LASER COMMUNICATIONS...

For years the CIA, among others, has employed a type of super "bug"; one that needed no access to the area to be monitored, worked from nearly a safe mile from the target, was portable and almost impossible to detect.

This device made the civilian marketplace about 5 years ago when it was offered, by a german electronics firm, for $25,000!!

Despite denials, it works...

It has some problems, i.e., outside noise, weather, interior covering noise, etc, but it does work.

The german device uses an infrared LASER tube to produce an invisible beam which is aimed at a target window and the reflecting beam picked up by a lens and fed to a demodulator.

As the persons in the target room speak, their voices actually set up vibrations on the glass of any window in the vicinity. These minute vibrations cause the beam of coherent light to vibrate (modulate) slightly in perfort accord.

When concentrated by a lens and electronically ciphered (demodulated) the target conversation can be heard.

The IR beam is invisible, making detection quite difficult. It also makes correct aiming/alignment difficult...

The commercial unit uses a visible LASER for aiming, and then switches to the invisible IR beam for monitoring purposes.

We have seen/used/built a similar unit for about $600...

PLEASE NOTE:

We are listing this unit for 2 reasons and 2 reasons only:

1. For your information so as to be watched for and countered.

2. For use as an experimental,one-way LASER COMMUNICATIONS DEVICE AND NOT TO BE UTILIZED AS AN ILLEGAL SURVEILLANCE DEVICE.

Any such use may well violate numerous federal and state laws and may well land the user in jail.

NOTE THE ABOVE WELL AND HEED IT!!

A few differences exist between our unit and the $25,000 german device; first and foremost, ours uses a VISIBLE LASER which places a red dot on the target window, and often through it onto a wall.

We are doing this for several reasons, it is about $2000 cheaper to use a visible LASER instead of an IR unit, although the substitution could be made.

During the daylight it is very difficult to see the faint dot on the corner of a window, although it is very bright at night.

It is much easier to aim and collect the returning beam with a visible unit.

You are not supposed to be using it for surveillance anyway, so who cares if a visible dot appears?

One should be aware that the red beam will "scatter" if it strikes a curtain leaving a very tell tale red glow that will at least alarm anyone within the target room.

One of the main problems in construction a one way communicator have been that the optically sensitive device (in our case a photo transistor) will react to any light falling upon it including our return beam.

To counter this effect we have used a special honeycomb light filter that only allows the BEAM FREQUENCY to pass through, stopping the stray non-coherent light.

The second problem is that outside noise, traffic, wind and such, also modulates the returning beam and tends to override the Inside conversation.

Luckily most of this interference lies in the lower end of the audio spectrum and can be filtered out with a low end cut off device that prevents the passage of anything below a certain frequency.

The honeycomb light filter has been around for a while albeit at a very expensive price. Some have now hit the surplus market and we found a very inexpensive source...

As our source also sells the best, cheap LASERS we could find, one can be certain that the filter actually does match the beam frequency exactly.

Realize that our unit is still experimental and requires a bit of adjustment to work perfectly but IT DOES WORK.

And for a hell of a lot less than $25,000...

At least two companies are working on a commercial version of this device; INFORMATION UNLIMITED, and one one other...

Under ideal conditions our unit will work from 1/4 to 1/2 of a mile from the target.

The main factor in good reception is that the angle between the transmitter and receiver is exactly 90 degrees. Note the drawing to see this is accomplished by maintaining a VERTICAL right angle rather than a horizontal one.

The return beam must be caught and focused into the filter/receiver unit. While this can usually be done optically please note:

ALTHOUGH WE ARE USING A FAIRLY LOW POWER HE-NEON LASER IT IS STILL POWERFUL ENOUGH TO BLIND ANYONE LOOKING DIRECTLY INTO THE UNIT ON A TEMPORARY OR PERHAPS PERMANENT BASIS.

Use care.

During the Vietnam "police action" we used a medium power LASER mounted on a helicopter gunship to flash a quick beam towards the site of any anti-aircraft fire with the idea of blinding the gun operator.

