



A gathering of EICO test equipment. Foreground from left, Model 666 Dynamic conductance tube and transistor tester, Model 1078 dual metered Variac, 1064S dual metered low voltage supply, 379 Sine/square wave generator, 369 Sweep generator, 1060 Low Ripple battery eliminator and charger, Top row from left, Model 147 signal tracer, 145 signal tracer, 324 RF Signal generator, 944 Flyback & yoke tester, 360 TV-FM Sweep generator, 488 Electronic Switch. On top, Model 710 Grid Dip meter and coils. (KB8TAD photo)

The EICO Story: The Electronic Instrument Company and its Kits

By Rich Post KB8TAD

I really didn't need another one, but there it sat, at a price that made it hard to say no. That blue-faced 425 oscilloscope brought back lots of memories as my first-ever EICO. I recently rebuilt another as described in this month's *TSM* "Adventures in Radio Restoration" column. EICO was a competitor of Heathkit and Allied Knight-kits in the hey-day of kit-built test equipment, audio products and ham gear. All those kits are now in the nostalgia category, but because they were well-documented, were mostly put together with screws rather than rivets, and can still be repaired and used, at least some of the ham and audio gear and certain useful pieces of test equipment have become quite collectible.

Early Beginnings

I was familiar with some of the history of Heathkit¹ and Allied but never really knew much about EICO despite having worked on and collected a number of their kits over the years. Checking into some of the EICO history was interesting. According to a press release issued by EICO in

1961, EICO, as the Electronic Instrument Company, Inc. was founded in 1945 by Harry R. Ashley. Ashley, age 33 at the time, was "a pioneer in aircraft insurance and financing prior to World War II. Ashley flew his own plane to airports on the East Coast conducting a highly successful business. With the advent of the War, Ashley joined the Navy Department where he worked on projects in the electronic field. It was there that he first realized the potentials of producing electronic instrument kits. Ashley devoted all his free time to the development of the kit concept and shortly after the War, he founded EICO with an investment of \$1500. His wife Sophie who is today Secretary and a Director of EICO, has been his close business associate since the company's beginning. During his first year, Ashley sold some 1000 kits."

The press release coincided with the sale of stock in EICO. According to the *Television Digest* magazine of July 1961, "Electronic Instrument Co., Long Island City maker of hi-fi components and amateur radio apparatus, seeks SEC registration (File 2-18404) of 173,000 capital-stock shares for public sale underwritten by Goodbody & Co. The compa-

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 Model HVP-1
 \$6.95

Pocket VOLT-OHM MILLIAMMETER
 Model P-75M
 \$14.95

ELECTRONIC INSTRUMENT CO., INC.
 276 Newport Street, Brooklyn 12, N. Y.

Left: July 1946 *Radio News* ad, the first Eico product, model 113 'Electron Tracer.' Center: September 1947 *Radio News* was the second EICO ad. Right: October 1949 *Radio & Television News* inside back cover, EICO's first full page ad. (Author's collection)

ny is offering 118,000 new shares, and the sole stockholder, Pres. Harry R. Ashley, is offering 57,000 outstanding shares. Proceeds would be used largely to retire debts." [estimated at about \$850,000 based on the report in "The SEC Digest" of June 29, 1961 which also states that] "The company has outstanding 407,143 shares of Class B capital stock and 82,000 shares of capital stock, all of which is owned by Ashley. After his sale of the 57,000 capital shares, Ashley will own 12.5% of the outstanding capital shares and about 71% of the total outstanding shares of the company." The sale of EICO shares in 1961 was near the height of kit-building popularity.

