



Innovation with
elegance – the
B&W DM2/II

**CRITICAL
OPINION**

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GRAMOPHONE

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In recent years one has come to look forward to new loudspeaker designs from B & W because they have become innovators in their use of materials, in their approach to design for performance, and not least in the style and appearance of their products. This aspect has resulted in the invention of some rather ribald nicknames for the DM6 and DM7 by their audio colleagues. The new DM2/II turns out to have a more normal appearance, so John Bowers and his team may be spared further examples of this industry humour for a while; what they will not be spared though is customers, for there can be no doubt that they have hatched another winner.

This latest B & W product was first demonstrated on the occasion of the company's receiving the Queen's Award to Industry in July and at Harrogate in September. It is a successor to the original DM2 which had a very successful career following its appearance in 1972. I mentioned in my Harrogate report that this loudspeaker is so completely new that I could see no reason for the Mk.II appellation. Now I find that, as so often happens, it started life as no more than that but as time passed it developed along lines which effectively do make it a new loudspeaker; so only the title remains. Since 1972, loudspeaker technology has grown apace and B & W's own team has made large strides in researching new materials and methods aided by wise company investment in sophisticated computer-controlled laboratory equipment. So it will come as no surprise that the three units produced for the DM2 II are fully representative of modern design, as were those of the DM7 before it. Unlike the previous model, all three units are fitted into the front face of the cabinet.

Uppermost is the mid-range driver, operating in the range 400-3,000Hz, which is a 100mm viscous elastic damped bextrene cone unit. Cone shape and front suspension have been optimized for minimal reflection and defraction, and the energy from the rear of the cone is absorbed by a filling of long haired wool in the tapered section of the cabinet behind it, partitioned off from the remainder. Immediately below, the high frequencies are radiated by a soft-dome 25mm tweeter whose dispersion characteristics at the crossover frequency are similar to those of the mid-range, so that there are no sudden discontinuities in a frequency area where the ear is particularly upset by them. The bass unit is again a damped bextrene design of 200mm diameter, with a long linear excursion of about 20mm and a soft suspension which puts the free air resonance at 22 and 24Hz on my two samples; an aluminium voice-coil former is used to assist heat dissipation. This unit operates in an enclosure of about 40 litres and there is a tuned port vent near the floor of the cabinet. Sheets of polyurethane foam are placed against all internal surfaces and the particle board cabinet has bituminous pads bonded to it to suppress resonances, in addition to internal braces. The in-box resonances then occur at 15Hz (vent) and 45Hz (cone) as measured in my samples.

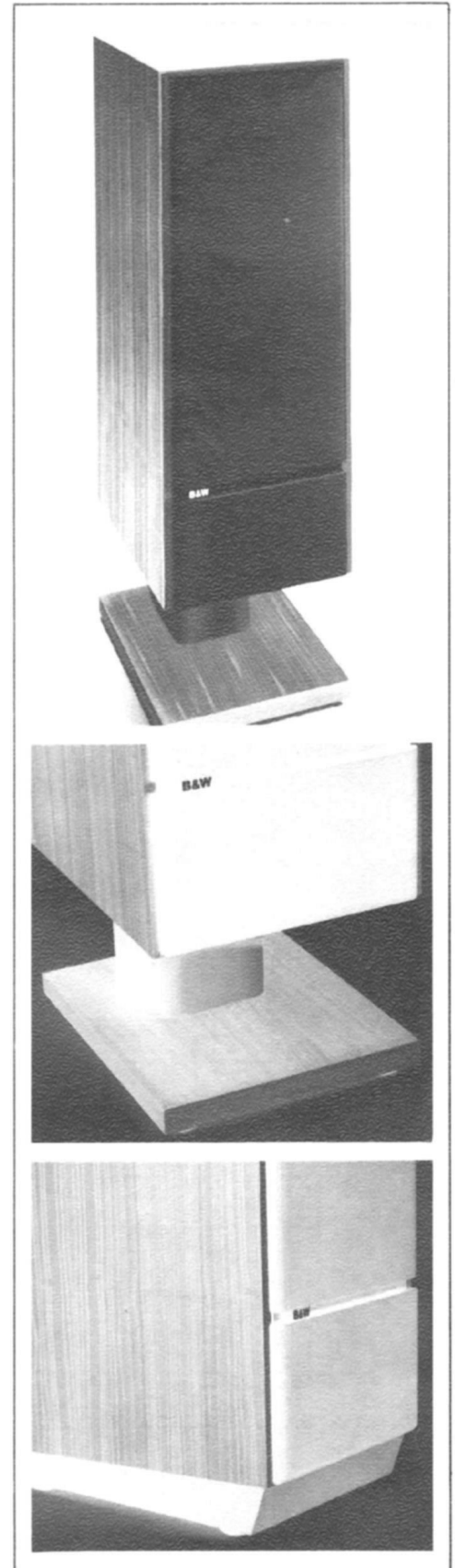
One of the loudspeaker design areas where computers rapidly demonstrate their worth is in the selection of a suitable crossover arrangement. By allowing integration of the characteristics of the individual units to provide a homogeneous whole without recourse to the cut and try finalisation previously necessary, they not only save vast amounts of time but can yield a superior result. In this case, third order Butterworth filters are selected and optimised to provide a level response overall in the design range of 50Hz to 18kHz. The disposition of the units and the phase characteristics of the filter are then calculated to provide good coherence

within a listening area having a 10° vertical and 40° horizontal spread.

To my eyes the external appearance of the DM2/II conjures up one word — elegance. Although unquestionably of modern design, it is restrained to a degree and moreover touched with attractive and interesting detail. In styling we are really considering two loudspeakers for they are available with either a short fat stand or a slightly angled plinth; these simple alternatives entirely change the visual outline and permit an easy alliance with many and varied styles of furnishing. Add to this the availability in standard finishes of teak, walnut or black ash (plus rosewood or white to order at slight additional cost) and even the most house-proud should be suited.