Operators of LASER surveillance devices have discovered that it is often possible to bounce the beam off of a reflective surface INSIDE the target room, such as a mirror or glass covered photograph, and produce better results than if just reflected from the window pane.

Needless to say they were usually using an invisible IR beam rather than our bright red dot.

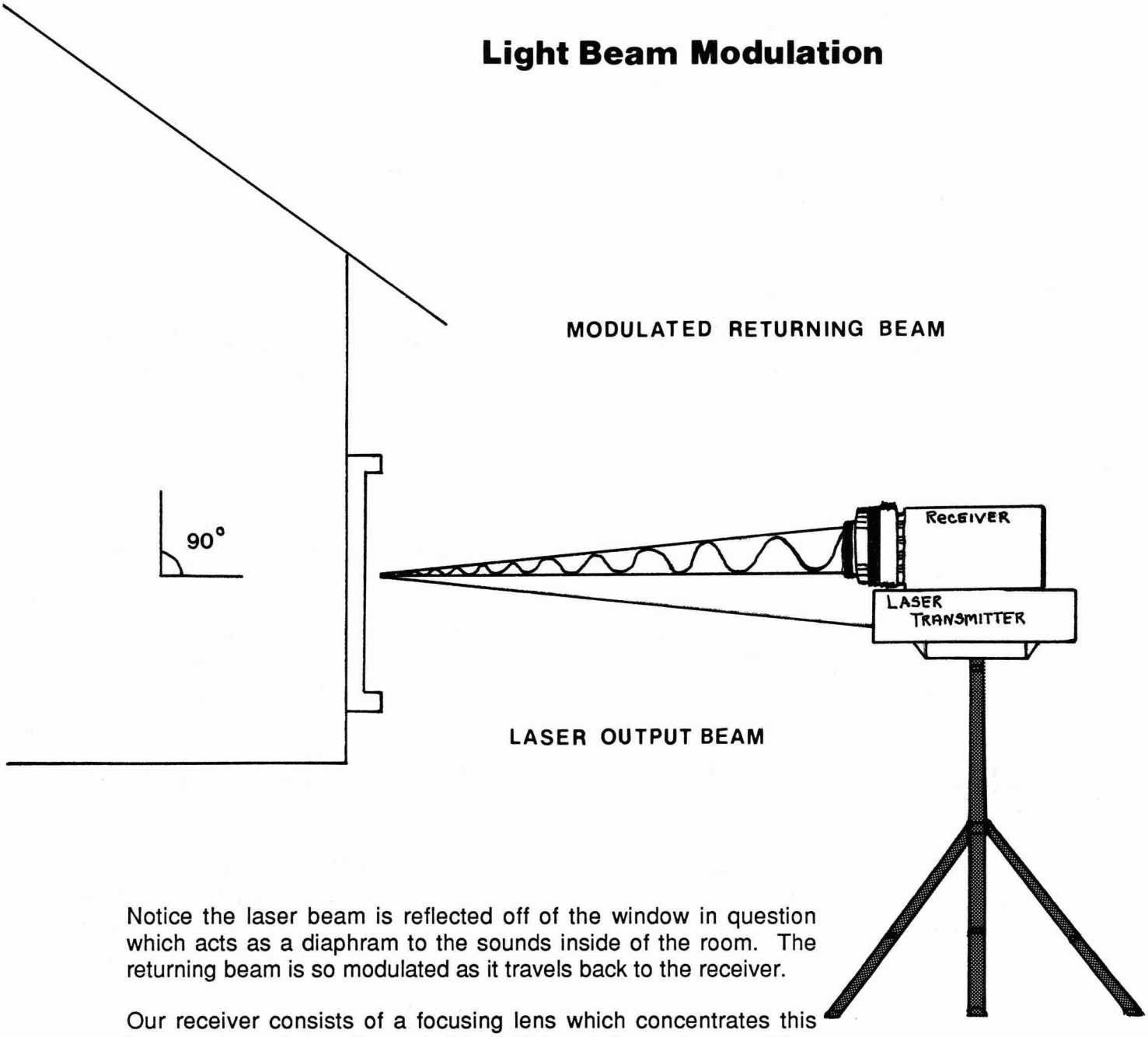
Even the LASER itself is fun to play with...Dogs chase the bright red dot, neighbors jump out of bed and throw open the window when their curtains "catch fire", joggers fall down when (at night) a brilliant red UFO paces them, people dim their lights, well you get the idea...

