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ION. ANT.— 34

IONOSPHERIC DATA AT SYOWA STATION

(ANTARCTICA)

January 1980–June 1980

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RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TOKYO, JAPAN

INTRODUCTION

Vertical soundings of ionosphere at Syowa Station, Antarctica, have been carried out by the Radio Research Laboratories, through the sponsorship of the National Institute of Polar Research of Japan.

LOCATION OF SYOWA STATION

Geographic		Geomagnetic	
Latitude	Longitude	Latitude	Longitude
69°00.4'S	39°35.4'E	-69.8°	78.2°

SPECIFICATIONS OF THE IONOSONDE USED AT SYOWA STATION

Items	Specificatons
Frequency Range	400 kHz-15 MHz
Transmitting power	10 kW (peak value)
Duration of Sweep	20 sec
Transmitted Pulse Width	80 μsec
Recurrence Frequency of Transmitted Pulse	50 Hz (by power source frequency)
Frequency Scale	every 1 MHz
Height Range	900 km
Height Scale	every 50 km
Total Receiver Gain	120 dB
Recording Method	35 mm film and video fax for ionograms
Power Supply	100 volt AC, 2.0 kVA
Transmitting Antenna and Receiving Antenna	30 m height vertical delta terminated by 600 Ω respectively

DESCRIPTION

a. All symbols and terminology in the tables or figures of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction (Second Edition 1972)"

b. Ionograms data are printed in the quarter hourly of every days.

c. Characteristics of Ionosphere

fxI	Top frequency of spread F traces or oblique traces.
fof2	Ordinary wave critical frequency for the F2 layer.
fEs(ftEs)	Top fnequency of Es layer as reflected overhead.
fmin	Lowest frequency showing vertical ionospheric reflection.
h'F	Minimum virtual height of the ordinary wave F trace as a whole.

Symbols

(i) Descriptive Letters.

The following letters are entered after, or used to replace, a numerical value on the monthly tabulation sheets.

A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example, Es.

B Measurement influenced by, or impossible because of, absorption in the vicinity of fmin.

C Measurement influenced by, or impossible because of, any non-ionospheric reason.

D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range.

F Measurement influenced by, or impossible because of, the presence of spread echoes.

G Measurement influenced or impossible because the ionization density of the layer is too small to enable it to made accurately.

H Measurement influenced by, or impossible because of, the presence of stratification.

K Presence of particle E layer.

L Measurement influenced by or impossible because the trace has no sufficiently definite cusp between layers.

M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

P Man-made perturbation of parameters-Presence of polar spur traces.

Q Range spread present.

R Measurement infuenced by, or impossible because of, attenuation in the vicinity of a critical frequency.

S Measurement influenced by, or impossible because of, interference or atmospherics.

T Volue determined by a sequence of observations, the actual observation being inconsistent or doubtful.

V Forked trace which may influence the measurement.

W Measurement influenced or impossible because the echo lies outside the height range recorded.

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabuation sheets.

D Greater than.

E — Less than.

J — Ordinary component characteristic deduced from the extraordinary component.

M — Mode interpretation uncertain.

O — Extraordinary component characterisitic deduced from the ordinary component.

T — Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

U — Uncertain or doubtful numerical value.

Z — Measurement deduced from the third magneto-electronic component.

Definitions of the CNT, MED, UQ and LQ

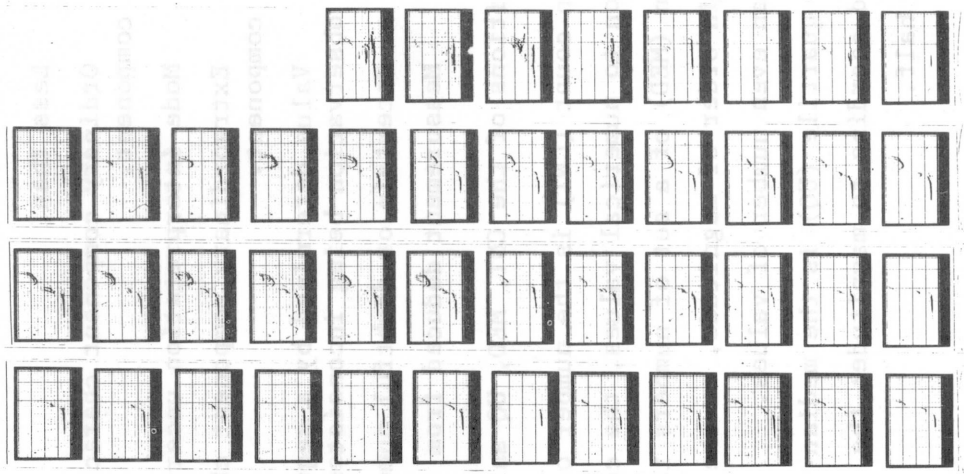
Median count (CNT) is the number of values from which a median has been computed. In addition to numerical values, the count may include certain descriptive letters.

Median (MED) of a set of numbers is the middle value when the numbers are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

Upper quartile (UQ) is the median value the upper half of the values when they are ranked accrding to magnitude; the lower quartile (LQ) is the median value of the lower half.

SYOWA STATION

IONOGRAM 1980 01 01 01;00–11;45



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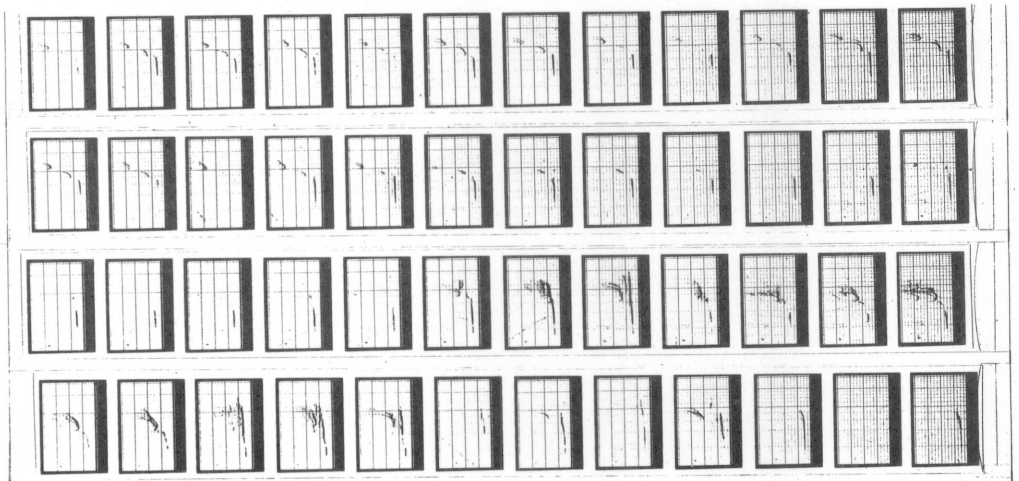

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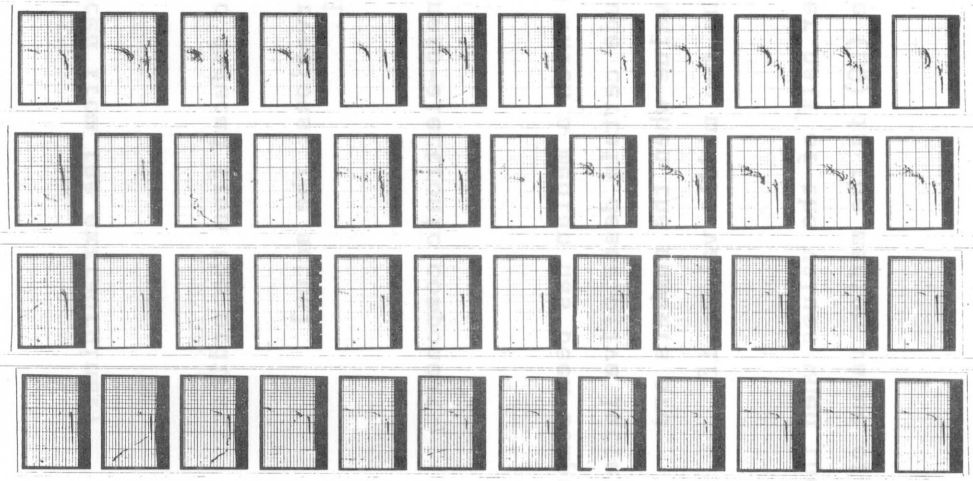

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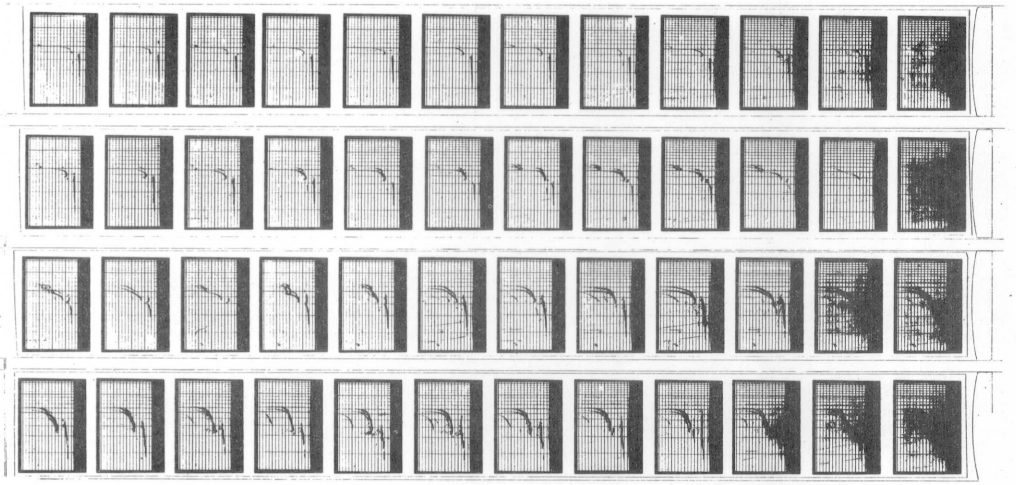

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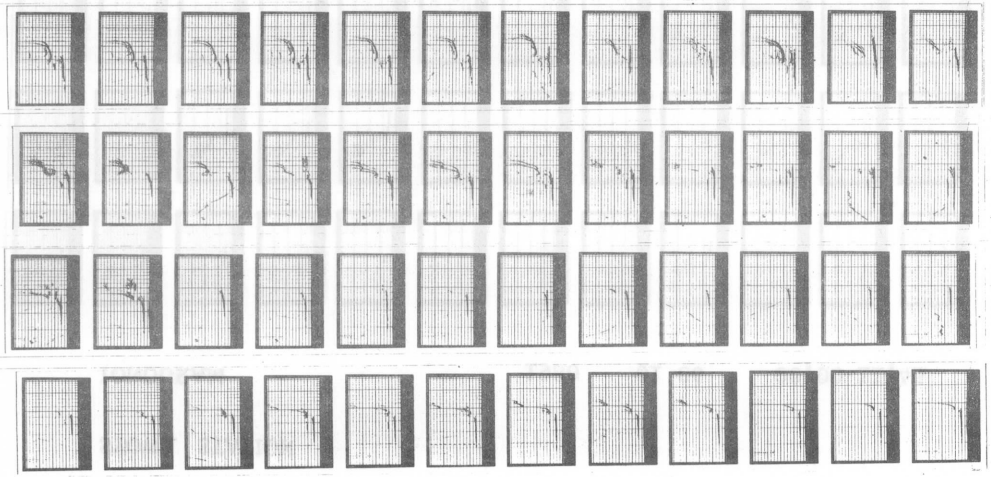

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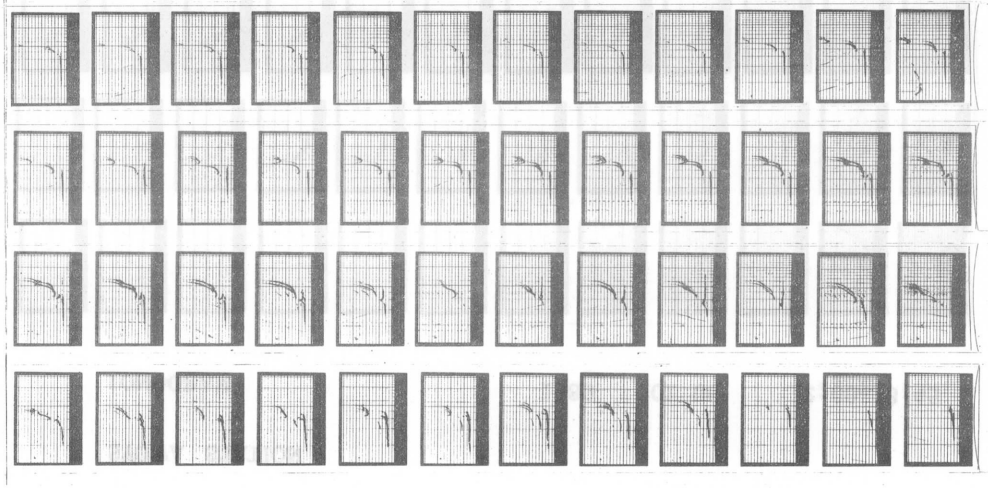

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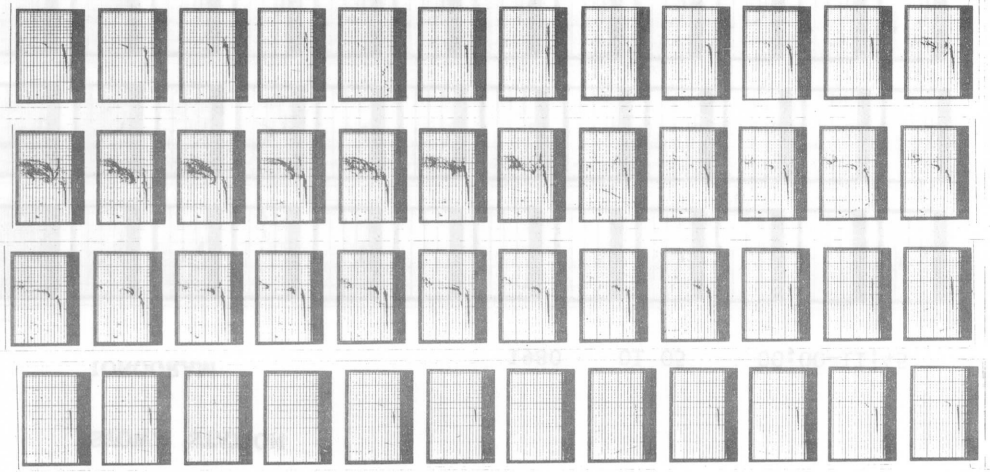

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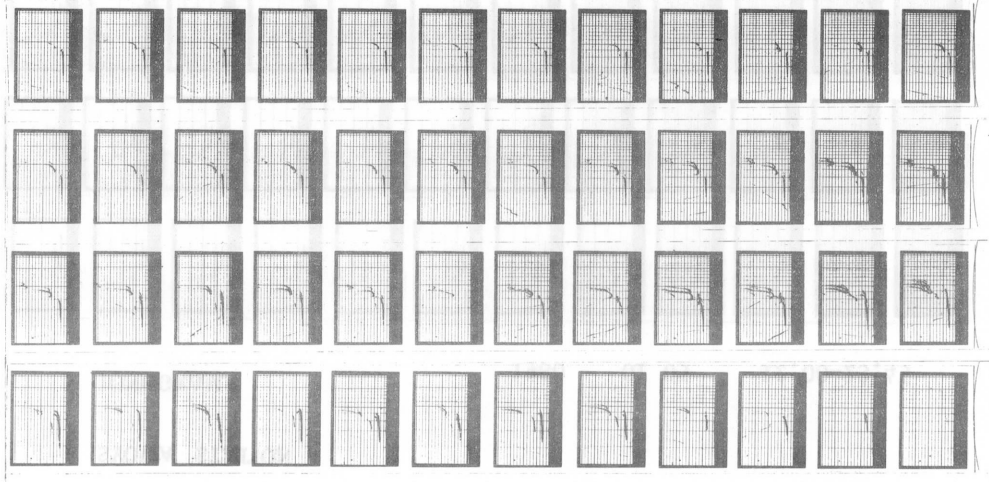

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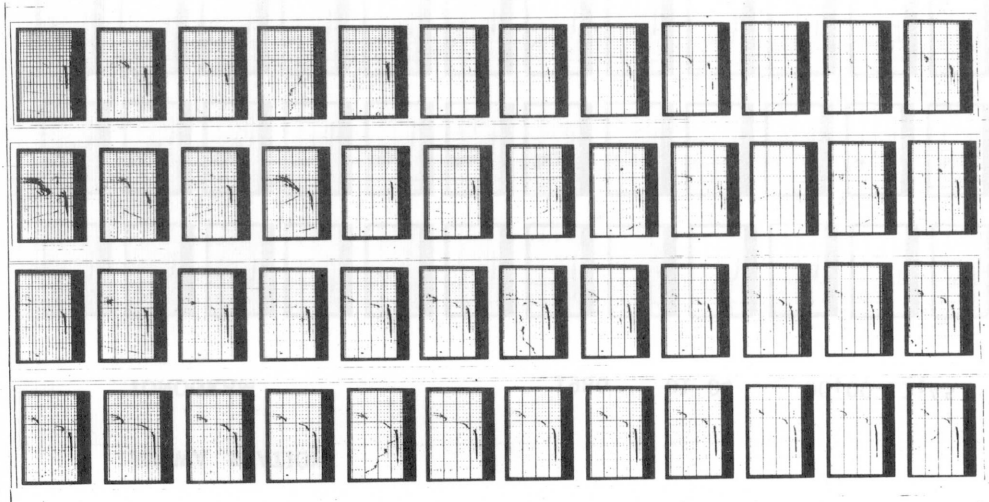

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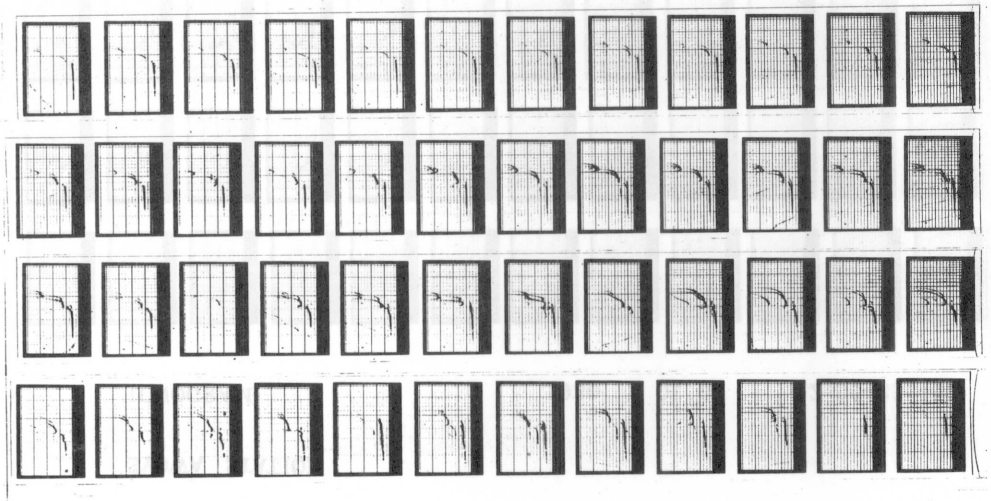

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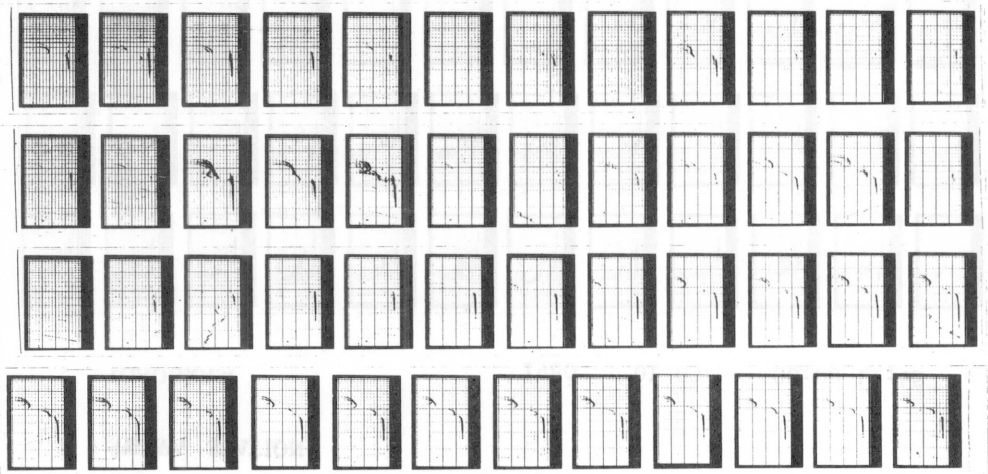

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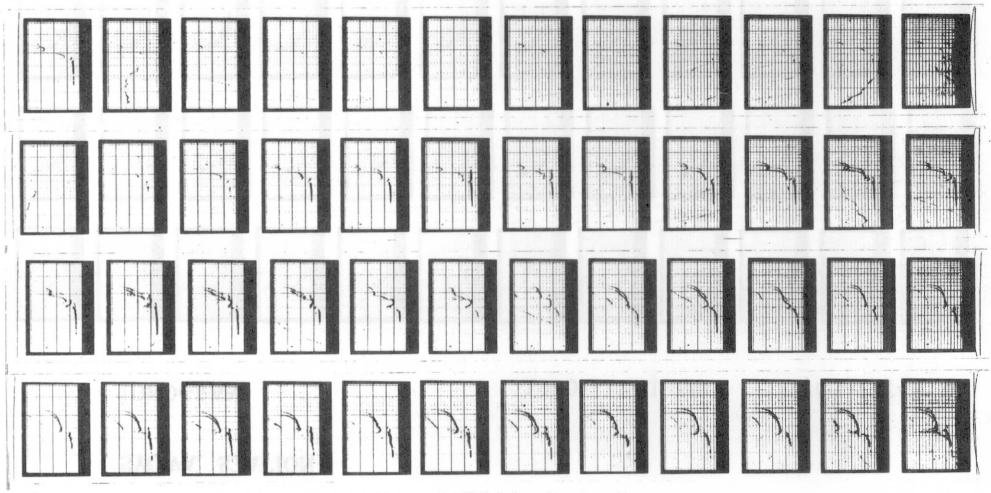

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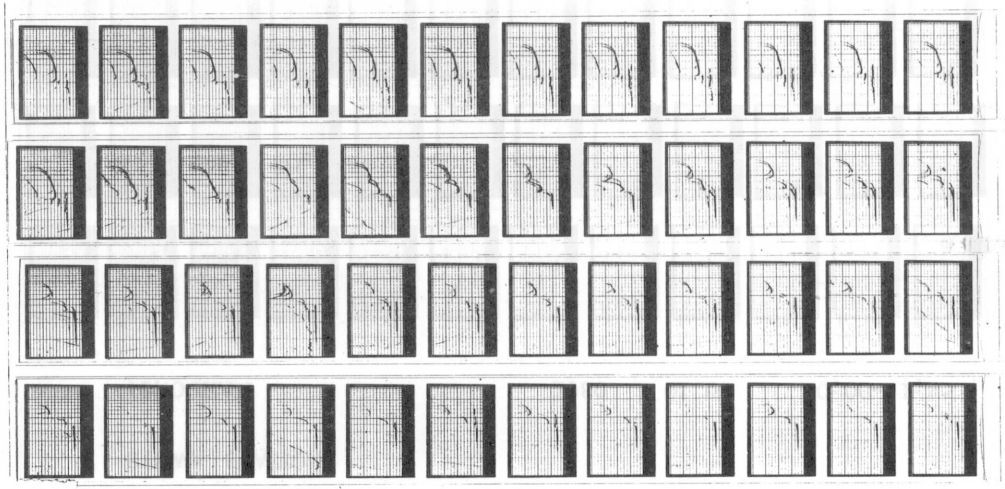

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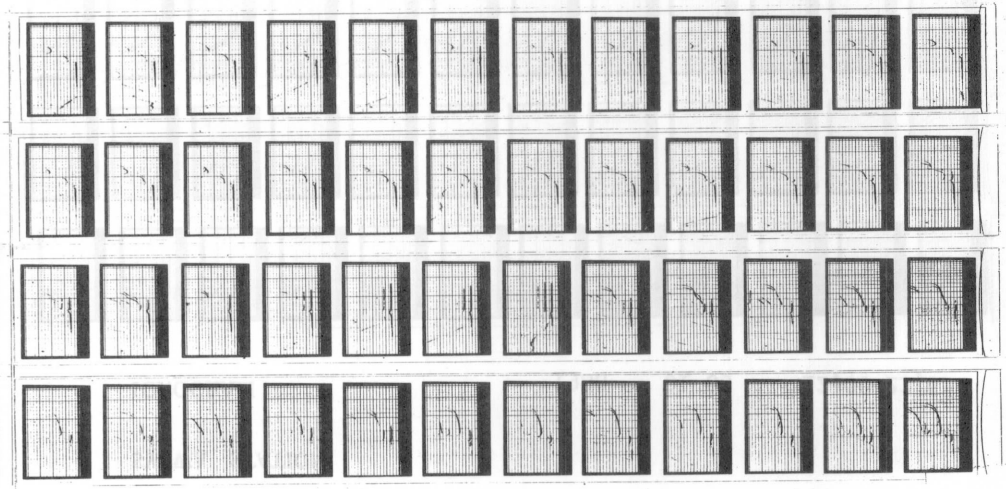

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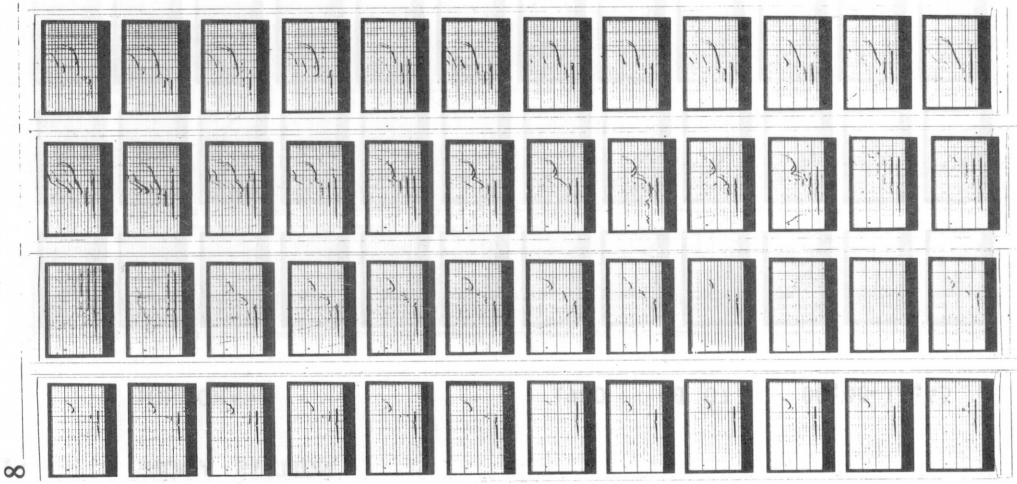

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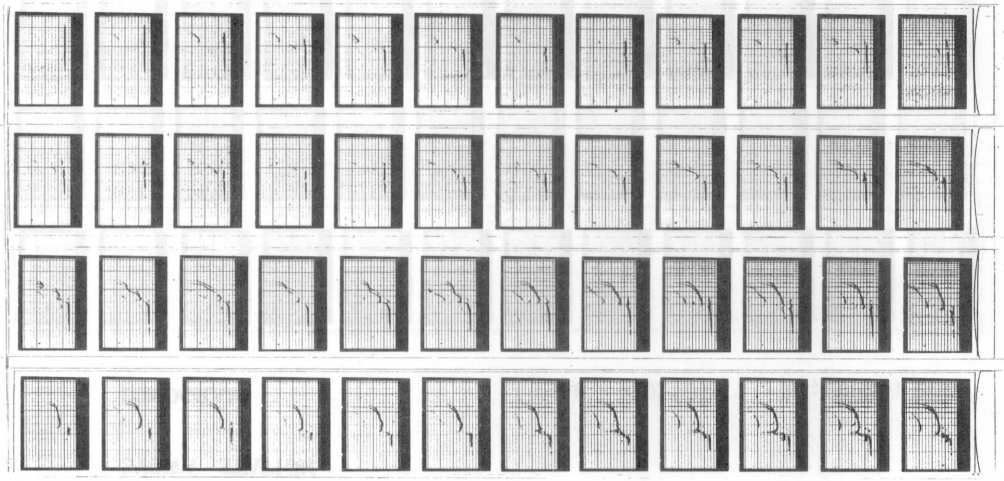

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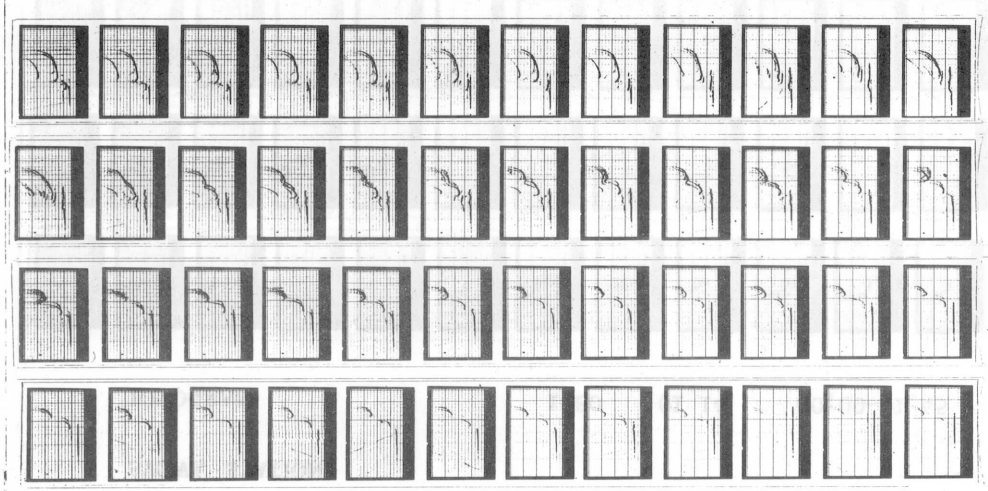

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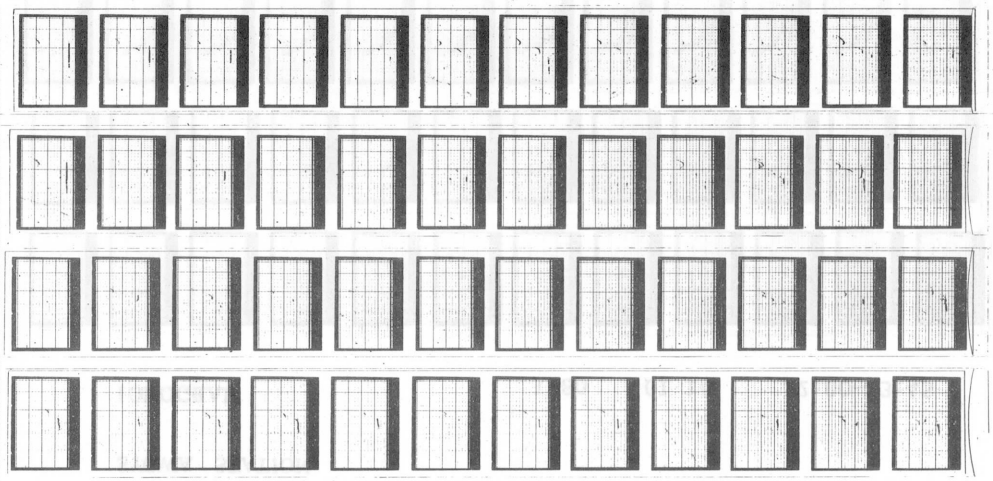

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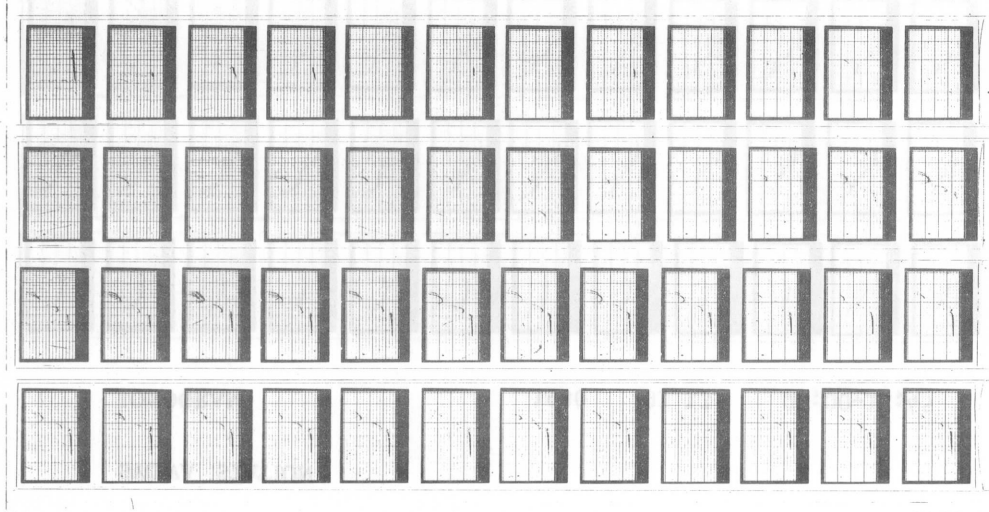

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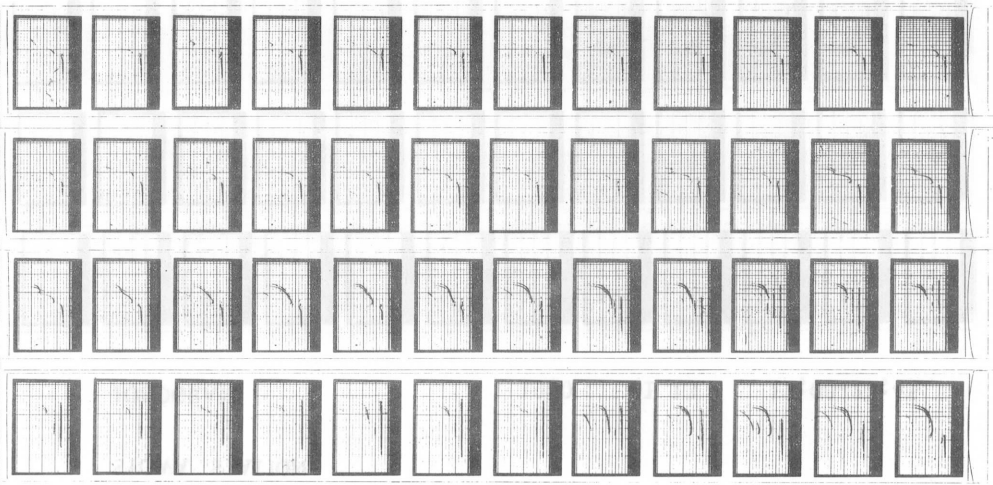

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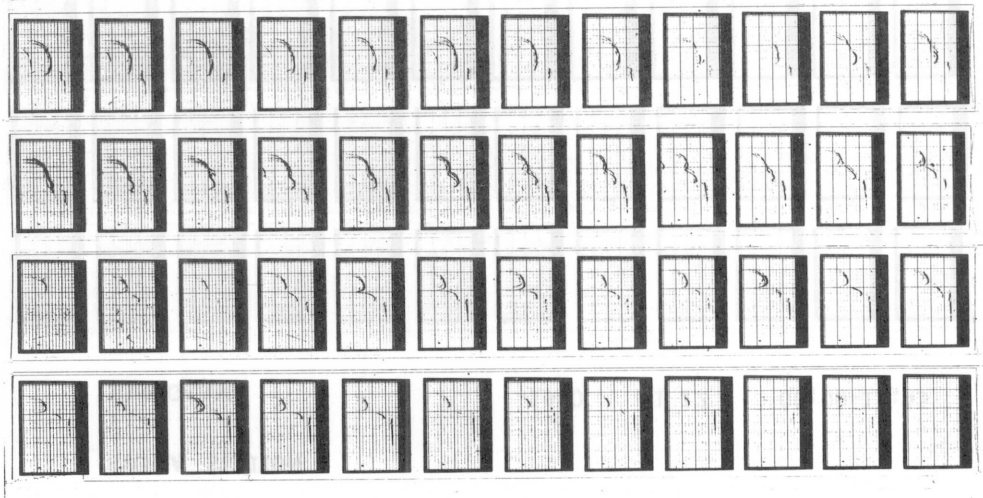

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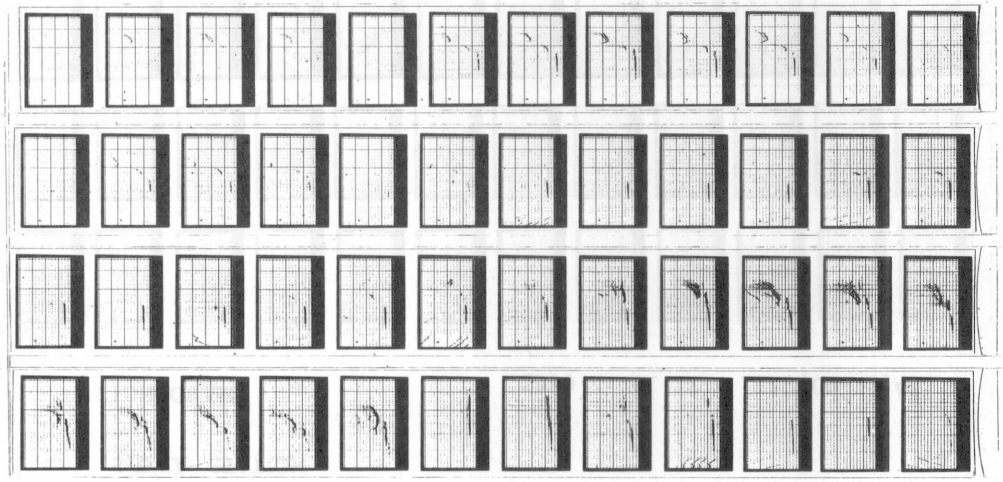

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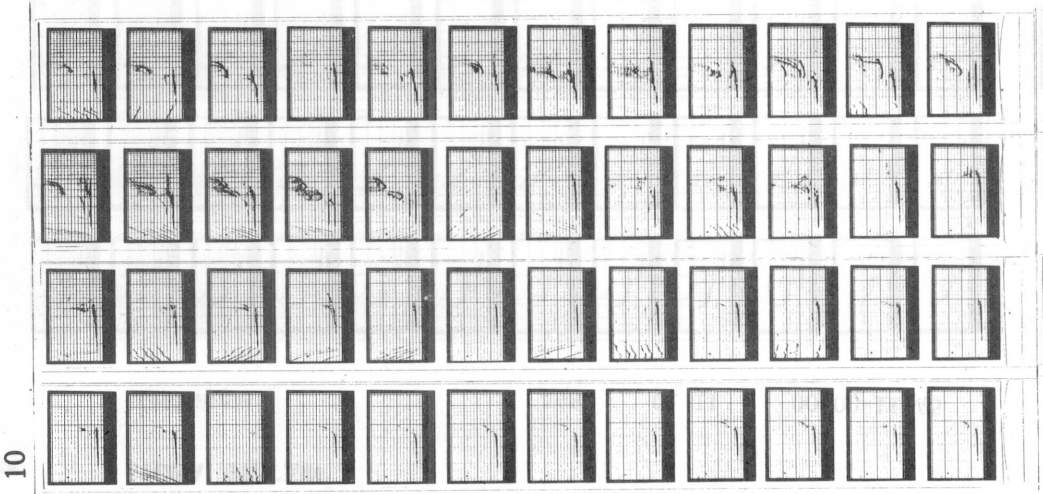

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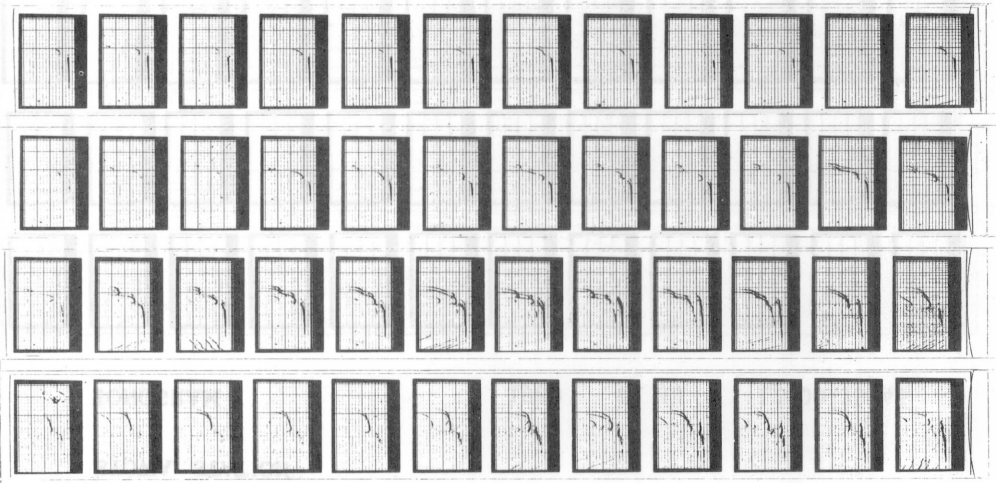

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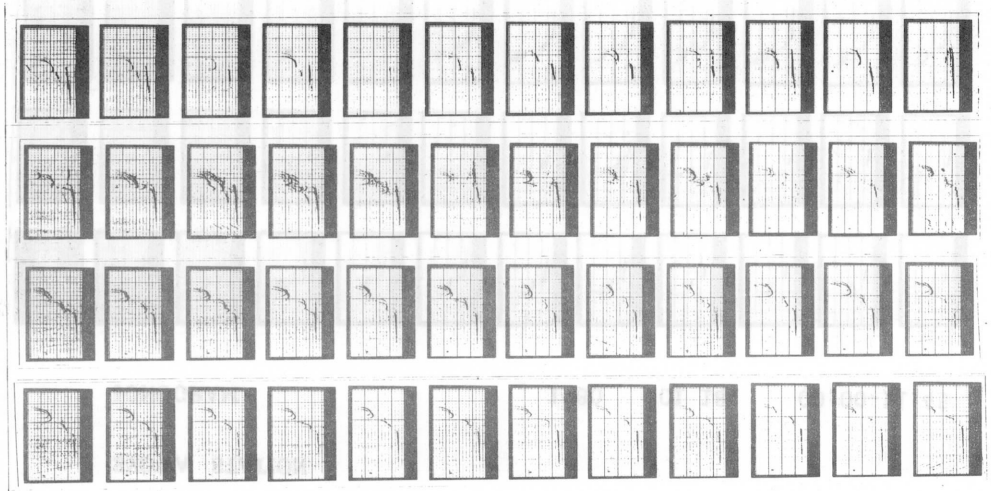

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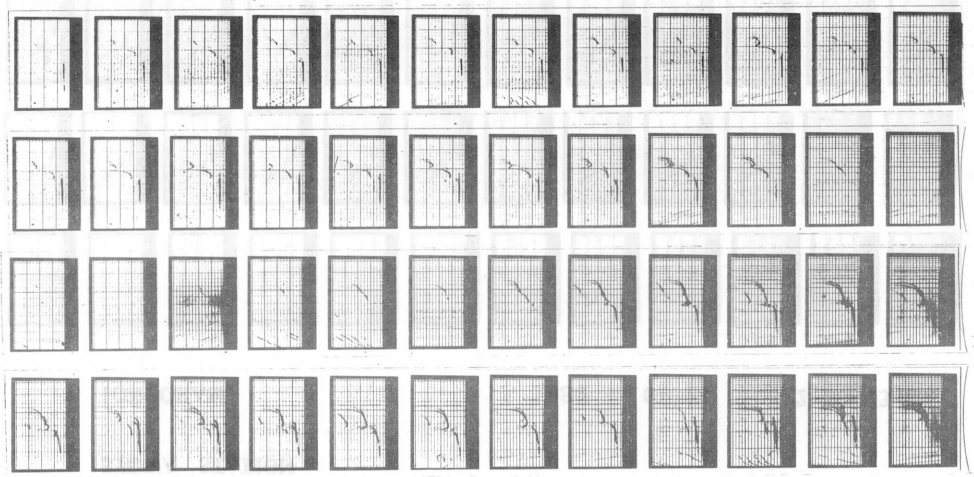

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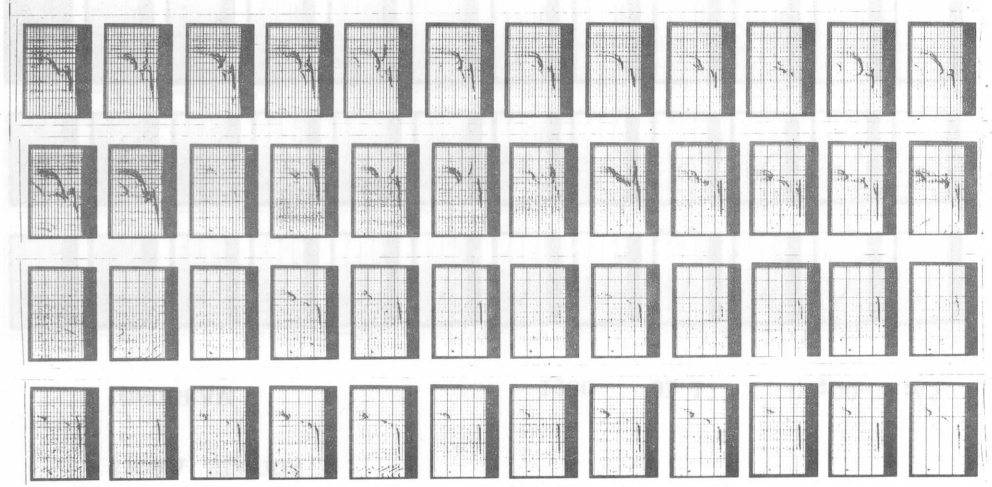

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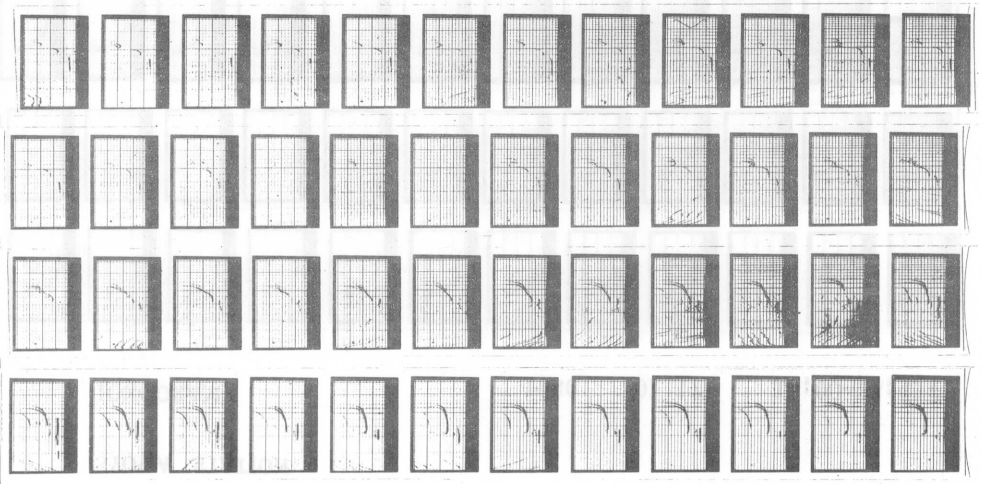

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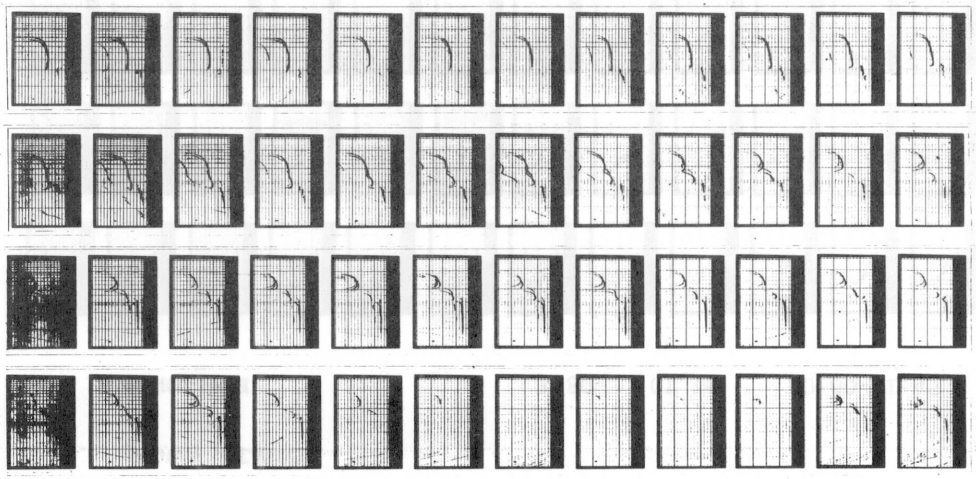

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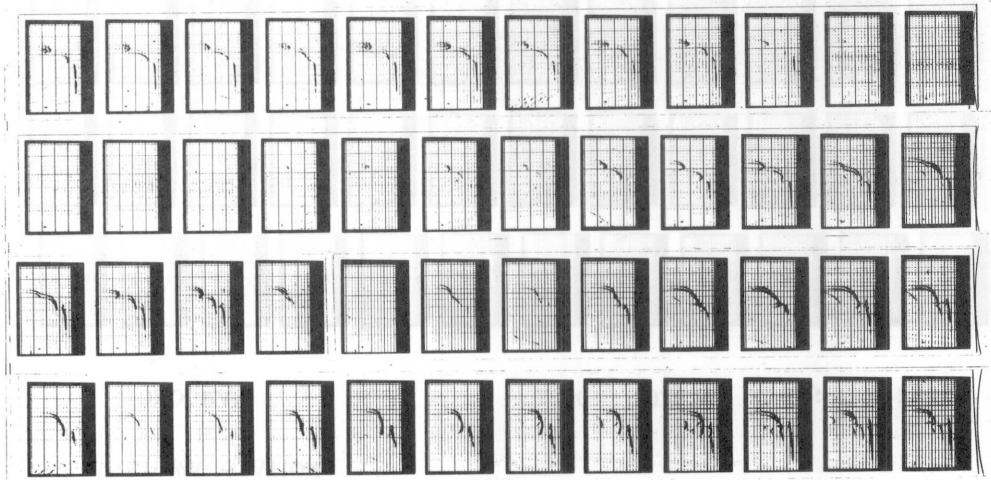

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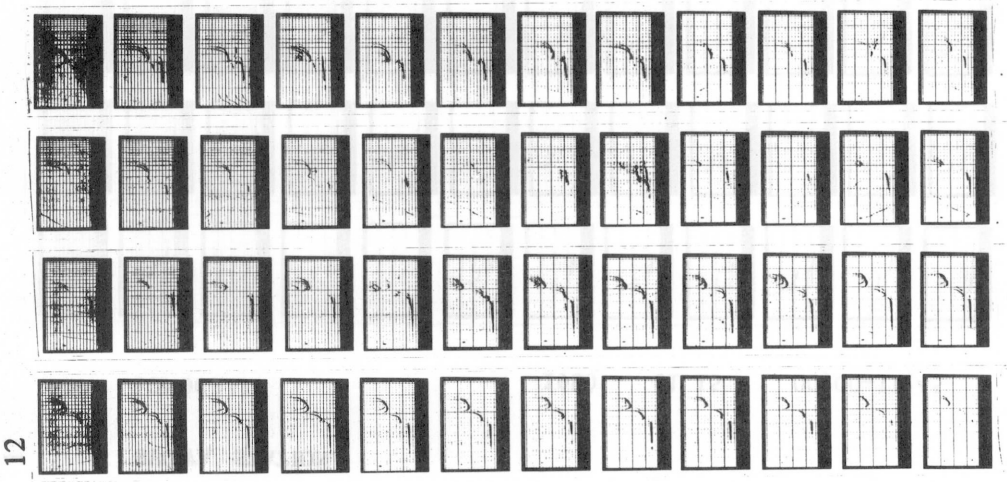

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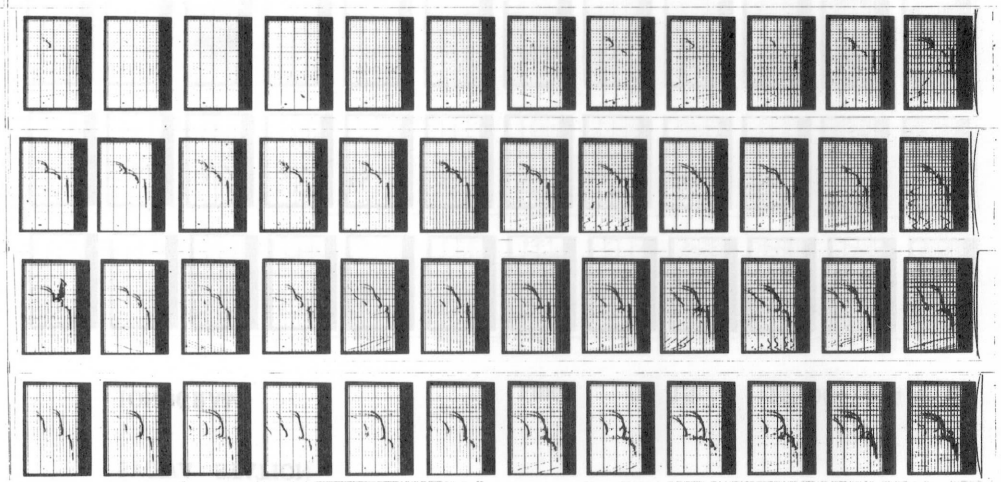

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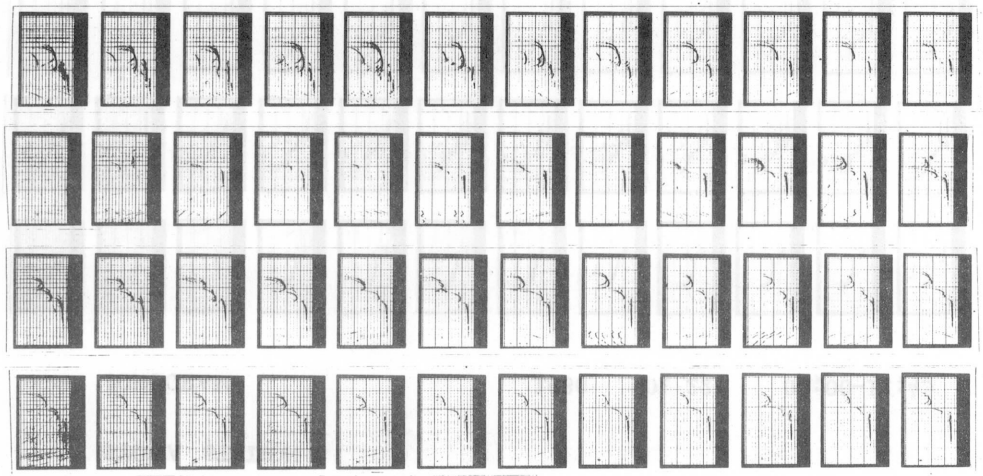

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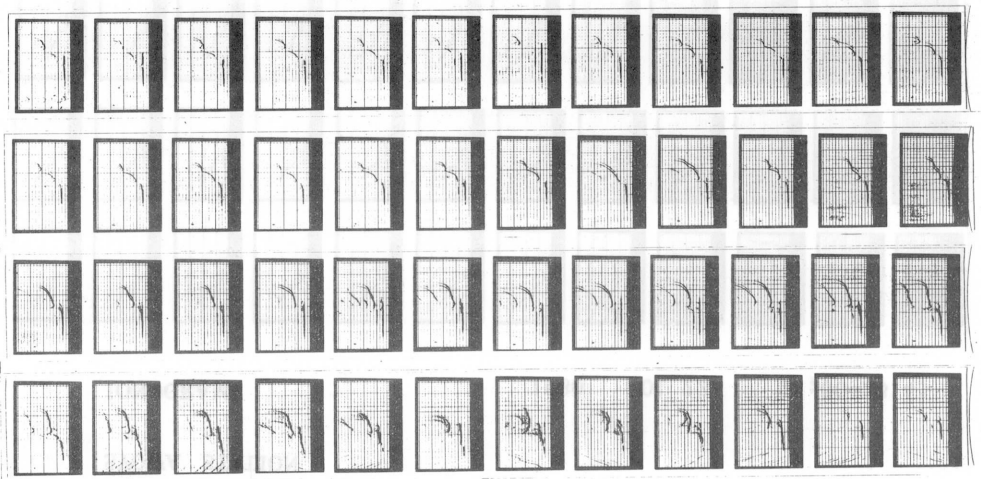

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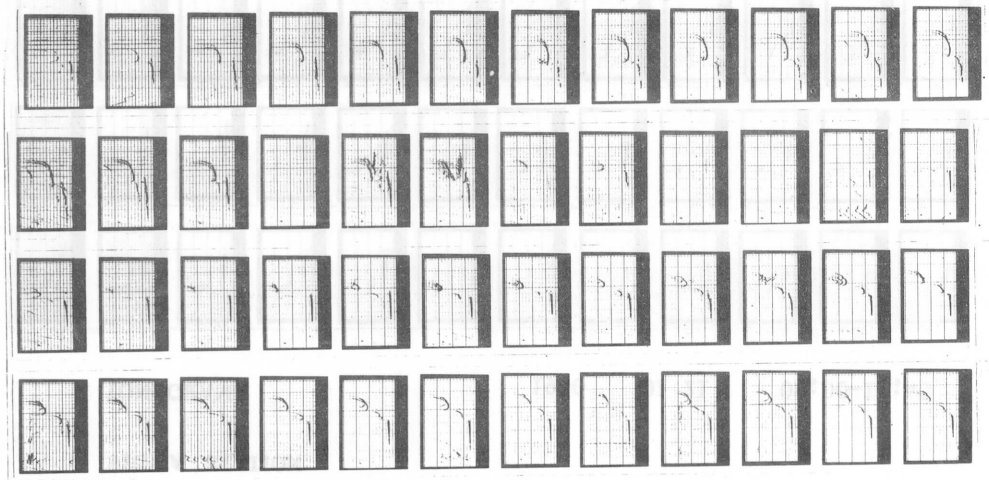

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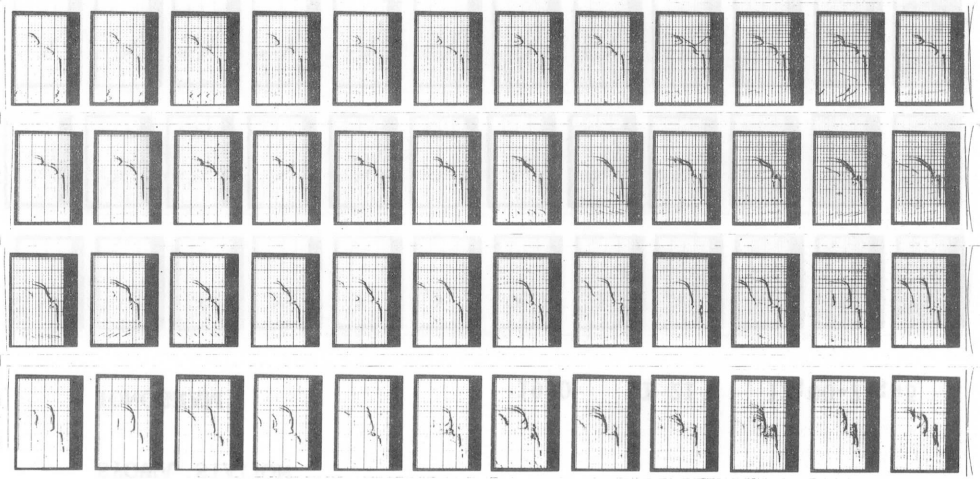

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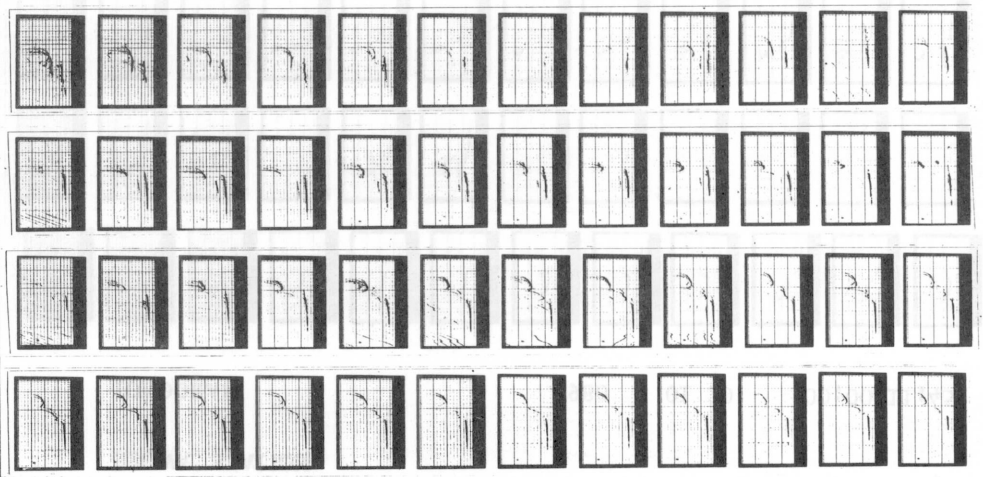

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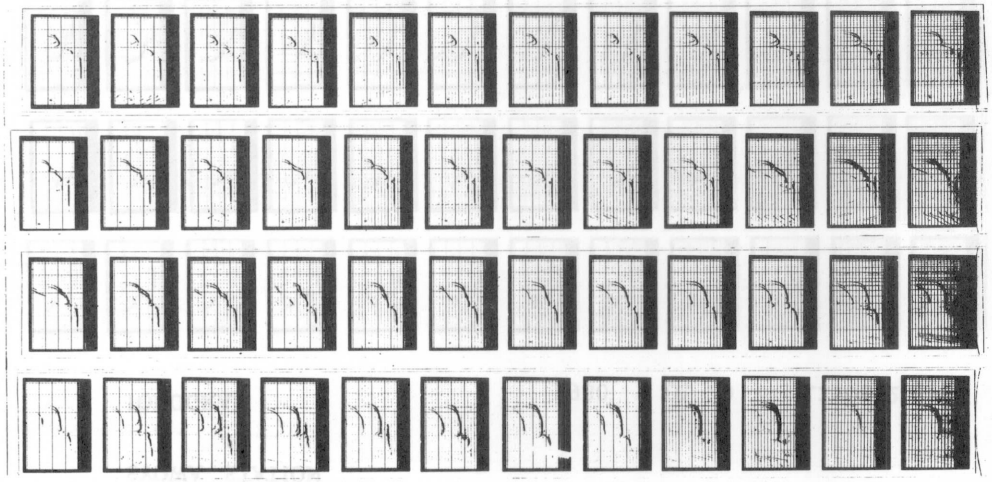

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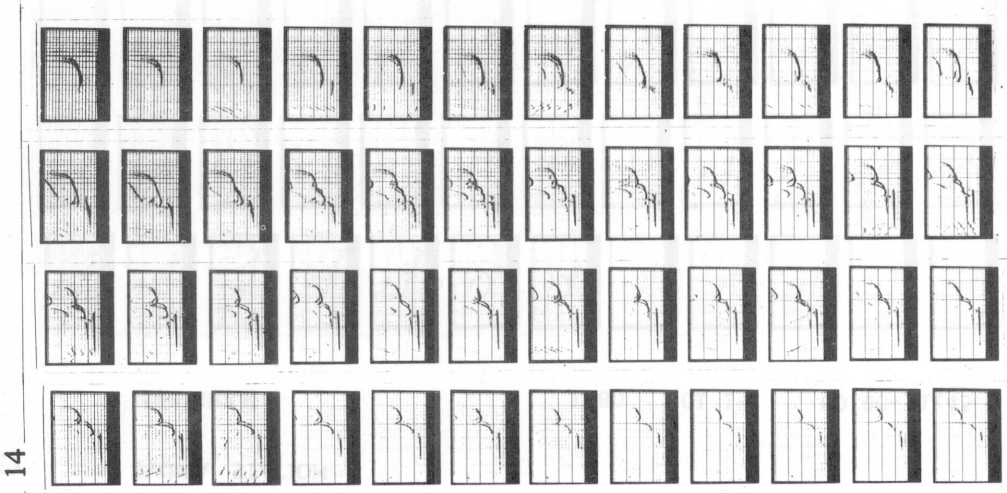

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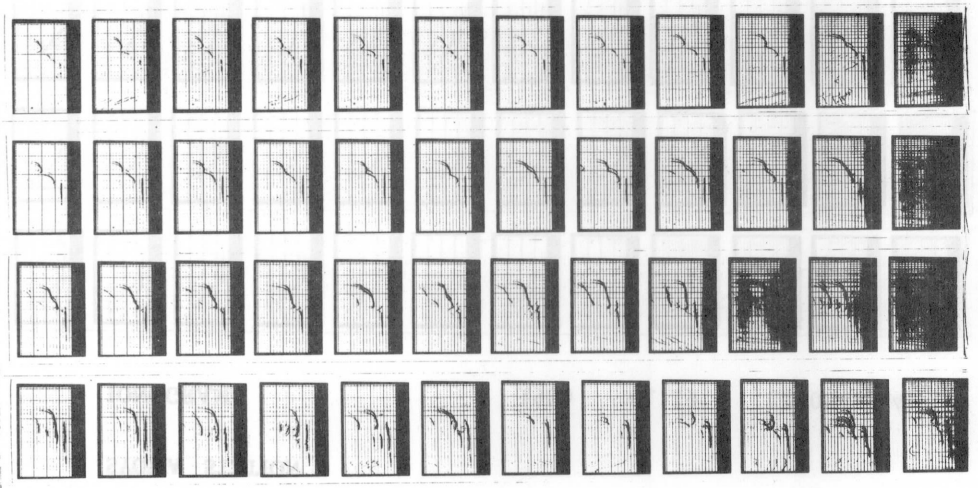

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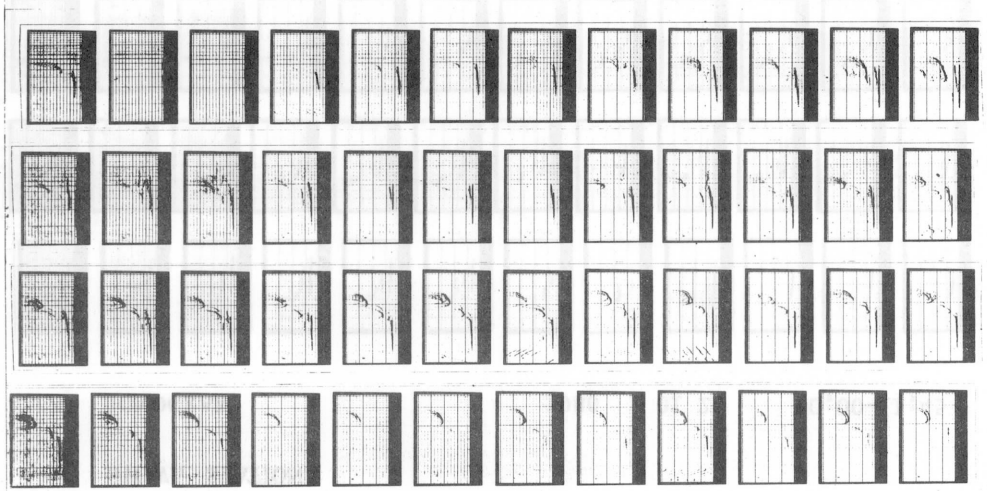

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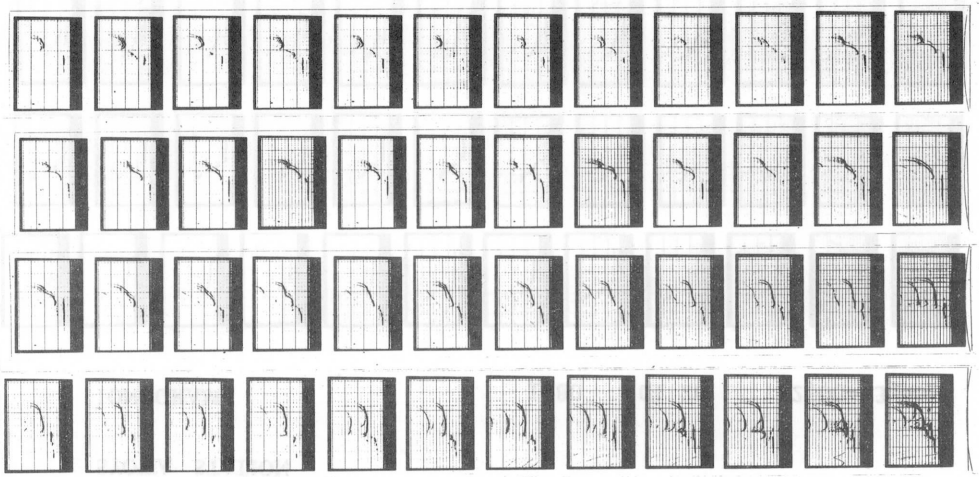

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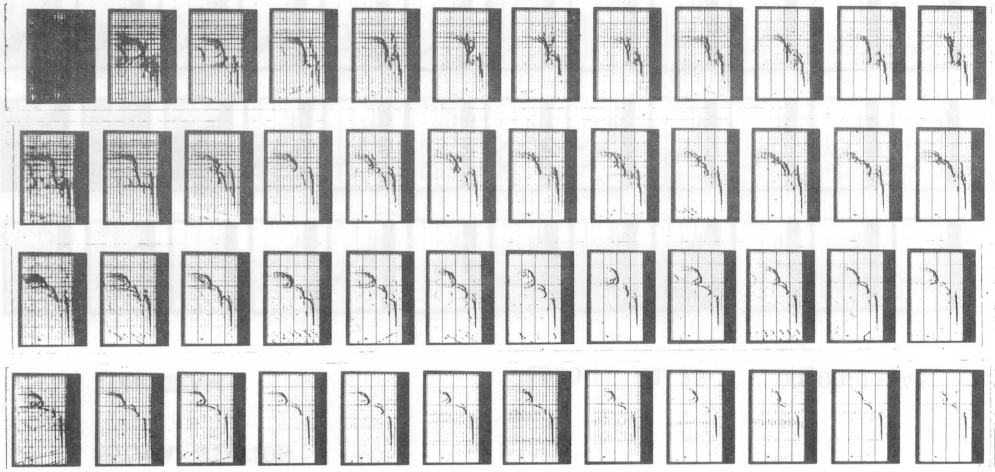
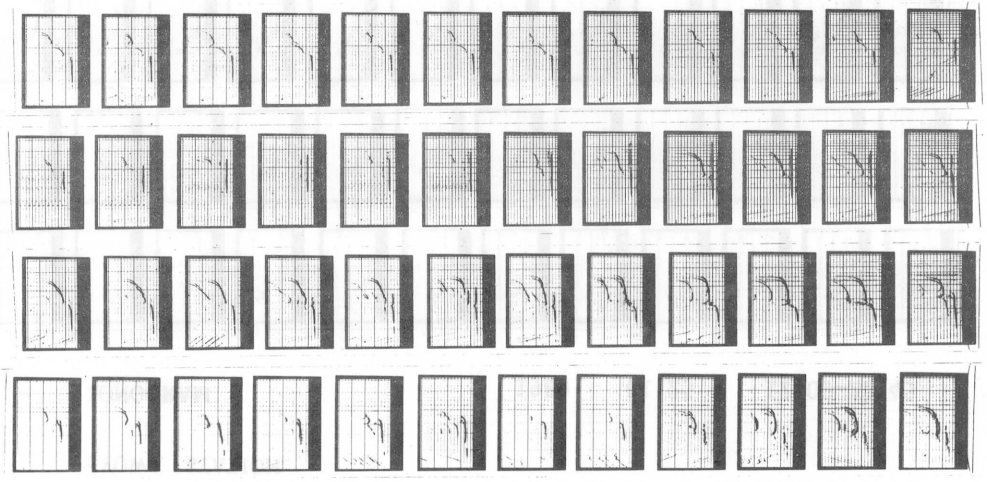


SYOWA STATION

IONOGRAM 1980 01 24 12;00-23;45



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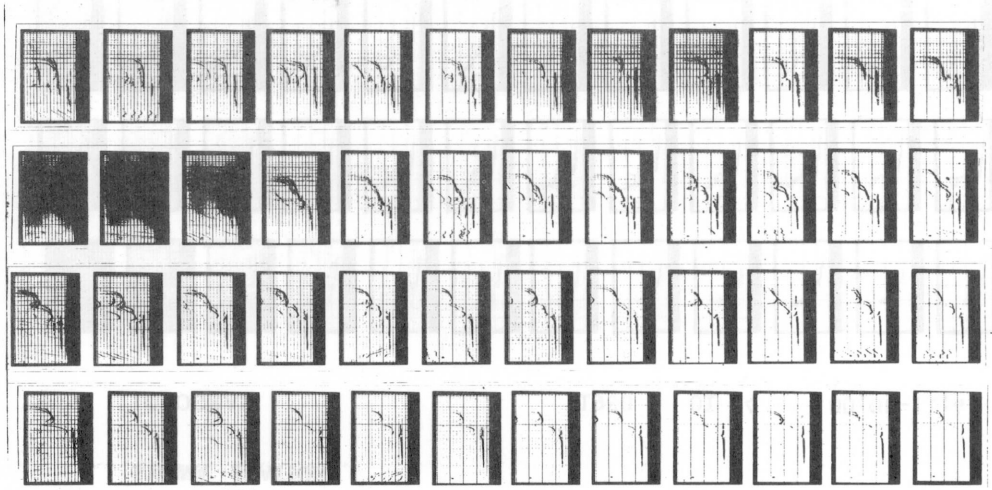

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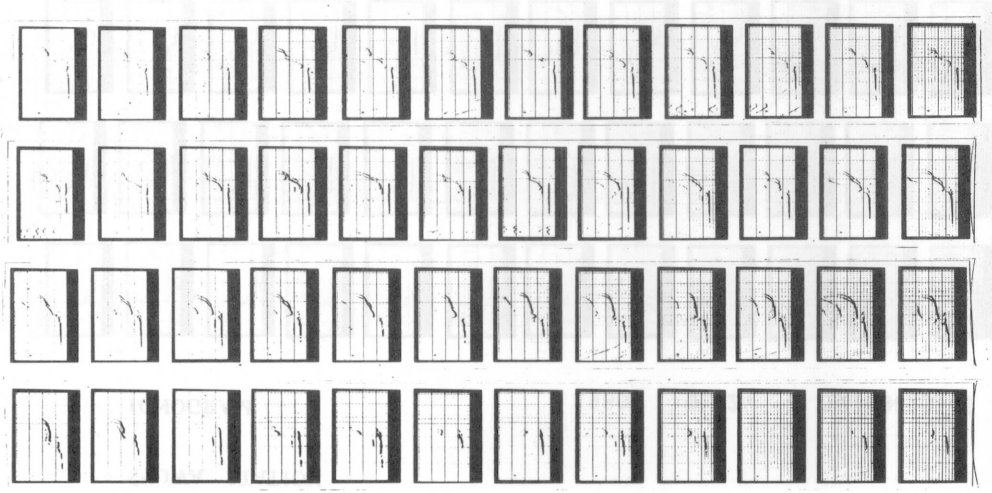

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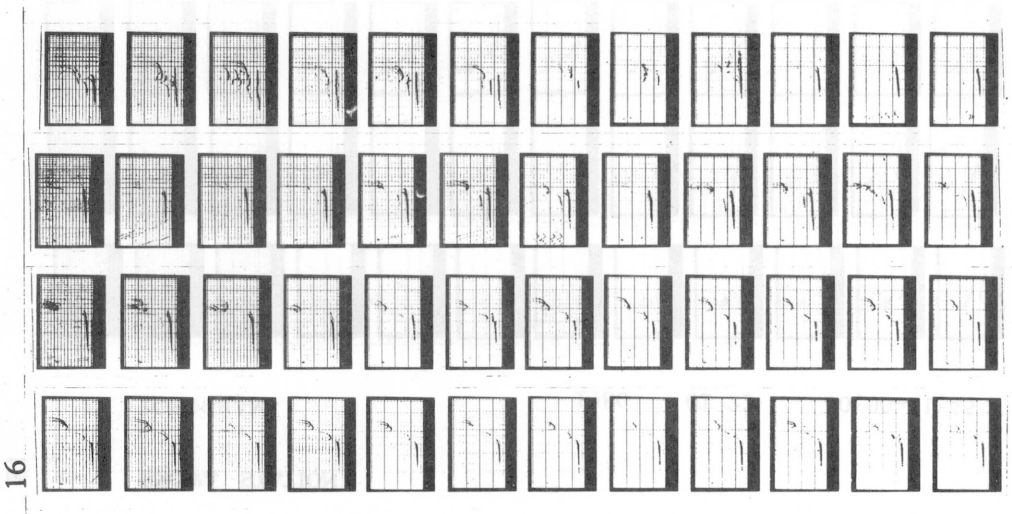

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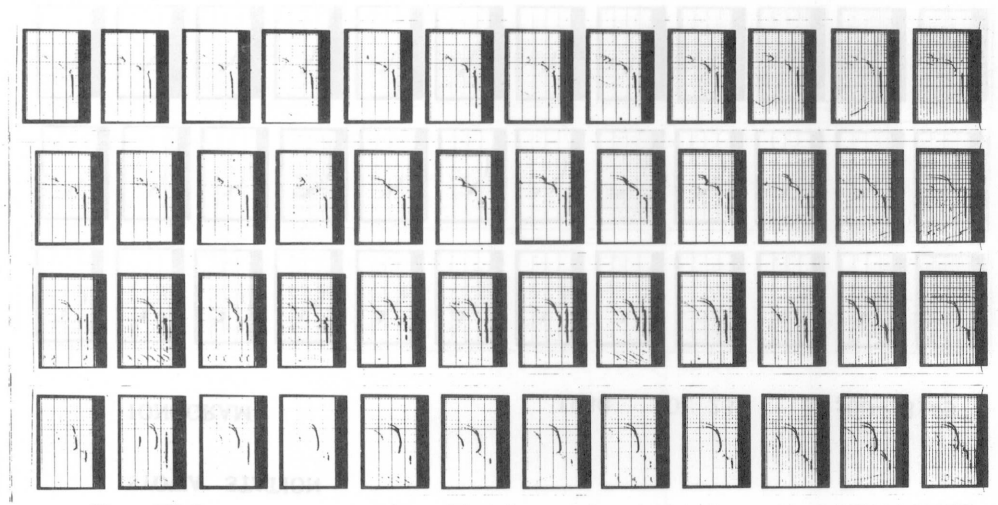

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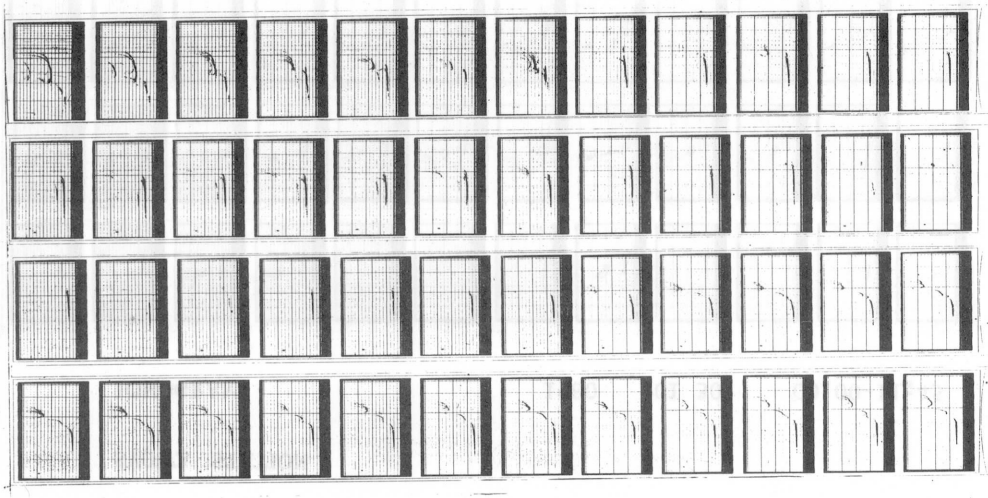

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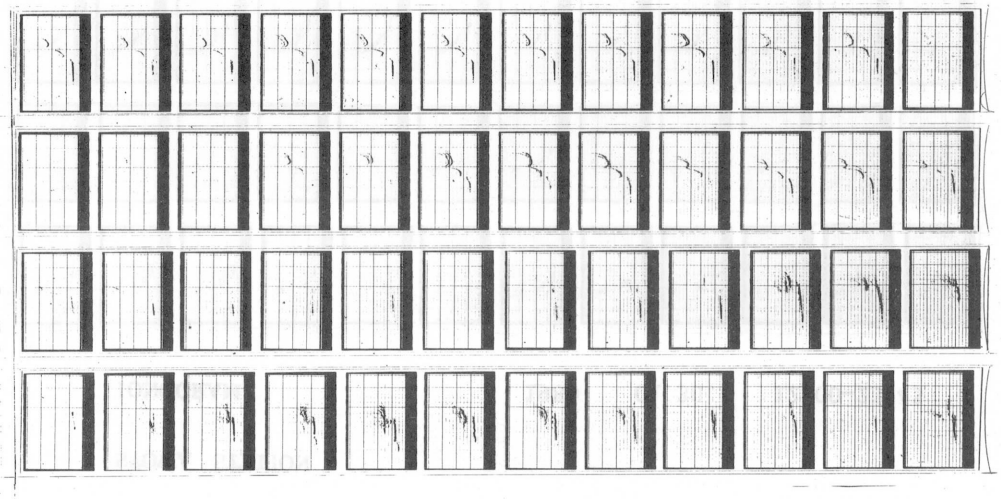

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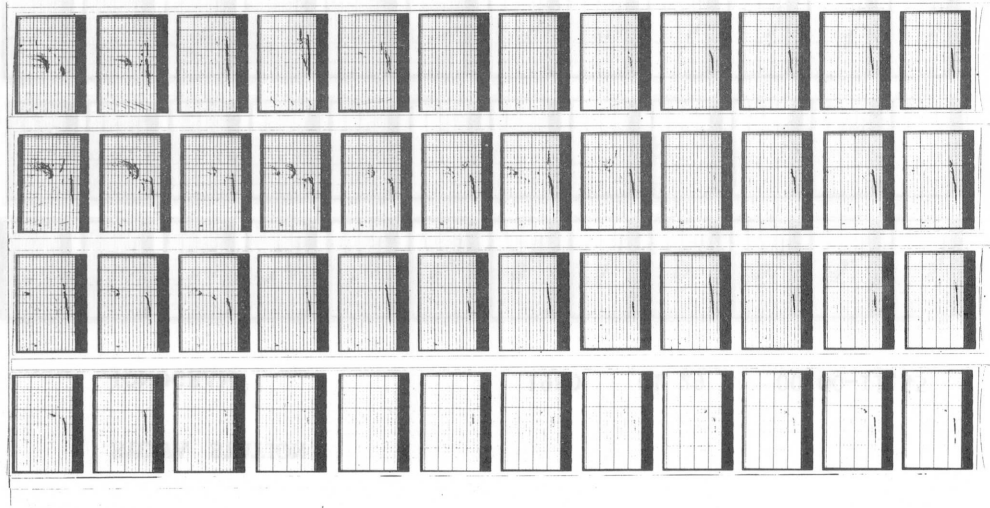

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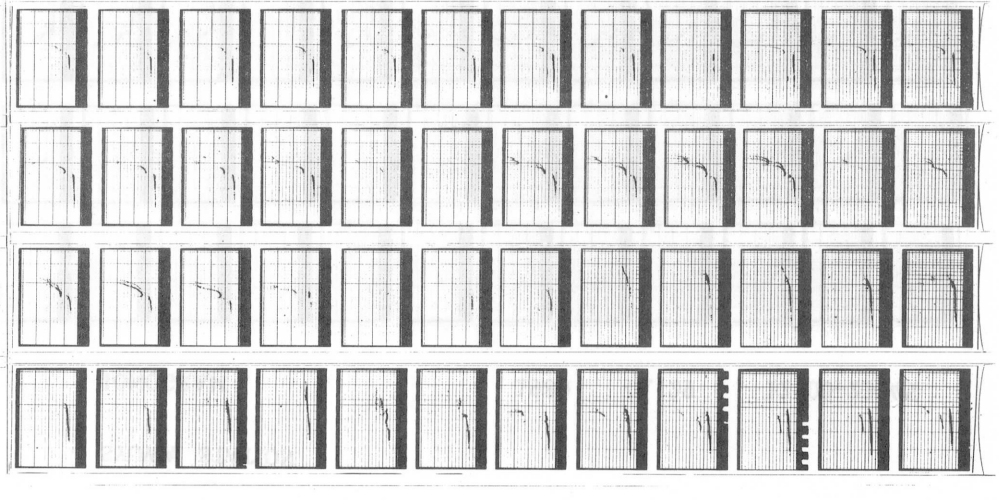

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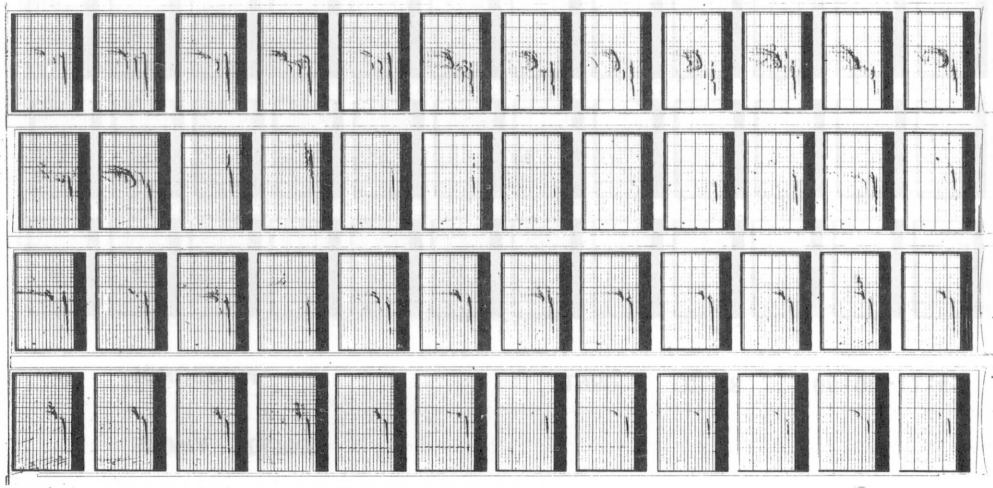

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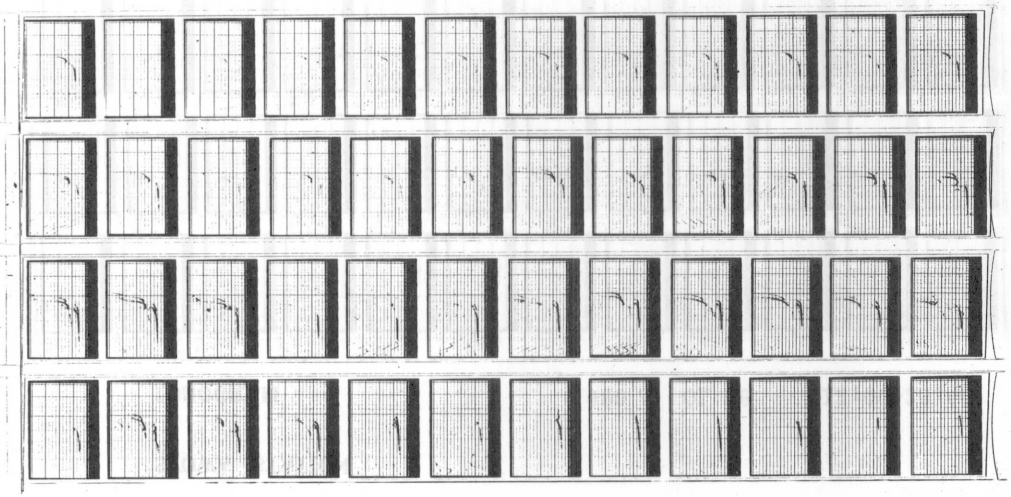

