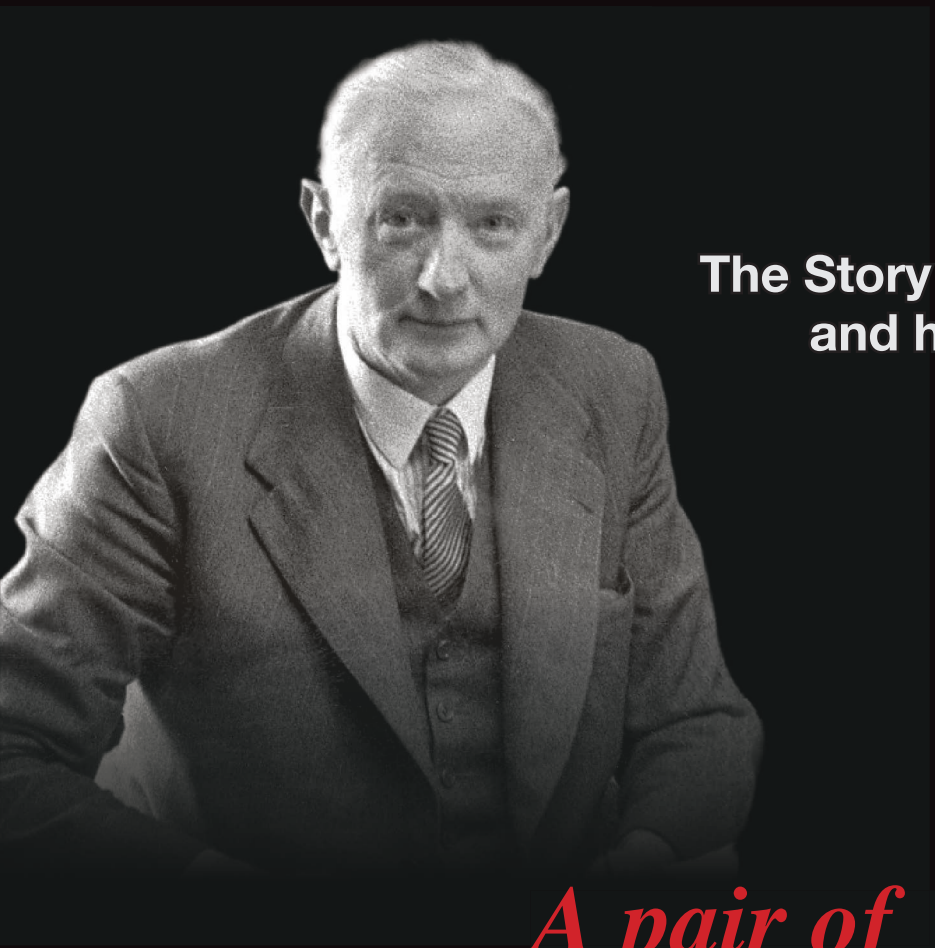
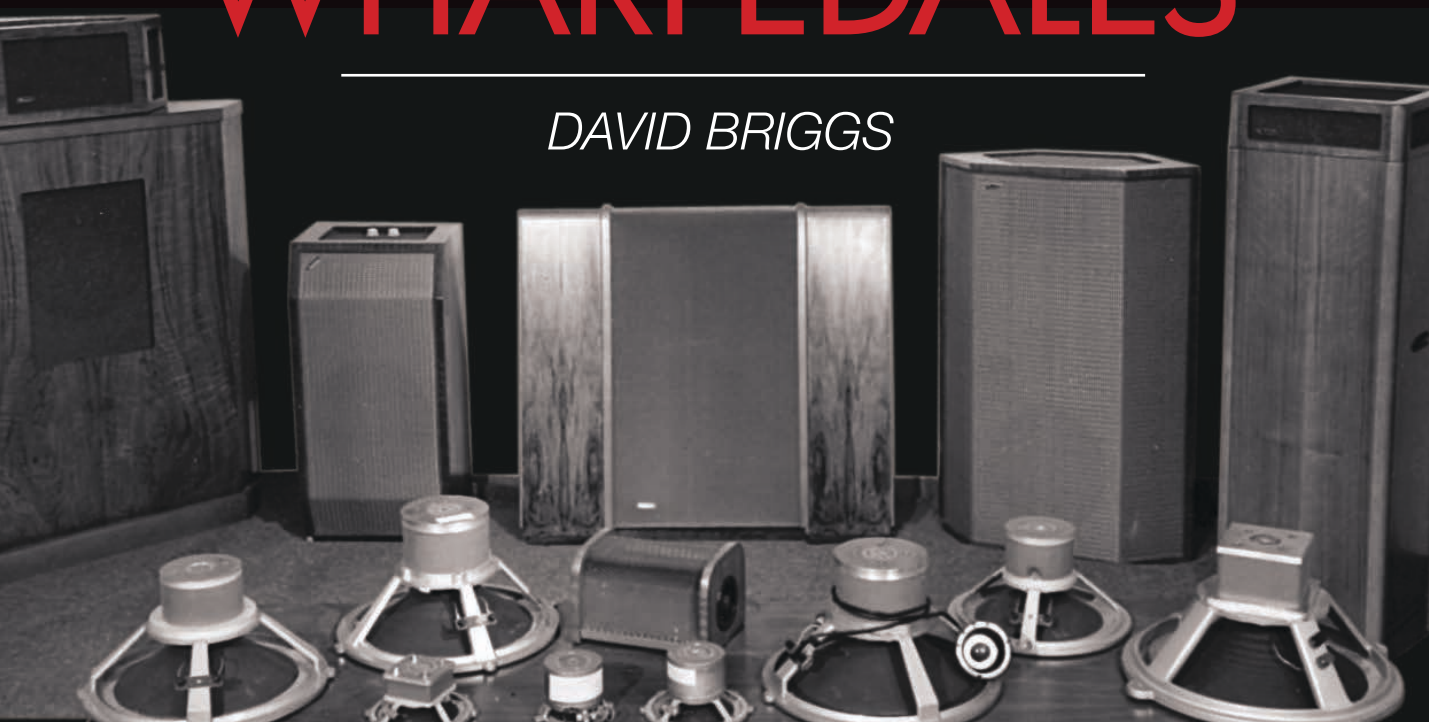


