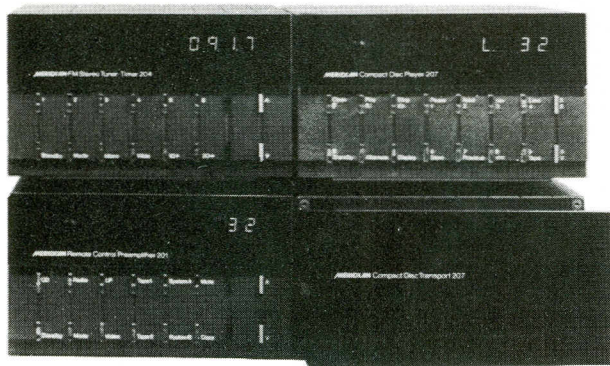


MERIDIAN 200 SERIES



THE two talented engineers/designers who co-founded Boothroyd-Stuart in 1977 have different scholastic backgrounds and areas of expertise, yet they share a common non-conformist attitude to the way high fidelity systems should be constructed and styled. In Geoffrey Horn's interview with these "two of our industry's clever young designers" which appeared in our September 1983 issue, Allen Boothroyd emerged as a multi-media design consultant responsible for Design Council Award winning

products ranging from the BBC/Acorn micro-computer to medical laboratory items as well as all the Meridian 'winners' and several other brand names in the hi-fi industry. Bob Stuart has a science and electronics background and concentrates his design effort on the 'innards' and the musical fidelity, whilst sharing Allen's preoccupation with ergonomic and visual excellence.

Among the first Meridian products were a succession of active loudspeakers which progressively refined the idea of combining a power

SPECIFICATION

207-PRO CD Player

Total harmonic distortion: 0.004%

Signal-to-noise ratio: 90dB

Input sensitivity: Line 500mV

Tape 500mV

MM/MC phono (optional extra)

Output: 300mV fixed; 600mV variable

Dimensions (W × H × D): 160 × 100 × 320mm

Weight: 8.5kg

UK retail price: £950.00, phono board £99.00, 209 Master Control £89.00

M30 Active Loudspeaker

Frequency response: 38Hz–20,000Hz ± 3dB

Maximum output: 106dB SPL

Sensitivity: 775mV (adjustable to 78mV)

Amplifier power: 2 × 70 Watts

Distortion: 0.01% 38–20,000Hz at all power levels

Drive units: 130mm bass/midrange, 35mm tweeter

Dimensions (W × H × D): 180 × 380 × 300mm

Weight: 7kg

UK retail price: £725.00 per pair; stands £85.00 per pair

204 FM Tuner/Timer

Tuning range: 88–108MHz

Sensitivity (50dB quieting): mono 4μV

stereo 23μV

Selectivity: 56dB

Frequency response: 20–15,000Hz within 1dB

Output level: 775mV

Dimensions (W × H × D): 159 × 100 × 310mm

Weight: 3kg

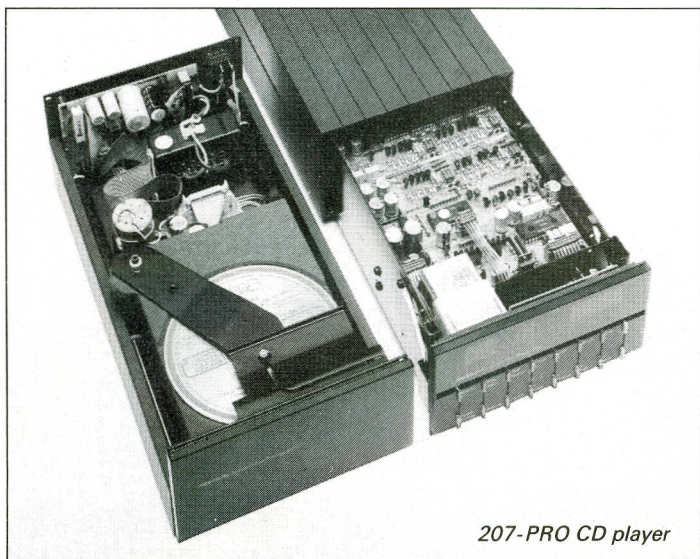
UK retail price: £495.00

Manufacturer: Boothroyd-Stuart Ltd., Clifton Road, Huntingdon, Cambs.
PE18 7EJ

amplifier (one for each driver usually) and loudspeaker inside a single comparatively compact enclosure, tailoring the amplifier response to match the known needs of the drive units and enclosure. Technically these Meridian loudspeakers must be voted a success (see for example GH's review of the M2 in August 1981) but the buying public have been slow to accept active loudspeakers—often for no better reason

than the fact that they already own an integrated amplifier and grudge having paid for a main amp stage which they would now bypass to couple to active speakers.