All this high technology and design expertise would count for nought if the end result was a loudspeaker with a disappointing sound. Listening still means more to me than a mass of measurements. Essential though tests are to the designer, and interesting enough to the investigative reviewer, it is the way the thing makes music that matters and the DM2/II does make music; beautifully. As with its appearance, this is one of those loudspeakers which are shy and retiring in character, never out to impress unless the music demands it. Natural on voices to a beguiling degree and with the smoothness and mellow flavour of a good vintage, and yet it is all there; there is bite when the trumpet blows hard and brassy exhibitionism when cymbals meet. Lower frequencies are well handled; both timpani and bass guitar seem realistic even when the loudspeakers are driven to a high level; perhaps a slightly hollow character is sometimes revealed, for example accentuation of the hammer sound on Brendel's recent Bach *Chromatic Fantasy* (Philips 950C 353, 8/78); but it is not of sufficient degree to be offensive. Perhaps the word inoffensive in its real sense is the one to apply to this loudspeaker. It has the ability to keep you interested in what is going on and its faults — for it must have some — are of a nature which do not divert attention away from the programme. During periods of listening extending over a number of weeks I've had much pleasure from my sample pair of DM2/II's and seldom felt the need to revert to my own reference to check on anything which didn't sound right. Full marks, B & W.

Geoffrey Horn



The option of a pedestal stand or wedge-shaped plinth provides a choice of two different "looks" in the furnishing sense — both of them in the modern idiom, but each with a character of its own.

B & W is one of the best known English companies specializing in the construction of loudspeakers. The "B & W sound" is unmistakably the "English sound", always regarded by enthusiasts as "the best". It is difficult and perhaps too ambitious to speak of the best sound as an absolute, considering the factors that come into play, but British manufacturers are renowned for a certain consistency (the malicious define it as stubbornness) in the layout of their loudspeakers which has found admirers throughout the world.

B & W is certainly one of the most typically English of firms: the various models are often listed in the catalogue for many years, which suggests evidence of a certain conservatism in production that characterizes many producers in Britain. However, the Worthing company has of late distinguished itself by a more dynamic approach. Considerable capital has been invested in research and new models have emerged: after the well-known DM6, the DM7 was presented, and tested in number 69 of SUONO with excellent results. Now it is the turn of a three channel bass reflex, the DM2 II, a new version (a completely different one, not just up-dated) of the ubiquitous DM2, which was first presented in 1972, and which evidently began to feel its age under the pressure of ever-increasing and fiercer competition.

Let us see how things have changed in five years.

Description

The DM2/II is an acoustic enclosure of dimensions which are certainly not microscopic ($71 \times 27 \times 33$ cm), its height is particularly noticeable. The aesthetics are sober but well thought-out: the cabinet is veneered with walnut of excellent quality (there are four other finishes available) and the front grille, which is divided into two parts, is covered in brown cloth. B & W have studied the design of the DM2/II so that it can be placed on the floor: for this purpose the well-organized and strong packaging contains a 20cm high pedestal which is screwed to the base with the special screws and kit supplied. The overall result obtained is very original, certainly functional and well made, but perhaps not to everyone's liking. After removing the front panels, we note that the drive units are mounted on the same vertical axis, with the tweeter placed between the midrange (at the top) and the woofer. However, the turning aperture of the reflex is off-centre with respect to the axis. The drivers are made by B & W and are notable for their excellent construction: they are fixed to the front by means of nut screws sunk into the wood. The woofer (ϕ 20cm), with a plastic diaphragm and synthetic rubber suspension, has the typical B & W die-cast open frame, with openings under the spider to avoid compression and distortion. In the front the flange is shaped in such a way that it can be mounted non-reversibly on the front panel. The resonance in free air is 30Hz; the central cone is made of soft plastic, giving the possibility of a considerable excursion (± 5 mm).

The midrange, with a diameter of 12.5cm, is characterized by a resonant frequency which is exceptionally low for a middle range transducer: 69Hz. The diaphragm has an exponential profile; it is made of plastic, with a central cone of soft plastic. The coil is 25mm; the magnetic unit is well dimensioned; the open frame is die-cast. This component works in its own separate enclosure arranged in the upper part of the inside of the cabinet.

The tweeter, with a treated cone, is the latest version of the famous B & W transducer used in

other models. It has a 25mm copper coil, wound in a single layer; the coil former is made of paper. Under the diaphragm there is a felt cone; the magnetic unit is exceptional ($\sim 19,000$ Gauss). The front flange is die-cast, self-centering on the upper plate of the magnetic unit.

The crossover is also exceptionally carefully and generously designed. Numerous components, all of good quality, are mounted on the heavy base-board. Coils wound on plastic formers with ferrite cores (except one in air), non-polarized PYE electrolytic condensers and others of the plastic film type are used. Strangely, in view of the class of the product involved, there are no level controls.

The typically English cabinet is of first-rate manufacture; it is lined internally with 4mm anti-rumble stuccoed plastic sheets. The structure is internally reinforced to about half of its volume. The midrange compartment is obtained by means of an inclined wooden partition rather than the usual supports of various types. Therefore, both the woofer and the midrange operate in irregular spaces, which helps to limit internal static waves. The damping material is replaced by 5cm and 2.5cm thick sheets; however, light synthetic fibre is used for the midrange compartment. In the space at the rear are the terminals for the banana plugs (truly English, but not always practical) and a safety fuse. On the whole, it is a very solid loudspeaker, free of vibrations, and extremely well made.

Some final observations. B & W now manufacture highly industrialized products, and are able to offer a product which is sound and well-designed even in its smaller details and yet not at an exorbitant price. The packaging itself denotes the care taken in manufacturing: the individual speakers are sold in pairs which can be "selected" by the buyer (two consecutive numbers). All the individual components and the filter are tested before assembly and their performance is noted with respect to the typical mean curve, within the production tolerances. Finally we must point out the excellent instruction booklet, which is well written and full of good advice (it is suggested that the buyer should listen to some particularly significant records, with reasons and comments), and it is accompanied by measurement certificates together with the response curve of the two models. The graph is, however, difficult to compare due to the absence of information on the measurement procedure, and it is mainly of value as a test certificate.

