

DECEMBER 1969

TAPE

RECORDING MAGAZINE

2'6

AUDIO FAIR REPORT

The war on wheels

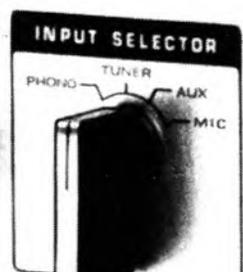
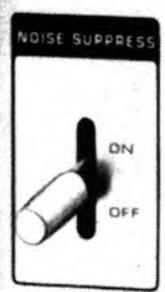
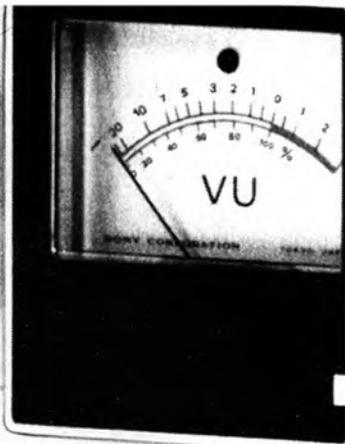
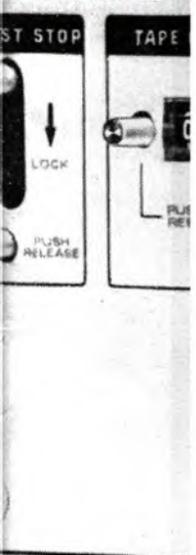
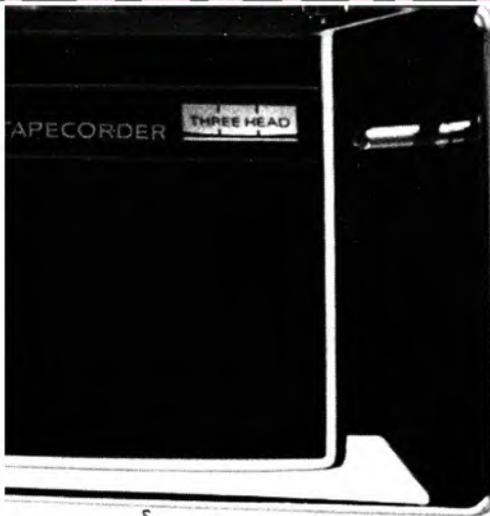
REVIEW—SONY TC-630

CROSS TALK

MUSIC REVIEWS

NEW PRODUCTS

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STEREO CENTER
TC-630
THREE HEAD
SOLID STATE



EMITAPE Afonic **low-noise recording tape**

quiet as a mouse!



don't buy any tape – buy **EMITAPE**

THE RANGE OF EMITAPE AFONIC LOW-NOISE TAPE

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STANDARD PLAY

The best general purpose tape, giving maximum durability at all professional speeds. Pre-stretched polyester base film of super strength.

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LONG PLAY

50% longer recording time – specially designed for multi-track recorders – pre-stretched polyester base film of super strength.

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DOUBLE PLAY

Twice the recording time for a given size of spool – the perfect film for low speed, multi-track recorders – superflex polyester base film.

300

TRIPLE PLAY

Maximum playing time on spools up to 5" dia. – extended dynamic range – specially suitable for battery operated recorders – extra tensile polyester base.

EMITAPE IS AN EMI GROUP PRODUCT





Introducing the Akai 4000D with new one-micron head. Result: Another 2000Hz at 3 $\frac{3}{4}$ I.P.S.

This impressive increase in frequency response from 14000Hz at 3 $\frac{3}{4}$ i.p.s. on the previous 3000D model to 16000.Hz on the new 4000D is a direct result of the new one micron gap head.

Of the 3000D, the reviewers in the March 68 edition of Tape Recording Magazine said: 'It can claim to achieve a standard of technical performance

far in excess of that indicated by its price.'

All of which makes the new Akai 4000D even better value at £89.18.8 (recommended), and almost certainly the best tape deck in Britain for under £100. And don't forget the 4000D is just one of Akai's range—the most comprehensive range of tape recorders in Britain.

PERFORMANCE SPECIFICATIONS

TAPE SPEED 2 speeds... 3.3 4 and 7.1 2 ips
WOW AND FLUTTER Less than 0.15% RMS at 7.1 2 ips
 Less than .20% RMS at 3.3 4 ips
FREQUENCY RESPONSE 30 to 22,000 Hz \pm 3db at 7.1 2 ips
 30 to 16,000 Hz \pm 3db at 3 3 4 ips
SIGNAL TO NOISE RATIO Better than 50db

LEVEL INDICATOR 2 VU meters
RECORDING SYSTEM 4 track stereo/monaural system
FORWARD/REWIND TIME 150 seconds using 1,200 foot tape at 50 cycles

SPECIAL FEATURE 3 heads for off-the-tape monitoring. Plus sound-on-sound recording.

For further details, write to:

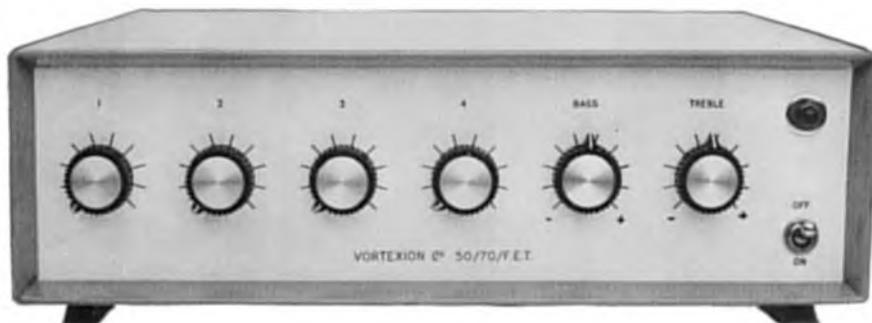
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Vortexion

This is a high fidelity amplifier (0.3% intermodulation distortion) using the circuit of our 100% reliable – 100 Watt Amplifier (no failures to date) with its elaborate protection against short and overload, etc. To this is allied our latest development of F.E.T. Mixer amplifier, again fully protected against overload and completely free from radio break-through. The mixer is arranged for 3-30/60Ω balanced line microphones, and a high impedance line or gram input followed by bass and treble controls. 100 volt balanced line output.

THE VORTEXION 50/70 WATT ALL SILICON AMPLIFIER WITH BUILT-IN 4 WAY MIXER USING F.E.T.s.



100 WATT ALL SILICON AMPLIFIER. A high quality amplifier with 8 ohms-15 ohms and 100 volt line output for A.C. Mains. Protection is given for short and open circuit output over driving and over temperature. Input 0.4v on 100K ohms.

100 WATT MIXER AMPLIFIER. with specifications above is here combined with a 4-channel F.E.T. mixer, 1 gram, 1 tape and 2 mic. inputs with tone controls and mounted in a standard robust stove enamelled steel case. A stabilised voltage supply feeds the tone controls and pre amps, compensating for a mains voltage drop of over 25% and the output transistor biasing compensates for a wide range of voltage and temperature. Also available in rack panel form.

200 WATT AMPLIFIER. Can deliver its full audio power at any frequency in the range of 30 c/s-20Kc/s \pm 1db. Less than 0.2% distortion at 1 Kc/s. Can be used to drive mechanical devices for which power is over 120 watt on continuous sine wave. Input 1 mW 600 ohms. Output 100-120v or 200-240v. Additional matching transformers for other impedances are available.

CP50 AMPLIFIER. An all silicon transistor 50 watt amplifier for mains and 12 volt battery operation, charging its own battery and automatically going to battery if mains fail. Protected inputs, and overload and short circuit protected outputs for 8 ohms-15 ohms and 100 volt line. Bass and treble controls fitted.

Models available with 1 gram and 2 low mic. inputs. 1 gram and 3 low mic. inputs or 4 low mic. inputs.

20/30 WATT MIXER AMPLIFIER. High fidelity all silicon model with F.E.T. input stages to reduce intermodulation distortion to a fraction of normal transistor input circuits. The response is level 20 to 20,000 cps within 2 db and over 30 times damping factor. At 20 watts output there is less than 0.2% intermodulation even over the microphone stage at full gain with the treble and bass controls set level. Standard model 1-low mic. balanced input and Hi Z gram.

ELECTRONIC MIXERS. Various types of mixers available. 3-channel with accuracy within 1 dB Peak Programme Meter. 4-6-8-10 and 12-way mixers. Twin 2, 3, 4 and 5 channel stereo. Built-in screened supplies. Balanced line mic. input. Outputs: 0.5 V at 20K or alternative 1 mW at 600 ohms, balanced, unbalanced or floating.

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Telephone: 01-542 2814 and 01-542 6242/3/4

Telegrams: "Vortexion London S.W.19"



Sennheiser and the professional



Most professional sound recordists will admit that monitoring on a high quality pair of headphones, such as the Sennheiser HD110 headphones above, is essential if well balanced recordings are to be obtained. Sennheiser have designed a pair of high quality stereo headphones type HD414 which are lightweight, yet very robust and offering a frequency response from 20Hz to 20,000Hz. To quote a leading professional recordist 'Most manufacturers claim that their products are comfortable and will not make the ears hot and sweaty. 'Certainly the HD414s feel different. They feel different because they are different in presenting an unbroken disc of foam to the ear instead of the more usual cup. Since relative degrees of comfort are purely personal I can only say that I found the HD414s to be as good as the best I have tried in this respect.

I was both amazed and thrilled by the results from the HD414s. Never before have I heard such a full rich bass from a pair of cans as these were able to give me. Wishing to confirm my own judgment I arranged for a number of other people to use these phones and for their listening test provided an organ recording with plenty of full-bodied low frequency sound going right down the register. I wasn't mistaken. Everyone who used the phones confirmed that the bass was present, audible and clean. The response was equally good in the middle and upper ranges.' Denys Killick T.R.M. Nov.1969.

The price of the HD414 stereo headphones is £12.5.0

The microphones illustrated below will be sold less 20% c.w.o. until the end of 1969

The MD611 omni directional microphone opposite is designed for the amateur recordist. Frequency response 60Hz-12000Hz Impedance 600 ohms. A wind shield is available for exterior use.

Price £6.5.0.

Less 20% £5.0.0. c.w.o.

The MD722 is similar in shape to the MD611 but has a cardioid characteristic and is therefore more useful for interior recordings. The specification is the same as for the MD611.

Price £7.10.0.

Less 20% £6. 0.0. c.w.o.



Sennheiser's excellent super cardioid microphone MD411 HLM designed for the serious amateur is shown on the right. This microphone is a triple impedance unit and will therefore connect directly into any tape recorder. Frequency response 40Hz-15000Hz. A windshield is available and should be used on all exterior recordings.

Price £16.15.0.

Less 20% £13. 8.0. c.w.o.

A few other microphones are also available.

FOUNTAIN PEN microphone £7. 5.0.

LAPEL microphone £7. 5.0.

Less 20% £5.16.0.



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3"	150' - 4/9d.	225' - 6/3d.	300' 8/9d.	450' - 13/9d.
4"		450' - 12/-	600' 18/-	900' - 27/-
5"	600' - 15/-	900' - 18/6d.	1200' 28/6d.	1800' 45/-
5½"	900' - 18/6d.	1200' - 22/6d.	1800' 36/-	2400' - 57/6d.
7"	1200' - 22/6d.	1800' - 28/6d.	2400' 48/-	3600' - 75/-

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AKAI's one-micron gap head is responsible for an amazing, important difference in tape recording.

It's the difference between every day, ordinary, performance and highest possible quality perfection—AKAI perfection.

Just what is a one micron gap head? It's a head whose width is one-micron—one astounding micron, to be precise.

Up to now, 2-micron heads or 4-micron heads have been the standards for comparing tape recorders.

But AKAI has pushed forward and narrowed the head-gap—narrowed the distance between tape recording results and actual sound. The result is AKAI perfection. One micron heads have these distinctive advantages over heads with wider gaps:

(A) They have excellent frequency characteristics even at low tape speed. (This means extremely high intense recording and playback is achieved)

(B) Clear high pitched tone can be regenerated as a high frequency tone and recorded smoothly. (A high frequency tone is recorded with a low distortion rate.)

The frequency characteristics resulting from one micron heads are amazing in recording, but certainly more noticeable during playback.

The frequency which can be regenerated is determined—theoretically—by the width of the head-gap (λH). Generally, it is conceded that head output comes to zero when the record pattern wavelength (λs) of the recorded frequency is equal to the head-gap length (λH).

Actually, the frequency ($f\frac{1}{2}$) whose record pattern wave length is twice the head-gap length (λH) can be used for the actual frequency band.

The relationship of the frequency and the head-gap to the tape speed is given in these quotations:

$f = V/\lambda s$...General formula for tape speed frequency and record pattern relationship.

$f_0 = V/\lambda H$...Frequency at which head output comes to zero.

$f\frac{1}{2} = V/2 \times (\lambda H)$... Actual frequency band.

These equations prove what more and more satisfied AKAI users know—that the narrower the head-gap the higher are the tones that can be regenerated.



Model 4000D

Using these equations, let's calculate for a moment.

When tape speed is 9.5cm/s, the actual frequency bands ($f\frac{1}{2}$) will be:

$f\frac{1}{2} = 47.5\text{kHz}$ For one-micron heads

$f\frac{1}{2} = 12\text{kHz}$ For four-micron heads

Let's suppose that a 20kHz tone is to be regenerated. The frequency will be out of the actual frequency band whenever a 4 micron head is used. However, whenever AKAI's one-micron head is used the tone can be regenerated.

Why—you may ask—can only AKAI make one micron heads?

In answering, let's list some of the problems that must be overcome in narrowing head-gaps. First, there is regeneration power degradation, then there is s/n degradation and recording performance deterioration—to mention a few.

These and many other obstacles have been surmounted by AKAI's diversified experience in this and related fields.

From this experience has blossomed AKAI's own, unique technique—technique that leaves absolutely nothing to chance.

Special adhesives and precision plus correct alloy materials for the head-gap have also been distinguished results of AKAI research to successfully narrow wide-gap heads with no defects.

This is all another step-by-step success story in what tape recorder users call "AKAI PERFECTION."

4 TRACK STEREO TAPE DECK—4000D

*4 track stereo/monaural recording and playback *2 speeds, 3 heads *All silicon transistorized pre-amplifier *Automatic shut off, Instant stop control *Tape cleaner *ONE MICRON GAP HEAD *Magnificent oil-finished wooden cabinet *For increased stereo enjoyment, use the matching AA-6000, 120 watt solid state amplifier and the matching speaker SW130 (2 way, 25 watt input).

Recommended retail price in U.K. £87.10.0 including purchase tax.