Having built their power amplifier(s) into the loudspeaker, Boothroyd-Stuart quite naturally went on to reassess the roles of the front-end and preamplifier units. This led to a number of ingenious and eye-catchingly attractive modular systems—



207-PRO CD player

and to more Design Council Awards—but proved even more hard to swallow for the notoriously conservative buying public, particularly in the UK.

However this latest 200 Series has already picked up awards in Japan and can be seen as still awowedly unique in concept yet ergonomically so user-friendly as to rival those Scandinavian and German brands popular with the design-conscious buyer. At present the Meridian 200 Series comprises the 207-PRO CD Player (£950.00 with built-in pre-amplifier/control unit), the 204 FM Tuner/Timer (£495.00) and the 209 Master Control (£89.00) for combining with any of Meridian's current three Active Loudspeaker Systems (M30 £725.00 per pair plus £85.00 for stands; M20 £1,295.00 plus £100 for special veneers; M100 £3,250.00 plus £250 for special veneers). For reactionary non-active buyers there are also the 201 Preamplifier (£550.00) and the 205 Mono Power Amplifier (£790.00 per pair).

For the purpose of this review I have been testing the 207-PRO CD Player (including its £99.00 optional extra MM/MC phono cartridge board), the optional 209 Master Control remote-control unit (£89.00) and the 204 Tuner/Timer along with a pair of the small M30 loudspeakers. This of course makes up a complete CD plus radio system, and can be used with any suitable turntable and/or tape deck.

207-PRO CD Player

Like previous highly acclaimed Meridian CD players, the 207-PRO is built around a Philips optical mechanism and electronics and is in fact an update on an earlier 207 design, taking advantage of the newer Philips 16-bit four-times oversampling chips. There are many resemblances to other Philips derivatives ends, because Boothroyd-Stuart have redesigned every component part which can be said to contribute to the mechanical and musical performance.

This is a two-box player aimed at ensuring a minimum of interference

between the disc drive (and laser optical system) and the sensitive signal electronics. The boxes have standard dimensions, with a 160 x 100mm front panel and a sizeable 320mm depth, and rubber feet. Styling is very pleasing, with plate glass fronts, though presenting rather a lot of narrow push-buttons which light up when functioning. The outer casing is a heavy aluminium tube with lengthwise channels and a rough matt-black finish.

One of the boxes houses only the CD transport and the system power supplies. The motorised disc drawer is more massive than usual (about 1kg) and uses a rack-and-pinion system running on stainless steel guides, the plate glass front closing against a soft front gasket for improved acoustical and mechanical isolation. A sprung diecast sub-chassis carrying the laser mechanism and servo circuitry is suspended on the drawer base via three-point Sorbothane mounts.

The electronics box can be mounted above, below or on either side of the transport box and is joined to it by a 25-way digital signal (plus power and control) connector. A horizontal metal screening panel divides the unit into two halves. The lower half contains the digital decoding and filtering stages whilst the digital-to-analogue converters and everything to do with analogue audio, including the full complement of control inputs and outputs, occupy the upper half.

The front panel is similarly divided into upper and lower halves. All the usual CD functions are provided but the self-illuminating control buttons do not look like the ones found on most domestic hi-fi equipment. There are two rows of eight buttons to cover the unit's extra functions as a preamplifier/control unit. In fact the number of control and display modes is again nearly doubled because one of the buttons is labelled "Alternative" and pressing this changes nearly all the other buttons to a secondary mode just like the Caps key on a typewriter or computer keyboard. So we have power on/stand-

by; CD drawer open/close; CD Play, Pause, Repeat, Stop, Track Skip, Track Selection (using the numbered keys), Track Omit or Cancel, Store (for up to 30-track programming), Index cueing (but not programming); source selection for CD, Line, Tape and Phono (if the optional phono board is fitted); volume up/down and mute; absolute phase reverse (CD only).