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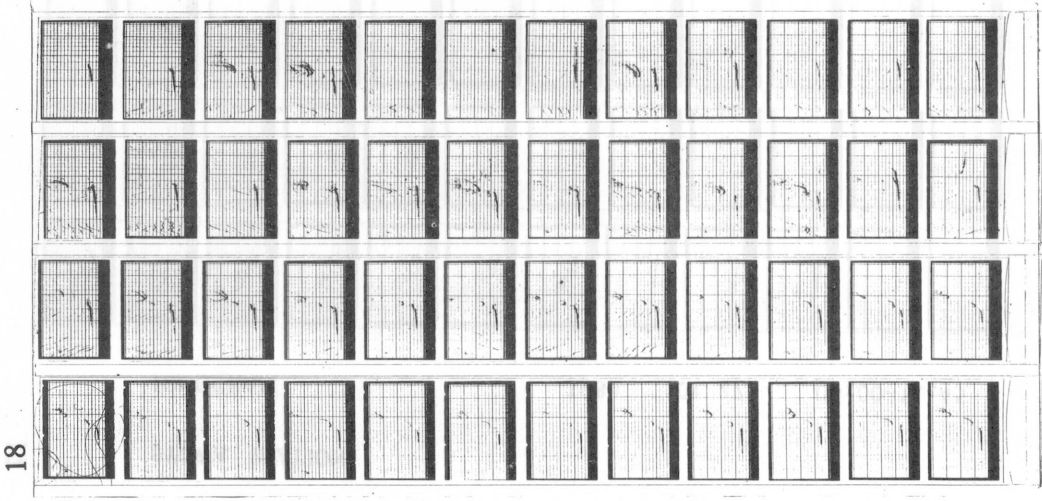

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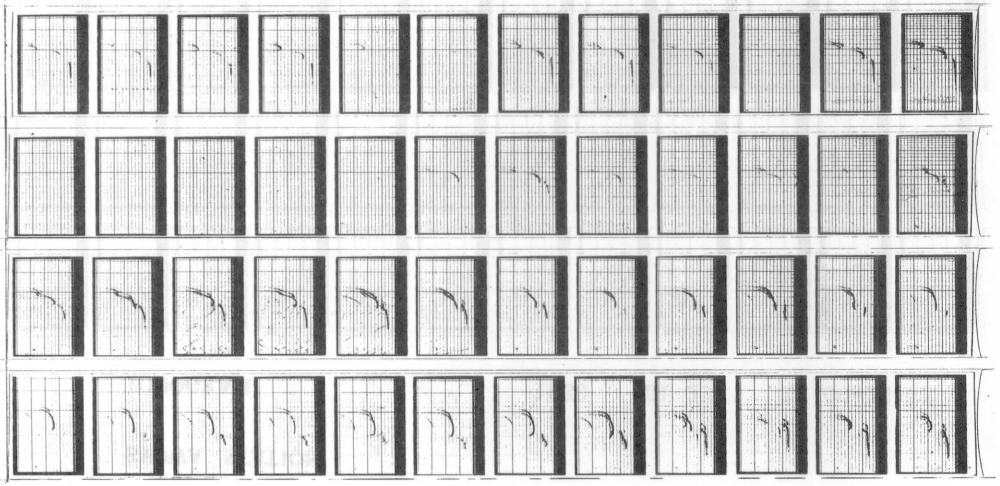

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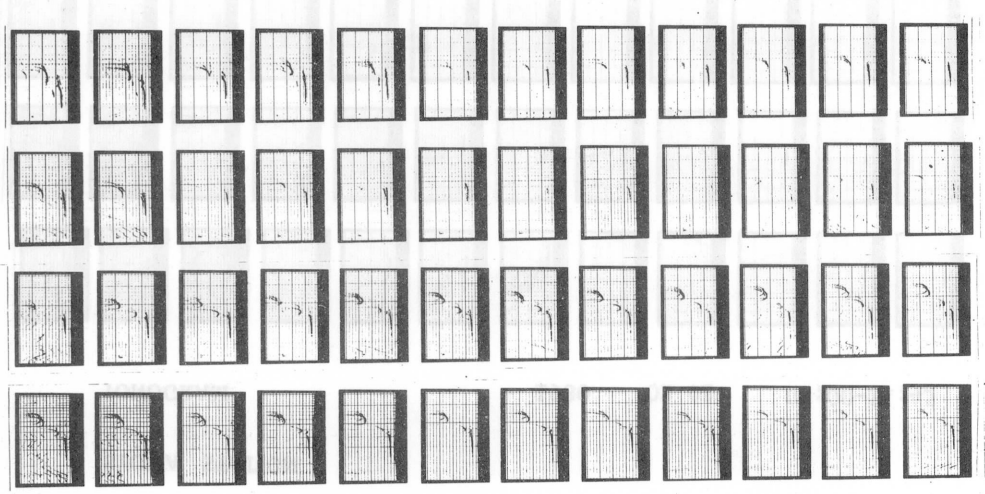

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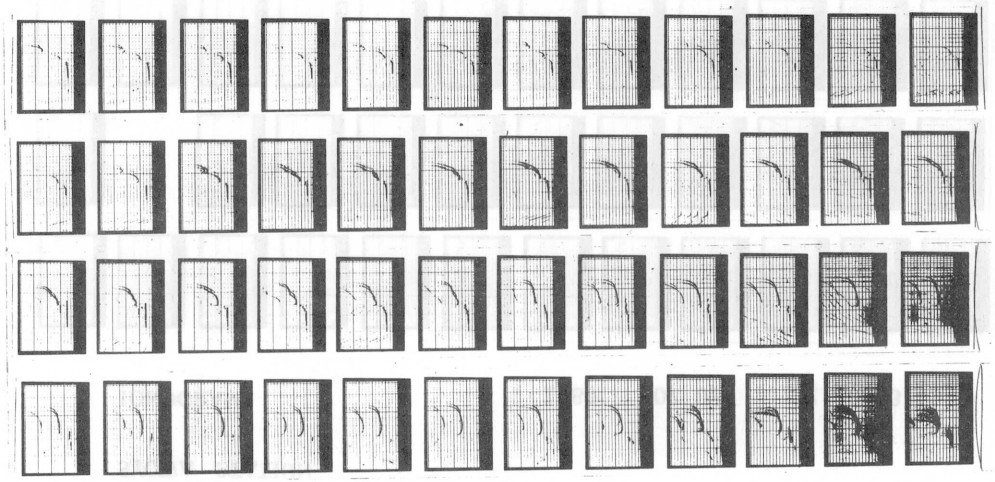

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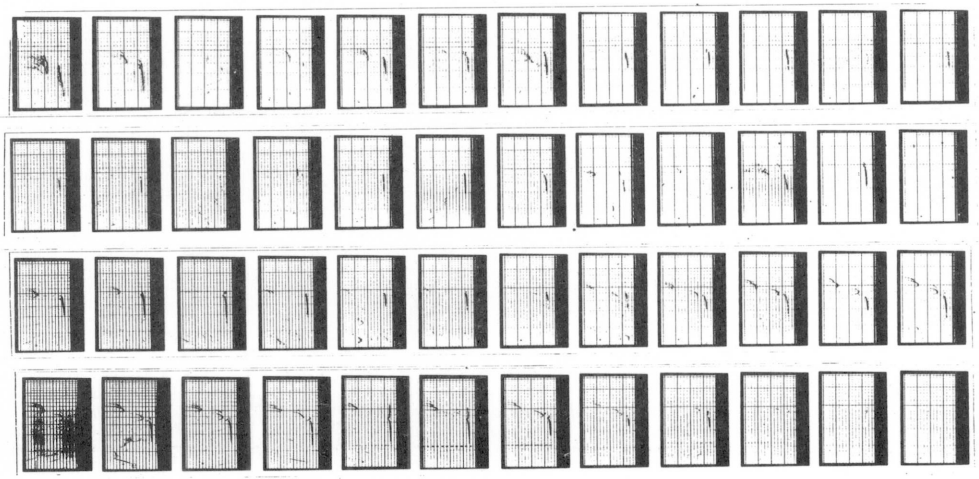

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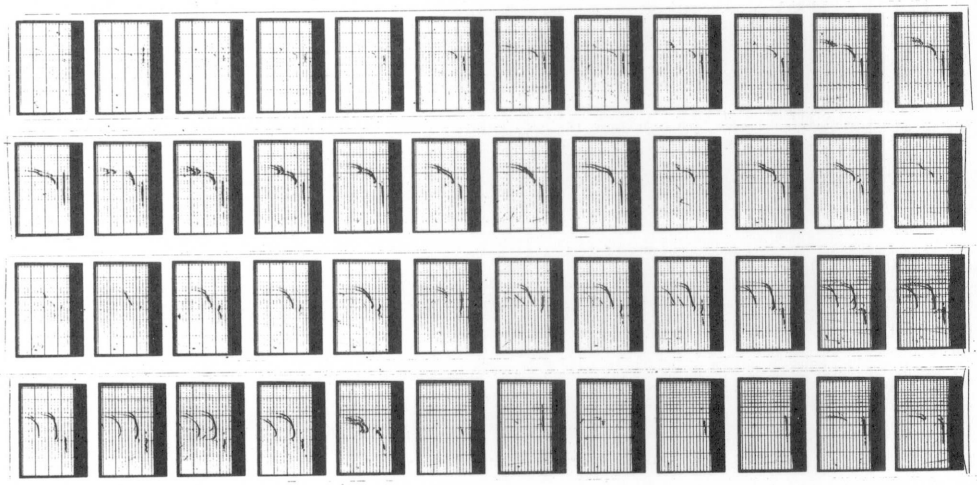

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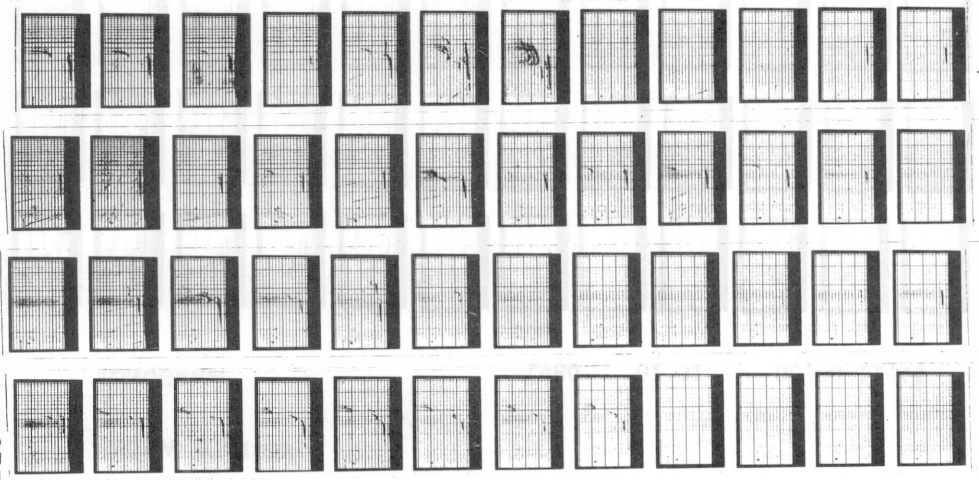

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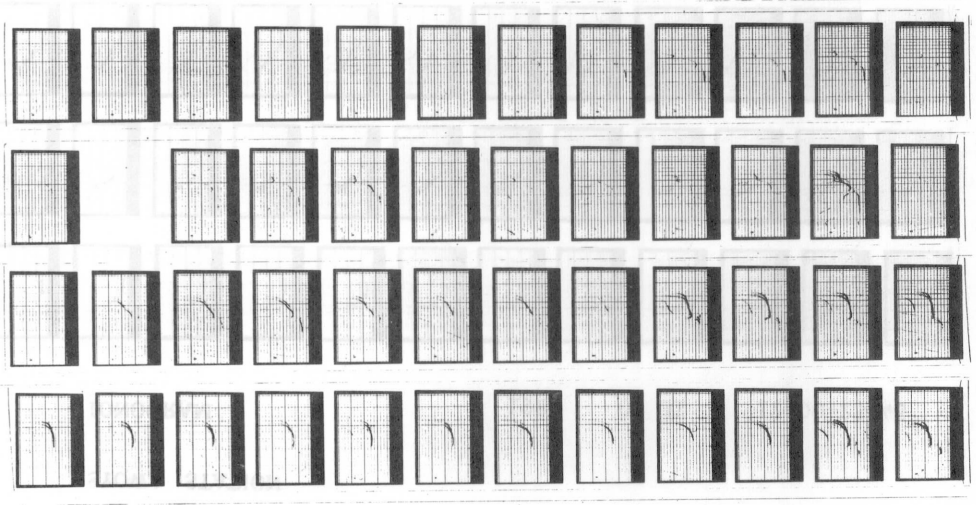

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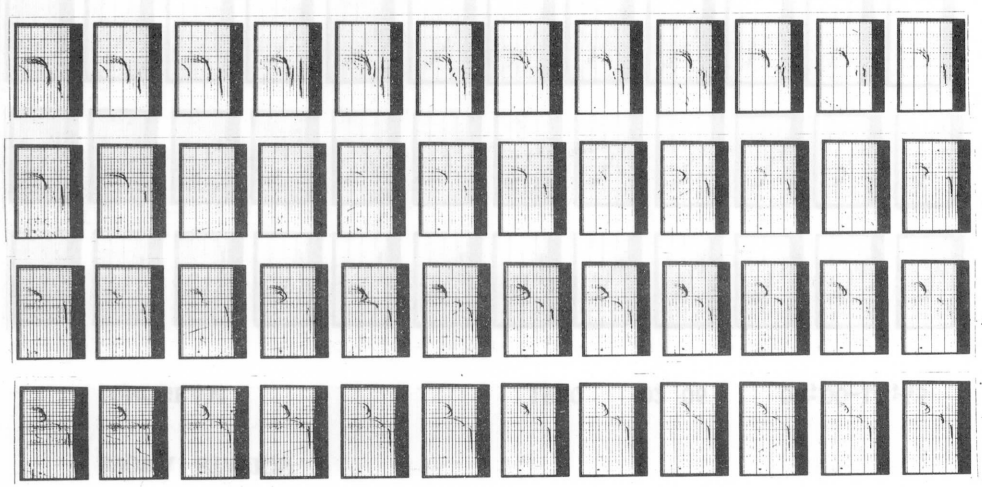

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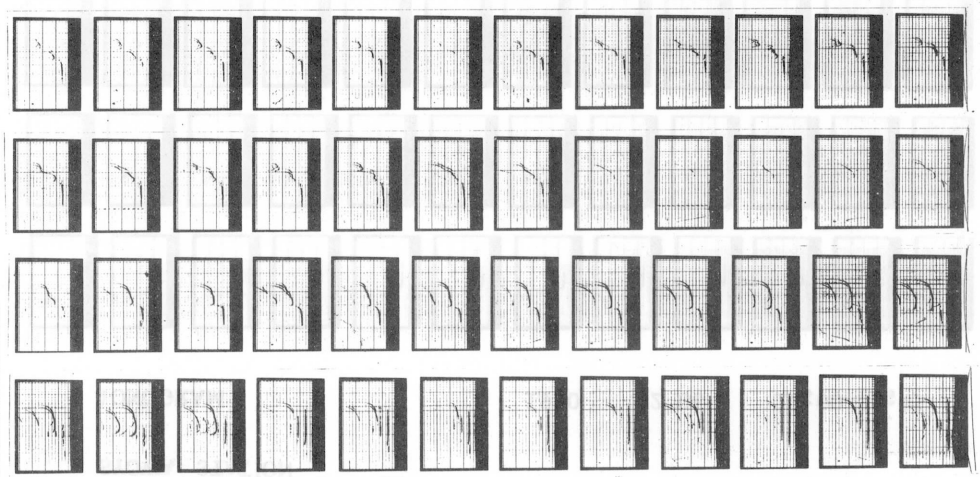

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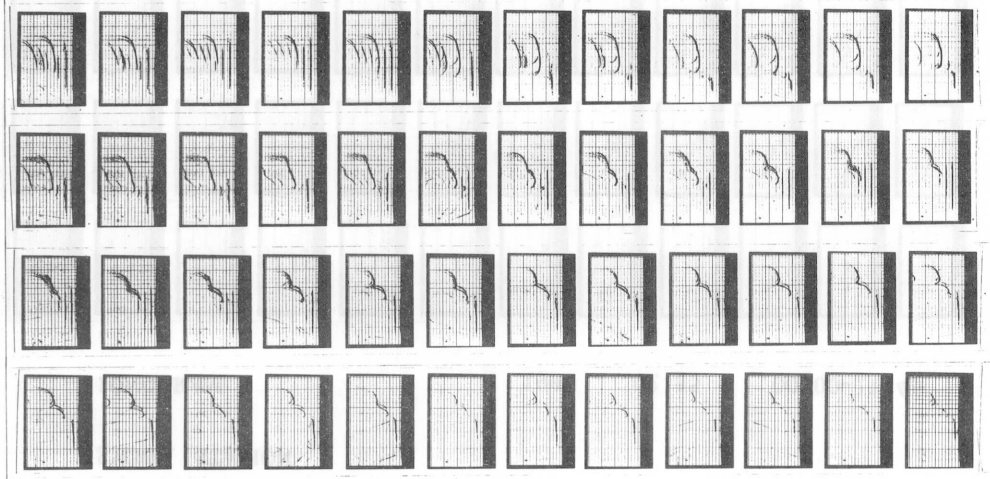

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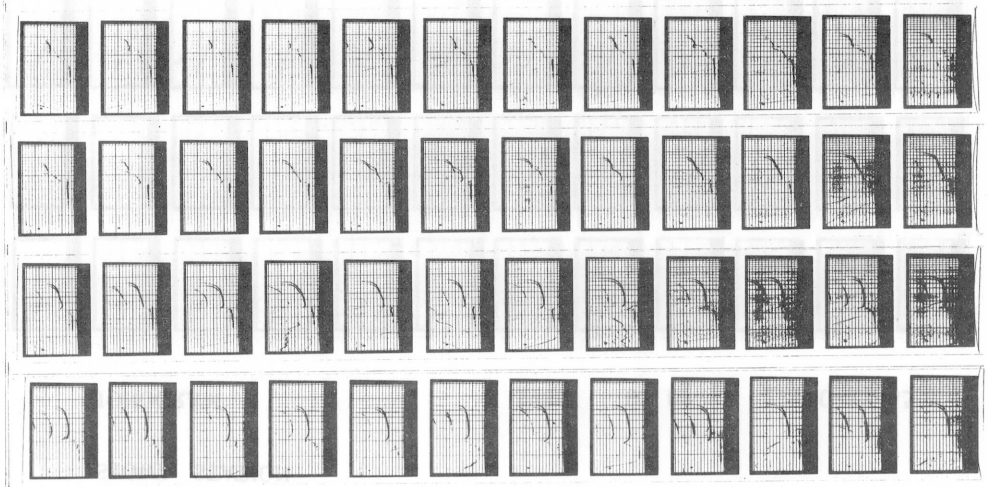

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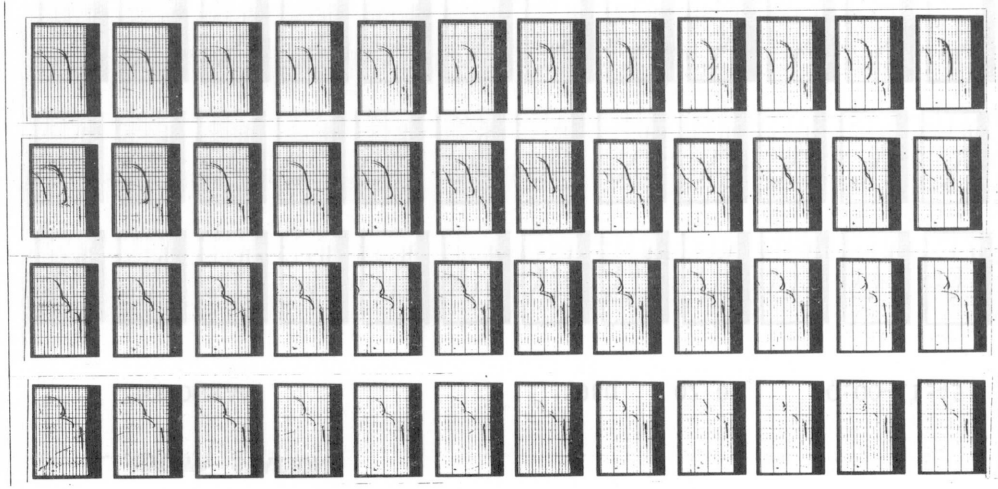

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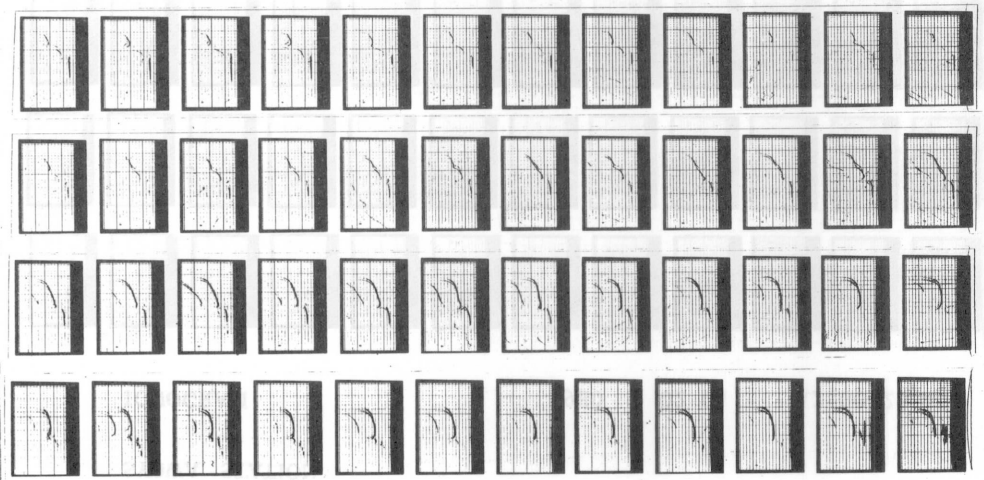

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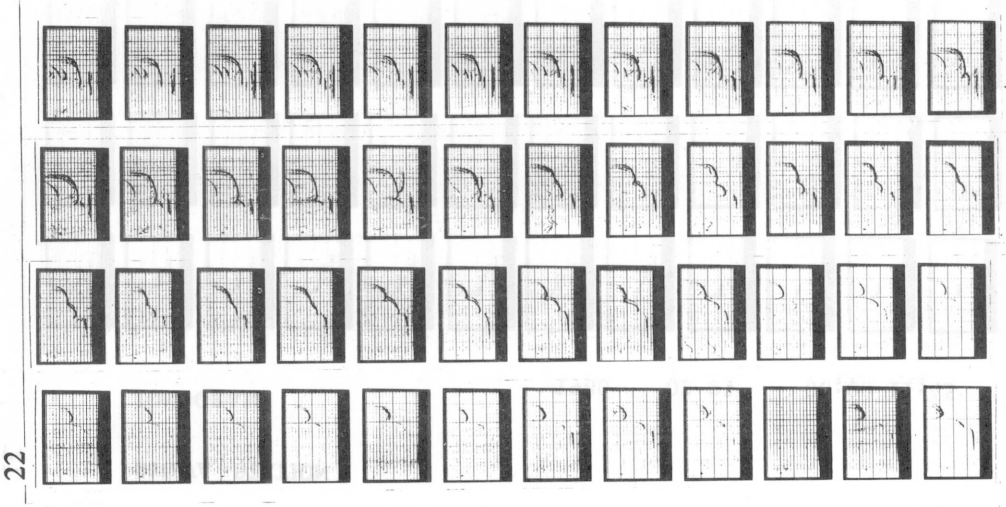

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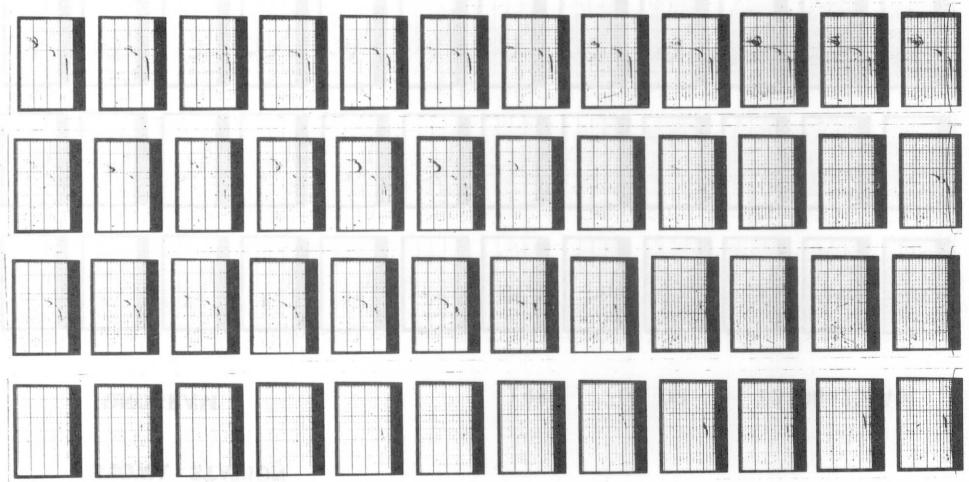

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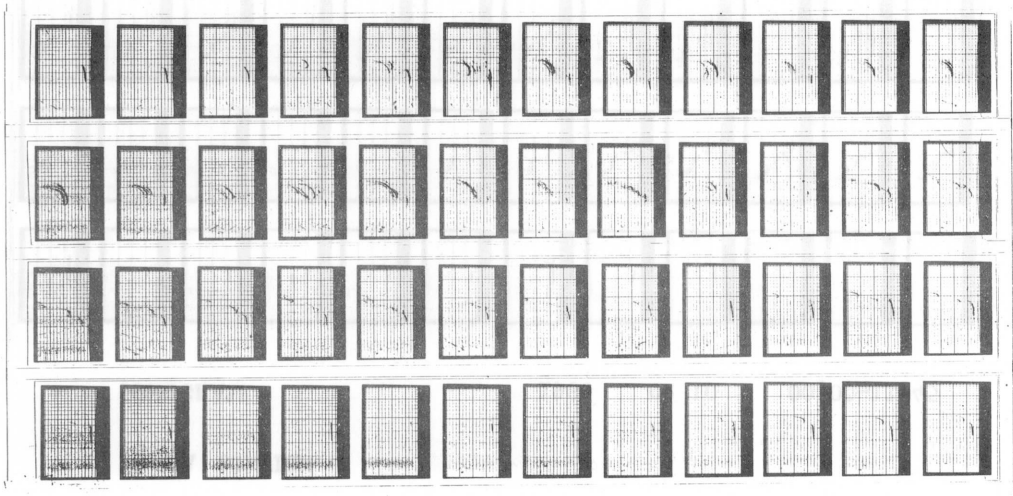

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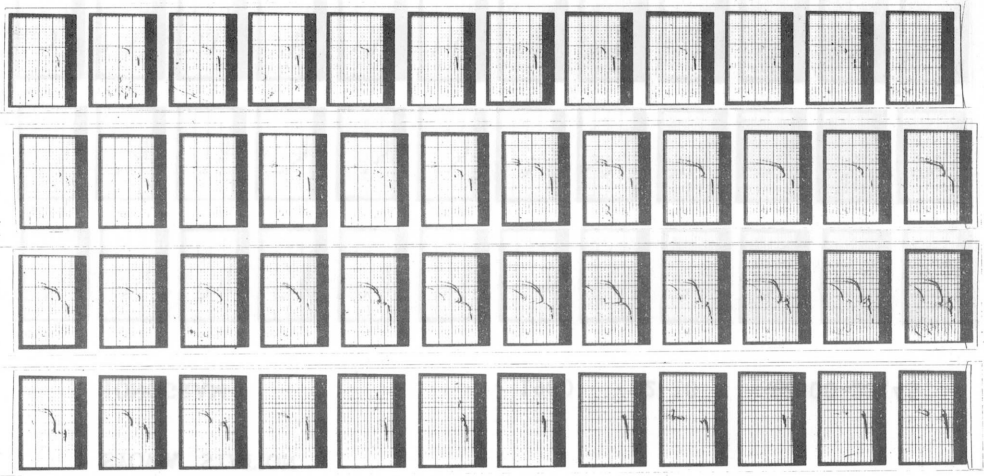

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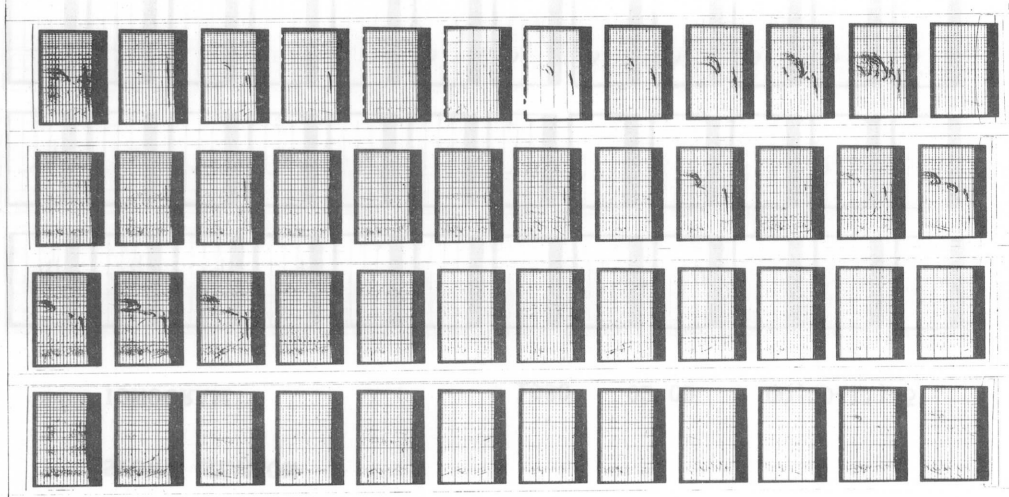

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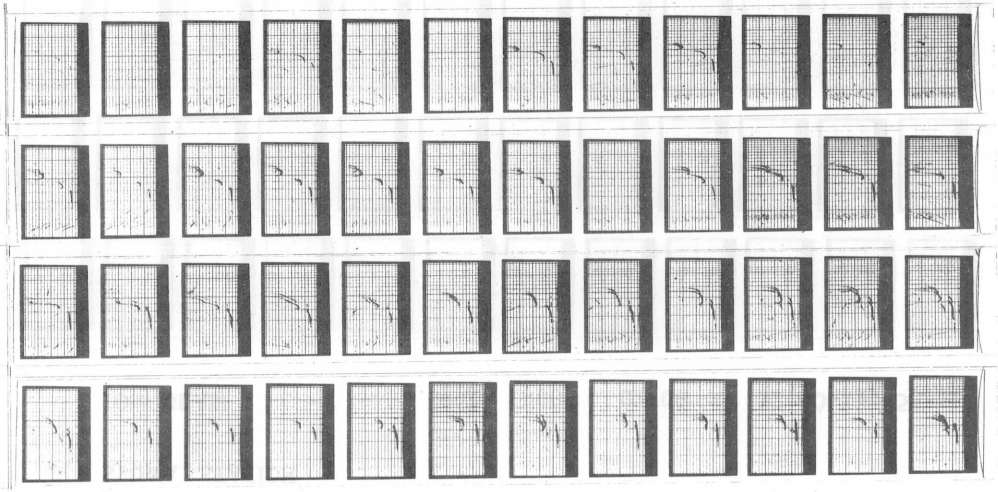

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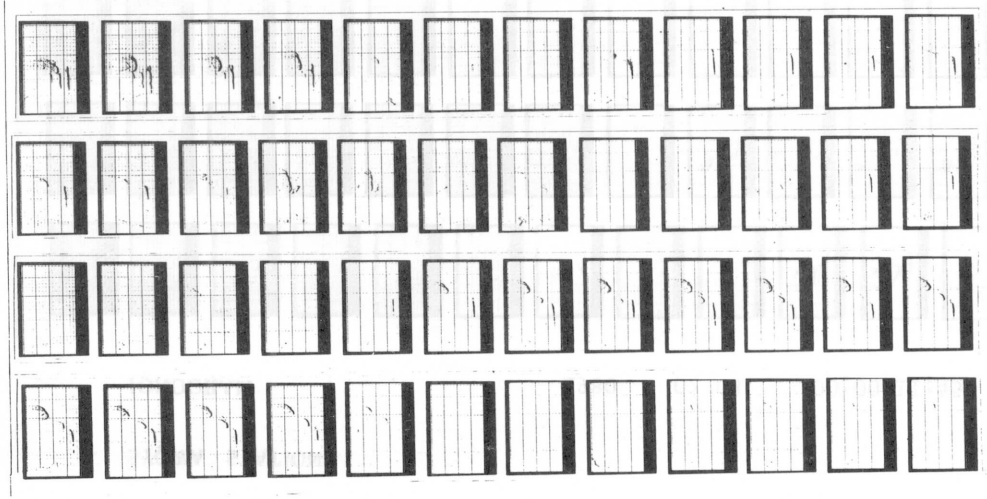

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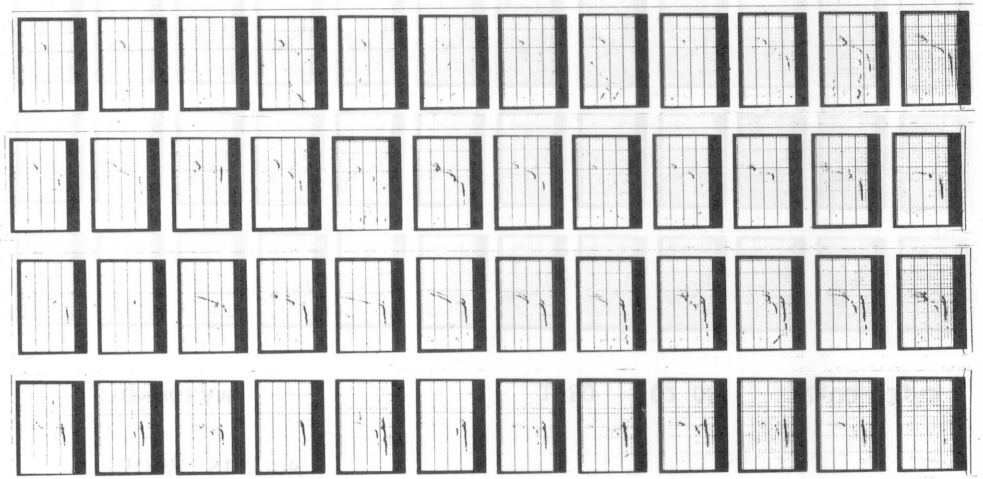

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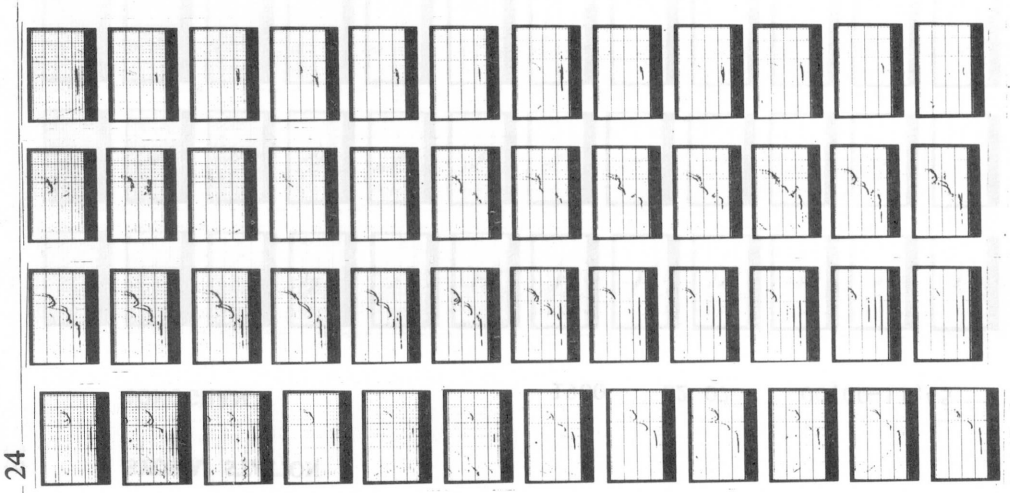

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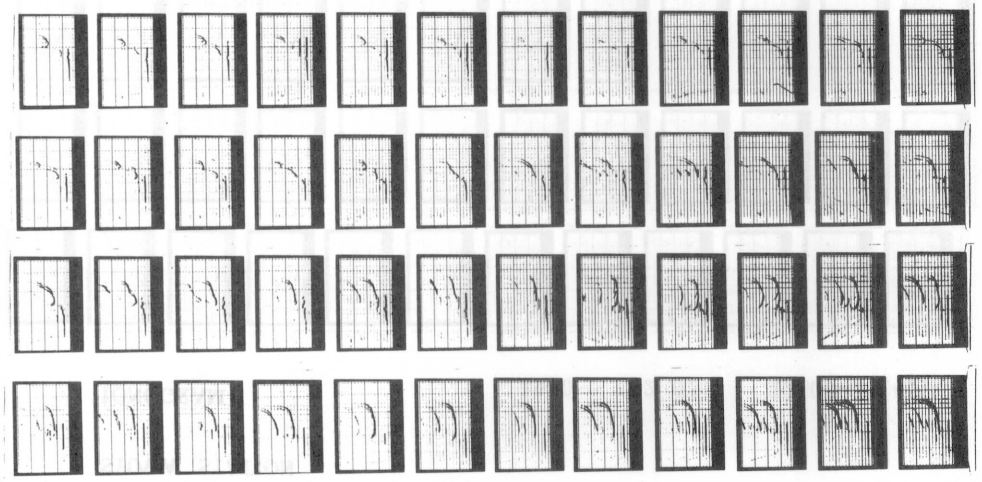

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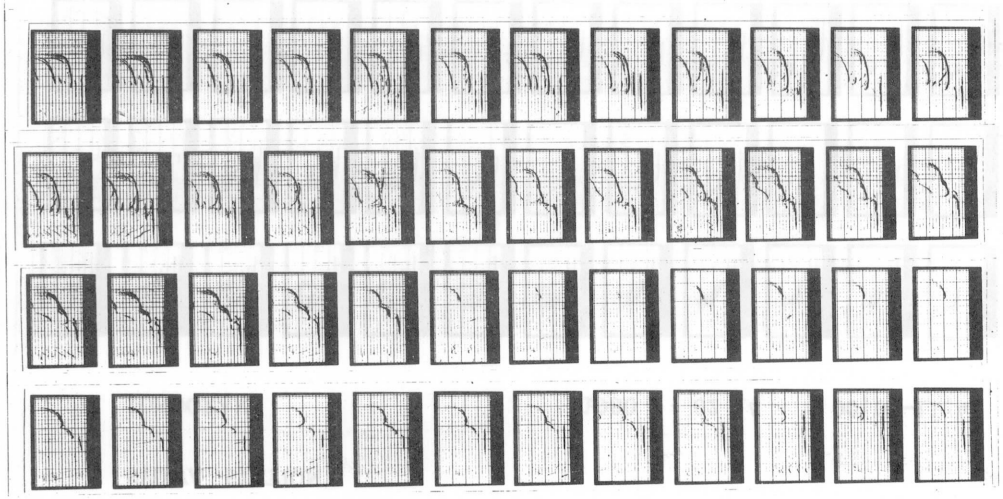

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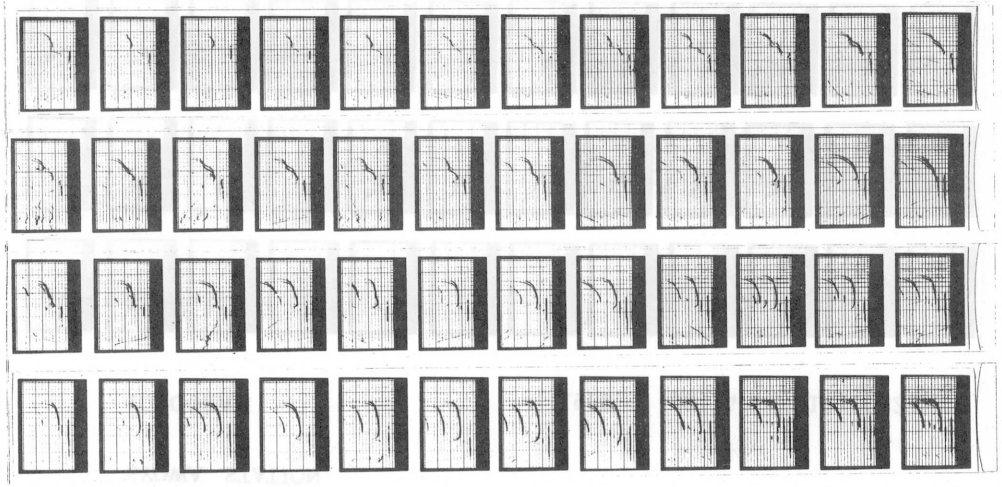

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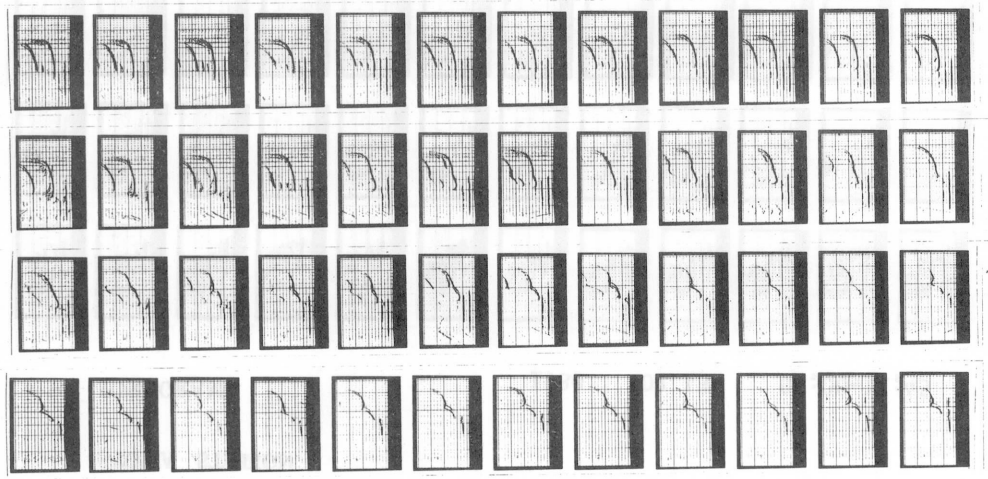

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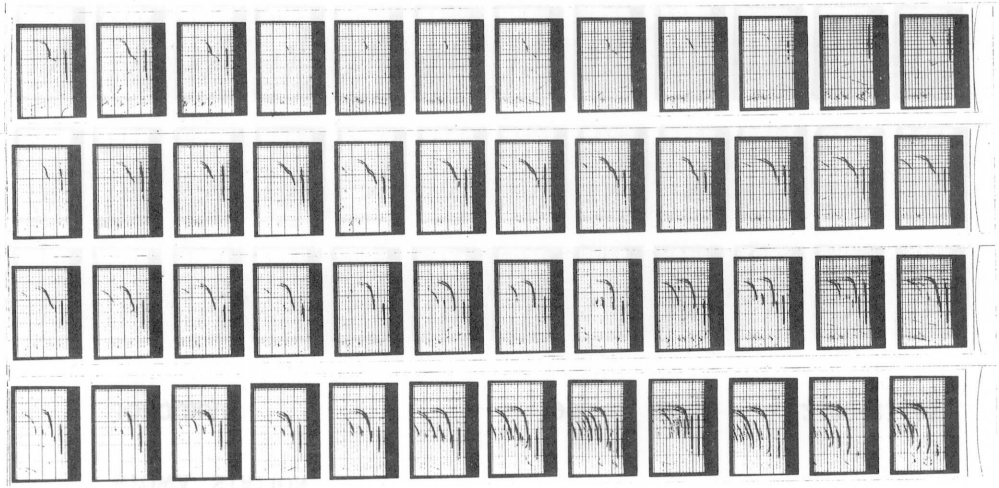

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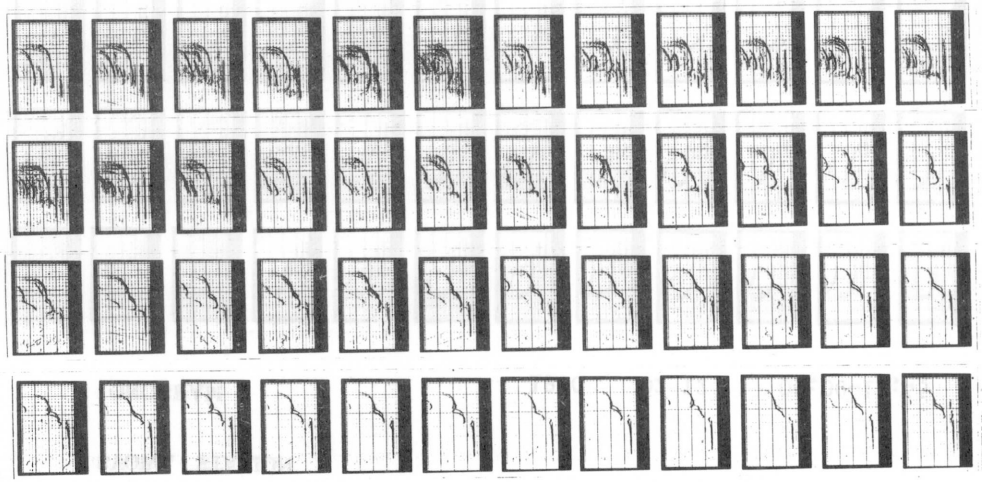

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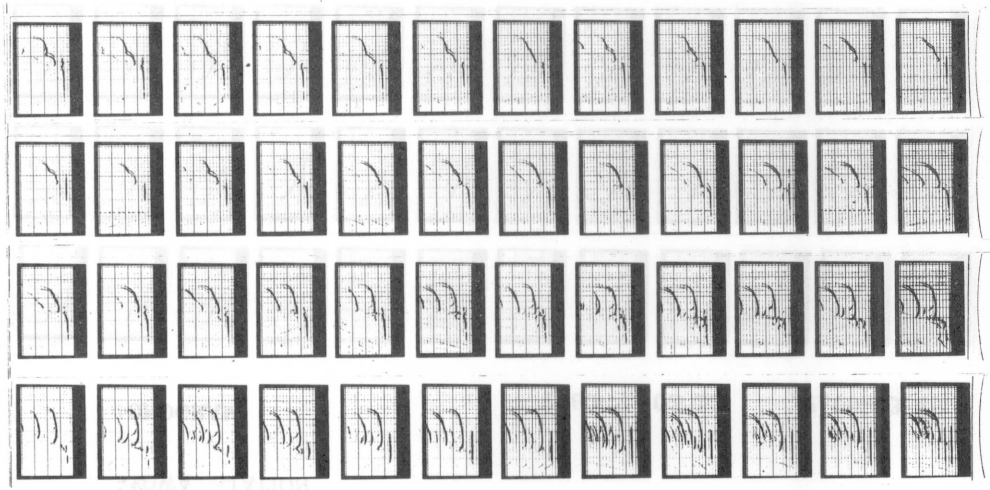

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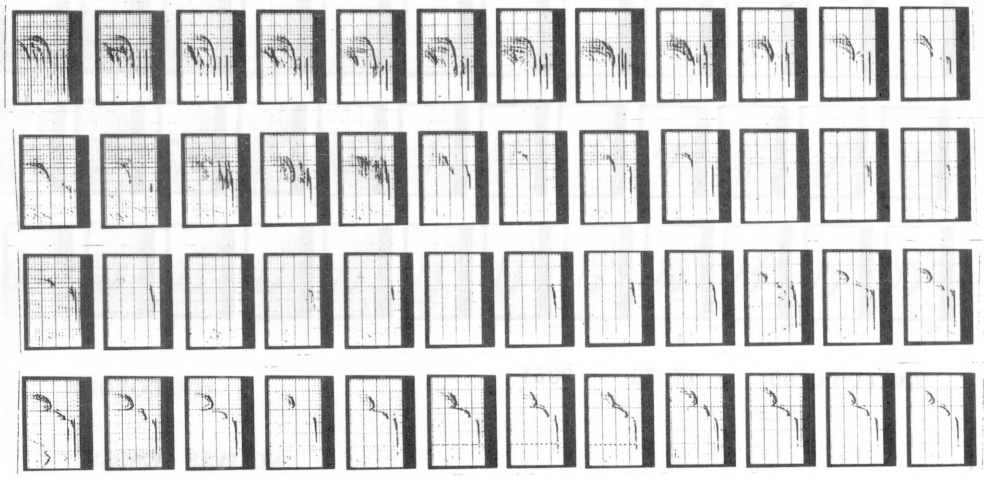

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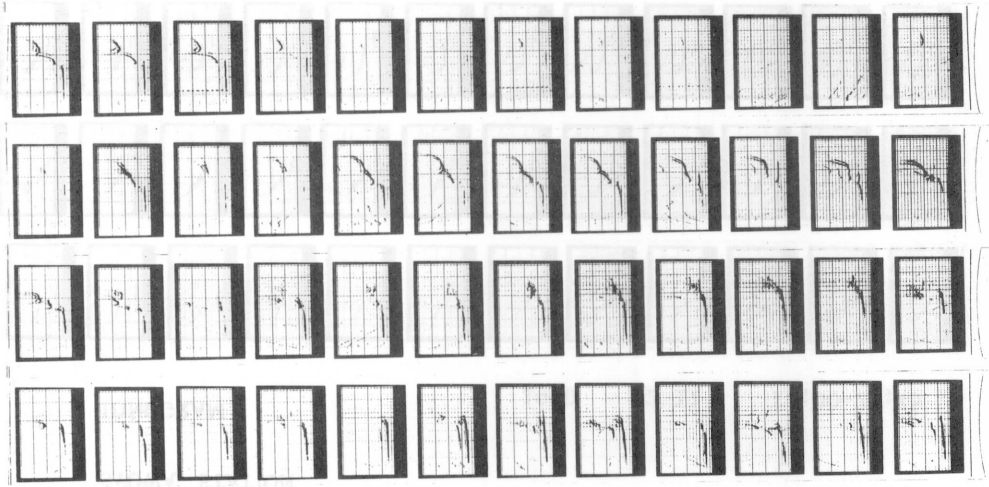

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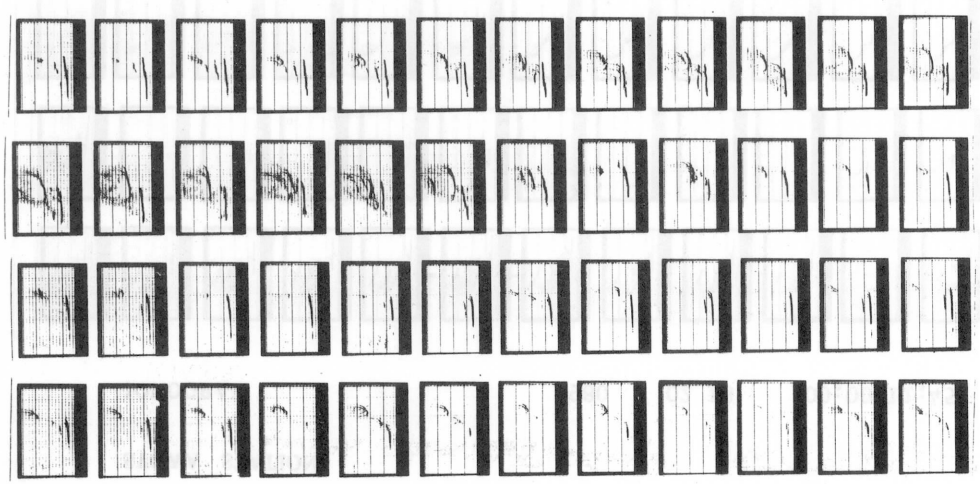

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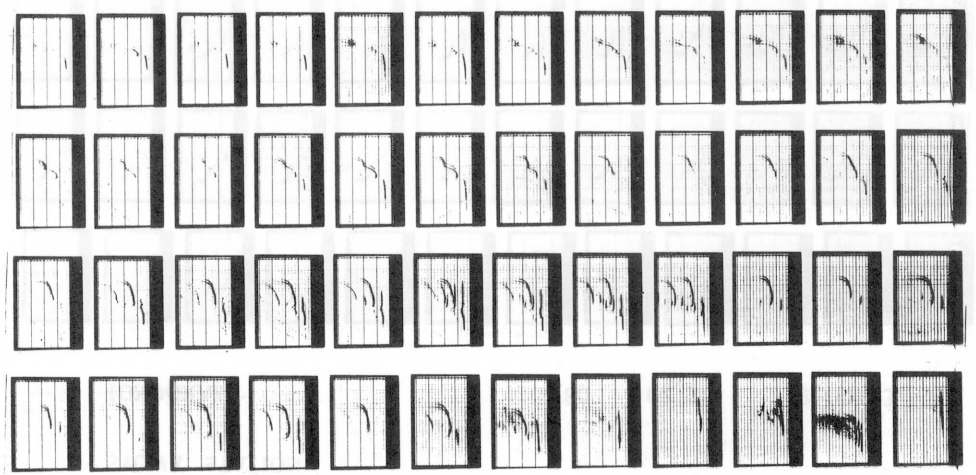

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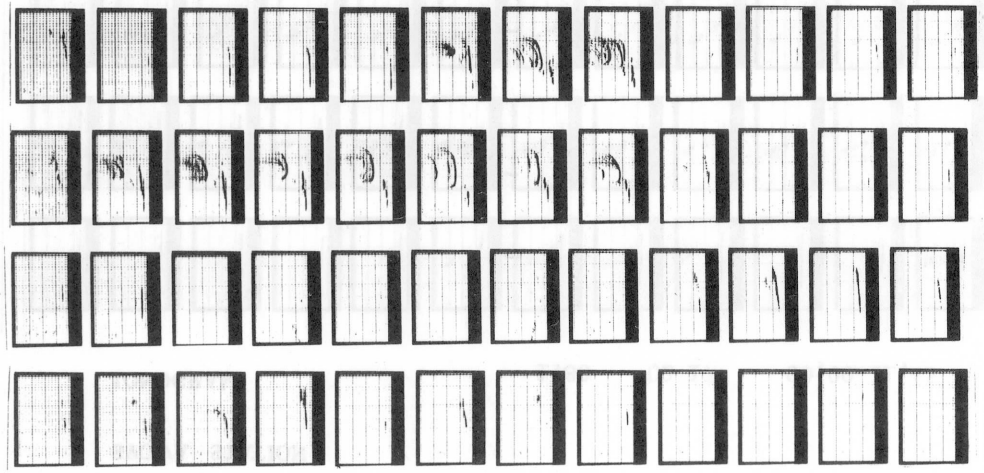

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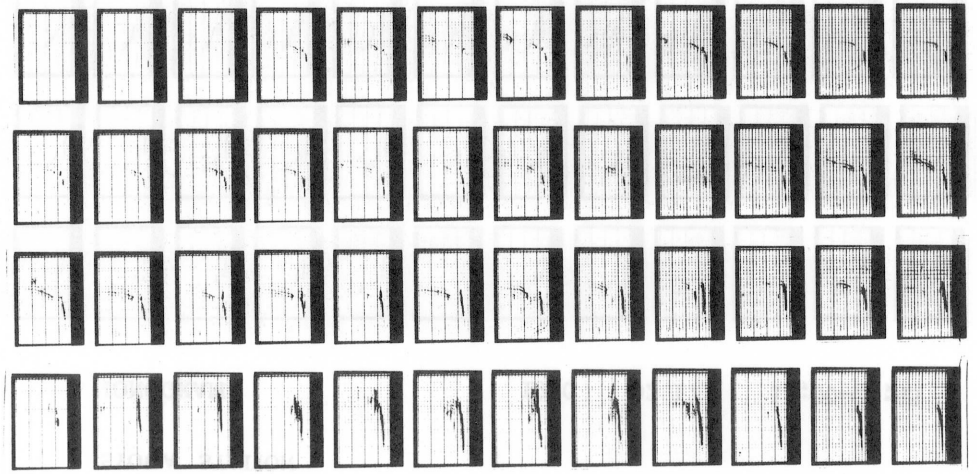

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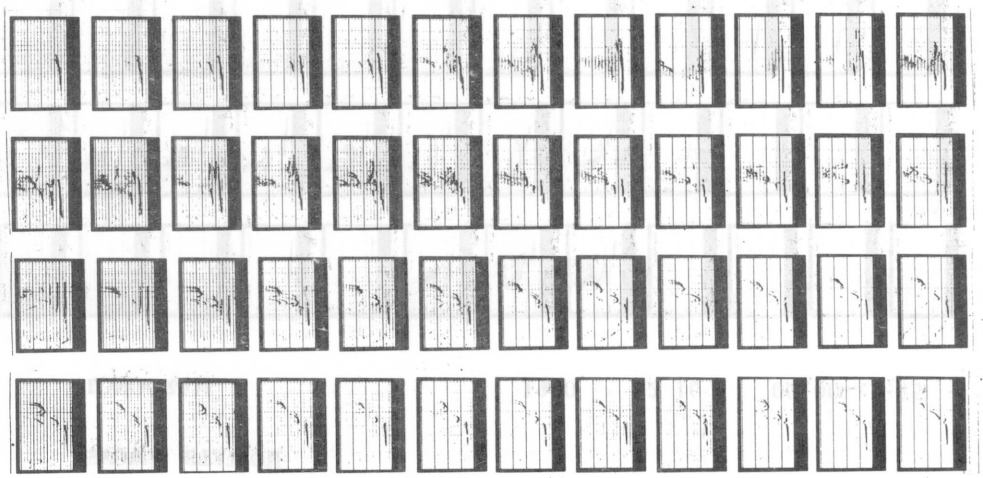

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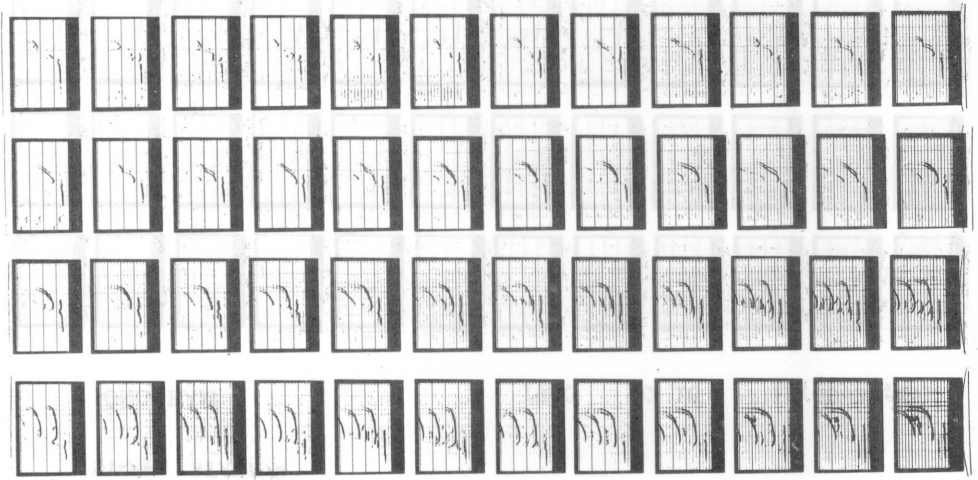

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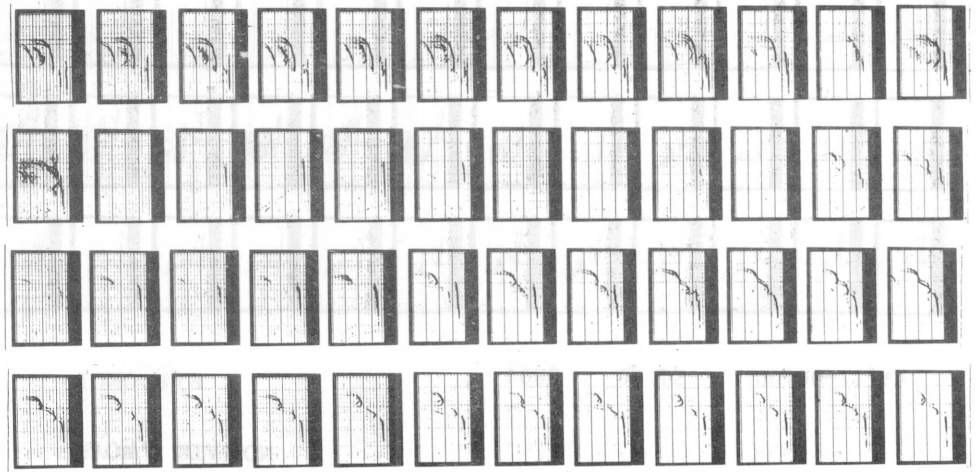
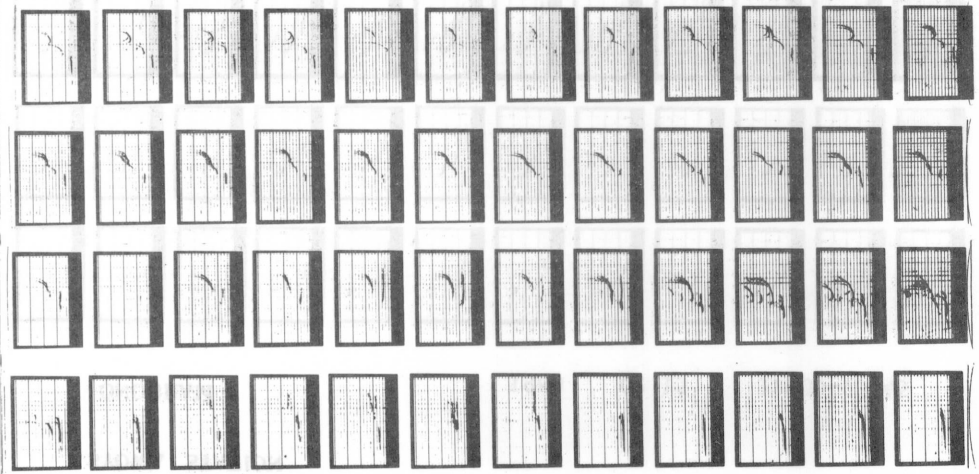


SYOWA STATION

IONOGRAM 1980 02 18 12;00–23;45



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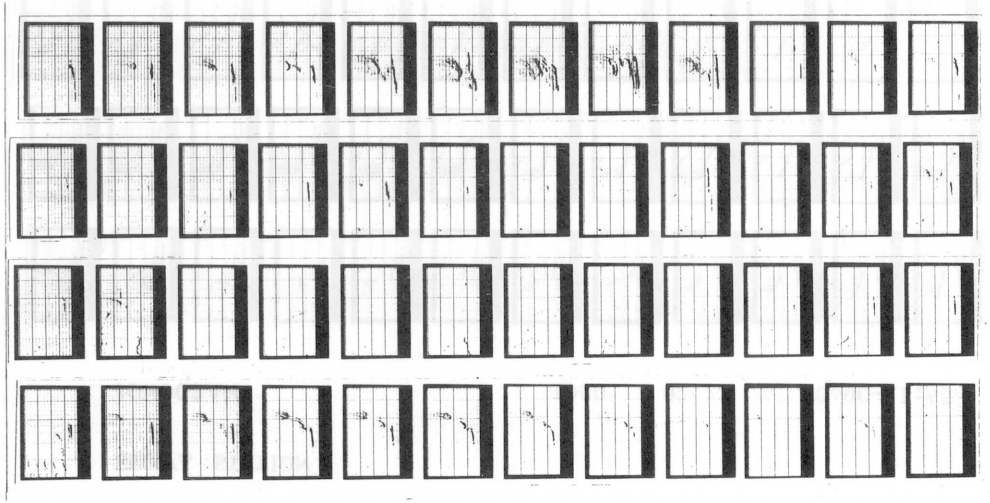

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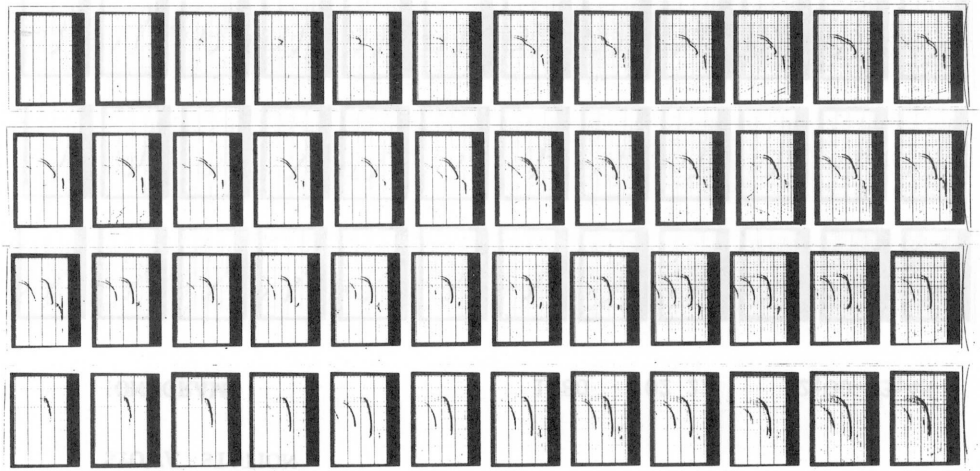

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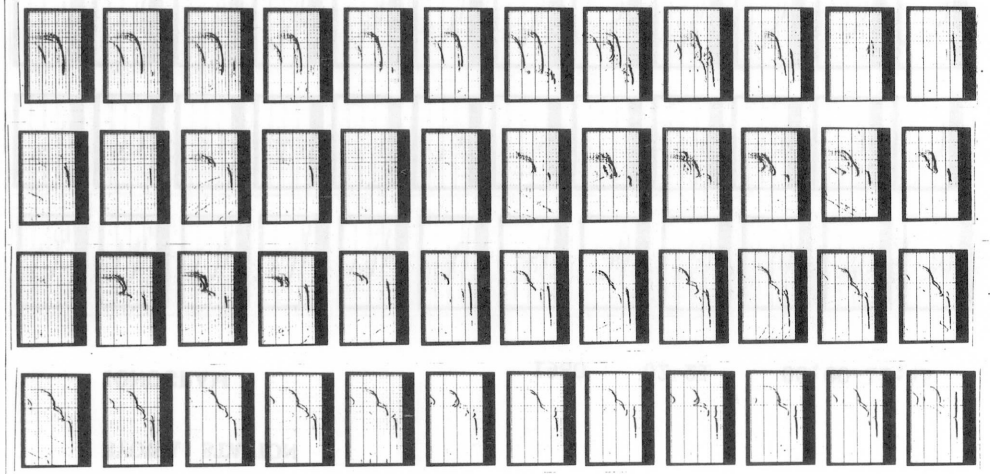

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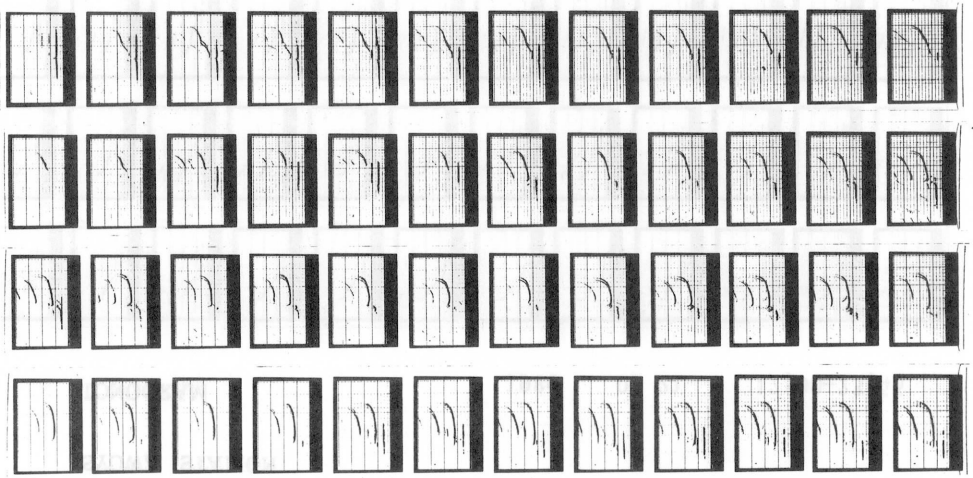

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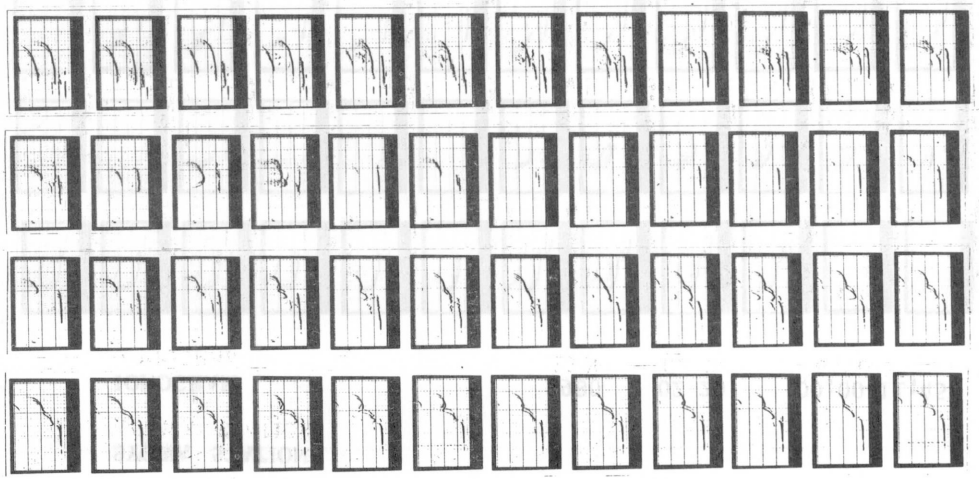

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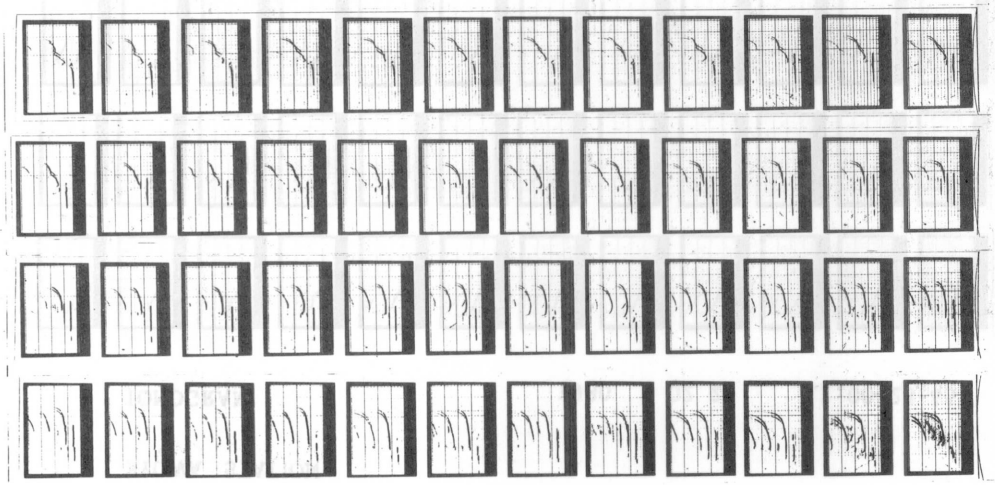

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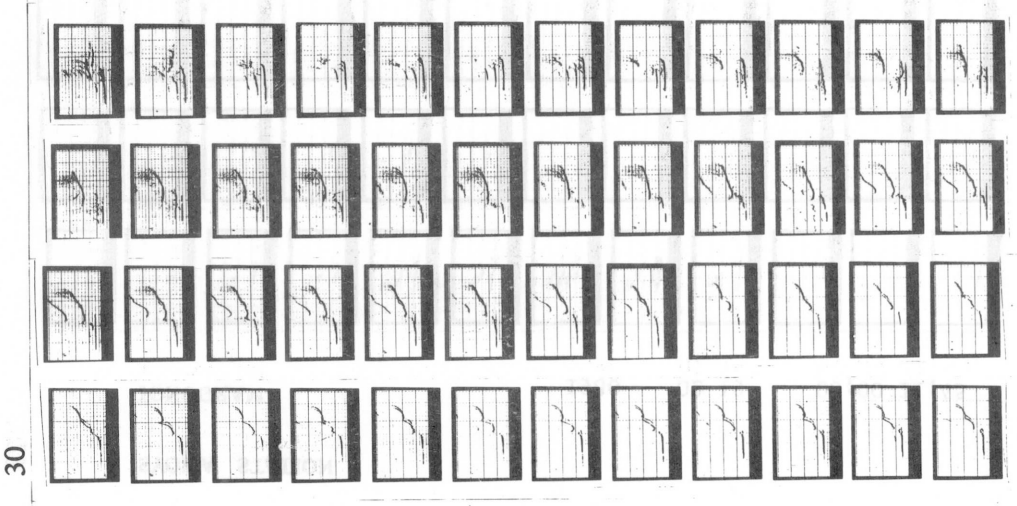

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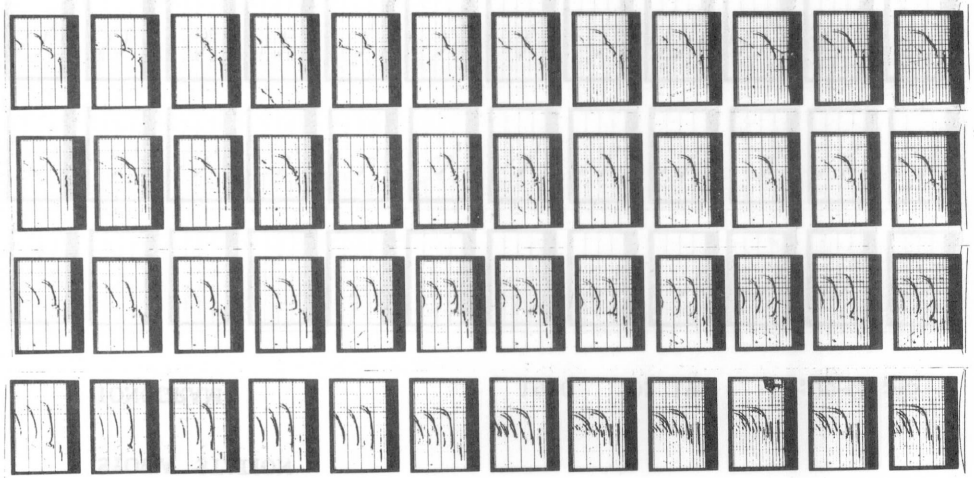

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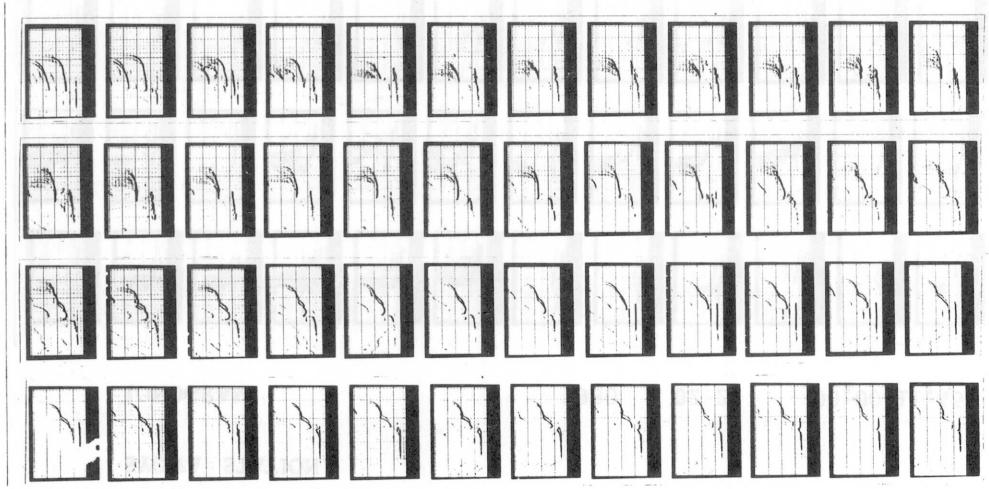

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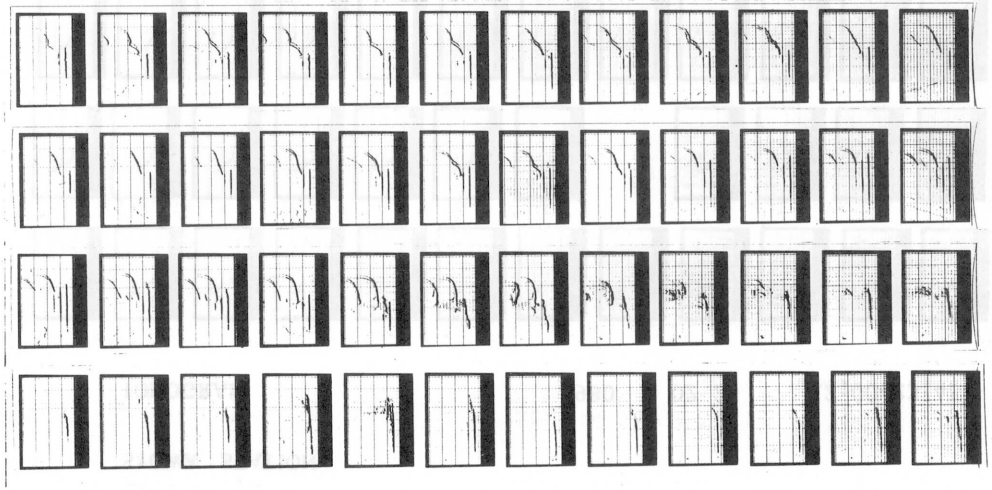

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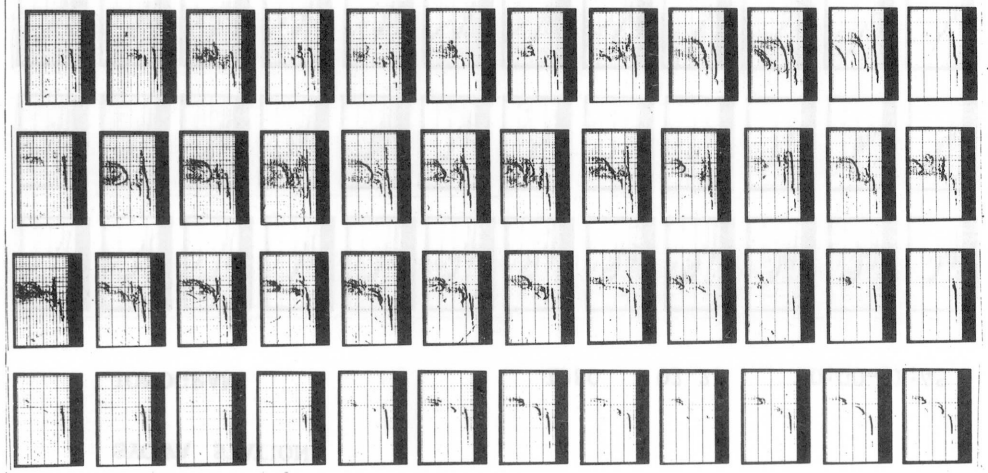

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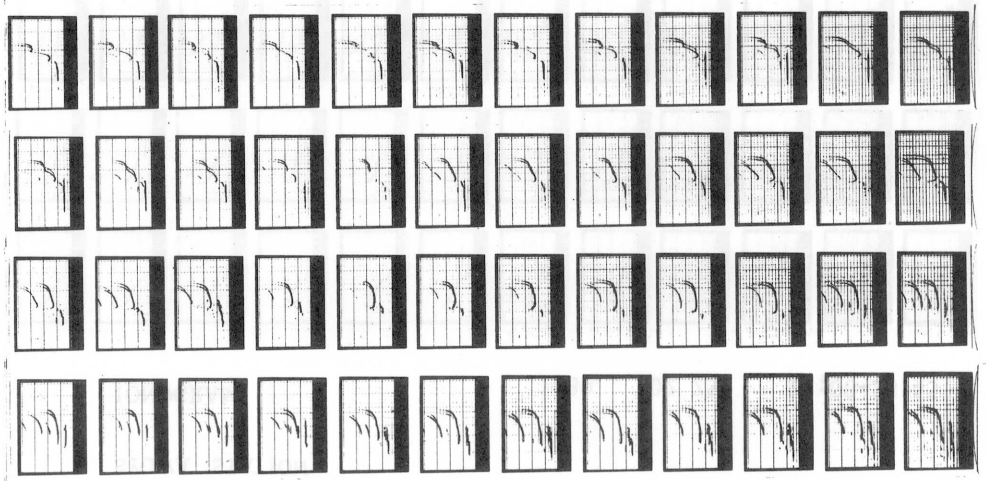

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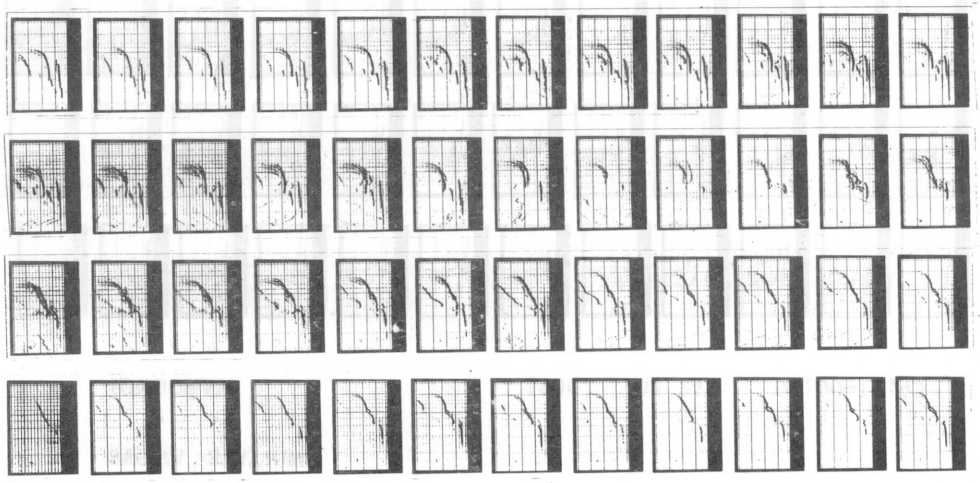

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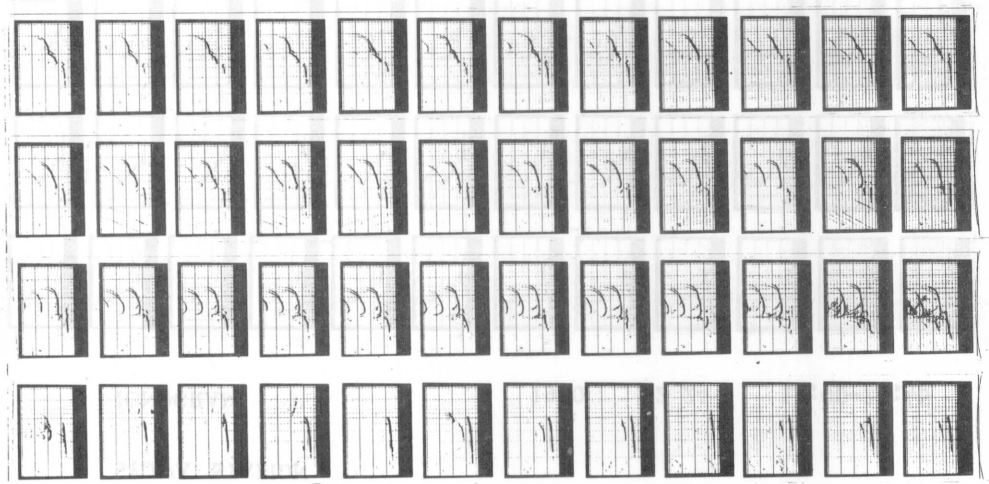

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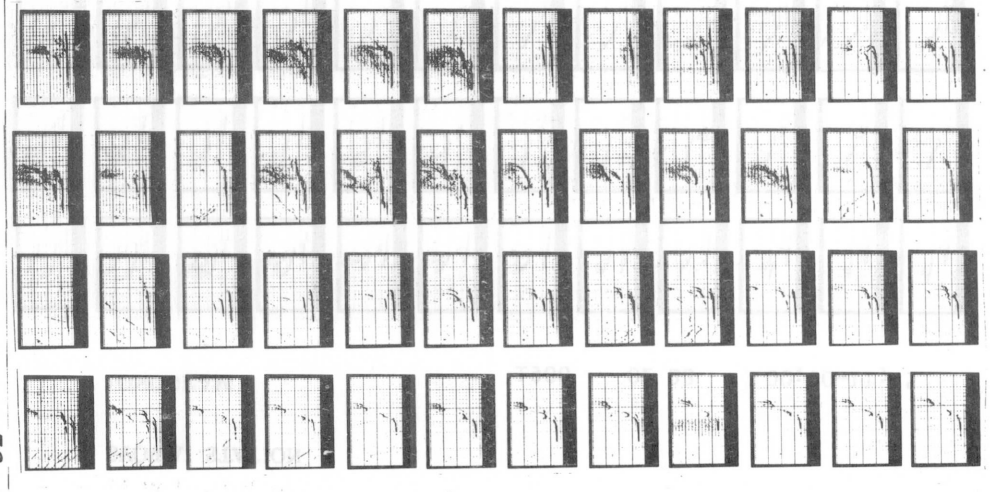

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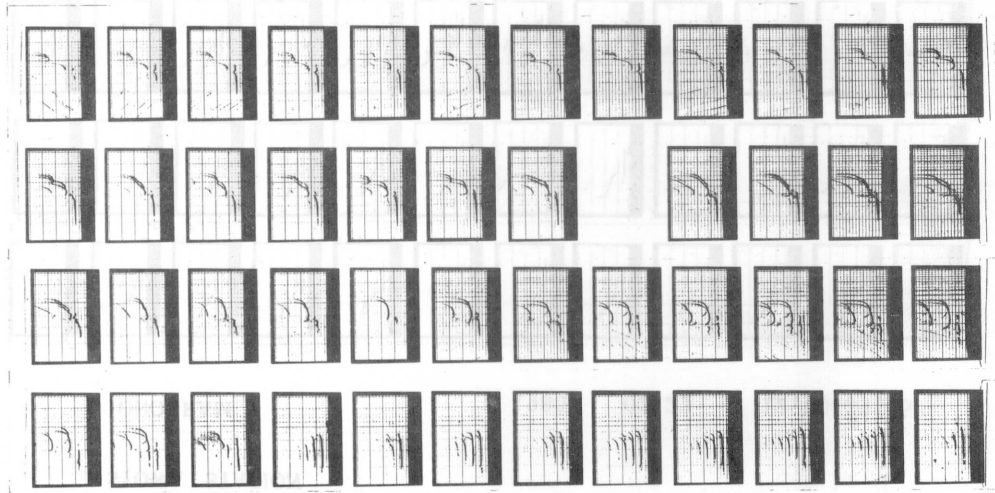

