SUPERGAMING

Turn the page and discover the wonders of stroblasting.

Last issue we told you how to make your videogame sound like the Norse gods clashing in Ragnarok, rumbling the rafters with bass explosions and resonant bleeps.

This issue we add a dash of lightning to your play, a scintillating effect called *Stroblasting*.

Before telling you how to do it, we'd best tell you what it *is*. Stroblasting is a means of triggering a strobe so that the launching of projectiles in games like *Space Cavern* and *Biplane* can be accompanied by dramatic flashes of light.

There are two variations of the Stroblaster. The first is a unit independent of your joystick; the second, which will be discussed next issue — along with an exciting new device — is wired directly to the joystick.

On these pages are the instructions and schematics which will allow you to create a Stroblaster. First, however, a few words of caution.

Unlike last issue's audio enhancement project, this fixture is built without pre-packaged equipment. Wires must be stripped and soldered and electrical hookups made. If you're not familiar with electrical equipment, make sure you undertake this project with someone who *is*.

Here are the materials you will need:

1. A minibox, available for under $2.00 at any electrical supply store or Radio Shack. This is the housing for the trigger.

2. A nine volt battery and cap.

3. Three yards of stranded single conductor wire, ie #22AWG.

4. A grommet, which can be had for pocket change.

5. A 2200mf electrolytic capacitor, 16VDC, retailing at $3.00

6. A 22 ohm, 1/4 or 1/2 watt resistor, a bargain at twenty-five cents.

7. One prefocused bulb, PR7.

8. A flashlight, of which you'll discard all but the reflector dish and bulb socket assembly.

9. An inexpensive pushbutton switch (SPDT Switchcraft, for example).

10. Two pieces of wood, roughly 3x3x1 and 3x1x1.

11. A power drill.

Building the Trigger Power Unit

Drill an appropriate hole a half-inch from either short side of the minibox lid. Insert the pushbutton switch, securing it with the nut and lock washer which are part of the unit.

Solder the resister to the normally closed terminal of the switch. Strip the end of a one-inch length of wire and solder this to the common terminal of the switch.

Setting the minibox aside for a moment, it's time to twine a pair of yard-long wires. While you *could* use a two-wire cable, that tends not to be flexible enough for Stroblasting.

Making sure that the two lengths of wire are equal, place one end of each in a vise. Insert the other ends into the chuck of the drill — from which the bit has been removed, of course. Turn on the drill and the wires will automatically twist together. Strip each end of the two wires. Solder one to the normally open switch terminal.

Using any of the popular "super glues," cement the capacity to the inside of the minibox lid. Do so below the pushbutton, and close to the long wall. Make sure there is sufficient clearance to slide the cover onto the base of the minibox.

Solder the end of the second twined wire to the negative terminal of the capacitor. Attach to the positive capacitor terminal the one-inch length of wire previously soldered to the common terminal of the pushbutton.

Although you can glue the battery in place, this makes it difficult to remove when you want to insert a replacement. It's best to secure the battery using a swatch of double-backed foam — the same adhesive which came packaged with your videogame to fix the antenna connector to your TV. Nestle the battery right beside the capacitor.

Two connections remain to be made. Strip the ends of the wires which are part of the battery cap. Affix the red (positive) lead to the floating end of the resistor, the black (negative) lead to the negative terminal of the capacitor. Drill an appropriate hole at the end of the box, away from the switch, and insert the grommet. Run the twisted two conductor cable through the grommet hole.

(If the box you purchased is made of plastic, there is no need for the insulating grommet.)

The trigger power unit is now complete. Close up the minibox and move on to the Stroblaster.

All that remains is to slip the grommet into the 3/16" hole you drilled, and feed the twined wire through it. The rubber grommet protects the cord from the metal edge of the hole so that it doesn't scrape and short. Knotting the wire before slipping it through will preserve the soldered connections from accidental dislodging.

The trigger is now complete. Close up the minibox and move on to the Stroblaster.

Building the Stroblaster

Using glue or nails, mount the smaller piece of wood to the center of the larger one. You'll end up with a squat looking "T" with a long crossbar. Screw the reflector to the shorter piece of wood, drilling a hole through the dish itself. Screw the lightbulb into the reflector.