The upper visual display area provides the usual 4-digit indication of CD status. The normal (default) display shows the number of the Track being played but this can be changed by first pressing the Display key and then numbered keys giving a display as follows: 1. Default; 2. Total Time elapsed; 3. Track Time elapsed; 4. Total Time remaining; 0. or 5. briefly reviews the Volume setting; 6. reviews in sequence any track numbers which have been programmed; 7. Total Number of Tracks; 8. Total Playing Time; 9. permanently displays the Volume setting. Additional displays indicate Index number and mode—e.g. Repeat, Phase Reverse, etc.

The volume control is a precision 64-step resistor array attenuator with 0.25dB resolution, having a visual display of level from 1 to 64. The 'default' setting of the volume is 32 and that of 'mute' is 0. The phono module costs an extra £99 and I suppose it is a sign of the times that LP reproduction is thus treated as an optional add-on, whilst CD is given pride of place. Fitting the module on to the main printed circuit board is straightforward and it has a simple switch to match moving-coil or moving-magnet cartridges.

The rear panel of the disc transport box carries an IEC three-pin mains socket, power off/standby switch, a ground switch and the 25-way socket making all connections to the electronics box. The latter has pairs of input phono sockets for Line, Tape and Phono (with earth terminal) plus output sockets for Tape Record, Headphones and main signal—fixed and variable analogue as well as digital (coaxial). There is

also a Communications socket related to Meridian's plans for multi-room installations.

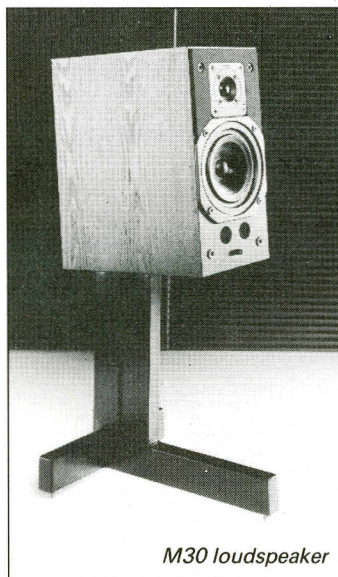
M30 Active Loudspeaker

This is the smallest and simplest in the current (third generation) Meridian range of active loudspeakers. However, thanks to the design tailoring made possible by the built-in amplifiers and electronic crossovers, it can realistically claim to be "full-range". In fact the designers see small dimensions as a virtue in a loudspeaker, helping it to radiate sound "in a more 'familiar' way—more like a speaking person". Certainly the reverse argument often applies in practice, and extra large enclosures can run into cabinet vibration colorations and produce too directional a forward beam. Here Meridian claim that their "interactive bass system achieves bass performance equal to a passive sealed enclosure of eight times the cubic capacity".

The M30 cabinet is constructed of 19mm panels with black ash as the standard finish. It measures 385mm high by 320mm deep, yet is only 180mm wide. The nominally 130mm paper-coned bass/midrange drive unit only just fits into the front baffle width, with the 35mm soft-dome ferrofluid-damped tweeter centrally aligned above it. The extra depth can be explained by the space taken up to house the sizeable power supply unit and the two separate 70W Class AA non-switching amplifiers fed respectively with high and low frequency signals from the precision crossover unit.

An added bonus provided by active loudspeakers, of course, is that apart from network equalisation to produce the design target tailored response it becomes relatively easy to offer the user a choice of switchable responses. Thus the rear panel of the M30 carries an 8-way DIL switch bank giving 10 assorted response settings to suit the given room acoustics or personal taste. This is all explained in the user's booklet with a response chart, which is duplicated on a plate at the back of each loudspeaker.

Room placement is a very important factor in relation to system response and stereo performance, and Meridian naturally recommend a sensible minimum spacing of 1 metre to side walls and 0.6m to the rear. Stands at least 40mm high are recommended and Meridian market well-designed stands at £85.00 per pair giving a few degrees of vertical tilt and excellent coupling to speaker cabinet and floor. Whilst stating that shelf-mounting cannot give best results, the designers have provided an EQ switch position to compensate for a shelf situation if this is found necessary in a given room environment. Further switches allow for connection to either two-wire or three-wire mains outlets as well as balanced or unbalanced (ordinary screened coaxial) signal leads. There are also six-pin sockets to be used with future network multi-room



M30 loudspeaker

applications for which the 200 Series is intended as the precursor.

The M30s are boxed as a matching pair along with the three-core mains leads and generous 12-metre long balanced twisted unscreened unidirectional signal leads (UK only), wire clips and an Allen key.