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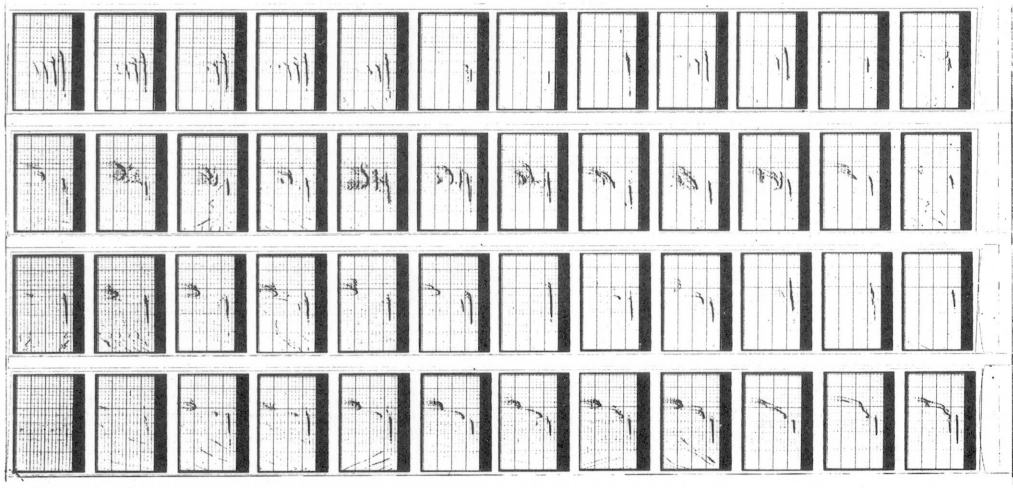

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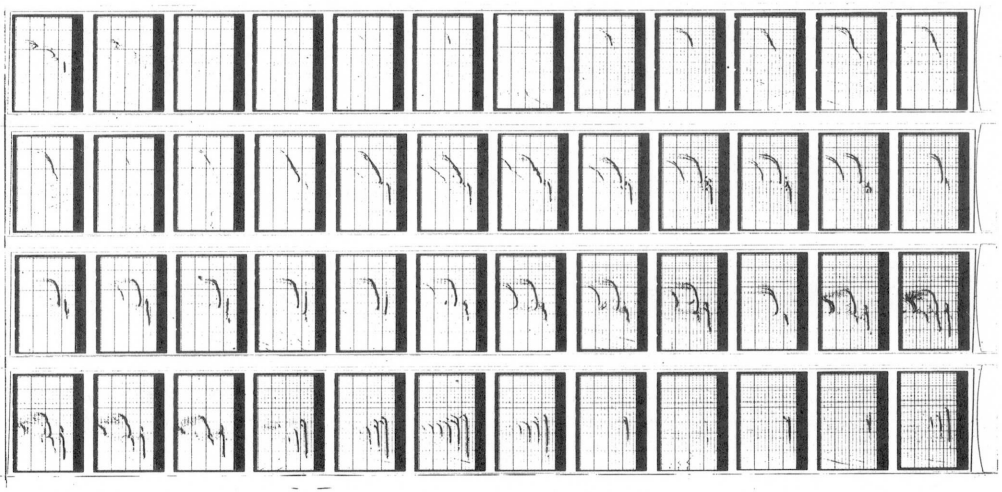

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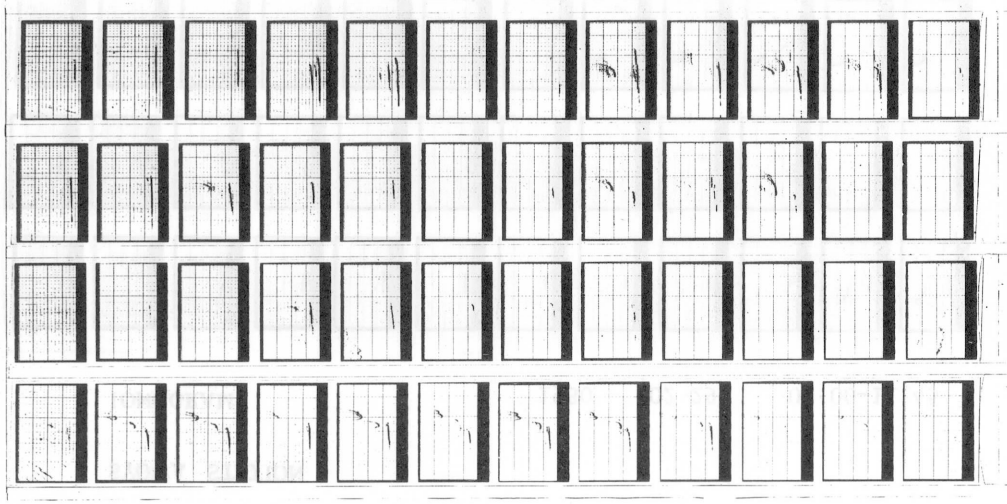

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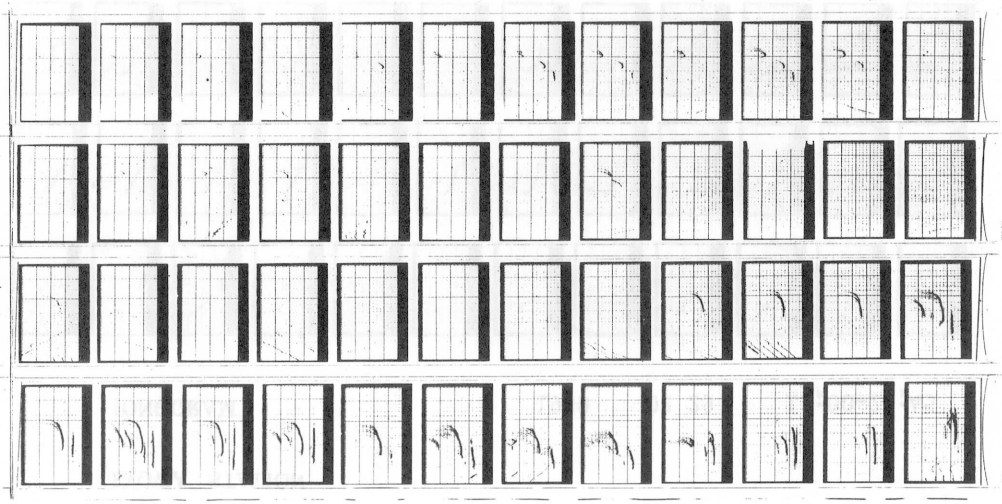

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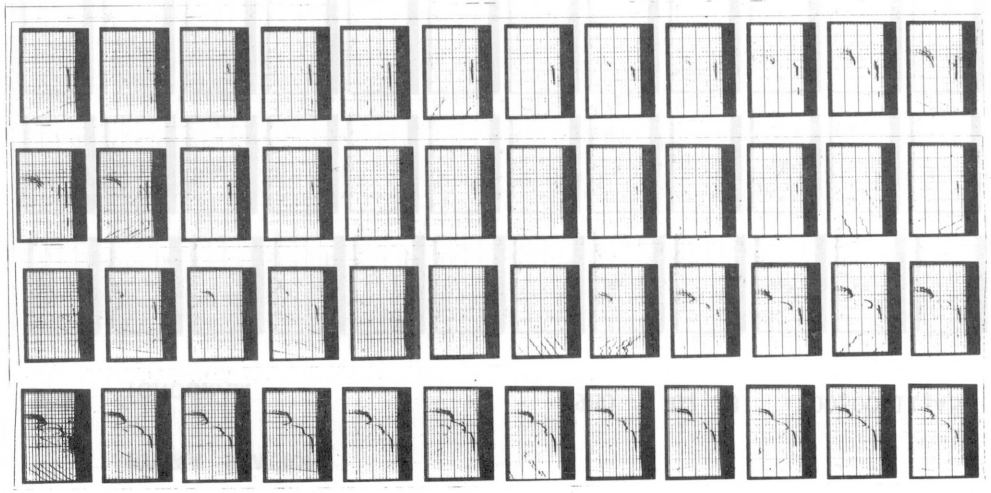

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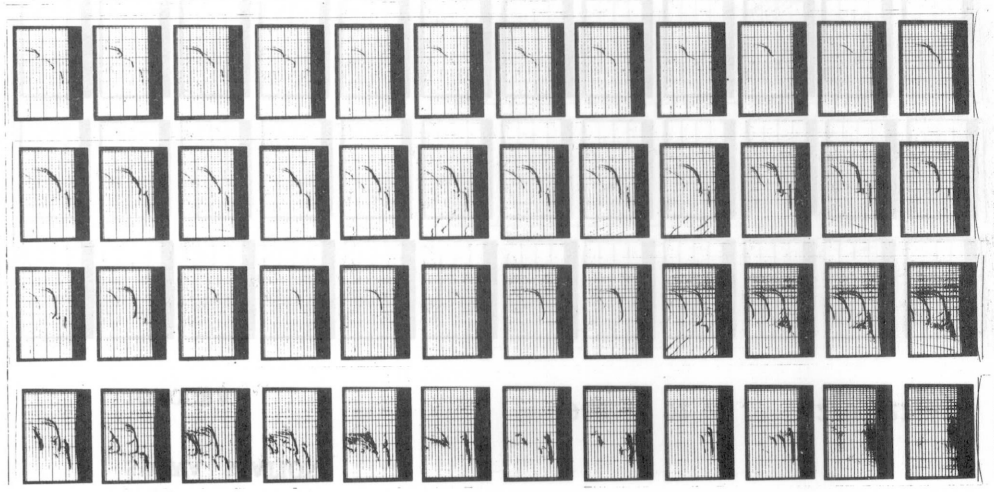

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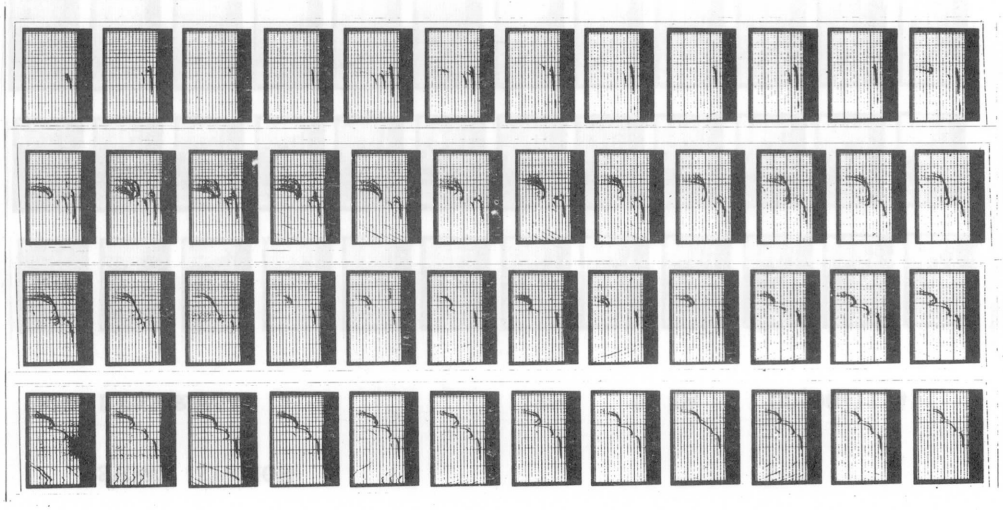

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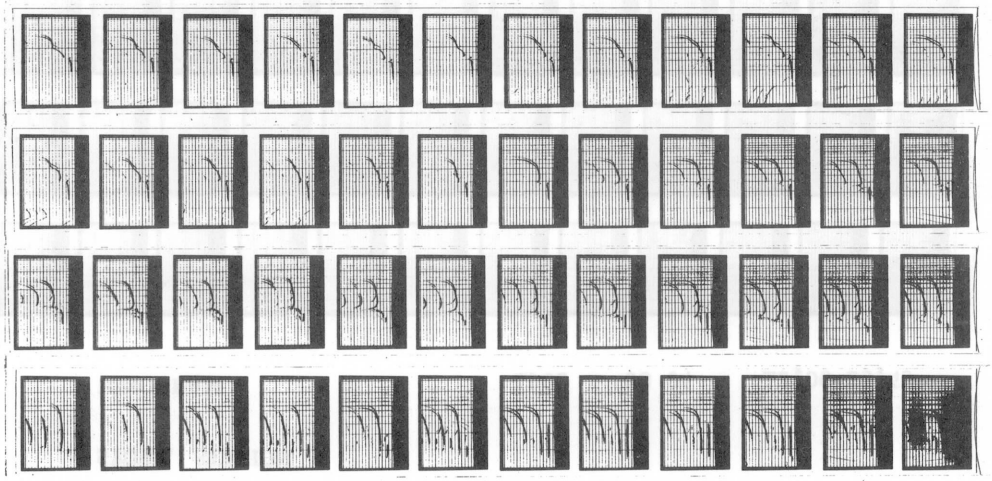

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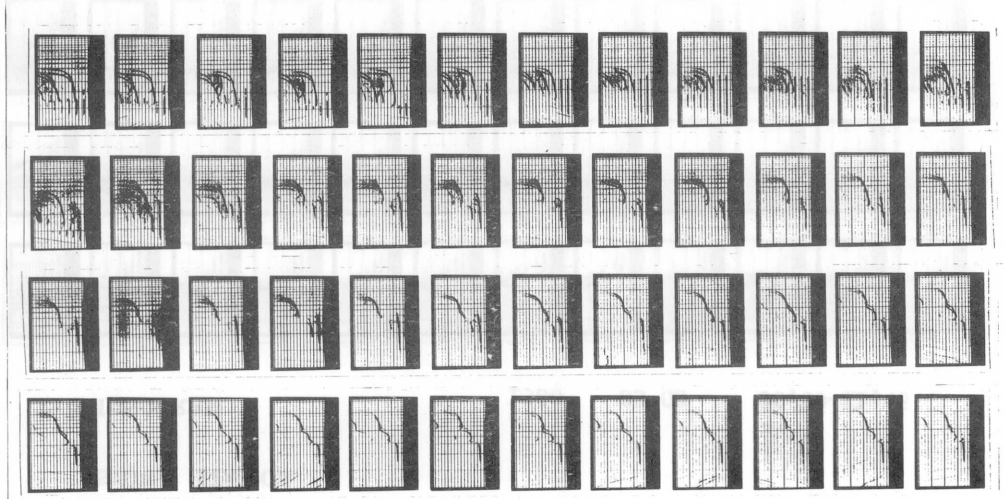

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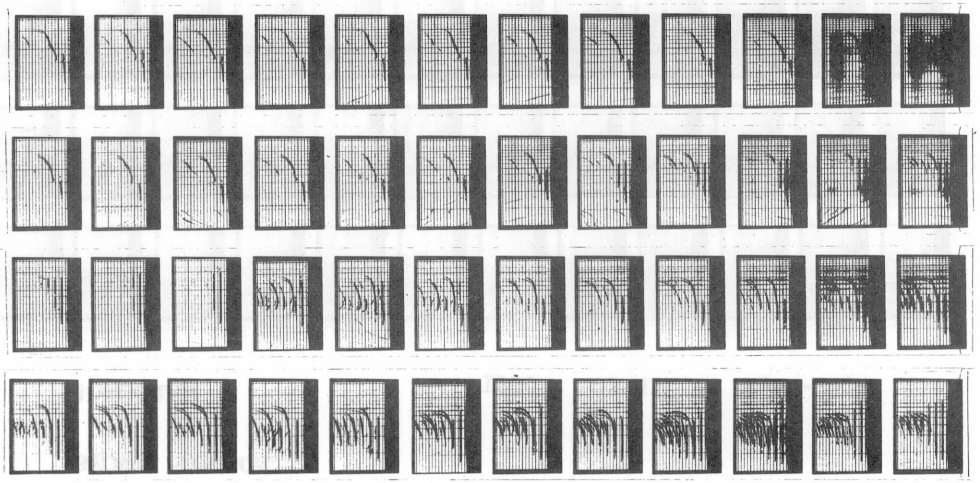

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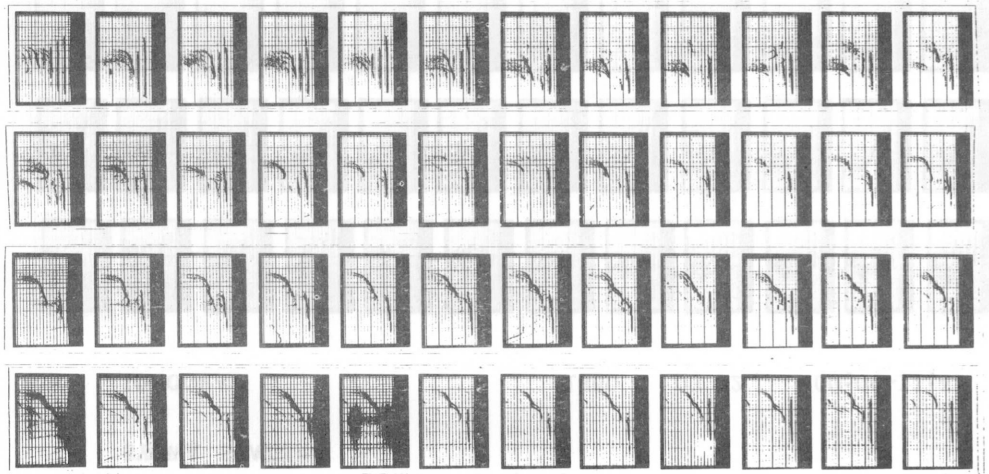

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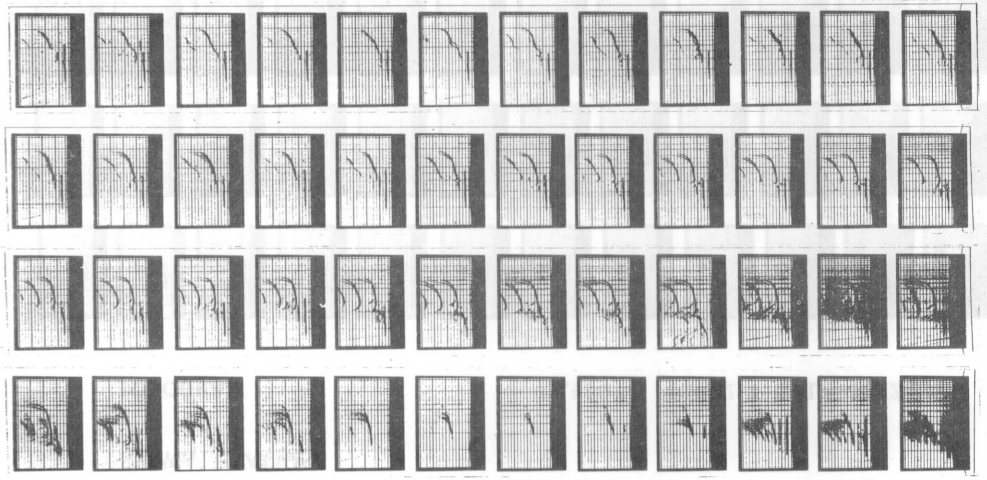

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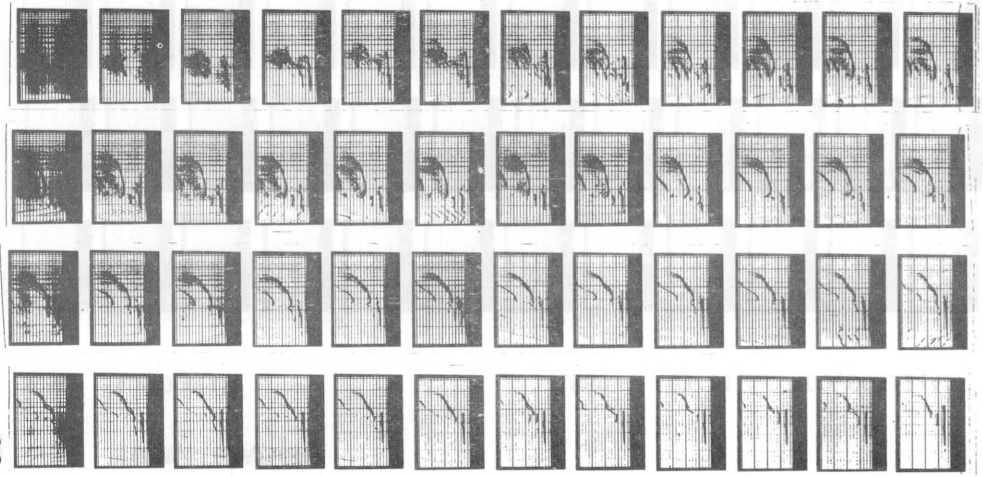

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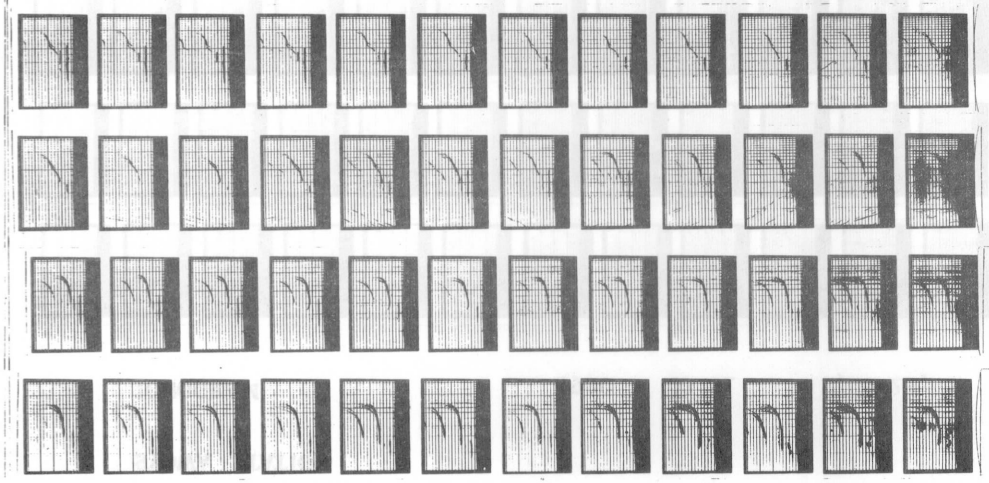

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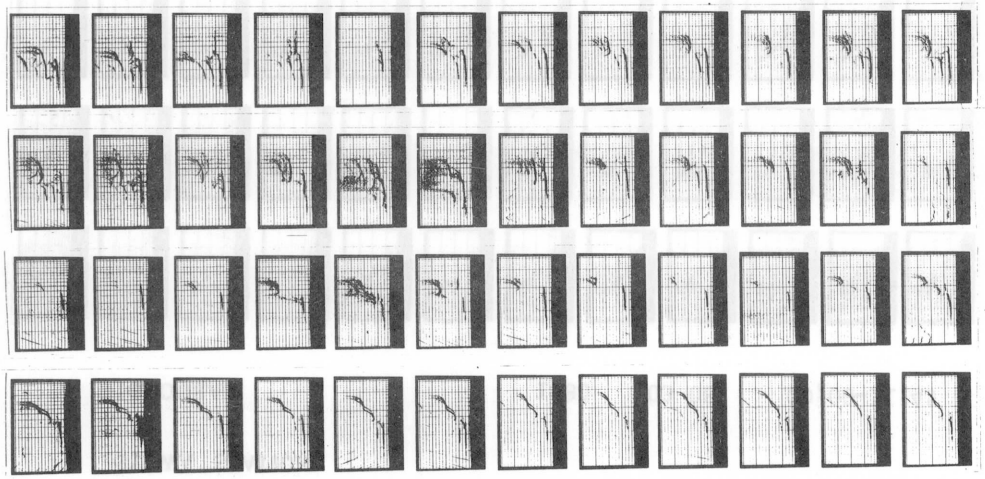

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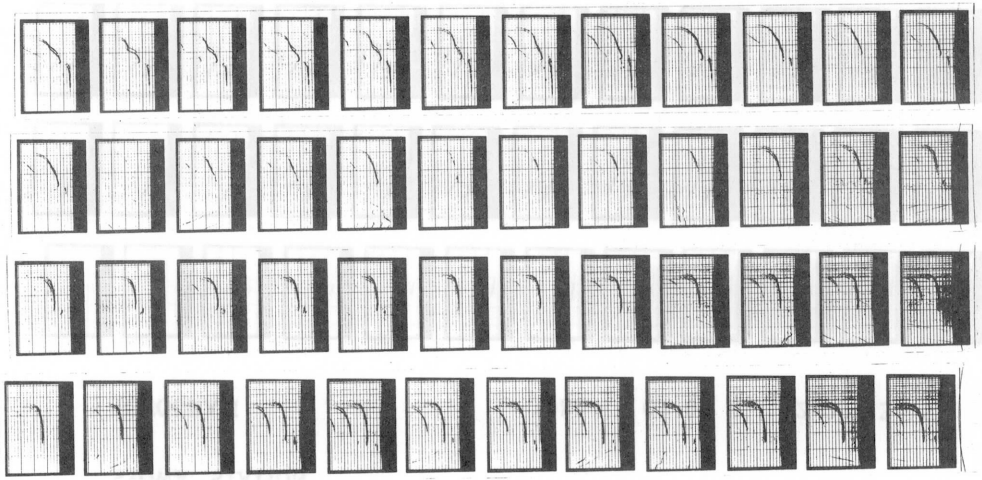

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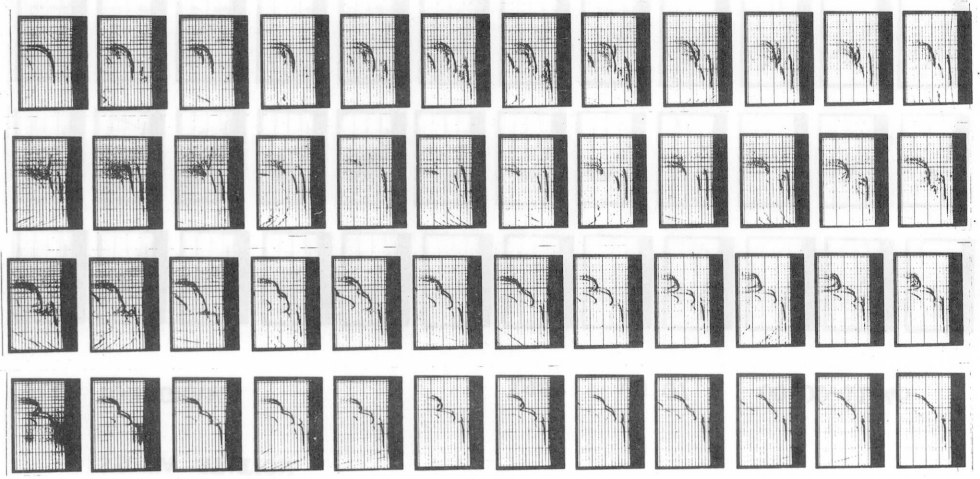

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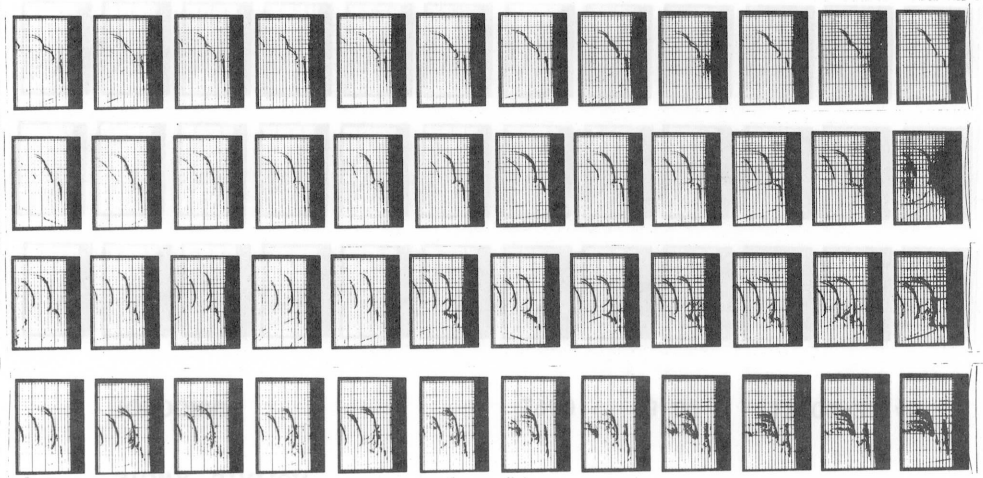

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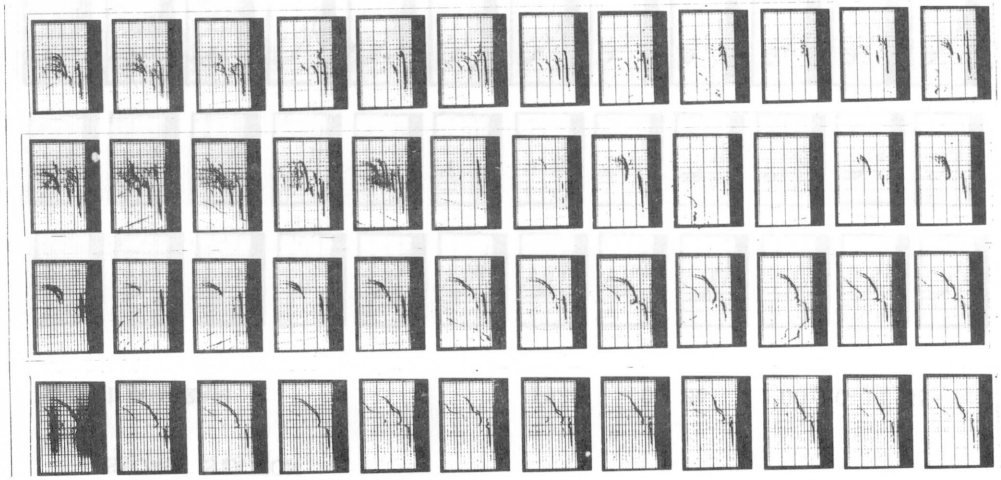

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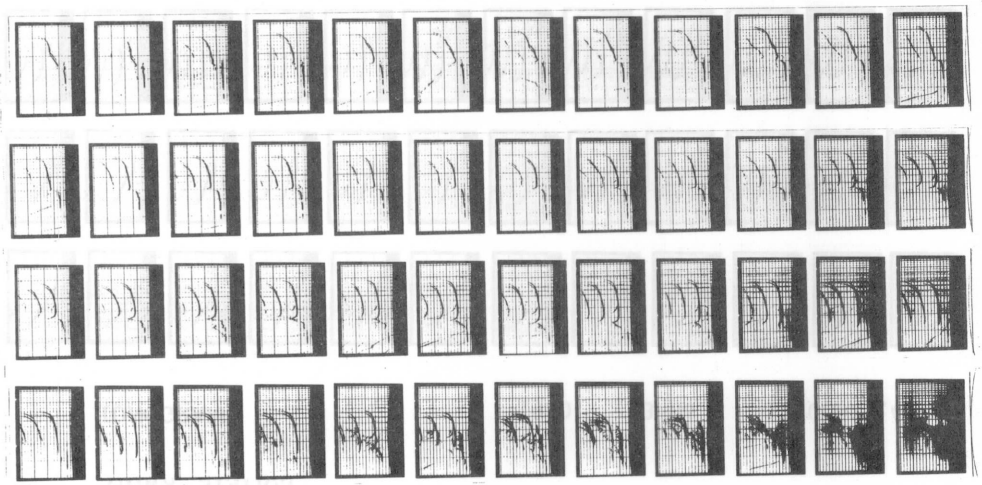

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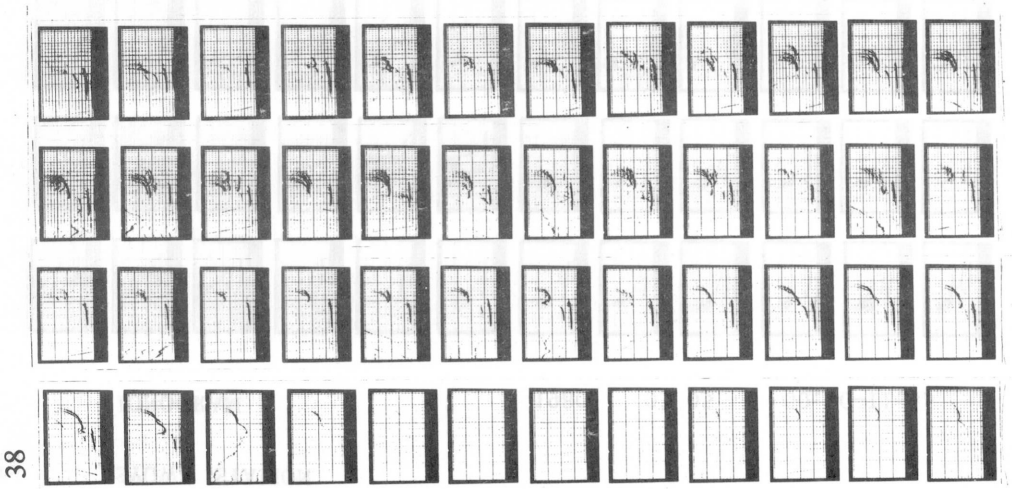

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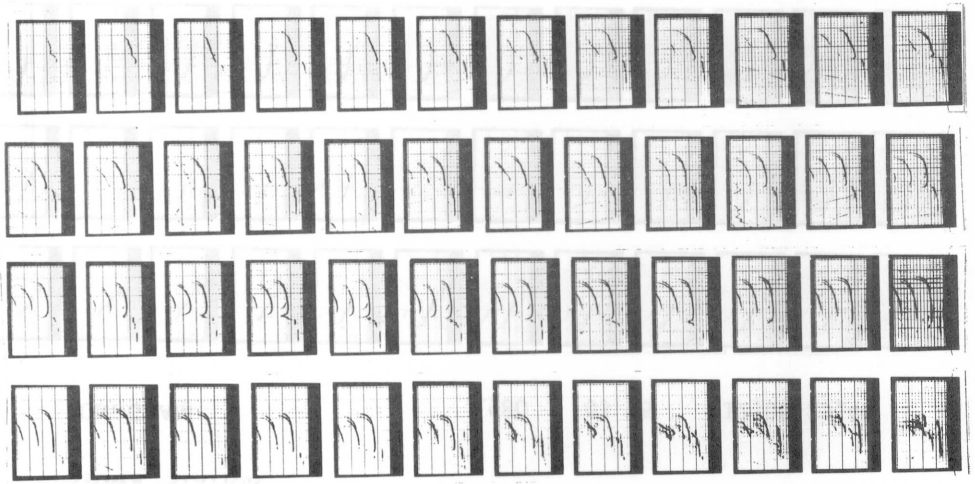

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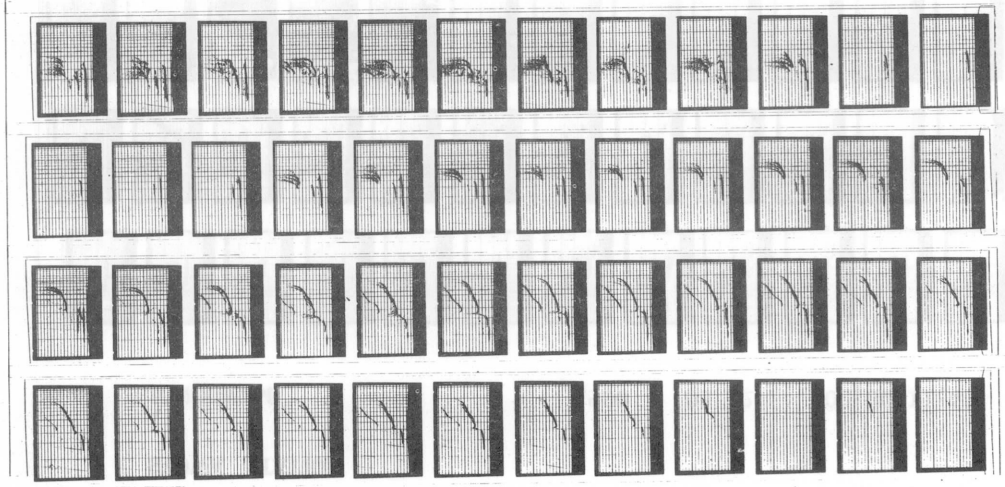

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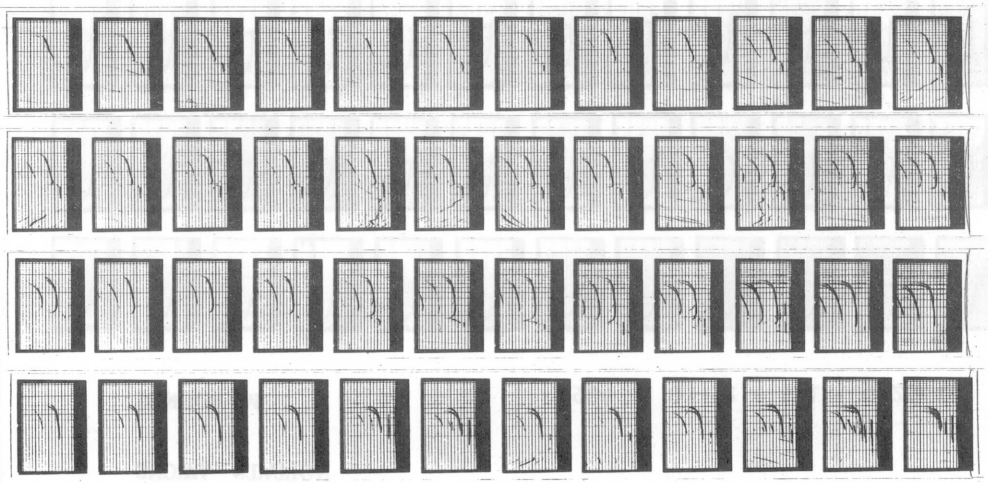

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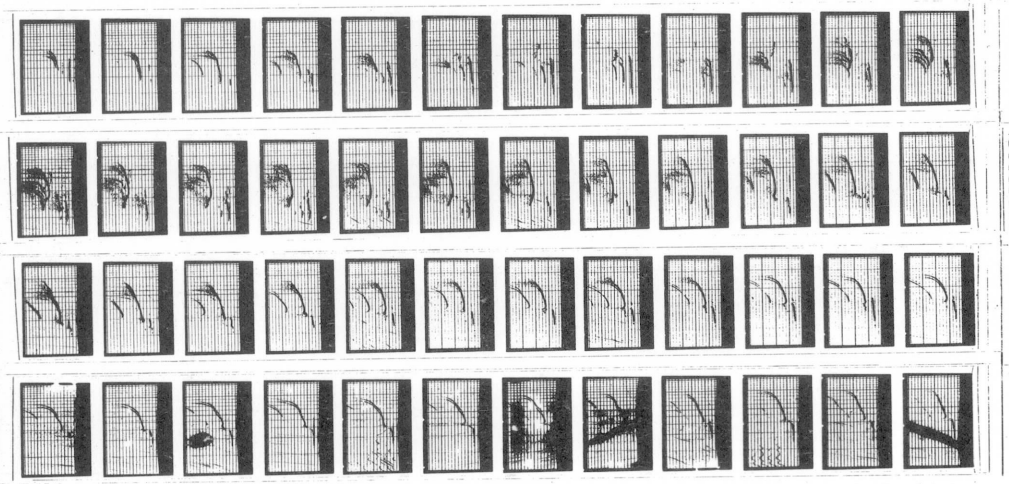

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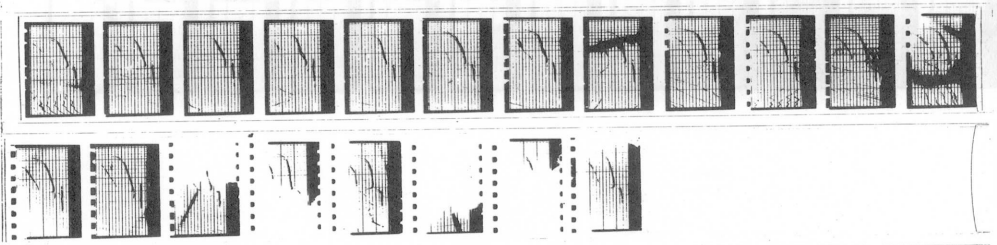

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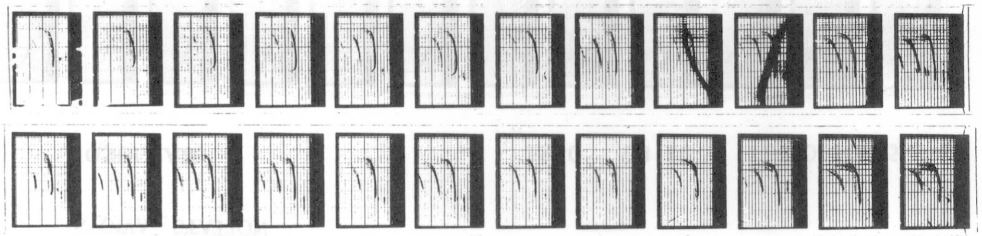

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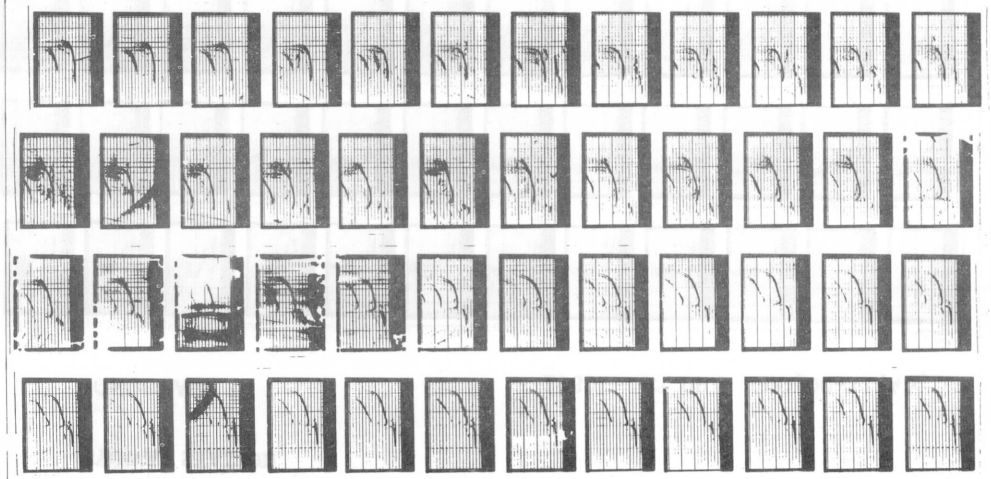

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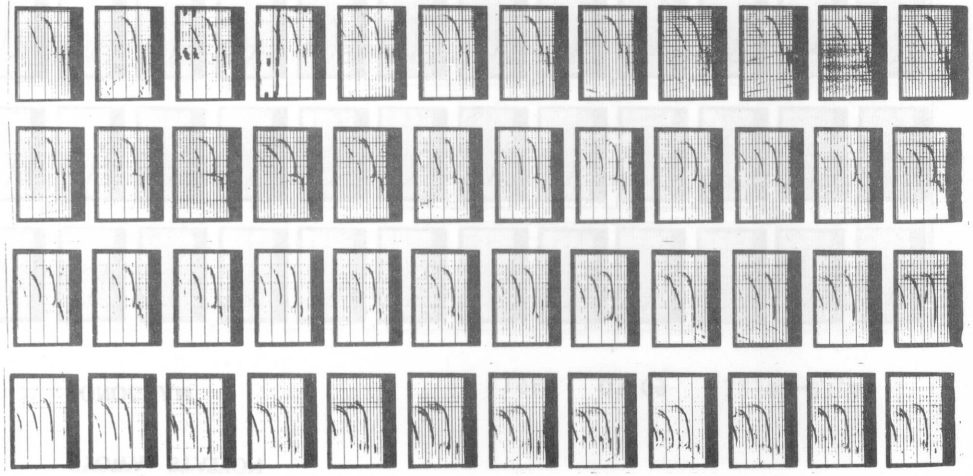

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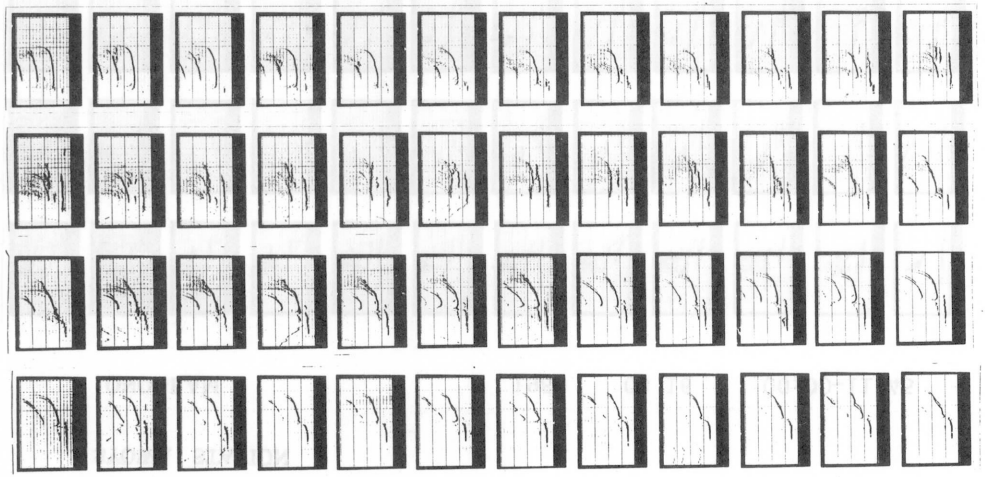

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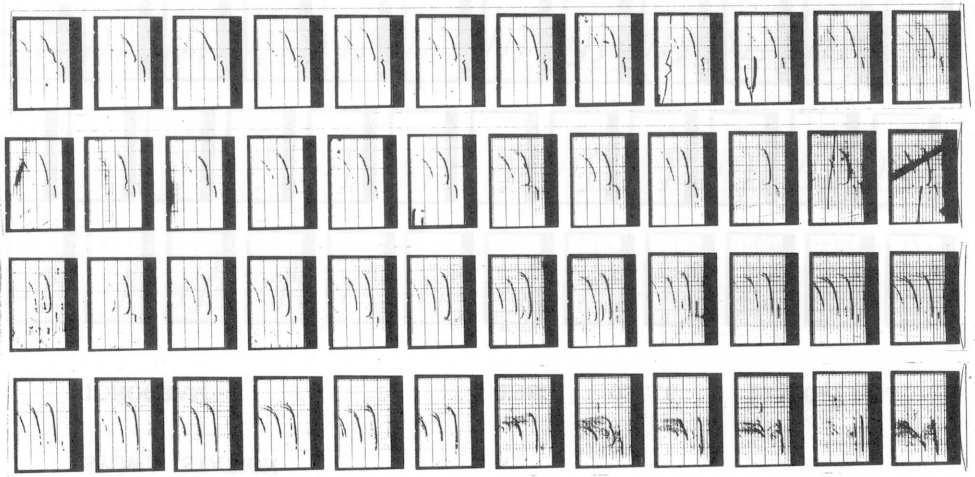

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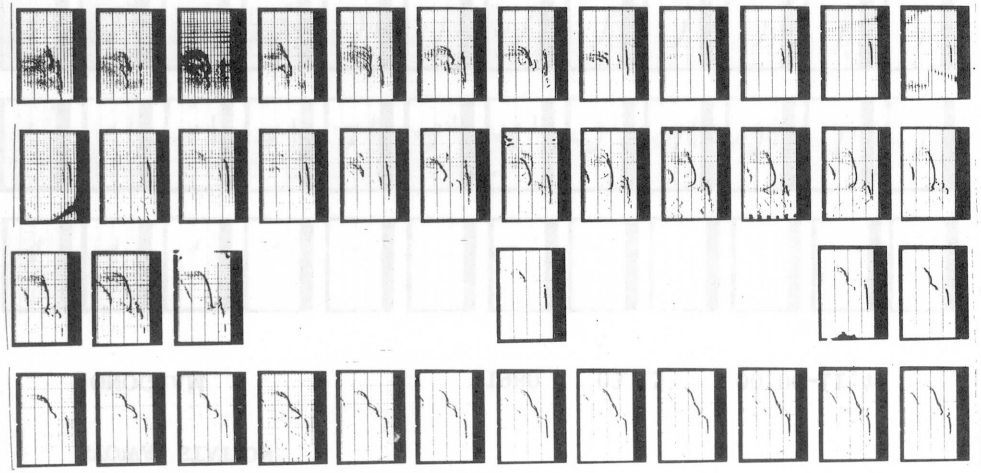

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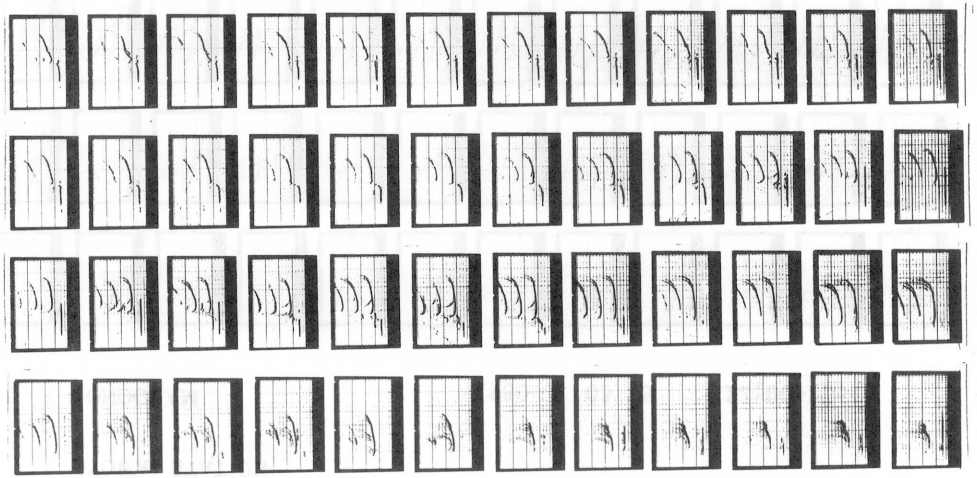

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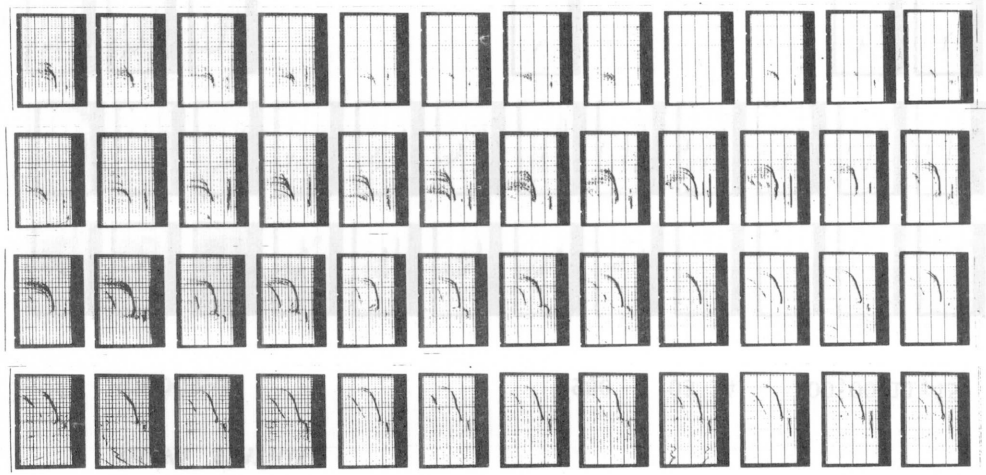

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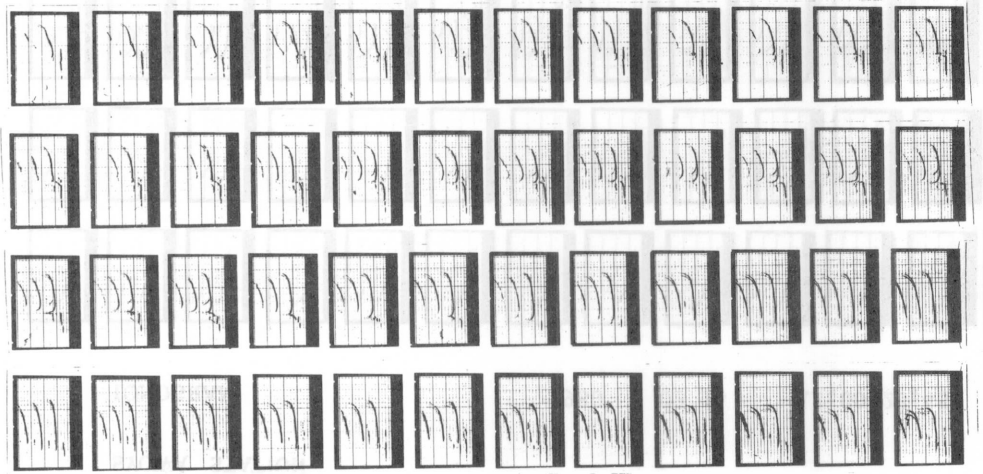

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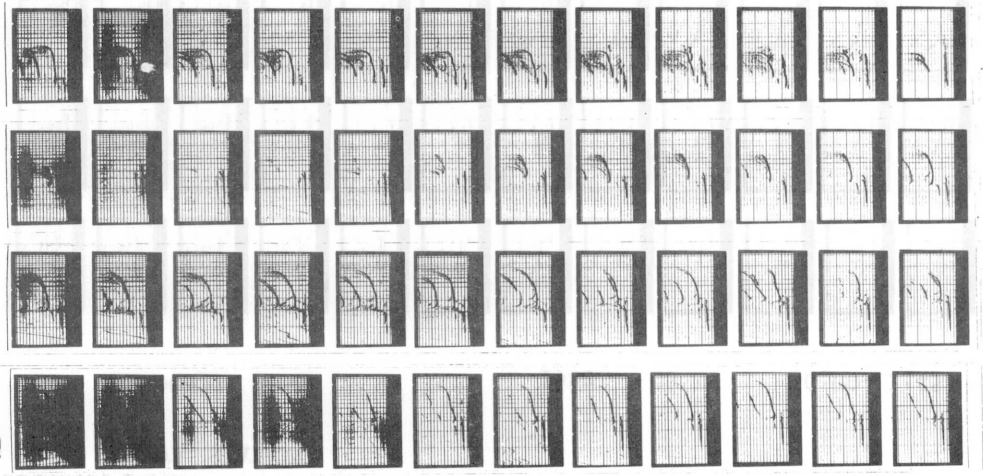

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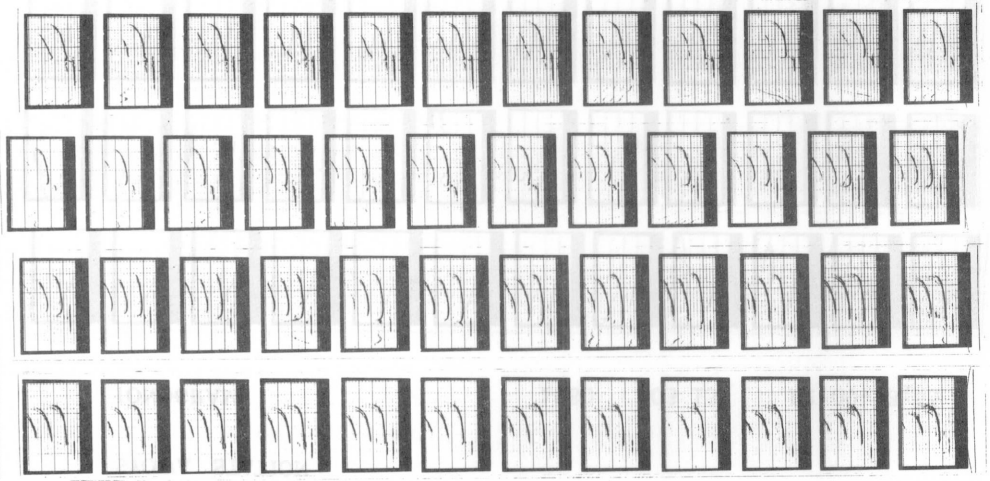

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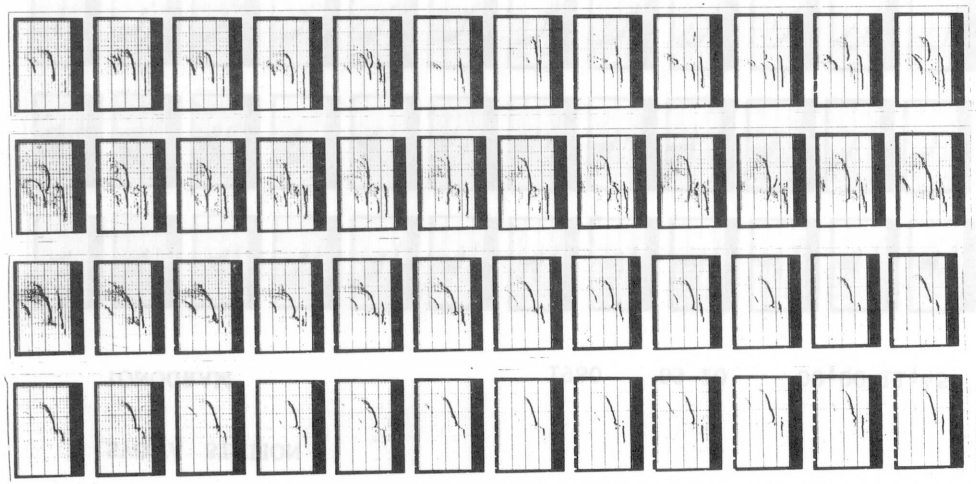

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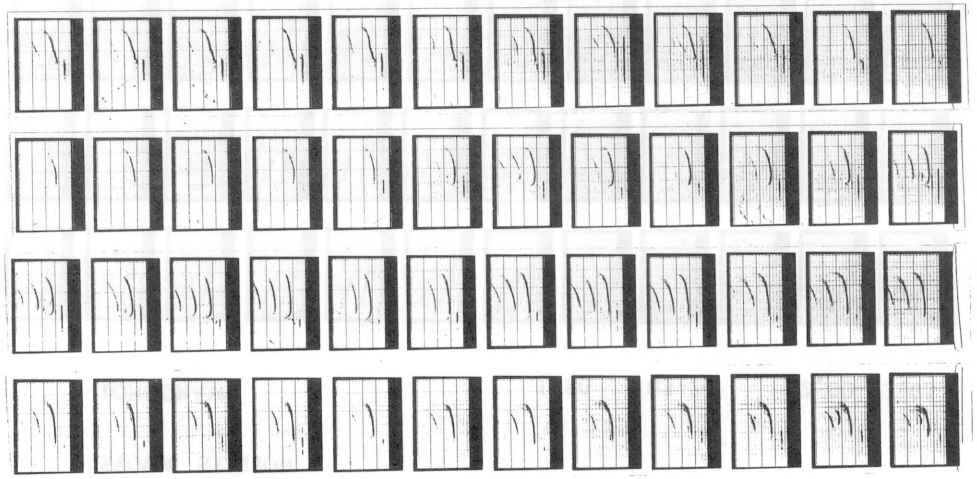

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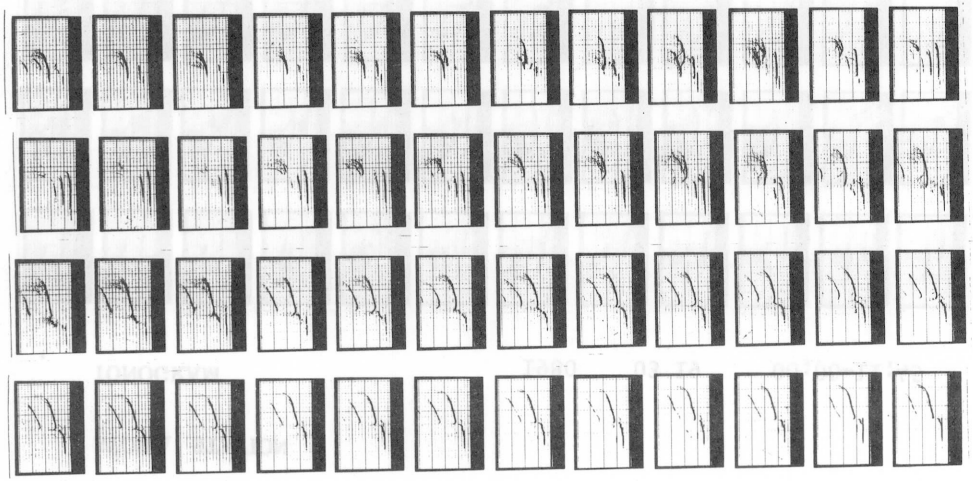

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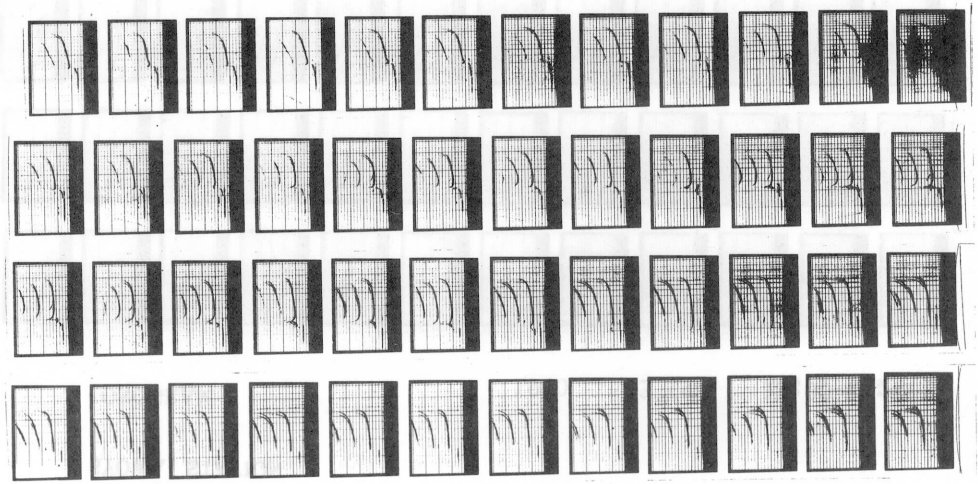

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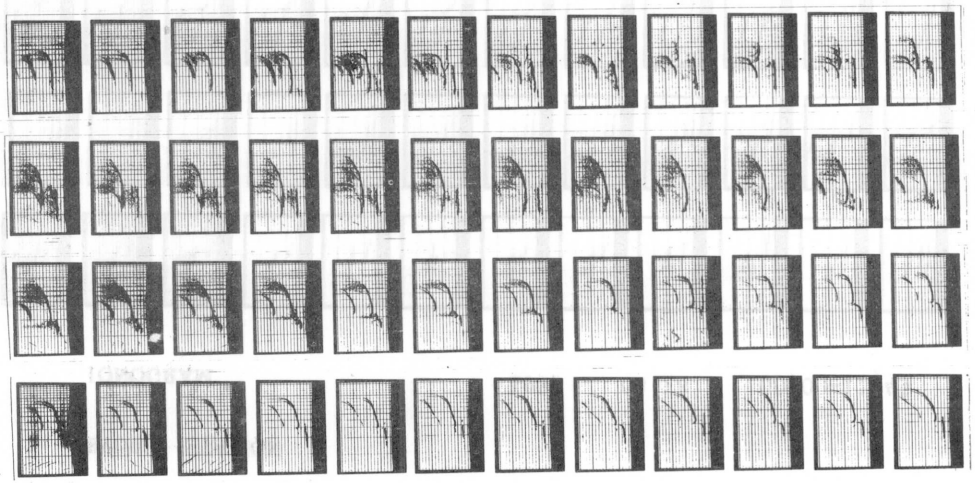

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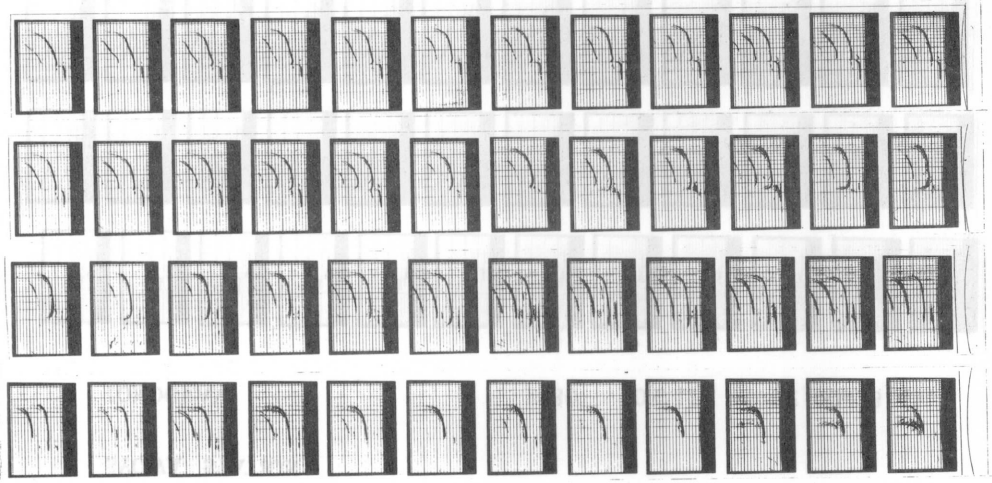

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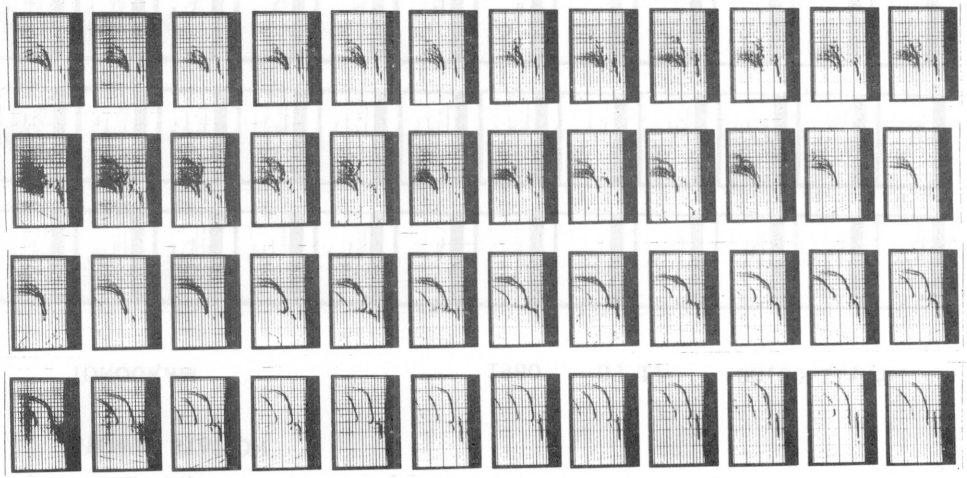

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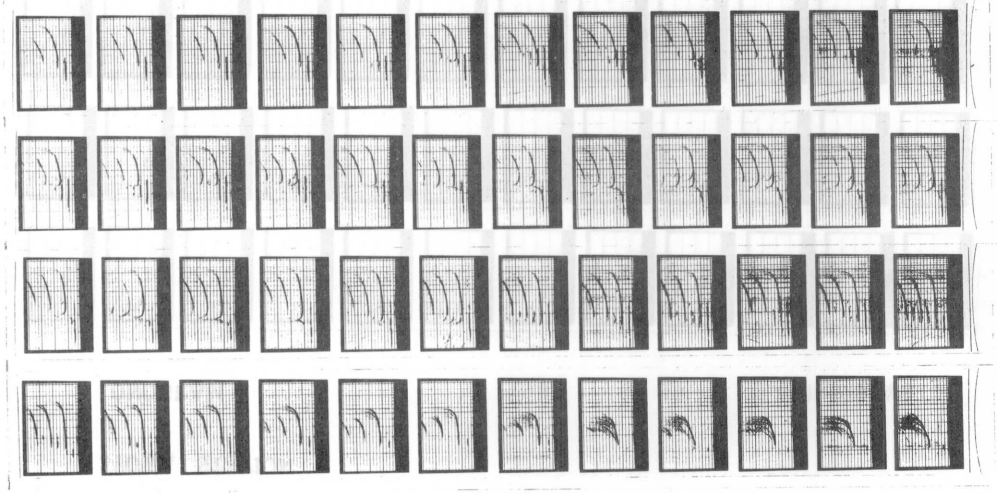

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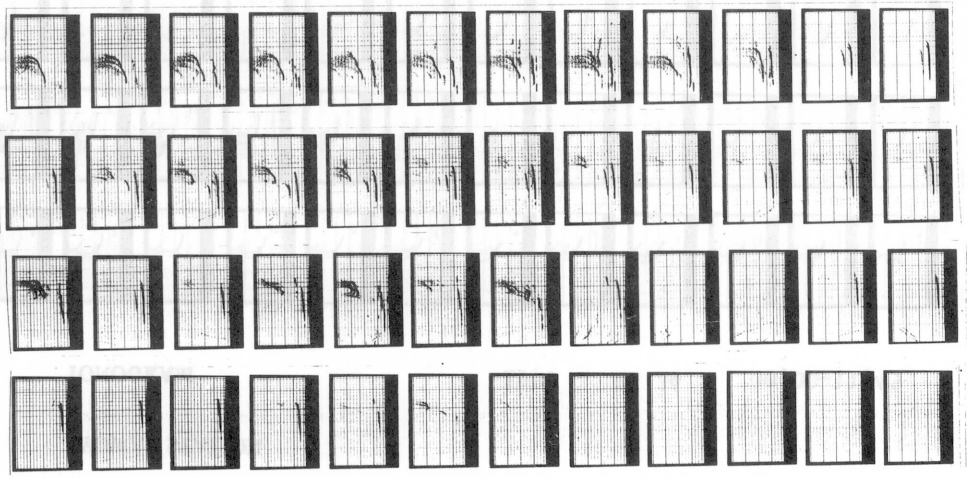

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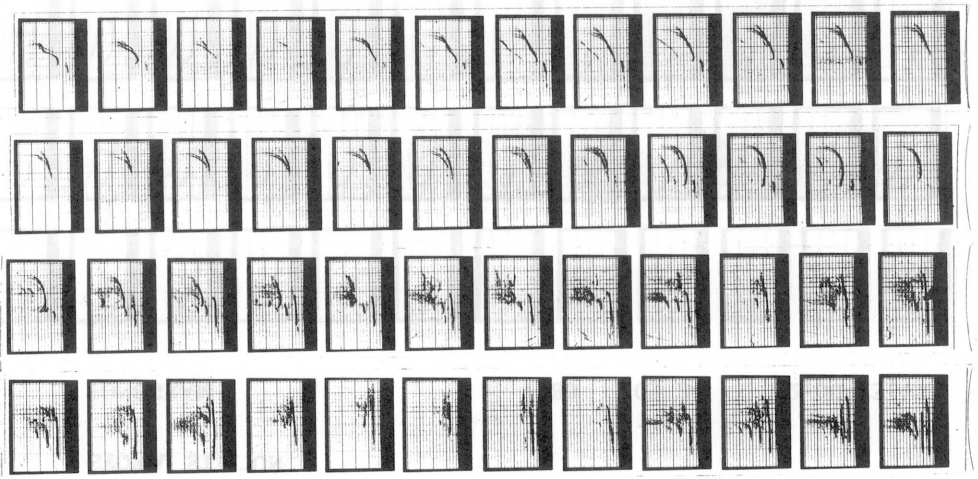

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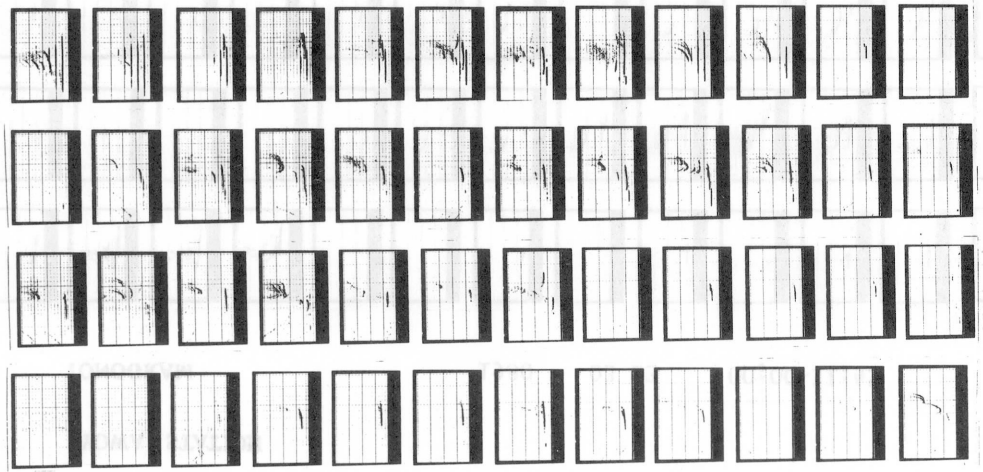

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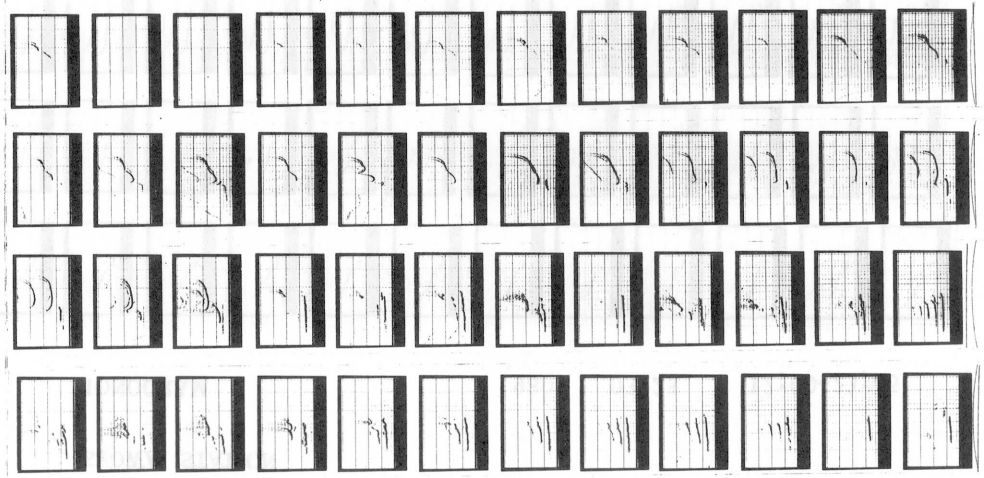

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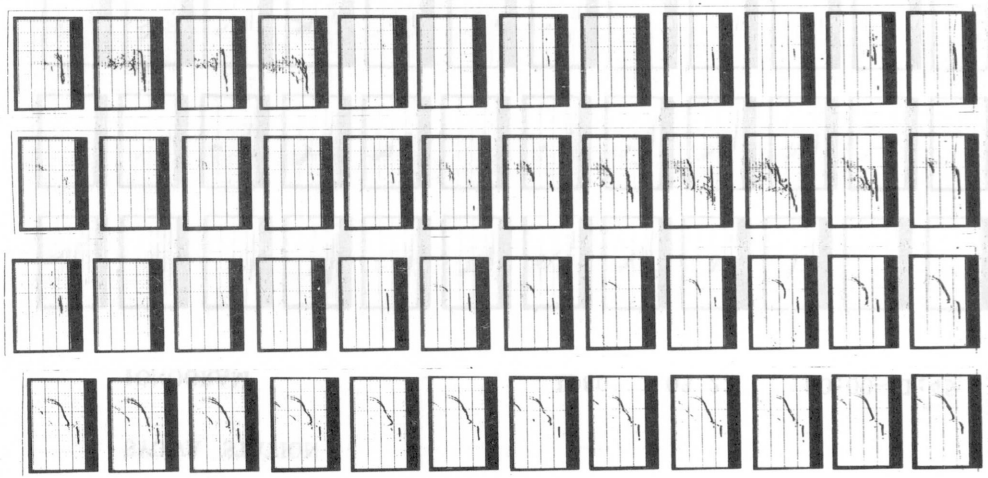

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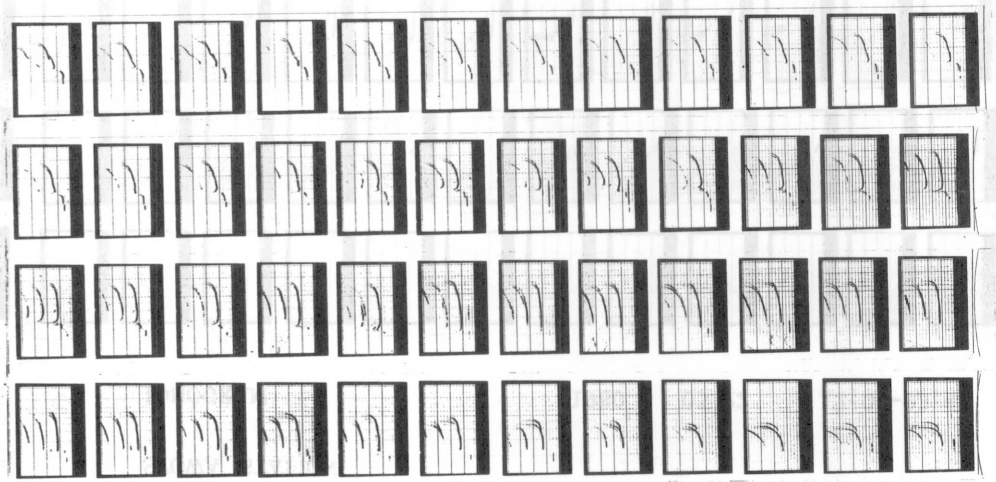

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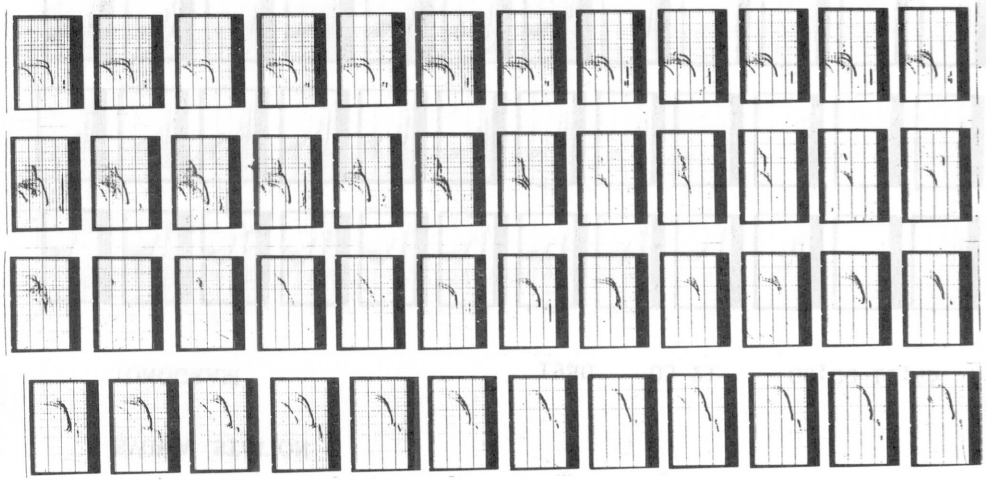

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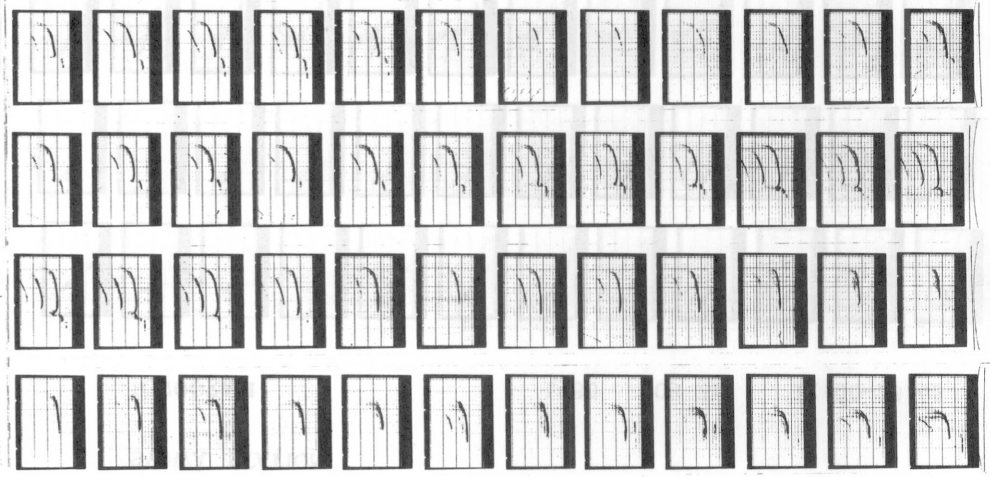

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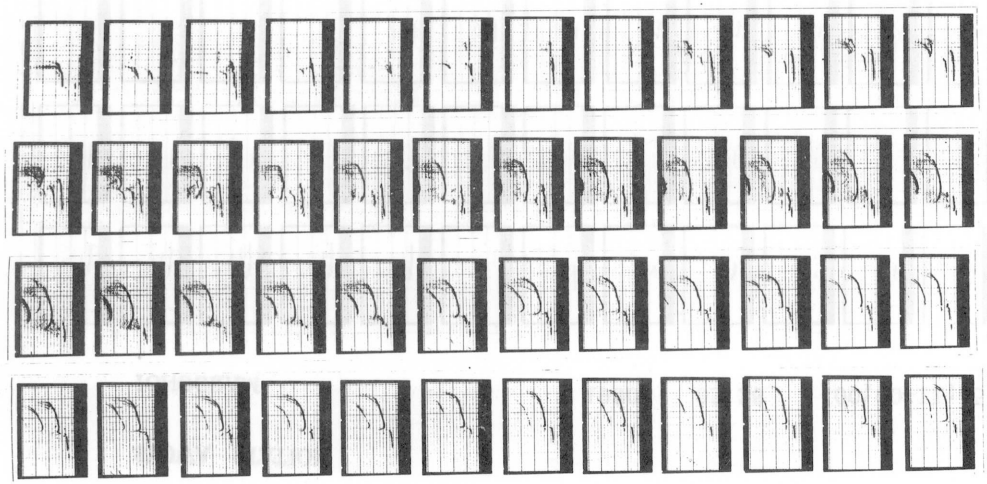

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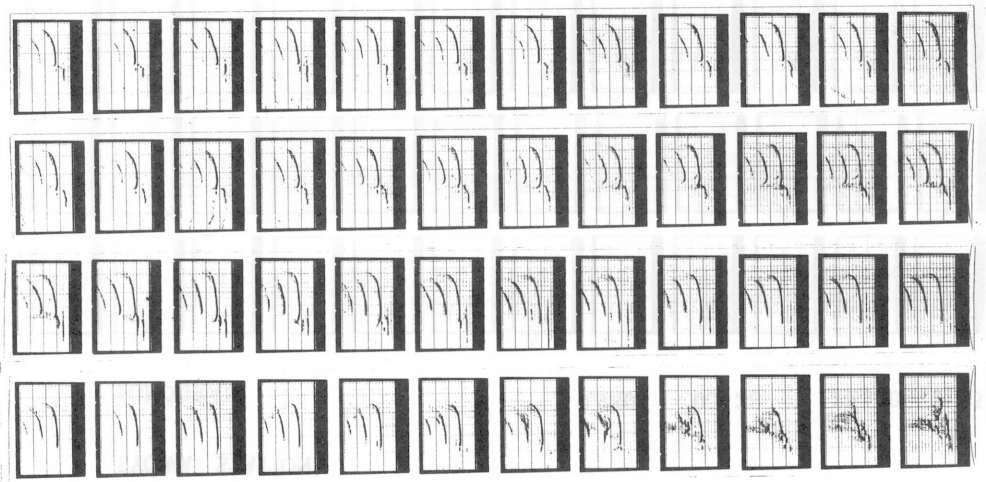

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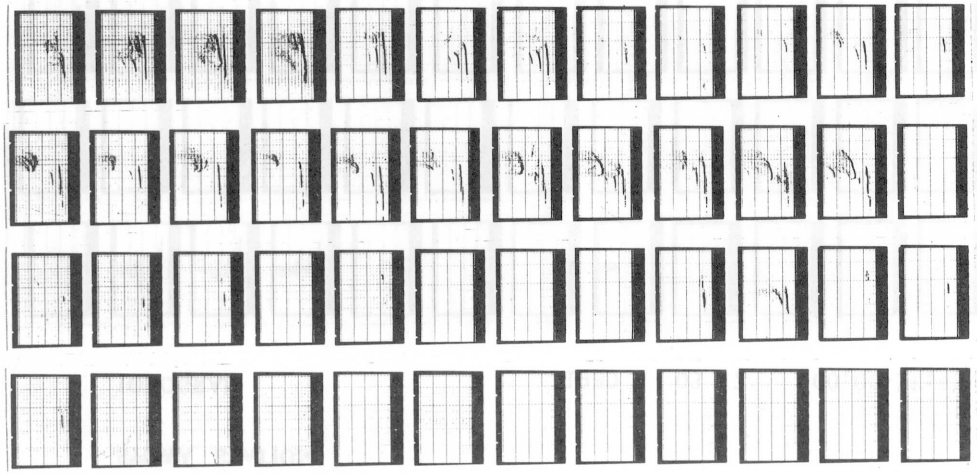

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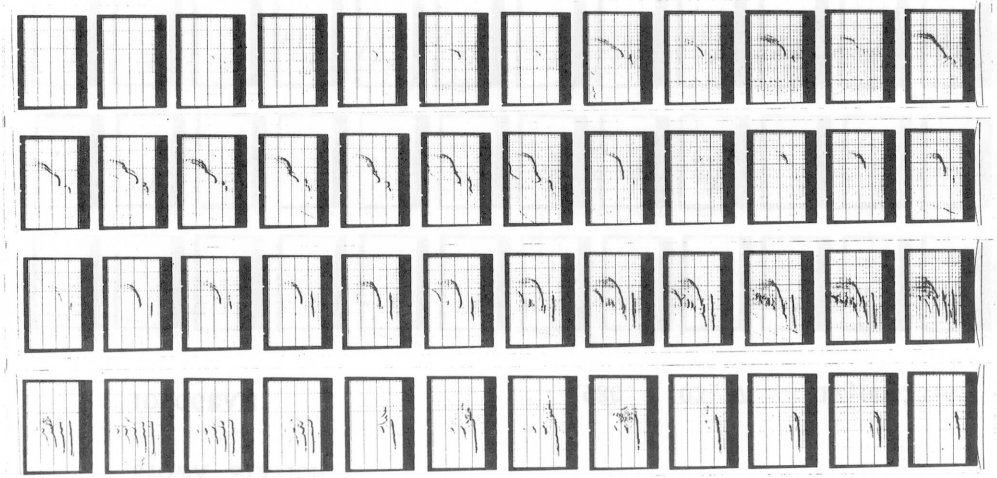

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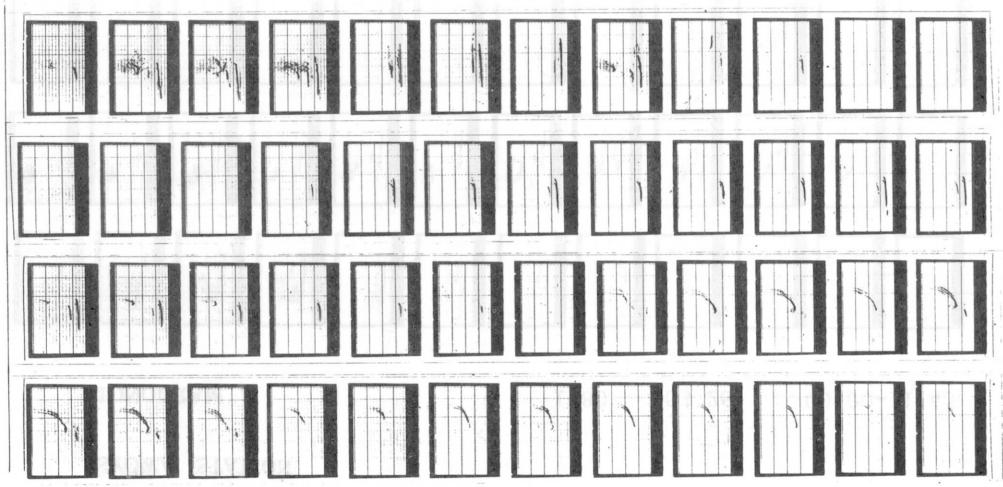