The Story of Gilbert Briggs
and his Loudspeakers

A pair of WHARFEDALES

DAVID BRIGGS



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Contents

For Ninetta and Valerie

Foreword

This biography is important both because it records the life of one of Britain's most successful 20th century engineers, who many have referred to as the father of hi-fi sound, and because it puts on record the leading role played by British engineers in perfecting the reproduction of sound. Gilbert Briggs was a self-made engineer who recognised that the loudspeaker was the weakest link in an audio system and set out to overcome this limitation, and to a large extent he succeeded. David Briggs tells his story in a clear and captivating style that is sympathetic, sensitive and highly readable, and yet, through his comprehensive research, it is detailed and complete. The book is greatly enhanced by fine photographs and illustrations that immediately transport the reader back to the decades before and after the Second World War, when Gilbert was founding and growing his company. He also takes time to set the technological scene, explaining how audio technologies evolved before and during the early days of domestic electronics, and reminding us of the important role played by British engineers.

I learned of this book as a result of the latter. I was in conversation with Mark Tully on *Something Understood*, a BBC radio programme that gently challenges its audience early on Sunday mornings to think in some depth, and with the aid of well chosen music, about a subject of current interest. We were discussing, in the words of the programme's creators, 'the history and contribution, the rise and fall and potential new rise of the professional engineer' and were looking back at how the role of engineers had changed over the 20th century, especially how it had declined over the last fifty years. Mark asked me what had brought me from Australia to Britain in 1959. I grew up in Melbourne and had just completed my undergraduate studies in physics and electronics at Melbourne University, and in my spare time had been making hi-fi sets for rich people, especially graziers (they did not call themselves farmers in those heady days of high wool prices), and was intent upon pursuing a career in electronics. I told Mark that I came to England because it led the world in high fidelity sound and in many other areas of consumer electronics, such as colour television, and I cited Wharfedale loudspeakers as the archetypal example of world-leading British components. I had used them in the sets I built, together with Wharfedale designs for cabinets. The last of these was a stereo set with column speakers which were highly efficient. The grazier for whom it was built placed the set on his Australian-style veranda, with the speakers about 20 feet apart, and sat on the lawn 40 feet away to listen to it. He was thrilled when his neighbour about half a mile away called him to ask where the brass band had come from. I had bought him a microgroove recording of Souza marches as a test record!

