

and Albert Ammons prove that three pianists playing together are simply not as good as one. C.F.

Pete Rugolo and his Orchestra

"Behind Brigitte Bardot"
Jeff's Blues: Mambo Bardot: Tell Me Something Sweet: Arsenic Blues: Paris B.B (V)/Mania Theme: A T'Aimer: L'Etang: Ma Vie Est A Toi: The Night That Heaven Fell. Warner Brothers ♫ WM4001; ♪ WSS001 (12 in., 27s. plus 8s. 9½d. P.T.).

"The Music From Richard Diamond"
Richard Diamond Theme: Diamond On The Move: Fancy Meeting Karen: I'm Always Chasing Butterflies: Who's Sam?: All Star/The Teaser: Ye Olde Curiosity Shape: Teen Age Rock: The Sleeve Job: Does Mama Know You're Out?: Richard Diamond's Theme. Mercury ♫ MMC14034; ♪ CMS18025 (12 in., 25s. 9d. plus 8s. 4½d. P.T.).

No one can deny that Pete Rugolo is a master of orchestral writing. He can extract the most intriguing effects from the ensemble by grouping the instruments in unusual units, rather in the style of Duke Ellington. The resemblance to Ellington ends there, however, for Rugolo seems to have no talent for writing memorable tunes, neither does he have a very acute understanding of rhythmic subtleties. "The Music From Richard Diamond" is another of those dreary, television cops'n'robbers sound tracks, relieved only by occasional solos of interest from such men as Bud Shank, Bob Cooper, Larry Bunker, Buddy Collette, etc. All the tunes were written by Rugolo, and for those interested in such matters, all are published by Jimmy McHugh Music. The Warner Brothers LP is very much better and it seems something of an insult to Rugolo and the musicians (none of whom is credited on the sleeve, incidentally) that the entire production has been designed around the double-spread sleeve, which carries a colour photo of Miss Bardot in typical reclining pose. With all his faults, Rugolo is too important and sincere an artist to be mixed up with such gimmickry. The tunes are taken from the sound tracks to various Bardot films, and it is in this role, as an orchestrator of other composers' work, that Pete comes off best. Apart from the frenetic *Paris B.B.* (with a supersonic vocal by Gloria Wood) the music consists largely of pastel-shaded scores, using rich, broad harmonies to offset the solos. Prominent amongst these is some good alto playing by someone who might be either Herb Geller or Bud Shank. A.M.

IN BRIEF

Pearl Bailey. "More Songs For Adults Only". Westport: *There's A Little Bit Of Bad In Every Good Girl: Confession: The Great Indoors: Singin' The Blues (Till My Daddy Comes Home): Love For Sale/One Man (Ain't quite Enough): Aggravatin' Papa: Nobody's Chasin' Me: The Begat: Show Me Love.* Columbia ♫ 33SX1247; ♪ SCX3320 (12 in., 25s. 9d. plus 8s. 4½d. P.T.).
 Pearl Bailey is less of a singer than an entertainer and this LP should be approached (as indeed one should approach most of Miss Bailey's records) as entertainment. The "Adults Only" title is no gimmick either. (After all, it's still forbidden to broadcast the lyrics of *Love For Sale* in this country). Anyway, the less narrow-minded of us will derive considerable enjoyment from Pearl's sardonic philosophy, for each song is ideally suited to her temperament. *Confession* boasts not only a good lyric but also a memorable melody line, and Pearl can always be relied upon to bring out the best in a song (sometimes just a little more than the lyricist intended!). I must admit I have not heard all of Pearl's recent releases, but this one seems to me to be the best in the current catalogues. A.M.

The Dukes Of Dixieland. "Marching Along With The Phenomenal Dukes Of Dixieland—Vol. 3." Tromboneum: *Lassus Trombone: My Home Town: Sdobeys Strut: Dukes Of Dixieland March: McDonough, Let The Trombones Blow/Bourbon Street Parade: When Johnny Reb Comes Marching Home: Eyes Of Texas: Glory To Old Georgia: With A Pack On My Back: Just A Closer Walk With Thee.* Audio-Fidelity ♫ AFLP1851 (12 in., 33s. 2½d. plus 10s. 9½d. P.T.); ♪ AFD5851 (12 in., 35s. 5½d. plus 11s. 6½d. P.T.).