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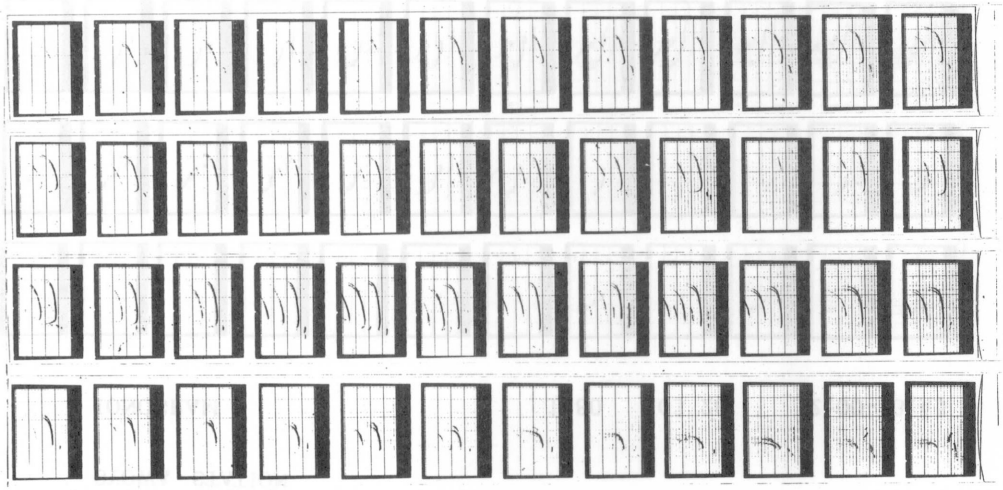

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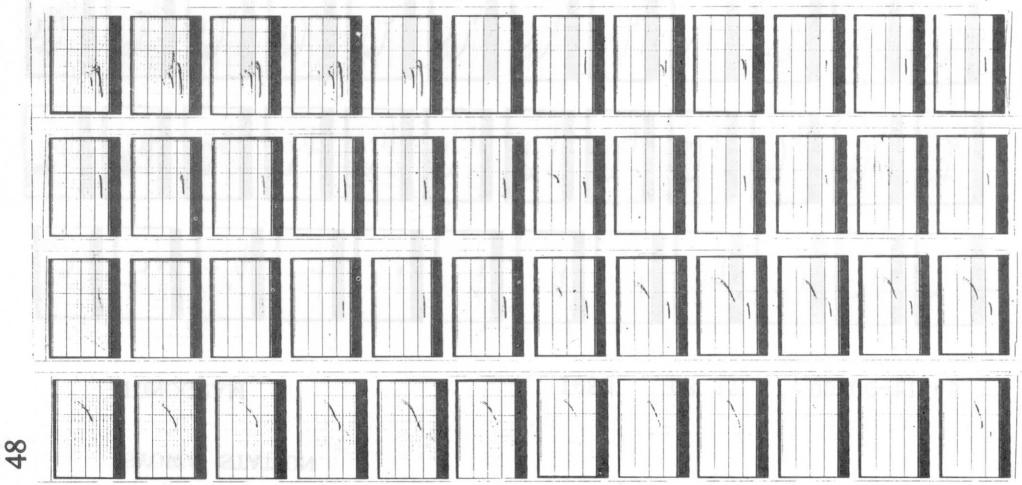

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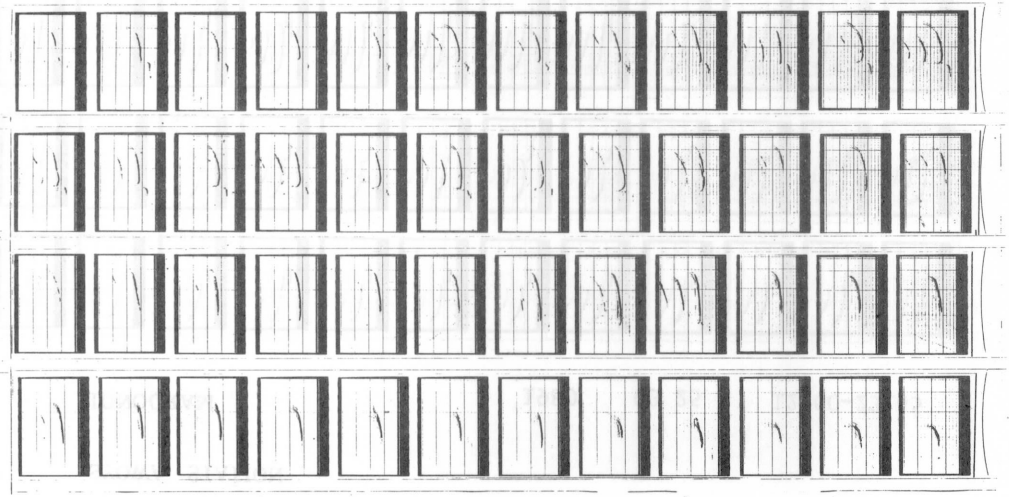

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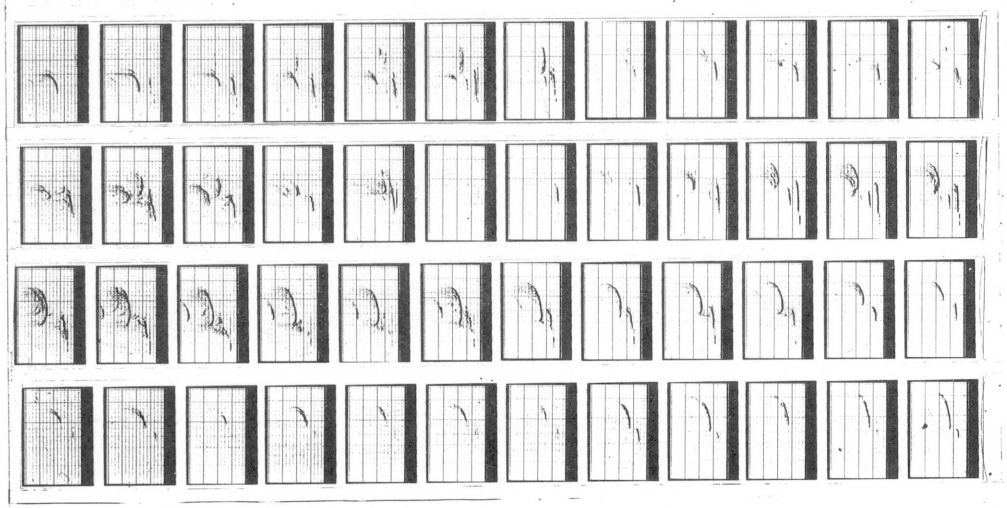

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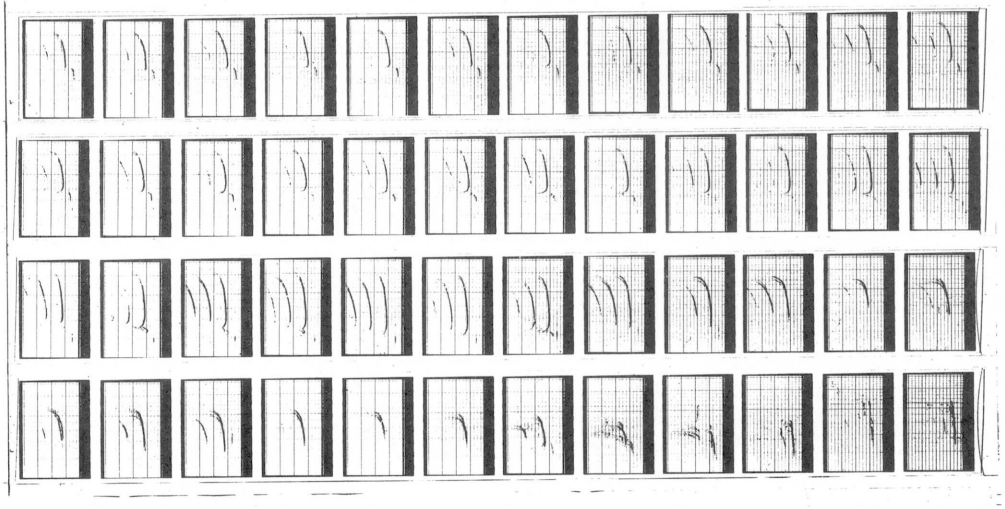

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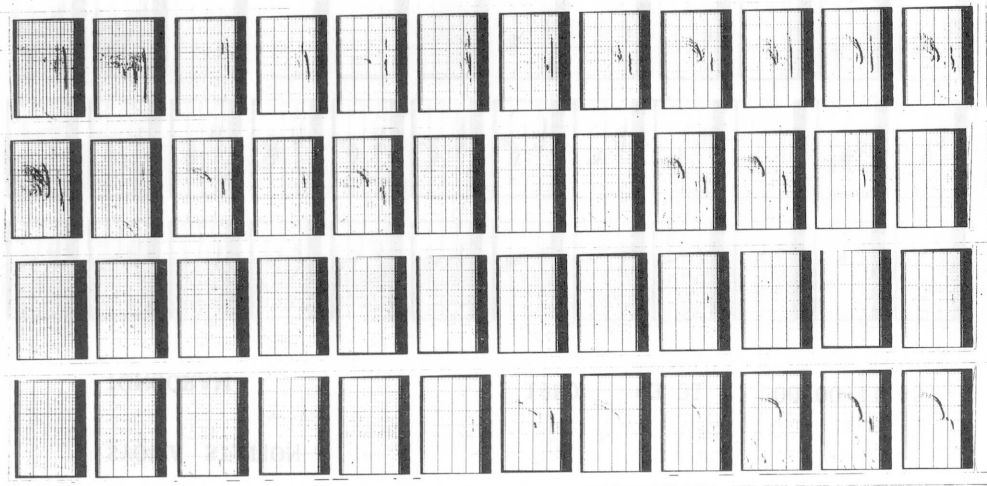

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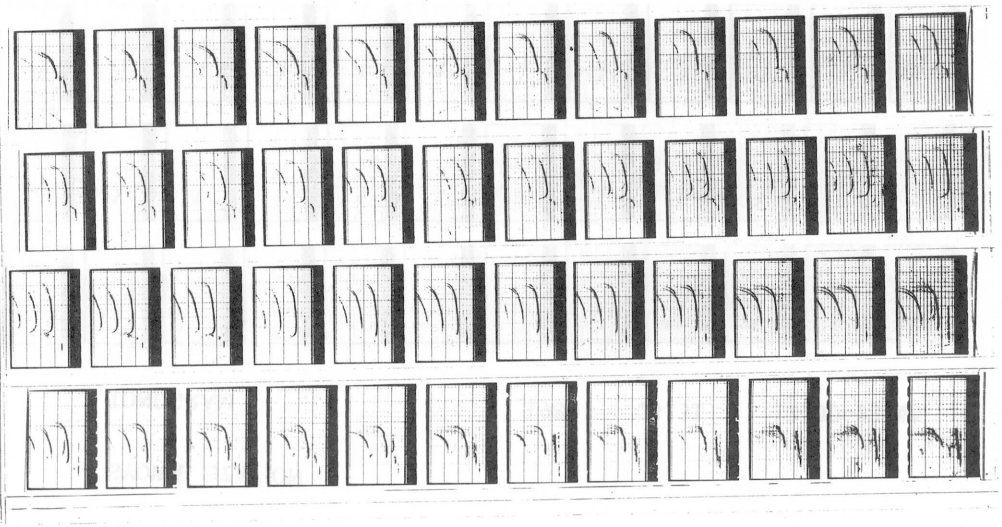

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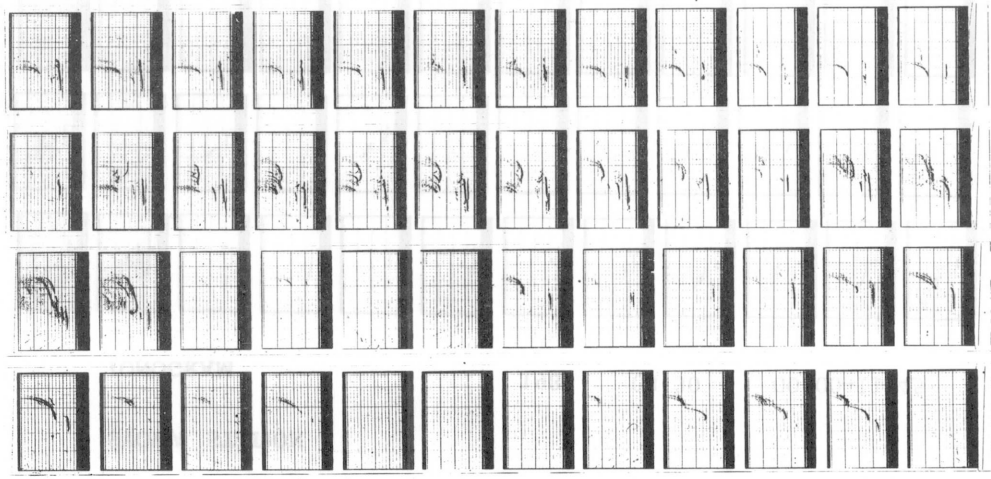

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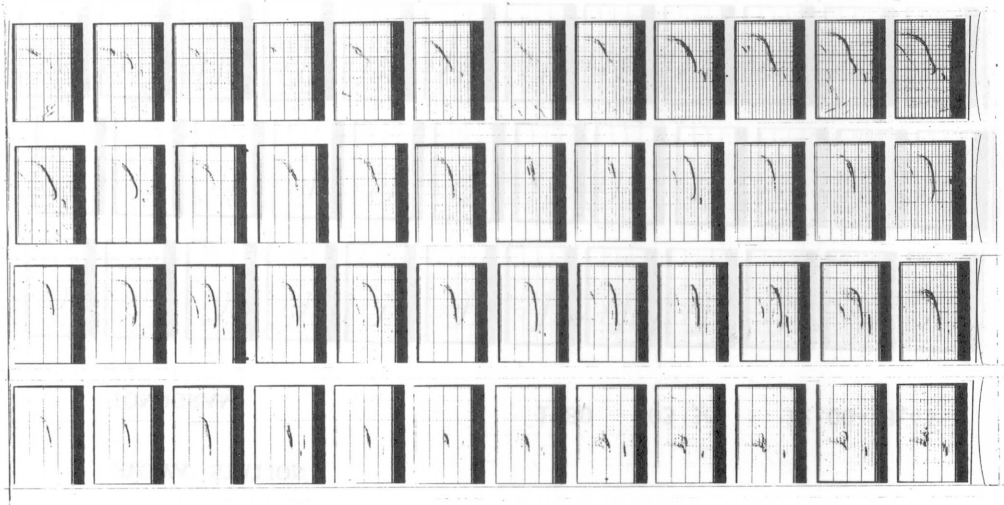

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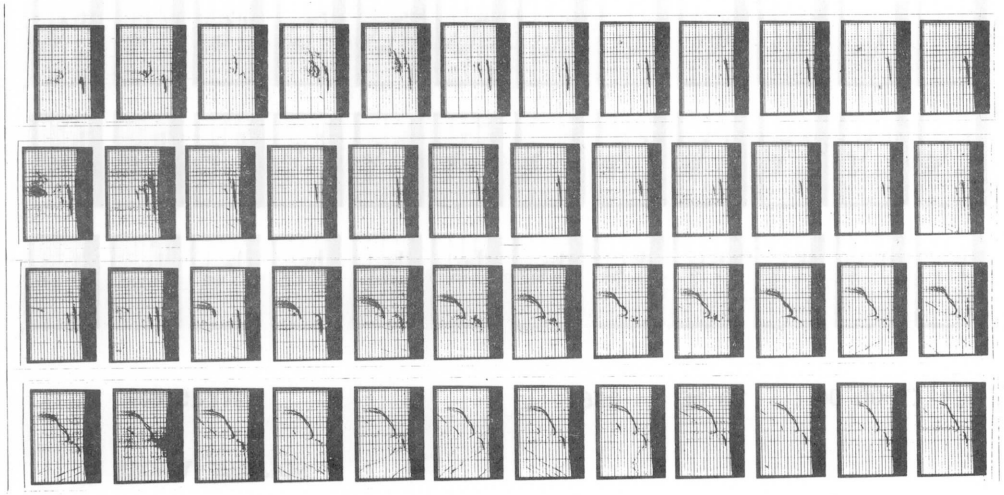

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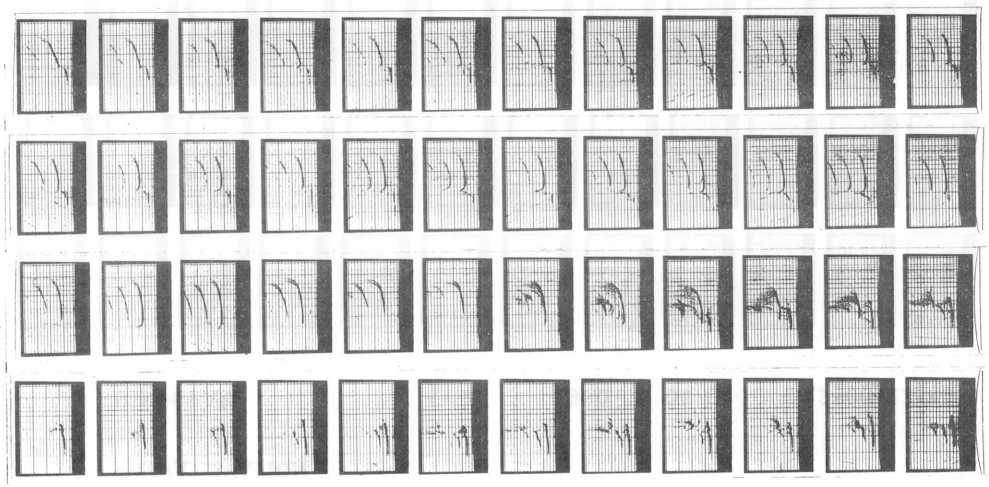

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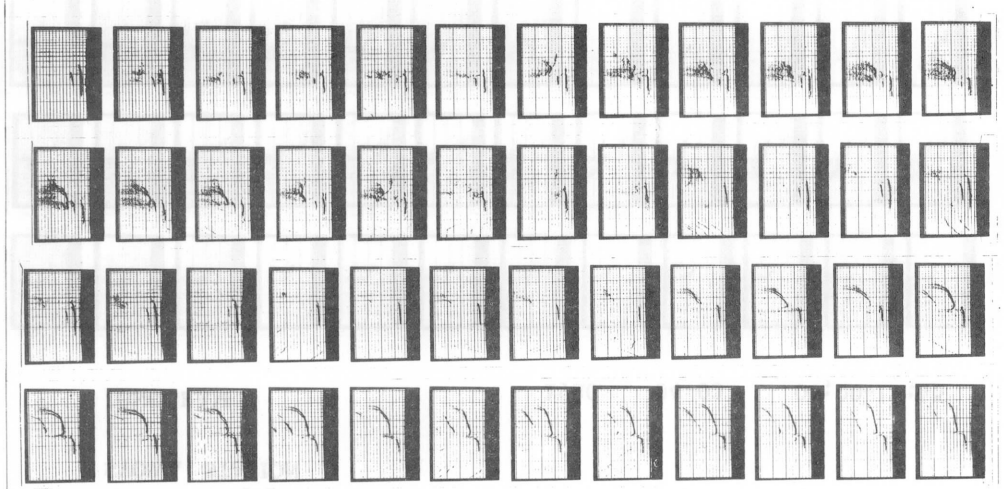

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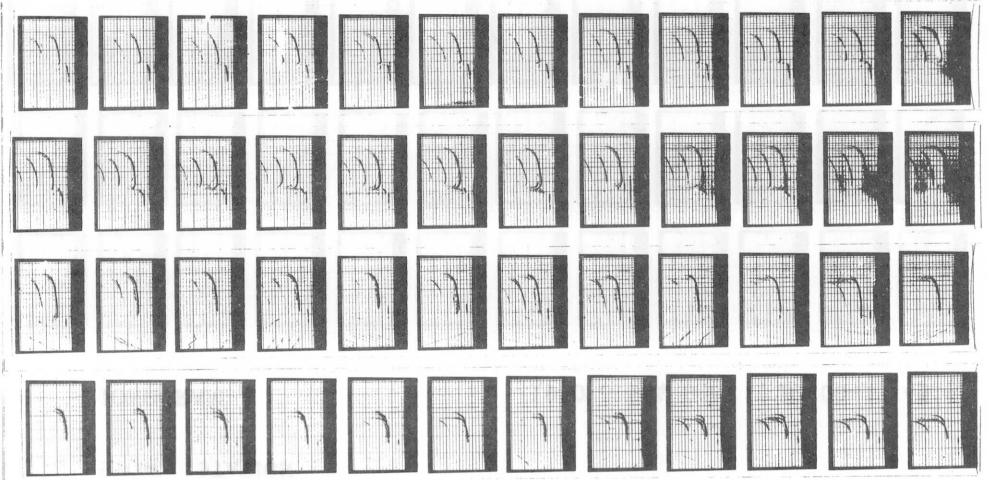

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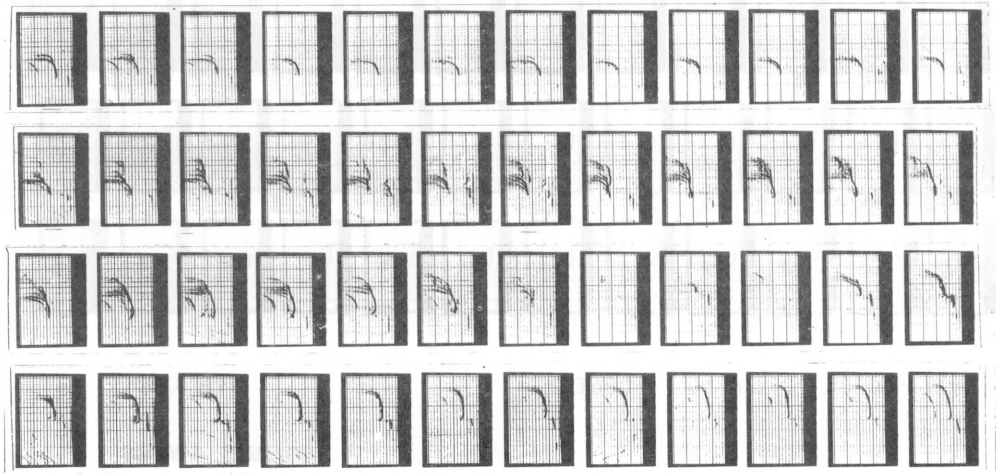

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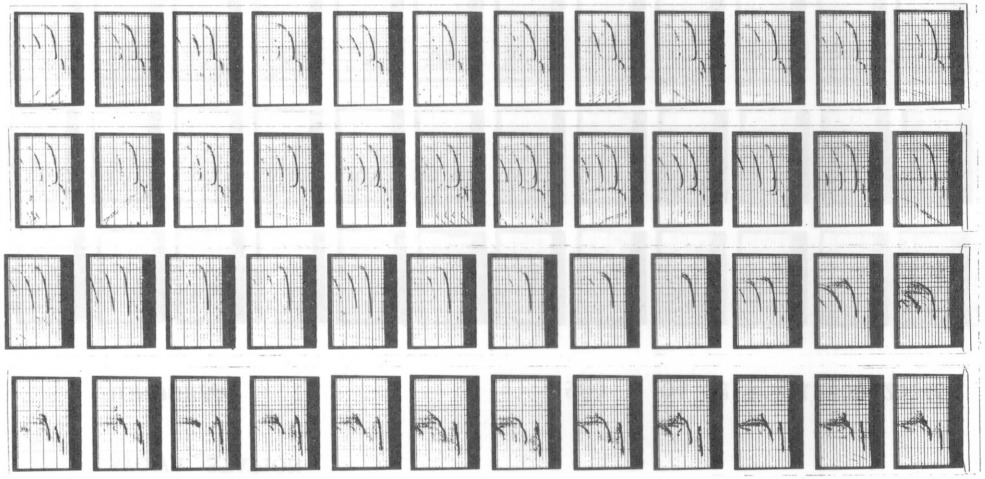

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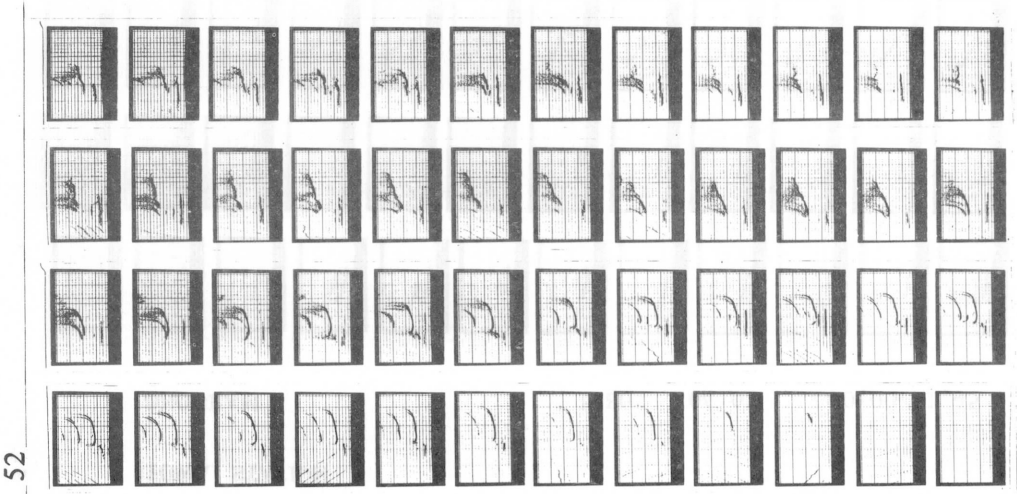

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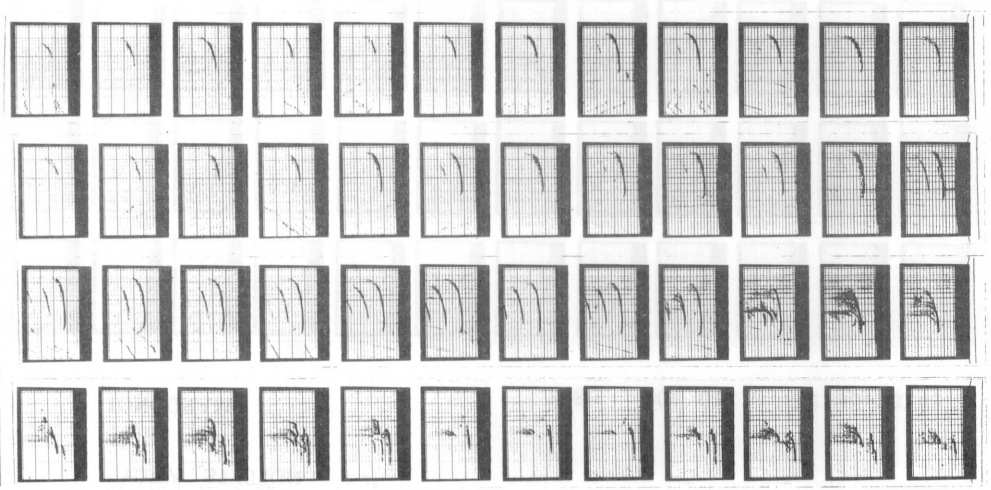

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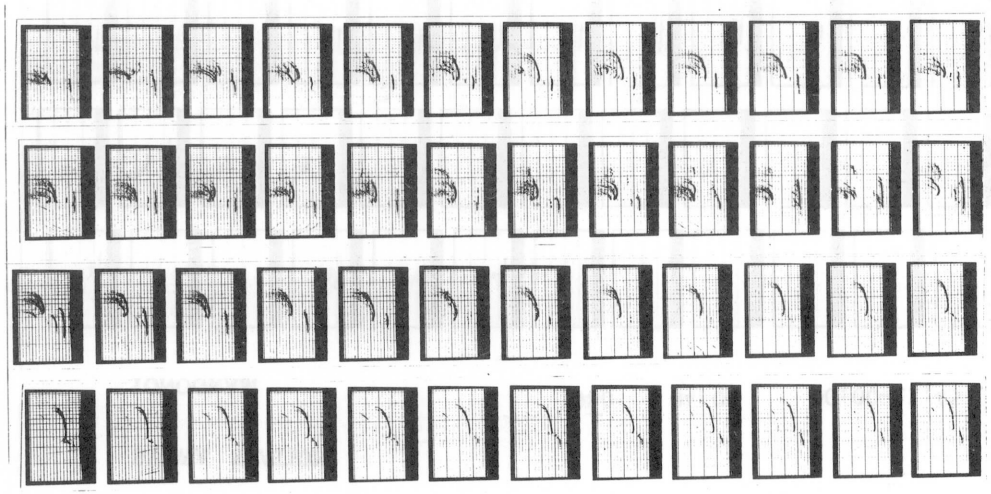

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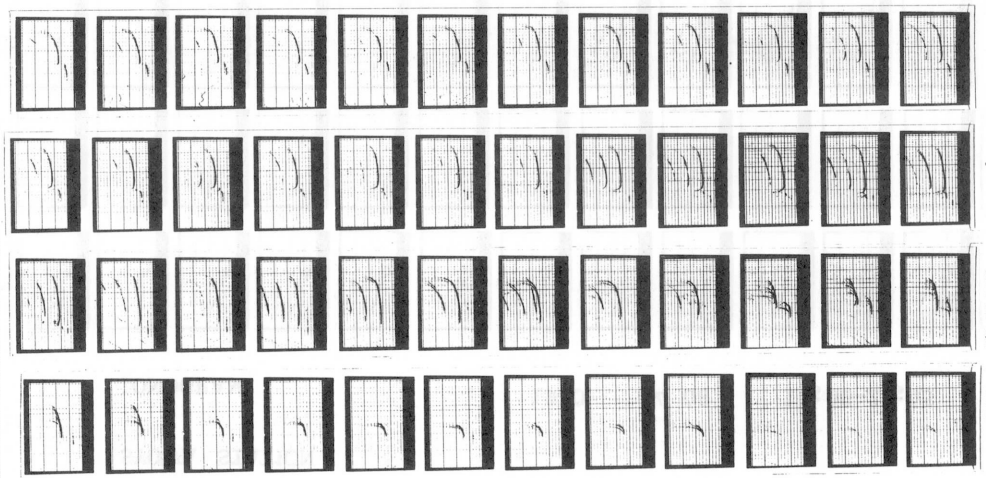

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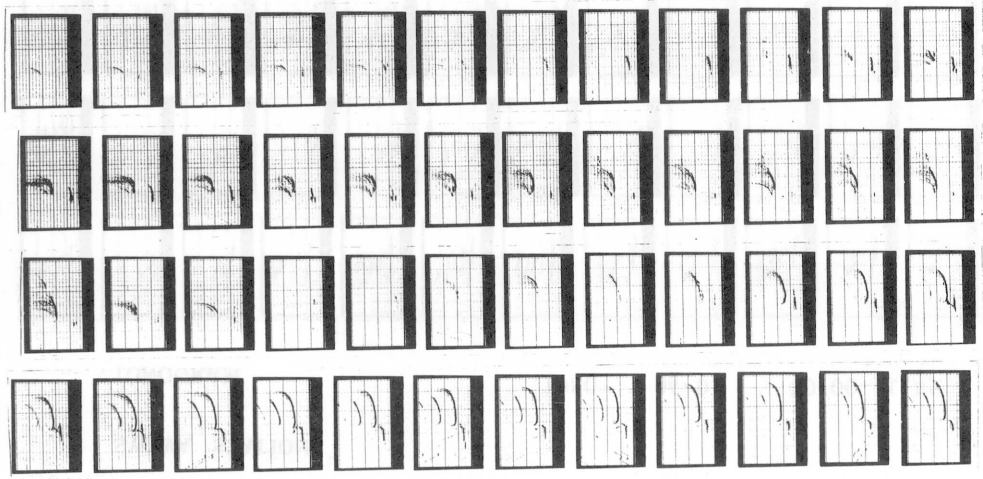

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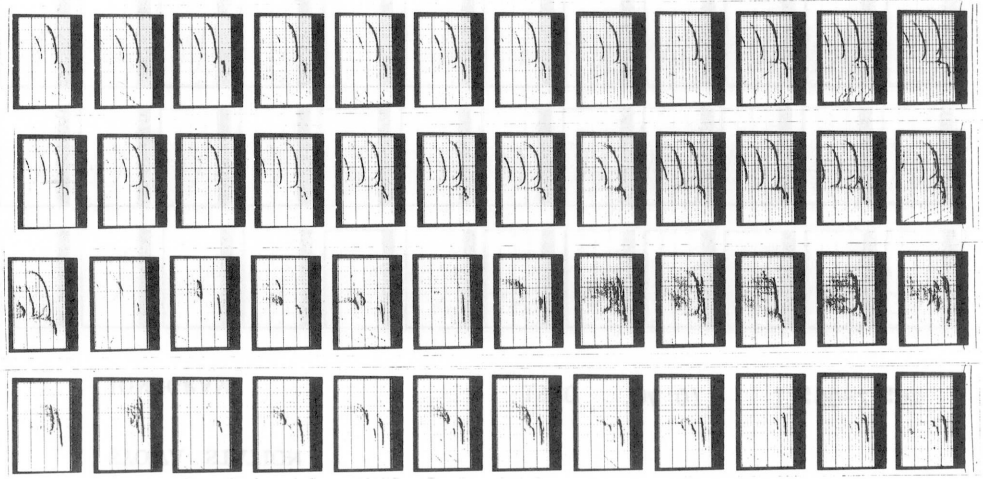

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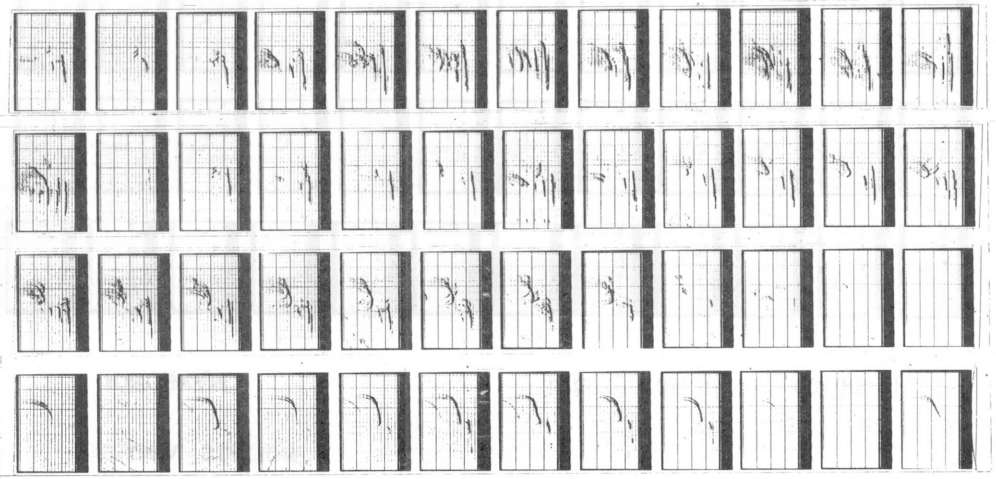

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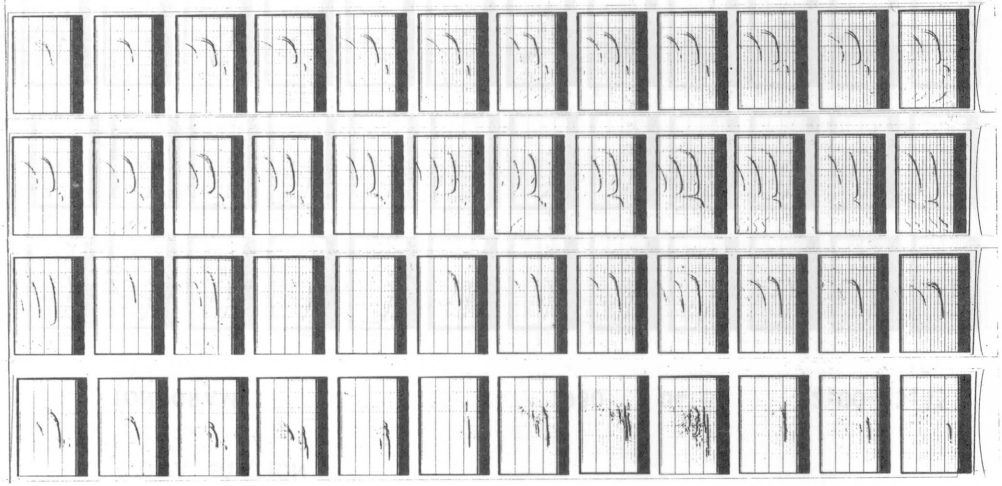

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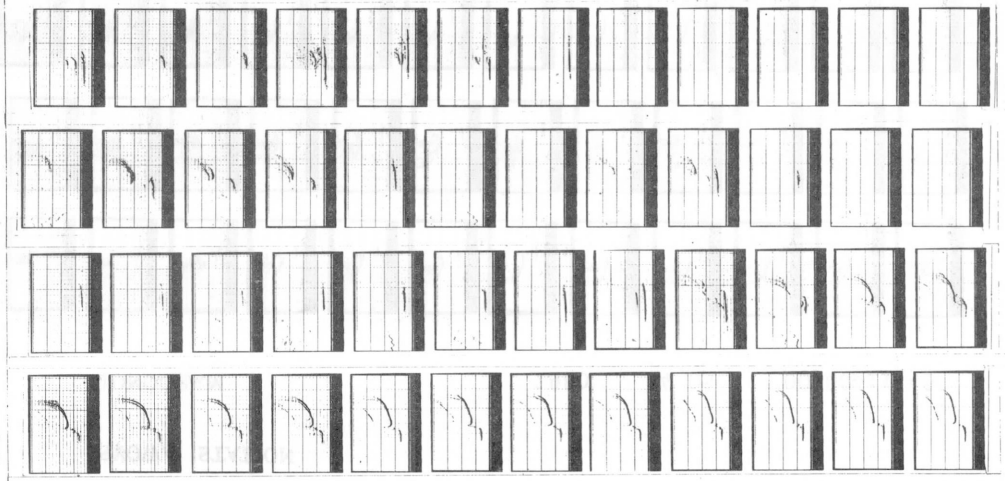

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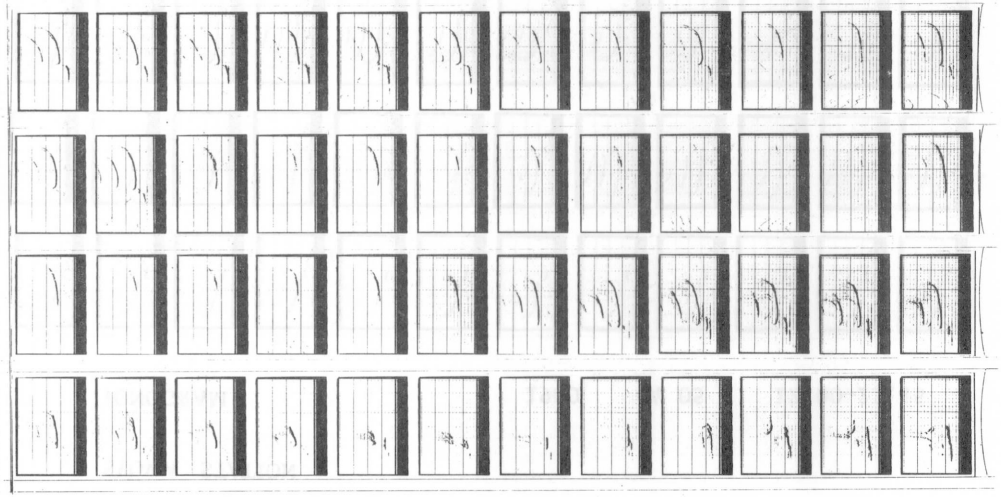

SYOWA STATION

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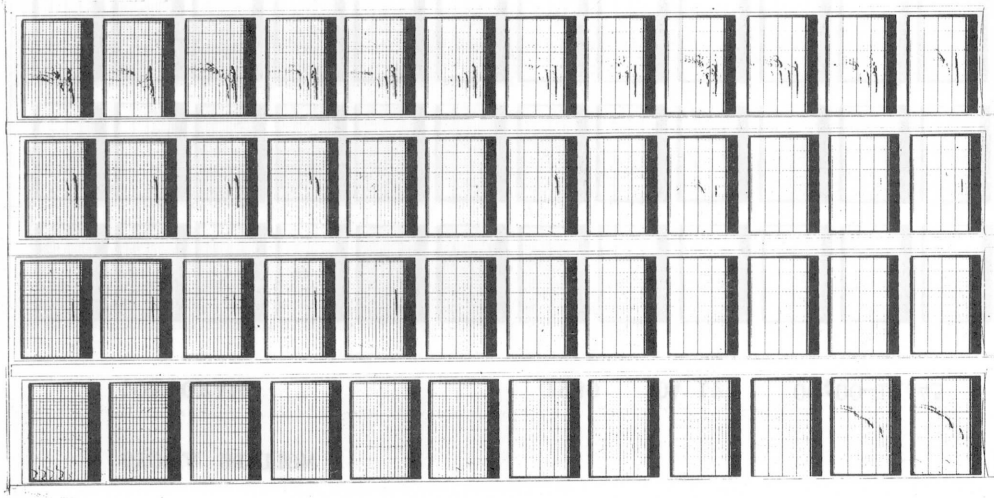

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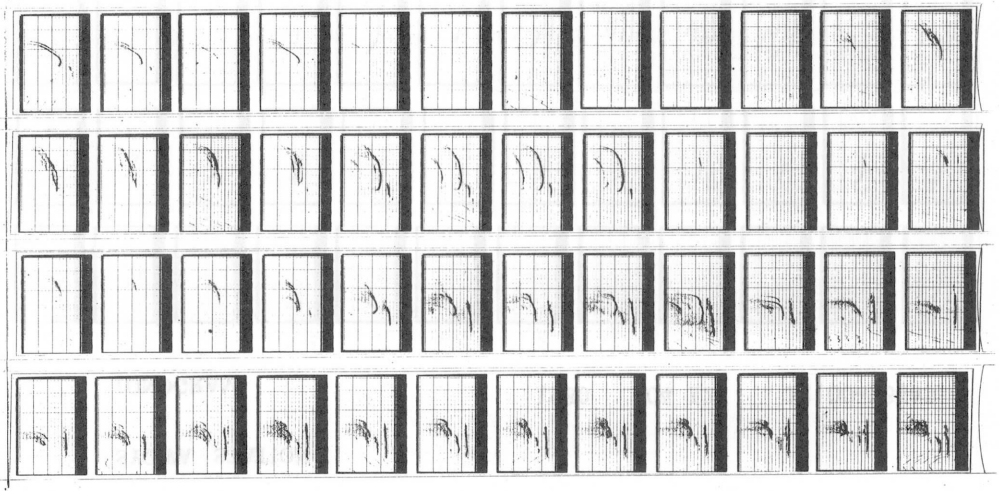

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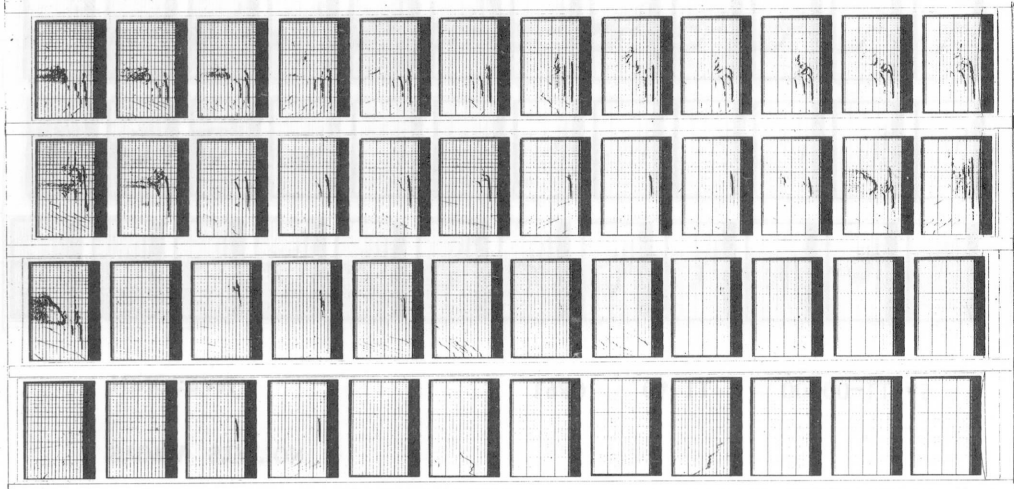

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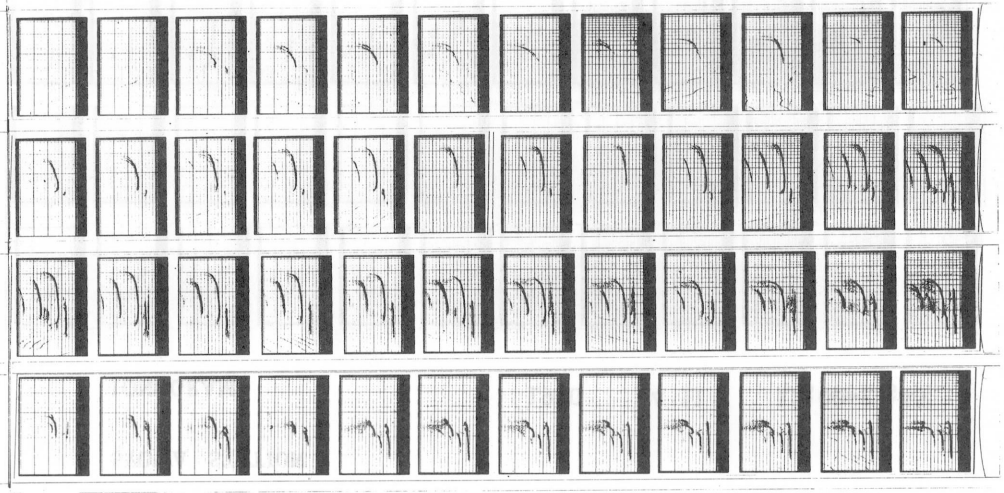

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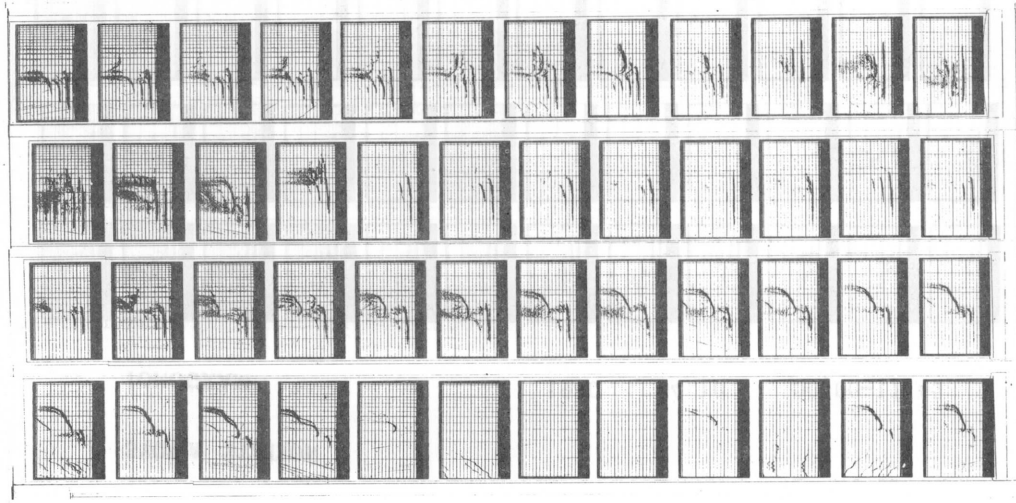

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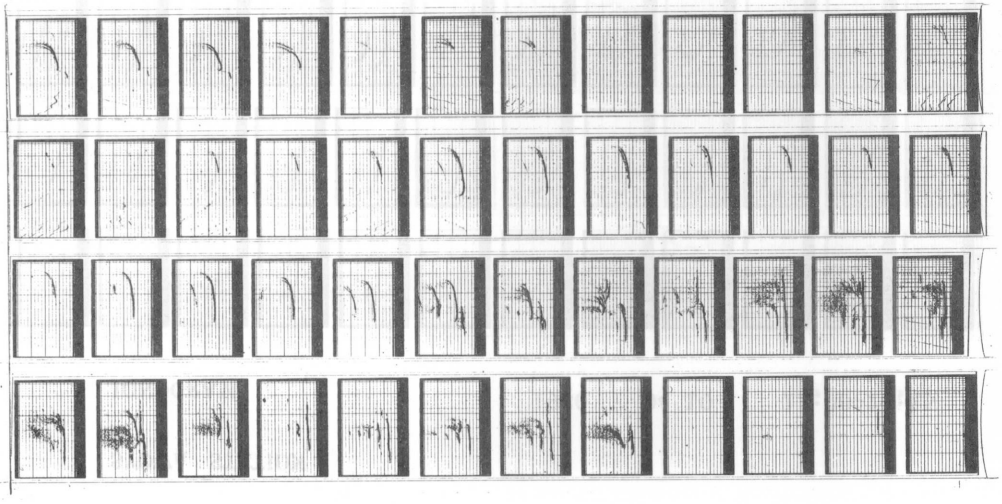

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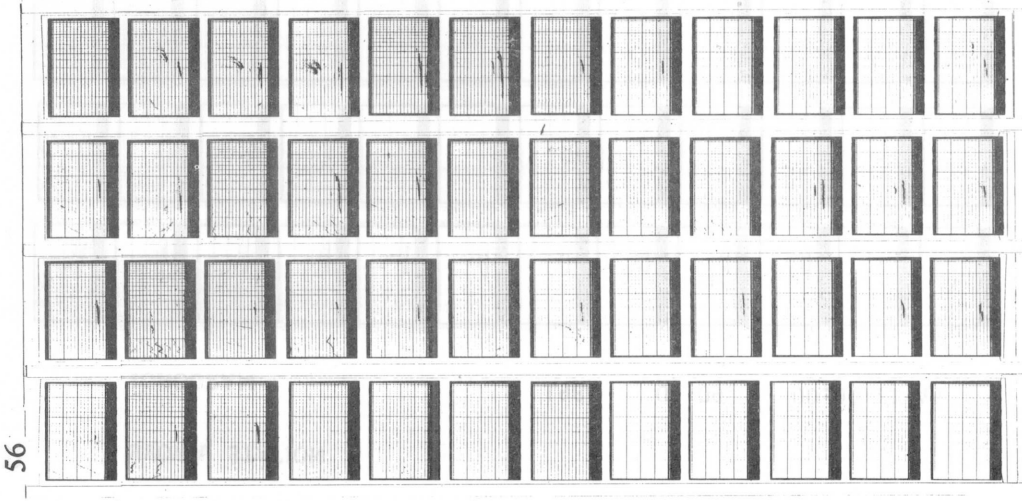

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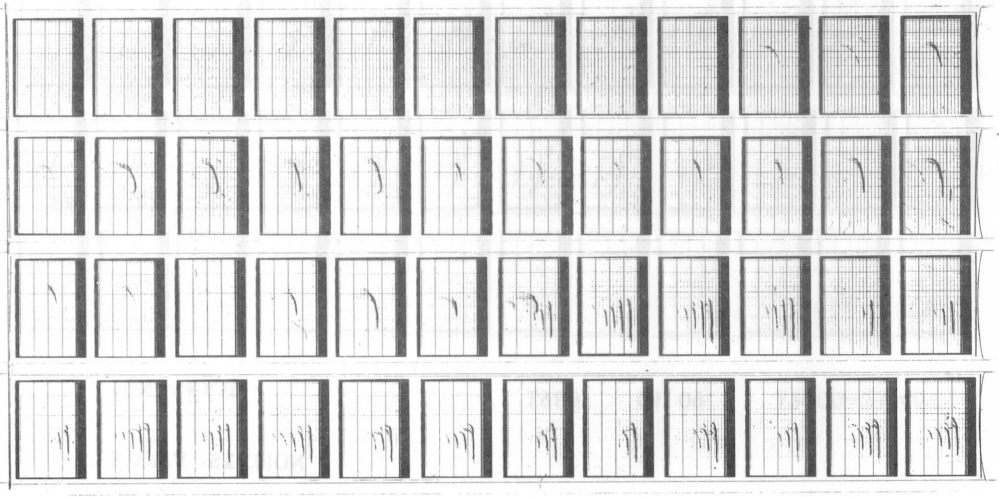

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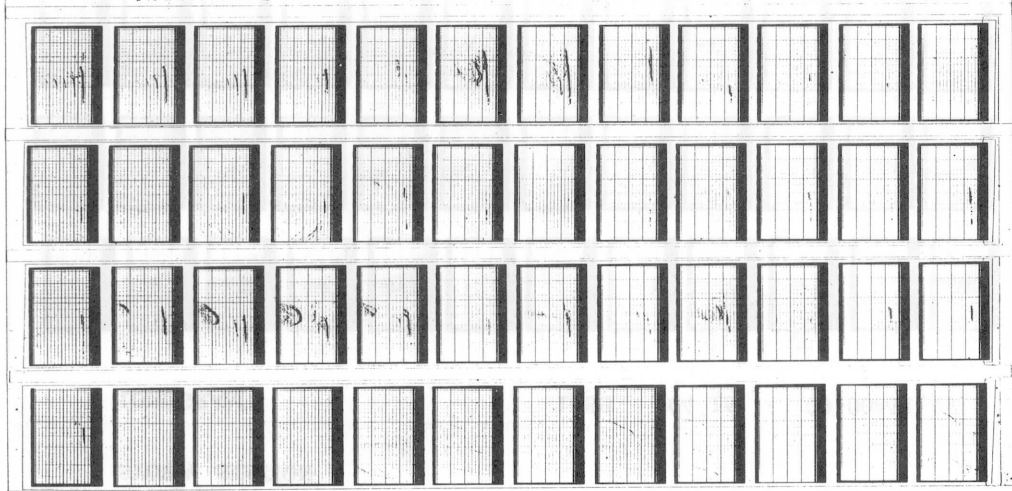

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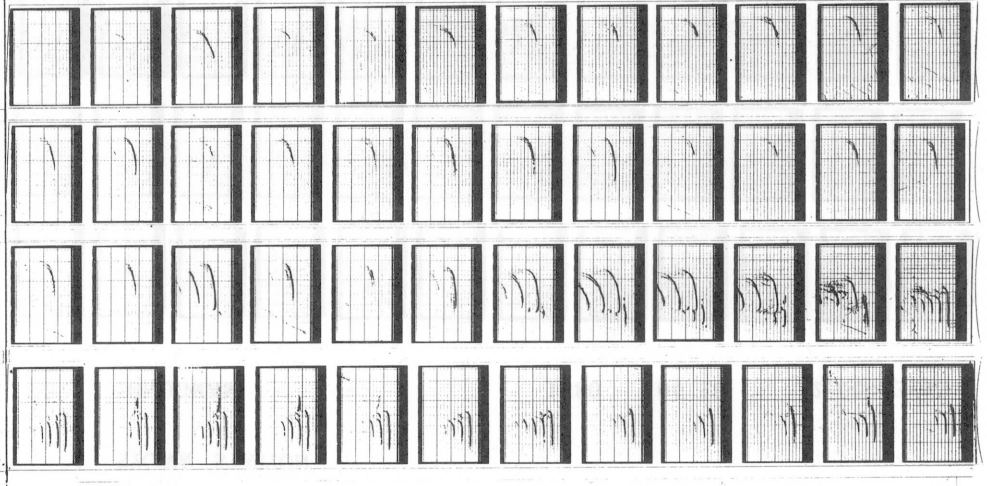

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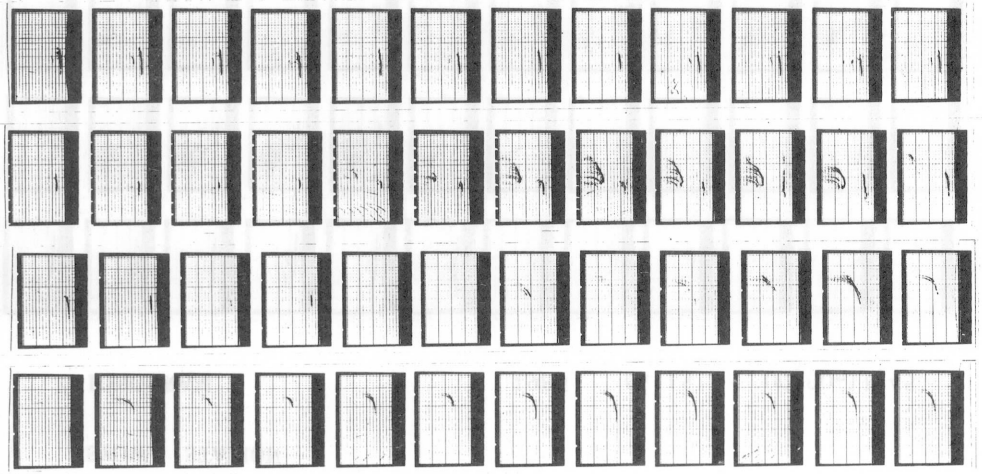

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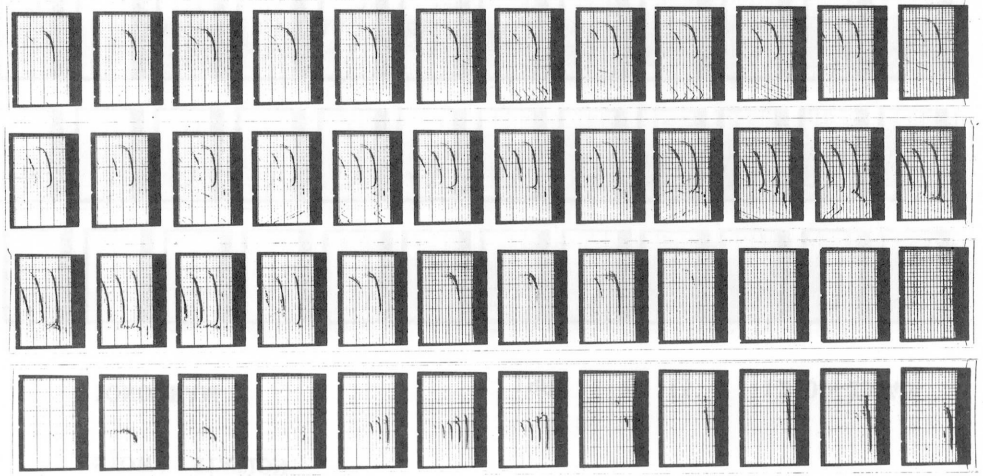

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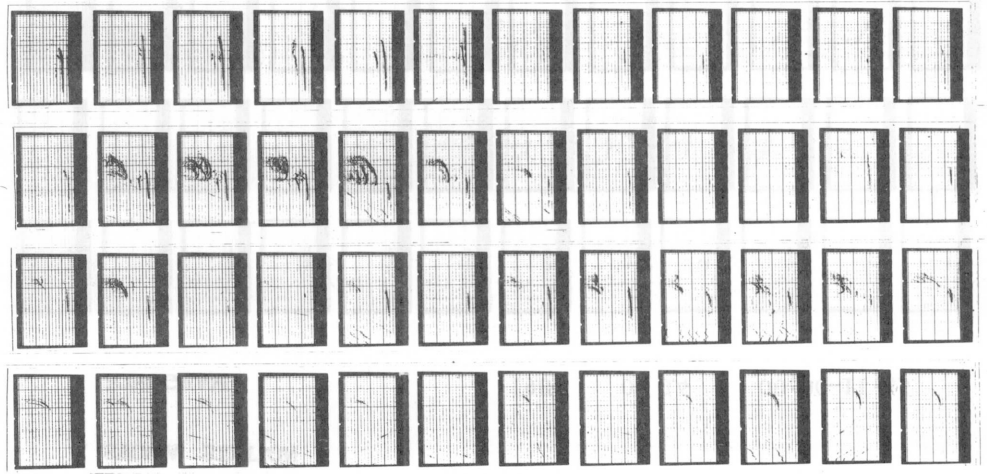

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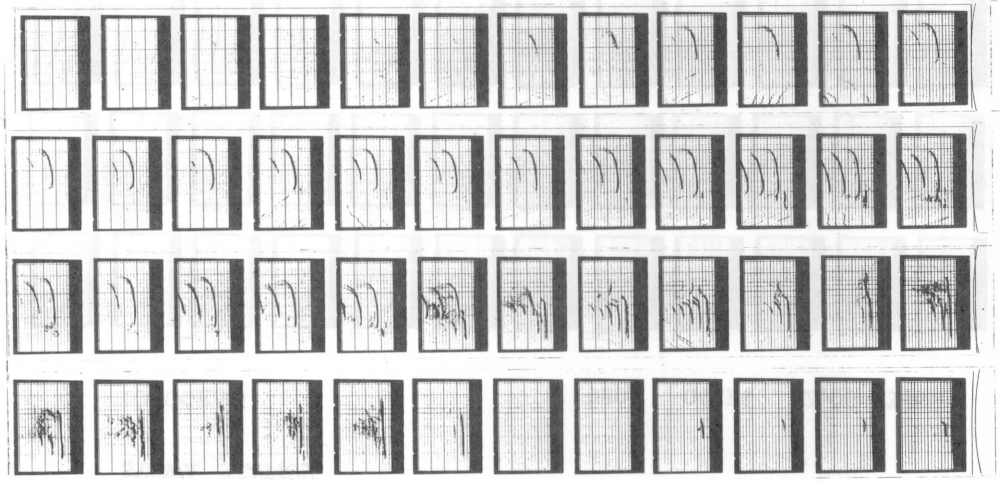

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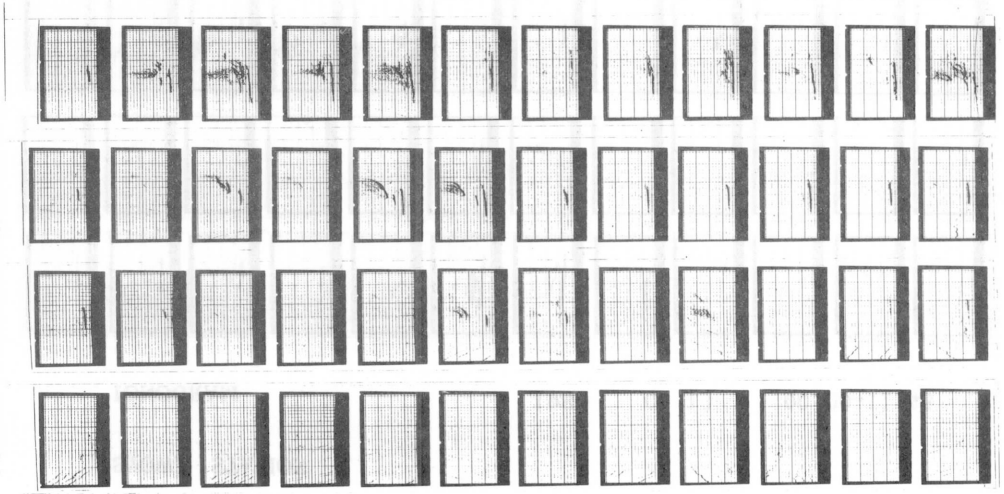

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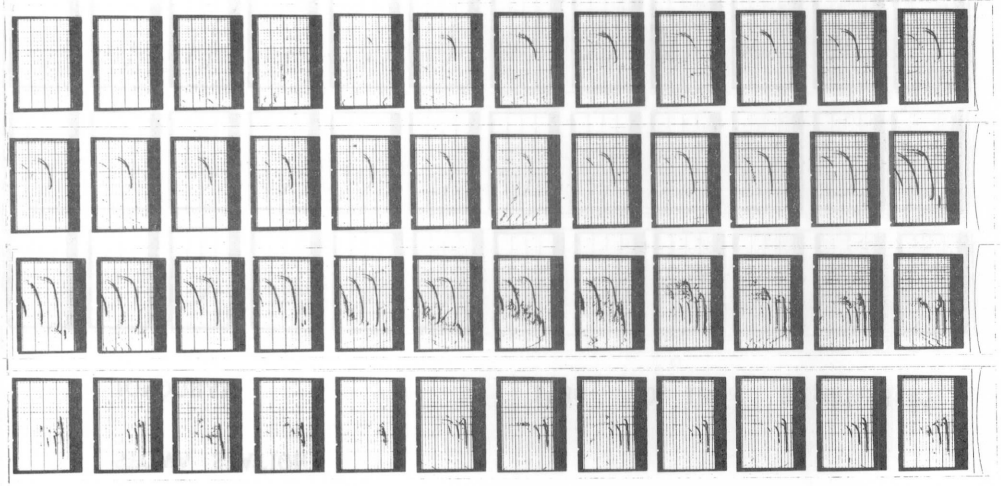

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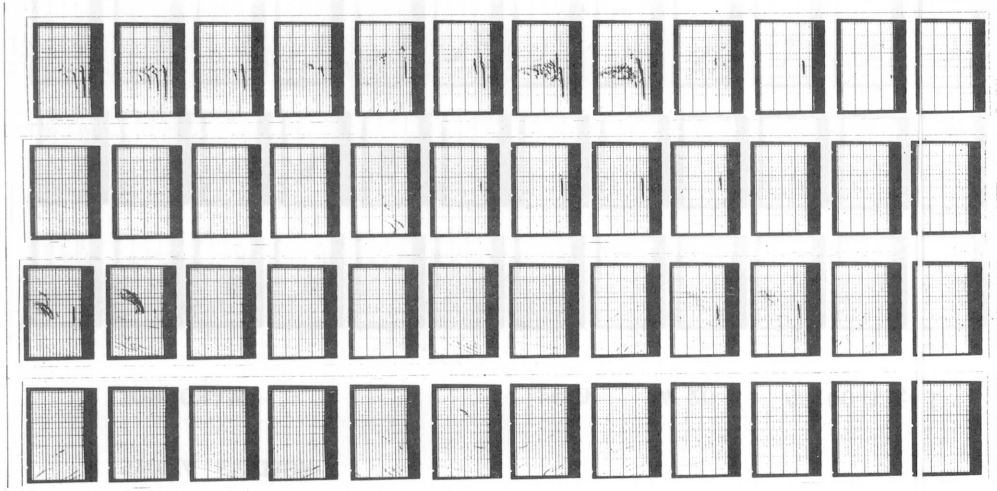

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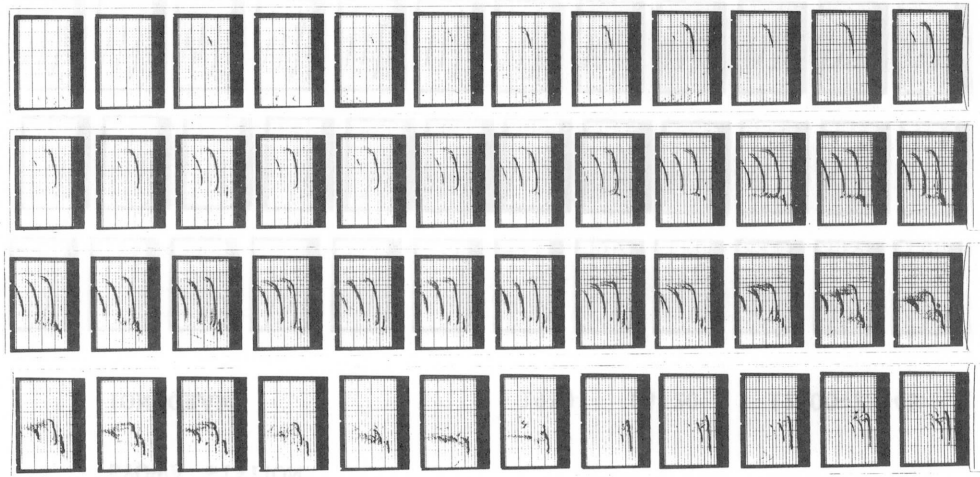

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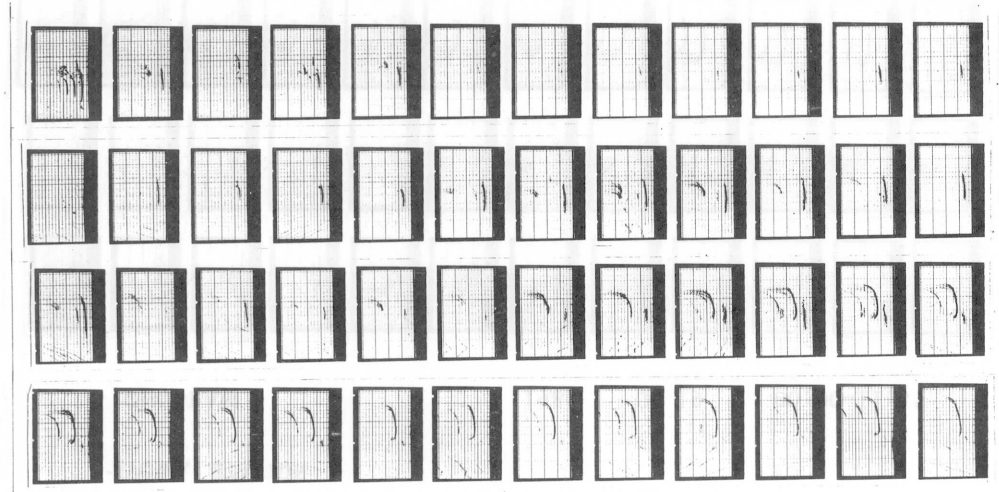

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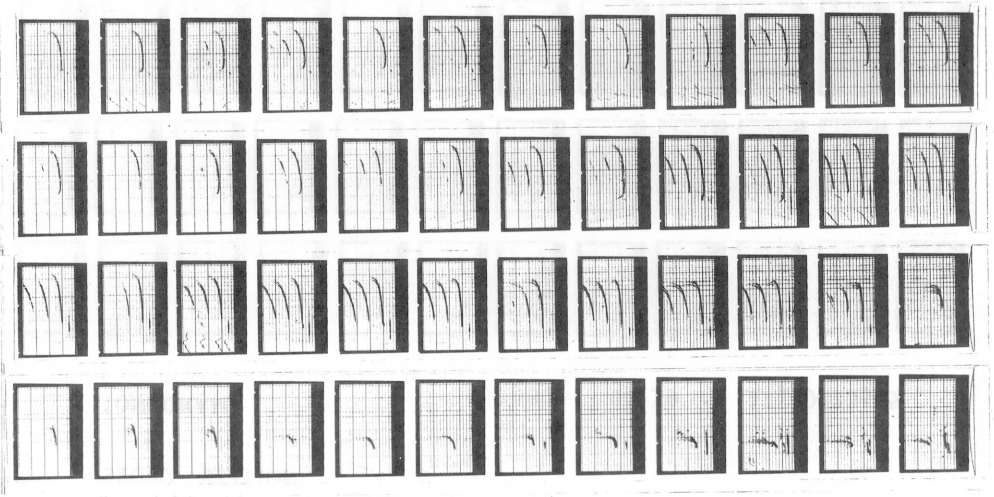

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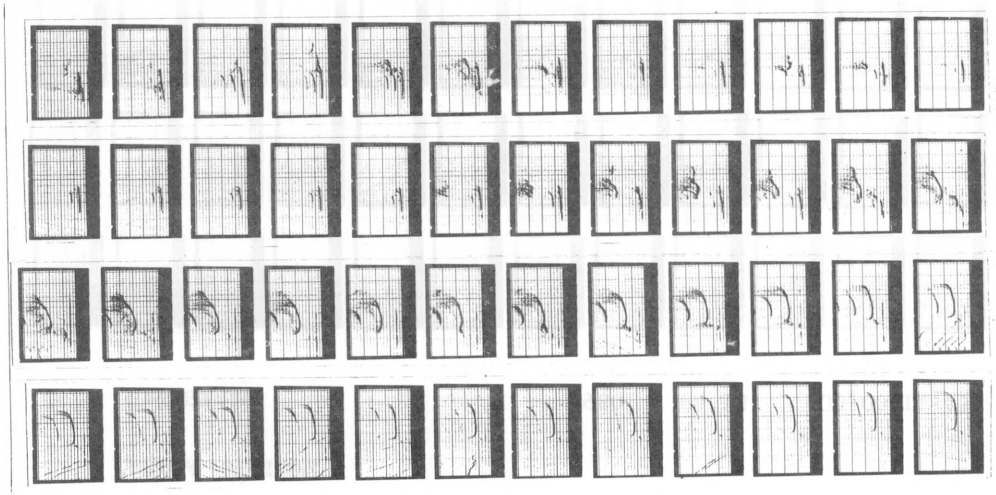

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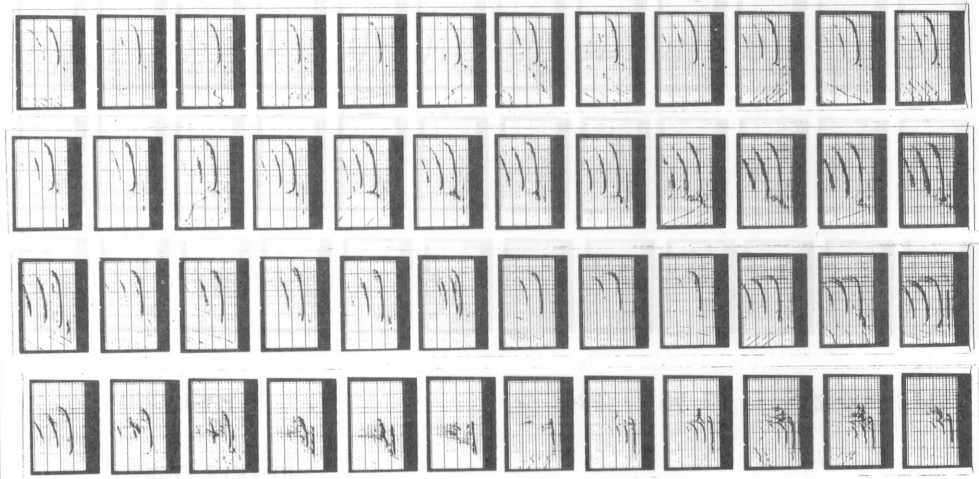

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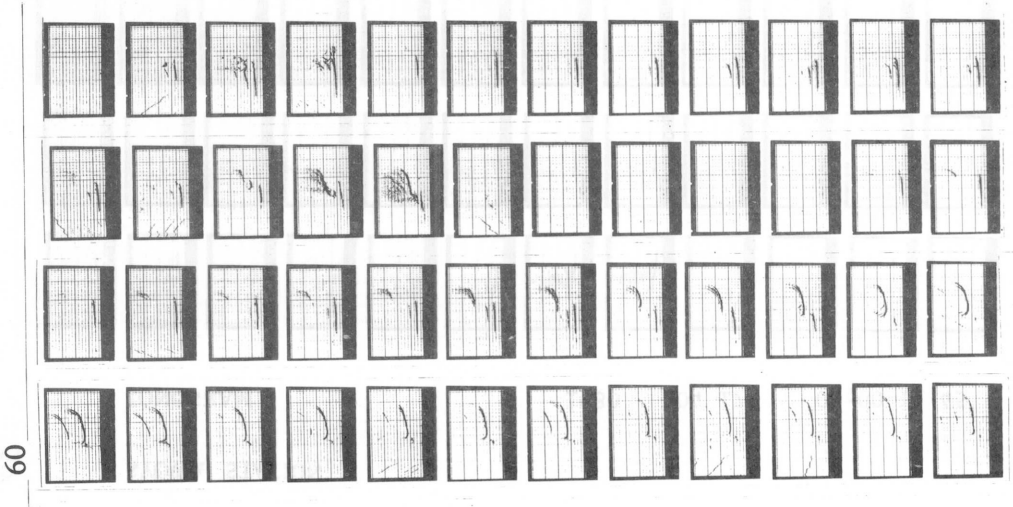

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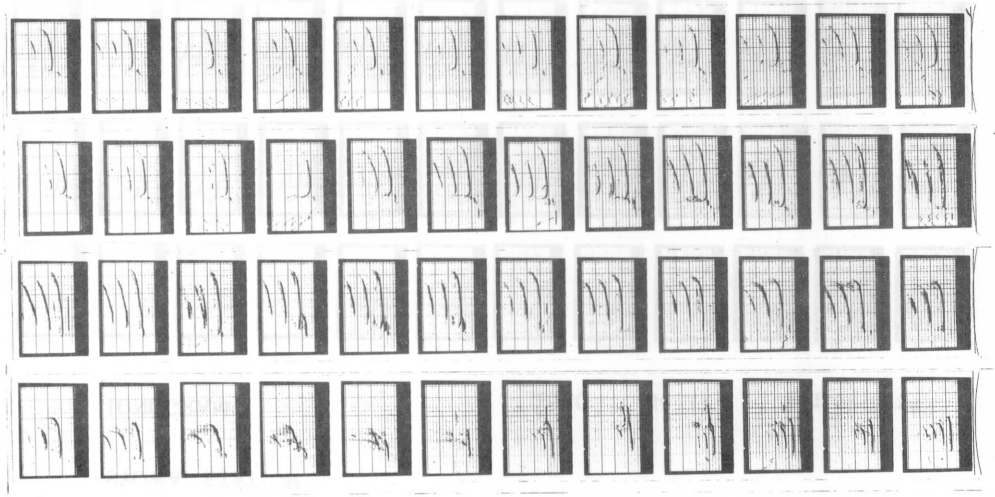

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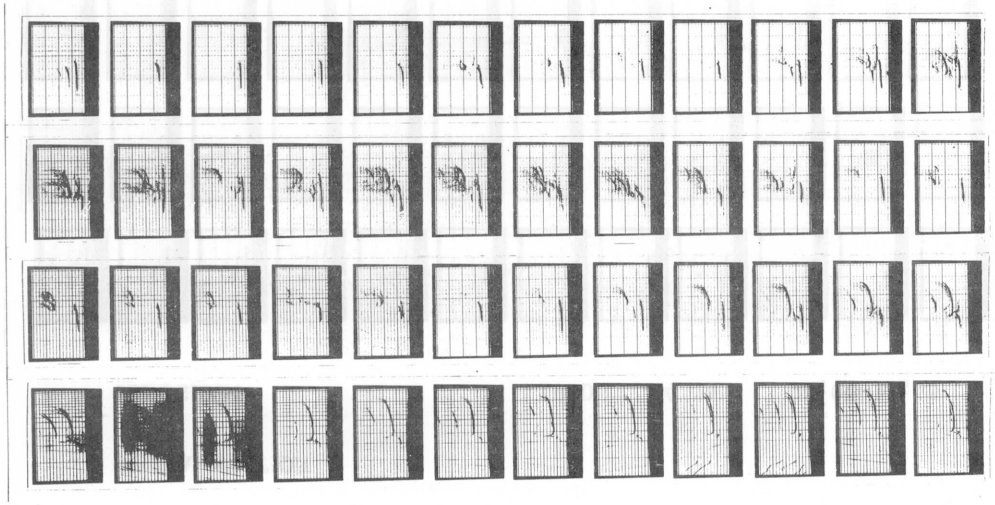

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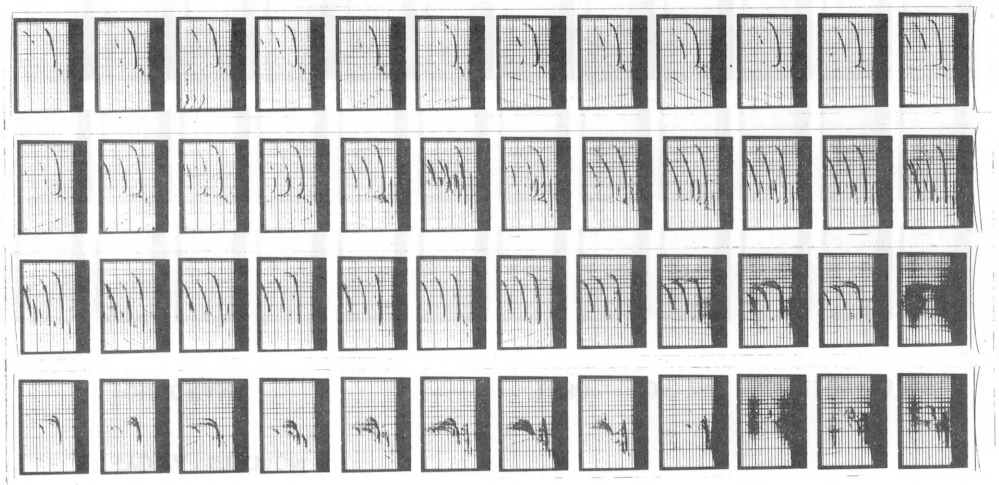

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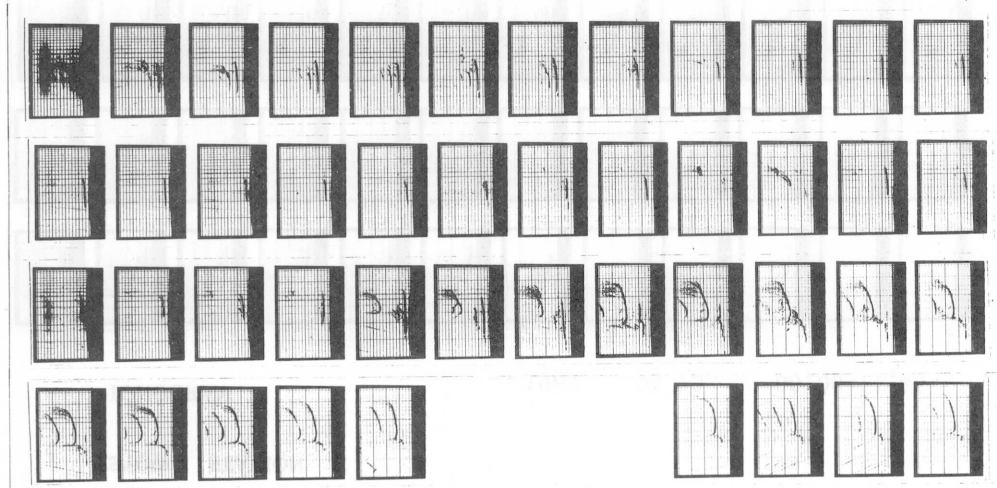

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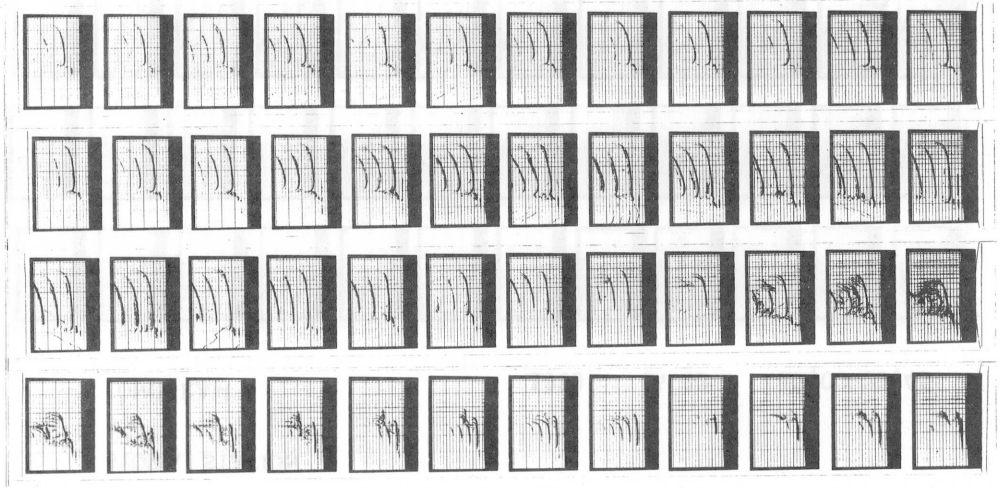

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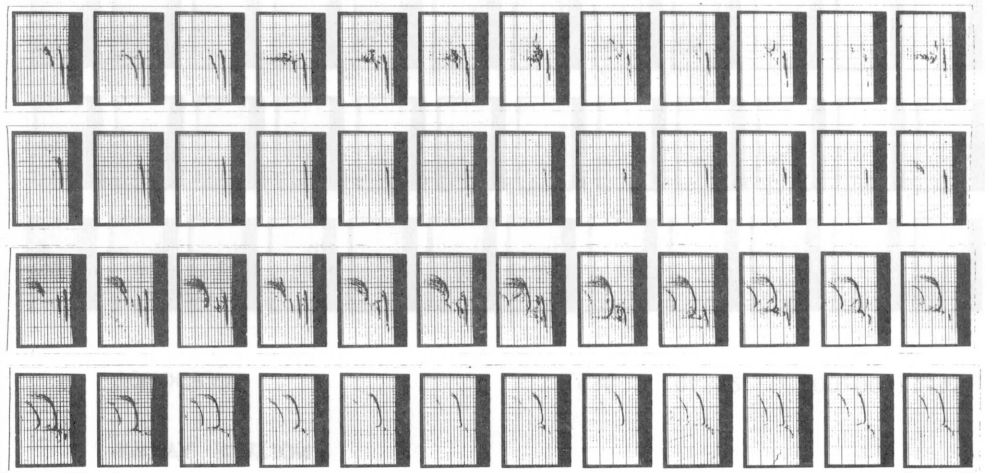

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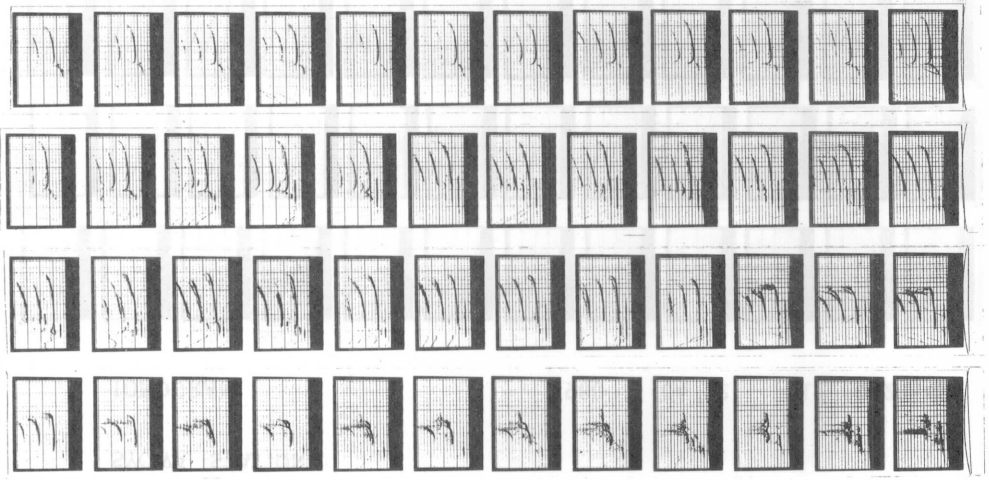

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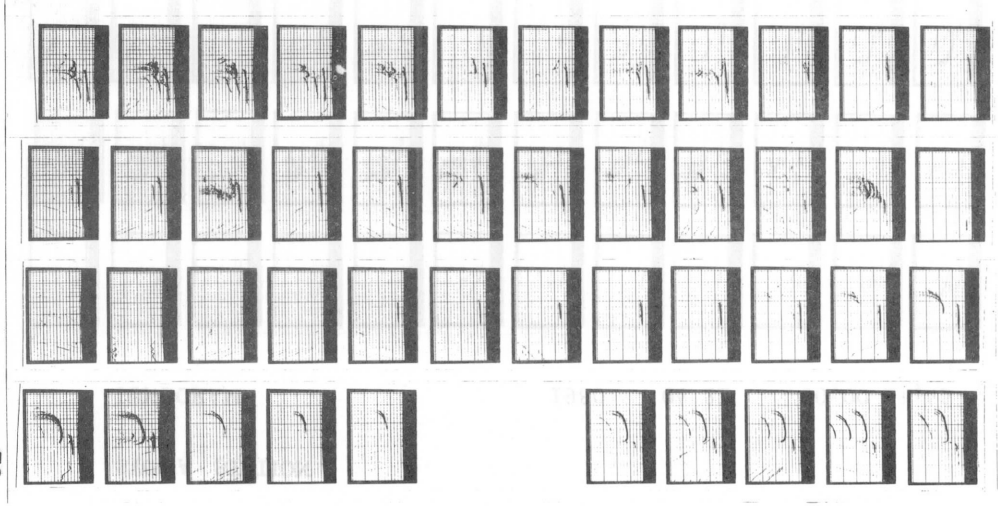

