



### **ATC Founder Billy Woodman**

To have your loudspeakers in use on half of Hollywood's sound stages, in hundreds of recording studios (leading to their acquisition by a veritable galaxy of star performers), major centers for the performing arts, radio and television studios all over the globe and by a list of famous individuals to rival Who's Who; and all from a standing start in the short space of twenty years. That is the achievement of W. J. (Billy) Woodman, Technical Director of ATC Loudspeaker Technology Limited, a quiet, unassuming, but supremely self-confident 48-year-old Australian, who turns out to have more than the usual number of facets to his career.

Billy Woodman was born in Castlemaine, central Victoria, some 70 miles north-west of Melbourne, in 1946:- Old gold mining country with no industry, inhabited mainly by retired people with a farming background; most of his family still live in the area. Relatively close by was the university at Bendigo and it was there that Woodman went to study engineering. His first love really was music, which meant either Melbourne or Sydney, but at that time his parents could not afford that so he chose this alternative career. He had been studying the piano since the age of eight and in his teens grew to have a great love of jazz, but his playing progressed through the normal classical grades until he was able to revert to his metier and perform professionally, which he continued to do whilst at university, often seven nights a week, in clubs. In fact he continued this parallel career right up to the early 1980s but now only plays for friends and his own amusement.

The engineering interest grew from his father's encouragement to "fiddle around" with farm machinery and tractors. This led to the acquisition of his own car at the age of twelve, not, as he puts it, to ride around the countryside, but to pull to pieces, learning about the mechanical bits and then putting it all back together again.

Most of his interest was in the mechanical side of things until in his teens his basic love of music directed his attention to the reproduction of sound. Although he had been studying power engineering, after some research he elected to write his final year thesis on loudspeaker design. To this end he sought out Australian experts in the industry such as Neville Theale and others, whom he found extremely helpful and who eventually encouraged him to seek out a career in this area.

There were only two or three loudspeaker manufacturers in Australia, of which the best known was Rola (no connection with the American Rola company or the British Rola Celestion). They were situated in Melbourne and were self-supporting, making everything, including cabinets, themselves. They also had a small interest in electronics, producing a tape recorder used by the Australian broadcasting authorities. It was a good place to start and in 1968 Billy was taken on as a loudspeaker development engineer on the basis of his thesis. He stayed with Rola for 18 months before landing a job with a patent attorney, but then the opportunity arose for a holiday in England which could be financed by playing the piano on the return trip on one of the ocean-going liners used to transport assisted passage immigrants 'down under' at that time.

Originally intending to stay for six months Billy had written to Goodmans, then in Wembley and whose loudspeaker products were known in Australia, and had received a favourable reply inviting him for interview. He arrived on our shores in August 1970 and in due course was interviewed by the then managing director of Goodmans, Bernard Cushion and his technical director Peter Collings Wells. Once again he was employed as a development engineer but by chance before his six months was up the laboratory manager was transferred and promoted to a position handling special projects. As a result he stayed, a decision helped by the fact that he was by then playing the piano every night! Further, Goodmans supported him on a day-release course at London University where he acquired an M. Sc. in Applied Acoustics. Goodmans at around that time proved to be one of the few training grounds for the many clever people who now head loudspeaker companies around the world. Woodman feels that too much educational effort is expended on computer expertise these days-that there are too many technical papers in learned journals from people who have had no real opportunity to gain the practical experience that would help them produce the viable products which earn the 'bread and butter'.

During his time with Goodmans Woodman had developed one of the first soft dome tweeters, later sold as the Axent, which used a one-inch doped fabric diaphragm. In doing so he had gained an enormous amount of practical experience of the quirks of this type of transducer. Much of his other work was in improving Goodmans' range of public address cone drivers, to increase efficiency, power handling and dynamic capability. One of his ideas, continued at ATC, was the edge-wise winding of voice-coils with flattened wire. Altogether, four years was spent at Goodmans which had by then been acquired via a roundabout route by the Thorn group and had moved to Havant near Portsmouth. To Woodman it seemed that Thorn would be unlikely to support much of the work that he had been engaged upon, favouring the mass production of (at the time) very basic units for incorporation in TV sets and motor cars. Already the idea of the three-inch midrange dome on which much of ATC's success was to rest was buzzing in Woodman's brain but he could see no opening for it where he was. So in 1974, after four years at Goodmans, he left and started his own small company making high power driver units based on the Audiomax 12- and 15 -inch designs he had conceived for Goodmans.

His company was based initially in premises at Richmond and later at the Pier House Laundry, alongside Kew Bridge in London. It was there that Woodman set to work on his concept of a really large midrange dome; he saw this as the only possible way to produce adequate levels of sound over the important midrange octaves without resorting to horn loading, which has certain intractable problems. His intention was to make one unit which would cover a whole frequency decade from 300Hz to 3kHz, where previous workers had found a limit of a couple of octaves or so, and which at the same time would be able to handle very high power without distortion or undue compression. A large part of the answer came from the use of huge magnetic structures from Swift Levick. This also produces a device with enormous dynamic range and props up the frequency response by lessening the inductive contribution of the impedance. ATC stayed at Kew for five years, towards the end of which time they produced their first cabinet systems, shown at the AES in 1978, moving then to a film lot at Isleworth where The African Queen had been made. After a couple of years they progressed to a trading estate on the Great West Road before making the major move to their present premises at Aston Down near Stroud in Gloucestershire some three years later again. Here they are well established in isolated buildings located in open country which, from the adjacent main road, could be mistaken for farm stores and out-buildings, giving no clue to the high technology which goes on inside.