The beginning of EICO partly parallels the Heathkit beginning. Both Ashley and Heathkit founder Howard Anthony were private pilots. World War II interrupted their earlier businesses to some extent. Anthony had to build some of his own test equipment because war priorities limited purchases of new equipment. I suspect that Ashley may have experienced the same problem. Like Anthony, his first advertised sale was not for a kit. The first EICO ad appears in *Radio News* in July 1946 for a combination of VTVM (vacuum tube voltmeter) and audio signal tracer model 113 named the "Electron Tracer" for the price of \$89.50 (about \$1148 in today's dollars), definitely not in the affordable category of test equipment kits. That instrument was called the "Multi-Analyst" in his next ad in the September 1947 *Radio News* and was sold along with a model 210 VTVM priced at \$65.50. The next EICO ad in *Radio News* was in December 1947, which showed the "Multi-Analyst" with a signal generator, model 315, which was priced at \$64.50. By contrast, in that same issue, Heathkit had an ad for its new VTVM kit for \$24.50 and an oscilloscope kit at \$39.50 which had first been advertised in the October 1947 issue. In January 1948, Heath introduced its signal generator kit at \$19.50.

EICO versus Heathkit

The immediate success of Heathkit and its low-priced kits was not lost on Ashley. His first kit appears in the EICO ad in the August 1948 issue of *Radio News*, which had just changed its name to *Radio & Television News*. Model 221K, a smaller version of the VTVM he had previously advertised was now available at a kit price of \$33.00 or assembled at \$49.95. That price of the kit was roughly half of the assembled price of the previous model 210 quoted in the September 1947 ad. In the November 1948 ad, the price of that same VTVM kit dropped even further, down to \$23.95, slightly below the Heathkit VTVM price of \$24.50. In the December ad, only the VTVM kit is shown, not the expensive "Multi-Analyst."

In the January 1949 ad, EICO is off and running in the kit business with the introduction of its second kit, Model 400 oscilloscope, which at \$39.95 was about the same price as the Heathkit scope. Like the Heath scope, it used just a single 6SJ7 tube each for the vertical and horizontal amplifiers, a minimalist design first appearing as a home brew scope in an article by Lyman Greenlee in the October 1946 issue of *Radio News*. Also introduced was a third kit, the "Pocket Volt-Ohm-Milliammeter" at \$14.95. The Multi-Analyst was still advertised, but the price was dropped to \$69.95. The April 1949 and later



EICO 625 tube tester (right) and the competing Heathkit TC-2. (KB8TAD photo)

ads no longer show the Multi-Analyst. In June, the fourth kit, an RF signal generator, model 320K, was introduced at \$19.95, competitive with Heathkit's signal generator priced at \$19.50. In July, the ad grew to 2/3 of a page with the introduction of model 145K signal tracer kit at \$18.95, slightly under the \$19.50 price of the Heathkit tracer.

In those same issues of *Radio & Television News*, Heathkit was running multi-page ads and had added radios and an audio amplifier kit. Ashley's EICO with five kits was trying to match the price and performance of Heathkit's test equipment. But both Heathkit and EICO were market disruptors in that era, changing the marketing of test equipment with their low-cost kits often made with cheap war-surplus vacuum tubes and parts and thus affordable to both hobbyists and the new Radio-TV repair businesses that mushroomed after World War II.

Heathkit kept a direct-to-consumer marketing strategy while EICO's Ashley preferred to deal with existing radio parts distributors and jobbers. According to his 1961 press release, "Early in Eico's history, Ashley developed the merchandising philosophy of selling exclusively through distributors. He initiated a series of imaginative promotions designed to bring customers to the distributor. He has continued these promotional activities and has subsequently enlarged not only his manufacturing capacity but the number of dealers selling EICO products until today [1961] over 1500 different outlets handle EICO equipment. Today EICO is the world's largest manufacturer of kits sold exclusively through distributors and high fidelity dealers."

