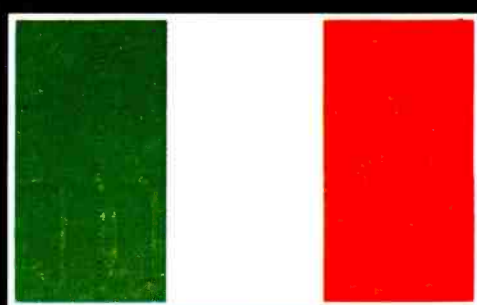
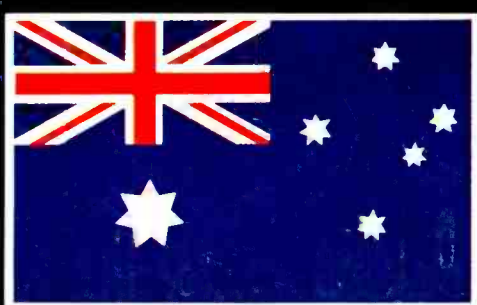
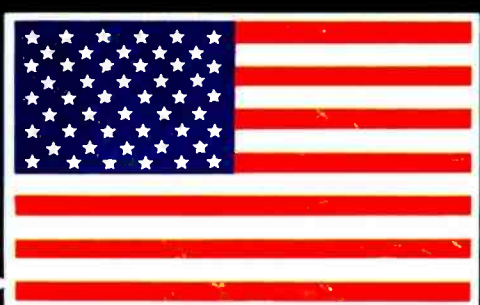
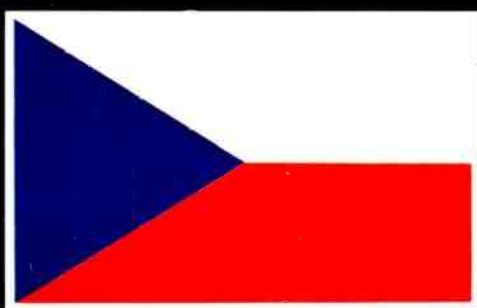
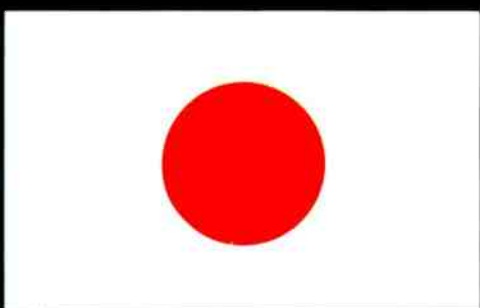
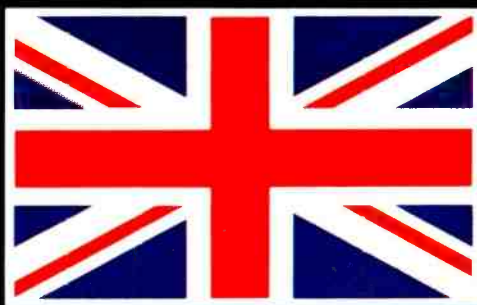
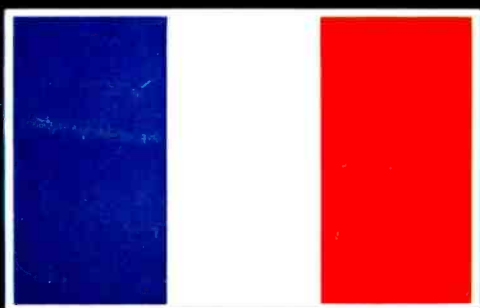


# studio sound

June 1976 35p

AND BROADCAST ENGINEERING



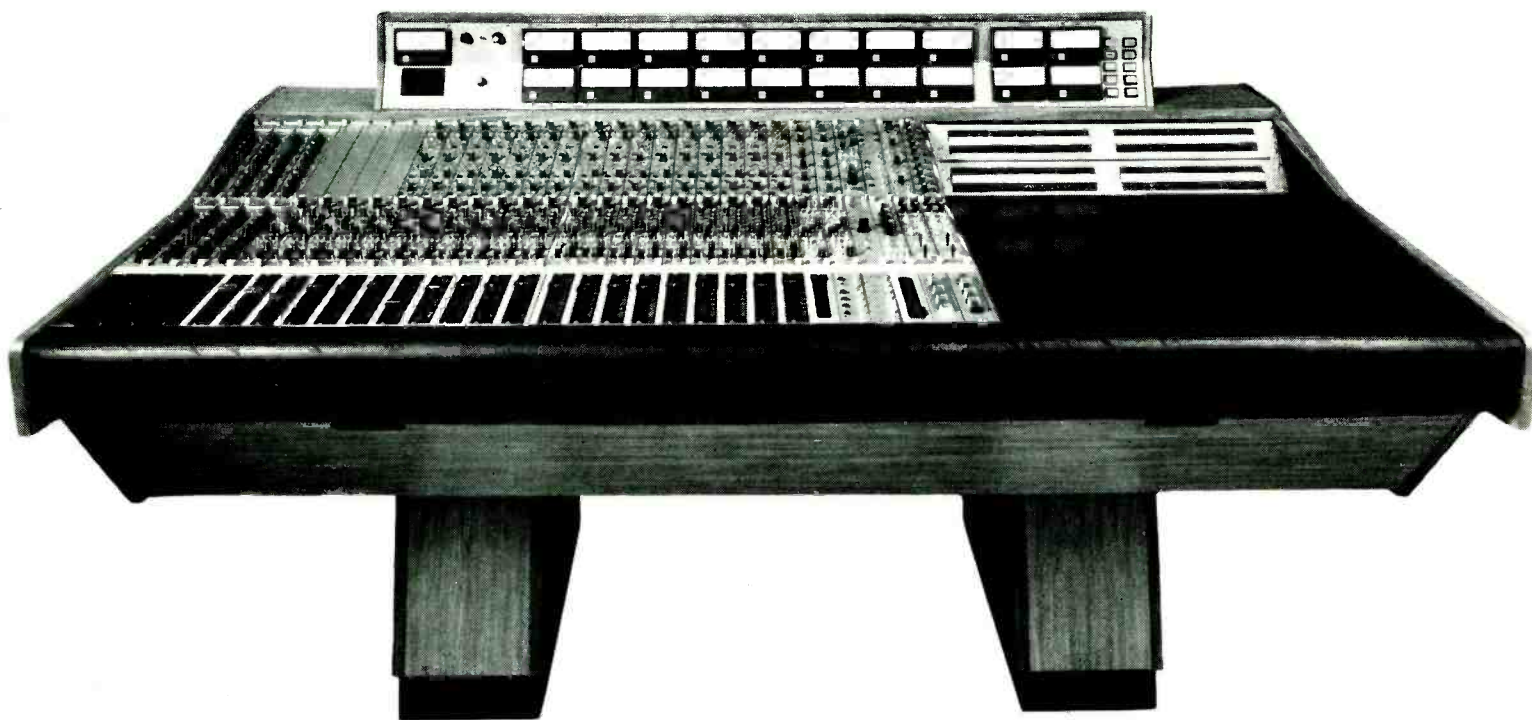
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# Introduction to the international issue

MICHAEL THORNE

STUDIO SOUND's main aim over the last two years or so has been to develop its international coverage. It was obvious a while back that we should square up to the scale of the industry as it is rather than covering the scene in one particular, albeit prominent country. As a result, we have now a fair-ranging international series of writers, and the editorial has for some time been constructed with a mental picture of an international reader, whatever he may actually look like. In practice this means writing so that the subject matter is understandable by someone working in England, America, Japan or wherever. Our English accent remains, certainly in preference to mid-Atlantic nondescript, since we live here; but the broad service is on an internationally conscious front. Whether we've achieved any part of this aim is up to you to decide.

Thus, the international issue here, with summaries of the state of the recording industry from 12 people. The form has changed and evolved, but the idea of collecting articles from informed and active people in various parts of the world and putting them side by side with no individual editorial comment was crystallised last year. Finding suitable authors took rather longer: the combination of someone who is close to recording and who is also prepared to write is not common, a fact which has obviously been on our minds during preparation of every publication. However, although each writer for this issue comes from a corner of the recording business in his area, and will have differing emphases in his writing, we hope that the collection goes some way to showing contrasts and similarities.

Normally, we acknowledge company affiliation of the feature writers in the magazine, but here it seems more of a hindrance than a help. It's not as if there are overt political or business pressures involved in writing here. Also, the business being what it is, it's quite hard to define what people do. Two writers here are specialist journalists, but the spread embraces musician, composer, recording engineer, hardware engineer, record producer, a&r man, tv and radio producer, studio manager and more. Also, the spread of people's capabilities in the business tends to be wider than a particular job entails, a reflection of the involvement that is normal.

There was, of course, a common brief to all people concerned. However, with the aim of bringing out national and local differences of recording worldwide, it would have been wrong to pin writers down to a shape conceived from a desk in London. While we couldn't be fully aware of local social and economic factors, we could at least be sympathetic towards them. The obvious divergences from a conventional Western bloc recording industry are the USSR and Czechoslovakia who, while relating to the rest of the world, serve very different establishment cultural and economic ends. In the extreme, the situation in the People's Republic of China bears little resemblance to anything in the West,

or indeed to other Communist countries. Conversely Sweden and Japan, while subscribing to a similar fundamental economic system, still show huge contrasts with the American way of life.

Incidentally, one thing which we ought to concede is the impossibility of doing justice to a single recording studio in three pages of article, let alone the whole music and recording activity of a country. You will all probably read about your own area first, but it's really the others that are for your benefit or whatever. Three pages isn't going to tell you anything you didn't already know about the country you work in, nor is it going to provide room for the escape clauses or qualifications that are needed in a long treatment. We're a magazine, not an encyclopaedia, and the aim here is not to provide academic source material but to try and give something to think about.

It's probably worth summarising the article description that we gave to the writers here. Each of the articles is a reaction to a request for:

—A discussion of the present state of the record and recording industry, covering both their present development and the way in which they are changing locally.

—Aspects of music and recording particular to the country, including economic and social needs.

—Techniques and equipment used in recording studios, perhaps reflecting specific musical needs.

—The growth and development of the recording industry as a reflection of the record market in that country and in others.

—The relationship of the recording industry in that country with those of other countries.

—Possible future developments and trends, in relation to the country.

The patience and cooperation of the writers here needs more than the usual polite thanks. Most are involved full time in things other than writing, usually tackling the project as a combination of interest for its own sake and favour to us. We were particularly glad of their cooperation because of the difficulty of the assignment, and contact was made through the usual processes of friends, acquaintances and all the rest. Thank you, again.

Which leads us on to the people we write for (and who write for us—the two sets of people are similar). The last few years has seen the maturity of Studio Sound into a magazine fully for operational sound engineers and producers, the international nature underlined by this issue. Obviously, it's useful to and is read by many others, musicians, record company people and so forth, but the studio operation remains central. Our own reasons for choosing material is whether it will be of interest to people in their studio activities. We've had some criticism on points such as the dropping of constructional articles; here, the reason was that generally the coverage can be found elsewhere if required, and in any case the engineer at the console is not really concerned with building ppm circuits. Equipment designers are, but we aren't writing for them. That's been another source of aggravation: a manufacturer who is in close contact with the magazine would often like to see a discussion of design techniques relating to his product or even to other people's. The recording engineer and producer, however, isn't that bothered. Our presentation of equipment, which is aimed to be expressed at a high technical level, belongs to straightforward news notes aimed at the studio, or a dissection from the potential user's point of view in the

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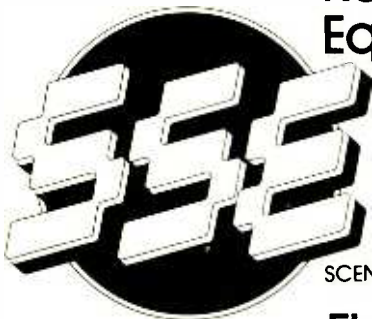
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reviews. There's no secret that in a magazine of this nature the hardware advertising pays the bills—for the market that manufacturers want to hit is the operational studio—but that has never influenced the content. Nor the bias.

The January issue went to more than 10 000 audited subscribers, for the first time ever. Since then, circulation has risen a bit more, to the point that we'll be printing over 12 000 June copies, with the delivery outside the UK approaching 50% of the total. This begins to reach a sizeable number, but in itself is not of concern. The main thing that matters is that the bulk of these, particularly those abroad, go to professional engineers and producers. We've specialised to a high degree, but that means that we can write without having to pause to explain what bias or tracking are every paragraph. It means that no one is going to either understand or be provoked by every article, but at least you

can expect that there's something there which isn't baby talk in an area of recording close to your interest. This approach seems the best approach to the subject for us, otherwise we're just feeding you stuff you know already. For relaxation give us Captain Marvel and the Hulk any time.

This is the last issue for which I carry the blame. Good luck to Ray Carter. I've spent the last two years learning a lot and I hope the process continues, both for myself and for Ray. The accidental coincidence between this special issue and my departure is the nicest leaving present I could hope for. Thank you, everybody, for the help and encouragement over the last two years. Since I'm not going to the moon, I hope to see you around. I owe a few beers, just here and there. **MT**

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*STUDIO SOUND* is published on the 14th of the preceding month unless that date falls on a Sunday, when it appears on the Saturday.

# Announcing THE VITAVOX LIVE SOUND AWARD FOR GROUPS

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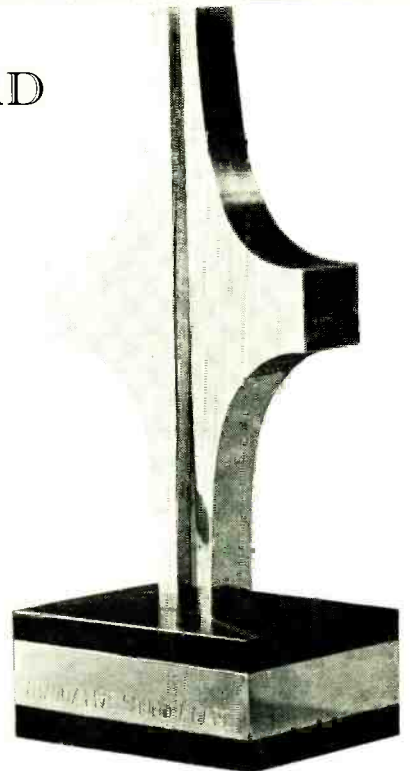


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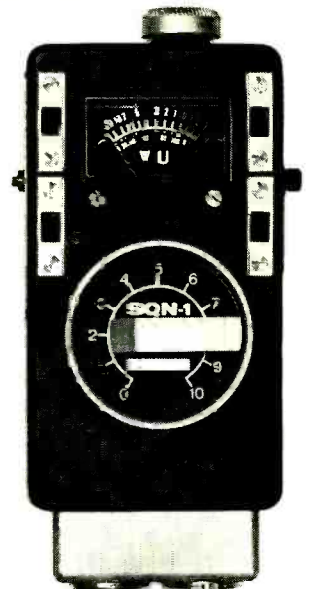
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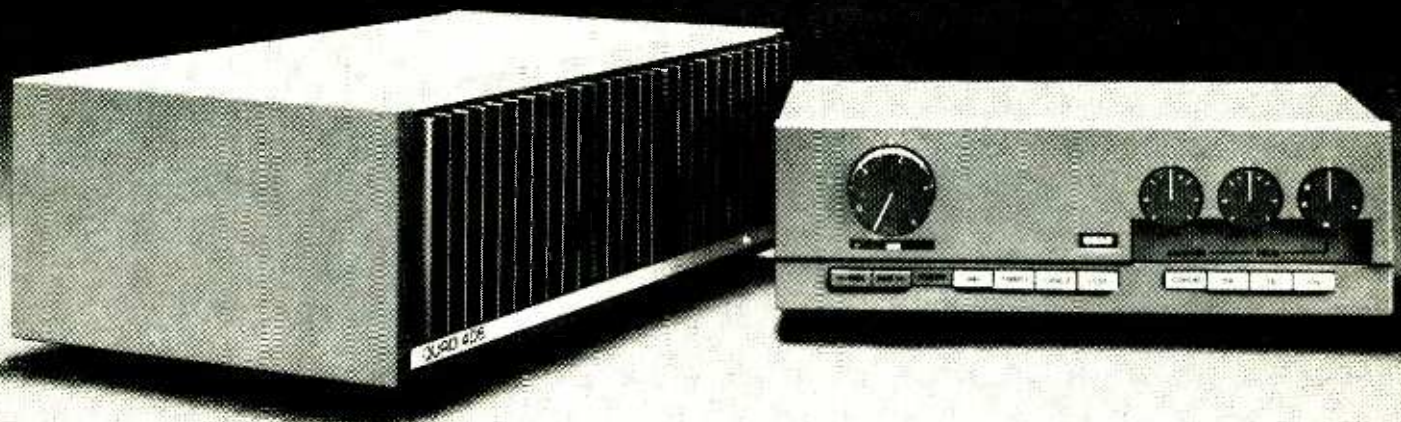
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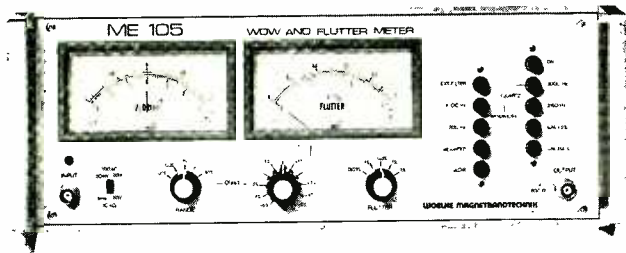
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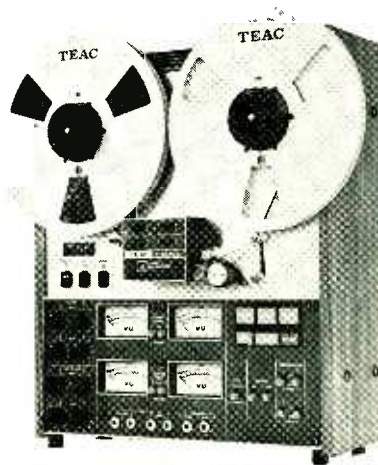
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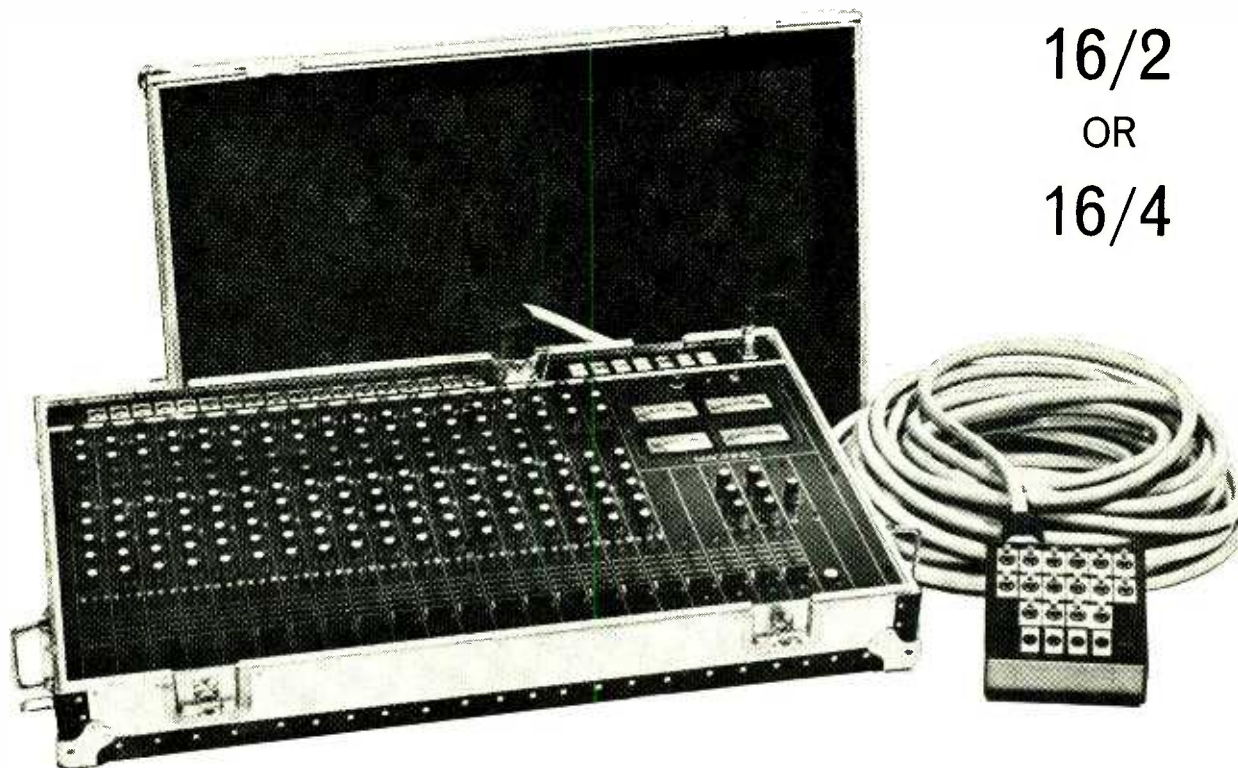
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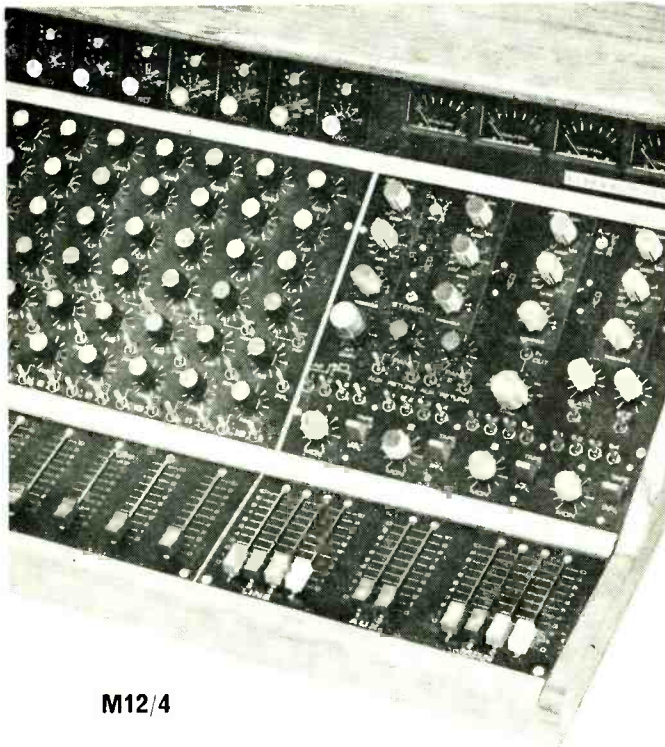
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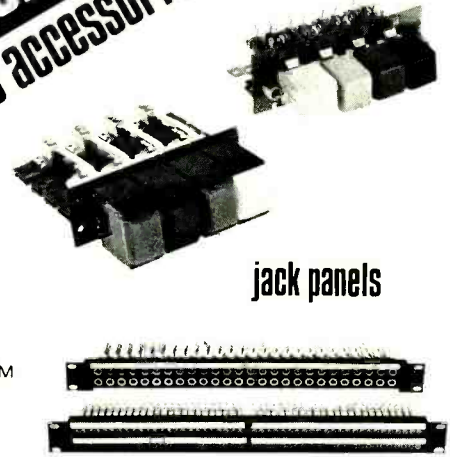
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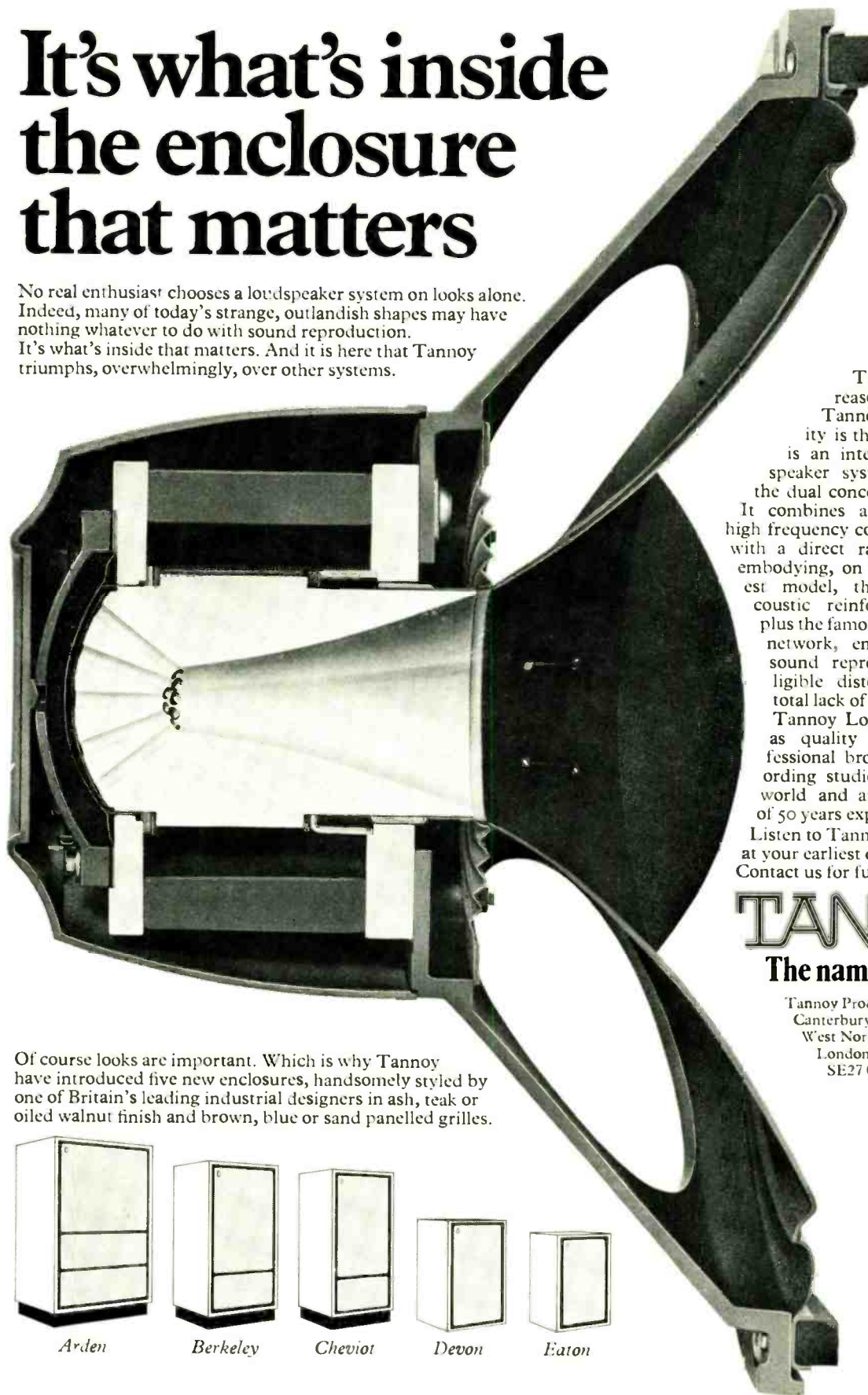
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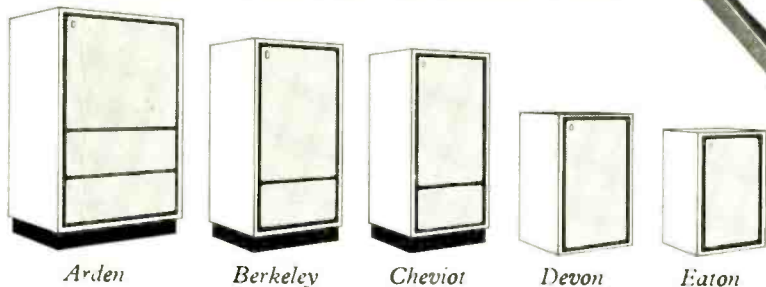
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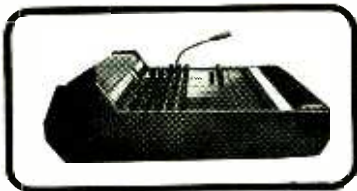
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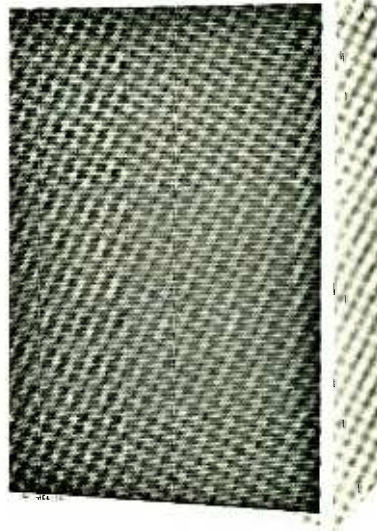
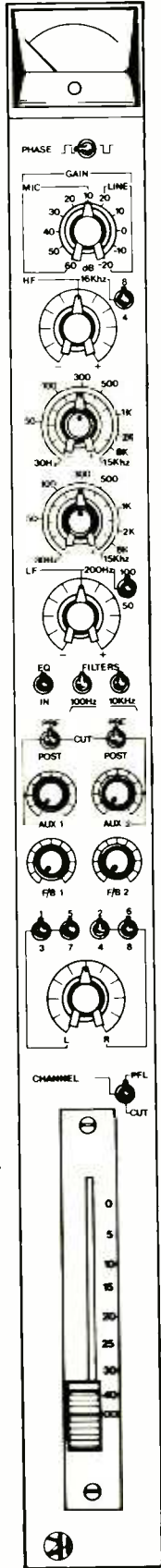
- 1, 2, 4 or 8 track routing.
- Illuminated v.u. (or P.P.M.) per channel.
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**Overall Specification of System:**

Frequency Response: within  $\pm \frac{1}{2}$ dB  
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Illuminated meter shows peak operating level, output level or gain reduction.  
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*The 805 is in a class of its own. If you  
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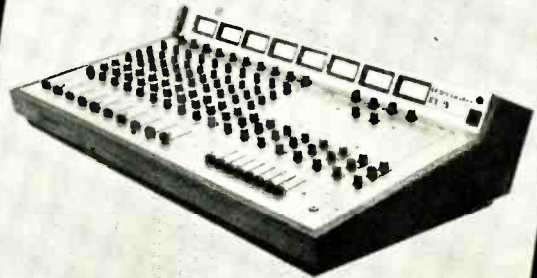
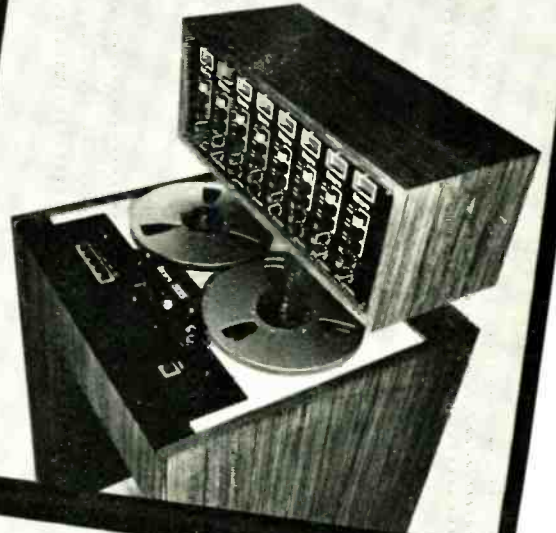
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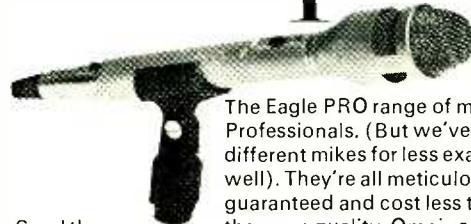
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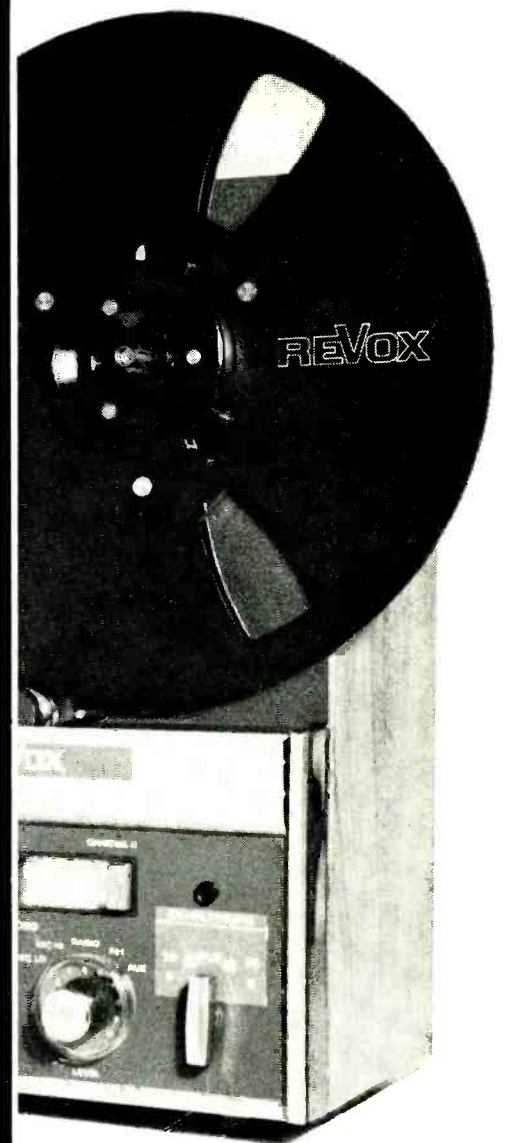
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\*Brenell Eng  
\*Cetec Audio  
\*Cadac  
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Philip Drake  
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Hammond & Co  
H/H Electronic  
Hampstead Hi-Fi  
\*Helios  
\*Hayden Labs  
\*Industrial Tape  
"International Musician"  
\*Jackson Recdng.  
\*Klark-Teknik  
\*Lennard Dev  
\*Jacques Levy  
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\*Lockwood  
Lee Eng  
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0900 - 1800 hrs

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\*Rola Celestion  
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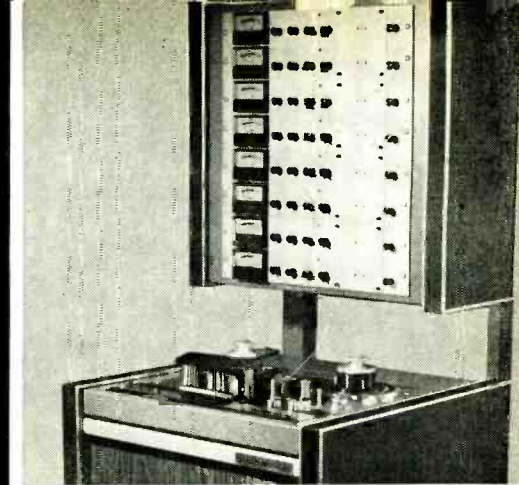
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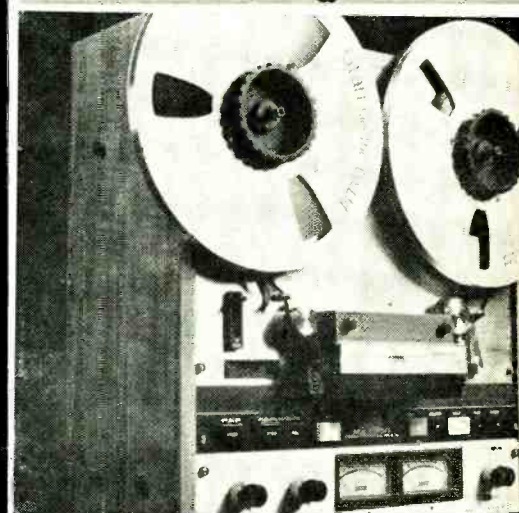
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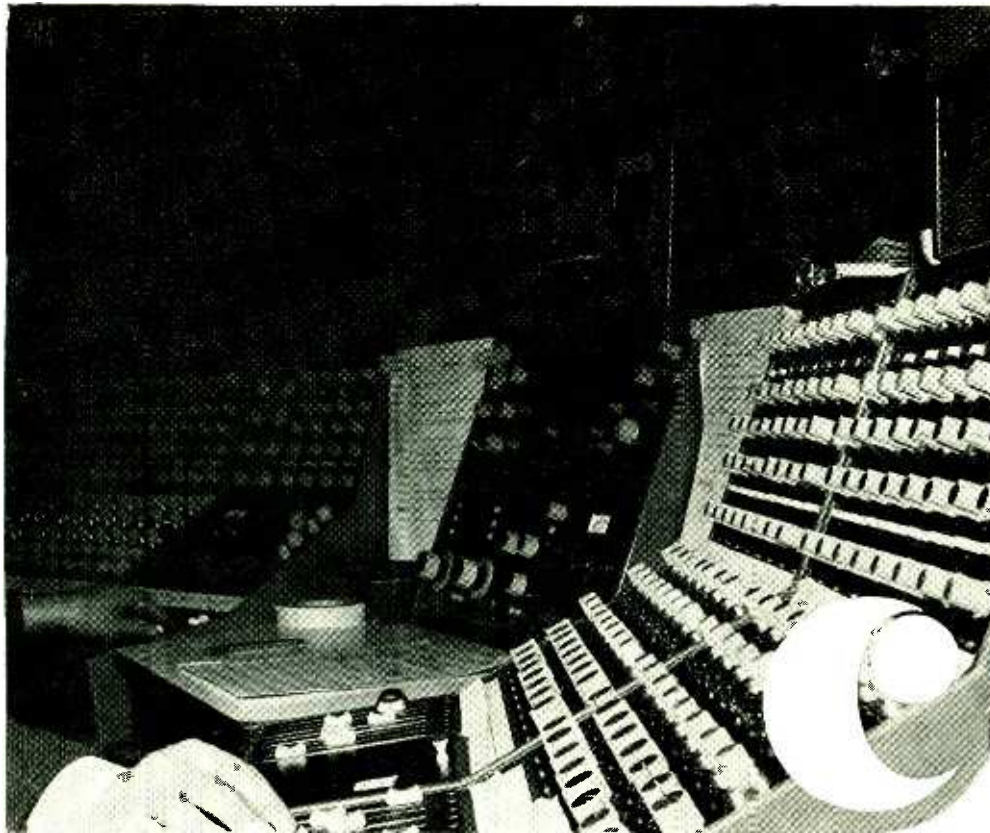
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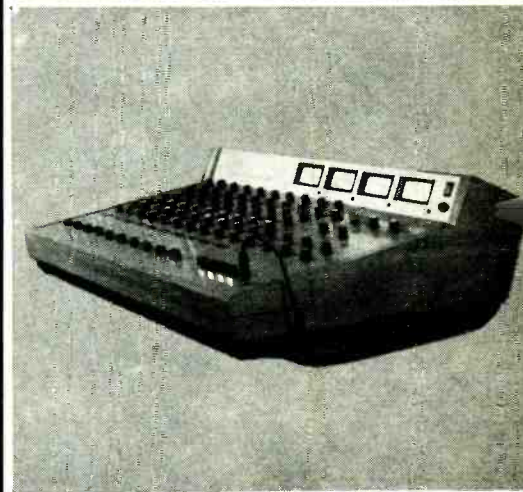
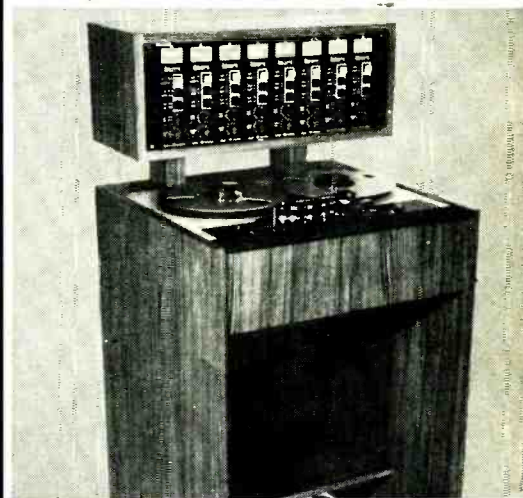
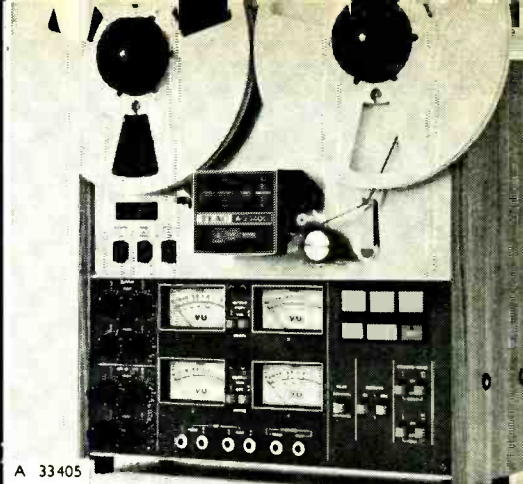
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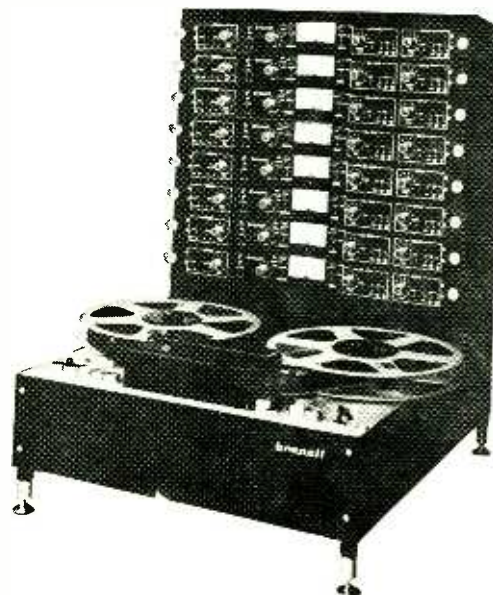
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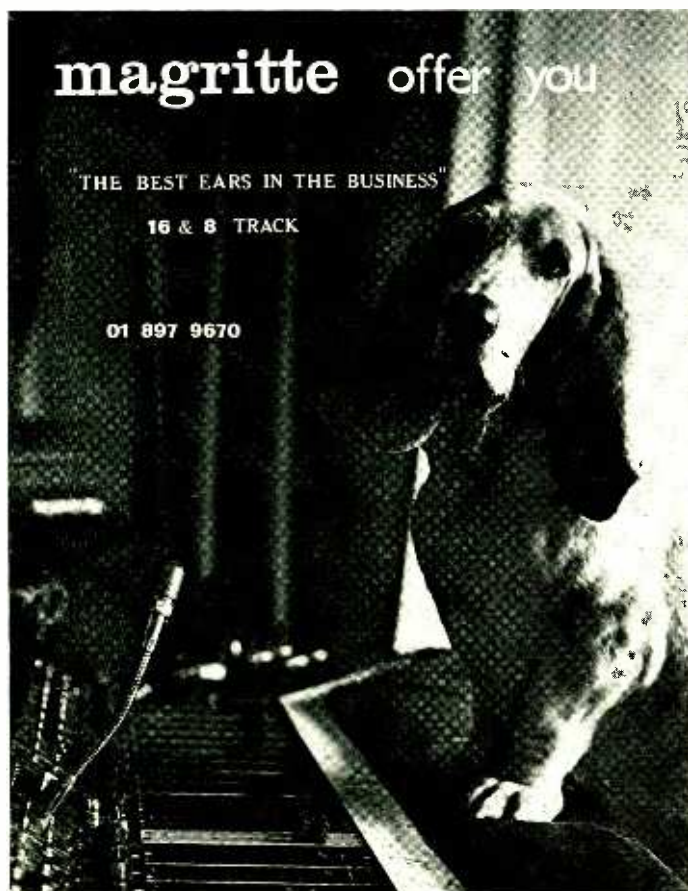
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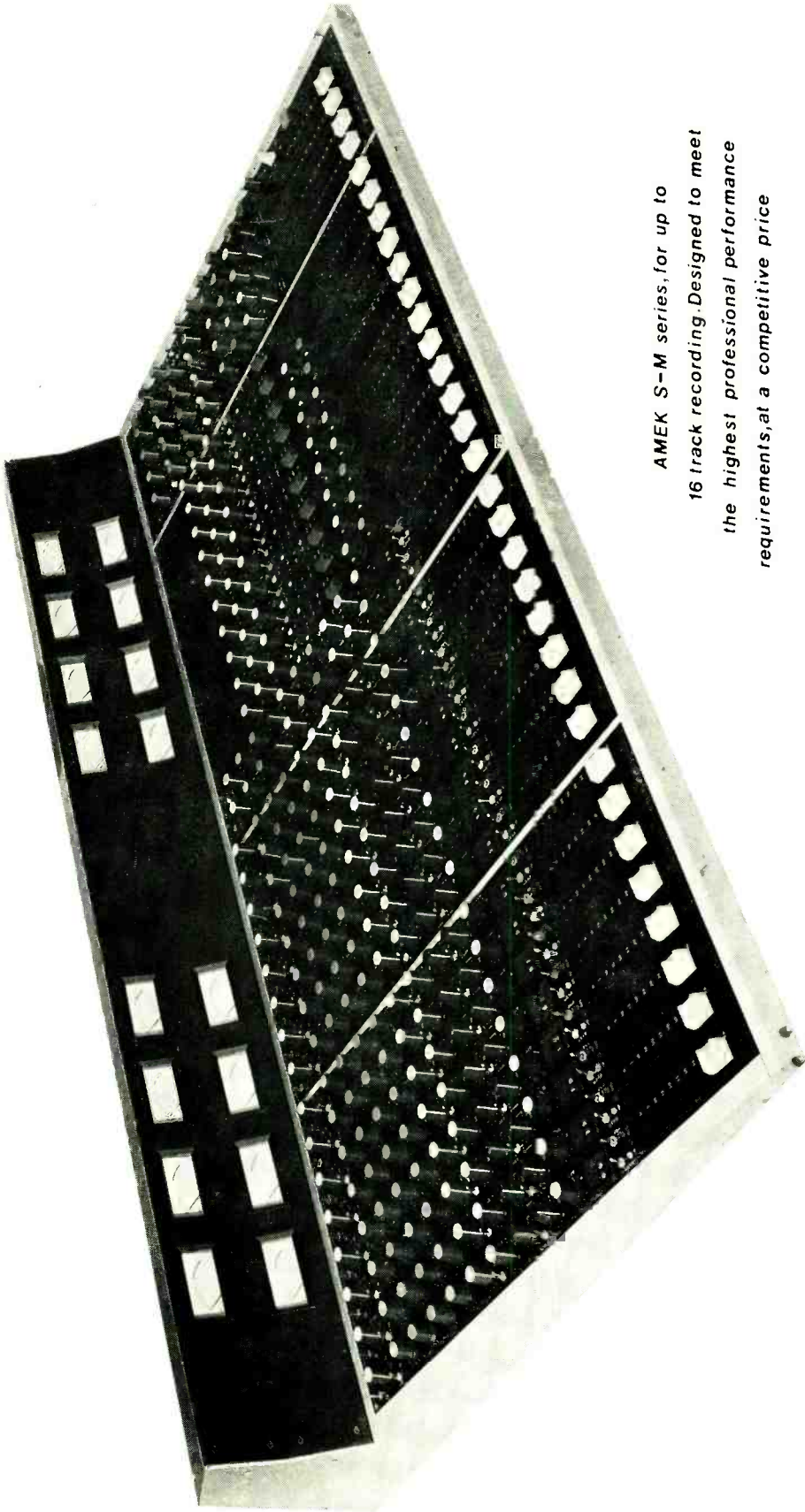
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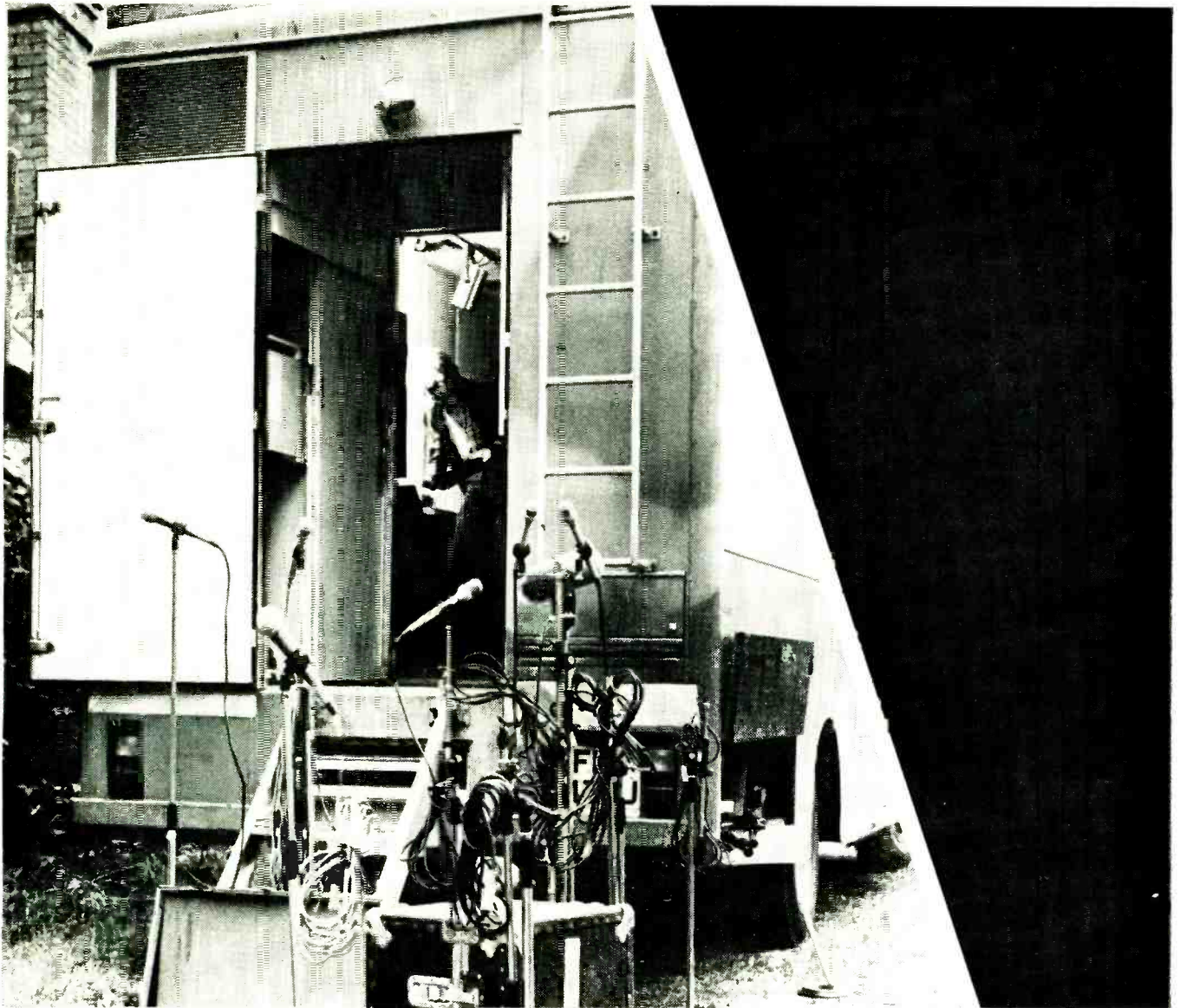
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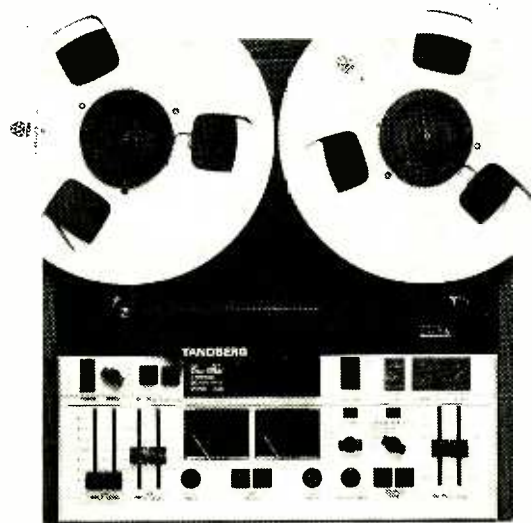