The remaining ends of th twined wire should be soldered to the Stroblaster, one to the back of the bulb socket, the other to the back of the dish.

Using the Stroblaster

By keeping the Stroblaster an independent unit, a companion is required to trigger the blasts. This gives your opponent something to do during alternating-turn competitions and can even be worked into your gameplay. Decide, ahead of time, whether your adversary can turn the flash on the TV, momentarily obscuring your view — or whether you, yourself, can be stroblasted if you get too far ahead!

The options are many, limited only by your imagination!

Next issue: triggering the flash with the action button, and a wonder tool to embellish the graphics of your videogame.

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A Word of Caution

Electrolytic capacitors are polarity-sensitive and care must be taken to ensure that the positive side of the capacitor sees *only* the positive voltage from the battery. Should the voltage polarity to the capacitor be reversed, not only will the strobe not work, you will most likely destroy your capacitor.

Space Battle

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portionately more of your ships than it will destroy enemy vessels, use the computer *solely* as a brief, stopgap measure. For instance, if you have dramatically depleted an enemy squadron and the warning siren sounds, leave the computer to carry on while you engage a stronger unit with a fresh squadron of your own. If you're called upon to deal with yet a third group of invaders, repeat this procedure.

The alternative is to abandon one fight, recall your squadron, and engage the attackers elsewhere. Do this only if the squadron you are leaving is *farther* from your mothership than squadron to which you're moving.

Deciding which tack to use is relatively simple. Keep in mind the 3:1 ratio of losses the computer is likely to generate if left to manage a battle. If, when you turned over command, you had at least two ships to our or five of the enemy, chances are good that the computer will win the battle and leave one of your ships remaining. When that happens, make sure you recall the remnants of that squadron to the mothership: there is no point allowing it to hover in space when the ships can be used to stall an enemy closer to home.

Obviously, you should always manage the weakest squadron yourself, not necessarily the one with the fewest ships but the squadron which is most formidably outnumbered. Far better to allow the computer to deplete a squadron than to surrender one altogether.

Intellivision was kind enough to provide additional strategies in their *Space Battle* instruction booklet. Most of these are primarily good, common sense suggestions, although there *is* one of questionable merit. Tactic #8 recommends that you keep the gunsight moving to prevent being hit by alien fire. This approach is no more useful than standing still: the chances of enemy lasers hitting any given spot are equally good, whether you happen to be there as result of zipping about or treading water. The advice Intellivision *should* have imparted was to move once an alien laser has been fired and you can see where it's headed.

Comment

The problem with *Space Battle* is the problem with Intellivision itself: the control disc simply doesn't handle as precisely as a joystick or paddle. Nor is it as satisfying. Poking a small plate with your fingers doesn't provide quite the same sense of physical participation as gripping a joystick "throttle." But as spaceflight may well *be* conducted by disc in the future, that complaint is a qualified one.

In any case, the joys of the game are many, not the least of which is its two-stage radar/combat play. There is the sense of a battle *developing*, not just happening. Decisions must be made as to how you'll meet the enemy, and whether a particular fight is to be continued or abandoned. In short, there is much more to do in this game than fire artillery.

One aspect of *Space Battle* which merits mention is the facelessness of the enemy. In videogames like *Space Invaders* or *Asteroids* the opponent, though stylized or non-living, is at least visible. In *Space Battle* we *know* there are creatures in the saucers, but they never show themselves. The imagination tends to flesh them out more than any videogame could, making the environment more realistic and the game more dimensional.

The graphics are also superb, meticulously detailed spaceships swooping and diving realistically against an atmospheric starfield. The explosions of the enemy vessels are spectacular, and your own craft's collisions with alien laserfire are quite rattling. ▲

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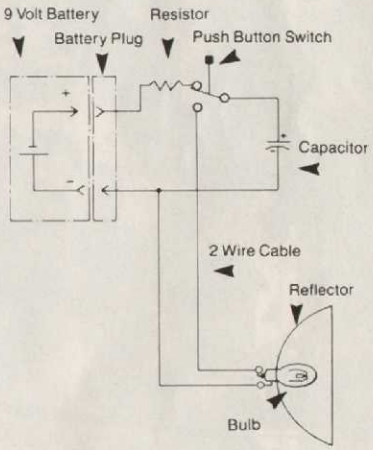
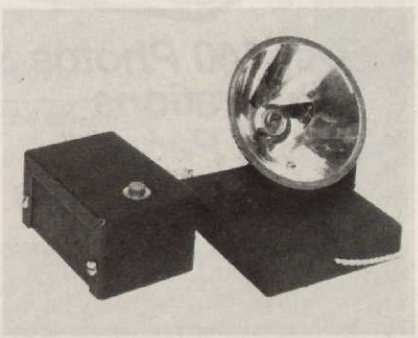
Build your own Stroblaster



