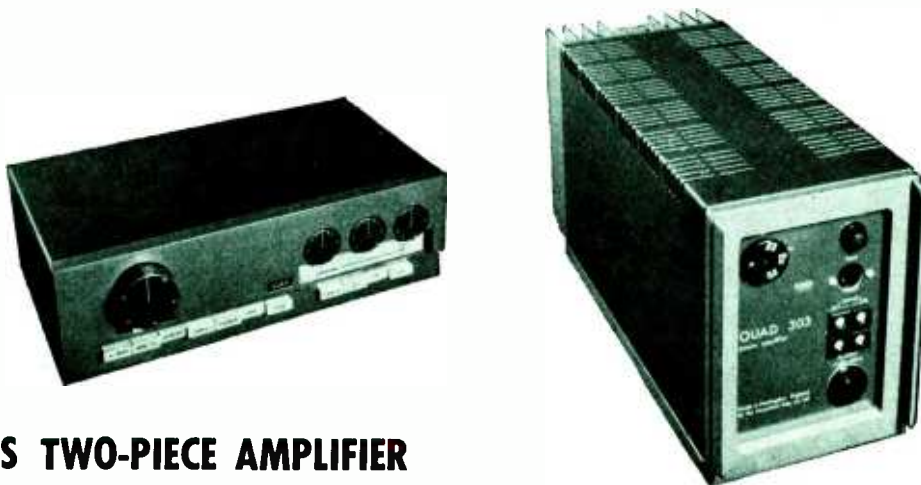


new equipment reports

THE CONSUMER'S GUIDE
TO HIGH FIDELITY EQUIPMENT



QUAD'S TWO-PIECE AMPLIFIER

THE EQUIPMENT: Quad 33, a stereo preamp-control unit. Dimensions: $10\frac{1}{4}$ by $3\frac{3}{8}$ by $6\frac{1}{2}$ inches. Price: \$180. Quad 303, a stereo power or basic amplifier. Dimensions: $4\frac{3}{4}$ by $6\frac{1}{4}$ by $12\frac{3}{4}$ inches. Price: \$220. Manufactured by Acoustical Manufacturing Co., Ltd., Huntingdon, England. Distributed in the U.S. by Harmony House, Inc., 197 East 76th St., New York, N.Y. 10021.

COMMENT: Although either the Model 33 preamp or the Model 303 power amp may be purchased separately and used with other makes of power amp and preamp respectively, the two units mate most conveniently with each other as the fore and aft sections of a complete stereo amplifier. In common with all two-piece amplifiers of whatever make, the basic or power amp may be installed out of sight, while the preamp or "front end" is intended for normal access location. To the average U.S. user unpacking a Quad for the first time, the novelty of its appearance and of the requirements for hooking it up and putting it into service may prove fascinating or annoying, depending on individual inclination. Everything about it is atypical, from the plug-in circuit boards (three of which are supplied "loose" and must be inserted by the owner) to the European DIN connectors (multi-pin types to which your U.S.-made gear must be related, via the included cable adapters). Even the output terminals from the power amp are unique, requiring that you solder the leads from each speaker system to special plugs which then jack into the amplifier. And so on.

Some of this need for fussing around can be justified on technical grounds: the hookups, once made, probably are stronger and more durable than usual (we have, in fact, commented in this magazine in the past on the flimsy mechanical connections provided on most audio gear), although some of it strikes us as window-dressing, or—in this day of product appeal

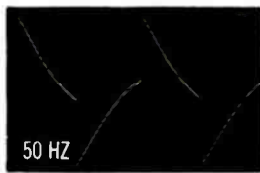
gambits—as "image reinforcement." Quad claims to offer nothing less than the best available equipment; certainly the products look like nothing else in the field, and a Quad owner—once he has figured out the hookup adaptations—can boast of owning a unique setup . . . down to the very styling of the unit, and the intransigence of its appeal vis-à-vis the U.S. market by such flourishes as the "E" (for "earth") rather than a "G" (for "ground") on one of its rear terminals, not to mention the wording used in the owner's instruction booklet. It's rather like buying a Jaguar with the steering wheel on the right.

