

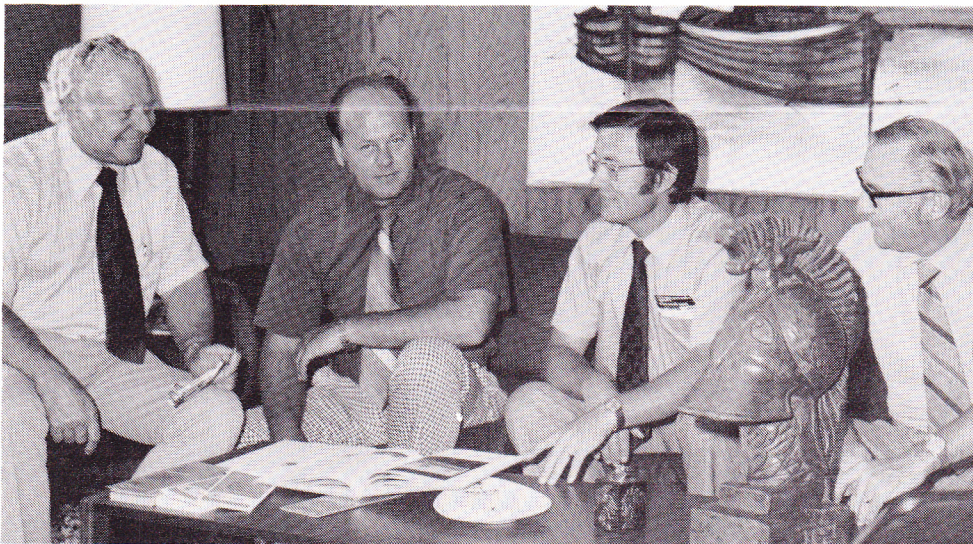


The SPARTAN

VOL. III • NO. 5

SEPT. - OCT. 1974

a Subsidiary of Cetec Corporation



WELCOME TO SPARTA . . . recently Sparta hosted an international visitor, together with Phil Gundy, executive VP, foreign operations, Cetec Corporation. Peter Herkes (3rd from left), general manager, Computer Equipment Company, Ltd., England, spent an entire day going through the Sparta plant, becoming familiar with procedures for international shipments out of Sacramento. Gundy (left) accompanied Herkes on his tour of American subsidiaries and divisions of Cetec, which manufactures products marketed in Europe, Africa and the Middle East, through CEC, Ltd. Bill Overhauser, Sparta president is second from left with Paul Gregg, transmitter products manager at far right. —Sparta Photo

Malaysia Goes FM With Sparta

The government of Malaysia has opted for the Sparta tender on two Model 610A 10Kw FM Transmitters, a specially engineered Jampro panel array antenna, plus composite STL equipment and on-site instruction by Sparta personnel. The Malaysia Minister of Information in Kuala Lumpur also ordered two Sparta 20kw AM transmitters in a dual-redundant modernization of their facilities in Mersing to the west of Malaysia.

The FM installation on Mt. Ulu Kali, a 6,000-foot peak 20 miles from the nation's capitol (see July-Aug issue- Ed) is the first FM service for the country. From its lofty site the powerful new station is expected to reach nearly half of Western Malaysia with stereo FM. The studios of the Ministry

of Information are headquarters of a large staff, with many programs employing several persons simultaneously.

The AM radio operation in Mersing will utilize four Sparta 710B (new solid state 10kw) transmitters, each pair of which will be combined for 20kw output using the unique Sparta ferrite combiner. One 20kw combination operates on 1055kHz and the other on 1310kHz. Their signals will be diplexed to a common tower.

It is anticipated that Sparta personnel assigned to train the Malaysian engineers in operation and maintenance will require some three weeks away from home.

Installation is being handled by the Sparta agent in Kuala Lumpur, Bahagia Teknik SDN Berhad.

The past summer Sparta officially became a subsidiary of Cetec Corporation, as the headline above makes evident. It is part of the new logotype you'll be seeing on Sparta stationery, advertising, product guides and convention displays, in addition to our own familiar Spartan warrior head and distinctive type style.

