

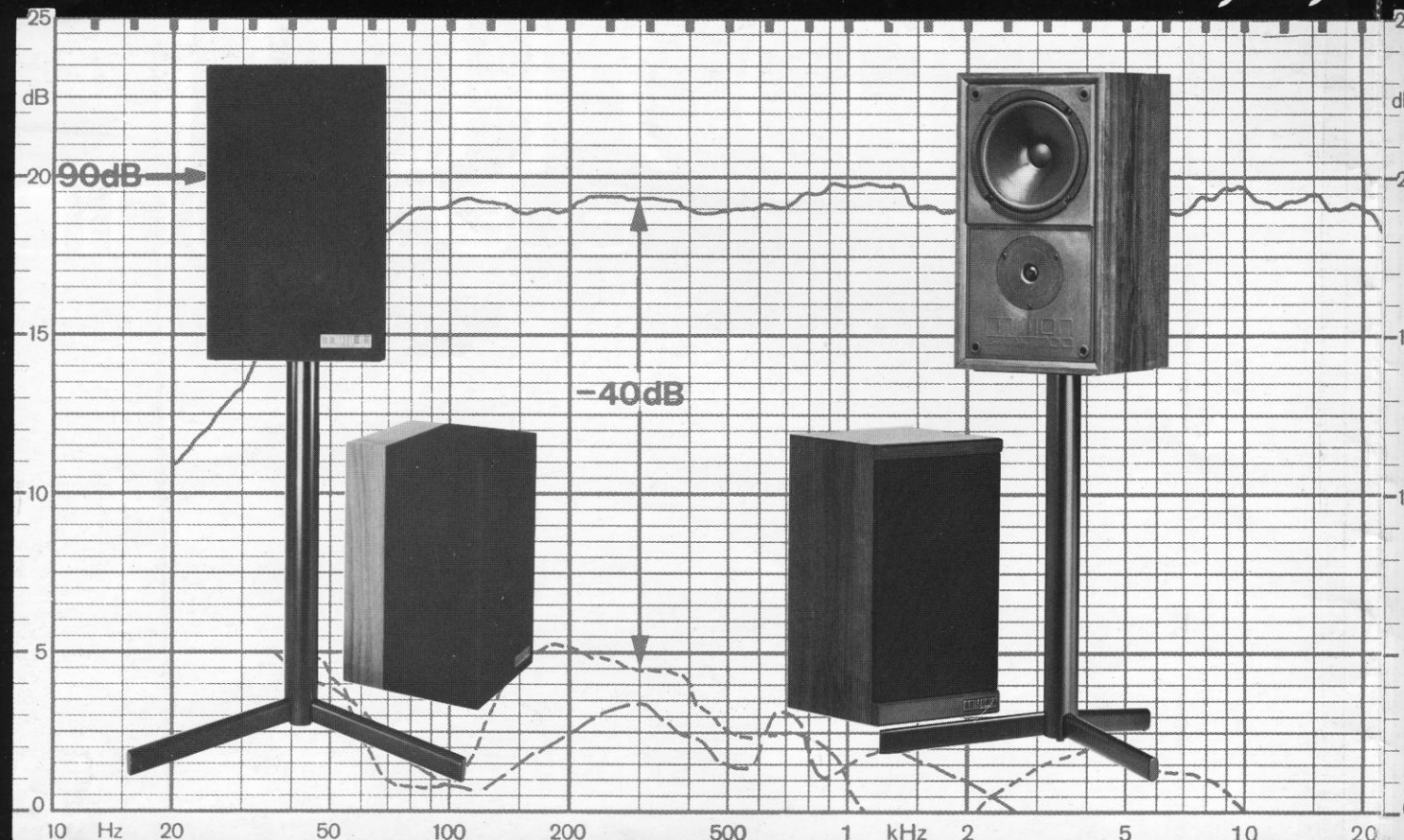
mission

ELECTRONICS



MISSION 70

MISSION 700 *Leading Edge*



Mission 70

1984's "Loudspeaker of the Year" in Britain; HI FI CHOICE "Best Buy"; winner of "Decibel d'Honneur" in France; acclaimed "Wunderkind" in Austria, the Magnificent 70 is an extraordinary state-of-the-art product.

The design objective was to manufacture the most compact loudspeaker system which was nevertheless capable of reproducing the extremities of the audible frequency range. This resulted in a true hi-fidelity speaker system capable of handling musical materials with exceptional dynamic range, including digital master tapes, and remaining linear at all listening levels. Here we should point out that many loudspeakers can only create the excitement and dynamics of music when played at loud levels. In fact, it is a tragedy for the consumer that most hi-fi systems sound no better than a transistor radio when played at low levels. Indeed, this is why cheap amplifiers offer a "loudness" control to artificially compensate for these inherent weaknesses, and it requires dedicated manufacturers to avoid such complex pitfalls.

