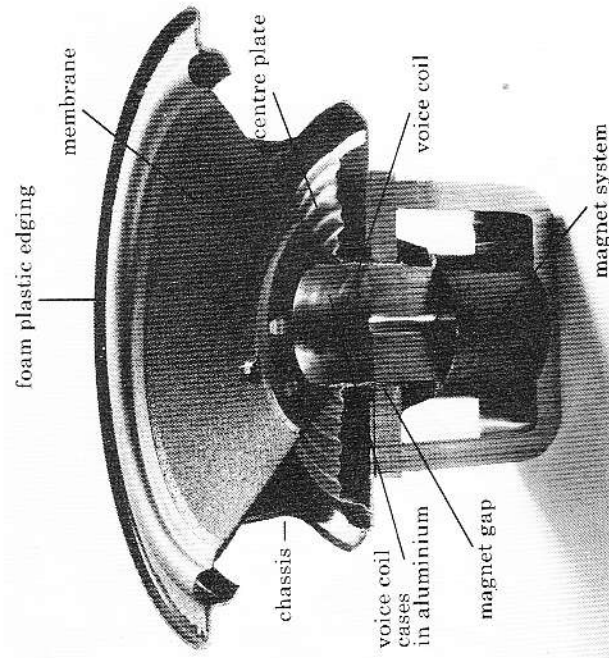
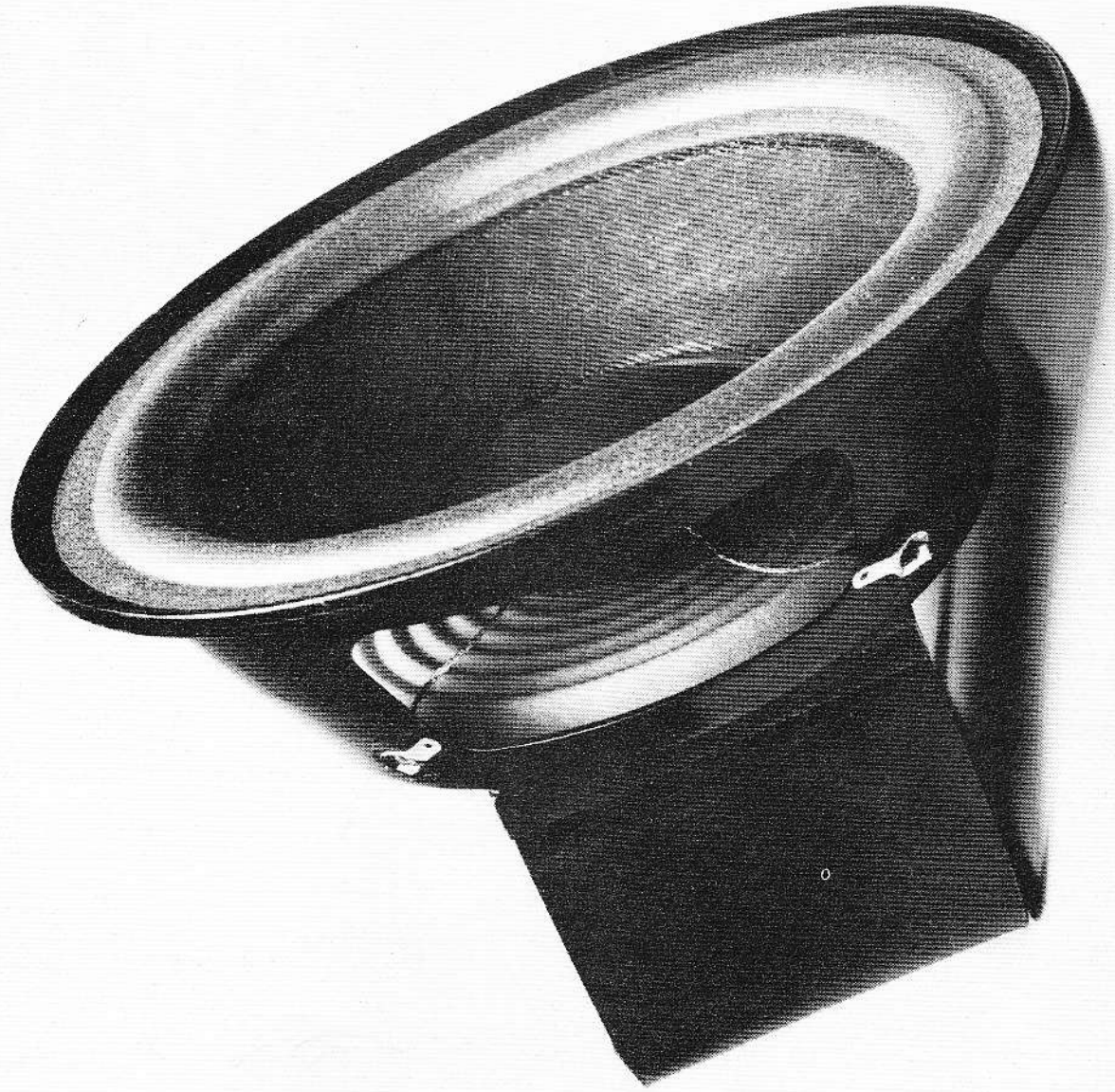