# For the musician who wants the best in recording.

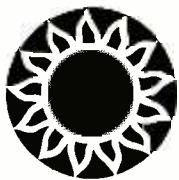
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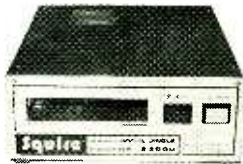
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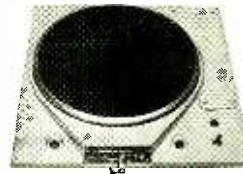


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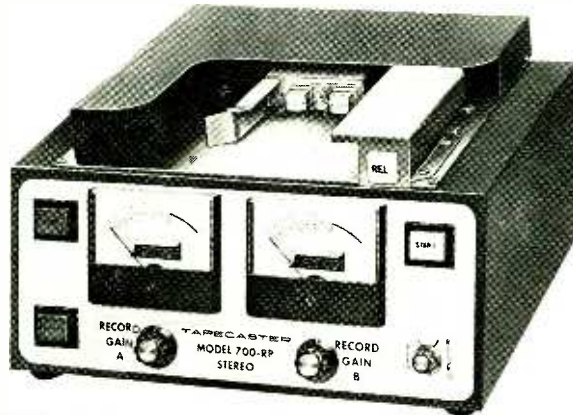


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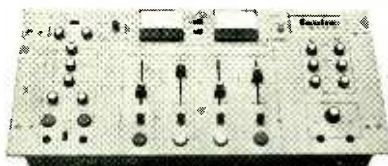
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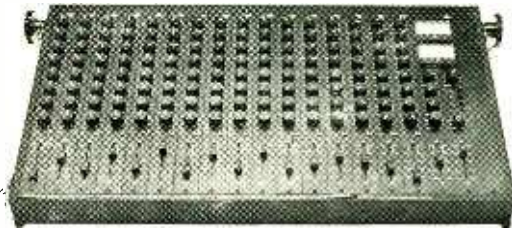
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# Soundcraft-Series II

## revised specification.



Illustrated: Series II original format

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- SWITZERLAND.** Professional Audio Systems, 4132 Muttenz, Kappeliweg 41. Tel: 061/41 51 56.
- AUSTRALIA.** Klarion Enterprises (Pty) Ltd., P.O. Box 379, South Melbourne, Victoria 3205. Tel: 61 3801. Cables: Klarionmelb.
- SOUTH AFRICA.** Tru-Fi Electronics S.A. (Pty) Ltd., P.O. Box 31801, Braamfontein, TVL 2017. Tel: Johannesburg 838 4930.
- JAPAN.** C.M.C. Inc., Kasumi Building No. 503, 21-20 Nishi-Azabu, 3-Chome, Minato-ku, Tokyo 104.



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## *The First Successful Decade: 1966 - 1976*

Dolby noise reduction has staying power. The A-system has been around for ten years. If you have read our technical papers and otherwise followed our progress, you're probably familiar with the reasons for this success. Here are ten quick reminders.

- 1  
The Dolby system works like a constant-gain amplifier in two critical dynamic regions — low levels and high levels. Error-free signal handling is thus ensured at the dynamic range extremes. Compression and expansion occur only at easy to handle mid-levels.
- 2  
The system employs a simple adding and subtracting scheme which automatically results in mathematically exact complementary compression and expansion. There are no approximations, so the signal must come out the same as it went in (just get the Dolby Level right).
- 3  
Compressor overshoots with high-level transient signals are suppressed without audible distortion, because of the basic system layout (dual signal paths). Since there are no overshoots to be clipped by the recorder, there is no impairment of even the most extreme transient signals.
- 4  
The freedom from overshoot is a result of system philosophy, not an ultra-short attack time, so it is possible to utilize relatively gradual gain changes. This yields a compressor output which is remarkably free from modulation distortion. There is thus no need to depend upon cancellation of modulation products by the expander (which relaxes recorder performance requirements).
- 5  
The reproduced dynamics of low-level signals are essentially immune to rumble in the input signal and head bumps and other frequency response errors in the recorder — the system has a solid low-level 'gain floor'.
- 6  
The system gives a pre-determined amount of noise reduction which is realistically useful (set at 10 dB).
- 7  
The noise that remains has a subjectively constant level. Noise modulation effects are almost non-existent.
- 8  
The principles and parameters used in the Dolby system result in a high margin of safety. The system works well with all types of audio signals — speech, music, effects — and practically all types of noises. High noise levels (from multi-generation copies, for example) do not impair performance.
- 9  
The system functions reliably on a day in, day out basis, with real workaday recorders and other equipment.
- 10  
All of the above have been proved in ten years of dependable service to the industry — 25,000 professional channels in use by well over a thousand studios in more than 50 countries around the world.

The Dolby A-system now looks forward to

## *The Second Successful Decade: 1976 - 1986*



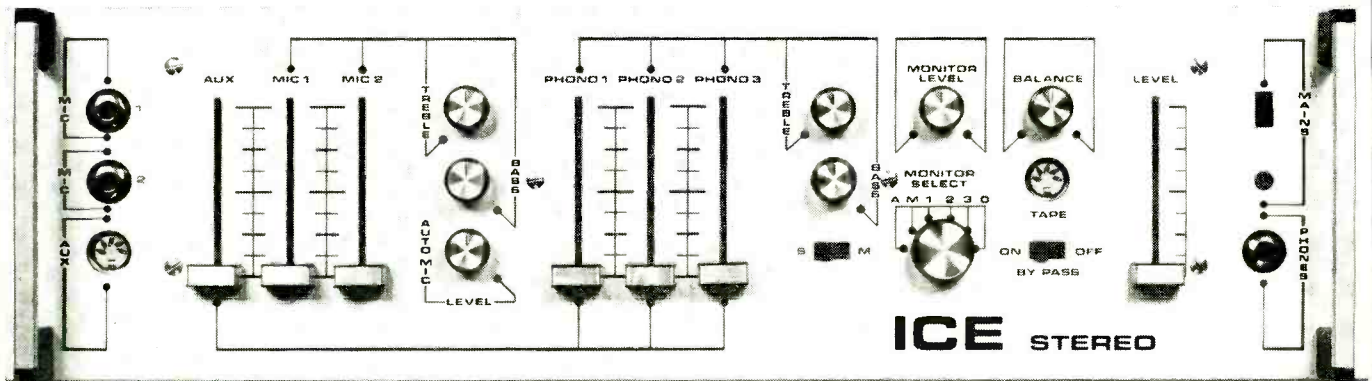
Dolby Laboratories Inc

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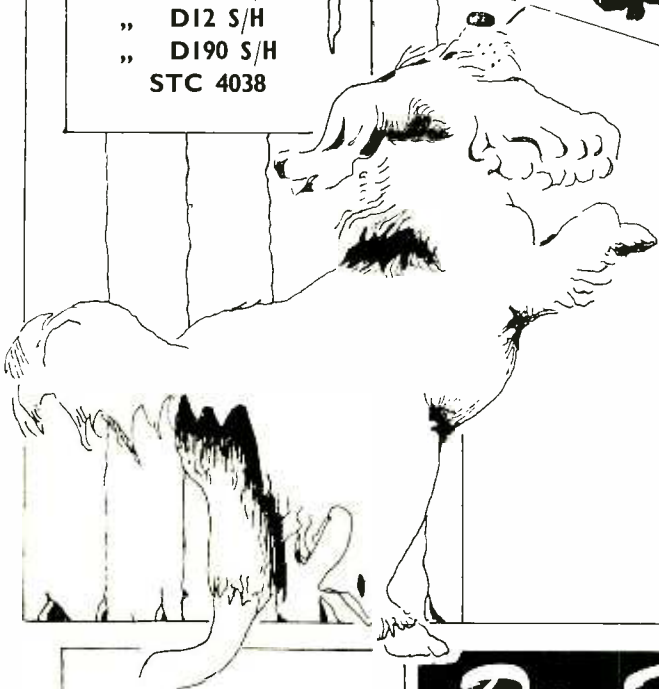
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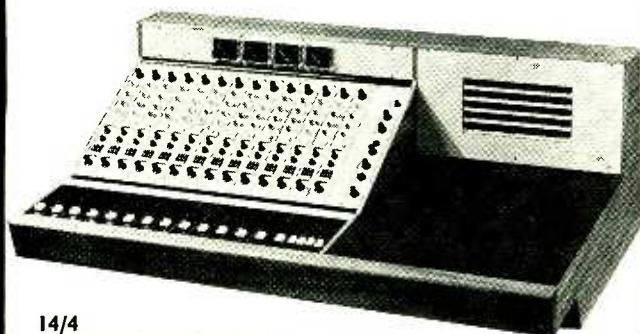
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| <b>WEST GERMANY</b> | Henry Keinert, Elmus GmbH, Herderstrasse 16, D1000 Berlin 12.<br>Tel. 030.312.2012   |

# seen from the professional angle



## the 201 is something quite personal...

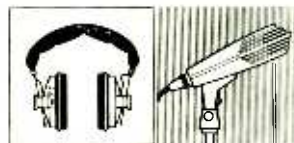
The M 201 Hypercardioid moving coil microphone is designed for recording or broadcasting. The M 201 offers excellent separation characteristics in extreme accoustical conditions.

**Specifications:**

Frequency Response: 40-18000 Hz.  
Output Level at 1 kHz: 0,14 mV/ $\mu$  bar  
 $\approx$  -56 dbm (0 dbm  $\approx$  1 mW/10 dynes/cm<sup>2</sup>). EIA Sensitivity Rating: -149 dbm. Hum Pickup Level: 5  $\mu$  V/5  $\mu$  Tesla (50 Hz). Polar Pattern: Hypercardioid. Output Impedance: 200  $\Omega$ . Load Impedance: > 1000  $\Omega$ . Connections: M 201 N (C) = Cannon XLR-3-50 T or Switchcraft: 2+3 = 200  $\Omega$ , 1 = ground. M 201 N = 3-pin DIN plug T 3262: 1+3 = 200  $\Omega$ , 2 = ground. M 201 N (6) = 6 pin Tuchel.  
Dimensions: length 6", shaft  $\varnothing$  0,95".  
Weight: 8,60 oz.



**BEYER DYNAMIC**



**BEYER DYNAMIC (GB) LIMITED**  
1 Clair Road, Haywards Heath, Sussex.  
Tel: Haywards Heath 51003

## USED EQUIPMENT

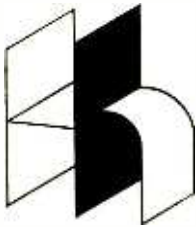
JBL L100's loudspeakers, Revox 1102HS and Revox 1104 tape decks, Nakamichi 1000 cassette deck, mint condition, Amcron IC 150 pre-amp, ex demo stock. Phone for further details.

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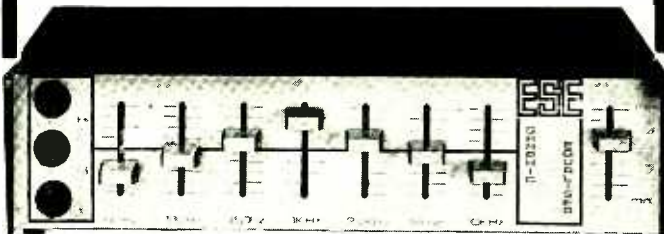
## HIRE EQUIPMENT

JBL L100's, Amcron DC300A, Yamaha B1 and Yamaha desks, Nakamichi 700 and 550 portable, Neal 103, Revox 1102 HS, Ferrograph Super 7, Dolby recorders, AKG D190E and AKG D202EI mikes.



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### Condensed Technical Spec

**Max. output:** terminated to 600Ω, +10 dB > 1.6 volts peak to peak, 2.5 volts R.M.S.

**Signal to noise ratio:** input terminated with 47K resistor. All filters at max. better than -70 dB.

**Frequency response:** All filters at central better than ± 2 dB.

**Filter slope:** Better than ± 13 dB per octave.

**Filter ranges:** Max. ± 15 dB at 60, 180, 480 Hz, 1, 2·4, 5 and 10 kHz.

To: **E.S. Electronics, 2 Upper Fant Road, Maidstone, Kent.**

Please send me  1,  2,  3,  4,  5 of your Graphic Equalisers. I enclose cheque or postal order for £..... having added 50p for p. & p. on each item ordered and V.A.T. I understand that two batteries are included.

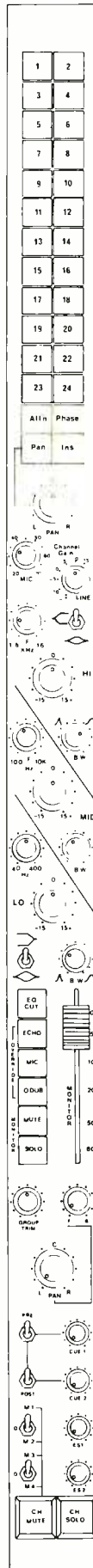
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The mixer is both compact and flexible and its layout is so designed to make those late night sessions a cinch.

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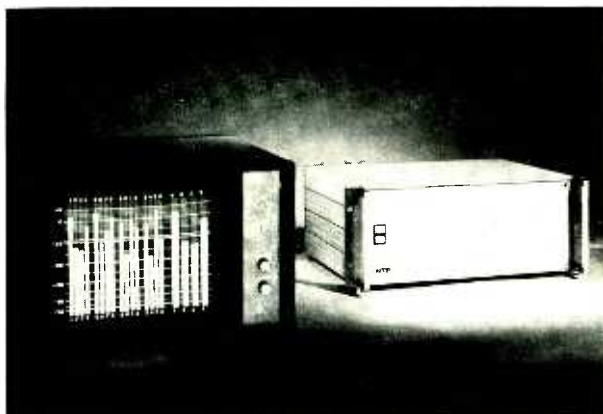
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# Multichannel Peak Programme Meter



## Colour Display 24 Input – and 4 Master Channels Peak Indication According to IEC/DIN

This new NTP design is primarily intended for studios using the multichannel technique.

Up to 28 channels in standard version and 36 in special version may be indicated on the easy to read vertical bargraph display. The channels are divided into groups of 4, and the bars are background illuminated. In the overload range the colour of the bars changes to red. In order to identify particular channels for instance those in record mode, soloists etc. the colour of these bars may be selected remotely from the mixing desk.

The scale is electronically generated which gives an outstanding accuracy. Two standard scales are available DIN or Nordic, but special scales according to customers requirements can be supplied.

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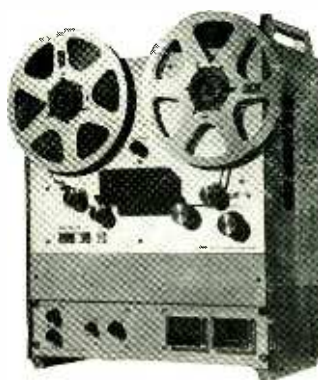
### E200 BROADCAST CONSOLE

Fully modular, mechanically and electrically offers high performance and reliability. Many hundreds in use in Broadcasting throughout the world.



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Elegantly styled version ideal for those heavy editing jobs and all application where seated operation is preferable.



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Space saving. Moderately priced. High performance rugged recorder. Ideal for O/B's and location recording.



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Trolley mounted BE1000. High performance studio machine. In use in many commercial Radio and TV Stations throughout the U.K. Inexpensive versatility.

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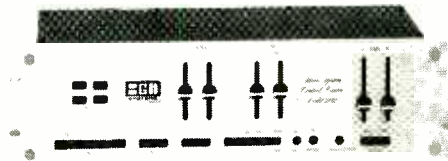
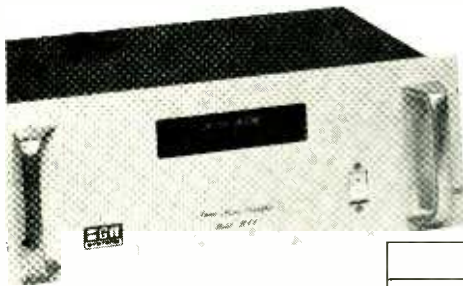


# PROBLEM SOLVERS

The new BGW range offers standards of performance, reliability and safety without precedence. Whether used in the most critical studio work, the highest powered PA system, or simply driving domestic stereo, it guarantees the cleanest and most accurate sounds attainable. BGW's state-of-the-art professional line of audio amplifiers is the result of fundamental rethinking of the traditional design parameters, solving the inherent problems of conventional models.

**Instability Problem** — BGWs safely drive continuously into loads as low as 2 ohms. Highly reactive loads, such as electrostatic loudspeakers are no longer a factor. **Distortion Problem** — voltage and current limiting circuits often causing annoying distortion in conventional designs have been eliminated. **Safety Problem** — to protect the amplifier and loudspeakers a 'fail-safe' SCR crowbar circuit is incorporated, which discharges all energy stored in the massive power supplies and turns the unit off via magnetic circuit breakers, without relying on fuses or relays. **Thermal Problem** — exceptional thermal stability is ensured by mounting all signal carrying transistors on to massive totally enclosed heat sinks. Additionally, except for the 250B, all models have a forced air cooling system employing a thermostatically controlled dual speed fan. **Service Problem** — each channel's circuitry is on a separate 'plug-in' module enabling quick replacement. **Reliability Problem** — only industrial grade precision components are used, for example, all resistors are low-noise types, all harness wiring is Teflon insulated, all circuit boards are flame retardant epoxy glass and all signal transistors are in hermetically sealed metal cases.

**Durability Problem** — All units feature welded steel chassis for maximum strength and rigidity. Other features include 19" rack-notched heavy gauge front panels. A rear panel switch converts the two channel amplifier to a higher power bridge connected single channel amplifier. Also from BGW is the model 202 preamplifier. Outstanding features include: \* An advanced phono preamplifier design using two discrete component operational amplifiers per channel. The high and low frequency signals are separately equalised to the RIAA playback curve, achieving exceptional accuracy in the phono stage (within  $\pm 0.25$  dB from the RIAA curve). \* A new active tone control system with ultra low distortion and precision calibrated step switches. \* Active high and low pass filter systems with 18 dB per octave slope. \* Special line amplifier output stage capable of driving 50 ohm lines. \* High/low gain switch for optimal signal to noise ratio. \* Fully stabilised dual rail power supplies. \* Plug-in moving coil pre-preamplifier. \* Independently switched pre and power amp power supplies. \* Tape monitor and tape dubbing facilities. \* Matrix input selection.



	POWER AMPLIFIERS			PREAMPLIFIER
	BGW 250B	BGW 500D	BGW 750A	BGW 202
INPUT SENSITIVITY	1.5 volts	2 volts	2 volts	—
INPUT IMPEDANCE				
Phono	—	—	—	47K ohms
High Level	47K ohms	47K ohms	47K ohms	90K ohms
INPUT OVERLOAD				
Phono	—	—	—	100mv @ 1KHz
High Level	—	—	—	10 v
FREQUENCY RESPONSE	2Hz - 65KHz +0, -3dB	1Hz - 65KHz +0, -3dB	1Hz - 65KHz +0, -3dB	20Hz - 20KHz $\pm 0.2$ dB
POWER BANDWIDTH +0, -0.25dB	20Hz - 20KHz	20Hz - 20KHz	5Hz - 15KHz	—
● POWER OUTPUT				
2 Channel	2 x 90w RMS	2 x 200w RMS	2 x 200w RMS	—
Bridged	200w RMS	501w RMS	600w RMS	—
OUTPUT VOLTAGE	30 volts	40 volts	40 volts	4 v into 5K ohms
SIGNAL TO NOISE				
Phono	—	—	—	> 82dB
High Level	> 110dB	> 105dB	> 110dB	> 90dB
DAMPING FACTOR	> 500	> 500	> 1000	—
TOTAL HARMONIC DISTORTION				
@ Full Output 20Hz - 20KHz	< 0.1%	< 0.1%	< 0.2%	< 0.01%
POWER REQUIREMENT	240v @ 4 Amps	240v @ 7½ Amps	240v @ 7½ Amps	240v @ 1 Amp
DIMENSIONS	19" x 5.25" x 11.75"	19" x 7" x 12"	19" x 7" x 12"	19" x 5.25" x 10.75"
WEIGHT	30 lbs	49 lbs	49 lbs	18 lbs

● MINIMUM RMS output power with all channels driving 8 ohms loads over full rated bandwidth. Guaranteed specifications are in accordance with the NEW FTC RATINGS

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## F300 Expander- Gate

- ★ AUTO-DYNAMIC CHARACTERISTICS
- ★ EXPANDER-GATE SLOPES
- ★ VERSATILE FACILITIES
- ★ SUPERB PERFORMANCE
- ★ COMPACT (16 units to rack)

### Technical Specification

**INPUT:** 10Kohm balanced.  
**OUTPUT:** < 1ohm source balanced clip level +24dBm.  
**DISTORTION:** < 0.1% THD at line levels for unity gain.  
**FREQUENCY RESPONSE:**  $\pm 0.5$ dB from 30Hz - 20kHz.  
**THRESHOLDS & NOISE:**  
**Normal:** -40 to -10dBm noise < -103dB ref +8dBm.  
**Effect:** -20 to +10dBm noise < -86dB ref +8dBm.  
**RANGE:** 0-40dB variable.  
**SLOPES:**  
**Expand:** 1:1 to 3:1  
 1:5:1 for 10dB exp.  
 2:1 for 20dB exp.  
 3:1 for 40dB exp.  
**Gate:** 20:1 with hysteresis  
**AUTO MODE:**  
 Averaging network, operating 10dB below peak sensing side chain.

**INDICATOR:** Shows condition and state of operation.

**ATTACK:** A three position attack (open) characteristic on peak sensing side-chain.

**RELEASE:** The attenuate time can vary between 25mS. to 5 secS

**RANGE:** Variable from 0-40dB attenuation. Slope varies from 1:1 to 3:1 as range is increased.

**THRESHOLD:** Sets the point of signal level at which expansion starts. Normal thr. operates from -40 to -10; with a high effect range -20 to +10dBm.

**AUTO-PEAK:** Selects peak sensing or combination of peak and mean level sensing.

**EXP-GATE:** In the gate mode the slope becomes 20:1.

**NORM-KEY:** Allows control from external signal source.

**F316-R:** Sixteen units in rack with power supply.

**F308-R:** Eight units in rack with power supply.



This new expander system is simple to operate yet highly sophisticated in its dynamic performance with an unequalled flexibility for effects use. In the 'auto' mode really smooth dynamic characteristics are obtained with freedom from 'hunting' on the most difficult of signals. This means that these units can be used with confidence on multi-track mix-down to provide noise reduction and a degree of automation.

As non contributing tracks are being automatically attenuated, added tape noise is reduced to a minimum, and in most applications involving limited dynamic range signal (ie pop), the noise will be masked by the signal.

Perhaps most important, especially to systems already equipped with a complementary noise reduction system, objectionable source noise (ie instrument amps, hiss from electronic devices, general studio ambient noise and crossmic pickup) will be eliminated—a very significant area in which established noise reduction units can do nothing.

St. Michaels, Shinfield Road, Reading, Berks, U.K

Tel. Reading (0734) 84487

FOLD OUT

THE LATEST



MODULES

**Type SO5—High-pass Dynamic Noise Filter Gate**

is suitable for attenuating low frequency noise such as hum or rumble; the device giving a flat response in the presence of wanted LF signal.

**Type SO6—Low-pass Dynamic Noise Filter Gate**

can be adjusted to attenuate HF noise as high frequency signal fails to provide a masking effect. Ideal for processing older recordings including classics; for use with electronic instruments that generate noise, and when recording instruments of predominantly LF signal.

Gating action is provided as an optional extra facility on both units.

**INDICATORS:** showing slope or gating operation

**RELEASE:** sets attenuation time of filter or gate

**THRESHOLD:** adjusts the point at which filter slope moves towards a flat response—or point where gate opens

**SLOPE:** pre-sets maximum slope rate attained below threshold level Variable 0—18 dB/oct

**FREQUENCY:** selects filter turnover frequencies. 6 kHz, 4 kHz, 2 kHz on SO6; 100 Hz, 200 Hz, 400 Hz on SO5

**RANGE:** relates to gate mode providing 20 dB or 40 dB setting

**MODE:** selects DNF or gate action

**IN/OUT:** bypass switch



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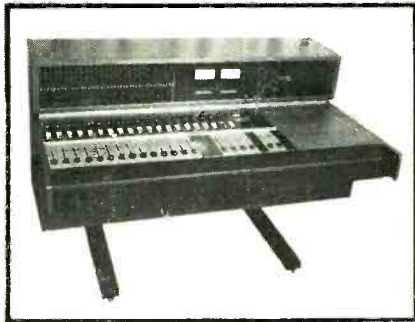
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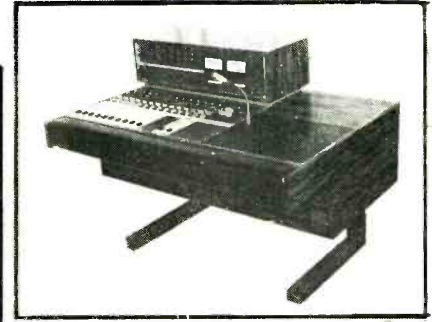




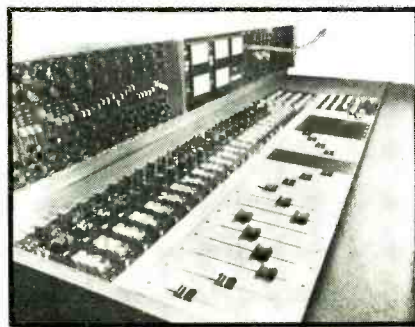
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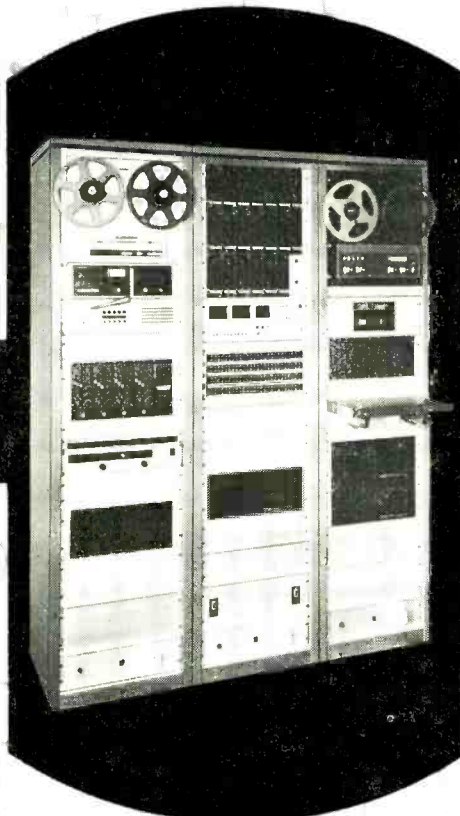
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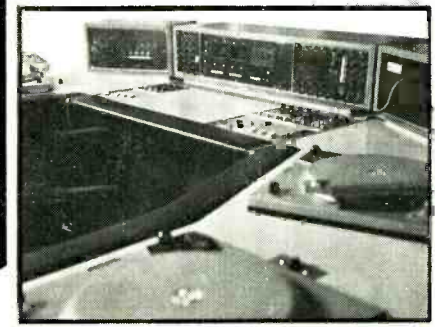
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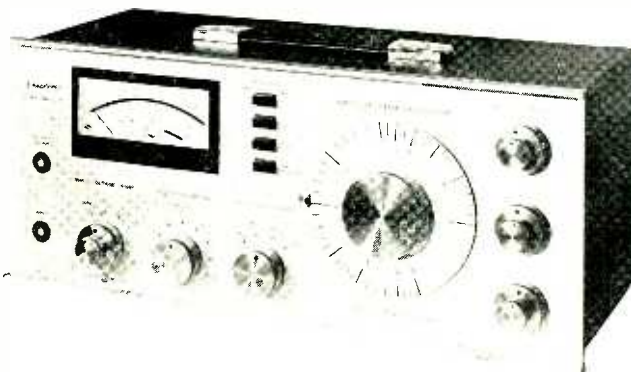


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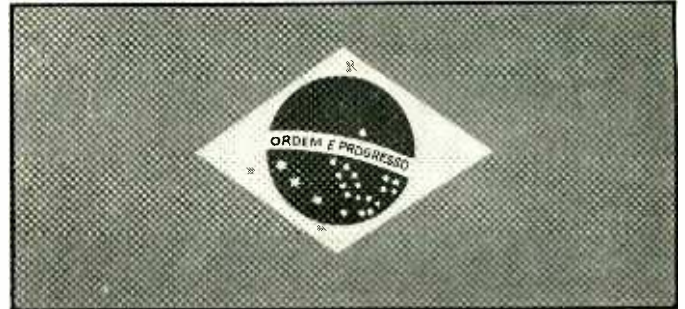
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# Brazil

EDUARDO ATHAYDO  
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**G**EOGRAPHICALLY very far removed from the traditional routes travelled by the greatest idols of the international music set, Brazil has even since last year become increasingly considered an extraordinary market, with audiences keen and able to watch live presentations by artists already familiar to them through records and TV shows. It is only recently that such people have travelled to Brazil. Top performers such as Rick Wakeman, Cat Stevens, Mick Jagger, Jim Capaldi, Eric Clapton and Leon Russell, perhaps feeling pressed by the high taxes charged in their home countries, and perhaps looking for inspiration in the always revivable Brazilian pop music, are now frequently travelling here. The results have been very encouraging.

Rick Wakeman, for instance, had recent concerts with the Brazilian Symphony Orchestra in Porto Alegre, São Paulo and Rio de Janeiro. In less than a week, a remarkable audience of 150 000 young people was attracted. Furthermore, he was surprised to discover that his albums (distributed in Brazil by A&M's representation EMI-Odeon) were high in the best sellers list. In fact, neither the Brazilian producers nor his own managers expected such a receptivity for Wakeman. As a result, extra shows had to be laid on. What happened in this case was an authentic rapport between audience and showman: the youngsters responded with wild applause to *Journey to the Centre of the Earth*, *King Arthur* and *The Six Wives of Henry VIII*, while the artist seemed to respond strongly and played remarkably. To ensure all the necessary luxury and technical standard in sound, lighting and special effects there was a production crew of 70 on hand; the whole equipment weighed 18 tons; the mixing desks were able to handle 285 channels at various levels. Rede Globo de Televisão (Brazil's most prominent tv network) and Projeto Aquarius (government-sponsored music project) who between them were responsible for the tour spent some £300 000 (\$600 000). Rick Wakeman returned to England with about £100 000 (\$200 000) net and probably considerable musical material gathered for further utilization in future albums, such as *Pedra da Gávea (Gávea Rock)*, provoked by Rio's landscape. All the while, his albums had been arriving at the top of the charts, summarising the overwhelming popular reception.

So, since the beginning of 1976 many top international bands—Yes, Emerson, Lake and Palmer, Rolling Stones, Led Zeppelin, Pink Floyd—have been announced to tour soon through Brazil. In the context of such activity and expansion Nesuhi Ertegun, head of the WEA group record companies (Atlantic, Warner Brothers, Reprise and Elektra, are all represented in Brazil by Continental), informs that by mid 1976 WEA will be established in Brazil. Aside from releasing its enormous catalogue to the Brazilian market, the expressed intention is also to promote overseas local music and talents. The whole operation is to be an integrated two-way process.

'After installing WEA in Brazil', says Ertegun, 'we won't limit our promotion schemes solely to American and European records. It

is our main intention to promote Brazilian music throughout the world, releasing new albums and investing in tours. Brazilian music consumption overseas represents a fabulous market to be explored, and I believe that time has come to do something for it. We are also going to back tournées in Brazil by people of our own, like Yes, Emerson, Lake and Palmer, and the Rolling Stones. The record industry in Brazil is expanding rapidly. For a long time it had been limited to a poorly explored local market; lately, however, Brazilians have been acquiring a much more international consciousness towards music. On the other hand, considering that Brazilian music is selling quite well in the international market, we can safely estimate just how much it has progressed and the possible speed of its maturing. Five years ago it would have been almost impossible to put in practice a tour through Brazil such as the one made by Rick Wakeman—perhaps he could have played for a couple of thousand people, but certainly not for 150 000. This is enough to show that Brazilian audiences are really improving, as far as international music appreciation is concerned. Music itself has different degrees of importance throughout the world, and it is my belief that Brazil is one of the most musical sites of all.

'The first time I visited this country was 15 years ago, at the beginnings of *bossa nova*, and as a record producer I brought Herbie Mann with me; at that time I also produced an album by Tom Jobim, called *Samba de uma Nota Só (One-Note Samba)*, and promoted a group that was to become known world wide: Sérgio Mendes. I think that in these past 15 years Brazilian music has assimilated a considerable dose of progress, yet still seems to have inexhaustible resources. Even at times of economic crisis Brazilians put music in first place. This happens in much the same way as in Italy, for instance, but not in France.

'You can be sure that by the end of 1976 I will have sponsored a Brazilian tour for the Stones, Yes and ELP at least. Next year we will be presenting soul-music shows with four or five important names like Aretha Franklin, Roberta Flack, Blue Magic, Margie Joseph, and so on.'

Some three years ago, a group called Secos e Molhados (literally: Dry and Wet Goods) first appeared in popular terms: they released an album which sold 400 000 copies, besides staging presentations for over-subscribed audiences all over Brazil. There was from then on a marked increase in the sales of Brazilian pop music records. Today, works of pop music entirely produced and recorded in Brazil account for about 50 or 60 per cent of the country's total record sales. Credit for this increase could be attributed to the conjunction of the remarkable Secos e Molhados and singer-composer Roberto Carlos—who had been since long before monopolising this market. But it was only after Secos e Molhados' appearance that several things changed and cleared the way for Milton Nascimento, Martinho da Vila, Paulinho da Viola, and also Clara Nunes, who broke a strong Brazilian taboo: that female singers just wouldn't sell on records.



1974 brought both the Brazilian and international music markets to a decline due to the petroleum crisis and its consequence of a shortage of raw materials for the industry. But by April 1975 recovery was obvious; and the increase in sales of Brazilian records drew significant improvements from our record industry, raising standards expected and delivered in areas from packaging to orchestration and recording. There have been great improvements in the work of our phonographic industry's directors, producers, designers and arrangers.

At the same time, changes also occurred in other sectors: for example, middle-class Brazilians instead of searching for imported Lee trousers started to wear similar ones made in Brazil; means of communications improved; highly sophisticated magazines assumed their places at news stands; indeed, people were really beginning to have access to better information. And on college campuses, music was still growing, in spite of drawbacks in the past.

Most recording enterprises have had their good salesmen in Latin-American markets, but Brazil (exporting more music than it imports from Latin-America) has now the whole world watching its potential closely as new trends are considered. The coming of foreign artists has undoubtedly increased sales of foreign records, but our deep-rooted samba has also got its due promotion to levels not recognised before: its own prominent artists are now singing at home and abroad, solidly backed by the important tv networks, on the same basis as top international stars. And while Rick Wakeman is drawing Brazilian crowds to live performances, Mick Jagger parades our middle-class night clubs, Cat Stevens frequents samba sessions, and Eric Clapton orders

fried shrimps at Copacabana's snack bars—in other words, when foreign myths turn out almost as common as our common people, greatly differing from the traditionally untouchable Hollywood-bred artificialism—the image of Brazilian artists becomes highly valued by their public, not only as an idol but also as a fellow being, to be identified with. The big stars of the international music set are simply not being considered so mythically anymore; at least not beyond their true personal virtues. There came to exist, thus, a standard to judge them together with home-bred artists. After all, this mythical aspect can now be excluded from such judgements.

Furthermore, Brazilian music now has its production being encouraged by government subsidies. This provides incentive for local consumption and is attracting interested parties to install new recording companies here. Our phonographic market is still in the stage of expansion, having as main consumer centres solely the states of São Paulo—responsible for 50 per cent of the whole market—and Rio de Janeiro. But the trend is to decentralise in favour of new potential markets such as Porto Alegre, Recife and Belo Horizonte.

João Carlos Muller, Brazilian Association of Phonographic Producers' Secretary and one of Odeon's directors, observes that it shouldn't be considered an overstatement to say that the early seventies established the maturity of Brazil's phonographic market. Commercialisation of recorded cassette tapes was started at that period of time, when we also found definitely consolidated the trends anticipated by the last decade—that sales of albums would surpass in quantity those of singles. Between 1970 and 1974 the

44 ▶



## BRAZIL

Brazilian record market experienced an extremely high development rate that hit, in 1973, a climax of 35 per cent growth. And in spite of raw materials crises, true growth remained at the 10 per cent level throughout 1974 and 1975.

A somewhat odd but significant fact occurred in the same period: Brazil's most important (private) tv network entered the phonographic business. Such an event—which resulted in massive tv commercials to promote the company's records—is considered to have been a turning point and determining factor for the market's rapid growth which, in turn, is held responsible for increasing the number of companies operating in our record business. We find BASF and K-Tel the most important newcomers. Disputes for a slice of the market were intensified, along with widespread adaptation to new concepts, so that today it can be said that there is in Brazil a marketing plan for the record industry—though not a fully developed one, as yet.

The very same period under analysis also distinguishes a clear trend to favour consumption of wholly local products. Though the number of foreign produced matrices released in Brazil is equivalent to that of our own releases, these accounted for more than 70 per cent of the total sales in 1973 and never fell below the 60 per cent level since 1970. As a result, local recording activity is at such intensity as to require urgent expansion of studio facilities in order to keep up with demand.

Actual recording activity in Brazil dates back a long time, to 1913 when EMI-Odeon opened their studio in Rio de Janeiro. Shortly after followed RCA and CBS; Philips added a studio to their record company operation about ten years ago. In the beginning there was a very long delay between technical advance in Europe or North America and following developments in Brazil, although this subsequently narrowed to two or three years. At the present time, a week is all that is needed for information to flow, with perhaps a year's delay in following the techniques. The development here follows the same rhythm as experienced elsewhere, simply varying in the delay in practical assimilation.

The music recording studios have always been tied to the main record companies, who have followed the lead of their originating countries. European influences come mainly from England, with France following behind despite the closer links with Spain. Large independent studios are only now beginning to open: there are two now in São Paulo one of which (Radio Gazetta, and part of a publishing company) has both eight and

16 track machines. Another independent has opened in Rio. There are many smaller studios, but these are largely concerned with advertising work, production of jingles and so forth.