Yes, I know that's a childish application of a high tech device, but it is still fun.

Once again I have to remind you this is NOT presented for use as a surveillance device and any such application, without consent of all parties involved is very likely against one or more laws.

LASER EVESDROPPER

Light Beam Modulation



Notice the laser beam is reflected off of the window in question which acts as a diaphram to the sounds inside of the room. The returning beam is so modulated as it travels back to the receiver.

Our receiver consists of a focusing lens which concentrates this beam onto a photocell coupled to a high gain/low noise amplifier. The output can be recorded or listened to.

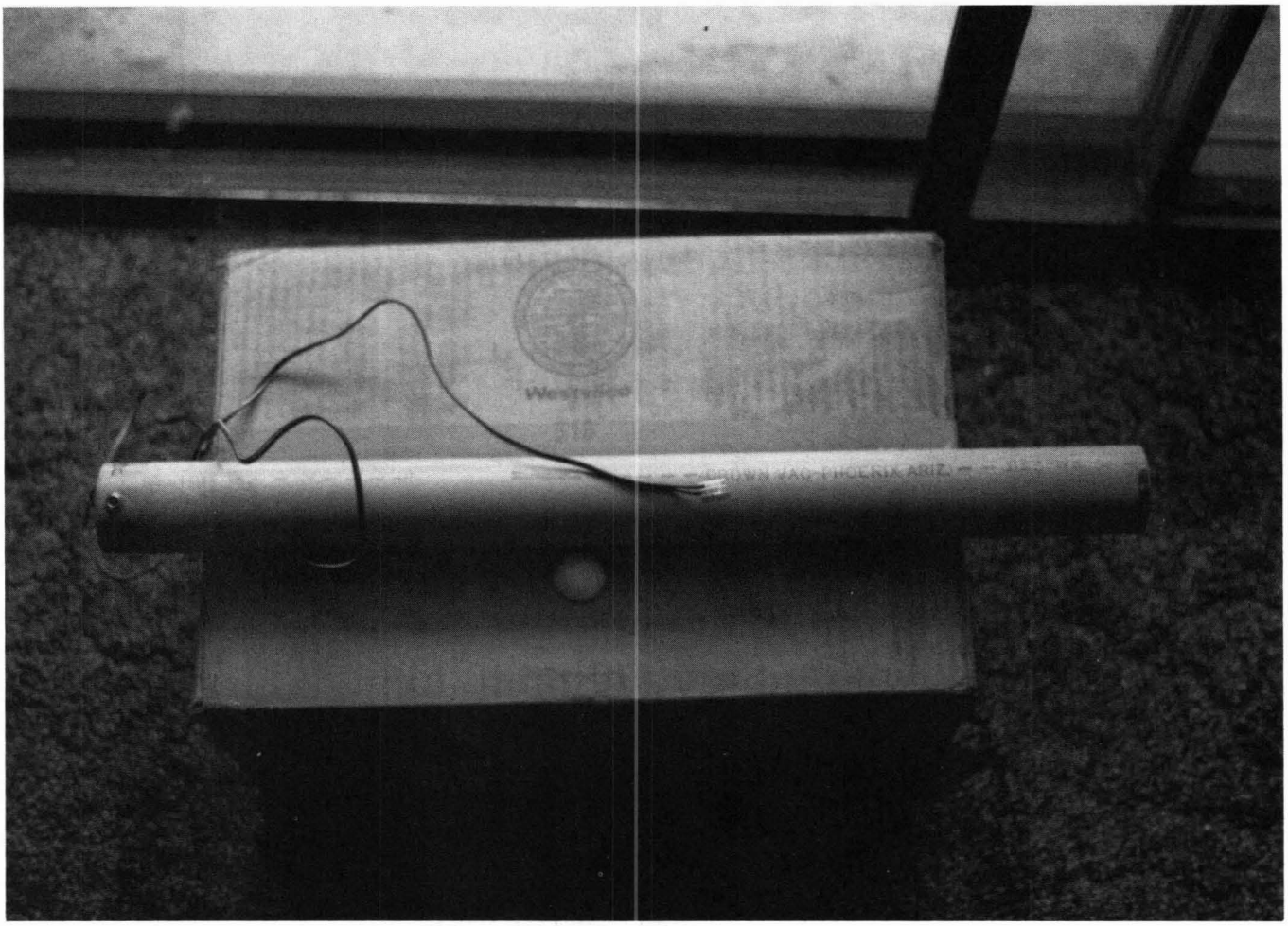
The laser should be aimed at a 90 degree (or as close as possible) angle to the window so the return beam strikes the lens of the receiver. If properly set up this unit will operate at a distance of up to 1/2 of a mile depending on the power of the laser and the quality of the components used in the receiver.

