

LETTERS

UNICORN-ONE

I enjoyed your articles on the Unicorn-One project, and I thought about the closing sentence: "What will be *your* contribution to the age of robotics?"

I'm not actually into robotics, but I've come up with an idea that might be useful to those of you who are.

Do you know anything about the metal "nitinol"—the metal with a memory? On the science updates produced by CNN (Cable News Network), they demonstrated the use of that metal and its sensitivity to the heat/cold cycle.

In its normal state, it can be bent completely out of shape, but when heated it will revert back to its original shape. I found that fascinating, because it seemed to me that the metal's characteristic would make it useful to build a better robot hand.

If one could construct a subminiature device and use it for the joint connections in the robot's fingers, I think that we would then have a robotic hand that could grasp objects.

A computer would control the DC input to a thermo module via D/A conversion to either heat or cool the nitinol metal. Heating would cause it to bend in a predetermined pattern and to exert a predetermined degree of force. Rubber (or some other elastic material) would be used to provide some degree of support. One could see it for elbow joints, too.

It wouldn't take much of a temperature change to cause the metal to flex, and a computer could control the different finger movements readily by varying the DC inputs to the thermo units.

ROBERT ELMORE,
Valdez, AK

RADAR DETECTORS

One can sympathize with the sentiments expressed by Dalton T. Horn in the June 1981 "Letters" section, that radar detectors should be made illegal because they are used solely to enable motorists to break the speed-limit laws. That is true, of course; but the arguments he advances to support his indignation and his con-

clusions are quite wrong. Let's see why.

He starts off with his weakest argument: that a radar-detector is not a communications receiver because "it merely detects the presence or absence of a carrier signal." That is a curious argument—something like saying that a radio is not a receiver at the moment that radio stations are broadcasting dead air. The law does not specify the electrical or content nature of a received broadcast; and to suggest that the information that a radar detector conveys to a speeding motorist is not a "communication" is simple foolishness.

But, of course, the real argument goes far deeper. The primary question is whether citizens have the right to disagree with a law by breaking it. The answer should be obvious. Citizens nowadays are *obliged* to break laws with which they disagree because that is the only way that their objections can be heard. The federal bureaucracy has effectively sealed off the citizenry of the country from the majority of law-making processes. There is no

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voting booth in the country (nor a single candidate for office anyone can vote for), whereby any change is possible in most of the regulations that are, in effect, laws—the national 55-mph speed limit included.

Not only is the 55-mph speed limit "law" one your opinion was never asked about; its proponents lie to you about why they feel it is necessary. "To save lives," they claim—as if the government has some constitutional mandate to save you from yourself. In fact, the 55-mph speed limit

does little to save lives on the super highways, which are the only roadways its imposition effects. It does save *oil*, of course—but the crisis in oil is one which the federal bureaucracy's meddling with the natural dynamics of supply and demand created in the first place.

Exceeding the speed limit when it is safe to do so is no more dishonorable than avoiding the payment of a tax on tea imposed by an overseas bureaucracy. We Bostonians had as much to say about the imposition of that obnoxious "law" back in the 18th century as we have today with the 55-mph speed limit. Now, as then, it's time we did something about it in the only way that is available to us.

THOMAS MARTIN HOLZEL,
Concord, MA

In reference to Mr. Horn's letter in the June 1981 issue of **Radio-Electronics**, "Objections," I would say that he is missing a few points.

I can just imagine law enforcement attempting to identify vehicles with an automatic vehicle-identification system. The thought of that, and the attending potential problems and cost is staggering. Local law enforcement does not have the technical expertise or the equipment to enforce many of the vehicle codes that are presently on the books—for example, vehicle-noise requirements, emissions, window tinting, etc.

Radar detectors are not inexcusable, in themselves. But the way that some law-enforcement officers use the radar equipment is something else. It is possible to obtain erroneous indications of vehicle speeds because of reflection, and other factors. And because of their lack of technical expertise, some police officers continually take speed readings in areas with high reflectivity and vibrations—such as areas inside steel-reinforced tunnels, and in and around areas containing large stationary or moving metal objects.

Some traffic police officers like to sit around street corners and wait for unsuspecting drivers, all of whom may not be exceeding the speed limits. But when such an unsuspecting driver sees the police car, he or she is very likely to slam on the brakes abruptly because of human nature—and that could be the cause of a serious accident.