Part of the reason for the inhibition of independent studios is the high cost of equipment, so that they are not viable until a high utilisation is achieved. The price of 16 track tape machines provides an indication. One year ago the installed cost was about twice that in the UK or US, or about £25 000 (\$50 000). The oil crisis caused the government to institute a high levy on imports, and in addition required that the full price of any equipment being imported (if it were not for essential industrial production purposes) be deposited with them for 180 days. Now the equivalent cost is about three times as much, or around £37 000 (\$74 000). With similar high costs in other studio areas, capital investment in any new operation is exceptionally high and can be prohibitive for a speculative operation depending on contractual work from elsewhere.

The close ties between record company and studio mean that there are pressures on studios to develop different from those experienced elsewhere in the world at present. Multitrack working beyond eight track is not much required: there is not the same demand by an artist or producer on tracks for their own sake that is experienced, for example, in the US; discussions about higher numbers of tracks are on a more considered basis. The general feeling among engineers is that eight is perfectly adequate for most working—the usual arguments about 'feeling' apply to recording samba music much more than many other types; going to more tracks makes it more precise, but less spontaneously sounding. This has not changed that pattern of recording engineers, with younger engineers making their first records multitrack and not going through the mono and stereo stages of the older people.

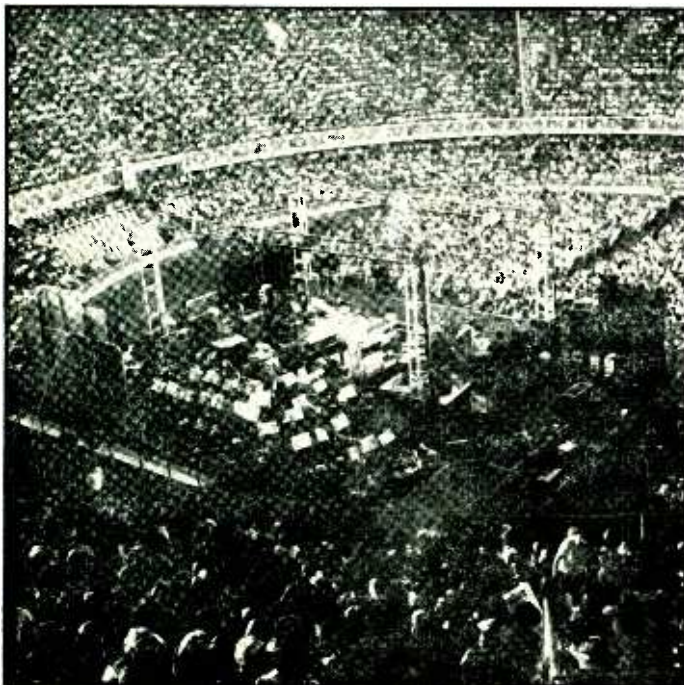
'Classical' music is very much a minority activity in Brazil. What recording there is remains largely government sponsored, and the market itself is understandably European dominated. Classical activities are probably greatest in Porto Alegre, in the south, with a large proportion of European immigrants; Argentina, though, probably has a stronger classical activity and market. However, Brazil rises fast, and the situation could change drastically in two years, with current educational progress across all age groups making it more accessible and comprehensible. While groups used to look towards the US for direction, the orientation has recently changed toward England. Although Brazilian national tunes are often used, these form the same basis as folk derivative music elsewhere. Much ends up as a samba, no matter what the source.

Development in future of the recording business depends on the economic situation and whether the import levies will be relaxed. Although the mood is encouraging, the time taken may be around two or three years. There is a need for more studio time: for example, EMI-Odeon is presently operating three shifts continuously, and is working toward extensions with two studios and a remix room. As has been mentioned, the music recording structure means that development upwards through track numbers is going to be a measured business. Whatever the outcome, the record buyer is not concerned about it; he does not buy records on the strength of the numbers of tracks used.

However, even taking into consideration figures around £35 000 000 (\$70 millions) for total wholesale prices, alongside all previously mentioned data, this market has still a long way to go. For instance, the number of existing record shops is much too small—some 2500—for Brazil's territorial extents; furthermore, the big business of rack jobs and record clubs is virtually nonexistent up to this moment.

On the other hand, it is interesting to note that for the past three years recorded cassette tapes have been in the main responsible for the increase in total sales. Lp record sales are expanding at quite low rates relative to those of cassettes—which keep on selling with 40 per cent increase rates annually and have reached four million units per year.

In summarising this modest analysis it seems appropriate to state that Brazil's record industry has reached the beginning of its maturity, and yet is far away from a stabilisation point. There still is much space to cover; this will come not only from the naturally expected growth of the country's general economy, but also as a result of more active and aggressive use of new marketing techniques.



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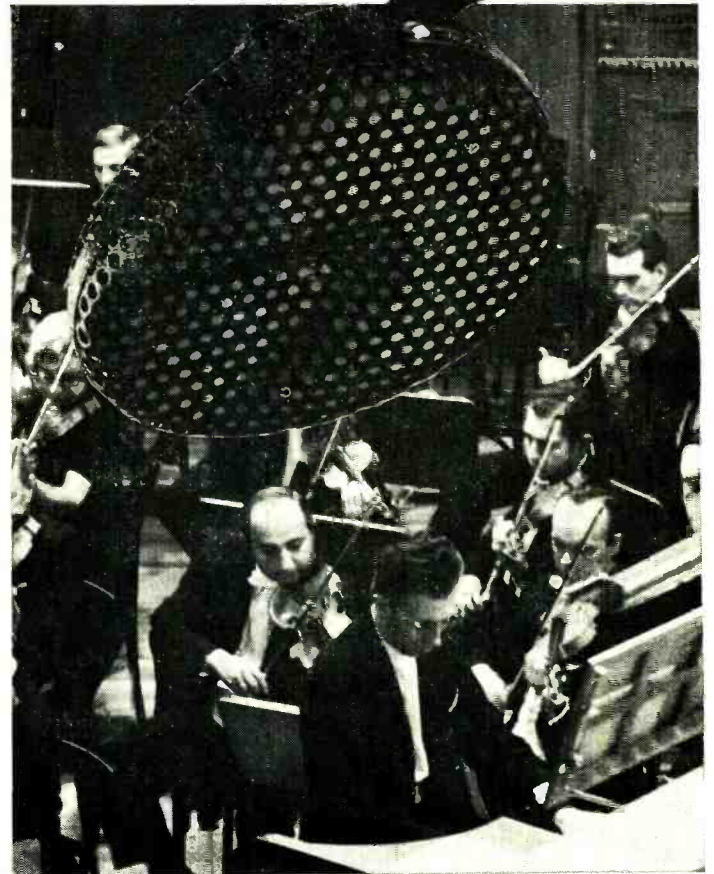
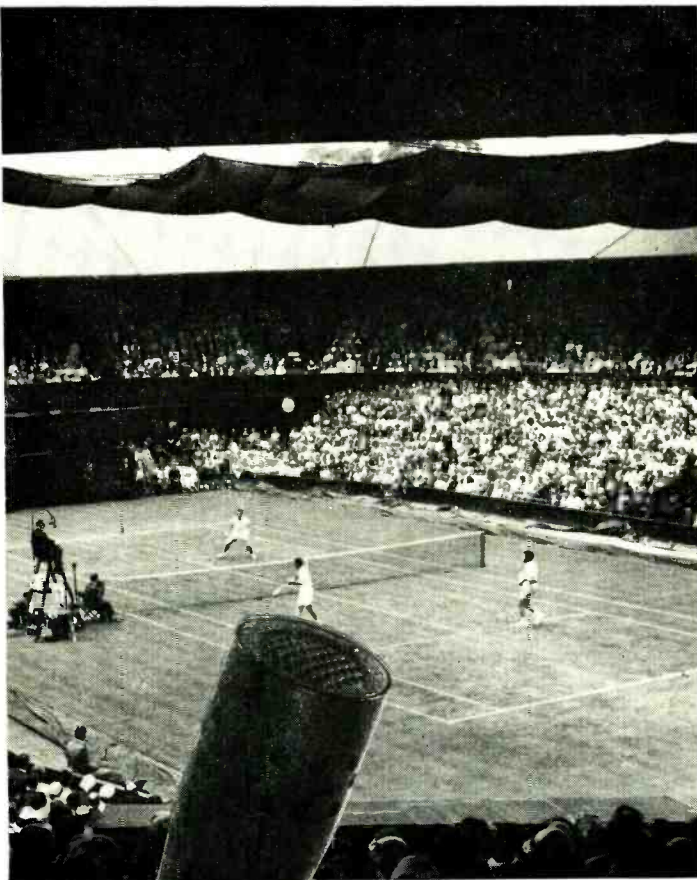
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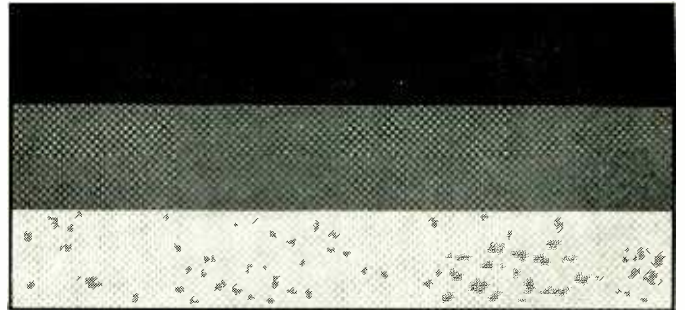
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# Germany

INGO HARDEN



SOME fifteen or twenty years ago German record managers looked upon England or the United States as they might Eldorado for selling music on records. Compared with Germany, people in those countries seemed to be much more interested in 'Tonkonserven'. In the meantime, though, things have changed, and records sell increasingly better in Germany. So 1975 was, in spite of the worldwide economic recession, the best year in the history of the Federal Republic's record industry.

## Economics

The German record industry consists of about 40 firms spread all over the country. The bigger ones are Deutsche Grammophon, Metronome, Miller International, Phonogram, RCA, Teldec and WEA in the Hamburg area, EMI Electrola in Cologne, Bärenreiter in Kassel, CBS and Bellaphon in Frankfurt, BASF and Da Camera in Mannheim-Ludwigshafen, Intercord in Stuttgart, Ariola-Eurodisc in Villingen and Freiburg, Black Forest. As the 'Bundesverband der Phonographischen Wirtschaft', the record industry's association, announced in March, sales increased in 1975 compared with 1974 by more than 18 per cent. Record retailers, disc clubs, mail order businesses and the newly established tv-merchandiser—who by the way advertise with irritating, over-repetitive spots—sold about 150 million singles, lps and musicassettes, that is a value of 1.5 billion Deutsche Mark (approximately £280 million, \$560 million).

In detail the figures show the same trends as in former years: once more the importance of the single 45 disc decreased, to the point that in 1975 only 30 per cent of the total output was singles. In contrast, the long playing record is still going even stronger. Consumers bought 87.4 million albums in 1975, about 13 per cent more than in the preceding year. Classical music kept its market share with about 15 per cent. That is a lower rate than it was in the late fifties, when it reached nearly the 30 per cent level, but this doesn't mean that there is a fundamental change in musical taste. The relative decline stems from the fact that records of light and pop music were for a long time not purchased by the public as much as they might have been. Total sales of classical music participate also in the general rise, with the output rising about 16 per cent within the last year—and the rather high rate of bargain records suggests a considerable amount of young buyers or people new to classical music.

Nevertheless the big winner of the year was the musicassette: 21.3 million of these were sold in 1975; that means an increase of 65 per cent or in other words to a quarter of the total lp sales. So the musicassette is considered to be the second important 'Tonträger' of the forthcoming years. Marketing specialists expect that the musicassette will increase its share up to 40 per cent around 1980; and they anticipate, hopefully, that this will be a supplementary increase which will not reduce disc sales.

Thus, altogether the economic situation of the record industry is not displeasing. A present statistical average overall of 2.5 discs or musicassettes bought per year by each German is a figure which even a few years ago seemed somewhat unrealistic. And in

the international arena, West Germany is now number three of the record markets in the Western world, first and second being the United States and Japan respectively.

Nevertheless there are problems enough to solve by the companies. The famous 'Wirtschaftswunder' of post war times depended on a complete liberalism of the market, and economic liberalism is traditional in Germany since then. So, after the abolition of fixed prices for records we experienced a boom in 'direct imports', which often injured the company's own sales. The boom was caused by the fact that the price level in Germany today is higher than in neighbouring countries such as England. German retailers could therefore buy many interesting records in London record shops at a lower price than they would have to pay at home to the wholesale record company. Sometimes strange things happened. A record might be pressed in—let us say—Hanover and sent to England. It then came back to Germany and was offered in a shop at a lower price than the firm recommended. Factors such as this tended to reduce the price levels for records in general, which explains to some extent the rise in sales.

## Repertoire

Evidently, the profits become lower in this situation of reducing record prices. On the other hand recording expenses and royalties grow steadily. Between them, these trends have influenced the repertoire policy of the companies to a considerable extent. The number of reissues seems to have increased in the last few years. The record producers' venture seems somewhat locked in a pattern, especially when new recording projects are planned for which a worldwide success is not predictable. At the same time the artistic policy of the firms becomes more cautious. In the classical field for example companies seem to restrict themselves on fewer names than in the past. That leads to 'injustice', for in Germany especially there is a rather large number of capable artists who thus never have a chance to show their artistry on records (on the other hand a conductor like Sergiu Celibidache would get his chance immediately, but he rejects it for mysterious anti-technical prejudice). Sometimes the international connections of many German companies evidently prevents the better artists from making records too.

Restrictions also take place in the field of release of tape material by German daughter companies from abroad. Many of the bigger German companies (such as EMI, Teldec, Phonogram, RCA) are affiliates of multinational recording concerns. They could offer an enormous repertoire, but it is surprising to see that a substantial part of the international catalogue remains unpublished in Germany. Special import services allow the collector to buy these records, but many very interesting records are not available in the typical record shop.

On the other hand the actual economic pressure opens new sources for productions, and to realise his ideas the producer now makes use of musical resources not properly considered until now. Musical life in Germany is much more decentralised than it is in England or France. Many smaller towns have their own orchestra and



Left: Studlo Hamburg. Above: Jesus-Christus-Kirche, Berlin.

theatre, and there are no less than ten broadcasting stations in the Federal Republic and West Berlin. In former times there were only a few recording co-operations between broadcasting stations and record companies excepting such as Deutsche Grammophon's coproductions of the Bruckner and Mahler symphonies, or Busoni's *Faust* with the Bavarian Rundfunk-Sinfonieorchester. Today it is quite normal to cooperate with an ensemble of a broadcasting station. Eurodisc has made many fine productions with the Munich 'Sender' too. The record division of BASF issued Othmar Schoeck's rarely performed opera *Penthesilea* with artists from the WDR (Westdeutscher Rundfunk) Cologne under the direction of Zdenek Macal. And the same firm is recording the series of the young Mozart's operas with the ORF Salzburg (Osterreichischer Rundfunk). Teldec produces with Salzburg's ORF another complete version of the Mozart piano concertos with pianist Karl Engel and conductor Leopold Hager.

Besides this there exists a traditional unique 'German-German' cooperation in the recording field. In spite of all political *querelles allemandes* nearly all bigger West German record firms have produced for some time in the Deutsche Demokratische Republik (DDR) together with the 'VEB Deutsche Schallplatten' as partner. On this basis for example Weber's *Freischütz* with Carlos Kleiber and in 1975 the *Euryanthe* under conductor Marek Janowski were produced in Dresden. In particular the nearly unknown and seldom performed *Euryanthe* would not have had its world premiere on records otherwise, for without the cooperation, production would not have been economically possible.

In the field of pop music there are no problems of this sort for normally the German market is big enough to risk ambitious projects. The main problem here seems to be an artificial one: the influence of English and American music is so strong that it is difficult for a young artist to find his own way—and if he does, to find a suitable producer. Nevertheless the last years saw some successful German pop artists like Joy Fleming or Udo Lindenberg. And in the chanson field Uko Jurgens, Reinhard Mey, Wolf Biermann (from East Berlin) and other 'Liedermacher' created a new popular German chanson.

#### The German call for 'Qualität'

For a long time in Germany, the public looked at the record simply as an imperfect recreation of live performances. One of the reasons was perhaps the very intensive and wideranging musical life in all parts of the country, as mentioned above. It has only been in the last ten or twenty years that German record buyers have gradually begun to realise the peculiarity of the medium; they have become aware of the specific aesthetic of the record. This emancipation of the medium was parallel with the evolution of high fidelity, in records and home equipment. And these facts, together with the well-known German demands for perfection, created a special requirement for high quality of record pressings. This seems to be typical for the German 'Konsumverhalten' and is a permanent challenge to the record six main pressing

industry. The pressing firms in Germany have therefore to maintain a rather high level of manufacturing. And this brings us to the six main pressing factories: Polydor/Deutsche Grammophon in Hanover, Ariola-Sonopress in Gütersloh, Teldec and Miller near Hamburg, EMI Lindström in Cologne, Pallas in Diepholz—a seventh opens with WEA near Aix-la-Chapelle—but almost every year produces new problems to be solved. Generally speaking rumble and surface noise are now problems of the past. At present, discriminating record collectors complain unanimously that the most important and often occurring deficiency of the current discs is warping or dishing. The roots of this defect are well known: the discs have become more light and thin, while at the same time modern press machines have raised the speed of pressing. This caused problems of temperature change: if the disc cools too quickly, tensions may occur which lead to deformation. In the last two or three years an increasing number of buyers brought their deformed records back to shops and wanted them changed. Industry has recognised this fact as a severe problem and tries to find a better solution—for example by an admixture to the pvc which will extend the process of cooling. In fact, this is a good example of a market in good state: there is no hint that in the future the record buyers in Germany will not compel the industry to issue records of a very high pressing quality on average, because of this strong feedback from the consumer.

In the field of musicassettes the factories themselves are very interested in raising quality. An example of this arises next year in the factory of Teldec in Nortorf (Schleswig-Holstein), where a new technique of copying and processing tapes will be introduced. The results should bring the musicassette in strong competition with the lp for the first time in the area of quality control. And the technicians are expected to raise the quality of sound on cassettes by a considerable amount.

#### Recording techniques

Some record collectors complain about the sound quality of the records too—and indeed many may consider that we are going back rather than progressing in the quality of recorded sound in classical music. It seems to me, that there are no uniform opinions about the 'best' recording technique that could be used today among German 'Tonmeister' recording engineers and producers. There are specialists who have absolute confidence in the purist recording techniques with only one coincident microphone, even with the biggest orchestral and vocal ensembles. For example the engineers of Harmonia Mundi have recorded the 53-part *Missa salisburgensis* in this way—and with excellent results; the record is often taken as an example of a free, open sounding recording. On the other hand we find examples of extreme close microphone placement. For example, Hans-Georg Brunner-Schwer, manager and proprietor of the MPS production, has tackled his piano recordings with Friedrich Gulda in this way; Teldec did it similarly in its recitals of pianist Joseph Bulva. They, however, are the exceptions. The standard is the use of many

## GERMANY

microphones in what have come to be 'normal' positions in a recording session, but all technical managers of the big companies stress the importance of using the 'Polymikrophonie' in a sensitive way and of the need for avoiding the dangers of that technique when badly applied. There is for every recording, says Peter Burkowitz of Polygram, an *optimales minimum* of technical display to achieve the wished 'Klangbild'. To get this optimum should be the aim of the engineer. Polymikrophonie should not be used as a security mechanism to save time and to enable the mixing of a fine reading later at the desk. Martin Fouqué of Teldec also rejects the common opinion; many microphones are only used to save money at the cost of an optimal sound. On the contrary, though, a recent work study analysis by Teldec has shown that the efficiency of recording sessions today has become lower than in former times. Polymikrophonie, Fouqué says, is a security factor; the quality of the recorded sound will mainly depend on the special use of the technique. One has a better chance to come to good results, and the mixing of an eight or 16 track tape after the sessions is no longer a problem since the Dolby system appeared.

### Studios and equipment

There are three broad groups of sound studios in the Federal Republic of Germany today: the studios of the record companies, the studios of the broadcasting stations and about 40 independent studios. They vary considerably in size and equipment. Some of the independent studios are very small, others have no competition to fear in their particular field. The mixing consoles in use vary from eight to 40 channels; most often one finds 'Mischpulte' with 16 to 24 channels for input and output. A number of studios are already equipped with 'Abhör-Simulatoren' up to 24 channels. Among the mixing consoles you will find most frequently the names of Siemens or Siemens-Sitral as manufacturers; sometimes the name Neve appears, seldom Neumann or Cadac. Among tape recorders there is a clear dominance of Telefunken's *M5*, *M10*, *M15* and *M28* and Studer's *C37* and *A<sup>no</sup>*. Very rarely are recorders from Ampex, Lyrec or Scully. The reverberation equipment comes mostly from EMT or AKG. Every studio is equipped with numerous Neumann microphones, although in addition you will find Sennheiser, AKG, Sony and others.

The loudspeaker set often consists of Klein and Hummel's *OY* (or sometimes *OZ*) or of speakers by Altec and JBL; sometimes you will see a pair of KEFs, Tannoys or Quads. In short, there is no standard equipment in the studios. Every engineer and recording team has found its own optimum solution and built it up. EMI Electrola uses the EMI/Neve console for pop productions, whereas the classical teams record with their own specially designed equipment. Polydor/Polygram established eight years ago its own Audio Research Department to be sure to keep abreast of developments in record techniques. Also it is considered important to have a free exchange of thoughts between pop and classical music engineers 'to guarantee that a pop recording sounds as crisp as a classical one and that a producer of classics reacts as quickly and cleverly as his pop colleague'. Technical-revolutionary news is not in sight, but there is enough to do in evolutionary improvement. The Teldec engineers for example are working (in close cooperation with Telefunken) on a new mixing console with 24 inputs and outputs, which will help improve their overall signal-to-noise ratio by about 10 dB. This enormous result is possible by the addition of many small improvements (concerning amplifier, tape heads, tape) and a newly developed 'Knotenpunkttechnik'.

Besides that the automation of tape control plays a more and more important role. In the near future the mixing will be computerised to a large extent.

### Quadraphony and dummy head

In the public sector, quadraphony is no longer being discussed, the different competing systems having provoked indifference. In contrast, though, it is now as before an important topic in the record companies. But the opinions are as usual in disagreement. Peter Burkowitz of Polydor/Deutsche Grammophon is cautious and reserved: 'In our opinion it is only useful to call for a surround sound if the score demands it. Looking at the music in the classical field, we don't see many works which need a

quadraphonic recording. That is the most important factor, and the question of a satisfactory system is of second order.' The opposite side of the opinion spectrum is marked by Ernst Rothe of EMI Electrola: 'A recording today is more than a realistic photo. It is a creative transcription aiming at an optimal realisation of the score. Why shouldn't we therefore arrange the instruments or voices of a classical work to surround the listener to illuminate the ideas of the composer? Why for example shouldn't we arrange in an opera the orchestra behind the listener and let the singers act in front of them? The main problem today is how to transmit the discrete four channel recorded sound via disc to the home of the listener without heavy losses.'

Record engineers seem to be unanimous now, that all available systems have their disadvantages. SQ and the other matrix proceedings are lacking in resolution until now; CD-4 records seem difficult to press in high quality without a disproportionate percentage of rejects. However, Germany is one of very few places outside Japan or the United States where CD-4 discs can be pressed. At the moment the German broadcasting stations refuse to accept CD-4 (because that would need large investments) and it seems therefore not realistic to think of it as a system for a mass medium here.

So many audio specialists look eagerly to the further developments of the dummy head techniques. Of course nobody expects or wishes the reproduction of dummy head recordings only by headphones. And most engineers look upon the reproduction of 'Kunstkopf' recordings by loudspeaker according to the compensation theory of Volker Mellert as not a favourable solution of the problem either. Technicians, however, are rather hopeful about finding a new way of recording, since it has been shown that a major problem of dummy head reproduction—namely the obvious lack of front localisation in the present arrangements—is not a fundamental fault but based only on a rather simple error: one gets a good front localisation, if the difference of positions between the microphones in the dummy head and the diaphragms of the headphone is compensated. That means that a sufficient dummy head reproduction will be possible.

'The Kunstkopf will be better in the near future, and then we will start to make experiments in recording', a manager of Deutsche Grammophon tells me. Teldec is experimenting too and will soon issue a first dummy head record of pop music. A small firm named Delta records has already released several 'Kunstkopfaufnahmen', and they show least that there are still problems to solve. The main problem is to get a sound not inferior to the stereo standards of today. This seems possible if a 'Kunstkopf' is combined with the conventional microphone techniques.

It is probably not wrong to certify the German record industry as maintaining considerable vitality and efficiency. Nevertheless the branch has a rather bad image in the public opinion of the country. It is often called the 'Haifisch-Branche' (literally: 'shark branch') in the press, and its management is shown as a club of pure capitalists using all possible tricks to get a maximum profit at the cost of music and artists. Moreover the Federal Government claims from the record companies now as before the full Mehrwertsteuer (value-added tax) of 11 per cent, while for journals, books, theatre and all other cultural activities only the reduced tax of 5.5 per cent is required. The firms unanimously oppose this treatment. They went to litigation before the Supreme Court of the Federal Republic—but without being successful. And they fight with a remarkable bitterness which does not help to change the public opinion positively. A new attempt to achieve a better reputation was made in 1973 when the Deutsche Phono-Akademie was founded, financially supported by about 20 firms. The academy will stress the cultural importance of record and music industry for the musical life of Germany today. But the public activities of the Phono-Akademie have been concentrated until now mainly in the annual presentation of the German record award—the Deutscher Schallplattenpreis was originally founded in 1963 by the publisher of one of the two German record and hi-fi magazines. Whether the Deutsche Phono-Akademie will be able to attain an enduring change in the public opinion, nobody can predict now. But it seems evident that a change will not happen before the centenary of Edison's invention of the phonograph in the next year . . .

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# USA:west

GORDON SKENE



FOR MANY YEARS the United States has had a curious musical split into two distinct groups: the East Coast scene and the West Coast scene. But, in particular, you never realise what mixtures the West Coast has to offer until you travel from community to community. On any given day if your ears are tuned and your car is filled with gas you can travel round Los Angeles and amaze yourself with marked musical contrasts from r&b to jazz to Chicano folk music to classical to rock and to pop. Eventually you reach the outskirts of the city, heading east to the desert or north towards San Francisco, where the music is still and probably will be country and western.

How does the music industry in the US accommodate so many varied tastes in music and if so how does it do the job adequately? First of all, the major power structures in the music business—the corporations which in reality dictate the majority of musical taste—do not in truth accommodate this wide range of tastes. In a monetary sense this seems justifiable. Secondly, if the bulk of the recordings are aimed at an am musical audience which is played at rather than played to, the failure of the US music industry to compensate for this loss and the audiences' seeming indifference to the current state of the media suggests that the present American music industry seems in rather sad shape creatively: although business is booming, the handling could be better.

There was a time some 10 years ago when a casual walk down the Sunset Strip turned up wave after wave of promising bands. Today the clubs have vanished. In their place are concert halls such as the Santa Monica Civic, the 18 000 seat Forum, the 16 000 seat Long Beach Arena, the 20 000 seat Anaheim Convention Centre and the Hollywood Paladium. In different areas throughout the city discos have sprung up, mostly playing canned music but some offering live music. This orientation towards a dancing crowd pushes the emphasis in any band's repertoire to the Top Ten. If a band is striving for originality they must wait until they feel they are good enough to impress a&r men, or

perhaps play a free concert. A commercial band stands a much better chance of eating in LA, as anywhere, than does a progressive band.

Although many creative things have taken on a pessimistic air in LA, over these last few years many things have happened to add new hope and excited anticipation of future development in the recording industry. As it stands today there are over 100 16 and 24 track studios in Los Angeles area alone. These studios vary greatly in quality of course, but there are still 100 accessible studios for the potential hit maker to use and from which to benefit. In addition to the 16 and 24 track level we have the new wave of Tascam-type studios, generally two and four track practice places aimed at the band with little or no funds. These studios rent from between \$2.50 and \$5 per hour. They are usually home made studios constructed in garages from materials of cartons and old carpets. The casual guess is about 200 to 300 of this type of studio.

The cost of studio time for 16 and 24 track has pretty much standardised over the last two years, and most studios are charging between \$110 and \$150 per hour, with

6.25 mm tape averaging \$12 and 50 mm tape from \$75 to \$120 to the client.

Unfortunately the serious group or producer has only relatively few of these 100 studios to choose from which have proved to be consistently good. Among them are Kendun, the Record Plant, Western, Village Recorders and Wally Heider's. In this situation, it's surprising that the major record companies' studios are falling way back on house business, with much increased use of independent studios. One of the five major record company in-house studios, CBS, has completely abandoned operations in LA.

The past two years has seen a rise of the independent engineer such that the majority of studios in LA is now almost entirely operated by freelancers. With very few exceptions, most studios have only one or two staff engineers.

With the new wave of freelance engineers, a new wave of professionalism has appeared. In recent years, more widespread attention and respect has been paid to aspects such as miking. The days are gone when an engineer will pick any type of random mic for an instrument. Such professionalism was overshadowed

Below: Tower Records on Sunset.

Opposite: across the street.





particularly in the late sixties when a plague of self-styled engineers appeared more concerned with how music was going to be mixed as opposed to how it was being recorded.

From all points of view, the present studio situation in LA appears to be the healthiest it's been in a long time with a slickness and integrity that until recently had been in decline since the 1950s. From the end of 1975 to the spring of 1976, recording studios in Los Angeles have had more business than at any time in the last 10 years. Studios like Kendun are booked as much as three months in advance; and Kendun's new studio which won't be completed for some time yet is booked way into July.

Typical of problems emerging due to multiple studio use is incompatibility between tape mastering decks. There is a wide range between the track widths of common mastering machines. Therefore cutting of albums mixed at various places can be difficult. Another standard element has been introduced to the LA studio scene—the automated mixdown facility. Here, as in the tape machine area, is a problem of incompatibility. Such difficulties with consumer items are rather commonplace, particularly acute now with the advent of home video and quadraphonic sound. However, incompatibility on the manufacturer's level is more pronounced and very often more serious.

Quad/Eight introduced their Compumix system some years back. Allison's processor system, of similar vintage, has been adopted by many console manufacturers for automated mixdown. The Allison system is at this point, by virtue of its spread, the closest to a standard system of automated mixing. In competition with sound and quality mix will soon be another automated system, manufactured by MCI. However the expectation is that the new system will be incompatible with the others. To complicate matters in an industry fraught with incompatibilities, MCI is also introducing 76 mm tape machines, with the co-operation of tape manufacturers. Also, this proposed machine may run at 38, 61 and 76 cm/s (15, 24 and 30 ips) which makes

such matters even worse. Now undoubtedly this will sell, because the studio owner who is unsure of himself but can get an album to be recorded on 76 mm tape will be assured that the album will be finished there—because few others will have 76 mm tape. This provides security for the small studio owner, who will jump on it, but it seems irresponsible for any manufacturer to even think of bringing out another standard in this already confusing state.

Most recording engineers have now steered away from gimmickry. This was so easy to indulge some years back, but now the majority of producers is leaning likewise. Even though most effects aren't being used much, most studios will have them on hand for the assistance of a producer.

Another practice that has grown from the independent studio is the session musician as almost permanent house guest. Kendun, like many other studios, caters quite a bit to the session musician and if an engineer likes the particular way a session man is playing the two often work together on more than one session, and usually the session man has friends who play all the required instruments. The relationship blossoms from there. Many studios get into the habit of making their surroundings more comfortable and often a competition starts to see who can come up with the best environment. Record Plant has a jacuzzi bath and sauna; Kendun has a dark cave atmosphere with individual headphone controls for monitoring. The society of the session men, though, remains an exclusive one and unless you have a long list of hits to your credit the only other way of entering is to be English. Aside from that, it is a long and sometimes painfully slow process getting there.

From the issues current in the studio scene in LA we turn back to the problems in music industry structure itself. During the early 1960s when stereo was in its infancy and any pop record had a chance to make a million no matter how bad it sounded from a musical or technical standpoint, there was a certain naivety concerning the music business as a massive commercial commodity. Heavy emphasis was on background oriented music and the occasional stereosonic spectacular such as *Thus Spoke Zarathustra*, not to mention the burgeoning teenage singles-buying market.

The same naivety is now true in many ways, I feel, for the bulk of a&r departments throughout the country, reflected in their resulting approach to the channeling of new and interesting acts. I feel that it is one of America's great national pastimes to locate trends and then drown the audience with them. With the imminent decline of disco-oriented music, many American record companies are now wondering curiously what is going to happen next.

With the rise in discos three years ago came also the rise in many other forms of music. Country and western branched off into the pop field causing previously exclusively country stars such as Waylon Jennings and Willie Nelson to be followed by the pop culture. Jazz became

intertwined with soul and pop, making the likes of Chic Corea and Miles Davis accessible to both markets. The influence of ELP and Rick Wakeman has had a marked effect on the tastes of the newly re-discovered classical market. All these new influences and varying tastes in music have caused numerous headaches with record companies trying to pin-point trends; and subsequently many are floundering. Perhaps it's becoming economically less feasible for them to cover so many tastes, but that is for their deliberation.

One record company worth mentioning as currently promising in California is the American counterpart of an already well established English record label: Island Records Inc. After a brief and less than inspired association with Capitol Records a few years back, Island decided to go into independent operation. At first, the idea was met with a chorus of local scepticism. The thought of a record company, particularly a relatively small one, going it alone without the support and/or sanction of a larger company seemed suicidal.

Two years after their change, Island is laughing at the sceptics and demonstrating that a small label with a keen eye on a specific market can still do far better than a large company with random guessing. With this assurance of a place in a crowd of record companies, Island has gone about changing various other attitudes in the face of rather uncertain odds, one being the introduction of Antilles—a low priced label featuring previously deleted Island material mixed with items that have never before been available domestically. The success of this venture so far is good. Reaction from consumers and press alike have been more than gratifying. Since the beginning of 1976 Island has managed to place itself with Antilles in the same rank as CBS Odyssey and Elektra Nonesuch in issuing consistent quality products both musically and technically (albeit in a different musical area) to the US market.

When visiting Los Angeles, people receive an impression that everything has an air of subtle tranquillity. But behind the doors of any record label or studio is often a constant state of mayhem making the calming effects of the Pacific Ocean almost unbearably shocking. Obviously it is difficult to handle this situation and maintain a state of professionalism, and so a number of studios are branching out to other areas away from the city. Spectrum Studios are located 20 feet away from the Pacific Ocean in Venice, Salty Dog Studios are in the hills around Sunland. One of the most attractive and sought after is Caribou in Colorado. Each of these places offers different environments for the artist to record, different working situations for the engineer. Even though working in Hollywood may not seem that big a hassle to the person or group from New York, there is elsewhere the added inspiration and more relaxed working feeling coming from working in a country surrounding.

Another increasingly unsettling trend in



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## USA: WEST

Los Angeles, which may prove to be a blessing in the long run, is the independent production. With the increasing number of groups trying for a break in LA and record company staff producers down to a minimum, a number of studios are offering combinations of engineer/producers to find and cultivate worthy projects. One such studio involved in this is Cherokee Studios in Hollywood. Once the home of MGM recording facility, Cherokee now flourishes as a pop and country facility doubling as a production house and linked to major labels, which for an unknown band is a great attraction. Another similar operation is His Masters Wheels studio in San Francisco run by Elliot Mazer, long a top producer in his own right.

But what do these producers look for? What kinds of sounds are they trying to achieve? For the past few years the LA sound, if you care to call it that, has been live in feel, augmented by horns and accentuated by bass and drums. Drums and bass are the key to a lot of local technique and are equalised to bring out a bright, sharp sound. Keyboards are prominent, in the sense that synthesisers play an important role in the overall picture, with the string ensemble taking a considerable share also. The Mellotron has never won the favour of American bands, due largely to unavailability of spare parts and lack of repair knowledge leading to frequent breakdown. The overall aim is often one of a natural sound with very few overdubs. Striving for the 'home-grown organic' feel which can be adequately duplicated on stage is of prime importance.

This is not to say that the make-up of the typical recording group in Los Angeles is in the Eagles or Linda Ronstadt period. There has been, for example, a rather curious wave of new bands turning up in LA which are copies of Genesis, with carefully duplicated theatricalities and rhythm patterns. These bands too have their share of talent in Los Angeles, but the question of whether their success is a function of passing fashion or of their musical ability needs time to answer.

When surveying the entire music scene in California one tries, but cannot entirely escape, the feeble mental state of the media. It has often been a point of embarrassment to explain the radio situation to a stranger in this town. Considering that the bulk of musical success depends on radio exposure I am very sorry to say that we are way behind the times compared with the rest of the country.

The irony is that Los Angeles is considered by many in the US, as well as in the rest of the world, to be one of the music capitals; however, the media here are off-base, unresponsive and almost totally unimaginative. This is especially unfortunate in view of the enormous power they have developed and now have at their disposal for influencing the way Southern California goes about buying records.

When the networks all but abandoned

radio in the 1940s in favour of the new media of television, most creative force disappeared too. Radio was left to fend for itself and to die a death of neglect. During the 1950s came research into radio, this time as a perfect media for recorded music with fm being reserved for the audiophile and carrying not much programming other than simulcast from the am band.

But as time progressed, the airways became flooded with disc jockeys whose exploits in the field of records live to this day in various halls of fame and infamy. The 1960s came along with everything being geared to this Top Forty format, the constant stream of hits. Around this time, fm radio came into its own as offering a musical oasis for the starved purist. As time went on, influence of other types of pop music increased and fm became an integral part of underground LA life. Then as the 1970s wore on, so did the commercial viability of fm and the underground radio station became suddenly commercial with more advertisement, less careful selection of music and more high-powered djs, paralleling the opening-out of rock music. Today, the oasis of fm in LA has become a nightmare with scant few stations providing any sort of relief from the incessant station changer. Only recently has any improvement come about.

In the earlier part of this year KUSC, a college-operated station, parallel with the increasing active KPFK, a listener sponsored outlet, and underwent a renovation in programming aiming at the more discriminating tastes of the classical listener by broadcasting live concerts from orchestras throughout the country. This increased classical activity has been long awaited.

One major problem has been the inflationary rise in the retail prices of albums over the last two years from \$5.98 to \$6.98 and \$7.98. This has caused a high percentage of record buyers to forgo the shopping experiment and concentrate simply on records which have received either air play or some kind of notoriety through another source.

The quality of pressings, even aside from Dynaflex which has provoked many buyers to return defective albums up to an unprecedented figure, is for the most part poor or poorer than expected in the past. Much of this can be traced to economic belt-tightening on the parts of many major record labels.

Kent Duncan, owner of Kendun Recorders in Burbank, has some views on the problems of pressings in this country. "The vinyl shortage in the US some years back proved to be an adequate excuse for many pressing plants to excuse faults in their operation. Quality pressing plants have used as much as 80 per cent filler in pressing, and in one case a major company pressing plant—which also presses for smaller labels—was using 100 per cent filler for pressing: not one speck of virgin vinyl. Unfortunately, the record label had in the final analysis to rely on the pressing plants for assurance of quality." Duncan went on to give an example: "When we cut Stevie Wonder's new album

we calculated from the initial order of 700 000 units that they were going to make 750 sets of stampers from 42 sets of lacquers that we cut. We only listened to 42 test pressings, one from each set of lacquers. Off each set of lacquers you can have as many as 10 sets of stampers and it is possible, if you handle your pressing right, that you can have 20 sets of stampers from a master. And that being the case you really have to rely on your processor because the stamper is only good for one to two thousand pressings maximum.

'And a stamper always dies a violent death. It is either destroyed by uncool plastic or mis-operation of the plant. This situation is aggravated since the records come off the line packed 25 to a box. When a pressing shows up which is defective due to stamper condition it has another 24 with it. So when someone buys a defective record and takes it back for another, it is more than likely that they will get a similar defective record. This situation happens constantly and many people refuse to bring back their records because they'll get another one just like it. I suspect that there are five to ten times more defective records around than the number returned.'

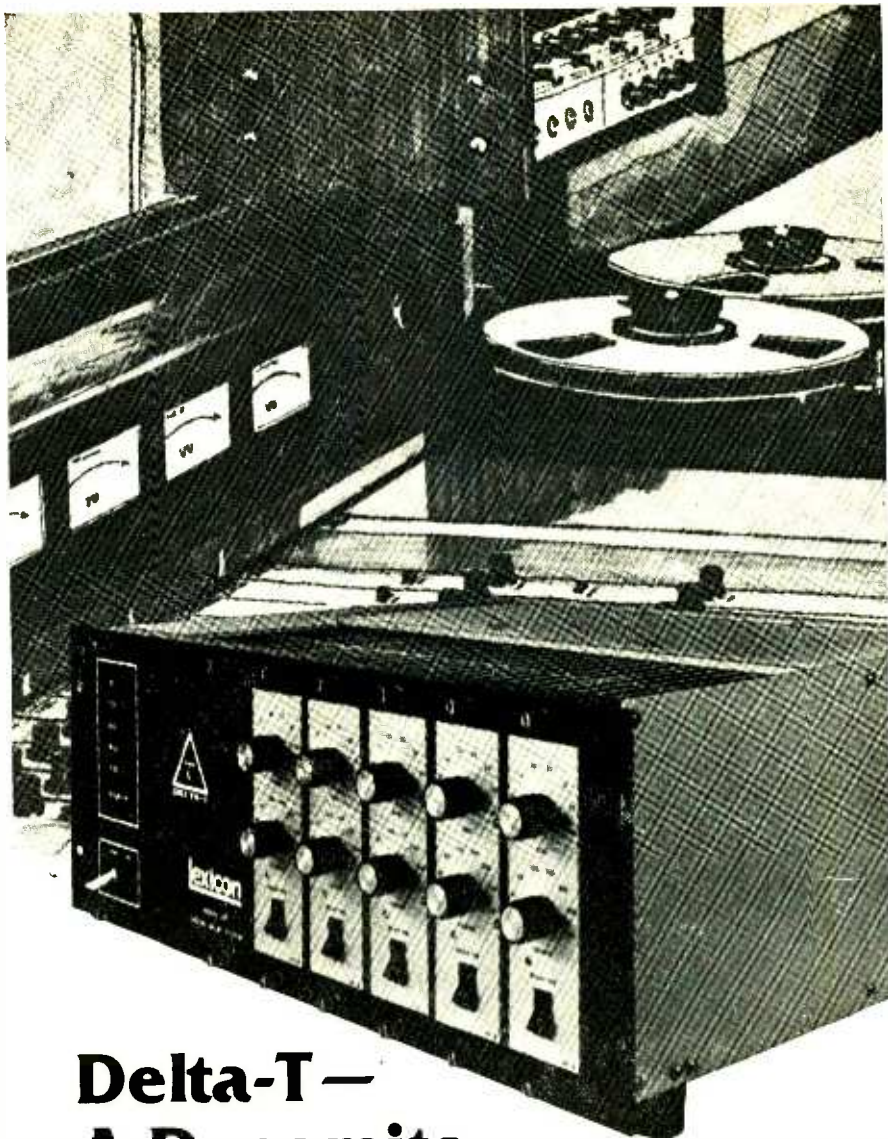
The world pre-recorded music business turns over \$5 billion a year. \$2 billion of that is in the US. Almost half the world music market is in the US, so when there is a hit there is an immense pressure to get it out. So everything is thrown to the wind, and even when a conscientious pressing plant says 'we need a new set of stampers but it will take two days' the record company pushes the plant into pressing and shipping all they can.

It is interesting to note that import sales are increasingly high. Many consumers will choose to spend an extra dollar or two for a high quality pressing rather than risk the chance of buying a defective domestic record. This is another factor that pressing plants should take into account, for if the demand for quality is not met domestically it will be met somewhere else.

Undoubtedly the make-up of the rest of the industry at least in LA is changing. Perhaps spring has something to do with it but everyone here is optimistically anticipating something. There appears to be renewed interest in the face of many setbacks, both physical and financial. No-one here seems to know just what it is and no-one is venturing to guess. The taste in music on the parts of the majority of the American audience is now hard to pin-point. But one thing is certain: the American audience is becoming quality conscious. The days are gone when anyone could record anything and it would sell to someone. With the increased cost of records and the improvement in home producing equipment, the demand for high quality music and pressings is central.

Eventually, the entire face of the American music business and the West Coast contribution in particular will change. I consider that, after all these years of being considered embryonic, we are finally taking ourselves seriously.

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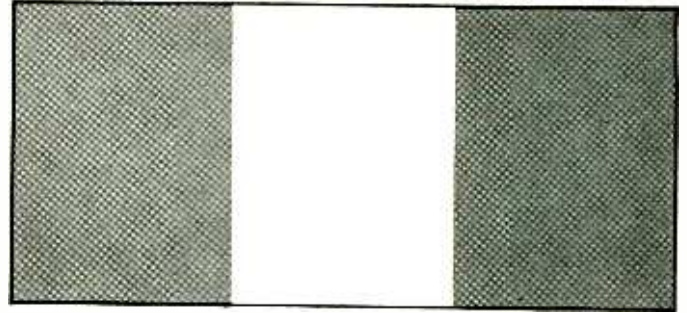
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# Italy

ALBERTO ALBERTINI



THE DISSEMINATION of the numerous recording studios throughout the Italian territories gives a clear, although non-specific, idea of a 'sound-producing country'.

