HI-FI NEWS & RECORD REVIEW

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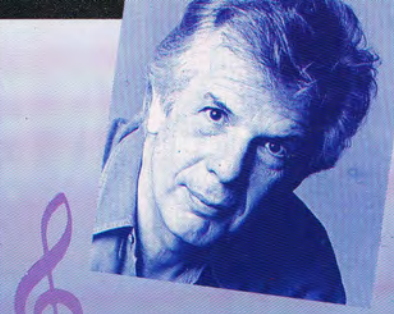

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HI-FI NEWS & RECORD REVIEW

contents

FEATURES

EQUIPMENT

MAY 1992

COVER: Four imported CD players designed to woo UK ears are the Marantz CD52SE, Mission DAD5, Rotel RCD-955 and Sony CDP-X222SE. The review, an in-depth comparison by Martin Colloms, page 27. Photography: Tony Petch

Metaxas Solitaire power amplifier and matching Marquis pre-amp: page 49

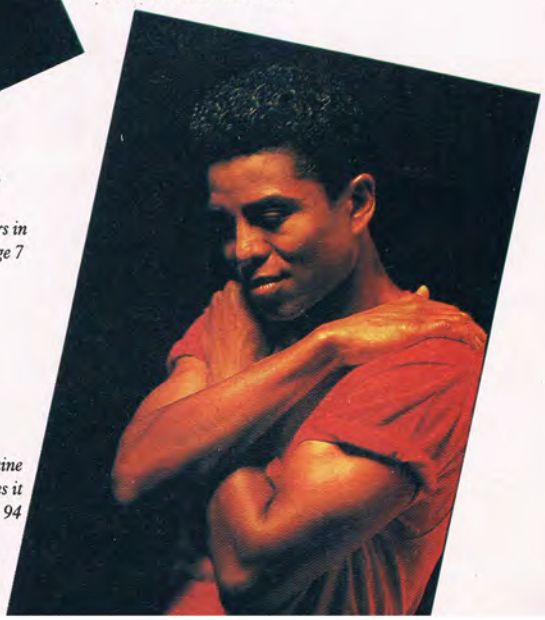
Professional Monitor Co's transmission line: page 59

Top of the range. Alphason's Symphony turntable plus HRS-100MCS arm: page 63

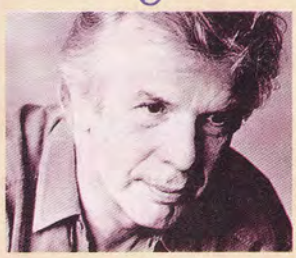
Linn's remote-control Kairn pre- and LK100 power amp, page 43; Roksan CD, page 36

WIN! These superb Rogers LS3/5A Anniversary speakers in rosewood finish: page 7

Jermaine Jackson does it again: page 94



RECORD REVIEW



REGULARS

SUBJECTIVE REVIEW

FIVE STAR PERFORMERS

From the ebullient Kostas Metaxas, Australian-based scion of the Greek brandy family, comes a typically upbeat pre-/power amp combination . . .

by KEN KESSLER

The Marquis pre-amp and the Solitaire power amp were names either for diamonds or, respectively, a lousy American automobile and a card game.

The two products drip of luxury, but, unfortunately, in the German manner. Yes, Metaxas has opted for acres of stainless steel, which is even more of a magnet for fingerprints than Perspex. And harder to keep clean, though far more resistant than the glossy plastics to scratching from even the softest duster.

The Marquis is a two-box pre-amp, the power supply housed in an all-stainless steel box, a completely dual-mono, high current, stacked 100W toroidals, with 46,000 μF of primary filtering monster. It connects to the pre-amp chassis via an umbilical cord with a five-pin plug, the juice entering the pre-amp through another 10,000 μF of filtering before reaching the regulating circuitry. This consists of a proprietary circuit built around matched transistors; the company eschews the use of ICs. The circuitry ensures that the DC is stable and that the impedance of the regulator is consistent at eliminating any AC components on the DC line from DC to 5mHz. Further circuitry prevents the possibility of any DC surges which could affect the servo circuits from maintaining absolute zero level DC at the outputs. And if that ain't enough, a dual FET trips a relay in series with the output, short circuiting the input to the power amp to prevent any damage to the loudspeakers.

The main pre-amp chassis is a pro-look, low-profile rack-mountable affair with an anti-magnetic stainless steel case and a black front panel. The fascia contains chrome plated hardware and etched legends, a mix of laboratory aesthetics and lily-gilding. Nothing shatters the illusion of luxury save for a lack of mass due to the positioning of the hefty bits in the external case. And you're reminded of this every time you flick a switch or twist a knob should the pre-amp be placed on a smooth surface. It is, simply, so light that even the force of the cable from the power supply can push it out of position. Which caused me to discover a previously hidden use for Flux Dumpers: even if you think that their hum-diminishing properties are just so much tweaker nonsense, there's no denying that they'll help to keep the Marquis in place.

The panel is crammed with facilities, including source and record select, a toggle to choose between line inputs and phono, a tape monitor switch, stereo/reverse selector, muting, balance and volume. All of the switches and knobs have positive action, suggesting high quality. This is reflected at the back, with the single row of sockets entirely gold-plated. These, by the way, are soldered directly to the motherboard.

The phono section uses proprietary push-pull differential input topology, with carefully selected and matched transistors. Internal microswitches allow the user to select a range of over 60 loadings from 10 ohms up to 47k ohms, with a single switch available to add 270pF of extra capacitance if necessary.

Without any doubt, the Metaxas Marquis is the fussiest pre-amp I've ever installed in my system. Not only is it tetchy about the choice of cables (the manual states the need for properly shielded designs), it's also fussy about their orientation. While I didn't have to hang the leads from the ceiling, I did have to experiment with their proximity to the two chas-

sis and to each other, eventually placing the power supply as far as possible from the main chassis, while ensuring that no leads – from the sources or to the Solitaire – were within a foot of the power supply umbilical cord. And then I had to ensure that the rest of the leads were kept well-separated. While this may seem like nothing more than good housekeeping, it did strike me as inordinately critical. Failure to do so resulted in background texturing and, depending on the wires, low level hum. This pre-amp simply goes crazy when placed too close to mains leads feeding other components.

Feeling in need of an analogue fix? Missing the days of DIP switches and plug-in resistors? So hair-spring is the behaviour of the Marquis phono section that you'll be in no doubt when the values are out, however slightly. And I'm not talking about whacko cartridges like Audio Notes or elderly Ortofons. Even the most accommodating types needed loads of trial-and-error adjustment. Thank goodness my Deccas were not in use; I'm certain that the Metaxas-Decca interface would be a hi-fi equivalent of the Arab-Israeli conference. I hadn't spent so much time setting up a cartridge since the days before Bitstream . . .

Whatever the power rating, this amplifier is an animal of the fiercest variety

Without any doubt, the Metaxas Marquis is the fussiest pre-amp I've ever installed in my system

Mercifully, the Solitaire – maybe Metaxas collects Andy Williams LPs? Neil Sedaka? – suffers only the cable fixations of the Marquis. Hook it up and switch it on. That's it, just like a power amp should be. But there's more to consider in practice once it's installed, because this amp does not like upsets.

It's a strange-looking device, with an anodized aluminium faceplate standing there and doing nothing other than providing a surface on which to mount the on/off switch. The amp is low and flat and sprouting vicious heatsinks, with four whacking great capacitors and the power supply there for all to see. Which bothers me, and not just because Sam'n'Dave Kessler is a 20-month-old toddlin' catastrophe. You don't need kids to see why Metaxas should stop playing Aussie Macho Man and produce a damned cage* for this thing. After all, the holes in the heat sinks would make dandy receptacles for the 'legs' of a grille or cage.

Okay, okay, so the only power travelling through the exposed bits, like the readily accessible fuses, is low voltage, but that won't stop some klutz, like the apocryphal punter who wondered why her electric frying pan was destroyed when she put it on a gas fire, from wreaking havoc. I'm reminded of the latest in American T-shirt and coffee mug slogans, which I saw all over Las Vegas: "S**t Happens". Which is America's neat if coarse way of of using three syllables to describe every single one of Murphy's laws. But enough about the unclad aspects of the Solitaire. At least everything is finished to Tiffany (the jeweller, that is) levels, with more stainless steel, top-quality sockets and binding posts and that free-standing fascia. Which, I should add, is drilled for rack mounting. Which would take care of the naked chassis.

The Solitaire is dual-mono, two high speed amps sharing one 1600W laminated transformer delivering 150W/channel from DC to 500kHz into any load. (I'll tell you right now that neither the Apogee Divas nor the Sonus Faber Extremas fazed it at all, while it drove the Wilson WATTs/Puppies as if they were Lowthers.) Inside, it's one large motherboard holding all of the components including the output transistors. The topology is such that the signal path from input to output is only 150mm including the current path from the transformer to the output devices. As speed appears to be one of Metaxas' priorities, no bypass capacitors have been fitted, the company regarding these as detrimental.