The world's largest manufacturer of kits was of course Heathkit, selling directly to consumers. Heathkit's Anthony preferred dealing directly with kit builders which allowed direct correspondence and personal contacts which in turn helped with improving the kits as well as the documentation. As an example, John T. Frye W9EGV, in his column in the July 1966 *Electronics World*, quoting Mac, as his alter-ego character in Mac's Electronics Service shop, "I was acquainted with the man who started the Heath Company in the electronic kit business," Mac offered. "After the war I bought my first 'Heathkit', a scope, and put it together. I had some trouble getting the spot as small and round as I desired because of stray magnetic fields, and I cured this by putting



EICO 720 transmitter at 90 watts input and 60 watts output to dummy load bulb. (KB8TAD photo)

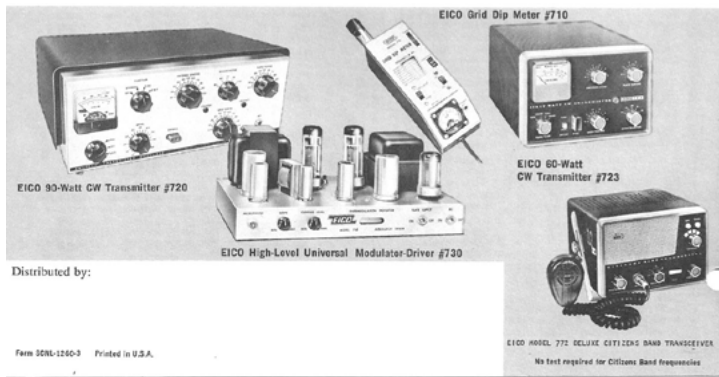
a war-surplus Mu-metal shield over the cathode-ray tube. I wrote Heath about this and started a correspondence between Howard Anthony, the president, and myself. When he invited me up to Benton Harbor to see his plant, I accepted and had a most enjoyable visit with him."

The next generation of Heathkit scopes, beginning with an ad in the September 1949 issue of *Radio & Television News* noted that a Mu-metal shield was now included in the 1950 model. Heathkit had also changed the simple one tube single-ended amps in the scope to push-pull circuitry, allowing greater bandwidth for the scope's vertical and horizontal amps to a level that was "usable" up to 2.5 MHz.

EICO's first full-page ad appeared in the inside back cover of the October 1949 *Radio & Television News*. The December 1949 ad highlighted a sixth kit, TV-FM sweep generator model 360K, described by Ashley himself in an article in the January 1950 issue of *Radio and Television Maintenance*.

That same month, January 1950, the *Radio & Television News* EICO ad, now consistently a full page, quietly introduced the new 425K push-pull scope, the model I had bought used in my teenage years. Apparently Heathkit's upgraded scope to push-pull amplifiers left EICO's Ashley scrambling to match the "usable" to 2.5 MHz specification. His 425K schematic was dated 11-15-49. The price was the same as the previous model 400, keeping up with Heathkit which had also kept its price the same for the newer model (and also advertised an upgrade kit for its earlier model which EICO did not).

In August 1950, EICO introduced its new battery eliminator-charger, model 1040K, a new tube tester model 625K, and a kit version of its model 315 signal generator which previously had been only available as factory built. The next month, its advertisement carried the slogan "Over 50,000 servicemen must be right" and stated that all kit parts had a 90 day warranty, and if the kits had been built as specified in the instructions they would work as described. Repair and calibration service was also advertised as available at a



EICO Ham & CB equipment from a 1960 specialty catalog. (Author's collection)

nominal charge. EICO's first catalog for 1951 appears in late 1950 featuring nine kits plus an RF probe.

Test Equipment Focus

EICO's kits also appeared in the Allied Radio catalogs for the first time in 1950. The catalog carried just the four initial EICO kits, but the 1951 catalog featured a full page of EICO kits. Other mail-order distributors such as Lafayette, Burstein-Applebee and Radio Shack also sold EICO. The catalogs provided EICO with an advantage that Heathkit did not have, a nationwide exposure to the electronics industry and the hobbyist through well-established companies and their freely distributed catalogs.

In the March 1951 issue of *Radio Television Service Dealer* magazine, Ashley wrote an article, "Build Your Own Instrument? Arguments for the construction of test equipment by the serviceman himself." He tells the story,

"Years ago, when I decided to open my own shop I figured that first of all I'd need a good VTVM, and the one I had my heart set on was priced at \$75. In those days 75 bucks was much moola, but the job I wanted rated as being real high class. So, I bought the VTVM I wanted, and shortly thereafter I learned a lesson, a sad lesson, that I'm going to recount for your benefit and guidance. As I said before, I bought the instrument and put it to work on some jobs that were in the shop. Then, in a few days, during a lull, and finding some spare time on my hands, I decided to 'look inside' my new pride and joy to see what made such an outward 'marvel of complexity' work.