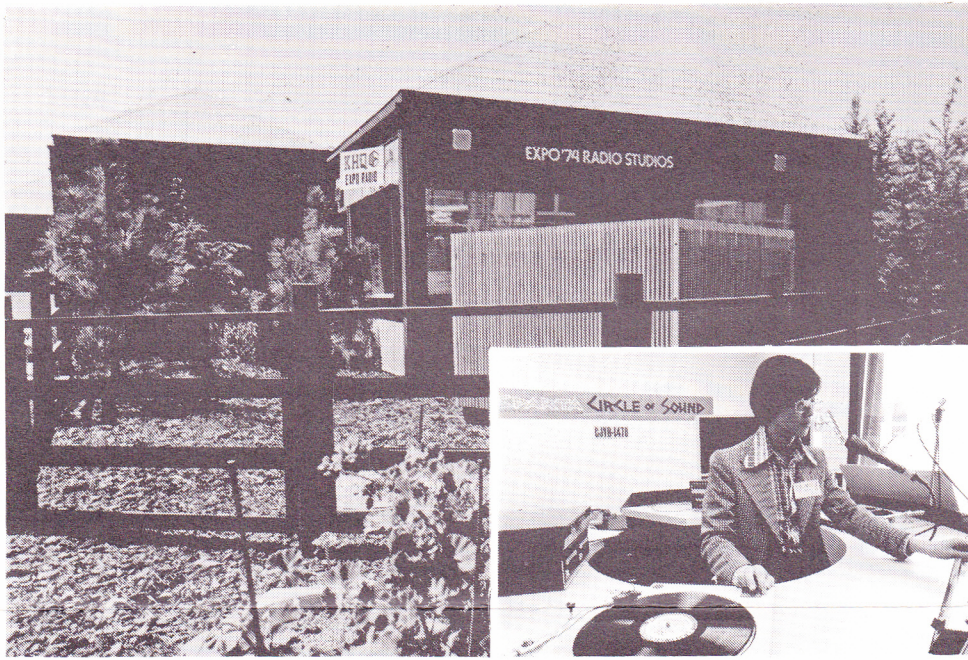
The Cetec logo represents a stylized capital "C" with an even more stylized small "e" inside. The "-tec", of course, represents the technological orientation of the corporation which has extensive interests in distribution, construction, and computer peripheral equipment in addition to the communications and broadcast equipment manufactured by Sparta; Benmar (marine electronics); Vega (wireless microphone systems); Jampro (FM and TV antennas); and Cetec Audio (consoles, tape duplication equipment and speakers).

Cetec has extensive interests spread around the world. The travel necessary to administer such far-flung business operations has proven so great that Phil Gundy has been appointed Executive VP for International Operations and Robert Nelson has been named Executive VP for Domestic Operations. Gundy will share with Nelson an active interest in the broadcasting equipment division of Cetec, reflecting his long experience in the field.

When queried as to the effect these changes would have on Sparta itself, and its relations with its customers, Bill Overhauser, Sparta president, commented: "Our clients will notice the expanded services, and future product development, from reliance on our parent corporation's tremendous financial and technical resources. When broadcasters see "Cetec" listed on American Stock Exchange reports, they'll know that Sparta is represented there as well. The first change is the obvious one . . . adding the Cetec logo to our own."

The changeover of all Sparta literature should largely be accomplished by the end of this year.

Visit us at the NAFMB—New Orleans—Oct. 9-13



AT EXPO '74 . . . the Sparta Circle of Sound continues to be of service to American and Canadian radio stations at Expo '74 in Spokane. Above is the broadcast facility at the fairgrounds while (inset) Aaron Lee of CJVB, Vancouver BC, gets the GT12 underway with musical selections for his Canadian listeners. The show goes on until Nov. 3. We hope that if you visit Expo '74 you'll look in on this attraction and perhaps find it possible to use the Circle of Sound yourself! —Sparta Photos

==Tech Tips==

—by DAN PELUSO
Mgr. Customer Service



Peluso

Your RFI problem may well be under control until a new station goes on the air and you find your station has become a on-air monitor for an alien signal. Your hunt begins . . .

Any coiled wires connecting your turntable preamps in high gain, low level circuits? Cable length is sometimes very critical in RF pickup.

Everything OK here so now let's try to pinpoint where the RF is getting in.

First, bypass the input of the low level preamp by connecting a .0001 or .001 mfd ceramic disc or mica capacitor across the input to ground. It is very important to keep the leads to the capacitor as short as possible.

If this doesn't do the job, bypass both sides of your incoming AC with a .1 mfd/600 volt or higher capacity. Do the same with b+. If you have a DC bi-polar power supply, bypass both supplies to the ground.

