

The electronic flash has become one of the most valuable tools in underwater photography today. As these become more and more sophisticated, one important component seldom changes: The ready light. When this small light comes on, your electronic flash should be ready to fire. After each flash, the diver must then wait for the strobe to recycle, as indicated by the stop and go signal of the ready light.

One vital question is whether or not your strobe is at full power when the ready light illuminates. On some strobes, this is not necessarily true. There is a big difference between the data quoted on the instruction sheet and

what actually happens. If you want to know the real story behind the ready light, read on.

Physically, the ready light is a small, neon lamp, about the size of a pencil eraser, located in its own special circuit between the positive and negative terminals of the strobe. This small circuit has nothing to do with the firing of the strobe. If the neon light burns out, the strobe will still function. Generally, most ready lights require about 90 volts to illuminate, and can be best described as a very simple volt meter. When the strobe's capacitors reach a certain voltage, the ready light goes on.

Underwater strobe manufacturers utilize a variety of electrical circuit concepts, so no two strobes are identical. The problem arises because the ready light circuit can be wired to illuminate at a voltage of less than 100 percent, indicating a faster recycle time. Each manufacturer has designed its ready light to come on at anywhere from 50 percent to 95 percent of full power. Most strobes take an extremely long time to reach 100 percent power, so 90-95 percent is considered a compromise which allows very little exposure loss. Yet, some

strobes tested by the authors had ready lights coming on at 50 percent power, which would produce a full f stop less light. This does not mean that a short recycle time indicates less than full power, as some manufacturers have designed very efficient circuits. The only way to positively check the performance of your strobe is by conducting a series of exposure tests on film or with a flash exposure meter.

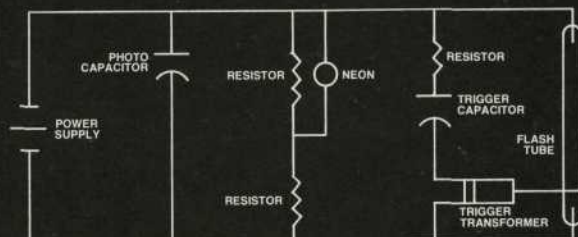
- 1) Make the first exposure immediately after the ready light comes on.
- 2) Second exposure, one second after the ready light comes on.
- 3) Third exposure, two seconds after the ready light comes on.
- 4) Fourth exposure, three seconds after the ready light comes on.
- 5) Fifth exposure, four seconds after the ready light comes on.
- 6) Last exposure should be double the normal recycle time.

Compare your results to see if there is any difference in exposure. If there is a very slight difference from the first to the last exposure, your ready light is set at close to full power. You can feel confident that you will get accurate exposures every time you fire your strobe. If your exposure tests are varied, you must then determine how long to wait after the ready light comes on, before firing the strobe in order to achieve full power.

All of this information can be reduced to a few simple rules of thumb: don't be too hasty in firing your strobe; think about the circuitry behind the ready light; time is on your side, the longer you wait, the more accurate your exposures. >»

READY LIGHT

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Above, a basic schematic for electronic flash. Left, an arrangement of ready lights; they indicate readiness to fire.