Protection is limited to fuses guarding the high current output stages, while a four pole relay in series with the speaker connections responds to any DC sensed at the amplifier output. As with the pre-amp, the Solitaire features DC-monitoring circuitry within the amplifier itself.

The units arrived already run-in, but a good 15-30 minutes warm-up from switching on is advisable. Once up to operating temperature, these products sing. Occasionally off-key.

Let's dispense with the Solitaire first. Whatever the power rating, this amplifier is an animal of the fiercest variety. At no point during the two weeks of auditioning did I feel a need for more power and nothing upset it. Other than stray fields from anything in the room including my telephone, my computer, traffic outside, satellites orbiting Jupiter, you name it. You will spend so much time messing about with the wiring and siting of this amplifier that you'll wonder if it's worth the bother. But that's the price of high performance, and the performance is high indeed.

This amplifier, once it stops pouting and stamping its feet, has definition, transparency, clarity and solidity which will charm the pants off anyone who regards imaging and detail retrieval as paramount. You hear into the performance, noting small events which may be masked with lesser amplifiers. And the Solitaire rises to every occasion, dealing with both the subtle notes and the barnstormer sounds with a sense of balance that borders on state-of-the-art diplomacy. Nothing is swamped. All remains relative. Feed it something delicate or something coarse and the Solitaire will change character as needed.

This behaviour isn't just consistent in dynamic terms; it also applies to a sense of equanimity regarding the frequency extremes. While an initial listen might suggest a touch of bass-heaviness, this invariably disappears. What you're hearing is extension, not added weight, and it suggests that the Solitaire is very good at forcing speakers to deliver their maximum potential.

The downside is that this amplifier comes across as a might relentless, as if it's suddenly going to explode or maybe kick you in the head. Like I said, it's an animal, and it sets a strange, urgent pace which I've not experienced before.

The pre-amp imposes far less of itself on the signal, handling its chores with near invisibility. At least on line level sources. The phono section disappointed me mightily, even after spending much time fooling around with the internal settings to make certain that the Lyra Parnassus, the Koetsu Urushi, the Denon 103 Gold, the Transfiguration and the Audioquest AQ-7000 were seeing exactly the right loads. It was thick-sounding, the antithesis of the line stages, with loss of detail and transparency compensated for only by excellent headroom.

Hey, I got as much music out of the ancient, dirt-cheap, funky Mos-Code SuperIt running into the line inputs, even if it was a whole lot noisier.

Moving onto line sources, though, the Marquis sounded wonderfully transparent and, well, invisible once the cable arrangements were Just So. And I emphasize that because you will not have a clue as to this product's potential if the matter hasn't been addressed properly. And bitch though I may about it, such concerns are no more demanding or out of the ordinary than speakers requiring specific stands or spikes, or turntables which require installation by a member of the Magic Circle.

The two products sell for a tolerable £2150 apiece, and they can hold their own against most other combinations in the £4000-£5000 bracket. Provided you can put up with the thought of wires in neat rows, a metre apart, stretched across your carpets . . .

Supplier:
Reference Imports, Pineridge, Theobalds Green, Sandy Cross, Heathfield, East Sussex TN21 8BS. Tel (0435) 868004

* Reference Imports has since informed us that a cover grille will be added to all future units – Ed

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HI-FI VCR'S

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Cover

A good hi-fi VCR can make a big difference in an A/V system. For a close look at three hi-fi decks that won't bankrupt you, the JVC HR-VP700U, RCA ProScan PSVR81, and Mitsubishi HS-U59 on this month's cover, see the comparison tests beginning on page 76.

Photograph by Dan Wagner

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Stereo Review®

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EQUIPMENT

Page 87

MUSIC

Page 127

TEST REPORTS

MAS Charisma Preamplifier

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Though new to this country, MAS (Metaxas Audio Systems), of Melbourne, Australia, has earned a solid reputation among European enthusiasts for its audio components, which are unique in many of their design features and embody the personal philosophy of their designer, Kostas Metaxas.

MAS products are characterized by uncompromising circuit design and physical construction, Metaxas says, the primary goal being to provide the most nearly ideal performance possible, especially with regard to sound quality. Aesthetic considerations have not been neglected, however. All of the components' controls have a silky-smooth, positive feel, and the knobs are machined from solid aluminum bar stock before being polished to a smooth satin finish.

The MAS line includes preamplifiers, power amplifiers, integrated amplifiers, a CD player, and loudspeakers, all carrying such unusual and distinctive names as Marquis, Iraklis, Solitaire, and Opulence. We tested the Charisma preamplifier, the company's least expensive component.

The MAS Charisma is a basic preamplifier, almost minimalist in some respects. Like MAS's other electronic components, it has a separate power supply, with a toroidal transformer and two-stage filtering to minimize power-line hum, that is joined to its chassis by a detachable cable approximately 3 feet long.

DIMENSIONS

PREAMPLIFIER: 13¾ INCHES WIDE, 2⅛ INCHES HIGH (INCLUDING FEET), 9½ INCHES DEEP

POWER SUPPLY: 4 INCHES WIDE, 2 INCHES HIGH, 9½ INCHES DEEP

PRICE

LINE STAGE ONLY, $1,700; WITH PHONO STAGE, $1,850

MANUFACTURER

METAXAS AUDIO SYSTEMS, DEPT. SR, 230 RAE ST., NTH FITZROY 3068, MELBOURNE, VICTORIA, AUSTRALIA

The Charisma is designed to be powered continuously, and neither the power supply nor the preamplifier itself has a power switch. In fact, Metaxas suggests that the Charisma be powered for at least 24 hours before any critical listening. Since the preamplifier becomes quite warm, it requires adequate ventilation.

A bare-bones control center, the Charisma provides no tone controls or filters. Its three high-level inputs, marked tuner, compact disc, and video, are selected by a knob. A small toggle switch selects the phono input, and another controls the tape recording and monitoring functions. Since the Charisma cannot be turned off in the usual sense, it has a third toggle switch, marked muting, that silences the preamplifier by the simple expedient of disconnecting its outputs and shorting them to ground. A red LED on the panel, marked AC, glows when the preamplifier is powered. Another LED, marked DC, glows only when there is a DC component in the output signal, a sign that there is a problem (the Charisma circuit is direct-coupled from input to output). Should such a problem occur, a relay grounds the outputs to protect the power amplifier and speakers.

PHOTO: JOOK P. LEUNG

TEST REPORTS

MEASUREMENTS

Output at clipping ..... 11.5 volts
Sensitivity (for a 0.5-volt output)
CD ..... 33 mV
phono ..... 0.13 mV
Noise
(A-weighted, referred to a 0.5-volt output)
CD ..... −93 dB
phono ..... −68.5 dB
Phono-input overload
(1-kHz equivalent levels)
20 Hz ..... 37 mV
1 and 20 kHz ..... 35 mV
RIAA phono-equalization error
20 Hz to 20 kHz ..... +0.2, −1.4 dB
Frequency response
CD ..... 20 Hz to 20 kHz +0.02, −0.01 dB
Distortion (THD + N at 1 kHz)
2 volts output 0.0022%

The volume-control knob, at the right end of the panel, has forty lightly detented settings, with ten index markings on the panel. The adjacent balance control, which also has ten panel markings, has a smooth, continuous rotation. It is unlike any other balance control we have used. Instead of differentially varying the gains of the two channels, it merely lowers the level in one channel at a time, depending on which way it is turned from the center position, leaving the other fixed. It has a limited adjustment range of 4 dB in either direction.

The Charisma's back panel is well populated with phono-type connectors for the signal inputs and outputs, plus a binding post for grounding a turntable or another component to the preamplifier for hum reduction. Consistent with the elegance and superb construction evident throughout this component, the signal connectors are machined from brass and gold-plated.

MAS says the Charisma's preamp and power-supply chassis are both made of nonmagnetic material. To the eye, it appears chrome-plated, its mirror-like surface presenting an attractive contrast to the preamp's black panel and polished aluminum knobs.

The Charisma's phono stage has DIP (dual in-line package) switches on its circuit board that enable the cartridge terminating resistance to be adjusted between 60 and 47,000 ohms. Except for several common settings,

this can involve a certain amount of calculation to determine the overall value of as many as eight resistances in parallel. Similar internal switches can be used to set the phono-preamplifier gain to suit a wide range of cartridge output levels. All our measurements were made using the factory-set phono values.

The MAS Charisma met or surpassed its specifications in practically every test we performed. Although we did not use it with a turntable, its RIAA equalization was very accurate (with a reasonable rolloff below 20 Hz). As received, the preamp was set up for a moving-coil cartridge and had a terminating resistance of about 2,600 ohms. Its noise level through a high-level input was very low (about the same as that of a CD player), and though the noise was considerably higher through the phono input, it still met the manufacturer's rating.