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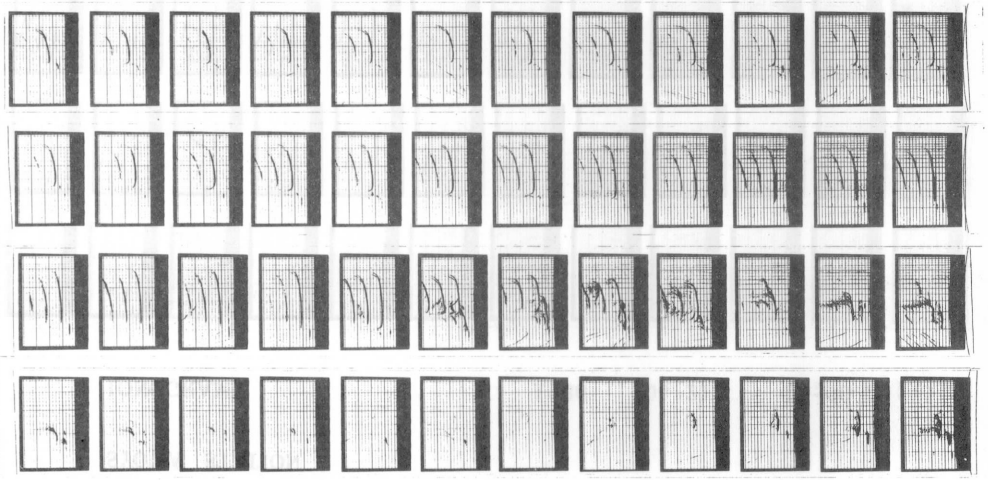

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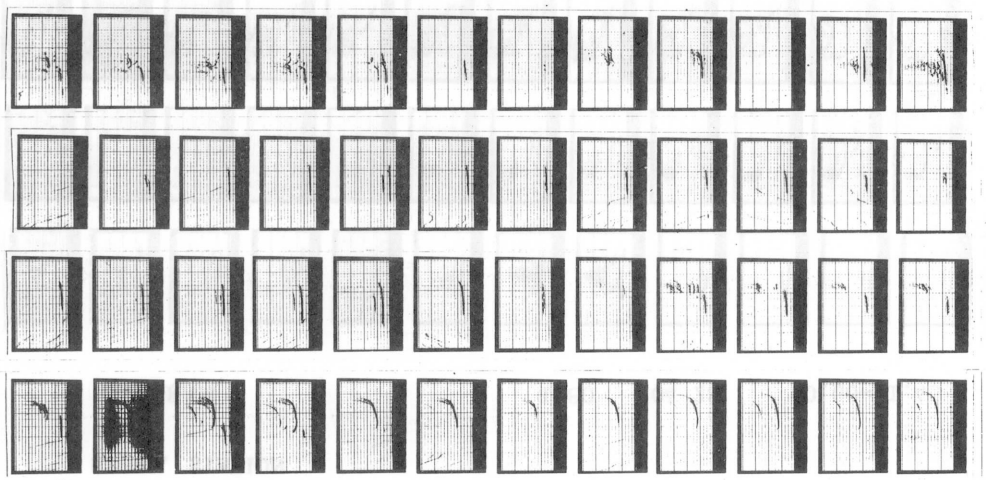

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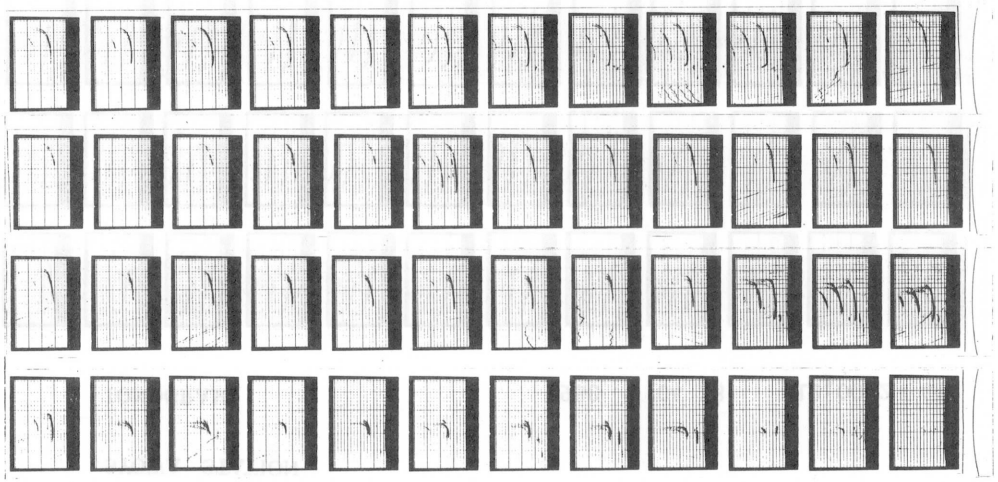

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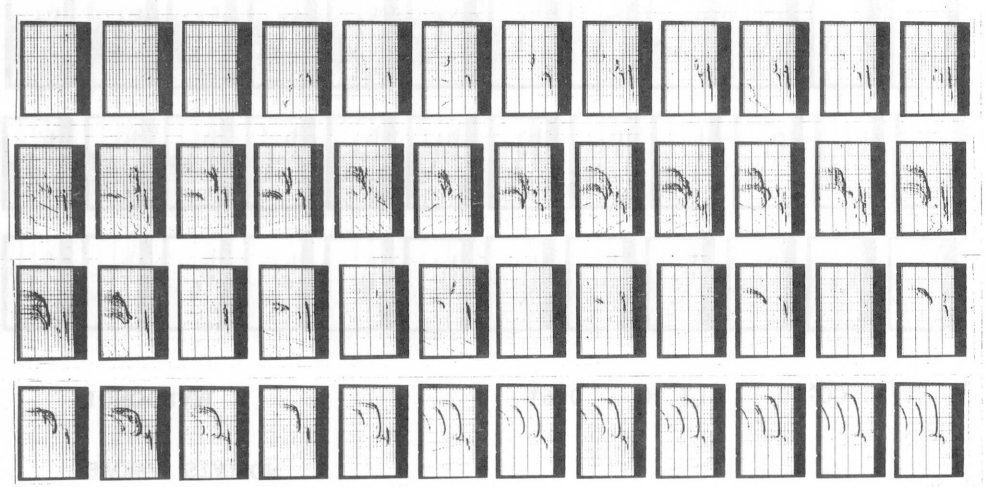

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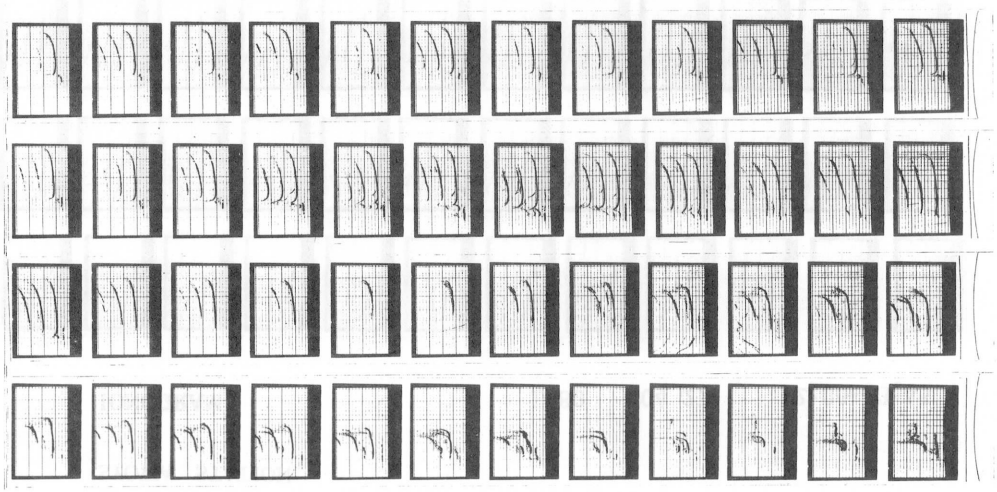

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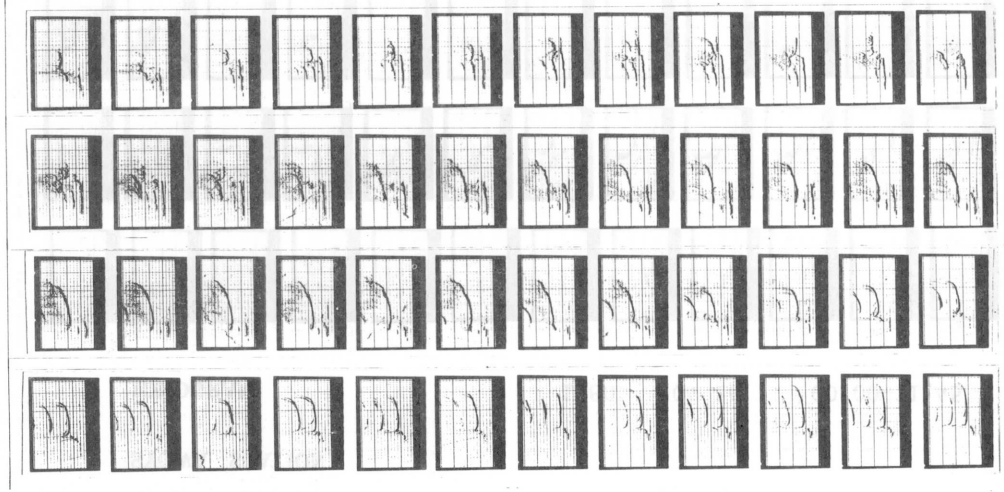

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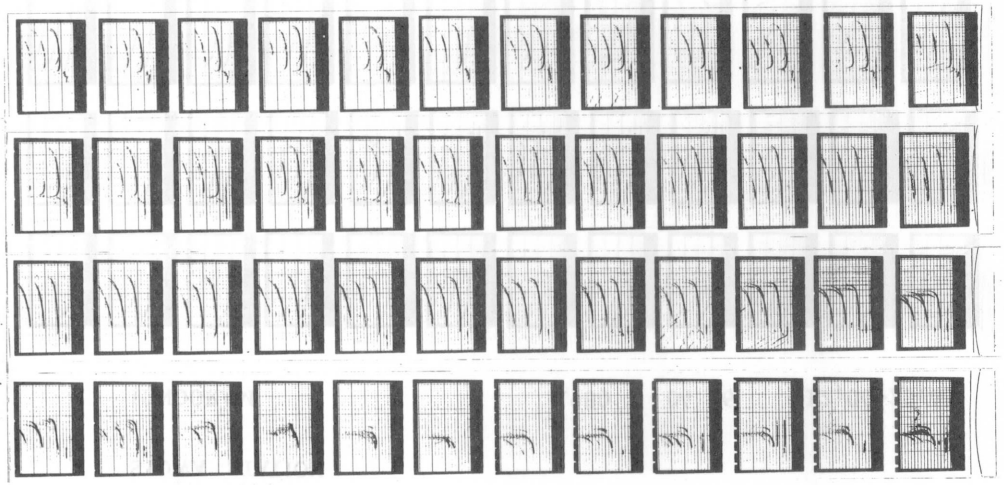

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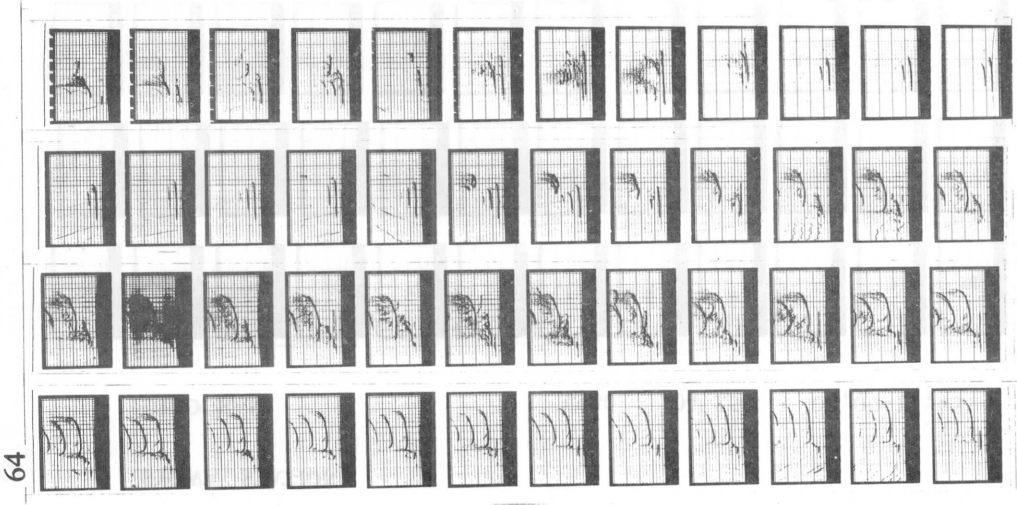

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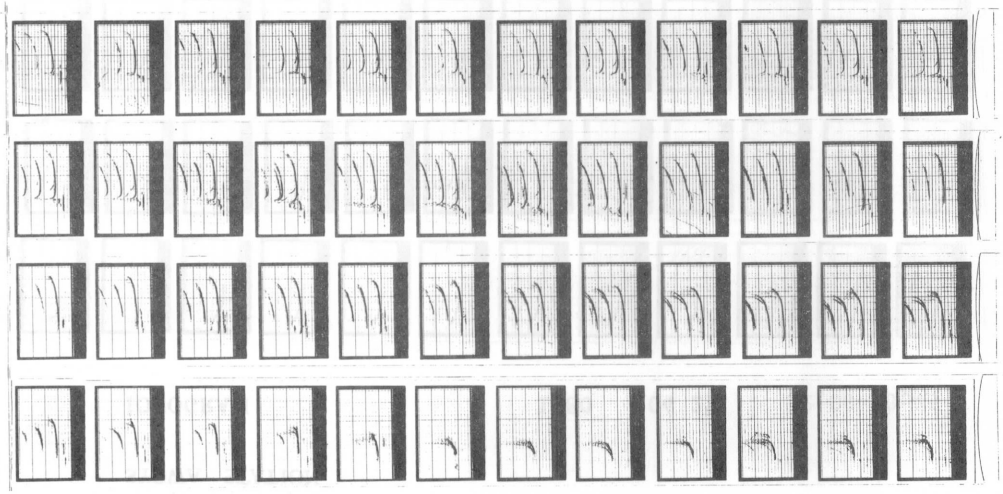

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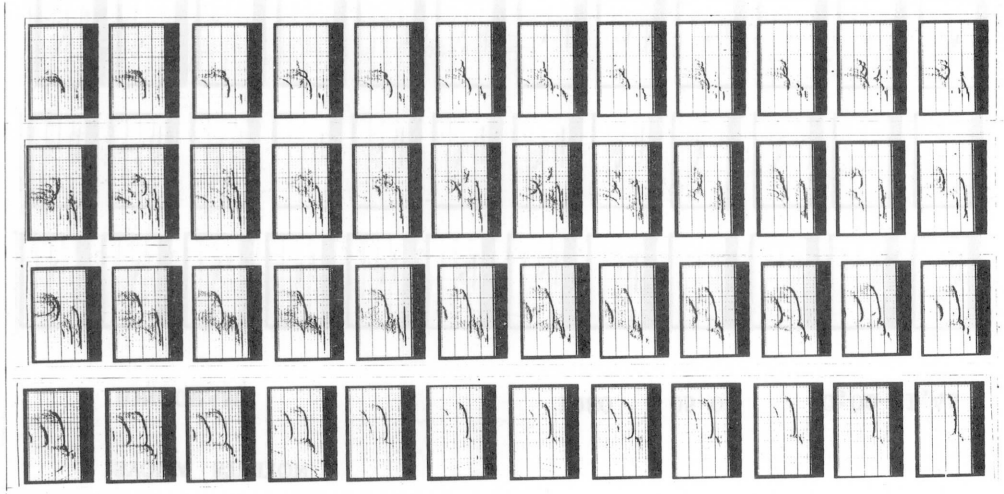

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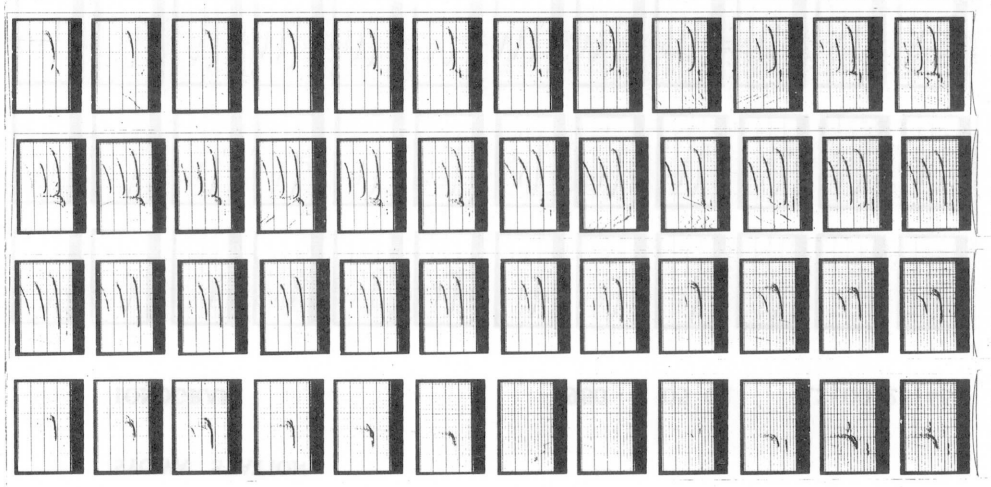

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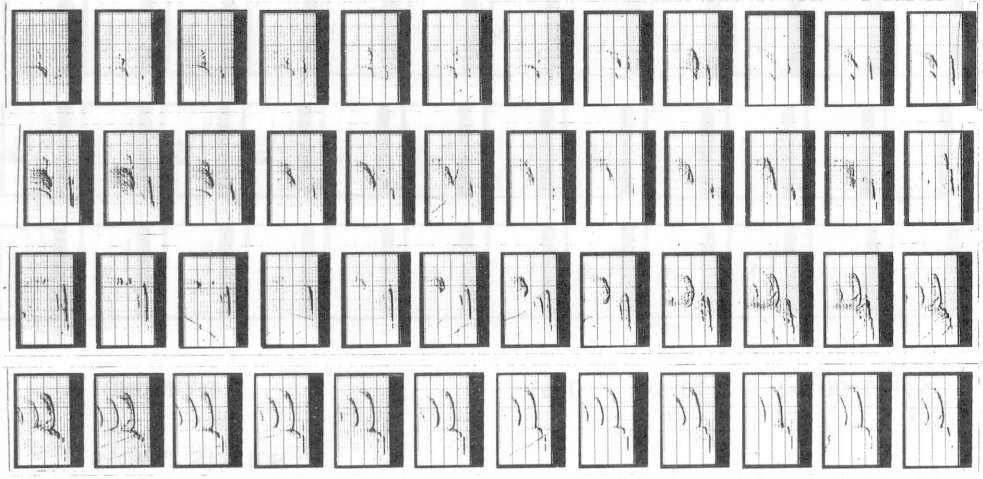

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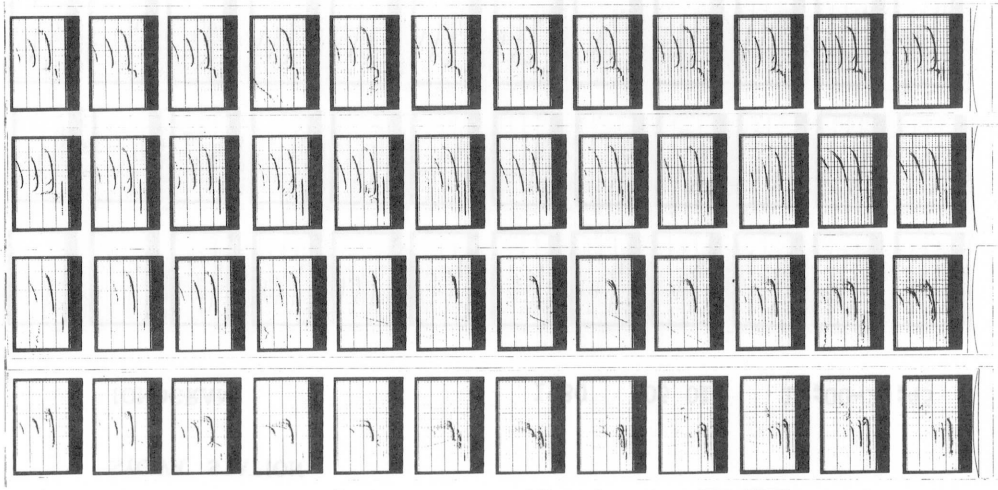

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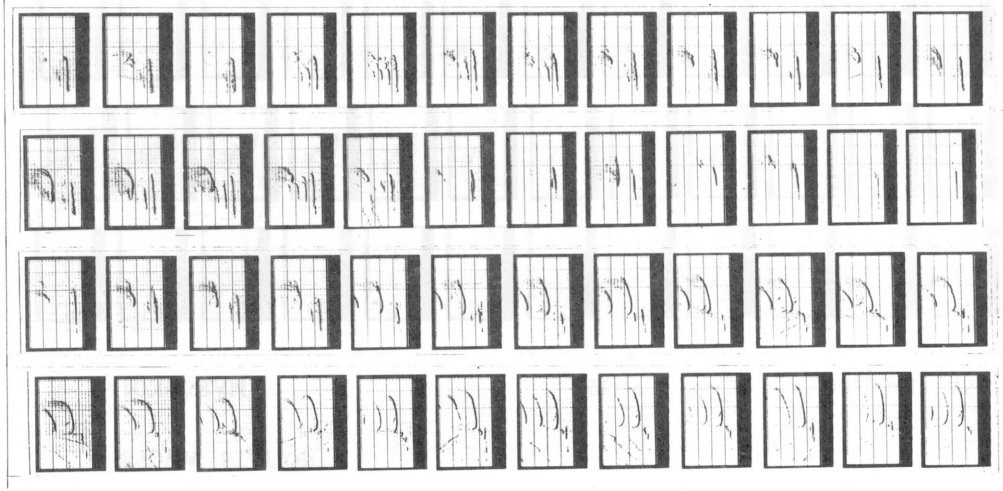

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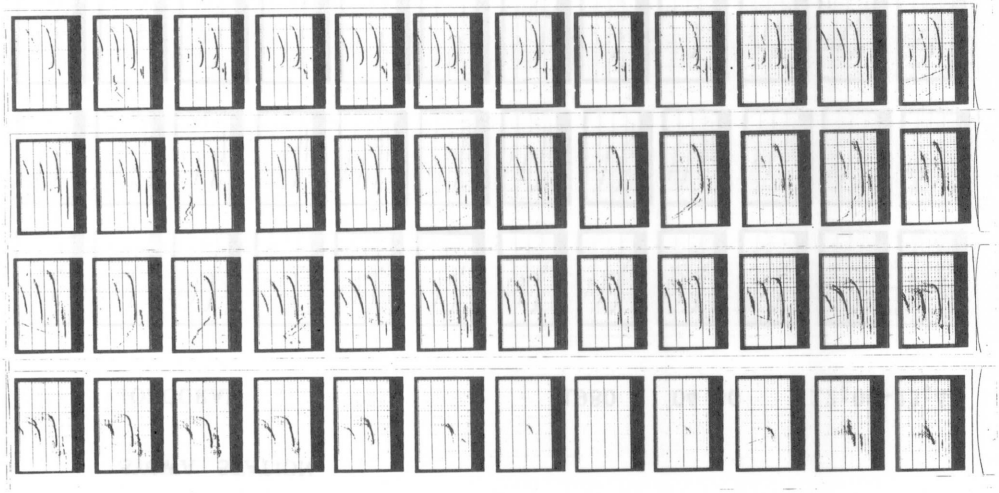

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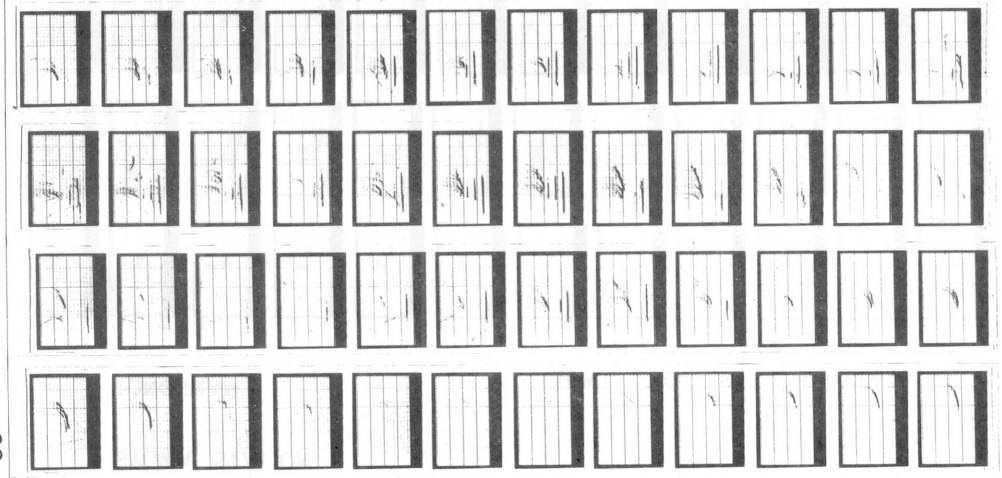

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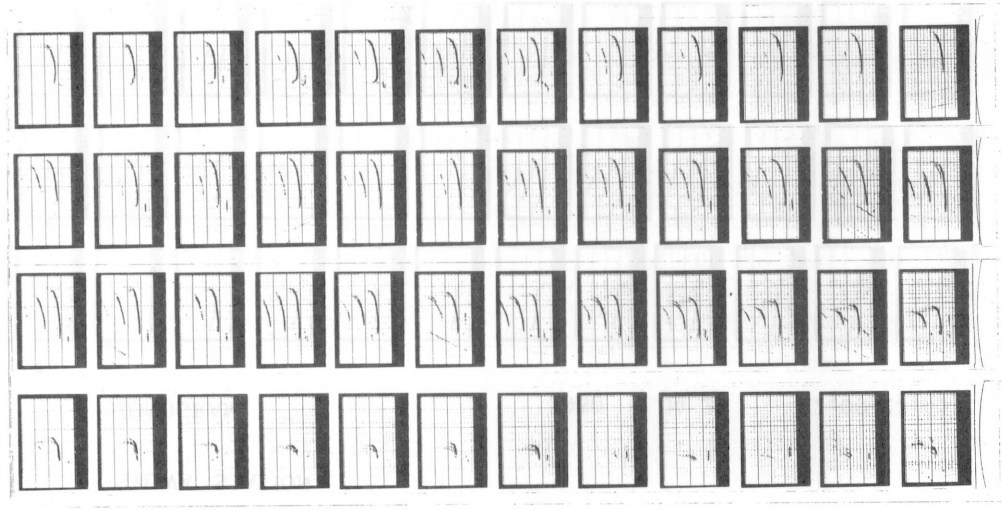

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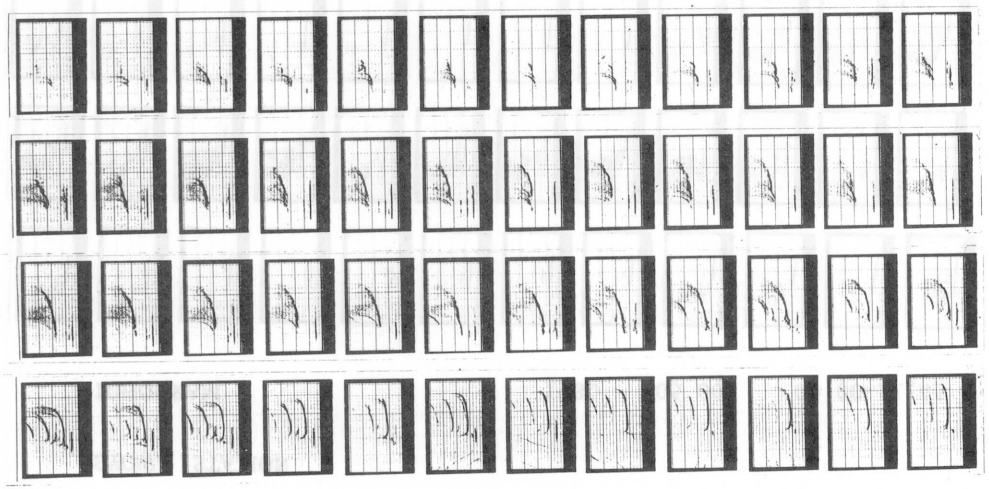

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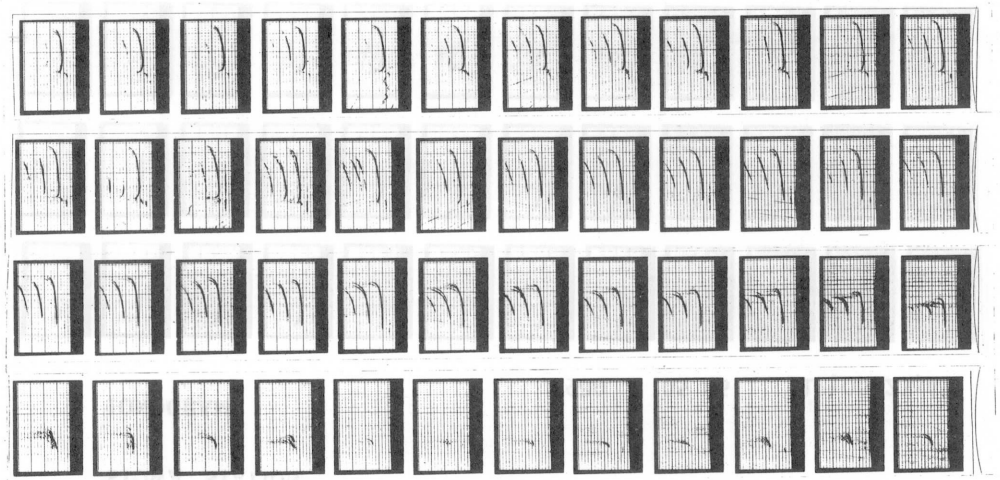
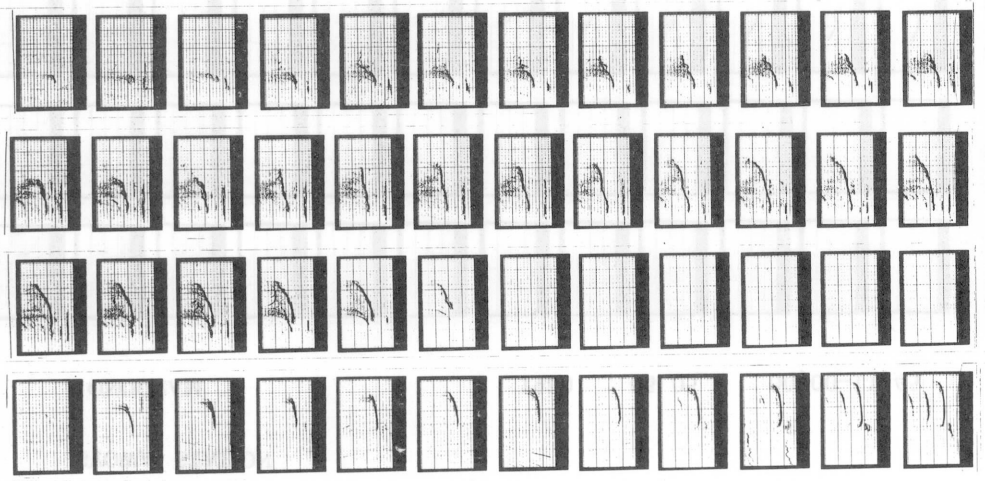


SYOWA STATION

IONOGRAM 1980 05 04 00;00-11;45



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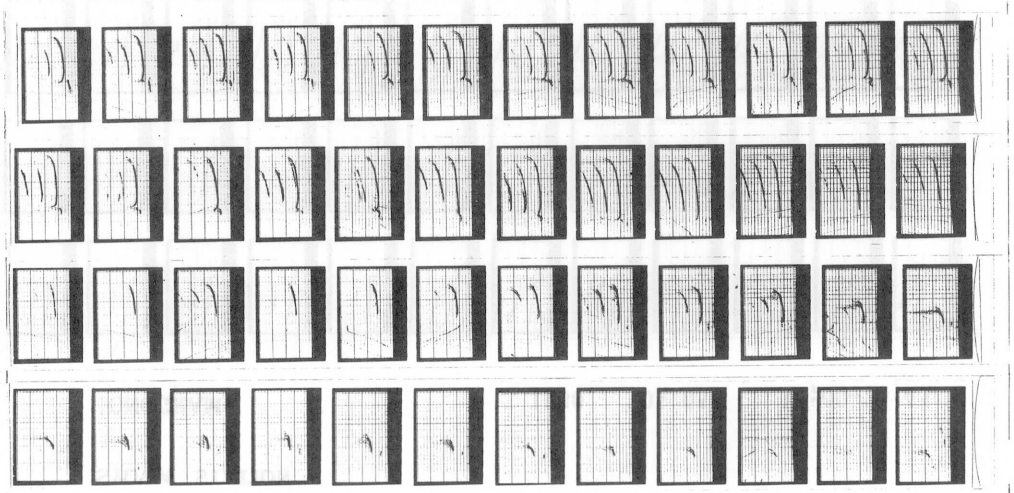

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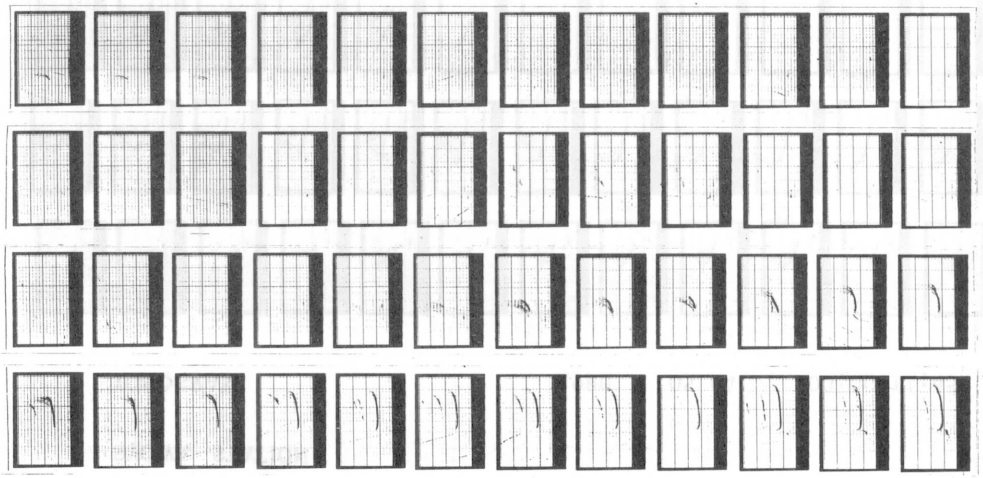
IONOGRAM 1980 05 05 00;00-11;45



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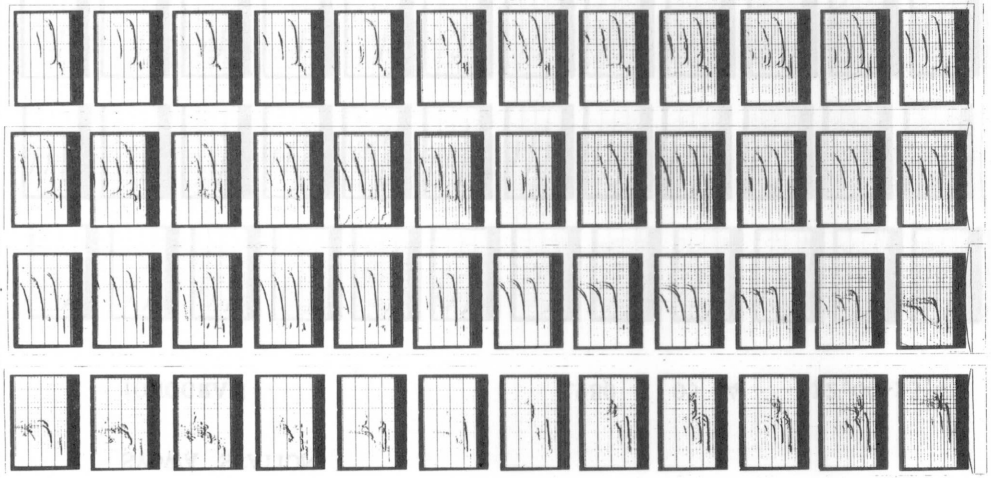

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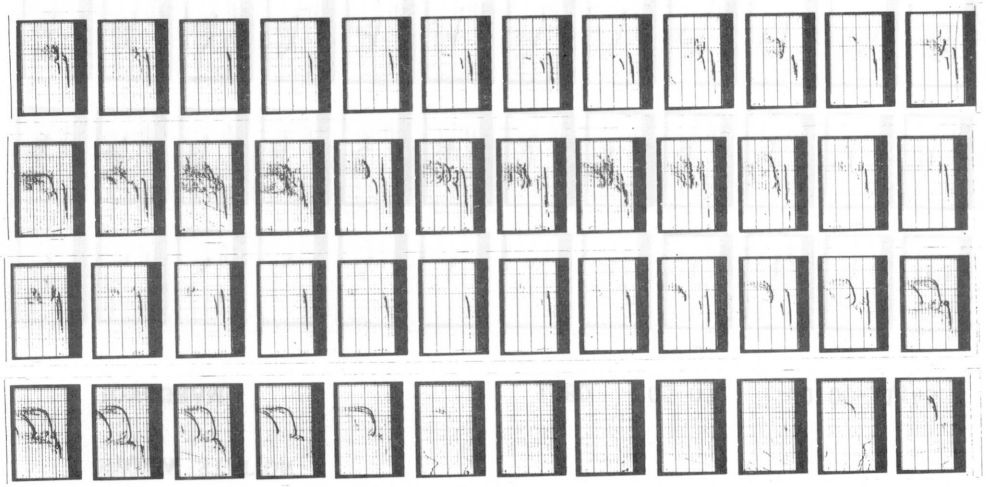

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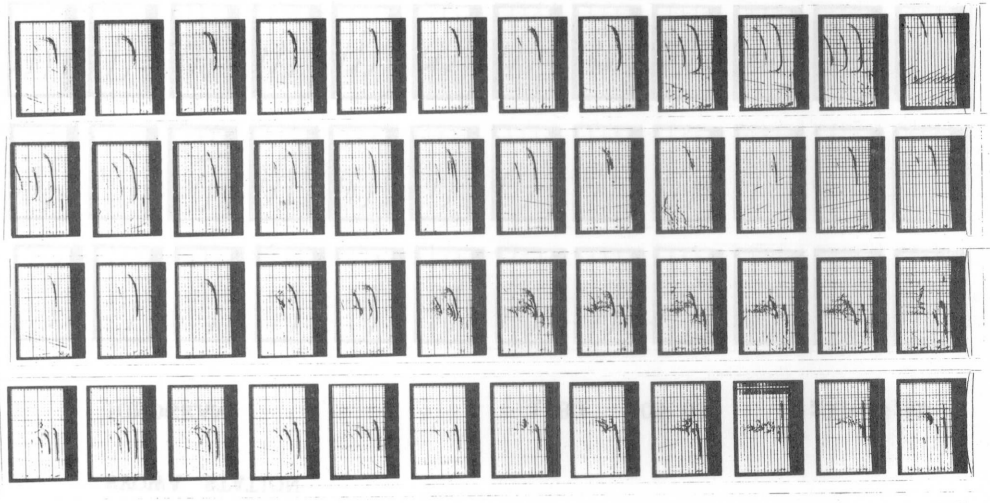

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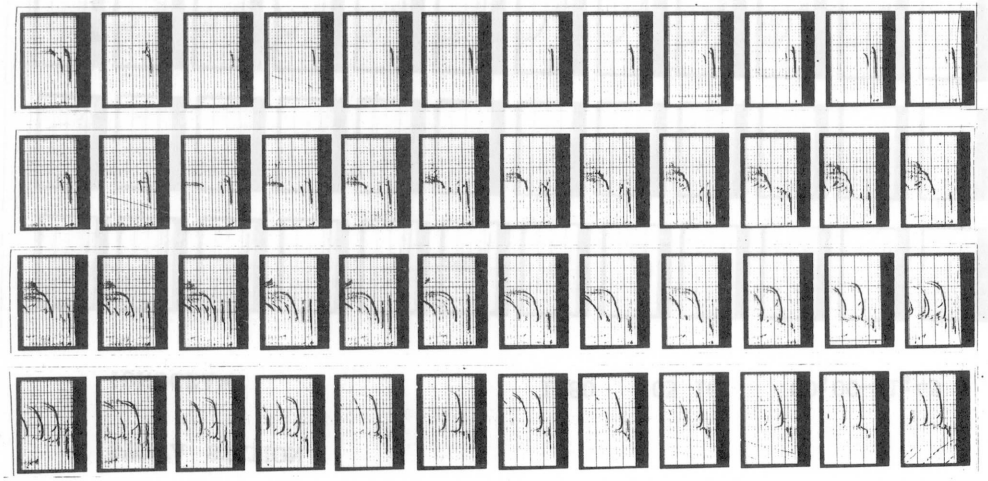

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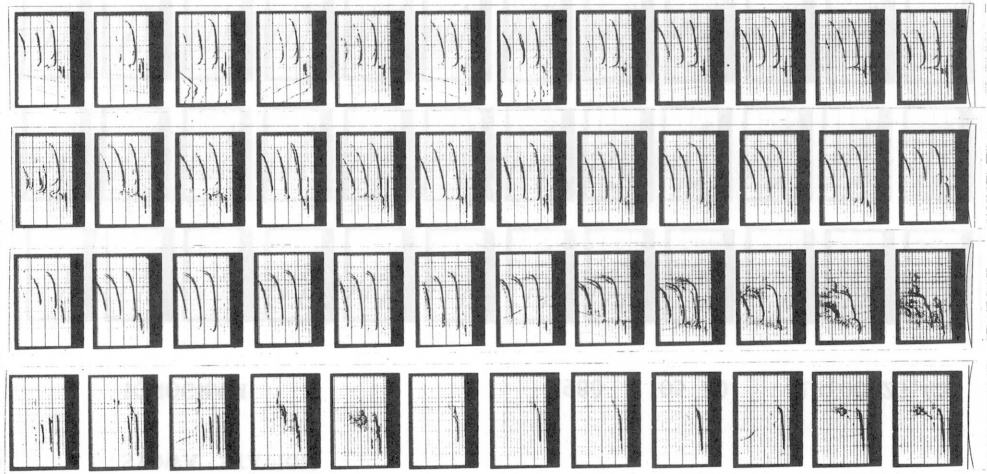

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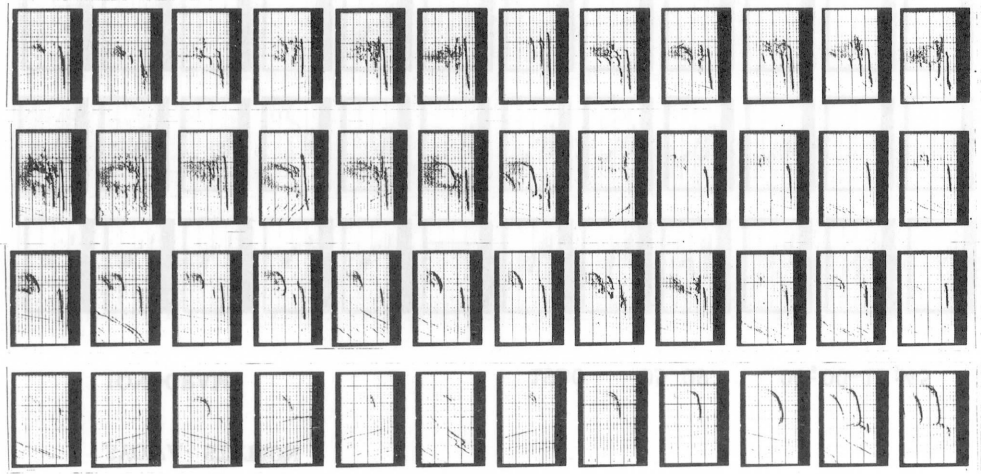

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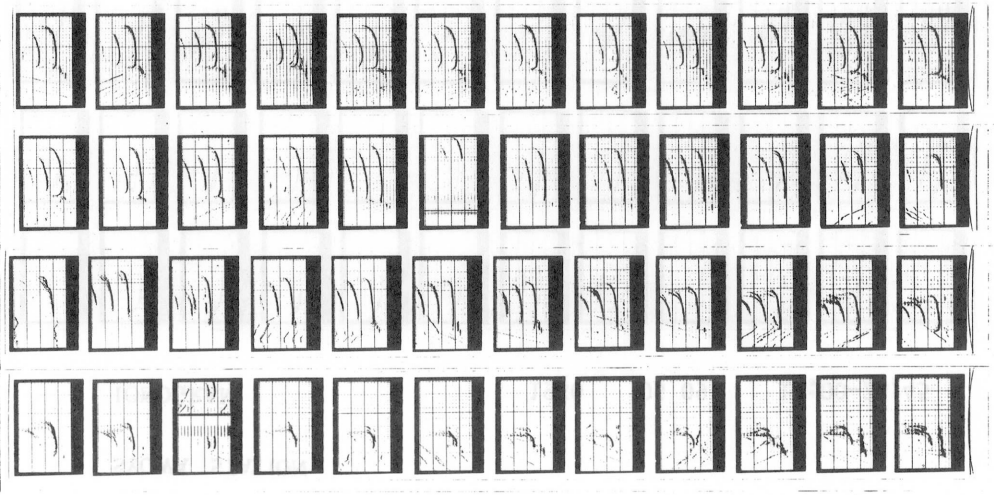

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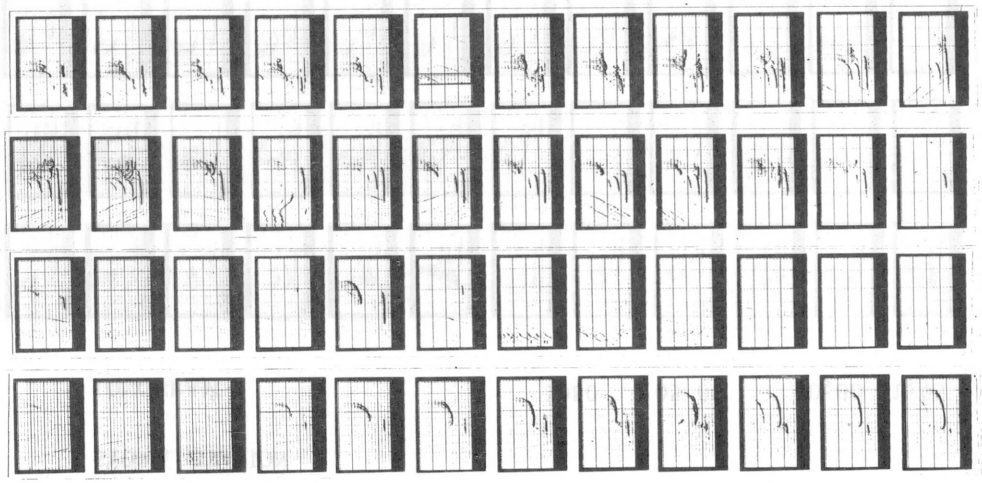

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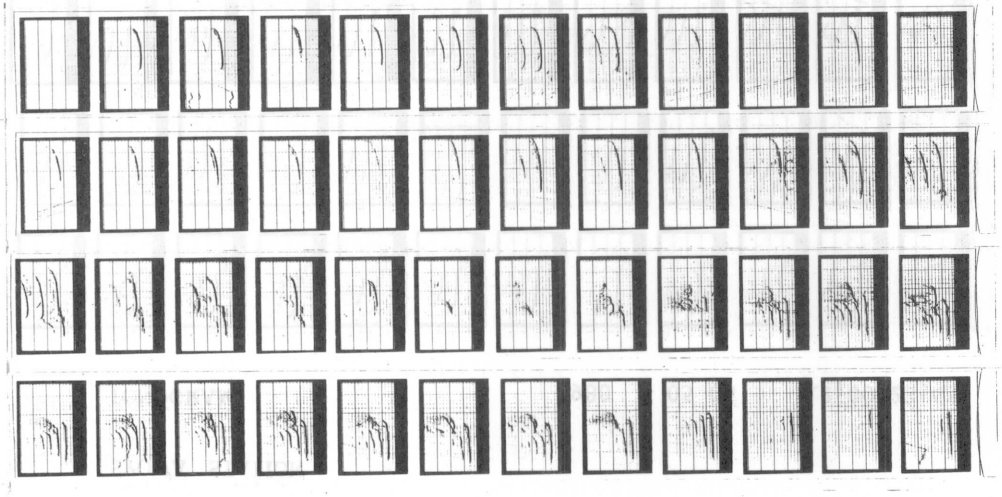

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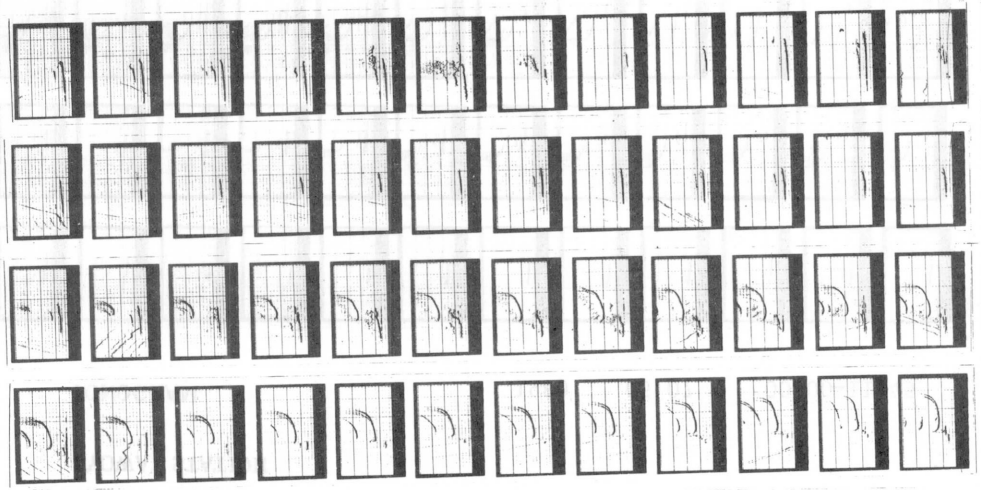

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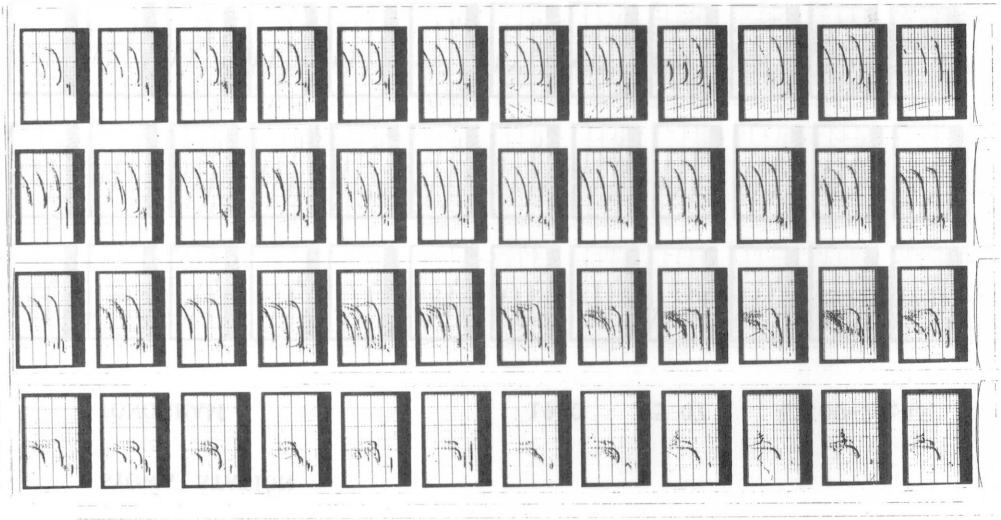

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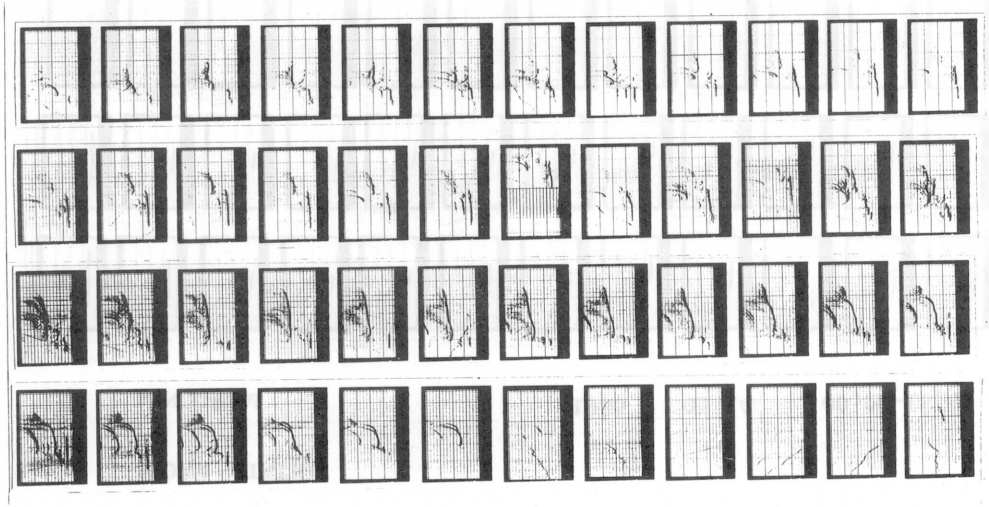

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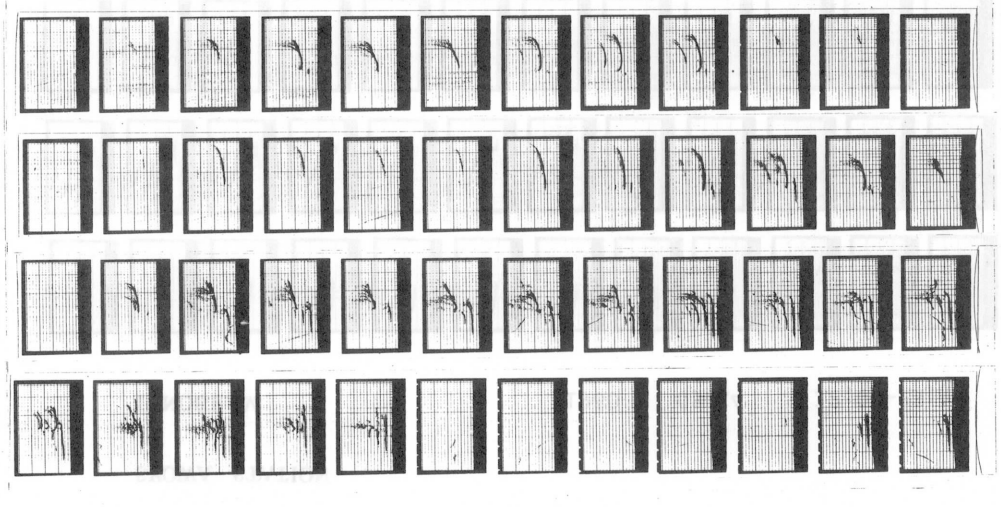

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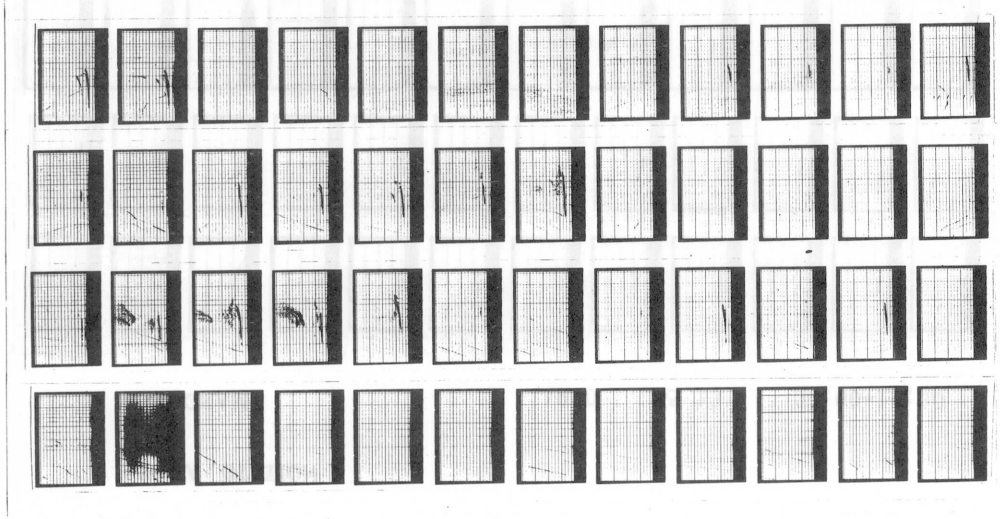

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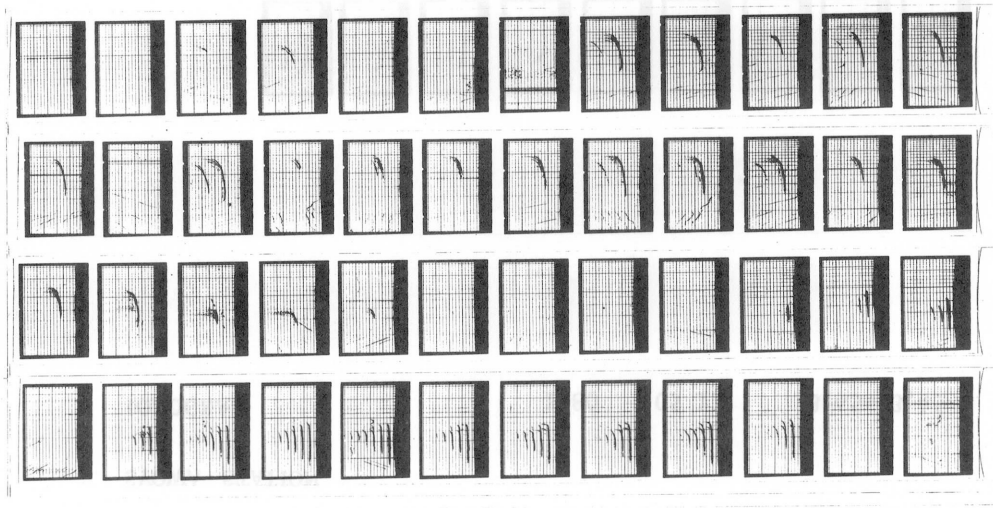

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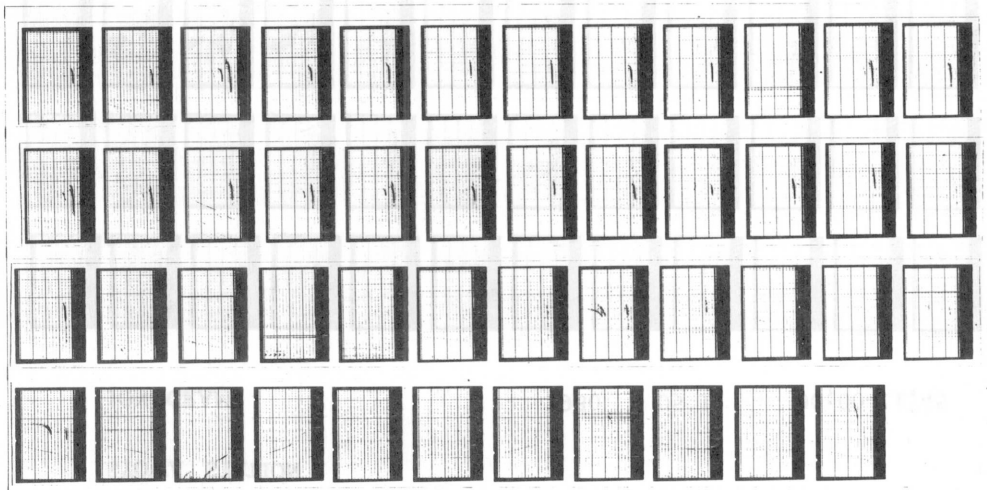

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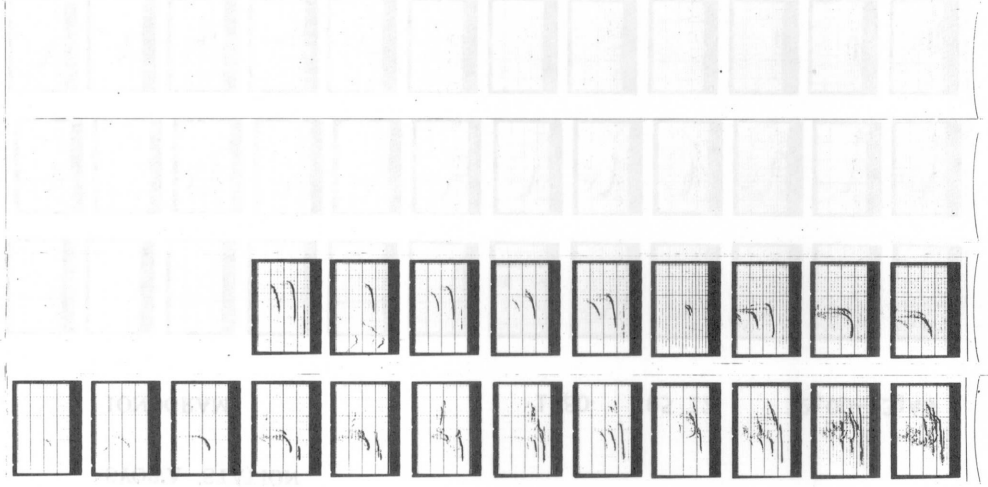

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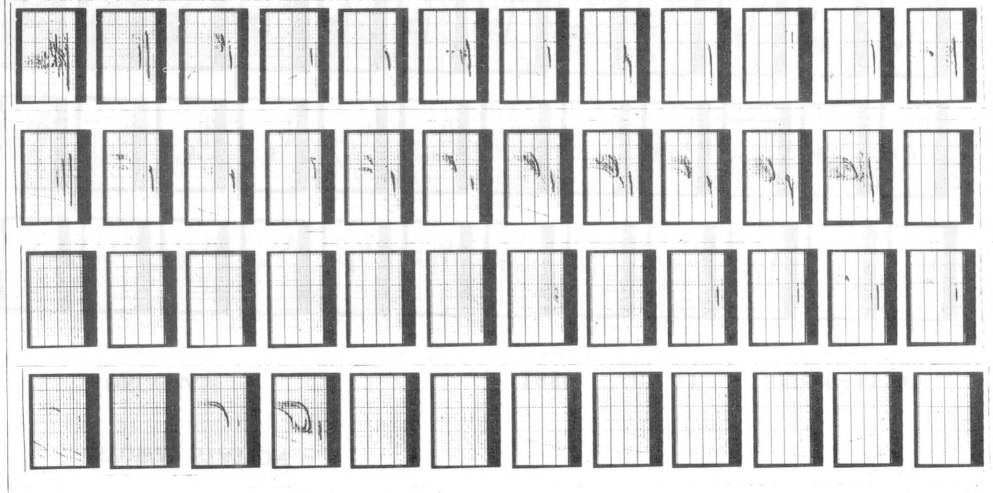

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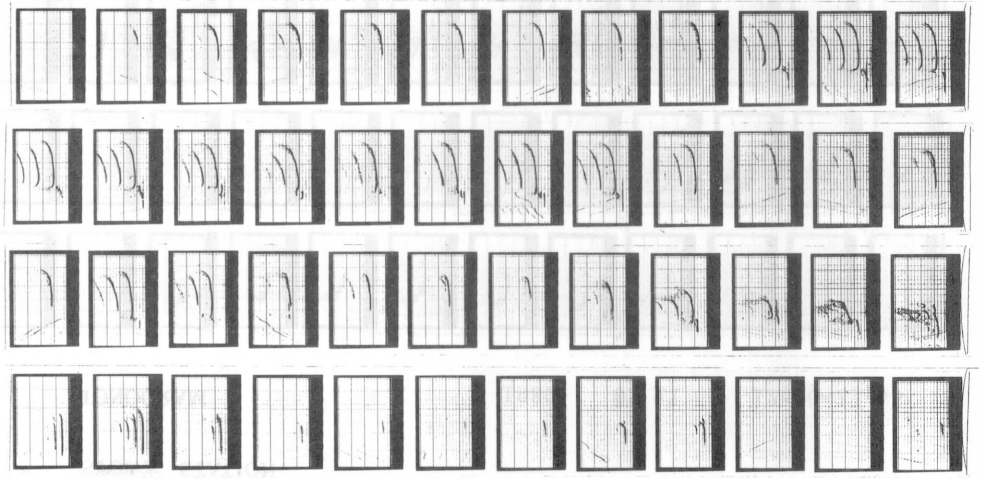

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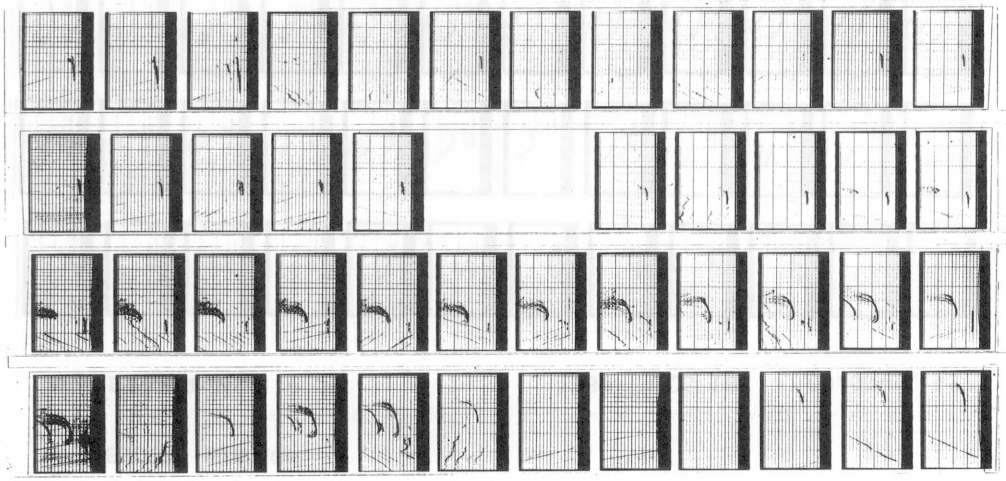

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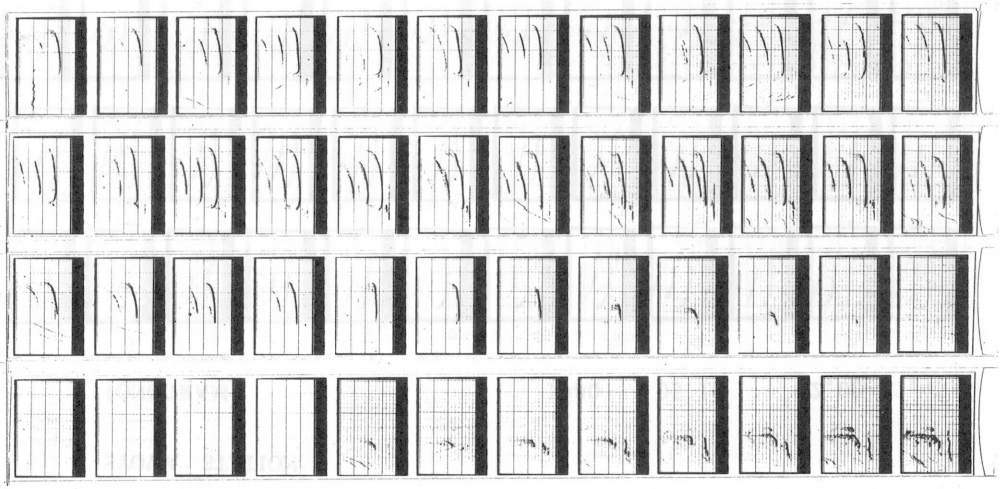

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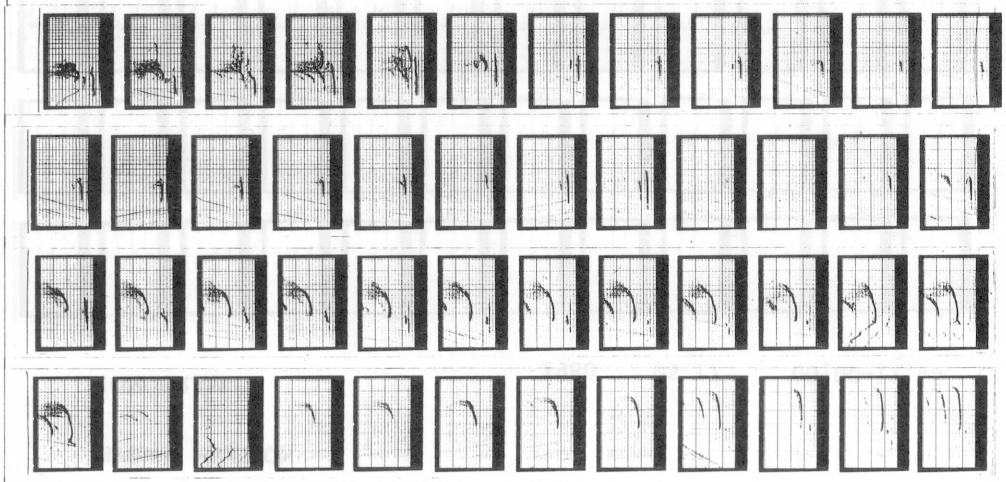

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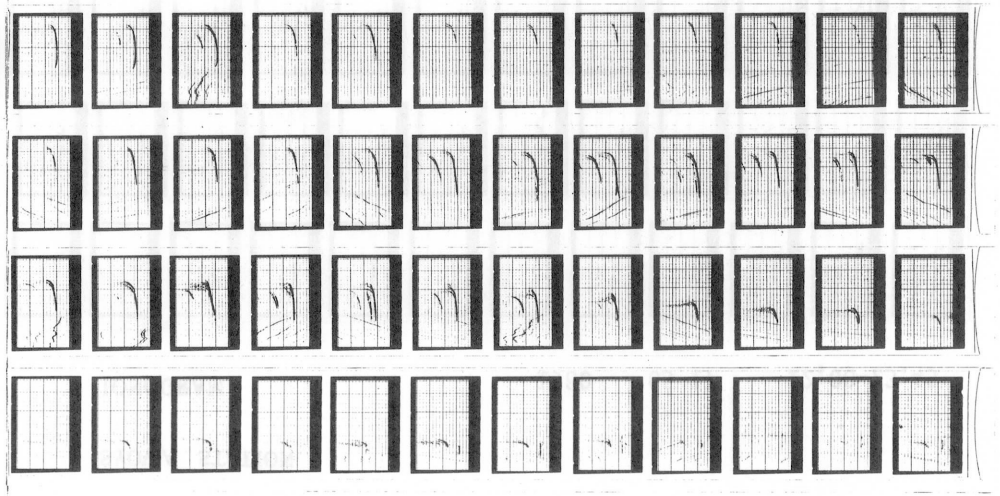

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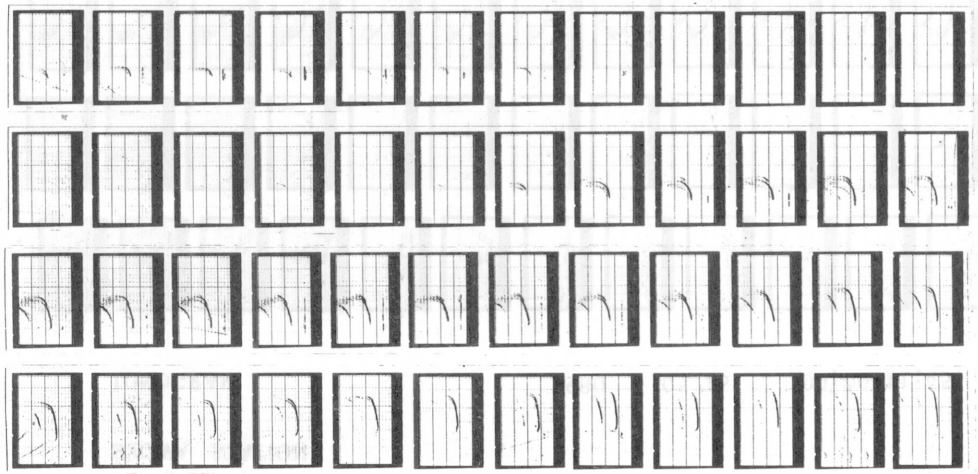

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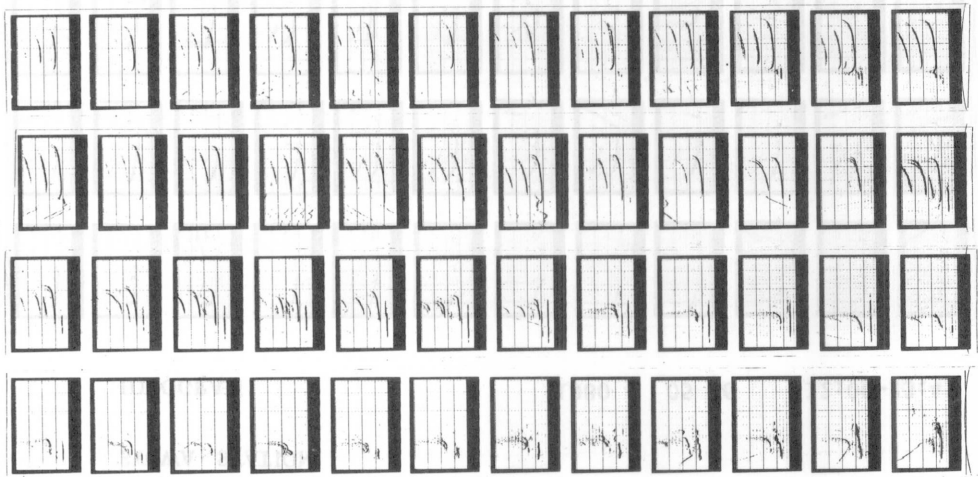

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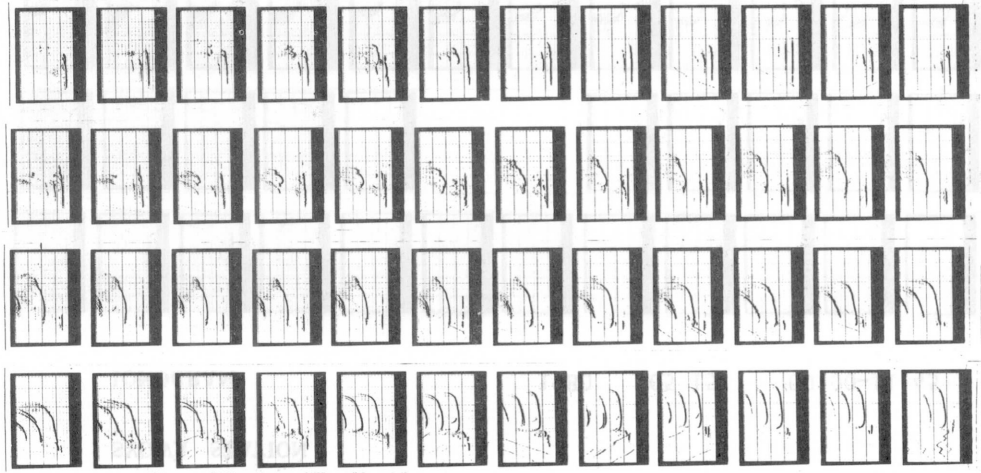

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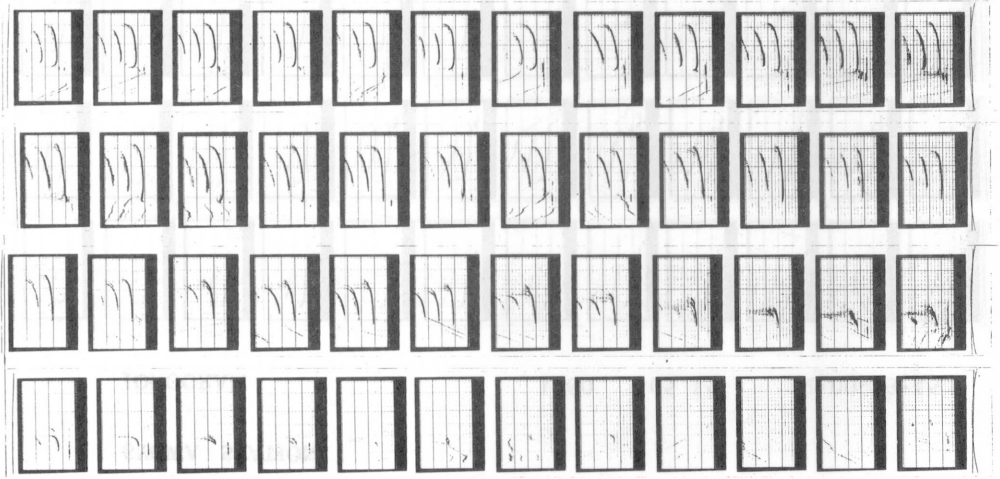

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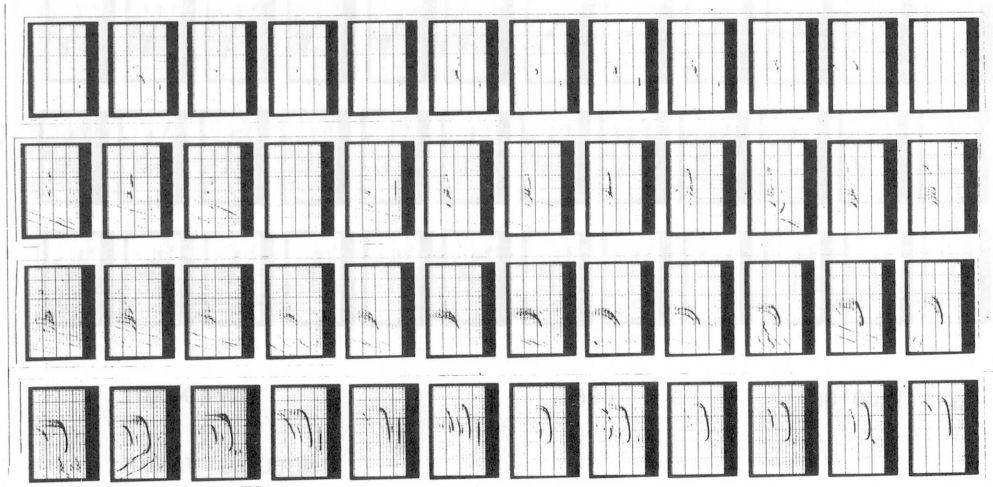

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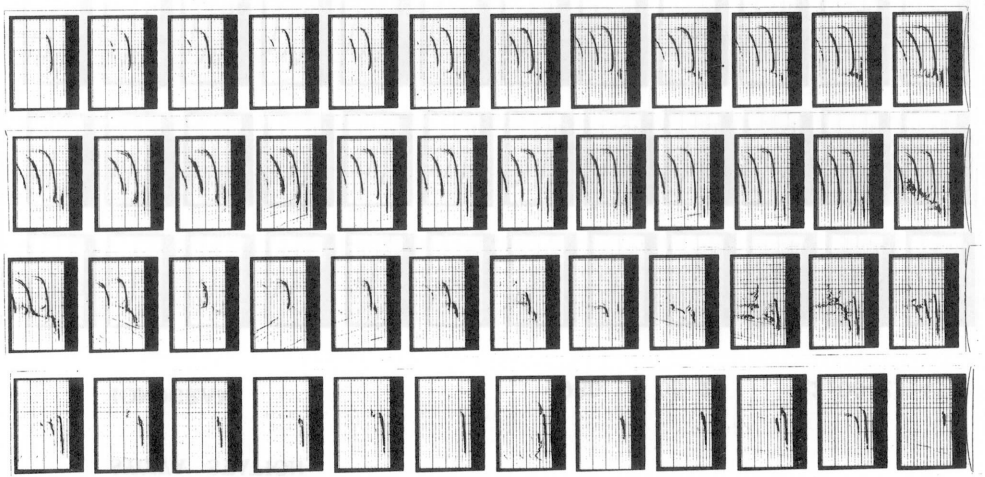

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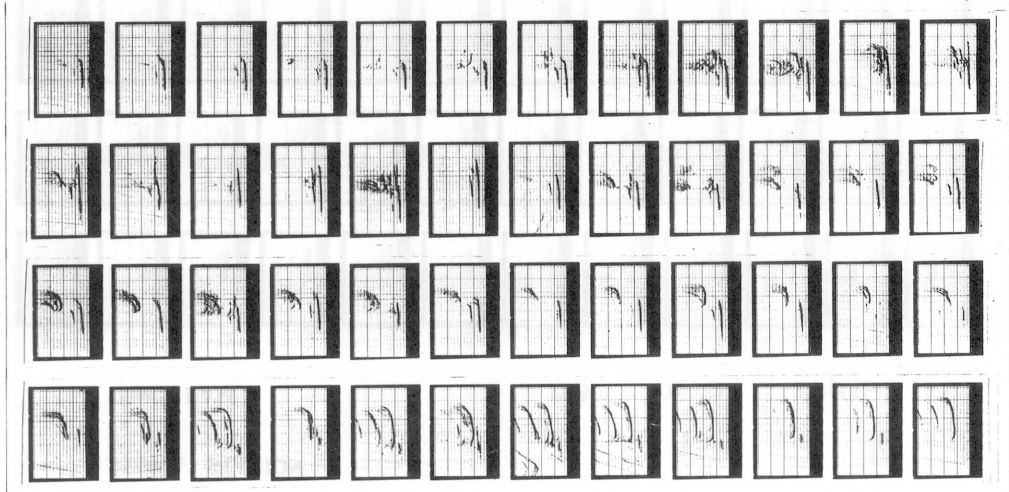

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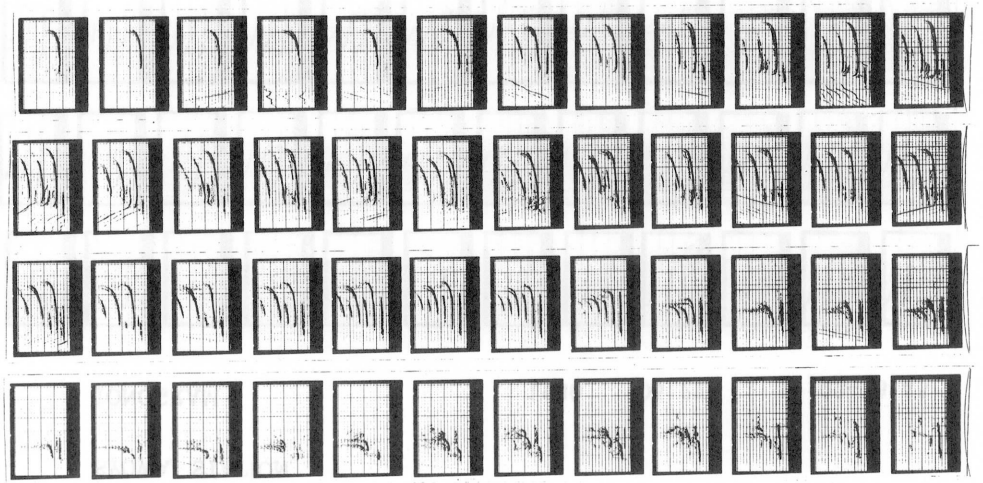

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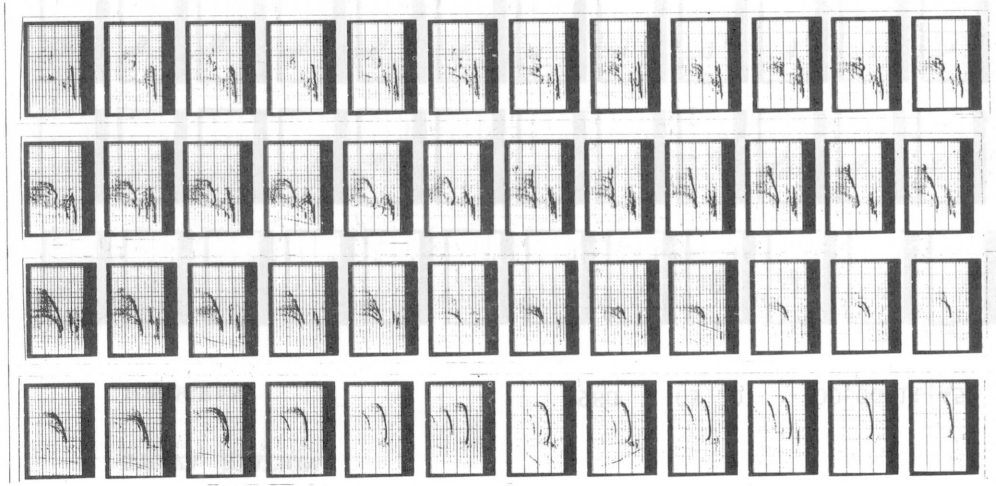

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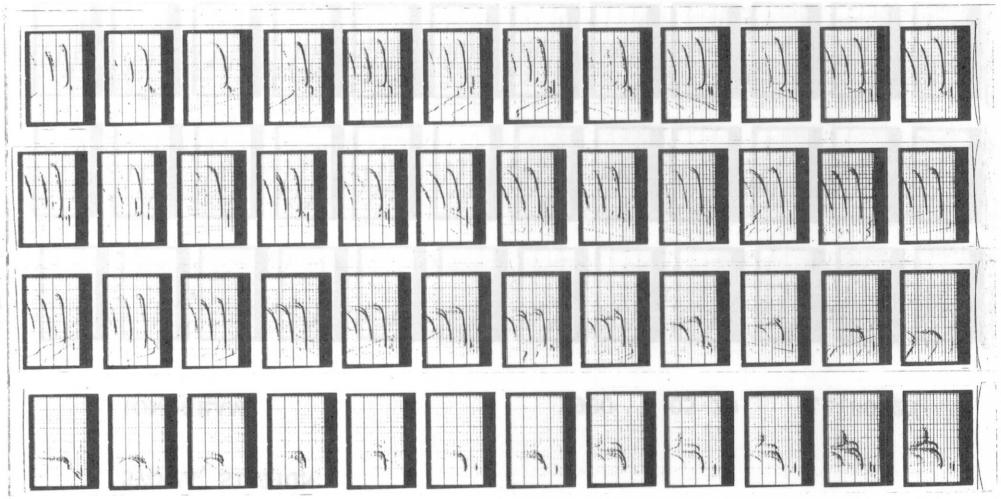

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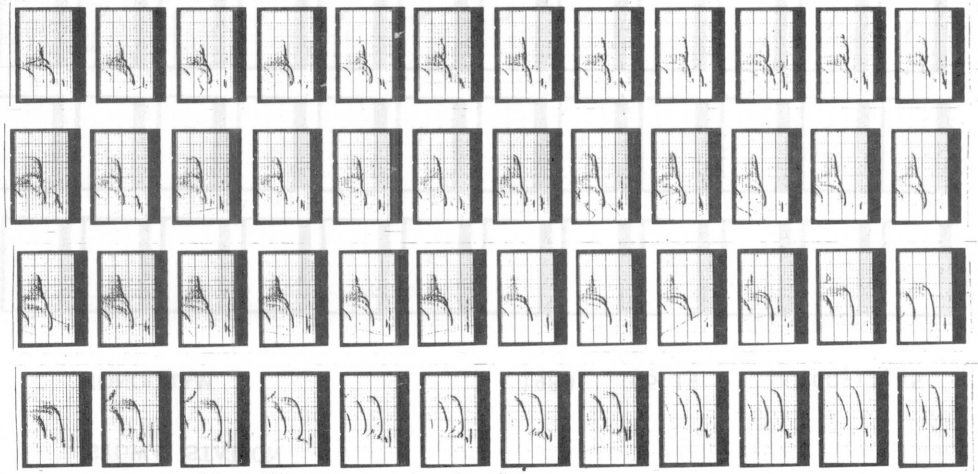