The 70 is manufactured of sandwiched construction to dampen and distribute enclosure resonances and uses sculptured MDF for the baffle board. The bass unit is a high quality 7" Mission product with a unique cone design and a quality 19mm ferrofluid damped dome tweeter. The filter is a full multi-component design incorporating Mission's own electrolytic capacitors and low saturation inductors. The driver geometry is inverted in the novel Mission style resulting in superb three dimensional stereo stage. The total design is carefully integrated to result in a wide bandwidth system free of unwanted resonances, distortions, frequency response anomalies and colorations.

As far as measurements are concerned we would briefly touch on the objective performance of the 70. Whereas the competition for the 70 has an irregular frequency response often as poor as ± 5 dB, the 70 measures flat to within ± 2 dB! When measured off axis it exhibits no mid band cancellations and at 30° off axis the response is still ruler flat. The modulus of impedance is very smooth, does not drop below 6 ohms and does not suffer difficult phase angles, which in turn makes the loudspeakers very easy for any amplifier to drive. Measured at 90dB, 2nd, 3rd and all other harmonic distortions remain below 0.5% – approaching amplifier specifications! and some 10 times better than most other loudspeakers on the market! The efficiency is 89dB.

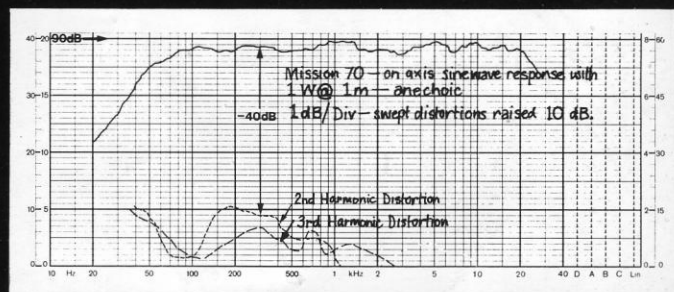
The 70s are recommended for use on bookshelves or stands and with amplifiers ranging from 20W to 75W per channel.

Mission 700 Leading Edge

The original Mission 700 was a landmark in the history of loudspeaker design such was the acclaim it received and the success it achieved. In fact it is common knowledge that before the 700, budget loudspeakers were simply 'boom-boxes'. Now, with the benefit of many years of research and refinement, Mission are able to introduce a unique, sophisticated, and high technology bookshelf system – the 700 Leading Edge. Advanced technology has been used to develop an exceptional 7 inch bass-mid drive unit. Shaped pole pieces and an ultra-fine voice-coil gap combine with a rigid high mass cone, to produce an unusually

extended bass response. Refined cone geometry and damping, with progressive hyperbolic suspension affords both high power handling, and inherently low coloration. This bass-mid unit is complemented by a ferrofluid cooled 19mm dome tweeter. The system is capable of handling musical material with exceptional dynamic range, including digital masters, and remains linear even at modest power levels – unlike many non-linear systems which, at low level, sound little better than a transistor radio.