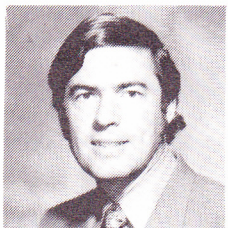
In a really tough situation, one or both of these additional steps may be necessary: (1) a few ferrite beads in the input leads of amplifiers and power line wires and (2) install RF chokes.

Another thing . . . be sure to check the solder joints on the connections between the phono pickup cartridge and tone arm head shells. They should be tight and clean with no evidence of pitting or corrosion.

Sparta will assist in any manner possible. If you have an RFI problem give me a call or drop a line. Good hunting!

Audio Console Distortion Specs

—by DAVE EVANS
Audio Products Manager



Dave Evans

Distortion specifications for broadcast audio consoles are usually expressed in terms of total harmonic distortion (THD) at rated output level, or as harmonic distortion over a specified frequency bandwidth at rated output level. Thus, three typical distortion specifications.

- (1) Less than 0.5% THD at rated output
- (2) Less than 0.5%, 20-20,000 Hz at rated output
- (3) Less than 0.5%, 30-15,000 Hz at rated output

Although specs No. 1 and No. 2 look similar, they actually are very different. Number one is saying that the sum of the harmonics of ONE fundamental frequency, usually 1000 Hz, is less than 0.5 percent of the amplitude of the fundamental signal voltage. Number two is saying that the sum of the harmonics of ANY fundamental frequency from 20-20,000 Hz is less than 0.5 percent of the amplitude of the fundamental signal voltage.

Spec No. 1 is a useful and traditional distortion specification, although it does not reveal the harmonic distortion of other

fundamental frequencies, especially those below 30 Hz and above 10,000 Hz, which tend to be distorted more by the console amplifiers than a 1000 Hz fundamental. The distortion at 20,000 Hz is often 5-10 times the 1000 Hz reading. At 20 Hz an output transformer may produce several percent of harmonic distortion.

For this reason some manufacturers specify distortion over a frequency range which excludes the upper and lower extremes where the highest distortion occurs.

Example No. 3 is a typical spec for distortion over a restricted bandwidth.

Although the No. 2 spec is clearly the most revealing, it is important to remember that No. 1 is the traditional method of specification and most specs written several years ago use No. 1 even though the equipment may meet No. 3 or even No. 2.

Sparta's B-series Consoles (A15B, AS30B, A20B, AS40B) are a case in point. New designs, such as our state-of-the-art Centurion consoles, should be specified over a full bandwidth as in spec No. 2 or at least to spec No. 3.

The foregoing is just background to the matter at hand, which is: What is an acceptable audio console program distortion figure? There is no single answer, since it depends on both the application and the quality consciousness of the user. For example. SOME AM radio stations have MORE stringent technical standards for studio equipment than MOST FM stations.

(Continued on Page 4)

DID YOU KNOW? . . .

. . . that the 1976 NAB convention, originally scheduled for New Orleans, has been moved back to Chicago? We hear that the huge new Orleans Convention Center will not be completed until late '76.



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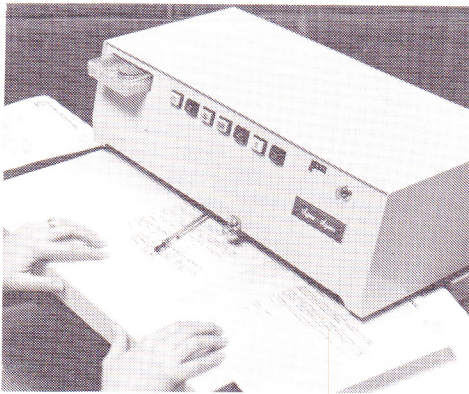
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Our Tape Decks Adopted For Signa-Signer

At first glance, the equipment shown above might seem to be a different type of automatic logging device for radio stations ... a computer which writes out the message in long hand ... or even an electronic ouija board!

Not so! the device is called the "Signa-Signer" and it reproduces any handwriting faithfully from a magnetic tape cartridge!

