OPERATING INSTRUCTIONS
FOR
TYPE 648-A STROBOLUX

Form 522-C

GENERAL RADIO COMPANY
CAMBRIDGE A, MASSACHUSETTS

PART III
CONTROL

The control of the flashing rate of the Strobolux is obtained from the Strobotac. The Strobolux always operates under the conditions selected from the Strobotac control panel. For speed measurement or stroboscopic work use the Stroboscope LOW or HIGH position as necessary, remembering that the top useful limit of the Strobolux is about 6000 rpm. The line position setting gives a flashing rate synchronous with the line frequency. For contactor or oscillator control plug into the contactor position of the Strobotac and select either contactor, HIGH or LOW, as desired. The Strobolux will follow the contactor rate. For single flash use, plug a switch or other control into the contactor position, being sure that the speed switch of the Strobolux is set in the LOW position.

PART IV
CARE AND REPLACEMENT OF PARTS

The Strobolux lamp is replaced by removing the lens from the lamp housing. The lamp unscrews in the base and the two leads are connected by spring fasteners. For replacement, use the General Radio Type 648-P1 Lamp. The fuses are 5-ampere rating and are located above the condenser on the back of the panel (upper right from front of panel). The rectifier tube is a Type 5Z3 and is also mounted back of the panel (lower left from front of panel). The panel must be removed to replace tubes or fuses.

Pilot Lamp - A 6.3-volt miniature bayonet-base lamp is used as an indication that the power supply is turned on. This may be replaced from the front of the panel by unscrewing the pilot bull's-eye.

PART V
THE LAMP HOUSING

This housing is removable by loosening the two clamp screws L on the lamp panel and sliding clamps outward, releasing the rim. The lamp may then be removed and is connected by ten feet of flexible cable to the power supply. If cable kinks, unplug at lamp and replug after straightening. To replace lamp housing, unplug, wind cable on pin and plug into lamp again so that the unit may be used without removal from the case. Lamp housing should be firmly fastened to housing by clamping lugs. The lamp itself is replaceable by removing lens. Legs are provided on lamp housing and a socket with a 1/4 x 20 screw thread is available on the bottom of housing in case it is desirable to use a tripod. The Type 759-P11 is available.

CAUTION: DO NOT DISCONNECT LAMP CABLE FROM LAMP WHEN EITHER STROBOLUX OR STROBOSCOPE IS RUNNING (POWER TURNED ON).

PART VI
PHOTOGRAPHY

Single-flash or multiple-flash photography of moving objects can be made by using the Strobolux as a light source. The extremely short duration of the flash (about 0.00005 second) makes it possible to arrest extremely rapid motion. The many variables entering into this type of photography make it difficult to give definite instructions for procedure, but a few general rules are outlined here.

(1) The object to be photographed should be prepared to obtain a high degree of light reflection, but this reflection should be diffused, avoiding, so far as possible, any specular reflection or highlights. In photographing machine parts, this can often be accomplished by painting the parts with a flat white paint.

(2) Use rapid lenses, f4.5 or faster, and fast emulsions.

(3) Place light as near as possible to the object to be photographed.

(4) The flash is "triggered" by a switch or other control plugged into the CONTACTOR position of the Strobotac. Timing of the flash is a matter that is usually best determined by experiment. A

few trial shots will establish conditions better than pages of instructions.

(5) The mechanism for tripping the flash must usually be devised to fit the particular circumstances at hand. For single-flash photographs, a mechanical contact actuated by the phenomenon to be photographed is usually satisfactory. Photocell relay combination can also be used. For multiple photographs on a single plate a system giving a sequence of contacts must be used. The flashing means provided in the Strobotac is quite satisfactory.