Comments on the results of the measurements

The efficiency is low: only 83.2 at 1 metre, with all the limitations that this involves. The frequency response in an anechoic chamber is exceptionally extended and uniform, and it can be summarized as ± 5 dB from 35 to 20,000Hz. The response in the listening room is also excellent, even if there is a certain fullness in the range from 100 to 300Hz, intended by the manufacturer, who has considerably attenuated the midrange and tweeter. The uniformity over the rest of the range is excellent.

The response of the woofer without the filter is exceptionally smooth, without the peaks typical of the woofer made of untreated paper; when cut, it falls gently below 300Hz and on the bass notes there is a slight fall below 100Hz, 6dB/octave down to 50Hz; below 30Hz the fall is 18dB/octave. The response of the midrange on its own is very extended (from about 70 to 12,000Hz); it is correctly cut from 350 to 3,500Hz, the frequency at which the tweeter starts.

The curves noted with pink noise at various microphone angles also uniform and extended: the attenuation in the medium and high ranges is extremely well contained.

The resonant frequency is equal to 57Hz, a value that is perhaps a little high for the class of product. The impedance modulus falls to 6 ohms in the low range, and this must be regarded as the nominal value of the DM2/II. The impedance angle (phase difference) takes unfortunately a very tortuous course: here again we can recognize a product of the English school. The polar dispersion is ample and uniform both on the vertical plane and (with some irregularities at 4Hz) on the horizontal: in the latter case we have about 170° at 8kHz and 80° at 16kHz at -10 dB below the level emitted on the axis. The tone bursts are, on the whole, fairly precise. The harmonic distortion with respect to both the 2nd and 3rd harmonics, is exceptionally well contained throughout the range: evidently this performance is typical of B & W, because we remember that the DM7 also had a similar performance. The distortion due to frequency differences is also very well contained, a little excessive only on the very high frequencies.

Listeners' opinion

After carefully evaluating the excellent performance of the DM2/II on the test bench, we were rather curious to examine its practical performance. So we tested it by listening to it for a long time in the two environments normally used for the purpose, after having fixed it on the pedestal supplied by the manufacturer. In both instances, we used a good 35 + 35 watt system and a pre/final pair of more than 120 watts per channel. (B & W advises the use of 25 to 200 watt amplifiers).

Classical Music

Berlioz: Symphonie Fantastique, Solti, Decca SXL 6571.

Stravinsky: Le sacre du printemps, Abbado, DGG 2530537.

Borodin: Prince Igor, Von Karajan, DGG 2530200.

After listening to the Symphonie Fantastique, we felt that the rest of the test would be more of a pleasure than a duty: the rendering of the DM2/II is, in fact, extremely natural and precise, and free of blurred tones. The reproduction, with respect to the B & W tradition, is not particularly spirited, but this does not mean that it is "anaemic". Compared to various competitors of a similar category, the DM2/II produces a very controlled and distinctive sound, which places it among the best products of its class.

Keyboard Instruments — Chamber Music

Chopin: Nocturnes, Weissenberg,

EMI 3C 165 10382/83.

Bach: Concertos for three harpsichords, BWM 1063/64, Redel, PDU AL 60001.

Bach: Various organ compositions, Walcha, Archiv 2565002.

Mercadante: Concerto for flutes and strings in E minor, Rampal, Scimone, Soloists Veneti, Erato, STU 70752.

After the excellent performance on symphony music, we noted another outstanding performance with chamber music, a type of music which is usually very much indicated for a speaker which is made in England. The DM2/II will not disappoint the music fans: here again we noted a naturalness in the transmission which allows the beauty of the pieces to be appreciated to the maximum. Among the characteristics most worthy of note, we must

mention the very marked selectivity, which allows the smallest details in the grooves to be heard. We felt that on reaching maximum volume, perhaps a tiny bit of extra clarity is needed.

Jazz

Mingus: Mingus Moves, Atlantic QD 1653.

Weather Report: Tale Spinning, CBS 80734.

With jazz, we entered a different field: how would the B&W fare? We can assure our readers that in this case also the DM2/II gives a distinguished performance: the result is perhaps not as spectacular as can be obtained by more specialized speakers, but it is enough to satisfy even the most demanding ears. The percussion stands out perfectly; it is clear and easily identifiable among the other instruments. A drum solo tempted us to test the power, so we raised the volume almost to maximum . . . the DM2/II seemed to stand this well so we raised the volume further. This time we reached the limits of tolerance, and prudence advised a return to normal volume. We tried Morton Subotnik's "Touch" as the ultimate test; compared to some competitors the DM2/II's performance at full power is not exceptional, as is traditional with many English loudspeakers, but it may be regarded as average.

Pop, Rock, Vocal

Diana Ross: Diana Ross, EMI 3C 06497508.

Stevie Wonder: Song in the key of life,

EMI 3C 98261/63.

Pink Floyd: Wish you were here,

Harvest 3C 064-96918.

The different types of modern music, although making less demands on reproduction by comparison with classical music, serve to provide new elements of judgement, and above all the element of versatility. Stevie Wonder and Pink Floyd are no problem for the B&Ws: the classic English sound of the new generation which distinguishes it goes well also with pop, but there is something missing in the deeper bass range. If one really wants to adapt the rendering exactly to one's own taste, a slight adjustment to the tone of the amplifier (bearing in mind that the speaker is unfortunately not fitted with controls) will satisfy the most varied demands (the loudspeakers handle accentuated tones well).

Disco Music

Giorgio Moroder: From here to eternity,

Duriam DAI 30272.

Cerrone: The golden touch, Malignator 773807.