The reason for its appearance in these

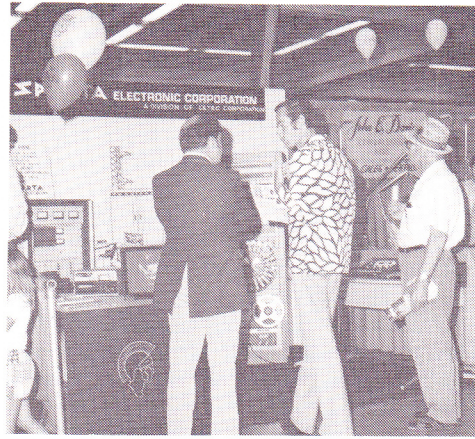


The Signa-Signer

—Marler Photo

pages is that the tape deck used by Signa-Signer is furnished by Sparta, as are the tape cartridges. The deck, identical to that used in the reliable Century Series tape cartridge equipment available for your broadcast operations, met extensive competitive tests by Signa-Signer before being chosen over others submitted.

The Signa-Signer models (one hand-fed, the other machine fed or by hand) record



PREMIERE ... Sparta participated for the first time in the Sacramento Trade Fair recently with three afternoons and evenings of explaining to the public the intricacies of radio broadcasting ... and was aided by the remote broadcasting efforts of several area radio stations. Above (1), Don Mutton, Sparta administrative manager, hosts a visitor. Visible are the Model 600BX 250-watt FM Transmitter, Century Series R/P, continuous slide projector of in-plant color pictures, a Spartamate I and AC155B Remote/Studio Audio control system. Photo at right shows Gaylord Walker, KFBK, Sacramento (a McClatchy broadcasting station) doing an afternoon air stint from the convention center. His equipment is a Sparta AC155 with 800-Series tape cartridge equipment.

—Sparta Photos

handwriting directly from the writer, store the impulses on the tape, and repeat the script exactly, and instantly, at the same speed at which it was transcribed. Not only signatures, but handwritten letters, or post-scripts, may be repeated by the thousands. The machines are lockable to prevent unauthorized use.

With continuous form paper in the automatic feed model, the manufacturer claims that 400-650 full signatures can be written per hour ... depending on the length of the name.

Signa-Signer is located in Fairfax VA.

SPEAKING OF TAPES!

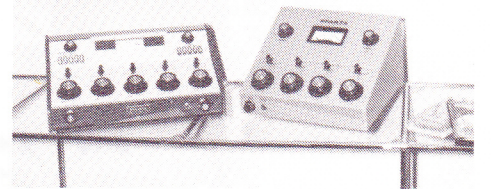
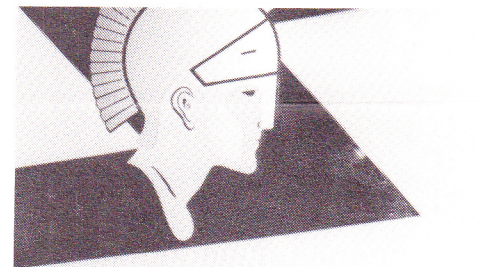
Sparta prepared, and shipped to its customers in the last year, enough audio recording tape to do 40,000 one-minute commercials at 7½ ips. That's 833.3 plus days, about two and one-third years.

A Decade Of Service For KKIS's A10!

Since August 1964, all the audio output of Station KKIS in Pittsburg (Contra Costa County), has been fed through a Sparta Model A10 4-Mixer audio console.

That's ALL the audio — as John Schneider (Sparta's sales order coordinator) found out when KKIS's A10 came into the Sacramento Sparta facility for minor refurbishing recently.

The KKIS need for an audio console



THE OLD AND THE NEW ... above photo compares the KKIS A10 (right) of 10 years ago with the current Sparta A15B, its present equivalent in the small console field.

—Sparta Photo

a little of ...

EVERYTHING

Everything we see, or hear, leads us to believe that the industry we serve is more than alive and well in 1974.

Because our New Year's optimism appears to be well substantiated, Sparta is embarking on a series of moves to further acquaint you with our products and services, to speed our production and delivery and back our efforts with new testing and production equipment.

This isn't an overnight concentrated effort, of course. The new EDP computer mentioned in the last issue, for instance, is now still being programmed. But, the first visible results are coming soon.

Our attendance at NAFMB, in New Orleans during October, will put the "new" Sparta on view for you. And, by NAB time at Las Vegas in April, the full effect should be unmistakably plain to all.

Sparta has great faith in broadcasting, and in itself as a vital contributor to the success of the industry.

BILL OVERHAUSER
President
Sparta Electronic Corporation

directly in their transmitter line at its Collinsville transmitter site, came about as a switchover mechanism. The studios are

(Continued on Page 4)

-Audio Console Distortion Specs

(Continued from Page 2)

On the other hand, many production companies record stereo music for FM stations using equipment considerably inferior to the facilities where the tapes will be played.