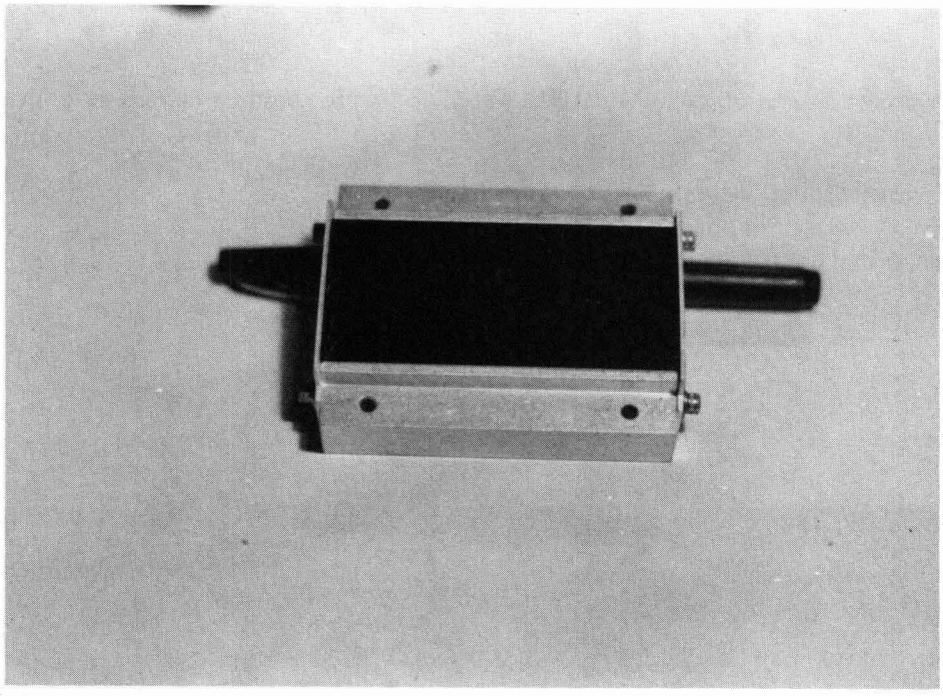
MEREDITH LASER

A rather ungraphic view of the MEREDITH LASER we used to construct our answer to the $25,000 LASER bug.

This device will light up bedroom walls (at night) for nearly a mile...

Great fun, even if one doesn't use it for communications purposes.