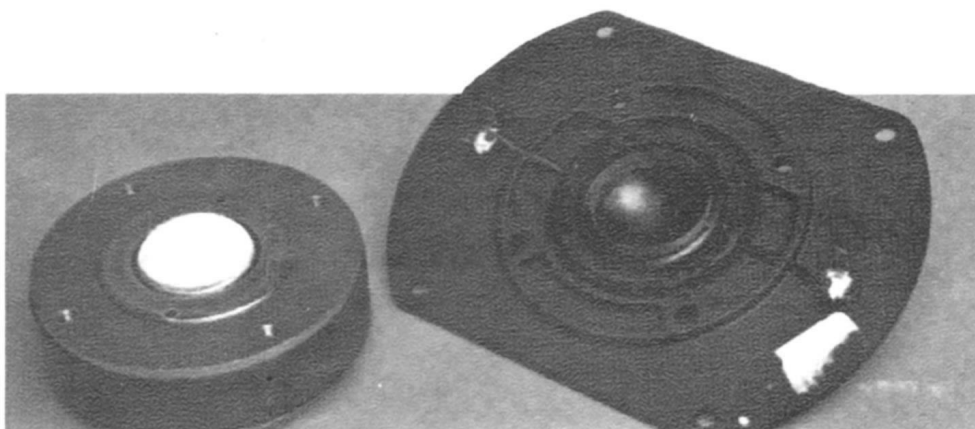
Musique: Keep on jumpin', Prelude PRL 12158.

Even though it is unlikely that the probable buyer of the DM2/II will buy a pair of DM2/II's to listen to disco music, we nevertheless wanted also to submit the new B&Ws to this last tour de force. To be honest, it is recognized that this type of music is rendered in a too "clean" and "delicate" manner (considering the high levels which are necessary) to interest fans of this genre, who will certainly want to feel the percussion in "Keep on jumpin'" literally explode around them. The DM2/II's, however, set with the volume not too high and with the addition of just a touch of "bite" obtained from the tone controls, do themselves credit, even if we feel that they can make a Paganini enthusiast a lot happier.

Conclusions

Once again we have to compliment B&W. Their DM2/II, the latest creation of this English firm's new line (after the DM6 and the DM7), without doubt represent a giant step forward after the already good DM2. Also it is an excellent example of how it is now possible to construct a highly industrialized product which is both accurate in detail and capable of giving an excellent performance in the measurement tests and listening tests when behind the commercial aspect there is some solid experience and real and enthusiastic employment of men and means.

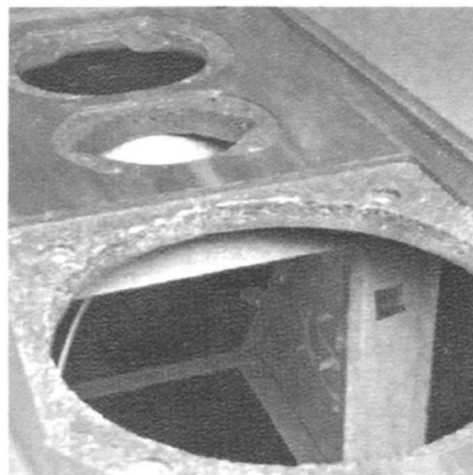
In every respect the DM2/II definitely belongs to the latest generation of the English school. Even if its general, and more especially its tonal set-up remain in line with the traditional school, its technical and aesthetic innovations will certainly increase the number of audiophiles capable of appreciating it. In conclusion, it is a product to be held in great esteem, even for systems of a high level, a product well worth its price.



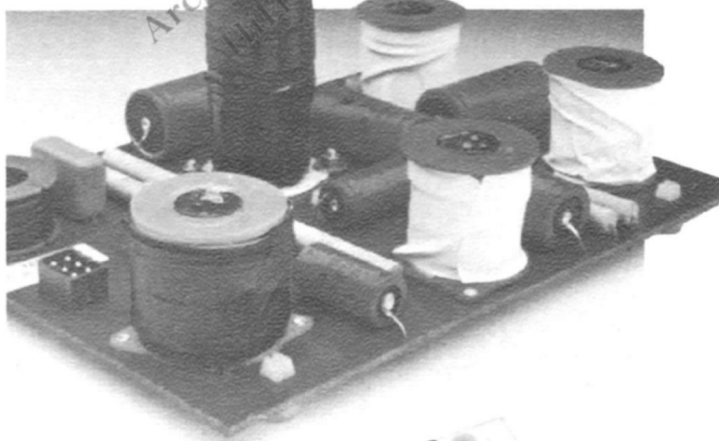
All the drive units used in the DM2/II are of impeccable manufacture: here we see the dome tweeter dismantled into its two main parts.



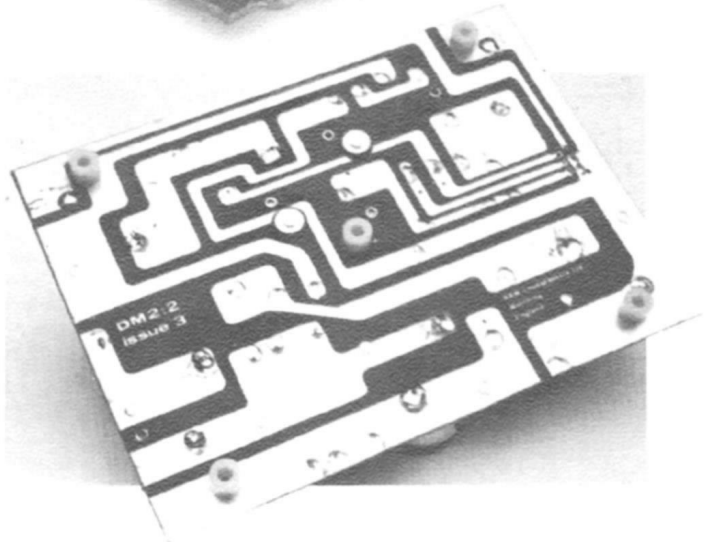
The midrange is also an excellent unit, it is characterized by a resonant frequency which is extremely low for a middle sound transducer: only 60Hz.



The cabinet of the new B&W system is extraordinarily robust and free of vibrations: among other things, we noted the use of stuccoed plastic anti-rumble sheets.



The DM2/II can certainly boast of having the most complex and sophisticated crossover circuit in its category, and one of the most "generous" in any category. All the numerous components, of notable quality, are mounted in an orderly fashion on a printed circuit board of generous proportions. The cut-off slopes are very steep by comparison with some from the traditional English school. Woofer and tweeter are 18dB/octave, the midrange is 12dB on "low" and 12dB/octave on "high". Strangely, there are no level controls: perhaps B&W wanted to economize on components . . .

