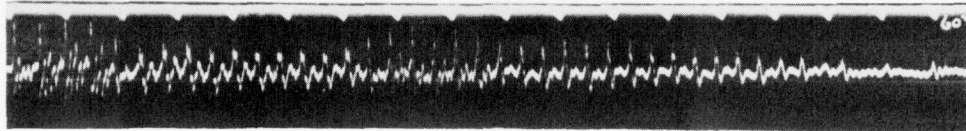


## LIST OF ILLUSTRATIONS

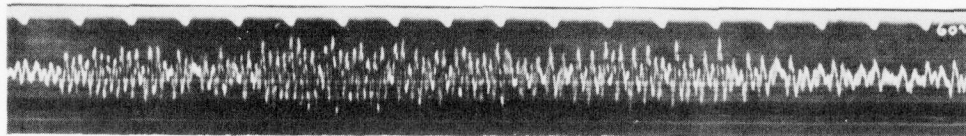
### Figure

- 1 Examples of Program Wave Forms
- 2 Schematic Diagram of Experimental Peak Reading Volume Indicator
- 3 Arrangements for Determining Volume Level at Which Overload of Amplifiers is Audible
- 4 Distribution of Overload Points
- 5 Comparison of Peak vs RMS Volume Indicators as Overload Indicators (Using W.E. 94B Amplifier)
- 6 Comparison of Peak vs RMS Volume Indicators as Overload Indicators (Using W.E. 14B Program Amplifier)
- 7 Gain vs Load Characteristics of Amplifiers
- 8 Comparison of Experimental Peak Volume Indicator with Gas Tube Trigger Device as Overload Indicators
- 9 Per Cent of Observers Choosing Symphony Music at Indicated Volume Levels to Be Louder Than Male Speech
- 10 Effect of Damping on Instrument Characteristics
- 11 Deflection of Volume Indicators to Suddenly Applied Sine Wave
- 12 Scale on 203C Volume Indicator
- 13 Scale on NBC 21 Volume Indicator
- 14 Scale on General Radio Type 586 Power Level Indicator
- 15 Scale on 1G and 700A Volume Indicators
- 16 New Volume Indicator - A Scale
- 17 New Volume Indicator - B Scale
- 18 Circuits for New Volume Indicator
- 19 Program Bridge for Feeding Several Lines from One Line
- 20 754B Volume Indicator Equipped with New Standard Instrument Having "A" (Bell System) Scale
- 21 New Standard Volume Indicators Installed at a Network Key Station

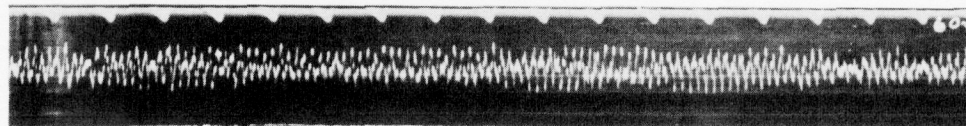
# EXAMPLES OF PROGRAM WAVE FORMS



MALE SPEECH ("HOW MANY")