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4 TRACK STEREO/MONO

	Deposit	12 Monthly	Cash	
	£ s. d.	Payments	Price	£ s. d.
Philips EL3312 ...	23 4 1	3 14 5	67 17 1	
Philips 4404... ..	26 17 0	4 5 0	77 17 0	
Ferguson 3232 ...	33 5 0	5 1 10	93 5 0	
Sanyo MR-929 ...	33 4 9	5 6 10	97 4 9	
Sony TC260... ..	33 0 0	5 10 0	99 0 0	
Philips 4407... ..	35 15 10	5 13 4	103 15 4	
Akai 1710W ...	37 15 7	6 2 1	111 0 5	
Sanyo MR939 ...	38 13 6	6 2 3	112 0 2	
Telefunken 204TS... ..	41 13 0	6 18 10	124 19 0	
Grundig TK247 ...	45 10 9	7 2 4	130 18 9	
Philips 4408... ..	46 19 5	7 8 9	136 3 10	
Sony TC530 ...	49 12 3	8 1 8	146 12 3	
Beocord 2000K ...	53 5 0	8 17 6	159 15 0	
Beocord 2000T ...	55 5 0	9 4 2	165 15 0	
National Console-Aire ...	61 16 8	10 5 4	185 0 0	
Ferrograph 722/4... ..	65 3 1	10 15 0	194 3 1	
Akai M9 ...	68 12 4	10 16 8	198 12 4	

4 TRACK MONAURAL

Fidelity Braemar... ..	11 12 8	1 17 4	34 4 8
Ferguson 3226 ...	15 9 0	2 11 7	46 6 0
Grundig TK140 ...	16 10 1	2 11 11	47 13 1
Philips 4307 ...	16 15 3	2 13 1	48 11 11
Ferguson 3238 ...	20 12 0	3 5 0	59 12 0
Ferguson 3216 ...	22 16 0	3 12 2	66 2 0
Wyndor Vanguard ...	25 4 0	4 4 0	75 12 0
Tandberg 1541 ...	26 15 3	4 10 0	80 15 3
Reps HW10 4-T ...	28 16 9	4 11 2	83 10 1

STEREO TAPE UNITS

	Deposit	12 Monthly	Cash	
	£ s. d.	Payments	Price	£ s. d.
Sanyo MR-801 ...	27 9 5	4 6 8	79 9 5	
Sony TC355... ..	33 7 6	5 11 3	100 2 6	
Akai 3000D... ..	35 0 3	5 10 7	101 6 11	
Beocord 1500 ...	42 15 0	6 18 4	125 15 0	
Ferrograph 702/704	58 8 5	9 11 8	173 8 5	

MAINS TWIN TRACK

Fidelity Braemar... ..	10 9 8	1 15 0	31 9 0
Ferguson 3224 ...	11 12 8	1 16 10	33 14 0
Grundig TK120 ...	14 0 3	2 3 9	40 5 3
Beocord 1100 ...	28 5 0	4 14 2	84 15 0
Brenell Mk. V/3 Std. ...	36 8 2	5 16 7	106 16 8
Brenell Mk. V/3 Mtr. ...	39 8 3	6 4 6	114 1 9
Ferrograph 713 ...	51 6 3	8 10 0	153 6 3
Ferrograph 713H... ..	53 14 6	8 17 6	160 4 6

BATTERY OPERATED

National RQ-1135 ...	7 13 5	1 5 7	23 0 3
Philips 3302 Cassette	11 1 7	1 15 0	32 1 7
Sharp RD505 Bat./Mns. ...	13 12 8	2 5 0	40 12 8
Telefunken 300 ...	15 0 0	2 12 6	47 5 0
Sony TC210... ..	16 0 0	2 13 4	48 0 0
Telefunken 301 ...	17 10 0	2 19 6	53 11 0
Telefunken 302 ...	19 12 0	3 5 4	58 16 0
Sanyo MR151 Stereo	30 4 1	5 0 0	90 4 1
Uher 4000L ...	44 13 1	7 8 4	133 13 1

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tively. Wow and flutter less
than 1 R.M.S., -15 R.M.S. and,
35 R.M.S. at $7\frac{1}{2}$, $3\frac{3}{4}$ and $1\frac{7}{8}$ i.p.s.
respectively. Cross talk better
than - 60dB. +9v output per
channel. Teak cabinet. £89.10.0

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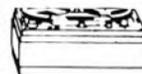
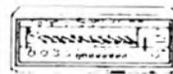
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	<p>The GR/1 and GR/2 Ribbon</p> <p>Ideal for studio and similar uses, when a high standard of fidelity is essential. Easily replaceable ribbon assembly.</p>

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All microphones are manufactured in a special section of our works, under strictly controlled conditions with stringent test and inspection at every stage. Each and every microphone is individually tested both aurally and on Bruel & Kjoer visual and graphic recording test equipment for conformity to a prescribed performance.

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Wow and flutter are under 0.1% at $3\frac{1}{2}$ ips, and better than 0.08% at $7\frac{1}{2}$ ips.

Facilities include monitoring, mixing and transcription from one track to an-

other. Cueing and dubbing keys. VU meters. And a lining-up switch for accurate setting-up of head alignment and amplifiers.

In fact, the PRO12 is a true professional tape recorder, at an enthusiast's price—under £240 (recommended).



If that's a bit beyond your pocket, turn your attention to our N4408—a Hi-Fi

stereo tape recorder, with everything you need for magnificent recordings. Recommended price £136.3.10.

Or look at the N4500—a superb Hi-Fi stereo tape deck, designed for connection to an external amplifier. It's perfect for use with a chain of Hi-Fi stereo units. Recommended price £126.

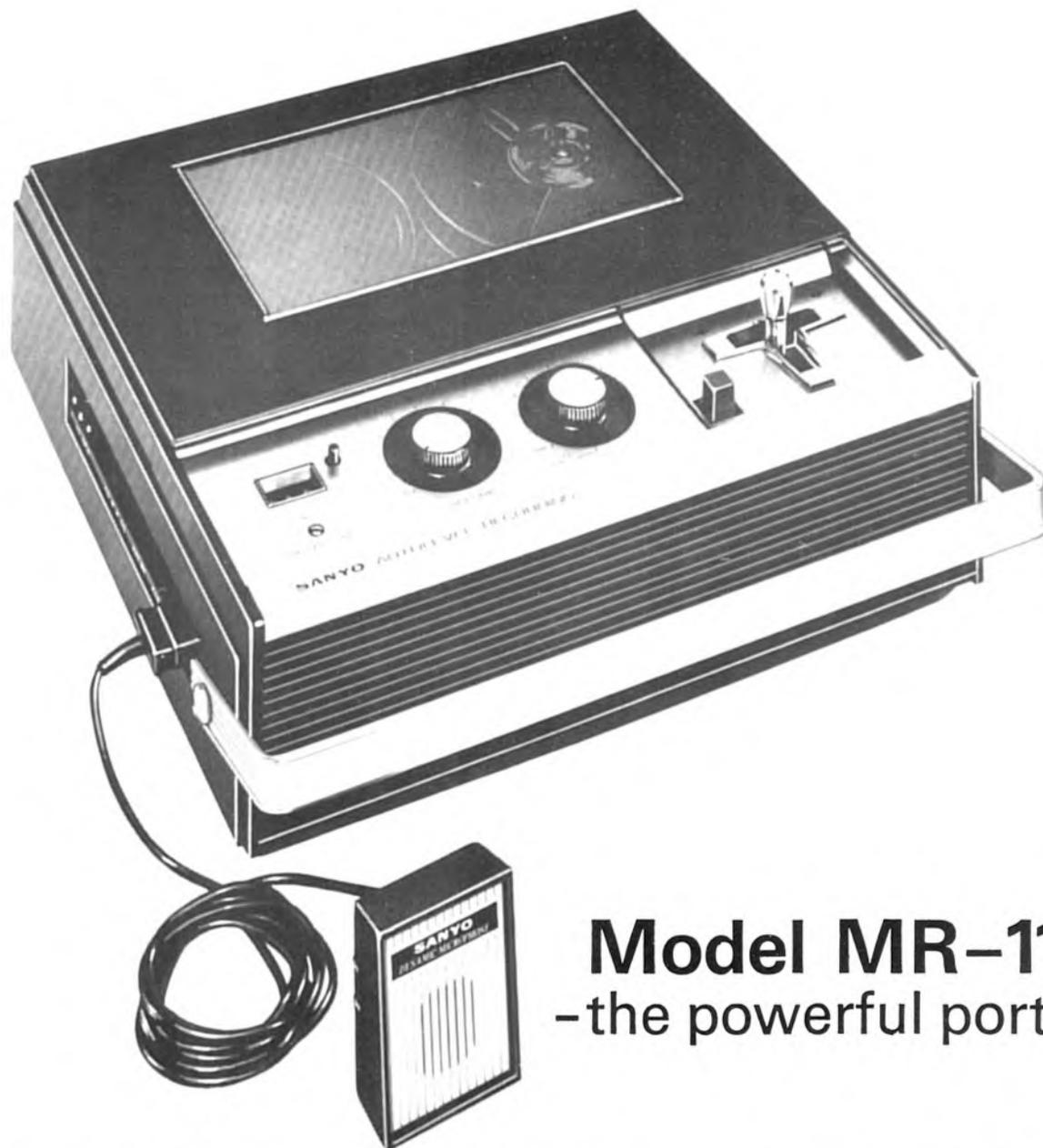


For a free Tape Recorder Brochure write to Philips Electrical Ltd., Century House, Shaftesbury Avenue, London W.C.2.



PHILIPS





Model MR-115 -the powerful portable

Operates on six flashlight batteries, or regular AC household current. 1,200 mW output power. Automatic level control (ALC) constantly keeps recording level adjusted for optimum recording quality, no manual adjustments required, especially useful for speech recordings. Three digit tape counter. Spindles accommodate 5 inch reels. Mixing while recording. Two signal sources (i.e. mike + radio, mike + record player) can be used simultaneously. Convenient for blending background music into narration. Continuous tone control. Battery condition indicator. Extension speaker and earphone outlet. Practically designed plastic cabinet designed for easy carrying.

SPECIFICATIONS

Recording system:
AC bias, 2 track
Erasing system:
DC erase

Tape speed & Recording time:
(With 5" reel, 2 tracks, 50 μ tape)
3 $\frac{3}{8}$ ips (9.5 cm/sec) 64 min.
1 $\frac{7}{8}$ ips (4.8 cm/sec) 128 min
Frequency response:
(Record & Playback)
150-6000 cps at 3 $\frac{3}{8}$ ips
150-4000 cps at 1 $\frac{7}{8}$ ips

Output power:
Maximum 1.2W
Power requirement:
AC: 115/230V, 50-60 c/s
DC: Size D (UM-1) x 6
Output impedance:
EXT. SP: 8 ohm
Loudspeaker:
6 $\frac{1}{4}$ " x 3 $\frac{1}{8}$ " permanent dynamic speaker
Voice coil impedance 8 ohm
Power consumption:
15VA
Dimensions:
11 $\frac{3}{8}$ " width x 10 $\frac{5}{8}$ " depth x 3 $\frac{7}{8}$ " height

(295 mm x 270 mm x 98 mm)

Weight:
9.4 lbs (4.3 kg) approx.

Accessories:
Microphone, 5" full tape
Empty reel, Splicing tape
Power cord

The MR-115 is available from the Sanyo dealer in your area, specially selected for first-class before-and-after-sales service. Or you can write for illustrated leaflet to:

Sanyo Marubeni (U.K.) Ltd.,
Bushey Mill Lane, Watford, Herts.
Telephone: Watford 25355.



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SIZE 23

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27/-



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TAPE

RECORDING
MAGAZINE

Incorporating TAPE RECORDING & HI-FI MAGAZINE and STEREO SOUND MAGAZINE

Vol. 13 No. 12 December 1969

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Cover photograph: In our review of the Sony TC-630, Page 420 of this issue, we refer to the very sensible controls and large VU type meters. Here is a close-up of that vital area of the deck. Note the slide potentiometer Record Gain Controls. Read Test Bench this month for our unbiased opinion of this tape recorder.

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Tape trends and tape talk

By Douglas Brown

THE 1969 INTERNATIONAL RECORDING CONTEST in Copenhagen was a memorable one and I shall be writing at some length in future issues on different aspects of it. Amateurs from 12 countries were able to pay homage to the Danish inventor of magnetic recording, Valdemar Poulsen, on the centenary of his birth. Appropriately, a tape featuring Poulsen, made by Lucien Wasmer, of Switzerland, won the Grand Prix.

Britain's five entries had only moderate success, but Robert Prizeman won a Radio Berne prize of 250 Swiss francs for his "Addington Palace" and Ken McKenzie won ten reels of tape with "Black Velvet."

The British delegation was the largest ever. Peggy Buchanan and John Bradley, Treasurer and Publicity Officer respectively, of the FBTRC spent their honeymoon on the Cimes Jury! Cyril Rex-Hassan, fresh from his Audio Fair triumph at Olympia, flew in to join the British group. And I was attending my 11th Cimes.

* * *

AWARD-WINNERS IN THE BRITISH Amateur Tape Recording Contest collected their trophies, cash and equipment at a gathering at the Audio Fair at Olympia a few days before the Copenhagen meetings began. The winning tapes, including those which went forward as British entries in CIMES, were played to an enthusiastic audience, though listening conditions were far from ideal. Those who would like to hear the tapes have the opportunity, however, of getting copies from the Federation of British Tape Recordists.

The value of these gatherings, of course, is that the most talented exponents of creative tape recording are able to meet face to face to talk over their approach to the hobby.

* * *

THE OLYMPIA AUDIO FAIR was a gamble, and everyone knew it. The event was well established in the Hotel Russell, following a well-practised formula, and it needed courage to change that formula. The manufacturers themselves were divided about what should be done. Some felt that audio had outgrown any hotel and needed a more ambitious exhibition in a hall; others believed that hotel rooms provided the best possible listening conditions.

So, whatever was done this year, there was going to be a dissatisfied faction. As it turns out, the issue is going to be put to the test in the most practical way. We have had the Audio Fair in a big exhibition hall, and next Spring we are going to have what can only be seen as a rival show, in a hotel setting.

I hope both events are a great success. I believe the Olympia Fair must be adjudged a very successful launching of the exhibition hall event.

The disorganisation of the opening day was no fault of the organisers; it seems that these days no exhibition can open until there has been a strike or two, a bit of go-slow, a spirited attempt to create chaos.

With the lessons learned at Olympia, future efforts of a similar kind seem assured of success.

* * *

TALKING WITH EXECUTIVES of Rank Audio-Visual recently, I gained a new appreciation of the "coming-of-age" of hi-fi in Britain. We are witnessing a significant phase in the growth of the industry; for the moment, it interests the managerial and marketing experts more than the customers, but before long the effects will be obvious in the retailer's shop window.

The story of Rank Audio-Visual is a textbook example of what is happening. They took over Wharfedale some years back and more recently they absorbed H. J. Leak and Co Ltd. These were firms of high reputation, which had been established on the expertise of individuals like Gilbert Briggs and Harold Leak. If the product was not the whole story, it was 95 per cent of it. The market? Well, the customer at hand; that is, the British.

Not only audio manufacturers but British manufacturers in general have thought like this until very recently. It comes as something of a shock to realise that Japanese audio manufacturers have *never* had this approach. They got going after the war with products specifically designed for the American market, and from that quickly broadened out to tackle the world market. Their own home market was incidental.

I may be challenged, but it seems to me that Rank is now becoming the first British-based firm to take the world view and to organise accordingly. It is making full use of the recently-evolved marketing science. It is investing in research and development and in design the sort of sums of money that could never be justified by sales in the British market alone.

It is sending its salesmen into territories where British-made audio products have made little impact in the past. For example, one of its salesmen was at the recent British Week in Tokyo, and doing good business. And in West Germany sales were quadrupled last year and a new subsidiary company is being set up there which is expected to quadruple sales again this year.

The Wharfedale speakers have so far spearheaded this export drive, but the product range will soon be much wider. Wharfedale-Leak association will breed new lines.

And of course, the British customer is going to get the benefit, too. Not only in terms of end-product, but in very much improved dealer and servicing facilities, unless I'm very much mistaken.

THE WAR ON WHEELS

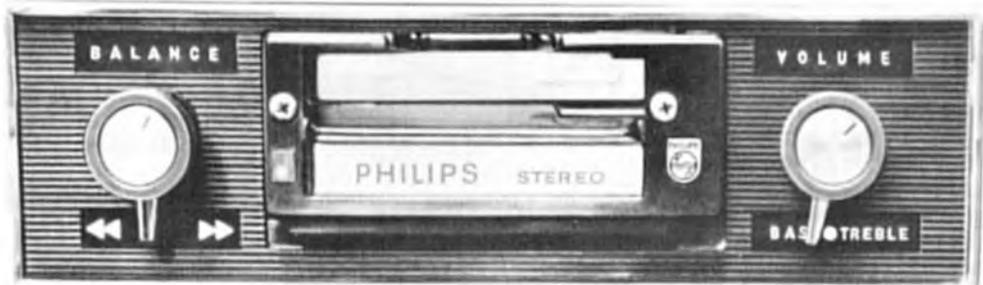
A TRM Report



The Ford team entered for the London to Sydney marathon race had their cars fitted with Philips Compact Cassette machines.



Larger in size, the Radiomobile playback mechanism takes the new RCA 8-track stereo cartridges.



Latest playback machine in the Philips range permits mobile use of stereo Musicassettes with complete safety of operation.