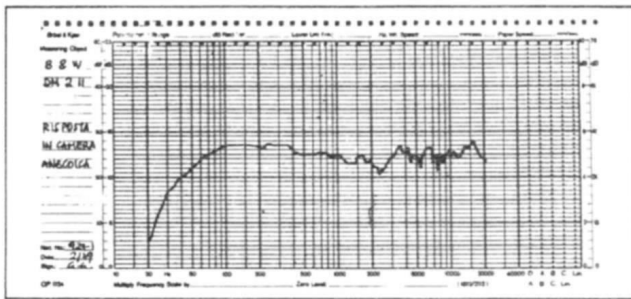




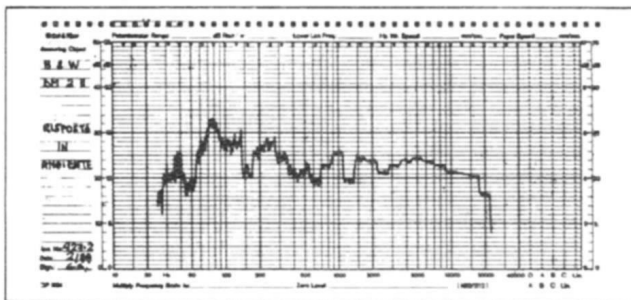
1) Efficiency

Average s.p.l. at 1 metre with 2.83 volts at input.
 Pink noise: 83.2dB.

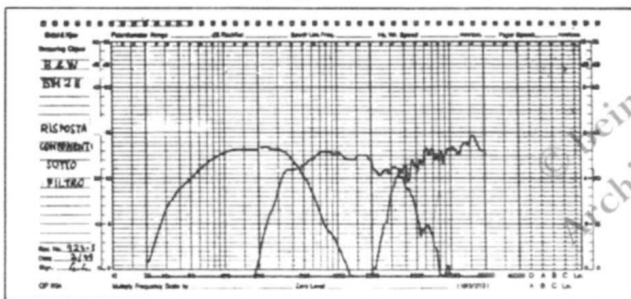
2) Frequency response



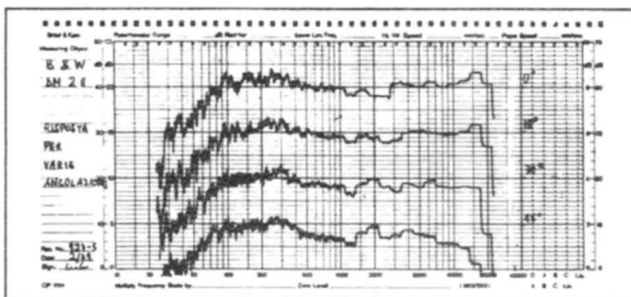
2a — Anechoic room — Microphone at 1 metre. Voltage applied to terminals 2.83 volts.



2b — Listening room — Pink noise filtered in thirds of an octave. Microphone at 4 metres. Voltage applied to terminals 2.83 volts.



2c — Of the individual loudspeakers with crossover filter.

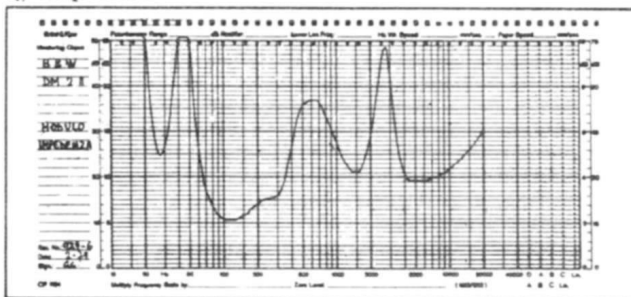


2d — Anechoic room — Frequency response with pink noise filtered in thirds of an octave at various microphone angles.

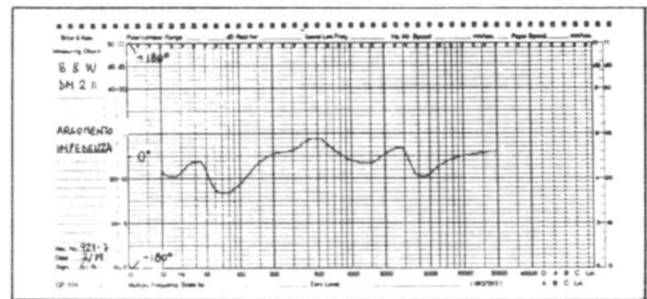
3) Resonant frequency

Resonant frequency = 57Hz.

4) Impedance



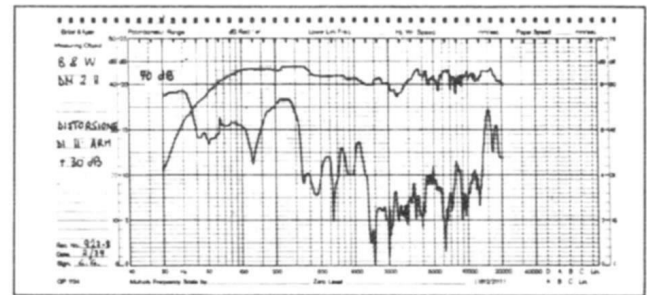
4a — Modulus.



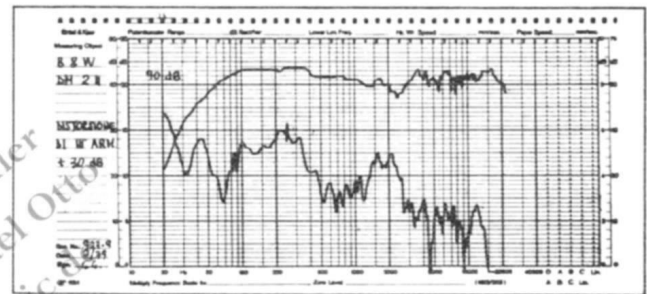
4b Impedance angle (phase difference).