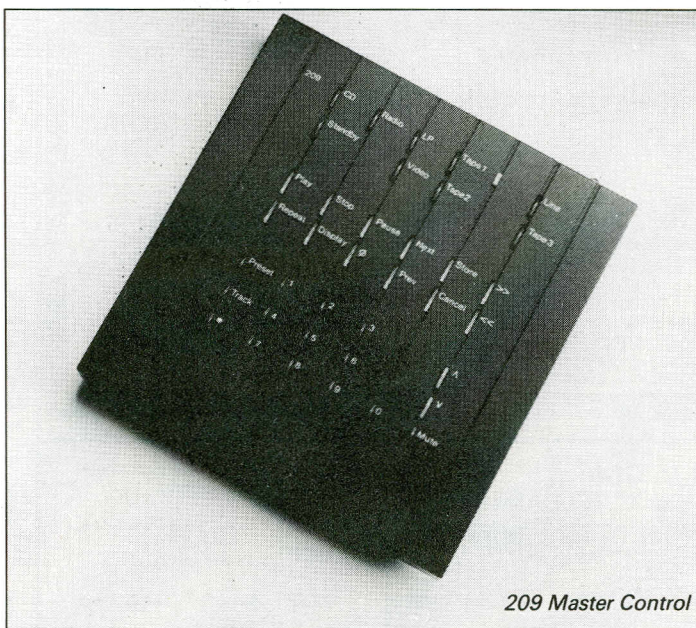
It is suggested that the AC mains supply should be left connected to the loudspeakers since they will stay in the 'standby' mode until an audio signal is fed to them. The standby mode consumes only a tiny amount of electricity and ensures that the amplifiers are ready to give immediate optimum performance. The 'music sensing' facility can be bypassed if preferred and it does generate a faint noise which I found to be just audible at a few centimetre's distance. A tiny two-colour green and red LED on the front panel indicates whether the system is in the standby or operating state. The push-on framed grille renders these lamps very inconspicuous but is acoustically transparent.

204 FM Tuner/Timer

This FM-only tuner has the same outer dimensions as each of the boxes of the 207-PRO CD Player. The family resemblance is further emphasized by the 204 front panel layout which exactly corresponds to the 207 with glass-fronted display area along the top half and two rows of eight self-illuminating push-buttons along the bottom. This family styling is a two-edged sword, of course, particularly when the designers strike out for a very individual shape and appearance. It encourages Meridian buyers to build up an all-Meridian modular system, yet it discourages the sale of individual items like this tuner/timer which, though it will make an excellent electrical match for any decent make of amplifier, etc., will very much look and feel the odd man out.

Tuning facilities are about as versatile as anyone could wish. There is a choice of three tuning methods: 1. Step which moves the tuner frequency up or down in the standard 50kHz increments; 2. Search which scans up or down in frequency and stops at any station whose signal strength exceeds a given "Threshold" level (This threshold level can be set by reference to a signal level display number from 1 to 15; set high to tune in only a few really strong stations, low to scan a larger number including weaker stations.); 3. Preset which uses the 1-6 numbered buttons to select any desired station directly, as previously stored using the Step or Search procedures. Up to 18 stations may be stored in the memory to be accessed by pressing a single button 1-6, or prefacing this with the 10+ or 20+ pre-scan button. Incidentally the store also memorizes whether mono or stereo mode was selected for each preset and an internal battery ensures that all data remain in the memory even when the mains is disconnected.

A Display button toggles the four-digit reading between four possible modes—preset station number, station frequency, time of day or



209 Master Control

Alarm time. The timer/alarm function is primed in the usual way as found on video recorders and the like. Once primed it will switch on to the selected station at the set time. When used with the 207 CD Player or 201 Preamplifier, system interlocking arranges that the complete system switches on with the tuner at the memorized station and volume setting.

The rear panel carries DIN sockets for 'network' connections to either the 207 or 201. Standard phono sockets are fitted for the audio signal outlets and there is a coaxial socket for 75-Ohms aerial connection and a three-pin IEC mains socket.

209 Master Control

I suppose someone just buying a basic Meridian system comprising only the 207-PRO CD Player and maybe a pair of the active loudspeakers might be tempted to go without this £89.00 209 remote-control handset. Yet I think this would be a mistake. Once the extra liberty bestowed by remote controlled operation has been experienced, there is no going back. If the 204 tuner is also used, or Meridian's planned new 200 Series products for Multi-room applications, then the 209 becomes pretty well obligatory.

