29 Slide Trombone

☐ This is a novel little instrument that can be played through your stereo system. IC1 and IC2 comprise a ramp generator, the frequency of which is adjusted by R3. The range of adjustment spans two octaves from 150 to 600 Hz. The ramp signal is fed to modulator IC3, which imparts a natural-sounding attack and decay to the note the sounds when S1 is pressed. R12 allows adjustment of the note's decay interval, and R10 controls the volume. Maximum signal amplitude at the output is 500 mV peak to peak (sufficient to drive an amp's high level input). To play, just R3

for a particular note; press S1; slide R3; then release S1. You can make things easy by calibrating R3 in terms of musical notes. Either a slide or rotating pot can be used for R3, depending on your playing preferences.

PARTS LIST FOR SLIDE TROMBONE

C1—0.15-uF mylar capacitor
C2, C3—0.1-uf ceramic disc capacitor
C4—3.3-uF, 25-WVDC electrolytic capacitor
C5—0.47-uF mylar capacitor
D1, D2—1N914 diode
IC1, IC2—741 op amp integrated circuit
IC3—3080 transconductance amp integrated circuit (RCA)
Q1—2N3904 NPN transistor
R1—5,600-ohm, ½-watt 10% resistor
R2—33,000-ohm, ½-watt 10% resistor
R3, R12—100,000-ohm, ½-watt 10% resistor
R4, R5, R13, R14—10,000-ohm, ½-watt 10% resistor
R6—62,000-ohm, ½-watt 10% resistor
R8, R9—100-ohm, ½-watt 10% resistor
R10—5,000-ohm audio-taper potentiometer
R11—220,000-ohm, ½-watt 10% resistor
S1—Pushbutton switch, normally open