# Sonab's own speaker element.

After searching for more than a year among the speaker element manufacturers of the world, we were forced to conclude at Sonab that the element we sought simply did not exist.

For our new generation of speakers we wanted an element with a small diameter: 165 mm. This would have to be of high efficiency for use from extreme bass up to 2000—3000 Hz and very robust to cope with large output with maximum effect and minimum distortion.

There was nothing for it but to produce our own element, the Sonab SC165. The object here was to get as close to technical perfection as possible in every detail. Very long throw was an absolutely essential requirement and consequently the aim was to create the maximum possible long throw in the design of the membrane edging, the central plate and the voice coil. The voice coil, for example, is more than twice the length of the magnet gap and the diameter of the centre plate is almost as great as the membrane diameter.



The membrane edging was a problem itself. We realized that the usual rubber edging did not function in the bass reflex enclosure: at certain frequencies it was in opposition to the membrane. An edging of foam plastic, was found to give the right effect.

The speaker element must be able to withstand high output, i.e. a great deal of heat. The voice coil is designed to function at high temperatures and is efficiently cooled. We solved this problem by using a thermostat voice coil former in aluminium, fastened to the membrane with a special adhesive.

Finally there is the chassis which keeps all the parts in place. This has to be rigid and strong to produce good results and we have used extra heavy-gauge steel plating, compression-moulded by means of special tools.

### The bass reflex enclosure

In order to ensure minimum distortion even down in the bass range the membrane amplitudes must be kept as small as possible and here the casing is a contributory factor. By using the bass reflex enclosure greater efficiency can be achieved in the bass range and this can be utilized to increase the frequency range downwards and for decreasing distortion.

The proportions of the bass reflex enclosure can differ and can be good or poor. Sonab uses Stig Carlsson's special design which utilizes all the advantages of the bass reflex enclosure.

The walls and surfaces of the cabinet, must be rigid and hard as a rock. The cabinet must not be allowed to "breathe" because this can spoil the bass reproduction.

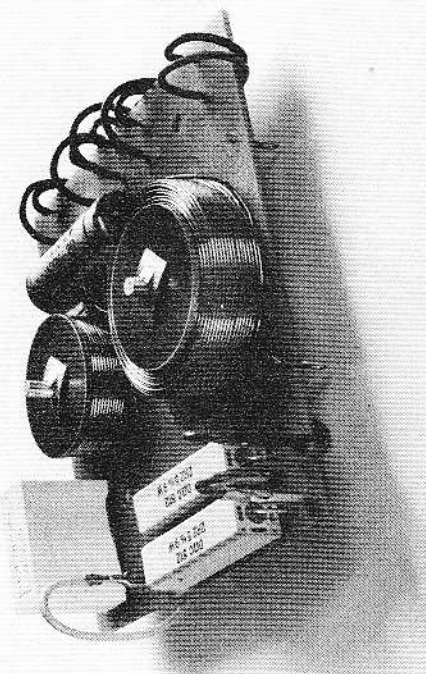
Our cabinet is built up around the top board, the base board and the reinforcement cross-sections in injection-moulded expanded ABS; a material which in many ways possesses better qualities than wood. Thanks to this structure the cabinet is extremely robust, moreover the use of precision moulded accessories ensures a high and precise standard of production quality.

The walls of the cabinet, too, are made of special material. Sonab speakers have always been built with walls as thin as possible.

### The crossover network

The quality of the crossover network and its components is often overlooked. Yet the crossover network plays an important part in the speaker's frequency response and must be designed with great care.

Components of the highest possible quality only can be used here. We have used coreless coils in place of distortion-generating metal cored coils and a strong plastic sheeting condenser instead of a cheap bipolar electrolytic condenser.