The Charisma can deliver a rather high output voltage before clipping. The phono-preamplifier overload level was satisfactory for moving-coil cartridges, but its gain would have to be reset with the internal switches for most moving-magnet cartridges.

Although Metaxas says that the Charisma's metalwork is nonmagnetic, we found that magnets clung to it about as strongly as they did to a steel plate. But since there are no high-current AC components present in the preamplifier itself, there would seem to be no reason for any concern about induced hum.

An unexpected discovery was the low input resistance of the high-level inputs (tuner, CD, video), which measured only 8,900 ohms. That will not cause any problems with most signal sources, but some might suffer a loss of deep-bass response when driving such a low load resistance.

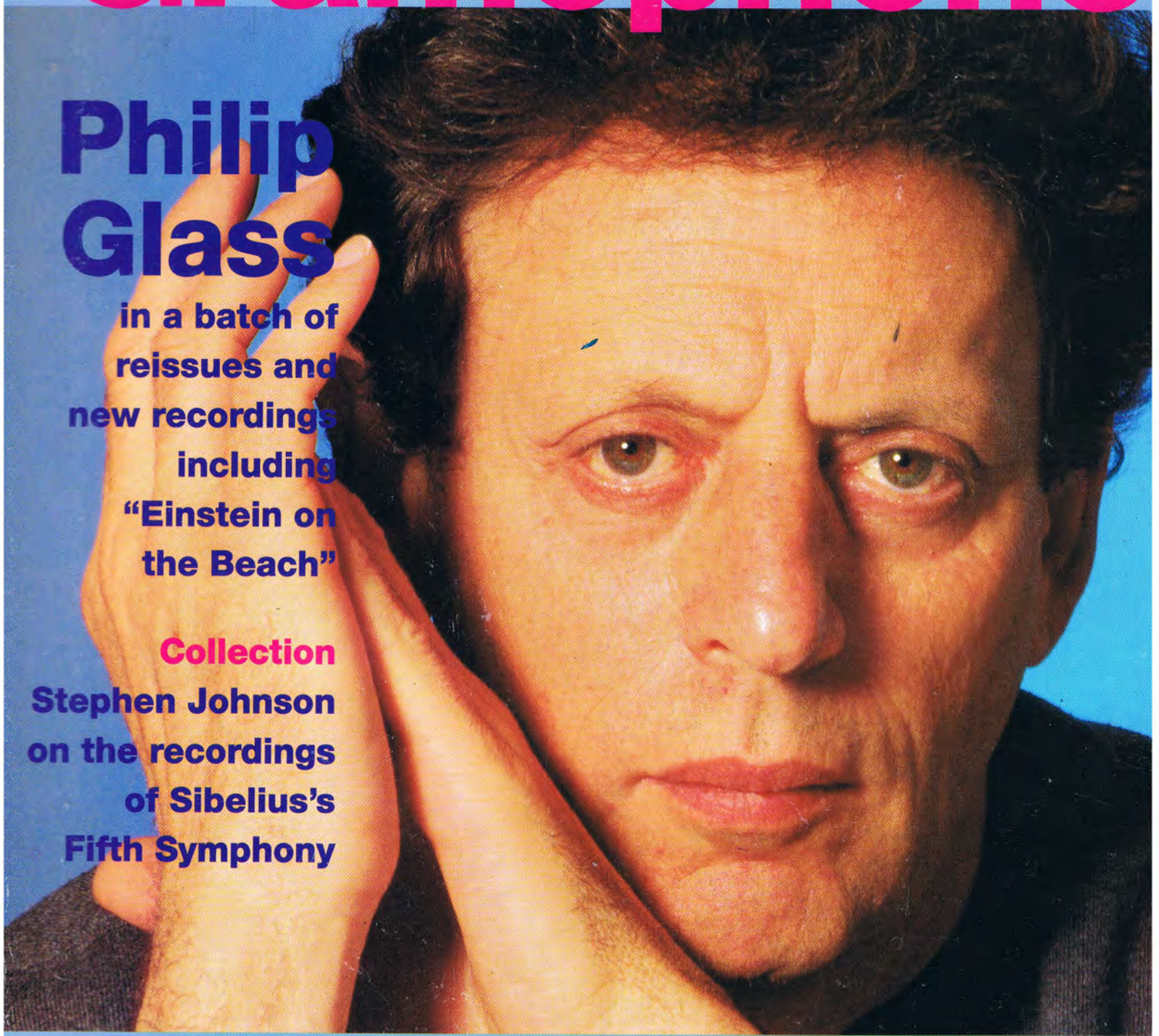
The Charisma does indeed get hot, justifying the manufacturer's admonition to avoid obstructing its ventilation slots or placing it on top of a hot component such as a receiver or amplifier. Most large receivers and amplifiers we have tested (up to power ratings of 200 watts or so) do not get as hot in normal operation as this compact preamplifier does.

As for the Charisma's sound—if you are one of those who finds significant sonic differences between preamplifiers, you should listen for yourself. This one was as flat-sounding and noise-free as any you will find, and I heard nothing that could be said to originate in it. It is a very smooth-handling unit, as quiet and precise as they come, easy to use, and significantly more compact than any I have seen in some time. I would have no hesitation in recommending it to anyone willing to spend $1,850 for a basic preamplifier—especially anyone who uses a moving-coil phono cartridge, for which the Charisma would seem to be ideal. □

£2·60 January 1994

The review of classical recordings

Gramophone



Philip Glass

in a batch of reissues and new recordings including "Einstein on the Beach"

Collection

Stephen Johnson on the recordings of Sibelius's Fifth Symphony

Hi-Fi buyers' guide

British Audio Dealers Association – a complete listing

Nearly 200 reviews including Christoph Prégardien singing Schubert Libor Pešek conducting Suk Historic Shostakovich recordings Three Callas discoveries Audio Rogers Studio 7 loudspeaker Metaxas Charisma/Iraklis amplifiers

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North American Office
136 East 57th Street
New York NY 10022
Telephone 212-371 6690
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Editorial

For the first time in a good many years the front cover of *Gramophone* features a living composer, and a highly successful one at that—if such matters are gauged in bald commercial terms. Glass is a composer who divides opinion radically. He can fill an opera house with ease, yet he rarely attracts the sort of critical acclaim that is showered upon composers whose music is unquestionably grittier and less approachable. His music is certainly easy to listen to yet does he ever engage the sort of emotional response that characterizes the greatest composers of any era? As an experiment in musical language his early compositions are undoubtedly of interest, but his lasting appeal and the extent and ultimate goal of his musical development remains to be seen. The audience he attracts, too, is markedly different from the usual attendence at contemporary music concerts; his mere approachability is both an advantage and a disadvantage. That the reviews of his recent releases in this issue are not universally laudatory is a typical critical reponse; what happens in the record store probably will not reflect those opinions but it is important that one contemporary composer should be judged by the same standards and with the same aesthetic responses as a work by another—why should Glass be treated differently to Schnittke or Boulez? Philip Glass is clearly not a composer one can ignore and any history of music in the late twentieth century would be foolish to bypass him but he remains a composer whose public is just that, the man or women who buys the concert ticket or the recording, not the critics whose tastes tend to be recorded as the historical response to the arts.

It is perhaps symptomatic of the future of serious music recordings that we should be focusing on a composer rather than a performer in the first issue of 1994. Talking recently to an A&R executive in a major record company traditionally involved in recording the central repertoire, the message certainly came across that the music rather than the musician was the priority in coming years. After ten years of CD, the catalogue is saturated. We have all the Beethoven, Brahms, Tchaikovsky and so on that we could possibly want (would we have ever dreamed back in 1983 that the catalogue would boast seven complete *Ring* cycles?), the need to explore beyond the core repertoire—which the independent companies, unhampered by the egotistical demands of the major companies' exclusive artists to record the core repertoire, have traditionally based their recording policies upon—will become a prime concern. It is a known fact that very little of the central repertoire sells in any great quantity—though there is, it appears, still room for the extraordinary performance of major repertoire (Nikolaus Harnoncourt's Beethoven symphony series has now sold 100,000 sets worldwide). The remedy is simple, if the majors don't follow the independents down the path of rare repertoire then the future will be bleak indeed.

January traditionally sees our audio pages carrying a listing of hi-fi equipment that has found favour with our panel of audio writers: this month is no exception except that we have expanded it substantially and have combined it with a listing of British audio dealers affiliated to the official trade body, BADA. We cannot hope to review all the audio equipment on the market so your local dealer is in a strong position to offer opinions on—and the opportunity to evaluate yourself—the finest in available hi-fi.