"I looked inside at the maze of wires, the components and evaluated the engineering skill involved in the construction - and what happened? I nearly fainted! All I found was two tubes, a few resistors and condensers and a meter all wired together. That plus the cabinet with its fancy embossed panel represented the 75 hard-to-accumulate bucks I had paid. ...I then hopped over to the Jobber from whom I'd bought the VTVM and said, 'Look, you've already made this sale, so take your hair down and tell me honestly, why was this job priced at \$75?' 'It's sensitive, you know,' he said. 'Sure it's sensitive,' I sputtered, 'but it doesn't measure the voltage of a flea's sneeze, and I don't need it to. What's the



EICO 950A resistor-capacitor bridge testing the leakage and reforming neon indicator circuit at 2 mA. (KB8TAD photo)

low-down?' And then he said, 'All right-it's the assembly labor, accuracy & calibration that runs the costs way up.

"Remember, close to 50% of the total cost was paid toward assembly labor, high quality parts and calibration.' That's when I heard a bong inside my output tube! And I said to myself, 'assembly labor, calibration, reading the wiring diagram, positioning the parts, dressing the leads, making good mechanical connections, soldering good electrical connections, checking for cold-soldered joints, why that's the very work I do for a living - and I went out and bought it from somebody else!' ... But, there's more to it than just the mere plan to by-pass and eliminate labor costs alone. You see, as a kit supplier, I also had in mind the premise that many technicians, particularly students, beginners in business with limited capital, hams and even some factories, are desirous [sic] of knowing what's in their instruments, why those things are in it, and what those things have in the way of maximum applications and ranges and uses."

Always a good story-teller and salesman, Ashley followed up beginning in 1951 with a series of one page photo ads that show him, engineering personnel, the 425K scope and the kit VTVM in use on the production line of several TV manufacturers, an excellent marketing scheme since most of his intended sales were for TV service shops. Therefore they might wish to use the same devices as shown in the manufacturing settings.

With EICO's self-reported 50,000 sales, *Television Digest* in its December 1951 issue reports that Electronic Instruments Inc., Brooklyn (Harry R. Ashley, president), had purchased a six story, 30,000-sq. ft. plant at 84 Withers St., Brooklyn to house offices and factory. The 1952-53 EICO catalog pictures the new manufacturing facility and introduces the new 950AK resistor-capacitor tester, the 377K sine/ square wave audio generator, a low-profile VTVM model 214K, a decade resistance box, and several new VOM multimeters including one at 20,000 ohms per volt. In February 1953, EICO reported sales of a quarter million sets.

Ashley also authored an article "Electronics for the



EICO 711 'Space Ranger' four-band SWL radio kit advertised in 1966-67. (KB8TAD photo)

Yachtsman" for the August 1953 issue of *Radio & Television News*. The 1040 battery eliminator-charger is the only EICO item visible in the pictures. His motor yacht, named "Miss Eico," is featured as a color photo on the cover of the magazine. EICO's one-page ad in that issue included the new 470K scope with its 7-inch display and response to 1 MHz within 2 dB and the model 495K scope voltage calibrator. In that same issue, Heathkit has a four page ad including several Hi-Fi amplifiers and the new AT-1 ham radio transmitter. EICO continued to concentrate on test equipment.

The EICO ad in the December 1954 issue of *Radio & Television News* shows a new flyback and yoke tester for television, the 950B version of the resistor-capacitor bridge and comparator as an upgrade of the 950A, and a new peak-to-peak VTVM available with the regular size or with a large 7-inch meter in a horizontal version. The battery eliminator/charger is upgraded to model 1050 with separate volt and ammeters. One difference between Heathkit and EICO was the frequency of model changes. Heathkit changed model numbers often while EICO did not. I counted more than 15 oscilloscope models for Heathkit in the early years while EICO had four. For example, the 425K scope kit, introduced in the January 1950 ad, was sold until 1963. Later versions had a plain aluminum front panel in place of the blue-face, but the model number did not change. EICO also commonly used the same numbers for an upgrade but changed the last letter, as in the resistor-capacitor comparator models 950, 950A and 950B. Heathkit typically changed model numbers for cosmetic upgrades even if the insides were identical such as their PS-4 and IP-32 power supplies. EICO did not and likely had less development cost.