Of the vast network of recording studios, we find that the bulk is in Milan and in Rome (with approximately 30 to 35 studios in each town), while the remaining studios (not more than 20 or so) are to be found in Turin, Naples, Florence, Genoa, and in other smaller centres. This figure refers to studios of varying capacity, in terms of dimensions and equipment available.

The main differentiation between Rome and Milan is that in the former there is a predominance of cinema studios, while in the latter the recording studios prevail. Some 20 to 25 years ago, the differentiation between the two sectors was even greater. In the 1950s, the major sector in Milan was constituted by disc recording studios, which availed themselves of equipment imported from Northern Europe—and more particularly Germany—while Rome was then, and is still, the open city of the cinema; this gives it a set of firm traditions and a collection of American equipment, particularly Westrex.

The position has changed considerably, thanks to a marked improvement in the field of communications, but primarily as a direct consequence of the increased foothold of tv. It is a fact that the demand for short films, for direct tv advertising, brought about the 'birth' of a new type of publicity cinema in Milan together with a series of studios dealing with the production of sound tracks, both for the tv medium and for radio advertising.

This preliminary, and condensed, panoramic view of the market and of the situation is illustrated by the statistics (fig. 1) which, unfortunately, relate only to 1973. The data for 1974 are not final.

If we examine these data and, more particularly, if we compare them with those available for other countries (on a pro capita expenditure basis) we note that, so far as expenditure on records as related to income is concerned, this particular market is bound to expand. During the period 1974-75, we have seen, indeed, such an expansion. However, we are unable to gauge its importance in terms of market value as yet.

All we can do, at this stage, is to draw certain conclusions. The large record companies are, in total, only eight (dealing with recording and all other intermediate processes, culminating in the pressing of the record). Surprisingly, it is an industry which is in full swing, in spite of the well-known economic crisis. The reason for this full-speed productivity is due to the unarguable fact that the proportional increase of price per record is well below the average increase in the cost of living. However, there are numerous factors to be considered, which can be summarised as follows:

- the enormous developments of hi-fi equipment in the last few years, the relative improvement of selling prices, in relation to the quality of the products, and the education of the public at large (who eventually demanded a better reproduction)

and

- the potential market of the 'younger generation', which thrives on music.

We are therefore faced with an increased demand, to satisfy a distinct requirement originating from live production—the theatre. This applies both to classical and non-classical music.

We can draw one important conclusion from the above, namely that the younger generation is an important buying sector of the population. It is a fact, now, that the younger generation is buying more and more records. And it is also a fact that they themselves have determined the important transition and transformation of the record from a mere standard product to a means of cultural improvement. These are important considerations, which demand a detailed research in the price structure of records. This transition is taking place in Italy as well, and this is shown by the detailed research carried out by specialised publications. Their initial results tend to indicate that we are now faced with less conformist tastes—in the specific sector of classical music—as compared with a few years ago. The rehabilitation of folk music has opened new avenues, and this has probably taken place in many other countries. Some people have learnt that folk music is not a sub-culture, but *another* culture. And this means that there is not only a new type of entertainment to be explored and exploited but, above all, that that particular sector of the population which was previously excluded from the 'official culture' (that is jazz or classical music, for reasons of 'structure'), is no longer forced to focus on a sub-culture (which, no doubt, folk music is) but now can identify with a real culture and draw certain pleasures from it.

The production sector of the city of Naples demands a completely different approach. The Neapolitan song is well known all over the world, and as a result of its popularity Naples has seen the birth of an independent centre dealing with the recording and pressing of records, constituted by four or five recording studios. It is in effect a minor world producing a large number of records for the home market and for export. The Neapolitan song is a very complex item. It is primarily, though, a consumer-durable which has been exploited for a number of years. Its fame is firmly attached to a few 'greats'. Today, it is only the sincere presentation of certain rare songs which attracts those people who are deeply fascinated by this type of music. Nevertheless, we can see here a genuine folklore in gradual expansion.

The whole world knows, most probably, that the musical Italian people can only claim a limited musical knowledge. However, there is a certain musicality which, in the past few years, has proved to be on the increase. Most probably, the same situation applies to many other countries with an historical background and a set of traditions similar to ours. It seems certain, however, that—so far as Neapolitan songs are concerned—this type of folk music will inject new life into the industry.

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## ITALY

### What is being Recorded in Italy?

#### How is it Recorded?

Italy records pop, folk, light music, film sound tracks.

No classical music is ever recorded (!).

What method of recording is widely used? Track-on-track.

As a rule, the recording is undertaken in separate sections. There are however a few exceptions (some highly sophisticated recording studios, specialising in sound tracks). We are now faced with a chicken-and-egg dilemma: who came first, the small recording studio, which established this technique of separate recordings, or the multi-track method of recording which has made it possible for separate recording units to survive?

Well, the small studio came first. It is a fact that there are very few big studios even now. As far as recording of 'live' programmes is concerned, there is no adequate equipment available.

During the 1960s, the recording was done by means of four or six track equipment—very rarely on eight track. From 1970 until 1975, on the other hand, things changed dramatically. Numerous eight track units were installed. The requirement now, however, is for 16 and 24 track.

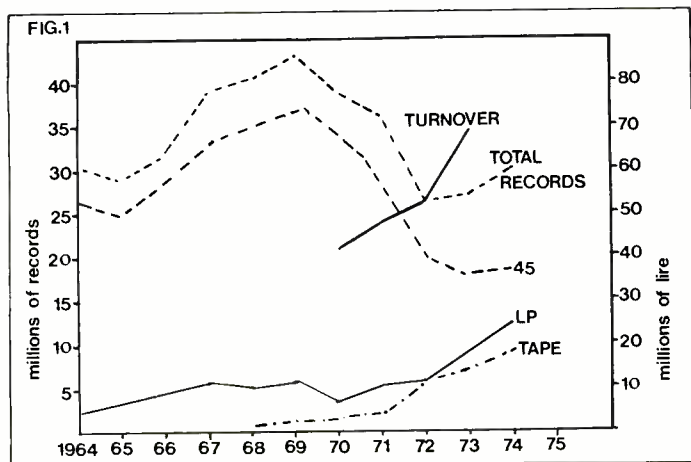
The tape machines available on the market are: Ampex, Studer, 3M, Telefunken and Lyrec. With the increase in the number of

The advantages are: scope, investment and therefore higher quality of the equipment. The disadvantages will become even more apparent, in terms of creativity, if the concept of exploitation of the studios is production-orientated. One could think that these important undertakings should be followed by a serious crisis, because the high running costs may well render the whole operation scarcely remunerative.

However, there are two good reasons which make us think that this will not take place. Firstly, we have the statistics, which show us that the pro capita expenditure on records is still very low. Secondly, the fees charged by the recording studios are well below those charged by other European studios. The recording techniques—track-on-track by means of multiple tracks—show that there is no need for a large studio. Therefore, the small studios will not disappear. However, the 16 and 24 track equipment will have to be implanted even in the small studios.

Those studios which have reached 'safe point', because they have already modernised or replaced the main items of equipment, are now trying desperately to add to their stock by means of improving equipment with compressors, condensers, parametric filters, etc.

Those studios which have not purchased such equipment try now to compensate the mixing stage by means of auxiliary filters. Therefore, there is a brisk demand for accessories.



Il Mulino, Anzano del parco Camy

tracks we see a greater demand for compact recording units.

The recording unit is replaced more readily than the recording control panel (mixer). The panel is often modified and updated. However, new and more advanced studios come to light. Their equipment is brand new, therefore their consoles match the recording unit. When this happened, most of the other studios had to modernise themselves.

Several manufacturers introduced new models that can be used in conjunction with 16 and 24 track recorders, in accordance with the particular requirements of the 'new sound'. If we are to judge on the basis of application, we are forced to conclude that Cadac offered the possible solution to these problems, their desks being much more widely used than others. Telefunken are also on the market with a few new items.

We have, therefore, a complete transformation which most probably will give a new impetus to the record industry. It is odd to note that the Italian record industry forms part of the Italian mechanical metallurgy industry because, after all, records are produced by means of presses in real workshops. The record is alive as an industry only insofar as this particular phase of the operation is concerned. In the other stages, particularly the recording stages, the industry is non-existent. It is an artisan movement at various levels. Now, the recording itself has become an industrial process, complete with all the advantages and disadvantages.

It is interesting to note that there is an insufficient use of reverberation units. This is an important point, because most probably it forms the main difference, when we compare techniques with other countries. It is not right to give hard and fast rules, particularly when these are related to a sector which, by its specific nature, yields a unique product. However, although the average Italian record is of very high quality, the sound is somewhat 'fuzzy' and less accurate than that of other discs. The reasons for these 'imperfections' are many. The musical end-product suffers from a track-on-track recording approach. There is also the factor of inadequate studio acoustics, and therefore the artificial acoustic prevails. More frequently, only one reverberation unit is employed—seldom two. There is a limited use of delay lines.

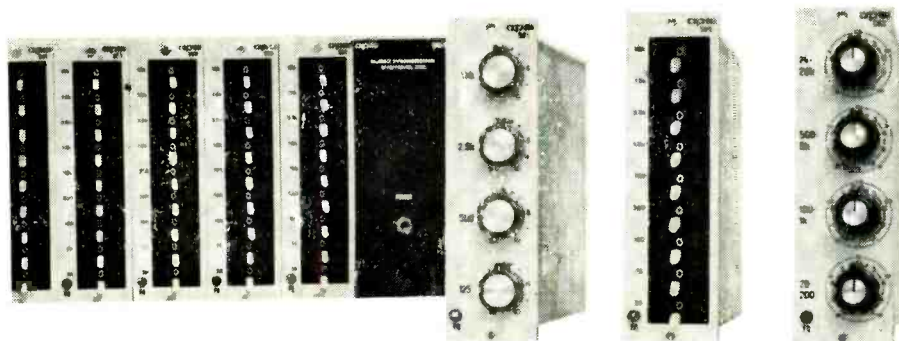
### What equipment has the Italian record industry available?

There is a large number of multi-track units in Italy. The total number is approximately as follows:

- 30 8 track units
  - 37 16 track units
  - 6 24 track units
  - a few 16 track units that can record in a 24 track mode
  - a few 24 track units that can record in a 16 track mode
- Each recording studio has at least two 6.25 mm machines, plus

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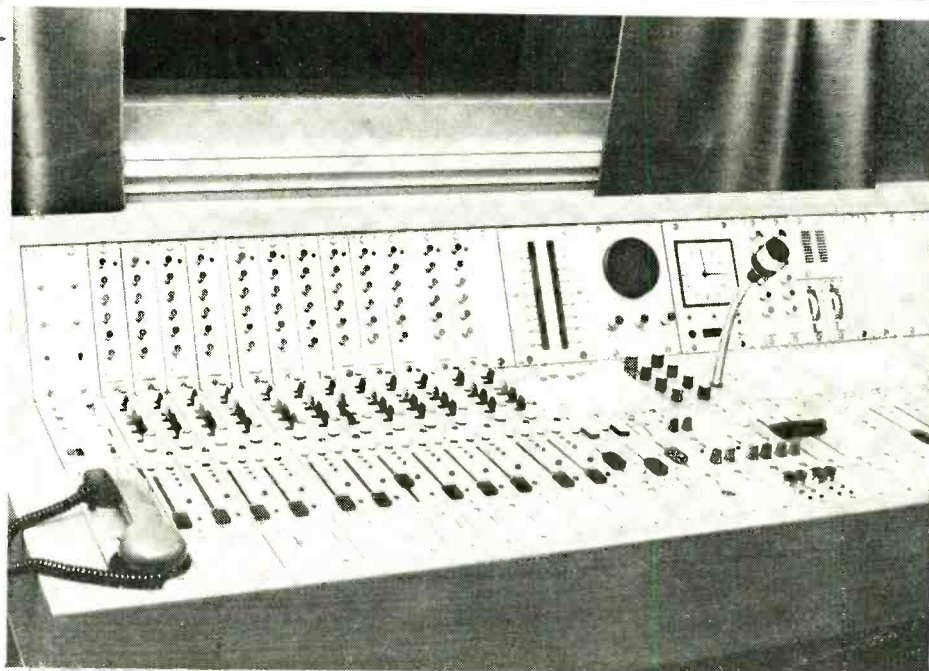


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## ITALY

numerous mono units for advertising and cinema work.

The control panels (mixers) situation is in full transitional swing. Cadac and Telefunken have the main new units.

The reverberation units are mostly EMT 140, followed by AKG and, finally, EMT 240. The most common monitors are JBL, Altec, Klein and Hummel and Tannoy.

Microphones—Neumann, Schoeps, Sennheiser and AKG.

At the moment there is a great interest in compressors, special filters, etc. There are very few delay generators. Dolby noise reduction is widespread.

As far as the optimum number of tracks is concerned for use in the modern recording studio, the opinions are differing. Some experts maintain that the 16 track solution is perfectly adequate, others believe that in order to overtake the present 16 track competition one should employ the 24 track mode.

However, those studios which have tested the 24 track unit believe that this new type of recording system presents other new problems, namely the difficulty of converting a recording unit from 16 to 24 tracks and vice-versa, according to the client's

This is typical of small/medium studios and these studios in turn force the big ones to move ahead (it is a fact that the big studios are usually a bit behind the times for bureaucratic reasons). As a direct consequence, the big studios start talking in terms of total up-dating. When this happens the medium-sized studios are forced in turn to purchase a mixer.

The modifications in question refer to the increase in the number of tracks, while the aspect of improvement calls for the replacing of the mixer and the addition of auxiliary units such as compressors, filters and noise reduction units. I have noted already a lack of reverberation units and a shortage of delay units, which are seldom used.

The average studio deals with three types of recording, namely cinema, advertising and records. Most studios record music for transcription on discs. These studios may be classified as usual as follows: studios working exclusively for others; studios working for others and for themselves; studios working exclusively for the record company which owns them. Generally speaking, the big studios owned by record companies do have disc-cutting equipment.

The procedures for multitrack recordings, with the mixing being the last phase, and the success of groups, have all contributed to effecting a change in the style of work, as well as the geographical positioning of the studios.



*New recording studios, Milan*



*Feeling Recording, Turin*

requirements.

No-one has tried out the 32 track system. It is felt by the majority of professionals that the 32 track mode should be dealt with by means of two 16 track recordings duly synchronised. Therefore, no-one can actually tell how this set-up would work out in a studio.

The consensus of opinion is that a 32 track set-up on a single 50 mm tape must be coupled to a superlative background noise reduction unit. The dbx is not known. There is not one single channel installed in any studio, therefore no-one can evaluate the potential performance.

Nowadays studios are modernised in two separate fashions: with gradual up-dating or with total re-modernisation. As a rule, the emergence of a new studio with up-to-date equipment dictates the need of replacing the equipment of old studios. These are fully aware of the fact that they can no longer adequately compete because of the inadequate number of tracks. Therefore, such studios opt for a recording unit with more tracks. However, such a new recorder would require the replacing of the mixer. As all of these changes are extremely expensive, the mixer is modified accordingly by adding a monitoring mixer and other devices so that the new studio can operate.

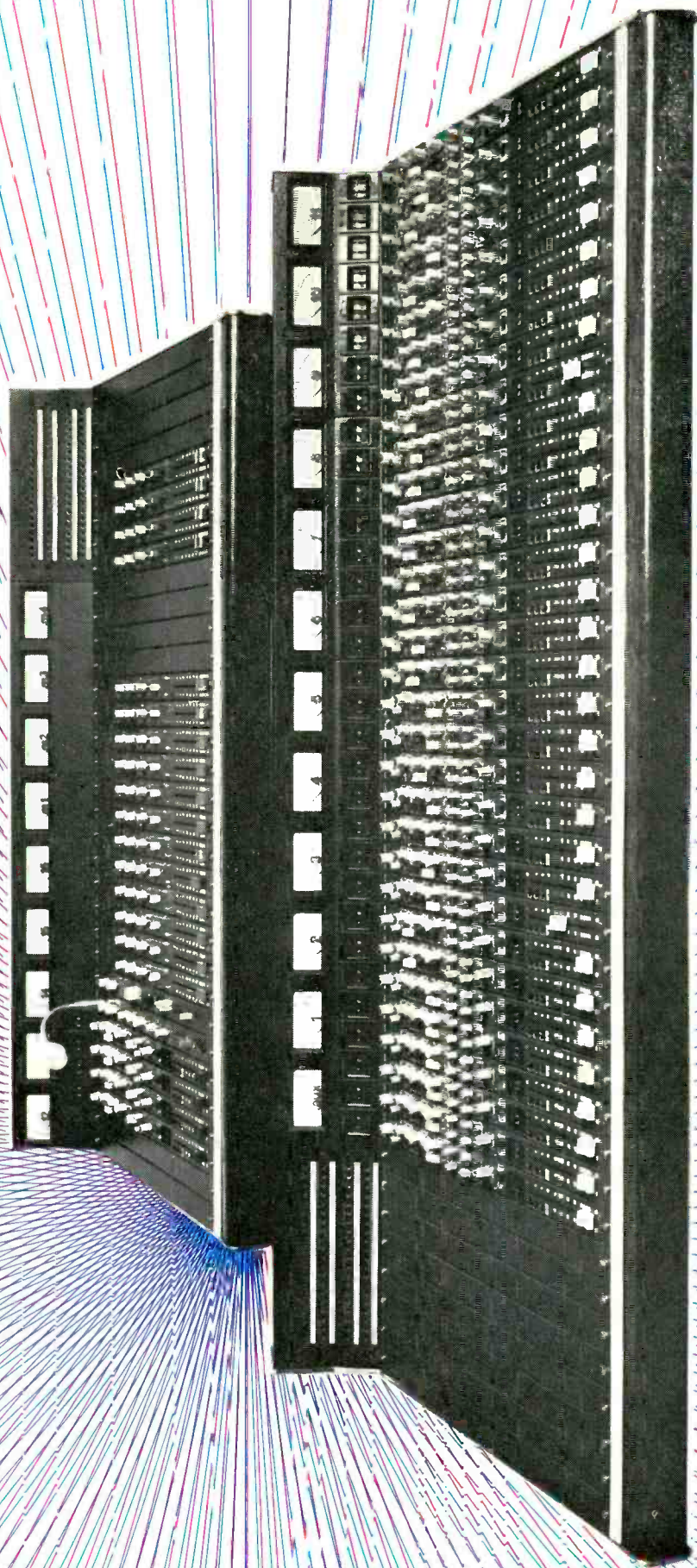
It is a fact that there is a predominant demand now by small musical groups, often to work in a particular studio for a whole month. This tendency has forced many studios to move out of town. The longer period of time spent commuting is compensated by the quiet country environment.

We now have three well equipped recording studios in the middle of the country, which are housed in old buildings. A fourth studio is being prepared. These studios were designed to enable a comfortable alternation of work/relax modes, and there are provisions, also, for a small group to live on the premises until the recording session is over.

As far as quadraphony is concerned, no development has come about. Buyers of new equipment purchase certain units which can be adapted to quadraphonic sound.

From this short report we can draw the conclusion that the professional audio market is in full swing. There is a complete transformation underway, and the same applies to the record sector. However, it would be desirable to see a better co-ordination of actions, so that these efforts may bring about the best results; that is to say, it would be better to have a series of programmed actions, specifically designed to increase the industry overall, so that each new development is well balanced by a similar market request. It is a programme which should include a marked increase of live musical production as well as the musical education of the newly-born generation.





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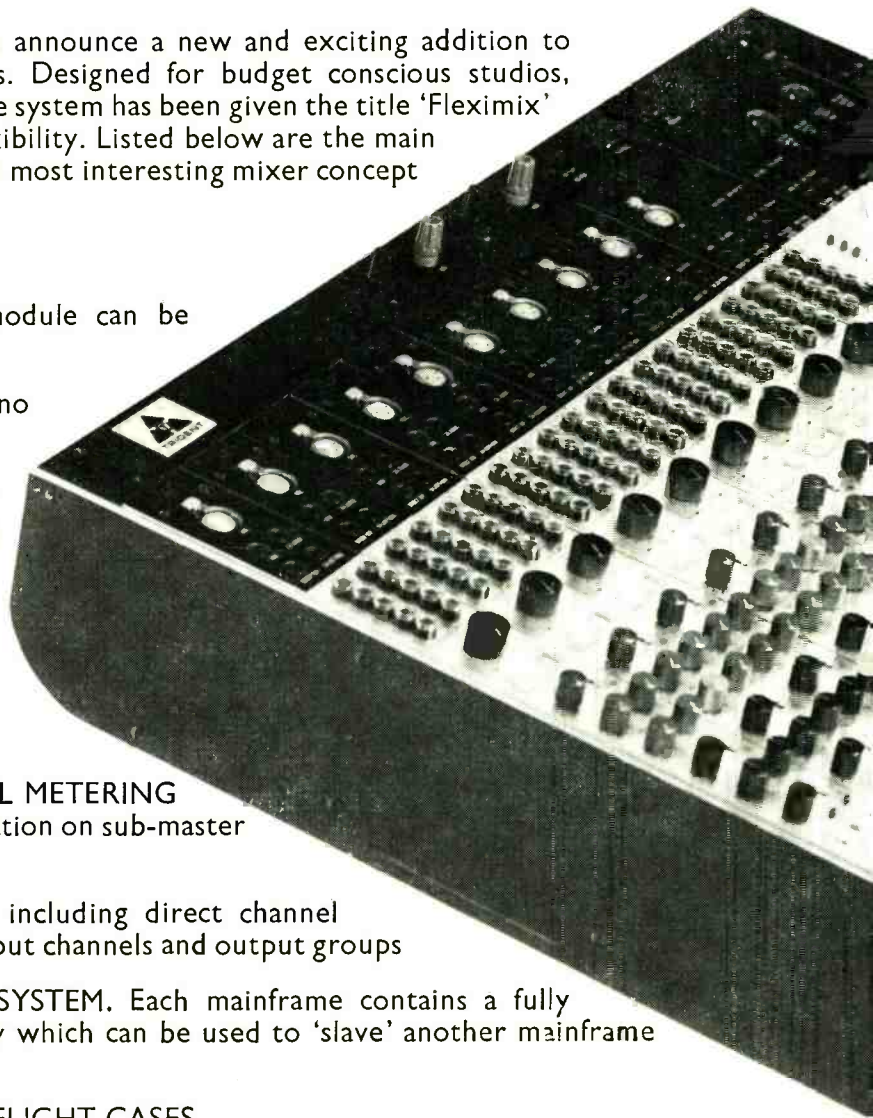
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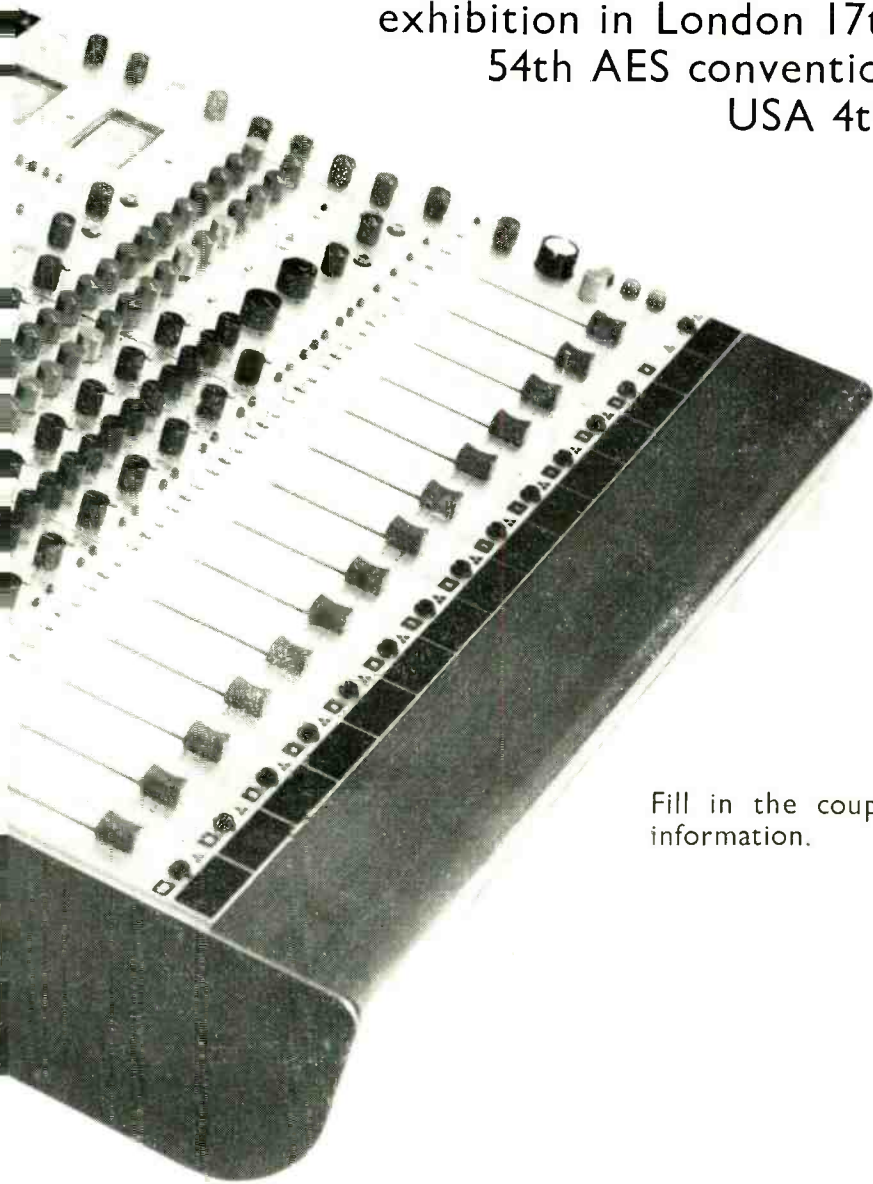
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# Great Britain

MICHAEL THORNE



IT used to be that England was where everyone had long hair, wrote hit songs, and was on close terms with the Beatles and the Queen. There was a sneaking suspicion that some of us believed that as well as the rest of the world; certainly the recording business in London, up to the first shiver of 1971, was an easy place to make money and have a good time. Then, the *Daily Express* and the *News of the World* discovered the phrase 'balance of payments deficit' and economic gloom, which previously had simply been something you read about as causing concern in the stock markets, began to affect the way small companies went about their business. Inflation brought concern to street level and leisure patterns changed. As did self-appraisal. The most relevant change in the national outlook, though, was the beginnings of a crisis of confidence. Production of records has always been a chancy business, but statistically if you do something a certain way you should eventually come out on top. In the less stable areas of the recording world, concern increased: in a climate where the pound was becoming embarrassing in its cheapness you may not be quite so sure that the hit that carried the misses was going to be there after all the waiting around.

Traditionally, Britain and London in particular have been clearing house for a wide range of musical styles and influences. Its population as a whole may not be notably musical, but areas such as South Wales and the Lancashire/Yorkshire area (which effectively includes Liverpool, Manchester and Sheffield) keep local music making particularly strong. London, due to its cosmopolitan mix, does not have the regional colouring but nevertheless maintains a quite astonishing breadth of activity. Some, such as the five major orchestras, tend to rely on state subsidy for continuance, while at the other end of the spectrum the small club circuit, on which any hopeful band depends for exposure and experience, remains reasonably self-sufficient. Areas of music making divide fairly clearly into those which are

establishment-acceptable and those which are not: huge Arts Council subsidies for the Royal Opera House contrast with the attitude of city councils like Leeds and potentially London who legislate crippling noise level restrictions against rock music which they basically do not like; thus they can practically eliminate it, and the consequences for London could be serious.

In a country where someone's accent is different for life depending on which side of the river he was born, it's obvious that tradition remains strong—such as the brass band in the north midlands and the choir in Wales. However, this follows right through to electrics, and local musical styles often vary recognisably and consistently from city to city. Because of this diversity, Britain will continue to be a major source of new ideas, whatever the economic climate or the state of the local record market. London certainly does not always have the edge in audience weight or intelligence; in the pop sector, London record sales do not necessarily determine a record's chart success. The Batley Variety Club, in a small town in the Lancashire industrial belt, is the most prominent in the country. Places like Sunderland have had good audiences for years—around 1969 a Free or Family tour would always get an unusually critical and enthusiastic reception. Conversely, though, that town might manage the lowest audiences in the country for orchestral concerts. Northern Ireland is the only bleak spot, musical life flattened like everything else by the present muddled political troubles. When Gary Glitter or even Rory Gallagher plays Belfast, it's something of an event.

From a music recording point of view, however, it is a fair generalisation to say that studios are either in London or in the countryside. There are very few major recording studios in other cities, a fair reflection of the attraction of London to any aspiring act—the localisation of the record companies there is almost complete. The justification of the country studios such as Rockfield, Sawmills and (60 miles from London) the Manor is an acknowledgement

of London anyway, in that people want to get away from it. Obviously, broadcasting activities throughout the country are more decentralised, but much of the production activity, particularly that with a music bias, tends to be carried out in London.

London has a reputation, particularly in the US, for producing good recording engineers, although the financial rewards of Europe and America increasingly lure many of the best away. Conversely, though, there is still a healthy respect here for American engineers, although there are fewer Americans active in British studios even on the freelance basis which has become more common here also in recent years. It isn't clear why the standard of engineering here should seem above average, but it appears to be that way despite all the trade grumbles and stories. As such, it parallels the very strong session circuit, which remains the heart of the London music business; it might be due to the long tradition of recording here, starting with Decca and EMI but also depending on the high technical and musical standards, definition of which used to be the prerogative of the BBC. Certainly, that helps establish an atmosphere of professionalism which is then propagated as a saleable commodity in a crazy business. Another reason might be the frequent need, one which was much more widespread for a period until perhaps five or six years ago, for an engineer to wrestle with outmoded and often unreliable equipment in conditions far from ideal, probably in a cramped basement in the West End of London. Now, the basement is still small, but the equipment and conditions can be as good as anywhere else in the world.

London in general has always adopted a conservative approach towards equipment, particularly when concerned with extending techniques which have already been proven. It was only in about 1969 that the 16 track revolution finally hit town, and even then top rock albums continued to be worked with eight track as late as 1971. At present there is a gradual shift from 16 upwards to 24 track working but this is

far from being a stampede, understandably in view of the relatively small change in actual techniques it involves; in the very early days of 24 track, though, there were more machines operational in England than in the US, because of eight track studios upgrading directly to 24. On the classical side, few engineers feel the need to work with more than eight tracks, even for opera, although Bob Auger Associates, classical mobile specialists, have two Ampex 16 track machines. The Rak Mobile, formerly the Team Mobile and still run by Doug Hopkins, has a 24 track complement, although their classical activities come second, as you might expect of a studio now owned by Mickie Most. The groundswell of purist engineers, those who would prefer to put up two or four mics and let the ensemble get on with the balance, is strong, but commercial assumptions have so far dictated the relative safety of flexible multitrack use.

Although the British recording industry has not been subjected to the traumas of automation development first hand, there is a considerable resistance to such innovation with many engineers and producers. This may be basic common sense and realistic approach to the production needs of a particular studio, or may reflect the widespread lack of proper understanding of the subject. The dislike

of engineers for gimmickry is another factor working against its acceptance, whatever its merits. Another barrier to progress is the insistence on high technical performance as balanced against engineering convenience, a difficult hurdle for vca dependent systems until relatively recently. The only studios with operational programmable mixing at present are Sarm, Advision and Manor, with API/Allison, Compumix and Helios/Allison installations respectively. The recently introduced Neve system has scored three big orders from Air, EMI, and the Music Centre, even in advance of its official launch. At least one other major studio complex is at an advanced stage of discussion with the manufacturers. Such a spread will promote interest and understanding of the techniques, if nothing else. And since the manufacturer is British, the lag of approximately two years in automation understanding that exists between the US and Europe will presumably reduce.

Standardisation is something particularly close to the British studio business, again a reflection of the reference point of chains of EMI and Decca studios throughout the world. This doesn't stop tape equalisation for example, from being split between CCIR and the European influence and the American NAB. Another interesting area is noise reduction. Dolby A is, of course, the reference standard, whereas dbx has been

here for some time as a viable alternative. The relative advantages of each are now widely understood, and need not be repeated here, but the dbx installations show a clear pattern. There are multitrack installations at Threshold, Manor, and at the forthcoming studios of Mike Oldfield, Pink Floyd and 10cc (Strawberry South in Dorking, Surrey). The performer bias is obvious. 'Technical' fidelity and interface with other areas is more crucial to an established engineering facility, dictating a more conservative approach to equipment acquisition.

Although the record and recording business is far from feeling the cold that afflicts the rest of the country, it moves cautiously at the moment. There are still occasional large studios opening and others expanding, but it's a far cry from the wild times of the late sixties. Most large studios report a noticeable upturn in business since the beginning of 1976, in some cases such that their own production companies cannot book time. The independent studios in particular seem to be having a minor boom, although the experience is not common to everybody, often for the usual intangible reasons of fashion and habit. However, on more modest levels things are not quite so buoyant. Rather more small demo studios are having a hard time, because they rely for business on new and aspiring acts rather

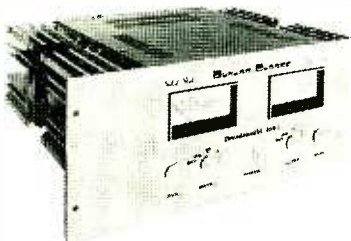
**Above left and right:** Manor Studios, Oxford.

**Bottom left:** Kingsway Hall, London.

**Bottom right:** EMI Abbey Road, Studio 3



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intermodulation distortion at 60 and 7,000 Hz mixed 4:1 at any power from 0.01 watt to 250 watts into 8 ohms	0.1% maximum 0.025% typical
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frequency response at 1 watt per channel	20 to 20,000 Hz, ±0.05 dB
slew rate	greater than 25 V/μs
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input sensitivity	1.75 volts RMS for full output
power line requirements	120 V AC, 60 Hz +240 V AC 50 Hz
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net weight, amplifier only	85 pounds

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than on cutting albums every day of the week. Due to the recession there is less disposable income for amateurs to go out and set themselves up with the gear which itself has become more complex and even more expensive. There isn't the luxury surplus that gives people a chance to do something which doesn't deliver ready money. Further, the small gigs often cannot afford to pay adequate amounts to cover equipment expansion and daily bread. Thus any act, be it amateur or semi-pro, needs a fair amount to set it going. While the bald statement is itself an oversimplification, such music in Britain is generally working class in origins as compared with the more middle class American rock accents, with more implications for cash availability in difficult times.

On the marketing side, it has become harder to break a new act in the UK. This is largely because of the reduced consumer spending and increases in record prices to over £3 (\$6); record buyers tend more to head for what they know and like rather than take a chance. It's also true that there is less music around for which it's worth taking that chance than in the late sixties. All these factors combine to discourage new people in Britain, although it still generates more than its fair share.

This economic hardening of the musical arteries is aggravated by the limited scope available for promoting new acts. As in many countries, the weekly and bi-weekly magazines play their part in dissemination and it is in their interests to catch something new and promising. Much of the time they do, although some are more alive and alert than others and the standard and responsibility of the journalism varies wildly. The printed word suffers because you can't hear it, so that the most effective force is radio and tv coverage, especially the latter. The BBC is a reference point for all British air waves. Since 1955 it has coexisted with commercial tv. Recent legislation has permitted commercial radio stations across the country in competitive areas. Another level is provided by local radio, BBC directed but oriented closely toward a specific community. All three radio forms carry a lot of music, much of it from disc.

Unfortunately, much of the exposure patterns fall between the extremes of organised broadcasting and the maverick attitudes, which were successful here when pirate radio was a going concern. BBC programming on the pop side is extremely conservative; various public statements have expressed this as clearly as the programmes. The music which is played tends to be middle of the road and widely known, whether the style is pop, rock, soul or what is conventionally known as m-o-r. The BBC follows taste, it never provokes it. The IBA suffers from similar conservatism in its direction, but the links between the station and the authority are not so overpowering, with the result that more flexible programming can occur. However, the large commercial station cannot stray too

far from the BBC style, because that is what the broad audience expects. The average listener here has had a lifetime of the BBC and cannot change overnight.

For these reasons it's unlikely that even a clearly interesting new act is going to get much exposure before it has made sales inroads. Top acts continue to sell, but not in such a rush. Typically, a top album might shift 2000 copies a week as compared with somewhat more 18 months ago. Around 30000 sales of a rock act is sufficient to guarantee residence in the Top 20 although middle of the road sells better due to longer currency. Fewer people buy Top 20 albums in a week than watch any one important football match. In a country of 55 million people, records are still a minority interest. It follows that with increasing recording costs it becomes uneconomic for a record company to push the chancy records. Even with a top line act, such as Pink Floyd, profitable returns on UK sales alone are by no means assured. The industry here has always been a major exporter, not of records as such but of licences; and while the connection is not so clear, the European market is as important as the American. It's worth remembering that CBS last year began to sell more records in Europe, including the UK, than it did in the US.

The classical market in Britain is relatively strong, accounting for around 15 per cent of total sales. Again, though, the early establishment as a recording centre and the remarkable concentration of activity in London means that even more, proportionately, is exported as a result of English recordings than on the pop side, confirmed by a glance at issues on the London or Angel labels in the US. An increasing proportion of CBS and RCA classical work is carried out here, although Phonogram, Dutch-based but with an active UK company, understandably leans more towards continental artists. Although the financial position of London's orchestras is never better than precarious, they tend to be busy. Because of financial pressures, time is also short: for a major concert there might be only two rehearsals, a stark contrast with continental practice. Conversely, though, this cheapness and the resulting facility attracts increasing recording contracts. And it does permit a budget label such as Classics for Pleasure to record with major orchestras and deliver healthy profits simply on that basis.

New music activity in this sector is crippled by the largely conservative press and a population which often feels intimidated by classical music. Here, BBC programming is more inspired and concerned with exposure and promotion than the moribund pop side, but the overall presentation still suffers from an air of refinement. Thus, the small section of the classical market is aware enough, if unadventurous, but the larger areas of progressive rock and jazz listeners remain largely oblivious. Recently, though, record companies have tackled this split head on, a modestly successful wide ranging label being EMI's EMD mid-price series mixing

Telemann, Barraqué, Penderecki and Cole Porter (as played by Menuhin and Grappelli). Decca's Headline series is wholly twentieth century and often packaged imaginatively. However, the catholicity of the record buyers still lags far behind that of those in the US.

The classical situation is closely linked with the session circuit, and the five orchestras supply many of the musicians. The standard basic fee of £22.50 (\$45) contrasts sharply with many places in the world: one advantage of economic disadvantage is that such services are increasingly attractive from abroad. A respectable middle of the road album using a medium-sized orchestra can still be put together on a budget of £5000 (\$10 000), including studio time. Recording studios in London have always been sharply competitive, even in boom times. This has also kept prices well down and efficiency relatively high: the most expensive studio time going in town now is probably around £50 (\$100) an hour for 24 track recording in a large studio with a reliable track record. Given a little care, it is possible to find good 16 track recording facilities for perhaps £15 (\$30) an hour. Extras are also low. Tape charges to the client vary around £7 (\$14) per reel of 6.25 mm and £35 (\$70) per reel of 50 mm. Studio equipment prices are reasonable, even for imports, with 24 track transports plus electronics from the major manufacturers around £15 000 (\$30 000). The proportion of bands from Europe and America recording in British studios is not overwhelming, but it is significant and certainly higher than the other way round.

At various stages in the past, bands would have paid rather more than the going rate to find the British rhythm sound, whenever that was in fashion. The dead drum and solid bass has seemed indigenous, contrasting with the more live sounds which the US seems more readily to produce. It is hard to pinpoint, but until recently there was a recognisable English tendency in acoustics and treatments. Lately, those sounds have become less sought after, and tendency has been anyway to provide a more live feel. Innovations such as movable carpeting were hardly appreciated until the early seventies, and even now are far from being commonplace. Despite the movement towards more predictable and more adjustable acoustics, and the wide scope of the best studios, there is still a characteristic sound emanating from many of them. While the balance engineers are much less tied than in the days of the early independent studios (when outfits such as Olympic, IBC, Lansdowne, and Kingsway were formed by independently-minded engineers leaving the major companies) there is still a closer association between them and the studio than in, say, Los Angeles. And thus a more distinctive style.

Until the arrival of Westlake and its reincarnation Eastlake, studio consultants did not play such a large part in the building. While advisers there are, it has often been that studios have generally preferred to work on a practical trial and error basis, often taking years to reach a

satisfactory control room characteristic. With Westlake came a shake up of attitudes: the first was the Moody Blues' Threshold studio, followed a year or so later by Strawberry and the Manor. The design approach here often contrasts strongly with established acoustics, but still produces favourable reaction. The increased emphasis on comfortable working conditions for musicians and engineers, and the predictability of the sound and its control work strongly in favour of such designs.

Acoustics in classical music contrast most strongly with the US more as a result of mic techniques than of ambience. Until relatively recently, when hi-fi became widely available and not just the province of enthusiasts, British orchestral sound recording owed much to the BBC, often because of audience expectation, and the links between it and the major record companies were stronger than they are now. The last ten years have seen a movement towards more presence and greater instrumental definition, with many more microphones deployed. In this respect, Britain is much closer to continental practice where there are often similar close record company/broadcast links. It has the advantage of some good halls, although few are pleasing to all. One of the best, Kingsway Hall in London, has been scheduled for demolition for several years, although recording continues. West Ham Central Mission, in East London, was 'discovered' two years ago, and the large scale works *Gurrelieder* and *Moses und Aron* of Schoenberg were successfully tackled there by Bob Auger. Noted provincial auditoria include the Free Trade Hall, Manchester, and the Philharmonic Hall, Liverpool.

Such recording accents grow because of an audience effectively demanding a certain sound, although the music is consistent. The opposite is true in the pop arena, with a wide range of styles now accepted and popular. Recently, the six minute *Bohemian Rhapsody* of Queen topped the singles charts for weeks and became one of only 13 million-selling singles ever. The flexibility of the singles market also embraces Telly Savalas, Rodrigo's *Concierto D' Aranjuez*, Barry White, Beatles (*Yesterday*), Pluto Shevington (*Dat*), CW McCall (*Convoy*), Be-Bop Deluxe, Elton John, 10cc and Cliff Richard. Albums currently (April) resident in the Top Thirty include similar variations (although the recent drift shows a slight resurgence of fast-selling middle of the road: the first two positions in the Melody Maker chart of March 27 were taken by Manuel and the Music of the Mountains (*Carnival*) and *The Very Best of Slim Whitman*). And while the climate had, for the reasons previously mentioned, become relatively hostile to new music, there still seems sufficient tolerance and innovation on both sides of the musical fence, player and listener, to ensure Britain's continuing prominence as a record and recording centre whatever the economic hurricane may do to the country as a whole. Things haven't been smooth recently, but the outlook is, on balance, increasingly optimistic and enthusiastic.



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# China

CHARLES PARKER



WHEN I VISITED China in the spring of 1972, I was a sound documentary producer of some 20 years with the BBC, committed absolutely to the tape recorder as the master tool of the sound media, and eager to discuss with artists, technicians and educationalists my experience with works such as Ewan MacColl's *Radio Ballads*. It seemed to me then, as it does still, that the unique capacity of the light-weight tape recorder to go out to life and capture the language and aural environment of people in their living situation was a breakthrough not only for the documentary producer but for every artist whose craft involves words and sound. I assumed that in the new China, the struggle to achieve a socialist society would have led them immediately to recognise the potential of this tool for the mass society. Hadn't Mao Tse-Tung said . . .

Revolutionary art and literature are the products of the brains of revolutionary artists and writers reflecting the life of the people. In the life of the people there lies a mine of raw material for art and literature, namely things in their natural state, crude but at the same time the most lively, rich and fundamental; in this sense they throw all art and literature into the shade and provide for them a unique and inexhaustible source. This is the only source; there can be no other. (*Talks at the Yen-an Forum, May 1942*)

. . . and isn't it precisely such a source that tape (and film and video) is superbly designed to tap?

The Chinese listened courteously to my enthusiasm—and replied, in essence, that communication for them meant literacy first and foremost, and it became obvious that we were really talking on different wavelengths. Indeed as I now realise the very word 'culture' in Chinese—*wenhua*—means 'to change, to become transformed, to evolve through what is written', so that the very concept of an oral culture expressed through the audio visual media was really an extremely difficult one to grasp (and well nigh impossible under the exigencies of time and translation). I also realise what Mao Tse-Tung meant when he said in 1927: 'In China 90 per cent of the people have no culture or education'—a statement which on the face of it contradicts that quoted

above.

And this perhaps explains why there is such a dearth of information available in the West on the recording industry in China, which would indicate technological development. There certainly does not seem to be any shortage of resources or technological know how . . .