Our re-design last September was carried out as the result of feedback from our readers. The majority of copies of the magazine this month contain a survey. Traditionally the response from readers far exceeds that expected from such research and it has enabled us to respond more sensitively to your ideas and suggestions than we might otherwise have. Your reply will, as always, be gratefully received.

Photo Philips/Steiner

Highlights next month

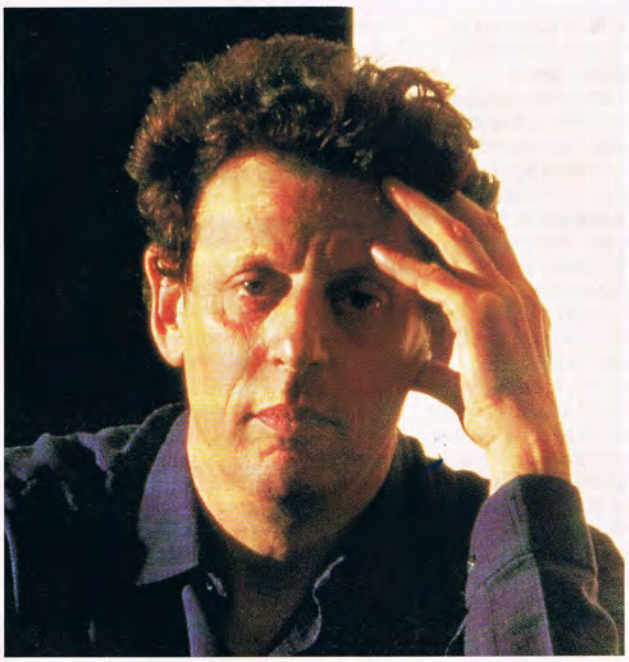
Sylvia McNair is featured on the February 1994 front cover to coincide with three new Philips releases. She sings Euridice in Gluck's opera, the solo part in a new Mahler Fourth with Bernard Haitink and Handel's *Silete venti* and Mozart's *Exsultate jubilate* with John Eliot Gardiner **Reviews** Mozart's *Così fan tutte* in period performances from Gardiner and Kuijken **Andrew Litton and the Dallas Symphony Orchestra in Mahler's Fifth Symphony** Neeme Järvi conducts Mahler in Scotland and Stravinsky in Switzerland **Richard Goode plays Beethoven sonatas**

The February issue is published on Wednesday 19th January

Reviews

Gramophone

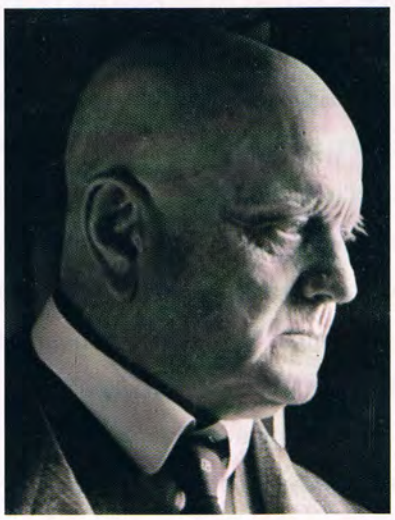
Feature



Philip Glass
Photo Elektra Nonesuch/Caravaglia

Regulars

Gramophone at 70



Jean Sibelius
Photo The Hulton-Deutsch Collection

News

Truls Mørk
Photo Virgin Classsics/Mountain

Audio

Quad 67 CD player

Musical Fidelity "The Pre Amp"

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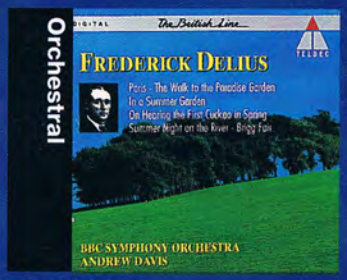
Editor's choice

James Jolly selects ten outstanding CDs from this month's reviews

Orchestral



Delius Orchestral Works
BBC SO / A Davis
Teldec
page 44

Opera

Donizetti Anna Bolena
Callas; La Scala / Gavazzeni
EMI
page 91

Chamber

Haydn Six String Quartets, Op. 64
Kodály Qt
Naxos
page 66

Choral and song

Schubert Schiller Lieder
Prégardien; Staier
Deutsche Harmonia Mundi
page 88

Chamber

Schubert "Trout" Quintet. Quartet in G, D96
Various artists
DG
page 68

Orchestral

Shostakovich Symphonies Nos. 9 and 14
Various artists
Russian Disc
page 54

Choral and song

R Strauss Wagner Orchestral Lieder
Meyer-Topsøe; Copenhagen PO / Bihlmaier
Kontrapunkt
page 88

Orchestral

Suk Ripening. Praga
RLPO / Pešek
Virgin Classics
page 59

Chamber

Vivaldi 12 "Manchester" Sonatas
Romanesca
Harmonia Mundi
page 72

Choral and song

Music from Renaissance Portugal
Cambridge Taverner Ch / Rees
Herald
page 89

The bass driver employed in the Studio 0·75M is built on a cast chassis of 155mm outside diameter carrying a 90 × 27mm magnet assembly with a 5mm thick front plate. The centre-pole has a 12mm vent hole. The actual cone is flared, of 92mm diameter black anodised aluminium with a soft rubber convex surround. A 33mm diameter copper voice-coil of 4·5 ohms DC resistance is wound on a Kapton high temperature former and there is a phase plug attached which actually projects in front of the chassis line. In free air this unit has a natural resonance at 33Hz. The tweeter is provided with a protective metal grille, held in place by magnetic attraction, but it does affect the sound and can be removed if there are no inquisitive fingers in the household, a 'modification' condoned by TDL.

The cabinet is constructed of 15mm MDF, veneered in real wood of walnut or blacked ash and the units are recessed flush with the front face to which a full length brown or black cloth covered grille can be fitted. The internal partitions which form the folded duct add great strength and there is a marked lack of reaction to the usual knuckle knock test. An optional square-section steel box frame into which the loudspeaker drops adds considerably to the stability; spikes can be fitted.

Much of the internal wall area is covered with 'egg box' sculptured polyurethane foam. The only material actually in the air path is a roll of BAF wadding behind the driver. This is part of the secret in keeping a moderate sensitivity, for this damping falls short of a true transmission line in exhibiting dual reflex resonances, admittedly well flattened, at 22 and 52Hz. This, together with a fair sized chamber at the start of the line, suggested a real sensitivity measuring about 84dB for 2·83 volts of drive at one metre. However, although quoted as a 'nominal' 8 ohms loudspeaker, it is nearer to 6 ohms over most of the frequency range and actually falls to around 3·5 ohms at 3kHz. Thus the true sensitivity is a dB or so lower and one really needs a load-tolerant amplifier of around 100 watts per channel to make these loudspeakers sing.

Performance

If one can satisfy that last requirement then the performance at low frequencies is quite staggering for loudspeakers of this size. Organ pedal notes are faithfully reproduced with good attack and decay and big bass drums ten times their size appear as if by magic. To he honest in my quite large listening room they are often working at their maximum level and I should really be using one of TDL's larger pairs, but nevertheless a number of visitors have gone away with a most thoughtful look on their faces. By comparison, like many transmission lines, they are less well blessed in the upper bass area and plucked string basses are somewhat hollowed; similarly, piano rendition is rather weakened in the left hand. Critically one can sometimes notice this on voice too, although far too many radio transmissions, which are boomy to start with, benefit from this.

In-room measurements suggest that above this area the 0·75Ms have a gradually rising response which can cause a little hardness on the efforts of some of our dear lady sopranos, whose rich harmonics are almost entirely in the range of the tweeter. This has excellent presence and is a big contributor to the very well defined stereo image and sense of depth which these loudspeakers exhibit; a property which is most likely enhanced by the very low cabinet coloration. It is possible to reduce the effect of the former problem area and maximize the asset of the latter by judicious angling inwards. The extreme treble above about 10kHz was falling, taking some of the sparkle out of gently brushed cimbals and metallic percussion on some of my jazz discs but measurements showed that it came back towards 20kHz, an octave higher, and reached a sharp peak above audibility at about 25kHz, a characteristic of metal domes.