In addition, traffic police officers do not always write fair tickets; thus even innocent drivers must often look around and behind corners and bushes for lurking patrol cars, instead of watching where they are going. That, too, can cause accidents. Ask yourself: How many tickets have been written over the years to persons who were traveling four or five miles an hour above the speed limit by radar, when the limit should have been higher? In other words, they were caught in a speed trap, but probably were driving safely, and never did see personally the speed reading on the radar gun. Because of the attention that has been brought to those radar detectors, there have been some dramatic advancements in the art (in some instances it was found that the backyard technician or electronics expert was building better radar detectors than the military; not too unusual, considering the advancements).

And finally, for those people who build pay-TV decoders: If Mr. Horn checks, he will find that it is illegal to sell complete working decoders (recent federal and state court rulings). Those that are selling completed decoders have a pretty limited supply of those decoders, and those who are doing the buying usually have limited supply of cash.

Presently, the only people who should be building those decoders should be the backyard technicians or electronics experts who are attempting to improve themselves technically. Most of them have been spending around two hundred and fifty dollars for a fifty-dollar working device. (The black market, fully-working devices are going for around five hundred

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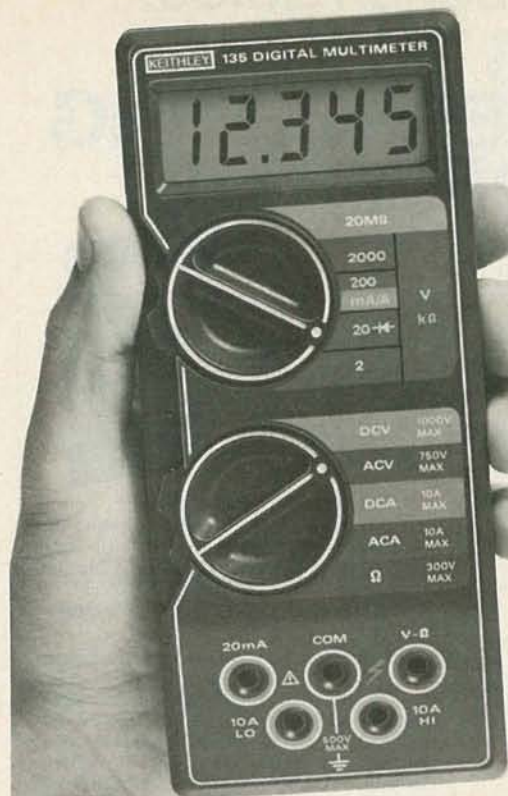
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dollars in some cases, with not too many takers.) For the electronics buff, two hundred dollars or so can be chalked up to experience and learning; for others, the money can buy quite a bit of pay TV.

Building those decoders is time-consuming, and it's hard sometimes to get the parts. I'd say that it's time to be moving on to other things. But I doubt that the number of private decoders actually operating are making even a small dent in the pay-TV business. You might say that in the beginning, the private decoders aroused a lot of interest in pay-TV and as a result, more people found themselves subscribing to pay-TV than building decoders. And the parts houses did a lot of business in items like UHF tuners.

Unfortunately, a lot of us found out that not all UHF tuners were created equal, and that a lot of them worked poorly—if at all. But in the end, we knew a lot more about electronics than we did when we started. Personally, I laid out considerably more than two hundred dollars, but the money was spent for related experimentation and test equipment. Often new elements were discovered, or old problems with equipment reaffirmed—which, by necessity, forced improvements.

I think that the cable and pay-TV people have a lot more to worry about with their own industry than with some little guy building a decoder.

M. FOX,
Manhattan Beach, CA

UHF RECEPTION

I was very much impressed with your article, "How to Improve UHF Reception," in the July 1981 *Radio-Electronics*. Although it does contain some misleading information, it is still, for the most part, the best article on the subject that I've seen so far.

The biggest fallacy is the listing of performance characteristics using average gain, minimum gain, and average F/B and F/S ratios. Of the 22 UHF-only antennas listed, several are made to receive channels 14-69 only, while others are made to receive channels 14-83. For those made to receive channels, 14-69, a sharp drop-off of gain is experienced at channel 69. Therefore, the gain on channels 70-89 will be low or, at least in some cases, even negative, thus lowering the average minimum-gain figures. That makes those figures very misleading.

I wish that someone would do a similar test on the top VHF-UHF antennas, to compare Winegard CH-8200, Channel Master 1120A, Blonder Tongue 0719, Finco F-89-C, and Jerrold VH-937S on both VHF-lo and VHF-hi and UHF-14-69, listing such specifications as gain, F/B ratio, F/S ratio, and beam width.

It's amazing how different the study-performance figures are from those furnished by the manufacturers.

GARY J. ARNOLD,
Elk Grove, CA

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