Weighing in at nearly 1kg and measuring 160mm (6.5 inches) square, this is no elementary remote controller. It has 37 push-buttons and must have called for much thought to produce its reasonably idiot-proof layout. For a start, the 209 duplicates practically all the facilities on the 207-PRO CD Player except disc-drawer open. Indeed it provides one important facility not available on the 207 itself—fast forward and reverse search—and gives more direct play of a specific track number. Source selection is also immediate, for CD, Line, LP or Tape. If the 204 Tuner/Timer is included, the 209 gives remote selection of any of the 1-6 preset station numbers. The 209 operates equally well with

the 201 Preamplifier and has a number of buttons such as Video (an extra source) which are 201-dedicated.

Powering is by means of a single PP3 type battery and the infra-red control beam is radiated from the 209 top edge and travels by line-of-sight to a receiving eye on either the 201 or 207 (not the 204 Tuner, which receives its instructions from the preamp). A red lamp shows when any remote key is pressed and also acts as a battery life indicator.

System performance

I began by hooking the 207-PRO CD Player on its own to the pair of M30 loudspeakers and settled down to a CD listening session which proved to be really enjoyable. All the instruction booklets are very well written and easy to follow, but I think I must have received early copies because printing errors and faulty references to diagrams were a slight nuisance.

Using the Meridian stands and the recommended away-from-the-walls layout, sound quality was immediately attractive with any sense of listening to boring rectangular boxes at an absolute minimum. Cabinet coloration was insignificant and the effect was airy and filled out all the space between and behind the loudspeakers. Treble had upward extension without emphasis and remained unattenuated over a wide listening area. Bass extension was subjectively equal to all the demands of anything other than deep organ pedal notes. In a word, the reproduction was 'musical'.

Tested separately the 207-PRO CD Player was above average, as the Specification suggests. Signal-to-noise ratio measured well over 100dB and distortion was as claimed. Frequency response was practically constant over the 20-20,000Hz range but channel separation was uneven, measuring a good 94dB right-on-left but only 69dB left-on-right. Error correction was exemplary and

mechanical noise unusually low, thanks to that sealed compartment door. Proof against external shocks was only about average, so no hammering please, and track access time too was an unspectacular 2-4 seconds. The square-wave response was copybook for this 4-times oversampling digital filter format, indicating good phase linearity and fast attack.

As for the 207 regarded as a preamplifier, again the claimed ratings were checked out and found to be accurate. The IEC/RIAA equalization on the phono input module was absolutely spot-on except for a small amount of attenuation below about 30Hz. I must say, however, that LP reproduction somehow lacked the clarity of CDs and I am left undecided as to whether this was due to some fuzziness on LP or the special definition and sparkling realism achieved by this new CD player design.

The M30 loudspeaker cannot match its bigger M20 and M100 brothers for deep bass and high power levels, but in the context of normal domestic listening the built-in amplifier and drive units' power handling capacity should leave nobody feeling deprived. I was able to raise levels to window-rattling proportions before any stress could be detected and the tightness of bass sounds remained accurate.

Out of interest I examined the in-room response at various settings of the EQ switches. The 'default' setting produced a graph easily within the claimed ± 3 dB tolerance limits all the way from 20kHz down to around 50Hz with a smooth roll-off below this. Switching to the 'shelf-mounting' setting introduced a fair degree of additional bass attenuation, intended to compensate for the spurious (and uneven) lift produced by closeness to wall or shelf surfaces. The remaining equalization switch settings provided a choice of three turnover frequencies and four bass gain/boost amounts. However these differences were subtle and patient trial and error would be needed to establish the optimum combination for a given room: I suspect that most users will happily settle for the default (mid-way) setting.

Sensitivity and selectivity on the 204 Tuner/Timer were more than adequate for UK listening in all but the pockets of worst VHF/FM reception. The full 15kHz span of the FM format was covered, noise was low and stereo separation excellent.

Technically, therefore, these Meridian Series 200 units emerge from the tests with high marks. However, with the possible exception of the quite superb CD performance, this system's asking price of somewhere around £2,500 could be spent on a pretty good conventional line-up. A decision must hinge on ergonomics, range of control facilities (that timer is a notable bonus) and most of all the importance you attach to appearance. Visit a Meridian dealer, look and listen: the chances are that you will be converted to active speakers and these uniquely designed modules.

JOHN BORWICK.