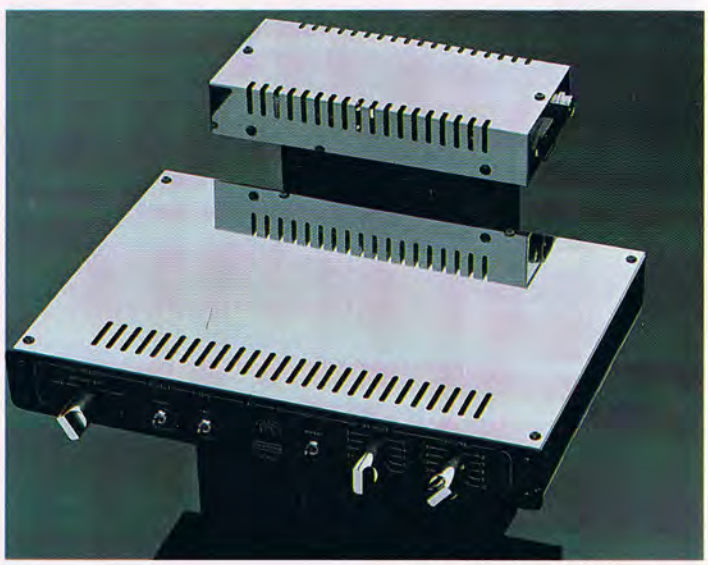
On the whole then, another high mark for TDL for a loudspeaker which is probably going to be happier in rooms of lesser volume than mine and which will then amaze many an organ lover who has probably never dreamt of hearing 16 foot registers in his or her own home.

TDL's 0·75M crossover using polypropylene capacitors and air-cored inductors

The 0·75M's bass/midrange cone compared for size with a Compact Disc

Metaxas Charisma II preamplifier and Iraklis II power amplifier

Geoffrey Horn

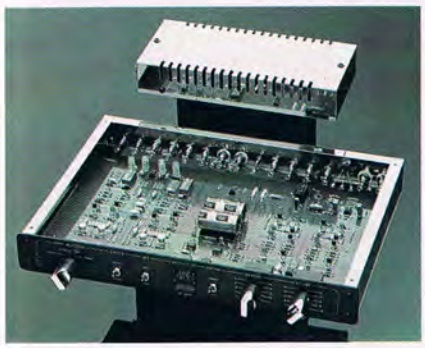


Charisma with its separate power supply

MAS, Metaxas Audio Systems, although becoming well known as a source of up-market audio products in Europe is relatively new to the UK. Originated by Kostas Metaxas, a third generation Australian of Greek origin, it emanates from Melbourne where it has earned a number of native awards. The trio of products supplied for this report are of unusual appearance and, in their extensive use of mirror finished stainless steel sheet, more in the fashion favoured in continental Europe where domestic products of like appearance often feature, particularly in France, Germany and Italy. To us it looks rather home made, though not in any derogatory sense, for I have come across remarkably impressive pieces of equipment which had their source in an enthusiast's workshop. Interestingly, the Metaxas literature lays stress on the hand-crafted approach, which is clearly indicated by the case and chassis construction from individual folded members bolted together with black, domed hexagon-headed screws engaging hank bushes. However, make no mistake, this is a technically advanced product, extremely well thought out and containing a number of refreshing features which result in a very high standard of performance. Its major appeal is likely to be to the enthusiast with a willingness to investigate the less stilted designs and I shall deal with it as such.

The Charisma preamplifier comes with a separate power supply unit, also housed in a ventilated stainless steel box containing a fair sized toroidal transformer, rectifiers and four 4,700μF electrolytic capacitors, two on each positive and negative 30V supply. There is an IEC mains connector (lead supplied) and a locking three-pin connector and cable to the preamplifier itself. Inside the latter there is further smoothing and unique regulation circuits using discrete components to give a final ±20 volts. No on/off switching is provided.

The control amplifier itself has a contrasting 3mm thick black anodised aluminium panel engraved and filled with white legends. There are three large polished chrome knobs for the three-position line-level input selector switch, balance and volume controls. Three small toggle switches bring in phono (cutting out the main selector), tape monitoring and defeat. In addition there are two red LEDs, one indicating power on and the other a warning of DC at the output, due perhaps to an offset in a connected input source, which, because the Charisma is direct-coupled and therefore devoid of capacitors in



the signal path, will be progressively amplified as the volume control is advanced. As the Iraklis power amplifier is also direct coupled a potential disaster would threaten one's loudspeakers if this warning were ignored. However, the avoidance of capacitors wherever possible is an essential part of the design philosophy—Metaxas calls them "a necessary evil which store energy at various frequencies and release this energy over a period of finite time to smear, add grain or texture and a form of hardness to the overall sound." I well remember this same cause being preached (?) in 1930s letters to *Wireless World* from a Reverend Noel Bonavia-Hunt. Strangely, both gentlemen seem able to forget that the final smoothing capacitor in the power supply is also in the signal path, for where else does the energy come from? However, supposing they are right it may help the sound if we avoid the blighters (correct use of the word!) wherever possible.

Two other design facets are important to Kostas Metaxas. The first we have touched on in relation to power supplies, which must be very sturdy and, where regulation is called for, some rather unusual circuit arrangements have been brought in. The second is using component layouts which yield extremely short interconnections on the printed circuit board and off where he regards the unshielded signal path, which is of uncommonly wide bandwidth, as vulnerable to possible contamination.

All the amplifying stages in this Metaxas equipment use matched complementary PNP/NPN pairs of selected transistors in a differential arrangement. In the case of the preamplifier four pairs are deployed in the phono stages with an unusual and highly accurate correction for the RIAA recording characteristic. Multiple internal miniature switches provide a wide choice of cartridge loading from 47k ohms down to 100 ohms plus an optional 270pF of capacity. Although the Charisma arrives set to a basic sensitivity suitable for most modern moving-coil cartridges, instructions are given to raise or lower it by changing a few resistors.

A further four pairs of transistors take up the output of the phono stage or the line inputs after switching and the 50k ohms volume control. Balance is set by an ingenious feedback circuit and an isolating tape buffer stage ensures that it causes no corruption of the main signal path. Construction is absolutely first class with a generous sprinkling of quality components on a single large ground plane printed circuit board. Individual gold-plated phono sockets are lined up on the rear panel opposite their board connections. The left hand section of the board houses the phono stages and that on the right the line and output section, with the power regulators in between.

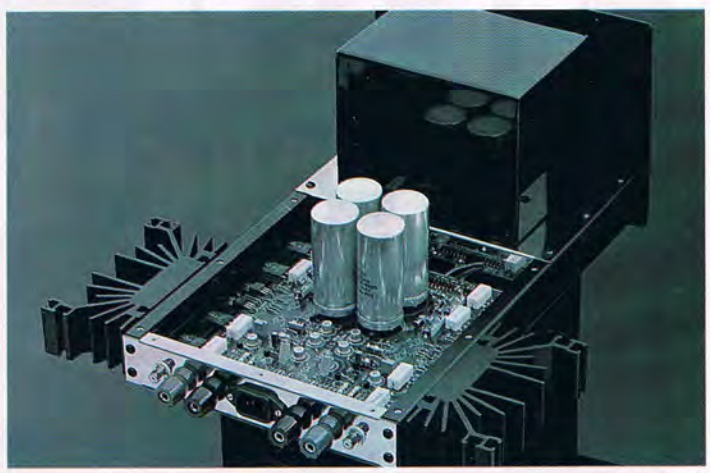
Similar circuit ideas permeate the twin power amplifiers, which are dominated by the case of the enormous power transformer—the only component common to both channels—and the black 'butterfly wings' of the two projecting heatsinks. This is quite the heaviest amplifier in relation to its output power that I have handled. The discrete dual-differential early stages have local feedback paths and the four fast parallel pairs of power output devices are arranged in a type of Darlington circuit with their drivers and have a small amount of overall feedback derived directly from the output terminals. These are large and solid with 4mm centre holes and are joined on the rear panel by two gold-plated phono sockets and an IEC mains connector. The front panel is again of 3mm thick black anodised aluminium, engraved with "IRAKLIS II" and the MAS logo. The only control is a red illuminated on/off rocker switch.

Performance

Like a number of upmarket British makers Kostas Metaxas only provides a very minimal specification and during the course of an amusing conversation at the recent Heathrow show he told me that he recommended potential customers "to buy it with their ears". Well, that is not a bad idea but before commenting on the sound—or lack of it, for this is a freewheeling neutral performer, I will fill in a few of the gaps as measured on my sample.

The power amplifier requires an input of 630mV to provide the stated output of 50 watts into 8 ohms loads, both channels driven, and some 56 watts were observed before clipping with the supply standing at a below-normal 230V. Into 4 ohms loads 72 watts was available. Total distortion is average for a low feedback design at around 0·05% but the signal-to-noise ratio is excellent at almost 110dB. The Charisma required 45mV at its line inputs to drive the Iraklis fully at a similar distortion and S/N ratio of 94dB. As described, the phono input is capable of considerable variation but set for a sensitivity of approximately 200µV it yielded a signal to noise ratio in the 75dB area. In both cases overload margins were adequate. (Note that quoting S/N ratios with input shorted, as Metaxas does, can often give inferior figures as induced alien current in input circuits can rise above those present with a normal source.)