The comparison, by the way, is fairly apt. For if the Quad is fairly difficult to become acquainted with and get into use, it also is a smooth, honey of a performer. As our tests indicate, both preamp and power amp either meet or exceed all performance claims within normal tolerance limits. For instance, Quad claims for the Model 303 a mere 0.1 per cent distortion for 45 watts output at 10,000 Hz; CBS Labs measured less: 0.067 per cent. Distortion, in fact (either THD or IM), over most of the response band at any output level was almost nonmeasurable, well down into the hundredths-of-a-per-cent range, and we had to expand the vertical scale of our distortion graph to show any amounts. Signal-to-noise ratio was outstandingly good at 95 dB. Power bandwidth, while not as spectacular as on some other high-priced amplifiers, did conform to Quad's specifications which, we ought to point out, express a deliberate design philosophy of rolling off the response below 20 and above 20,000 Hz. At that, the 303 produces its power bandwidth for rated distortion of 0.1 per cent from just below 20 Hz to 16,000 Hz. Frequency response remains within 2 dB from 20 Hz to 45,000 Hz.

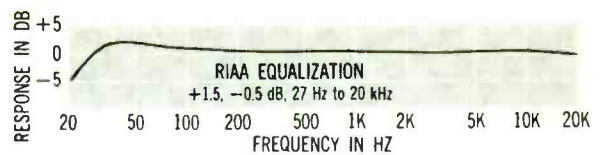
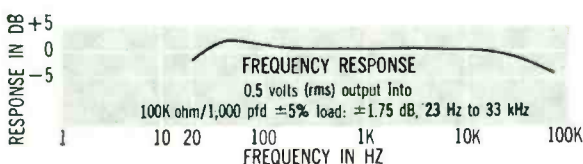
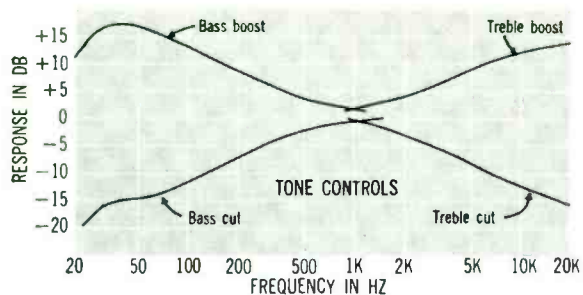
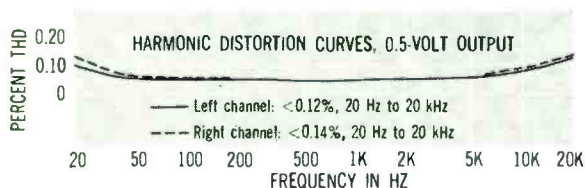
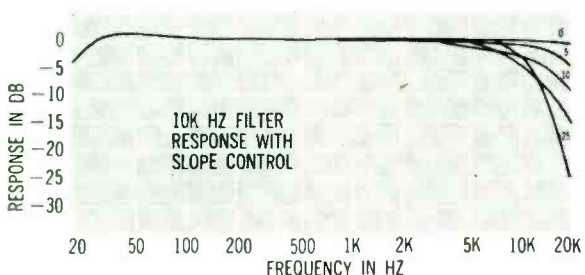
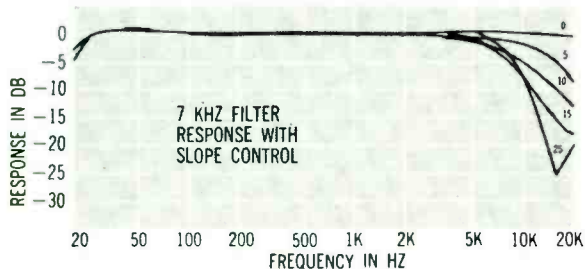
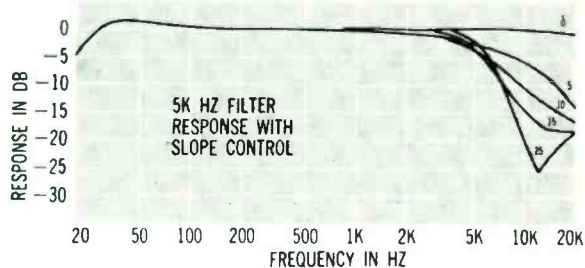
The preamp (Model 33) tested ran with no more than a few hundredths-of-a-per-cent distortion within its specified range. Although the lab could not duplicate the 90-dB signal-to-noise figure claimed, it