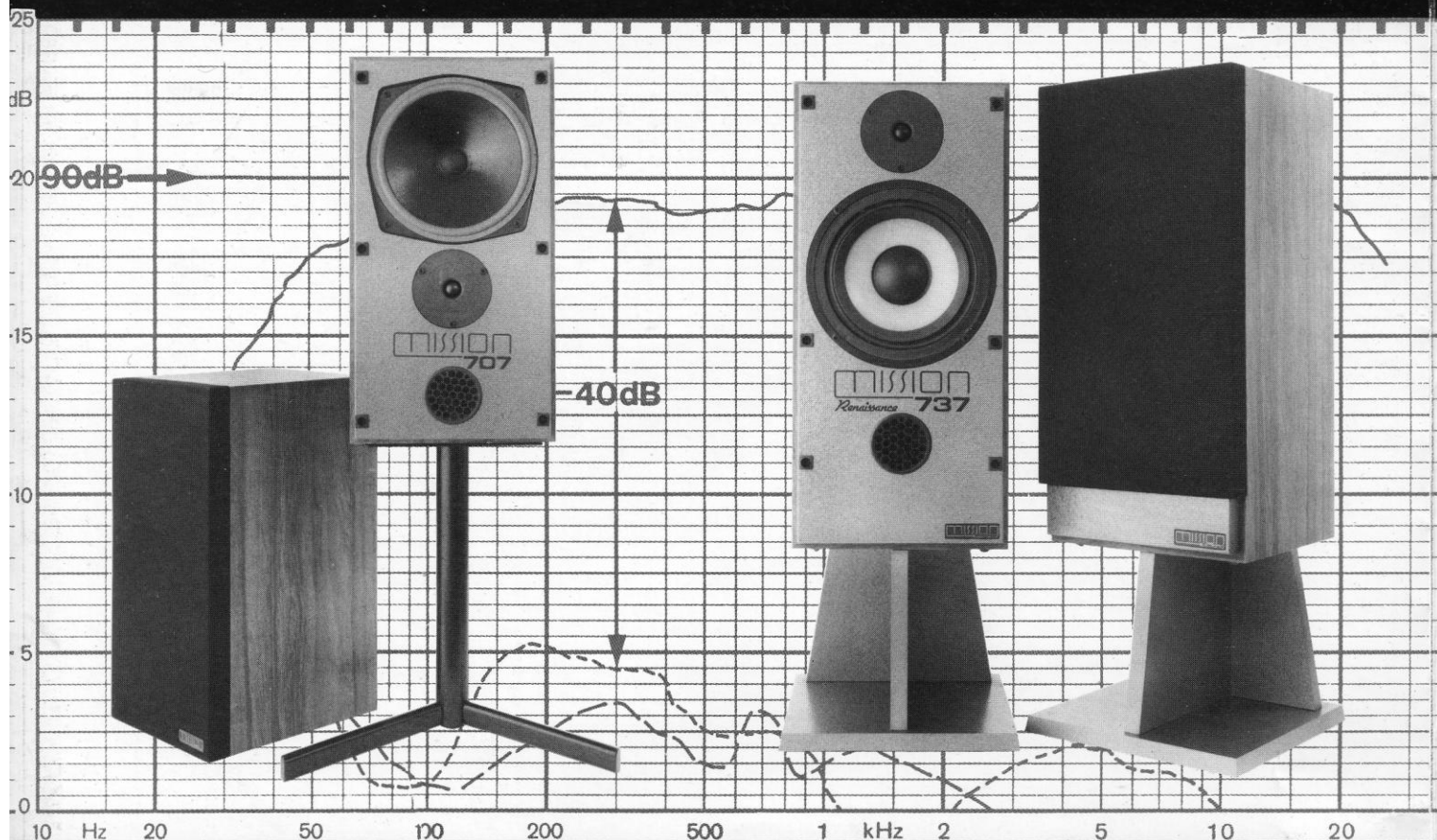
The unusual inverted drive unit geometry, first designed by Henry Azima in the Mission 700, goes some way towards equalising the distance from the acoustic centres of the drive units to the ears of the normally seated listener. The effect of such a design is that at the crossover frequency the radiation lobe is directed up towards the listener rather than down to the floor. The refinement goes one step further in the use of a time delayed baffle board resulting in dramatically better acoustic phase linearity, with substantial improvements in realism, dynamics, and stereo imagery. The baffle board itself is precision injection moulded in polypropylene reinforced with natural composite materials. This combines with Mission's multi-fold technique for cabinet construction to ensure phenomenal transient attack.



SPECIFICATIONS	MISSION 70
FREQUENCY RANGE	40 Hz – 20 KHz
FREQUENCY RESPONSE	60 Hz – 20 KHz ± 3 dB
IMPEDANCE NOMINAL	8 ohms
RECOMMENDED AMPLIFIERS	20W – 60 Watts/channel
SENSITIVITY, SPL at 1M, 1W	88.5 dB
TWEETER	19 mm Polymer Dome – Ferrofluid
WOOFER	177 mm Plastiflex Cone
CROSSOVER FREQUENCY	2.7 KHz
GRILLES	Fixed
TERMINAL CONNECTIONS	4 mm plug or wire
EFFECTIVE VOLUME	12 litres
CABINET DIMENSIONS (H x W x D)	350 x 210 x 210 mm
FINISH	Black

MISSION 707

MISSION 737 Renaissance



Mission 707

The 707 is a brand new addition to the Mission range. It offers the inverted drive unit arrangement first used in the 700 (for reasons see 700.2). The 707 incorporates Mission's unique multi-folded cabinet construction and sophisticated injection moulded baffle board manufactured from polypropylene and natural minerals – the formula not being made public by Mission. This configuration offers optimum rigidity for accurate transient bass response with controlled and minimal resonances in the mid band region. The tweeter is our proven ferrofluid 19mm polymer dome and the overall results are optimum integration and excellent off axis performance, resulting in quite exceptional stereo stage.

Here we must point out that there is a fundamental design conflict between the efficiency and low frequency performance of a loudspeaker. In the majority of cases efficiency is achieved at the direct expense of bass extension, and frequently high efficiency systems suffer very high coloration. Not so with the new generation of Mission designs. The exceptional motor systems combined with high quality cone materials and precision manufacturing processes have enabled us to offer extraordinary sensitivity and bass extension whilst preserving the mid band magic of classical Mission speakers. Our speakers have always been acclaimed for low coloration, neutrality and transparency in the mid band. This is now coupled to bass extension, with control and articulation. Careful attention is paid to the linearity of both frequency response and distortion at different power levels. Consequently the dynamic headroom is so great that the loudspeaker system will not suffer "saturation" and "compression" at high listening levels.