IT SO HAPPENS that the combined Audio and Photo-Cine Fairs coincided this year with the Motor Show. Perhaps it was a happy accident – but whatever the reason the fact remains that there is now a strong link between the motor car and the tape industry. For some time the Philips Organisation have been publicising their Compact Cassette equipment as an ideal medium for the reproduction of music programmes in automobiles. Today, Tuesday the 7th October, war has been declared. The firm of Radiomobile Ltd announce their entry into the tape/motorcar business with an 8-track endless loop cartridge running at 3¾ ips. They have available repertoire from RCA and it is believed that EMI are also showing considerable interest. This war is going to be a revival of the struggle between the advocates of

the spool-to-spool 1 7/8ths ips Compact Cassette equipment and those who favour the faster running endless loop system.

But firstly let us ask ourselves the question: “Why should anyone wish to go mobile with their tape equipment by introducing it to the family car?”

Both firms would give a number of answers and in each case they would follow the same general pattern. There are many disadvantages to car radio sets. Not only does the station fade whenever reception conditions are difficult but the receiver will also tend to pick up interference from the ignition of other vehicles or even from the vehicle in which it is installed. Then there is little choice of programme; all too frequently the programmes transmitted are not necessarily what the driver would choose

to hear on a long run. Whatever tape reproducing system might be installed the driver has not only a choice of repertoire completely free from outside interference but he also has the possibility of a standard of reproduction far better than that normally found in the ordinary car radio. Plus, of course, that essential to modern living – stereo.

Philips have done some research into the market potential for tape reproducers in motorcars. They suggest that there are only about 10,000 tape units of any kind fitted to cars in the United Kingdom. This represents only 1% of the possible market. A very different situation exists in the United States where some 40% of motorcars use tape reproducers. The implication is only too obvious – someone somewhere should make a great deal of money

selling both the equipment and the music to go with it.

Both the competing systems, Philips Compact Cassette and Radiomobile 8-track stereo, have their advantages and disadvantages. They are different in many ways.

Readers may not need to be reminded of the fact that Compact Cassette uses tape of approximately 1/8th of an inch in width, runs at 1 7/8ths ips and offers a compatible stereo/mono medium. Amongst its many advantages is the wide repertoire of pre-recorded music available in Musicassette form, the vast number of different kinds of equipment now being marketed by different manufacturers, and the ability to both fastwind and to record on to virgin tape if one wishes.

Against this the 8-track stereo system marketed by Radiomobile uses a "cartridge" of larger dimensions than the cassette enclosing an endless loop of standard width tape running at 3 3/4 ips. There is no fastwind facility, neither is there any means of recording included, although the Akai tape recorder model X-1800SD does offer a facility for recording cartridges of this type in addition to its normal open-spool function.

At the present state of the art one cannot dispute the fact that a faster tape speed means better audio quality in terms of frequency response, signal to noise ratio and speed stability. It therefore follows that in this respect 8-track stereo has the edge on Compact Cassette. However, we have already announced the adoption early in 1970 of chromium dioxide tape for the production of Musicassettes and this should push up frequency response at 17/8ths ips to some 15,000 or 16,000 Hz. which is probably what we could expect to get from 8-track stereo at the faster speed. We do not yet know what effect the new tape will have on signal to noise ratio but it may well prove to be beneficial. This leaves the knotty question of speed stability which as we have suggested before is one of the last hurdles to be overcome by Compact Cassette.

We have, however, to consider in practical terms just how much "high fidelity" does the motorist really want or need as he drives? Because of the limitation in the size of the loudspeaker equipment and the obvious lack of air space within the vehicle audio quality is bound to be poor as compared to the standard we might be accustomed to hearing at home.

It therefore seems to us that in this battle for the motorcar/tape market the consumer's first consideration should be versatility and availability of repertoire

Believed to be the only domestic machine available in the U.K. with a facility for recording 8-track endless loop cartridges, the Akai series X-1800 also serves the normal function of a high grade open spool recorder. Costing £159 3s 5d plus £39 16s 7d purchase tax it offers a unique dual function, performing both cartridge and standard recording to a high specification.



rather than quality. In our opinion the system to choose should be that which offers the possibility of the widest range of application together with the best choice of programme material.

Under ideal conditions our mobile entertainment should reproduce from the same medium as we normally use for home entertainment. The advantages of this duality are obvious. Favourite "records" can be played at home and then reproduced in the car without involving any additional expense. Compact Cassette fulfils this requirement ideally through the enormous range of static home and mobile equipments available. Stereo-8 is very much more limited and as yet there are no plans for the immediate introduction of a home playback unit. If one were to be available it would immediately give us the benefit of the faster tape speed but unless it incorporated an efficient fastwind mechanism it would be difficult to locate the beginning of any given programme in a cartridge. This seems to us to be the biggest disadvantage of 8-track stereo.

If a motorcar is equipped with either system the driver will be able to invest in language courses so that his time

spent in traffic jams can be used profitably rather than wasted. With 8-track stereo it is proposed to negotiate sales outlets for programme material through garages (the obvious place for a motorist to call) and it is even suggested that a part-exchange plan might be adopted so that the driver can exchange his existing cartridges for new ones during the course of his journey at a cost of only a few shillings.

In this commercial battle we wish luck to both sides. The truth is that the market is so vast there should be adequate room for both Compact Cassette and 8-track stereo to live happily side by side. From our point of view the important thing is that which ever system the individual might elect to adopt he will be using magnetic tape, the medium for entertainment, which is at last beginning to really threaten the supremacy of the gramophone record.

At least one well-known company is believed to be withholding further capital investment in gramophone record producing plant. In their opinion the future for music both in the home and on the road lies in magnetic tape in some form or other. Which is what *TAPE Recording Magazine* has been saying for the past thirteen years.

BUSH

TP 60

CASSETTE RECORDER



**“A TRULY
REMARKABLE
MIDGET”**

as reported on in April
issue of this magazine

The results of our laboratory investigation might well cause some raised eyebrows. There were some anxious moments when it was thought that our test equipment must be faulty.

Operating from the four small 1.5V dry cells the inherent tape and system noise was a fantastic 52 dB down below peak signal as indicated on the built-in meter. We didn't believe it ourselves; 52 dB is around the theoretical best that can be obtained from valved equipment, regardless of price.

So we fully expected a distortion reading of something in excess of 5 per cent. We were quite wrong. Once again the TP 60 produced what we can only describe as an absurd result—2.5 per cent!

28 GNS

Summarising the TP 60 we can say that it outstripped our expectations in so many ways that it leaves one desperately short of words to adequately describe it.

Sufficient to say that within its small bulk it carries a quality potential that in many ways matches some of the best domestic open spool equipment on the market. A truly remarkable midget that can perform a man-sized task.

Bush, a product of the Rank Organisation.



The man with
the gong—a man of
many skills.



BBC T.V.-moonshot: Where there can be no re-take you'll find Ferroglyph.

During the Apollo 11 moon landing, the BBC used Ferroglyph Series 7 Tape Recorders to monitor the NASA commentary. The recorders were in use continuously 24 hours a day. There could be no break, there could be no re-take. The BBC now has over 40 Ferroglyph Series 7 recorders in use throughout the country.

Every Ferroglyph Series 7 recorder is made in Britain and combines quality, reliability and a unique range of facilities. Available in mono or stereo, with or without amplifiers, all solid state,

three-speed, with two inputs per channel and independent mixing. Retail prices from £175 including P.T.

Follow the professionals; choose the recorder you know will serve you best at home or in your work: Ferroglyph—it makes sound sense. See your nearest stockist or send the coupon for details and address of nearest Ferroglyph specialist or ring 01-589 4485.

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Please send me a free brochure
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or the Ferroglyph Manual
for which I enclose £1.

Name _____

Address _____

TRG

TAPE WITH EVERYTHING

THE multiplicity of gadgets and units that can now be used for the reproduction of sound is as fascinating as it is alarming. Visitors to the Audio Fair at Olympia will have been dazzled and bewildered by the array of gleaming appliances presented for their inspection, and, as the manufacturers hope, approval. There are amplifiers and there are tuners. There are tuner/amplifiers. There are gramophone turntables. There are tuner/amplifier/gramophone turntables. There are cassette machines. There are stereo cassette machines. There are cassette/radio machines – or should it be sets? And all the time we shall be listening to the sounds reproduced by a cosmopolitan selection of loudspeakers, from the frankly borrowed deaf-aid to the enclosure which rivals the stately home in its dimensions.

But of all the appliances at Olympia or in the dealers' showroom none is so versatile as the tape recorder. Nowadays we can have tape with everything.

I sometimes think it is a pity that one of the effects of the imposition of purchase tax on tape recorders has been to incline manufacturers towards producing tape units rather than machines complete with a final audio output stage of good quality, with or without loudspeakers. A tape recorder which has its own built-in high-grade amplifier, probably giving about ten watts RMS output in this age of sophisticated electronics, could so easily be used as the "heart" of a really high-grade reproducing system. Why should we not make use of its built-in amplifiers to drive a pair of really good loudspeakers as we feed in the output from radio tuner, transcription turntable or a cassette machine? By working this way around we will have saved ourselves the cost of a main amplifier – usually a pretty expensive item.

Of course there are snags. Such an arrangement is not so flexible as the more conventional hook-up employing an external amplifier. But some

contemporary amplifiers have really gone quite mad in providing a range of facilities and controls that will rarely, if ever, be needed. As an acquaintance of mine who has spent his entire lifetime in audio said the other day: "This amplifier has got absolutely everything – including a knob that turns eau de cologne into gin!" Obviously an admirable piece of equipment for those who have a stiff gin-and-tonic with their high fidelity.

No, a tape recorder giving a genuine ten watts clean output at the external speaker sockets with the possibility of reasonable tonal correction by means of separate bass and treble knobs is quite capable of performing a thoroughly satisfactory job whilst at the same time giving us an overall sound quality that will not be inferior to the more expensive gleaming members of the amplifier family.

When considering using equipment in this way it is as well to remember that a self-powered tuner will probably have to be used since the tape recorder is unlikely to provide a suitable power outlet. Little difficulty should be experienced in matching the tuner to the tape recorder either in terms of impedance or sensitivity. Too much signal at the machine can easily be corrected by means of the special attenuated leads now marketed by a number of firms. It is unlikely that one will have too little signal, but should this happen then a very low cost pre-amp unit can be inserted between the two to give the necessary boost.

It's not quite so easy when feeding directly from a gramophone pickup into the machine; so much depends upon the type of pickup cartridge in use. If this should be ceramic or crystal it will probably give bags of signal but for a correct response it should be matched into an impedance of about 2 Megohms. Many tape recorders provide an input at this impedance for this very purpose. If a magnetic cartridge is being used then the situation is rather different. Not only is the signal output from the

cartridge relatively very low, but an equalisation network must be used to bring the response to flat. However, once again our accessory manufacturers come to the rescue by offering very compact little pre-amplifier units complete with RIAA equalisation networks which will provide both a flat response and signal boost for the modern low output magnetic cartridges.

In addition to this extreme versatility of the tape recorder we have the inescapable fact that recording has creative possibilities and as such is of so much greater interest than the mere passive enjoyment of gramophone records. How far the individual owner cares to avail himself of this creative possibility is a matter for him to decide. All owners of tape recorders do not rush around the country wielding razor blades and chinagraph pencils, neither do they transport their equipment at the cost of great physical effort to local churches and halls to record musical recitals. Even if one is merely "dubbing off the air" copying a radio transmission one is at least making a programme of one's own. A great deal of individual ingenuity and skill can be displayed in the arranging of such programmes into a full-length entertainment, perhaps with the recordist's voice providing a linking commentary. This is so different to merely placing records on a gramophone.

Then there are all the possibilities of using recording equipment in conjunction with photography. The latest models of slide synchronisers available at reasonable cost from most of our major manufacturers open up the most exciting possibilities for tape/slide presentations. With the ubiquitous cassette machine making outdoor recording so easy the creatively minded need never be idle. Synchronising sound with cine is a rather more complex proposition, particularly if lip-synch is the aim. One need not be put off by mere technical difficulties – half the joy is in overcoming such problems and in overcoming them successfully.



'Scotch' low noise 'Dynarange' Magnetic Tape is the choice of top recording studios such as CBS, Decca, De Lane Lea, Lansdowne and Pye. Both the tapes and cassettes are now available in smart new plastic packaging. Your dealer stocks the complete range.



'Scotch' Magnetic Tape



Recording studios use it every day

3M, 'Scotch' and 'Dynarange' are trademarks

CRYSTAL-BALL-GAZING is one of the favourite occupations of journalists at this time of the year. Here we are once again with an issue cover-dated December. The last month of the year. We can look back on 1969 as past history; as we move steadily into the seventies we can attempt to forecast some of the good – or bad – things that are yet to come.

Purchase tax has been the biggest and ugliest ogre of the past. It has reared its greedy head and taken a large bite at tape recorders and music-on-tape. The full effect of this iniquitous imposition made itself felt during the months of 1969. And yet we find more and still more models of tape recorders coming on to the market; and as for the music department there has never been so much interest and activity in Musicassettes and now we have Stereo-8 cartridges as well.

When a government deliberately restricts by inflating prices to the consumer (which is all purchase tax does) and when such manipulation is followed by an unprecedented upsurge of commercial enterprise it can only mean that the commodity – in this case tape recorders, tape and music-on-tape – is so good and in such demand that it cannot be depressed by bureaucratic decree. Tape offers too many advantages over other sound reproducing media. During 1969 we had proof positive that it would take more than a Chancellor's ill-will to kill it.

For the immediate future we can predict with confidence a sustained and increasing interest in the subject. More and more people are going to acquire tape equipment of some kind. Some might be "playback only" designed for the reproduction of pre-recorded music. We shall welcome the users of such equipment to the "family." Good luck to them and may they derive much pleasure and benefit from what will be to them something of a novelty. Perhaps as they get accustomed to handling tape they will also come to realise the creative possibilities of recording rather than merely playing. So we shall progress from strength to strength.

What do we see if we look not one year ahead but two? As far as 1972? It's only twenty-four months away but the pace of technological advance is now so rapid almost anything could happen in that time. Is 1972 too soon to see a colour-TV cassette player costing well under £200 and using a laser beam instead of a record/playback head? If you think so then you are quite wrong. The equipment has already been demonstrated by RCA whose plans include domestic marketing in 1972.

Called Selecta Vision, the

CROSS TALK

By Audios

recorder-sized cartridges carry a low-cost half-inch vinyl tape on which is embossed an invisible message which is "read" by the laser beam. First estimates of cost are around £170 for the player and about £4 for a thirty-minute programme. In full colour. The user can regulate speed, normal, slow-motion, fast-motion or single frame hold, and the whole thing is no larger than a 35 mm slide projector.

How often do we switch on the wireless today because we are too idle to put a tape on the recorder or a record on the turn-table? Whatever wonders our technicians might provide for us my own private crystal ball tells me nothing they can do will change the fundamental nature of Mankind – you and I. Unless, of course, there really is something in that latest news about brain transplants . . .

* * *

I NEVER cease to wonder at the miracle of sound recording. Every time I press the button and watch the indicator move I marvel at this magic that deals so effectively with invisible waves in the air. Perhaps familiarity too easily breeds contempt. We have all become so used to magnetic recording and all it means that we tend to take it for granted. Then one reads a story that brings home with startling forcefulness the true meaning of sound recording.

What has all this to do with the Lake District? Well, our first National Park in that vast area opened in June and since then visitors from nearly 40 countries have enjoyed the grand scenery and beauty of the lakes and the hills. But for them there is an added interest. The main exhibition centre in the Park includes "broadcasts" of Wordsworth reading his own poetry. What a moving experience that must be, to hear the great poet – and other Lakeland writers as well – reading lines that were so often inspired by the glories of the Lakes and their surrounding countryside.

Originally the voices of these old masters would have been recorded on to gramophone records, presumably in the days of "wax" recording. The performer had to bellow into a horn and the mechanical forces of the vibrations set up by the sound waves of the voice were used to etch the sound pattern on to soft wax. To keep the wax soft the studio had to be kept warm – so warm that the sweat used to pour off the faces of artistes and engineers alike. But it worked, and thanks

to the perseverance of these pioneers we have great recordings such as these as part of our heritage.