5) Distortion

Harmonic distortion

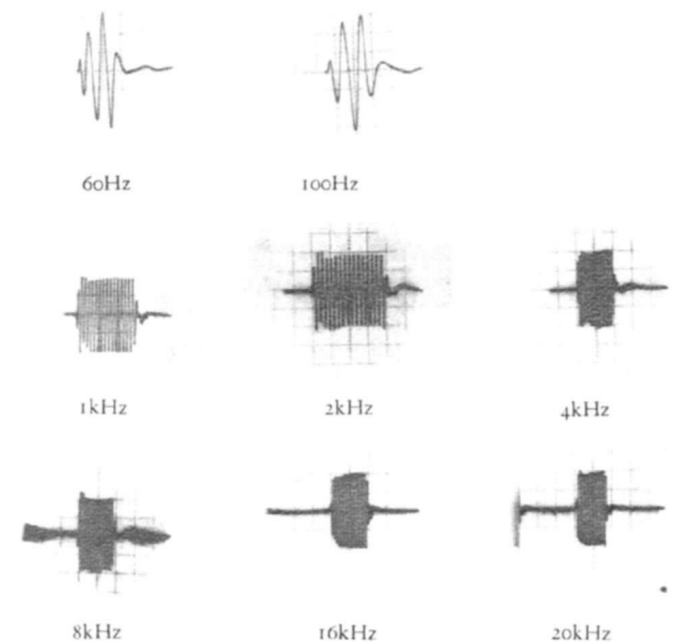


5a — 2nd harmonic — reference level 90dB pink noise.



5b — 3rd harmonic — reference level 90dB pink noise.

6) Transient response. Tone bursts



THE JINGLE COMPOSERS

AUGUST 1979 • \$1.25

Stereo Review

• SPECIAL SPEAKER ISSUE •

The British-made B & W DM2/II is a compact, three-way speaker system designed to deliver exceptionally smooth, uncolored sound under normal home-listening conditions. The woofer has an 8 inch diameter cone, made of Bextrene, whose long-throw suspension allows an excursion of 0.8 inch. It is housed in a vented (ducted-port) enclosure. There is a crossover at 400Hz to a 4 inch Bextrene-cone midrange driver. The midrange is in an acoustically isolated compartment within the cabinet, and its rear radiation is absorbed by a tapered section filled with wool. The second crossover, at 3,000Hz, is to a 1 inch soft-dome tweeter. The three drivers are aligned vertically, with the midrange unit at the top and the tweeter between it and the woofer.

The crossover network of the B & W DM2/II is a relatively sophisticated design, using third-order Butterworth filters in all sections. It has a total of 19 elements. The balance of levels among the three drivers is set by the system and driver design, and there are no user-adjustable controls. A subpanel, set into the rear of the cabinet, contains the connectors and a protective fuse.

The B & W DM2/II system has a nominal 8 ohm impedance and is rated to deliver a 95dB sound-pressure level (SPL) at 1 metre with a 9 volt input (equivalent to about 10 watts). The frequency response is specified as 50 to 18,000Hz ± 3 dB, and the polar response of the system is rated at ± 2 dB over 40° horizontally and ± 1 dB over 10° vertically. The DM2/II is recommended for use with amplifiers rated to deliver 25 to 200 watts into 8 ohm loads.

Laboratory measurements

The integrated frequency response of the B & W DM2/II in the reverberant field of our test room agreed very closely with the individual frequency-response curves enclosed with the speakers. Although the latter were presumably made under

anechoic conditions, the small response variations occurred at approximately the same frequencies and with the same amplitudes we measured.

The overall response was impressively smooth, within ± 3.5 dB from 40 to 20,000Hz. There was a slight low-frequency rise (about 1 to 1.5dB in the 100Hz region), and we found a small high-frequency emphasis in the uppermost audible octave — at its maximum, +4dB at about 15,000Hz. The only other departure from a straight-line response was a slight down-and-up "jog" of about 2dB between 1,000 and 2,000Hz in the operating range of the midrange driver.

The bass distortion, measured with constant input levels corresponding to 1 and 10 watts into 8 ohms, was very low down to 50Hz, where it measured about 1 per cent at 1 watt and less than 3 per cent at 10 watts. It rose fairly rapidly at lower frequencies, setting the effective lower limit of the system response at about 35 to 40Hz.

The impedance reached a minimum of 5 ohms at 120Hz, but at most audio frequencies it was at least 8 ohms, with the maximum impedance of about 20 ohms occurring at 50 and 3,300Hz. The system sensitivity was exactly as rated, with 2.83 volts (1 watt) of random noise in the midrange producing an 85dB SPL at a 1 metre distance. The tone-burst response was uniformly good, with no sign of extended ringing at any frequency.

Comment

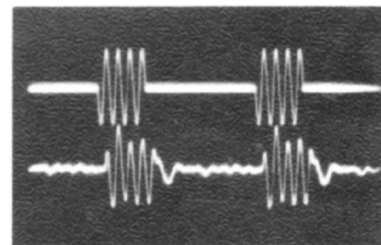
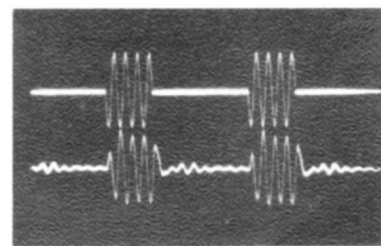
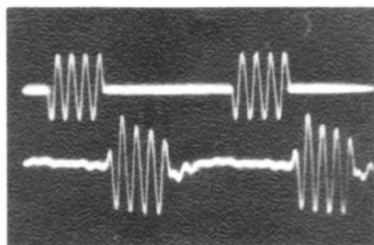
The B & W DM2/II has the smooth and uncolored sound quality that is consistent with its measured performance. The quality was one of naturalism, with none of those spectacular or flashy characteristics that can cause one to sit up and take notice but which prove to be irritating after a time.

