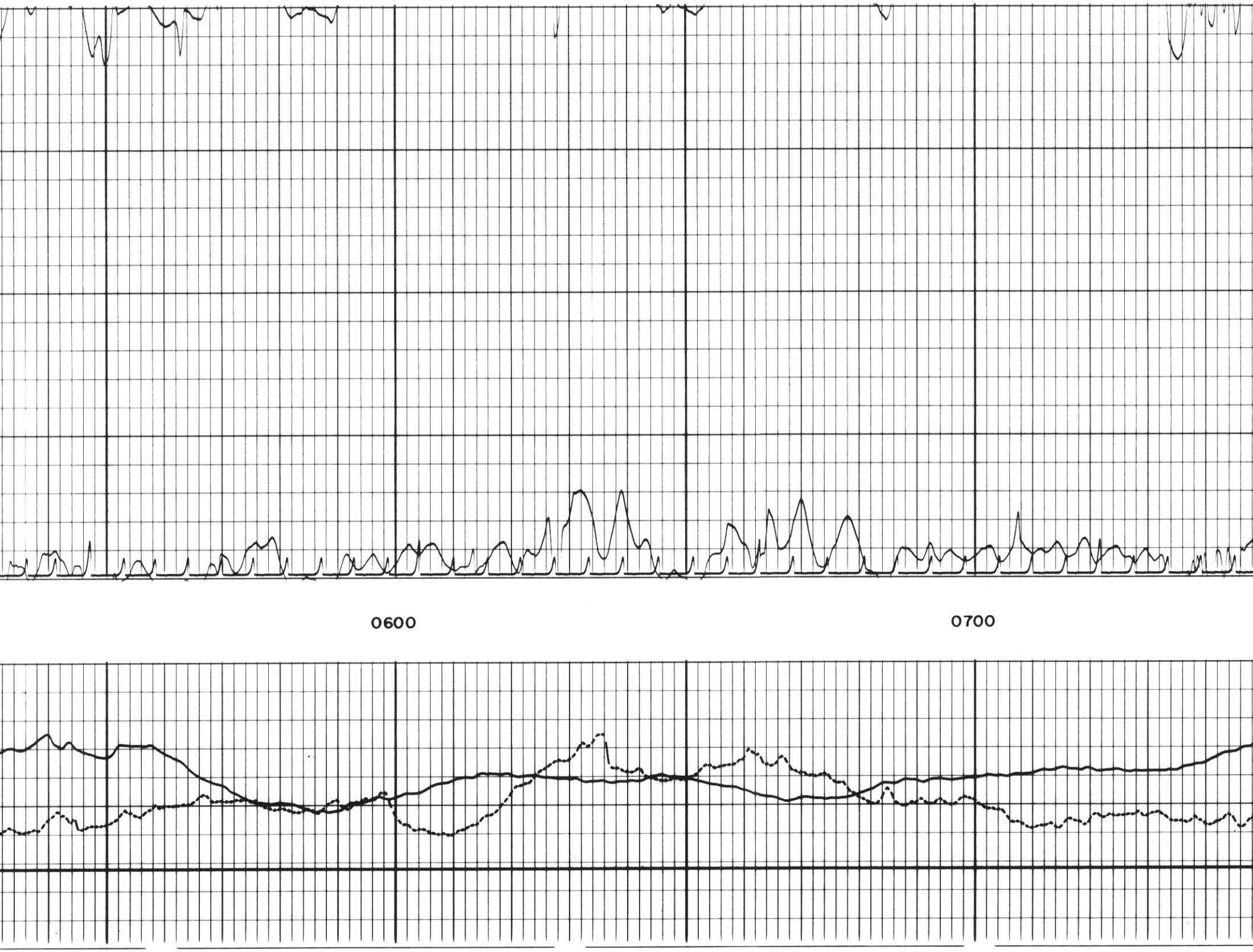
1600

1700




1800
1900


2000
0500
140
100
80
60
150
100
50
80
100
140


0600
0700

0800
BACKUP
225
175
175
125
75
REPEAT