For the purpose of the National Park exhibition the non-electric recording has been copied on to magnetic tape and the visitor listens to the play-back of a tape recorder. So we have the chain of miracles that together bring back voices from the past. Wordsworth speaks again from the heart of the land he loved so well, and he speaks to all of us. It is indeed a miracle.

* * *

YOURS truly is not the only one to look into the future with enquiring eyes. In a recent edition of the Daily Express I found a feature entitled, "Now, the all-in-one leisure machine" with a sketch of a so-called "disco-tape-radio-TV unit." Designed by Eric Marshall, who is also said to design gas cookers and practically everything else for the home, it caters for tape spools up to 7-inches in diameter, cassettes, gramophone records, multi-channel television and radio. Certainly it looks like something out of this world. The gramophone turn-table is covered by a hinged acrylic dome and a similar sized dial at the other end of the console provides TV and radio tuning. The whole looks to be enormous.

This was doubtless an interesting exercise for the designer, but I cannot see it performing any other useful function. Modern trends depart from massive pieces of furniture, however space-age they might look. Most of the gadgetry included in this single unit could equally well be in the form of separate, small, compact items which will almost disappear when stood on shelves. Instead Mr. Marshall thinks in terms of a single, dominating feature as his entertainment centre. Sorry, but it's the wrong approach. The ironmongery should be unobtrusive so that the end product – sound in audio and vision in TV – is allowed to dominate. The last thing we want is to have our attention distracted by the cleverness of the designer who by forceful use of his craft fascinates the eye whilst the ear struggles to absorb the music. Another case, I fear, of the cart being placed firmly and deliberately in front of the horse.

* * *

HAVE you got over the strain and drama of the Audio Fair? I haven't because at the moment of writing it hasn't yet begun. But already there is a move afoot to plan an audio exhibition in the Spring of next year. To be called Sonex '70 it is proposed to hold the event in the Skyways Hotel at London Airport over the period from 23 to 26 of April.

Organised by the Federation of British Audio it is hoped that this will be the first of a series of annual Hi-Fi Exhibitions. Choice of the Skyways Hotel at London airport might seem a little strange. In fact the venue was selected for some very good reasons and only after the most careful thought. Just because the hotel is virtually on the perimeter of the airfield it is subjected to the maximum amount of outside aircraft noise. And, because of that fact, it has some of the best sound proofing of its individual rooms to be found anywhere in the country. Makes sense, doesn't it? What more could one ask for audio demonstrations? Only good car parking outside and air conditioning inside. Skyways has them both.

Unlike the Audio Fair at Olympia entry to Sonex '70 will be free of charge. Many old friends will be showing there and we shall all find ourselves once again in the intimate atmosphere of a hotel instead of the more impersonal vastness of a big exhibition hall.

WHERE HAS ALL THE MUSIC GONE?



THE STAFF TAKE AN OBJECTIVE LOOK AT THE FAIR

Was the 1969 combined Audio and Photo-Cine Fairs a success? If attendance is the answer then we can say: "Yes". There were more visitors at Olympia than have ever been recorded at any comparable event anywhere in Europe.

OLYMPIA, Thursday the 16th October, 1969. A scene of heart-breaking desolation. A chaos of workmen, a confusion of part-erected stands. A nightmare of painters, carpenters and electricians. The only sounds to be heard at mid-day were the clattering and banging of the tradesmen with an occasional burst of the thinnest of "musical" noises from their tiny transistorised portable radios. Instead of the throngs of eager visitors crowding the stands, we, the exhibitors, were dodging ladders, kicking our way through piles of rubbish and trying vainly to avoid the acres of wet paint only then being applied.

We came across three overseas buyers. They had flown in from New York that morning and were to leave the same evening for the Continent. The stand they had come to see was an unfurnished shell with no equipment and no electricity. The expressions on their faces reflected the feelings of us all. What they thought we shall never know, but it is not difficult to guess. Thanks to industrial disputes that was the first day of the 1969 Audio Fair. Where had all the music gone?

How many of the thousands who were finally admitted on the Friday morning realised the magnitude of the effort that was required to put on a presentable show for them? Many of the stand staffs did not get to bed until the early hours; many a smart executive suit was ruined with paint smears and many an executive thumb was patched with

sticking plaster. But the doors did open at ten o'clock on Friday to admit the beginnings of what was to prove to be the greatest number of people who have ever attended an audio exhibition in this country. During the early afternoon of Saturday the gangway between the stands in the gallery was virtually impassable, jammed solid with a mass of audiophiles. The tragedy of Thursday was forgotten. The new crisis was how to increase the frequency of demonstrations to cope with the surging tide of public demand — a tide so relentless that some of us began to imagine we might well founder beneath it, sunk for ever without trace. As we hopelessly pushed our way around and saw how demonstrators, salesman and technical staff alike were besieged with enquiries, inundated with queues and bewildered by the sheer weight of numbers we again asked ourselves, "Where has all the music gone?"

It should have been found in the many "soundproof" demonstration studios. It too frequently required something in the nature of a military operation to gain admittance. The number allowed in any one studio at a time was (fortunately) very strictly controlled and many demonstrators were using a numbered ticket system. It was not unusual to find that demonstrations were fully booked for as long as two hours ahead. The day developed into a weary trudging back and forth from studio to studio where, to meet the steadily increasing pressure,



John Borwick, Chairman of the Federation and Technical Editor of The Gramophone presenting awards to R. Prizeman (an appropriate name!) winner of the Class II Documentary and Tape of the Year.

demonstrations were being cut in length as visitors were "processed" as if on a conveyor belt.

The temperature inside the studios increased. Ventilation was by air extractor fans; if the fans were turned off during a demonstration the studio became a sweat-cave, if they were left on their noise spoilt what one had come to hear. The fact that in many cases sound broke *out* of the studio into the main hall space did not matter at all; it seriously mattered that sound broke *in* from the studio next door. All demonstrations did not suffer in this way — it depended on how the individual stands were placed. But on one occasion when a loudspeaker manufacturer was manfully endeavouring to show off his product with a very tasteful choice of programme material the quieter passages were literally *drowned* by the firm next door who happened at that moment to be using some high level playback in their demonstration. That was the worst we found, but perhaps it helps to explain why so many demonstrations were more blaring than delicate.

During the first day of the show we were very disappointed with most of the demonstrations we heard. Was it fate or ill-luck that subjected us to what seemed to be an unending succession of

WHERE HAS ALL THE MUSIC GONE?

CONTINUED...

Hammond organs? Surely this must be the most unsuitable of instruments to use in an endeavour to show off the qualities of an audio reproducing network? To make any assessment of the merits of equipment the listener must be able to relate what he hears to what he knows. A Hammond organ can be made to sound like anything and to listen to the noise it produces tells us nothing. Being more than a little evil-minded at such events we conjectured as to whether or not this might be the reason for its popularity.

And when it wasn't electronic organs it was *plink, plank, plonk* monotonously tinkling away to tell us even less.

The depression aroused by these inept and incompetent demonstrations inspired the title of this report. Where, oh where, had all the music gone?

On the second day we were delighted to find some of the answers. Our attempt to foray into Wharfedale country on the Friday had met with a sharp rebuttal. Not only was there no room but the patiently waiting audience had no electricity either. Our rapid strategic withdrawal did not imply defeat, a state of affairs to which we at *TAPE Recording Magazine* never admit. Instead secret plans were laid to surprise the enemy with a swift, deadly attack at dawn the next day. Thanks to superb generalship victory was ours. Ten o'clock on Saturday morning found us the sole audience in an otherwise empty and delightfully cool studio, revelling in our discovery of at least one of the places where the music *had* gone.

In their latest literature Wharfedale describe their products as "speakers that ask to be ignored". That phrase perfectly summarises what good audio is all about. The equipment, the ironmongery, the hardware, should be so



Ferrograph's stand, thought by us to be the most tasteful of the show. Visitors were invited to listen to a diverse repertoire reproduced by Ferrograph machines via Koss headsets. It didn't look a bit like this during opening hours when we found we could get nowhere near for the crush!

good that the user is unaware of its presence. It should be so unobtrusive – both visually and aurally – that the audience can listen to the *programme*, not the *equipment*. And as Bob Cox worked his way through his repertoire that is just what we did. We listened to music and felt ourselves to be encouraged, refreshed and invigorated.

Why do so many demonstrators persuade themselves that audience will not listen to classical music? In fact the contrary is the case. Not only does good audio equipment need the dynamic range that is exclusively classical to display its qualities, but far from objecting to such items the audiences we saw were enthralled by them. Bob's choice of programme was a tasteful selection of classical and lighter works which together proved the point that his Denton, Super Linton, Melton, Dovedale 111 and Rosedale speakers can indeed be ignored. Looking back on our notes we find that this was the ninth demonstration we attended; it was the first we really enjoyed.

It would be unfair and untrue to suggest that the Wharfedale room was the only one where music could be found. One of the busiest studios was that of Bowers & Wilkins Electronics where once again a mainly classical repertoire was being reproduced via the range of superb B & W speaker systems.

The latest of these, Model 70, is a large electrostatic of distinctive design. At the moment of writing we have no details of construction or price (Ed. provisionally £150 each) but we do know that it produces some of the cleanest, most effortless sound we have heard for a long time.

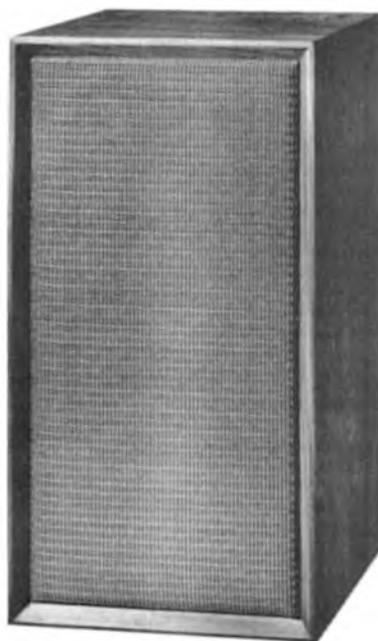
The B & W demonstration opened with an apology for the noise of the extractor fan. In fact we did not notice it; we were too engrossed in the delightful programme and the sheer rapture of exquisitely reproduced sound. And we were staggered by the quality from their tiny DM1 enclosures at £32 each. These are indeed real little gems. Here was another place where the music had undoubtedly gone.

Some firms abandoned the "set demonstration" in favour of the "ever open door" with a continuous programme. They were able to handle greater numbers in that way but we felt this arrangement to be much less satisfactory. Typical was the show put on by Dual Electronics Ltd., where their turn-tables, amplifiers and speaker systems gave us operatic selections together with a light classical repertoire that was so good that their audiences were obviously reluctant to move on. And it wasn't just tired feet!



Having lost that first vital day of the Fair, we in common with other journals, are placed in a difficult position. Our report on what we have seen and heard has to be rushed to the printers before we have had a chance to visit more than a fraction of the exhibits. So from all those of our good friends whom we do not mention we ask forgiveness, and if readers should find that their favourite product is not mentioned in these columns we would remind them that it was touch and go whether we had anything to write about at all. On the Monday before opening day the Organiser, Cyril Rex-Hassan, had to take a fateful decision — to abandon everything or risk going ahead. We now know he was right to take a chance, and by doing so pleasure has been given to thousands. But it nearly didn't come off at all.

The first tape recorder firm we saw was Sony. Immediately we heard their new Sony SS 3000 and SS 1000 speaker systems we knew we were listening to something very good indeed — a sound quality much better than one might expect from imported enclosures. The reason is no secret. Both these speakers are made in the U.K. for Sony by Bowers and Wilkins Electronics Ltd. The larger model, the 3000 costs £63 each,



Above the Bowers and Wilkins Model 70 speaker which caused something of a sensation, with, below, the small Model DM 1, a very mighty midget.

the smaller £32 each. Expensive? Yes, but fully warranted by the quality potential of the Sony equipment with which they are associated.

In the Akai dem. room we were

treated to a full performance of the Akai equipment together with the newly imported Rotel amplifiers and amplifier/tuners. The latter appear to offer exceptional value for money, as too does the lowest cost Akai tape deck, the 4000D. Some half-a-dozen combinations of equipment were used and the most significant point to come out of this demonstration was the fact that the lowest cost equipment sounded equally as good as the highest priced. This was because all were reproduced through the same speaker enclosures (Akai SW 180 at £110 each) and it confirmed our own theory that when considering different models from the same manufacturer one *should* be relating a consistent high quality standard to increased and more versatile facilities as price rises. That is precisely what happens here.

The Uher demonstration was an example of complete automation. Pulses delivered from a Universal 5000 machine triggered off the operation of the complete range of Uher recorders, supplied a pre-recorded commentary and ended the show by operating an automatic slide projector with pictures of the factory in Munich. Also in use was the Uher CV 140 amplifier which delivers 35 watts of audio power per channel to DIN specification 45 500.



Hardly a sight we are used to seeing at the traditional Audio Fair. But it made a change to have the light, colour – and glamour – of the Photographic Section's set pieces.

This represents Uher's first excursion into the hi-fi market and the amplifier, with an advanced range of facilities, will sell at around £166.

Toshiba equipment imported and distributed by Hanimex (UK) Ltd. was shown off by comparative switching through their various speaker systems, an ideal style of presentation which is meaningful to the audience. The Toshiba optical pick-up was in use (look, no stylus!) together with tuners and tuner/amplifiers.

In the B & O room the –grams, the –cords and the –voxes were put through their paces by Martin Smith. This firm was fortunate in having an excellent site on the ground floor and did not suffer from extraneous sound breakthrough. Only problem was the hum of the fan which could not be ignored. Latest of the Beovox speaker enclosures represent an improvement on the older models giving some well defined sound plus what might be described as "better musicality". Although we all acknowledge the fact that speaker systems should not impose their own tonal influence on the sounds they reproduce it is equally true that some sound better musically (to our ears) than others. To hear this is a pleasure, and it was a pleasure to listen to what this firm played for us.

B. H. Morris & Co. (Radio) Ltd., were showing Trio hi-fi equipment together with the Teac range of tape recorders. An enterprising firm, they invited a number of well-known journalists to give a series of general talks and we were pleased to be able to attend the one by Clement Brown, Editor of Hi-Fi Sound. Under the title "On the Track" he spoke with knowledge and authority on some of the problems of disc reproduction, using as

illustrative material a thoughtful selection of records ranging from Vaughan Williams *8th Symphony* to *Switched-On Bach*. An instructive talk that we feel sure was enjoyed by all who were able to squeeze into the studio. We were beginning to call these prefabricated caverns "sweat caves". If we remember aright, each human body gives off about half a kilowatt of heat. So to the heat from some thirty bodies add the warmth of a freak October heat-wave plus the effect of the glass roof to the National Hall and the answer can only be increasing discomfort.

Arena equipment was on dem. by Highgate Acoustics Ltd., with the new 2 x 20 watts RMS tuner/amplifiers, T2600 AM/FM and T2700 FM. Not available until December both of these models are examples of the very latest Scandinavian design. They were driving no fewer than five different speaker systems ranging in price from 10 to 150 gns. Highgate also handle Luxor equipment, Pickering cartridges and a fascinating collection of accessories under the name of Schweizer. These include record housing and cleaning, cassette storage and a number of other reasonably priced items.

A quick look into Tandberg's rooms showed that they were running on three basic reproducing chains, covering the top, middle and lowest of their price ranges. Plus, of course, the now familiar five different speaker systems. One noteworthy feature was their very sensible use of the Tandberg portable AM/FM radio, Model 41. Finished in a superb wood (walnut – looks so good it's mistaken for plastic!) cabinet this little fellow can effectively serve a double role as domestic maid-of-all-work and high grade audio tuner. Why buy two items if one will do both jobs?

