

AUDIO 8

MAKER'S SPECIFICATION
TECHNICS SB-5 LOUSPEAKER

1. Type	Three-way closed box
2. Drive unit diameters (mm)	220, 80 and 28
3. Frequency response (Hz)	38-35,000
4. Crossover frequencies (Hz)	800, 4,500
5. Nominal impedance (ohms)	8
6. Power handling capacity (watts)	110 music 75 DIN
7. Sensitivity (for 1 watt at 1 metre)	87 dB
8. Dimensions (mm)	315 x 580 x 318
9. Special features	Level controls on tweeter and mid-range

the diaphragm construction by varying the pitch of the honeycomb core in a radial fashion. In this SB-5 model they have additionally tackled the cost and weight problem and have hit on the ingenious scheme of attaching a small aluminium cone to the flat diaphragm at the balancing nodal circle and driving this aluminium cone with a normal 1½ inch (sorry, 37mm) voice-coil and magnet assembly. One sad fact remains to trouble the designer of this enterprise; it is not possible to maintain the desired standard of performance over more than a few octaves before other nodal disturbances raise their heads. Thus he is no more fortunate than those who stick with cones, because there is still the need to split the whole frequency range into two or three parts, to design units for each and to provide suitable crossover arrangements.

The Technics SB-5 is a three-way design with crossovers at 800Hz and 4.5kHz. The bass unit I have described is of 200mm nominal diameter and is surmounted by a similarly constructed 80mm mid-range unit which operates in its own enclosure within the cabinet. The 28mm tweeter mounted at the top reverts to the earlier form of construction with the voice-coil attached directly at the nodal point. There is a clear plastics plate supported on three legs in front of the diaphragm, presumably to provide some form of phase correction, although I would not have thought it necessary in this flat piston design. All three units are excellent examples of precision engineering built to a standard which would seem to challenge the asking price.

The mid-range and tweeter units are fed via substantial variable potentiometers flush-mounted in the baffle and calibrated in arbitrary figures around a 'Normal' position. Early listening tests showed a strong preference for the mid-range to be reduced to the -1 position and the tweeter to -2; all subsequent work was done at these settings. Above the level controls are reset buttons for three overload protection circuit breakers, and an overload lamp indication. In normal use all these are hidden behind a stylishly framed grille cloth retained by clips and only shadowy glimpses of the concealed technology can be obtained in certain lights. The cabinet is of 18mm chipboard covered in a wrap of simulated dark walnut plastic foil and painted black on the rear. There is no panel damping and bonded acetate fibre is used as an internal absorbent. One could say that any economies called for have been made in the cabinet and not in the units.

How they performed

On test, these SB-5 loudspeakers handled the full 100 watts output of a Quad 405 amplifier without apparent distress and the overload trips did not operate. Sensitivity seems a little above average with a clear forward projection and few people would tolerate this volume of sound in a domestic situation for long. However the impedance, quoted as 8 ohms, is in fact somewhat lower over part of the frequency range, for example around 120Hz and falls to 4.7 ohms at 3kHz. The quality of reproduction at normal listening levels is still rather forward and eager but the inevitable colourations, although present, are quite mild and controlled, producing a pleasingly

detailed and vital sound. There is some cabinet 'talk' though and the walls can be felt vibrating at ordinary volume levels. This weakness seems to degrade what could have been a very satisfying bass performance. As it is, the majority appeal will be to the popular end of the market, as most classical music lovers will seek the greater accuracy which perhaps a more detailed attack on the remaining problems might rather easily have

yielded. By exploiting the new technologies, the Japanese designers back at the Matsushita laboratories have moved nearer to the performance characteristics that we require in good loudspeakers and there is no question that in engineering and visual appeal they are more than capable of competing with our leading brands.

GEOFFREY HORN.