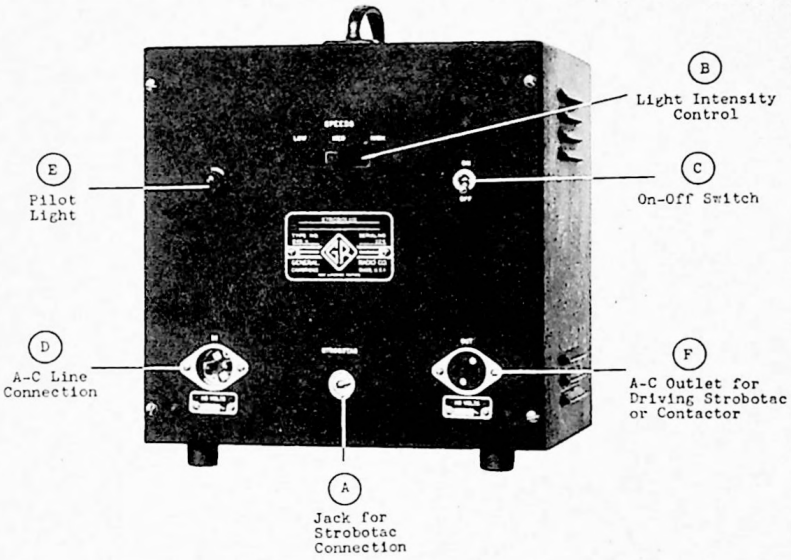

FIGURE 1. Panel view of Type 648-A Strobolux.

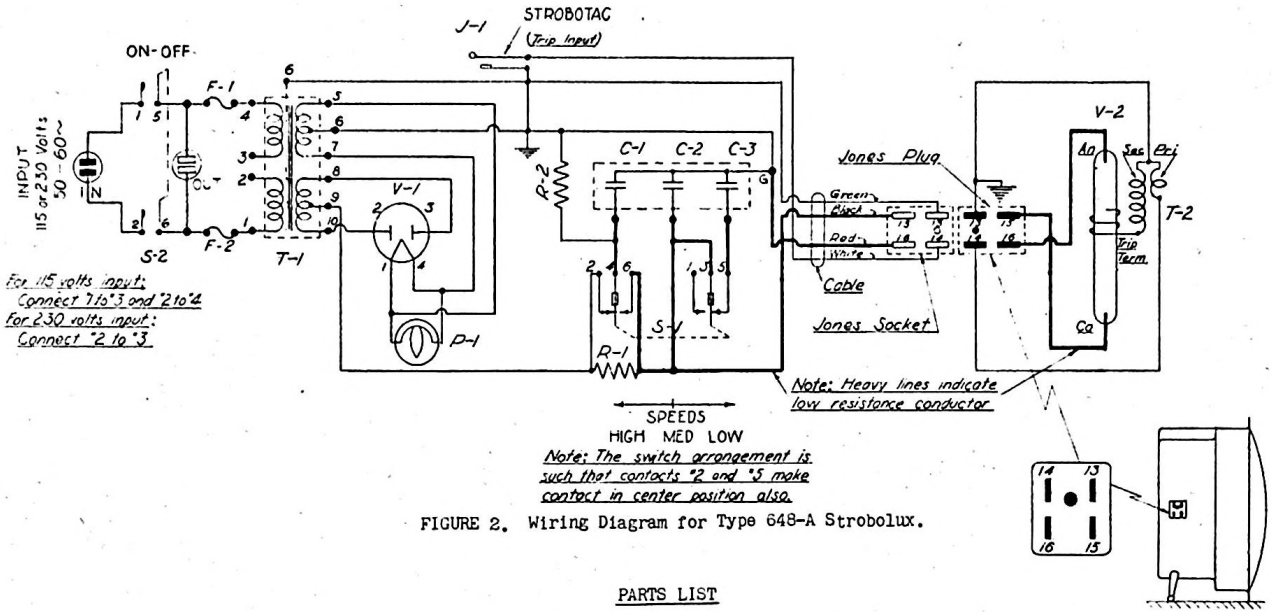

FIGURE 2. Wiring Diagram for Type 648-A Strobolux.

PARTS LIST

Resistors	Condensers	Tubes
R-1 = 3 kΩ	C-1 = 10 μf	V-1 = RCA Type 5Z3
R-2 = 1 MΩ	C-2 = 2 μf	V-2 = Strobolux Lamp Type 648-P1
	C-3 = 2 μf	

Fuses		Miscellaneous
F-1 = 5 amp. Type 8AG (or 7AG) F-2 = 5 amp. Type 8AG (or 7AG)	For 115-volt operation	P-1 = 6.3-volt Pilot Lamp 139-939
F-1 = 2.5 amp. Type 8AG (or 7AG) F-2 = 2.5 amp. Type 8AG (or 7AG)	For 230-volt operation	J-1 = Jack Plug 648-316

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