Shortly after the programme was broadcast I received a letter from David, who told me that he was working on this book and asked me, amongst other things, if I had any material relating to Wharfedale speakers in Australia in the 1950s. I did, and I also had information about the speakers that they sold in the USA, as I had purchased a pair of large Wharfedale speakers in sand-filled enclosures when I moved to the USA to work for IBM in the 1960s. I built my own electronics to drive these speakers, with 60 watt valve amplifiers that I still use today, as their bandwidth and distortion characteristics remain unsurpassed. Today's sound systems employ many channels to create surround sound effects that were not available in those days, but the fidelity of the sound produced has changed little since that time, largely because the performance of loudspeakers was already so advanced.

Building a technology business takes a broad set of skills; Gilbert Briggs possessed almost all of them and was a good judge of others whom he could attract to complete the set. In addition to his engineering abilities, which he acquired by seeking knowledge from others and self study, he was a natural business man, who knew that high quality was essential but cost control of equal importance. At the same time he was a brilliant salesman who understood his market and, indeed, through inspired outreach he created and nurtured the market. He was a talented writer and speaker, who knew and loved music, and he used his knowledge and talents to educate his customers and attract new ones. The book captures skillfully the risk and excitement that surrounded the staging of the remarkable concert-demonstrations in the Festival Hall in London and in Carnegie Hall in New York. There are few engineers or businessmen with the chutzpah to mount such high profile events.

As an engineer he realised that it was not just the loudspeaker driver that was important but also the ways in which the electronic signal was coupled to the driver and the configuration, shape, and materials of the enclosure. Gilbert was truly the renaissance audio expert and his company manufactured a complete set of components to enable customers to produce sound of world-leading fidelity.

Enthusiasts of hi-fi sound in its early days will find this book a compelling read as they, at last, learn who was behind the Wharfedale speakers that were their pride and joy, and how their creator took on international competition and produced the best high fidelity speakers of his time. For those born in the last fifty years, most of whom take high fidelity sound as given, it presents the chance to learn of the creative advances that were needed to achieve the clear and transparent sound they enjoy and take for granted.

Professor the Lord Broers FREng, FRS

Preface

Anyone who has driven along the M62 between Manchester and Leeds will know the Pennine moors which stretch across Lancashire and Yorkshire between Oldham and Halifax. I was born in 1948 and brought up on the very edge of these moors just on the Lancashire side of the border, not far from Oldham. My father, on the other hand, had been born in Queensbury, near Bradford, which from my childhood perspective was across the moors and just the other side of Halifax. His sister lived there all her life. We were lucky to have a car and some of my earliest memories are of challenging car journeys to see my older cousins in Queensbury. At one or more of these gatherings, I recall the grown-ups talking about 'Cousin Gilbert'. He was clearly a person of some note—practically famous—who was an inventor, an authority on loudspeakers, and author of a book or books on 'sound reproduction'. Fascinating stuff. If there was also mention of his running a company, or its name, it did not register.

In 1971 when I was earning a living and had a decent-sized space to fill with music I abandoned my record player and bought my first hi-fi system. This included an amplifier and speakers made by Wharfedale (I still possess the speakers, fortunately). When my father heard of this he exclaimed 'that was Cousin Gilbert's Company'. He later produced a copy of *Sound Reproduction* signed by G.A. Briggs, which I eventually inherited. At that point I knew I would some day find out more about Gilbert and Wharfedale. Retirement, and the ability to work on family trees via the internet, finally provided the opportunity. Only then did I actually find out what kind of 'cousin' he was and, inevitably, become drawn into his remarkable life-story.