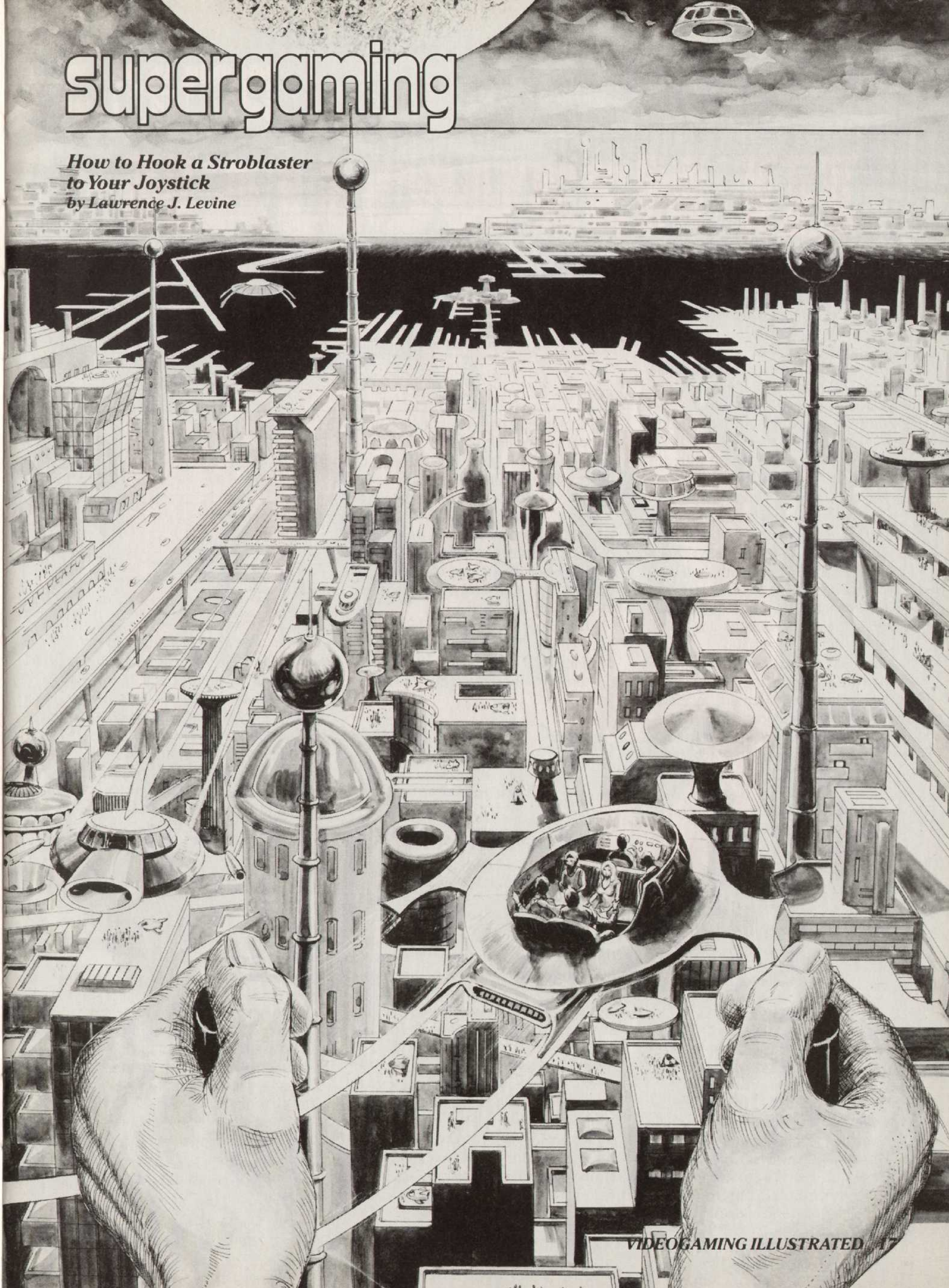
Above: the schematic for constructing a Stroblaster. As designed by *Videogaming Illustrated* electrical wizard Lawrence J. Levine, this unit will allow you to add off-screen flares to your videogame play. Below: The Stroblaster itself. Next issue, the author will show you how to hook the Stroblaster to your joystick. Without impairing play, you will be able to trigger a flash every time you depress your action button. ▲