There was a lack of bass heaviness, and as a result voices were reproduced with a very natural quality. However, there was no lack of bass itself (except in

USA

comparison to some very much larger speakers); the DM2/II was able to shake the room in much the same way we expect speakers twice its size to. The stereo imaging, for those who consider this to be a critical part of speaker performance, was excellent. Indeed, with the exception of the very deepest bass in the octave below 40Hz, we found the DM2/II systems to be a match in every way for the best large speakers we had on hand for testing — all of which were much larger and more expensive than the B & W DM2 II.

Tone-burst response of the DM2/II was uniformly good, as shown by oscillograph photos at (clockwise) 100, 1,000, and 10,000Hz. Upper traces are the input signals, lower traces the speaker output.



1/1979/f 4,25/b.fr. 70

plaatbesprekingen
klassiek - volksmuziek -
cabaret - jazz - pop

hifi-tests

maandblad Luister

HOLLAND

On a number of earlier occasions I mentioned that for obvious reasons, I did not want to review B & W loudspeakers myself. In the meantime, however, so many readers have asked me to reconsider that decision, because they think I shall not abuse their trust and shall write exactly what I think despite a long-standing friendship with John Bowers. Therefore, I decided to review the DM2/II anyway.

Of course there is the danger (not fair) to become extra critical, so as to prove my independence and integrity. My thoughts about integrity helped me to realise that it cannot depend on any one article. Those who wish to think the worst will do that anyway. I also asked the opinion, however, of Peter van Tricht, who contributed earlier to Luister, and who is moreover hard to get behind a typewriter to put his thoughts into words.

Peter van Tricht

Listening to many kinds of music it was not difficult to conclude that the DM2/II is a very good loudspeaker indeed. Because my reference consists of an enormous pair of three-way systems with two 250 litre Briggs corner enclosures, B & W mid-range units (from the DM6) and Ionofanes for treble, electronic crossover and Quad 405 and 303 amplifiers I think I am justified to say I am spoiled. The more so because my pickup cartridge is the incomparable Ortofon MC-20.

Despite all this, I did not feel any disappointment and even "suspected" the DM2/II of better bass than provided by my own giants! That does not mean that I did not find anything to criticise. I am of the opinion that that would be impossible with any loudspeaker, but there could not be any doubt about really very high quality.

While listening to many records I had a suspicion of slight edginess in the upper mid-range. For example, with the clarinet in "Der Hirt auf dem Felsen" on Harmonia Mundi (by Elly Ameling), and sometimes on a few records with string music. There is, however, also the strong possibility that, as in the past, I was misled by the fact that so many records are not as good as we thought they were, and the combination of MC-20 and DM2/II reveals that mercilessly. Listening to a Philips record of the Haydn "Name" symphonies — rightly praised for their natural string sound — in contrast with many examples of so called hi-fi, this trace of edginess completely disappeared. So I ended by fearing more for records than for the loudspeakers. I feel that the same thing happened as at the time my brother judged the DM7's. With the increasing quality of the programme material the loudspeaker never failed to make this improvement audible. About the mid-range there remained a slight feeling of some "wooden" sound in some music, never unacceptable though. Bass was solid and went quite deep, and left very little to be desired, especially the double bass in string orchestras. The stereo image was very stable but might have had slightly more depth, but there one can be deceived again by the recording.

Summarizing, I think I am justified to say, especially with the price in mind, the DM2/II is an excellent loudspeaker and one has to be very finicky to find matters that can be criticised. Criticism can only be applied to minor matters, because the total sound is so nicely clear, well defined and has such wide response.

Jan Kool

In general I do not find it difficult to agree largely with Peter van Tricht. I lived longer with the DM2/II's, however (about two months, and used them almost daily). I differ slightly about the mid-range, because I feel that is exactly where the great improvement over its predecessor, the DM2a can be found. One can almost feel how the experience gained in the development of the DM6 and DM7 is incorporated. Nothing is perfect in this world so the future will have further improvements in store for us. But here we are only concerned with the present. The complete absence of any listening fatigue after prolonged use, I am inclined to attribute to a freedom from colouration in the mid-range and a well balanced treble with very pure transient reproduction, and a very extended response. My point of criticism will sooner concern the bass, although I have the idea that my remarks will be about properties that will be considered qualities by the public.

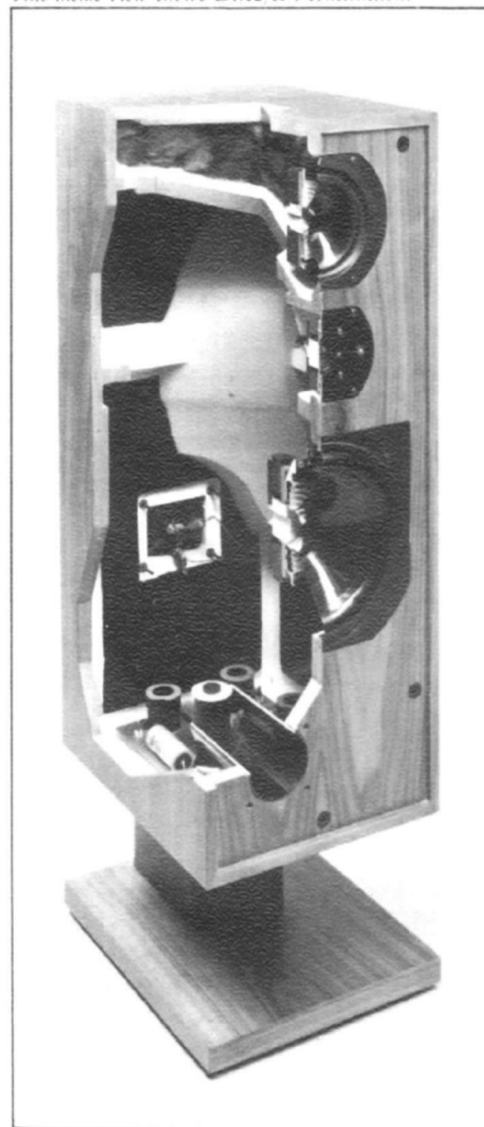
Bass is undoubtedly very generous and goes down very far — dependent on position as always — but there is perhaps more from the loudspeaker than really present in the programme material. This is often a pleasing effect and I was never unpleasantly aware of it. But it is not quite "the truth and nothing but the truth". This was confirmed when a short while ago I received the definitive manual from the factory. It included several response curves in different rooms and in different positions, with the DM2/II on its column or the lower plinth. All showed a rising tendency in the bass. In a corner position there would be definitely too much. A position somewhat free from corners and walls and preferably on the column will in most cases give the best results. I prefer the column over the plinth, because coupling to the floor will be less and the height of mid-range and treble units will be ideal, but because the bass is solid, well defined and never boomy, it may very well often lead to a preference for this loudspeaker.