Competent, polite music in what might be called the modern Dixieland idiom, with the usually harmonised passages and family squabbles in the free-for-alls. There isn't anything I would be desolated never to hear again, though the repertoire is mainly new, if not very varied. O.K.

John Coltrane With The Red Garland Trio. "The Soul Of Trane". *You Say You Care/Russian Lullaby.* Esquire ♫ EP229 (7 in., 9s. 9½d. plus 3s. 2½d. P.T.).

These titles appeared here first on an LP called "Soultrane" (Esquire Mono 82-089), an album which rates as one of the tenor saxist's best collections. Coltrane is certainly one of the most distinctive and individual of the newer jazzmen, complete with a vocalised tone and an unacknowledged approach to improvisation. He receives the sumptuous support of pianist Red Garland, Paul Chambers' bass and the lively drumming of Art Taylor, and together they tackle *Russian Lullaby* at supersonic but effective speed. A.M.

Steve Lawrence And Eydie Gorme. "We Got Us". *We Got Us: Side By Side: No Two People: Darn It, Baby, That's Love: Flattery/This Could Be The Start Of Something: I Remember It Well: Baby It's Cold Outside: Two Lost Souls: Harmony: Check To Check.* H.M.V. ♫ CLP1872; ♪ CSD1310 (12 in., 25s. 9d. plus 8s. 4½d. P.T.).
 Steve and Eydie make up one of the best husband-and-wife singing partnerships in popular music today, and this is easily their best pairing-off on record. First they are both good singers in their own right (as opposed to the admittedly more jazz-orientated Jackie Cain and

Roy Kral, whose success lies in their working as a team); secondly, the chosen songs are really excellent, and thirdly, Don Costa's accompaniments are near-perfect. Coincidentally, three of my particular favourites occur at the beginning of the second side, commencing with Steve Allen's *This Could Be The Start Of Something*, continuing with the amusing *I Remember It Well* (from "Gigi"), and ending with that Frank Loesser song which I have always enjoyed so much, *Baby It's Cold Outside*. (Incidentally I have always thought this worthy of inclusion in the repertoire of an intelligent jazz group). Suffice it to say that "We Got Us" is warmly recommended. A.M.

Ian Menzies and his Clyde Valley Stompers. *The Fish Man: Salty Dog (V).* Pye ♫ 7N2031 (7 in., 4s. 9d. plus 1s. 7d. P.T.).
 The *Fish Man* turns out to be Sidney Bechet's *Fish Seller*; Bechet gets the composer-credit, however, so no harm has been done. I hear the record is doing well with the public at large; good luck to it, even if it has little to excite the connoisseur. *Salty Dog* is a rowdy pastiche of Sharkey's record of the same number, with Fiona Duncan doing a convincing imitation of Lizzie Miles. I expect it was fun to make. O.K.

TECHNICAL REPORTS

B.J.—Elac Stereo Cartridge, 310. Price: £16 12s. 6d. plus £5 6s. 8d. P.T. Burne-Jones & Co. Ltd., Brunswick Road, Sutton, Surrey.

Maker's Specification.
 Frequency Response: 30 c/s to 15 kc/s, ±3 dB
 Interchannel Balance: ±2 dB
 Output Voltage: 1.5 mV per cm/sec.
 Cross-talk at 1 kc/s: Better than 24 dB.
 Resistance: 650 ohms per channel.
 Impedance 1 kc/s: 1,350 ohms per channel.
 Recommended Load: 37,000 ohms.
 Intermodulation Distortion: Less than 4%.
 Playing Weight: 3 to 6 grams.
 Compliance: 4.5 × 10⁻⁶ cm/dyne.
 Tip Mass: 2.16 milligrams.
 Stylus: Diamond, of 0.52 to 0.57 mil. radius.

The Elac cartridges are of German origin. I used to regard the variable reluctance, 3-pole mono design as one of the two best non moving-coil designs in the world.

