RECOMMENDED

Yamaha CA-2010

Natural Sounds System Ltd., 10 Byron Road, Wealdstone, Harrow, Middlesex. 01-863 8622.

A very unusual feature of this amplifier is that it has the switched option of two modes of operation of the output stages, class A/B or class A operation, the latter being claimed to give even lower distortion. The penalty for class A operation is that the rated output power into 8 ohms drops from 120W to 30W, and all figures in the adjacent table are related to the 120W output.

Measured distortion in this condition was first class and similar excellent results were obtained with class A operation, the high frequency intermodulation distortion being extremely low, and also the power bandwidth extending above 100kHz.

Not only was distortion performance outstanding, but also the noise associated with all the inputs was amongst the best measured in these amplifier reviews and the output noise was good. Because the manufacturer has had the sense to place the 'muting' attenuator after the analog volume control, noise was no problem when using headphones and the action of the volume control was found to be very good. Neither the volume control nor the treble and bass tone controls upset the amplifier balance and the tone controls were a delight to use with their small switched steps and sensible restricted range. The defeat tone control switches provided a choice of two well chosen turnover frequencies for each control.

High pass and low pass filters are of the 12dB per octave type with well chosen turnover frequencies at 30Hz and 10kHz respectively and it was noted that the common and unnecessary loudness control was not to be found on this amplifier.

On the output end two sets of loudspeaker terminals are available, with switch selection of either loudspeaker or both in parallel — in which case use 8 ohm speakers.

The basic input selector switch provides for the two tape inputs and the tuner and auxiliary inputs, with a further position selection selecting the phono inputs switch. The latter selects the fixed sensitivity and impedance 'phono 2' input or the 'phono 1' input which accepts either a magnetic pick-up cartridge with a choice of 99/68/50k ohm input impedance or a moving magnet cartridge with a low input impedance and a sensitivity of 70 microvolts. But amplifier balance was poor using this input — see graph.

The arrangement of the two tape inputs and outputs which do not have DIN connectors is such that tape monitoring is achieved by the input source switch, and the signal to be recorded is selected by a further rotary switch which has positions for all the input sources in addition to positions for the two tape units, such that tape dubbing can be done in either direction. Crosstalk across all selector switches was satisfactory, such that there was little interference from unwanted sources.

In addition to the inputs and outputs already mentioned, the rear of the amplifier also has pre-amplifier output and power amplifier input connections which can be separated by a slide switch.

A final feature is two front panel meters calibrated in millivolts for measuring the record output level, and in decibels and watts into 8 ohms for measuring the power amplifier output. These were fast acting meters which really did indicate peak conditions — amplifier clipping and distortion could be easily read.

Internal and external finish were both good, with excellent and clearly identified circuit boards and components, but access for servicing appeared to be restricted.

Overall this is an excellent amplifier with all the facilities which may be required, but it is of course expensive.

General Data

Hum modulation at rated output into 8Ω
50/100/150Hz 0dB
Damping factor ref 8Ω at 1 kHz 58
D C offset at loudspeaker and headphones L/R ... 8/21mV
Crosstalk at 1W output 100Hz/1kHz/
10kHz ..... —74/—70/—55dB
Loudness control effect ref 1kHz 100Hz/10kHz ..... —dB
Frequency response deviation from 20Hz to
20kHz aux/tape/tuner 0.5dB

Power performance

Power output into 8Ω both L/R 139/135W*
Power output into 8Ω single L/R 156W*
Power output into 4Ω both L/R ..... —W
Power output into 4Ω single L/R ..... —W
Burst output into 8Ω single L/R 176W*
Burst output into 4Ω single L/R ..... —W
Power output into half rated load L/R 4Ω 250/254W*
Power bandwidth 8Ω 60W L/R ..... 10Hz to 100kHz
Power bandwidth W L/R ..... —kHz

Distortion

Total harmonic distortion at 1W into 8Ω
1kHz/10kHz 0.04%*
Total harmonic distortion at 1W into 4Ω
1kHz/10kHz ..... —%
IM distortion at half rated power into 8Ω
DF2 1/10/100kHz ..... —>80/>80/74dB*
IM distortion at half rated power into 8Ω
DF3 1/10/100kHz ..... —72/74/74dB*
IM distortion at 1W from auxiliary input DF3
1/10/100kHz ..... —>80/>80/>80dB
IM distortion at 1W from phono input DF3
1/10/100kHz ..... —>80/>80/>80dB

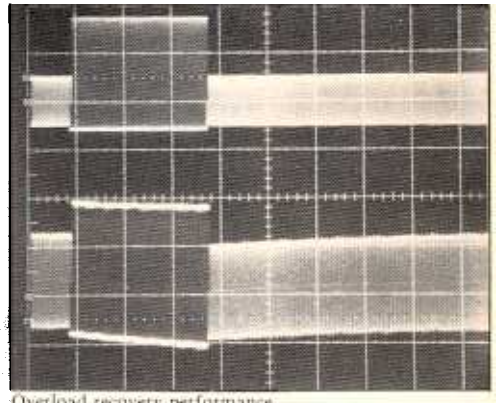
Noise performance

Noise ref to input — average L/R CCIR/22kHz
aux/tuner/tape 109/117dBV
Noise ref to input — average L/R CCIR/22kHz
Phono 114/121dBV
Noise ref to input — average L/R CCIR/22kHz
Mic ..... —dBV
Output noise power at zero volume (8Ω)
CCIR/22kHz 0.05/0.006μW
Worst case volume setting auxiliary input (8Ω)
CCIR/22kHz 0.10/0.02μW
Burst dynamic range aux input ref 8Ω worst
channel CCIR 92.5dB

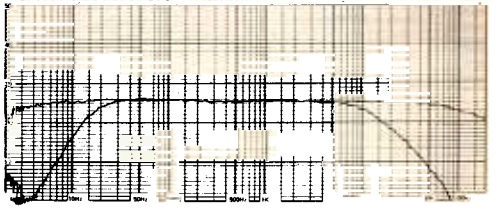
Inputs and outputs

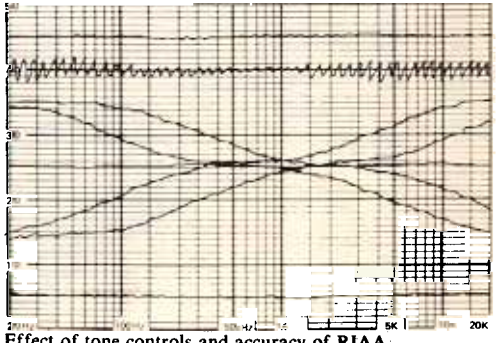
Input impedance on aux/tuner/tape
42/40k 120-tape 98pF
Input impedance on phono 99/68/50k 255pF*
Input sensitivity and clipping point at 1kHz
aux/tuner/tape ..... 125mV >20V
Input sensitivity and clipping point at 1kHz
phono 1.8mV 350mV
Input sensitivity and clipping point at 1kHz mic .... —mV
Output voltage and impedance for rated output —
headphone 31V 270Ω
Output voltage and impedance for rated output —
tape ..... 125mV VARIΩ
Output voltage and impedance for rated output —
DIN ..... —kΩ

Typical selling price including VAT £500.00



Overload recovery performance





Effect of tone controls and accuracy of RIAA equalisation