Breaking the Mold

In a September 1955 ad, EICO reported sales of over half a million sets. An improved signal tracer, model 147, was introduced. The December 1955 issue of *Radio & Television News* had a nice article with schematic on the new Eico 324 signal generator advertised as the "World's Best



EICO model 2200 'Classic Series' FM tuner. (KB8TAD photo)

Generator Buy" (and one of my personal favorites). The December 1955 *Service* magazine notes, "Electronic Instrument Co., Inc., 84 Withers St., Brooklyn 11, N. Y., recently celebrated its tenth anniversary at a birthday luncheon, during which Harry R. Ashley, founder and president of the company, was honored by industry leaders." The year was also a milestone for EICO as it begins to branch out from primarily lower-end service-type test equipment. A 5 MHz scope, model 460, was introduced as well as a new model 666 dynamic conductance tube tester. A large format VTVM for classroom use is pictured in *Popular Electronics*. EICO also introduced its model 803 Geiger counter kit, a unique offering.

A Shift to Audio Gear

An increasing interest in audio high fidelity in the world of electronics prompted EICO to develop its first quality integrated amp (amp with built-in preamp and tone controls) that same year. The HF-20 Hi-Fi amp, introduced in February 1956 ads at \$49.95 featured an ultralinear Williamson circuit. It further moved EICO from strictly service test equipment kits to the beginning of an excellent set of tube audio offerings that are still highly prized today. The HF-20 was followed by an ad in March 1957 for the HF-61 preamp and the 60-watt HF-60 power amp (an amp without a pre-amp or tone controls, nowadays nicknamed a "monobloc") sporting a top of the line Acrosound 330 output transformer. The HF-50 and HF-35 power amps with Chicago Standard (Stancor) ultralinear output transformers rated at 50 and 35 watts were also introduced. A high power integrated amp, the HF-52, as well as a lower power HF-12 with a direct tape head input and the HFT-90 FM tuner also quickly followed as well as a bookshelf speaker system and a high-end floor-mount speaker system, the HFS-2. EICO had jumped into the quality audio market in a big way.

EICO also introduced some low-end kits such as the 540 "Redi-Tester," detailed in a *Popular Electronics* article in May 1957. It was obvious they were moving away from a mold of strictly service test instrument kits. That same month, they advertised "Performance proved by TV manufacturers, electronic schools and over 100,000 servicemen. Over 1 million in use today." EICO had doubled its sales in less than two years.



EICO model HF87 amp with four EL-34 output tubes and 70 watts RMS (35 watts per channel). (KB8TAD photo)

Amateur Radio

The full-page ad in May 1958 in *Popular Electronics* was half test equipment and half audio, a change that would continue for some time. In August the HF-81 stereo dual preamp/ amp was introduced. But what about amateur radio? EICO's first set of ham gear was featured in a separate September 1958 ad in *Popular Electronics* that described the new model 710 grip-dip meter, the 720 transmitter and the 730 plate modulator—three quality pieces I have personally experienced. Described in the kit building section of *Popular Electronics* in June and September 1959, the separate transmitter and modulator were a definite departure from following Heathkit. The 730 modulator with those EL-34 output tubes looks and behaves a lot like the quality audio power amps that EICO had just introduced, making me suspect that the same engineers had designed it.

The May 1959 ad in *Popular Electronics* lists monaural power amps in the 60, 50, 35, 30, 22 and 14 watt range with the note to use two for stereo but also shows the new HF-86 which is a self-contained stereo power amp with two 14 watt output channels. The HF-85 stereo preamp is described in an article in the same issue. The following month's ad includes a note that the HF-87 amp was now also available with its dual 35-watt output channels and a quad of EL-34 tubes (and one of my favorite tube amps).