MALE SOLO WITH ORCHESTRAL ACCOMPANIMENT

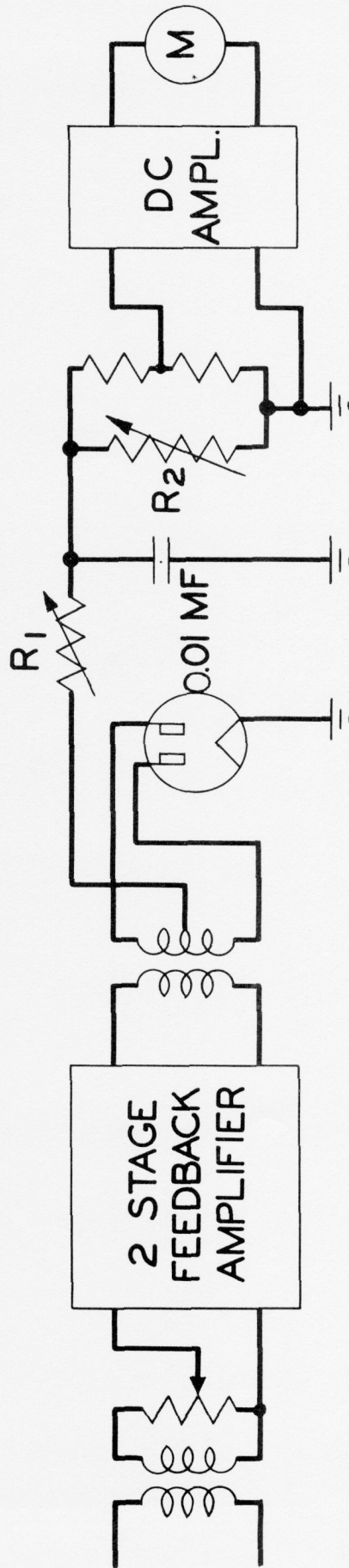


DANCE ORCHESTRA

FIGURE 1



FIGURE 2  
SCHEMATIC DIAGRAM OF EXPERIMENTAL  
PEAK READING VOLUME INDICATOR



$R_1$  - CONTROLS SPEED OF RESPONSE

$R_2$  - CONTROLS RATE OF DECAY

M - METER

FIGURE 3  
ARRANGEMENTS FOR DETERMINING VOLUME LEVEL  
AT WHICH OVERLOAD OF AMPLIFIER IS AUDIBLE