China produces its own radar, sonar, avionics, missile and nuclear instrumentation . . . radios, phonographs, tv receivers . . . tv transmitters, microwave and short wave transmission equipment, automatic telephone switching gear . . . as well as analog and digital computers. Most of China's present electronics production capability dates only from the mid-1950s when several large electronic production plants were imported from the USSR and Eastern Europe. By 1960, China had established 60 major manufacturing plants . . . By 1973—200 major plants and 500 smaller workshops. (*New Scientist, 15/3/73*)

'Electronics in China is a major growth industry; each province now has the nucleus of components and electronic equipment manufacture . . . more than 3000 factories have been established. A drive began in 1971 to expand radio and tv production, and only one region lacks the capacity to produce tv sets. (*Sino-British Trade, Jan 1975*)

This also does not seem to be due to any reluctance by the Chinese to acquire and emulate the very best of Western technology and even in the area of technical sound they embraced enthusiastically what the West could provide. At the turn of the century it was usual apparently for political conferences to be held on an open telegraph line to link up simultaneously with the provinces, while in 1935 there were 41 broadcasting stations operating in Shanghai, nearly all Chinese owned, operating from 560 to 1480 kHz, the largest with a power of 1 kW. The recording industry as such was initially set up with Russian equipment (78s) and modernised with Japanese equipment (33½s)—and of course the comparative proximity of the Japanese electronics industry would presumably have made the extension into hi-fi, stereo and so on a pretty straightforward matter—if the Chinese had felt it important.

But the fact is that, while discs and phonographs are produced in China, they

are for the reproduction of existing works from theatre or concert hall—revolutionary opera, ballet, songs and marches etc—and of a technical quality akin to that in the West of 20 years ago. The quality is not bad but opera recordings tend to be topky like our early lps, and on the gritty side, while the cheap eps used—at least until recently—the sort of advertisers' give-away transparent plastic, and tend to jump with a light weight pickup because they don't track very well. The sound mixing seems to be minimal and based on a single orchestra microphone with an audience/atmosphere microphone, with a consequent lack of separation and presence. The aim seems to be the sort of broad spectrum blend of sound standard in the BBC when I joined it.

The first Chinese satellite, weighing 173 Kg, went into space April 1970 and orbited the earth broadcasting the revolutionary song *The East is Red*. On 26 July, 1975, China announced the launching of her third satellite. (*Sino-British Trade, August 1975*)

I was unable to see any radio or recording studio equipment myself but, talking to sound engineers who visited China three years ago with tv crews, the standard microphone seemed to be similar to the *AXPT* ribbon of 1951 vintage. Indeed one told me that while in China, he ran into trouble with his radio microphone and had to enlist the help of Peking Radio engineers; he got the impression that they didn't really know what they were looking at, and certainly had no experience with miniaturised equipment.

Record players are generally of early design based on a crystal head, piezo-electric system with cheap pickup, and very lightweight electro-magnetic pickups did not seem to be available. As for tape recorders, I have been unable to find anyone who has seen a Chinese manufactured tape recorder, although they must exist. Certainly when I was visiting the electronics workshop of the Kwangtung Teachers Training College, where they develop and manufacture sophisticated oscilloscopes and demonstration transistor radio amplifiers, the only tape recorder in evidence was a standard Philips



two-track machine. Cassette recorders were not in evidence, nor was stereo, although I'm told that a lightweight cassette recorder is now being manufactured in China.

The specific accounts I met with of the use of tape machines for field recording, bear out the written word bias. A girl from the People's Liberation Army, studying at Peking University, told me that while with her detachment in the countryside she had recorded the bitter memories of old peasants of conditions before liberation, had then re-written them for the PLA journal and wiped the tapes. The University itself was conducting a survey of coal-miners using tape, but again for written publication; while at the Nan Shang Peoples Commune outside Shanghai, the young woman running the Commune local radio station also told me that, while she had recorded local veterans of struggle, the recordings were wiped after transmission; and I got the impression that really she disapproved of the practice and did not consider it to be of any particular importance by comparison with newspaper readings and studio programmes generally.

All in all then, there seems to be little sense of the media as forms in their own right (and this applies to television and film—with some notable exceptions). The emphasis is upon their use as means of broadcasting information, not entertainment of works of art; and even in the area of disc

production of works such as *The White Haired Girl*, I have a strong feeling that these are meant not to be more or less passively listened to but to be learnt from and emulated.

'Where do they learn to dance and sing?' Judy asked the villagers of the Commune. 'Does the state send around teachers?' 'No,' said a peasant woman, 'they see the movies of model operas like *The Red Lantern*, or ballets like *White Haired Girl*, and then they come home and practise. For the songs, there are the movies and also our radios, and they can buy records as well. They practise a lot together, and after a while they aren't bad at it.' (*China! Inside the People's Republic*, p250)

This means that the disc as a commodity, directed to a market ever open to extension in both repertoire and technical expertise, and to an audience of listeners only, is alien to Chinese practice. Which is not to say that the Chinese don't enjoy listening to discs, but that such enjoyment is not the primary object. That is propaganda.

'To serve the people is the role of the media. Our main emphasis is on the political side. We try to improve quality, but we don't put that first.' (Chinese Embassy Official, London, Feb 1976)

Above all else, culture in China is political. This is because the Chinese feel that art and culture cannot and should not be divorced from the political goals of the revolution. The content is just as important as the form, and there is not 'Art for Art's sake.' . . . After all,

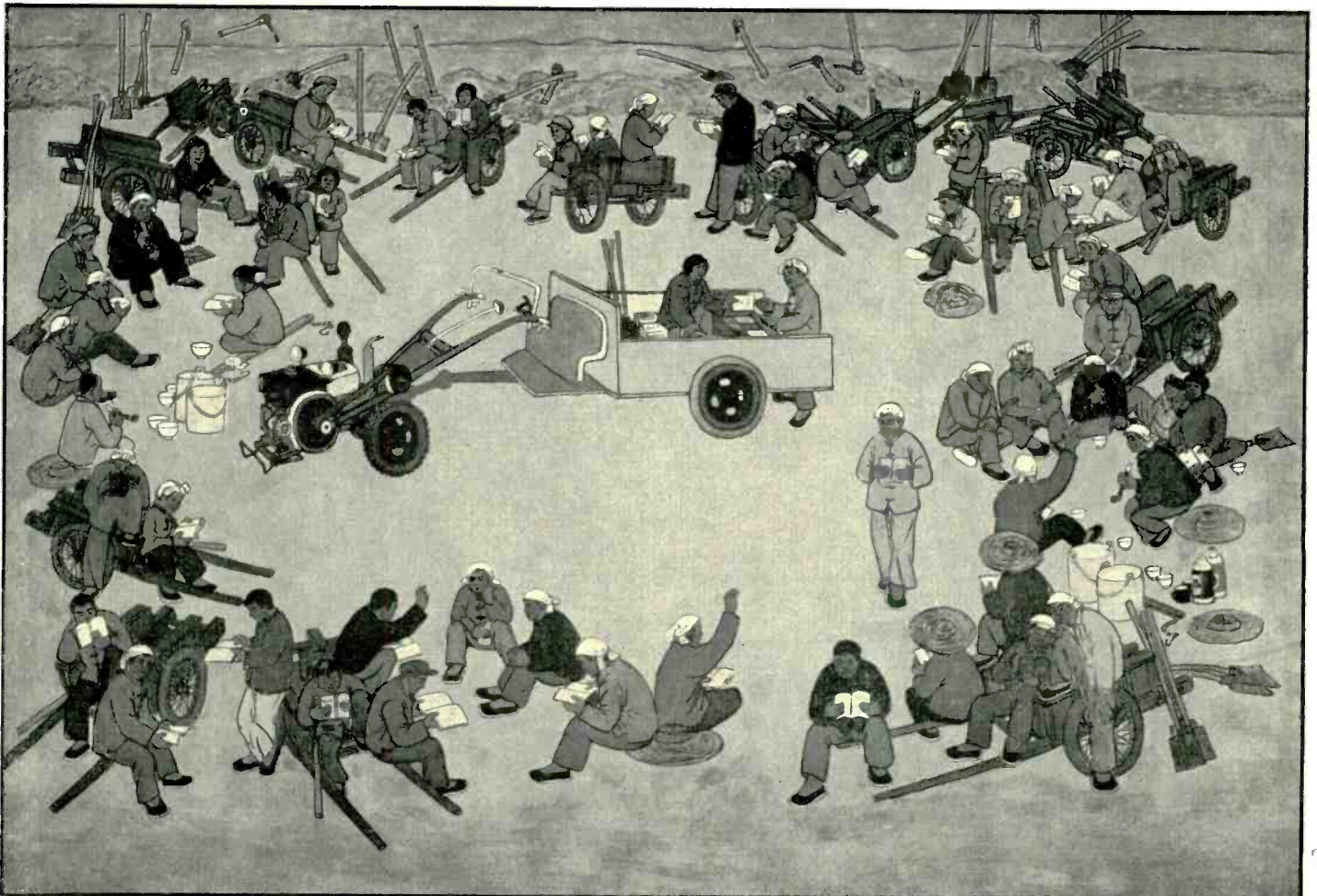
they point out, all art is propaganda for something; the only mistake is to believe that all propaganda is art. (*China! Inside the People's Republic*, p262)

Propaganda is of course a switch-off word for us, with its shades of Goebbels and Lord Haw-Haw, and its—for us—built in implications of brain washing and indoctrination. For the Chinese, it is seen as a reasonable and entirely desirable response to the challenge of creating a new society, a socialist society of 700 million people newly emerged from 3000 years and more of feudal tradition and a century of Western economic and technological dominance.

The problem of socialist development is to be solved by finding a procedure for turning the problem over to everyone. Rather than motivate people by material incentives, we must release the creative potential in human beings to serve the common welfare. To do this we must recognise that the key problem is to change people's consciousness. Hence the problem can best be tackled by putting politics in command of culture and production. (*Mass Communications and Cultural Revolution: The Experience of China* by Dallas W. Smythe. A paper for the International Symposium on Communication, Univ. Pennsylvania, March 1972)

And whatever may be the effect upon our delicate aesthetic souls or our swinging scene preoccupations, the masses of the people are certainly not brain-washed, as every visitor from Heath and Nixon on bears witness.

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## CHINA

I recorded extensively in China, on many occasions completely at random in streets, homes, clubs and so on, and nowhere have I met people more self-confident, assured and at ease with the microphone than in China. Even through an interpreter, this came across, and even though I was often critical of their use of the media.

And there can be no doubt of the popularity of the Revolutionary Operas, of the avidity with which political works are read or listened to, and the importance of newspapers and pamphlets. Above all is the extent to which the big character poster, the tatzupao, is used to conduct public debate on every issue great or small. Here, one feels, is a people engaged in continual questioning and dialogue—hardly consonant with our presumptions about the results of propaganda.

This assumption also applies in the particular area of music and performance arts. The comparatively small number of operas and ballets which are in the received national repertoire are taken up and performed by the people; every factory, production brigade, neighbourhood group and school class has its dance drama troupe; air hostesses, train conductors, waiters, interpreters sing at the drop of a hat. You receive the intoxicating sense of a nation of artists, for whom Mao's admonition that to change reality 'you must personally participate in the practical struggle' is applied as enthusiastically to art as to politics. And not only are the revolutionary operas performed everywhere (and in my estimation in the process are given a dimension, a vernacular panache and authenticity not always present in the national companies) but new works come up at grass roots level of a quite extraordinary quality. In Sian I saw a performance by Middle School pupils of a dance they had themselves created, based upon the complicated elastic skipping rope play you see in the streets all over China—but performed by 30 girls weaving in and out between each other at breathtaking speed, and expressing with gaiety and verve the relations between the group and the individual. I have also heard a tape recording of a performance given by the works orchestra of a Railway Waggon shop in Peking, which seemed to me to be the expression, in purely musical terms, of just this relationship; it's a sort of double flute concerto, in which the orchestra—of traditional Chinese instruments—establishes the theme, the flutes develop it to a point in which their brilliant improvisations upon it bring them into increasing musical opposition to each other; the orchestra firmly re-establishes the theme; the two flutes come back in unison (and your Western heart sinks!) but then develop the theme in even more brilliant individual improvisation—but always musically related to each other and to the orchestra. It's an extraordinary conjunction of political ideology and musical creativity, composed by these workers themselves, and in my estimation every bit as significant as *The*

*Yellow River Concerto*. Indeed the distinction between what we call the professional and the amateur becomes increasingly difficult to draw in China, where for all the popularity of the outstanding national artists—and there are over 100 professional art troupes—there is no star system, and excellence is common property.

The problem of social organization is at the centre of Chinese philosophical thought . . . no conflict exists between the natural law and that of human liberty. Freedom . . . is not thought of as free will (which would involve arbitrary decisions) but as freedom to follow a natural tendency, to join spontaneously into a whole . . . Western traditions place much importance on institutions, rights and the contract which limits individual liberty in the common interest. These ideas have never been prevalent in China. (*Nagel Encyclopedia-Guide*, quoted by Dallas Smythe)

In a country as huge as China, the genius of the Cultural Revolution seems to be that overall policy is deliberately kept as simple and general as possible so that it invites a maximum of dispersed and diversified initiative. It really is as

*Kuang Chien-lien (Hung Hsien-nu), a singer of Kwangtung Province's yuechu opera, singing an aria from 'On the Docks' at a commune in Hsinhui County when joining commune members there in manual labour.*



simple as it seems. (Dallas W. Smythe op cit p35)

It is therefore not to be wondered at if the Chinese tend to view Western contemporary culture, not least in the area of technical sound, as dominated by the cult of the individual, and the techniques with which it is associated correspondingly suspect. 'Let foreign things serve China' is always subject to this overriding caveat; and the blatant contradiction that, in the West, the tools most superbly suited to meet the needs of mass society are at present used to magnify the individual out of all proportion seems not to be perceived as yet.

All of which means that the Chinese presumably see it as irrelevant if not downright harmful to devote so much energy and technological brilliance to hi-fi etc, with all that that implies in Western usage: of an artistic and technical elite swamping the sound spectrum with quadraphonics and 24 track mixes, when for them the objective is a society where there will be no specialisation as we know it, and individuals will practice 'being masters of

many fields of learning and art' (Marx). Which can be construed in this context as live performance by everyone in natural hi-fi and 3D.

In fact, most sound reproducing equipment is communally owned; talking to an English student just back from two years' study in Peking and Shanghai, I was told that none of her fellow students had a record player, let alone a tape recorder and while they were interested in her Sony cassette machine they seemed perfectly happy with access to the equipment available to the department as a whole for any recording they wanted to hear. And this seems to be the case in communes, factories and offices. As long as the material is available for them to learn from, they see no point in the personal possession of its recorded performance.

If you asked me what the Chinese do in their spare time, I would say they put on revolutionary theatrical performances, play the parts of the heroes of the people, sing or play the music for these parts, draw and paint, write poetry on and compose music for Mao's directives. They are incredibly romantic and revolutionary. Millions of them are protagonists in their own lives. They combine what Chiang Ching, Mao's wife, said about art in a speech in 1966: 'We must combine revolutionary realism with revolutionary romanticism in our creative work'. This revolutionary realism is completely different from the 'socialist realism' of the past. (*Daily Life in Revolutionary China*, Maria Antonietta Macciocchi, p191)

And the built in acoustic richness of Chinese traditional instruments—Chinese lute or pipa, wind harp, cymbalom, drums, cymbals and Chinese violin, and above all the Chinese flute with its subtly sussurating rice paper membrane, would seem to me to make the electronic *tours de force* now standard in Western recording studios a little irrelevant, perhaps? This, I know, is a tricky one: but if you are familiar with the actual instrument in live performance, the brilliance of recording virtuosity can be seen as overblowing the reality, and I can't think it's an altogether healthy situation in which we have become so dependent upon a massive mix of technological brilliance to achieve a performance. And in this I am not, as it might seem, contradicting my position in the opening paragraph. My personal committal is to the machine which can with such fidelity handle the living realities, not seek to transcend them and create a technological supra-reality of recorded sound.

Of course much of what I say in this context is inevitably surmise so far as the Chinese are concerned; issues connected with sound recording do not seem to be discussed at all (by comparison for instance with the furore aroused by cinema—especially an issue like the Antonioni film). But sound radio is obviously very important, and still much more so than TV; Dallas Smythe in his analysis of mass communications in China, says that saturation with radio receivers in urban areas is 'impressively high'—90 per cent of households in cities like Kwangchow and Wuhan—with 24 different types on sale in Shanghai beginning at around £8, and that was in 1972. Across China as a whole

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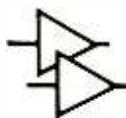
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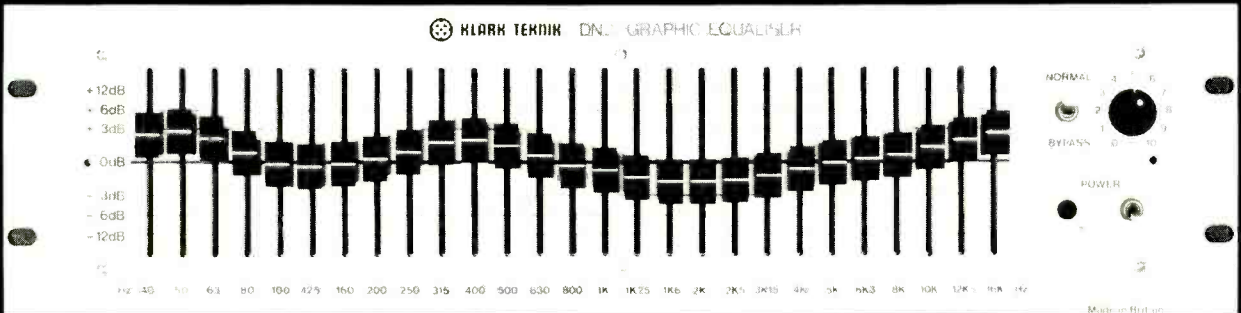
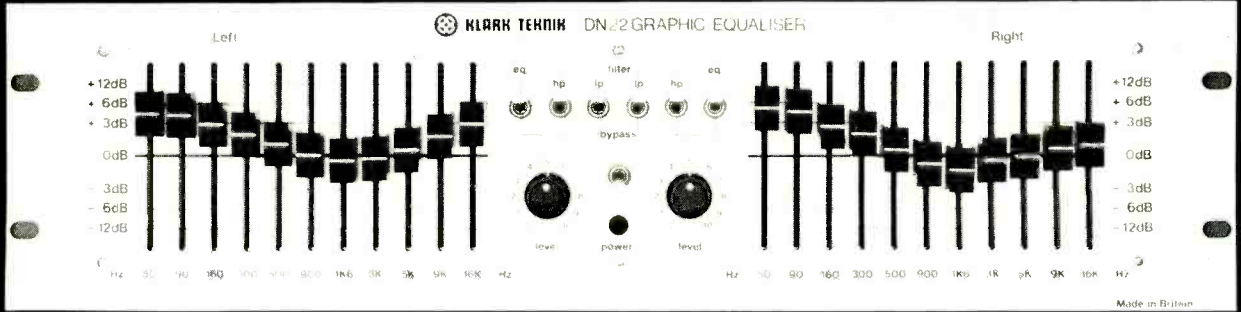
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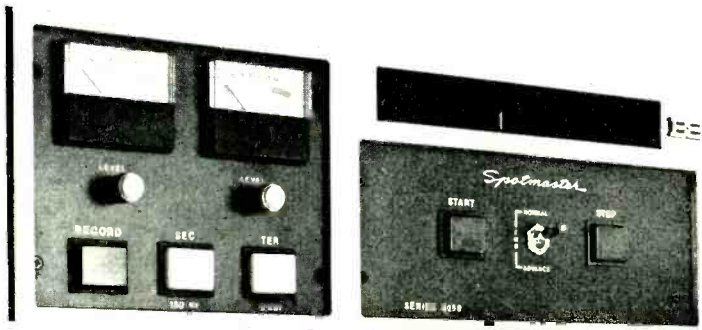


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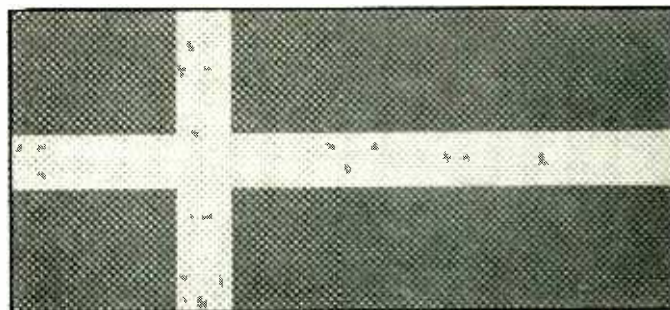
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# Sweden

PER-ANDERS HELLQVIST



THE PER CAPITA INCOME in Sweden is among the highest in Europe and the density of record and cassette players is high. Consequently, Sweden is a dynamic and profitable market for the record business. 'World record markets' (published by EMI in 1971) showed 1.09 records sold per inhabitant in Sweden in 1969, to be compared with, for example, 1.9 in the UK and 0.64 in Norway. The sales in 1975 were about 2.1 records per inhabitant and now more than 90 per cent of the records were lps (to be compared with about 50 per cent in 1969). That means that the value of records sold has been almost tripled in six years (sales increased from about 164 million sKr (£19 million, \$38 million) in 1969 to at least 557 million sKr (£65 million, \$130 million) in 1975, in which, however, inflation played a considerable part.

In these circumstances it is remarkable that the record sales in the main part are based on imports. No statistics are published on this matter but the proportion of records produced in Sweden, that normally can be found in stock in a Swedish record shop, is observed to be not more than 10-12 per cent of the total stock.

To understand the situation for the Swedish record companies it is necessary to know something about the music life of Sweden in general. Sweden is culturally to be considered a young country. The music history does not go very far back and the origins of an independent Swedish musical life in the seventeenth and eighteenth centuries were still very much dependent on imported foreign musicians, primarily from Germany, France and Italy. Sweden's reputation as one of the rich countries of the world is even more recently founded, mainly after the industrialisation of late nineteenth and early twentieth centuries.

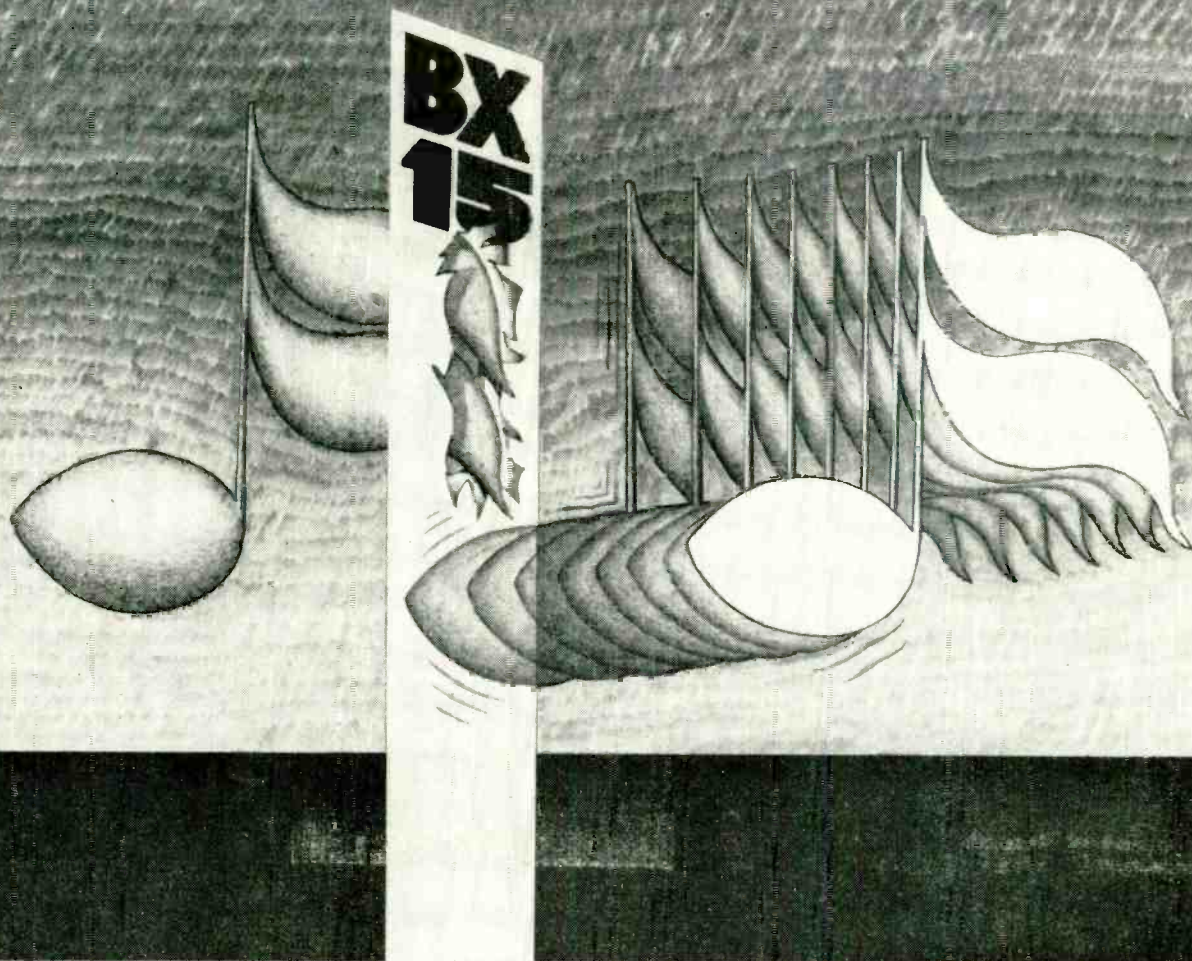
This is still of great influence on the musical life today. The best Swedish musicians and composers have normally received important parts of their education abroad, no artist agency or publishing house of big international importance has their home in Sweden and not one of the most important record companies is Swedish. This is no doubt of importance for Swedish composers and musicians of all categories. Quality and style alone do not decide success in international music life. Equally important is to sing in a world language and to be within the horizon of the big promoters. The fact that Sweden is geographically distant from the centres of the music industry creates very special and not very favourable conditions for those hoping for an international career. The exceptions prove the rule. Swedish opera singers are very much sought-after internationally—many of them of high quality are recruited via the enormous choral activity in Sweden (about 175 000 Swedes are said to be active in choral singing) and as the opera repertory is mainly Italian/German/French and very much standardised all over the world they have no difficulties in taking part on relatively equal conditions. And

when a Swedish rock group like Abba (after winning the European popular song contest in 1974) makes an international career, this has been possible mainly because they copied and skilfully adapted a style already proved to be successful in international popular music. Neither the opera soprano Birgit Nilsson nor the group Abba is in any way representative of Swedish music, except for the fact that these musicians happen to be born in Sweden.

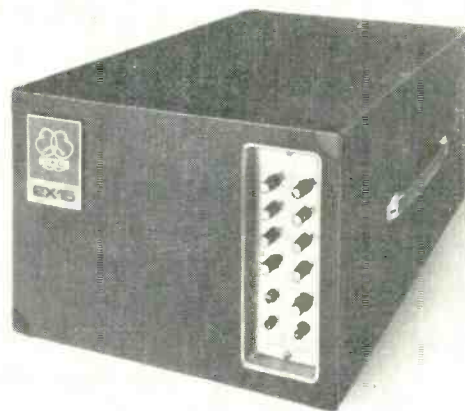
The unfavourable situation of Swedish culture in the international area and consequently even in domestic cultural life has been observed by the politicians and the cultural policy of Sweden belongs in many ways to the most advanced in the world. Three principles can be said to be basic in musical matters. Swedish musicians and Swedish music should be promoted. Lack of economic resources or social circumstances should not mean that anybody is locked out from music of high quality, nor should the distances between population centres in the regions with low density population. The latter is a very big problem as Sweden has a population of no more than eight million inhabitants in a country nearly as big as UK and it is easy to understand that only the few bigger towns provide resources for a profitable commercial concert life.

The cultural political ambitions are shown in music life by large subsidies from state, county administration and communities to lyric theatres, symphony orchestras, music organisations and independent groups. The price of the best ticket in Stockholm opera is about 30 sKr (£3.50, \$7.00), and it would be five or six times as much without the state subsidies. Rikskonserten (The Institute for National Concerts) has a state budget of more than 20 million sKr (£2.3 million, \$4.6 million) yearly for arranging public concerts, school concerts, non-public concerts, giving individual subsidies and producing gramophone records—the number of concerts arranged is about 6000 yearly. Non-commercial music life in Sweden has a yearly 'turnover' of about 500 million sKr, mainly in the form of subsidies from state and communities. The 'commercial' music life—record companies and connected activities, publishing companies and the like—turns over however at least 1500 million sKr (£175 million, £350 million) a year, notwithstanding the state activities the Swedish music life is undoubtedly, like in most countries in the western world, still basically founded on the activities of the music industry.

The political goal of the non-commercial music activities in Sweden is to give jobs to Swedish musicians and to present good music to any Swede, whatever his social or geographic situation. It has however even had the happy effect of showing that the average Swedish standard can very well be compared with the imports. In that way it creates something of a counterbalance to the universal tendency of concentrating the music production on a few stars, star ensembles and standard works, produced by a few dominating companies of the international music industry. In the cultural debate, not least concerning the policy of Rikskonserten



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## SWEDEN

and Swedish Radio, this kind of counterbalance to multinational star productions is often said to be the only hope for Sweden to be able to keep and develop a national music life of individual profile. This debate has in a way cooled down when it concerns opera and concert life. The simple fact is that no opera company, symphony orchestra or chamber ensemble based solely on commercial activities would be able to survive in Sweden and the state subsidies are thus essential. When it comes to the record industry, however, the debate is very hot and controversial. The record companies have regarded the trend of increasing state interest in the record business as a threat of nationalisation or at least of creating new regulations or demands (maybe in the form of special taxes) that may have an influence on an until now profitable market.

Still, however, the state activities in the record market are limited almost completely to the production and distribution of Caprice records from Rikskonserten—a very small distribution so far (less than 100 000 records a year) but with a highly provocative profile and treated as a kind of test for possible further state initiatives. The fact is that Caprice, mainly concentrating on the kind of music that the record companies up to now have neglected except when they were provided with substantial subsidies from institutions (like Swedish Radio), foundations or state—that is classical or modern Swedish concert music, folk music, jazz and pedagogical productions—has in most cases been able to sell much more than the commercial companies in corresponding kinds of repertoire. The reason for this is, of course, that even a highly subsidised record still can be considered a losing concern when kept in stock by a commercial company. Costs of promotion, distribution and even stock keeping are high enough for the companies to refrain from anything but symbolic marketing

activities.

Further state activities within the record business—expanded state production and/or a developed system of subsidies to commercial companies for non-commercial production—are now prepared by the Cultural Board, a new specialised authority, which works in close connection to the Ministry of Education. It seems that these problems are looked upon now (under the impression of commercial dominance in the cultural life) as matters of highest political importance and it is understood that a government proposal to the parliament will be presented within one year. Whatever the character of this proposal it can be expected to have a very important influence on the record production and record business in Sweden from 1978 and on.

As mentioned, the big multinational record companies play, through affiliated companies or representatives in Sweden, a dominating role in Swedish record business. Biggest of them all is the Swedish EMI company, which acts as importer, producer and distributor and in the latter role covers an estimated 24-25 per cent of the Swedish record market. EMI covers very well most parts of the repertoire. It even owns well built technical resources as studio and (very soon) the most modern pressing factory in Scandinavia, situated in Amål (not far from Gothenburg) and established with substantial financial help (aids and loans) from the Swedish state. The reasons for the state investments in the EMI factory are mainly connected with unemployment problems in the Amål region, but very severe criticism has been directed towards the ministry in question for granting this help to a company of EMI's character without expressing any kind of conditions of cultural political art. A very often expressed fear is that the capacity of the Amål factory, when fully built out and trimmed, will be so big that it will create a monopoly situation and thereby give the company means to control the structure of the Swedish record market. The risks have especially been stressed upon by producers who for political or other reasons try to create a counterbalance to the international commercial market. EMI has even paid a considerable interest in the final link of the distribution chain, buying some record shops. Observers note this with a certain apprehension, remembering that EMI in Denmark now owns 50 of the most important record shops around the country with considerable latent possibilities to control the output.

The greatest and still increasing part of the distribution is held by a separate distributing company GDC (Grammofonbolagens Distributionscentral) owned by a group of record companies among which Philips and Polydor are the most important. GDC was for a long time an important resource of distribution for smaller, independent record producers and thus important for variation within the Swedish record repertoire. It has however restricted its undertakings of this character, mainly concentrating on the labels represented or produced by the company's part-owners. GDC's estimated part of the Swedish market was in 1975 about 41 per cent. Of the part-owners both Philips and Polydor have a limited production in Sweden and mainly act as importers from the parent companies in Europe.

Third in the Swedish market is Electra, representative in Sweden of (among others) RCA, Decca, Telefunken and MCA and also owner of the label Swedish Society-Discofil, a former one-man company. Under its former ownership this label created a position as an ambitious specialised label for classical and contemporary 'serious' Swedish music and this line is now carried on by Electra. Electra today covers an estimated 16 per cent of the Swedish market. CBS-Cupol, with a share of about 10 per cent of the Swedish market, is a former family company, now basically a representative of CBS records. Its own productions in Sweden are of minor importance.

Adding up these four great distributors one may find that they cover something like 90-91 per cent of the total Swedish market. The small remainder is of greater significance than it may look. Not only GDC but also other distributors in Sweden some years ago decided to limit their undertakings as wholesalers for minor companies. Some of these collapsed, others began (like Rikskonserten's Caprice) to build up their own distribution—in Rikskonserten's case basically on a cultural-political idea about

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## SWEDEN

decentralisation of the cultural distribution in Sweden. A group of producers, mostly referred to as the 'Waxholm group' (after a small town outside Stockholm) or as the 'left wing companies' created a distribution company of its own (and later even a anti-IFPI producer association, called NIFF). This latter distribution company—'SAM'—is in character a non-commercial foundation, mainly devoting its efforts to music of more or less openly declared political content. Caprice has through a mail order system and a record club tried to find ways outside the established chain of record shops in the bigger towns. Even some other record clubs (Reader's Digest Swedish company managing one of the bigger) and small record companies with a distribution of their own contribute to this 9-10 per cent of the total market. They are mostly in declared opposition to the 'monopolistic' group of EMI/GDC/Electra/CBS-Cupol and this way creating a high grade polarisation of the recording business in Sweden. In some situations this has resulted in violent open fights, like in spring 1975 when Sweden, after the triumph of Abba in the Eurovision Song Contest of 1974, found itself automatically chosen as host for the new contest. Parts of the Swedish music life protested against this, claiming that the contest as such through its commercial character was against the strictly non-commercial rules of Swedish radio and tv and that it also represented a repertoire of extremely low quality and unconscious politically reactionary tendency. The contest was nevertheless arranged in Stockholm but surrounded by anti-activities resembling a siege. Even an 'alternative' festival was held during the same weekend and claiming the right to be equally observed by television and radio, with popular and 'serious' music of non-commercial character.

The position of the Swedish radio and tv has since remained a complicated question in the recording business. The radio and tv company is a non-commercial company with sole right of broadcasting in Sweden. The government or parliament has no right to influence the programming directly but there is an agreement between the radio company and the state, saying for instance that the programmes shall be strictly non-commercial, objective and observing even the minorities of politics, religion and culture. The popular programmes of radio and tv however prefer to reflect the output of the commercial record industry, claiming the duty to represent the taste of the majority. First of all the radio channel 3 (with many programmes of top-of-the-pops character) has thereby an immense importance for the marketing of popular music on records in Sweden. To this very complex situation add that the radio company, due to insufficient financial resources has declared the necessity of reducing

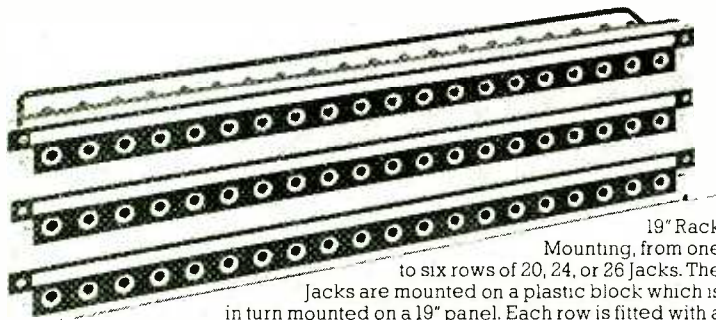
the amount of Swedish music (loaded with rather heavy costs for 'needle-time') during certain hours and concentrating on records that give lower broadcasting costs, such as American popular music. This of course influences the marketing situation for the record companies in favour of the imports, and increases the polarisation between different kinds of producers within the recording industry in Sweden.

It seems very clear that the future of music and recording in Sweden is very much a political question. If the present social democratic government keeps its position after the general elections in autumn 1976 the result will no doubt be new actions against what in the debate today is called 'the negative influences of the commercialism in the culture' and possible changes in the climate of the recording business in Sweden.

The described situation, with modest recording activities in Sweden and concentration on imports, is of course reflected in the technical resources. If however the capacity is relatively small the standard of the existing studios for recording of popular music is good. When it comes to 'serious' music Swedish radio in Stockholm is well equipped, however, with a serious lack of good studios for bigger ensembles. The Stockholm concert hall has never been ideal for these purposes and few alternatives exist. The present plans of the Swedish radio to build a new, modern orchestral studio is therefore of great importance, maybe not only for the symphonic recordings for which it will be specially designed.

The precise quantity of independent studios in the country is not known. There is, however, a considerable number of them, at least ten only in Stockholm and surroundings, most of them small in size but with modern multichannel equipment and mainly for recording popular music. There is a clear tendency among record companies and popular groups with high frequency of recordings of building studios of their own to avoid the rapidly rising costs of hiring the established big-time studios. In many cases, the background for this decentralisation of studio resources is even said to be the wish to avoid the control of the international record companies on the operations of the local producers. It should also be mentioned that Sweden has in EMS (Electronic Music Studios, no relation of the equipment manufacturers) one of the best equipped studios for production of electronic music in Europe. Originally created by the Swedish Radio, EMS is now a foundation, with the Swedish State as one of its guarantors. At its side, some smaller studios are active, of which Andromeda (owned by the composer Ralph Lundsten) has had remarkable success.

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# Japan

GIICHI HIRATA



**B**EFORE DISCUSSING the Japanese music industry in 1976, I have to wonder how people in other countries who do not have actual experience of our area are able to understand the real state of the Japanese music field. In the market place everywhere in the world we see Japanese stereo sets of many kinds being shown in radio shop windows. These sell very strongly; and in every tax free airport shop tremendous quantities of Japanese radio and cassette recorders are being bought. As a result of this, I think many foreign people will imagine our very big music market growing parallel with these phenomena. Of course, our music market is very big: more than 19 000 000 000 yen (£35 million, \$70 million) per year for discs alone.

But this brings us to the problem we are really suffering. Can you see many Japanese discs being sold in worldwide markets? No. The foreign brand disc market in Japan is very big, at about one-third of our market. It is our common experience that a big record company in Japan cannot exist without having a foreign label—but the Japanese music market in foreign countries is very small except in areas such as the Far East, the West Coast of America and Hawaii, where many Japanese are now living.

I would like to discuss music we have loved as a nation. One type of music which has achieved big sales in our market is known as 'enka'. This enka is translated in many English ways but I like to translate it as 'Japanese Chanson' so you can more easily understand it. Japanese have loved this enka very much, especially older people. But, from the viewpoint of more common music, I think the melody of enka seems somewhat special. The lyric of the song has special pattern and these songs are sung with special utterance of each singer with which the spirit of song is expressed; anyway, I dare say this enka is very far from being easily understood by foreign people without full understanding of Japanese language and life.

Another song which has been loved by the Japanese, especially sung by aged men, is

minyo, traditional local song. This minyo is played by Japanese instruments shakuhachi (bamboo flute), shamisen (with three strings, used like a guitar, struck by a large pick for rhythm and obligato etc), narimono (consists of Japanese drum and small percussion instruments) and singer with background chorus. Japanese on average like these enka and minyo very much and still have large interest in them; for example, we often sing them after a banquet.

I would not like you to misunderstand that these are all of the songs we care about, but it is clear that these songs have very big sales in the Japanese disc market. But I have now to mention the very strong tendency of these more established songs not getting such big hits in these last several years. I expect the same thing is occurring in other countries, showing certainly that the proportion of young generation to old is changing gradually year by year; men familiar with modern music from the beginning are spreading in the music market. Therefore, as a result of this tendency, 1976 big hits in the music market will be divided across every sort of music source and it seems more difficult to get big hits in certain music styles, such as we used to achieve.

Also in these markets, it will be even harder work to choose the song for men working in this field to score hits with. Being affected by this market condition, we have unfortunately no big hit on the scale of 1966, for instance. A big hit was made by Canyon Records here in the beginning of this year, since the end of 1975, *Taiyaki Song*; and more than 3 500 000 copies have been sold already. But this record is for children, sung in a certain television programme for morning education. Of course, this disc was bought by children at first, but I think the reason for this hit being so prominent is that it links to present Japanese feeling reflecting very dull economic conditions in today's Japan: there has not so far existed a song just right for today.

To help you understand other side of our present situation, I mention another example. Several big hits have been made continuously for these last two years by Mr K Ogura,

and his songs have occupied high ratings of charts here. But it is very curious that he is not a music composer but a banker. He works on a weekday for his bank and appears in the studio on Sunday for the recording—he never likes to appear on television, even though people like to talk about his music, which is widely appreciated among young men. We have to conclude from such phenomena that people wanting to listen to music are not going to be satisfied by 'given music'. Up to this moment, we in the field, have been trained to consider that 'music which has big hit possibility is made by our hands'. This is to say that in most cases music producers' endeavour was made to employ well-known song-writers to make technically better lyrics, to employ outstanding music composers to ensure that melody meets majority feeling easily; producers make a song with these assumptions and thus many songs and new singers appear on the market every year. Also, a record company might advertise songs they make with co-operation of radio or television networks with singers developing gesture and costume to match the song, and spending a lot of money. Anyhow, using all possible procedures, record companies used to send their songs to the market as if it would be the best song tomorrow. But there is a little change, so that the majority of music listeners are not going to be satisfied with these sorts of given music, but it takes place gradually. Big hits are not going to be made always by people of such limited musical range.

On the other hand, we see many older people and even some young men are very keen to train for minyo singing, which I am very happy to see because it is natural that people always look for true music. As you know already, it is only a hundred years since notated music was introduced in Japan; and modern music was brought into Japan just 30 years ago, after the second world war, by the Americans. So the history of modern music in Japan has been written in a very short time span, but we are now learning day by day, especially the young people, even though



we have some disparity as yet. If one says 'music is heard by heart or blood', I think, it is not time enough yet; but on the other hand, we have very rapid modernisation in the industrial field and with the aid of these industrial developments, I think Japanese music will be modified gradually but with increasing speed in the near future so that it can expect a worldwide reputation.

To let you know about our record industry in more detail, I would like to show you two reports from the Japan Record Company Association, one of which shows sales of each record company and the other of which is pressing quantities of singles and albums. These two figures show (1) all names of Japanese record companies, (2) total sales by each company, (3) pressing trends over these last four years, (4) proportions of domestic and foreign brands in these sales, and so on; but please understand that a little more discs and tapes are manufactured, because these figures include only the discs and tapes manufactured for record companies and do not include those initiated by book distributors or independent productions for their own uses.

Also, I wish to explain that we have three famous disc pressing plants which are Toyo Kasei, Canary Record Industry and Tokyo Denka; for recorded tapes, Pony and Apolon are the biggest manufacturers. Nearly all of the big record companies have their own pressing plant; besides their own production, they accommodate discs which overflow capacity of other record company's plants and discs of record companies who have no plant. Discs of independent productions are made in the above-mentioned three plants; discs in Japan consist of 50 per cent from record companies' plants and 50 per cent in independent pressing plants.

In addition to the names of record companies here, two companies have been established recently and their sales have begun in 1976; these are RVC and Discomate. RCA Victor here had been involved in JVC but they have parted and established a new independent company. Discomate have been established by TBS (Tokyo Broadcasting System) with their

brother broadcasting network and with JVC. There is a very lucky story; the first single release of Discomate, *Beautiful Sunday* got a highest charts rank here from the beginning.

The classical market in Japan is relatively low, between five and six per cent in share. Again, from the figure you can find that, since 1973, quantities of singles are not increasing so, but amount of manufacture of albums increased gradually and I think it will increase continuously from now. Again, you can see that all manufacturing amounts in 1975 have decreased against the amounts of 1974. This shows clearly that our market is very dull, particularly since the amounts each year had previously increased until 1974.

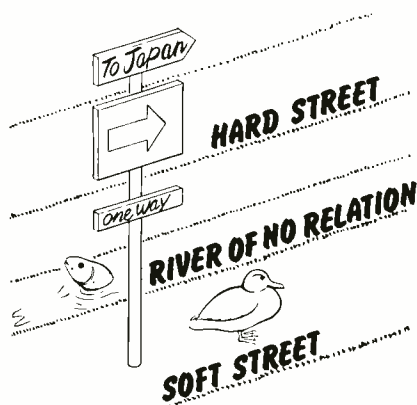
People who are seeing Japanese equipment and stereo components taking advantage on a large scale in the world-wide market cannot believe that many of our recording companies are still buying foreign equipment for their recording studios to satisfy their demands; even though our industry has a highly developed semi-conductor technology and computer

technology, we cannot find good mixing consoles here for music recording. So in Japan even foreign console manufacturers are using quite a lot of Japanese components in their machines. We can see clearly what we are lacking now, after these big developments of our industry. As you see, much foreign music and professional recording systems are coming to Japan and many of our consumer products are going abroad but unfortunately these two streets are running parallel in one direction now. Therefore, it is our task to make a bridge over this river from 1976 onwards.