I discovered that my grandfather was Gilbert's first cousin (their fathers were brothers). Therefore, Gilbert's grandchildren would be my first cousins, three times removed. By trawling through post-1910 marriages and births records and BT residential numbers on-line I eventually traced one of them and this led to contact with both of Gilbert's daughters, Ninetta and Valerie. Amazingly, the latter lives less than half a mile from me and this turned out to be a very good omen. Without their help and support this book would have been impossible. In a way, this research has been guided by Gilbert himself who provided plenty of signposts in his own books. His brief reminiscences written up in two chapters of the fifth edition of *Loudspeakers* and his entry in *Audio Biographies* were the milestones but the other books are littered with facts and clues about his life in and out of Wharfedale, often in the most unlikely places, with his introductions to the contributors in *Audio Biographies* a particularly rich source. Material from his early life and nearly 28 years in the textile export business has miraculously survived, only coming to light as a result of this research. As to the history of Wharfedale, I have been very fortunate to trace several key employees, or their family members, and, through them, gain invaluable personal insights, photographs and technical information. These are acknowledged below.

Acknowledgements

I owe a particular debt to the Escott family. Bill Escott worked at Wharfedale from 1946 to 1973 and was Gilbert's deputy for much of that time. His younger brother, Phil, was there from 1971 to 1998 and for many years he ran the service department. I was unable to interview Bill because of his health, but I am grateful to his wife, Jacqueline, for allowing Phil to search through his files. Between them they have provided me with important facts and photographs, many of Gilbert's

books and a treasure-trove of technical literature. Dorothy Stevens joined Wharfedale as 'office junior' in 1943 and left in 1968; she was my link to the early days. Dorothy Dawson became Gilbert's secretary in 1961 and she stayed with him, following his 'retirement' to run the 'Wharfedale Book Department' in Ilkley, until his death in 1978. Ken Russell was technical manager from 1962 to 1982. These three all knew Gilbert well and between them covered most of the period of this Wharfedale story. As well as providing pictures and documents they patiently put up with my probing of events which were at least 40 years ago, and to which I returned many times over the course of the project, as the jigsaw came together.

Raymond Cooke, one of the founders of KEF Electronics, was Gilbert's technical manager from 1955 to 1961. I was fortunate to discover his first wife, Marjorie, and two children, Ann Crayford and Martin Cooke, late in the project. Through them I found John Ball, co-founder of KEF, who was briefly Gilbert's understudy from 1959 to 1961. They provided recollections, photographs and documents which answered several key remaining questions. John Collinson, whilst working for Quad, was very involved in the 'live versus recorded' concert-demonstrations and he also worked at Wharfedale from 1966 to 1973. He too, provided me with unique memories and material. Alex Garner, worked in R&D with both Collinson and Russell; he was my source of detailed information about that activity during his time from 1969 to 1976.

Away from the direct connections with Wharfedale there have been many contributors. My cousin, Susan Smith, looked after me during my trips to the Bradford area and also carried out local research. John Patchett made available his extensive research into the origins of Queensbury and the early Briggses. My other cousin, Mansell Jagger, loaned me Phineas Briggs' cuttings book and material about Black Dyke Mills and early Clayton, whilst Stuart Downey sent me old pictures of the village. Rose Taylor explored the archives of Crossley and Porter's School, David Pyett provided information about musical societies in Ilkley and Michael Callaghan found original negatives in the C.H. Wood collection, held in the Bradford Industrial Museum. Paddy O'Connell (presenter of *Broadcasting House* on BBC Radio 4) was my intro. into the BBC Written Archive, where Erin O'Neill and Trish Hayes uncovered facts and documents. Roger Beardsley professionally digitised tape recordings of Gilbert and Ian Thompson carried out photography and difficult image restoration. I obtained invaluable help from many librarians, in particular John Shepherd of the University of California at Berkley and John Hillsden of the Radcliffe Science Library, Oxford University. John Grant scanned material held by the University of Dayton, Ohio. Staff at Southampton and Birmingham University libraries, the Bodleian Library (Oxford) and at the libraries in Bradford, Brighouse, King's Lynn and Malvern all found information for me, as did staff of the West Yorkshire Archive in Wakefield. Heather Lane of the Audio Engineering Society and Anne Locker of the Institute of Engineering and Technology did the same. The following all contributed to the project in one way or another: Julian Alderton, Sue Bee, John Borwick, Fr Anselm Cramer, Michael Fountain, Malcolm Green, Jennie Goossens, Mervyn Grimshaw, John Handley, Tim Harris, Clare Lee, Stuart McLaughlan, David Patching, John and Chris Pitchford, Christine Randall, Stefan Sergent, Stephen Spicer, Judy Smith, Felicity Stubbs, Leslie, Ruth and Jonathan Theobald, Simon Waddington and Andrew Watson. My grateful thanks to them all.