supergaming

How to Hook a Stroblaster to Your Joystick

by Lawrence J. Levine



Last issue we told you how to build a Stroblaster. Although one can come up with numerous applications, the most obvious is using it to enhance the visual blasts caused by depressing your action button.

Following last issue's instructions, you built a unit which must operate independently of the action button — fired by another player, for example, to "blind" you in a strategic maneuver, or to help create the ambiance of battle.

This issue, we're going to explain how to hook the Stroblaster directly to your joystick so that you can generate a powerful burst of light every time you press the action button.

Figure one is the electrical schematic diagram of what you built initially. *Figure two* is the electrical schematic depicting changes which must be made in the original system to enable the flash to be operated in conjunction with the actuation of the action button.

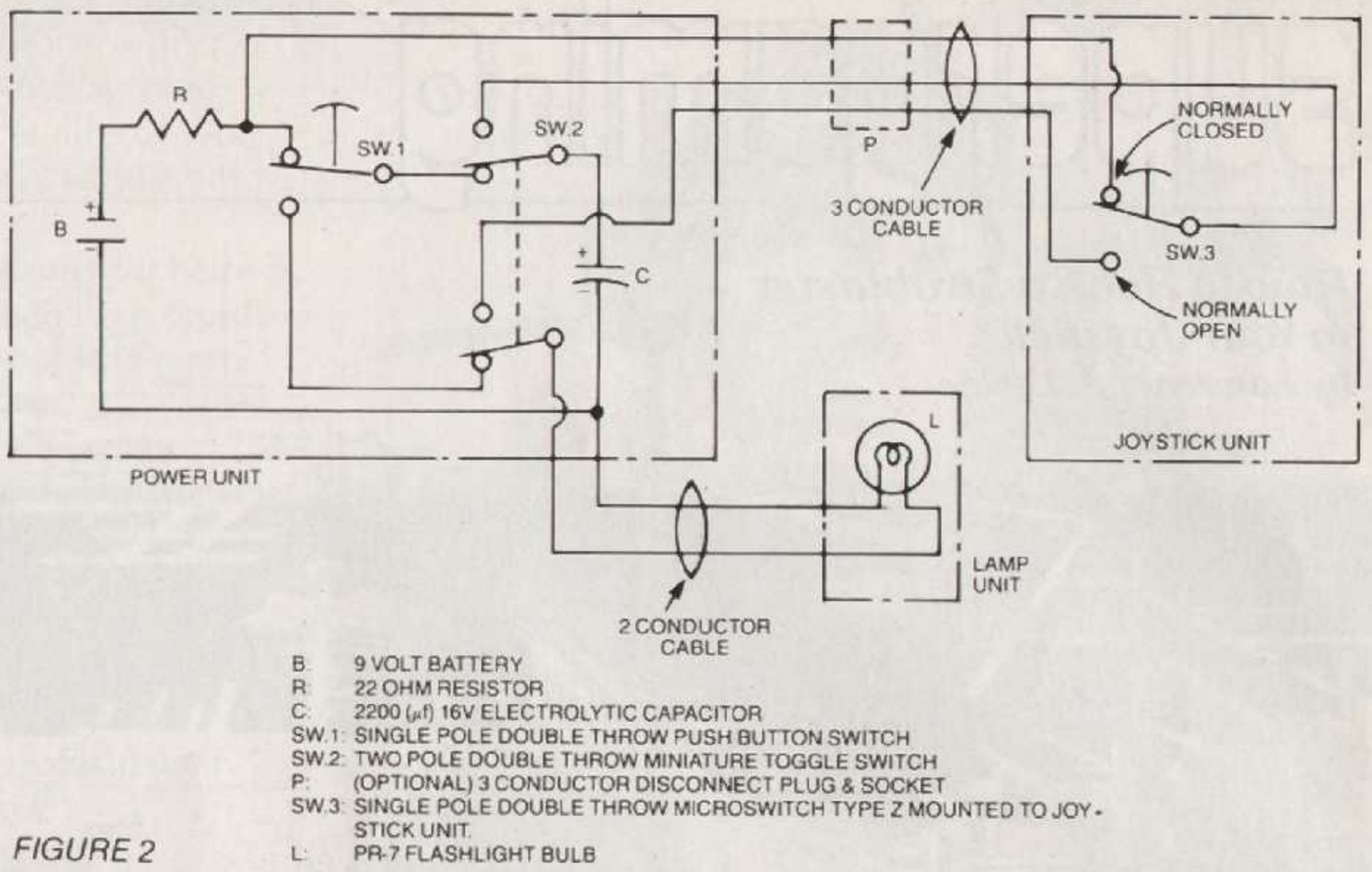
The newly added switch (SW-3) is a microswitch. (Although a trade name, the term "microswitch" has become generic through long-term usage.) The switch is of the "Z" type, although the unit actually used in this case is the "BZ." As you can see from the photograph of the completed unit it readily adapts to the needs at hand.