I have been running this system for several weeks now with a wide variety of sources and several differing pairs of loudspeakers. After an initial 'so-so' period while it was settling down it developed that easy confidence which is the signature of a thoroughbred, only marred by rather too much mechanical hum from that oversize power transformer. I had chosen decent interconnect and loudspeaker cabling—no leads apart from IEC mains supply came with it—and, because of the stress laid on it in the literature, spent some time listening via the phono input to several alternative pickup cartridges, thus renewing acquaintance with a number of long-forgotten LPs to which it did full justice. However, recording exercises over the last few years have many times provided me with the unrivalled experience of directly comparing live feed from the microphones to the digital master tape and later that master tape to the completed CD. There can be no doubt where accuracy lies and so most of my listening has been to the latter. You may have read some of the resulting comments in December's "Sounds in Retrospect" and I have been indulging in repeat performances of some of my top choices via this Metaxas system. This has served to confirm my opinion that although one might describe its appearance as business-like rather than pretty, its sound is fully capable of bringing on the elated feeling that often follows a good live concert performance; quite the opposite, a musician friend points out, of the equally enjoyable soporific contentment which follows a good meal!



Iraklis with cover removed

Specification

Charisma preamplifier

Input impedance phono 47k/250pF; line-level 10k (phono is internally switchable to 69 different values)
Signal-to-noise ratio phono 80dB ref 1mV, input shorted; line-level 100dB ref 0·5V in/out (IHF)
Gain phono 55dB at 1kHz; line-level 25dB at 1kHz
RIAA accuracy ±0·1dB, 20Hz–20kHz
Total harmonic distortion <0·05% at 2V RMS
Intermodulation distortion <0·05% SMPTE

Iraklis power amplifier

Power output 50 watts per channel into 8 ohms, DC–500kHz +0, –3dB
Total harmonic distortion <0·25% at full power output above
Signal-to-noise ratio 117dB unweighted, input shorted
Input impedance 130k/100pF
Damping factor 500
Slew rate >1,000V/µs
Manufacturer MAS, 230 Rae Street, North Fitzroy 3068, Melbourne, Victoria, Australia
UK distributor UK Distribution, 23 Richings Way, Iver, Bucks SL0 9DA Telephone 0753 652669
UK retail prices Charisma preamplifier and Iraklis power amplifier £1,525 each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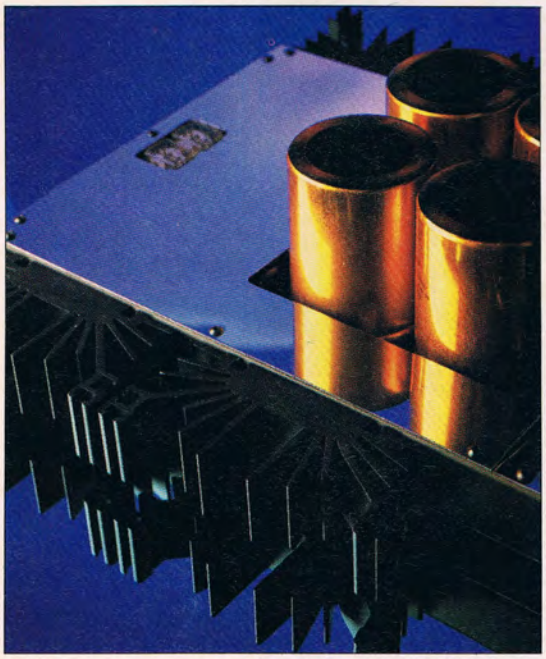
AUDIO

Tape Test, *page 38*



Metaxas, *page 62*

features

equipment profiles

auricles

recordings

departments

Currents, *page 26*

Rock/Pop, *page 100*

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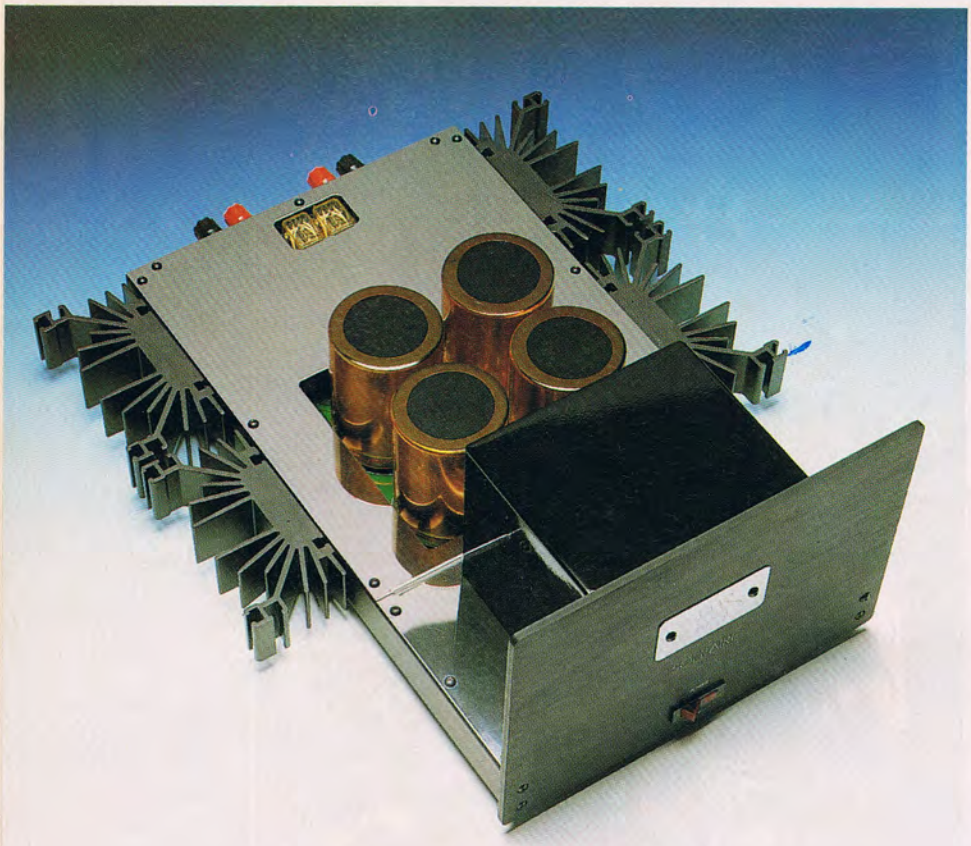
EQUIPMENT PROFILE

METAXAS SOLITAIRE AMPLIFIER



I first encountered Kostas Metaxas at the 1992 Winter CES and was impressed by the man, by the range of products displayed in his company's demo room, and by the sound of those products. Metaxas Audio Systems hails from Australia. They make a number of electronics pieces, including several preamps, three power amps, and some interesting full-range electrostatic speakers. Other new products are in the making.

The Solitaire amplifier reviewed here is an unusual looking package rated at 130 watts per channel into 8-ohm loads and is said to be very wideband and fast. Some Metaxas literature claims a power output in excess of 100 watts per channel into any known speaker load, from d.c. to well over 500 kHz; I was reluctant to test that bandwidth spec until I had done the formal measurements and had my fill of listening!

The Solitaire is a near dual-mono design, with the common elements being the chassis and the power transformer. The overall layout ensures a very short signal path from input to output, including the current path from the power-transformer secondary windings and the rectifier and filter capacitors. The front-end circuitry consists of a complementary differential cascode arrangement feeding a complementary second stage that I usually call the "last voltage amplifier" (LVA). The differential input amplifiers don't use solid-state current sources but are connected by good old-fashioned resistors to the appropriate supply rails. The collectors of the LVA, tied together through a bias-spreading regulator, feed a series of three Darlington-connected complementary emitter followers, of which the first two are drivers and the last is the actual output stage.

All the circuitry above, including the first output-stage driver, is powered by complementary Darlington-connected capacitor-multiplier "regulators" fed from the main rectified power-supply rails. Capacitor multipliers divide the input d.c. voltage down by a small amount and bypass the lower arm of the divider with a large capacitor. This divided and filtered voltage is fed to the base of an emitter follower, in this case a Darlington-connected one, and the emitter is the multiplied output. This provides a low output impedance, with the value of the capacitor connected from base to ground multiplied, in effect, by the beta of the transistor(s).