There are recording techniques special to Japan, and the remarks here reflect not only my opinion but that of other engineers across the music recording field. For instance, use of noise reduction systems with tape recorder are probably going to be reduced. One of the reasons is that Japanese engineers are having some doubt about the sound quality through noise reduction systems, recognising some changes of sound; in other words, Japanese sound speciality sometimes requires high emphasis on the 'naturalness' of the sound. Also, it seems somewhat complicated to insert noise reduction system in recording practice because recordings today have different recording levels according to the latest recording techniques which each studio is following; and fine adjustment of the tape recorder is required on every recording. Additionally, many of today's recordings, of today's music, have fewer vacant intervals where noise is obvious from beginning to the end, if an engineer fades the sound out smoothly at the end of the music. The dynamic range is often lower.

These are some points showing why we cannot move to 24 track recording so easily, as it needs noise reduction systems more; also, this recording of more than 24 tracks is often considered to need automatic recording techniques for improved efficiency of mixdown. Which is a more reasonable way of recording from now? Of course, these things form daily discussion, but it seems very difficult to reach a final conclusion today which most engineers would agree with.

Who can make the bridge?



## JAPAN

In other areas, we have tried to improve our techniques to obtain better signal-to-noise ratio of our recordings. Some studios have moved to the standard of 250 nW/m of flux on high-output tape, as some of you are doing, but we found in cases when the recording level was accidentally raised that it often provoked more distortions—NAB recording response for modern music requires much more level

for bass guitar and bass drum, for instance, and some studios returned to 185 or 200 nW/m standards.

Additionally, not all Japanese studios are equipped with ppm for recording level indication and it is very bad that some of them are equipped with Japanese vu meters whose response time is very low at around 300 ms. I think, therefore, it is necessary to spend a time so all recording systems here employ ppm and utilise the possibility of ppm for reasonable and more accurate

Disc pressing report				
<b>Singles</b>				
	Jan-Jun		Jul-Dec	
1972	47,660,411 pcs	100%	43,252,677 pcs	91%
1973	46,742,309	108%	46,998,110	101%
1974	48,142,269	102%	49,758,991	103%
1975	44,607,298	89.6%	48,044,817	108%
<b>Albums</b>				
1972	23,095,188	100%	36,510,972	158%
1973	32,922,684	90%	44,637,640	136%
1974	37,548,472	119%	45,791,720	122%
1975	35,369,751	77.2%	48,727,519	138%
<b>Total</b>				
1972	70,755,599	100%	79,763,649	113%
1973	79,664,993	99.8%	91,635,750	115%
1974	85,690,741	94%	95,550,711	116%
1975	79,977,049	83.7%	96,772,336	121%

### Production distribution, March 21-September 20, 1975

	Total amount		Discs		Tapes	
JVC	1,200,000	16.23%	840,000	14.24%	360,000	24.15%
Nippon Columbia	751,900	10.17%	563,925	9.56%	187,975	12.60%
Toshiba	947,500	12.82%	844,222	14.31%	103,278	6.92%
King	695,365	9.42%	577,970	9.80%	117,395	7.88%
Teichiku	441,467	5.97%	264,880	4.49%	176,587	11.84%
Polydcr	817,400	11.06%	681,500	11.55%	135,900	9.12%
Crown	303,400	4.11%	243,327	4.12%	60,073	4%
Tokuma	224,600	3.04%	141,500	2.40%	83,100	5.57%
CBS/Sony	949,760	12.85%	731,315	12.40%	218,445	14.65%
Nippon/Phonogram	365,400	4.94%	316,600	5.37%	48,800	3.27%
Canyon	156,000	2.11%	156,000	2.64%		
Toho	84,731	1.15%	84,731	1.44%		
Warner/Pioneer	408,000	5.52%	408,000	6.92%		
Trio	45,000	0.61%	45,000	0.76%		
TOTAL	7,390,523	100.00%	5,898,970	100.00%	1,491,553	100.00%

recording level. On this point of view, we appreciate very much the new low cost ppm using gas-bar plate and comparator technology, because the cost of ppm was always a problem in past installations.

We hope to move to higher recording tape speed, which is not afflicted with high frequency loss; but it is necessary also to avoid sound change from head contour effects at the low frequency end, to be allied with development of tape quality itself. But we know if we move to a new recording standard that it has to be a more reasonable way of solving problems we have today, while overcoming troubles such as interchangeability with our present recordings. How difficult it is!

In contrast with the very dull condition of music recording studios affected by technical and economic factors, many studios of radio and television stations mainly in local areas of Japan are very anxious to replace their recording equipment. This is because many of them are still using very old systems, some of them even with valve amplifiers. Two famous mixing console manufacturers here, Tokyo Koon and Tamura, are very busy trying to fill these demands now. Also, engineers in sound reinforcement fields are very anxious to replace their systems, as many of their systems are of older types too.

Actually, some of the laboratories of hardware manufacturers here are developing considerable interest in recording practice and are going to have their own recording studios to learn connections between their latest developed technologies and sound recording techniques. To design and develop new amplifier or speaker systems in Japan today, very high engineering technology is used with aid of computer simulation; but I think such manufacturers are going to have to understand that the new products might be made by modern methods of production but, finally, our human ears have to judge whether the new products are released in the market or not. We have the very difficult experience, for example, that quadrasonic systems of today have been developed mainly in the field of hi-fi manufacturers and are still not accepted in recording fields. Therefore, I wish to say again that 'bridges between hard and soft streets are necessary in our country today'.

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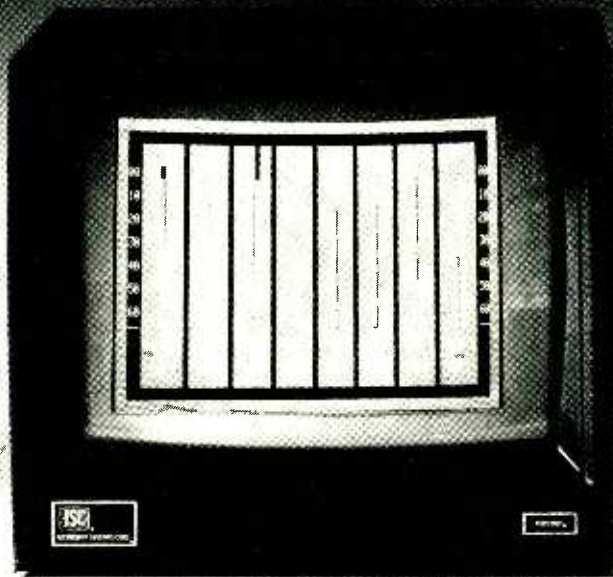
\*Such as: AKG, Ampex, Crown, DBX, Dolby, J.V.C., Parasound, Tascam, Eventide, Audiotronics, White, Roger Mayer, J. B. Lansing, Shure, Sony, Scully, McIntosh, Urei

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# You're Looking At The Most Advanced Automated Remix System:



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Close to five years ago, we introduced the first programmable mixing system: Compumix 1. And we demonstrated to the Recording, Film, and Broadcasting industries that a whole new technology for the storage of audio mixing data was a reality. Well, like any company which introduces a dynamic new, and useful product, we ran into some competition. And the race has been on ever since.

Not to underestimate our competitors, at least three working systems have been proposed, and appear to work. There's everything from a d.c. motor moving faders up and down to an infinity of additional console buttons and blinking lights.

*We think the ultimate answer is both simpler and more complex than that.*

For the company that started the whole thing, we have been conspicuously quiet. And we would like you to know the reason. Our new Compumix Three utilizes a separate data recorder for the storage of mixes: a dual-drive floppy disc machine which is synchronized via an industry standard code (SMPTE) to the Master Tape Machine. After thoroughly evaluating all the available media, the disc came out best. Here are some of the advantages:

- **SPEED** — More information faster, dynamic and static
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- **ACCURACY** — Error correctibility, real-time parity checking
- **FLEXIBILITY** — a convenient, flat, low-cost medium.

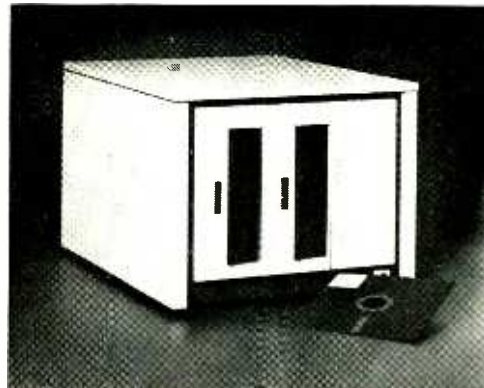
Along with the flexibility feature comes the capability to program editorial information on the mix, and expand the software programming at any time.

The input microelectronics processor is the best computer industry has to offer: Motorola 6800.

And to make sense out of all this new technology, a color graphics display terminal which shows a real-time Video readout of the mixing data and whatever else you care to take note of during a mix. Interfaced to a large Remix board the Compumix Three can work with everything from Faders only to complete programming of the entire console: Equalization, Pan/Echo, switch closures.

Quad Eight has delivered 20 automated systems. And, as we said, that started five years ago. We're now into the third generation design and believe that what we now offer is the most advanced and sophisticated system out there. We would like you to think about that and everything else we've said if you're interested in an automated remix system.

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Schugart SA3800 Dual-Drive, Dual-Density Floppy Diskette Data Recorder.

### SPECIFICATIONS

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# news

## APAE 76

The yearly event was once again held at the Bloomsbury Centre Hotel, Coram Street, from March 16 to 18. However, the show could be the last at this venue due to clichéd reasons of cost and timing clash. Even last year there were rumblings; an extract from the 75 show report: *Talks are in progress to find ways of stabilising the cost of the exhibition. Suggestions include moving the show from the Bloomsbury to a provincial centre; at the same time, more local venues would be organised much in the same style of the Leeds event (PA 74 Parkway Hotel); a small, successful event.* It is possible that one event would be held in Scotland. According to Keith Monks, APAE treasurer, people are still talking. Although a personal opinion, and on the surface a justified statement, he suggests that a better show arrangement would be for would-be APAE exhibitors to enter a joint venture with the British Overseas Trade Board to sponsor an entry to the European 1977 AES show. This would be in addition to a British APAE show at a cost and convenience venue. Benefits to participants of the Paris AES are obvious; export possibilities should be on tap at a fraction of the price of going it alone.

So far, negotiations with the BOTB are at exchange of correspondence state; however, this is enough to spike the guns of the APRS who might wish to operate a similar arrangement. The Board will only deal with one party to an individual trade show. Naturally, the main AES event is organised under the auspices of the European section and, thus, does not interfere with any other solely British arrangements. In terms of exhibitor response, there have been six definite yes answers and up to 15 very interested as canvassed over the period of the APAE 76 event. This compares with a total of 36 exhibitors at the show.

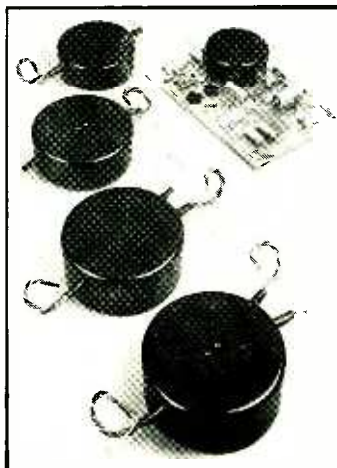
The industry joint venture could have much wider implications to other parties; in particular those who are members of the APRS and other people. Conditions for BOTB sponsorship include no limit as to who can, within the industry, apply for stand space. Membership of the

APAE is not a condition. It is merely a question of 'go to it' on the part of individual companies. Foreign exposure must be good news for the industry; it needs a cohesive influence without which, it will simply jog along, or at worst, fade. A moment's thought makes one wonder why such an arrangement has not come about before. After all, the American AES show includes a vast diversity of interests represented at its functions. Reference to this year's Los Angeles preview (p 30) demonstrates the fact without further recourse to words. Different camps look on the sound re-inforcement/recording/av aspects of the industry in the same light as oil and water although experience shows that they can mix. It is perhaps not too cynical to correlate more than enough empire building on the part of individuals in organisations concerned with the associated lack of co-operation. But, one supposes, that's life.

From both a statistical and subjective viewpoint, the 76 APAE was a success. The number of exhibitors was up by four without including the space allocated to tea and cakes. One estimate suggests that although the numerical attendance was slightly down the quality of expo inquiry was very high. Apparently, over 70% were serious minded people.

## Frank Ogden

*Avel-Lindberg toroids offer low hum field, small size and high environmental protection.*



## Low field transformers

Toroid transformers find applications in recording equipment principally on account of their low field radiation coupled to a physically small size. The Avel-Lindberg range are resin encapsulated with flying lead connections for direct mounting on the pcb. There are five unit ratings between 15 and 120W, 50/60 Hz. Size ranges from 69 x 30 mm to 113 x 49 mm. Avel-Lindberg Ltd, South Ockendon, Essex RM15 5TD. Phone: 040 25-3444.

## Mini Nagra remote

The Document Group remote control unit SQN offers more than simple control of transport for the Nagra SNN series miniature tape machines. When used with SQNP-02 interface (permanently attached to the side of the tape machine) the ensemble offers: Headphone and vu meter monitoring with or without the transport motor running. Built in pre-amp and phantom powering for the Sennheiser MKH rf condenser mics. Pilottone generator. Bass cut filters. Internal batteries. Further, the unit remotes the standard functions of the SNN recorder in addition to those listed above.

The makers claim the recording channel for film sound can be reduced to 2 kg total weight. Document Group London Ltd, Third floor, 8/12 Broadwick Street, London W1V 1FH. Phone: 01-437 4526/7.

## Aerial current

The Delta Electronics Analog Antenna Monitor measures the relative phase and current in individual arms of directional medium wave aerial arrays. Designated model AAM-1, the instrument claims to meet or exceed all FCC specifications and as such has been given the 3-235 FCC approval rating for equipment in the signal path.

The AAM-1 is said to provide the following features: stable phase and current ratio readings at high modulation indices; phase sign data, true ratio readings with automatic correction for variations in reference tower amplitude, interface with remote control hardware and remote metering facilities. The unit will process information on phase/current in up to eight arms of an aerial network.

Delta Electronics Inc, 5534 Port Royal Road, Springfield, Va 22151, USA. Phone: (703) 321 9845.

## Busy Alice

Alice Broadcasting is clearly happy; the company gently crows about the recent orders from the British Forces Broadcasting Service for re-equipment of the Gibraltar and Cyprus stations with self-op broadcast desks manufactured along lines similar to those supplied to Beacon Broadcasting of Wolverhampton.

The Beacon job was worth over £50 000 and covered design and supply of station hardware as well as installation and commissioning of the total system. Further orders for Alice gear include a re-equip contract for Ulster tv and three ilr orders for the STM6 six channel ob mixer. Alice (Stancoil) Ltd, 38 Alexandra Road, Windsor, Berks. Phone: Windsor 51056.

## Bird song

If you're fed up with the prospect of doing that take yet again for the twenty-third time in a smokey ol' control room, you might find just what your spirit needs on this residential weekend teach-in at the University of Aberdeen. It's theme is 'The Countryside in Sound' and is designed to be of interest to all those who would like to find out more about, and try their hand at, the production of natural history sound recordings.

Organisers of the course, to be held at Tarradale House, Muir of Ord, Ross-Shire from April 30 to May 2, are Richard Margoschis, Bill Sinclair and Geoffrey Gill. Further information may be obtained from Geoffrey Gill at: The Department of Adult Education and Extra Mural Studies, 23a High Street, Inverness, Scotland. Registration cost £10 (residential) and £5 (non residential).

## New solder system

The Adcola 222 soldering system offers a soldering iron with the usual range of bits fitted with sensing element to maintain bit temperature within  $\pm 2\%$  of a pre-selected value.

The iron is controlled and powered from a remote box fitted with a temperature dial calibrated from 180 to 420°C. The heating element operates from a low voltage ac supply with the duty cycle controlled through a triac within the control box. Feed back from the sensor controls this device. Advantages of the system include prevention of burning when used on high density fibre-glass pcb modules. Adcola Products Ltd, Adcola House, Gauden Road, London SW4 6LH. Phone: 01-622 0291.



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## NEWS

### Soundcraft update

Physically, the new four and eight output desks look very much the same as the 1975 specification models. However expanded options are available with the new series; these include changes to the output switching, channel sends, eq and monitor facilities.

Specifically, the basic 16/8 (the exact number of input channels can be varied provided it is a multiple of four) can now be switch routed to up to 16 outputs, twice the number of the previous arrangement. Similarly, the 16/4 can be routed eight ways. There are two more cue sends headed by a pre/post switch. Although the former channel eq is still available, the new facility incorporates hi and lo shelves with adjustable roll off points and two parametric mid-range bells. Further, the hipass filter has a parametric hinge point from about 40 to 270 Hz. Monitor capability is now wide enough for most recording applications. Soundcraft Electronics Ltd, 5/8 Great Sutton Street, London EC1 0BX. Phone: 01-251 3631/2/3. Systems and Technology in Music Inc, 2025 Kalamazoo, Michigan 49001, USA. Phone: (616) 382 6300.

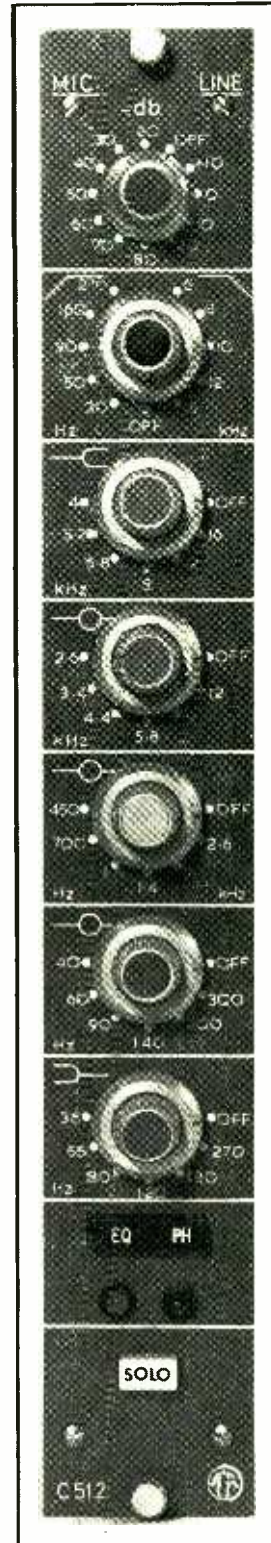
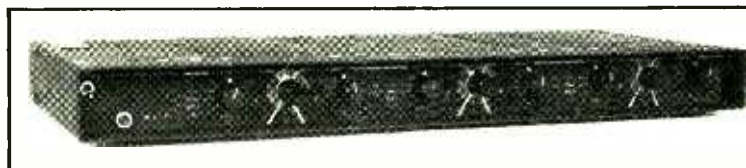
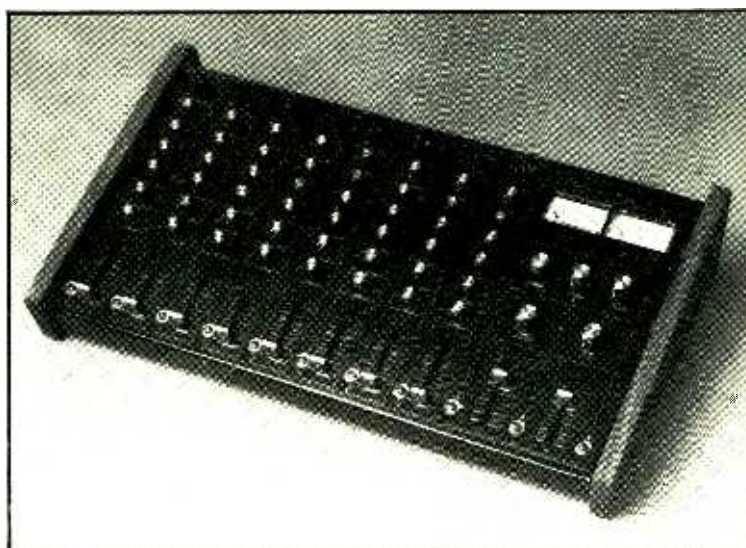
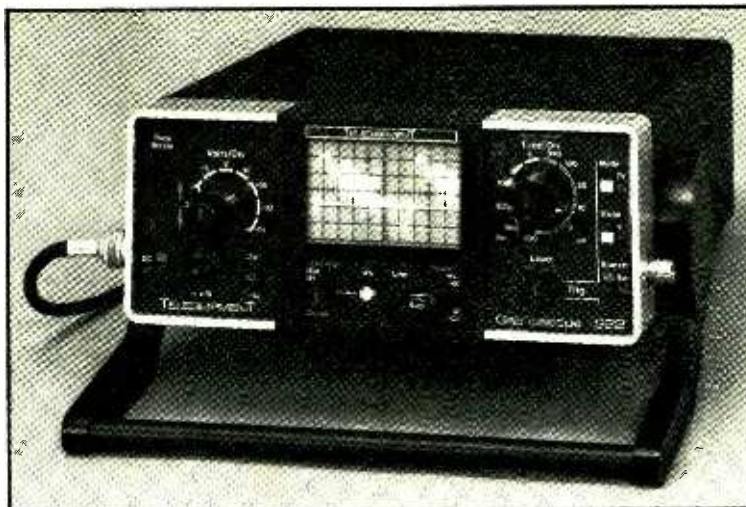
### Vca mixer

Richmond Sound Design now produce two new models in the portable mixer range employing voltage controlled circuitry in the front end. Both the *M82-II* and *S42-II* feature a vca gain stage allowing direct interface with automated mixdown hardware, vc synthesisers; it also offers sub-grouping possibilities.

The systems, available in 8, 16, 20 and 24 input format, include the usual foldback and echo send functions, eq and comprehensive monitoring facilities. Richmond Sound Design Ltd, Box 65507 Stn, Vancouver, BC, Canada V5N 5K5.

### Active crossover

The Custom Audio Electronics rack mounting *XO-1* electronic crossover offers a tracking filter assembly operating between 0.2 and 8 kHz. Output is through adjustable gain line drivers. The manufacturer intends the user to stack and serial feed banks of units to achieve various system combinations. The filters slope at 18 dB/octave. Units are powered by a common supply mounted at the base of the rack. Custom Audio Electronics Ltd, 2828 Stommel Road, Ypsilanti, Mich 48197, USA. Phone: (313) 482 6568.



### Portable scope

The Telequipment *S22* offers a 5 MHz bandwidth and a screen size of 6 cm x 3.6 cm. With emphasis placed upon small size, light weight and simplicity of operation, it works from power provided by internal Ni-Cd batteries or directly from the mains. Sensitivity is 1 mV/cm at 1 MHz or 10 mV/cm at 5 MHz. The instrument costs £185. Tektronix UK Ltd, Beaverton House, PO Box 69, Harpenden, Herts. Phone: 058 27-63141.

### Channel amp

Tweed Audio now manufacture a comprehensive modular eq unit

which also features full pad, eq defeat and phase reverse facilities. Between the hf and lf shelves turning at 6 frequencies between 4 and 16 kHz and 36 and 270 Hz respectively, there are three bells, hf, mf and lf, offering up to  $\pm 15$  dB control with a total of 18 centres. There are also comprehensive hi and lo pass filters.

The *C512* interfaces with line level equipment up to +20 dBm at a quoted 0.05% thd at 1 kHz. Equivalent noise performance sourced from 600 ohms claimed to be better than -126 dBm. Tweed Audio, Rosewood Industrial Estate, Kelso, Borders, Scotland. Phone: (05732) 2983.

**Top left:** the new Telequipment single beam battery/mains oscilloscope, the *S22*, with a bandwidth of 5 MHz.

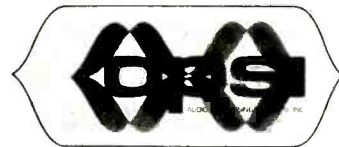
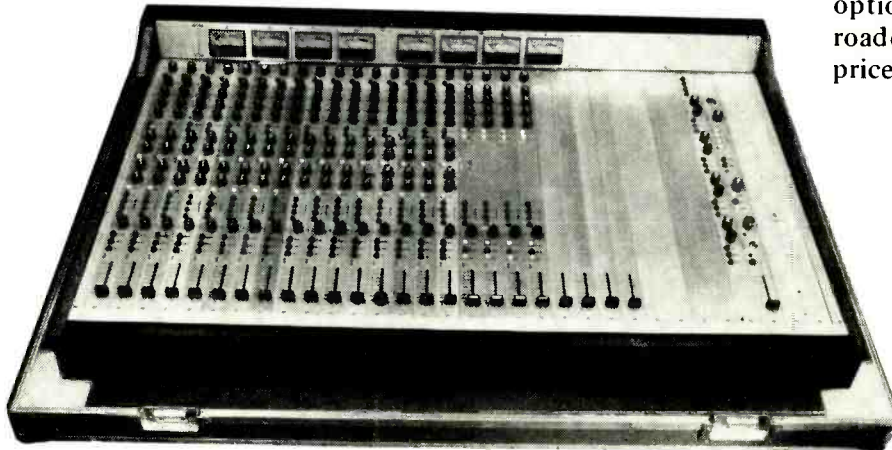
**Centre:** Richmond Sound Design portable mixer with voltage control.

**Bottom:** Custom Audio Electronics *XO-1* parametric filter set.

**Right above:** Tweed Audio *C512* eq/channel amp.

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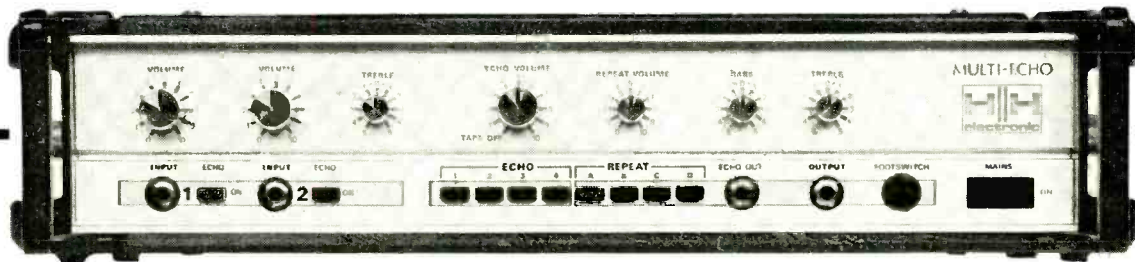
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## NEWS

### Very cutting

Hard on the tracks of the introduction of their computer desk, Neve has teamed up with the British lathe company MSR Electronics Ltd to add computer control to a new cutting system—the Neve/MSR 2000 Series Disc Mastering System. Introduced in March, it incorporates among the usual features a half speed position for carrier quadruphony. According to the manufacturers, the software addition gives the hardware 'digital

computer control of all functions, digital display readout of cutting suspension, a rumble-free servo control turntable with speed indication by electronic strobe and automatic groove compensation.'

Despite the rush of new products, the company has made a few more in the established lines. Konk, the Kinks studio, will update the existing 16/16 by replacement with a 32/16 24 track basically to 8038 spec. A 24/16 goes to Cairo and a total of four broadcast 10/2 consoles will head for the East. Rupert Neve & Co Ltd, Cambridge House, Melbourn, Royston, Herts SG8

6AU. Phone: 0763-60776. USA: Rupert Neve Inc, Berkshire Industrial Park, Bethel, Conn 06801. Phone: (203) 744 6230.

### Produce of Orange County

Although both new products from Orange County (no relation) implement limiting functions, the *Vocal Stresser* combines the features of a four band parametric equaliser, vari-slope compressor, expander or gate as well as a basic limiter, while the *Dual Complex Limiter* offers stereo operation, vari-slope

compressor, gate expander and peak limiting with control circuitry incorporating switchable pre-emphasis ahead of the rectifier circuitry. Model numbers are *OCA749XR* and *OCA740XRS* respectively.

Both units are designed for 9 cm rack and are available from stock. They cost \$1256 and \$1510. Orange County Electronics Corporation Ltd, 1125 Empress Street, Winnipeg, Manitoba R3E 3H1, Canada.

USA: PO Box 369, Pembina, North Dakota 58271. Phone: (204) 775 8151.

## CHINA

there are something like 260 models available, (the policy of provincial self-sufficiency resulting in wide variety) and ranging from ultra lightweight transistors to multi-wave band table sets; and radio building is very popular.

Radio parts and supplies are commonly available and are bought in large quantities. With the general level of technical knowledge what it is, virtually everyone in China with a desire to have access to a radio receiver can have one. (Smythe, op cit p36)

As regards the programming on Chinese radio, this needs to be seen in the context of the Cultural Revolution, where the transformation in media use is dramatically demonstrated, as in this account by a Kwangchow radio worker on the programming before 1966.

The radio programs were feudal and bourgeois in tendency. So we broadcast a story of elephants making love in the zoo; about beautiful islands with birds and snakes; instructions in arranging flowers; about cries of animals; about the colour of clothes and dancing on holiday in parks . . . (Smythe, op cit p17)

Wuhan radio (1972) is about 50 per cent occupied with news of which two-fifths is relayed from Peking. There is a total of 13½ hours of programming in three segments per day. Weather and river-level reports constitute seven per cent . . . the remainder, 43 per cent, is classed as art. It consists of Modern Revolutionary Peking opera, local productions, revolutionary music (songs from the Anti-Japanese and Civil War period, modern patriotic songs), and music from Chinese ballet. This distribution of programs is typical. (Smythe, op cit p21)

Much of the news consists of straight readings from the newspapers (and I am told, incidentally, that a prime objective for Chinese tv is to achieve national spread of tv news printout); a more recent breakdown of radio programming includes live conference relays, literature readings and political study programmes, special programmes for children, women, PLA, farming etc. A most important element is educational broadcasting—Peking radio puts out nine programmes of English lessons daily, and I remember the hotel cashier in Shanghai with his ear glued to the speaker at midday, learning English. Stations also put out talks by workers, peasants, and soldiers—530 times by Wuhan in 1971—

and also involve them in the running of the system; indeed a worker from the station told Dallas Smythe that 'the masses now run the station'.

Shortwave is used extensively in China for domestic broadcasting; distances are so great, and this of course has other connotations.

In China, quite a number of sets have the capability to receive foreign programs . . . No one could stop the people from listening to them if they want to . . . (they) can decide for themselves. We want as many people as possible to have radios. Prices of sets were reduced by 30 per cent last year (1971). No licence fees are charged for radio (or tv) receivers, nor is a record kept of who buys radios or parts with which to assemble them. (Wuhan official, quoted by Smythe, op cit p36)

Wire relay systems play an important part of China's communication system, and have greatly expanded since the Cultural Revolution, both as to communes and countries with their own stations, and production brigades and teams with loudspeakers. Kiangsu province for instance in 1972 had 68 country-level wire-broadcast stations (ten times the number in 1965) and eight million loudspeakers (400 000 in 1958).

China's rural broadcasting network has developed vigorously. At present, basically all counties and municipalities have set up amplification stations; and more than 90 per cent of the production brigades and teams can listen to broadcasts. Loudspeakers have been installed in 63 per cent of the country peasant households. (Summary of World Broadcasts, 9/10/74)

One major problem the Chinese face is the multiplicity of languages (China is 94 per cent Han, but there are another 40 million of 55 nationalities) and of local dialects, speaking the same Chinese written character completely differently. Thus for instance in Kwangchow the character for 'thankyou' is pronounced something like 'mong woyn nyeh'; in Peking it's 'seeay seeay'. The Peking dialect of 'Potonghua' is being established as the common tongue, and in this radio plays an important part. But in this, as in all the other aspects of technical sound, the Chinese seem to see radio as an extension of existing educational and informational forms and rooted in the written language. The thrust is still towards the abolition of illiteracy, not the development of a sophisticated audio/visual

audience; but with a 90 to 95 per cent literacy in schoolchildren, this is likely to change.

Public address systems play a great part in Chinese social life. Thus, at 10 o'clock every morning, the rollicking music comes from every loudspeaker and everyone does their morning exercises; train journeys have a continual pa accompaniment and so on. Quality often leaves much to be desired and the emphasis seems sometimes to be on loudness alone. But they meet effectively what the Chinese see as the need, and fulfil an important propaganda function. During the Cultural Revolution, the media had a special role in making the tumultuous debate nationwide.

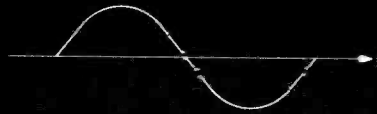
During the second half of September 1967 it was common to see little knots of Chinese at every intersection reading long wall newspapers . . . Most of the mass organisations went on to reprint them . . . or record them on tape, after which they were disseminated throughout the length and breadth of China. (*A History of the Chinese Cultural Revolution*, Jean Daubier, p216)

'We had only three loudspeakers going, but the opposition had six big ones and drowned us out. Not content with this, they got ten more—brand new they were with wrapping still on them! They strung the whole eastern end of Nanking Road with speakers, so that we were literally surrounded by noise. This is how they used their material superiority to keep the unenlightened masses from hearing our voice.' (Red Guard's account of the struggle in Shanghai. *Turning point in China*, William Hinton, p63)

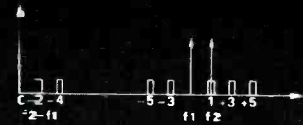
I have written of what seems to me the matter of fact and entirely functional approach of the Chinese to the media in general and technical sound in particular. For them the super-sophisticated electronic hardware we have come to accept as part of our aural lives is, in the words of Mao, 'to embellish the brocade with embroidery' when they still conceive of the primary need as 'to offer fuel in snowy weather'. But it cannot now be long before the snowy weather is passed, so great have been the achievements of this extraordinary people; and when they feel that the time is ripe, I believe that we can expect a grasping and application of the hardware into areas of creative activity of which we haven't even dreamed. When the people of China take the mass media to themselves then indeed will they become the media of the masses.

# Swept Distortion Analysis

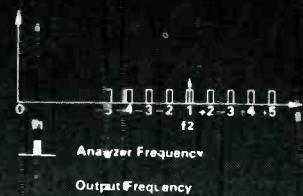
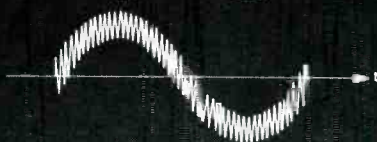
Harmonic



Difference Frequency



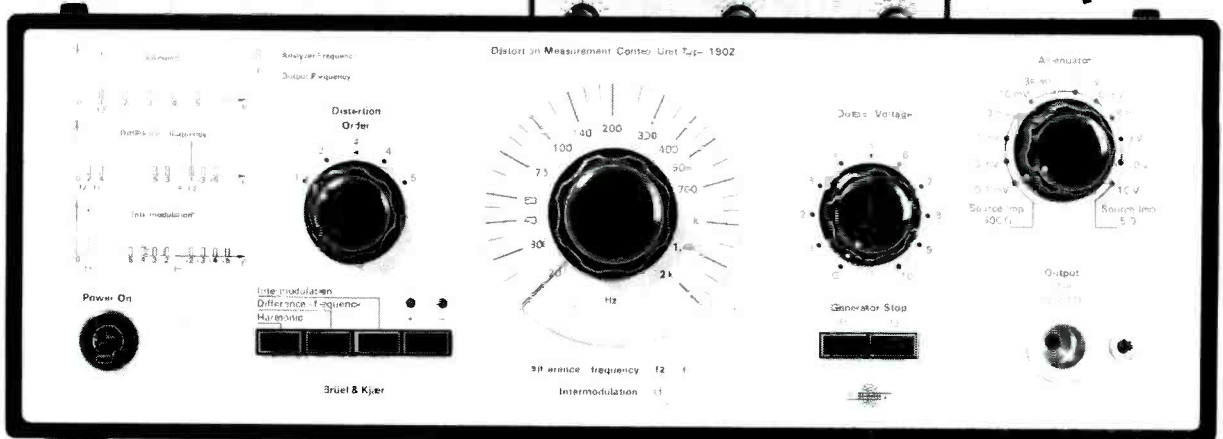
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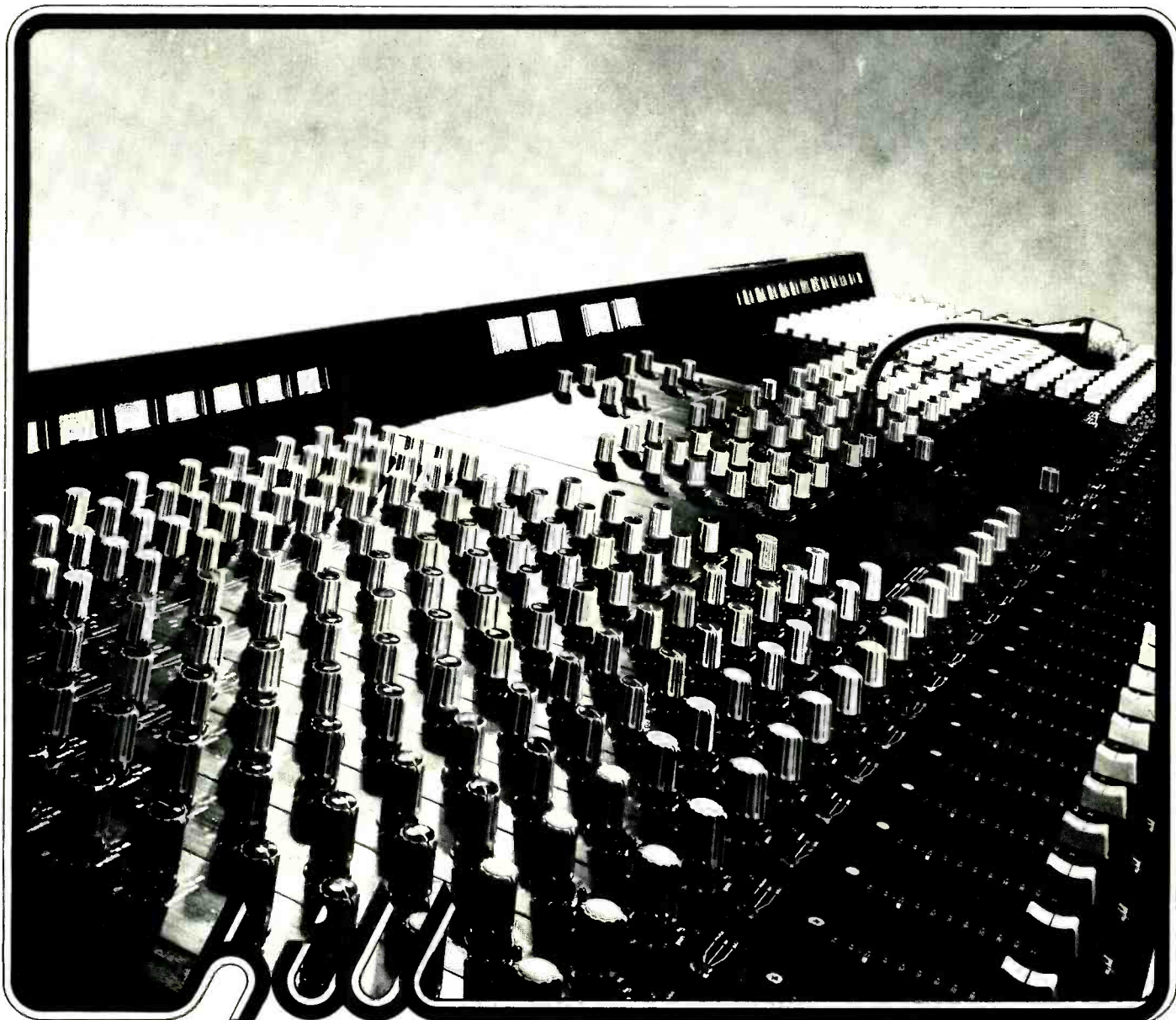
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AL LAWRENCE



IT IS VERY GOOD to report that after several years in the doldrums the recording business in New York is experiencing a much needed recovery. Some of the New York studio owners and musicians I spoke with told me they had never felt a slump but the fact is that during the late sixties and early 1970s the record business in general was leaving New York.

New York was once the centre of the record business in America and though there were facilities in Los Angeles, Chicago and Nashville the money, power, and bulk of the recording was here. There were several important independent studios but much of the recording was done by the bigger companies, like Columbia and RCA, in their own studios. Then, sometime around 1966 and 1967, a series of factors combined to change the complexion of recording here and abroad. New York was to become the biggest loser.

The New York sound of the late fifties and early sixties had been one of slick production and heavy orchestration ably abetted by some of the best studio musicians in the business.

In the mid sixties the British invasion hit the American market and radically altered the course of American pop music. These small, self-contained groups began to dominate the market and record sales hit unprecedented new heights. With the new profits came the incentive to encourage new groups and increase production. Eight track recording machines were by now the standard, making it easier for some of the new groups to overcome their incompetence by endless overdubbing. The stage was set for an even bigger change—the arrival of the underground acts.

Among the first to arrive were Jimi Hendrix and the Vanilla Fudge. It took a year for their presence to be felt, mainly on fm radio but, once accepted, they were followed by Blood, Sweat and Tears and Electric Flag in the East and the Jefferson Airplane, Buffalo Springfield and the Grateful Dead in the West. The impact was tremendous. The record companies, rich from their recent successes, were in a position to offer big money. New groups

not only demanded more money, but also insisted on controlling where and how they would record. The record companies conceded.

Some of the older studios found themselves booked to capacity as artists with larger budgets demanded more and more time. New studios opened to accommodate the increased production. Some of these were begun by engineers who took their clients with them from places of former employment to the new places of business. Other studios were opened by producers who found that they could save money and control their product more efficiently. Whereas the established studios had made their own custom boards, companies sprang up to supply the new studios. Opening a studio became a turnkey operation. The patient engineer, who could work for weeks on the same song as it was overdubbed endlessly, found fame and fortune.

Many of the established artists began to leave New York. Columbia Records, with extensive facilities in Los Angeles, opened a studio in San Francisco to be near the group scene there. Simon and Garfunkel, who have always recorded in New York, switched immediately to be with their engineer and co-producer Roy Halee. Sly Stone, whose early hits had been cut at Columbia in New York, returned home to the West Coast. Bob Dylan, who had gained his fame in New York's studios and coffee houses, moved out of the city, was injured and retired for a while. When he returned to recording it was not to New York, but to Nashville. Chicago, whose initial hits had also been made in New York, followed their producer Jim Guercio to Caribou Ranch in Colorado. Wherever the stars went, others followed.

Nashville boomed as some groups sought to improve their success with a country sound. Others moved to Los Angeles for the easier pace and were welcomed as new studios popped up everywhere. New York, which had grown at first with the burgeoning market, was left behind.

Some of the big New York-based labels folded their tents and headed West as well.

MGM, Decca and Capitol, not having kept pace with the industry, consolidated their forces in Los Angeles. Later Elektra records merged with Asylum Records and moved to Los Angeles.

Other factors helped to contribute to the emigration from New York. The nightclub scene died and nightclub entertainers moved West to be closer to the studios in LA and the circuit in Nevada.

Discotheques, which had provided employment for many aspiring rock groups, finally closed their doors as tastes changed; dancing ceased and the audiences began to sit and listen. The coffee houses in Greenwich Village that had launched so many of the groups of the mid-sixties found they could no longer pay the fees asked by the now affluent stars. The same problem was to eventually spell the end of the Fillmore East. As the facilities for performers closed, upcoming acts were forced to consider the alternative; crowd into a cold New York apartment or move to a house in sunny Los Angeles. Westward ho!

Naturally the recording business continued in New York but the studios could no longer boast of the star-studded client roster. Recordings for radio and tv commercials helped keep some studios going. It was not glamorous work, but the jingle business was tied to the Madison Avenue advertising firms and New York maintained its predominance in that area. Jingle producers worked swiftly and efficiently, employed the best studio musicians and paid their bills promptly. Tv and film work helped to supplement studio billings as well.

New York retained its pre-eminence as the capital of classical music but few companies were involved and most classical recordings were done in the company's studios or on location in the larger symphony halls. In that sense, classical music has had little effect on the New York recording industry.

About 1972 a national economic recession hit strongly in America. There was talk of cutting budgets and paring rosters. Even the steady jingle business hit a slump. Everyone held their breath, for though we all believed recession would not hurt

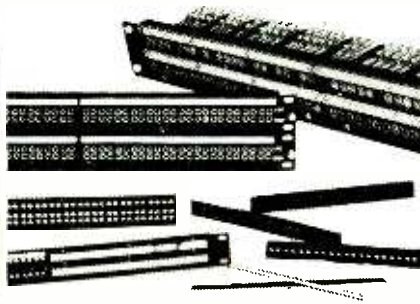




**Above left:** *Media Sound, New York*  
**Above right:** *Criteria Studios, Miami*  
*Studio C. Immediately above:*  
*MFSB strings at Sigma Sound*  
*photo—Stu Parker*

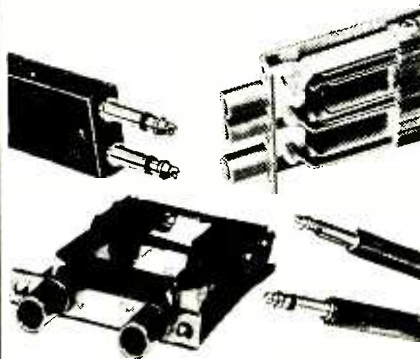
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## USA EAST

records (rather, it would keep people home and listening more), no one was sure the fact would support the theory.