The 707 offers 92dB efficiency for 1W input measured at 1 metre and can be used with amplifiers ranging from 20W to 100W per channel. Rigid, sand-filled metal Mission stands are available for use with this model, or under special circumstances the 707 may be bookshelf mounted.

Mission 737 Renaissance

In 1978 when polypropylene as a cone material was in its development stages at the research laboratories of the British Broadcasting Corporation, and other manufacturers were carrying on with conventional materials, Mission were negotiating the patent rights for the coming technical revolution. Around the same time Mission became the first licensee in the world for this British patent. Mission's pioneering research in this area resulted in one of the most advanced loudspeakers – the 770. Since then most other manufacturers have attempted to copy the Mission design with varying degrees of success.

At Mission we have continued to move on. After many years of evolutionary refinements the most advanced version of the 770 drive unit is now designed into our new model 737 Renaissance. The cone membrane for this model offers a unique combination of rigidity, lightness and acoustic opaqueness. The drive unit is manufactured into an esoteric die-cast magnesium chassis to improve rigid coupling. The acoustic properties of the cone are such that they do not allow for internal reflection and standing waves to come out of the cabinet and reach the listener out of phase. Furthermore, a solid block of Mission acoustic foam is built into the inside of the cabinet to attenuate such standing waves. The Renaissance cabinet is of precision multi-folded construction, visco-elastically damped and incorporates our special MDF baffle board. The total system is reflexed using the Mission resistive port and resulting in extended low frequency and power handling performance. The Renaissance now possesses many attributes of its predecessor but at substantially lower cost.

For this model, as well as the 770 Freedom and the 780 Argonaut, special Mission stands are available which lock into the loudspeaker and are offered as an optional extra. The Renaissance is recommended for use with amplifiers ranging from 30W to 120W per channel.

MISSION 700 LEADING EDGE	MISSION 707	MISSION 737 RENAISSANCE	MISSION 770 FREEDOM
35 Hz – 20 KHz	30 Hz – 20 KHz	30 Hz – 20 KHz	20 Hz – 25 KHz
55 Hz – 20 KHz ± 3 dB	50 Hz – 20 KHz ± 3 dB	45 Hz – 20 KHz ± 3 dB	35 Hz – 20 KHz ± 3 dB
8 ohms	8 ohms	8 ohms	8 ohms
20W – 75 Watts/channel	20W – 100 Watts/channel	35W – 125 Watts/channel	30W – 150 Watts/channel
89 dB	92 dB	90 dB	92 dB
19 mm Polymer Dome – Ferrofluid	19 mm Polymer Dome – Ferrofluid	19 mm Polymer Dome – Ferrofluid	25 mm Polymer Dome – Ferrofluid
177 mm Plastiflex Cone	210 mm Plastiflex Cone	215 mm Polypropylene Cone	215 mm Reinforced Homopolymer Cone
3.1 KHz	2.2 KHz	2.4 KHz	2.1 KHz
Removable	Removable	Removable	Removable
4 mm plug or wire	4 mm plug or wire – 3 way	4 mm plug or wire – 3 way	4 mm plug or wire – 3 way
15 litres	25 litres	30 litres	40 litres
380 x 210 x 210 mm	470 x 250 x 270 mm	540 x 250 x 270 mm	610 x 270 x 300 mm
Walnut/Black	Walnut/Black	Walnut/Black	Walnut/Black

MISSION 770 *Freedom*

MISSION 780 *Argonaut*



Mission 770 Freedom

We are confident that the 770 Freedom is a worthy successor to our legendary 770. Our objective in replacing the 770 was to improve on that model in certain specific areas. Firstly, we wanted to ensure that the frequency range was even more extended. Secondly, our design team felt that the bass response could be tighter and with greater transient attack. Thirdly, we wanted to increase the available headroom so that at high power levels the system did not go into saturation. Finally, we wanted to increase efficiency for the era of digital master tapes.

For the mid/bass drive unit a brand new cone was developed made of an advanced homopolymer material impregnated with certain minerals (the formula not being made public by Mission) to offer optimum mass, rigidity, Q and sonic opaqueness – a further advance on polypropylene. The voice coil is manufactured using high temperature aluminium former and is carefully ventilated to increase power handling. The motor system is exceptionally powerful for the amount of magnet we have used and this has been achieved by careful geometric design of the pole piece which in turn is brass plated. This arrangement results in minimal magnetic flux wastages into stray fields. The driver is assembled into a sophisticated rigid magnesium die-cast chassis. The high frequency unit is carefully designed for extreme power and exhibits exceptional power/frequency response linearity and no major saturation at high levels. It is further oil cooled to avoid temperature related performance aberrations and for increased saturation thresholds. The cabinet construction is based on Mission's unique multi-folded geometry ensuring rigidity for low frequency transient attack without coloring the very open and transparent mid band. The cabinet walls are visco elastically damped to control and attenuate resonances and minimise stray acoustic output to ensure minimal acoustic phase distortion. The Freedom's low frequency behaviour is totally unusual for a reflex loudspeaker and this has been achieved by careful integration of the drive unit Qs in relation to the 37 litres of internal volume and the use of the Mission resistive reflex port.