Back to the main signal path: A second complementary emitter follower drives

SPECS

Power Output: 130 watts rms per channel into 8 ohms, with less than 0.25% THD; 250 watts/channel into 4 ohms.
Rated THD: 0.05%.
Slew Rate: 1,000 V/μS.
Frequency Response: D.c. to 500 kHz, +0, –3 dB.
S/N: 117 dB, unweighted.
Gain: 28 dB (0.8 V rms in for 40 watts out).
Dynamic Headroom: 6 dB.
Damping Factor: Greater than 500, wideband.
Input Impedance: 130 kilohms and 56 pF.
Dimensions: 16 9/16 in. W x 7 7/8 in. H x 19 5/16 in. D (42 cm x 20 cm x 49 cm).
Weight: 65 lbs. (29.5 kg).
Price: $3,800.
Company Address: 230 Rae St., North Fitzroy, Victoria, Australia 3068.
For literature, circle No. 90

four pairs of very fast (80-MHz gain-bandwidth product) output transistors. No Zobel (series RC) stabilizing network across the output line to ground, or parallel RL output-buffering network in series with the hot output, is used. The only stabilizing elements, at least according to the schematic, are a pair of small capacitors between the collectors and bases of the LVA transistors. A passive RC input filter reduces response above the designed bandwidth of the amplifier circuit itself. All devices are bipolar transistors. A claimed 11 dB of overall loop feedback is employed, and an op-amp servo keeps overall d.c. offset to low values. Of course, the use of a d.c. servo negates the possibility of audio response to d.c., since servo circuits ultimately reduce the subsonic a.c. gain to a value less than what it is in the audio frequency range. Topologically, this circuit is a lot like other designs I've seen over the years, but to my knowledge, none of them were as fast as this design. Part of the reason for this wide power bandwidth is in the p.c. board design, which borrows from r.f. and ground-plane technology to maximize the speed of current delivery at high frequencies. A turn-on/turn-off time-delay and protection circuit operates a relay in series with the speaker terminals.

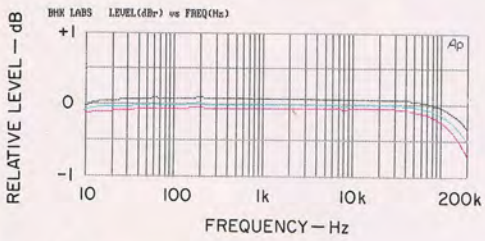


Fig. 1—Freqency response for (from top) open circuit, into 8 ohms, and 4 ohms. Note the close match.

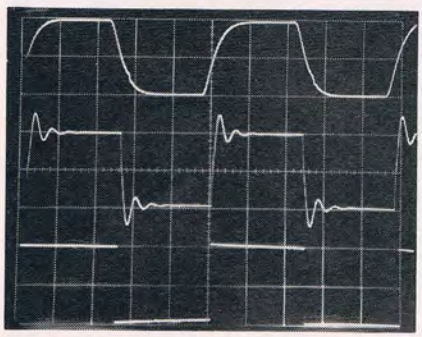


Fig. 2—Square-wave response of (from top) *200* kHz, 8 ohms (1 μS/div.); 10 kHz, 8 ohms & 2 μF (20 μS/div.); 40 Hz, 8 ohms (5 mS/div.; all 5 V/div.).

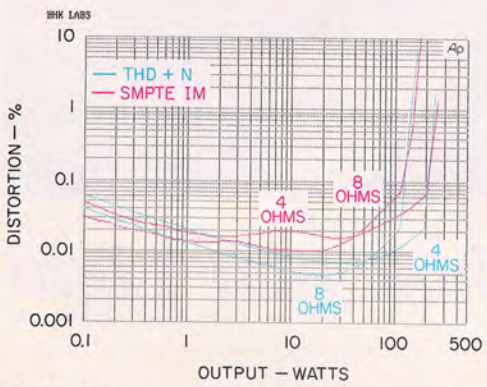
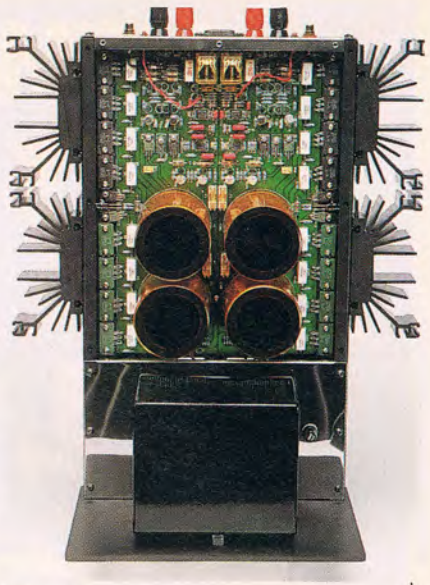


Fig. 3—Distortion vs. power.



Another interesting circuit departure from convention is the use of a large number of small rectifier diodes in parallel instead of the customary single high-current bridge rectifier, which is slower.

Measurements

My first measurements were of gain (30.3 dB for the left channel, 30.2 dB for the right) and sensitivity (86.8 and 87.3 mV for the left and right channels, respectively). Then I measured frequency response at an output level of 2.83 V (equivalent to 1 watt into 8 ohms) for 8-ohm, 4-ohm, and open-circuit loads (Fig. 1). As can be seen, the response is essentially unaffected by load.

Square-wave response for this amp is shown in Fig. 2. The top trace is for *200 kHz!* I couldn't help using this much higher than usual square-wave frequency to illustrate that this amp is indeed fast. Measured rise- and fall-times were about 0.6 μS, giving an equivalent upper frequency response limit (+0, –3 dB) of some 583 kHz. The little glitch on the negative-going transition is a fairly insignificant flaw; since its duration is some 200 to 300 nS, its energy is well out of the audio frequency band. With a more normal square-wave frequency of 10 or 20 kHz, the waveform would remain exponential even if I ran the level up quite a bit higher than the 10 V peak to peak shown. (Remember, I didn't want to risk the possibility of rendering this amp unplayable, as I hadn't fully assessed its sonic properties yet.) In the middle trace of Fig. 2, we have a 10-kHz square-wave frequency with an 8-ohm load paralleled by 2 μF of capacitance.

AT 500 kHz, THE AMP COULD SQUEEZE OUT "ONLY" 80 WATTS PER CHANNEL—STILL PRETTY DAMNED IMPRESSIVE!

Ringing here is typical of other transistor circuits and shows that even though the rise-time of the amp into a resistive load is blazing, it still can't deliver the current that fast into a high-frequency short (the capacitor), as evidenced by the slower rise-time in this trace. In the bottom trace, for 40 Hz, there is some low-frequency roll-off (not much, mind you, but some), evidence that the reponse does not go down to d.c.

Figure 3 shows THD + N and SMPTE-IM distortion as functions of power output and loading. (The 3-ampere fuses in the power-supply rails blew during my tests with 4-ohm loads, as the approximate average current per rail is about 3.8 amperes under those conditions. I therefore replaced them with 4-ampere fuses, despite

the admonition in the owner's manual not to use fuse values larger than 3 amperes.) Results are shown for the right channel, which was slightly higher in distortion than the left channel.

Total harmonic distortion, as a function of frequency and power for 8-ohm loads, is shown in Fig. 4. Even though the bandwidth of this amplifier is so high, distortion does start to rise in the audio range, as can be seen in the figure. The distortion at lower power levels was dominated by line harmonics rather than distortion per se; accordingly, I used a 400-Hz high-pass filter to cut off the measurements. Spectrum analysis (not shown) revealed a second-harmonic component of about 0.0025% in the right channel, with the rest of the spectrum mostly made up of line-harmonic components. The left channel, however, had much lower noise, so more discrete distortion components could be seen, including a decreasing series down to the sixth harmonic.

Table I—Output noise. The A-weighted IHF S/N ratio was 82 dB for the left channel and 72.7 dB for the right.

	Output Noise, μV	
Bandwidth	LEFT	RIGHT
Wideband	741.0	2,030
22 Hz to 22 kHz	700.0	2,030
400 Hz to 22 kHz	204.0	598.1
A-Weighted	226.0	658.0

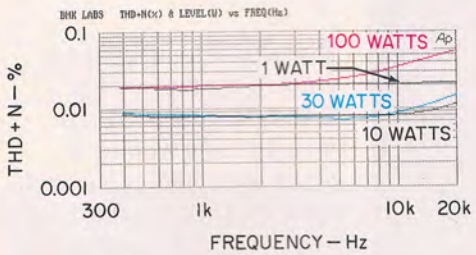


Fig. 4—THD + N vs. frequency as a function of power into 8-ohm load.

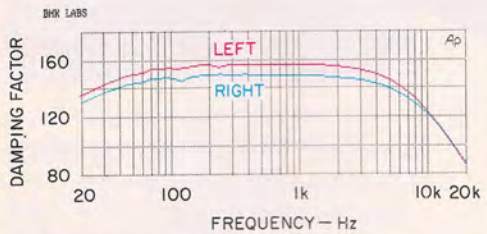
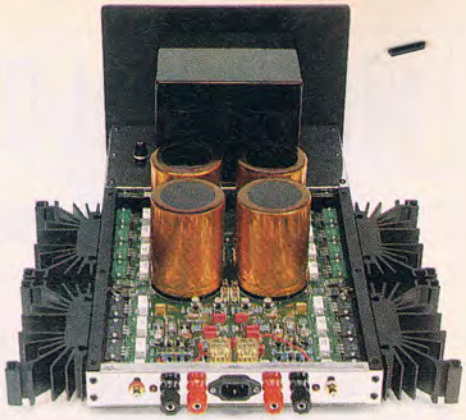


Fig. 5—Damping factor vs. frequency.

