base of the isolation chamber with a coverslip they should also be suitable for work at higher powers, using an inverted microscope.

Reference: Boyd, J.B., H.D. Berendes and H. Boyd 1968, J. Cell Biol. 38:369-376.

Grossfield, J. New England Institute, Ridgefield, Connecticut. Gaseous anesthesia of Drosophila.

Carbon dioxide anesthetization has often been used to avoid some of the deleterious effects of etherization. While different species and mutant strains respond differently to ether, the use of CO_2 introduces the difficulty of CO_2 sensitivity with some strains. For such cases, anoxia produced by nitrogen, helium or argon is an effective narcotizing agent. Administration of pure O_2 does not narcotize. The major detail involved in using gaseous anesthetization is the use of a low flow rate through the regulator valve and short exposure time to avoid the dessicating effects of gas flow. If extended periods (over 5 minutes) of gas flow are required, then humidification of the gas is suggested.

Bricks, B.G. and J. Grossfield. New England Institute, Ridgefield, Connecticut. A timing control circuit for fluorescent lamps.

The spectral distribution and heat characteristics of fluorescent lamps are superior to incandescent bulbs for illuminating small chambers on a rigid light cycle in studies of circadian rhythms. Controlling the on-off cycle of small fluorescent lamps, such as those used to light a dissecting microscope stage, cannot be done by simply attaching the lamp to a timer. Such an arrangement will turn the lights off but will fail to turn them on, because a voltage greater than that of the AC line is required to initiate the gas discharge in the lamp. This increased voltage is normally provided by the induced EMF of the ballast inductor of the lamps. If the lamps and inductor are simply connected by a timer to the AC line, the induced EMF is insufficient owing to the small current drawn because of the high impedance of the lamps prior to breakdown of the gas. We present here a simple circuit (Fig. 1) employing thermal time-delay relays to overcome this difficulty. One relay (Amperite 115C20T) with contacts (S_1 and S_2) in the normally closed (NC) position is connected in parallel with each fluorescent lamp (GE F4T5-D). When the timer closes switch S the relays short circuit each tube, allowing sufficient current so that the induced EMF of the ballast can ignite the tubes. After ~20 seconds the relays open permitting full current through the lamps and producing maximum illumination. Relay tubes for two lamps will fit inside the case of an Intermatic model T101 24 hour timer.

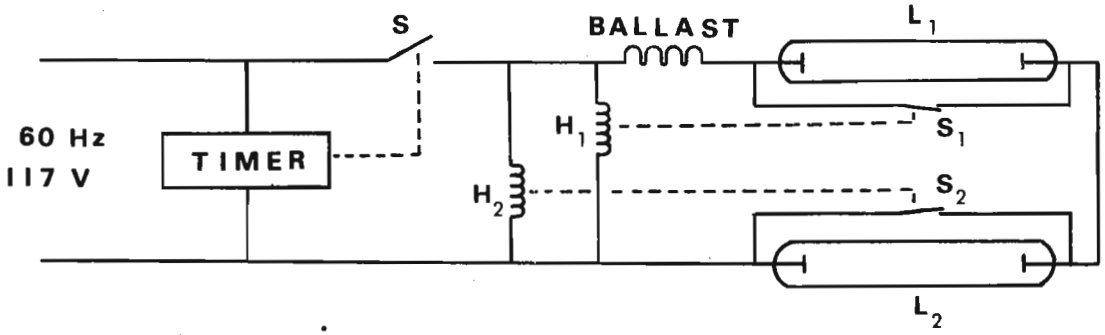

Fig. 1. L_1 and L_2 are fluorescent lamps connected in series with the usual ballast. H_1 and H_2 are heater filaments of the time delay relays, and S_1 and S_2 are the respective relay switches connected across each lamp. Switch S is internal to and activated by the timer clock mechanism. When S is closed, the lamps and heater filaments are connected to the AC line. Since S_1 and S_2 are shunting the lamps, sufficient current is drawn so that the induced EMF of the ballast will ignite the tubes. About 20 seconds later the heat generated by H_1 and H_2 causes S_1 and S_2 to open; all the current passes through L_1 and L_2 and lamp ignition is completed.