As we strolled around the Fair we

realised, sadly, that in most rooms the emphasis was on equipment rather than sound. What is audio and hi-fi all about if not sound? That is the product that everyone would have been selling; only a select minority of exhibitors appreciated it. So we were delighted to discover that EMI Ltd had made sound the central feature of their demonstration. First they were playing back Compact Cassette recordings with a quality standard that surpassed what some people were able to achieve on open spool gear running at 7½ ips. Without doubt this was the very best cassette sound of the Show and it proved the great potential of the system *when properly used*. Naturally it is claimed that this startlingly good audio quality is due to the tape in the EMI Cassette, but we feel that it also proved the point that an equal care is required in handling the cassette medium as one would use when working with conventional machines. Their repertoire originated from 15 ips master tapes but their playback machine was one of the little under-£30-portables with the output fed via an amplifier to a pair of full range speakers. Thanks for a most revealing and informative demonstration.

Not content with this EMI also made the advantages of their new low noise tape, Afonic, more than obvious by splicing lengths of the older, brown-coloured tape together with sections of the new one and then measuring the comparative noise levels of both on a VU meter. As the needle fell when the black tape passed the head the story was eloquently told. Even visitors were encouraged to have samples of their own tapes spliced in and compared in the same way. What could be more fair than that? Certainly EMI were concentrating on sound, both the sound we want and the sound we don't want.

We found AEG proudly displaying the modern lines of the Telefunken Acusta hi-fi set-up. There's some brilliant design and styling here, although we were rather sorry to find that the sound quality tended to suffer from the limitations of the L 250 speaker systems (£40 12s 1d each); the quality of the rest of the Acusta equipment really demands something a little better. Also on show were the 204 and 205 recorders and comparative switching revealed some interesting facts about their four small speaker enclosures. We would particularly draw your attention to the WB 50, a slim miniature at £20 9s 6d each, which is capable of reproducing lower register sound with surprising reality and conviction. One does not expect such a small box to perform so well.

Please turn to Page 423

The Grundig TK149 gives you the complete sound.

A tape recorder is only as good as it sounds. You know that and so do we. That's why we developed the Automatic TK149—to take the guesswork out of tape recording, to give you that distinct, clear sound for which a GRUNDIG is so justly famous. There's a lot of sophisticated engineering in the TK149 to bring it right up to Hi-Fi standards and, of course, it comes with more than £10 worth of quality accessories. But first things first.

The Features . . . Switchable automatic level setting without increase in distortion and using the unique GRUNDIG delay system. Illuminated recording level meter. Automatic stop at end of tape. Facilities for dual play and trick recordings. Heavy gauge plated steel chassis provides robust construction and perfect mechanical alignment. Handle unclips. GRUNDIG 'Easy-G' single dial control. Head cover unclips for easy access to heads and sound channel. Optional accessories available to give added facilities.

...and the Facts...Recording System: 4-track mono with dual-play facilities.
Level Adjustment: Automatic with the ingenious distortion-free Grundig delay system or manual override.

Tape Speed: $3\frac{3}{4}$ i.p.s. (9.5 cm/s).

Wow and Flutter: 0.2% r.m.s.

Maximum Playing Time: 6 hrs. (4 hrs. with the 1200 ft. of L.P. tape supplied).

Frequency Response: 40—12,500 Hz +3—5dB

Signal to Noise Ratio: 45dB

Output Power: 2.5 Watts/5 Ohm

Input: Microphone/Universal 2mV/1.5M Ohm

Outputs: High impedance 500mV/15k Ohm, Earphone 11V/220k Ohm, Ext.

Loudspeaker 2.5W/5 Ohm. Monitor Output for synchronised recordings.

Loudspeaker: 6" x 4" high flux density unit.

Position Indicator: 4-figure digital with press button re-set.

Accessories Supplied: Moving coil stick microphone GDM 312, 1200' L.P. tape in library container, spare spool, connecting lead.

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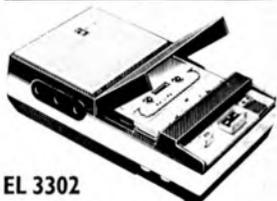
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NATURE NOTES FOR DECEMBER

BY RICHARD MARGOSCHIS

IN recent years we have heard a lot about the effect of pesticides on our animal population. During the last few weeks, that is the end of August and half of September, I have been more than usually interested in grasshoppers and it has been surprising how many people have said - "I haven't heard one for years." Naturally, I have wondered why this is. Three reasons come to mind, perhaps the person has not been in the right place to hear them, maybe the use of insecticides has reduced the number of these insects, or the person's hearing might even have fallen off to the degree of being incapable of hearing this fairly high frequency noise.

Whatever the cause, the fact remains that grasshoppers and other insects abound if you know where and when to look for them, and your ears can help to locate them too. There are many insects which make noises in a miscellany of ways and I am convinced that an awful lot of work still remains to be done to get them all recorded on tape.

When we went to Somerset at the end of August for a ten-day holiday we hardly expected to come home with a big "bag" of bird recordings. This did not worry us because we knew there would be plenty of other natural sounds to hunt out, and we were not mistaken. Two friends, both experienced naturalists, joined us for a day and together we went out on to the old peat marshes. This really was a red letter day for us because we always find it fascinating to watch a thoroughly experienced naturalist at work; in this way we can learn so much. John knew of one very small area which is a breeding ground of the Large Marsh Grasshopper, the largest and one of the rarest of British Grasshoppers. When we walked on to that field, with its large patches of bog grass, the sun was behind a bank of cloud and there was no sign of a grasshopper. Like so many insects they are very difficult to find because their colour acts as a natural camouflage; it is generally movement or sound which reveals their location. After a wait of about a quarter of an hour the clouds passed and the field was bathed in warm sunshine. We stood, watched and listened. Suddenly, from quite nearby, came a series of definite and individual 'clicks' and a moment later we saw the insect sailing through the air to a new perch on the top of a grass. In a flash John was there with a one inch diameter glass tube held at 45 degrees in front of a fine specimen of the male of the species and I was amazed at how easily he was captured.

Two or three days later "Charlie," as we had christened him, was sitting beneath a 60 watt bulb contained on a cage of curtain netting carried on a rough wire frame. He had lived quite happily in a plastic container in which we had put some grass, now the artificial warmth caused him to "stridulate." This particular species is rather different from most in that instead of using both legs at once to make the sound he uses one at a time. The resulting sound, now filed away in my library, is quite distinctive.

I was again rewarded with an unexpected insect sound only yesterday (Sept. 21). As I sat quietly by my favourite pond a large dragon fly came zig-zagging its way along the edge of the water, its huge wings glistening in the morning sunshine. As he passed within a yard of me, my reflector was trained on him and instead of the expected hum from his wings I heard, over my headphones, a crackling noise, rather like thin plastic sheet being rustled. This proved to me once again that there are all sorts of unexpected sounds at all times of the year.

I suppose it is hardly necessary for me to remind you that the time for giving presents is very near. I mention it because information which I have just had from a reliable source has confirmed my long held theory that many teenagers who are interested in bird watching and natural history generally, realise the possibility of extending their hobby by the use of a field tape recorder. If you have a child with such interests why not make it a "recorder for Christmas?"

Finally, another reminder, closing date for the Wildlife Sound Recording Competition is even nearer than Christmas - it is November 30. Have you sent in your entries?

R.E.W. AUDIO VISUAL CO

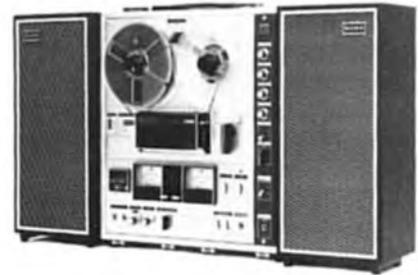
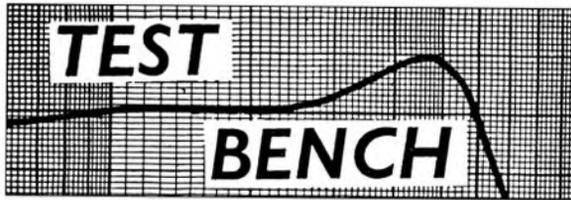
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MANUFACTURER'S SPECIFICATION

SONY TC-630

Power Requirements: 100, 110, 117, 125, 220 or 240 Volts, 50 or 60 Hz.

Power Consumption: 85 Watts.

Semiconductors: Transistors 40, diodes 7.

Recording System: 4-track stereophonic or monophonic.

Tape Speeds: 7½, 3¾ and 1 7/8 th ips.

Reel Size: 7 inch maximum.

Heads: Record head 1, erase head 1, playback head 1.

Inputs: Microphone 0.2 mV, 250 Ohms, Auxiliary 60 mV, 560 k Ohms. Tuner 60 mV 100 k Ohms. Phono 2 mV RIAA equalised for magnetic type pick-up cartridges.

Outputs: Line out 0.775 V at 0 VU, load 100 k Ohms. Lid speakers 16 Ohm impedance. External speakers 8 Ohm impedance. Monitor headphones 31 mV 8 Ohms. Headphones listen 8 Ohms.

Frequency Response: 30 to 22,000 Hz. at 7½ ips. 30 to 13,000 Hz. at 3¾ ips. 30 to 10,000 Hz. at 1 7/8 th ips.

Wow and Flutter: 0.09% at 7½ ips, 0.12% at 3¾ ips, 0.16% at 1 7/8 th ips.

Signal-to-noise: 50 dB

Harmonic Distortion: 1.2%.

Power Output: 20 Watts x 2 (dynamic power output). 15 Watts x 2 (rated power output) both 8 Ohms.

Dimensions: 17 7/8 th inches wide x 20 inches high x 11 5/8 th inches deep.

Weight: 46 lb. 3 ozs.

Supplied Accessories: Microphones F-45 x 2, Sony pre-recorded tape x 1, Reel x 1, Connecting cord RK-74 x 1, Head cleaning ribbon x 1, Reel caps x 2.

Recommended Retail Price: £199.15.0 including purchase tax.

Distributor: Sony (U.K.) Ltd., Ascot Road, Bedfont, Feltham, Middlesex.

SONY TC-630

INVESTIGATED BY R. HIRST AND D. KILICK

SONY TC-630 TEST CHART

Frequency Hz	Overall Response dB			Playback Only dB	Signal/Noise Ratio dB	Distortion %	Crosstalk dB
	7½ i.p.s.	3¾ i.p.s.	1¾ i.p.s.	7½ i.p.s.	58.5 / 51.0	3.3 / 1.3	44
40	+1.0	-1.0	-1.8				
50	0	-1.0	-1.6	+2.0			
100	-0.5	-1.6	-1.4	+1.8			
250	0	-1.5	-0.6	0			
500	0	-0.5	-0.5	0			
1000	0	0	0	0			
2500	+0.3	+1.0	+1.2	+0.3			
5000	+0.4	+1.8	+1.6	+0.3			
7500	+0.6	+1.9	+0.5	+0.3			
10000	+0.8	+2.0	-3.5	+0.4			
12000	+1.3	+2.6		+0.6			
15000	+1.2	+2.4		+0.4			
18000	+0.6	-1.0					
20000	0						
22000	-0.5						
Wow & Flutter	0.10%	0.13%					

NOTES. - The Overall Response figures relate to record and playback. Playback Only relates to the reproduction of a 50 microsecond test tape at 7½ ips (N.A.B.). For Signal-to-Noise Ratio the tape was recorded at 0VU plus 10dB and then the input signal was removed from the record amplifier, but see text for further information. By reference to the signal level recorded and the resultant tape noise, the noise voltage was read off, with the tape still in motion. Distortion is quoted against a 1,000 Hz signal recorded at the same level and the figure is an R.M.S. value (see text). Both these measurements were then repeated at 0VU plus 3dB. Wow and Flutter is also R.M.S. the test frequency being 3,000 Hz. Test equipment used includes: Bruel and Kjaer Signal Generator, B & K Frequency Analyser Type 2107, B & K Level Recorder Type 2305, Marconi Distortion Factor Analyser and Gaumont-Kaylee Wow and Flutter Meter.

FOR this month's review we take a close look at one of the most interesting machines it has been our pleasure to examine for some time, the Sony TC-630. In the past we have made certain criticisms of Sony equipment, particularly in relation to what we have thought to be a desire to "conceal" the various recording controls in a way that made us suppose that perhaps the manufacturer was almost ashamed of

including such a facility. Tiny level controls awkwardly placed, miniature meters and a feeling of "we must let the owner record but we wish he wouldn't" about the general design lead us to conclude that Sony were more interested in the playback side of their equipment. Now, with the TC-630, we have a machine that appears to more than generously cover all the points we have

queried in the past. Dare we hope that our friends in Japan have been influenced by our previous reports? Whatever the reason, which is immaterial anyway, we have with this model one of the most sensibly practical pieces of recording equipment one could wish for, plus superb playback facilities giving an unusual degree of flexibility and versatility; so much so that it is described by Sony as a "Stereo Center".

It is such an exciting departure for this firm we almost feel inclined to forgive them their American spelling!

Basically the TC-630 is a four-track, three speed (1 7/8th, 3 3/4 and 7 1/2 ips), three head, mains stereo record/playback machine. It includes power output amplifiers, comprehensive pre-amp control panel with most of the usual main amplifier facilities and a pair of detachable lid speakers. It needs only a glance at those enormous VU type meters on the deck with their slide potentiometer gain controls to immediately indicate utter practicability. Here is a working tool, built to do a job and built to use. Which to our mind is just fine. So let's see how this sleek beauty stands up to laboratory examination. Does the performance of the machine match its appearance?

The answers to this most important question are set out in our usual tabular form. First it will be noted that the manufacturer's specification quotes frequency response figures without any reference to tolerances. We always complain when we see figures presented in this way because they are meaningless. The cynic might think that the variation from flat is not mentioned to avoid drawing attention to an unusually wide deviation, and who could blame him for being suspicious? Such unkind thoughts about the Sony TC-630 can be instantly dismissed. Reproduction of an NAB calibration tape shows a maximum rise from the straight line of only 2 dB, and that at 50 Hz. From 250 to 15,000 Hz, playback is "as flat as an old boot" to use on of our laboratory's rather picturesque expressions. When we are talking about rises of from 0.3 to 0.6 dB we are talking about nothing. Such microscopic variations are completely inaudible, even to the most discerning of Hi-Fi ears.

Overall response, measured on BASF LGS 35 tape, is also well within the accepted quality standard of plus or minus 2 dB, apart from the upper end of the curve at 3 3/4 ips where at 12,000 Hz we show a rise of 2.6 dB. However we also show that at this speed response usefully extends as high as 18,000 Hz, well above the claimed 13,000 Hz, and that more than compensates for the gentle incline between 2,500 and 12,000 Hz. Careful examination of these figures shows that the manufacturer has been commendably conservative in making his claims and in terms of frequency response we can anticipate a higher standard of performance than the specification might lead one to believe.

For signal-to-noise ratio and distortion the manufacturer's figures are 50 dB and 1.2% respectively.

Unfortunately he does not state how these figures were arrived at and since measurement of these parameters depends entirely on the method used together with the characteristics of the built-in meters on the machine we have given two separate answers. Using a sine tone of 1,000 Hz we first measured at 10 dB above the indicated zero mark on the meters and found that under such conditions the noise level was 58.5 dB below signal with distortion at 3.3%.

When it is considered that around 3% distortion is generally considered to be an acceptable "Hi-Fi" criterion it will be realised that the noise is exceptionally low. Our measurements were then taken again, this time with the recording level set at 3 dB above zero. With less signal applied the noise was bound to be relatively greater, and in fact was now 51 dB below programme level with distortion as low as 1.3%. These figures are almost identical to the specification. It is hoped that by discussing this matter in some detail we have made clear the effects of over-recording. When using the TC-630 one can safely go "over the top" on sustained tones by as much as 10 dB without increasing distortion to an objectionable level whilst at the same time improving the noise relationship by an appreciable amount. In saying this we do not mean to suggest that 51 dB signal-to-noise is in any way inadequate; to the contrary. There was a time not so very long ago when we used to think of around 5% distortion at that noise level. With the Sony we are getting a genuine 1.3%, a figure comparable to that obtained on many fully professional (and extremely expensive) machines.