The Stereotwin model is of entirely different design. The self-balancing, variable reluctance magnetic circuit has given place to a moving magnet system. But a similar delicacy of workmanship is still apparent.

I was disappointed with the first (experimental) model I heard some two years ago: it seemed to me to be too rough and peaky in the treble. The present 310 model has no such fault and the cross-talk characteristics are much better.

Its qualities can be readily appreciated from the response measurements that we made. For with this Elac, as with the American Pickering 380 and Dynaco which we tested at the same time, there is a close correlation between objective measurements and subjective listening assessments—which is a testimony in itself to the relatively small distortion content.

Good stereo focusing corresponds to high cross-talk figures; good tracking to high stylus compliance; and smoothness of response to low tip mass coupled with delicate damping.

	c/s	12 k	10 k	8 k	6 k	4 k	2 k
L	dB	-3	-4	-3	-3	-2	-1
Lx	dB	-20	-20	-19	-21	-24	-27
R	dB	-1.5	-1	-2	-2.5	-2	-5
Rx	dB	-23	-21	-21	-22	-21	-25
	c/s	1 k	500	250	125	60	40
L	dB	0	-5	0	-5	0	0
Lx	dB	-25	-15	-11	-13	-14	-11
R	dB	0	0	0	-1	+5	+1
Rx	dB	-24	-17	-22	-22	-22	-21

On both channels the response is very smooth, so much so indeed that it is difficult to detect any H.F. resonance; yet in view of the value of tip mass and the fact that the stylus radius is near ½ mil., there must be such a resonance below 10 kc/s. Evidently the damping is very effective, yet the channel separation remains high. And, of course, the use of ½ mil. stylus keeps the tracing distortion low.

All these features, as I have said, can be detected aurally as well as measured.

Another valuable feature is that the cartridge can, if desired, be safely used on a steel turn-



table, so small is the external magnetic field. This is one of the special virtues of the moving magnet system, compared with either moving iron or moving coil.

It is heartening to test a stereo cartridge as good as this. It means that the full acceptance of stereo even by the purist diehards (or, should I say, mono-hards) is certain. For it really is excellent stereo—when used, of course, with a good stereo amplifier and a pair of good loudspeakers. P.W.

The Quad FM Tuner. Price: £21 plus £7 17s. 6d. P.T.). The Acoustical Manufacturing Co. Ltd., Huntingdon, Hunts.

Maker's Specification:
 Tuning Range: 87.5-108 Mc/s.
 Sensitivity: 3 µV for 20 dB quieting.
 Output: 100 mV at 100,000 ohms impedance (to be terminated by 100,000 ohms across amplifier input).
 Consumption: 6.3 v 1.85 A; 330 v 27 mA.
 Values: 6B16; 12A7/ECC81; 6BH6; 6BH6; 6AU6; 6AL5/EB91; 12AX7/ECC83; neons Hivac CC11L; lamp 6.5 v 0.3A.
 Front Panel: Die cast, stove finished silvered fawn.
 Knob: Aluminium, stove finished matt brown.
 Dial: ½ in. perspex, machine engraved, filled white and red, and finished gold on a matt brown background.
 Dimensions: 10½ in. by 3¼ in. by 6 in.
 Weight: 6 lbs. (2.7 Kgs.).

A reader recently noted that the Quad FM tuner, although now some four years old, had never been the subject of a report in these columns. In case the omission should be



construed as indicating some inadequacy in its performance let me speedily state that it is no more than an oversight on the part of the makers and our technical editor who were both vaguely of the opinion that it had been reviewed. I trust that the reader in search of a good FM receiver will not be so casual, for as this report will show, few, if any, can match its high standards of appearance, performance and overall efficiency.