Transistors

The August 1959 *Popular Electronics* issue shows the first ad with the new RA-6 transistor AM portable radio kit. On the same page is an informational ad on the new 1020 transistor variable power supply. That supply is fully described in an article in the October issue. An Eico 706 code practice oscillator followed. Transistor technology had come to EICO.

The October 1960 ad proclaimed "IN STOCK! Compare, take them home right 'off the shelf' from 2000 neighborhood dealers. Over 2 million EICO instruments in use



EICO Cortina 3570 ad in the 1968 catalog. (Author's collection)

throughout the world." EICO had again doubled its total sales in less than three and a half years. The ad also introduces the new HF-89, EICO's most powerful tube amp with a power output of 100 watts from its two 50 watt sections.

In the October 1961 *Popular Electronics* magazine, Herb Brier reports on building EICO's second ham transmitter, model 723, which used a 6DQ6 as RF power tube. Input power was 60 watts. The 6DQ6 was an octal-base sweep tube also used by Heathkit in its DX-20, but the 723 had a more compact design than the DX-20. Ashley himself got into amateur radio with the novice license call of KD2UVY in 1961. While the 723 transmitter was primarily intended for crystal control by Novice hams, a VFO (variable frequency oscillator), model 722, was made available in 1962. The VFO coincided with Ashley's license upgrade to General with the call K2UVY. The company name which had been Electronic Instrument Company was formally changed to EICO Electronic Instrument Co. Inc.

The 1962 catalog includes EICO's first CB, model 770. Like others of the era, it featured continuous 23 channel band coverage for receive and crystals for up to four selected channels for transmitting. Also offered was model 740, a hand-held single channel portable CB with rechargeable battery.

In 1963, EICO introduced its first stereo reel-to-reel tape deck. The mechanical tape transport was already built, but the electronic sections were available as kits. The 1963 catalog also featured the ST-40 and ST-70 integrated stereo amplifiers using sets of 7591 output tubes. The 7591 was a popular choice for output tube at the time, about the size of a 6V6GT but with much greater power handling capability, especially if used in ultra-linear circuitry with fixed bias. The ST-40 amp at 40 watts used cathode bias and the ST-70 was capable of 70 watts with fixed bias. Each used a quad of the 7591. EICO also introduced the MX-99 Multiplex adapter and the ST-96 FM-AM tuner.

In 1964, the outward design of EICO's integrated amp and tuner was changed with oiled walnut cases optional for the "Classic series," a beautiful design. The 1964 catalog



You can build this exciting Eicocraft® Solid State Wireless Mike in 1½ hours.

Complete with all parts including microphone, pre-drilled printed circuit board and attractive housing. You supply only a standard 9-volt transistor battery.

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You can broadcast voice, music, any audio signal through any AM (or FM) standard radio, tuner or car radio. Pocket-size, easily concealed—makes ideal wireless intercom, security/surveillance and public address system.

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Now there are 18 exciting Eicocraft® Solid-State TruKits to choose from. \$2.50 to \$9.95.

Electronic Siren \$4.95, Burglar Alarm \$6.95, Fire Alarm \$6.95, Intercom \$3.95, Audio Power Amplifier \$4.95, Metronome \$3.95, Tremolo \$8.95, Light Flasher \$3.95, Electronic "Mystifier" \$4.95, Photo Cell Night Lite \$4.95, Power Supply \$7.95, Code Oscillator \$2.50, FM Wireless Mike \$9.95, AM Wireless Mike \$9.95, Electronic VOX (Voice-Operated Switch) \$7.95, FM Radio \$9.95, AM Radio \$7.95, Solid-State Bongos \$7.95.	
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Send for Free 1968 EICO Catalog
EICO Electronic Instrument Co., Inc.
131-01 39th Ave. Flushing, N.Y. 11352 ES-11
Send me FREE catalog describing the full EICO line of 200 test buys, kits and wired, and name of nearest dealer. I'm interested in:

☐ EICOCRAFT® kits	☐ CB 2-way Radio
☐ electronic electronics	☐ Continual Service
☐ amateur short wave	☐ test equipment

Name _____
Address _____
City _____
State _____ Zip _____

1968 ad for Eicocraft wireless mike. (Author's collection)

also notes that EICO was now located in Flushing, New York, in a modern 100,000 square-foot plant near the site of the New York World's Fair.