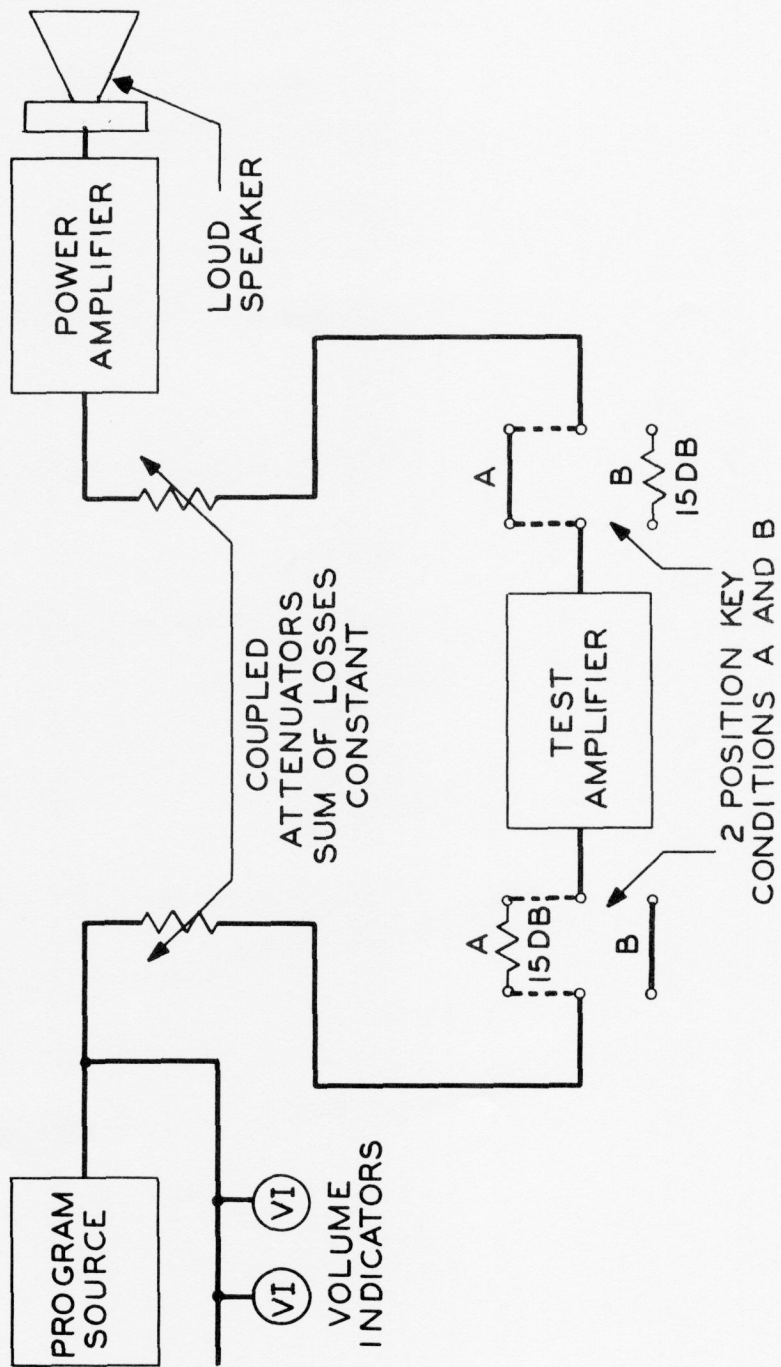


FIGURE 4  
DISTRIBUTION OF OVERLOAD POINTS

TESTS ON 94B AMPLIFIER

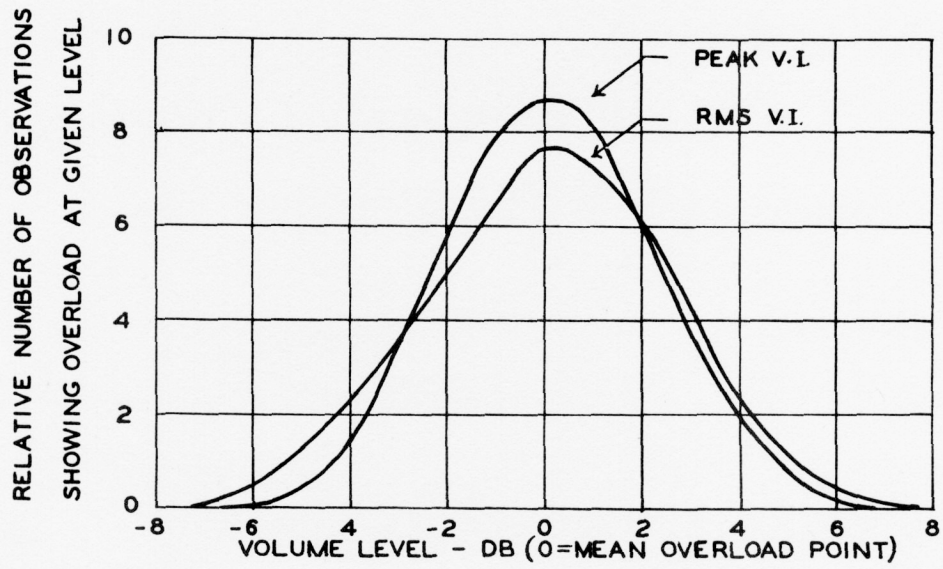




FIGURE 5  
COMPARISON OF PEAK VS. RMS VOLUME  
INDICATORS AS OVERLOAD INDICATORS

285 OBSERVATIONS ON 94B AMPLIFIER

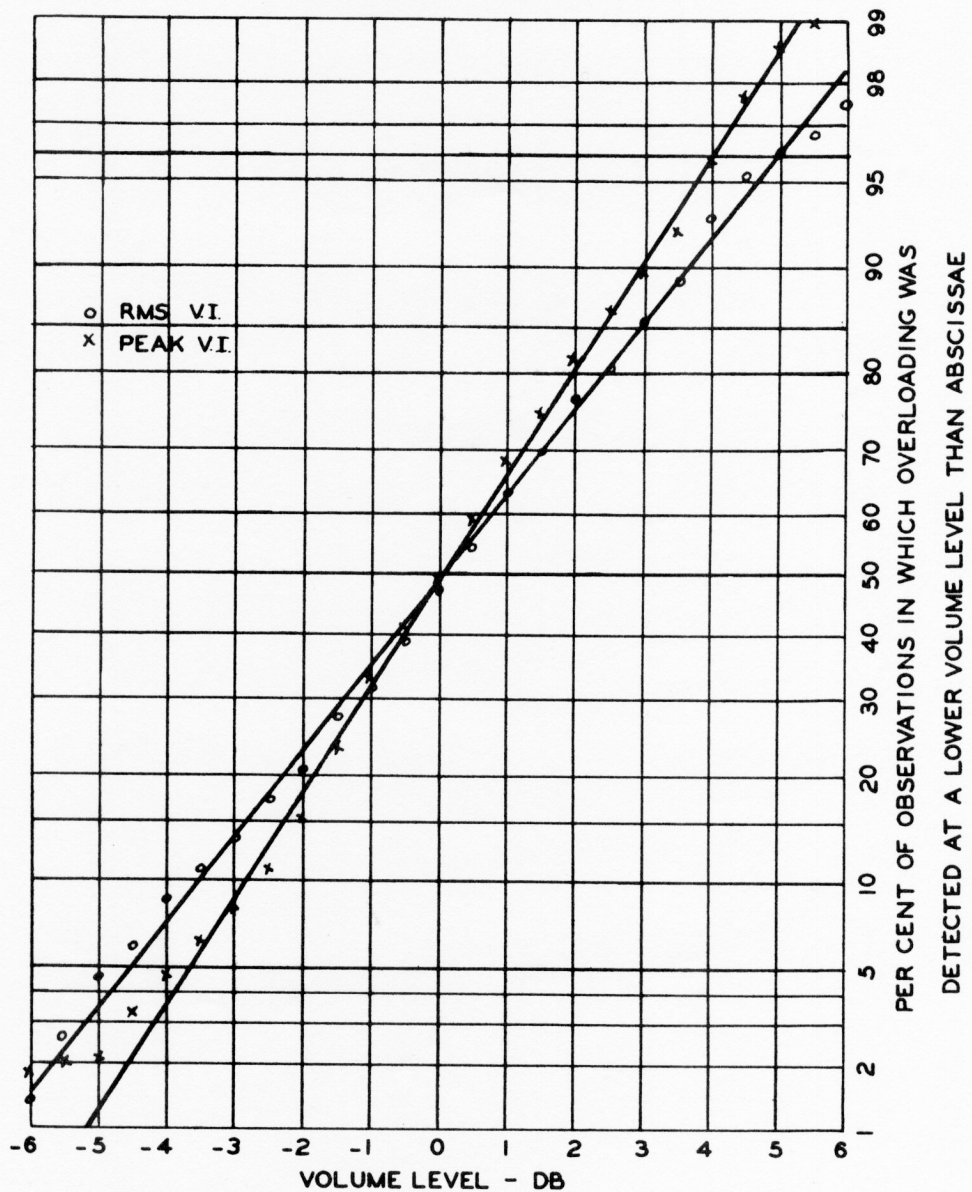


FIGURE 6  
COMPARISON OF PEAK VS. RMS VOLUME  