On measurement the Freedoms are capable of exceptionally smooth,

highly integrated off axis frequency response as well as the least amount of distortion we have measured in any other loudspeaker. Indeed, driven at 90dB mid band distortion is close to 0.1%!

The Freedom is a powerful expression of Mission's experience and technology. Subjectively, and when used in conjunction with good quality ancillary equipment, the results are exhilarating and most realistic. The Freedom has optional stands as pictured above and is recommended for use with amplifiers ranging from 30W to 150W per channel.

Mission 780 Argonaut

The 780 Argonaut is a brand new Mission product. It is important to point out at this stage that by the nature of its design the Argonaut presents amplifiers with both complex and difficult loads. That is to say, the characteristic impedance at certain frequencies can drop to around 3.5 ohms and even though the phase shift angles are kept to a minimum and for the most part the impedance is purely resistive, nevertheless this can present problems for ordinary amplifiers. This means that only exceptionally well designed amplifiers should be used to drive the Argonauts otherwise the sound quality will be poor and the amplifier could suffer damage. Many good British and American amplifiers, however, are designed to deal with such loads and all Mission designed amplifiers, including the little Cyrus I, are perfectly capable of driving the Argonauts.

The Argonauts are truly exceptional speakers unmatched by any other model at any price. Firstly, for 2.83V of input a single Argonaut produces approximately 94dB of output measured at 1 metre. Secondly, whereas speakers of such sensitivity always lack deep bass, the Argonauts are extremely well extended in low frequencies. Thirdly, whereas nearly all ultra high efficiency speakers use light paper for their cone material and suffer the associated colorations, the Argonaut uses modern polymer based engineering materials and has no significant audible or measured colorations or distortions. The whole speaker is manufactured from MDF rather than conventional chipboard and the walls are visco elastically damped.

The Argonaut has many common features with the 770 Freedom. It parallels up two of its 8" drive units (see 770 Freedom) for mid/bass frequencies and the tweeter takes over at 1.8 KHz to handle the high frequencies. Such low crossover frequency combined with excellent dispersion characteristics of the tweeter result in breathtaking stereo stage such that when the speakers are correctly positioned there is no audible evidence of point source left and right channels. Rather, the system achieves the true definition of stereo – a solid three dimensional stage with tremendous front to back imaging (without any tunnel effect) and no interrupted left to right sound stage. When this happens the speakers effectively "disappear". Such 3-D musical stage is then combined with the Argonaut's awesome dynamic range to produce what Mission designers call Magic!

Special optional stands are available from your dealer which fix into the 780 and we would recommend these speakers for use only with very high quality British and American amplifiers.

MISSION 780 ARGONAUT

	20 Hz – 25 KHz
	35 Hz – 20 KHz \pm 3 dB
	4 ohms
	50W – 200 Watts/channel
	94.5 dB
fluid	25 mm Impedance Transformer
mer Cone	2 x 215 mm Reinforced Homopolymer Cone
	1.8 KHz
	Removable
	4 mm plug or wire
	50 litres
	710 x 270 x 300 mm
	Walnut/Black

Specifications subject to change without notice

TECHNICAL PHILOSOPHIES

Most people do not associate loudspeakers with complex technology. But in reality, of all the components in the audio reproduction chain the speaker proves the most difficult to design. The role of the loudspeaker is an intricate one, in that the transducer is required to transform electrical energy into mechanical energy. The complexities of this process, together with the subtle nature of music itself, have created countless controversies over the years and have resulted in many conflicting design philosophies. As a result listeners can discern marked differences between various models. Different designers emphasise different aspects of the speaker's characteristics. For example, some speakers offer high efficiency to the detriment of accuracy; others produce smoothness and low coloration but fail to generate adequate sound levels and musical dynamics; many impress on initial listening but in the long term produce fatigue and become irritating.

At Mission we try not to compromise, and have optimised our loudspeakers making full use of the current stage of technology. Above all Mission is the only specialist loudspeaker manufacturer with the depth of knowledge in behaviour of amplifiers, turntables, tonearms, cartridges, etc. – for which the company has a worldwide formidable reputation. It is no longer possible to design a component in isolation and more and more designers are getting involved in systems engineering. It is this unique capability at Mission which has resulted in tremendous breakthroughs in loudspeaker performance, and the following sections will touch on the less complex parameters affecting a loudspeaker's performance.