At the present time there are comparatively few first-class tuners available in this country although there is a wide choice in the "good average" category. In part this is due to the excellent coverage which the B.B.C.'s VHF/FM transmitters provide and in part to the desire to keep prices low in spite of the imposition of purchase tax. As a result of this tax the wise designer arranges for his tuner to receive its power from the tax-free main amplifier thus increasing the amount of money which can be spent on the basic receiver for a given total cost. This philosophy has been executed to near perfection in the Quad FM tuner which matches in style, size, finish and appearance the well-known Quad control units. There is a single large brown control knob for tuning alongside the solid perspex dial, rear engraved with frequencies from 87.5 to 108.5 Mc/s: scale markings are white and red against a background of brown and gold. The die-cast panel is stove enamelled silver fawn. A steel-grey cover removes with two screws and the tuner can be inserted through a 10 in. by 3 in. hole in a panel and the cover replaced to provide invisible fixing.

Almost all the electronic components are housed in a long chassis assembly supported 3 inches behind the panel on pillars: the valves, I.F. transformers, etc. are thus between the chassis and the panel and a removable bottom plate to the chassis gives complete access to the smaller components and provides a solid bushing for the cover retaining screws. The long chassis is in two distinct sections: one, approximately 1½ in. deep, lies immediately behind the control knob and contains the R.F. and frequency changer stages: the other shallower section contains the 10.7 Mc/s I.F. and discriminator components. A standard coaxial aerial socket in the side of the R.F. chassis is coupled to the 6BH6 pentode R.F. stage via a broad band fixed tuned transformer. A further tuned transformer takes the signal to a low noise triode mixer using half of a 12AT7 double triode valve. The second half is used as the local oscillator. Both the tuned R.F. transformer and the oscillator coil have negative temperature coefficient capacitors across them to counteract drift and take the form of long coils wound with copper strip. Inside their tubular supports slide low loss iron dust cores which are drawn in and out by a precision thread on the shaft of the tuning control. Six complete revolutions of the shaft allow an extremely exact setting to be obtained and the control has a delightfully "expensive" feel. A nylon cord drive moves the pointer along the 5-inch scale which is fitted with three movable coloured station markers set to indicate the local programmes.

On the I.F. chassis a 6BJ6 variable mu R.F. pentode and a further 6BH6 precede the 6AU6 limiter valve: they are separated by over coupled I.F. transformers to give a band pass characteristic and neutralised. The limiter is of the saturated pentode type with a short time constant grid circuit and part of the self bias due to signal is applied to the 6BJ6 as automatic gain control. A 6AL5 double diode is used in a Foster Seeley phase discriminator circuit in which the constants have been selected for lowest distortion rather than maximum output. Alternative de-emphasis circuits for British and export models

complete the signal path, but one of the cleverest parts of this tuner remains to be described. As is well known the output from a phase discriminator contains not only the audio signal, but also a D.C. component which drops to zero when the tuning is exact, rising in proportion to the amount of mistune and changing polarity with the direction of mistune. In the Quad FM tuner this D.C. component is applied to a cathode coupled phase inverter using a 12AX7 double triode valve. In the anode circuit of each triode is a small neon lamp which is placed below the dial. When a station is accurately tuned both neons are lit evenly. If the tuning pointer is moved slightly to the left the right-hand neon slowly dims and eventually goes out and vice versa—a clearer and more accurate indication would be difficult to imagine, for it continuously indicates the correctness of the tuning where the more usual displays only provide this information at the time when the tuning control is adjusted. One half of the 12AX7 in addition to its use in the tuning indicator is utilised as a reactance valve across the oscillator tuning coil to provide automatic frequency control.

Several of the valve types in this tuner, although standard, are unusual in domestic radio as they belong to a range that was originally developed for use in mobile equipment. Their use here enables a very high performance to be obtained with a very low power consumption—as far as I can ascertain less than that of any other tuner. Not only does this reduce the amount of heat generated, but it permits the tuner to be used with associated equipment of limited spare power: in fact by changing the value of one internal resistor full performance is obtained with an H.T. supply of less than 200 volts.

It is frequently stated that in equipment operating at very high frequencies wiring must be so direct that a certain amount of cramping and untidiness is unavoidable. After examining the inside of the Quad tuner one wonders how much of this is an excuse for faulty design, for here the important leads could scarcely be shorter and yet all the components are neatly laid out parallel with the sides, the wiring is dressed in the angles of the chassis and there seems to be room to spare in spite of the fact that a hundred odd parts nestle in this small space. Needless to say components, wiring and finish are first class throughout. The instruction book is a model of its kind. All components are labelled on a photograph and listed with a full description and there is a separate circuit drawing and panel template in a pocket at the rear.