INDICATORS AS OVERLOAD INDICATORS

179 OBSERVATIONS ON 14B PROGRAM AMPLIFIER

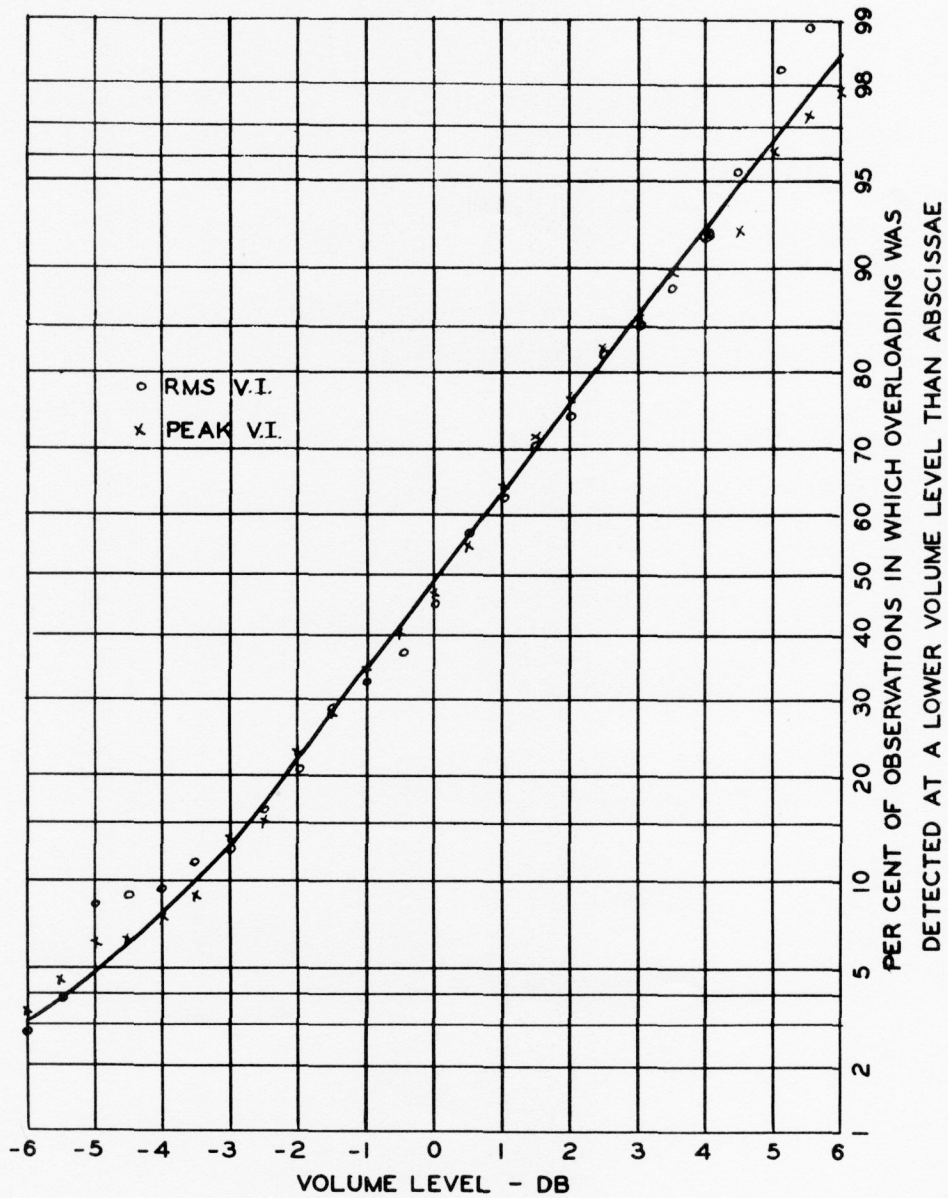


FIGURE 7  
GAIN VS. LOAD CHARACTERISTICS OF AMPLIFIERS

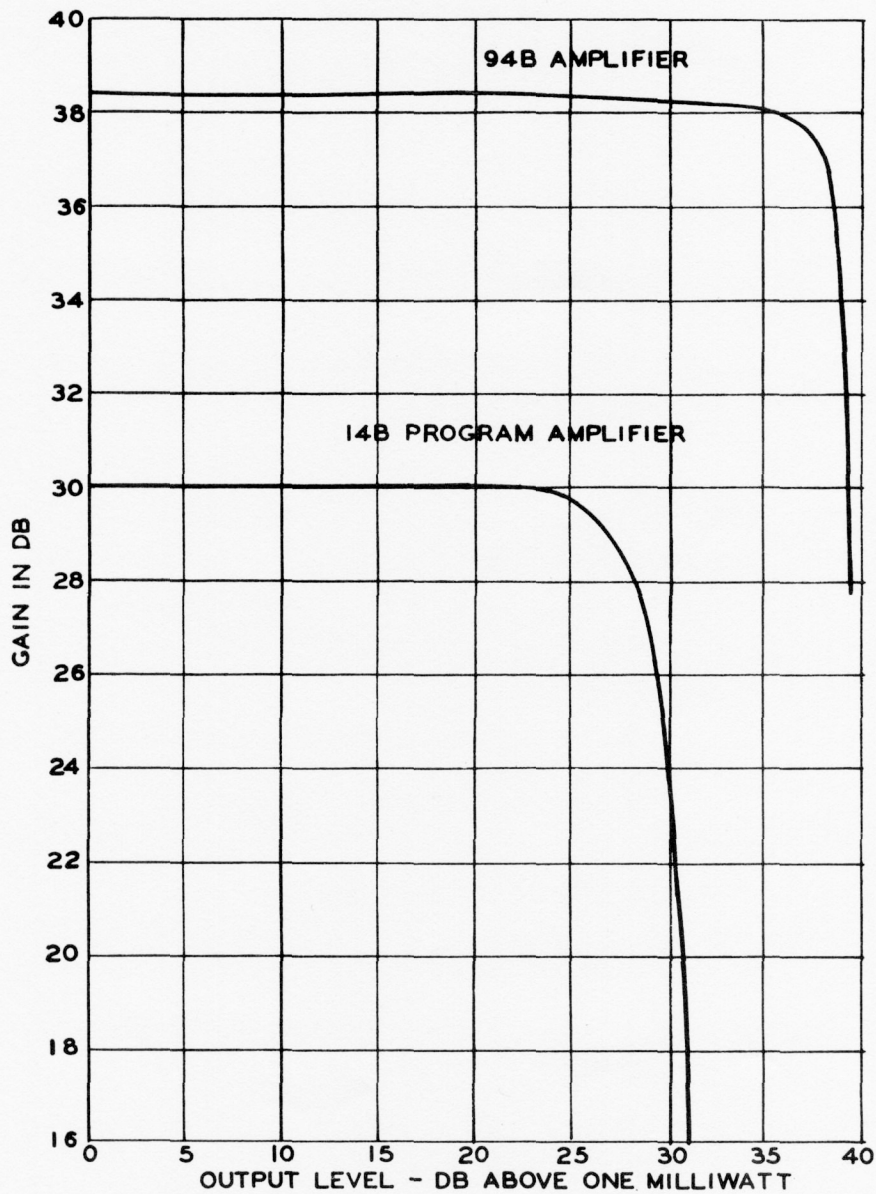




FIGURE 8

COMPARISON OF EXPERIMENTAL PEAK VOLUME INDICATOR WITH GAS TUBE TRIGGER DEVICE AS OVERLOAD INDICATORS

41 OBSERVATIONS ON 94B AMPLIFIER