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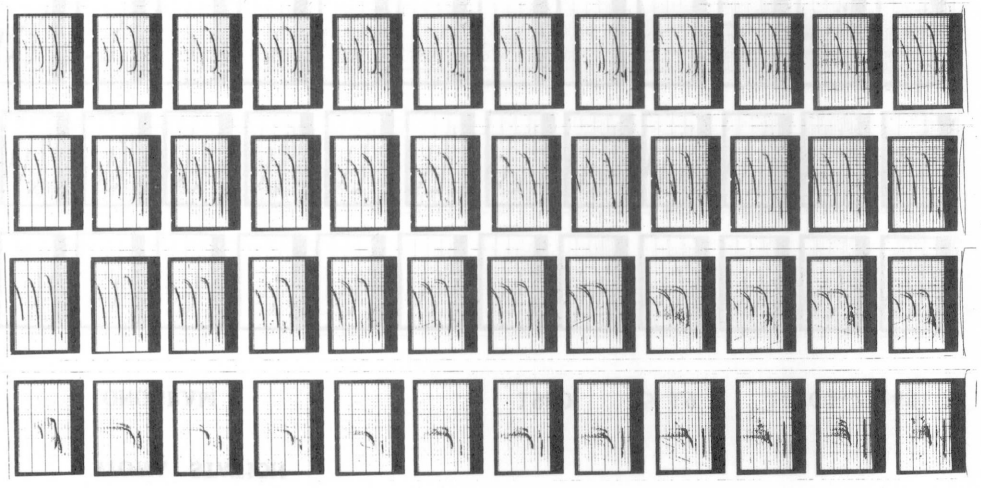

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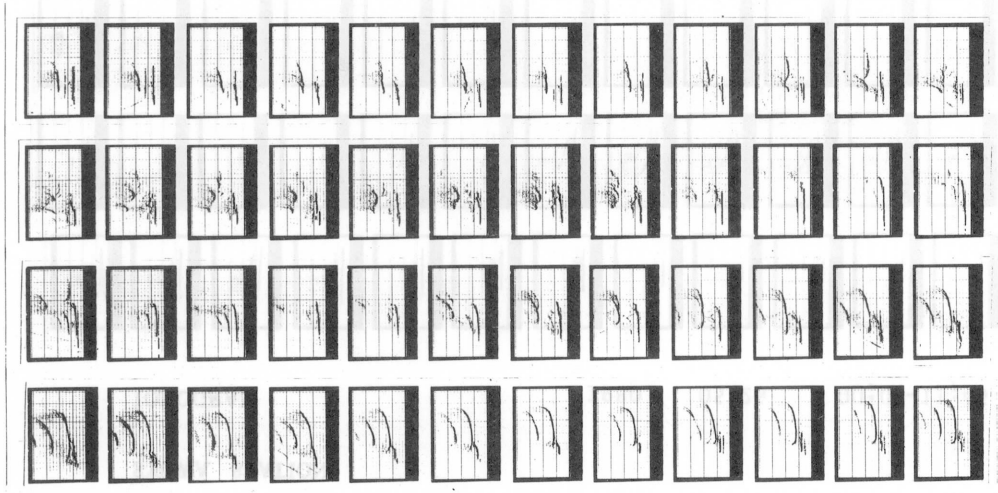

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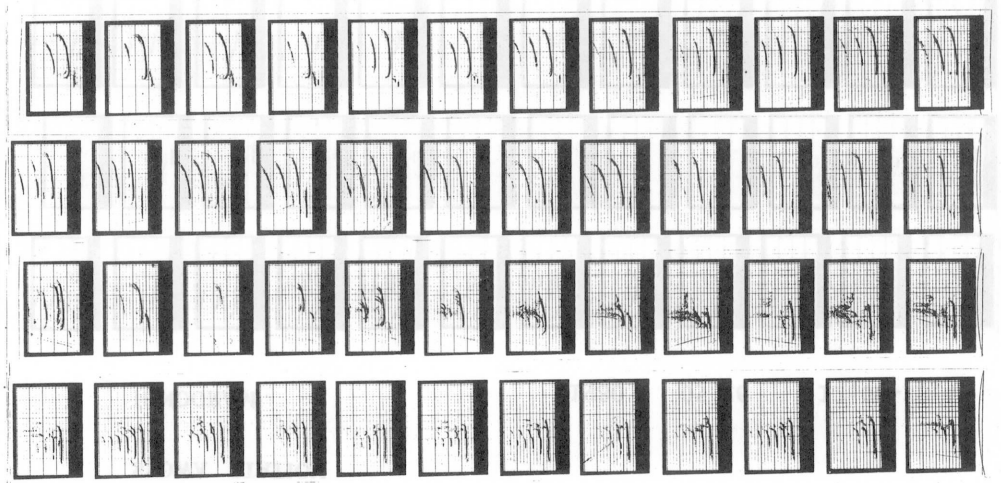

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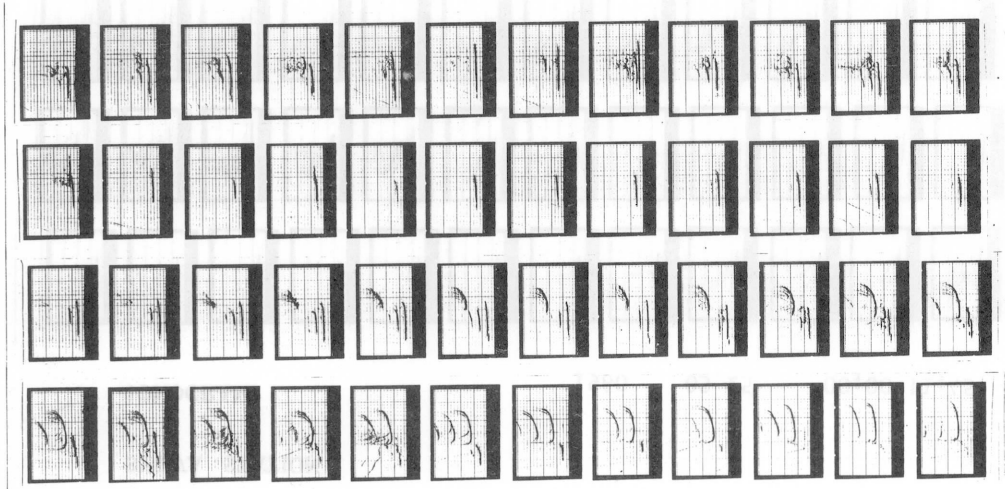

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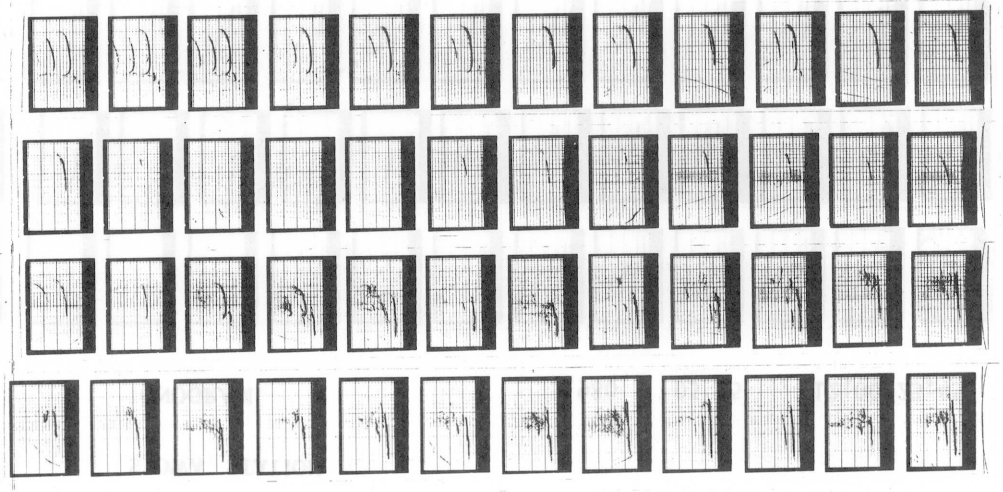

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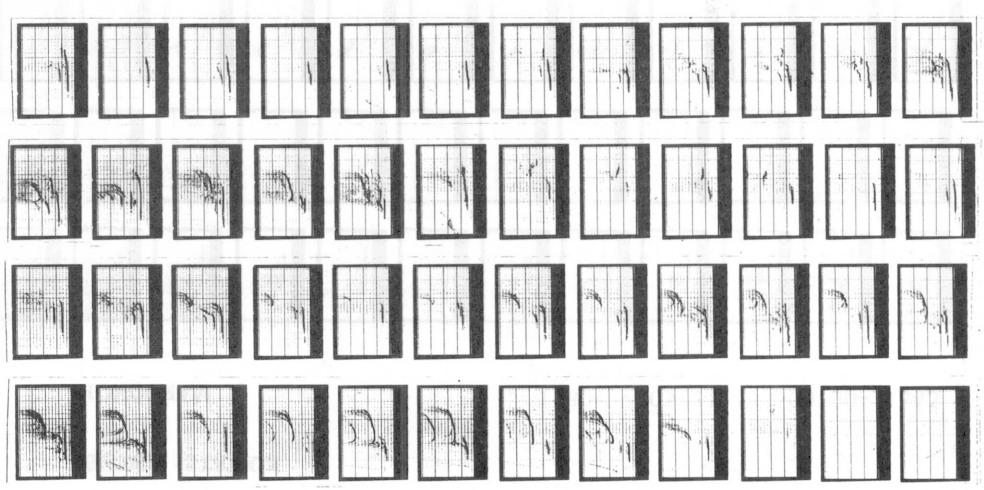

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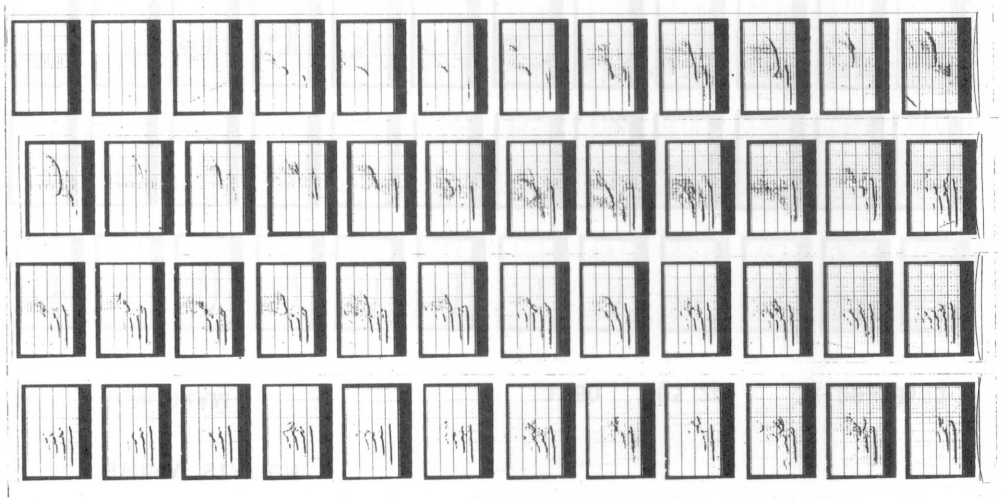

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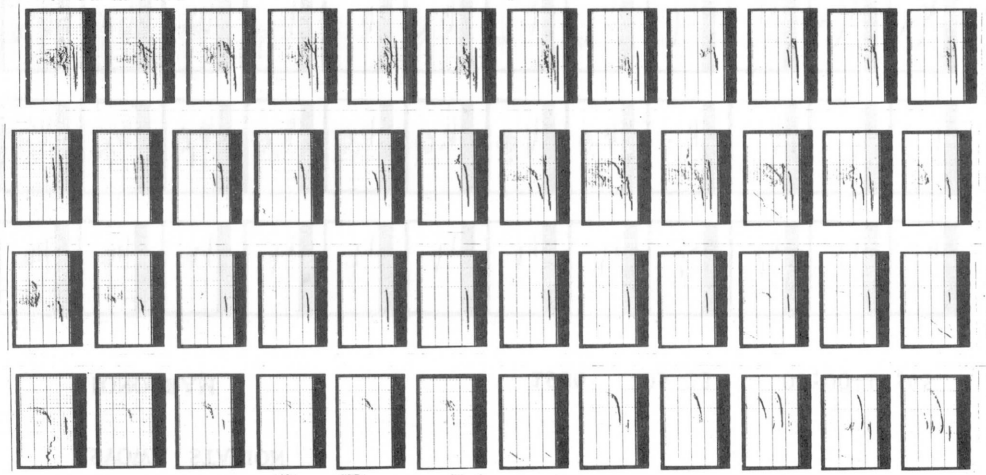

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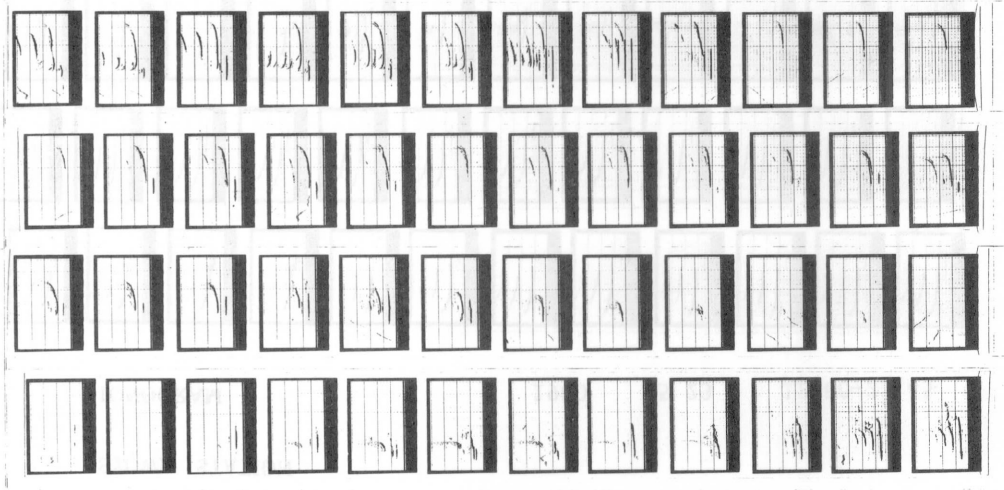

SYOWA STATION

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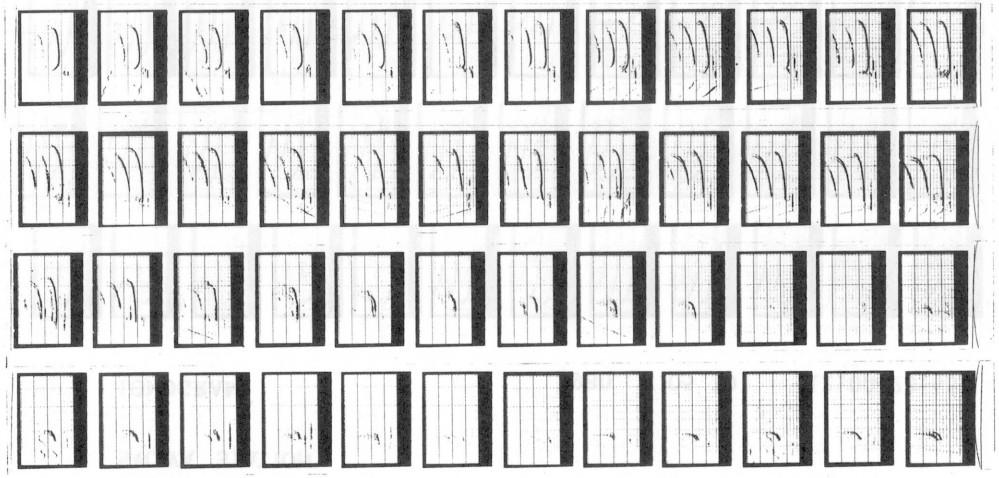

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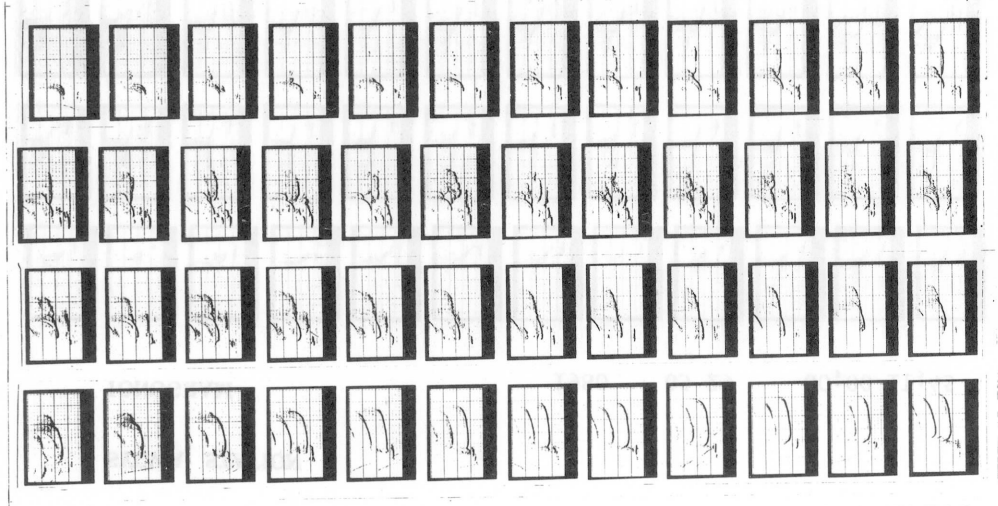

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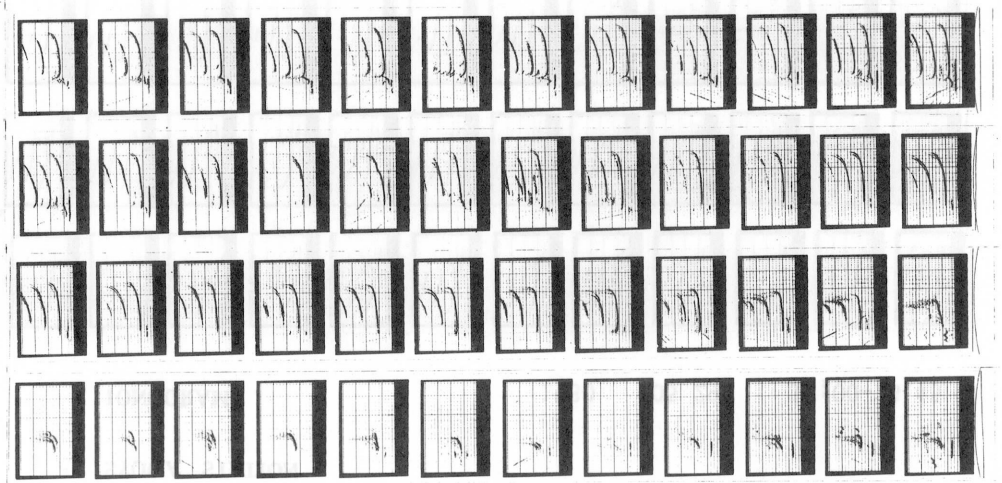

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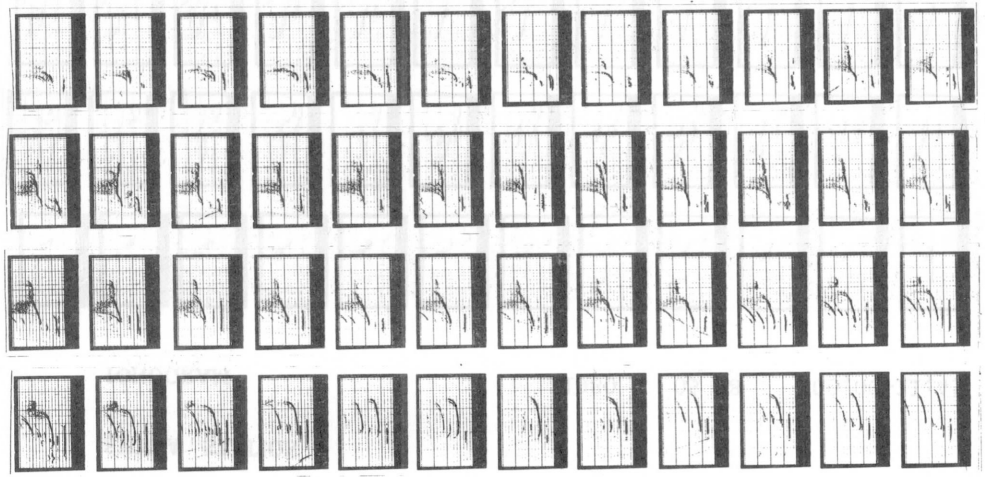
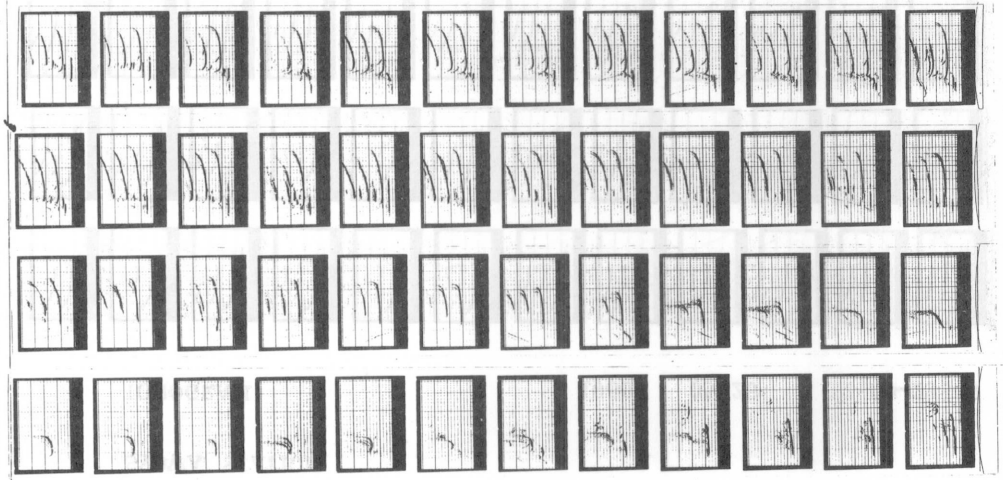


SYOWA STATION

IONOGRAM 1980 05 29 12;00-23;45



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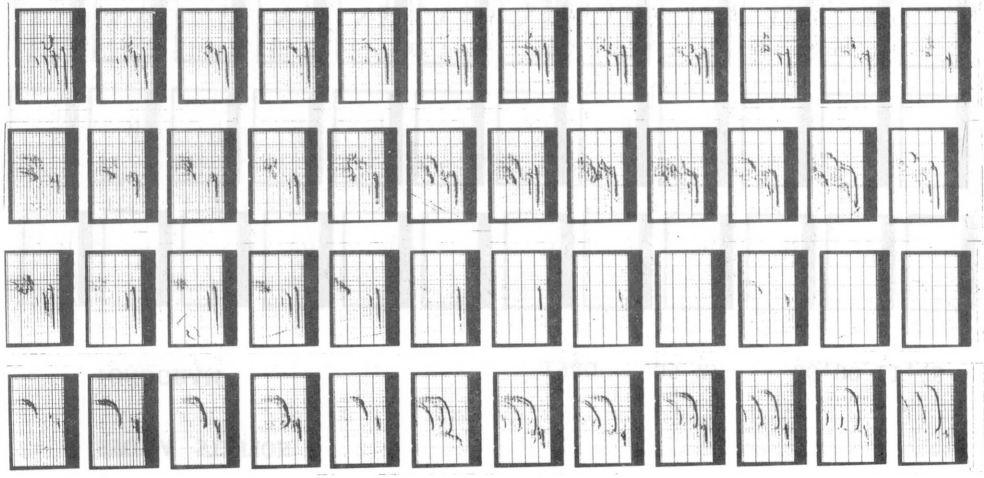

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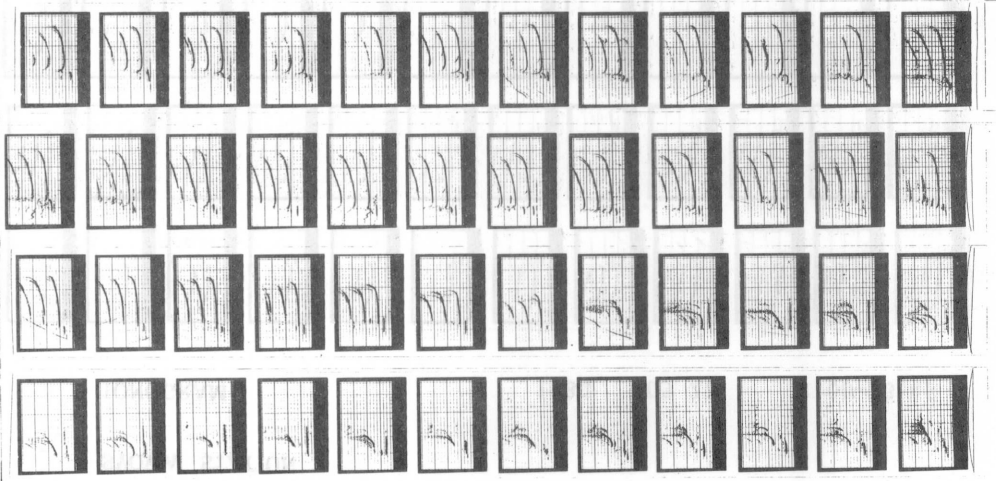

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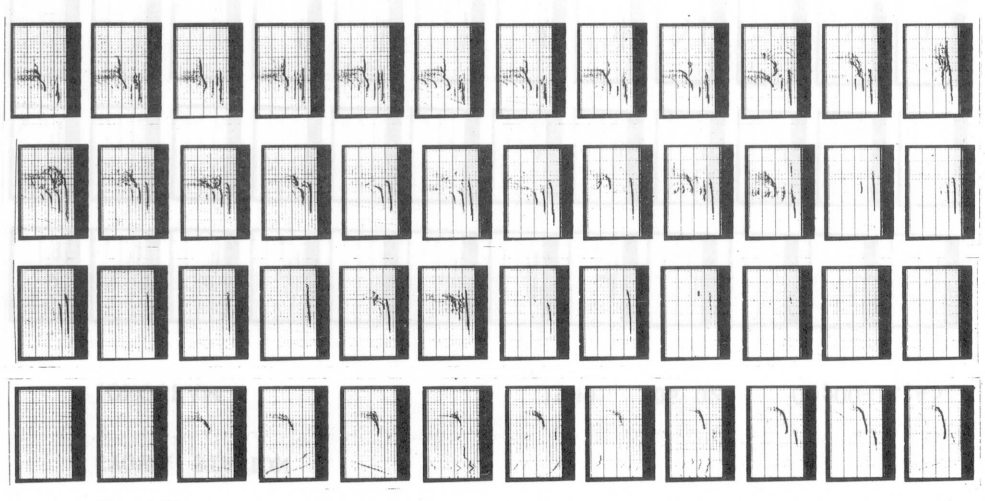

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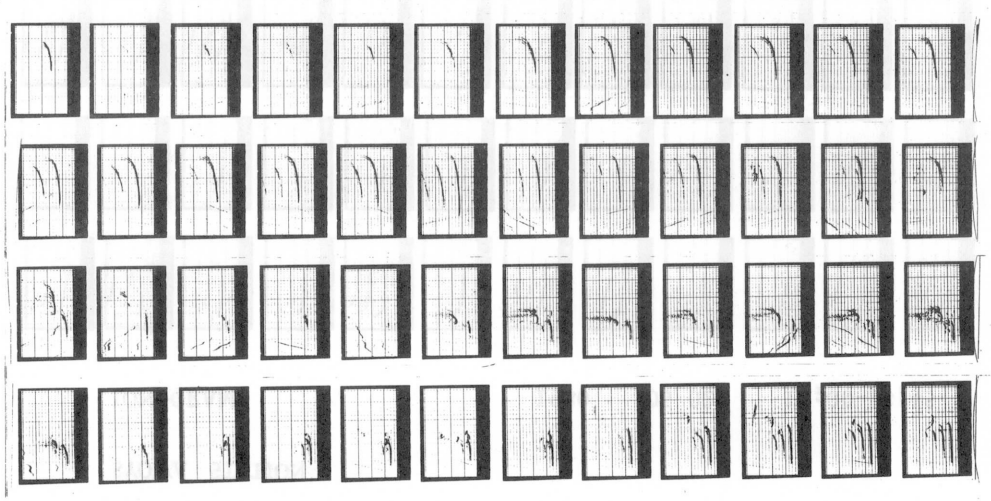

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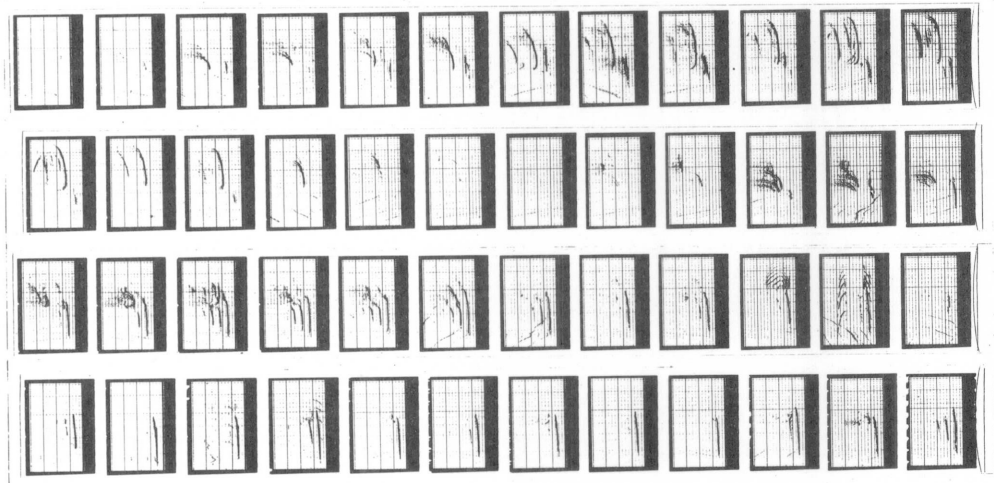

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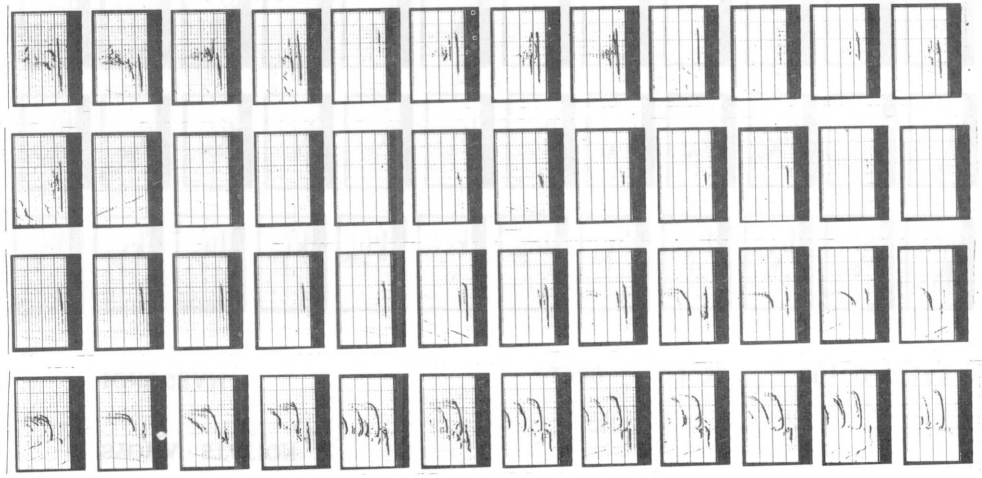

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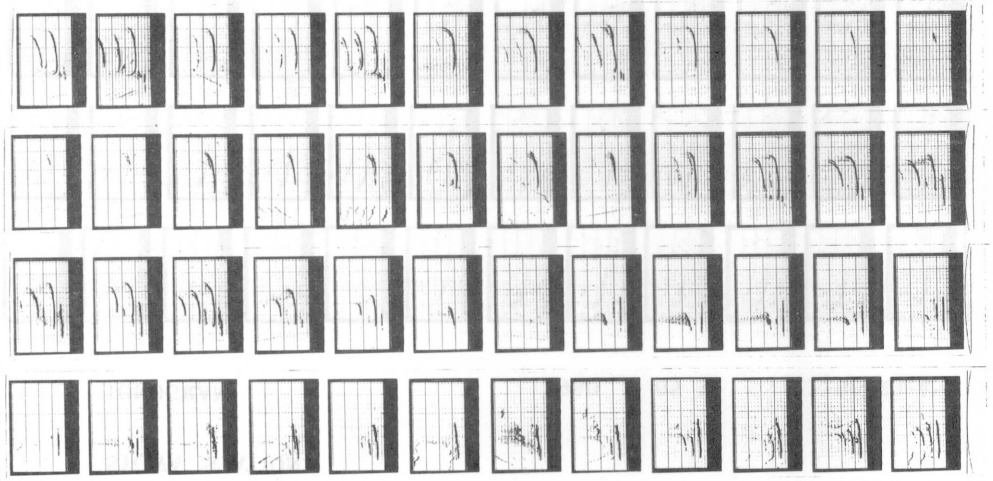

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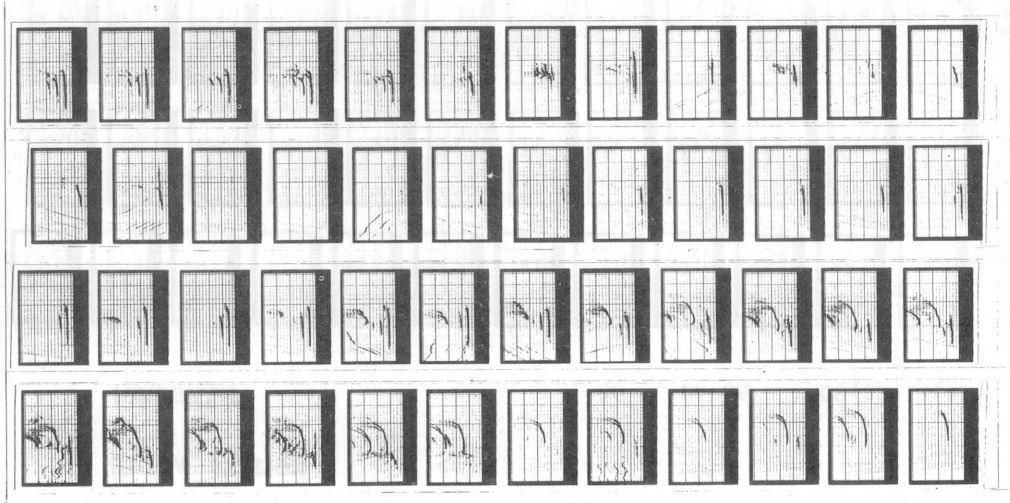

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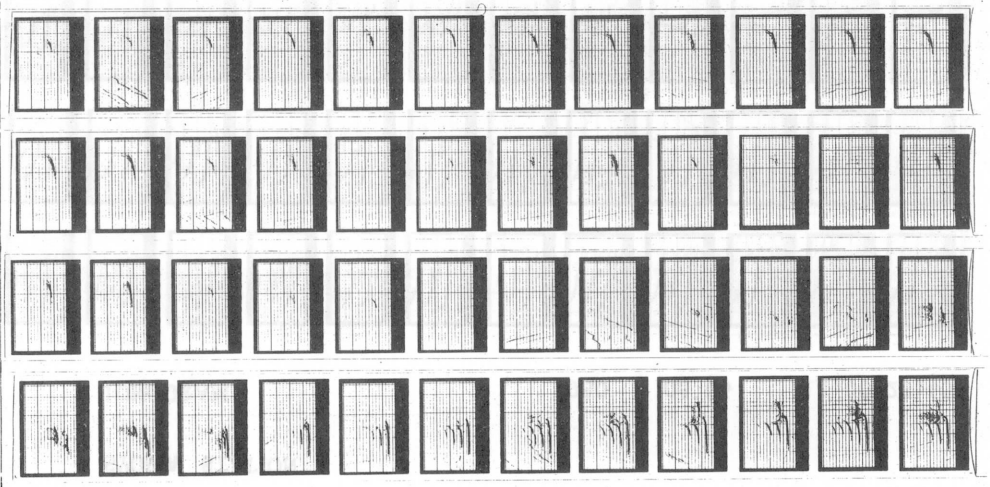

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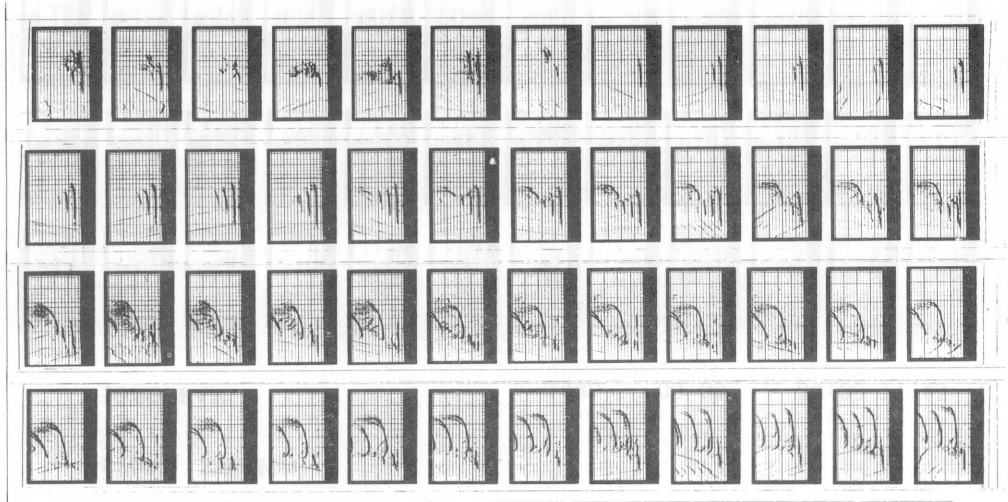

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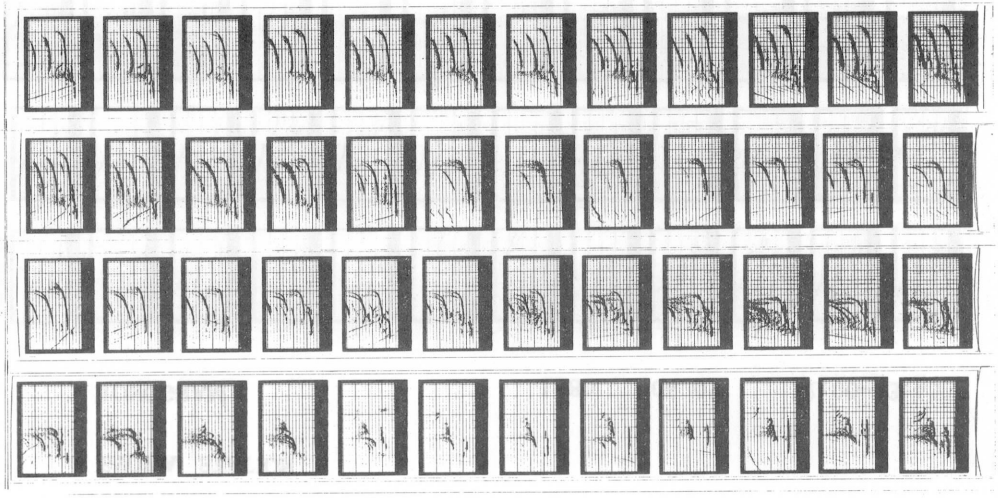

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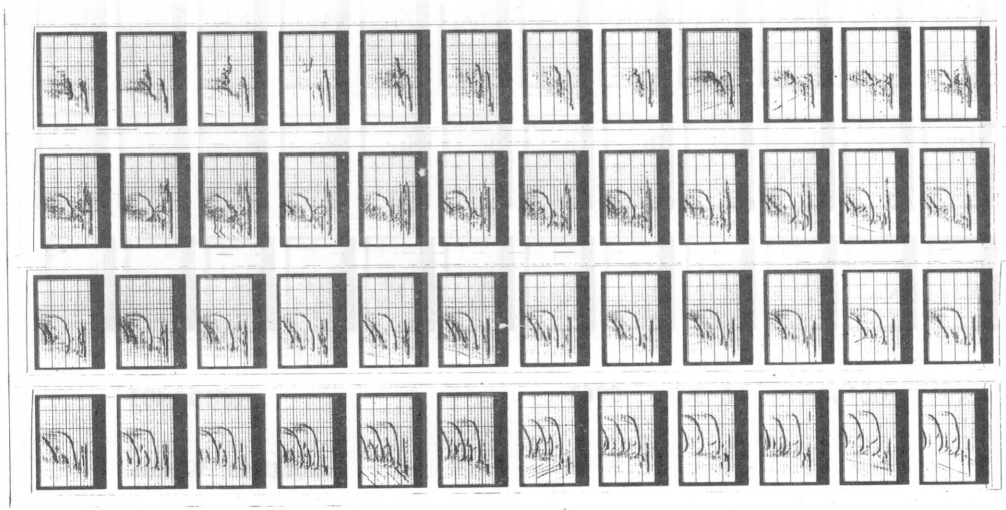

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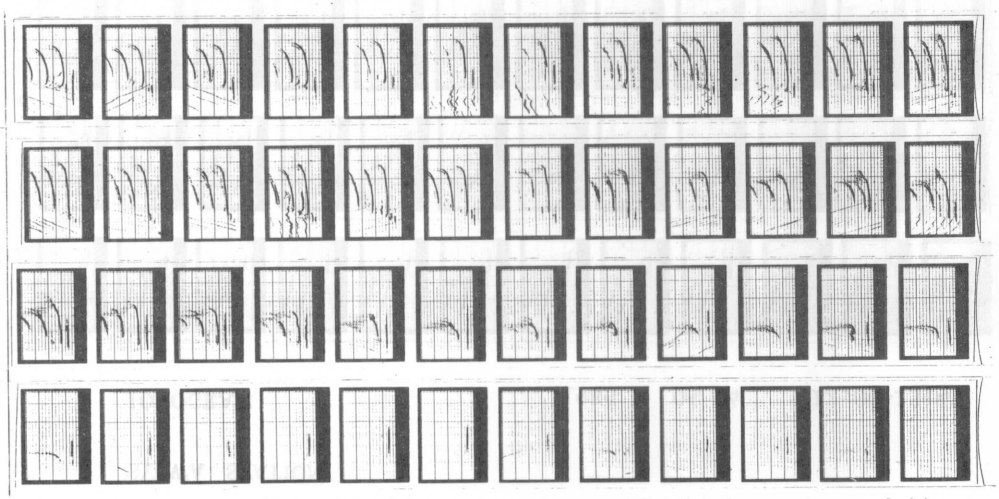

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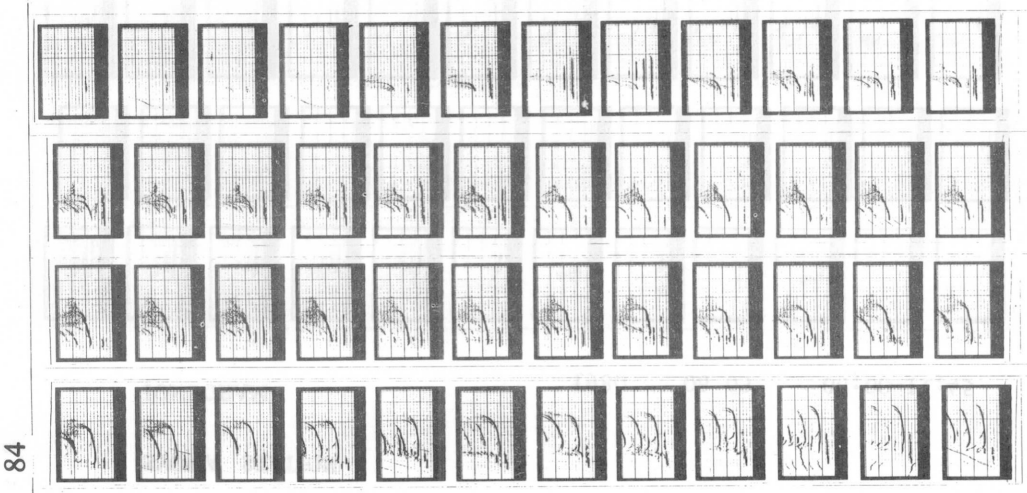

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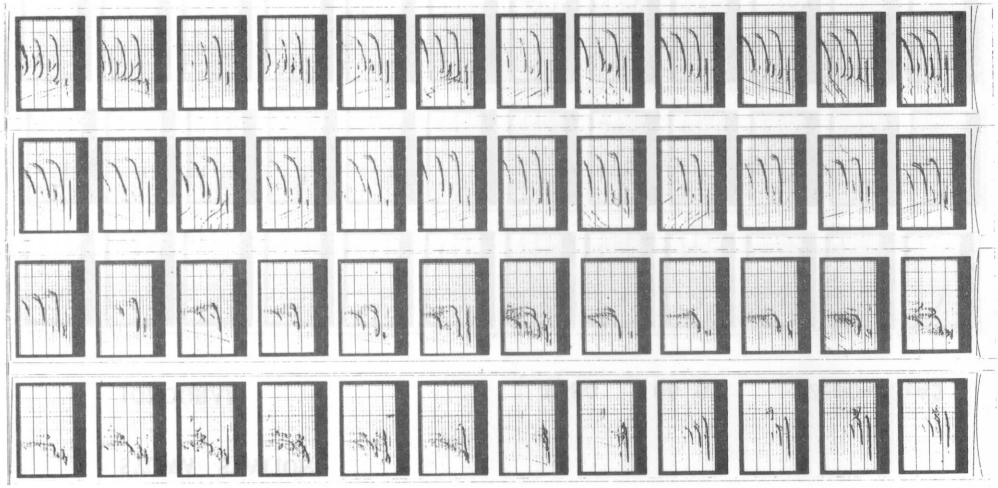

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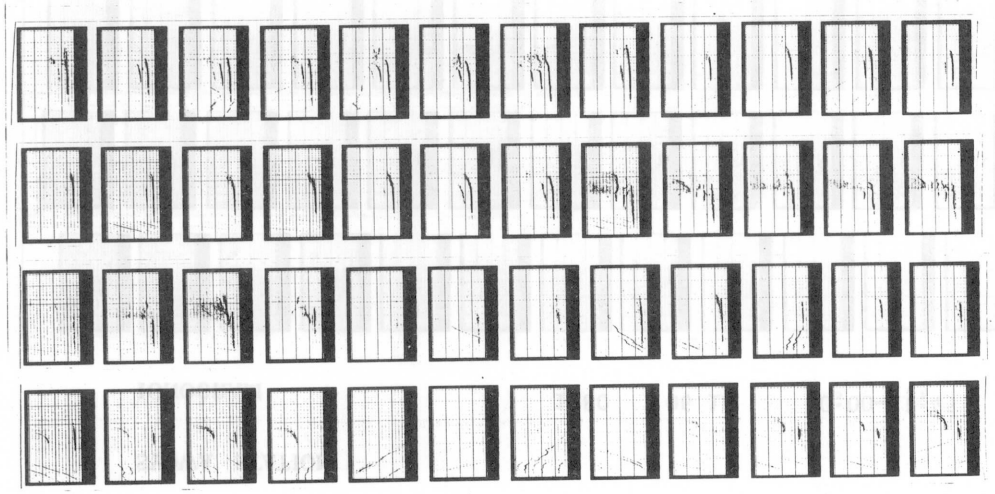

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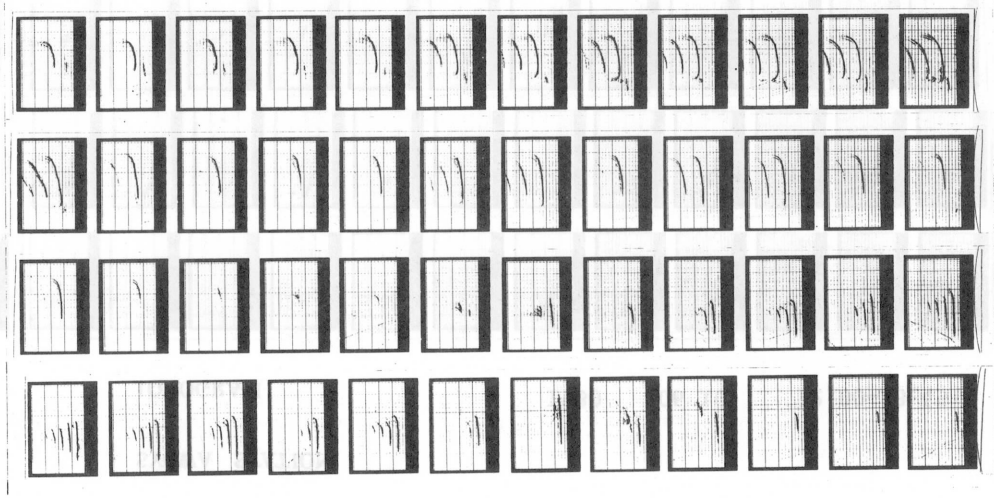

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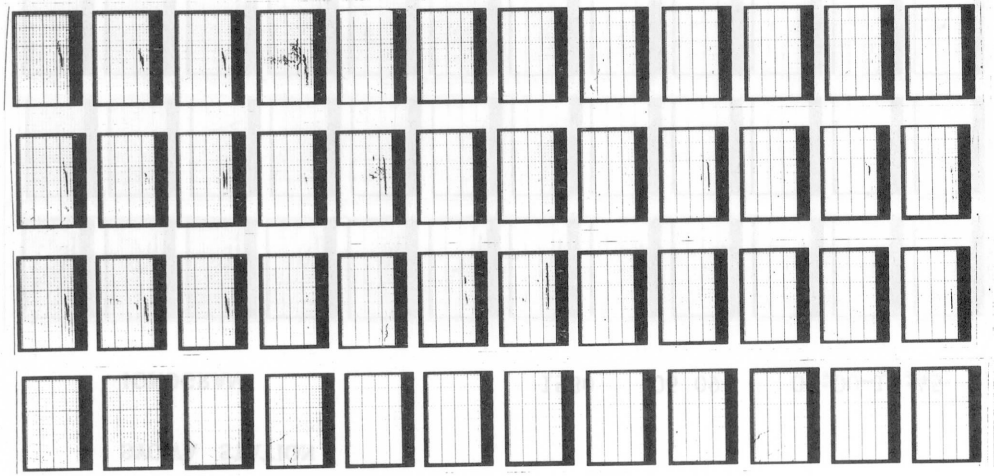

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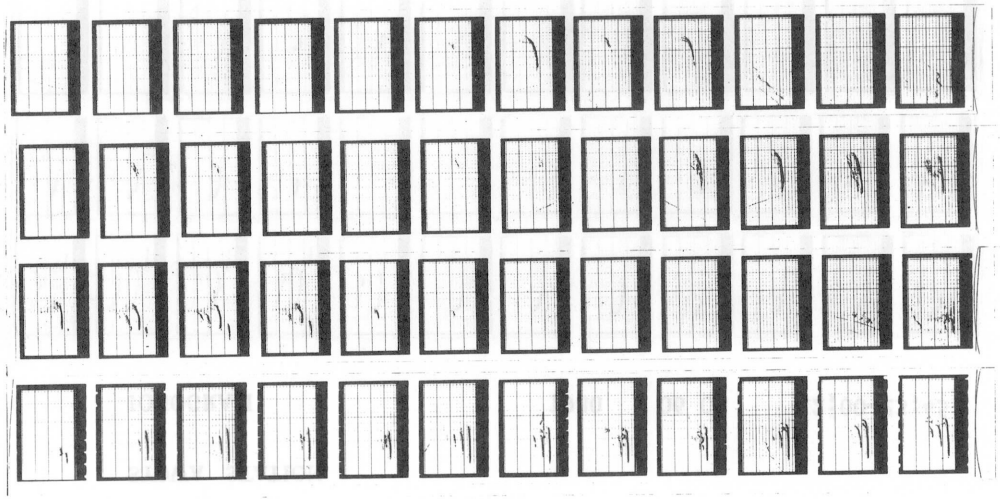

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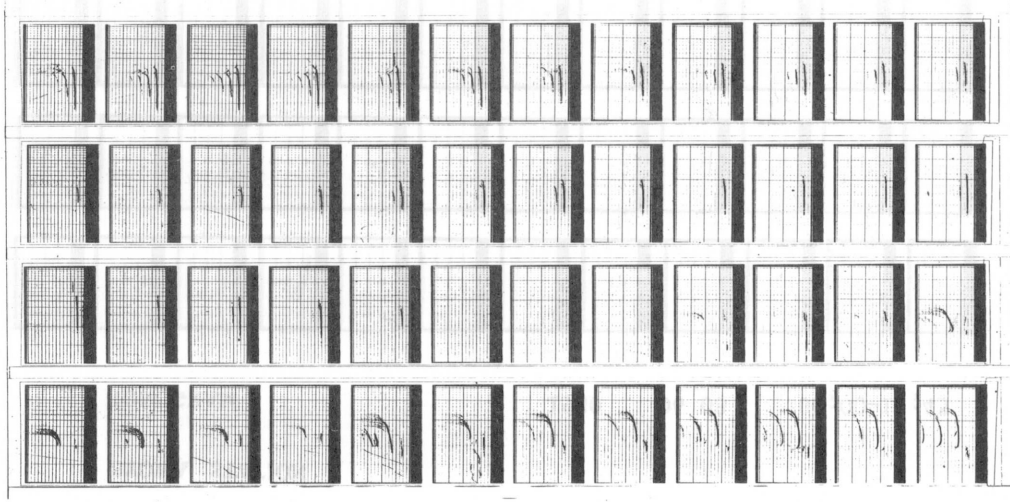

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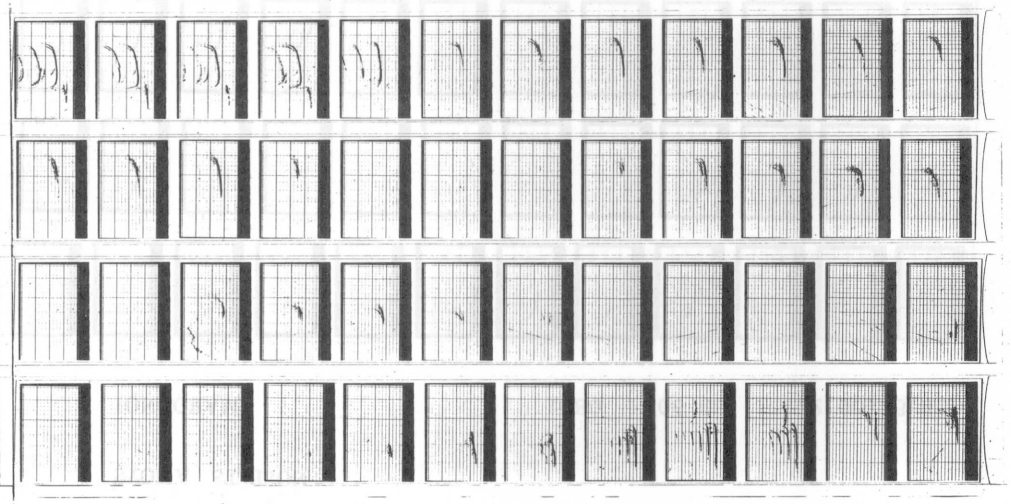

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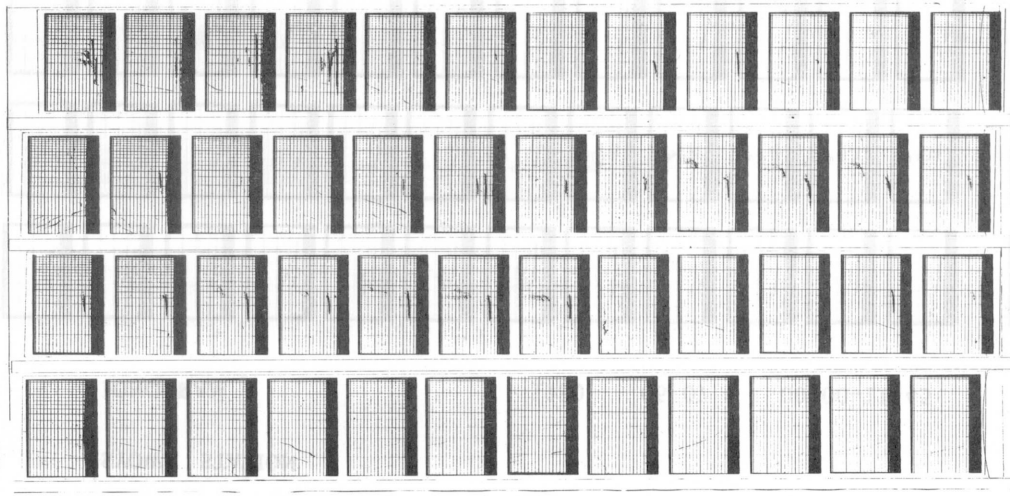

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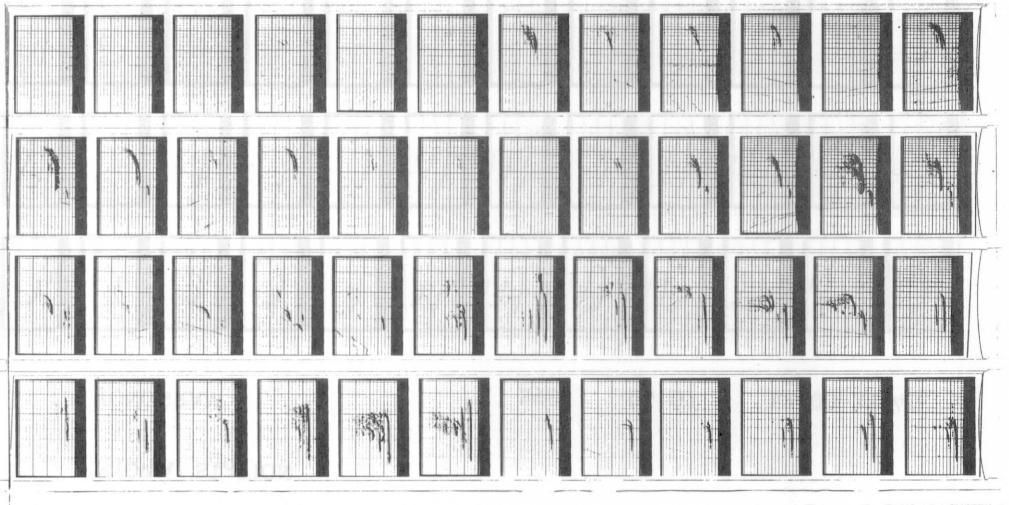

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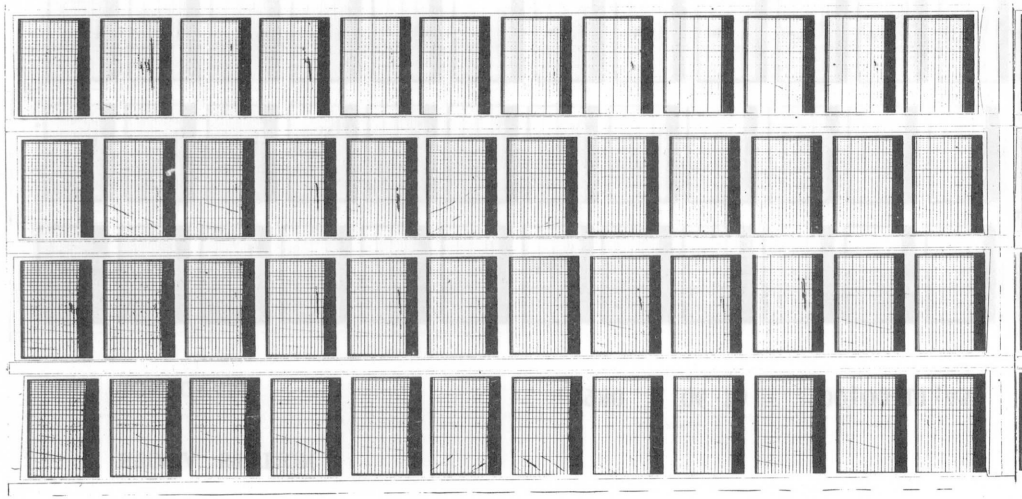

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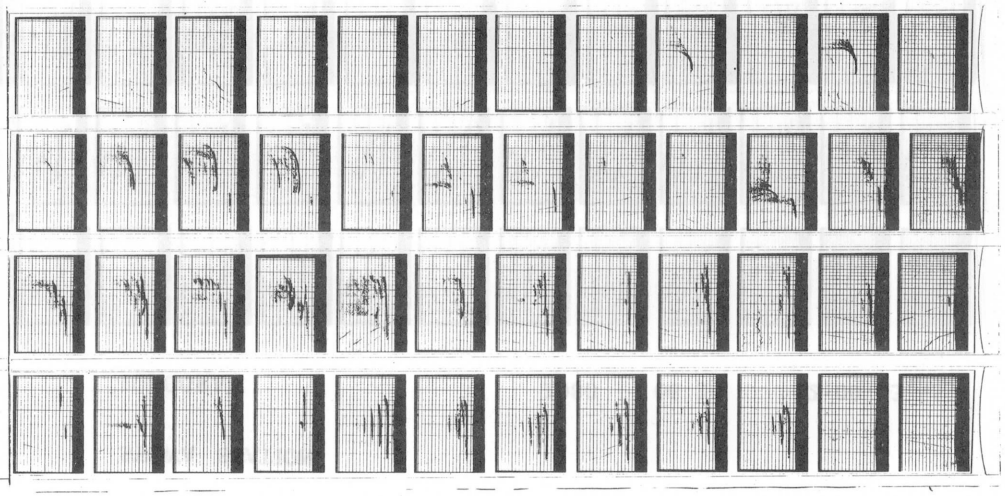

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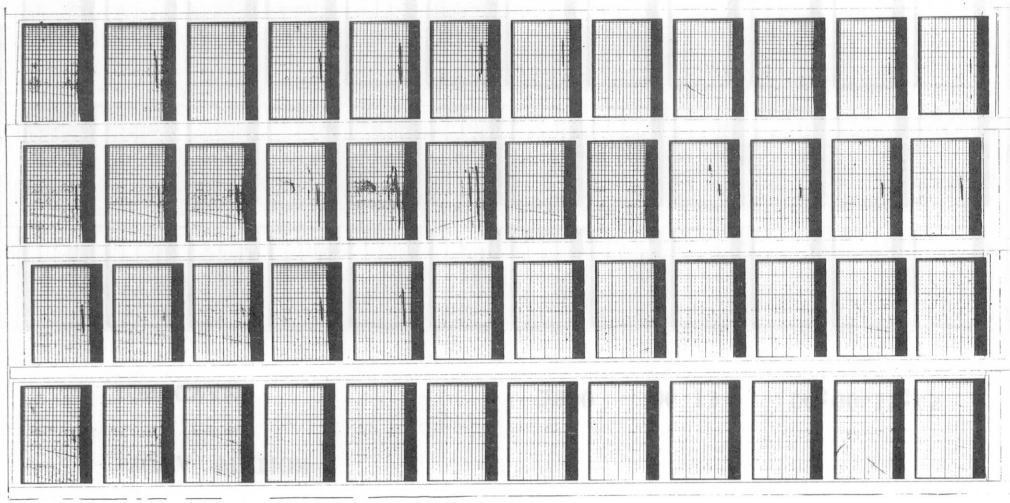

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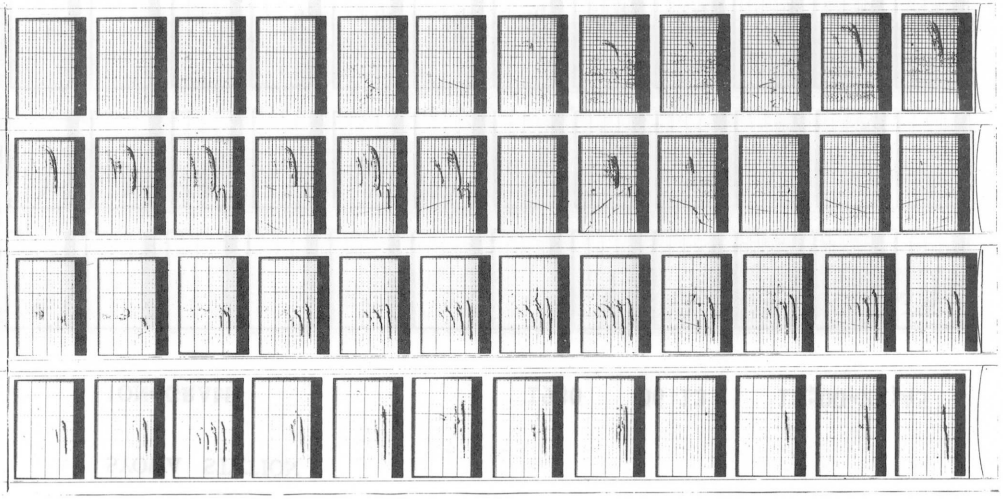

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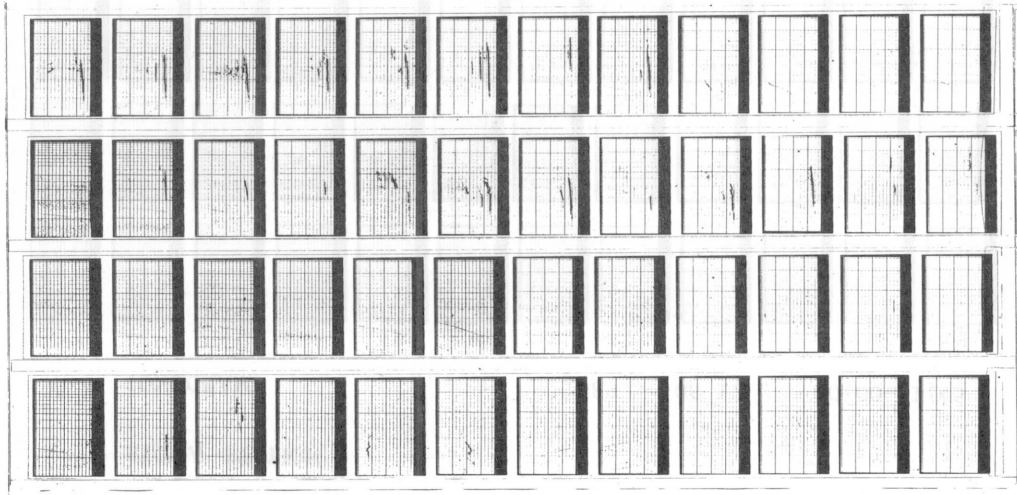

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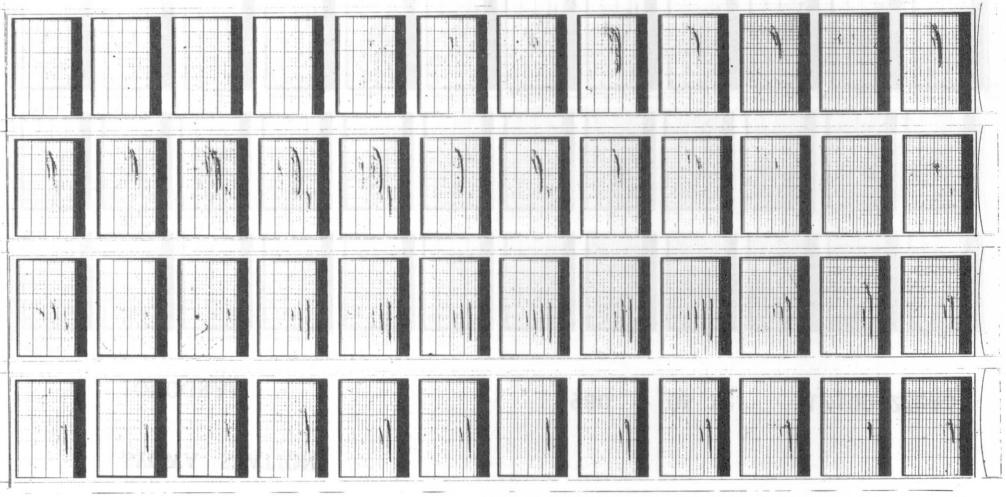

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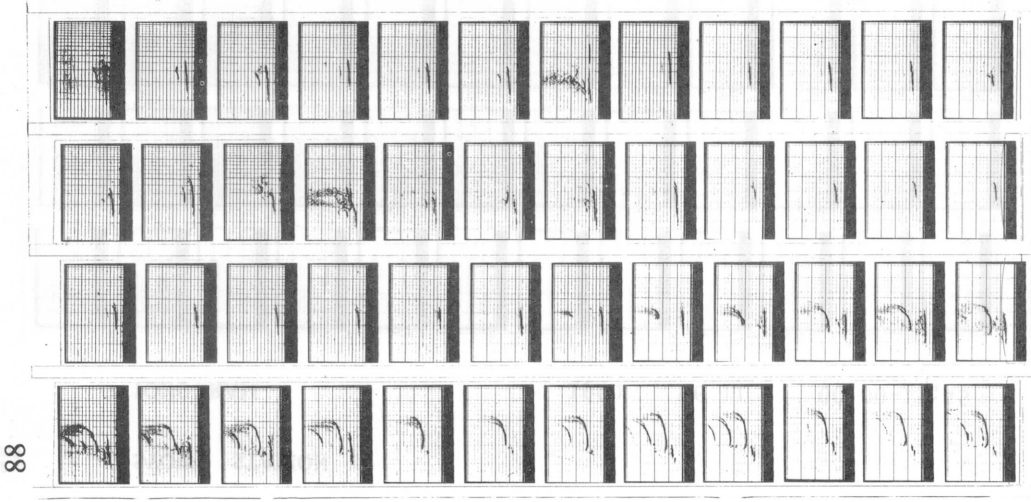

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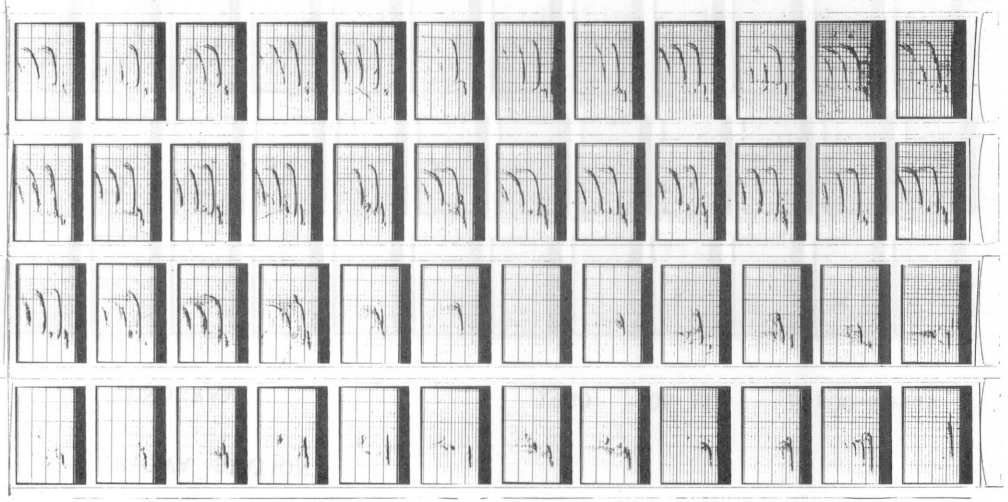

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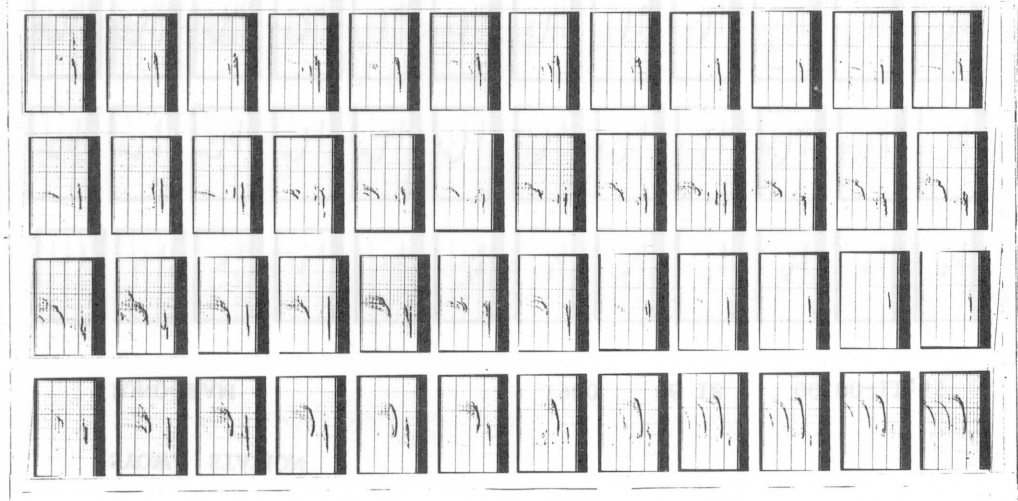

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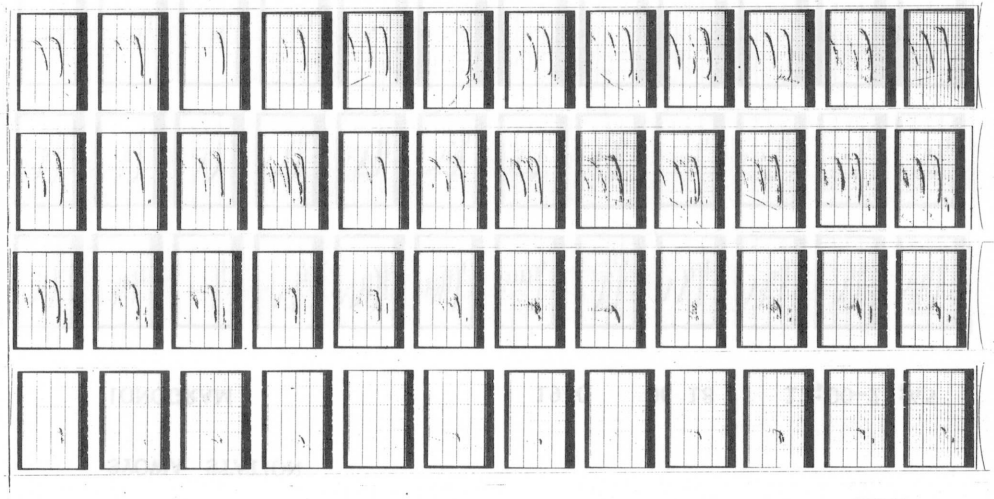

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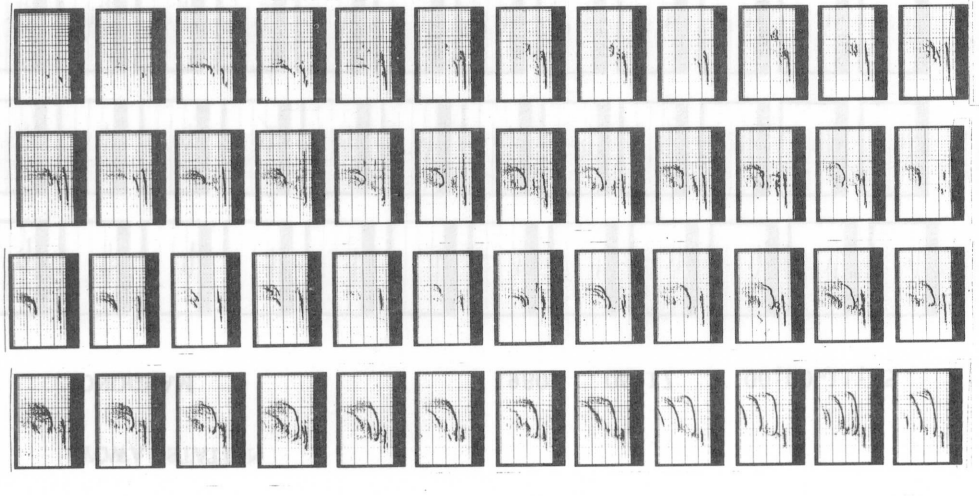

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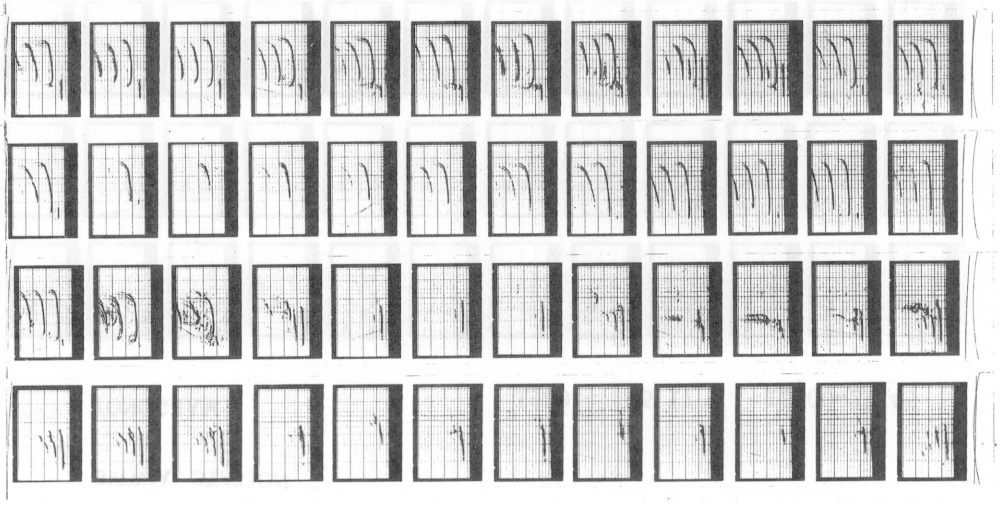

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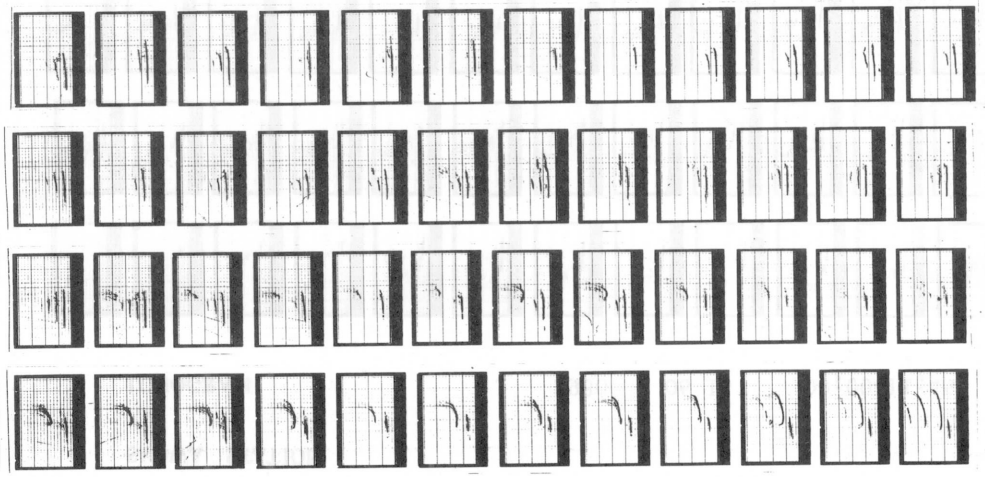

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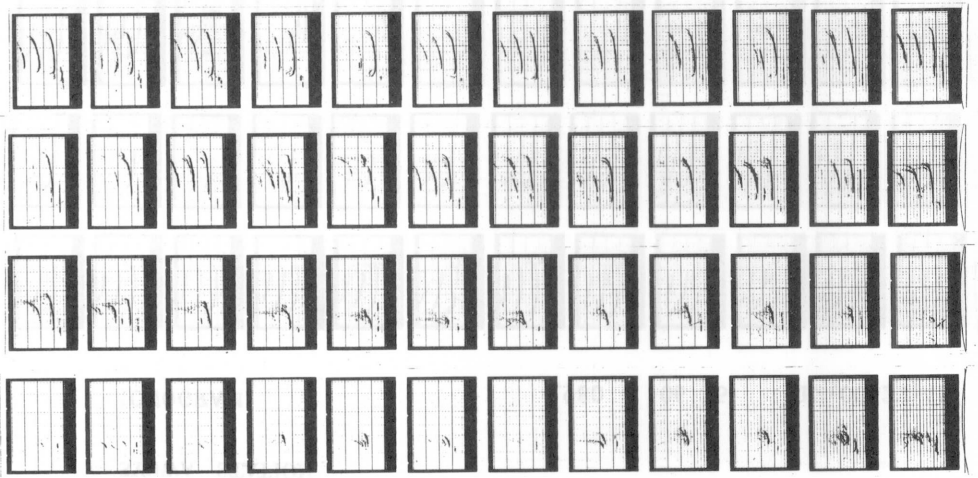

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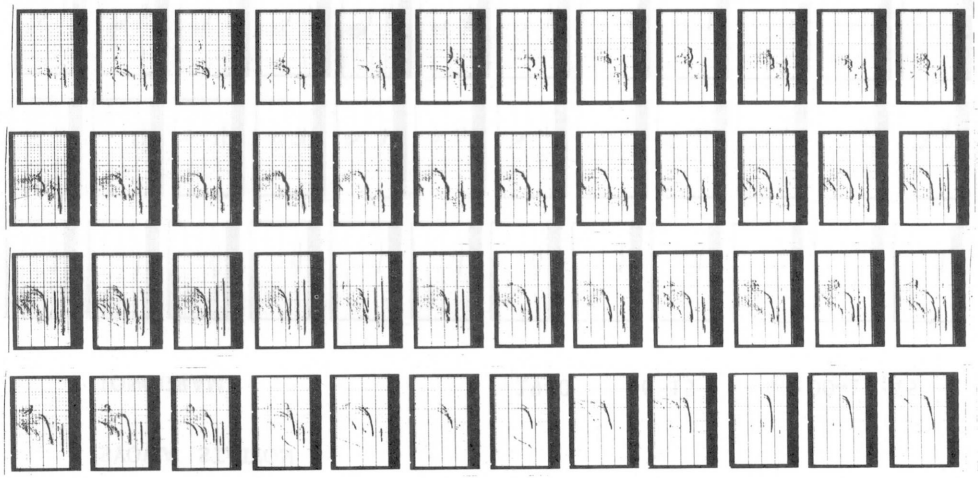

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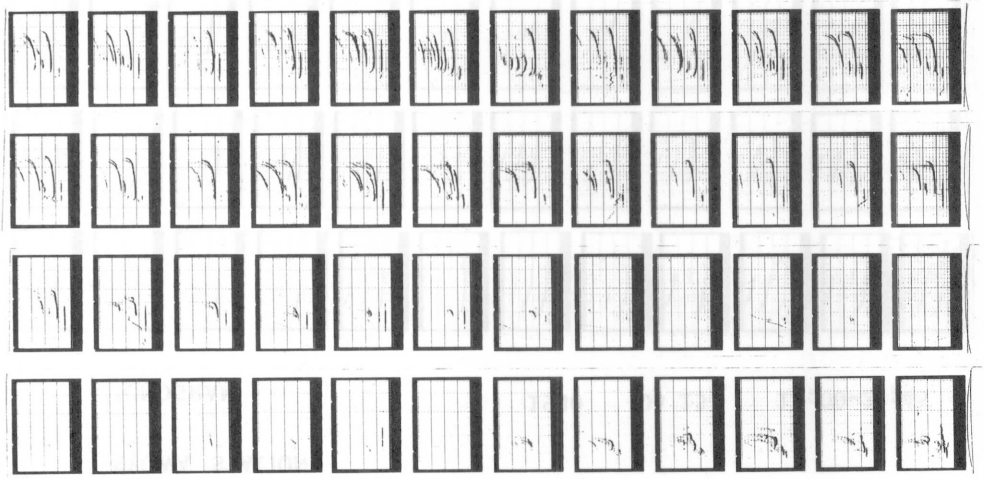

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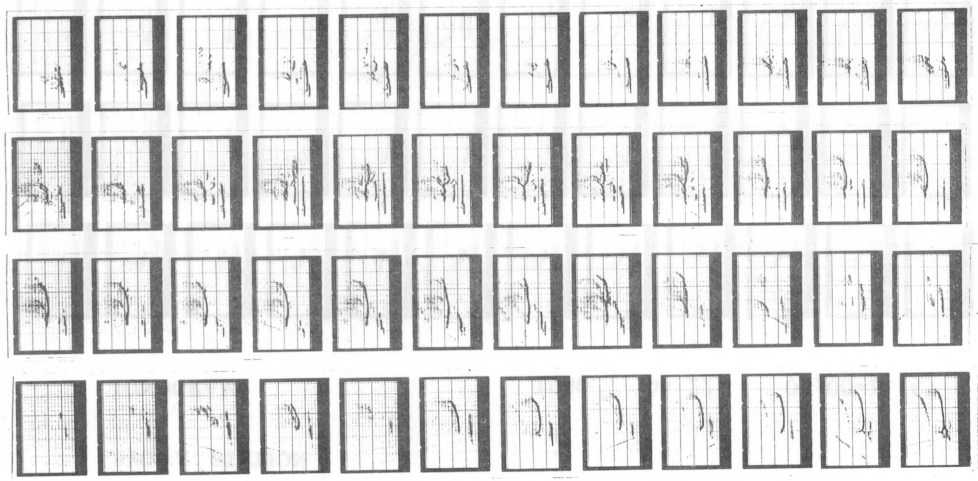

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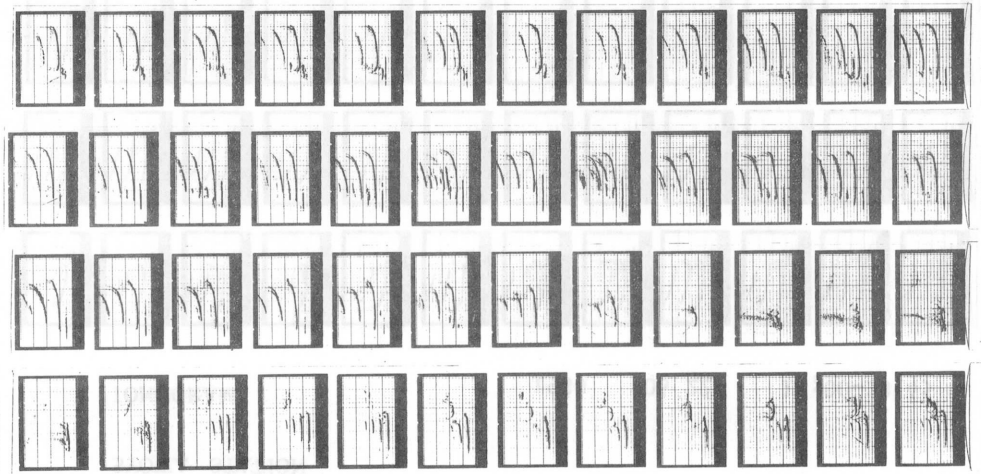