SPEAKER TYPE

Once upon a time people bought speakers on the principle of "the bigger the better". The same people were equally impressed by a multitude of drive units, control knobs and other harmful gimmicks. But things have moved on and today most people know better.

At Mission we pioneered elegant two-way designs and insisted that three- and four-way models were plagued with insurmountable problems. Today other manufacturers are increasingly copying the Mission philosophy. The compact, efficient, high power handling, full range, high performance Mission models are so advanced and have so many design secrets that they will not be outperformed by any competition for many years to come.

DYNAMIC RANGE – *this we define as the differential decibels between the least audible musical information and the loudest attainable transients, while they are simultaneously present!*

Dynamic range is perhaps the single most important parameter of concern to our designers. Also, it is not a coincidence that the greatest difference between live and recorded music is in dynamic range differential. Nearly all hi-fi systems compress the dynamics of live music. Not so with Mission. High dynamic reproduction of music has become the company's signature. Indeed, this is recognised by reviewers and commentators throughout the world in their repeated references to Mission's ability to achieve exceptional realism.

Linearity of the power response within the dynamic "window" is maybe even more important than the dynamic range itself. Mission systems preserve power response linearity throughout the wide dynamic range, allowing the reproduction of large transients while preserving quality at the lowest levels.

COLORATION – *a term widely used to describe a multitude of distortions and other aberrations which occur in loudspeakers.*

A variety of complex "steady-state" and dynamic distortions lead to inaccurate and unrealistic reproduction of music. Subjective terms such as "boxiness", "chestiness", "nasality", "honkyness" etc. are generally used to describe such colorations. Coloration is often defined as "additive distortion" but at Mission we go further and contend that negative coloration can also exist. This occurs in the case of low dynamic systems with poor information retrieval capabilities. In such cases the lost information cannot, obviously, suffer distortion! We call this "subtractive distortion".

The Mission design team is particularly strong in this department. In fact, the new generation of Mission speakers are so exceptional in terms of low distortion that they are approaching amplifier specifications! We believe that even the baby 70 has some 10 times less distortion than most other speakers. Mission enclosures are precision designed and visco-elastically damped to reduce unwanted acoustic output from the cabinet walls and eliminate internal standing waves. The driver membranes are made of special and rather unusual materials. They are light, but acoustically opaque and very rigid. Their mathematical profile and mechanical terminations are carefully optimised. Their chassis are mostly very rigid aluminium or magnesium die-casts. These drivers are inherently very smooth, have highly controlled break-up modes and minimal other resonances.

Attention to detail extends to the analysis of accelerations involving drive unit displacements measured in microns! The drive units in your speakers are "Direct Coupled" to unusually substantial baffle boards of over 1" thickness which in turn are made of special materials such as MDF or polypropylene instead of conventional chipboard used by other manufacturers.

FREQUENCY RESPONSE – *the characteristic amplitude response in the audio frequency band.*

Mission loudspeakers incorporate the company's exclusive and high technology drive units to ensure accurate and balanced reproduction of all forms of musical programme. Extensive anechoic research has resulted in careful optimisation of drive units and their interaction. The inherent qualities of the Mission drivers have further resulted in the use of elegant and "natural" roll-offs and crossover network designs – avoiding the pitfalls of complex filters with the resultant phase shifts, power impedance problems and loss of information.

Essential to the accurate reproduction of music is the system's ability to retrieve

maximum information from disc, tape or tuner. Please note, however, that such extraction of information must not be at the expense of frequency balance, otherwise prominence will be given to certain instruments to the detriment of other musical notes. Speakers with defective frequency balance may sound impressive for a short period but will prove unsatisfactory for serious reproduction of music.

TRANSIENT RESPONSE – *a system's ability to reproduce and control speed and attack of the music signal.*

Music consists of irregular transient impulses. The loudspeaker is called upon to respond instantaneously to sudden changes of electrical energy. The secret is one of dealing with the leading edge of the transient attack but perhaps even more important, of terminating the signal when the transient has stopped (no overhang). The latter proves the more complex of the two problems.

Mission's use of high technology cone, suspension and voice coil materials has resulted in the dramatic reduction of moving mass. At the same time, powerful motor systems are employed to give both positive and negative accelerations to the moving air piston. Overall enclosure loading and reflex systems have been carefully optimised to assist in such accelerations and recovery of the moving parts.

DISPERSION – *the ability of the system to reproduce sound accurately and smoothly off axis, both in horizontal and vertical planes.*

Stereo and high fidelity are so closely associated that the two terms now seem interchangeable – and with good reason. Unfortunately, the majority of hi-fi systems tend to produce a two-dimensional sound stage. Those which do not restrict the stage to a wall of sound may produce other aberrations such as imaging a tiny grand piano or an abnormally large flute. Again, the stage perspectives could be distorted and so on. The human perceptual mechanism finds it tiring to decipher the necessary information to reconstruct the original three-dimensional sound stage.