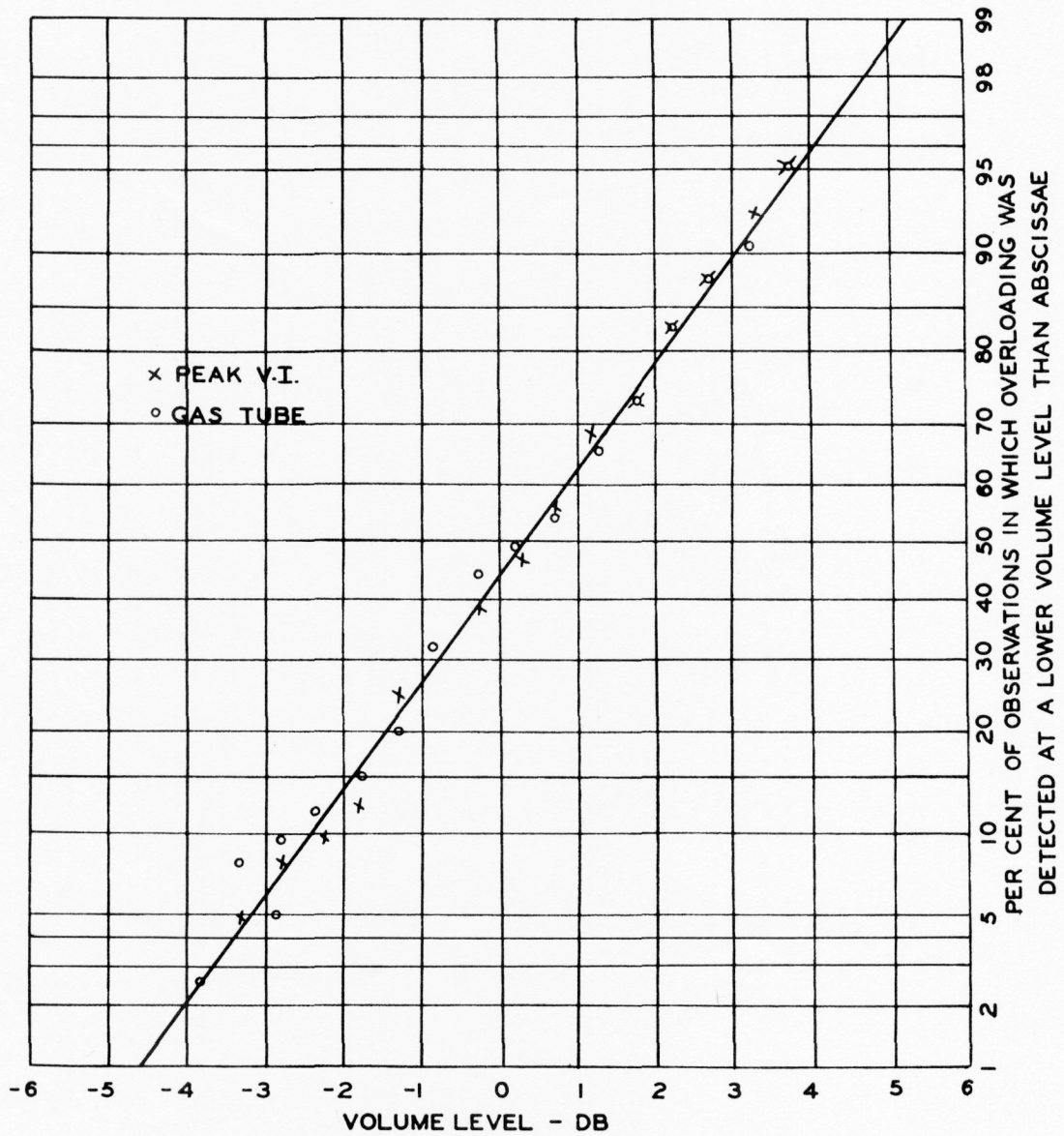


FIGURE 9  
PER CENT OF OBSERVERS CHOOSING SYMPHONY MUSIC  
AT INDICATED VOLUME LEVELS TO BE LOUDER  
THAN MALE SPEECH

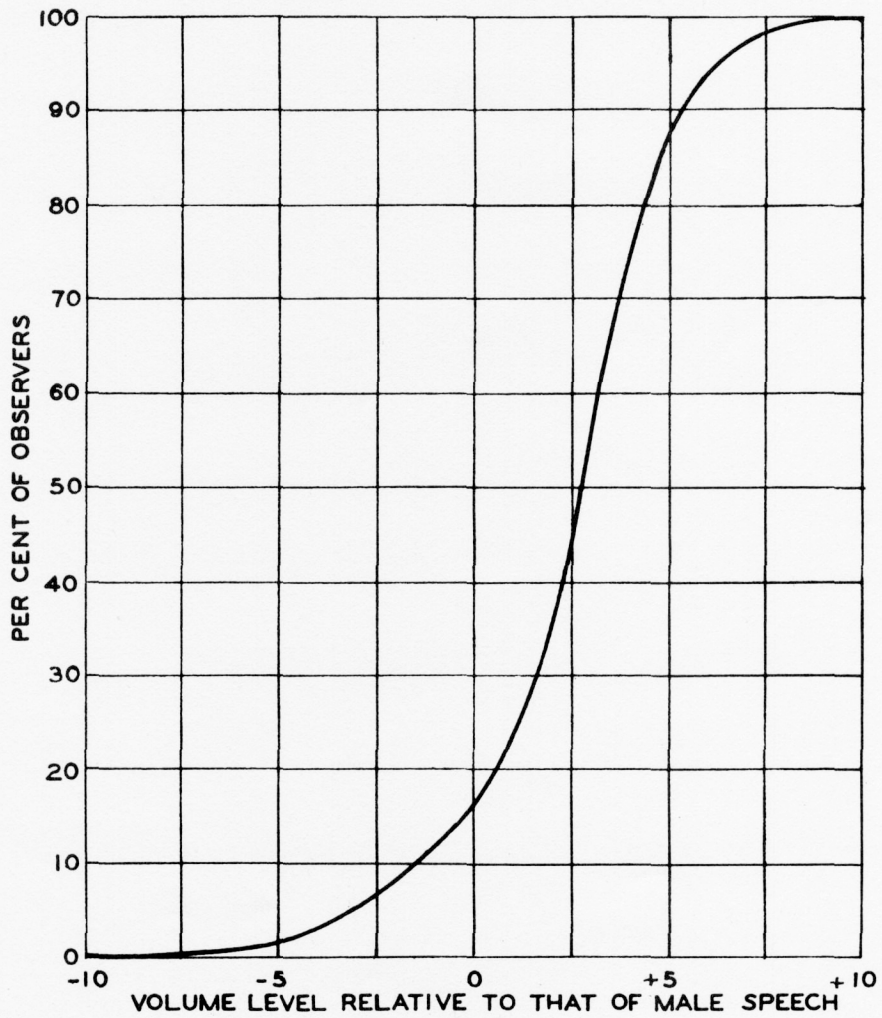


FIGURE 10  
EFFECT OF DAMPING ON INSTRUMENT CHARACTERISTICS

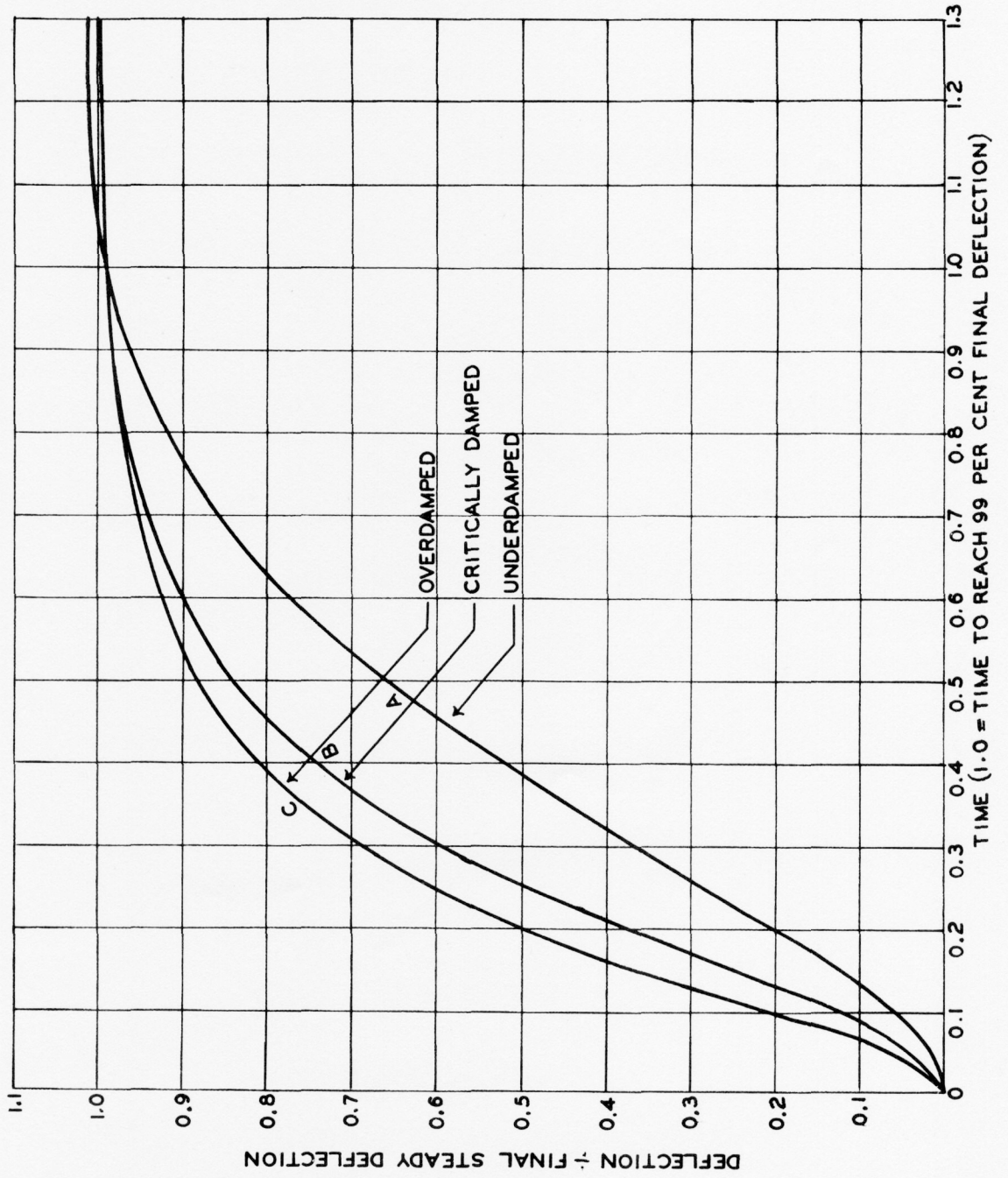
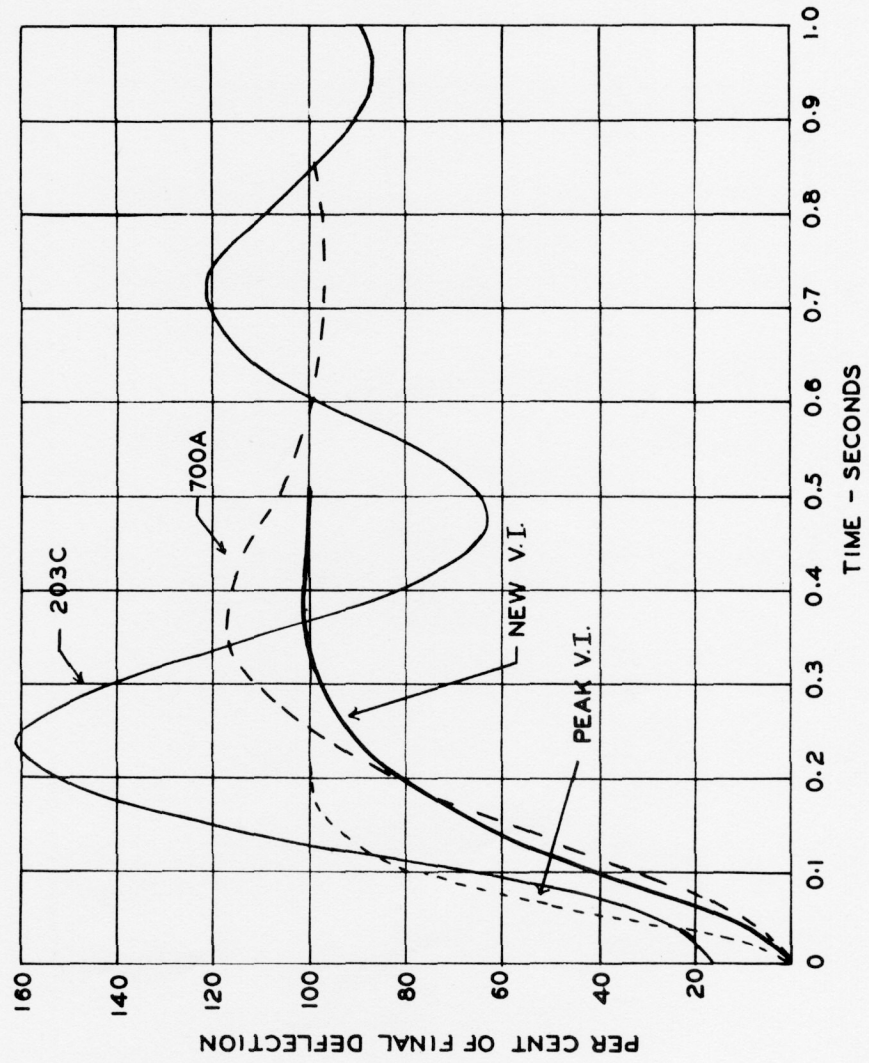