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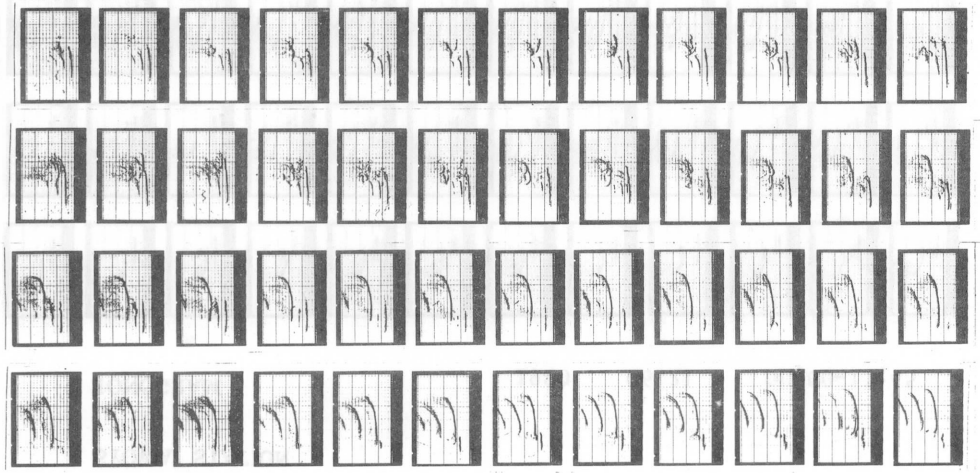

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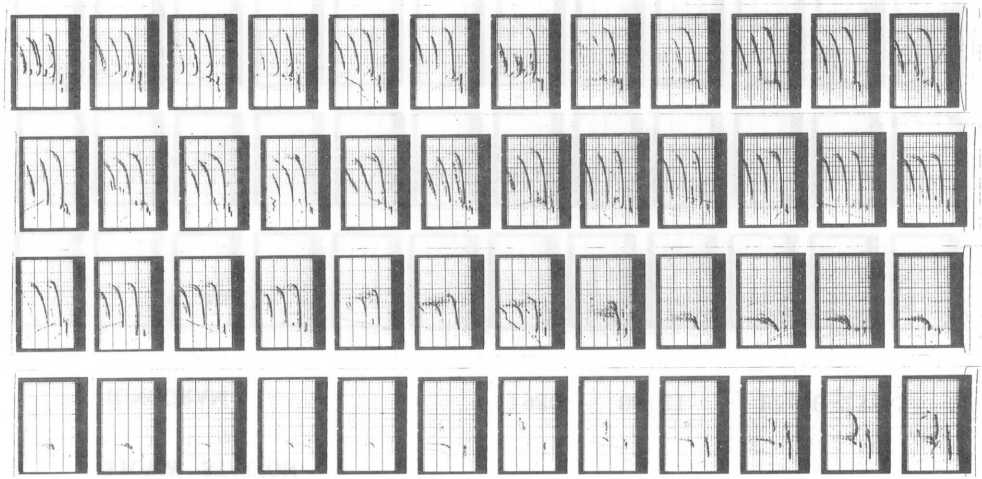

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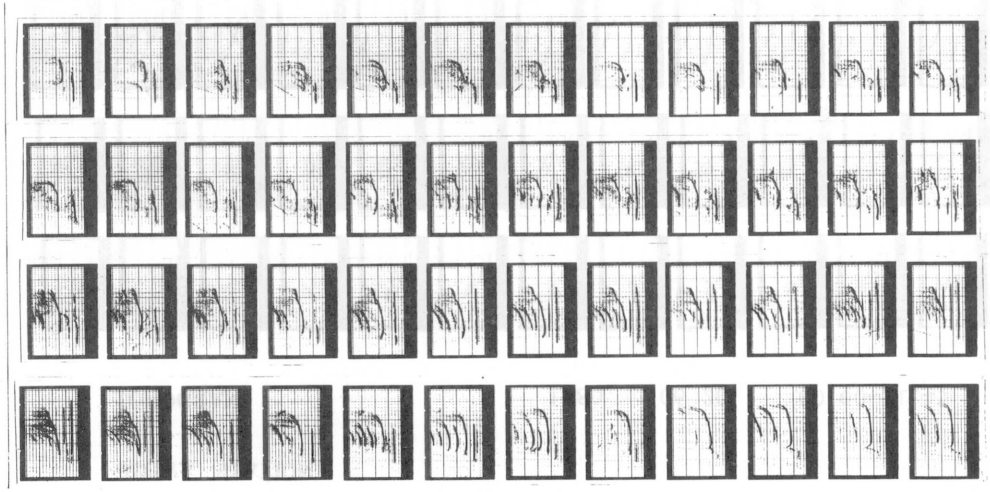

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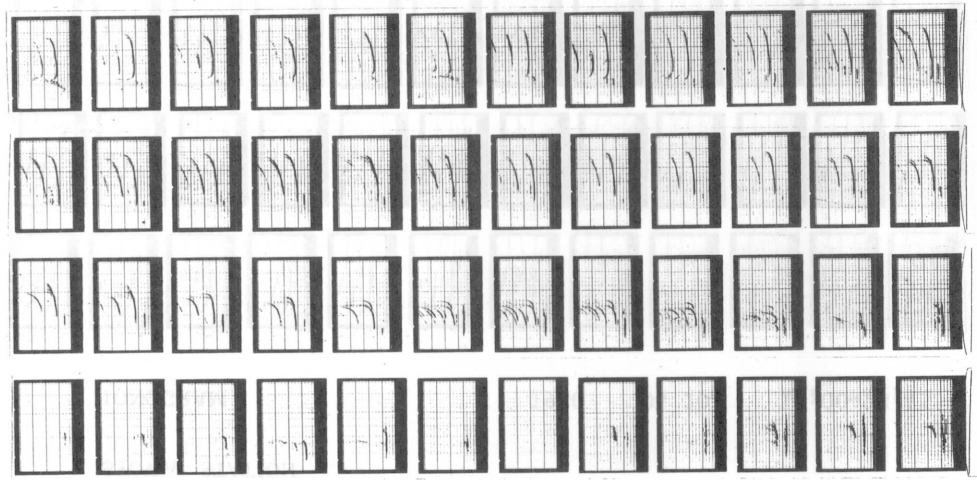

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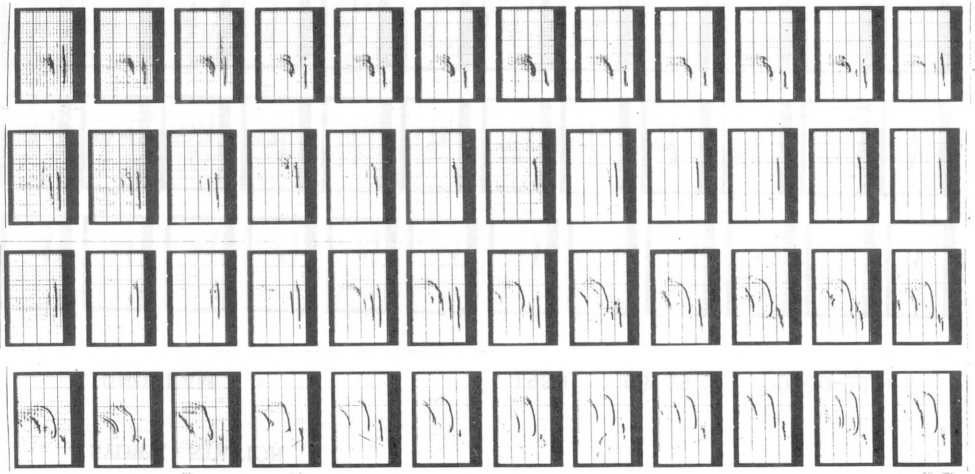

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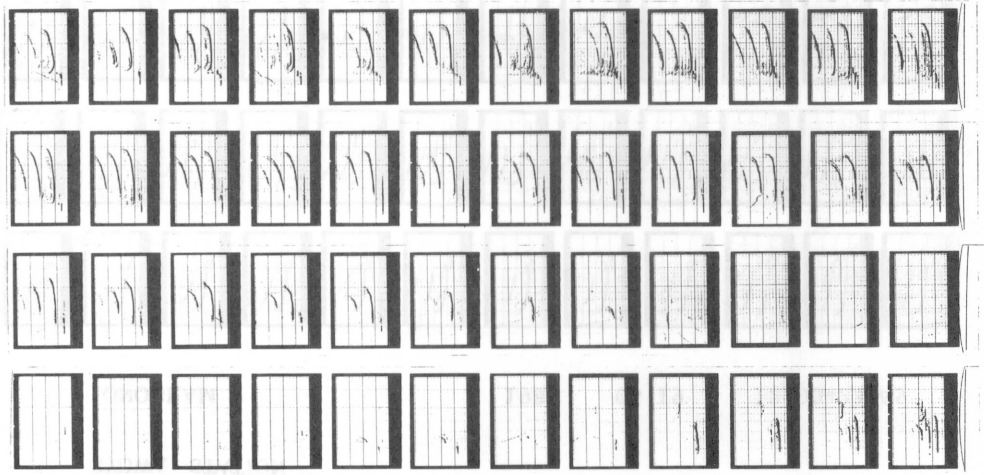

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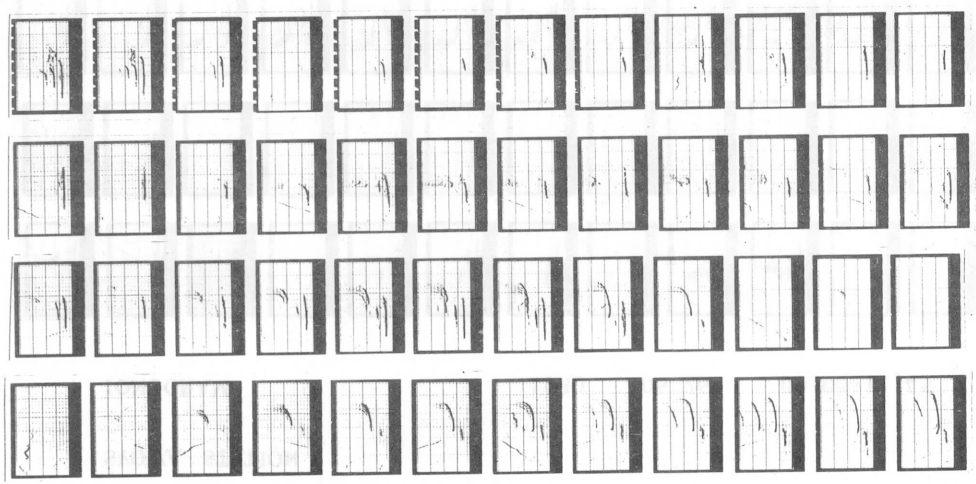
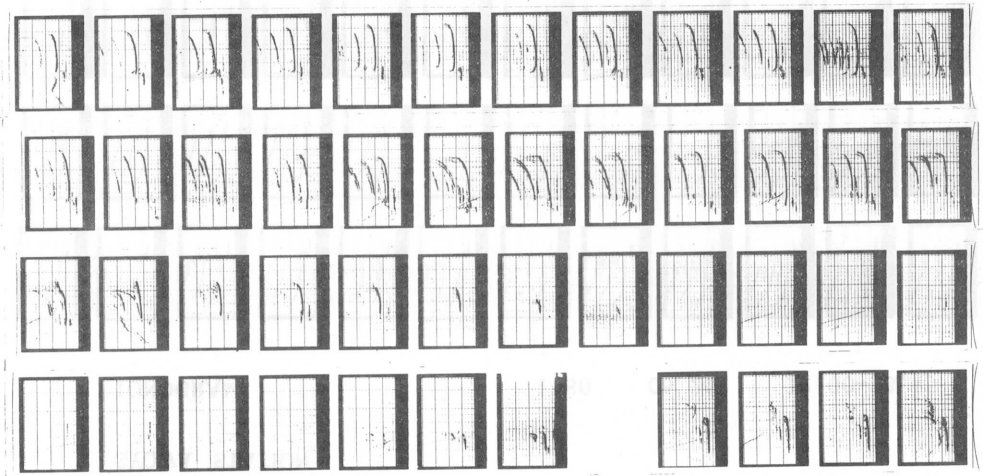


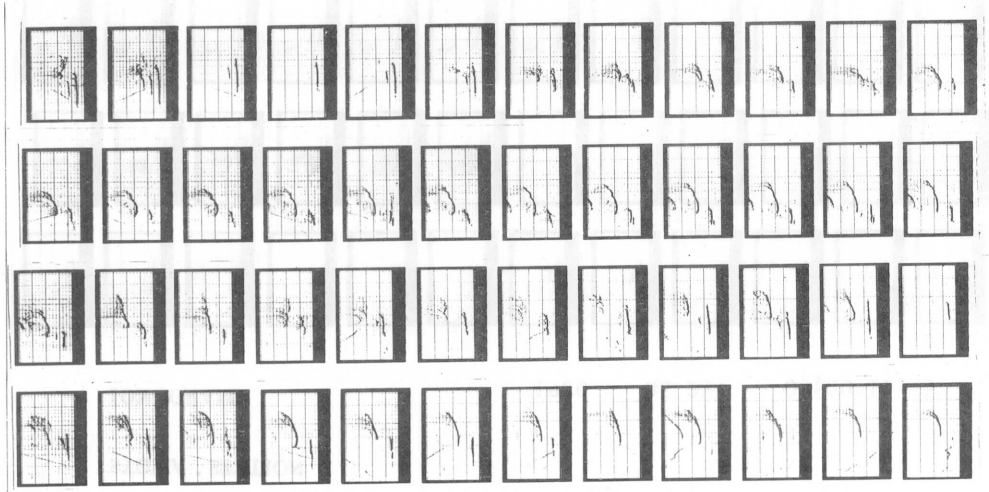
SYOWA STATION

IONOGRAM 1980 06 23 12;00-23;45



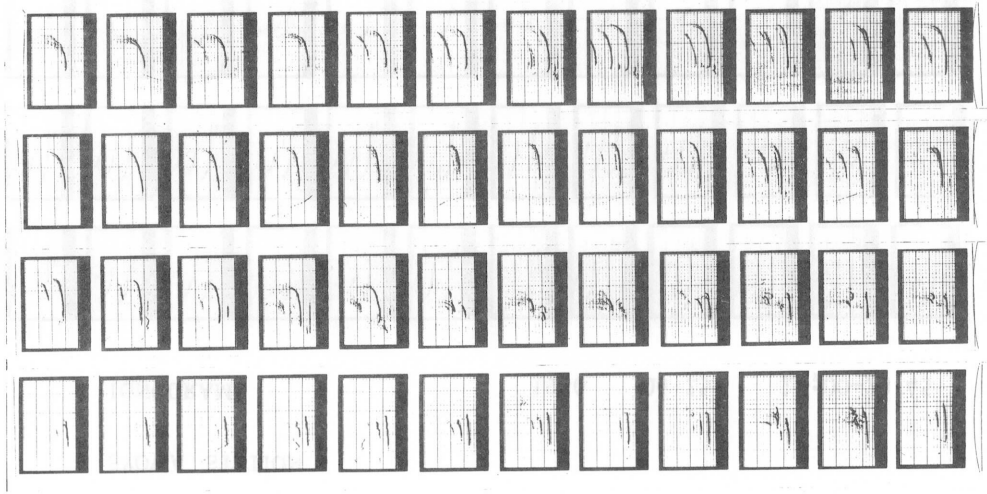
SYOWA STATION

IONOGRAM 1980 06 24 00;00-11;45



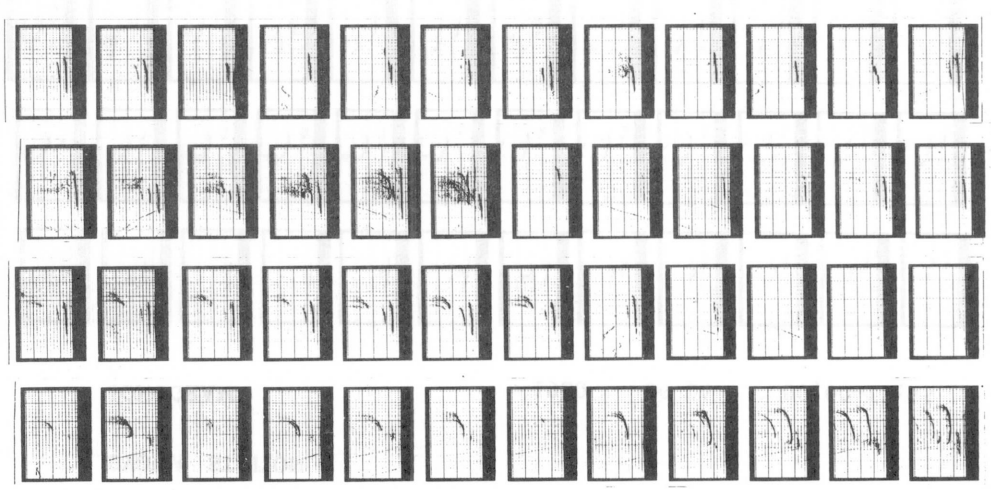
SYOWA STATION

IONOGRAM 1980 06 24 12;00-23;45



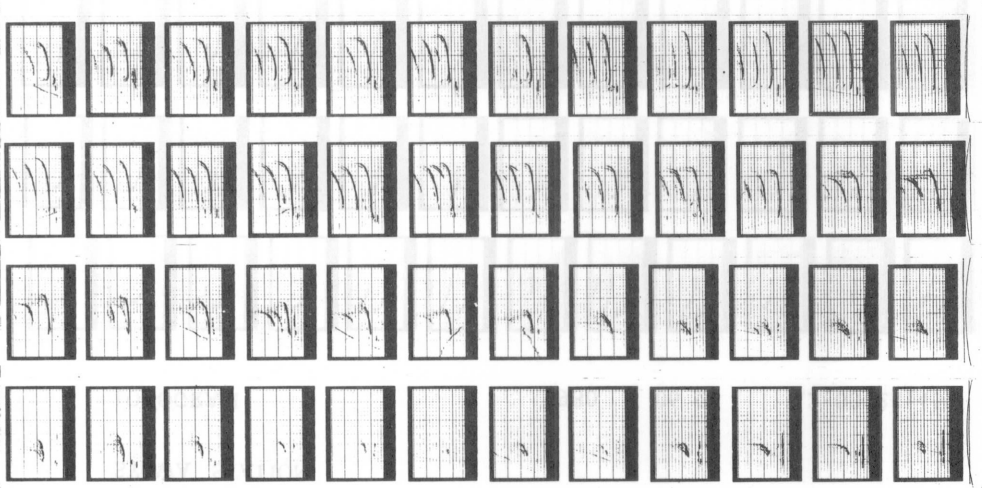
SYOWA STATION

IONOGRAM 1980 06 25 00;00–11;45



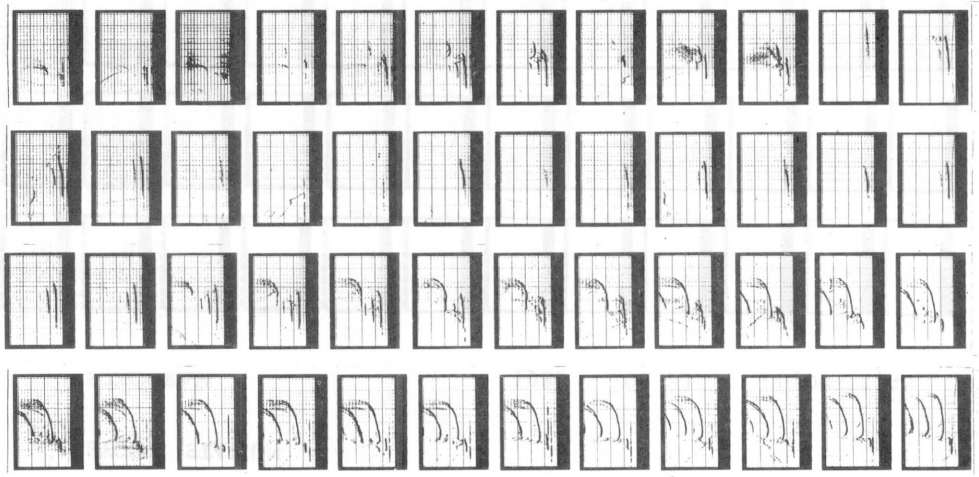
SYOWA STATION

IONOGRAM 1980 06 25 12;00–23;45



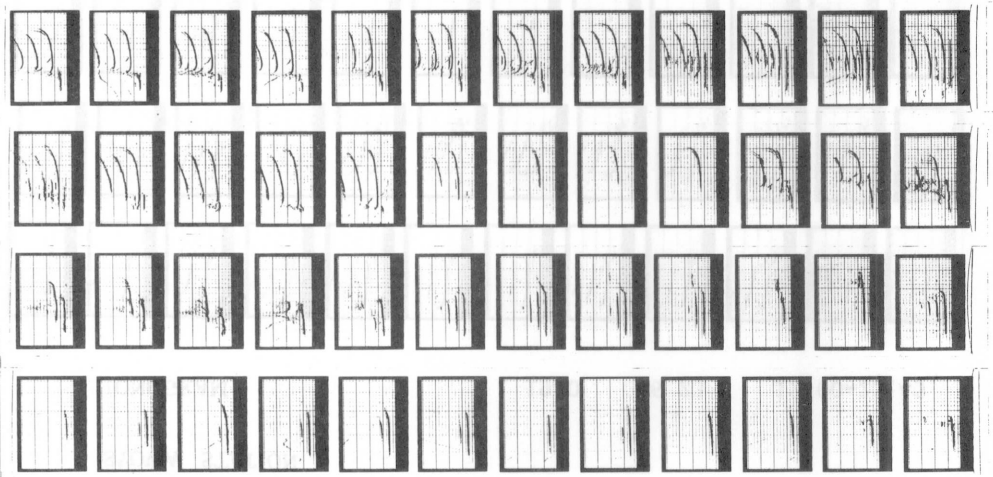
SYOWA STATION

IONOGRAM 1980 06 26 00;00–11;45



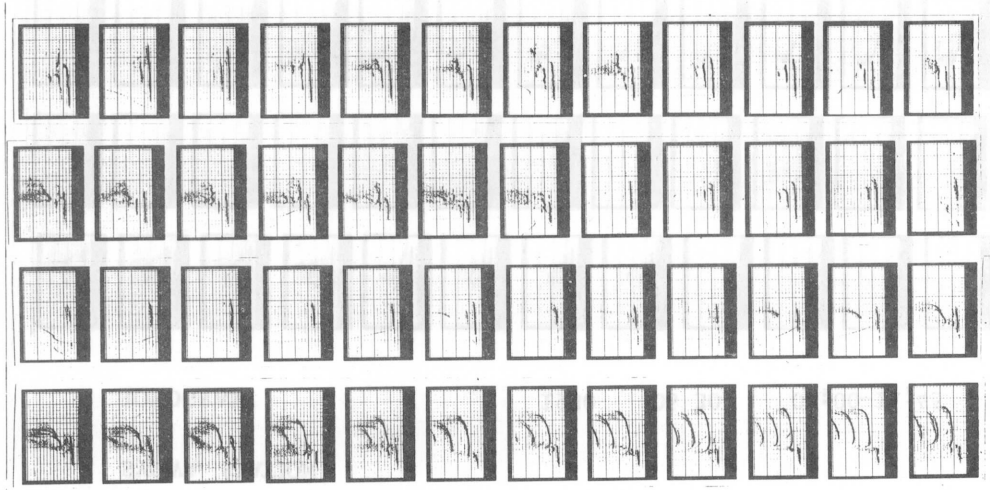
SYOWA STATION

IONOGRAM 1980 06 26 12;00–23;45



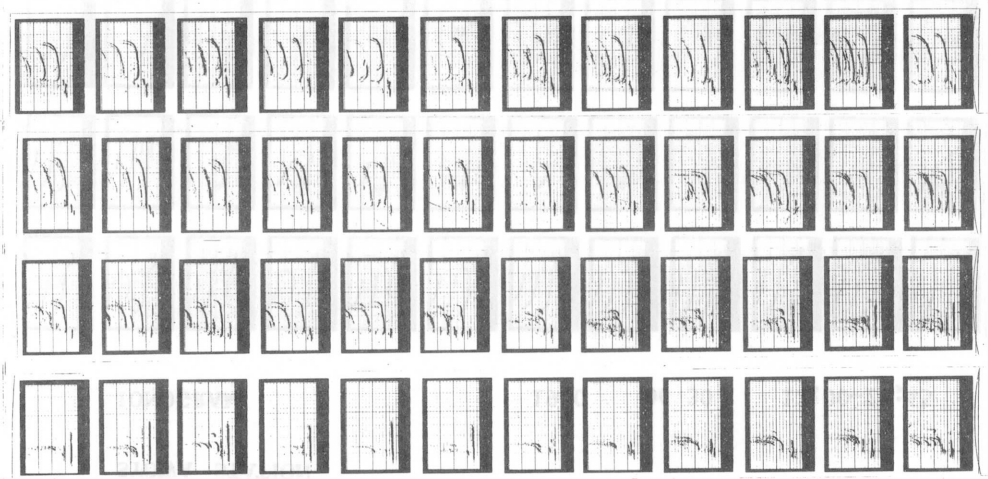
SYOWA STATION

IONOGRAM 1980 06 27 00;00-11;45



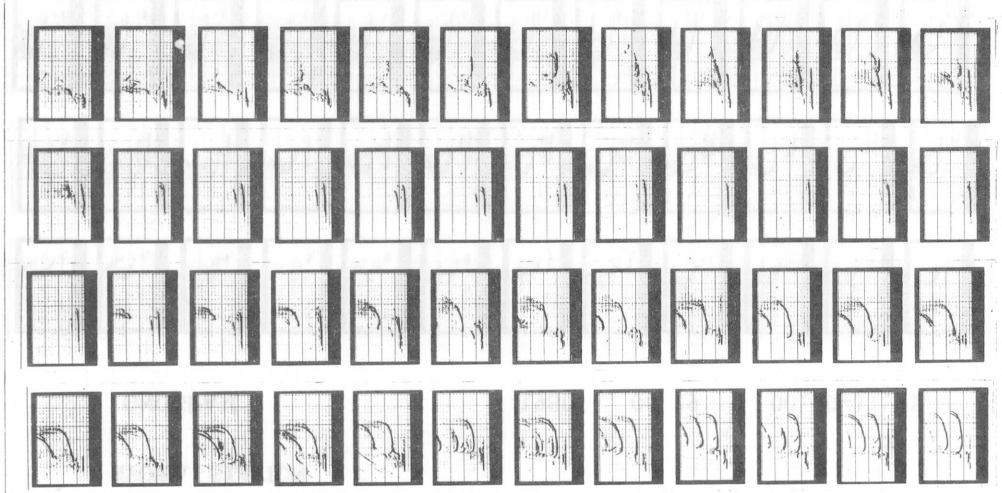
SYOWA STATION

IONOGRAM 1980 06 27 12;00-23;45



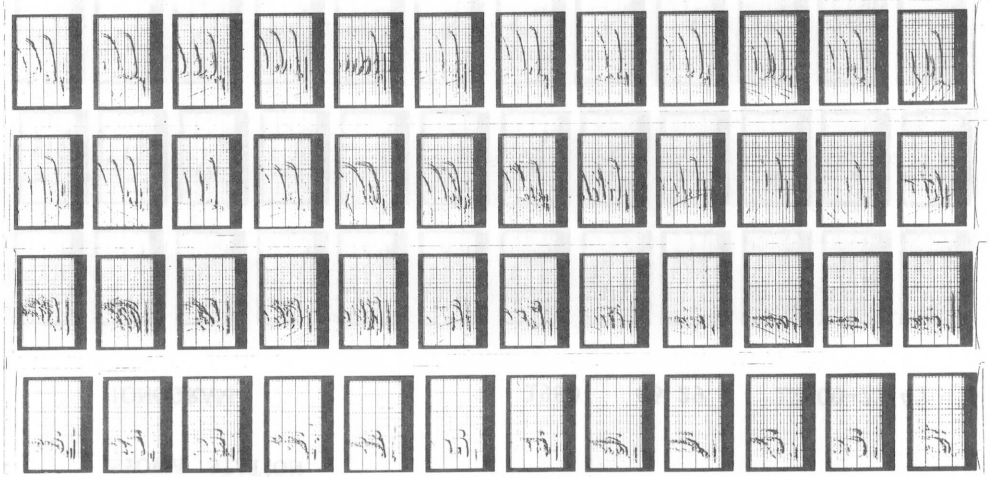
SYOWA STATION

IONOGRAM 1980 06 28 00;00-11;45



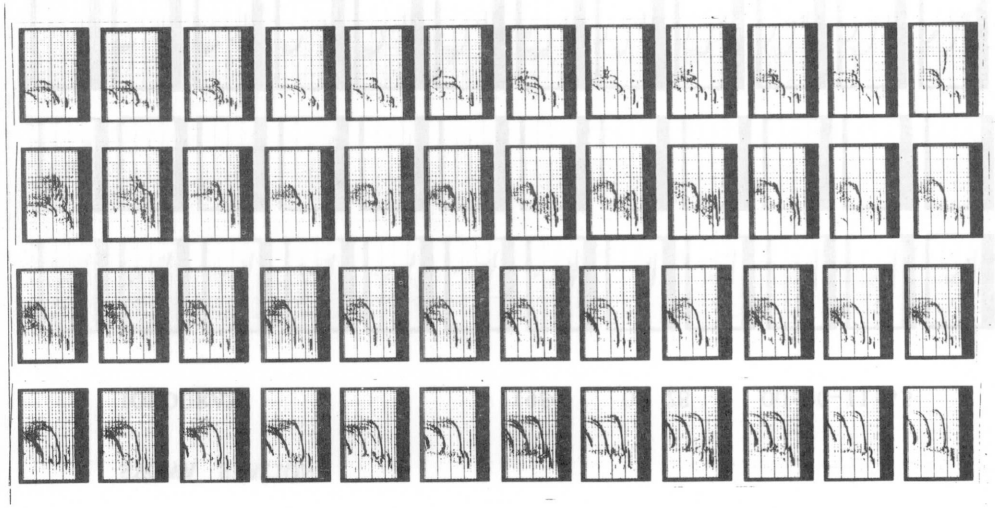
SYOWA STATION

IONOGRAM 1980 06 28 12;00-23;45



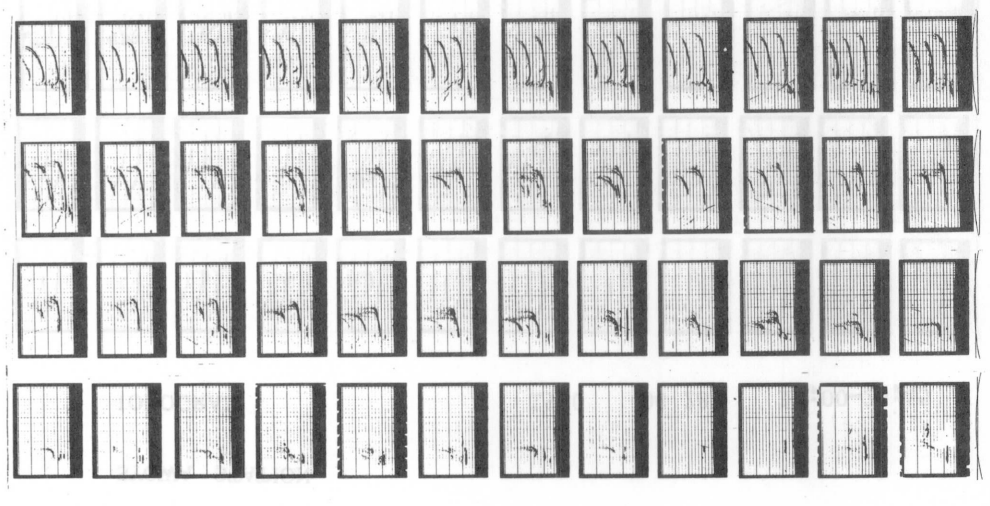
SYOWA STATION

IONOGRAM 1980 06 29 00;00-11;45



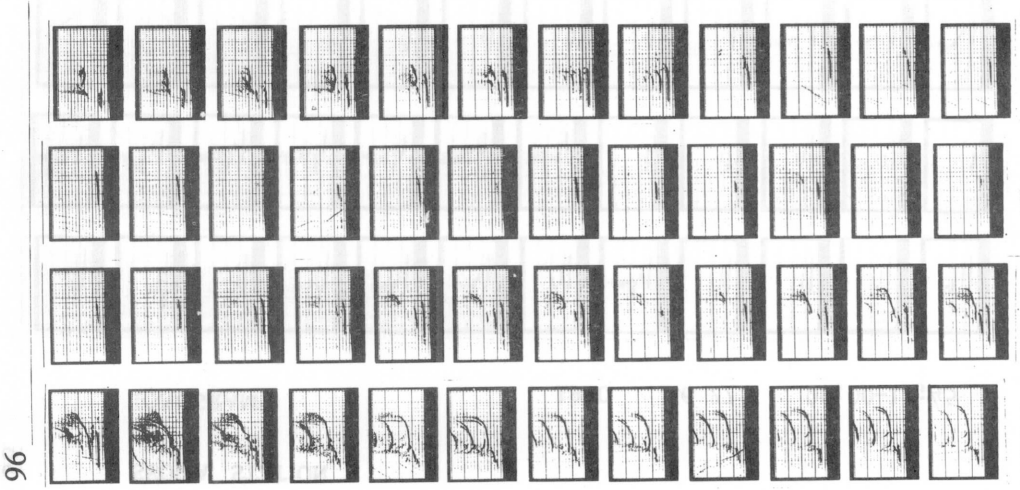
SYOWA STATION

IONOGRAM 1980 06 29 12;00-23;45



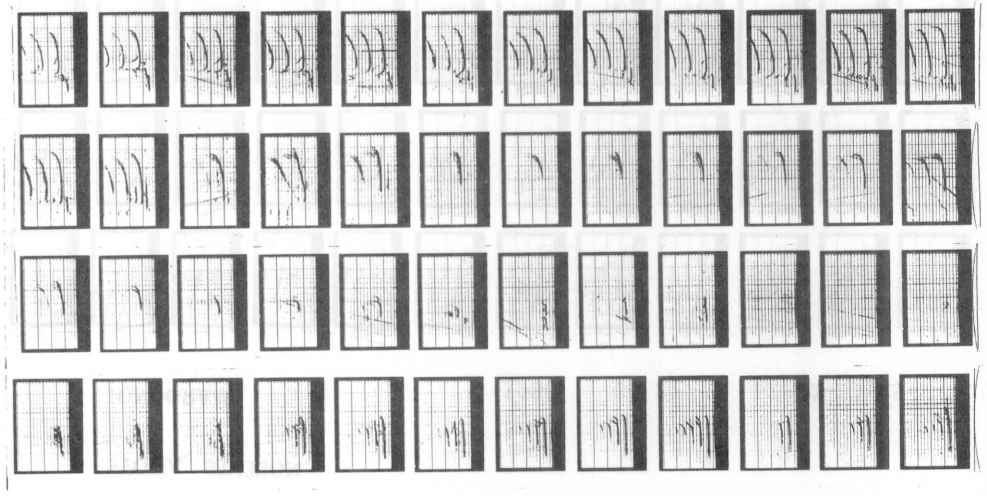
SYOWA STATION

IONOGRAM 1980 06 30 00;00-11;45



SYOWA STATION

IONOGRAM 1980 06 30 12;00-23;45



IONOSPHERIC DATA

JAN. 1980 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	62	64	OR 55	R	74	X 73	74	80	71	OR 59	63	67	73	71	72	X 76	66	R	51	UR 51	69	60	62	52
2	OR 48	62	62	A	52	62	A	OR 55	OG 51	R 56	57	R 57	58	X 60	X 61	X 62	X 61	X 63	X 61	X 61	X 60	X 61	X 61	X 62
3	X 63	X 67	X 67	73	X 57	60	65	A	R	EG 56	X 61	65	R	X 61	X 64	X 70	X 72	X 73	X 67	X 61	X 57	48	X 56	X 60
4	X 56	48	X 54	62	65	X 62	61	63	65	R	R	R	X 61	OW 60	G	X 61	X 64	X 61	X 58	X 56	X 51	X 53	X 50	X 63
5	OR 54	OR 52	OR 56	63	R	X 56	75	W 61	X 66	X 70	X 72	X 73	X 70	OR 71	X 71	X 71	X 71	X 70	X 63	X 57	X 60	X 56	X 56	65
6	X 57	X 60	60	OR 67	70	64	B	OR 71	77	X 80	X 81	80	X 73	OR 71	OR 70	OR 70	X 68	X 68	X 66	X 64	X 66	X 62	X 57	X 60
7	X 63	69	70	74	79	X 81	X 87	X 86	X 96	X 91	X 90	X 90	OR 84	X 78	X 76	X 76	X 76	X 75	X 71	X 70	X 71	X 70	X 66	X 64
8	58	68	B	A	80	80	X 83	X 85	X 83	R	X 62	66	72	X 73	X 72	X 71	X 74	X 72	67	X 70	X 71	X 71	X 70	X 69
9	X 71	X 76	X 80	X 81	X 85	X 89	X 95	X 96	X 95	X 89	X 86	X 88	OR 85	X 79	R	X 78	X 74	X 72	OR 70	A	X 70	OR 69	X 70	X 71
10	X 70	X 73	X 78	X 85	X 89	X 91	A	X 93	X 95	X 95	X 91	X 90	OR 87	X 82	X 80	OR 73	OR 71	X 70	X 70	X 72	X 73	X 73	X 66	X 68
11	X 70	X 72	X 74	X 76	82	81	81	90	87	85	86	X 80	X 81	OR 80	OR 80	X 84	OR 81	OR 88	OR 63	X 61	OR 55	X 59	OR 57	X 55
12	A	B	B	OR 63	OR 71	B	75	X 75	X 77	X 79	X 80	OR 76	X 78	X 74	OR 69	R	OR 68	X 68	70	X 73	X 76	X 76	X 77	X 75
13	X 78	X 81	OS 74	87	93	X 90	X 94	X 105	X 109	X 98	X 97	X 103	OR 96	OR 83	X 88	B	B	EY 36	EY 36	80	80	65	65	OR 50
14	X 51	47	X 50	56	60	60	65	A	A	X 51	OR 54	X 56	OR 56	OR 56	X 55	OR 55	X 63	X 64	X 62	X 61	51	X 56	X 58	X 52
15	X 55	OR 58	X 58	68	72	75	82	90	X 88	X 88	X 82	X 81	X 78	X 80	X 80	X 76	X 74	X 76	OR 74	X 71	X 71	X 58	X 57	X 57
16	62	74	62	75	79	65	B	69	A	70	75	76	X 73	X 71	X 71	X 70	X 71	X 70	X 69	X 67	X 66	X 67	X 68	X 70
17	X 71	X 75	X 80	X 86	X 89	X 95	X 100	OR 97	X 103	X 103	X 99	OR 88	80	77	75	B	75	70	X 67	B	63	X 58	63	F 55
18	56	X 58	59	X 67	X 72	OS 66	S	75	83	92	X 90	85	X 84	B	X 81	X 86	80	X 72	X 70	71	X 66	X 66	X 61	X 60
19	X 54	61	60	X 60	OR 61	69	X 76	80	X 91	X 96	X 90	X 90	X 91	X 86	X 81	X 78	X 75	X 75	X 75	X 71	X 70	X 67	50	56
20	OR 55	65	71	75	95	B	X 58	73	X 74	X 86	X 90	X 90	X 85	X 80	X 76	X 74	X 71	X 70	X 66	X 68	X 70	X 66	X 63	59
21	55	X 61	63	65	65	X 62	X 66	83	X 88	X 95	X 95	X 88	X 86	X 86	X 85	X 81	X 76	X 71	X 71	X 71	X 71	X 66	72	68
22	60	65	70	75	81	87	97	X 103	X 104	X 101	X 100	X 96	X 90	X 90	X 86	X 85	X 81	X 78	X 78	76	X 77	77	X 65	X 56
23	53	54	65	59	A	X 65	68	77	X 81	87	X 90	96	95	86	80	80	77	72	X 70	X 72	X 71	X 72	X 68	X 66
24	65	66	67	80	80	75	80	90	93	91	88	X 90	X 90	X 90	X 90	R	R 81	X 85	X 76	X 78	S 74	X 62	X 50	X 53
25	X 65	X 57	66	65	75	80	90	96	R 95	X 96	X 90	X 86	X 86	X 80	X 77	X 75	X 70	X 70	X 71	X 71	X 72	X 61	47	R
26	S 54	X 55	65	60	65	63	67	70	X 79	80	X 72	X 75	X 71	X 71	X 70	X 70	X 71	X 73	X 71	X 70	X 68	X 66	X 60	X 60
27	X 61	55	65	S	S 57	A	A	A	65	73	76	X 78	X 86	X 86	90	B	X 88	75	X 61	UY 49	75	R	60	A
28	47	OR 59	OR 55	72	62	B	45	A	A	EG 49	R	EG 52	EG 53	X 56	EG 53	X 59	OR 62	68	60	B	A	A	A	47
29	52	53	50	60	R	UY 36	48	44	50	65	56	EG 51	EG 53	EG 52	EG 53	X 60	X 60	EG 50	X 52	OR 42	X 50	OR 44	A	A
30	UY 41	B	A	52	X 43	42	60	R 51	X 56	X 64	X 61	70	X 66	X 68	X 63	B	B	OR 61	X 60	X 58	X 58	X 59	X 56	50
31	55	60	55	57	50	B	65	70	81	85	81	X 74	X 75	X 71	X 70	X 67	X 68	X 67	X 69	X 70	X 69	X 70	X 67	60
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	28	27	28	26	25	27	27	29	29	30	30	30	30	25	29	30	31	28	30	29	29	28
MED	56	61	64	67	72	68	75	80	X 83	X 85	X 82	X 80	X 79	X 76	X 74	X 73	X 71	X 70	X 67	X 70	X 70	X 65	X 61	X 60
UQ	X 63	68	70	75	80	81	83	90	X 94	X 92	X 90	X 90	X 86	X 82	X 80	X 78	X 76	X 73	X 70	X 71	X 71	X 69	X 66	X 66
LQ	54	57	57	61	62	62	65	70	72	70	X 72	70	X 71	X 71	X 69	X 70	X 68	X 68	X 62	X 61	X 60	X 59	X 57	55

IONOSPHERIC DATA

JAN. 1980 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 53	F 51	R 49	R	F 64	67	F 68	F 74	F 65	W 53	F 54	F 60	F 65	F 65	F 64	70	F 60	R	F 45	F 45	F	F	F 43	F 45
2	F 42	F 50	F 48	A	F	F	A	F 47	E G 45	50	F 51	F 51	F 52	54	55	56	55	57	55	55	54	55	55	56
3	57	61	60	F	51	F	F	A	R	E G 50	55	F	F 53	55	58	64	66	67	61	55	51	F	50	54
4	50	F	48	F	F	56	F	F	F	R	R	R	W 55	W 54	E G 53	55	58	55	52	50	45	47	44	47
5	R 48	46	50	F	R	50	F	W 57	60	64	66	67	64	65	65	65	65	64	57	51	54	50	50	F
6	51	54	52	61	F	F 58	B	65	F	74	75	F 70	67	65	64	64	62	62	60	58	60	J R 56	51	54
7	57	F 60	F 60	F	F	75	81	80	90	89	R 84	84	78	R 72	70	70	70	69	65	64	65	64	60	58
8	F 45	F 60	B	A	F 65	F 70	77	79	78	R	56	F 60	F 66	67	68	65	68	66	F 53	64	65	65	64	63
9	65	70	74	75	79	83	89	90	89	83	80	82	79	J R 73	R	J R 72	68	66	64	A	64	R 63	64	65
10	64	67	72	79	83	85	A	87	89	89	85	R 84	R 81	76	74	67	65	64	64	66	67	67	60	62
11	64	66	68	70	F	F	F	F	F	F 78	F 78	74	R 75	R 74	R 74	78	R 75	72	57	55	49	53	51	49
12	A	B	B	57	65	B	F 65	69	71	73	74	R 70	R 72	68	63	R	62	62	64	67	70	70	71	69
13	72	75	68	F	F	84	90	99	103	R 92	R 91	97	R 90	R 77	82	B	B	E Y 30	E Y 30	43	F	F	F	R 44
14	45	F	44	F	F	45	F	A	A	R 45	48	50	50	50	48	49	57	58	56	55	F 49	50	52	46
15	49	R 52	52	F	F	F	F	F	80	82	76	75	72	74	74	70	68	70	68	65	65	52	51	51
16	F	F	F 54	F	F	F	B	F	A	F 60	F	F 69	67	65	65	64	65	64	63	61	60	61	S 62	64
17	65	69	74	80	83	89	94	91	97	97	93	U R 82	F	F	F	B	F 65	F 63	61	B	F 52	52	F 55	49
18	F 47	52	F 50	S 61	66	60	S	F	F	F	82	F 76	78	B	75	80	74	66	64	65	60	60	55	54
19	48	F	F 51	54	55	F	70	F 70	85	90	84	84	85	80	75	72	69	69	69	65	64	61	F	F 49
20	49	F 55	F 61	F 67	F 60	B	52	F 62	S 67	80	84	84	79	74	70	68	65	64	60	62	64	60	J S 57	F
21	F	55	F 55	F	F	56	60	F	82	89	89	82	80	80	79	75	70	65	65	65	65	60	F 60	F
22	F	F	F	F	F	F	F	97	98	95	94	90	84	84	80	79	75	72	72	F 67	71	F 68	59	50
23	F 46	F	F	F	A	54	F	F	75	F	84	F	F 85	F	F 70	F	F	F	64	66	65	66	S 62	60
24	F	F	F	F	F	F	F	F	F 80	F 80	F 80	84	84	J R 84	R 84	R	J R 75	79	70	72	68	56	44	47
25	S 59	51	F S	F	F	F	F	F	89	90	84	80	80	74	71	69	64	64	65	65	66	55	F	U R 42
26	S 48	48	F	F 50	F	F	F	F 64	73	F	66	69	65	65	64	64	65	67	65	64	62	60	54	54
27	55	F	F	S	51	A	A	A	F	F	F	72	80	80	F 80	B	82	F 67	55	U Y 43	F	R	F	A
28	F	43	49	F	F	B	F	A	A	E G 43	R	E G 46	E G 47	50	E G 47	53	56	F 60	F 53	B	A	A	A	F
29	F	F	F	F	R	U Y 30	F	F	F	F	F	E G 45	E G 47	E G 46	E G 47	54	54	E G 44	46	36	44	38	A	A
30	U Y 35	B	A	F 44	37	F	F	45	50	58	55	F 62	60	62	57	B	B	55	54	52	52	53	50	F
31	F	F	F	F	F	B	F 52	F	F	F	F	68	69	65	64	61	62	61	63	64	63	64	61	F
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	19	20	11	12	15	11	16	20	23	25	28	30	28	29	24	28	29	31	28	27	26	25	23
MED	50	55	53	61	64	60	70	72	80	80	80	73	72	68	68	66	65	64	61	63	63	60	55	54
UQ	58	64	64	72	72	79	85	88	89	89	84	83	80	75	74	71	70	67	64	65	65	64	60	59
LQ	48	51	50	56	53	55	62	63	69	59	66	64	64	64	63	62	62	61	55	54	53	53	51	48

JAN. 1980 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1980 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20sec in automatic operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	46	62	70	42	G	G	G	G 26	G	G	G	G	G	G	G	G	G	Y	Y	40	22	G	58	40
2	42	45	35	82	50	40	48	40	42	44	G 31	G	37	38	36	42	G	35	39	45	40	35	33	57
3	35	33	38	42	33	40	38	54	43	G	G	G	G	G	G	43	41	G	35	45	79	G	40	45
4	45	Y	48	26	32	46	34	43	45	44	37	G	38	38	G	G	G	G	G	G	32	42	40	42
5	42	45	38	41	46	35	G	G	G	G	G	G	40	40	40	39	38	G	G	35	37	27	44	39
6	55	37	33	43	37	39	B	45	42	38	G	G	43	E B 44	44	E B 59	38	G	45	G	29	26	32	23
7	33	33	31	33	28	33	43	37	43	G	41	89	55	46	38	37	53	35	G	33	E B 45	36	35	30
8	30	36	B	72	46	G	G	46	G	G	G	G	G	G	G	G	G 33	G	34	36	36	23	24	23
9	28	28	29	31	27	35	G	42	34	36	45	40	40	48	55	36	38	37	52	81	40	27	39	30
10	19	38	30	50	46	38	146	35	45	61	56	62	112	51	60	50	62	G	G	G	39	26	20	20
11	20	29	31	38	32	35	34	G	44	45	G	55	66	43	E B 58	65	E B 60	31	E B 48	E B 45	E B 45	40	38	34
12	70	B	B	E B 45	E B 50	B	30	32	G	38	39	E B 56	42	52	G	G	G	37	G	32	42	81	82	67
13	23	24	30	24	25	28	E B 50	33	35	42	45	47	E B 60	E B 62	42	B	B	30	30	27	45	36	33	50
14	36	37	45	60	36	38	46	50	45	45	36	40	40	G	G	G	G	G	G	G	45	G	G	34
15	37	35	60	75	37	35	G	G	G	G	G	G	G	G	40	43	42	34	E B 57	E B 33	G	25	25	36
16	36	35	30	35	80	43	B	50	66	60	G	G 33	37	G	G	G	E B 45	E B 34	E G 34	37	32	42	27	27
17	22	20	22	26	25	27	G	G 27	G 27	42	E B 40	E B 60	G 17	G 28	G 28	B	E B 40	G	36	B	30	29	33	35
18	36	30	28	G	40	45	G 32	G 35	G	G	G	G	E B 53	B	E B 52	44	34	35	G	29	30	24	G	26
19	28	26	30	E B 45	42	40	38	G	37	35	43	36	50	G 34	G 26	G 27	G 25	G 20	G 29	41	36	G 11	30	30
20	32	35	G 21	G 11	45	B	36	46	G	G	35	G	G	G	G	G	36	G	G	29	26	G	G	29
21	31	36	76	60	37	48	40	36	G	G	G	G	G	37	38	36	35	G 30	G 20	G	26	23	30	17
22	E B 14	20	19	29	24	30	35	35	32	33	35	35	36	35	G	36	53	38	33	29	33	45	40	32
23	38	45	45	68	52	82	38	32	43	G	E B 53	G	44	35	E B 40	G	39	30	39	29	25	24	G	27
24	31	63	35	36	45	41	43	30	G	G	G	G	35	35	G	52	98	125	G	42	G	38	36	29
25	36	36	37	23	23	36	33	37	34	37	49	52	39	37	36	48	43	33	G 22	G	G 14	30	40	35
26	33	43	90	49	46	44	46	44	G	G	G	G	38	39	41	38	34	37	40	37	43	22	18	16
27	17	35	46	52	47	65	66	60	G	G	G	G	G	G	G	B	E B 52	G	G	43	45	46	35	45
28	30	60	45	41	35	B	60	58	76	G	49	G	G	G	37	G	E B 35	G	G	B	75	55	65	42
29	43	42	29	36	50	30	43	G	G	G	G	G	G	E B 37	G	G	G	36	G	36	41	33	47	46
30	35	B	60	37	36	24	43	G	G	G	G	G	G	E B 35	35	B	B	E B 35	33	33	30	25	24	33
31	33	38	41	42	50	B	36	36	G	G	37	38	G	G 31	G	35	33	32	37	28	27	28	18	20
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	28	29	31	31	27	29	31	31	31	31	31	31	30	31	27	29	30	30	29	31	31	31	31
MED	33	36	35	40	37	38	37	36	32	G	E G 31	G	36	34	E G 35	36	36	30	G 25	32	34	27	33	33
UQ	38	42	45	50	46	42	43	44	43	40	39	38	41	39	39	42	41	35	36	38	41	37	40	41
LQ	29	32	30	32	32	32	32	G 28	G	G	G	G	G	G	G	G	G 29	G	G	28	28	24	24	27

JAN. 1980 | FES (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1980 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	8	8	14	14	14	17	12	13	13	13	14	15	21	31	21	20	11	16	12	9	13	12	7	10
2	8	12	9	14	9	9	14	14	17	13	15	20	10	12	14	8	13	14	15	9	7	7	8	8
3	7	10	9	10	8	12	12	9	20	20	12	10	11	10	15	11	14	10	10	16	14	10	9	14
4	14	16	13	9	8	12	14	8	10	14	21	19	13	14	10	11	14	13	11	10	8	9	12	20
5	17	20	13	13	22	14	15	11	14	13	9	11	8	9	8	14	11	9	9	10	10	11	8	8
6	21	30	14	20	10	22	B	21	15	13	14	13	13	44	23	59	15	13	10	16	10	13	8	8
7	8	5	8	8	9	10	8	8	8	13	13	14	14	17	16	15	14	18	15	29	45	11	10	8
8	6	10	B	50	10	22	16	13	23	24	15	8	13	14	22	10	10	12	10	9	9	11	8	7
9	6	6	7	7	15	9	8	10	13	14	17	15	15	14	13	10	13	15	13	10	14	17	17	9
10	8	8	11	8	7	8	9	9	15	22	17	19	20	18	19	17	19	12	10	10	10	19	13	10
11	7	5	6	E	5	7	8	7	10	10	10	12	23	32	58	20	60	22	48	45	45	23	24	25
12	20	B	B	45	50	B	20	13	14	14	13	56	16	21	17	20	13	13	13	15	10	13	10	10
13	10	10	20	10	10	11	50	17	23	21	14	15	60	62	15	B	B	13	12	10	10	10	8	8
14	13	8	8	8	9	8	8	19	13	9	10	11	10	11	15	22	13	8	13	8	7	17	16	6
15	8	28	20	7	8	17	10	8	10	13	13	8	9	11	15	12	12	11	57	33	8	9	7	8
16	10	16	14	10	10	10	B	20	21	14	10	11	20	20	19	20	45	34	34	20	19	8	17	15
17	16	15	12	18	13	13	16	18	8	10	40	60	10	10	10	B	40	15	13	B	16	16	13	8
18	9	13	17	22	24	22	15	10	8	9	10	15	53	B	52	15	13	10	9	12	8	8	8	10
19	8	8	13	45	25	15	9	8	10	8	13	13	13	10	13	14	13	10	10	8	8	8	10	9
20	14	8	8	6	11	B	13	14	13	13	13	13	13	13	13	11	11	10	9	12	10	9	13	8
21	8	12	15	14	10	15	20	11	8	10	10	13	14	11	10	12	11	10	10	9	10	13	8	13
22	14	12	13	10	10	8	18	18	9	10	13	23	21	15	20	15	15	13	9	9	19	8	6	13
23	13	14	10	20	15	8	8	8	8	9	53	15	21	19	40	18	16	13	10	13	12	7	8	8
24	7	8	9	7	10	8	6	10	9	9	10	14	11	15	14	20	15	13	10	8	10	15	8	12
25	8	6	8	8	7	8	8	8	9	9	10	10	11	11	10	13	13	9	9	13	10	8	8	13
26	11	8	14	12	11	10	11	15	13	13	13	10	11	13	10	10	9	11	10	13	11	14	12	10
27	9	10	13	10	14	16	20	22	16	14	14	10	14	16	13	B	52	23	20	18	12	22	9	16
28	20	20	19	14	12	B	14	14	15	11	28	20	20	13	19	10	35	15	16	B	13	12	11	8
29	13	8	8	14	15	12	8	8	8	9	9	17	19	37	17	20	21	13	9	9	14	13	11	8
30	19	B	13	10	11	11	16	15	15	18	19	13	15	35	22	B	B	35	20	13	20	20	15	10
31	8	9	16	13	14	B	16	13	16	10	13	9	10	20	15	21	15	15	13	10	8	13	15	7
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	9	10	13	10	10	12	14	13	13	13	13	13	14	15	15	15	14	13	11	12	10	12	10	9
UQ	14	16	14	14	14	17	16	15	15	14	15	16	20	20	20	20	20	15	14	16	14	14	13	12
LQ	8	8	9	8	9	9	8	8	9	10	10	11	11	12	13	12	13	10	10	9	10	9	8	8

JAN. 1980 | F-MIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JAN. 1980 | H'F (KM) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	260	250	A	R	375	300	H 260	250	260	275	255	225	225	220	240	245	265	U Y 300	Y	A	200	265	265	400
2	A	400	385	A	E A 300	330	A	A	E A 325	280	230	250	220	225	225	225	240	235	240	255	250	250	285	305
3	320	325	300	325	335	350	390	A	R	270	H 195	195	H 200	220	235	240	240	225	230	240	275	300	415	365
4	390	265	A	290	275	E A 345	275	235	F 260	R	250	230	230	225	210	210	230	220	240	255	270	E A 380	395	395
5	E A 395	A	420	370	R	285	280	230	250	220	210	230	215	H 215	235	225	215	230	235	220	250	260	E A 395	300
6	405	Y 400	450	Y	290	375	B	Y	295	225	225	220	235	B 265	E A 300	B	230	225	250	H 200	240	270	285	280
7	330	335	310	325	285	255	250	240	230	250	210	A	250	245	215	230	235	225	225	240	B	250	270	310
8	325	225	B	A	325	Y	310	E A 300	Y	C 250	200	200	215	250	235	230	225	240	220	240	240	255	255	280
9	300	300	240	275	275	265	240	240	245	230	235	235	225	A 225	235	225	225	H 225	A	A	255	270	300	290
10	300	E A 320	290	285	A	250	A	230	225	A	A	A	A	245	E A 260	230	E A 260	225	H 225	250	250	270	255	H 175
11	290	285	270	285	275	255	240	240	220	225	200	A	A	275	B	A	B	240	B	B	B	300	335	315
12	A	B	B	B	B	B	270	230	235	245	220	B	E A 240	205	225	250	220	250	245	255	250	A	A	275
13	300	295	295	300	295	260	B	270	250	245	220	220	B	B	235	B	B	Y	Y	285	250	285	275	A
14	A	235	365	A	295	270	270	A	A	295	240	225	230	230	235	250	215	245	255	250	250	280	285	285
15	A	Y	350	340	275	350	275	240	215	220	220	205	210	230	225	225	245	230	B	245	240	290	300	300
16	300	300	315	320	A	A	B	A	A	A	200	270	250	250	240	245	B	255	240	250	250	275	285	285
17	295	300	305	295	290	260	240	245	225	H 220	220	B	205	210	H 230	B	255	215	240	B	265	290	305	255
18	275	330	330	370	A	A	450	325	200	200	230	H 225	B	B	B	225	220	220	H 225	225	245	255	250	275
19	285	270	330	B	A	370	270	220	200	H 225	A 250	H 210	245	205	220	H 210	210	235	240	225	240	175	285	305
20	335	355	290	295	335	B	315	295	225	215	H 200	H 205	205	205	H 200	205	225	235	200	225	250	255	H 225	360
21	315	300	350	A	450	495	305	245	H 205	H 215	H 195	240	225	H 200	225	210	200	215	H 200	240	240	265	255	245
22	260	275	245	285	250	235	240	225	220	215	205	215	H 195	H 205	220	210	225	205	220	235	245	255	290	350
23	325	E A 415	350	430	A	A	300	240	225	205	B	220	E A 275	225	E B 250	220	215	225	225	230	255	250	250	245
24	200	300	325	300	330	300	255	240	215	200	215	205	225	230	220	A	A	225	225	250	250	A	325	280
25	275	275	270	200	225	250	235	225	H 210	205	A 250	A	220	200	225	220	225	220	220	235	250	275	A	A
26	A	335	A	A	A	A	A	275	205	225	215	215	225	215	225	H 215	220	235	245	250	250	255	255	220
27	300	320	A	A	A	A	A	A	275	250	245	220	235	240	225	B	B	245	325	Y	A	265	300	A
28	395	A	A	A	A	B	A	A	A	215	A	225	225	200	E A 250	230	B 260	240	245	B	A	A	A	A
29	A	A	290	A	A	Y	310	250	230	225	210	250	230	225	225	225	240	240	250	A	330	A	A	A
30	Y	B	A	A	A	280	A	290	250	235	215	240	255	225	240	B	B	240	250	250	270	275	290	330
31	320	305	A	A	A	B	A	260	250	225	215	H 205	220	215	225	225	220	220	225	245	245	275	270	305
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	25	22	17	18	20	21	24	26	28	28	25	27	29	29	24	25	30	26	24	27	27	27	26
MED	300	300	312	300	291	278	270	240	226	225	218	220	225	225	225	225	225	230	238	242	250	268	285	295
UQ	326	328	350	325	330	348	305	260	250	248	232	230	232	230	235	230	240	240	245	250	252	276	300	315
LQ	288	275	290	285	275	258	250	232	215	215	208	210	218	210	225	218	220	225	225	232	245	255	260	275

JAN. 1980 | H'F (KM)

The Radio Research Laboratories. Japan

IONOSPHERIC DATA

FEB. 1980 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	50	54	R	OR 51	OR 51	X 54	65	OR 58	66	X 69	X 65	X 65	OR 71	X 64	X 69	70	X 71	X 66	70	X 66	X 70	63	48	A
2	52	53	B	A	UY 51	52	B	A	B	X 56	65	B	B	B	R 65	EG 59	X 68	OR 66	OR 67	66	68	63	X 60	X 56
3	53	65	62	66	X 66	73	X 81	85	92	90	X 98	X 90	X 86	X 81	X 75	X 75	X 72	OR 71	X 72	X 72	X 71	X 69	70	X 69
4	X 71	S 73	X 76	78	79	89	89	103	110	109	X 106	R	R	OR 97	X 93	X 88	X 86	X 86	X 85	X 79	X 79	X 79	X 74	X 69
5	X 69	X 71	X 77	86	X 90	S 99	X 106	X 110	X 116	X 116	X 107	X 106	X 102	X 105	X 101	X 99	R 96	X 90	X 90	X 88	X 83	75	66	63
6	57	57	65	67	72	86	95	95	100	R	X 97	99	100	75	78	83	89	X 65	EG 46	OR 50	B	B	B	R
7	UY 47	OR 50	50	48	X 52	45	X 53	X 61	R	EG 51	EG 53	EG 53	EG 53	EG 53	EG 53	X 60	X 60	X 61	X 61	60	X 63	X 55	A	47
8	43	B	60	A	B	66	65	B	B	B	B	OR 63	R 66	OR 66	68	75	X 72	X 63	75	X 56	X 57	X 59	EG 51	57
9	48	X 51	A	X 55	67	OR 66	B	75	90	87	X 76	77	80	81	X 79	X 78	X 74	R 66	50	X 48	X 49	43	53	41
10	A	40	50	65	60	68	78	X 86	X 88	X 90	X 89	X 90	X 81	X 78	X 74	X 69	X 72	X 70	X 71	X 78	X 78	S 74	75	75
11	75	74	78	86	86	93	96	99	105	110	109	106	X 105	X 96	X 89	X 86	X 86	X 80	X 80	X 80	X 79	X 76	S 74	78
12	75	75	76	80	85	92	105	108	X 110	X 110	X 113	X 112	X 109	UR 96	UR 95	UR 95	X 90	X 89	X 85	85	X 84	X 80	X 71	72
13	65	63	70	80	87	94	103	110	110	110	X 110	X 110	X 108	X 106	X 101	X 94	X 88	X 82	X 80	X 81	81	X 78	S 72	72
14	72	69	70	72	82	77	75	X 71	90	99	98	106	97	OR 91	OR 91	88	108	X 90	65	80	90	68	X 55	48
15	49	50	56	75	77	75	72	57	62	71	80	X 77	X 68	72	72	76	X 76	X 79	X 78	77	75	X 68	X 63	A
16	A	55	UY 36	OS 49	96	57	A	A	A	A	Y	B	B	65	64	EG 49	X 52	EG 45	70	EG 43	X 52	A	A	A
17	A	X 38	W 32	65	76	63	57	65	73	X 76	X 79	X 80	X 76	X 76	X 73	X 71	X 70	X 65	69	69	73	X 73	X 66	60
18	65	65	68	70	A	OR 59	OR 67	75	87	84	X 86	X 89	90	X 93	X 89	90	X 85	X 74	74	75	68	OR 51	A	UY 42
19	45	58	62	A	47	63	UY 56	B	B	X 66	69	X 61	B	X 71	X 73	X 71	70	70	74	73	77	80	80	75
20	75	77	76	65	B	80	80	84	100	X 100	X 97	X 101	X 106	X 108	X 106	X 100	X 100	X 93	X 87	X 78	74	80	76	75
21	70	75	58	62	69	73	80	X 96	X 96	X 93	X 96	X 100	X 96	X 90	X 88	R 86	X 80	X 79	X 76	X 77	S 76	X 73	X 67	X 60
22	90	46	52	73	75	80	85	90	92	X 96	X 96	X 96	X 95	X 91	X 90	X 86	X 87	X 83	X 80	X 80	X 80	X 81	X 66	X 55
23	60	46	56	75	75	87	98	90	X 93	X 96	X 100	R 106	X 106	X 103	X 102	R 105	X 89	X 90	X 87	80	62	A	A	A
24	UY 49	54	63	80	65	62	63	68	X 70	70	64	70	66	70	X 70	X 71	X 73	72	X 69	70	X 66	X 61	58	58
25	60	64	69	75	75	77	90	93	106	R	X 105	X 105	X 104	X 100	X 98	X 94	X 89	X 85	X 77	X 72	S 72	61	A	A
26	48	56	55	55	45	60	UY 32	EG 41	OW 50	W 55	X 61	X 66	70	X 69	X 71	70	X 65	X 66	X 59	X 58	X 50	50	UY 45	UY 45
27	UY 54	UY 48	43	63	70	60	50	75	73	B	72	70	71	OR 91	X 105	X 108	S 95	80	80	75	60	43	A	B
28	A	A	61	A	A	45	B	UY 46	B	X 60	65	61	R 64	65	70	OR 71	B	B	66	B	X 61	63	45	35
29	A	A	X 52	70	B	B	UY 45	B	70	73	80	76	80	R 78	R 82	85	X 81	85	X 85	R 76	X 71	60	40	A
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	26	26	25	24	28	25	24	23	24	27	26	25	28	29	29	28	28	29	28	28	26	22	21
MED	58	56	62	70	74	70	78	84	92	88	X 89	X 90	X 86	X 81	X 79	X 83	X 80	X 76	X 74	75	X 72	68	66	60
UQ	70	69	70	75	80	83	90	96	102	X 100	X 99	X 105	X 102	X 96	X 93	X 90	X 89	X 85	X 80	X 80	78	X 76	72	72
LQ	49	50	52	63	62	60	63	66	73	70	70	70	71	70	X 71	71	X 72	X 66	69	66	X 62	60	53	48

The Radio Research Laboratories, Japan

FEB. 1980 | FXI (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1980 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	R	45	R 45	48	F	52	F	63	59	59	65	R 58	63	F 61	65	60	F	60	64	57	F	A
2	F 44	F 45	B	B	U Y 45	F	B	A	B	R 50	F	B	B	B	59	E G 53	62	60	R 61	F 59	F 60	F 57	54	50
3	F 47	F	F	F	60	F 65	75	F	F	F	J R 92	R 84	80	75	69	69	66	65	66	66	65	63	64	63
4	65	67	70	F	F	F	F	F	F	F	100	R	R	R 91	87	R 82	80	80	79	73	73	73	68	63
5	63	65	71	F	84	93	S 100	104	R 110	110	101	100	96	99	R 95	93	90	84	84	82	77	F 60	F 56	F 53
6	F	F	F	F	F	F	F	F	F	R	91	F	F	F	F	F	F 82	59	E G 40	44	B	B	B	R
7	U Y 41	44	F	F	46	F	47	55	R	E G 45	E G 47	E G 47	E G 47	E G 47	E G 47	54	54	55	55	54	57	49	A	F
8	F 37	B	F	A	B	F	F	B	B	B	B	57	R 60	60	F	F	66	57	47	50	51	53	E G 45	F
9	F	45	A	49	F	60	B	F 65	F	F	70	F	F	F	73	72	68	60	44	42	43	F 37	F 36	F 35
10	A	F	F	F	F 54	F	F 70	80	82	84	83	84	75	72	68	63	66	64	65	72	S 72	68	F	F
11	F	F	F	F	F	F	F	F	F 98	F	F	F	99	90	83	80	80	74	74	J S 74	S 73	70	68	F
12	F	F	F	F	F	F	F	F	J R 104	R 104	F	106	103	U R 90	U R 89	U R 88	84	83	79	79	78	74	65	F
13	F	F	F	F	F	F	F 92	F	F	F	104	J R 104	102	100	95	88	82	76	74	75	F	S 72	66	F
14	F	F	F	F	F	F 67	F	65	F	F	F	F	F	R 85	U R 85	F	F 100	84	F	F 47	F	F	49	F 42
15	F	F	F	F	F	F	F	F 51	F 56	F 65	F 74	71	62	F	F	F	70	73	72	F 65	F 68	62	57	A
16	A	F 45	U Y 30	43	F	F 49	A	A	A	A	Y	B	B	F	F	E G 43	46	E G 39	46	E G 37	46	A	A	A
17	A	32	W 26	F	F	F	F	F 55	F 65	70	73	74	70	70	68	66	64	59	F 60	F	F 64	67	60	F 51
18	F 55	F	F	F	A	53	61	F	F	F	80	83	84	R 87	83	F	78	69	F 65	F	F	45	A	U Y 36
19	F 38	F	F	A	F 40	F	U Y 50	B	B	60	F	55	B	65	67	65	64	64	F 67	67	F	F	F	F
20	F	F	F	F	B	F	F	F	F	R 93	91	R 95	100	102	100	J R 94	94	87	81	72	F	F	F	F
21	F	F	F	F	F	F	F	90	90	87	90	J R 94	90	84	82	80	74	73	70	71	70	67	61	54
22	F	F	F	F	F	F	F	F	F	90	90	90	89	85	84	80	81	77	74	74	74	75	60	49
23	F 50	F	F	F	F	F	F	F	87	90	94	100	100	J R 97	J R 96	99	83	84	81	F 71	F	A	A	A
24	U Y 43	F	F	F	F	F	F	F	64	F	F	F	F 60	F 60	64	65	67	F 65	63	F 60	60	55	F 47	F 47
25	F	F	F	F	F	F	F	F	F	R	99	99	98	94	92	88	83	79	71	66	66	F	A	A
26	F	F	F	F	F	F	U Y 26	E G 35	W 44	W 49	55	60	F 60	63	65	F	59	60	53	52	44	F 44	U Y 39	U Y 39
27	U Y 48	U Y 42	F	F	F	F	F 44	F	F	B	F	F	F 65	R 85	99	102	89	F	F	F	F	F	A	B
28	A	A	F	A	A	F	B	U Y 40	B	54	F	F 55	58	F	F	65	B	B	F 57	B	56	F 45	F	F
29	A	A	46	F	B	B	U Y 45	B	F	F	F	F 65	F 71	72	76	F 77	75	F 76	79	70	65	F	F	A
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	8	5	3	7	7	10	11	10	15	18	20	22	23	24	23	28	27	26	25	21	20	16	12
MED	F 47	45	46	45	46	60	56	55	84	70	90	84	78	85	82	77	74	69	66	66	65	61	58	50
UQ	52	55	70	47	57	66	75	72	98	90	94	97	98	90	90	88	82	78	74	72	72	69	64	54
LQ	F 42	43	30	44	45	51	U Y 45	52	64	57	73	60	62	68	68	65	66	60	57	54	57	51	48	40

FEB. 1980 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

FEB. 1980 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4 S. Long. 39° 35.4 E Sweep .4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	29	36	43	40	46	E B 40	49	44	37	G	62	42	43	45	43	57	G 30	E B 32	36	33	36	23	27	60
2	39	60	B	43	45	44	B	65	B	45	G 30	B	B	B	G	E B 35	G	E B 35	E B 45	29	29	E B 22	E B 21	E B 25
3	20	47	25	39	E B 50	40	45	G	G	G	G	G	G	37	41	34	37	E B 40	G	G	G	31	53	82
4	47	45	15	33	37	38	50	35	37	33	G 32	G 31	G 28	G	37	40	37	34	G 25	29	22	18	15	25
5	25	19	14	16	18	G 14	G 26	36	37	36	37	40	39	40	39	36	37	G 25	G	G	26	26	18	16
6	32	37	28	33	60	25	27	G	G	E B 35	E B 35	G	39	40	G	E B 37	G 25	E B 49	G	E B 23	B	B	B	35
7	41	31	21	19	24	32	G	34	42	40	E B 33	G	G	G	G	G	G	G	G	G 17	26	23	90	29
8	46	B	33	60	B	36	33	B	B	B	B	E B 50	G	E B 53	G	G	G	G	G	G	31	37	39	38
9	33	E B 34	60	32	E B 24	E B 43	B	40	35	G	E B 34	E B 51	E B 51	E B 45	E B 46	38	E B 34	E B 24	G	G	40	37	43	36
10	41	35	42	34	E B 40	G 23	G 23	35	57	45	41	G	48	70	47	44	35	47	G 21	41	34	36	22	39
11	31	30	36	30	22	27	33	35	E B 34	G	G 31	52	50	35	38	35	42	37	30	33	37	37	20	32
12	29	33	32	34	32	35	36	33	32	34	37	G	68	E B 46	E B 45	90	52	52	48	36	37	46	36	49
13	23	28	44	60	30	28	25	33	37	41	45	36	46	41	G	52	G	G	35	32	30	18	29	31
14	42	28	45	27	60	45	53	E B 27	53	36	43	G 23	G	E B 60	E B 60	37	36	45	37	36	47	45	47	36
15	42	37	30	30	42	40	52	72	54	52	37	39	38	36	37	G	G	E B 35	30	45	33	35	E B 19	85
16	80	43	30	60	27	70	55	60	100	62	27	B	B	37	40	38	34	38	39	43	45	60	100	68
17	42	41	59	37	33	33	73	32	35	36	37	43	35	42	45	38	40	G	42	40	37	19	27	23
18	26	28	35	32	60	38	45	50	37	45	G	38	32	33	39	36	33	45	43	90	31	37	80	36
19	42	53	63	50	41	71	50	B	B	50	38	E B 35	B	37	35	32	G	G	36	26	22	E B 25	18	15
20	14	18	39	46	B	30	E B 50	57	39	G	35	50	100	140	46	E B 46	66	28	37	24	21	E B 17	33	28
21	21	37	40	70	60	50	50	40	G	G	G	G	43	41	32	37	42	42	42	32	19	36	22	29
22	32	53	43	30	19	22	30	30	26	28	30	32	35	33	40	41	36	35	33	23	37	15	19	33
23	25	34	33	30	21	28	21	G	37	46	41	50	49	38	36	43	43	56	58	37	36	45	75	45
24	43	36	47	72	101	80	70	35	40	52	52	33	33	G	40	36	G 23	G 21	G 18	28	18	33	29	29
25	37	33	38	38	36	G	35	32	G	E B 23	G	G	37	34	36	38	38	28	34	23	26	43	52	60
26	80	34	87	30	65	28	26	41	41	G	G	G	37	33	43	G	G	G	33	27	27	26	39	39
27	48	42	47	35	45	32	37	42	37	B	41	36	33	E B 67	E B 48	E B 32	G	36	36	46	30	27	36	B
28	45	48	42	55	45	50	B	40	B	35	43	40	E B 50	E B 33	E B 47	E B 58	B	B	G	B	E B 29	35	18	31
29	40	48	44	50	B	B	45	B	30	30	G	G	G	E B 53	E B 40	33	G	35	27	E B 32	17	27	29	36
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	28	28	29	26	28	26	26	25	27	28	27	26	28	29	29	28	28	29	28	28	28	28	28
MED	39	36	40	35	38	34	38	35	37	35	35	33	37	36	38	36	34	30	33	30	30	32	29	36
UQ	42	44	44	50	50	44	50	42	40	45	41	40	46	43	42	40	38	40	37	36	36	37	45	42
LQ	29	31	31	30	26	28	27	32	31	E G 23	E G 28	G	32	34	36	33	G	E G 22	G 18	23	23	22	20	29

The Radio Research Laboratories. Japan

FEB. 1980 | FES (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1980 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	7	14	20	20	21	40	15	26	21	13	13	20	37	30	15	15	13	32	32	20	13	12	9	21
2	13	14	B	20	23	20	B	15	B	23	14	B	B	B	20	35	22	35	45	25	20	22	21	25
3	10	8	12	14	50	20	13	14	14	17	13	16	15	14	20	13	10	40	20	13	15	18	9	8
4	7	7	7	6	8	8	8	8	9	10	10	19	17	15	18	15	13	20	13	16	13	9	11	7
5	8	E	8	8	8	8	9	8	10	14	16	20	16	28	27	20	17	21	14	14	14	16	13	11
6	12	10	9	10	9	14	14	13	18	35	35	20	20	15	12	37	20	49	17	23	B	B	B	20
7	20	14	17	17	17	20	21	21	18	20	33	21	23	27	17	23	21	15	17	10	11	14	13	14
8	8	B	11	23	B	13	16	B	B	B	B	50	30	53	22	15	17	16	15	15	11	11	14	14
9	10	34	20	14	24	43	B	24	13	13	34	51	51	45	46	30	34	24	15	13	8	15	18	12
10	13	17	19	27	40	15	10	8	9	19	33	15	13	14	14	14	12	11	8	8	9	10	14	8
11	9	5	E	7	8	6	9	16	34	21	13	15	17	31	17	17	15	13	13	15	9	8	7	7
12	7	6	E	6	6	8	8	7	14	20	14	21	20	46	45	30	15	21	18	15	13	13	13	9
13	8	6	7	8	9	8	9	9	8	9	8	10	9	13	13	19	13	9	9	9	7	8	8	9
14	7	7	8	15	13	13	15	27	15	7	8	8	9	60	60	25	14	13	13	10	13	13	9	6
15	8	8	7	7	10	14	10	16	13	16	13	20	21	14	15	20	9	33	21	9	8	20	19	19
16	23	7	25	23	9	15	29	28	15	17	17	B	B	26	13	20	13	16	13	10	9	25	9	7
17	8	7	7	7	10	12	11	12	13	11	13	13	10	13	12	13	10	12	11	13	7	8	6	7
18	7	7	6	7	12	27	21	10	8	12	12	9	10	31	15	15	22	20	22	24	16	9	9	6
19	7	10	13	32	15	13	30	B	B	24	18	35	B	33	18	20	23	20	8	18	14	25	14	13
20	13	14	8	20	B	21	50	14	9	10	14	13	13	10	10	46	18	22	9	16	13	17	9	7
21	6	E	8	13	18	20	13	9	13	9	8	9	10	12	13	13	12	9	8	7	7	8	8	8
22	7	9	8	8	7	7	7	7	13	10	9	10	10	13	11	10	10	10	8	7	6	7	E	8
23	6	7	7	7	8	10	7	6	8	10	10	10	10	9	13	18	8	8	8	8	8	13	7	17
24	7	8	8	8	E	7	7	8	11	15	13	29	10	14	11	9	14	15	13	19	15	13	9	7
25	E	6	E	E	E	20	13	8	12	23	14	14	13	23	13	12	9	12	12	8	9	10	9	8
26	8	8	9	7	6	6	8	12	11	9	17	19	23	13	10	9	8	9	13	20	11	9	9	7
27	7	7	13	23	13	13	14	15	14	B	15	13	21	67	48	32	13	12	17	19	9	7	7	B
28	20	7	E	10	20	13	B	16	B	19	15	14	50	33	47	58	B	B	21	B	29	11	11	9
29	17	15	20	8	B	B	30	B	22	15	15	15	19	53	40	14	13	15	17	32	13	7	7	10
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
MED	8	8	8	10	12	13	13	14	13	15	14	16	17	26	15	18	13	16	13	15	11	12	9	9
UQ	12	14	13	20	21	20	21	21	18	20	17	21	23	33	22	25	18	22	17	19	14	16	13	14
LQ	7	7	7	7	8	8	9	8	11	10	13	13	10	14	13	14	12	12	11	10	9	9	8	7

FEB. 1980 | F-MIN (0.1 MHZ)

The Radio Research Laboratories. Japan

IONOSPHERIC DATA

FEB. 1980 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep, 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	345	380	A	A	A	B	A	A	250	245	A	260	A	245	215	240	215	230	250	240	260	270	370	A
2	405	E A 400	B	A	Y	A	B	A	B	A 305	205	B	B	B	230	230	210	250	B	240	260	275	280	295
3	320	315	325	370	B	A	A	300	240	245	220	210	225	230	220	210	H 205	B 250	245	245	250	250	270	270
4	275	290	300	305	285	275	275	240	270	240	225	205	275	240	235	H 220	240	235	250	240	250	255	250	250
5	255	275	300	300	285	260	250	240	240	235	240	225	215	235	250	260	225	215	235	250	250	245	240	255
6	290	305	305	290	250	265	255	235	235	230	220	240	275	275	250	265	255	B	255	295	B	B	B	A
7	Y	A	335	355	285	A	295	300	A	345	A	280	245	230	230	235	220	235	240	255	265	305	A	A
8	385	B	350	A	B	A	270	B	B	B	B	B	285	B	240	240	250	250	270	310	300	340	340	290
9	275	340	A	380	340	B	B	Y	255	240	230	B	B	B	B	240	240	240	285	330	270	310	A	A
10	A	A	A	485	B	240	H 225	250	A	A	A	230	220	A	H 200	225	235	240	250	255	240	235	250	250
11	250	270	290	315	300	270	245	250	240	230	210	230	245	230	H 200	235	225	240	H 215	250	255	250	230	245
12	250	285	295	290	295	285	250	250	225	215	220	215	E A 260	B	B	A	225	225	240	260	250	240	235	260
13	255	300	325	315	300	285	250	220	225	H 205	225	H 215	230	210	225	230	215	H 200	235	255	255	260	235	250
14	300	270	290	410	250	A	A	A	375	240	230	225	220	B	B	270	255	275	305	245	A	A	A	A
15	A	A	200	370	310	300	A	A	A	320	220	270	250	235	225	240	235	260	255	250	265	260	270	A
16	A	A	Y	A	300	A	A	A	A	A	Y	B	B	255	240	250	275	245	280	325	350	A	A	A
17	A	A	A	A	A	345	A	250	240	230	230	215	205	200	220	235	240	235	245	250	255	240	240	245
18	295	295	290	A	A	A	A	A	250	215	220	230	H 230	220	240	250	240	270	275	290	285	A	A	Y
19	A	375	A	A	A	A	Y	B	B	A	230	225	B	260	225	225	240	235	240	245	240	255	240	240
20	270	295	295	A	B	320	B	A	270	H 200	235	255	A	245	235	B	A	235	235	240	H 220	235	225	240
21	250	300	290	A	A	A	A	300	240	215	200	225	230	240	225	225	225	240	235	250	235	240	230	240
22	320	A	465	385	340	300	255	235	235	215	H 220	225	225	220	215	225	H 200	H 200	H 200	250	255	240	220	255
23	250	A	390	375	350	300	255	245	230	225	245	A	A	225	240	240	230	E A 290	E A 280	280	A	A	A	A
24	Y	A	290	A	A	A	A	240	260	A	285	270	220	215	215	235	240	240	245	275	235	245	250	275
25	285	310	340	340	330	320	270	230	225	240	220	235	215	210	245	225	215	230	250	240	245	350	A	A
26	270	A	A	A	335	280	Y	A	255	240	240	250	250	245	245	230	240	235	250	285	285	275	Y	Y
27	Y	Y	A	A	400	320	A	A	250	B	240	225	H 200	B	B	240	230	245	225	250	280	325	A	B
28	A	A	A	A	A	A	B	Y	B	280	250	240	B	230	B	B	B	B	270	B	270	275	295	A
29	A	A	A	A	B	B	Y	B	260	225	225	225	240	B	B 250	225	235	240	245	235	245	275	330	A
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	16	18	15	16	15	12	15	21	23	24	24	21	21	24	26	27	27	28	28	26	24	19	15
MED	275	299	300	355	300	285	255	245	240	235	225	228	230	230	230	235	235	240	246	250	255	258	250	250
UQ	310	320	335	378	338	310	270	250	255	242	238	245	248	245	240	240	240	246	258	278	270	275	275	265
LQ	255	288	290	310	285	272	250	238	235	220	220	225	220	220	220	225	222	235	238	245	245	242	235	245

FEB. 1980 | H'F (KM)

IONOSPHERIC DATA

MAR. 1980 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	55	66	77	82	77	78	90	90	87	X 85	X 84	X 81	X 80	X 80	X 76	X 75	S 75	X 71	X 67	X 62	X 54
2	X 49	47	52	50	80	93	83	87	X 96	X 106	X 106	X 108	X 108	X 106	X 100	X 94	X 94	X 93	X 90	X 90	X 78	X 73	S 62	55
3	45	40	32	60	60	73	80	90	99	100	100	102	101	100	100	X 95	X 91	X 86	X 81	X 76	75	68	72	65
4	38	52	68	68	75	75	80	81	90	X 93	X 102	X 103	X 100	X 102	X 100	X 98	X 97	100	92	87	82	75	75	72
5	54	A	80	87	80	85	X 71	82	75	86	90	97	X 97	X 107	X 112	X 111	X 110	X 106	106	100	87	80	80	73
6	63	64	65	90	75	80	78	86	90	89	87	X 88	X 90	R 94	X 91	X 95	X 95	X 88	X 91	X 92	X 76	68	62	57
7	55	R 43	O R 36	80	85	U Y 39	75	85	X 84	X 90	X 96	X 106	X 110	X 109	X 108	X 111	X 104	X 98	X 90	X 90	X 82	X 70	X 65	58
8	48	55	74	75	75	80	82	80	81	X 89	O R 89	O R 92	R 108	X 108	102	X 97	X 97	X 96	X 90	X 86	X 80	75	X 60	50
9	48	43	43	A	73	76	81	90	X 96	X 103	102	R 103	R 104	R 106	R 105	X 103	X 100	X 100	X 96	X 96	X 82	78	X 62	62
10	60	47	60	75	78	87	99	86	82	X 79	X 87	X 96	X 104	X 106	X 107	X 110	X 110	C	C	C	C	C	C	C
11	C	C	C	C	90	80	87	96	100	C	C	C	C	C	C	C	C	X 116	X 112	106	100	90	76	74
12	67	55	50	80	67	90	80	X 78	X 93	X 102	X 112	X 118	X 126	X 126	X 123	X 123	X 119	X 109	105	X 96	82	X 73	65	55
13	54	45	44	60	75	80	76	82	90	X 90	O S 96	R 94	X 99	X 117	X 114	X 110	X 104	X 106	X 106	X 99	X 89	S 75	70	34
14	47	52	X 37	A	80	90	88	C	C	86	89	X 96	X 99	X 99	X 96	X 94	X 90	X 88	X 86	X 80	X 70	51	47	41
15	29	18	18	26	38	45	66	75	87	100	X 106	113	X 117	X 122	X 121	X 118	X 113	X 103	S 96	X 87	S 80	75	69	53
16	45	38	44	46	59	78	86	90	S 100	R 108	X 120	X 124	R 126	X 126	X 126	X 121	122	109	S 103	S 91	90	74	70	73
17	59	60	43	90	100	90	90	88	90	90	100	110	X 117	R 128	X 118	R 118	X 113	X 106	X 97	X 100	X 85	81	70	70
18	55	74	75	67	89	90	100	90	100	109	110	115	116	X 111	X 112	X 107	X 102	S 100	X 96	X 87	X 78	72	X 62	63
19	61	58	63	80	96	90	90	88	85	90	X 95	X 103	X 110	X 118	X 117	X 112	X 110	122	120	112	S 96	85	75	65
20	57	55	65	60	65	68	67	75	77	92	110	X 116	X 124	X 123	X 125	X 118	X 123	X 121	X 116	X 110	S 94	X 81	62	48
21	39	43	37	A	70	70	80	67	B	A	X 64	B	80	84	120	121	120	117	S 99	110	100	70	A	57
22	36	45	65	B	65	60	70	58	G	B	A	W 58	68	66	71	80	X 71	X 85	82	57	46	43	40	A
23	40	B	A	65	U Y 51	75	A	60	80	90	90	89	X 89	X 91	X 93	R 94	X 92	X 91	S 94	S 86	77	67	56	37
24	34	33	35	63	90	100	100	95	83	100	105	115	116	X 116	X 116	X 121	120	120	111	X 106	103	90	77	58
25	40	50	75	85	80	90	100	90	95	100	110	123	X 126	X 130	X 127	X 130	128	123	115	107	93	X 81	S 71	60
26	65	A	72	90	80	90	75	A	A	O R 96	B	B	B	60	E G 69	82	81	O R 78	70	75	67	60	A	A
27	43	A	A	B	A	70	57	70	63	70	80	X 80	X 82	R 91	X 106	X 111	X 113	X 110	X 106	X 91	X 76	X 61	45	24
28	A	A	A	A	O R 51	65	75	O Y 56	84	87	R 92	R 96	X 107	X 107	X 118	X 120	X 121	X 118	X 109	X 107	100	79	70	50
29	35	37	65	45	70	80	86	81	91	R 87	88	110	120	X 120	X 123	X 122	X 118	X 119	R 118	S 104	85	71	57	60
30	A	43	70	90	60	90	B	B	B	B	B	X 69	90	110	120	115	X 110	S 119	X 112	X 96	77	65	45	40
31	31	28	45	70	70	70	80	B	O R 61	79	B	80	81	86	107	110	112	120	105	95	88	65	47	33
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	24	26	24	30	31	29	27	27	27	26	28	29	30	30	30	30	30	30	30	30	30	28	28
MED	48	46	56	69	75	80	80	82	87	90	96	102	X 104	X 107	X 110	X 110	X 110	X 106	X 98	X 94	82	73	64	57
UQ	56	55	68	82	80	90	87	89	94	100	106	112	X 116	X 118	X 120	X 118	X 118	X 118	109	X 104	90	79	70	64
LQ	40	42	43	60	65	72	75	76	80	88	89	90	X 90	94	X 100	X 95	X 95	X 93	X 90	X 87	X 77	67	58	49