Measurements made on this tuner showed that the quoted sensitivity was exceeded at the centre of the band with a slight fall off at the high frequency end (which is not used in Britain). Image rejection was 30 dB and I.F. rejection close to 80 dB. The I.F. bandwidth was 180 kc/s at the 6 dB points and 38 dB down at 400 kc/s. The de-emphasis was correct to within ± 1 dB. The scale accuracy was within the thickness of the pointer everywhere except at the extreme low frequency edge of the band.

On test, this tuner out-performed in some detail everything that was tried in comparison. In suppression of interference, ability to separate a weak station from an adjacent strong one and, above all, in ease of tuning it has no equal to my knowledge. In this fringe area (Oxford) I could obtain a usable signal from both Wrotham and Sutton Coldfield by holding a screwdriver on the aerial terminal; and using a dipole and reflector in the roof space it was consistently possible to resolve the signals from five different groups of B.B.C. stations. In addition I made use of the F.M. signal from the

French transmitter at Lille on 88.7 Mc/s, which is, I suppose, some 200 miles distant. It provides a readily identifiable signal midway in frequency between the two "local" B.B.C. stations and makes great demands on a tuner's ability to separate and hold a weak station. It is, of course, rarely good enough to be of programme value with any tuner (except when freak reception conditions prevail), but the proportion of "listenable time" is higher with the Quad than anything else I have tried; and in spite of the use of AFC, which simplifies correct tuning, there is a marked absence of any tendency for the receiver to jump from the weak signal to a neighbouring strong one. I can pass on a report from an American friend who tells me that in spite of the considerable "mark up" on this tuner in his country it holds its own with native products at several times the price. In view of its exemplary performance, I can well believe his statement and would conclude this report by congratulating the makers on their achievement. G.E.H.

The Rogers Master Stereo Control Unit and RD Junior Stereo Amplifier.

Prices: Master Control Unit—£35. RD Junior Stereo Amplifier—£28 10s. Rogers Developments (Electronics) Ltd., 4-14 Barmeston Road, Catford, London, S.E.6.

Shortly after the last war Jim Rogers founded Rogers Developments (Electronics) Ltd., and from its inception developed a range of excellent amplifiers, tuners and loudspeakers. Continuous technical improvements and good presentation created a great interest in the products, which are to be found not only in Europe but also in America, the Far East, Australia and New Zealand. With interests also in industrial equipment, Jim Rogers found that his first premises were too small and two years ago built a fine new factory where some 40 engineers and assembly staff work under excellent conditions. Like all small specialist firms producing high-quality equipment, the ratio of development and test engineers to assembly staff is high. I spent an enjoyable day at the new two-floor factory, talking to many of the staff and there is no doubt that they form a very happy, co-ordinated unit.

The development engineers under the technical guidance of Jim Rogers continuously strive to improve their products, keep a continuous check on the quality of the components used, and have some of the best test gear to check their designs. The benches are laid out so that there is a smooth flow of assembly, with preformed wiring that automatically falls into the correct position. Neatness of wiring has always been a characteristic of Rogers equipment, and in spite of moving several miles from his first factory to the present one, a number of the staff employed in assembling and wiring amplifiers and tuners willingly travel the extra miles so that they can continue their skilful trade.

Over the past few years many new amplifiers have come on the market, and due to improved and new forms of input signals, each manufacturer has found it necessary to add to and modify his circuit designs to deal with these inputs. Compare any good immediate post-war amplifier design with current models and the differences between the facilities offered are apparent. The introduction of high-quality broadcasting from FM transmitters, LP, mono and stereo records and first-class tape decks all brought their problems to amplifier designers, and every year or two it is essential to improve the overall performance and facilities. Some 18 months ago Jim Rogers decided that he would attempt to design a pre-amplifier that would offer every facility that one could wish, and at the last Audio Fair a few of the early production models were seen.