The microswitch is secured to the side of the joystick using 3M Super Strength Household Cement, available at most hardware stores. The same cement is used to secure the button to the actuator arm of the microswitch. Please

Switch and actuator button attached to Atari joystick.

note that the actuating arm is *not* being used to tap down the existing action button: it positions a new one entirely over the old button. This location is solely for the sake of player familiarity: you can, in fact, relocate it wherever you wish.

The actuating arm is made from a piece of spring steel — in this instance, cannibalized from a discarded windshield wiper blade. (There are usually



B 9 VOLT BATTERY
R 22 OHM RESISTOR
C 2200 (μf) 16V ELECTROLYTIC CAPACITOR
SW.1 SINGLE POLE DOUBLE THROW PUSH BUTTON SWITCH
SW.2 TWO POLE DOUBLE THROW MINIATURE TOGGLE SWITCH
P (OPTIONAL) 3 CONDUCTOR DISCONNECT PLUG & SOCKET
SW.3 SINGLE POLE DOUBLE THROW MICROSWITCH TYPE Z MOUNTED TO JOY-STICK UNIT.
L PR-7 FLASHLIGHT BULB

FIGURE 2

two such pieces of steel imbedded in the back of the wiper rubber.)

Using the hole already in place on the microswitch, secure the arm in place using a 2-56 screw and nut. The cut length should be approximately 2 3/8" long with a right angle bend 3/4" from the hole. (These sizes are correct for the Atari joystick; in the case of an Odyssey unit the figures will vary, though only by fractions of an inch.)

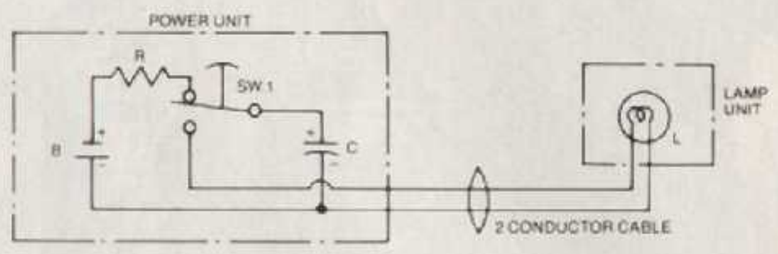
Attach approximately two feet of three conductor flexible cable to the underside of the microswitch. Wire size is not terribly important; it need be no

The disconnect plug.

larger than #22 AWG for each conductor. The other end of the cable can be terminated with a disconnect plug (as shown) or wired directly to the power unit. The former is convenient if you wish to play without Stroblaster.

Novices: make sure that in making this disconnect attachment you wire the male and female portions of the disconnect plugs so that color goes to color where the cable is concerned. The three strands of wire must emerge from the disconnect unit as though they had never been broken.

SW-2 is added to the power unit to provide for either local or action button control over the Stroblast. Follow the schematic for wiring instructions. With the switch in the "local" position, the strobe can be flashed by pressing the button installed last issue on the power box.