In 1965, EICO would make one more complex ham kit, a three band 80, 40, 20-meter SSB transceiver capable of 200 watts PEP (peak envelope power). Model 753 would become affectionately known as the "Seven Drifty Three." EICO never made a ham receiver although it did introduce a four-band shortwave radio, the four-tube 711 "Space Ranger" in 1966. A transistor version of that set followed as model 714. Not many were sold. Both radios are very scarce today. EICO also introduced a series of smaller and inexpensive Eicocraft kits in 1966, all priced at under \$10. One example was an FM wireless mike, a popular kit at \$9.95.

In 1966, John Frye as his alter ego Mac, summed up some of the difficulties facing kit vendors. "Gradually two divergent trends have developed in electronic kits: 'kitted' devices are becoming more and more complicated and sophisticated; yet people buying them know less and less about electronics. Musicians are building electronic organs; housewives are assembling hi-fi amplifiers; high-school boys are building laboratory-type scopes; 'plug-in appliance' hams are tackling complicated SSB equipment; and Sunday sailors are building marine telephone, direction-finding, and

depth-sounding equipment for their boats.

"This provides a real challenge to kit engineers and persons preparing the manuals. Designing a complicated instrument so that it can be easily assembled by a person who knows nothing about mechanics or electronics and must be told how to make a decent soldered connection before he starts is no snap...Pre-assembled and aligned units raise the cost considerably... All [kit manufacturers] agree that when an instrument is offered in both kit and wired form, the kit far outsells the assembled unit. They agree aesthetic considerations are increasingly important in kit design. Not only must the completed unit work well, but it must also have an attractive appearance. The old, overgrown, boxy look is 'out'; the new, compact, stylishly-shaped-and-colored look is 'in.' All kit manufacturers stress the importance of giving prompt and helpful assistance to a purchaser who has trouble with a kit. All maintain service facilities for straightening out the difficulty if it cannot be handled through correspondence. All agree engineering a kit is much more difficult than engineering an instrument for assembly by skilled workers in a factory where progress is constantly being inspected. Finally, all were unanimous in foreseeing a bright future for the kit business."

Unfortunately Mac (John Frye) and the kit manufacturers did not foresee the coming storm clouds. Integrated circuitry and automation would eventually make factory assembly cheaper than kits. More complex kits such as FM tuners and receivers would require entire assemblies to be not only pre-built but also pre-aligned. Stereo systems from competitive offshore manufacturers could increasingly be very high quality. Smaller solid-state kits would largely be popularized and sold by Radio Shack with its many local outlets. For EICO, the solid state Cortina audio offerings were very good but competed with some very high-end offerings available from large chain Hi-Fi retailers that sprang up during that era. High-end oscilloscopes and similar devices were too complex for kit construction. These and other factors would take its toll on kit manufacturers in the 1970s. EICO, like Heathkit, struggled through the next decade partly by selling factory-built equipment, with some of those kits and assemblies being made in overseas locations such as South Korea, but the heady days of kits and growth experienced in the 1950s and 1960s were over. The decline was paralleled in electronics magazines as ad size, subscriptions, and revenue began shrinking, and interest in computers took over much of the electronics hobby.