It is, therefore, essential for hi-fi systems to recreate a solid three-dimensional sound stage with correct size and position of instruments in space, little drift, and accurate perspective. Mission loudspeakers will achieve such results, subject to correct positioning and the quality of the ancillary equipment.

IMPEDANCE – *the load characteristics of a loudspeaker as presented to the amplifier.*

Critical to the successful interface between loudspeakers and amplifier is the nature of the speakers' complex impedance. Here it is necessary to ensure that the speaker impedance will not drop below critical levels. At the same time, the phase shift angle throughout the frequency band must be minimised and kept at a realistic level. Speaker loads will otherwise prove too reactive for most amplifiers, resulting in the latter going into premature clipping. The impedance curves of all Mission loudspeakers are smooth with small phase shift angles, and do not drop too low. All good quality amplifiers (including many inexpensive ones) are perfectly capable of driving Mission speakers. The exception is the 780 Argonaut; this is an extremely difficult model for amplifiers to drive and it is designed for use with Mission or other state-of-the-art amplifiers only.

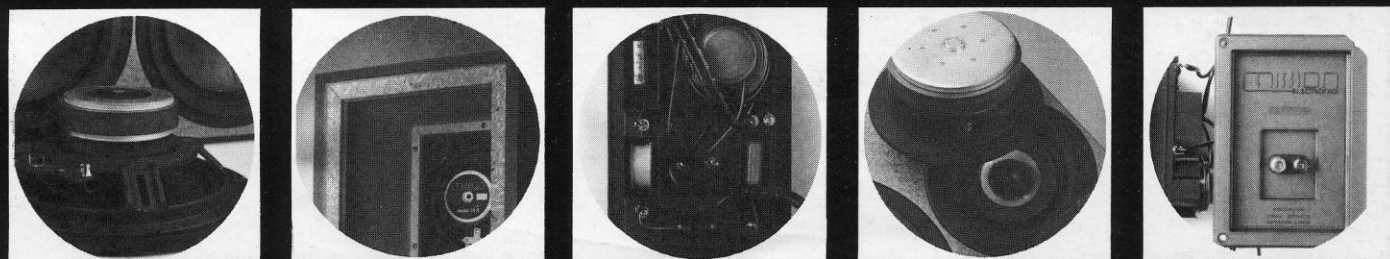
SENSITIVITY – *the efficiency of the loudspeaker in converting electrical energy into acoustical output with minimal loss.*

Mission maximises this parameter in order to attain reproduction of wide dynamic range musical programme. The obvious benefit of efficiency is that a higher quality, lower powered (for the same cost!) amplifier can be used. But more important, our research categorically proves that it is impossible for low efficiency systems to reproduce high dynamic range material and cope with transient signals. Here the reason is that the loudspeaker is a mechanical device and beyond an optimum level of power, will set into "compression" and severe distortion. In other words, all else being equal, it is inaccurate to think that a low efficiency loudspeaker with large amplifiers can achieve the same results as a higher efficiency model with small amplifiers. All Mission models offer exceptionally high sensitivity, and the Argonaut is simply extraordinary in this area.

POWER HANDLING – *the ability of the loudspeaker to accept without distortion large electrical inputs associated with transient impulses, or to operate at very high sound levels without thermal or mechanical fatigue or damage.*

The scientific definition of the true power handling of a loudspeaker system is not a simple one. Manufacturers quote figures of maximum power handling under different definitions and mostly for commercial reasons. Very few of these figures are meaningful in determining a continuous amount of RMS power loudspeakers can sustain when playing music. As such we have dropped maximum power handling figures from our specifications and only refer to recommended amplifiers both in terms of minimum and maximum amplifier ratings permissible. This will merely indicate the range of amplifiers which can be used with each Mission model.

The real power handling of your loudspeaker depends on the model, but even more important is the quality of the ancillary equipment, especially the amplifier/turntable/arm and cartridge. In the case of poor "front ends" a great deal of unwanted low frequency energies will be delivered to the loudspeaker limiting its general performance, especially its power handling. As for the amplifier, a lot depends on its available spare headroom when amplifying sudden transients, its "clipping" characteristics and low frequency filter design. For example, a poor turntable/amplifier combination with a rating of only 30W can damage the 770 Freedom if driven flat out, whilst we know for a fact that the Freedoms are capable of handling high dynamic digital master tape information with 400W amplifiers! All Mission loudspeakers use high temperature materials and cooling systems, and have truly exceptional power handling capabilities when used correctly.



Left to right. The 770 LF Chassis; folded cabinet constructions; the filter network of the 770; the tweeter of the 780 and the superb terminals of the Mission speakers.