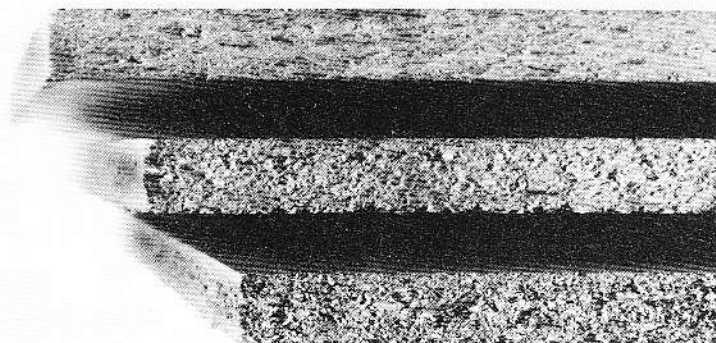


The crossover network with coreless coils and plastic sheeting condenser, for minimum distortion, dependable operating and longevity.

### A suitable amplifier

The amplifier should be the most usual type, i.e. designed for 4-8 ohm speakers.

The new Sonab speakers have a very high level of efficiency. Thus in smaller rooms an amplifier which produces as little as 15 watts per channel is adequate. In a larger room, 30-40 sq.m., more output is needed.



Shown here are three pieces of particle boarding cut with the same saw blade. The one to the left is ordinary particle boarding, the one in the middle that which is normally used in speakers, and the one to the right is the quality which Sonab uses: uniform in density, compact and very strong, made up of long chips.

Properly constructed an 8 mm walled speaker can be just as robust as one with thicker walls, but of course much lighter.

Such material must be of good quality. Ordinary particle boarding will not do and instead we use a special boarding of very high volumetric weight. This is uniform in density, very strong and made up of long chips, rather than of the small chips or sawdust used in most particle boarding.

Two more interesting details:

The bass speaker element is "suspended" in the top board to prevent vibration being transmitted to the cabinet.

# Here are the details of all the speakers in Sonab's new generation series:

| Sonab OA14  |  | Sonab OA12  |  | Sonab OD11  |  |
|---|--|---|--|---|--|
| Operating principle   | Bass reflex type Patented  | Operating principle   | Bass reflex type Patented  | Operating principle   | Bass reflex type   |
| Power handling capacity (DIN)                                 | 40 W   | Power handling capacity (DIN)                                 | 40 W   | Power handling capacity (DIN)                                 | 40 W   |
| Necessary input power for an acoustic output of 0.022 W (DIN) | 8 W  | Necessary input power for an acoustic output of 0.022 W (DIN) | 8 W  | Necessary input power for an acoustic output of 0.022 W (DIN) | 8 W  |
| Frequency range   | 25 — 18000 Hz  | Frequency range   | 35 — 18000 Hz  | Frequency range   | 45 — 18000 Hz  |
| Frequency response  | 29 — 15000 Hz $\pm$ 3 dB   | Frequency response  | 42 — 15000 Hz $\pm$ 3 dB   | Frequency response  | 52 — 15000 Hz $\pm$ 4 dB   |
| Impedance   | 8 ohms   | Impedance   | 8 ohms   | Impedance   | 8 ohms   |
| Speaker elements  | Bass: } 1 dynamic<br>Mid-range: } SC 165<br>Treble: 4 dynamic<br>5 cm                              | Speaker elements  | Bass: } 1 dynamic<br>Mid-range: } SC 165<br>Treble: 2 dynamic<br>5 cm                              | Speaker elements  | Bass: } 1 dynamic<br>Mid-range: } SC 165<br>Treble: 1 dynamic<br>5 cm              |
| Connection  | 5 metres lead with DIN plug  | Connection  | 5 metres lead with DIN plug  | Connection  | 5 metres lead with DIN plug  |
| Dimensions (W $\times$ H $\times$ D)                          | 23 $\times$ 57 $\times$ 42 cm  | Dimensions (W $\times$ H $\times$ D)                          | 20 $\times$ 46 $\times$ 34 cm  | Dimensions (W $\times$ H $\times$ D)                          | 26 $\times$ 26 $\times$ 26 cm  |
| Volume  | 35 litres  | Volume  | 18 litres  | Volume  | 10 litres  |
| Weight  | 11.5 kg  | Weight  | 7 kg   | Weight  | 6 kg   |
| Finish  | Teak, oak, walnut, rosewood, white and black lacquer   | Finish  | Teak, oak, walnut, rosewood, white and black lacquer   | Finish  | Teak, oak, walnut, rosewood, white and black lacquer                               |
| Note  | Delivered as a properly aligned stereo pair; OA14 L for left channel and OA14 R for right channel. | Note  | Delivered as a properly aligned stereo pair; OA12 L for left channel and OA12 R for right channel. | Note  | Delivered as a properly aligned stereo pair. To be placed on wall, shelf or floor. |