Our findings on speed stability, wow and flutter, of 0.10% and 0.13% at 7 1/2 and 3 3/4 ips, are a tiny fraction above specification, but one hundredth of one per cent is easily accounted for by variations in measuring instruments. We have come so far in the precision of recording equipment that accurate measurements become progressively more difficult. Let us just say that the TC-630 is performing well up to present day high standards of speed stability. Crosstalk between stereo channels is as low as 44 dB at 1,000 Hz and so will give excellent stereo separation.

On the amplifier side the bass lift and cut is in the order of +10 dB to -9 dB and the separate treble control gives us +12 dB to -10 dB. All more than adequate for such tonal correction as might be required to suit particular programme material. The noise suppressor provides a roll-off from 10,000 Hz to reduce hiss or unwanted surface noise from gramophone records.

The actual audio output is nearer 10

Watts RMS into an 8 Ohms load rather than the 15 Watts claimed but again the measurement method is not specified. In terms of "Music Power" the manufacturer is probably right but we would again emphasise the fact that amplifier power should always be related to loudspeaker efficiency and in our humble opinion a good, clean, 10 Watts RMS is all that the domestic user should require to provide a more than adequate sound level within the home. If the contrary should be found to be the case then the fault lies with the loudspeakers not with the amplifier.

At the beginning of this technical investigation we asked whether the TC-630 would perform as well as it looks. The answer is undoubtedly a very resounding and very positive YES! So with the keenest anticipation we turned to user applications.

When describing the appearance of the TC-630 there is only one phrase that is really adequate; that is "functional beauty". Here we do not have design for design's sake, but rather a delightful modern styling, every feature of which adds to the efficiency and ease of operation of the equipment. It is an object lesson in "how to do it". Take the meters, for instance. Meters are meant to be read. The larger they are the easier to read. So Sony make a virtue of a necessity by giving us a pair of real giants (each three inches across) in the middle of the deck with built-in illumination so they can be read from the other side of the room. How very, very sensible. And how very *right* they look.

Between the meters one finds the record gain controls, a pair of slide potentiometers which move against a numeric scale. What a delight it is to use them. With precise indication of levels from the giant meters one is inspired with confidence in the equipment. All switches and controls are large and positive in operation. There's no fumbling with the TC-630. It all works like a dream.

Tape transport is controlled by the usual Sony single rotary control level, a massive fitting to the right of the sound channel. Motor noise is minimal; there's more sound coming from the friction of the tape across the heads than there is from the mechanics. Typical of the thoughtful design of this machine the rev. counter is four-digit (not three) and is protected by a transparent cover. The brief pause gives as nearly an instantaneous start as it is possible to achieve.

A pair of very large, and suitably brilliantly red-coloured, slide keys control the record function, one for each channel. They automatically return

to "neutral" when coming out of "run". Sound-on-sound and echo are both catered for by means of a pair of rotary controls on the main deck plate, each with a click-stop "Off" position so there can be no danger of having them inadvertently in circuit when not required. An input selector routes the various input connections to the record amplifier: Phono, Tuner, Auxiliary or Microphone. The "Before/After" monitor selector takes the form of a couple of sensible throw-levers, one for each channel. Sorry if the word "sensible" keeps cropping up in these notes, but the TC-630 is *such* a sensible machine. Similarly styled levers provide noise suppressor control, mains On/Off with a separate mains On/Off for the power amplifier. Mains On is indicated by green pilot lights.

Switches are basically simple things, but how delightful it is to use those on the TC-630. Like so many features of this machine they tend to make one feel professional, as does the recorder as a whole.

On the amplifier side we have separate treble and bass controls (of course!) plus a playback volume control (not related to record level) and a balance control. Another of those lever switches routes output to external or lid speakers and a mode selector gives us either stereo or parallel mono from either channel. For the first time on a domestic machine we find not a single socket for monitoring headphones, but two. One is marked Monitor and the other Listen. The former gives us the line out signal with a fixed, flat response, the other (for private listening) is controlled by the main amplifier facilities for volume, tone and balance whilst at the same time muting the external speakers. Is there anything that has not been thought of? Well, it is our job to be critical and we shall mention one or two possible improvements to this machine before concluding, but in terms of the provision of facilities it would be very hard to think of anything that has been omitted. If by this time the reader is beginning to realise that we are enthusiastic about the TC-630 he is not mistaken. This is a down-to-earth piece of recording equipment, a working tool that really does an honest-to-goodness job in thoroughly practical ways whilst at the same time preserving the good looks that will please the distaff side of the household.

Input and output sockets are mounted on a recessed panel in the left-hand side of the machine. Inputs comprise: Phono, Tuner and Auxiliary; outputs: Line, External Speakers and Lid Speakers. All these connections are for phono-type plugs, except the Lid

Speaker sockets which are standard jack. In addition the usual 5-pin DIN record/playback socket is also mounted on this panel, together with an earth connection. A similar panel on the right houses the mains supply socket which uses a detachable lead, a pair of outlet sockets for applying mains to associated equipment, one switched the other unswitched, the voltage selector and mains frequency (50 or 60 Hz) selector together with mains fuse.

If we consider the facilities made available by these two panels together with the high quality mains audio amplifier and its associated pre-amp we begin to understand why the machine has been dubbed "Stereo Center". It in fact follows through the philosophy that has often been advocated in these pages. The TC-630 is not merely a record/playback mechanism but is intended to double up and perform the function of a main amplifier as well. This is why we have full tonal correction facilities together with balance control; this is why we have mains outlets to power other equipment – tuner and or turntable; this is why the Phono input is equalised to RIAA with a sensitivity of 2 millivolts – it is suitable for use with any of the modern high quality, low output, magnetic cartridges. Here we have a machine that can be regarded as the focal point of a high fidelity installation. All other equipments can be fed through it and its power output can be used to drive a pair of full-range loud speakers. A main amplifier is just not necessary. As we said before the TC-630 is such a sensible machine.

We perhaps take a purist view where loud speakers are concerned. Too often good recordings are never properly heard because of the inadequacy of the speakers used for reproduction. No-one would pretend that the two detachable lid speaker systems provided with the Sony are high fidelity – nevertheless they do produce a reasonably cheerful noise. More than that could not be expected. The potential audio quality we can get from the machine is so good it fully warrants spending that extra on a pair of full-range transducers and driving them from the External Speaker sockets. These could come as extras after the main expense has been met.

For user tests we carried out our normal drill of reproducing pre-recorded tapes of known quality, copying from original 15 ips master tapes and dubbing both mono and stereo "off the air". In addition we listened on both the lid speakers and our usual pair of domestic monsters, and we reproduced gramophone records by feeding the signal from a Shure V-15 II cartridge directly into the Phono sockets. All

results were excellent. Comparisons between Before and After record at 7½ ips revealed no audible difference in sound quality at all; at 3¾ ips there was a slight increase in hiss whilst at 1 7/8 th ips the restricted frequency response emphasised the advantages of using faster speeds for recording music programmes.

In operation the TC-630 performed all its functions with a smooth, effortless efficiency that reveals the many years' experience that have gone into its design. Truly the machine is a joy to use, both as a recorder and in its dual function as main amplifier. In the handling of the controls the user is inspired with the confidence that comes with a no-compromise top-grade product. Never is there so much as a hint of flimsy construction. Everything about the machine has the solid feel that one associates with professional gear. Again we must repeat ourselves and use the phrase "functional beauty". It really does sum up the TC-630 in just two words.

But no tape recorder is perfect and there are one or two points on which we could be critical. As is usual with Sony equipment we find that the pinch wheel is brought into pressure contact with the capstan by the mechanical action of the run lever. As a consequence there is no safety trip to separate these two components and the user must take care not to leave the machine for long periods when that function is engaged with the motors stationary. The result of prolonged pressure from the capstan on the composition roller of the pinch wheel would be to produce an indentation which would in turn give increased wow on both recording and playback. As the machine is fitted with a micro-switch autostop mechanism it is only too easy for the tape to run out and therefore automatically stop the motors without the operator realising that attention is required to bring the equipment out of "run" and back into "neutral". A small point, but one well worth remembering.

We are not at all keen on the extensive use of phono-type connectors – these are the least efficient of the many different kinds of plugs now available, and certainly they are amongst the most awkward to solder. However an alternative DIN socket is provided and we must admit that very many machines have adopted phonos as standard. It is believed they are popular in America and this has probably influenced their choice in this case.

Lastly we would mention the large, overhanging head cover. This can be easily and quickly removed by undoing a couple of screws at the rear, and

removal is necessary (because of its size) before the tape can be marked for editing. This is one respect in which Sony have departed from the otherwise thoroughly professional design concept. Immediate access to heads for tape marking is a professional requirement which is not quite fulfilled by the TC-630. In addition even when the head cover is removed the front of the playback head is partly obstructed by the metal flap carrying the pressure pad. However we have thoroughly tested the machine for ease of accurate editing and can report that the tape can be quite successfully "inched" past the head and marked with Chinagraph in the usual way with only very minor inconvenience. We comment on this aspect of the machine more from the point of view of general interest rather than as a critical objection.

Those complaints are all very trivial compared to the many features in favour of this machine. We have found it to be a pleasure to use in so many ways and have no hesitation in strongly recommending it to potential purchasers. The Sony TC-630 is going to offer best value for money to the man who intends to make the maximum use of its many facilities and so is particularly suitable for someone who either does not own an existing stereo amplifier or whose existing amplifier equipment is suspect. It would be ideal for the recordist who has longed to change from mono to stereo but has been frightened off by the extra cost of all the many accessories. With the TC-630 there need be no additional expense at all – even a pair of microphones are included in the price.

It also offers top value as a mobile, fully self-contained recording station complete with its own speaker systems and audio output. When used in this way there would be no more problems over monitoring facilities – they are all there at the touch of a switch. Even the enthusiast who already owns a satisfactory stereo installation will find much to attract him in the TC-630. We have said nothing about the use of the sound-on-sound and echo controls which together open up the possibilities of all manner of advanced experimental recording work.

The crucial question that a reviewer always asks himself about any piece of equipment he is examining is whether or not he would be happy to buy it and use it himself. We believe the Sony TC-630 to represent exceptionally fine value for money; we would be more than happy to both buy it and use it. And we can't resist saying yet again – it is one of the most *sensible* machines we have seen for a long time.

Audio Fair Report from Page 417

The distinctive Yamaha speakers were making some very cheerful noises in the Actina demonstration room. Is it because of their peculiar shape or in spite of it? That's difficult to answer, but thanks to the courtesy of Actina Ltd we have been offered the use of a pair so that we can take a closer look at them in the very near future. We shall report on this in due course but in the mean time the model we preferred was the NS 15 at a price of £65 each.

In the Shure rooms the V15 11 cartridge was tracking a succession of beautiful classical records via a pair of B & W Model 70 speakers. We heard a little of the Verdi *Requiem* with satisfaction and enjoyment. Here too was a haven of refuge where music, real music, was to be found. There's little to say about the cartridge – its excellence is so well known there is no need for us to extol its virtues further.

And then, quite suddenly, we found we were in a room where the sound quality was in our opinion so much better than anything we had heard elsewhere that we have not the slightest hesitation in claiming it to be Best of the Show. The equipment being demonstrated was Goldring. The new GL 69 transcription unit was fitted with an 800 Super E cartridge wired to a Leak Stereo 70 amplifier. The secret of the superb sound – we repeat, the best to be heard at Olympia – lay in the speaker equipment used. Wisely Goldring brought along a pair of laboratory monitors, great monsters that would cost some £300 each if they could be

bought, which, by the way, they can't.

This demonstration had the greatest significance. Whatever the equipment being used the only thing *heard* is the *sound* from the speaker enclosures. Good speakers will not make poor equipment sound good – to the contrary they will show up faults with transparent clarity. So Goldring, with wisdom and courage, got hold of the very finest enclosures they could lay their hands on and said by implication rather than directly – we will now let the public hear the very maximum quality of which our products are capable. In our opinion it is the only way to properly demonstrate audio – by audio. If only some of our tape recorder manufacturers and distributors would adopt the same policy . . .

BSR had a different approach. We arrived in their room on the Monday morning after suffering all the further irritations and inconveniences of another strike, this time on the Tubes. And as we entered we were greeted by the strains of *Land of Hope and Glory!* Actually it came from a record specially made for BSR called Sounds of 1969. The band we heard was a reference to the protest raised when it was said that this item would be omitted from the last night of the Proms. Other bands included: landing on the moon; the Rolling Stones in Hyde Park, the maiden flight of Concord, etc, etc. A deliberate error had been made in the commentary and any visitor spotting it was presented with a free record token. Playback equipment was centred around the BSR MA 75 transcription unit which was wired to a Leak Stereo 70 amplifier driving a pair of Leak Sandwich



Voted by us to be The Most Tasteful Studio, our illustration does less than justice to KEF Electronics Ltd. With white benches for the audience, speaker units hung against an off-white rug and efficient air conditioning the KEF demonstration room was a haven of refuge. And the sound was equally good too.

speakers. An imaginative and interesting show.

H. J. Leak themselves were comparing the sound of their large Sandwich enclosures with the smaller Mini-Sandwich. Once again we found that the smaller boxes were producing the kind of a very cheerful noise that one would expect to be coming from their bigger brothers. The FM tuner with the preposterous name, Stereofetic, was also in evidence and the new tuner/amplifier reproduced programmes played back on a TRD machine. Many exhibitors found themselves in trouble with their disc records. Warped by the intense heat in the "sweat-caves", soiled by the gritty dust from the construction work, the 1969 Fair best demonstrated the considerable advantages of tape. A number of demonstrations were spoiled because the records were not in good condition; even people using tape machines had their problems — the rooms got so hot the equipment overheated!

Which brings us to KEF, the studio with air conditioning. What a joy it was to be able to breathe once again. And how tastefully the room set out and decorated. Two pairs of enclosures, the large Concerto and the smaller Cresta, were backed by a huge thick-pile white rug hung on the wall. Visitors sat on

upholstered white benches as they enjoyed the true sound of a solo piano with all its richness of overtones. Another place where music was to be found.

The 3M Company adopted quite a different approach to publicise their Scotch tape. A bank of Akai tape recorders were playing back tapes on which were recorded a number of sounds. The public were invited to listen, via Koss headsets, and to guess the identity of the noises. A Compact Cassette machine is to be awarded as a prize for the best answer after the Show. Very popular, this one. The crowds were so great we could get nowhere near any of the headsets to listen for ourselves, but we had heard the tapes before the show so we knew they were posing some very interesting problems. In fact we spotted one competitor who had dropped the speed down from 7½ to 1 7/8ths ips in a (futile!) attempt to make identification easier.

Featured in the static display by Brennell was a completely new, remote control tape deck. This is a piece of professional equipment that will *not* be available through the normal domestic sales channels. At just under £100 (without heads) it offers exceptional flexibility of operation together with a

mechanical specification that warrants association with the highest grade electronics. The Mark 5 deck and complete recorder was on show together with the latest ST 200 and ST 400. The dramatic change in styling of these latter drew a great deal of attention and comment.

Footsore and weary, with aching heads and trembling hands we regretfully decided that more we could not cover. Again we apologise to those of our many kind friends whom we have not been able to mention. If only the Fair had opened on time . . .

And what of the photographic section? Well, the number of exhibitors was disappointing. But it did make a change to have the light and colour of the photographic displays at an Audio Fair. In this part of the hall there were many "set pieces" with pretty little dolly girls — in scanty costumes — all ready and waiting. To be photographed. Should one complain that sex had at last reared its ugly head in the middle of "our" Audio Fair? When one young lady removed her upper garments completely there was a near riot. What an odd creature the human male really is. Strange to relate we would prefer to spend our time listening to that Best Sound of the Show in the Goldring demonstration room.