MAR. 1980 | FXI (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAR. 1980 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	F	F	F	F	F	F	F	F	F 77	79	78	75	74	74	70	69	69	65	61	56	48
2	43	F 41	F 44	F	F	F	F	F	90	100	100	102	102	100	94	R 88	88	87	84	84	72	67	56	F
3	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F 90	89	85	80	75	70	F	F 56	F	F
4	F	F	F	F	F	F	F	F	F	87	96	97	94	R 96	J R 94	92	J R 91	F	F 81	F 72	F	F	F	F
5	F	A	F	F	F	F	65	F	F 67	F	F	F	91	101	106	105	R 104	100	F	F	F	F	F	F
6	F 51	F	F	F	F	F	F	F	F	F	F	82	84	88	85	89	89	82	R 85	J R 86	70	F	F	F
7	F	37	30	F	F	U Y 33	F	F	78	84	J R 90	100	104	103	102	105	98	92	84	84	76	64	59	F
8	F	F	F	F	F	F	F	F	F	83	R 83	R 86	102	102	R 96	91	91	90	83	80	74	F 64	54	F
9	F	F	F	A	F	F	F	F	90	97	F	97	98	100	99	97	94	94	90	90	76	F 70	56	F 52
10	F	F	F	F	F	F	F	F	F 69	73	81	90	98	R 100	R 101	R 104	R 104	C	C	C	C	C	C	C
11	C	C	C	C	F	F	F	F	F	C	C	C	C	C	C	C	C	110	106	F	F	F	F	F
12	F	F	F	F	F	F	F	72	87	96	106	112	120	120	117	117	113	103	F	90	F	67	F	F
13	F	F	F	F	F	F	F	F	F	84	90	88	R 93	111	108	104	98	100	100	93	83	69	F	F
14	F	F	31	A	F	F	F	C	C	F	F	90	93	R 93	90	U R 88	84	82	80	74	64	F	F	F
15	F	F	F	F	F	F 39	F	F	F	F	100	F	111	116	115	112	107	J R 97	90	81	S 74	F	F	F
16	F	F	F	F	F	F	F	F 82	94	R 102	J R 114	118	120	120	120	115	F	F 100	J S 97	S 85	F	F	F	F
17	F	F	F	F	F	F	F	F	F	F	F	F	111	122	112	R 112	107	100	91	J R 94	79	F	F	F
18	F	F	F	F	F	F	F	F	F	F	F	F	F	105	106	100	S 96	S 94	90	81	S 72	F	56	F 51
19	F	F	F	F	F	F	F	F	F	F	89	97	103	112	111	106	104	F	F	F 102	90	F	F	F
20	F	F	F	F	F	F	F	F	F	F 82	F 100	110	118	117	119	111	S 117	115	110	103	88	74	F 54	F
21	F	F	F	A	F	F	F	F	B	A	58	B	F	F	F	F	F	F	93	F	F	F	A	F
22	F	F	F	B	F	F	F	F	E G 45	B	A	W 52	F 60	F	F 65	F	65	79	F 76	F	F	F	F	A
23	F	B	A	F	U Y 45	F	A	F	F 70	F	F 80	83	83	85	J R 87	88	86	85	88	80	F 67	F	F	F 31
24	F 28	F 26	F	F	F	F	F	F	F	F	F	F	F	110	110	115	F	F 106	F 100	100	F	F	F	F
25	F	F	F	F	F	F	F	F	F	F	F	F	119	124	120	123	F	F	F	F	F	S 75	S 65	F
26	F	A	F	F	F	F	F	A	A	R 90	B	B	B	F 52	E G 63	F	F	R 72	F 60	F	F	F	A	A
27	F	A	A	B	A	F	F 45	F	F 55	F	F	74	76	R 85	J R 100	105	107	104	100	85	70	55	F 38	F
28	A	A	A	A	45	F 60	F	U Y 50	F	F	R 86	U R 90	101	101	112	R 113	114	112	103	101	F 90	F	F	F
29	F 29	F	F	F 39	F	F	F	F	F	R 81	F 81	F	F	114	117	116	112	113	112	S 98	F 75	F	F 47	F
30	A	F	F	F	F	F	B	B	B	B	B	63	F 83	F	F 110	109	104	113	106	90	F 66	F	F	F
31	F	F 21	F	F	F	F	F	B	R 55	F 70	B	F	F	F 80	F	F	F	F	F 97	F	F	F	F	F
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	4	4	3	1	2	3	2	3	11	13	15	19	23	26	28	26	24	25	26	23	18	11	10	4
MED	F 36	F 32	31	F 39	45	F 39	55	72	70	84	90	90	98	102	104	105	98	97	90	85	74	67	56	F 50
UQ	47	39	38			F 50		77	88	96	100	98	108	114	112	112	107	104	100	94	79	70	56	F 52
LQ	F 28	F 24	30			36		61	F 61	82	82	82	88	93	92	91	88	85	83	80	70	62	F 54	40

The Radio Research Laboratories, Japan

MAR. 1980 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1980 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep .4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	33	47	44	39	32	28	29	94	41	G	G	G	34	34	33	38	36	37	G 20	G 16	20	11	20	29
2	21	12	36	33	42	32	42	44	31	G	G	33	42	33	33	38	40	60	81	70	33	40	44	52
3	75	70	34	42	45	43	41	37	44	35	56	40	56	44	40	36	49	33	32	25	11	28	E B 13	30
4	36	38	28	23	22	23	19	32	36	39	43	50	56	48	33	29	32	39	43	29	23	26	17	E B 12
5	32	62	42	46	56	55	50	41	45	45	34	40	38	34	35	30	E B 30	E B 45	28	24	E B 22	E B 17	15	17
6	E B 13	30	35	46	51	44	33	29	33	30	38	36	40	70	G	G	G 17	G	24	22	16	14	11	32
7	37	47	55	66	58	33	51	42	35	G 21	G	38	40	36	36	G 22	G 15	G 14	G 15	G 11	12	20	E B 8	39
8	38	40	39	35	44	46	50	50	48	39	E B 66	E B 55	E B 30	G	G 18	G 21	G 18	G 25	G 15	11	10	12	14	26
9	38	26	39	45	51	46	36	12	34	G 11	G	E B 35	E B 35	E B 40	E B 32	G 27	34	G 20	G 20	G	25	E B 19	46	22
10	43	32	32	26	26	44	20	28	G 15	E B 22	31	33	32	32	36	37	G 26	C	C	C	C	C	C	C
11	C	C	C	C	48	34	22	G 17	G 13	C	C	C	C	C	C	C	C	E B 27	E B 23	21	E B 19	19	15	E B 15
12	E B 12	14	16	19	10	12	15	G 16	G	29	38	35	42	36	38	37	G	G	G 14	18	12	E B 13	12	11
13	9	12	16	39	35	29	15	27	30	33	G 20	G 25	37	39	32	29	G	25	22	17	28	16	E B 9	34
14	25	29	50	55	51	27	19	C	C	G	G	G	38	36	35	33	G 22	G 13	31	14	12	50	E B 7	25
15	E B 9	16	E B 12	E B 12	21	35	23	19	20	26	29	29	44	37	42	G 25	G 18	G	20	15	12	14	21	32
16	17	26	29	46	37	34	27	19	28	G	36	37	34	37	32	E B 22	G 17	33	30	16	15	17	26	16
17	16	35	35	33	28	28	56	34	41	30	G	35	37	44	71	E B 30	33	26	30	16	20	15	17	21
18	18	35	31	50	46	41	15	19	G 16	33	G 19	G 19	G 30	G 17	G 25	G 27	G 16	27	21	19	14	14	13	12
19	11	32	35	29	28	9	E B 10	23	80	G	35	45	36	G	G	G	G 18	32	28	21	30	16	E B 15	E B 20
20	23	36	33	33	24	16	E B 15	25	24	G 25	29	36	36	36	33	37	33	G 16	32	17	26	13	17	E B 11
21	12	29	45	50	45	55	58	50	B	69	45	B	E B 22	E B 24	G	E B 40	E B 35	29	26	41	45	45	148	42
22	69	63	71	B	45	41	36	36	45	B	60	G	E B 32	E B 46	E B 32	E B 24	E B 23	26	25	42	31	30	37	43
23	51	B	47	40	45	55	112	53	38	34	26	34	G 26	G 22	G 23	G 18	G 17	G 16	13	12	12	14	10	E B 11
24	15	12	18	47	17	E B 15	E B 20	E B 30	E B 28	34	E B 21	31	29	G 17	E B 33	G	29	26	18	E B 20	E B 20	E B 19	E B 17	28
25	17	63	46	45	33	28	18	20	26	27	G	G	33	35	G 24	G 20	G 16	G	29	19	27	E B 14	E B 11	E B 9
26	45	76	43	50	45	58	36	87	68	52	B	B	B	E B 26	32	E B 20	28	E B 60	33	42	36	36	60	55
27	31	71	93	B	43	42	45	38	28	35	E B 30	E B 35	E B 46	E B 55	E B 30	E B 25	E B 21	23	E B 15	14	26	18	E B 13	13
28	35	36	36	48	39	45	56	50	35	E B 36	E B 25	E B 30	27	G 27	G 24	G	E B 19	E B 22	E B 31	E B 22	15	E B 16	E B 15	14
29	E B 14	35	40	43	69	41	35	30	38	36	E B 33	G	G	G	G	G	24	12	13	10	13	E B 18	E B 20	30
30	66	79	39	43	39	40	B	B	B	B	B	E B 36	G	G	G	G	G	17	13	16	12	27	33	33
31	33	28	26	40	45	36	26	B	50	38	B	E B 29	E B 30	E B 40	32	G	E B 30	26	E B 29	E B 18	20	E B 20	21	17
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	28	31	31	30	28	28	28	27	28	29	30	30	30	30	30	30	30	30	30	30	30
MED	28	35	36	42	43	36	31	31	34	31	24	32	34	34	32	22	20	24	23	17	18	16	15	24
UQ	38	47	44	46	46	44	45	43	42	36	36	36	39	38	35	32	30	30	30	22	26	26	21	32
LQ	15	28	31	33	30	28	19	21	26	G 22	E G 19	23	28	G 20	E G 24	E G 18	G 16	G 15	16	14	12	14	E B 13	13

MAR. 1980 | FES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1980 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep .4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	17	12	19	9	13	13	11	22	14	14	13	18	19	15	15	9	14	14	12	13	8	8	7	17
2	7	5	6	6	8	10	10	9	10	13	14	13	13	13	15	15	14	14	13	12	12	7	7	7
3	6	7	6	E	15	14	8	8	17	8	8	8	13	13	13	10	9	9	8	7	7	8	13	17
4	18	18	7	7	7	8	7	10	10	8	9	13	14	18	20	20	13	15	14	14	15	11	9	12
5	7	19	9	10	8	10	23	9	10	13	8	8	11	8	13	22	30	45	23	20	22	17	11	10
6	13	9	9	7	9	9	5	8	7	8	11	13	9	11	15	15	7	12	14	14	8	8	7	7
7	7	10	17	8	8	16	17	13	13	8	12	12	12	9	8	14	12	8	7	7	7	7	8	7
8	10	12	12	7	16	16	20	20	15	7	66	55	30	20	13	9	9	7	12	5	7	8	8	7
9	8	8	8	24	10	16	8	9	8	8	16	35	35	40	32	17	15	16	18	13	9	19	17	14
10	17	7	7	8	7	7	10	13	11	22	15	17	14	17	14	14	14	C	C	C	C	C	C	C
11	C	C	C	C	11	7	E C 15	17	8	C	C	C	C	C	C	C	C	27	23	17	19	14	11	15
12	12	9	7	9	5	8	12	8	13	13	13	17	11	14	14	14	14	18	13	13	9	13	8	8
13	7	7	7	8	10	8	7	7	8	10	13	13	13	10	15	17	15	14	14	11	14	10	9	7
14	E	7	13	19	11	7	6	C	C	17	13	14	10	8	8	9	12	9	8	6	10	9	7	8
15	9	10	12	12	8	8	16	16	14	21	17	17	13	12	13	10	7	9	8	10	10	7	5	E
16	E	6	7	10	11	9	6	8	8	8	8	10	11	9	14	22	13	12	10	9	7	8	E	9
17	10	E	10	7	7	7	10	9	13	18	14	13	15	17	12	30	19	17	11	13	11	13	14	13
18	13	11	7	6	8	6	6	8	9	10	11	11	11	10	8	7	9	7	7	5	E	9	7	8
19	7	8	8	8	8	8	10	13	15	14	14	12	17	17	15	14	13	18	14	15	8	13	15	20
20	14	12	13	7	13	10	15	12	12	14	15	13	15	11	10	10	10	7	6	5	E	9	13	11
21	11	7	7	12	13	15	13	8	B	14	18	B	22	24	10	40	35	14	17	12	12	7	10	8
22	6	9	8	B	13	7	13	19	22	B	20	21	32	46	32	24	23	21	10	10	8	7	9	9
23	12	B	17	25	28	11	22	20	23	14	15	16	15	18	16	13	14	9	11	11	9	8	9	11
24	10	9	8	9	11	15	20	30	28	20	21	19	20	14	33	18	19	16	11	20	20	19	17	14
25	13	22	13	12	7	8	8	8	10	10	13	19	17	13	15	13	11	14	7	8	8	14	11	9
26	13	13	23	9	E	5	29	60	15	22	B	B	B	26	30	20	18	60	23	14	8	9	11	8
27	19	11	25	B	13	15	13	22	21	20	30	35	46	55	30	25	21	15	15	11	13	16	13	10
28	8	9	17	20	19	22	30	20	18	36	25	30	25	21	19	17	19	22	31	22	11	16	15	9
29	14	11	20	12	14	13	7	14	8	29	33	20	20	21	21	19	18	10	8	7	9	18	20	9
30	14	19	20	13	14	19	B	B	B	B	B	36	17	17	19	15	16	13	9	9	9	7	7	7
31	7	9	13	10	9	13	10	B	26	21	B	29	30	40	20	19	30	20	29	18	15	20	14	13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	31	31	31	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	10	9	10	9	10	10	10	13	13	14	14	17	15	16	15	15	14	14	12	12	9	9	10	9
UQ	13	12	17	12	13	14	16	20	18	21	21	29	22	21	20	20	19	18	15	14	12	14	13	13
LQ	7	7	7	7	8	8	8	8	10	10	13	13	13	11	13	13	12	9	8	8	8	8	7	8

MAR. 1980 | F-MIN (0.1 MHZ)

The Radio Research Laboratories. Japan

IONOSPHERIC DATA

MAR. 1980 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	405	390	315	A	A	240	225	220	220	225	225	230	225	240	240	240	235	225	225	225
2	245	280	A	345	385	340	350	370	265	230	225	225	235	225	210	H 215	240	A 265	A	235	230	A 240	240	245
3	A	A	A	A	A	A	340	300	250	220	A 250	225	A	240	225	220	240	240	240	240	265	285	295	300
4	350	A	390	365	360	315	220	250	250	240	245	A	A 250	A 275	225	225	225	250	245	240	240	240	250	255
5	300	A	A	A	275	A	A	230	A	250	240	240	240	240	230	230	230	250	245	240	245	260	245	260
6	300	320	340	A	A	A	340	255	245	240	250	235	225	225	230	235	235	240	250	230	225	250	245	305
7	335	A	A	400	375	Y	400	330	250	230	240	225	215	235	220	240	240	240	230	240	220	230	245	245
8	A	A	A	405	440	425	A	A	A	260	B	B	250	230	235	230	230	245	250	245	240	230	240	290
9	A	290	380	A	A	A	350	260	240	215	H 210	250	250	250	230	215	240	245	225	245	235	240	250	240
10	280	325	A	385	375	335	260	245	245	240	200	230	230	230	240	230	240	C	C	C	C	C	C	C
11	C	C	C	C	A	375	290	250	230	C	C	C	C	C	C	C	C	230	240	230	230	235	225	235
12	250	285	375	350	350	330	380	255	245	230	235	240	235	225	200	210	220	215	220	215	205	220	240	245
13	245	245	280	340	365	240	200	250	225	225	225	225	H 210	240	230	225	235	235	225	205	225	225	220	345
14	425	340	A	A	A	340	295	C	C	280	230	235	220	230	220	225	240	225	240	225	215	240	265	300
15	295	340	B	395	350	300	280	250	240	235	225	235	235	210	225	220	225	220	215	215	210	220	215	220
16	240	280	310	275	A	350	315	250	240	225	225	225	215	225	225	235	225	215	220	210	210	215	215	220
17	255	300	A	410	375	350	305	255	H 210	200	230	240	220	205	215	240	240	220	230	215	220	230	240	250
18	305	350	295	A	A	365	240	255	240	235	240	235	225	210	235	235	225	235	235	200	210	220	235	240
19	245	205	A	355	350	325	H 200	250	240	235	230	240	235	240	235	235	225	240	235	220	220	235	260	280
20	315	340	340	410	440	375	340	290	250	240	235	225	225	235	225	225	225	230	230	220	220	210	230	300
21	340	335	345	A	A	A	A	A	B	A	A	B	270	255	245	E B 285	B 270	265	275	400	440	A	A	280
22	270	A	300	B	400	A	A	A	A	B	A	400	250	B	250	270	305	295	260	A	445	A	350	A
23	A	B	A	E A 380	Y	400	A	A	345	250	220	H 210	240	240	240	240	240	H 200	230	215	205	225	250	255
24	280	300	330	325	330	B 370	350	300	280	250	240	225	235	240	240	240	230	235	230	235	230	220	230	240
25	290	A	A	A	400	375	320	265	250	H 220	225	235	240	240	225	240	225	220	205	205	225	230	230	250
26	A	A	A	A	470	A	Y	A	A	Y	B	B	B	290	275	280	300	B	A 305	300	300	400	A	A
27	A	A	A	B	A	Y	A	A	300	275	280	260	B	B	245	235	245	240	235	230	240	240	260	290
28	A	A	A	A	A	A	A	Y	320	305	230	240	240	240	225	230	240	225	210	225	225	220	230	230
29	295	E A 375	275	425	250	A	385	285	275	295	255	240	240	240	240	225	235	235	230	215	200	240	260	340
30	A	A	290	300	345	415	B	B	B	B	B	300	250	240	245	240	245	240	235	210	215	240	260	300
31	400	440	430	A	A	450	250	B	A	300	B	250	290	B	250	250	250	240	255	240	255	290	315	400
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	17	14	16	19	20	22	20	22	26	24	26	27	27	30	30	30	29	29	29	30	28	28	28
MED	295	310	335	366	375	358	315	255	248	240	230	235	235	240	230	231	238	240	235	230	225	232	242	255
UQ	315	340	375	402	400	382	350	288	265	250	240	240	245	240	240	240	240	240	245	240	240	240	260	300
LQ	255	285	295	342	350	332	260	250	240	230	225	225	225	225	225	225	225	225	230	215	215	222	230	240

MAR. 1980 | H'F (KM)

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IONOSPHERIC DATA

APR. 1980 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	52	79	A	73	A	O S 63	50	59	70	78	84	X 85	X 93	X 96	X 102	X 105	X 110	X 105	S 96	X 81	60	A	A	43
2	A	33	43	55	53	81	66	O S 62	78	88	X 88	X 96	X 100	R 106	106	X 108	X 107	X 109	109	100	83	75	53	X 43
3	37	33	30	63	67	65	86	70	72	90	105	117	X 119	125	X 132	X 132	X 126	X 123	X 121	X 117	90	45	45	46
4	45	38	47	60	75	60	55	55	68	X 79	X 98	X 101	R 94	112	127	120	135	X 136	X 126	X 110	X 92	65	60	43
5	40	65	65	62	80	78	83	81	90	103	96	107	113	X 116	X 124	X 126	X 126	X 118	X 117	S 86	S 72	75	35	29
6	26	30	A	43	45	65	110	U Y 44	90	110	113	121	130	134	140	X 142	X 138	135	110	90	100	80	73	43
7	54	68	70	90	46	75	70	70	73	72	83	72	X 76	88	X 87	X 90	X 103	X 106	X 112	X 104	91	63	A	65
8	36	45	B	80	A	73	A	A	75	75	84	102	105	110	X 111	X 116	127	132	123	106	75	63	31	A
9	33	28	50	A	57	45	U Y 50	U Y 64	B	B	B	B	69	O R 68	B	122	130	R	90	70	63	33	36	37
10	35	A	43	113	A	A	62	A	B	B	B	B	B	68	O R 78	95	120	125	110	90	67	52	40	36
11	34	83	58	70	A	43	52	60	63	73	55	66	80	O R 79	B	122	122	136	X 117	90	A	65	35	B
12	B	A	69	A	A	B	A	U Y 41	U Y 68	37	B	B	B	B	B	68	86	90	78	65	A	A	A	A
13	A	54	30	A	52	A	A	48	56	R	B	O R 60	B	87	X 110	118	120	110	104	89	70	A	A	A
14	A	A	A	A	45	63	45	B	70	B	90	92	X 95	X 100	X 105	X 111	X 111	X 110	X 106	89	87	25	A	A
15	A	A	A	A	78	B	80	65	73	75	70	80	B	90	107	113	110	107	96	80	73	65	80	A
16	A	46	A	A	57	A	A	B	70	B	B	B	B	O R 82	88	91	X 89	X 90	90	90	76	30	A	A
17	A	A	A	B	B	A	70	B	65	B	B	B	B	R	119	120	117	100	X 91	80	67	38	30	A
18	A	47	R	B	A	52	60	62	74	85	100	X 107	X 121	X 125	X 135	X 136	X 135	127	X 120	X 90	75	43	24	27
19	18	50	33	A	A	73	70	70	72	80	R 96	X 107	X 126	X 133	145	146	147	135	120	117	92	66	40	A
20	B	A	A	75	78	B	67	73	85	87	105	115	X 125	X 128	X 130	X 136	X 139	X 139	X 125	123	90	60	31	40
21	A	A	A	75	77	73	77	73	83	91	115	130	137	139	X 140	R 146	X 144	X 130	X 115	104	77	48	40	30
22	A	A	X 45	A	A	78	63	68	96	90	109	X 113	X 124	X 132	X 136	X 136	X 123	X 120	X 113	S 106	80	53	58	40
23	51	53	45	A	A	A	67	72	79	83	90	X 101	X 115	R 128	X 132	X 138	X 134	X 129	105	92	75	46	45	54
24	62	46	36	A	A	75	B	A	A	80	X 86	87	X 96	X 105	X 108	X 116	S 117	X 115	S 101	X 92	67	30	R	53
25	42	44	O R 43	B	A	A	A	A	88	83	90	X 102	X 118	X 128	X 124	X 130	R 133	139	115	92	X 81	45	35	36
26	B	A	A	60	70	70	75	A	B	82	96	110	X 126	X 139	142	X 146	X 137	X 117	X 108	S 95	80	54	38	X 31
27	52	72	70	68	66	70	80	91	70	71	X 90	X 113	X 131	X 132	X 124	X 133	X 130	X 121	S	S 97	S 78	46	32	28
28	53	A	A	A	A	89	90	76	80	85	X 99	X 111	X 126	X 124	X 134	X 130	X 129	120	120	110	72	56	33	27
29	30	40	43	55	70	77	73	80	80	81	90	110	120	126	138	136	X 134	124	R 112	102	80	50	34	24
30	39	46	45	68	62	67	72	75	82	90	105	110	113	120	120	118	X 116	X 128	105	104	76	63	40	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	20	18	16	17	21	24	22	26	24	24	25	24	28	27	30	30	29	29	30	28	27	23	20
MED	40	46	45	68	66	70	70	69	74	82	93	107	X 116	118	X 124	X 122	X 126	X 121	110	92	76	53	38	38
UQ	52	60	58	75	75	75	78	73	82	89	102	111	X 126	X 128	X 134	X 136	X 134	130	X 117	104	85	64	45	43
LQ	34	39	43	60	53	63	61	60	70	76	87	92	96	93	X 108	113	X 116	X 110	104	89	72	45	34	30

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APR. 1980 | FXI (0.1 MHZ)

IONOSPHERIC DATA

APR. 1980 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00'.4 S, Long. 39° 35'.4 E Sweep .4 MHz to 15 MHz in 20sec in automatic operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	A	F	A	S 57	F 40	F	F	F	F	79	R 87	R 90	R 96	R 99	104	J S 99	90	75	F	A	A	F
2	A	F	F	F	F	F	F	56	F	F	82	90	94	100	F 99	102	101	103	F	F	F	F	F	37
3	F 30	F	F	F	F	F	F	F	F	F	F	F	113	F 115	126	126	120	117	115	111	F	F	F	F
4	F	F	F	F	F	F	F	F	F	73	92	94	R 88	F 101	F	F	F	129	120	104	S 86	F	F	F
5	F	F	F	F	F	F	F	F	F	F	F	F	F	110	118	120	S 120	112	111	S 80	S 66	F	F	F
6	F	F	A	F	F	F	F	U Y 38	F	F	F	F	F	F	F	136	132	F	F	F	F	F	F	F
7	F	F	F	F	F	F	F	F	F	F	F 74	F 65	70	F 77	81	84	97	S 99	105	S 98	F 83	F	A	F
8	F	F	B	F	A	F	A	A	F	F	F	F	F	F	103	110	F	F	F	F	F	F	F	A
9	F	F	F	A	F	F	U Y 44	U Y 58	B	B	B	B	F 62	62	B	F	F	R	F	F	F	F	F	F
10	F	A	A	F	A	A	F	A	B	B	B	B	B	F	72	F	F	F	F	F	F	F	F	F
11	F	F	F	F	A	F	F	F	F	F	F	F	F	73	B	F	F	F	110	F	A	F	F	B
12	B	A	F	A	A	B	A	U Y 35	U Y 62	F	B	B	B	B	B	F	F	F	F	F	A	A	A	A
13	A	F	F	A	F	A	A	F	F	R	B	54	B	F	104	F	F	F	F	F 80	F	A	A	A
14	A	A	A	A	F	F	F	B	F	B	F	F	89	93	99	105	105	104	S 100	F	F	F	A	A
15	A	A	A	A	F	B	F	F	F	F 69	F	F	B	F	F 100	F	F 103	F 99	F 89	F	F	F	F	A
16	A	F	A	A	F	A	A	B	F	B	B	B	B	R 76	F 80	F 81	83	84	F	F	F	F	A	A
17	A	A	A	B	B	A	F	B	F	B	B	B	B	R	F	F	F	F	85	F	F	F	F	A
18	A	F	R	B	A	F	F	F	F	F	F	100	F 112	118	128	130	R 128	F	114	84	F 62	F	F	F
19	F	F	F	A	A	F	F	F	F	F 70	90	R 101	119	127	F	F	F	F	F	F	F	F	F	A
20	B	A	A	F	F	B	F	F	F	F	F	F	R 119	122	123	130	133	133	S 118	F	F	F	F	F
21	A	A	A	F	F	F	F	F	F	F	F	F	F	F	134	140	138	124	S 108	F	F	F 40	F	F
22	A	A	39	A	A	F	F	F	F	F	F	106	118	125	130	130	S 117	114	107	S 100	F	F	F	F
23	F	F	F	A	A	A	F	F	F	F	F	J R 95	J R 109	R 121	126	132	J R 127	R 123	F	F	F	F	F	F
24	F	F	F	A	A	F	B	A	A	F	80	F 77	90	99	102	110	111	109	S 95	86	F	F	R	F
25	F	F	37	B	A	A	A	A	F	F	F	96	112	121	118	124	R 127	F	F	F	75	F	F	F
26	B	A	A	F	F	F	F	A	B	F	F	F	120	133	F	140	131	111	102	89	F	F	F 30	25
27	F	F	F	F	F	F	F	F	F	F	84	107	125	126	J S 118	127	124	J R 115	S	91	S 72	F	F	F 22
28	F	A	A	A	A	F	F	F	F	F	93	105	120	118	128	124	123	F	F	F	F	F	F	F
29	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	128	F 117	106	F	F	F	F	F
30	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	R 112	110	R 112	F	F	F	F	F 32	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1		2			1	2	4	1	3	7	13	17	20	20	20	21	18	16	11	6	1	2	3
MED	F 30		38			S 57	42	U Y 47	U Y 62	F 70	84	95	112	112	111	124	120	112	106	89	74	F 40	F 31	25
UQ								57		72	91	101	119	122	126	130	128	117	112	99	83			31
LQ								U Y 36		F 70	81	79	89	92	99	108	105	103	98	82	S 66			24

IONOSPHERIC DATA

APR. 1980 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep .4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	26	40	46	43	52	45	46	41	25	G 15	G	G 21	G 21	G 27	G 19	G 21	22	14	E B 19	E B 22	21	38	39	36
2	43	33	30	23	30	42	50	50	37	33	G	G	G	31	G 18	G 20	G 20	29	18	26	E B 18	E B 19	17	16
3	16	E B 15	E B 15	16	30	13	E B 14	16	36	29	30	E B 24	G	G	G 20	G	15	17	E B 19	16	E B 23	16	38	38
4	21	29	30	30	41	20	25	35	39	G	G 23	E B 33	E B 47	E B 45	E B 24	E B 46	E B 28	E B 21	E B 16	16	E B 13	20	37	36
5	25	25	24	32	35	35	43	31	24	E B 21	24	27	G	G	G	G	G	17	12	E B 12	E B 16	23	E B 15	E B 15
6	E B 18	26	30	25	21	16	16	38	35	31	23	33	G	G	G	G	G	G	G	33	75	60	45	37
7	40	52	37	32	42	45	37	31	30	E B 35	27	E B 22	E B 30	G	G	G	G	E B 13	E B 15	E B 60	E B 20	20	37	60
8	37	90	B	E B 35	63	47	60	60	42	20	G	24	G	30	G	E B 21	E B 28	E B 70	E B 26	E B 30	30	E B 13	20	34
9	30	31	45	52	E B 41	30	44	58	B	B	B	B	G	E B 43	B	E B 23	30	E B 45	E B 35	33	36	29	31	29
10	27	30	28	68	46	53	32	51	B	B	B	B	B	E B 30	E B 33	26	26	20	37	34	45	36	32	33
11	33	33	34	40	56	57	36	35	33	30	E B 28	E B 30	G	E B 50	B	E B 65	E B 35	E B 30	E B 35	E B 18	110	52	50	B
12	B	56	E B 55	45	56	B	43	35	62	26	B	B	B	B	B	E B 45	E B 22	E B 33	E B 33	E B 14	37	35	35	37
13	45	31	20	25	38	36	37	36	29	41	B	E B 40	B	E B 42	E B 51	E B 35	E B 35	E B 59	E B 30	E B 30	23	52	60	38
14	42	39	35	35	27	26	36	B	E B 25	B	E B 33	E B 27	E B 28	E B 26	26	21	19	15	10	E B 17	E B 44	E B 15	38	70
15	49	58	33	45	25	B	48	46	38	E B 45	E B 48	E B 50	B	E B 55	E B 30	E B 25	21	20	E B 9	16	60	55	90	45
16	44	63	70	69	38	51	46	B	E B 23	B	B	B	B	E B 55	E B 45	E B 25	E B 25	E B 16	12	23	42	41	33	35
17	36	69	87	B	B	56	40	B	35	B	B	B	B	E B 56	E B 29	E B 25	E B 21	16	12	18	16	26	15	37
18	51	43	32	B	37	45	66	36	42	22	G	E B 24	G	G	G	E B 24	E B 30	16	24	18	16	E B 17	E B 13	27
19	51	34	36	38	33	32	65	32	15	32	E B 20	G	G	G	25	23	29	12	16	18	E B 20	E B 10	30	53
20	B	70	45	45	30	B	50	45	35	E B 19	E B 20	G	B	G	G	E B 19	20	10	48	20	E B 10	E B 10	20	66
21	43	58	41	52	43	30	44	45	52	G	G	E B 22	G	G	G	G	42	19	16	10	15	E B 14	23	39
22	45	40	45	53	46	49	69	70	39	35	E B 18	G	G	G	G 21	G 18	33	13	13	17	E B 21	18	36	41
23	42	36	37	70	52	51	46	44	24	G	E B 20	G 21	G	G 20	G	G 17	32	29	14	11	31	16	16	13
24	33	37	54	53	60	45	B	49	50	33	E B 40	29	G 23	G	G 16	G 17	G 14	16	12	10	17	22	18	E B 23
25	23	43	47	B	61	54	70	75	70	46	E B 26	E B 28	E B 30	E B 25	23	E B 57	E B 59	E B 26	E B 30	E B 27	E B 24	E B 15	E B 18	25
26	B	27	44	31	22	18	36	65	B	36	34	25	26	G	25	23	19	30	15	E B 21	24	12	19	17
27	19	37	70	30	30	30	15	11	26	14	G	G 20	G 21	G 21	21	28	20	E B 10	11	9	15	14	E B 13	22
28	13	73	115	52	55	50	30	34	12	14	20	21	35	23	52	25	11	11	21	30	26	23	26	10
29	16	12	14	32	35	42	42	51	E B 8	16	E B 17	E B 16	28	27	25	17	12	16	12	E B 14	E B 18	E B 16	E B 12	28
30	15	23	27	32	20	24	55	53	39	15	G 16	G 17	G	G	30	33	36	33	18	E B 23	E B 20	E B 13	23	35
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	30	29	27	29	27	29	27	27	25	24	25	23	29	27	30	30	30	30	30	30	30	30	29
MED	33	37	36	38	38	42	43	44	35	23	E G 20	E G 24	G	E G 23	E G 21	E G 23	18	16	14	14	19	20	28	35
UQ	43	56	46	52	52	50	50	51	39	32	25	E B 28	24	E B 31	25	E B 26	26	23	E B 26	22	34	35	37	38
LQ	22	30	30	31	30	30	36	35	25	14	E G 16	E G 20	G	G	G	E G 17	16	14	12	13	E B 17	E B 15	18	25

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APR. 1980 | FES (0.1 MHZ)

IONOSPHERIC DATA

APR. 1980 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep .4 MHz to 15 MHz in 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	12	14	14	13	10	15	14	13	19	13	17	17	14	14	14	15	8	10	19	22	10	10	9	9
2	12	14	12	8	13	16	14	20	20	14	14	15	14	14	13	13	11	10	13	16	18	19	14	13
3	10	15	15	8	10	9	14	8	23	22	21	24	17	17	17	17	9	13	19	14	23	8	9	7
4	9	9	8	8	9	7	10	10	13	14	15	33	47	45	24	46	28	21	16	13	13	11	8	8
5	11	13	10	13	10	13	13	16	18	21	19	19	15	17	17	15	16	12	9	12	16	15	15	15
6	18	17	14	15	13	13	13	23	20	11	15	17	15	15	16	15	13	12	8	12	11	13	12	11
7	13	7	8	8	14	10	8	10	21	35	20	22	30	19	17	17	14	13	15	60	20	14	8	9
8	10	13	B	35	20	15	22	20	13	15	15	14	13	10	14	21	28	70	26	30	8	13	10	8
9	7	8	8	14	41	20	19	22	B	B	B	B	18	43	B	23	16	45	35	12	8	10	8	9
10	7	7	7	11	14	21	7	22	B	B	B	B	B	30	33	22	14	15	10	8	13	20	8	8
11	7	7	9	5	7	8	13	8	14	8	28	30	20	50	B	65	35	30	35	18	7	8	7	B
12	B	11	55	22	20	B	14	20	21	19	B	B	B	B	B	45	22	33	33	14	7	9	8	8
13	11	22	10	10	7	28	7	13	14	22	B	40	B	42	51	35	35	59	30	30	7	7	7	9
14	14	13	14	18	19	15	14	B	25	B	33	27	28	26	23	18	15	8	8	17	44	15	10	15
15	7	7	15	8	12	B	19	15	20	45	48	50	B	55	30	25	15	15	9	8	8	6	8	19
16	21	9	10	23	13	17	20	B	23	B	B	B	B	55	45	25	25	16	8	9	8	7	13	9
17	10	20	28	B	B	27	15	B	16	B	B	B	B	56	29	25	21	12	7	9	8	8	8	7
18	10	15	22	B	17	13	12	28	18	19	19	24	23	22	21	24	30	12	11	7	7	17	13	9
19	7	9	13	13	9	8	8	7	8	8	20	21	20	22	13	E	9	7	9	11	20	10	8	8
20	B	21	11	14	9	B	18	11	8	19	20	20	20	20	18	19	14	5	9	10	10	10	8	8
21	10	3	13	15	9	10	14	21	12	15	19	22	21	19	19	18	7	8	9	8	10	14	8	10
22	11	11	18	16	17	28	21	10	E	8	18	18	18	20	17	16	13	9	9	9	21	9	8	19
23	8	7	15	20	13	21	12	8	10	13	20	17	15	18	18	14	10	8	7	7	E	7	7	7
24	9	9	9	16	15	15	B	22	19	15	40	16	20	20	14	15	11	9	8	8	9	11	13	23
25	7	8	16	B	15	26	23	13	21	13	26	28	30	25	13	57	59	26	30	27	24	15	18	13
26	B	14	8	9	17	5	6	32	B	19	17	19	18	20	7	13	8	8	9	21	13	10	9	9
27	7	10	7	7	7	6	7	6	6	8	14	15	15	14	15	8	8	10	7	5	9	9	13	10
28	9	10	16	13	13	13	10	10	6	7	10	13	13	17	15	12	6	8	14	12	6	8	10	7
29	10	7	8	E	5	8	7	7	8	8	17	16	21	20	15	13	9	10	10	14	18	16	12	19
30	12	12	19	9	13	13	8	9	8	5	7	7	16	16	13	8	7	8	9	23	20	13	9	8
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	10	10	13	13	13	15	14	14	18	15	20	22	20	20	17	18	14	12	10	12	10	10	9	9
UQ	12	14	16	18	17	21	18	22	21	22	40	33	30	42	29	25	22	16	19	18	18	14	12	13
LQ	8	8	9	8	9	10	8	10	10	11	17	17	15	17	14	14	9	8	9	9	8	8	8	8

The Radio Research Laboratories. Japan

APR. 1980 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

APR. 1980 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	395	275	A	480	A	A	A	395	320	275	250	245	240	250	240	240	230	230	225	250	280	A	A	375
2	A	A	370	300	410	A	A	A	380	250	245	240	245	240	240	245	225	H 200	225	235	245	245	245	265
3	275	325	390	390	455	410	350	275	270	270	250	240	240	235	240	235	220	210	215	215	220	305	370	295
4	300	305	410	A	400	400	370	290	250	235	245	240	B 255	255	250	250	225	235	230	240	240	265	280	350
5	440	350	290	375	435	480	415	340	270	250	240	245	240	240	235	235	225	215	215	225	275	320	270	280
6	B	A	A	400	400	395	390	Y	290	225	230	230	220	225	220	235	240	240	250	390	240	260	340	250
7	290	415	390	375	320	475	450	375	490	B 340	255	250	275	250	250	240	245	240	235	B	230	225	A	A
8	A	225	B	420	A	425	A	A	365	275	250	245	245	245	240	250	235	B	240	220	255	245	280	A
9	305	A	300	A	B	310	Y	Y	B	B	B	B	270	B	B	285	270	B 320	255	325	295	A	350	325
10	385	A	A	A	A	A	340	A	B	B	B	B	B	290	B 285	250	250	225	240	245	275	290	320	340
11	350	A	295	A	A	A	A	425	350	290	305	300	250	B	B	B	240	240	245	260	A	A	A	B
12	B	A	B	A	A	B	A	Y	Y	A	B	B	B	B	B	B	265	275	275	260	A	A	A	A
13	A	245	A	A	A	A	A	A	A	225	B	B	B	B	B 220	250	250	B	245	255	240	A	A	A
14	A	A	A	A	A	460	A	B	350	B	260	245	240	240	240	240	225	215	195	225	B	300	A	A
15	A	A	A	A	305	B	A	A	A	B	B	B	B	B	270	250	245	235	190	250	A	A	A	A
16	A	A	A	A	355	A	A	B	B	B	B	B	B	B	B 275	260	250	240	240	230	A	A	A	A
17	A	A	A	B	B	A	A	B	A	B	B	B	B	B	255	250	240	235	225	215	220	255	250	A
18	A	305	A	B	A	450	A	A	290	245	240	235	230	225	230	225	225	210	200	205	210	220	270	260
19	A	285	A	A	A	460	380	320	280	245	240	235	225	220	225	220	210	195	230	220	235	210	260	A
20	B	A	A	A	300	B	A	A	300	225	240	240	240	235	230	210	200	200	190	215	195	210	300	A
21	A	A	A	290	295	360	A	410	315	245	245	250	230	230	220	220	215	195	200	220	205	235	290	A
22	A	A	A	A	A	A	A	480	335	250	240	225	240	235	230	H 210	205	H 190	215	230	225	250	315	A
23	255	270	300	A	A	A	A	400	300	H 200	245	240	240	225	210	215	205	205	195	200	200	225	260	340
24	370	375	310	A	A	A	B	A	A	275	250	245	255	245	235	235	240	210	215	215	240	290	405	305
25	295	360	A	B	A	A	A	A	A	315	240	240	245	245	245	E B 250	E B 250	225	210	230	225	220	270	280
26	B	A	A	335	390	310	370	A	B	290	240	225	215	215	205	225	H 200	200	H 185	245	200	230	235	265
27	325	A	270	400	405	375	355	340	295	260	225	225	220	205	205	210	200	200	210	205	200	220	235	290
28	280	A	A	A	A	410	295	380	295	240	235	235	220	210	215	225	215	195	205	205	205	220	220	300
29	300	285	345	435	430	425	400	350	190	195	H 200	230	225	220	210	205	210	200	210	220	200	220	250	330
30	350	370	320	405	415	425	A	A	360	245	245	240	230	240	240	240	225	215	235	230	225	235	250	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	14	12	12	14	16	11	13	20	23	23	23	24	23	27	28	30	28	30	29	25	23	22	16
MED	305	305	315	395	400	418	370	375	300	250	245	240	240	235	235	236	225	215	220	230	225	235	270	298
UQ	360	360	380	412	415	455	395	400	350	275	250	245	245	245	242	250	242	235	240	245	240	262	315	335
LQ	292	275	298	355	320	385	352	340	285	238	240	235	228	225	220	222	215	200	205	215	205	220	250	272

APR. 1980 | H'F (KM)

The Radio Research Laboratories. Japan

IONOSPHERIC DATA

MAY. 1980 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep .4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	52	46	52	65	54	72	75	80	81	80	90	X 116	X 130	X 131	X 134	X 134	X 127	118	119	99	90	51	41	29
2	32	37	22	26	47	50	53	67	66	65	X 69	90	120	128	138	X 138	X 133	120	106	86	72	37	28	19
3	32	35	37	40	65	72	75	73	73	75	90	118	X 125	X 131	140	X 140	S 120	X 110	102	75	60	30	20	19
4	19	30	37	38	55	70	77	74	B	O R 58	100	120	130	135	145	X 137	S 121	S 115	S	95	80	33	35	23
5	O R 21	B	B	B	B	53	B	28	37	75	96	X 118	X 136	X 131	X 140	X 137	X 121	X 110	X 93	X 93	X 56	33	45	91
6	70	A	75	63	90	93	72	73	70	80	75	B	100	123	130	X 126	X 131	132	116	75	53	53	A	50
7	50	A	A	A	38	60	65	43	50	X 69	X 92	X 107	X 132	X 137	X 133	X 128	X 120	X 110	X 94	S 86	65	A	45	A
8	52	56	43	70	60	75	87	88	67	75	77	83	111	111	114	X 112	X 114	100	83	80	55	38	31	29
9	33	37	44	81	68	75	70	75	B	73	73	100	B	126	110	133	150	D 150	126	X 72	56	46	53	A
10	A	66	A	A	A	A	43	55	58	63	70	80	X 94	X 108	X 116	X 112	X 110	X 106	76	54	40	33	29	40
11	43	45	60	73	73	75	83	76	78	75	57	B	B	73	97	B	129	116	75	70	50	73	39	B
12	A	B	A	A	A	B	A	A	A	9	B	B	B	B	X 93	96	100	90	75	31	B	B	A	A
13	A	A	A	A	A	A	A	B	A	46	B	B	C	C	C	C	C	C	C	76	37	X 28	60	110
14	73	A	A	A	79	75	B	B	U Y 55	62	B	B	O R 96	115	121	X 118	X 112	X 113	X 95	80	53	A	A	A
15	A	B	B	A	A	A	29	35	40	45	65	B	116	X 120	X 125	X 125	X 105	103	75	72	29	B	20	21
16	29	55	A	A	A	B	60	70	67	70	69	102	X 117	X 113	128	123	X 104	90	75	65	36	18	18	18
17	20	20	B	B	25	36	37	37	43	60	76	B 99	X 114	X 124	126	125	100	X 81	63	49	29	19	23	25
18	A	42	A	35	41	68	73	65	65	60	80	X 95	106	115	120	123	111	109	90	73	37	X 27	18	B
19	A	B	40	63	53	65	71	38	36	53	80	84	R 96	110	110	X 106	120	108	X 92	80	36	A	A	A
20	44	52	60	66	60	80	70	70	85	75	86	105	111	116	X 133	X 132	109	100	85	77	38	23	26	50
21	60	65	40	40	46	67	70	63	40	65	82	100	110	X 122	X 121	X 118	X 95	S 94	89	58	36	18	27	40
22	46	50	60	63	68	79	78	75	73	60	78	X 91	X 112	X 118	X 127	X 126	X 97	X 102	100	X 80	X 60	45	35	28
23	45	45	49	40	43	56	65	63	80	80	87	97	112	124	126	X 122	X 102	S 99	X 96	X 70	52	43	A	A
24	43	A	50	A	A	A	50	72	78	80	80	X 80	X 104	116	112	118	B	X 107	X 87	67	78	A	57	43
25	A	A	62	63	75	A	72	63	69	75	78	64	B	65	95	X 123	80	53	46	60	50	A	A	55
26	52	43	40	A	A	116	60	45	45	57	75	93	X 112	122	130	120	120	107	72	64	29	A	20	25
27	A	A	A	A	A	52	57	50	60	68	75	85	103	110	120	110	92	90	79	50	28	25	18	18
28	35	28	77	80	70	68	63	72	75	75	81	X 100	112	121	X 126	X 114	102	X 101	X 86	70	54	31	30	28
29	28	27	37	70	66	70	73	73	70	73	76	X 86	R 101	R 116	X 116	X 112	O S 101	X 91	82	X 66	35	26	X 25	59
30	68	60	48	70	65	60	75	70	B	76	78	88	110	X 110	114	X 105	X 102	X 90	84	56	30	27	30	35
31	45	52	50	A	A	92	A	A	A	B	76	80	98	90	116	117	X 118	X 122	96	B	32	30	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	20	20	18	21	24	26	27	25	29	28	25	26	29	30	29	29	30	29	30	30	23	24	22
MED	44	45	48	63	60	70	70	70	67	70	78	95	112	118	123	X 123	X 111	106	87	72	50	31	30	29
UQ	52	54	60	70	68	75	75	73	73	75	84	102	X 117	X 124	130	X 128	X 120	113	96	80	56	40	40	50
LQ	32	36	40	40	47	60	60	52	50	60	75	85	103	111	114	X 114	102	94	76	64	36	26	22	23

MAY. 1980 | FXI (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAY. 1980 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	F	F	F	F	F	F	F	F	F	110	124	J R 125	128	J R 128	R 120	F	F	F	F	F	F	F
2	F	F	F	F	F	F	F	F	F	F	63	F	F	F	F	132	127	F	F	F	F	F	F	F
3	F	F	F	F	F	F	F	F	F	F	F	F	118	123	F	134	114	104	F	F 68	F	F	F	F
4	F	F	F	F	F	F	F	F	B	R 52	F	F	F	F	F	131	S 115	109	S	F	F	F	F	F
5	15	B	B	B	B	F	B	F	F	F	F	112	130	125	134	131	115	104	87	87	50	F 26	F	A
6	F	A	F	F	F	F	F	F	F	F	F	B	F	F	F	J R 120	J R 125	F	F	F	F	A	A	F
7	F	A	A	A	F	F	F	F	F	63	86	R 101	J R 126	131	J R 127	J R 122	114	104	88	80	F	A	F	A
8	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	106	108	F	F	F	F	F	F	F
9	F	F	F	F	F	F	F	F	B	F	F	F	B	F	F	F	F	F	F	66	F	F	F	A
10	A	F	A	A	A	A	F	F	F	F	F	F	88	101	110	106	104	100	F	F	F	F	F	F 21
11	F 21	F	F	F 27	F	F	F	F	F	F	F	B	B	F	F	B	F	F	F	F	F	F	F 33	B
12	A	B	A	A	A	B	A	A	A	B	B	B	B	B	87	F	F	F	F	F	B	B	A	A
13	A	A	A	A	A	A	A	B	A	F	B	B	C	C	C	C	C	C	C	F	F	22	F	F
14	F	A	A	A	F	F	B	B	U Y 49	F	B	B	R 90	F	F	112	106	107	89	F	F	A	A	A
15	A	B	B	A	A	A	F	F	F	F	F	B	F	R 112	119	R 119	99	F	F	F	F	B	F	F
16	F	F	A	A	A	B	F	F	F	F	F	F	110	106	F	117	98	F	F	F	F	F	F	F
17	F	F	B	B	F	F	F	F	F	F	F 70	R 93	108	R 118	F	F	F	75	F 55	F 40	F	F	F	F 19
18	A	F 36	A	F	F	F	F	F	F	F	F	89	F	F 108	F	F	F	F	F	F	F	21	F	B
19	A	B	F	F	F	F	F	F	F	F	F	F 78	R 90	F	F 100	100	F	F	86	F	F	A	A	A
20	F	F	F	F	F	F	F	F	F	F	F	F	F	F 110	127	J R 126	F	F	F	F	F 30	F	F	F
21	F	F	F	F	F	F	F	F	F	F	F	F	F	116	R 115	112	89	88	F	F 46	F	F	F	F 20
22	F 21	F	F	F	F	F	F	F	F	F	F	85	106	112	121	J R 120	91	S 95	F	74	54	F	F	F
23	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	115	S 96	93	90	64	F	F	A	A
24	F	A	F	A	A	A	F	F	F	F	F	74	98	F	F	F	B	101	80	F	F	A	F	F
25	A	A	F	F	F	A	F	F	F	F	F	F	B	F	F	117	F	F	F	F	F	A	A	F
26	F	F	F	A	A	F	F	F	F	F	F	F	106	F 114	F	F	F	F	F	F	F	A	F	F 17
27	A	A	A	A	A	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
28	F	F	F	F	F	F	F	F	F	F	F	94	F 103	F	120	108	F	95	80	F	F	F	F	F
29	F	F	F	F	F	F	F	F	F	F	F 65	80	R 95	110	110	106	S 95	J R 85	F	60	F	F	19	F
30	F	F	F	F	F	F	F	F	B	F	F	F	F	104	F	99	S 96	84	F	F	F 22	F	F	F
31	F	F	F	A	A	F	A	A	A	B	F	F	F	F	F	F	112	116	F	B	F	F	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	1		1					1	2	4	10	14	15	12	21	18	15	8	9	4	3	2	4
MED	F 21	F 36		F 27					U Y 49	58	68	91	106	112	120	117	107	100	86	66	40	22	26	F 20
UQ	F 21										78	101	118	120	127	R 126	115	104	88	74	52	24		F 20
LQ	18										64	80	95	109	110	108	96	90	80	60	F 26	22		F 18

MAY. 1980 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1980 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	37	60	99	B	55	E B 30	36	50	60	B	B	B	B	30	35	25	E B 35	E B 23	37	38	43	50	45	37
2	63	81	80	63	B	38	49	58	44	18	29	G 18	24	39	E B 20	E B 56	E B 25	E B 15	32	20	29	30	32	36
3	36	35	63	45	B	47	51	49	36	32	16	E B 24	E B 46	E B 50	E B 45	E B 39	B	E B 53	E B 34	E B 26	19	28	38	41
4	77	34	58	52	47	37	29	26	27	10	16	28	28	18	23	30	30	20	E B 11	17	32	12	32	33
5	28	39	36	40	52	58	31	30	29	27	33	17	31	26	18	12	12	E B 13	27	30	32	25	41	26
6	24	15	29	33	47	30	11	18	19	12	15	18	17	32	32	37	18	26	16	12	12	14	29	45
7	80	48	53	70	66	36	35	B	60	52	B	E B 32	32	26	E B 13	E B 10	E B 20	E B 13	E B 19	E B 30	35	41	43	46
8	60	B	43	60	64	50	45	B	B	B	B	B	B	E B 60	E B 27	B	B	E B 23	16	E B 18	B	16	29	32
9	38	60	43	40	50	55	100	43	30	21	27	21	18	18	E B 25	E B 30	B	E B 30	B	E B 20	B	B	22	90
10	70	B	46	112	37	40	46	50	B	B	B	B	B	B	E B 47	29	E B 53	31	33	22	49	90	59	38
11	B	B	B	B	32	B	37	59	42	B	B	B	B	B	E B 22	E B 45	23	B	41	80	110	115	85	67
12	B	80	B	43	72	75	43	68	B	B	B	B	B	B	E B 50	E B 24	32	E B 45	27	33	38	45	70	55
13	56	77	B	B	27	33	B	B	B	B	B	B	B	E B 56	E B 30	E B 30	32	E B 55	28	37	42	37	43	42
14	43	40	50	37	32	45	45	62	36	28	E B 15	20	20	17	19	14	27	28	18	E B 14	11	19	31	30
15	80	38	35	33	27	32	27	29	41	49	40	17	18	17	16	G	E B 11	15	27	26	E B 13	E B 13	B	E B 14
16	15	36	33	47	60	33	37	45	37	32	21	20	21	16	46	16	E B 19	E B 9	10	50	30	38	65	44
17	37	66	40	42	45	45	46	45	41	38	42	32	24	16	16	27	16	12	18	30	20	15	E B 10	E B 12
18	27	27	30	34	19	30	50	72	36	32	24	20	21	61	29	42	31	18	28	27	B	E B 13	30	12
19	29	32	32	28	42	25	27	21	26	56	37	33	21	32	21	26	26	31	19	12	E B 10	33	40	36
20	44	37	40	43	36	42	27	29	16	11	13	17	26	19	14	14	12	13	16	11	E B 9	10	E B 13	21
21	35	20	27	29	30	30	26	64	80	106	36	12	13	E B 13	14	E B 13	18	18	22	12	18	24	29	39
22	44	20	18	36	50	60	57	50	30	16	29	22	19	15	27	11	32	25	19	16	16	25	18	30
23	60	37	80	72	53	36	50	45	17	B	28	27	22	24	20	21	23	11	17	27	B	B	20	35
24	60	43	25	19	28	16	18	31	40	37	30	20	E B 21	21	22	E B 22	E B 24	E B 18	E B 15	22	37	38	41	43
25	55	80	64	69	75	60	47	48	45	E B 35	33	20	27	20	15	16	11	10	E B 12	12	26	10	21	37
26	30	37	35	100	81	61	57	43	29	17	16	17	18	18	37	22	26	E B 20	32	37	45	51	58	50
27	73	44	47	43	45	38	45	45	40	30	26	15	18	17	15	14	14	12	13	12	22	27	35	17
28	14	16	32	46	45	49	46	32	63	16	31	18	28	40	23	33	15	30	37	27	12	28	30	16
29	12	12	14	45	34	33	12	11	11	14	14	22	60	35	15	15	E B 20	E B 14	E B 13	11	13	12	13	18
30	16	30	56	70	56	45	57	50	41	60	16	17	17	18	16	16	53	E B 27	E B 19	E B 17	33	30	40	41
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	27	27	28	29	29	27	26	23	23	24	24	27	30	29	27	29	29	30	26	28	29	30
MED	40	37	40	43	46	38	45	45	36	29	27	20	21	20	19	18	20	15	18	20	28	28	32	36
UQ	60	54	54	62	56	49	49	50	42	38	32	22	27	31	26	28	28	E B 28	28	30	37	38	43	43
LQ	28	31	32	36	33	33	29	30	29	16	16	17	18	18	16	14	15	12	14	13	13	14	29	26

JUN. 1980 | FES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1980 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep .4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	7	13	15	B	25	30	12	14	13	B	B	B	B	14	11	13	35	23	9	10	9	13	7	8
2	7	28	16	8	B	19	13	16	12	14	8	9	14	8	20	56	25	15	8	11	9	9	7	7
3	7	9	20	20	B	13	10	8	9	10	8	24	46	50	45	39	B	53	34	26	16	11	9	9
4	14	13	15	10	10	8	5	7	6	8	7	9	7	10	7	7	7	14	11	7	7	7	11	14
5	8	7	7	7	7	6	6	6	5	6	7	7	7	15	11	9	9	13	8	7	9	9	14	14
6	13	11	7	7	7	5	8	8	7	7	7	7	8	10	8	7	12	9	10	9	9	7	7	8
7	13	9	18	19	13	8	10	B	9	18	B	32	21	19	13	10	20	13	19	30	9	8	11	14
8	20	B	35	17	15	15	15	B	B	B	B	B	B	60	27	B	B	23	14	18	B	9	9	7
9	8	7	13	23	18	14	16	20	7	18	13	17	9	15	25	30	B	30	B	20	B	B	13	7
10	14	B	15	15	21	15	22	18	B	B	B	B	B	B	47	20	53	25	9	13	8	16	8	14
11	B	B	B	B	13	B	28	13	10	B	B	B	B	B	22	45	17	B	9	8	8	18	8	13
12	B	18	B	18	7	24	15	18	B	B	B	B	B	B	50	24	13	45	14	9	8	12	9	47
13	9	13	B	B	11	8	B	B	B	B	B	B	B	56	30	30	10	55	13	8	8	11	9	10
14	8	11	18	13	9	21	17	18	13	10	15	10	14	13	11	9	9	7	8	14	8	9	10	9
15	13	10	11	11	13	9	8	8	13	15	13	13	14	14	13	13	11	12	8	13	13	13	B	14
16	12	7	8	10	9	7	8	19	9	10	8	10	9	9	9	9	19	9	8	10	8	7	20	13
17	8	13	10	11	13	10	10	13	17	7	15	17	10	13	12	8	10	9	8	9	9	11	10	12
18	9	8	7	7	7	8	7	7	7	8	14	18	15	13	12	13	8	10	10	9	B	13	10	8
19	7	6	7	7	7	7	9	9	10	21	22	15	13	10	13	9	7	7	6	8	10	9	8	10
20	10	9	9	8	8	10	8	8	7	8	9	8	9	9	10	8	8	8	8	10	9	9	13	9
21	8	7	7	7	7	8	8	7	8	9	9	10	10	13	10	13	11	15	14	9	8	14	8	9
22	10	8	7	7	14	14	15	9	8	7	12	14	9	9	9	8	6	7	8	9	14	14	8	8
23	8	13	14	14	11	16	14	9	10	B	21	16	14	13	12	8	9	6	12	16	B	B	12	8
24	8	11	12	8	8	7	8	13	12	12	9	13	21	14	15	22	24	18	15	8	13	14	11	11
25	13	18	19	15	10	22	13	13	10	35	24	17	12	13	11	9	8	8	12	9	13	8	12	8
26	9	10	13	14	8	10	10	11	9	9	5	7	7	7	8	8	8	20	8	7	8	15	8	9
27	7	8	8	10	10	13	8	9	8	9	7	8	8	8	8	9	10	9	8	8	6	6	6	8
28	7	7	7	13	11	13	7	8	9	8	7	7	7	9	10	10	10	8	8	8	7	6	6	6
29	7	7	7	7	7	7	7	7	7	7	7	7	7	8	8	8	20	14	13	9	8	9	7	10
30	7	7	15	20	9	28	23	10	20	8	9	9	8	8	9	8	19	27	19	17	13	9	7	7
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	8	10	13	12	10	12	10	10	10	10	12	14	12	13	12	10	11	14	10	9	9	10	9	9
UQ	13	13	18	18	13	16	15	18	13	35	24	24	21	15	20	22	20	23	14	13	13	14	11	13
LQ	7	7	7	8	8	8	8	8	8	8	8	9	8	9	9	8	9	9	8	8	8	9	8	8

JUN. 1980 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1980 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	450	350	470	405	475	315	495	365	305	280	245	235	225	225	225	220	205	225	220	205	225	240	265	E B 275
2	295	275	320	415	420	385	425	440	325	275	B	B 260	240	230	215	220	210	210	220	205	210	235	290	300
3	325	350	330	375	445	425	345	325	240	225	220	230	215	205	210	220	200	205	220	200	220	205	280	300
4	280	335	340	320	350	340	340	305	B	B	235	230	220	200	225	220	200	210	230	240	210	250	260	280
5	E C 330	B	B	B	B	500	B	400	250	245	230	225	220	210	225	210	200	220	205	210	205	245	340	A
6	A	A	A	290	340	320	A	A	445	250	250	B	245	240	225	240	250	E B 300	235	240	260	A	A	295
7	340	A	A	A	470	400	350	290	265	240	215	220	225	220	205	200	200	210	230	215	210	A	320	A
8	290	325	390	300	250	A	440	415	340	A	290	255	250	230	225	210	220	220	200	210	205	225	255	300
9	340	360	A	A	A	A	A	445	B	B	325	270	B	250	250	250	250	240	230	240	360	340	290	A
10	A	A	A	A	A	A	A	440	385	330	260	250	240	230	215	200	200	200	200	200	225	260	290	300
11	315	370	440	A	340	480	405	390	320	270	275	B	B	300	225	B	230	270	320	350	390	220	300	B
12	A	B	A	A	A	B	A	A	A	B	B	B	B	B	255	265	275	250	240	325	B	B	A	A
13	A	A	A	A	A	A	A	B	A	350	B	B	C	C	C	C	C	C	C	230	250	295	290	200
14	215	A	A	A	A	400	B	B	Y	A	B	B	225	235	235	230	215	225	230	240	215	A	A	A
15	A	B	B	A	A	A	500	385	370	310	275	B	220	200	210	205	195	210	210	240	250	B	300	340
16	345	210	A	A	A	B	385	370	295	290	280	240	220	220	245	210	210	205	205	220	220	B	325	380
17	270	350	B	B	B	345	315	295	270	230	220	220	225	225	210	220	190	210	205	215	265	280	305	300
18	A	250	A	A	440	400	355	325	250	190	245	220	220	220	230	200	220	210	205	215	225	260	270	B
19	A	B	415	440	B	475	415	360	335	290	255	240	225	220	H 200	210	235	235	255	245	325	A	A	A
20	375	A	430	400	425	550	420	405	350	280	210	250	240	240	240	200	210	220	200	E A 225	215	225	340	290
21	425	290	395	385	380	395	335	365	330	240	240	230	225	230	220	220	200	220	225	205	210	275	280	285
22	285	310	340	350	365	360	345	340	335	255	240	235	220	230	220	220	200	250	225	220	220	215	275	295
23	325	325	305	390	440	490	560	600	370	250	225	215	215	230	230	215	205	225	255	260	300	360	A	A
24	375	A	230	A	A	A	A	455	390	285	240	225	240	225	250	225	B	250	250	250	A	A	275	A
25	A	A	380	415	325	A	A	A	470	405	300	370	B	395	300	320	390	400	420	375	360	A	A	350
26	255	210	305	A	A	265	450	A	A	350	260	240	230	220	220	230	210	235	200	240	270	A	290	A
27	A	A	A	A	A	A	440	425	350	275	230	235	235	215	205	200	205	210	215	240	250	285	280	310
28	340	350	365	350	290	390	365	340	325	285	225	225	230	220	205	200	190	225	220	210	215	240	260	325
29	305	320	375	390	390	385	375	340	295	290	240	225	240	225	210	205	200	210	205	220	205	280	320	375
30	325	340	330	425	460	525	400	550	B	425	295	240	215	210	215	215	215	210	200	205	225	275	290	310
31	330	340	345	A	A	420	A	A	A	B	290	275	250	B 265	250	240	240	245	285	B	375	285	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	18	18	15	17	21	21	24	23	25	27	25	26	29	30	29	29	30	30	30	29	21	24	19
MED	325	330	355	390	390	400	400	378	330	280	245	235	225	225	225	220	210	220	220	221	225	260	290	300
UQ	340	350	395	410	440	475	440	432	360	290	275	250	240	230	235	225	220	238	235	240	265	280	302	318
LQ	290	290	330	350	340	360	350	340	295	250	230	225	220	220	210	205	200	210	205	210	215	235	275	292

MAY. 1980 | H'F (KM)

IONOSPHERIC DATA

JUN. 1980 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	B	A	45	48	A	A	B	B	B	B	100	135	138	95	82	80	64	60	A	A	A
2	49	A	A	A	B	A	A	A	40	48	69	X 81	X 97	110	X 111	107	89	X 86	76	43	23	R 22	A	A
3	A	A	A	A	B	A	A	41	52	69	65	65	89	110	102	105	B	90	89	43	27	37	A	A
4	A	60	A	A	43	46	59	60	50	60	85	X 88	107	108	112	X 103	76	75	75	X 49	45	33	38	40
5	42	66	36	40	42	45	43	43	44	50	63	76	83	X 97	105	101	87	64	66	31	20	0 R 22	A	A
6	A	20	27	40	38	45	52	55	53	55	62	X 77	X 93	X 96	99	87	100	96	62	34	30	26	27	A
7	A	A	A	A	A	46	55	B	A	X 44	B	50	74	90	88	97	94	X 89	X 92	51	A	A	A	75
8	A	B	A	A	A	A	A	B	B	B	B	B	B	0 R 76	X 88	B	B	100	68	30	B	19	A	A
9	A	A	A	A	A	A	A	A	35	37	65	76	X 78	90	95	107	B	96	B	42	B	B	A	A
10	A	B	A	A	A	70	R	60	B	B	B	B	B	B	122	123	120	100	70	60	65	A	A	A
11	B	B	B	B	A	B	A	A	A	B	B	B	B	B	100	90	100	B	75	A	A	A	A	A
12	B	A	B	A	45	A	A	A	B	B	B	B	B	B	87	X 135	X 135	90	35	A	A	A	A	A
13	A	A	B	B	60	55	B	B	B	B	B	B	B	120	125	130	130	120	40	A	A	A	A	A
14	A	A	A	A	37	A	A	A	43	47	59	68	78	X 100	X 86	X 86	X 85	80	75	54	37	36	30	A
15	A	X 32	A	27	29	33	45	40	37	65	71	80	80	110	X 98	99	75	73	66	43	30	29	B	21
16	23	28	A	45	60	48	47	53	54	64	68	75	91	100	101	93	X 84	86	75	A	28	A	A	A
17	A	A	A	A	A	A	A	51	62	63	63	75	96	R 94	U R 93	U R 94	81	69	46	29	31	21	23	26
18	27	X 28	X 46	45	43	46	54	55	64	62	65	75	X 87	100	100	80	65	66	51	27	B	18	0 R 21	28
19	19	60	41	73	70	72	90	80	90	R	72	90	105	110	109	103	91	88	78	72	28	A	98	87
20	68	60	70	72	60	70	75	76	80	79	79	86	100	R 113	X 113	X 110	96	100	76	53	20	19	R 23	45
21	52	45	43	45	56	60	72	75	73	83	75	X 78	R 92	R	X 110	X 98	88	X 90	80	38	33	A	R 23	21
22	33	30	30	A	A	A	A	57	69	55	70	78	88	100	111	110	90	86	75	58	0 R 22	A	16	A
23	A	A	A	A	A	60	63	72	61	B	77	85	0 R 102	X 117	X 110	106	79	81	80	63	B	B	R 23	A
24	A	A	37	37	40	43	47	63	70	75	80	79	85	90	X 105	X 96	110	108	86	62	50	A	A	A
25	A	A	A	63	75	R	70	62	54	55	69	80	93	106	X 128	X 104	X 81	70	63	55	30	30	25	26
26	28	56	53	A	A	A	A	70	73	73	72	82	90	110	X 113	X 109	X 105	S 106	63	73	A	A	A	A
27	A	46	42	57	38	A	A	A	50	53	65	73	75	X 86	R 93	87	71	50	43	X 35	27	16	0 R 19	19
28	32	52	90	53	A	A	A	63	60	50	58	73	X 86	X 98	X 99	X 86	X 63	S 72	X 37	X 35	24	X 24	26	23
29	24	26	40	70	45	45	51	60	57	58	57	66	80	X 92	X 101	87	70	70	60	34	30	18	23	A
30	38	42	A	A	A	A	A	65	70	80	70	X 69	X 87	X 99	R 101	S 93	100	82	69	X 37	0 S 27	A	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	15	12	13	16	16	15	20	23	22	23	24	24	26	30	29	27	29	29	26	21	15	14	11
MED	32	45	42	45	44	46	54	60	57	59	69	76	88	100	102	101	89	86	70	43	30	22	23	26
UQ	46	58	50	63	60	60	66	68	70	69	72	80	94	110	111	107	100	96	76	58	33	30	27	42
LQ	26	29	36	40	39	45	48	54	50	50	64	73	82	94	98	93	80	73	62	35	27	19	R 23	22

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1980 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	B	A	F	F	A	A	B	B	B	B	F	F	F	F	F	F	F	F	A	A	A
2	F	A	A	A	B	A	A	A	F	F 40	F	75	91	F	105	F	F	80	F	F	F	16	A	A
3	A	A	A	A	B	A	A	F 35	F 46	F	F 45	F	F	F	F	F	B	F	F	F	F	F	A	A
4	A	F	A	A	F	F 40	F	F	F	F	F	80	F	F	F	97	F	F	F	43	F	F	F	F
5	F	F	F	F	F	F	F	F	F	F	F	F	F	91	F	F	F	F	F	F	F	16	A	A
6	A	F	F 20	F 21	F	F	F	F	F	F	F	71	87	90	F 90	F	F	F	F	F 27	F	F	F 20	A
7	A	A	A	A	A	F	F	B	A	38	B	F	F	F	F	F	F	83	86	F	A	A	A	F
8	A	B	A	A	A	A	A	B	B	B	B	B	B	R 70	82	B	B	F	F	F	B	F	A	A
9	A	A	A	A	A	A	A	A	F	F	F	F	72	F	F	F	B	F	B	F	B	B	A	A
10	A	B	A	A	A	F	R	F	B	B	B	B	B	B	F	F	F	F	F	F	F	A	A	A
11	B	B	B	B	A	B	A	A	A	B	B	B	B	B	F	F	F	B	F	A	A	A	A	A
12	B	A	B	A	F	A	A	A	B	B	B	B	B	B	F	129	J R 129	F	F	A	A	A	A	A
13	A	A	B	B	F	F	B	B	B	B	B	B	B	F	F	F	F	F	F	A	A	A	A	A
14	A	A	A	A	F	A	A	A	F	F	F	F	F 72	94	80	80	R 79	F	F	F	F	F	F	A
15	A	26	A	F	F	F	F	F	F	F	F	F	F	F 102	92	F	F	F	F	F	F	F	B	F
16	F	F 21	A	F	F	F	F	F	F	F	F	F	F	F	F 94	F	78	F	F 65	A	F	A	A	A
17	A	A	A	A	A	A	A	F	F	F	F	F	F	R 88	U R 87	U R 88	F	F	F	F	F	F 16	F	F
18	F	22	40	F	F	F	F	F	F	F	F	F	81	F	F	F	F	F	F	F	B	F	15	F
19	F	F	F	F	F	F	F	F	F	R	F	F	F	F	F	F 97	F	F	F	F	F	A	F	F
20	F	F	F	F	F	F	F	F	F	F	F	F	F	107	107	103	F	F	F	F	F	F	17	F
21	F	F	F	F	F	F	F	F	F	F	F	72	R 86	R	R 104	R 92	F	84	F	F 30	F 25	A	17	F
22	F	F	F	A	A	A	A	F	F	F	F	F 70	F	F	F	F	F	F	F	F	16	A	F	A
23	A	A	A	A	A	F	F	F	F	B	F	F	96	111	104	F	F	F	F	F	B	B	17	A
24	A	A	F	F	F	F	F	F	F	F	F	F	F	F	99	R 90	F	F	F	F	F	A	A	A
25	A	A	A	F	F	R	F	F	F	F	F	F	F	F	J R 122	98	75	F	F	F	F	F	F	F
26	F	F	F	A	A	A	A	F	F	F	F	F	F	F	107	103	S 99	S 100	F 55	F	A	A	A	A
27	A	F	F	F	F	A	A	A	F	F	F	F	F 67	80	87	F 79	F 65	F	F	29	F	F	13	F
28	F	F	F	F	A	A	A	F	F	F	F	F	80	R 92	93	80	57	66	S 31	29	F 16	18	F	F
29	F 16	F 18	F	F	F	F	F	F	F	F	F	F	F 72	86	R 95	F	F	F	F	F	F	F	F	A
30	F	F	A	A	A	A	A	F	F	F	F	63	R 81	93	95	R 87	F	F	F	31	21	A	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	4	2	1		1		1	1	2	1	6	11	12	17	13	7	5	4	6	4	4	6	
MED	F 16	22	30	F 21		F 40		F 35	F 46	39	F 45	72	81	92	95	92	78	83	60	30	18	16	17	
UQ		24										75	86	98	104	98	89	84	76	31	23	17	17	
LQ		F 20										70	72	87	90	R 87	70	80	43	29	16	16	15	

JUN. 1980 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAY. 1980 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	35	36	44	30	43	50	59	30	17	21	17	G 21	G	28	30	40	30	30	32	13	15	20	E B 13	E B 17
2	E B 12	32	51	30	36	16	29	38	29	E B 20	E B 50	E B 44	E B 23	25	22	E B 28	E B 19	25	17	E B 16	20	15	E B 15	20
3	E B 13	11	20	28	31	28	18	16	16	28	33	E B 19	E B 19	G	G	18	16	20	16	12	E B 12	E B 11	E B 13	12
4	E B 12	14	11	30	30	10	24	18	B	E B 35	E B 22	29	25	G	G	E B 14	E B 9	10	E B 26	E B 28	19	E B 17	17	E B 13
5	E C 12	B	B	B	B	16	B	26	E B 18	E B 22	E B 21	E B 23	25	19	18	30	36	36	16	31	30	16	30	40
6	54	51	65	36	105	75	80	52	50	30	26	B	33	E B 26	E B 20	26	E B 22	E B 50	E B 35	E B 15	25	36	45	36
7	52	49	45	45	32	27	24	38	14	25	18	22	23	24	27	20	32	30	30	G	9	39	38	50
8	44	48	40	55	66	46	44	43	67	49	E B 43	E B 24	19	24	18	16	12	16	E B 16	11	11	11	E B 12	15
9	26	23	36	54	53	50	41	47	B	E B 50	39	36	B	E B 26	E B 23	E B 35	E B 55	E B 30	24	E B 18	33	38	38	52
10	46	40	51	46	50	48	42	30	19	73	21	18	24	30	28	29	19	11	13	10	40	12	21	11
11	13	16	24	31	33	30	18	13	11	31	18	B	B	E B 21	23	B	E B 40	28	E B 41	32	43	38	49	B
12	39	B	42	38	55	B	35	70	45	B	B	B	B	B	E B 21	E B 23	E B 40	E B 20	E B 22	E B 20	B	B	40	40
13	40	45	44	43	39	37	41	B	45	36	B	B	C	C	C	C	C	C	C	E B 24	E B 22	E B 15	27	35
14	80	46	46	75	40	38	B	B	49	37	B	B	E B 59	E B 33	E B 25	21	20	E B 16	E B 22	E B 20	16	40	33	36
15	36	B	B	35	31	26	18	15	17	24	18	B	E B 22	30	26	E B 14	35	33	E B 22	E B 17	E B 15	B	17	19
16	24	30	36	35	40	B	36	18	14	E B 12	E B 34	E B 24	E B 22	E B 30	E B 56	E B 35	E B 22	E B 16	E B 21	E B 14	E B 14	E B 12	E B 10	16
17	16	20	B	B	E B 21	15	11	30	15	E B 13	E B 18	E B 21	E B 22	E B 21	70	E B 13	E B 11	E B 16	26	33	30	16	12	26
18	33	28	39	46	35	30	16	35	11	11	18	20	19	20	25	14	14	16	E B 15	E B 13	E B 12	17	E B 13	B
19	20	B	17	E B 22	40	E B 15	E B 15	E B 14	E B 15	E B 14	50	E B 20	E B 21	E B 21	16	26	33	28	17	29	21	43	52	45
20	50	42	44	85	80	46	50	45	42	37	20	21	26	E B 24	27	25	26	30	33	42	37	29	13	32
21	35	34	31	27	23	30	27	27	21	E B 18	E B 15	21	22	21	19	28	20	18	13	15	12	12	E B 9	12
22	11	11	17	16	12	15	12	20	14	18	22	20	20	20	29	33	16	28	11	15	13	23	18	27
23	36	24	27	30	30	40	100	45	38	27	18	36	31	21	25	30	26	26	28	16	29	36	35	46
24	40	60	60	116	45	60	50	48	36	30	19	G	16	28	E B 23	E B 25	B	E B 42	E B 20	38	40	73	75	81
25	90	45	40	31	60	76	45	42	32	31	26	30	B	E B 22	30	29	41	40	39	32	39	36	43	39
26	45	68	44	70	61	60	27	50	43	35	E B 40	E B 28	28	29	45	36	30	26	33	59	E B 15	42	18	32
27	37	60	40	52	43	39	33	38	45	36	26	27	18	20	30	20	18	25	36	17	E B 13	17	25	15
28	14	14	28	35	32	26	31	14	17	E B 10	20	18	17	17	19	28	51	12	18	11	11	E B 13	14	20
29	15	28	16	15	14	16	18	16	28	29	29	36	32	18	16	16	30	24	12	E B 13	E B 10	E B 8	E B 9	29
30	43	53	43	32	33	32	48	45	B	34	34	30	18	19	14	14	12	11	13	16	28	30	25	17
31	19	30	28	50	46	47	63	50	71	B	E B 27	E B 30	E B 28	E B 46	E B 24	E B 18	E B 17	E B 15	35	B	20	26	30	36
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	27	28	29	30	29	29	29	28	29	28	25	26	29	30	29	29	30	30	30	30	29	31	29
MED	35	34	40	35	40	32	33	35	24	28	20	22	20	20	22	22	20	22	18	14	19	20	21	29
UQ	44	47	44	50	50	47	45	45	44	34	30	28	26	26	28	28	32	29	30	29	30	36	36	39
LQ	16	24	28	30	31	26	18	18	15	16	18	19	18	19	18	16	14	14	14	12	11	14	12	17

MAY. 1980 | FES (0.1 MHZ)

The Radio Research Laboratories. Japan

IONOSPHERIC DATA

MAY. 1980 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep .4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	8	7	7	7	13	22	9	12	8	7	10	15	18	14	12	8	8	17	8	8	8	9	13	17
2	12	9	7	5	7	7	8	13	13	20	50	44	23	19	19	28	19	15	13	16	13	13	15	13
3	13	9	8	7	7	7	6	7	8	11	15	19	19	19	14	13	11	10	13	10	12	11	13	10
4	12	7	7	6	5	5	7	13	B	35	22	23	14	18	15	14	9	7	26	28	14	17	14	13
5	E C 12		B	B	B	14	B	16	18	22	21	23	15	14	13	9	8	5	7	8	12	7	6	8
6	12	13	8	9	10	7	13	14	12	10	11	B	22	26	20	12	22	50	35	15	11	10	13	10
7	13	22	13	13	10	8	7	8	8	7	8	14	14	10	14	8	5	5	12	8	6	6	7	8
8	7	7	7	7	8	13	13	21	18	35	43	24	14	13	13	13	10	9	16	8	9	8	12	10
9	7	8	7	9	13	13	23	13	B	50	22	15	B	26	23	35	55	30	8	18	7	7	7	8
10	7	5	18	10	23	13	13	8	7	9	15	15	14	11	8	8	9	8	8	7	7	7	8	9
11	9	7	9	8	9	8	7	7	6	8	12	B	B	21	17	B	40	15	41	14	7	8	10	B
12	8	B	20	25	11	B	10	16	9	B	B	B	B	B	21	23	40	20	22	20	B	B	7	7
13	21	16	19	12	15	22	8	B	25	22	B	B	C	C	C	C	C	C	C	24	22	15	9	13
14	7	17	9	9	17	9	B	B	20	23	B	B	59	33	25	13	14	16	22	20	9	7	19	11
15	14	B	B	20	15	11	10	10	9	10	13	B	22	13	13	14	8	8	22	17	15	B	11	8
16	7	7	15	14	18	B	10	9	8	12	34	24	22	30	56	35	22	16	21	14	14	12	10	12
17	13	10	B	B	21	10	9	9	13	13	18	21	22	21	15	13	11	16	9	7	5	6	7	7
18	7	7	9	8	7	8	8	8	7	8	9	13	17	15	8	10	10	13	15	13	12	7	13	B
19	14	B	13	22	14	15	15	14	15	14	19	20	21	21	13	10	9	7	7	20	13	9	9	10
20	15	13	8	7	8	11	13	17	9	19	12	15	13	24	15	10	10	9	8	9	8	9	8	7
21	8	7	7	7	7	9	10	14	8	18	15	14	18	14	13	10	10	10	10	8	7	E	9	7
22	8	7	8	8	7	7	7	7	9	8	10	14	15	9	10	8	8	8	7	7	8	10	11	8
23	8	7	7	7	7	E	E	10	8	8	9	13	14	13	13	10	7	8	9	10	12	7	7	7
24	10	8	10	15	19	15	12	9	7	8	8	14	12	15	23	25	B	42	20	8	8	21	8	8
25	10	13	11	7	9	20	11	19	9	8	9	10	B	22	E	10	11	5	5	7	7	7	7	8
26	7	7	15	10	10	8	13	9	18	18	40	28	9	13	14	30	20	18	16	13	15	14	7	8
27	9	13	10	11	12	10	15	13	9	8	9	10	15	11	10	10	13	8	8	14	13	10	9	10
28	10	10	8	7	7	6	9	7	9	10	11	10	12	9	11	7	10	10	9	9	8	13	9	10
29	8	8	8	7	8	7	7	8	8	8	13	14	12	9	8	7	6	7	10	13	10	8	9	7
30	7	10	10	15	9	9	9	10	B	23	19	10	11	14	9	8	6	8	8	9	10	7	9	8
31	8	7	7	8	13	10	11	10	24	B	27	30	28	46	24	18	17	15	11	B	10	8	7	7
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31
MED	8	9	9	9	10	10	10	10	9	12	15	19	18	15	14	11	10	10	10	13	10	9	9	8
UQ	12	13	14	14	14	14	13	14	18	22	24	29	22	22	19	18	19	16	20	16	13	12	12	10
LQ	8	7	8	7	8	8	8	8	8	8	10	14	14	13	11	9	8	8	8	8	8	7	7	8

MAY. 1980 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1980 | H'F (KM) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	B	A	540	550	A	A	B	B	B	B	325	295	255	300	255	400	385	415	A	A	A
2	270	A	A	A	B	A	A	A	355	280	245	225	235	210	225	B 250	245	225	240	205	265	A 355	A	A
3	A	A	A	A	B	A	A	425	340	300	250	300	B	B 250	260	250	B	E B 270	235	240	275	295	A	A
4	A	260	A	A	A	425	355	325	280	250	265	235	240	210	210	200	200	225	225	250	235	235	300	355
5	330	270	340	380	370	370	335	290	280	260	235	245	240	235	205	200	215	200	205	220	270	285	A	A
6	A	300	295	300	325	325	330	325	290	280	225	250	240	215	210	210	205	205	200	235	260	285	350 A	A
7	A	A	A	A	A	450	350	B	A	500	B	400	300	240	250	205	240	255	240	B	A	A	A	340
8	A	B	A	A	A	A	A	B	B	B	B	B	B	B	270	B	B	230	235	290	B	200	A	A
9	A	A	A	A	A	A	A	A	A	340	250	250	240	255	260	255	B	220	B	240	B	B	A	A
10	A	B	A	A	A	A	R	A	B	B	B	B	B	B	275	240	290	250	325	A	A	A	A	A
11	B	B	B	B	A	B	A	A	A	B	B	B	B	B	325	B	350	B	250	A	A	A	A	A
12	B	A	B	A	A	A	A	A	B	B	B	B	B	B	A	245	245	340	A	A	A	A	A	B
13	A	A	B	B	275	A	B	B	B	B	B	B	B	315	275	250	235	275	285	A	A	A	A	A
14	A	A	A	A	A	A	A	A	E A 400	285	200	220	245	235	210	210	210	240	205	215	245	A	A	A
15	A	A	A	A	A	475	390	395	A	A	285	230	215	240	205	215	195	235	205	220	270	235	B	355
16	340	A	A	335	390	440	455	445	295	290	240	240	240	215	200	200	235	235	215	A	425	A	A	A
17	A	A	A	A	A	A	A	445	385	325	300	255	235	210	215	200	180	200	200	210	260	320	260	280
18	350	375	240	350	350	345	355	325	275	255	240	245	240	225	210	220	200	240	205	305	B	300	300	280
19	360	310	365	355	315	350	350	330	340	A	365	250	225	215	220	200	210	220	200	235	240	A	350	350
20	250	375	360	240	415	380	375	340	315	260	215	215	220	215	200	215	195	220	200	200	225	310	320	370
21	300	260	330	390	400	405	375	325	310	300	270	H 195	H 200	H 195	235	210	195	235	215	240	240	A	A	A
22	290	290	325	A	A	A	A	A	280	235	300	235	210	200	210	205	230	225	225	225	260	A	340	A
23	A	A	A	A	A	400	A	360	300	B	275	250	230	240	205	205	200	250	195	240	B	B	A	A
24	A	A	315	355	370	345	350	400	425	375	320	270	280	265	210	240	260	210	225	250	A	A	A	A
25	A	A	A	A	270	A	A	A	A	B	310	240	225	200	225	200	205	190	240	215	240	300	275	300
26	345	A	A	A	A	A	A	400	350	275	240	240	225	250	220	200	250	250	250	A	A	A	A	A
27	A	290	A	325	350	A	A	A	A	290	240	235	215	210	215	200	215	195	200	210	240	A	375	330
28	300	A	260	315	A	A	A	370	275	250	200	H 195	205	215	205	200	190	230	250	240	240	275	255	225
29	290	310	335	340	380	400	375	315	275	240	240	225	210	210	225	190	205	225	220	215	240	260	340	A
30	340	290	A	A	A	A	A	A	A	260	245	245	240	210	240	225	250	250	210	245	235	A	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	11	10	11	12	14	13	16	18	20	23	24	23	26	29	28	27	29	28	23	19	13	11	10
MED	315	290	328	340	360	400	355	350	302	280	245	240	235	215	220	210	215	230	222	235	245	285	320	335
UQ	342	310	340	355	385	440	375	400	345	300	280	250	240	240	250	240	245	250	240	242	268	300	345	355
LQ	290	280	295	320	320	350	350	325	280	258	240	228	218	210	210	200	200	220	205	215	240	260	288	280

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