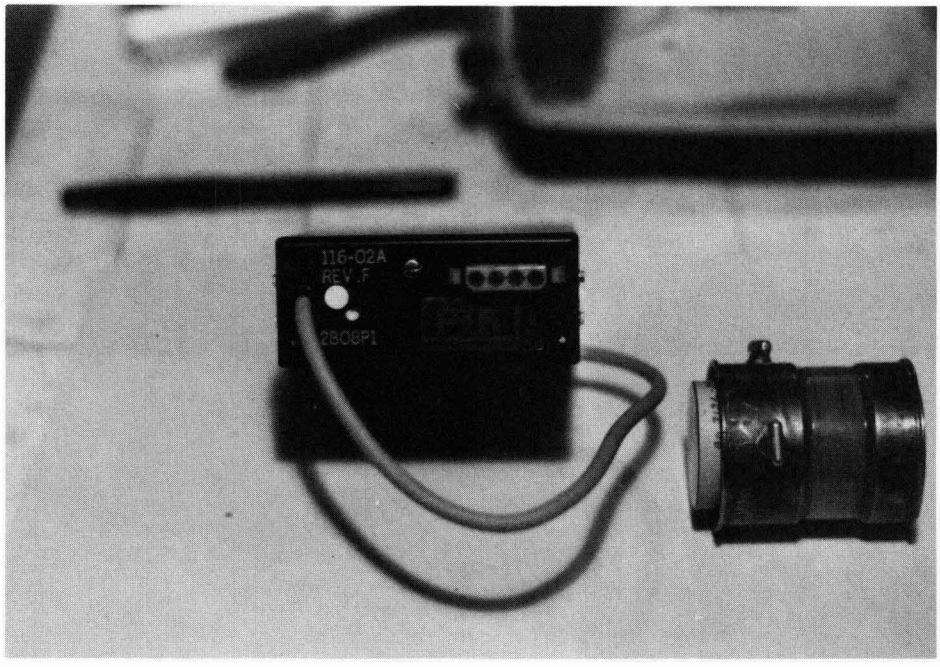




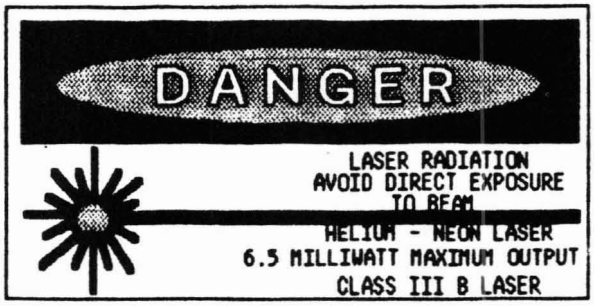
BETTER LIVING THROUGH MEREDITH ELECTRONICS