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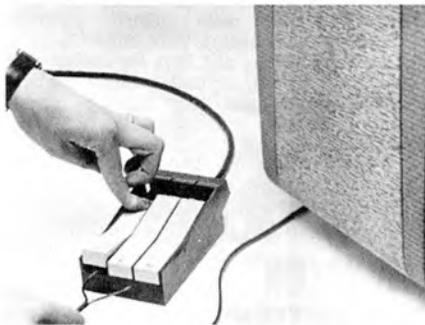
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A built-in safety switch in the 13 amp fuse housing ensures the Keynector cannot be overloaded and when the fuse housing is opened the circuit is broken. Once closed no metal part protrudes and the keys cannot be depressed. In operation there is complete safety and no chance of an accidental shock. The appliance is available in an attractive two-tone finish and there is provision on the base for permanent fixing to a bench. The cost is 39s 6d plus postage and packing.

Electronic Brokers Limited, 49/53 Pancras Road, London, N.W.1.

BIB CLEANING KIT

RELEASING their new Size B Stylus and Turntable Cleaning Kit, Multicore Solders mention the interesting fact that the playing of only one side of a record involves a journey for the stylus of half-a-mile. This naturally implies that foreign matter must be picked up during tracking. And as we know such deposits will not only impair the quality of the reproduction but could also damage the record itself.

The new Bib Cleaning Kit comprises a 30 c.c. bottle of Bib antistatic, stylus and turntable cleaner and a cleaning brush with a permanent base so that it can be kept upright close to the turntable. This base is in the form of a suction pad which will adhere to most cleaning surfaces or alternatively it can be standing. There is also an absorbent washable cleaning cloth to wipe the brush free from the dirt picked up by the stylus and to apply and remove the Bib Cleaner to the turntable. This latter application not only cleans but through

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P. F. & A. R. Helme, Butcher Pasture, Summerbridge, Harrogate, Yorks.

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Operating at tape speeds of 3 3/4 and 1 7/8ths ips with a maximum spool size of 5 1/2-in. the equipment is complete with internal loudspeaker, crystal microphone and connections for radio input, external loudspeaker and remote control. Controls include push-buttons and keys for normal and tuition use, record/playback volume control combined on/off and tone control, record level control and re-settable tape counter. Dimensions with cover at 13 3/4-in. by 12 1/2-in. by 6 1/4-in. Weight is 20 lb and the cost £129 18s 6d inclusive of purchase tax.

Grundy & Partners Limited, 163 High Street, Hampton Hill, Middlesex.

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A.E.G. (Great Britain) Limited, Lindsay House, 86/88 Upper Richmond Road, Putney, London, S.W.15.

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Music

Musicassette Reviews

KARAJAN IN WIEN. Melodies of Johann Strauss (father and son) and Josef Strauss. DGG 623 025, 49s. 6d. including purchase tax.

With this review we welcome to the United Kingdom the illustrious label of the Deutsche Gramophon Gesellschaft to the family of Musicassettes. Long renowned for the excellence of the technical quality and performance standards of their gramophone records their arrival into the cassette field is a noteworthy event. Fifty titles have already been issued this year and fifty more are promised for early 1970 with still more to come. Welcome DGG!

So for this, our first review, we have the *Maestro* himself, Herbert von Karajan, conducting the Berlin Philharmonic in a performance of some of the best loved Strauss waltzes. For me the name of the Strauss family always did, and I suspect always will, conjure up the happy, carefree days of the 19th century Vienna of the Emperor Franz Josef – the wonderful balls, coaches in the Vienna woods, lovely ladies with parasols in their hands.

The magic of the family Strauss started with the genius of father Johann and continued in his sons, Josef and Johann Junior, the latter becoming, as the composer of some of the best known and loved melodies, the most famous. Here, in the DGG album the magic spell is woven for us once again. We can sit back and allow the family Strauss to take us by storm as they captivated the Viennese audiences of their day. But their success was not limited to their native Austria; all Europe acknowledged the prolific genius of the father and his two sons. Johann Strauss Junior himself wrote more than three hundred waltzes, polkas and marches before turning to the stage for which he created masterpieces such as *Die Fledermaus* and *The Gipsy Baron*, both of which are still performed with great success in opera houses all over the world.

Let us just sit back and let Karajan enthral us once again with the happy tunes of *Tritsch-Tratsch-Polka*, the glorious melodies of the *Overture to Die Fledermaus*, the famous *Emperor Waltz*, with which Strauss celebrated the 40th anniversary of Franz Josef's rule, the hauntingly beautiful tunes of *The Blue Danube*, all works by Johann Strauss Junior. Then there are the exciting rhythms of *The Radetzky-March* by Father Strauss and the lilting refrain of the *Delirien-Waltz* by Josef. All are played equally well by the Berlin Philharmonic, giving us the warm tones and real understanding of the score we are accustomed to from them.

Listening to these waltzes, marches and polkas one finds it difficult to remain seated. They will carry you with them in an exhilarating, rejuvenating whirl. The recording does justice to the high quality of the playing. All in all an album one could be proud to own. Personally I shall listen to it over and over again.

FOLK MUSIC OF GREECE. Polydor 914 577. 47s. 6d. including purchase tax.

The mere word "Greece" conjures up strange, wild fantasies of Olympian gods and nymphs, mysterious voyages in search of the Golden Fleece or avenging a beautiful maiden. How grateful should we not be in our modern times that with the help of electronic equipment we can reproduce the traditional music of that land – even in our own bedrooms should we so choose.

So in this album we have a wonderful selection of what must be best in Greek folk music. The gaiety, the tuneful, rich melodies together with their pleasing orchestrations bring to us the sunshine, the warm scented evenings, the vineyards on the hills, the open-air inns where one may happily drink the local wine – in one word, Greece.

The execution of numbers like *Mesa sto glicocharama* and *I palia istoria* is excellent. I found the recorded quality good too, but what a pity it is that the publishers do not give translations of titles (they're all Greek to me) and also some explanations about the songs, their places of origin, notes about the orchestration and even about the performers. As it is we have nothing. Not a single word. It really is too bad. Polydor will have to do better than this. I cannot help comparing this utter lack of information of any kind with the detailed exposition given in the sleeve of that superb Flamenco Musicassette, *The Incredible Paco Peña* (Fontana CFP4032 reviewed November). In that case one can not only enjoy the music but also learn a great deal about the folk idiom. With Folk Music of Greece we can enjoy but will learn nothing.

The other items in this anonymous collection are: *Irtha ki apopse sta skalopatia*, *Pedikos choros finale*, *I valista*, *Pic acori agapo*, *Metaxourgio*, *Choros tou psarojiannou*, *Thessaloniki*, *Pagonia*, *Enake ena kanoun dio*, *Mesa stin nichta perpato*, *I amouda* and *Xanasmigoun T'aidonai*. I can only hope that this bunch of titles is more meaningful to you than it is to me.

In the first item on side two, *Choros tou psarojiannou*, there is an interesting use of percussion instruments combined with guitars to give to this dance a very exciting quality, so typical of Greek music. One can almost see the colourful clothes of the dancers whirling about. This number, like *Thessaloniki*, depicts the moods of modern man, whereas, for me at least, *Xanasmigoun T'aidonai* with its nostalgic tune brings back memories of "olden times." Here are the beautiful gardens where the lovely Aphrodite reigned surrounded by cherubs. A mere whim! But whatever your reactions or dreams, if you like music of other countries and if you wish to be taken out of your shell then this is the record for you with its tuneful melodies and fine performance. And if you should feel an increasing irritation caused through the lack of sleeve notes you will have the consolation of knowing that I felt just the same. I was a little disappointed, too, to find that the album is made up entirely of instrumental arrangements without a single song amongst them. That's rather a

pity. However, what the album does contain can be strongly recommended.

HAIR. Polydor 914 589. 47s. 6d. including purchase tax.

I have not seen the famous, or as some might say the infamous, West End production of *Hair*. That is an admission. Perhaps I am one of a distinguished bourgeois minority, yet many dear and elderly ladies of my acquaintance have seen the show and thoroughly enjoyed it. Now I know that the loss is mine. I should have known better. For so long *Hair* has been acknowledged to be a real gem of a production in its own right, Has there ever been anything like it before? I think not.

For the first time young people are making themselves heard in the theatre, and we oldies might look askance at their outspokenness. If there is a lack of understanding then the chances are that the failure is ours, rather than theirs. Why should one not call a spade a spade? Openly? Few have dared to do it before. We owe a debt of gratitude to the courageous cast of this musical-with-a-difference. Or is that being too patronising? It is not meant to be. It can be pop, it can be ballad singing, it can be jazz. But it makes you sit up. You cannot use it as background music. It makes you sit up. Sit up and think.

Do you want to be jerked from the jungle to the shops of Fifth Avenue? If you do then *Hair* is for you. Beneath this constant pulsating activity and change, this throbbing exploding of young life, there is an underlying sincerity – a quality which makes *Hair* a great show instead of just an immature lark. Show Biz is commercial. But I feel that *Hair*, although a commercial success, has a unique feeling of amateur *bonhomie* a sort of effervescent joy of life and living that some of us miss in the coils of our daily routines. Perhaps that is what it is all about. Here we have a fresh look at old problems; problems as old as Adam and Eve. If you doubt that then listen to the track, *Sodomy*. Other items include: *Aquarius*, *Donna*, *Coloured Spade*, *Ain't got no*, *Air*, *I got life*, *Hair*, *My conviction*, *Easy to be hard*, *Frank Mills*, *Where do I go*, *Black boys*, *White boys*, *Electric blues*, *Walking in space*, *Abie babie*, *Three-five-zero-zero*, *What a piece of work is man*, *Good morning starshine*, *The bed and Let the sunshine in*.

The young artistes want their ideas to get across to us. Ideas that are a genuine as they are sincere. They do so with a degree of professionalism that would do credit to many a well-known trouper. But then after all, they are professionals.

Yet all is not lofty ideas and idealism. The show is primarily entertainment – the idealism is a plus extra, a bonus, even if at the same time it is a *raison d'être*.

Where do our lives lead us? Where do we go? These are some of the questions of *Hair*. Hardly original, but the old queries are phrased in a new way, and they are posed in

the highest of high fidelity. Every word can be heard, which is so important in a work of this kind. The recording is excellent. The whole reminds me of modern painting, poetry and philosophy. *What a piece of work is man!* There is not the slightest hint of pretentiousness; it entertains from beginning to end. Have I conveyed my enthusiasm? I hope so. And if anyone has a spare ticket for the show please post it to me.

SERGIO MENDES & BRASIL '66. Fool on the Hill. A & M CYP 1101 47s. 6d. including purchase tax.

Hardly the merriest of albums, this. Side one gives us a pedestrian melancholy with the depression deepened by the weight of the curtain which appears to have been drawn between the artistes and the listener. The voices have lost all reality and the instrumental backing has been subjected to some weird and wonderful treatment that does unmentionable things to the sound. As one begins to realise that the "drop-outs" are in fact rhythmic patterns it dawns on the listener that the effects are deliberate. All of which is a great pity because the latent potential of this record is considerable. It suffers from over-enthusiasm for too-clever gimmicks, all of which detract instead of adding to the enjoyment.

On side one we have: *The fool on the hill, Festa, Casa forte and When summer turns to snow.* Turn the cassette over and everything changes. Audio quality is quite different; some-one has pulled back the curtain. Voices and instruments shine through with what is commonly called "fidelity" and the performance begins to move with a swing. Never have I heard such a contrast between the two sides of a record. Programme on the "cheerful side" is: *Lapinha, Scarborough Fair/Canticle, Canto triste, Upa neguinho and Laia ladaia.* This I like very much indeed. It has plenty of talent plus the recorded quality we have come to expect - and demand. Good, very good indeed.

So there we have it. A dirge laced with exciting spice. And it's worth buying for the spice alone.

TRINI LOPEZ. Welcome to Trini Country. Reprise CRP 371. 47s. 6d. including purchase tax.

How often the first few notes one hears from a cassette tell the whole story. They do here. With dramatic realism from the speakers the listener tends to look up in surprise. It really is that good. And the quality is maintained throughout the entire repertoire. A tape of this standard is a real joy to play, and the owner has the satisfaction of knowing that the quality will not deteriorate with repeated use. And I suspect that the purchaser of this album will be tempted to play it over and over again. Which is just fine.

Trini Lopez is a great character and a great entertainer. In this country-style programme his personality an infectious *joie de vivre*,

sails happily across carrying real pleasure with it. Everything is relaxed and effortless; there's not the slightest hint of strain anywhere. One gets the feeling of having dropped in on a jolly party where people are making music for fun. Which, in my humble opinion, is what music is really for. Maybe some of the numbers are corny - I'll accept that. But it's good, clean, golden corn, the stuff from which the staff of life is made, so why complain?

Trini gives us: *Gentle on my mind, Crazy arms, Devil woman, Once a day, If the whole world stopped lovin', Good old mountain dew, Flowers on the wall, Green green grass of home, Lonely week-ends, Four strong winds, Shanghied and Mental journey.*

Congratulations to all who took part in the making of this cassette, particularly the recording engineers who have done a really fine job. Strongly recommended.

JERRY BUTLER. The Soul Goes On. Mercury CMP 7028. 47s. 6d. including purchase tax.

Yes, the soul does indeed go on and there could be no better musical guide than Jerry Butler. The very first number in the collection is rather disappointing. *Never give you up* is uninspired, but followed by a superb rendering of *Chain gang* leading into more and more goodies. Besides those two items side one also gives us: *The dock of the bay, Yes my goodness yes, You send me and Ain't that good news.* On the reverse side we have: *Respect, The arms of mine, A change is gonna come, Guess who, Goodnight my love pleasant dreams and I've been loving you too long.*

Technically the album is averagely good. We could have had just a fraction more reality perhaps - there's a hint of boxiness about the voice that makes one realise the sound comes from a record instead of from life. But it's not bad and I suspect most would not notice it. To compensate we have the distinctive style and tonal quality of Jerry, and that more than makes up for any minor weakness in the engineering department.

The popularity of "soul" is still on the increase and its fascination is only too easy to understand. At its best it takes a long, sad look at the length and sadness of life, yet at the same time it expresses itself in singularly joyful terms. Does that make sense? Certainly it describes my own feelings about this collection, which is why I regard it as one of the best I have heard in this idiom.

So for the bitter-sweet pill, try Jerry Butler. I enjoyed it enormously.

JOHNNY CASH. Ring of Fire. CBS 40-62171. 47s. 6d. including purchase tax.

With its sub-title, *The Best of Johnny Cash*, this album is another member of the great family of "Best Of's". I'm not at all sure that I agree that the programme offered here is indeed made up of the best Johnny has to offer. None of the exquisite Folsom Prison items are included, and to my mind that rules out the "Best Of" title. That really was a gem of a cassette (CBS 40-63308 reviewed August 1969) and I found Cash to be at his greatest

when singing to his friends, the social outcasts. Perhaps it is the contrast between that programme and the present one which brings a slight feeling of disappointment. There's a suggestion of smugness about Ring of Fire, or is it just my imagination?

As we might expect, performance is excellent as is the technical production. It's good to hear a fine vocalist backed up by competent handling of the recording equipment; the result is bound to be an album that cannot fail. Which is the category into which I put Ring of Fire in spite of my own impression of less sincerity than can be found in Folsom.

Many of the items are Johnny's own - he's a prolific and skilful writer as well as a fine performing musician. The collection includes: *Ring of fire, I'd still be there, What do I care, I shall miss someone, Forty shades of green, Were you there (when they crucified my Lord), The rebel - Johnny Yuma, Bonanza!, The big battle, Remember the Alamo, Tennessee flat-top box and (There'll be) Peace in the valley (for me).* Not, perhaps, the best of, but still authentic Cash and as such worth acquiring.

THE SANDIE SHAW SUPPLEMENT. Pyc CYP 1107. 47s. 6d. including purchase tax.

The sleeve notes to this album tells us at least four times that Sandie is now a WOMAN. Yes, in capitals just like that. Oh dear, oh dear! It could be a shattering statement if women were to be creatures as rare as, say, the monkey-eating eagle, but from my personal observation I would say that women exist in both the wild and captive state in very large numbers indeed. So I don't quite know what Keith Altham is boasting about - unless of course he found it difficult to say anything original about Sandie and felt he just had to fill the space up with something.