FIGURE 11  
DEFLECTION OF VOLUME INDICATORS TO  
SUDDENLY APPLIED SINE WAVE



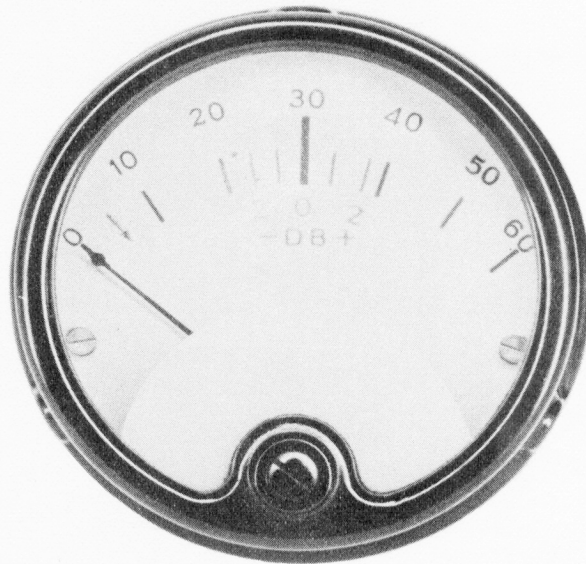


FIGURE 12  
SCALE ON 203C VOLUME INDICATOR

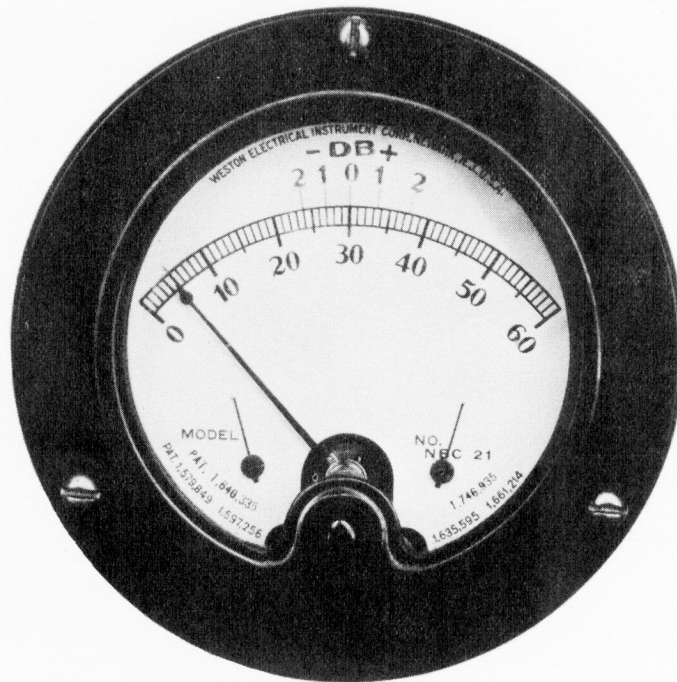


FIGURE 13  
SCALE ON NBC 21 VOLUME INDICATOR

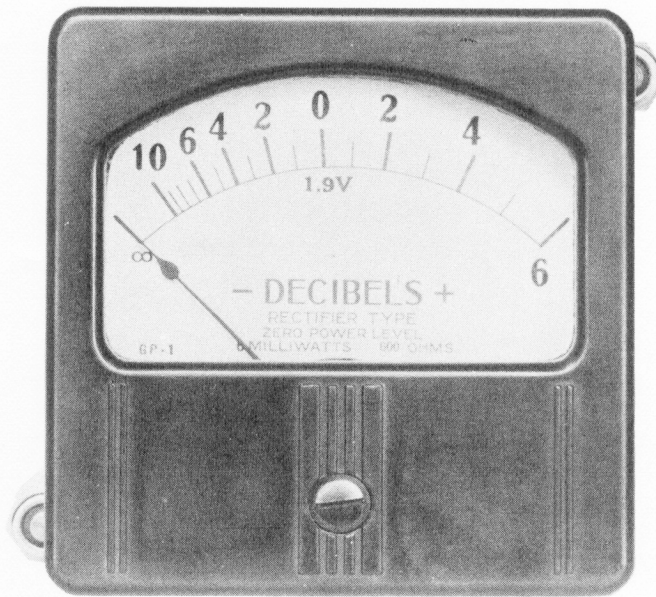


FIGURE 14  
SCALE ON GENERAL RADIO TYPE 586 POWER LEVEL INDICATOR

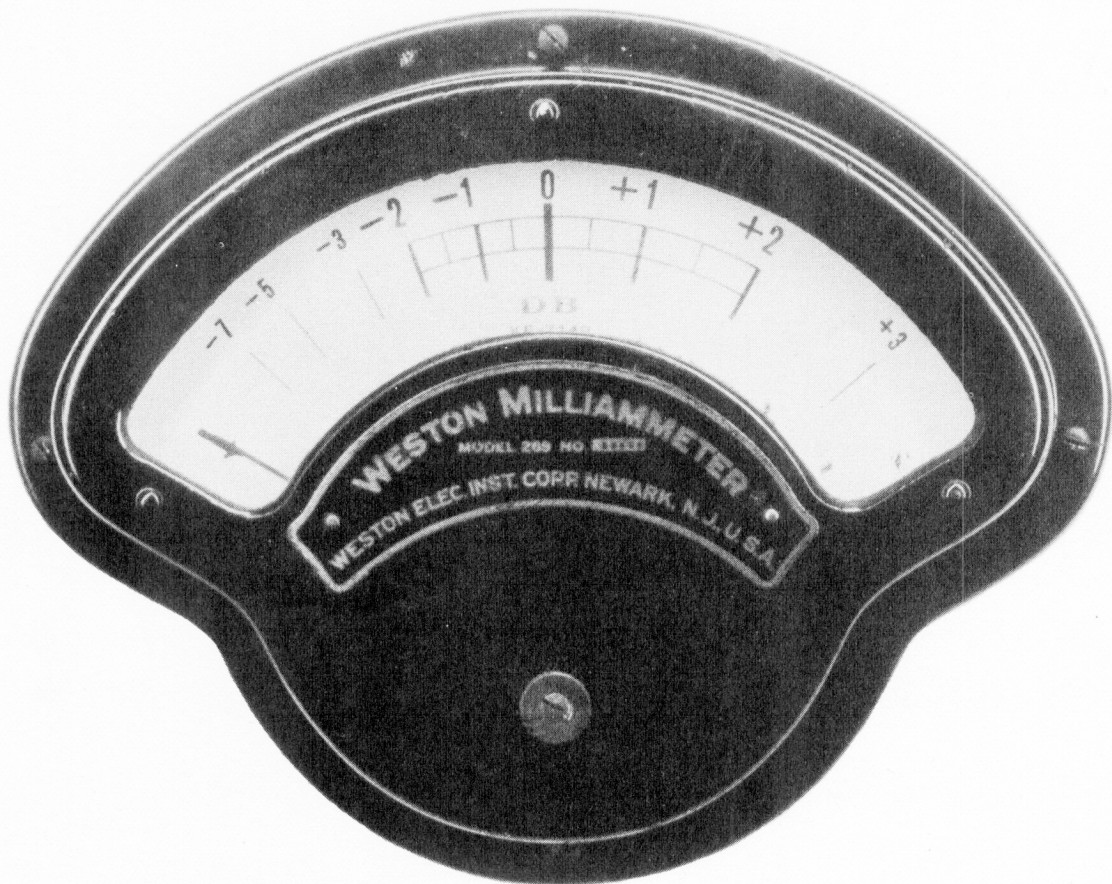


FIGURE 15  
SCALE ON IG AND 700A  