New Products

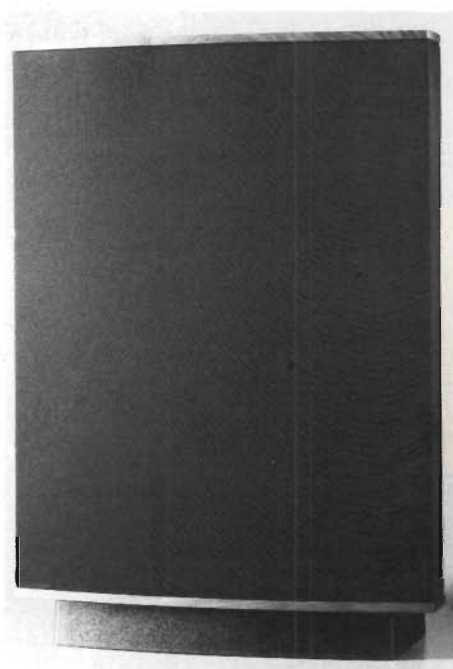


New Quad loudspeaker

Except for a tantalizing glimpse and pre-listen to a pair of prototypes at a London meeting of the AES (British Section) on June 12th, 1979 which we reported in our August 1979 issue, the audio world has been kept in suspense over the anticipated launch of Peter Walker's new electrostatic loudspeaker design. Now at last, after about 23 years during which the famous original Quad ESL has held a unique position without challenge, the new ESL-63 (price about £1,000 per pair) is on its way to the shops.

The transducer is again electrostatic, consisting of a very light electrically polarized diaphragm suspended between two sets of rigid and acoustically transparent electrodes. The difference

nominal impedance of 8 ohms. The amplifier used should be protected against accidental short circuits and have an output capability of 40V peak (100 watts into 8 ohms). The loudspeaker has two protection circuits to limit the maximum input voltage and short-circuit the input in the event of arcing. Further information may be obtained from the Acoustical Manufacturing Company Limited, Huntingdon PE18 7DB. Readers will see that our "Sounds in Retrospect" panel used the new Quad speaker for their listening sessions reported in this issue (page 103). We hope to review the Quad ESL-63 in the July issue.



Quad ESL-63 loudspeaker

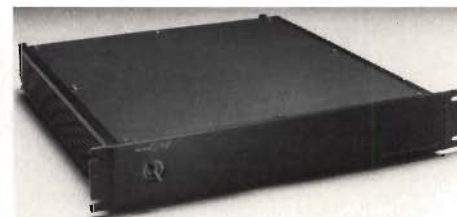
is that the electrodes are arranged as concentric circles to which the signal is fed through sequential delay lines. The sound pressure pattern which results is designed to resemble that of an ideal point source situated 300mm behind the plane of the diaphragm. Driving the diaphragm in this way produces a homogeneous sound source which avoids the phase problems of typical multiple driver systems and, of course, the associated cabinet effects.

The name of the Quad ESL-63 indicates that the design has been on the go since 1963 (and indeed we were given a look at the laboratory notebooks going back to that date on a recent visit to the factory, and they show that the basic design principle has changed very little over the years). The loudspeaker behaves as a dipole, that is the radiation pattern is figure-of-eight. It measures 929mm high, 660mm wide by 270mm deep including the base. It requires AC mains energization and presents a largely resistive

Sony Esprit

Sony (UK) Limited, Pyrene House, Sunbury Cross, Sunbury-on-Thames, Middlesex TW16 7AT have taken over a studio at Shepperton as a listening-room in which to demonstrate new products in their prestigious Esprit line. The massive APM-8 loudspeaker, of which we gave news back in July 1979, continues as the flagship of the Esprit no-compromises philosophy but is so expensive that Sony will only tell you the price on application. However the APM (Accurate Pistonic Motion) technique of driving a honeycomb sandwich construction diaphragm simultaneously at four nodal points has now been employed in a smaller loudspeaker. The APM-6 (£4,750 per pair) is a two-way system with the APM-8's 807cm² woofer and 5.8cm² tweeter mounted in an oval cabinet claiming lower cabinet resonances and better diffraction-free dispersion.

The Esprit amplifier line-up is of correspondingly elevated price and technical performance. It comprises the TA-E900 stereo preamplifier



Sony TA-N900 (top) and TA-D900 electronic crossover

(£1,250) and TA-N900 mono power amplifier (£800). The latter (two needed for stereo) has no negative feedback in the power stage, complementary high-speed power MOS-FETs in a non-switching circuit, pulse locked power supply and a combination cooling system with Sony's 'heat pipe' and a low-noise fan driven by a linear-torque motor. Power rating is 200 watts per channel.