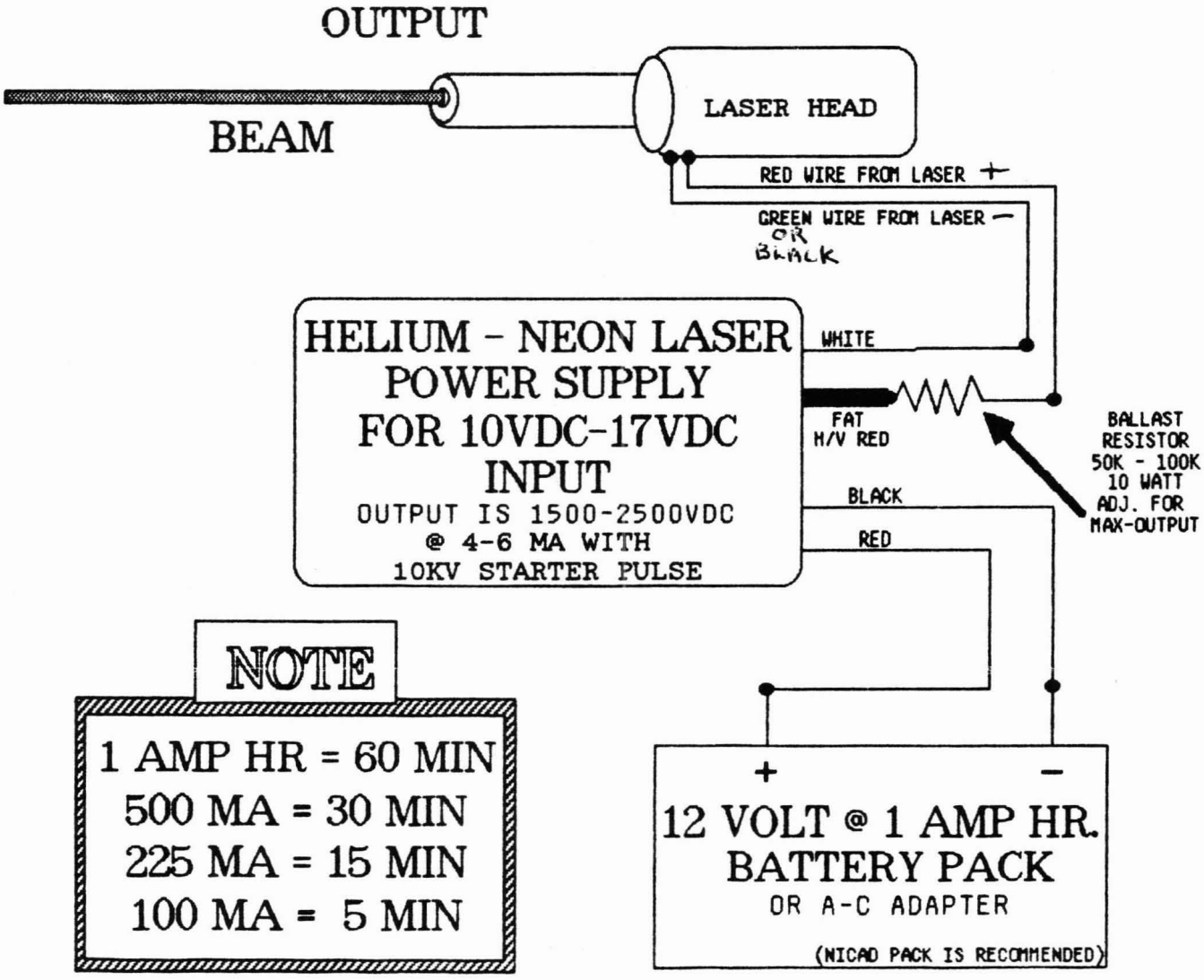
The LASER one-frequency filter that makes possible the one way communications device and, ah, the bug.

Bottom photo is the Starlight scope power supply and one of the three light amplification tubes for the kit.