Output noise levels are enumerated in Table I. Noise levels are dominated by line-harmonic (hum) components at a fundamental frequency of 120 Hz. The waveshape of these hum components looks like the effect of charging current pulses in the main filter or smaller bypass capacitors tied to the main supply line. In my opinion, the left channel was only marginally quiet, and the noise in the right channel was outright too much.

Crosstalk between channels was found to be down more than 90 dB over the audio range in the left-to-right direction, with the exception of the aforementioned hum components (which aren't crosstalk per se but do show up in the measurement). In the right-to-left direction, crosstalk was again better than 90 dB down, including the hum components, but started to rise at about 1 kHz, crossing over the –90 dB point at 3 kHz and ending up at –83 dB at 20 kHz.

Damping factor for both channels is plotted in Fig. 5. The higher damping factor is for the left channel. Notice the dip at 120 Hz for the right channel. That is the 120-Hz fundamental hum component showing up in this measurement. The basic technique in measuring damping factor is to inject 1 ampere of current into the measured channel's output terminals, with the signal input jack terminated by 1 kilohm, and then measure the voltage appearing across the output terminals. Since the injected current is 1 ampere, the measured voltage across the output is directly convertible to ohms of output impedance. However, any noise or hum in the output of this measured but undriven channel can raise the voltage measured in this test, contaminating the results. Since damping factor is really 8 ohms divided by the measured output impedance, a small rise in level at hum frequencies will appear as an apparent dip in damping factor.



In dynamic power testing, the Solitaire's dynamic clipping power was found to be 150 watts into 8 ohms, for a dynamic clipping headroom of 0.62 dB. Into 4-ohm loads, the dynamic clipping power at the visual onset of clipping was 288 watts. Steady-state clipping power at the visual onset of clipping was 134 and 220 watts into 8- and 4-ohm loads, respectively. This yields a clipping headroom of 0.13 dB for 8-ohm loading.

The Solitaire's d.c. offset measured less than 1 mV in each channel. The a.c. line current at idle was 0.72 ampere, indicating a moderate idling power dissipation that gets the heat-sinks warm to the touch. Power-supply rails were ±55.3 V for a 120-V a.c. line input.

After a thorough listening evaluation, I returned the amp to my lab to look a little closer into its ultrasonic power capabilities. Driving a 20-kHz signal into clipping with 8-ohm loads showed some signs of "sticking." A sweep of distortion versus power output with 8-ohm loads and a 200-kHz test signal (not shown) revealed that distortion stayed under about 0.6% for both channels up to 100 watts, and visual onset of clipping occurred at about 120 watts. At 400 kHz, again with 8-ohm loading, I got about 100 watts per channel at the onset of clipping. Finally, at 500 kHz, I could squeeze about 80 watts per channel out, though the waveform was starting to look more triangular than sinusoidal. Although this doesn't quite meet the Solitaire's spec for high-frequency power, what the amp does do is pretty damned impressive, if you ask me! Definitely not something to try on most other solid-state amps!

Use and Listening Tests

Ancillary equipment used to evaluate the sonic properties of the Metaxas Solitaire

Continued on page 78

along with Rotel and Onkyo CD players. My reference speakers are the B & W 801 Matrix Series III units (the Series III recently replaced the Series II, which had been my reference from the start). All cabling is from Straight Wire. Listening was done with the Dahlquists' grilles off.

Initial listening disclosed a well-balanced, wide-range sound with extended low-frequency capability and the ability to do justice to many different types of program material. The Dahlquists' imaging capabilities were very good. Their sensitivity was quite close to that of the B & W systems, so no level adjustment was required when switching between speakers.

On the very revealing third-octave band-limited noise signal, the DQ-30is kept up with my B & W systems over most of the low-frequency bands in terms of sheer bass output. However, the B & Ws were somewhat cleaner than the Dahlquists due to lower levels of vent noise. At most bands, the port noise of the Dahlquist systems included a slight but audible whistle-like sound. At the 63- and 80-Hz bands, significant outward cone displacement was evident due to dynamic offset problems. (The easiest way to distinguish dynamic-offset displacement from genuine program-generated displacement is to reverse the leads going to the speaker and note if the direction of the displacement changes. If the direction does not change, it is self-generated dynamic displacement.) In addition, at the 125- and 160-Hz noise bands, highly audible vibration of the top and rear screens was evident. I searched for program material that would cause audible sounds from these screens but did not have much success. The only music that consistently set them off was pipe organ. Fortunately, the energy content of program material must be highly concentrated in the screen's resonance range and be of high level to set off the vibration. Any additional program content in other frequency ranges often masks the vibration's sound.

The sound of pink noise did not change much as I went from sitting down to standing. However, most of the change was heard when I sat, making the Dahlquists sound slightly muffled. This is because the DQ-30i's tweeter is about 42½ inches from the floor, about 6½ inches above my ears when I was sitting on my sofa. That placed my ears about 3.1° below the tweeter's axis. Hammerstrom, the designer, told me that sitting in his favorite listening chair places his ears about 43 inches above the floor, hence his reliance on a higher listening axis. I can't recommend tilting the Dahlquist forward to remedy this, because of the previously mentioned balance problem. My quick fix was to sit on a large overstuffed pillow; another solution might be to remove the cone bases, which would lower the DQ-30i by about 3½ to 4 inches. (As mentioned, the optional base with spikes only makes the tweeter higher.)

The Dahlquists exhibited excellent realism and a very detailed, live, and clean sound on a recording of music from the Renaissance period, *Songs of the Sephardim: Traditional Music of the Spanish Jews* by La Rondinella (Dorian Discovery DIS-80105). They also did very well on quite different music that is normally played quite loud. When I was recently in Berlin to attend an Audio Engineering Society convention, I picked up a German compilation of extended-mix dance versions of club music. The DQ-30is could play loud and clean, with solid low end, on this CD, *Maxi Dance Sensation 8* (BMG/Ariola 74321 11562). The reproduction of horns and the orchestral soundstage of Liszt's "Les Préludes" (you probably know this piece, the old Flash Gordon theme music) were very impressive. The Liszt selection came from *Ravel: Boléro* (Music Digital 31 003, one of Delta Music's inexpensive but high-quality "DDD" classical import compilations; I picked it up at a local supermarket for $2.99.)

Program material permitting, the DQ-30i's soundstage capabilities and stereo focus were always very good. On mono signals, the stability and narrowness of the center image was excellent. The Dahlquists' extended bass response provided a solid underpinning for pipe organ music; they could essentially keep up with my reference B & W 801 Matrix Series IIIs on bass pedal notes.

In summary, the DQ-30i's many virtues well exceed its weaknesses. Its fine imaging capability, smoothness, neutrality, and extended bass response—coupled with its refreshing styling—make for a solid contender in the $2,000-per-pair range.

D. B. Keele, Jr.

Metaxas, *continued from page 66*

power amp included the following: An Oracle turntable fitted with a Well Tempered Arm and Spectral Audio MCR-1 Select moving-coil cartridge, a Krell Digital MD-1 CD transport feeding a PS Audio UltraLink or Counterpoint DA10 D/A converter, a Nakamichi 250 cassette recorder and an ST-7 tuner, and a Technics 1500 open-reel recorder. Preamplifiers used included a Counterpoint SA-5000 and First Sound Reference II. Other power amplifiers used were a Crown Macro Reference and a pair of Quicksilver M135 mono tube prototypes. Loudspeakers used were Win Research SM-10 monitors, early Genesis Technologies two-way prototypes, and Scientific Fidelity Joules.

THE SOLITAIRE OFFERS GREAT TRANSPARENCY AND EXQUISITE SPATIAL PRESENTATION.

The Solitaire is yet another solid-state amplifier that I liked from the first time I heard it in my system. It passed very musical and unharsh sounds through to the speakers. Its sound is characterized by exquisite spatial presentation, solid dynamics, great transparency, and a tonality that is a little soft-sounding in the high frequencies. This amp is lyrical and quick sounding. Some of my favorite software that might be a bit edgy on other otherwise good amps sounded smooth and less irritating on the Solitaire yet had great definition.

I had two nit-picks about the Solitaire: It made a very audible pop some 5 or 10 S after the power switch was turned off, and the hum in the right channel was definitely audible at the loudspeaker and just discernible at the listening position when no signal was going through the system. In practice, however, this hum level is not going to be a problem except with very efficient loudspeakers; it didn't really bother me.

Overall, though, I enjoyed having the Metaxas Solitaire in my system, and listened to a lot of music through it. I forgive its trivial technical flaws for its wonderful music transference. A BHK thumbs-up for this one.

Bascom H. King