B: 9 VOLT BATTERY
R: 22 OHM RESISTOR
C: 2200 MICROFARAD (μf) CAPACITOR: 16 VDC (ELECTROLYTIC)
SW1: SINGLE POLE DOUBLE THROW PUSH BUTTON SWITCH
L: PR-7 FLASHLIGHT BULB

FIGURE 1

When the switch is in the "action button" position, depressing the action button will trigger the burst. In the photograph, notice that we've set our SW-2 at a right angle to the original Stroblaster action button. The schematic tells you how to make the hookup. (For additional help, if needed, refer to photograph of power unit interior.)

Local switch on the side of the Power Unit.

If you have no use for a local control, then the schematic shown in Figure one can be used, substituting the microswitch for the SW-1 push button switch. This makes the final unit somewhat simpler, though less versatile.

Incidentally, we found an interesting and certainly unusual way to give your unit slightly more light than with the flashlight disk we recommended last issue.

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Close Up

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"Since video games are smaller than movies, one person can take on several jobs. I would be considered the director and scenic designer. The programmers would be my camera, lighting and sound personnel. The hardware people would be everyone else."

While the design team toils, the company is taking care of business. They want to make sure that everything is ready on their end when the conceptualizer arrives with the finished machine. "The companies usually handle the cabinet and the various 'interfaces,' " Cicak maintains, "meaning the control stick and that sort of thing. They look at it from a manufacturer's point of view. They have to be sure that they can mass produce it efficiently which is why they handle all the peripheral things like the outward appearance of the cabinet. The designers handle everything on the screen."

It all comes together at this point. The team sticks their hardware and software into the company's cabinet and thus a videogame is born.

One, lone machine that has hopefully lived up to all the creators' expectations.

But the process does not stop there. Manufacturers have learned the hard way not to be content with their own tastes. The final judge has to be the player — the person with the coin. In other words, you.

"The company makes a few machines and puts them on test in various secret locations all over the country," Cicak reveals. "Sometimes they don't even reveal the name, to make it more mysterious. After all that time, effort, and money, they don't want their competitors to steal any thunder."

All the secrecy is understandable given just how expensive that thunder can be. Cicak says that a minimum price tag for the development of a single new videogame is a half-million dollars. There have been cases on record where the cost has gone as high as three million dollars. And if new technologies are researched and forged, new kinds of chips or controls, the expense may soar ever higher.

"The company will watch the prototype games in the field, and keep records of the two 'M's," Cicak continues, "money and maintenance. Depending on that they will make their final decision, which is usually one of three. One: it's ready to go. Two: it needs changes. Three: it's a worthless idea."

For reasons explained by game designer Joe Cicak, the cabinets and artwork which adorn them are standardized for a very good reason: they must be mass-produced as quickly and as inexpensively as possible.

Thankfully, Cicak has never had many worthless ideas.

Although he and his contemporaries work well under the present conditions, Cicak is looking forward to a future of even greater accomplishment and challenge.

"The systems we're working on now will become more and more flexible until even someone with no programming experience and only a basic understanding of the equipment — like me — will be able to sit down and make it almost all work. That is some years away yet, but not as many as people seem to think. You'll be able to invent arcade games at home before long."

So, hopeful designers you have a choice. Either start making your company contacts now or sit tight and wait for the fast-approaching future. It will be glorious, it will be invigorating, and it will *never* be boring. ▲

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Next time you finish a roll of bathroom tissue, take the roll and cut it to a height of approximately 2½". Slice it in half, lengthwise. Take a 3" x 3" sheet

The wiring inside the Power Unit.

of aluminum foil and lay it inside the makeshift dish, using tape to fasten it in back. Use one of the "super glues" to cement the dish to the lamp base.

Obviously, you can experiment with the size of the roll until you get the maximum flash; this was the only one we had time to build.

In any event, this dish is much more fun to create than simply pulling apart a flashlight, and is more of a conversation piece when one of your fellow videogamers asks how you did it.

What we have done to date is given you instructions on how to enhance the sound of your videogaming (*Videogaming Illustrated* #1) and add some flair to the explosions via stroblasting.

Next issue, we'll be taking you in a new direction entirely as we tinker with the hardware to make gameplay easier. ▲

Triple Play