The current owners of 'Wharfedale' are the International Audio Group (IAG) which continues to manufacture award-winning loudspeakers. I should like to thank the President, Michael Chang, for all the help I have received from IAG during this project and for the permission to reproduce

images relating to Wharfedale products. The source of all other images is provided in the captions, with reproduction permission details where the original photographer could be identified.

Finally, my thanks to Lord Broers for his Foreword and other contributions. It was my hope, once the project got underway, to find someone who had built loudspeakers to Wharfedale designs and using their drive units during the late 1950s, when Gilbert Briggs' influence was at its peak. A sound-bite from a radio programme put me on the trail of Alec Broers, distinguished engineer/scientist and Vice-Chancellor of the University of Cambridge from 1996 to 2003. I am confident that had Gilbert heard the story about the Australian grazier, related in the Foreword, he would have dined out on it for years.

Introduction

During the four years of researching and writing this book, there were many occasions on which I asked complete strangers whether they had heard of Wharfedale loudspeakers. Almost invariably in the case of men, and also for a substantial number of women, aged over 50, the answer would not only be 'yes', but would be followed by either: I have a pair (in use, in the garage or in the loft); I once had a pair; my father had a pair; I wished I could have afforded a pair. Out of their mouths came the title for the book. Not many, though, knew anything about the remarkable man behind the loudspeakers and the firm that made them.

Gilbert Arthur Briggs, G.A.B. to those who knew him well, was born into a humble family in a Yorkshire textile village in 1890. His father died when he was nine and he went to an orphans' school. Despite this inauspicious start in life he rose to become a director of a firm of textile export merchants in Bradford, but was virtually bankrupted in the Depression. A passion for music and a love affair with the piano had led to an interest in loudspeakers and, as the textile industry collapsed, he started a sideline to make them, called Wharfedale Wireless Works. He was forced to turn this into his full-time occupation in 1933. He had no relevant, theoretical or practical training, yet both he and Wharfedale became internationally famous, and when he died Gilbert's obituaries referred to him as 'the father of hi-fi'. His contribution to the development and popularity of 'hi-fi' was unique and profound.

As well as designing loudspeakers and growing his company, he wrote twenty-one books on various aspects of sound reproduction and audio for amateurs, published through Wharfedale, with total sales worldwide of well over a quarter of a million copies. He also staged a series of over twenty audacious lecture-demonstrations in major concert halls during the 1950s (including the Royal Festival Hall, London and Carnegie Hall, New York) which featured 'live versus recorded' performances.

A straight talking Yorkshireman, with an impish sense of humour, Gilbert possessed many human qualities which drew people to him. Very few recruits to Wharfedale during his 30 years at the helm left the firm and, through a combination of sincerity, integrity, charm and prodigious letter writing, he built up, and maintained, a huge network of friends throughout the audio world. It was their willingness to help him, when asked, which made his writing and concert activities both possible and successful.

Once he left the 'rag trade', Gilbert rarely referred to this first career of nearly 28 years. Unlike most of his peers amongst the 'audio pioneers' he had not gone into the industry as a young man and his formative experiences and influences were quite different. However, the foundations for the things that he did with Wharfedale, which so surprised his colleagues at the time, were all laid during this period—indeed by the time he was 30. One of the fascinations of my research was to uncover these traits and see how they played out in later life. This, then, is the story of Wharfedale, the company and its products, and the remarkable G.A. Briggs who started it all.

For the benefit of readers with different interests, I have tried to keep these two narrative streams separate, in as much as this is possible, whilst writing chronologically. Chapters covering the period when Gilbert was running Wharfedale (1933–64) are in two parts, the first dealing with Wharfedale and the second mainly biographical. Once he retired, but continued to run the Wharfedale 'Book Department' from his Ilkley office, separate chapters cover this period

in his life and events at Wharfedale until his death in 1978. Although the sagas of his books and concert-demonstrations are covered briefly in the chronology, they are described fully in two final chapters. A short Epilogue brings the Wharfedale story up-to-date. The history of the company's products is quite detailed and a full list, with prices, from during Gilbert's lifetime, can be found in Appendix 4.