Extensions are just being completed, adding a new storage wing and releasing space for their next venture which I was asked not to publicize yet.

When they moved to Aston Down their main activity was still large heavy-duty drivers for the professional field but in 1982 Woodman's fellow director and electronics man Tim Isaac, developed a clever and unique electronic crossover as part of a huge system ordered by a customer. This led to production of complete three-way systems with outboard power amplifiers and the new crossover, all of which ATC supplied as kits which were marketed by a company called QMS. Then in 1985 Woodman learnt from his agent that Danish Radio were in the market for quantities of an active loudspeaker that they could move around on trolleys so Tim Isaac integrated his crossover with a three-way amplifier and these newly christened "Ampacks" were built into a cabinet loudspeaker destined to become the current model SCM50A which was reviewed in Gramophone in August 1993.

Up until 1980 Woodman had employed an agent to handle exports, which had always accounted for a respectable proportion of the business, but he now took on this part of the enterprise himself until Ashley James joined the company, initially part time, in 1987. James soon assumed full charge of all sales and marketing and is now firmly established as 'part of the furniture'. Woodman admits that until the Danish Radio order they had never realized how good an active loudspeaker combination could be; it was now obvious that they had a product which demanded and deserved promotion. When Woodman had first started selling the soft dome philosophy to recording studios it fell on deaf ears and through the late 1970s this lack of interest hurt the ATC quite badly because they had spent a lot of money on tooling. Although the measured advantages were obvious, with the analogue techniques then used it was not recognized and it was not until digital recording started to become commonplace in the early 1980s that these units came into their own. It was really the hugely improved dynamic range of digital recording which got the soft dome off the ground.

Acceptance of the marque domestically took longer in spite of James's heroic efforts, but slowly discerning people began to realize that the enormous dynamic range on some CDs was not being recreated by many current designs. Woodman's ambition had always been to produce loudspeakers from a purist and idealistic standpoint, units which would meet all the distortion performance and amplitude response criteria and which would also have the dynamic range; but he knew that this would imply a price point where it was uncertain that he would be able to establish a market. Now his philosophy has become more widely accepted and the upwards of 10dB dynamic ceiling which his midrange accommodates, given an amplifier which doesn't run out of steam, is readily appreciated on say a good piano recording at apparently reasonable average loudness--a point he insists is still not well understood and which can make an enormous difference to the pleasure you can get out of listening. His opinion of the vogue which is current in some circles for comparatively low powered valve amplifiers driving alleged high efficiency loudspeakers doesn't bear repeating and started a diatribe which commenced with "If..." and concluded with "... you are on a hiding to nothing". Even with his smaller loudspeakers, the 10 and 20 models (all ATC numbers relate to the internal volume in litres) he always strives to achieve the same balance between low and midrange frequencies, although this may produce an apparent loss of efficiency. Asked about the future, Woodman ventures that his professional products have reached a stage of development where they can expect to receive only minor refinements, although he feels he might be tempted to produce a very large system with a 4-inch (100mm) dome which he has on the stocks. Domestically, though, he feels there is still much to be done, although he is content to leave home cinema to the mass manufacturers since ATC's niche must lie with the music lover for whom he will continue to design and produce further loudspeakers. The available multi-channel systems which are enjoying something of a vogue at the moment, he thinks are inferior to good stereo, in as much as the best known surround-sound system (he named it, but I don't want to start a war!) "if you use it just for the pleasure of listening to music contains the most infuriating distortions, which are unacceptable". He thinks it is a fatally flawed system although it is effective when you are watching dramatic action packed movies. Another side of Woodman, far removed from the musician and the delicacies of soft domes, hides in one of those Cotswold out-buildings where I spotted a collection of old farm machinery and tractors. It transpires that another of his interests, a hobby in fact, lies in the restoration of such pre-war items as he had come across in these rural surroundings. When he noted my interest he whipped the dust sheets off a very early Fordson tractor whose condition clearly exceeded anything it might have displayed on the day it left the factory, having been stripped down to the last bolt, refurbished, re-assembled and repainted dark blue to a high standard. Other tractors lay in pieces, waiting replacement parts which Woodman would have to make by hand. He told me that his oldest tractor was a 1926 Howard--an Australian machine made by the man who invented the Rotovator. "I like them because their form is delightful to look at and yet form follows function entirely--there's not a single item on a tractor which is not there for a reason. They were designed to last a farmer a lifetime which most of them successfully did; I think they are remarkable pieces of thought and human ingenuity". Thus Billy Woodman, perhaps unconsciously and once again surrounded by the open

countryside, has returned to his youthful pursuits at the other end of the world. It will be fascinating to see where the future will take him.