HOW TO POWER YOUR HELIUM - NEON LASER



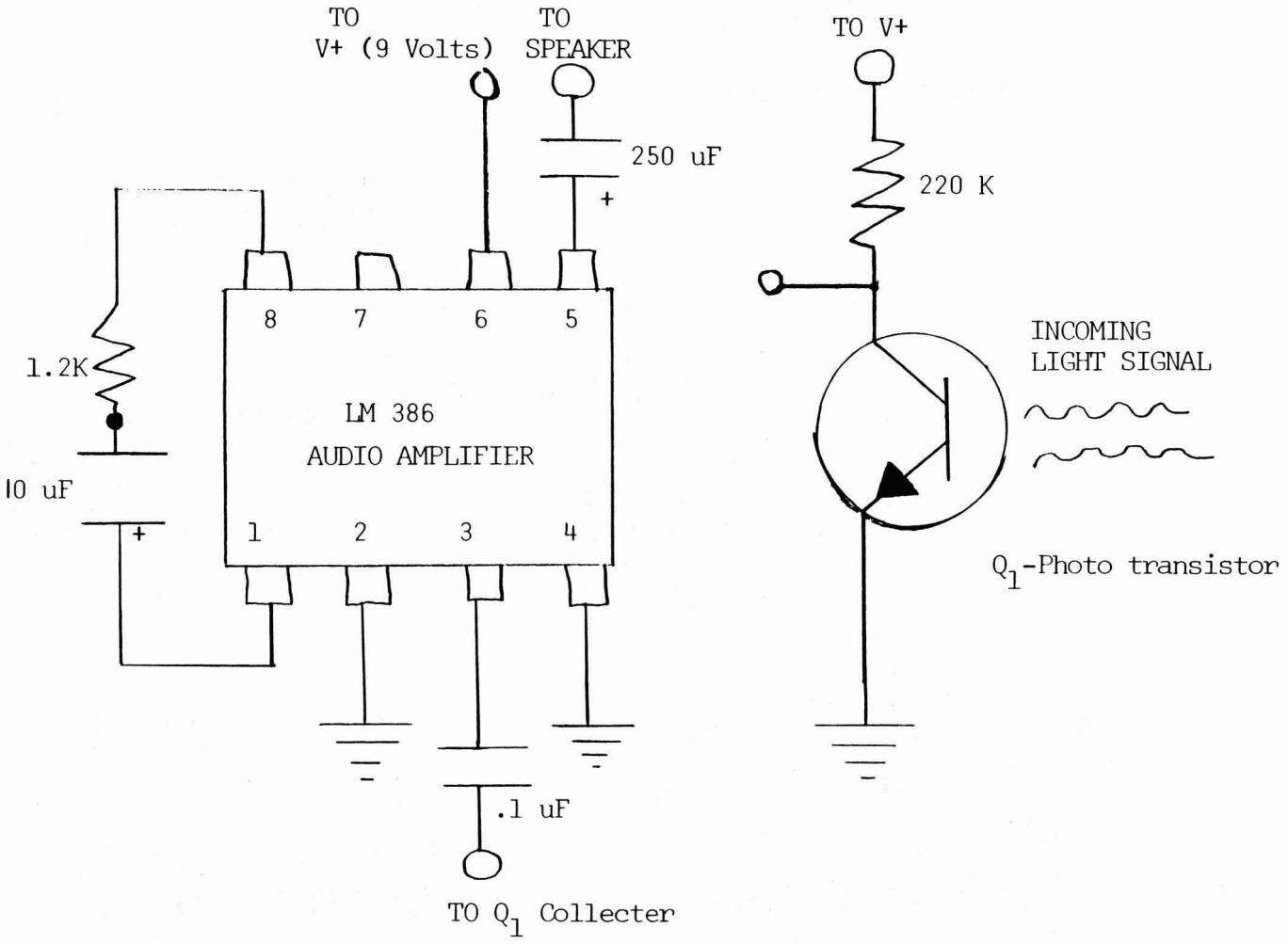


COURTESY OF MEREDITH ELECTRONICS

Electronics for the one way LASER COMMUNICATOR.

Remember the light filter goes IN FRONT of the photo transistor, and a good notch or adjustable filter unit should be placed between the output and the earpones/recorder to knock off low frequency noise to which the unit is MOST SENSITIVE.

LIGHT BEAM RECEIVER AND AMPLIFIER



LASER ART

Scott shooting himself via the reflection (from a mirror) of the MEREDITH LASER. Plenty of beam for any modulation purpose.

Bottom shows the visible beam splatter on a curtain at night. It is a bit noticable...

SCANNERS IN SURVEILLANCE APPLICATIONS

Public service band scanners are fun, interesting and let one know if the police have a sudden interest in one's activities... Sometimes a nice thing to keep track of...

Previously they were not really good enough for surveillance applications because of their design. The units were controlled by crystals which were hard to find and keep on hand and they were designed to receive signals from at least 5 watt transmitters, not micro powered bugs.

New developments in the scanner area plus a whole slew of aftermarket add-ons have changed this situation.

Most scanners are now frequency synthesized so they are as stable as crystal units but DO NOT use crystals. This gives one instant access to a large number of frequencies at the touch of a button.

Preamps and Active Antennas

These add-on devices boost the strength of incoming signals much like adding a gain (yagi) antenna making it possible to receive weak signals without a long wire antenna. A number of different models are now on the market for under $100 from VIKING ALTERNATE TECH and the sources listed on the scanner helper (sounds like dinners my wife used to cook) page.

Filters

Notch and bandpass filters for rf that will knock out undesired signals, multipath and interference.

Sometimes coupled with an active antenna.

Converters