I have avoided excessive referencing. Where possible and appropriate I have quoted from Gilbert's own writing; the book extracts are referenced. I have also referenced specific information from books, journal/magazine articles, tape recordings and the occasional website, as well as books which were major sources of background material. Other background information which is readily available from the internet, has been corroborated, but not referenced. The remaining information came from interviews with, and documents provided by, the Briggs family and the many others listed in the Preface.

Finally, some comments about units. During the period covered, dimensions were in feet and inches and these have been retained, the latter being abbreviated, e.g. 6" for 6 inches. Prices were in pounds, shillings and pence (£, s, d) with 20 shillings to the pound and 12 pence to the shilling. Often prices would be expressed in just shillings and pence using a shorthand form, e.g. 39/6 for 39s 6d. In Appendix 4 the prices have been converted into the current decimalised system, so 39/6 becomes £1 98p (rounded up). From time to time, in the text, an approximate equivalent price today is given, for which I used the inflation calculator at http://safalra.com/other/historical-uk-inflation-price-conversion/.

CHAPTER ONE: ORIGINS

Gilbert Arthur Briggs was born on 29 December 1890 in the village of Clayton, on the western edge of Bradford, just off today's main Bradford to Halifax road, the A647. Originally a Saxon farming settlement, the village, which retains most of its 19th century character (1.1–1.3), was incorporated into Bradford in 1930. When Gilbert was born, the population of Clayton (the village and surrounding farms) was under 4000, but only 10 years later, at the turn of the century, it had risen to nearly 5000. At that time the local economy was dominated by the mainly wool-based textiles industry, with quarrying and associated masonry trades also providing significant employment. A fireclay works, established in 1880, exploited the local clay and was known for its glazed bricks.

In 1961, when Gilbert was asked indirectly by 'Free Grid', the anonymous columnist of *Wireless World*, whether he was ' …descended from Henry Briggs, also a Yorkshireman,* who collaborated with Napier on the production of Logarithms.' Gilbert replied that he ' …could only trace [his] ancestry back two generations (in spinning and weaving—not science)'.[2] In fact, spinning and weaving had been an integral part of his family history for far longer than that and his ancestors can be traced back at least six generations, to the time when they were known, not as Briggs, but as Brigg.

Ancestry and the Importance of Textiles

Gilbert's earliest ancestor, for certain, is Jonathan Brigg (~1713–1788) who, from 1742, was tenant of an estate consisting of a farmhouse with several fields in the 'township' of Clayton, which was to become known as New House. (A 'township' was a civil administration district covering a rather large area of land which in this case included, and was named after, Clayton village.) Jonathan Brigg was a 'manufacturer' as well as a farmer. He would buy wool in bulk and distribute it to local cottages, where it would go through a sequence of processes, including washing, combing, spinning and weaving, to produce worsted cloth—locally known as 'stuff'—in standard lengths or pieces. Workers would be paid 'piece rate' and the finished cloth would be taken to the Piece-Halls at Halifax and Bradford for sale. This area, and the West Riding of Yorkshire in general, was especially suitable for this activity, because the coarse grass growing on the local peat provided excellent grazing for sheep and the soft water was ideal for wool washing. Farming and textile work within the home, involving most family members, went hand-in-hand.

Jonathan's only son Abraham (1738–1809) took over the New House tenancy in 1789, whilst one of his grandsons, John (1764–1842), was tenant of the nearby Harrowins estate and was also described as a manufacturer. With the coming of mechanisation and the harnessing of water power, this domestic system of textile manufacturing was gradually replaced by the factory system (in

*A genealogical link to the mathematician Henry Briggs (1561–1630) is not such a fanciful notion, because he was born at Warleywood, a parish of Halifax.[1]

Figure 2.4 Gilbert Briggs on leaving Crossley & Porter's School aged nearly 15. (Photo courtesy of Crossley Heath School.)

Of his time at the school he is mostly dismissive:[7]

'All I can remember about Halifax is that it was famous for carpets and toffee; it had quite a nice concert hall to which we school children were occasionally taken to hear choral and orchestral works; and a Glee Party which gave us an annual concert in the school dining room. Of all these attractions, I think toffee was the most popular.'

Figure 2.5 Herman Van Dyke and his wife. (Photo courtesy of Crossley Heath School.)