REPORT POLICY

Equipment reports are based on laboratory measurements and controlled listening tests. Unless otherwise noted, test data and measurements are obtained by CBS Laboratories, Stamford, Connecticut, a division of Columbia Broadcasting System, Inc., one of the nation's leading research organizations. The choice of equipment to be tested rests with the editors of HIGH FIDELITY. Manufacturers are not permitted to read reports in advance of publication, and no report, or portion thereof, may be reproduced for any purpose or in any form without written permission of the publisher. All reports should be construed as applying to the specific samples tested; neither HIGH FIDELITY nor CBS Laboratories assumes responsibility for product performance or quality.



Square-wave response



Quad 33 Preamp

Additional Data

Performance characteristic

Measurement

Output at clipping

left channel	1.63 volts at 0.13% THD
right channel	1.58 volts at 0.14% THD
(figures remain same for channels driven individually or driven simultaneously)	

IM distortion

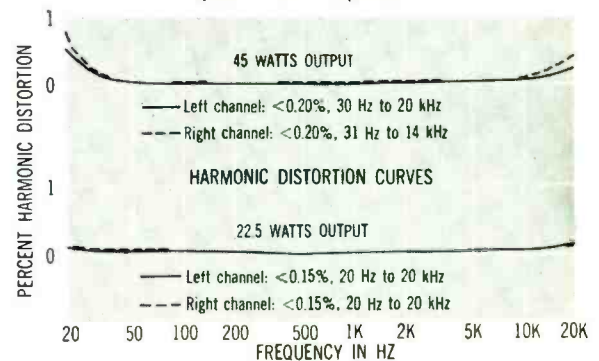
0.06% at 1 volt output

Inputs (for 0.5 volt out)

	Sensitivity	S/N ratio
Radio 1, 2	96, 96 mV	73, 73 dB
Tape (M, L, H)	380, 93, 950 mV	74, 61, 63 dB
Disc (M2, M1, C1)	5.5, 1.9, 27 mV	60, 54, 60 dB



Square-wave response



POWER DATA

Channels individually

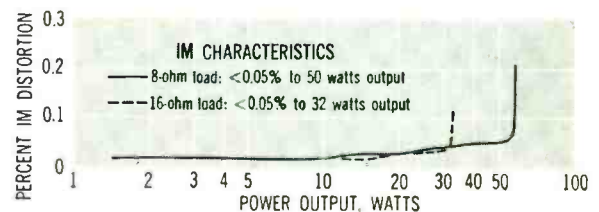
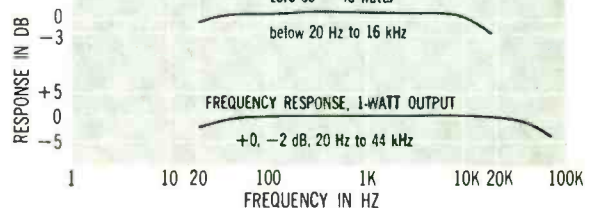
Left at clipping: 50 watts at 0.023% THD
Left at 0.03% THD: 50.5 watts
Right at clipping: 50 watts at 0.023% THD
Right at 0.03% THD: 50.5 watts

Channels simultaneously

Left at clipping: 40.9 watts at 0.064% THD
Right at clipping: 40.9 watts at 0.070% THD

POWER BANDWIDTH, 0.1% THD

zero db = 45 watts



Quad 303 Power Amp *Additional Data*

Performance characteristic	Measurement	
Damping factor	40	
Input characteristics (for 45 watts output)	Sensitivity 480 mV	S/N ratio 95 dB

did confirm that S/N on all inputs came to better than 60 dB, which is excellent by any standards.