VOLUME INDICATORS



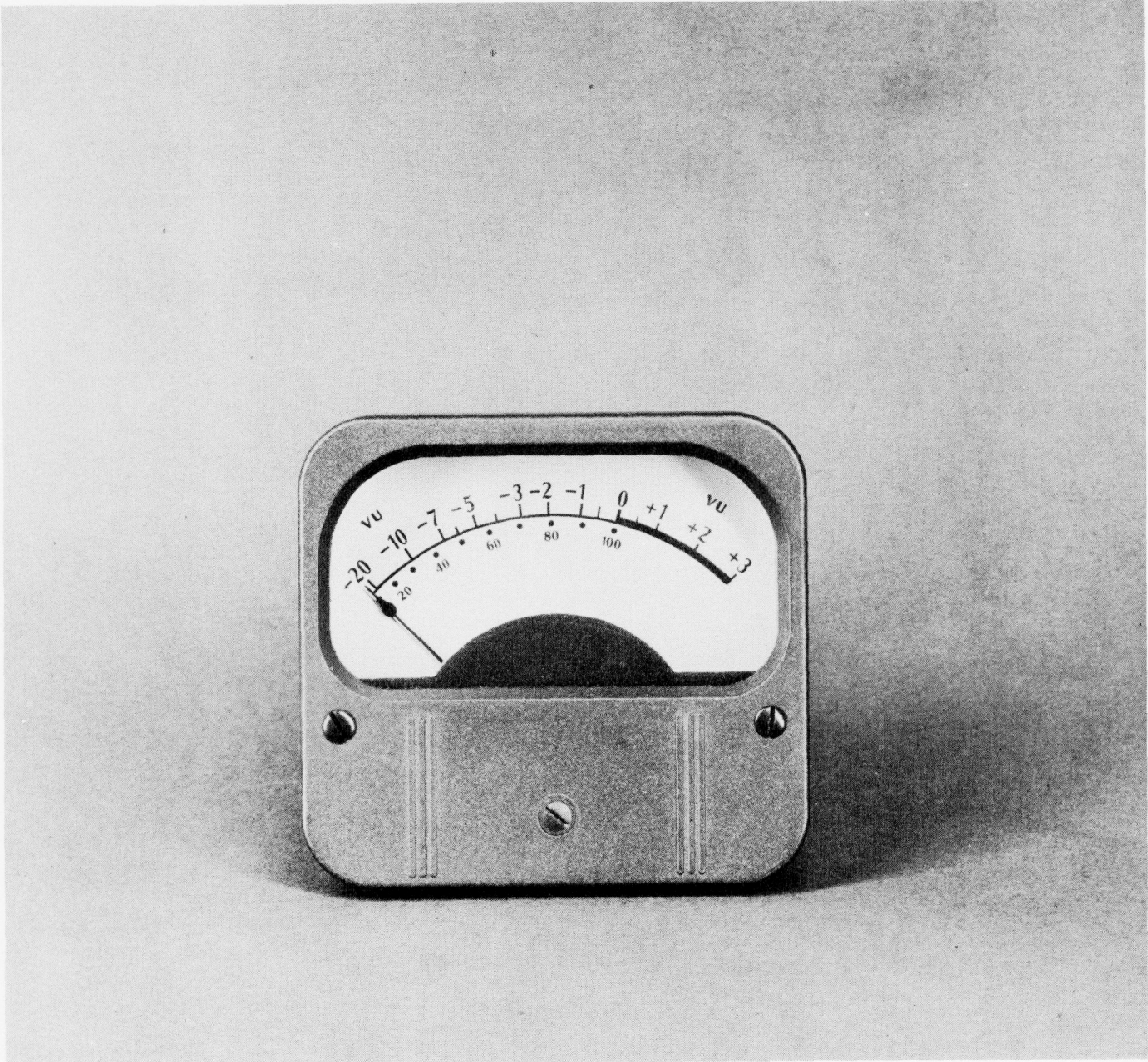


FIGURE 16  
NEW VOLUME INDICATOR - A SCALE

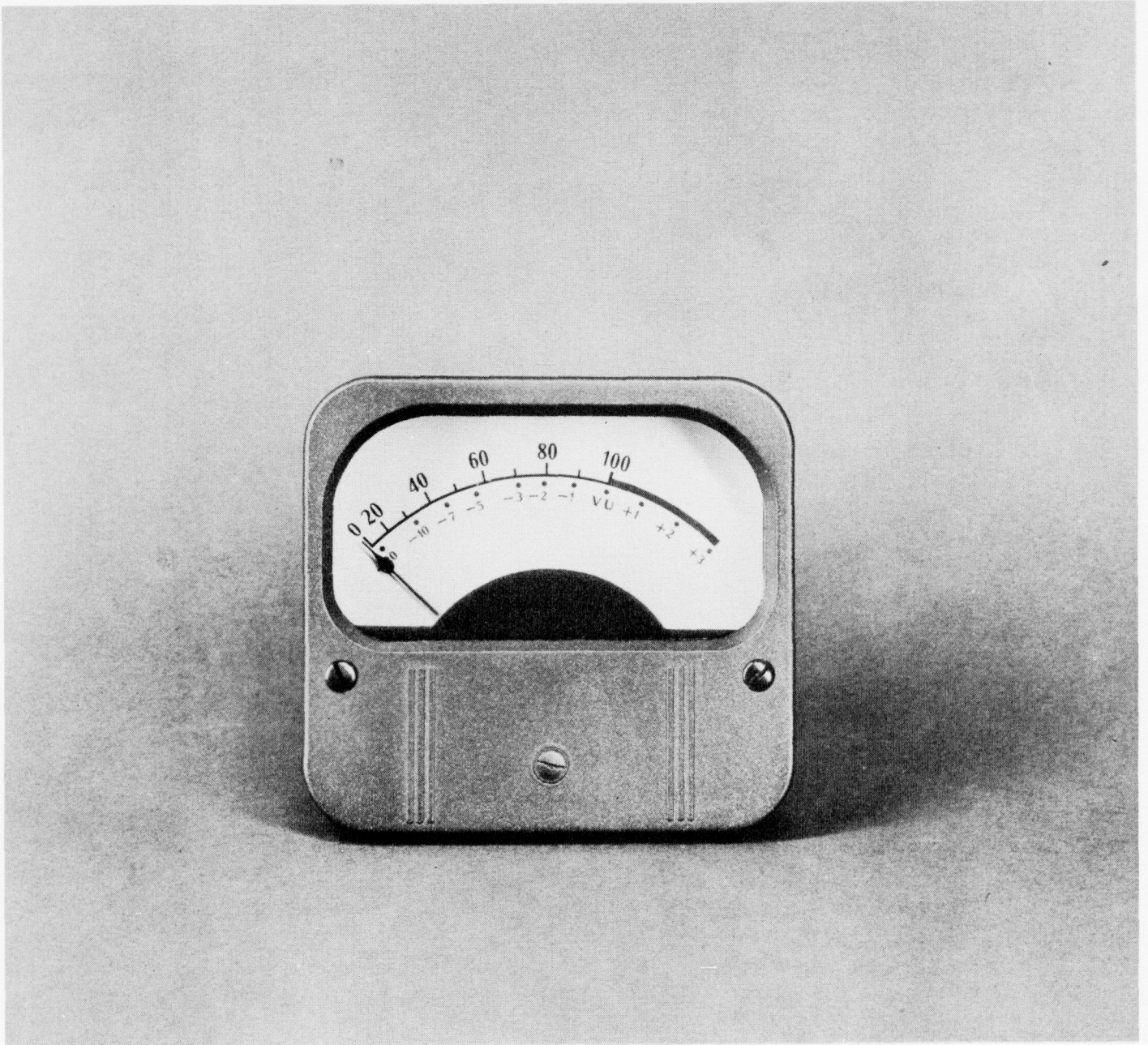
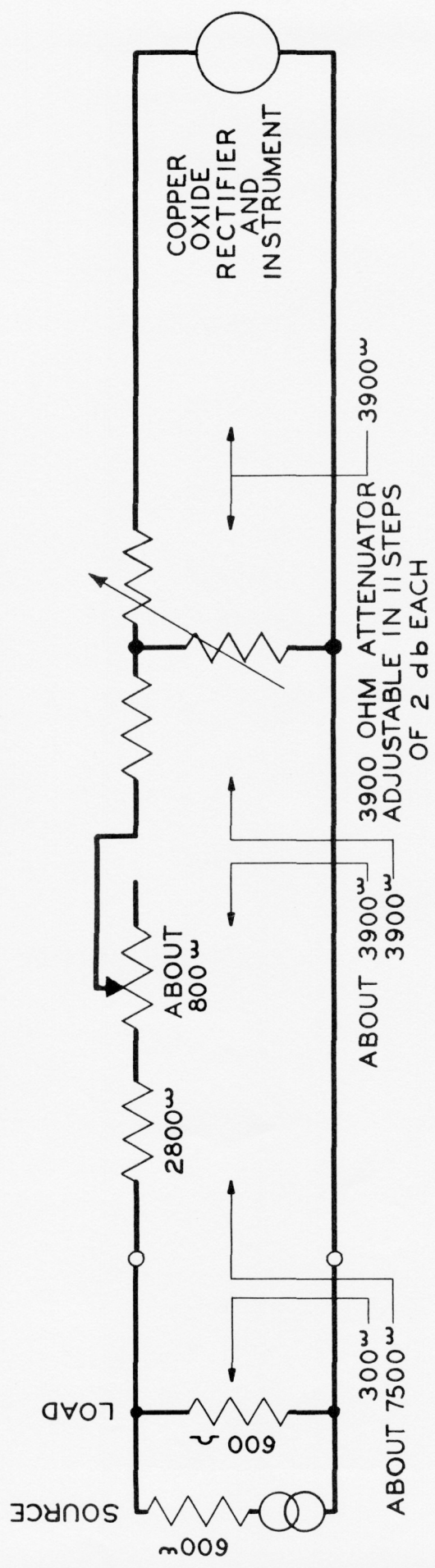


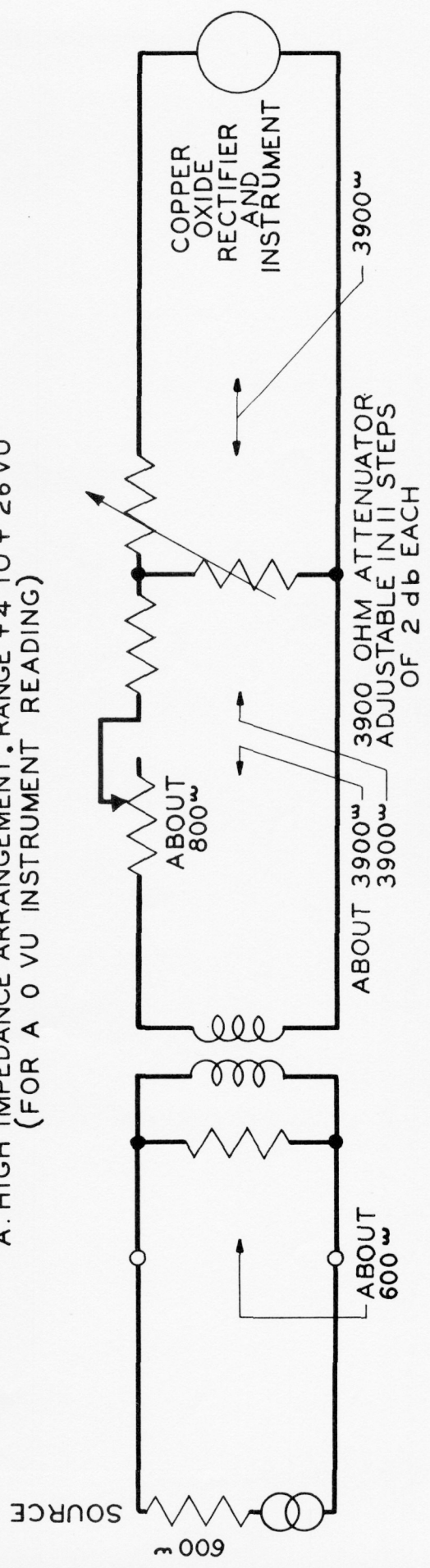
FIGURE 17  
NEW VOLUME INDICATOR - B SCALE



FIGURE 18  
CIRCUITS FOR NEW VOLUME INDICATOR



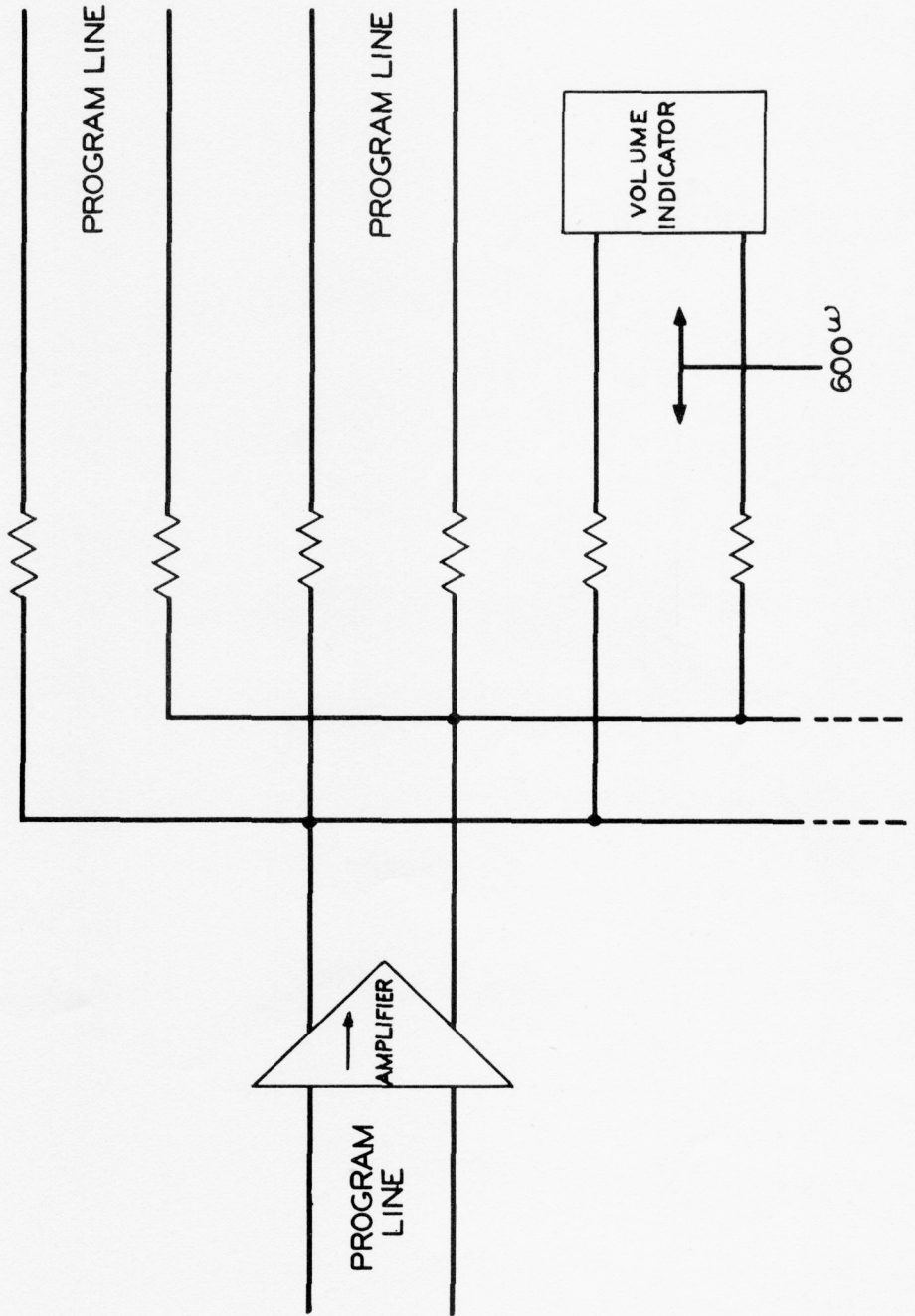
A. HIGH IMPEDANCE ARRANGEMENT. RANGE +4 TO +26 VU  
(FOR A 0 VU INSTRUMENT READING)