Over the years various tests have indicated that a THD of 0.5 percent at 1000 Hz is about the threshold of detection. However, the higher the harmonic order (3rd, 5th, etc) the more intolerable the coloration becomes. My personal rule-of-thumb guideline is as follows:

Sparta B-series consoles meet the first two requirements, and the new Centurion meets the third.

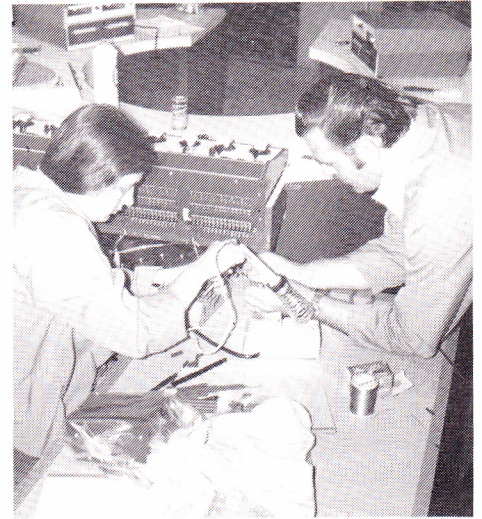
Unfortunately, the most abnoxious form of distortion is Intermodulation Distortion, consisting of spurious sum and difference frequencies created by non-linearities in an audio amplifier. More on this subject, and what we're doing about it here at Sparta, in a later installment.

AUDIO CONSOLE APPLICATION

Most AM control rooms and production facilities	less than 0.5% @ 30-15,000 Hz
Most FM, high quality AM, and tape music	less than 0.5% @ 20-20,000 Hz
Best quality AM & FM for air, tape music for FM	less than 0.25% @ 20-20,000 Hz

MINIMUM STANDARDS OF ACCEPTABLE DISTORTION

EDITORS' NOTE: it is planned to finish this article by Dave Evans, Audio Products Manager at Sparta, in the November-December 1974 "Spartan".



GETTING READY . . . someone, somewhere at Sparta, is always involved in display preparation for a convention. Above, Peggy Fiorovich helps Gary Maggiore, fabrication shop foreman, with a special equipment order bound for a convention. Sparta will be at the NAFMB in New Orleans, Oct 9-13, in the Fairmont Roosevelt Hotel. It is being billed by the FM Broadcasters Assn. as the "1974 National Radio Broadcasting Symposium and Exposition". Look for the Sparta booth to be really colorful and eye-catching.—Sparta Photo

Please Help Us To Help You!

With every mailing of The Spartan, we have returned to us a large handful of copies because the Postal Service is unable to deliver them.

We request address corrections from the Postal Service and if they have a forwarding address, they give it to us and then we correct our mailing list. If The Spartan is returned to us as "undeliverable" (usually a forwarding address expires after one year), we have to remove the addressee from our mailing list. Once we have to drop it, it can be replaced on our list only by a personal request or a later FCC notification or some other chancy way.

If this issue of The Spartan is forwarded to you, chances are your station will eventually be removed from our mailing list unless you send us your new address.

Your whereabouts is important to us and we hope The Spartan and other Sparta information mailed you is important to you, too!

You can always get in touch with us and we want to always be able to get in touch with you. Please advise us if your address changes.

Thank you.

—The Editors

—KKIS's A-10!

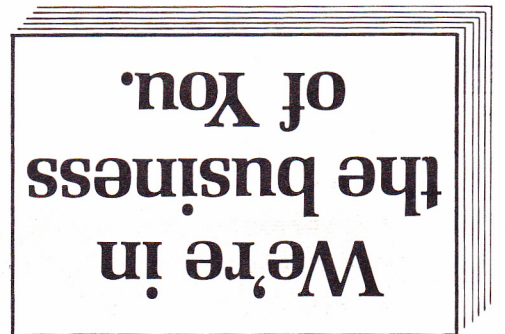
(Continued from Page 3)

feeding audio via microwave to the Collinsville site, so both microwave audio, output of the Spartamation system or live programming (both at Collinsville) may be instantly switched about at the console. Consequently, whatever audio was going to the transmitter, went through the old A10.

The A10 is going to get a much needed rest when it goes back into service. Instead of being the audio switching link for the entire station output, it is being semi-retired to a production room or remote broadcast function after nearly 10 years of continuous service.

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