The cosmetics of the Quad, while novel, do relate to the unit's functionalism. The large knob on the left of the preamp serves as the volume control combined with a power off/on switch. Directly below it a slide control adjusts for channel balance. The lower left row of push buttons is divided into two groups; the first three, colored orange, select mono left, mono right, or stereo. Pressing the two mono buttons at once sends the same mono signal through both channels (the preferred way to play mono discs with a stereo pickup). The four white colored buttons in this row select input signals: radio 1, radio 2, disc, and tape monitor. Radio 1 and 2 correspond to the auxiliary or high-level inputs on U.S. equipment. The knobs at the right control tone and filter action: bass control on both channels simultaneously, similar-acting treble control, and filter slope. The last knob is used in conjunction with the other set of push buttons below it which determine the frequency at which the filtering becomes effective. A fourth button in this group marked "cancel" deactivates all tone and filter action to return the preamp to flat response. This unusual versatility may not concern many users, although it could be of interest to professionals and to those who do a good deal of listening to, or dubbing of, older recordings. A final flourish on the front panel is the word Quad which lights up when power is turned on.

The preamp's rear panel contains the little "doors" that you lift to slide in the circuit boards for tape and disc playback, a grounding (pardon, earthing) post, a fuse holder, three AC sockets, and the signal input and output connectors. Of the AC sockets, two are convenience outlets for powering other equipment, including the basic amplifier; one is the main AC line connector. This last is a three-prong connector at the preamp end, although it may be terminated in a normal two-spade plug for insertion into a wall outlet. Of the signal connectors, four (the signal inputs and the tape feed) are 5-pin types which must be wired, via shielded cable, to standard U.S. phono connectors. The fifth (output to the power amp) is a 4-pin connector which may be wired directly to the 4-pin input on the Quad power amp via the reversible cable supplied. To use the preamp with a U.S. power amp you would, however, have to adapt the cable with suitable plugs.

The 303 power amp, in keeping with its function, has far less external hardware, all of which—happily—is located on one end panel to facilitate installation. The signal input jack is the 4-pin type, corresponding to the preamp's signal output jack. Speaker connectors are separate pin-jacks, one each for signal and ground sides of each channel, and color-coded for polarity. There's a fuse holder and an AC connector (again, it's a three-prong connector on the chassis, although a standard two-spade plug may be used at the other end to connect either to the preamp or to an ordinary AC outlet). Finally, the 303 has an adapter plug that permits running the amplifier on 110, 120, or 240 volts AC. A pilot lamp comes on with the power.

Either the 33 preamp or the 303 power amp stands as a top-grade performer in its respective class. The combination offers, at a premium price, correspondingly high-grade performance combined with stability, reliability, apparent longevity, and a distinctly "British-modern" appearance.

CIRCLE 144 ON READER-SERVICE CARD

BSR AUTOMATIC COMES WITH STEREO CARTRIDGE



THE EQUIPMENT: BSR McDonald 300T, a four-speed automatic turntable supplied with stereo cartridge and fitted onto mounting base. Dimensions: 15¼ by 14 by 7 inches. Price: \$44.50. Manufacturer: BSR (USA) Ltd., Blauvelt, N.Y. 10913.

COMMENT: When we first saw this new BSR we were skeptical. Four speeds, a good-looking mounting base, and a magnetic pickup—all for less than \$45? How good could it be?

The answer is, surprisingly good for the cost. What we have here is a cleverly integrated ensemble in which certain design compromises (such as the particular cartridge employed, and the fixed—rather than user-adjustable—antiskating force) add up to a given

level of performance which, while not the equal of other possible turntable/pickup assemblies costing considerably more, still is not as far below them as one might think.

A four-speed (16-, 33-, 45-, and 78-rpm) unit, the Model 300T may be used manually or as an automatic, depending on which of the two spindles (long and short, supplied) is used, and how you adjust the position of the over-arm. For instance, with the short spindle and the over-arm moved to the center, you can cue manually via the finger lift, and set the pickup down as desired. The unit will shut itself off at the end of the record. In this mode, by the way, you can—by swinging the over-arm to the right—get the machine to repeat the same record automatically. The