Oddly enough, at just the point when things began to look bad nationwide, New York recording started on the upswing. Like the decline before it, the process of change has come about slowly. Paul Simon returned to New York, so did Dylan. Several New York-produced single artists, including Janis Ian, Phoebe Snow and, more recently, Eric Carmen, hit the charts strongly. All of these artists used studio musicians. In addition, another trend in music developed which focused more attention on New York—the disco sound.

Disco started in the major cities, most notably New York, Philadelphia, Baltimore and Washington DC. It was an underground scene for a time until disco buyers began to influence the pop record charts. Most of the disco hits were being made on the East Coast. Many of the disco records featured the New York sound, slick productions heavily orchestrated and played by studio musicians. There are many funkier disco records being made by self-contained r&b groups but even those reflect another side of the New York sound. One of the first studios to cash in on the new disco craze was Media Sound. Formerly involved mainly in jingle recording, Media began turning out disco hits by Gloria Gaynor, the Main Ingredients, Van McCoy and Kool and the Gang. Media's success spread to other studios as producers raced to profit in the sound. New York was alive and well again.

Two other cities on the East Coast have been experiencing boom periods as a result of disco: Philadelphia and Miami. Philadelphia is to black music in the seventies what Motown had been in the sixties—before it too went Hollywood. There has always been a small recording business in Philadelphia almost as a satellite of New York. The cities are geographically close and have always shared some musicians, producers and arrangers. In the late fifties Bobby Rydell, Frankie Avalon, Fabian and of course Dick Clark made their reputations in Philly. Later on, in the early sixties, Chubby Checker, Dee Dee Sharp and Cameo Parkways Records found international fame.

Today the 'Sound of Philadelphia' is known by that name worldwide. Kenny Gamble, Leon Huff, Tom Bell, and the MFSB studio band, along with a host of other highly talented friends, are responsible for writing, arranging and producing hits by the O'Jays, Harold Melvin and the Bluenotes, the Spinners, Billy Paul, the Stylistics, Tramps, Blue Magic etc, etc, etc. Their home base is Sigma Sound Studios. They too have a sound that is usually fully produced with heavy orchestration. It's been called slick and formulised and though it is generally more sophisticated it is similar to the New York sound.

Miami, though not a major recording area in the true sense, does have one of

the country's foremost studios in Criteria. It also boasts one of America's hottest new labels, TK records. Criteria was founded by Mac Emmerman in the late fifties but really came into prominence when two of Atlantic Records' famous executives moved there. Jerry Wexler produced and Tom Dowd engineered (and later produced) some of their biggest hits at Criteria. Aretha Franklin, Derek and the Dominoes, Eric Clapton and Stephen Stills and Manassas were some of the most prominent stars to record there. The Bee Gees and Stills have passed through recently and stars continue to flock there when time is available.

TK Records, the home of KC and the Sunshine Band, is another product of the present disco scene. Henry Stone's little label has established itself as a prominent new independent record company with hits by other artists such as Gwen McCrea, George McCrea and Betty Wright. Most of the sounds that emanate from TK owe a debt to the funky, small group style of New York rhythm and blues.

Some reporters apparently viewing the disco phenomenon as it now exists in the eastern metropolitan regions have concluded that it has already peaked. However discotheques are now beginning to open in other areas of the country, which makes a strong argument for its continued success. As if to support my last statement, Columbia Records has just announced that it currently has the hottest selling single in the company's history in *Disco Lady* by Johnny Taylor.

In addition to New York, Philadelphia and Miami, Toronto must be considered an integral part of the East Coast recording scene. Its growth is directly attributable to its position as Canada's leading centre for English speaking records, as well as the centre of the Canadian film, tv and jingle businesses. The situation in Canada is unique because of the governmental attempt to encourage the country's record business by ruling that Canadian radio must contain a specified percentage of Canadian produced records. I cannot begin to explain the law, but it is currently being extended to cover radio and tv commercials.

*Nimbus Nine Studios, Toronto*



The increased activity on the East Coast has both benefited by and been responsible for the arrival of 24 track equipment. Nearly every important studio I contacted now has one 24 track machine. Most studios have two or more. Media Sound, presently the hottest studio in the city, is adding a fourth studio. The other three rooms are equipped with MCI 24 track recorders. They reported their business was 75 per cent pop recording dates with 15 per cent jingles and the rest miscellaneous.

Media is equipped with Dolby and has facilities for film and tv work.

Another of New York's top studios, the Record Plant, has two 24 track rooms and one that has 16 track capability. All machines are MCI equipped with Dolby. About 85 per cent of their work is on pop artists. Arrowsmith has just finished an album there and Alice Cooper did tracks for his new album.

Founder and part owner of A&R studios is Phil Ramone whose present productions include Paul Simon and Phoebe Snow. Two of A&R's four studios have 24 track equipment and they recommend the use of 76 cm/s with Dolby. Both Columbia Records (CBS) and RCA maintain extensive facilities in New York.

In Toronto I spoke with Jack Richardson, who has long been one of Canada's top record producers. Jack and his associate Bob Ezrin have produced many top artists, most notably Guess Who and Alice Cooper. Jack has recently built a recording studio as well as film, tv and disc mastering facilities for his Nimbus 9 productions. About 60 per cent of their recordings are their own in-house productions, with the rest of the time being given over to outside clients. The 16 track studio is almost a year old and Jack says he will soon be moving to 24. His equipment is 3M and he prefers not to use any noise reduction.

I spoke as well to Dave Greene, former chief engineer at Manta Sound. Dave is now freelance but frequently works at Manta, which has two studios equipped with 16 track which can be hooked together. All machines at Manta are Studer. Manta is also equipped for tv and film work, which comprises about 30 per cent of their bookings. Pop recording is 40 per cent of their work and jingles the remaining 30 per cent. Practically everything is done straight at 76 cm/s.

Toronto boasts of at least ten 16 or 24 track studios, including Thunder, Sound Exchange and Eastern (where Elton John has just completed a month and a half of recording). Studio rates in Toronto, by the way, run \$30 to \$50 cheaper per hour than in New York.

If Philadelphia is the new capital of black music, Sigma Sound is its temple. Sigma has three rooms, 24 track machines and generally records with Dolby at 38 cm/s. Owner-engineer Joe Tarsia has been in operation since 1968 and has absolutely the city's number one studio. De Lite records, another small r&b label, also has a studio and there are at least six other 16 or 24 track studios in Philly.

Criteria in Miami has 24 track MCI

equipment in two of its three rooms. Jack Davis the chief engineer said they prefer to run at 76 cm/s without Dolby. He said they had received no requests for dbx noise reduction.

To my surprise I found that Dolby still held about 95 per cent of the noise reduction market as against 5 per cent for dbx. I was not surprised to find that many of the engineers I talked to were not overly enthused about 24 track because of its lower technical specification and the obvious problems involved in handling the extra tracks. However, all agree the customers were demanding it and that the prospect of coming automation would necessitate as well as facilitate its use.

Despite the present upsurge of recording activity in New York the great changes that occurred from 1968 to 1972 have, in my opinion, permanently altered the nature of the pop recording business in America. Since most studios can keep pace with each other technically there is little they can offer the recording artist except the uniqueness of their particular location and the personalities who inhabit it. New York cannot attract an artist intent on photographing the colour of the Aspen trees in Autumn from horseback at 9000 feet in the Colorado Rockies, as can Caribou Ranch. If one New York studio installs a sauna and whirlpool bath to emulate the LA Record Plant others will find room to install their own health clubs merely by trading their EMT echo chambers for new

and smaller models. While some artists may prefer to travel to New York for its studio musicians others can afford to fly those same musicians elsewhere. They can also afford to hire their own producer and/or engineer to travel with them wherever their dreams may lead, for virtually every major city in America has at least one 16 track recording studio.

If there is a new trend I believe it is simply that the other leading centres like Los Angeles and Nashville have reached a saturation point and the balance is tipping back to New York only to restore equilibrium. The seemingly endless studio expansion has ceased because the factors that permitted it have stabilised. New York will continue to be one of the several major centres but will never again dominate as it once did. Though Philadelphia and Miami have some potential for growth I feel their real popularity is inexorably tied to the personalities who presently dominate the scene. Of all East Coast cities, I believe Toronto has the most potential because the city itself has finally come into its own as a modern cosmopolitan centre. Like New York and Los Angeles, its recording business is founded on a more stable base that is not totally subject to the whim of the pop entertainer.

I know that I am not alone in viewing the revival New York is experiencing with enthusiasm—as if we who stayed to hold the tent during the hurricane have at last been rewarded for our tenacity.

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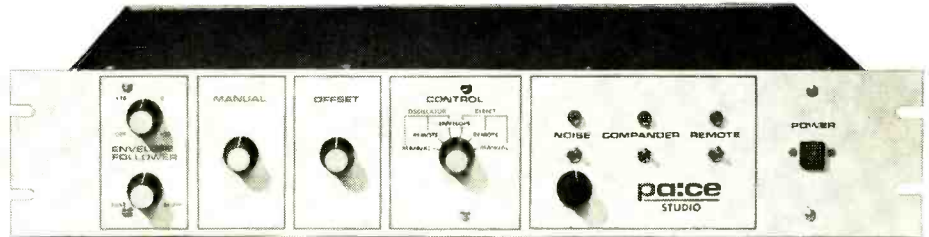
# MM

# ELE

Phasers. The Pa:ce Studio Phaser type SA140 is a 19in. rack mounted voltage controlled phaser operated within a compounding system. It features a total phase shift in excess of 4,8000 arranged such that the phasing has a constant time delay characteristic over the maximum possible range. This has the effect which is more closely associated with phasing produced with a tape unit.

The compounding system enables the phaser to be operated under optimum conditions of distortion whilst eliminating the background noise when no signal is present. It also facilitates optional injection of noise within the compounding system thereby enhancing the phasing effect. The phasing is controlled via a Master Selector switch giving options on direct control manually,

## Studio Phaser



via an envelope follower, or from a remote source, or alternatively by an oscillator the frequency of which is controlled by these voltages. A D.C. offset control is also supplied. Monitor lamps are included to show the selection of unit functions.

Both normal and auxiliary outputs are available for stereo phasing, and

PA:CE

are buffered by high level line drivers. The signal input and both signal outputs are transformer coupled at a nominal impedance of 600 ohms and connections are made via XLR sockets.

sented at sockets in a decoded binary form, for automatic operation of facilities in the sequencer.

## Drum Synthesiser



PA:CE

The PA:CE Sequencer type 4107 is a digital sequencer, primarily intended for musical applications, built around a high speed flag oriented random access memory. The basic unit gives an output compatible with most synthesisers, and is input via a keyboard which is generally incorporated within the unit. The memory has a capability of 4096 events, which can be output via any one of 7 layers, and the internal time-reference clock has a maximum range of 100,000 counts.

### Input/Output

The unit contains two high speed 8-bit analogue to digital converters, which are normally connected to the pitch and touch sensitivity outputs of the keyboard. The keyboard is by-passed by plugging in an external signal, which initially feeds an internal preamp of variable gain. Routing information can also be input via switches or electrical pulses.

The output units contain digital to analogue converters for the two parameters, one of which may be switched to be gated in during keying. Also routing and keying outputs are available, with monitoring lights. One of the output units has the routing information pre-

### Layer Operation

Each event that is recorded has a layer number assigned to it, by means of a switch. This defines the output module through which the note will normally appear. It is thus possible to store up to 8 different sequences in the memory without confusion (or 128 is the routing used). Each sequence may be of an arbitrary length subject to a maximum of 4000 events distributed between them all. There are also controls which enable a layer of a certain assignment to be output through any output module. Using this facility, it is thus possible to record several sequences and play them back in any order, with any number of repeats.

### Deletion

It is possible to delete part or all of the information contained within the memory. In the basic unit, the functions are "delete all", "delete layer", and "delete event". Thus with the latter, used in conjunction with the fast/slow clock speed, a note-by-note editing of a sequence is possible.

### Further Editing Facilities

Also available is an editing sequencer of narrower specifications. By using this device the edit sequence may be inserted into the main sequence or may replace part of it. The edited version of the main sequence will be available at a different layer, whilst the original sequence is still held. Hence, possibilities exist for using this machine for composing of musical pieces.

# ELECTRONICS

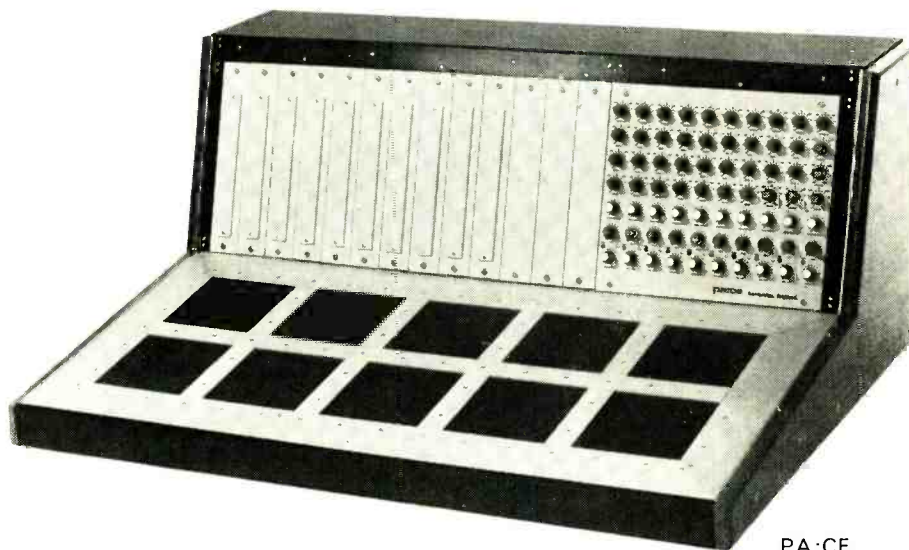
## 4000 Event Sequencer

The PA:CE drum synthesiser type 2103 consists of a framework in which are incorporated 10 pressure sensitive pads. These pads, which are constructed of drum practice pad material, may be struck with drumsticks or hands to trigger ten synthesiser modules. These are normally arranged to give natural percussive sounds, such as bass, drum, tom, snare, cow bell, gong, cymbal, tam, each of which is controlled by a series of preset functions giving a wide range of control. The outputs are then directly routed into a 10 channel stereo mixer with 4 band equalisation and full echo facilities.

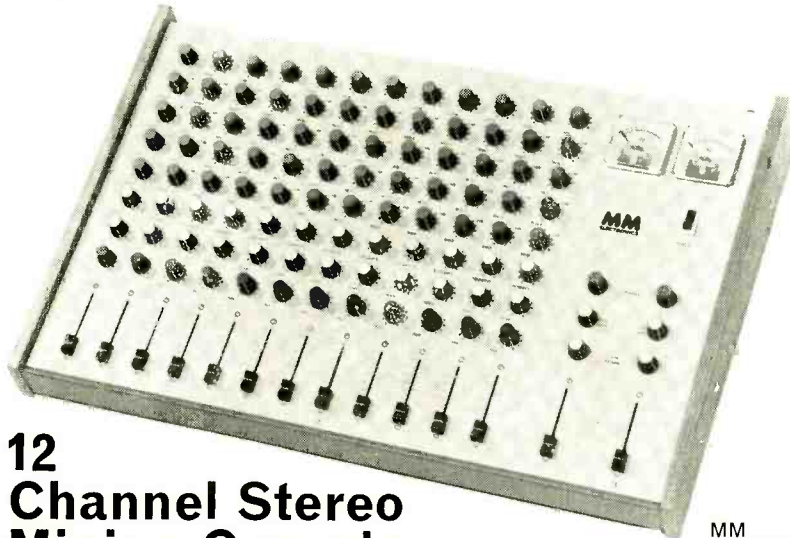
The pressure sensitive pads may be patched into one or more of the synthesiser modules, if desired via an automatic control module, which will cause a sequential series of trigger pulses to be generated such

as in the form of a drum roll, a paradiddle, etc. The pads contain advanced circuitry which differentiates between vibrations picked up in the pad due to being hit from those

transmitted through the frame. The circuitry involves time-amplitude discrimination and has a response time fast enough to accommodate the most dextrous drummer!



PA:CE



MM  
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## 12 Channel Stereo Mixing Console

The MM Electronics MP175 with 4 band equalisation giving 12 dB cut and boost at frequencies: 100 Hz; 2 kHz and 10 kHz.

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Hum ref input (with internal power supply)—122 dBm

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Overhead level at 22 dBm all outputs buffered £250 retail

### ANNOUNCING

12 channel export model built into a CT flight case designed along similar lines to 2 channel stereo mixing console. Features XLR sockets as standard fitting; black fascia with white lettering and white flight case with black trimming. Internal regulated power supply with toroidal mains transformer to alleviate any mains pick-up problem.

An 8 channel stereo mixer is available with similar features to the MP175 12 channel stereo mixing console, and also 16 channel extended version of MP175.

*For further details contact*

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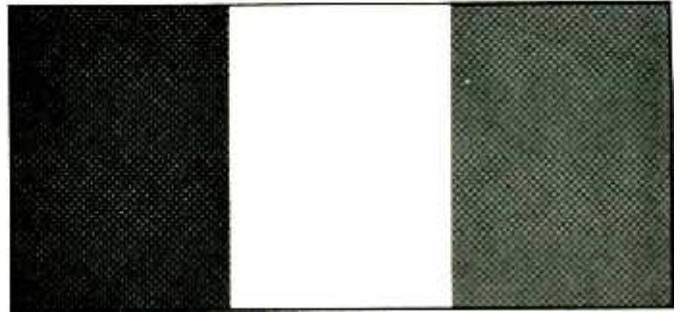
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# France

PIERRE LATTES



IT IS ALWAYS disconcerting to those members of the international recording jet set coming to work in our country for the first time when they are confronted with local habits. The gear is just about the same, but somehow sounds different; and, would you believe, the natives don't care for hamburgers.

The discrepancies are all the more evident in the studios operated by major record companies, that have an old recording tradition well suited to the majority of songs recorded there: a fat bottom, plenty of treble and the voice all the way up front. The reason is evident to those who know a little about *la chanson*. Lyrics come first, and if you put in as much middle as for an American rock side, you just don't have room for the words. I have recently discovered that, for the same amount of compression, the French version of an American song needs more level on the vu meter. No mystery there, since the average speech level is perhaps one octave higher in English than in French. It means, though, that studio monitors are not going to be set up the same, and I would suggest that would-be visitors should try a familiar tape before starting a session. As for the actual equipment, it is quite similar, being mostly imported from UK, America and Switzerland. It is not quite clear in my mind why France, with its large electronic industry, was not more interested in studio gear until recently. It means that everything is 40 to 100 per cent dearer, the 20 to 33 per cent vat not helping any. Add to this fairly

high wages, and the asking price for an hour of 24 tracks in a major studio is then around 700 francs (£85, \$170), plus 20 per cent vat and 33 per cent on tapes. After that gloomy picture, why would any sane producer want to work in Paris?

Well, it must be known that those big studios we have been talking about have a huge amount of equipment at their disposal. A number of them were automated very early—with variable amounts of success—and the most outrageously expensive consoles are to be found just about everywhere. One factor for what some members of the trade call 'over-equipment' is perhaps traceable to 3M policy, since they seem always ready to set up an extravaganza for a down payment, since they have their own credit system first set up for their photostat machines. But it is an overall trend nonetheless. They are responsible for the latest one, Vogue Records' new studio in Villeteuse, near Paris, a Westlake affair with a Cadac console. The cost might be over eight million francs (£1 million, \$2 million) for one room. Other majors are Sofrason (Decca) with two studios, EMI-Pathé Marconi with four revamped studios in Boulogne-Billancourt, Polydor-Philips Studio Des Dames, a three room complex near Place Clichy, Barclay-Hoche with four and publishing tycoon Gerard Tournier's Studio 92 again in Boulogne. In that bracket they all have good quality maintenance, all possible facilities and generally competent engineers. Independents come in all sorts, from the

## Consumer statistics

The author is sorry not to be able to offer any figures relating to the industry after 1974. Except where noted, figures are extracted from *Economie Geographie*, the bulletin published by the CSDF. Sixty-eight *editeurs phonographiques* are listed in the current issue of the *Quai du Show-business*, 50 of which are listed in the bulletin as 'members' of the French Syndicat Nationale de l'Edition Phonographique-Audiovisuel. Not listed are a number of underground labels dealing mainly with avant-garde music, jazz, rock and folk, with erratic distribution, corresponding with the current tendency among musicians to take care of their own fate (Disjuncta, Pauvre, Centre of the World, etc). Three of the 50 companies were in 1973 giving employment to more than 100 people, 16 between 25 and 100, and 39 less than 10.

For the same year, 8659 records were officially released, including 1562 classics, 3402 pop and 1047 jazz items. They were distributed through 80 000 outlets. Forty-nine per cent of the records were bought in record shops or specialist counters in general stores, 32 per cent in supermarkets and the like, 11 per cent through mail order, and eight percent in odd places including country markets. The sales in units: home market 85 891 516 records, 4 405 126 cassettes, 623 601 eight track cartridges, 6011 reel-to-reel tapes; the corresponding export figures: 14 901 866, 1 039 094, 366 743 and

1744 respectively. The estimated retail sales of the home market, including 33 per cent vat, was 1.4 billion francs (£160 million, \$320 million) for a population of 55 million.

Record imports were 3 254 649 units from the EEC and €27 981 from other countries. Exports were 8 212 519 units to EEC countries, 2 479 320 units to the franc zone and 4 210 027 units to other countries. From an interview given by a representative of the CIDD (Centre d'Information et de Documentation du Disque) in 'Audio' magazine, the figures for 1974 will show a sale increase of two to four percent for singles, 23 to 25 per cent for lps, leading to a general increase of about 10 per cent; for cassettes, increase is between 17 and 19 per cent, with cartridges going down 12 per cent. The performing rights society, SACEM, received in 1972 (the last figure published) 34 571 650 francs (about £4 million, \$8 million) in rights for other countries and distributed 30 452 240 francs (about £3.5 million, \$7 million) to corresponding foreign societies.

Music in 1973 was listened to on 7.2 million record players, 700 000 hi fi sets and 600 000 multipurpose units. There were 1.9 million cassette machines, 300 000 radio cassettes; 400 000 cars were equipped with some kind of cassette player or recorder, and there were 200 000 play only units. Add to this 100 000 cartridge machines, and 1.5 million reel-to-reel tape recorders. Since then, the growth has been steady.

shabby den with a lot of dangling wires and a hot soldering iron, to some very intelligent operations. One of the oldest is Studio Davout, with four rooms including Studio A if you need some air around a hundred musicians, and 35 mm xenon. Among the most modern independents, one has to quote l'Aquarium (with very comprehensive gear and the best sound in town for modern groups), Ferber, Saravah, Strawberry an hour away and, better known as The Honky Château (just Westlaked too), Gang (with convertible acoustics at the touch of a button) a perfectly slanted choice, as Billboard International Directory will show. Smaller

companies and musician-operated studios are opening up—sometimes closing—every day, often difficult to trace due to the lack of any equivalent of the English APRS. Competition is fierce and often not too friendly even though the total number of rooms is not so large for the country's sixth rank in the record business. An unofficial number of studios in the Paris area is around 80.

Not surprisingly, the independents cater more for rock dates, although it is impossible for a studio to be totally specialised, French rock not selling too well to other countries and the local market being too small. It should be noted that a number of



**Left:** The Decca Studio A laid out for a session. Note the acoustic treatment on walls and ceiling.  
**Below:** Leonard Bernstein with the Orchestre Nationale de France and the Choeurs de Radio France. Recording Berlioz's Requiem at Les Invalides, September 1975. (Records due for release end of September. photo—CBS).



## FRANCE

English groups have recorded albums here, often bringing their own engineers, it is hoped for language reasons. Since France exports more music than it buys from the outside, there is no immediate reason for the basic set up to alter drastically.

The national broadcasting system, once known as ORTF, has been split up in seven companies in January 1975, and it is a bit early to estimate the implication on their once unified recording techniques. If privately-owned studios have been mostly independent on foreign machines, it hasn't been the case with ORTF where the 'service des études' has worked hand in hand with a number of manufacturers. There are well-known cases of radio engineers entirely designing what was to be manufactured as a priority for inner use, but with no restriction on outside sales. At least some BBC designers were known as such. Without going into financial details, it means that the radio was able to foster highly original know-how and obtain the special machines to go with it. Among the 'oddities' one could mention +12 dBm line level, quasi-standardisation on Schoeps microphones with +9V power supply, two-track configuration for stereo heads with 640 nW/m and 35  $\mu$ s at 38 cm/s and 320 nW/m and 50  $\mu$ s at 19 cm/s, and special multiway plugs. There were all kinds of good reasons for those things, even though some people still manage to steal microphones on live gigs (but not too many since there is no way to use them for I believe you cannot even buy the mating connector). Since Radio France went into operation, a healthy wind of change has brought a lot of improvement, and a whole range of new equipment is being evaluated. Narrow guard heads are on the way, along with 510 nW/m and the latest tapes. Disc playback is already much better on the France Musique stereo fm program, resulting in a surge of calls from delighted listeners.

The question of basic recording techniques is still open. For

years the spaced pairs have been the rule, and any questioning of this method in a recent issue of the AES journal will not change anything since apparently nobody reads English at the radio. That being said, the classical broadcasts and recordings sound fine indeed. A multitrack mobile unit has been built and used (Studer console and machines), with another one ordered. It looks as if pan pots, for better or worse, are going to appear in the new generation of consoles to be delivered rather soon. With its huge potential, and the end of splendid isolation, Radio France can look forward to even better sound and more influence on the outside world. La Société d'Instrumentation Schlumberger, (consoles, tape decks, turntables) one of the main partners of the ex-ORTF and now Radio France, reflects those new concepts with a new tape recorder called the *F100*, that is being job tested this spring. This very promising machine is a luxurious automated broadcast job, with three speeds and a quartz controlled dc motor ready for computer interface, with teledisplay facilities and counter storage 10 minutes after main switch-off and other such gadgets.

Getting into that new SIS machine leads to other manufacturers. Another one with close radio ties is Elipson, the speaker firm. A pioneer in phased arrays, Elipson has provided for the vast majority of ORTF monitors. Phased drivers and double cavity notwithstanding, you can't use them for your next Led Zeppelin date, but they are likely to be better than your high power boxes for speech clarity and the like. The quest for the perfect speaker is still going on, a proof of French Radio's optimism. Lem and Melodium still do a range of dynamic and electret microphones, some of them in use at Radio France, and when the name of Girardin (consoles and a new medium price broadcast recorder) has been mentioned you will have an idea of the manufacturers dealing with the country's single main buyer of audio. The others are smaller concerns, like EMI (incorporating SALT), Red, Freevox (mostly pa) and newcomers like EMB Nanopulse, Audio Help or Sonag with an enterprising console, compressors and soon power amps and a bright future (yes, they are friends of mine). One can see that it is very difficult for a company without a radio or tv contract to grow international, and since major foreign brands hold the market, not too many people take the risk. When Bourdereau, after making some very fine tape transports geared specifically for the ORTF, were told that the next machine was not going to be bought, all they could do was to go bankrupt . . .

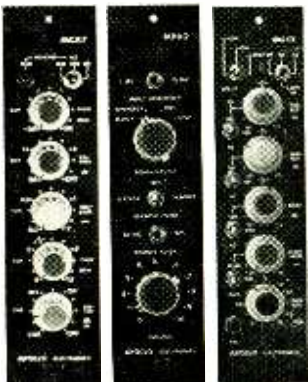
I hope to have made it clear that, with Radio France's fast evolving policies and the appearance of competitively priced and innovative French products, our slightly backward position compared with England and America is going to change for the better. I am afraid, though, that if quad is ever going to be a commercial reality we are going to be left behind, if I judge by the lack of interest of most record companies. And I don't think that the few albums already published mean that a lot of work is being done in that respect, though quite a few studios have the capabilities to tackle it. On the other hand, the recent trend for better studio and control room acoustics is typical of a strong desire to keep up with the times. Not only did Westlake make Vogue, the new control room at Strawberry and an echo room at Davout but before that Gang followed the same kind of procedure, and more are rumoured to be on the way.

I haven't mentioned studios outside of Paris and its immediate surroundings. One should remember how heavily centralised is our country, and studios in Lyon, Antibes, Toulouse, Strasbourg, Angers or Angoulême have a hard time making it. A new one is supposed to open soon in Bretagne, where the strong Celtic scene makes it look reasonable. This is going to be a 30/16/4 home-made affair, with an Amity 16 transport and Sonag electronics, all of that implying a quite decent price tag and reasonable rates. Clearly, the new trend is: no more than 150 000 francs (£18 000, \$36 000) for all the innards of a 16 track studio.

It used to be the thing to go to London to record; now, the hip move is Nashville (Eddie Mitchell) or Bogalusa, Louisiana (Dick Rivers). But Quincy Jones used to go to Barclay's for his strings, and Elton John, Pink Floyd, Mahavishnu and a host of others are discovering or rediscovering the local scene. I cannot see a more healthy trend.

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# Australia

HOWARD DAVIDSON



AT THE LAST count there were 49 tv stations (four networks) and 118 radio stations (commercial) in Australia. The ABC has six tv stations and about 10 local radio stations. The bulk of the Australian recording industry's work is for these broadcasting concerns, which has meant that, parallel with the growth of this medium, standards have improved at a considerable rate over the past three or four years. As far as records and record manufacture goes, the current trends in popular music have brought about a mini-revolution in the industry, and this combined with the commercial radio and tv work means that the studios are having a ball.

But there is still the old feeling of mistrust. Artists, if given the chance, hop off overseas—to Britain or the US. They have an urge to make it abroad—to be successful overseas is a dream. The obvious and real reason is the much bigger market. There is more money to be made elsewhere, despite the overall affluence of the Australian nation, and if fame and fortune is assured return to Australia is forgotten.

So, up until a few years ago any record destined for international release was recorded abroad. All this is now changing, though. The Australian recording industry is more than capable; the facilities they offer are adequate and reflect current trends; the atmosphere in the studios is good, and the engineers and technicians affable. However, while it is generally agreed that the studios over here are as capable of recording as others in the US and the UK, the standards of the respective 'bests' do not quite match. This is traceable simply to lack of experience and also, to a certain extent, due to lack of specialisation in a relatively small market.

Quite a few of the more advanced studios are part of much larger concerns. Some cater for tv and radio as well as for recording. Armstrong Audio Visual, for example, has two main recording studios and four dubbing/voice over and radio production studios as well as a fully equipped and highly advanced video facility. Another much smaller concern in Brisbane,

Bruce Window, is primarily video with a 16 track studio in one corner.

Because of the high demand for commercials, a lot of studios have very musical engineers who need no excuse to go to 'the other side of the glass' to pick up and play an instrument. Quite a few are fixers, arrangers, instrumentalists, in their own right—you name it. (Once again, Bruce Window provides an example: Mark Moffat, the engineer, is also guitarist in the Carol Lloyd Band (released on EMI) and has his own company 'Jangles'.)

In general, the studios here are much the same as anywhere else in appearance. They have the same equipment, although it's a little harder to get and a good deal more expensive: there are extremely high import duties on professional audio equipment

Armstrong's  
Studio 1, Optronics console



from overseas if such trade is likely to be detrimental to the home manufacturing industry. Australian manufacturers can apply for a protective tariff against foreign gear if they themselves make similar units, or sometimes even if they don't but think that they could.

If a firm makes a multitrack recorder, for example 16 tracks on 6.25 mm tape with a specification that would impress only the deaf, they can apply for a tariff to protect their interests. On the other hand a prospective buyer of foreign goods has to inform customs and they in turn ask various manufacturers if they can or do make the goods. Even if they don't they can assure the customs that they could, thereby effecting a 35 per cent increase in the price. Fortunately, however, things are changing. The federal government is waking up to this and other problems, and has initiated an inquiry into the industry and its needs.

## Studios

EMI studios is the largest setup in Sydney, under the direction of Bill Ramsey. They have three studios, all equipped with Neve and Studer, but are in the process of finding new premises so that the proposed expansion can proceed. This expansion will be from 16 to 24 track and thence to automation, probably the new Neve NECAM system. Ideally, Bill would like premises in a nice quiet suburb with lots of room for even more expansion later. As far as the new studios go he wants a larger main studio and, as with many of them, he intends to seek Tom Hidley's advice. Work at EMI consists of roughly a third own label, a third advertising, and a third other labels and film work.

*Festival* is a single large studio, fully 24 track (MCI) in operation with one dubbing room and a Neumann lathe, part of Festival Records (for more complete description see STUDIO SOUND October 1975). They, like so many studios, are expanding and are looking at plans to have another fully quadraphonic 24 track studio. Studio boss is Barry Nagle.

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## AUSTRALIA

*Albert Productions* is Ted Albert's own studio, part of a music publishing company. Chief engineer and more is Bruce Brown. Lots of work is handled here, with a fairly even split between commercials and records. Their setup is small only in size, a disadvantage soon to be remedied. At the moment they have a 16 track MCI machine with large Neve console, Bose amplifiers and Lockwood type monitors. The main control is surrounded by three smallish studios, all of which might be used in any one session. It is perhaps an understatement to say that they don't have separation problems. A 24 track studio is, at the time of writing, under construction, and when this happens the Neve will be moved to join an already delivered MCI 24 track machine (yes, they are popular here) and will be replaced in its present location by the first fully automated API desk in Australia. This will inevitably be mainly used for dubbing and remix. The existing 16 track will be updated, after which there should be no holding them back. They already do a lot of work and have many good recordings to their name.

*Trafalgar* is a little different and 'guvnor' John Sayers likes it that way. Built into a strange, shabby looking building in a somewhat desolate area, the studio, only one, could be described as comfortable. Mood lighting, wood, carpet, screens, brick, all help the excellent acoustics. It feels like a good studio to work in, and that's what people do: Trafalgar is popular and all of

their work is for records. Equipment consists of a 16 track Ampex with an MCI desk and usual outboard equipment. The control room is small but again comfortable, and looks down on to the dimly lit studio floor. Block bookings are available and there is no clock. John freely admits an LA influence with a 'touch' of Westlake.

*Armstrong Audio Visual*, run by Bill Armstrong and John Savage, is in Melbourne and is huge. It is concerned with both audio and audio visual. A run down on the equipment is impressive, and is worth going through to give an idea of the scope:

Studio 1: 16/24 track Optronics recorder with 32/16 Optronics desk; JBL 4350 monitors with Optronics amplifiers. Studio 2: 16/24 Optronics recorder, 26/24 Audiotronics desk, same type monitors. Studio 3: 20/6 Optronics desk, 16 track Optronics recorder, JBL 4320 with SAE amplifiers.

**Below:** Armstrong's central equipment—video machines.

**Far below:** Floorplan of Armstrong's, Melbourne.



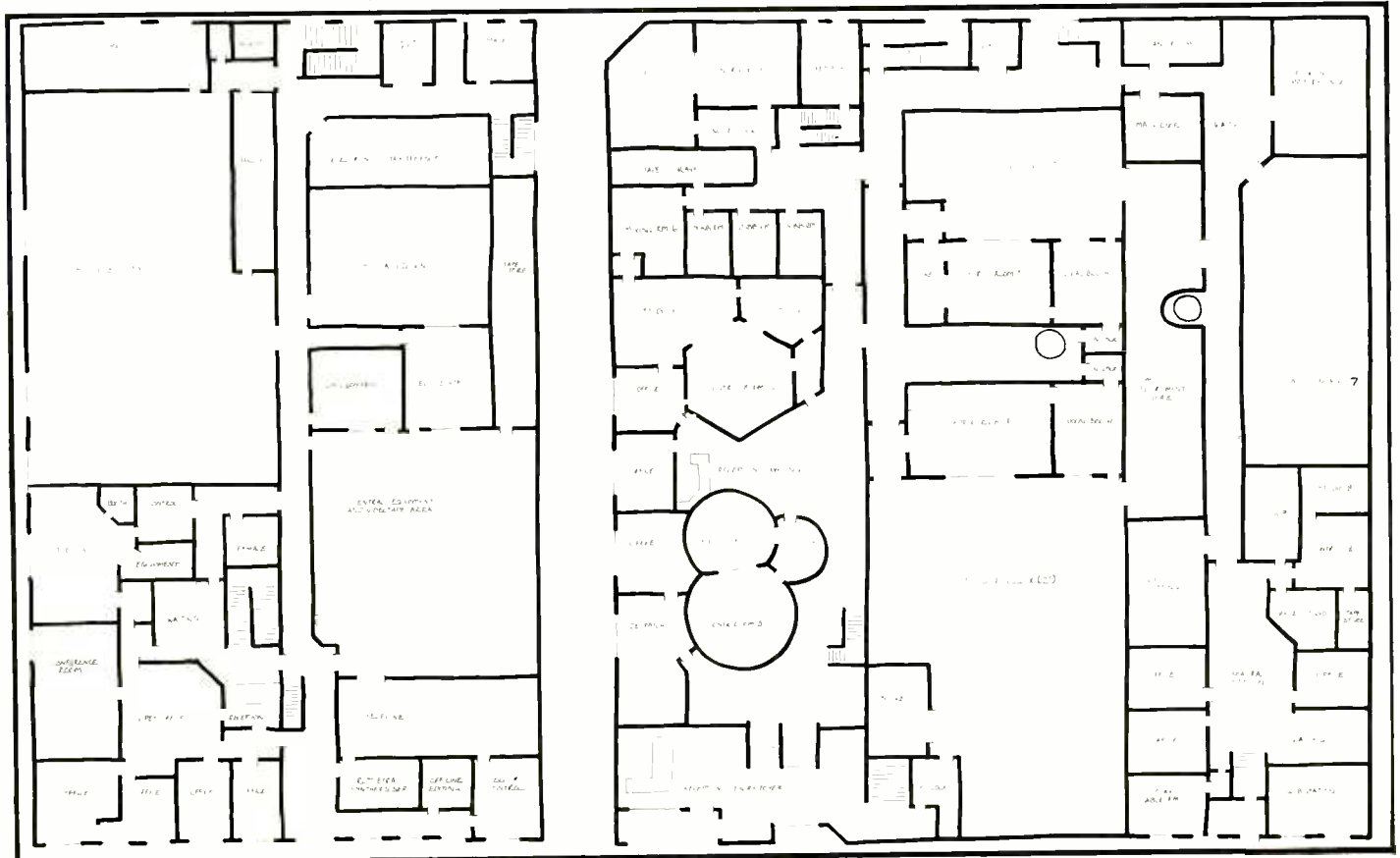
Studios 1 to 3 have EMT and AKG echo, Cooper Time Cube, Eventide delay and phaser, Dolbys etc. Ob van: Audiotronics desk, Optronics 16 track (24 track available), Master Room echo, JBL 4320 with Phase Linear amplifiers.

Studio 4, voice-over production: eight track Optronics, 16/8 Allen and Heath console, Tannoy monitors with Optronics amplifiers. Studio 5, voice-over: four track Ampex, 5/2 Optronics console, Tannoys with Optronics amps. Studio 6, voice-over: four track Ampex, 6/2 Optronics console with Tannoys etc. Disc Mastering Room: Neumann SX74. 'Audio Sweetening Room' for mixing audio tracks to video replay: 16 track Optronics recorder with 16/8 Allen and Heath desk; video, CMX 300 on-line edit system with Grass Valley mixer interfaced with video recorders and other equipment too numerous to include. Editing suites: CMX and full preview and transmission, professional vision and audio monitoring. Telecine: Rank Cintel Mark 3 Flying Spot Telecine chain, both 16 mm and 35 mm facilities with punch paper tape colour grading, with interface to Manatec recorder/reproducer; Rutt Etra Video-Synthesiser. Two tv studios and a mobile.

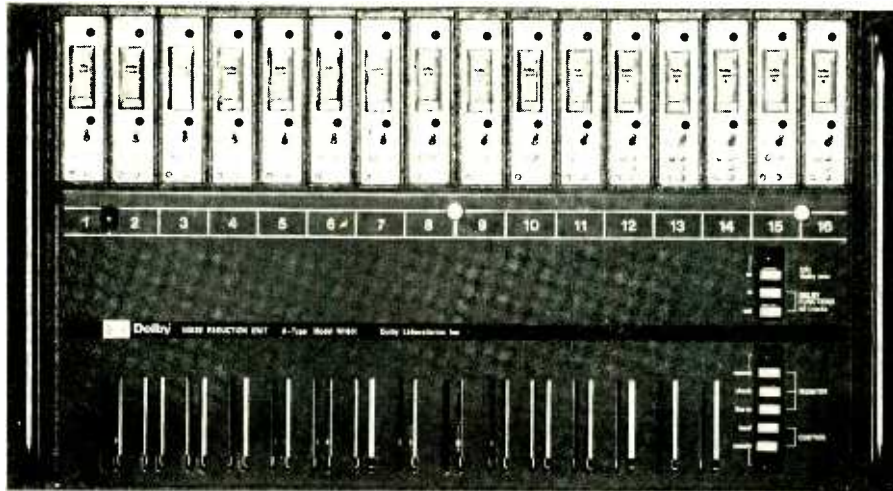
The studios started under the direction of Bill Armstrong around 1965 in five terraced houses. John Savage joined later and moved into present premises with help of a newspaper chain who also own Optronics—hence the high incidence of local gear.

They possess the only audio mobile in the

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## AUSTRALIA

country and soon the only good quality independent disc cutting facility (most of the others are house owned). Audio work is split between records and commercials.

### Economics

At the moment, the industry is particularly healthy. There is currently a boom and nearly all studios say they have never had it so good. Attitudes of musicians, engineers, the public, and producers are all improving, for Australia is beginning to look at itself. The talent exists (it always has done) and the commercial world has realised that there is a market for Australian artists. Recordings are done with a view to international release, although with the home market very much in mind.

In the past there was really no need for a recording industry, because Australia is an English speaking nation and has always had at her disposal unlimited imports of overseas material—records, tv, shows, films and books. So while some industries were producing, others were simply importing or even did not exist. With the advent of tv and radio and eventually the local content by-law (which effectively means that 20 per cent of 'needle time' or 'air time' must be of Australian origin) the industry started to grow, expanded, and became large in relation to the population of only 12 million. Not only has the recording industry changed and developed but so have others in related fields, such as film and tv (there is, for example, an exceptionally well equipped film and tv school in Sydney).

### Techniques

Studio techniques are practically the same as elsewhere although there does not, however, seem to be as much interest in studio design. Quite a few studios paid scant attention to acoustics; a bit of padding and that was it. However, the sounds the studios produce in some cases should not in principle differ from those overseas. Bill Ramsey (EMI) has two balance engineers and a technician all trained in the UK (two from Abbey Road and one from Trident). He does observe, though, that EMI discs produced in Australia sound a bit topky.

None of the people I spoke to had any worries about automation or quad. When they need it they'll use it. Bruce Brown of Alberts Productions said that as far as he was concerned 'All that knob twiddling wears a little thin after so many years, and I would welcome any device making the job easier, more efficient. Nothing should get in the way of an engineer's creativity; automation doesn't worry me.'

On the other hand, John Sayers of Trafalgar thinks that the Australian recording industry is too hung up on equipment. There is a need to establish the right kind of relationship between the musical and the technical aspects. Some studios create a pressure cooker effect: no mood, no relaxing, no coffee. A clock is the first piece of equipment to be installed, calibrated in hundredths of a second. As far as relative standards are concerned, Sayers thinks that comparisons are a little unfair. Before a record reaches Australia it has

been through a filtering process; it has been proved to be good elsewhere, tried out on other good markets and finally sent to Australia. So the final release over here is of a good, well proven record, and we try to compare with that.

Apart from tv, local radio and the pop scene have had a lot to do with the development of standards and facilities. Barry Nagle (Festival): 'We are heavily reliant on commercial radio for promotion . . . pop music has been the driving force behind the development of the studios.' Nagle thinks that attitudes of musicians must change: 'Ten bars' rest and they want a smoke and a coffee, and when they come back in they're cold . . . Compare that with the scene in the US, Nashville for example; even though not all the musos are involved in a particular track they'll still stay in the studio and take an active interest in what's going on.'

The realisation that there is a strong home market has helped, and recently there has been a flood of overseas bands touring. The public realise that they are really not that better (in some cases worse) than local bands, and start actively supporting Australian acts. A record that sells 15 000 is gold, relative to population, which although not many is enough—but it is difficult for artists to keep touring the seven major cities. They have to break out overseas if they want real fame and fortune.

All agree that the tariff placed on some goods is a problem they could well do without. In some ways it means that they cannot afford to keep up with the overseas studios, and as there isn't much of an industry here they find keeping up with trends hard. The overseas manufacturers, however, tend to be very good at keeping the studios supplied and in very few cases were there severe delays in parts supply.

There are a lot of smaller studios around, four and eight tracks in particular who occasionally give the bigger boys cause for concern. As far as rates go they, of course, are much cheaper, and overheads are less. The big studios charge up to \$80 for 16 or 24 track, but this is usually discounted depending on the client. Salaries are relatively quite high. A top balance engineer can earn \$250 per week plus \$7 per hour overtime (over and above a 35 hour week).