The system is a genuine three-way one, with crossover points at 400 and 3,000Hz. The bass unit of 17cm effective diameter (mid-range 10 and treble 2.5cm) "looks" into a space of 47 litres with a tuned pipe which is, however, not a bass reflex in the traditional sense, because pipe resonance is kept very low, so that this outlet serves more to avoid the unpleasant side effects of a totally enclosed system of this size. The result is a specified bass down to 45Hz, but I could determine that 40Hz could still go up to 19 volts, 35Hz to 16, and 30Hz 13 volts. The really useful bass goes on far below specification. Pulse behaviour, when observed on the oscilloscope, proved to be very good over the whole frequency range, which was no surprise after having heard how pleasant transients in music were handled.

Altogether a worthy successor to the very popular DM2a, a clear gain in mid-range and treble quality, in the bass perhaps less well defined as in the transmission line of the 2a, but warmer and deeper. The total sound better balanced, more natural and definitely warmer. The rising impedance in sub-sonic regions will help to prevent overload from indecent (not audible) noises from records and/or turntables. The efficiency is a reasonable average for high quality speakers and there is no necessity at all for special audio artillery. In the average room, a good 2x35 watt amplifier will easily let it come to life. It can handle bigger ones, but that will only seldom be necessary.

In its price range an exciting loudspeaker which I wish the same success as the DM2a.

This inside view shows DM2/II's construction.



UK

The B&W DM2/II appears similar only in name to the Mk I. The latter was definitely not one of my favourite speakers and I think the Mk II is a big improvement over the earlier model. As with KEF, computer research is now being used to aid development and this has been applied to the Mk II. A complement of three units has been used. Bass loading is the normal reflex variety, heavily acoustically dampened with foam. The enclosure is asymmetric internally, divided into two sections to give the mid-range unit a wedge-shaped cavity filled with long-haired wool.

Cabinet finish and construction can only be described as immaculate, very non-resonant and also heavy! The review samples were finished in dark walnut veneer, including the base of the matching stand. A two-part grille has been fitted, retained by ubiquitous nylon studs. The overall appearance, I thought, was stunning and, if nothing else, the DM2 certainly looks the part.

In my opinion, the reflex bass loading technique employed on the DM2 is very difficult to optimize. Although there are some reflex speakers on the market offering quite amazing amounts of bass noise for their size, they are frequently very inefficient, ridiculously room-sensitive, with poor power handling and the bass *quality* of the average oil drum. This wasn't the case with the DM2, which didn't offer a very extended low frequency performance, but was comparatively tight and clean in these regions. This is a compromise I find much more acceptable. Furthermore, the speaker was not overly room-sensitive and could even be placed near corners — on stands — without too much emphasis. However, for my listening tests I used the speakers about four feet from a wall. In this position, stereo image was the best. By today's standards, efficiency was about average and quite high levels could be generated in a room of 57m³.

For a moving coil speaker the DM2's are substantially neutral, particularly in the critical mid-

band. There was some upper-bass emphasis and an additional dulling of extreme treble. This resulted in a "warm" balance on full range programmes such as orchestra, but it rarely showed up on individual instruments.

In many respects, these speakers reminded me of the subjective performance of the Sansui 317 amp because they seemed to compress the source dynamics and transients. At low levels I thought their performance dull and bland — admittedly to a small extent — but this changed quite markedly at higher volumes. In fact, the harder the speakers were driven the more I liked them. This is an effect I've encountered before with several speakers: they seemed to need hard work before they got going. This may not be a very scientific way of putting it, but it is the perceived effect.

Good spread

The stereo image was one of the best aspects of the DM2's performance, giving a good spread of sound without "phasing", diffuse qualities. Ambience was well-revealed when necessary. The overall performance of the system was largely the sum of its constituent parts. If this description seems obvious, remember it's not always the case. Component interaction is often completely unpredictable and some items just do not go together.

This system does go together, though I have a few reservations: a bit too much warmth and lack of attack and excitement. This is largely due to the amp and speakers. Each would probably be best off taming the aggressive qualities of other equipment. In most respects the 317 and the DM2 match quite successfully.

The one item that stood out was the ATR; this would be a good match for virtually any system. With its synchronous motor and compliant suspension, this deck is not unlike an economy Linn (that name had to creep in somewhere), and would compare favourably with a Rega Planar 3.

Some doubt hangs over the Formula Four arm, which worked well with the Elite but could create problems if the cartridge were changed for a low compliance moving coil. If future upgrading is envisaged, the Haddock would be a safer choice.

The component not mentioned so far is the "Stylift": it worked perfectly. I strongly recommend it to anyone craving for an auto-lift-off.

In conclusion, this is a system for those who would prefer to be lulled by soothing music, rather than for those who want to recreate the Sex Pistols in their listening room.

Height

cabinet 710mm (28in)
stand 188mm (7½in)
plinth 60mm (2½in)

Width

270mm (10½in)

Depth

330mm (13in)

Weight

22kg (48½lb)

Finish

Standard: teak or walnut veneer. *Special:* satin white or veneers of rosewood or black ash.

Frequency response

±3dB 50Hz to 18kHz at centre of listening window.

Sensitivity

9 volts r.m.s. for a s.p.l. of 95dB at 1 metre.

Power handling

Suitable for amplifiers 25 to 200 watts into 8 ohms.

Overload protection

1.6 amp fuse protects the system.

B&W Loudspeakers

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