EICO in the 1970s

In January 1970, the EICO ad in *Popular Electronics* notes, "Over 3 million EICO instruments now in use." It had taken EICO almost 10 years to sell that third million instead of just three and half years between the first and second million. And that third million included those under \$10 Eicocraft kits. In the 1970s, EICO featured solid-state versions of some of its test equipment kits, advertising a 5-year warran-



Stuck in time: (Left) June 1983, the last EICO ad in *Computers and Electronics* magazine for their 32 page catalog. Compare this ad to the 1979 ad at right. (Author's collection)

ty. Ads for home security devices were touted as requiring no soldering. By the mid 1970s, over 40 percent of its sales were factory-built devices. Unlike Heathkit, it did not move into computer systems. Ad sizes also dropped. My last EICO catalog, while copyrighted in 1974 with its 32 pages, is actually a 1976 catalog with a May 1976 price schedule. The catalog introduces EICO's new line of six "Foneaid" kits such as the "Call Valet," for recording phone conversations and the "Call Guard," an electronic combination lock to prevent unauthorized outgoing calls. A total of 54 security products are listed on the price schedule, all wired-only. However, only three audio components are listed on the price sheet with only one available as a kit. The catalog still had a nice selection of test equipment including a number of models that had been available for well over 10 years. Plenty of kits were sold during the 1970s but no mention was ever made of a fourth million.

EICO's last ad in *Computers and Electronics*, the spin-off of *Popular Electronics*, came in June 1983. In its April 1983 issue, *Computers and Electronics* had reviewed EICO's model 482 oscilloscope. The review noted, "Model 482 was tested ... and was found to meet or exceed its claimed specifications in all cases. It has been many years since we used an Eico instrument. So, it was a pleasant occasion to test out this latest Eico scope."

That reviewer's comment, "it has been many years" was telling! That 425K scope kit introduced at \$39.95 in January 1950 would have cost about \$165 in 1983 adjusted for inflation (and \$424 in 2018). Of course, that new model 482 was triggered and capable of a 20 MHz response, but at a

price of \$799.95 in 1983, (\$2000 in 2018 dollars) it was too complex to ever be a kit and too expensive for the average hobbyist. However, it told the story. EICO magazine ads in the late 1970s and early 1980s were small and mostly offered just a catalog. The few unique equipment ads were primarily for their home security system. The last *Computers and Electronics* ad in June 1983 for a 32 page catalog had been running for four years with the "79" for the catalog year simply blacked out in the ad. That same ad ran until July 1984 in *Radio Electronics* magazine after which EICO ads disappeared. EICO apparently continued to sell products for a time but the end was near. In April 1986, a reader of *Radio Electronics* wanting to buy a manual for an EICO scope asked if the company was still in business. The magazine responded positively noting EICO's business address, which was not the Flushing, New York, plant location. Evidence suggests that the company had shifted to leasing out space in its 100,000 square feet plant. An SEC filing states that on June 23, 1993, EICO sold that property in Flushing, New York, for \$5,000,000 with the company itself holding the first mortgage for the buyer. The final mortgage balloon payment was made in October 1998. In 1999, the shareholders approved a plan to liquidate the assets and dissolve the company.

In February 1995, Harry Ashley K2UVY passed away in Boca Raton, Florida, at the age of 82. He did not live to see some of his high-quality vacuum tube audio equipment like those high-powered push-pull EL-34 amps achieve almost cult status as evidenced by online auction prices and audiophile commentary. And for me, and others who have known and appreciated EICO kits over the years, many of those pieces are still useful. My "go to" Variac is the double-metered EICO 1078, and that EICO 1060 variable battery eliminator-charger, also double metered, has been a garage battery charger of choice. I use a similar double meter 1064S with an added high-current Schottky diode to charge sealed lead-acid batteries. That 147 signal tracer and the 625 and 666 tube testers come in handy at times and that 324 signal generator occupies a prominent spot near the work bench. And, of course, there's that nostalgia and memories of the 425 oscilloscope. Like Heathkit, EICO lives on through its products that were once kits that helped us learn electronics.

To view some more EICO ads through the years, see: <https://people.ohio.edu/postr/bapix/TSM18/TSM12-2018sup1.htm>

⁽⁴⁾ For more on Heathkit, see "The Heathkit Legacy" as published in *Monitoring Times* July 2013 and on my website: <https://people.ohio.edu/postr/bapix/HLegacy.htm>