### Future

More studios can be accommodated and the exciting thing is that the industry here is still growing up. It still has a goal to achieve, to be part of the international scene. At the moment, each studio does the complete job: initial recording, dubbing, remix, mixdown and mastering. In some cases a 16 track tape is not big enough so there is a transfer to a bigger studio for the final finishing touches. Perhaps what is needed is more specialisation.

The record production side will have to expand to cater for demand, and it is hoped that more and more records will be exported, but it is a very difficult international market for Australia to break into. There is no characteristic sound as yet. Producers too frequently want a particular sound, an LA sound or a Philly sound, so engineers over here are getting to be good mimicks. There are no apprentice schemes. Not once did I see a tape op. This means that staff are hard to recruit, and there is a need of a school for recorded music. The only classical recording is done by the ABC, so engineers in the commercial studios don't possess the necessary technique. Trends are followed closely, studios tending to have the same types of equipment, even the same brands.

There is no type of music particular to this country, artists generally copying others to a certain extent although they then develop into their own brand of performance. The related industries will eventually catch up and be able to compete: the film industry is on the move, and that will bring more work to the studios, to the composers, to the musos, and the end result will be continued improvement.

Australia should take advantage of the fact that it can observe the UK and the US, look at trends, and pick the best from the two. Her role in East Asia, surrounded by developing countries all wanting their tranny, their telly and their pop stars should be investigated. These will be helped by the industries here and the recording industry will benefit. So Australia should by all means break into the European and American markets but she mustn't overlook the, as yet, untapped markets closer to home which are out of reach to the rest of the world.

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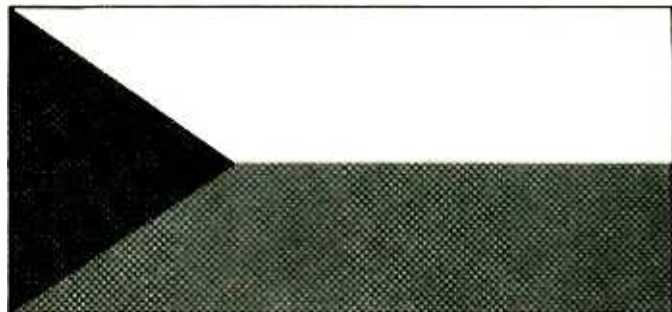
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# Czechoslovakia

LEO JEHNE



THE BEGINNINGS of the Czechoslovak gramophone industry go back to the twenties, when the local branches of prominent foreign companies not only issued recordings of famous foreign artists like Caruso, Kreisler, Landowska, or Paderewski on labels like His Master's Voice, Telefunken and others, but also recorded—partly in Prague—outstanding Czech performers: for instance the singers Karel Burian and Emmy Destinn, the Czech Quartet, and naturally also the Czech Philharmonic Orchestra under Václav Talich. Of the two more or less independent local gramophone firms established in the thirties, Esta and Ultraphon, the latter showed particular initiative which also covered the field of classical music: one example was the first complete recording of Bedřich Smetana's *The Bartered Bride*, conducted by Otakar Ostrčil, then head of the Prague National Theatre.

However, it was only after the Second World War, and particularly after the nationalisation and integration of the entire gramophone and record production, that the opportunities were fully revealed for building a gramophone industry in this country in the heart of Europe with a long-standing musical tradition. The artistic potential which was awaiting recording for the gramophone became more evident. A single National Corporation, Gramofonové závody (Gramophone Works) of Prague was established as the monopoly publisher and manufacturer of records, manufacturer of record-players, and distributor of all its products. Under the Supraphon label, the records enjoyed from the outset extensive sales opportunities in the company's specialised retail outlets, whose number (30 stores in Prague alone) and equipment perhaps made the arrangement unique on the European continent at the time. So-called Theatres of Music were established in all important music centres throughout Czechoslovakia whose programmes were based on both Czechoslovak and foreign recording. Their audio-visual equipment made them the forerunners, on the one hand, of the *Laterna Magika*, a hit of the 1958 Brussels Expo, and on the other of present disc-jockey practice in the field of pop music. New record and gramophone plants were also built, capable of meeting—in terms of both quantity and quality—the requirements posed by the particular era, as well as by society.

It was clearly understood—and the gramophone industry received this as its guide-line—that in a country with a socialist social system the products of the gramophone industry would not primarily serve a commercial objective, but would be an instrument for the cultural education of the broad masses, and a means of satisfying their cultural needs. This was the purpose pursued both by the publishing practice, whose results over the past 30 years have won recognition throughout the world thanks to the quality and the comprehensive concept of the undertaking, and by the price policy. Like the prices of other cultural commodities such as books, or concert and theatre tickets, the prices of gramophone records were set at a level among the lowest

in the world, both in absolute and relative terms (compared with other products).

It must be noted that Czechoslovakia enjoyed particularly good conditions after the Second World War for pursuing such objectives. Apart from having a long and solid musical tradition, the country emerged from the war with its gramophone industry relatively unscathed. In contrast, in what used to be the prewar 'gramophone powers' on the Continent, this industry had suffered extensive damage. The East European countries, whose social system was or became identical with Czechoslovakia's and which could thus, in theory, mount the same kind of social effort in the gramophone industry, either lacked the necessary industrial tradition (and musical tradition in some cases) or had other, more fundamental, industrial priorities.

It was thus no coincidence that famous Soviet performers like David Oistrakh or Sviatoslav Richter began their international recording career on the Czechoslovak Supraphon label, and that famous opera singers of the time, like Boris Gmyrya (Ukraine), Bogdan Paprocki (Poland), Nicolae Herlea (Rumania) and others, also recorded in Czechoslovakia at the time. Another stimulant was the Prague Spring Music Festival, one of the first postwar events of its kind, whose tradition now goes back thirty years. From the very outset it served as the meeting place of artists from both East and West, and in the critical fifties it bridged the sharp division of the world with performing art. The close ties between the Prague Spring management, Supraphon, and the Czech Philharmonic Orchestra, the country's most prominent performing body, made it possible for Supraphon to record performances by outstanding Western artists. Such recordings, along with those made by performers from the socialist countries and as a result of the wide range of the country's own Czech and Slovak talent, helped to build for Supraphon the goodwill which made its label the undisputed socialist leader in the first 20 years after the war, and a household term even in countries with highly advanced gramophone industries of their own.

Historical development has produced some changes both in the system of Czechoslovakia's own gramophone industry, and in the East European pattern of the industry in general. In Czechoslovakia, Gramofonové závody (Gramophone Works) of Loděnice now only manufactures gramophone records, while the record player plant at Litovel is now a part of the TESLA concern, which makes all kinds of equipment from sound consoles through loudspeakers, microphones, tv sets and radio sets to tape recorders; the concern's headquarters are in Bratislava. Supraphon continues to produce, publish and distribute gramophone records and later also cassettes, but it is no longer the only company in this line. Pantón, the publishing arm of the Czech Music Fund in Prague, was also authorised to publish gramophone records in 1967; and after Czechoslovakia became, five years ago, a Federal state consisting of the Czech Socialist Republic and



the Slovak Socialist Republic, the music and record-publishing firm Opus was established in Bratislava and was given the task of developing Slovakia's own record production which had been somewhat neglected until then, particularly by concentrating on the promotion of Slovak creative and performing artists.

Panton's prime emphasis is on contemporary Czech compositions in all musical genres, and on promoting talented young artists. The single integrating factor of the entire gramophone field is Artia Foreign Trade Corporation of Prague, which exports Supraphon and Panton records, handles record licensing deals, exports record players and pressing material, conducts custom pressing, and handles most of the import operations in this field. The Opus records are exported by Slovart Foreign Trade Company of Bratislava. Nevertheless, Supraphon remains the prime force in the Czechoslovak gramophone market by virtue of the scope of its catalogue and of the grand concept of its publishing policy (more than 250 new lp records or sets annually). In 1975, Supraphon accounted for almost 70 per cent of the roughly 10 million record units (including single and extended play discs) produced for the Czechoslovak gramophone companies, and Panton and Opus for 16 and 14 per cent respectively.

A few data on the industrial production will characterise the development trend in the Czechoslovak gramophone industry in general and in the particular record lines. The monopoly Czechoslovak manufacturer of gramophone records is Gramofonové závody National Corporation at Loděnice (about 30 Km from Prague), which began to mass-produce records in 1951, and observed its 25th anniversary on May 2 this year. Because of the good quality of the products of its twin presses, the plant also custom-presses records for both Eastern and Western countries from its own pressing material. This is also exported and can be said to have helped more than one foreign firm to maintain the planned output during the world pressing material crisis. The industrial complex at Loděnice also includes large

warehousing and label-printing facilities. The table below shows the annual production figures, rounded (with one exception) to the nearest ten thousand:

	standards (shellac)	lp	sp and ep
1955	6 220 000	628 000	68 000
1960	720 000	1 160 000	1 710 000
1965	5 000	2 310 000	5 980 000
1970		2 910 000	6 690 000

The output figures for the past five years are the following:

1971	3 140 000	6 840 000
1972	3 630 000	6 460 000
1973	4 450 000	5 860 000
1974	5 570 000	4 350 000
1975	5 960 000	4 070 000

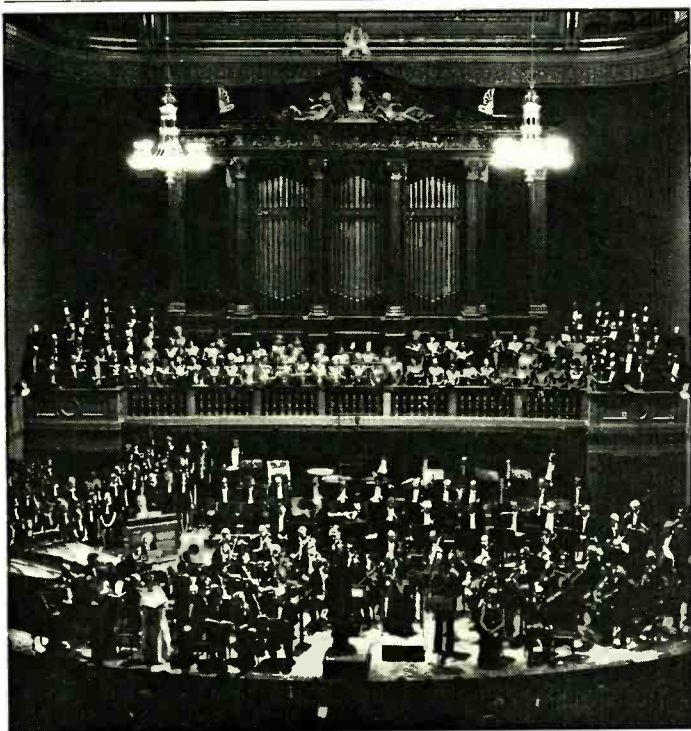
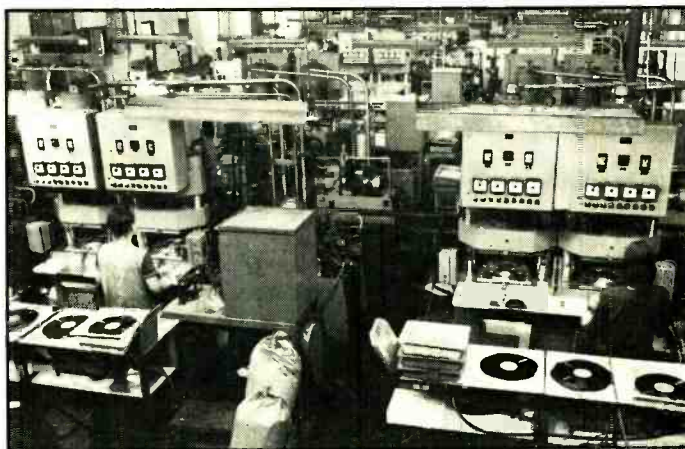
The trend in all categories is evidently the same as the world trend, with seven inch (17 cm) records unequivocally losing ground, with 10 inch (25 cm) records virtually on the way out (the table lists them under the lp heading without more detailed specification) and with 12 inch (30 cm, profiled, weight 125-135g) records now the mainstay of both production and trade. The stereo production is now the rule, with mono production reserved only for historic and documentary recordings. Production of quadraphonic records on a wider basis began in 1975, and in 1976 the prime classical recordings should be made in compatible quadraphonic versions, replacing stereo recordings (SQ System of CBS). Of the six million or so lps made in 1975, a full one-third was exported; exports of seven inch records ceased more than five years ago.

Cassette production (Philips-system compact cassettes) has a shorter tradition and as yet also a more modest scope (large scale production started in 1973) but it keeps growing rapidly, and in 1976 cassettes can be expected to account for roughly 15 per cent of the sales volume of all sound carriers. Eight-track cartridges 116 ▶

**Right upper:** Pressing plant of Gramofonove zavodny, Lodenice

**Right lower:** Control room of the Supraphon Studio at the House of Artists in Prague. Left to right Eduard Herzog (recording director), Dietrich Fischer-Dieskau, Josef Suk recording Harold in Italy.

**Below:** Dvorak Hall in the House of Artists: Czech PO, Chorus, conducted by Serge Baudo, recording Honneger's Jean d'Arc au Bucher. Quadraphonic productions of this and Harold in Italy were realised.



## CZECHOSLOVAKIA

have made no headway in Czechoslovakia.

The relatively high record exports of almost two million units, naturally also to the West, as well as the licensing of Czech and Slovak recordings practically to the whole world, testify to the international reputation of the Czechoslovak recordings. Such reputation must be sustained not only by the quality of the art, but also by technology of a standard appropriate to this mass medium. From the outset, Supraphon has done its best to keep up to date in this respect, and its technical equipment—along with the skill of its sound directors and sound engineers—can be said to have played an important role in establishing and sustaining the label's prestige. Opus, in Slovakia, is engaged in a similar effort.

It is worth noting that Supraphon has four permanent studios and a fifth is planned (two for classical music, two for pop and jazz, and one for the spoken word) and that it also makes very good recordings (including quadraphonic) with its mobile van at places and sites particularly suited for recording performance of a particular composition: a small old village church at Lúčany, the Smetana Hall in Prague, the Gothic cathedral at Olomouc, or the Brno Philharmonic Orchestra Concert Hall. For instance, the concert hall in Prague's House of Artists (for classical music) accommodates 140 instrumentalists and 120 choral singers. The control room there has a Neve console with 20 inputs and eight outputs, four track Studer tape recorders, four Lockwood monitor speakers, Quad amplifiers and Dolby equipment; the Mozarteum Studio (pop, rock, jazz) also has a Neve console, with 16, eight, four and two track Studer tape recorders, etc. The mobile van has a Studer 189 console with 18 inputs and eight outputs, a Studer A80 tape recorder and ancillary equipment, and complete equipment for quadraphonic recording.

Opus, which formerly had to record mostly in radio studios, commissioned on January 15, 1976 its new 1300 m<sup>3</sup> studio Pezinok in Bratislava. This has a capacity of 50 to 60 instrumentalists or singers (for classical chamber compositions, pop and jazz), with a Neve console with 24 inputs and eight outputs. Other equipment includes one 16 track Studer tape recorder and another two track, two Lockwood monitor speakers and Dolby equipment. For recording large orchestral and vocal-orchestral works, Opus plans a permanent control room with quadraphonic recording equipment in Bratislava's Reduta, near the Slovak Philharmonic Orchestra Concert Hall. It also has a smaller (300m<sup>3</sup>) studio at Bratislava's Theatre of Music for recording rock groups and the spoken word. Panton, which has yet no studio of its own, makes use of the House of Artists studio for more sophisticated recordings, but it also records in radio, tv and film music studios. It should be noted here that the gramophone companies are not the only producers of recordings used on Czechoslovak gramophone records; radio recordings contribute to what is published of contemporary music, with radio, tv and film recordings to the pop, jazz and folk record production. Both the central radio stations in Prague and Bratislava and the regional stations have their own orchestras and ensembles, and by recording less well-known performers they also perform the role of talent scout. More detailed information on the Czechoslovak gramophone studios and on their equipment will be found in the *Billboard* 1976 International Directory of Recording Studios.

Let us now turn to the Czechoslovak gramophone industry's international relations, most of which are handled (see above) by the foreign trade organisations Artia Prague and Slovart Bratislava. Trade with the socialist countries is regulated by international agreements, and constitutes in their field mostly exports and imports of gramophone records. The Czechoslovak side publishes recordings from socialist countries under licence only exceptionally, in club editions or similar. Often only the records themselves are imported, with sleeves or other parts of the final marketed product made in Czechoslovakia. Almost everything that is essential in the record production of the other socialist countries can be said to find its way to the Czechoslovak market, naturally above all the items irreplaceable by Czechoslovakia's own products. Moreover, the network of the so-called Culture Centres maintained by every socialist country in all the other partner countries not only helps to promote musical culture by means of lectures and new record performances, but also serves as a trade outlet in its own right and can present whatever it considers appropriate from the catalogues of the gramophone companies of

the particular country. However, the opportunities for imports and exports of records and similar commodities between countries with the same social system can be said to be far from exhausted, and more systematic cultivation of the market could produce still more interesting results—for instance, there is a Czechoslovak Records Club in the German Democratic Republic.

Recordings made by the Czechoslovak gramophone companies go to Western countries either in the form of actual ready-made records (a typical case is Great Britain, where Rediffusion is the partner of both Supraphon and Panton, through licensing arrangements (in Japan, Supraphon is represented by Nippon Columbia, and Opus and Panton by Victor of Japan), or through a combination of licensing with exports of finished product (Ariola-Eurodisc in the Federal Republic of Germany). Imports of finished Western records to the Czechoslovak market are limited (the imports are mostly sold through the specialist Tuzex shops) and Western recordings are mostly published in Czechoslovakia under licence, either with the original cover design or in sleeves designed by Czechoslovak designers in line with the Czechoslovak tradition of industrial design and with the needs of the local market.

In this line, Supraphon and Artia have framework licence agreements with many prominent gramophone concerns such as EMI, CBS, Polydor International, WEA, or Tamla Motown, which cover both their classical, and jazz, rock and pop repertory. Opus and Slovart have recently also entered into several such agreements, for instance with Phonogram. Naturally, from time to time separate licensing deals are concluded for particular titles. Singles, for the most part, are neither imported nor licensed, but Czech or Slovak cover versions are made of the most attractive titles (Czechoslovakia is represented in BIEM). It is worth noting that Czechoslovakia was the first socialist country to enter into licence purchase agreements with Western firms; under such agreements, Czechoslovakia was given the sales rights for most of the other socialist countries, so that it communicated (and still communicates, in some cases) to record collectors there certain recordings which would otherwise be unavailable to them. Czechoslovakia ceased to perform the role of mediator between Western gramophone industries and the other socialist countries after the expansion of the gramophone industries in Eastern Europe (particularly in the USSR and the DDR, as well as in Poland) made it possible for the other countries to establish direct contacts of their own with the West.

One interesting feature is Supraphon's coproductions, particularly in the field of classical music, with Western partners, including the West German Polydor and Teldec, the multi-national EMI, Nippon Columbia of Tokyo, and many other firms, including smaller ones. Czechoslovakia's prime purpose in such arrangements is artistic; that was also the case of the recording of Mozart's *Don Giovanni* in Prague (where the opera had its first performance, conducted by Mozart himself, in 1787) with international soloists, conductor Karl Böhm, the Czech Philharmonic Chorus, and the Prague National Theatre Orchestra.

This year, the Czechoslovak gramophone industry will observe the 30th anniversary of its nationalisation. A review of the extensive list of recordings made over that period and of their standard and impact, reflected in no less than 40 international prizes, indicates that this modern mass communications medium—and a cultural commodity as well—does justice to the musical tradition of the nationals of Czechoslovakia. It has introduced to the world gramophone scene artists and ensembles of the calibre of Josef Suk, Ivan Moravec, Zuzana Růžičková, Václav Talich, Karel Ančerl, Václav Neumann, the Smetana Quartet, the Ars Rediviva ensemble, the Prague Madrigal Singers, the Czech Chamber Orchestra, the Czech Philharmonic Orchestra and others, whose names important gramophone companies in countries much larger than Czechoslovakia would consider it an honour to have in their catalogues. The *Musica Antiqua Bohemica* and *Musica Nova Bohemica* series have literally discovered for the world Czech composers whose existence and significance used to be known to only very few specialists. Naturally, the gramophone industry continues to advance, and audio-visual recordings are now the supreme interest of the entire industry, and its driving-force as well. For the Czechoslovak gramophone industry, they represent the last remaining fortress to be taken; its capture is planned for 1978.

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## Features

The 1745M employs random access memories instead of shift registers for maximum versatility and reliability. The standard 1745M offers two independent outputs each providing up to 320 ms of continuously variable delay. Up to 3 additional outputs are available.

Delay is read out in milliseconds on solid-state digital readouts, one for each output. There is no noise when changing delay settings—switching can even be made during recording. For convenience, the 1745M front panel includes switches for instant zeroing of all delays, plus switches for audio recirculation and delay doubling (up to 640 ms at one-half frequency response).

An input level control and optimum level indicator is included.

**The Modular design of the 1745M**  
allows many special features including:

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Employing novel circuitry for wide range pitch variation and musical harmonising without effecting any change in speed

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Including manual and automatic flanging with digital versatility.

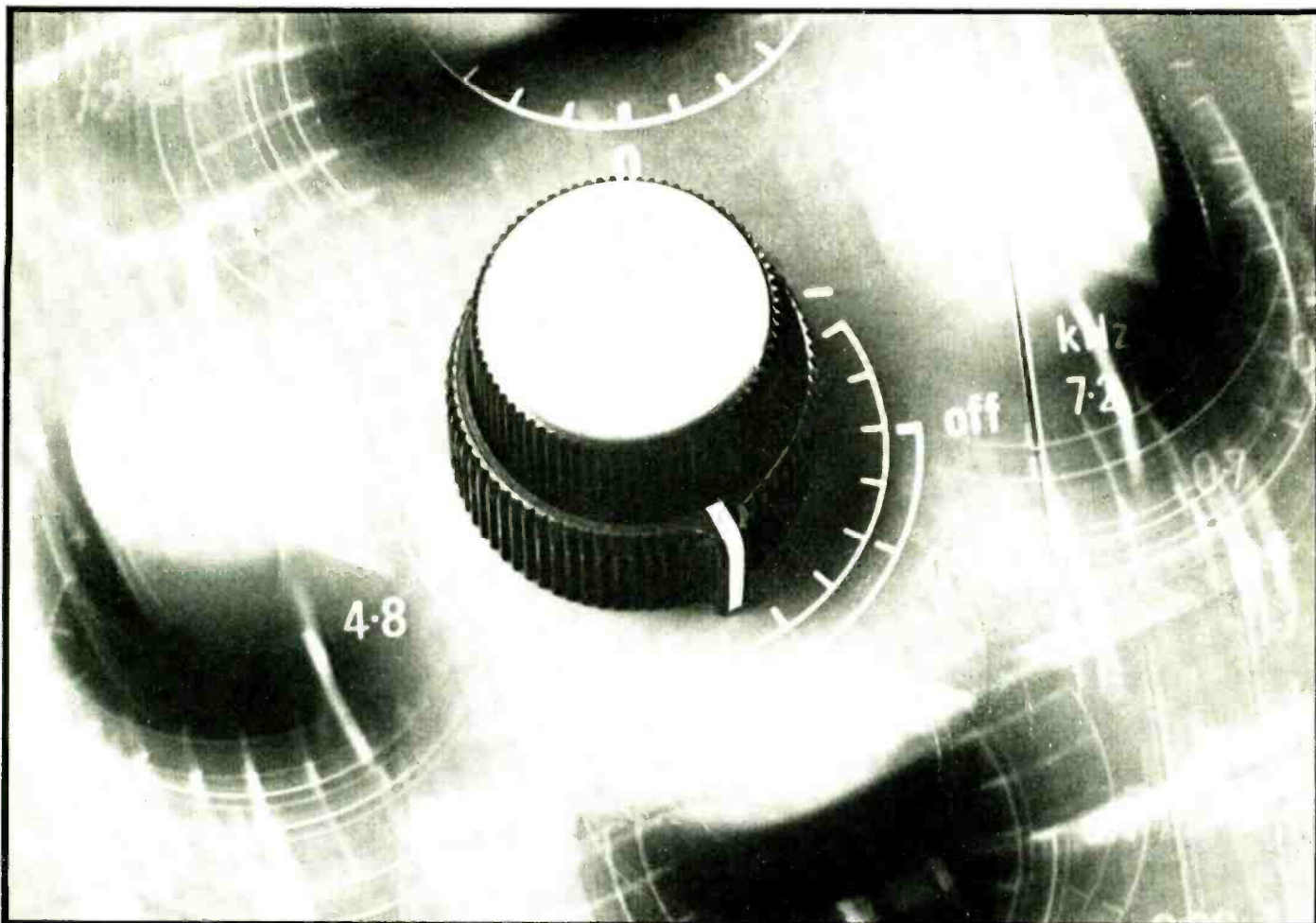
### Remote Control

Manual and automation — compatible.

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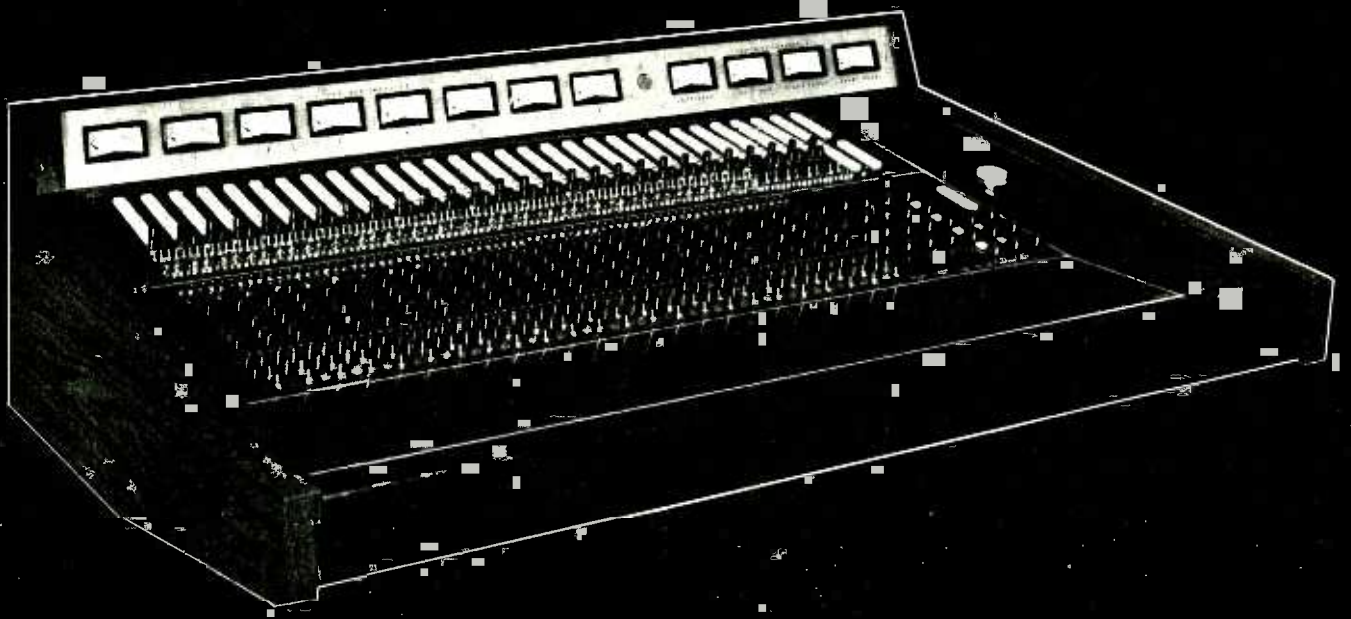
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## HY5 Preamplifier

The HY5 is a mono hybrid amplifier ideally suited for all applications. All common input functions (mag Cartridge, tuners, etc) are catered for internally, the desired function is achieved either by a multi-way switch or direct connection to the appropriate pins. The internal volume and tone circuits merely require connecting to external potentiometers (not included). The HY5 is compatible with all I.L.P. power amplifiers and power supplies. To ease construction and mounting a P.C. connector is supplied with each pre-amplifier.

**FEATURES:** Complete pre-amplifier in single pack—Multi function equalization—Low noise—Low distortion—High overload—Two simply combined for stereo

**APPLICATIONS:** Hi-Fi—Mixers—Disco—Guitar and Organ—Public Address

**SPECIFICATIONS:**

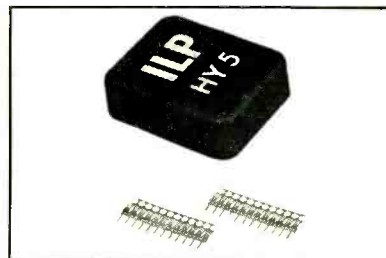
**INPUTS:** Magnetic Pick-up 3mV; Ceramic Pick-up 30mV; Tuner 100mV; Microphone 10mV; Auxiliary 3-100mV; input impedance 47 k $\Omega$  at 1 kHz.

**OUTPUTS:** Tape 100mV; Main output 500mV R.M.S.

**ACTIVE TONE CONTROLS:** Treble  $\pm$  12dB at 10kHz; Bass  $\pm$  at 100Hz.

**DISTORTION:** 0.1% at 1kHz. Signal/Noise Ratio 68dB.

**OVERLOAD:** 38dB on Magnetic Pick-up. **SUPPLY VOLTAGE:**  $\pm$  16-50V.



## HY30 15 Watts into 8 $\Omega$

The HY30 is an exciting New kit from I.L.P. It features a virtually indestructible I.C. with short circuit and thermal protection. The kit consists of I.C., heatsink, P.C. board, 4 resistors, 6 capacitors, mounting kit, together with easy to follow construction and operating instructions. This amplifier is ideally suited to the beginner in audio who wishes to use the most up-to-date technology available.

**FEATURES:** Complete Kit—Low Distortion—Short, Open and Thermal Protection—Easy to Build.

**APPLICATIONS:** Updating audio equipment—Guitar practice amplifier—Test amplifier—audio oscillator.

**SPECIFICATIONS:**

**OUTPUT POWER:** 15W R.M.S. into 8 $\Omega$ , **DISTORTION:** 0.1% at 15W.

**INPUT SENSITIVITY:** 500mV **FREQUENCY RESPONSE:** 10Hz-16kHz —3dB.

**SUPPLY VOLTAGE:**  $\pm$  18V

Available  
June '76

## HY50 25 Watts into 8 $\Omega$

The HY50 leads I.L.P.'s total integration approach to power amplifier design. The amplifier features an integral heatsink together with the simplicity of no external components. During the past three years the amplifier has been refined to the extent that it must be one of the most reliable and robust High Fidelity modules in the World.

**FEATURES:** Low Distortion—Integral heatsink—Only five connections—7 amp output transistors—No external components.

**APPLICATIONS:** Medium Power Hi-Fi systems—Low power disco—Guitar amplifier.

**SPECIFICATIONS:** **INPUT SENSITIVITY:** 500mV.

**OUTPUT POWER:** 25W R.M.S. into 8 $\Omega$ . **LOAD IMPEDANCE:** 4-16 $\Omega$  **DISTORTION:** 0.04% at 25W at 1kHz.

**SIGNAL/NOISE RATIO:** 75dB **FREQUENCY RESPONSE:** 10Hz-45kHz —3dB.

**SUPPLY VOLTAGE:**  $\pm$  25V. **SIZE:** 105 50 25mm.



## HY120 60 Watts into 8 $\Omega$

The HY120 is the baby of I.L.P.'s new high power range, designed to meet the most exacting requirements including load line and thermal protection this amplifier sets a new standard in modular design.

**FEATURES:** Very low distortion—Integral heatsink—Load line protection—Thermal protection—Five connections—No external components.

**APPLICATIONS:** Hi-Fi—High quality disco—Public address—Monitor amplifier—Guitar and organ.

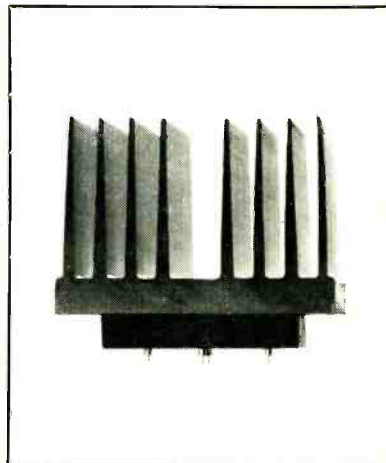
**SPECIFICATIONS:**

**INPUT SENSITIVITY:** 500mV.

**OUTPUT POWER:** 60W R.M.S. into 8 $\Omega$ . **LOAD IMPEDANCE:** 4-16 $\Omega$  **DISTORTION:** 0.04% at 60W at 1kHz.

**SIGNAL/NOISE RATIO:** 90dB **FREQUENCY RESPONSE:** 10Hz-45kHz —3dB **SUPPLY VOLTAGE:**  $\pm$  35V.

**SIZE:** 114 50 85mm.



## HY200 120 Watts into 8 $\Omega$

The HY200 now improved to give an output of 120 Watts has been designed to stand the most rugged conditions such as disco or group while still retaining true Hi-Fi performance.

**FEATURES:** Thermal shutdown—Very low distortion—Load line protection—Integral heatsink—No external components.

**APPLICATIONS:** Hi-Fi—Disco—Monitor—Power slave—Industrial—Public address.

**SPECIFICATIONS:**

**INPUT SENSITIVITY:** 500mV.

**OUTPUT POWER:** 120W R.M.S. into 8 $\Omega$ . **LOAD IMPEDANCE:** 4-16 $\Omega$  **DISTORTION:** 0.05% at 100W at 1kHz.

**SIGNAL/NOISE RATIO:** 96dB **FREQUENCY RESPONSE:** 10Hz-45kHz —3dB **SUPPLY VOLTAGE:**  $\pm$  45V.

**SIZE:** 114 100 85mm.

## HY400 240 Watts into 4 $\Omega$

The HY400 is I.L.P.'s "Big Daddy" of the range producing 240W into 4 $\Omega$ ! It has been designed for high power disco or public address applications. If the amplifier is to be used at continuous high power levels a cooling fan is recommended. The amplifier includes all the qualities of the rest of the family to lead the market as a true high power hi-fidelity power module.

**FEATURES:** Thermal shutdown—Very low distortion—Load line protection—No external components.

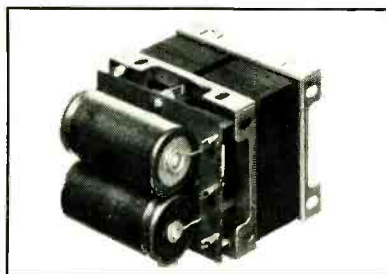
**APPLICATIONS:** Public address—Disco—Power slave—Industrial.

**SPECIFICATIONS:**

**OUTPUT POWER:** 240W R.M.S. into 4 $\Omega$ . **LOAD IMPEDANCE:** 4-16 $\Omega$  **DISTORTION:** 0.1% at 240W at 1kHz.

**SIGNAL/NOISE RATIO:** 94dB **FREQUENCY RESPONSE:** 10Hz-45kHz —3dB **SUPPLY VOLTAGE:**  $\pm$  45V.

**INPUT SENSITIVITY:** 500mV **SIZE:** 114 100 85mm.



## POWER SUPPLIES

PSU36 suitable for two HY30's

PSU50 suitable for two HY50's

PSU70 suitable for two HY120's

PSU90 suitable for one HY200

PSU180 suitable for two HY200's or one HY400

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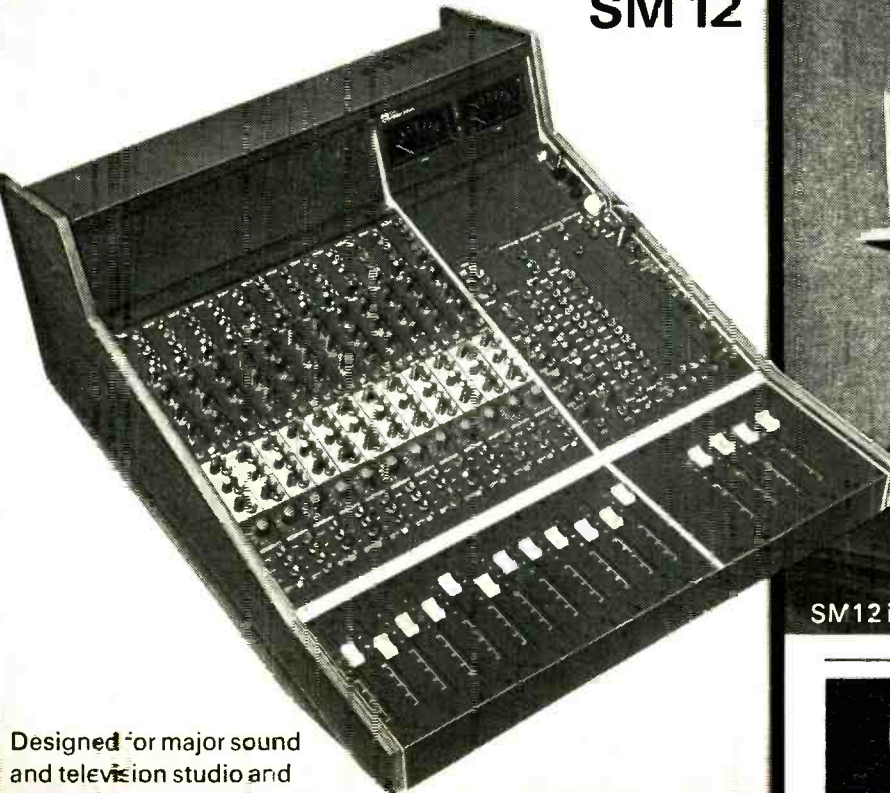


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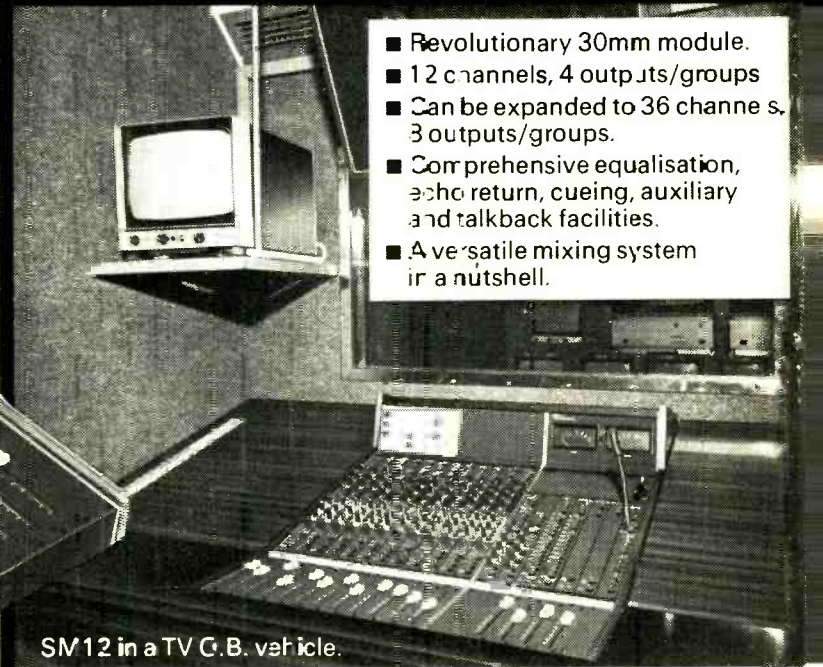
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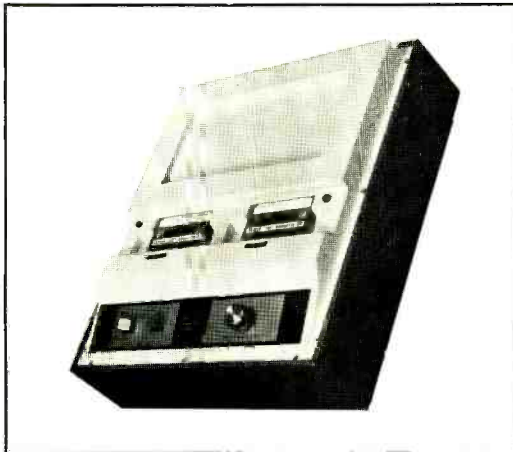
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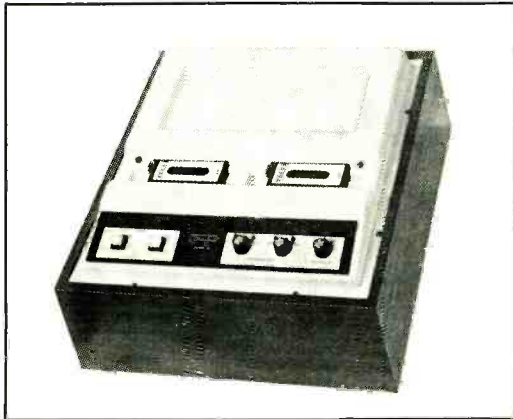
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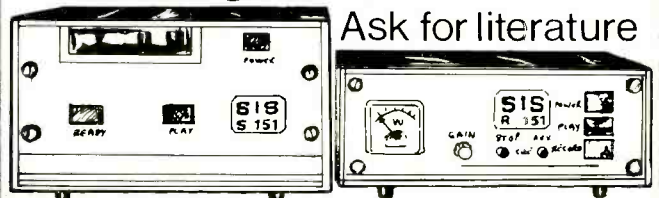
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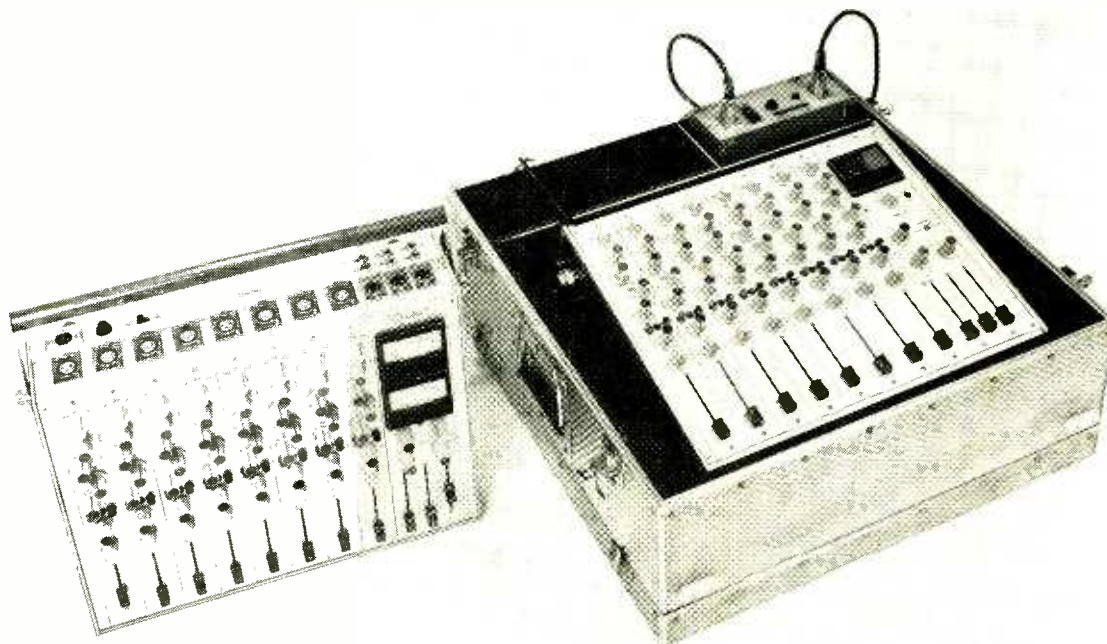
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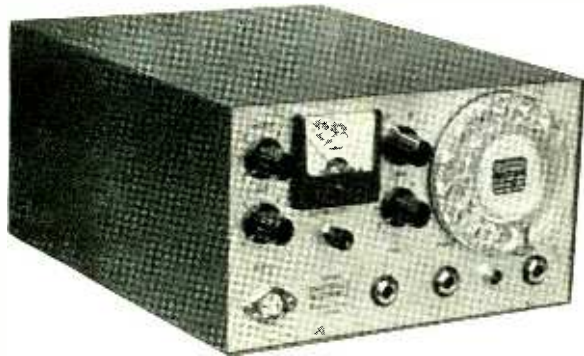
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**Note:** Advertisement copy must be clearly printed in block capitals or typewritten.

Replies to Box Nos. should be addressed to the Advertisement Manager, Studio Sound, Link House, Dingwall Avenue, Croydon CR9 2TA, and the Box No. quoted on the outside of the envelope. The district after Box No. indicates its locality. **SEX DISCRIMINATION ACT 1975:** No job advertisement which indicates or can reasonably be understood as indicating an intention to discriminate on grounds of sex (e.g. by inviting applications only from males or only from females) may be accepted, unless (1) the job is for the purpose of a private householder or (2) it is in a business employing less than six persons or (3) it is otherwise excepted from the requirements of the Sex Discrimination Act. A statement must be made at the time the advertisement is placed saying which of the exceptions in the Act is considered to apply.

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126 STUDIO SOUND, JUNE 1976

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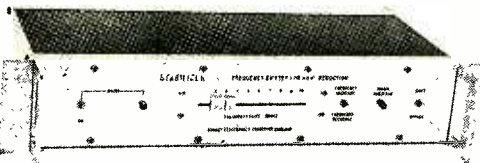
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SERIES



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