But, leg-pulling apart, this collection is just about the best Sandie to date. And if that is the result of the "maturity" (a late developer, perhaps?) that Altham keeps raving about then it's O.K. by me. As you might have guessed by now, I am not the greatest of Sandie fans. She has a small talent which she projects to its furthest limits by the sheer force of her personality, but to me there is an inherent brashness which even the "little girl lost" approach does not conceal.

The supplement comprises: (*Get your kicks on*) *Route 66, Homeward bound, Scarborough Fair, Right to cry, Same thing, What now my love, (I can't get no) Satisfaction, Words, Remember me, Change of heart, Aranjuez mon amour and Our song of love.*

How can I live through another day - without Sandie? Very easily, actually, but each man to his own poison and there's nothing to be ashamed of in a secret passion for the lady. If that should be your sorry plight then you can invest in this supplement with every confidence. Recorded quality is outstandingly good - so good the listener is assured of satisfaction even if the Shaw has her own personal troubles in that direction.

Music

Open Spool Reviews

7½ ips STEREO

Equipment used for review tapes: Amplifiers—Quad valved and Ferrograph F307 Loudspeakers—Celestion and Jordan-Watts. Tape Recorders—Akai 3000D and Tandberg 64X

OSCAR PETERSON TRIO PLUS ONE (CLARKE TERRY). Mercury STC 60975. 7½ ips 4-track Stereo. 88s. including purchase tax.

So we have agreed that the 7½ ips stereo tapes are expensive. But from the very first note the listener is left in no doubt at all as to the value he has bought for his money. Jazz can be too often a noisy medium. With good quality recording and reproduction there's no noise at all; just music, music, music.

The tones of the instruments leap from the speakers to live, really live, right in front of you. It's truly an experience to hear jazz at this high standard of technical quality. The sleeve notes refer to the musicians' phrase which speaks of being "stretched out." Never was the medium further stretched than on this particular tape.

Choice of repertoire is broadly based, including: *Brotherhood of Man, Jim, Blues for Smedley, Roundalay, Mumbles, Mack the Knife, They didn't believe me, Squeaky Blues, I want a little girl* and *Incoherent blues*.

For sheer, solid presence this album will take some beating. As I listen I am only too well aware of the fact that the Trio plus Clark Terry are here in the room with me. The technicians have done a splendid job, giving superb definition and instrumental balance. All of which is matched by the virtuosity of the performers. Such precision with uninhibited spontaneity is the very essence of jazz; here it is displayed to perfection. Never a hint of "we are making a record" or "I am playing to the microphone." Just free melodic lines with inspired improvisation, all worked delicately into the fabric of the melody.

Unlike some of the highly-paid performers who accept success as it shines too easily on them, these boys are professionals at the top. They got there the hard way — by learning their jobs from the very beginning and then taking the trouble to be better than anyone else. But that alone is not enough. To this one must add that touch of divine fire which makes the difference between the musician and the artist. It is an out-of-this-world feeling that makes this album worth every penny of its purchase price. An excellent collection that really cannot be faulted on any count. Lovers of jazz can't go wrong with it.

THE HARP WEARS A LEL. De Wayne Fulton. Mahalo MM 3005. 7½ ips 4-track Stereo. 57s. 5d. including purchase tax.

There's not really a great deal one can say about a record like this. The sleeve describes

it as: "Treasured melodies of Hawaii in a unique presentation by the gifted harpist De Wayne Fulton." I'll not argue with that. Neither can I add very much to it, either.

The music of the islands has been appropriated by so many instrumentalists, all of whom offer their own "improvements" on an original blend of sound that is rapidly disappearing. Which is a pity, because the real thing is well worth preserving. However, we now have to consider the traditional melodies — suitably "arranged" — performed on the harp. Vehicles for the endeavour are: *Beautiful Kahana, Maui chimes, Ke kali nei au, Waipio, Ua like no a like, Akaka falls, Old plantation, and Aloha oe*.

If the derivation might in some cases be slightly suspect never mind. Mr De Wayne Fulton's harp goes tinkling merrily on. And let us confess, a pleasant sound he makes, too.

Unfortunately the record is marred by a few traces of distortion, particularly on the accompanying percussion instruments and even occasionally on the harp itself. Not so serious as to make the collection unlistenable, though. Apart from this one defect the album could be recommended as unobtrusive background noise at a reasonable price. For serious listening it quickly began to bore me, but you might perhaps react differently.

3¾ ips STEREO

DAVE DEE, DOZY, BEAKY, MICK & TITCH. Greatest Hits. Fontana. FTX 67567. 3¾ ips 4-track Stereo. 88s. including purchase tax.

Once again we have a "Greatest Hits" label, and once again that title is fully justified. In this one album we have all the best that this quintet have produced. One point that might be worth mentioning. Although packed on a 7-inch spool, which, quite naturally, is contained in a 7-inch box (there's a thing now!) the small quantity of tape — remember we are running at 3¾ ips — makes one wonder if some hi-jacker hasn't taken his shears and removed several hundred feet before we got our hands on it. So, let us repeat the argument once more.

When buying pre-recorded music, either on tape or on disc, one is acquiring repertoire, not so many feet of tape or ounces of vinyl. If the repertoire is what the purchaser wants then he has no complaint if the quantity of tape appears to be small. Total playing time of this collection is within a second or two of twenty-four minutes; in other words a fraction over the length of a single side of a twelve-inch l.p. The items that make up the time are: *Bend it, Touch me touch me, Hold tight, Hideaway, I'm on the up, Save me, You make it move, Here's a heart, You Know what I want, and Hands off*.

Performance is typical of "The Five" and recorded quality leaves nothing just nothing,

to be desired. So you pay your money and takes your choice. There are doubtless many fans of the group who will be quite sure it's money well spent; others might pause and think a couple of times before diving right in.

RHAPSODY IN BLUE. Frank Pourcel and his orchestra. Columbia TD-TWO 232. 3¾ ips 4-track Stereo. 41s. including purchase tax.

In previous reviews of albums by Frank Pourcel I have been pleased to pay tribute to this outstanding musician from the other side of the Channel. *Rhapsody in Blue* maintains this very high standard, both of performance and of technical quality.

Actually *Rhapsody in Blue* is only one side of the record. On track 2 we find: *Summertime, I got rhythm, The man I love, Embraceable you* and *Love walked in*. Quite a collection! And all of them bear the distinctive Pourcel hallmark.

There's not a great deal to be said about this collection. Surely no-one can be unfamiliar with that great Gershwin masterpiece, *Rhapsody in Blue*? Or the repertoire on side 2, for that matter. Orchestration is peculiarly Pourcel's, and a very pleasing sound he makes of it. Plenty of zip and zest without for a moment losing touch with the composer.

Perhaps not everyone will fall in love with this tape as I have done, but I find it difficult to imagine the person who could not at least get considerable enjoyment out of it. So if you're looking for blues plus a big round orchestral sound the search is over. It's Frank Pourcel for you.

VALENTINO. Columbia TD-TWO 248. 3¾ ips 4-track Stereo. 41s. including purchase tax.

Well, there's a title for you! Valentino. That's all, just Valentino. And there's something rather egotistical about the choice and arrangement of repertoire, too. This is how it goes: *At Mayerling, All my loving, Song without end, Straight concerto, The Coolin, Exodus*, interpolating *Lawrence of Arabia, Aranjuez Mon Amour, Ben Hur* (Love theme and Adoration of the Magi), *Liebstraum, Loreto, Over the rainbow* interpolating *Smoke gets in your eyes* and *Warsaw concerto* interpolating both *More* and *Theme from the Quiller Memorandum*. A host of different arrangers and conductors hover in the wings whilst the Mike Sammes Singers flit fitfully in and out but with only the tiniest acknowledgement on the sleeve.

Much of this could be forgiven (if one chanced to be in a forgiving mood) but when insult is added to injury by *interpolating* (!) some very nasty distortion on some of the loudest passages, then we really do have grounds for complaint. And what about this inglorious hotch-potch of a repertoire? Do you agree with me that it's nothing more than a gimmicky rag-bag? I mean, why all these absurd interpolations? Either play the piece or leave it alone. Reminds me of the Cockney

costmongers' traditional cry: "If yer don't want the goods then don't muck 'em about! So that's my message here. Personally I don't particularly want the goods, offered, anyway.

3¼ ips MONO

WAGNER OVERTURES. The Philharmonia Orchestra conducted by Otto Klemperer. EMI Columbia TA-33CX 1697 3¼ ips half-track mono. 41s. including purchase tax.

Good and evil. The eternal struggle. It goes on within us all. Within you – and within me. Good and evil. And sensuality. It's all here. If there should be censorship of music (which heaven forbid!) then surely Wagner would be awarded an "X" certificate every time.

During his lifetime Wagner never shunned experience. The loves of his life were music and Cosima. Through both he found ecstasy. And he does not hesitate to pass his feelings on to us. But there is more to human psychology than the mere enjoyment of sensuality; thanks to the conventions of our society there is also a feeling of guilt. This Wagner was only too well aware of and he expressed it in his music as the struggle between good and evil.

In what terms should one think of the powers of good and evil? In his private life Wagner chose to ignore the censorious opinions of his friends and the public; in his music he posed the problem in broader terms. Here he was thinking about aspects of absolute good and absolute evil. As a result listening to his music can be one of the most moving of experiences.

Perhaps today our modern psychiatric doctors could explain away such ideas in dull, technical terms. In the twentieth century there is no longer any clear-cut line of definition between right and wrong. In Wagner's time it was different. Or so his contemporaries liked to think. It was fashionable to believe that there were two courses open to Mankind – the right one and the wrong one. Such a philosophy reduces our more complex view of life to these two simple elements. When we listen to Wagner we can enjoy this delightful simplification to the full. Similarly his interpretation of sensuality was equally uncomplicated; this to him was the essential male characteristic of the forces of aggression, a power he loved to describe musically.

His importance on twentieth century music cannot be under-estimated. Our contemporary composers, such as Schoenberg and Webern, could not have written as they did had Wagner not gone before. His was the inspiration – his was the light that led the way. The others followed to develop their own distinctive styles, but they never hesitated to admit their debt to the maestro, Wagner.

In this album we have, alas, but a few of the Wagnerian gems. But under the supreme

authority of conductor Otto Klemperer we do have one of the truly great Wagner performances. It both thrills the ear and moves the heart. Pity there is so little. However the programme comprises: *Overture Rienzi*, *Overture Der Fliegende Hollander*, *Overture Tannhäuser* and *Prelude to Act I, Lohengrin*.

Listening to the latter I was reminded of the time when I heard Klemperer conducting this work at Covent Garden. What an experience it was! However good the tape might be – and it is very good indeed – it lacks, as it must, that magical "something" of a live performance. There never has been, nor will there ever be, any substitute for live performance; but recordings as good as this offer the best possible alternative.

As I played the tape back I found myself deeply moved. The alchemy of Wagner has this power. Wagner has moved many others besides myself. Hitler was perhaps the most notorious. His obsession with *The Ring Cycle* was said to be the genesis of his preoccupation with racial philosophies – to the cost of millions.

When I complained about the lack of Wagner in this album I did not intend to imply poor value. It is just that there is so much of this composer's music that any one album must of necessity be limited. And the more one hears the more one wants to hear. What we do have is excellent in every way. Recording is dramatic, and as such perfectly suits the drama inherent in both composition and orchestration. The powers of brass are used to perfection as the inner struggle of Mankind unfolds before us; a struggle in which Wagner himself was happy to take part. Strongly recommended to all.

BERLIOZ. *Symphonie Fantastique.* Philharmonia Orchestra conducted by Otto Klemperer. EMI Columbia TA-33CX 1898. 3¼ ips half-track mono. 41s. including purchase tax.

Berlioz. The misunderstood genius. He tried several times for the Grand Prix de Rome. After many years' frustration he at last achieved his aim. Composition did not come easily to Berlioz as it might have done to some of his contemporaries; but the thought he devoted to his music resulted in works that are more subtle, less transparent, than those of, say, Tchaikovsky.

Now, at long last, Berlioz is coming into his own. His true stature is generally acknowledged and there is no doubt but that his works will be more highly regarded in the future than they were in the past. *Symphonie Fantastique* is one of his major works, well-known and well-loved by concert audiences throughout the world. It makes use of an augmented symphony orchestra to produce the brilliant colours and deep moods, intricate patterns woven by the instrumentalists. Here in this album we have a performance conducted by the Grand Old Man himself – Otto Klemperer.

Unfortunately my copy had a serious fault

near the beginning of side two. The programme faded for a few seconds, produced a couple of pathetic slurs and then returned with somewhat reduced quality. It is noted that the tape used is the older brown-coloured material instead of the newer black "Afonic" and the packaging is in a cardboard box instead of the newer plastic. No-one is going to object to the style of the pack; everyone has the right to object to an imperfect record. Quality control at the factory should be so organised as to detect and reject tapes with such obvious faults.

My own copy of the *Symphonie Fantastique* is, then, quite spoiled for this reason. Make sure that yours is not the same. As one might expect, performance is excellent and audio quality reasonably good. Provided you can get hold of a good copy the album would be worth acquiring. It is a fine example of "Programme Music" – music that tells a story. As such it makes easy listening, but closer study will reveal the greater depths that lie hidden beneath.

THE SCOTTISH REGIMENTS. EMI Waverley TA-ZLP 2116. 3¼ ips half-track mono. 41s. including purchase tax.

Nine Scottish regiments are represented here, together with an additional item performed by massed pipes and drums. The beat of the drum and the skirl of the pipe is either in one's blood or it is not. I know people who would run a mile to avoid listening to this programme. Some would say that is the sole purpose of the pipes – to strike terror into the hearts of the enemies of Scotland. I must confess that listening to this album I would just hate to be an enemy of Scotland – and I like the sound of the pipes!

Although the programme is complicated it is worth quoting in full as many readers will be looking for their favourite airs. So taking a deep breath here goes. The Royal Scots Greys: *The victory polkas*, *Thick lies the mist on yonder hill*, *The roe's among the heather* and *The ceilidh reels*. The Scots Guards: *El Alamein*, *Jim Tweedie's sea legs* and *Brae Riach*. The Royal Scots: *The Heroes of Kohima*, *The Royal Scots Polka* and *Dumbarton's drums*. The King's Own Scottish Borderers: *The Borderers*, *The Battle of the Somme* and *The Blue Bonnets*. The Royal Highland Fusiliers: *The 74th. Slow March*, *The kilned runner*, *The lady in the bottle*, *Barbara's jig* and *The Heroes of St. Valerie*. The Black Watch: *The Toronto Scottish Regiment*, *Dorrator Bridge* and *Duntroon*. The Queen's Own Highlanders: *A Hebridean Air*, *P/M Donald Maclean of Lewis* and *Major General Hunt's welcome to the Queen's Own Highlanders*. The Gordon Highlanders: *Major Manson at Clachantrushal*, *Dornie Ferry*, *Alick C. Macgregor* and *The Cock o' the North*. The Argyll and Sutherland Highlanders: *Miss Elspeth Campbell*, *Inverary Castle* and *Mrs Mcpherson of Inveran*. Massed pipes and drums: *The Dornoch Links*, *Lady Madeline Sinclair*, *The Marquis of Huntly*, *The Piper of Drummond*, *The Fairy Dance*, *Highland Laddie* and *The Princes Street Parade*.

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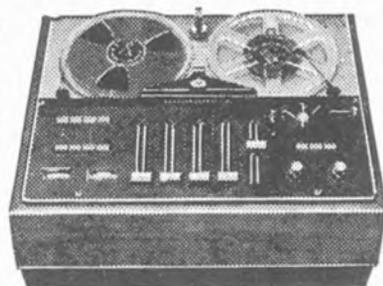
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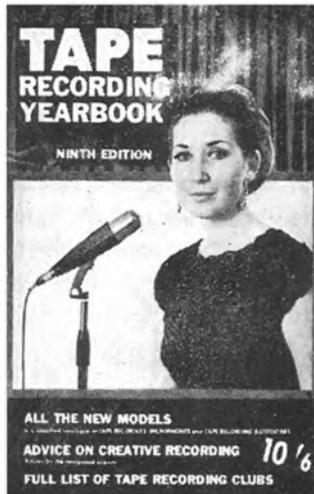
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