B. LOW IMPEDANCE ARRANGEMENT. RANGE -6 TO +16 VU  
(FOR A 0 VU INSTRUMENT READING)



FIGURE 19  
PROGRAM BRIDGE  
FOR FEEDING SEVERAL LINES FROM ONE LINE



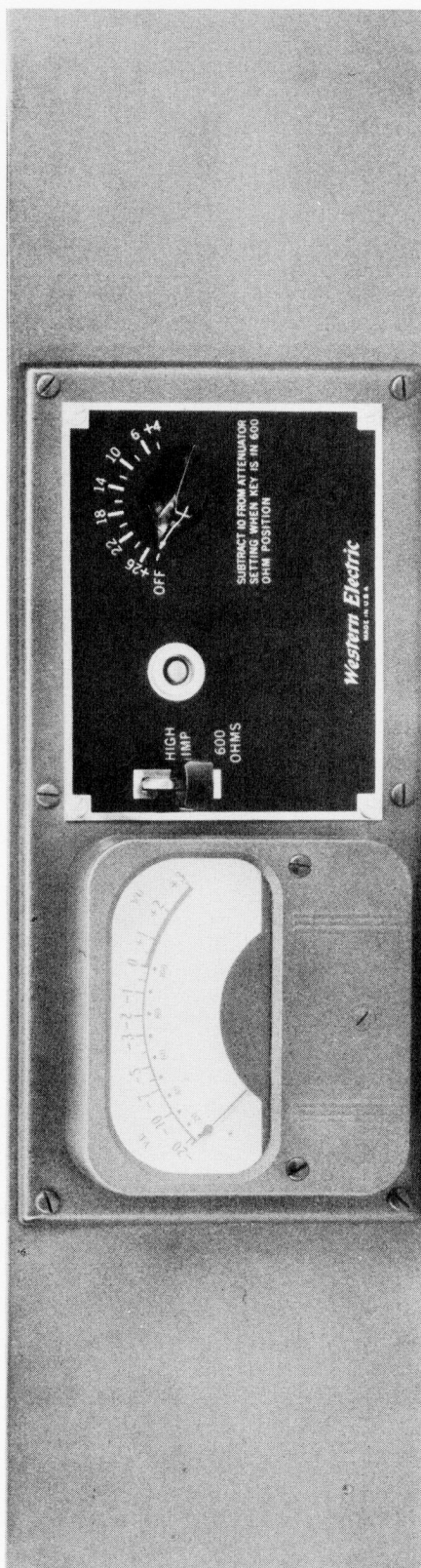


FIGURE 20  
754B VOLUME INDICATOR  
EQUIPPED WITH NEW STANDARD INSTRUMENT  
HAVING "A" (BELL SYSTEM) SCALE



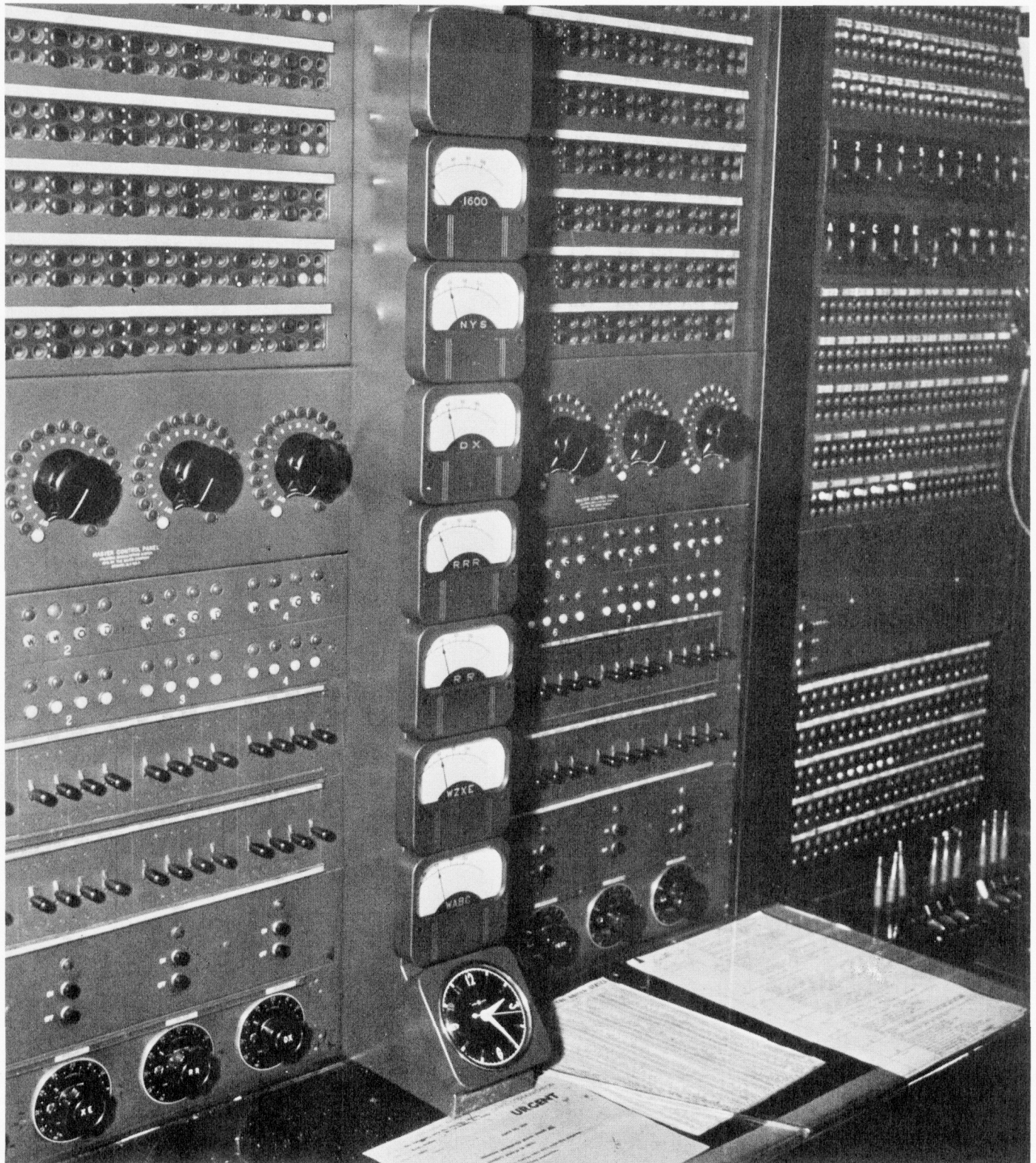


FIGURE 21

An installation of the new standard volume indicators in the master control room of a network key station. Six of the instruments shown are used for visually monitoring outgoing program lines. The seventh volume indicator is for an incoming line which is actually the end of one of the aforementioned outgoing lines that has returned to the point of origination after making a 2300-mile circuit of the country.