GENERAL INTRODUCTION

When choosing your loudspeakers be sure you are not influenced by superficial dealer demonstrations. Your hi-fi dealer can sell you what he wants but his advice can be affected by industry politics and commercial factors. As far as manufacturers are concerned you'll find that often their products are designed for marketing purposes rather than to reproduce music. A certain group of manufacturers insist on putting in as many drive units as possible so that when you take the grille off you're impressed. Others attempt to give you as big a box for your money as possible. A third group try to confuse you with so called "hi-tech" features and specifications. You'll find that in the majority of cases none of these factors has anything to do with music. In fact, such marketing exercises frequently result in confused objectives and incompetently designed products. The thing to remember is that bells and whistles and other gimmicks have nothing to do with music.

So, how do you go about making your personal investment to reproduce music, which will presumably be your objective? As far as we can see, to cut through the jungle of confusion isn't easy and your safest bet would be to invest in the reputation of the manufacturer. In most instances the sophisticated audiophile throughout the world would agree that British loudspeakers are the best. A handful of British manufacturers have made a serious commitment to genuine research and development in an atmosphere of severe competition which has resulted in some excellent high fidelity products. These products are not designed for fashionable hi-tech reasons and their perceived value may not be that great. In other words, investment is made *inside* the product rather than in its external size or appearance.

Amongst this handful of British manufacturers Mission is a leading light and in its short history has established a most formidable reputation throughout the world for "state-of-the-art" in high fidelity. Mission's reputation is not just for loudspeakers but for cartridges, tonearms, turntables and amplifiers, and this is a unique achievement. Most manufacturers tend to earn their reputation for one item in the music reproduction chain: there are good loudspeaker companies, a few companies make good tonearms, others make good turntables and very few manufacture good amplifiers. Only Mission is acclaimed as a manufacturer of all these items, most of which are acknowledged as the best that money can buy.

Mission have to manufacture all items in the chain because without an overall technical and philosophical understanding of what the reproduction of music entails, no single component can be designed properly. The full explanation of this problem, which is in the realm of stage-by-stage bandwidth optimisation, impedance matching, interface distortions and so on, is outside the scope of this leaflet.

Returning to loudspeaker design on which Mission's international reputation is based, years ago we put forward ideas and products which have influenced this industry ever since. We suggested good measurements weren't enough. We said to design for low coloration wasn't enough. We insisted two-way speakers were inherently superior. We argued that loud-

speakers had to reproduce the emotions and dynamics of live music. We claimed that good dynamic range needed higher sensitivity and power handling. We said our speakers had to be "hot wired". The unique combination of our own ideas with proven classical theories such as accurate stereo imaging, smooth frequency response, low distortions, etc., gave birth to a generation of products that made Mission an industry leader. Our courageous work with new materials such as polypropylene, Sorbothane, carbon fibre, MDF (Medium Density Fibre-board) etc. influenced designers all over the world.

In 1979 the 770 took the industry by storm and the competition has tried to out-perform it ever since. Our "upside down" 700 offered an entirely new standard of performance for inexpensive systems. In fact, it is our opinion that before the 700 the majority of inexpensive loudspeakers were simply boom boxes. The 700 became an overnight legend throughout the world and set a whole new standard of performance for inexpensive systems. It was Mission's debate in information retrieval, negative distortion, dynamic range, the importance of sensitivity, the system's ability to reproduce musical expression and feeling, and so on, that made our public listen more and worry less about meaningless gimmicks. We said then and we continue to say: good loudspeakers must not be auditioned through dealer comparators. In fact, the better the loudspeaker the purer and finer the rest of the reproduction chain must be and it stands to reason, therefore, that residual distortions and nasties in comparators are more audible through good loudspeakers than poor ones. The same goes for bad amplifiers and turntables.

Your choice of loudspeaker is crucial to the upgradability of your hi-fi system. It's important that the loudspeaker doesn't become the limiting factor in the chain; that is to say, as you improve your other components the loudspeaker must be good enough to improve with them. It is this long range view that makes it necessary for you to take special care and spare no amount of effort in selecting a good pair of speakers.

Earlier we touched on meaningless specifications and here we can give you a couple of examples of the problems involved. As far as measurements are concerned we would state that excellent measurements are a necessary but not sufficient condition of a good design. Furthermore, simplified steady-state measurements and specifications don't tell you anything about the true capabilities of a product. For example, a distortion figure may be given at a single frequency and for a particular type of distortion. This will not indicate how the system distorts at different frequencies and continuously varying power levels. Here we get involved in discussions of system linearity as a function of power, the harmonic structure of distortion as a function of frequency, the problems of compression at high power levels, component saturations and so on. Matters get extremely complicated and confusing.

And this is why we say, listen for yourself and we think you'll agree...

NOBODY WAS EVER SORRY FOR BUYING THE BEST!

Your authorised Mission Dealer

MISSION ELECTRONICS, Huntingdon PE18 6ED, England.

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