But elsewhere he writes:[8]

> *'The thing I remember most vividly is the piano I heard at boarding school in Halifax around 1904/5, when I used to lie awake at night listening to the instrument being played by the music master after the boys had gone to bed. The strains of music came in through an open window and I was fascinated as much by the sound of the piano as by the actual music. I think I resolved there and then that I would buy a piano as soon as I could save enough money.'*

Thus began his infatuation with the instrument.[9] The master in question was almost certainly Mr Herman Van Dyk, a Dutchman who had settled in Yorkshire in the early 1890s, becoming conductor of the Halifax Orchestral Society in 1901. He was an accomplished pianist and taught piano, violin and singing at the school from 1895 to 1922. A picture of Mr Van Dyke and his wife, also an accomplished pianist, is shown in (2.5). Piano tuition would have been available to Gilbert, in principle, had he wanted it. However, this had to be paid for as an extra, at 30 shillings per half year, and by the time his interest was aroused it was probably too late to do anything about it.

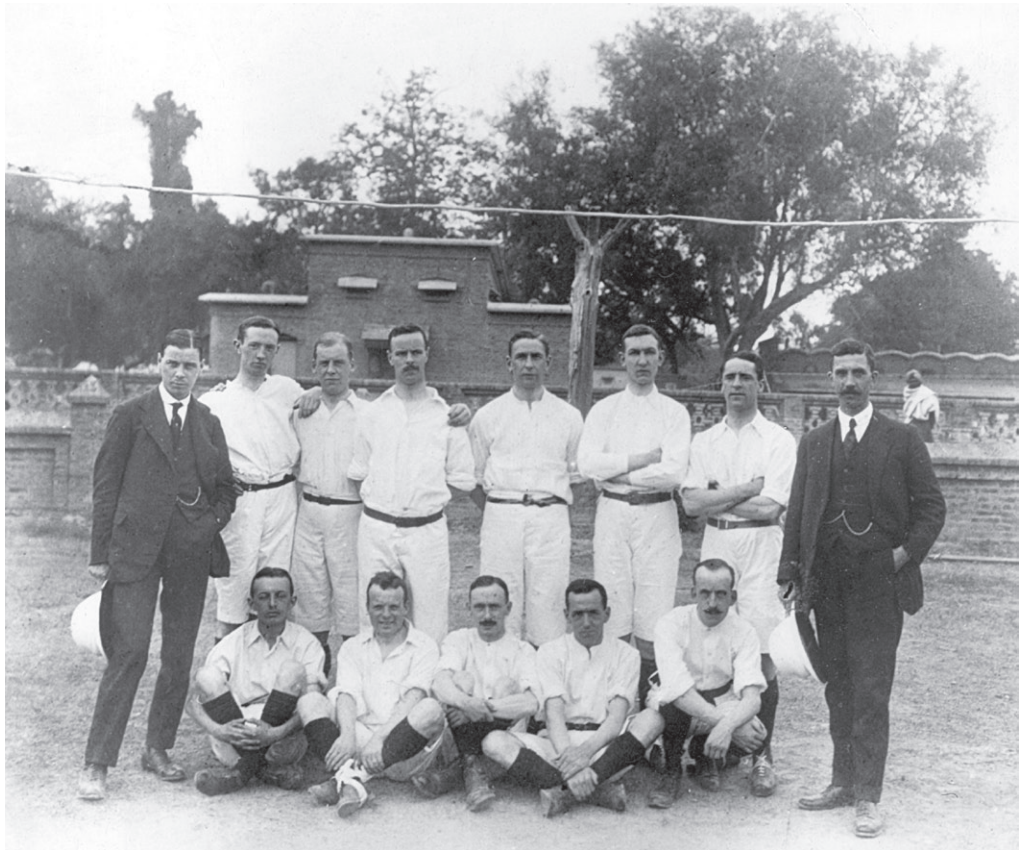

Figure 3.5 Bradford Travellers, Delhi, 19 December 1913. Gilbert Briggs, in kit, standing first on left. (Photo courtesy of the Briggs family.)

was to form a football team, 'The Bradford Travellers', which took on a Delhi Police team on 19 December and won 2–1 (3.5).

The First World War

He arrived back home at the end of April 1914 with Europe heading towards war. When Kitchener announced the formation of the volunteer army in August, Gilbert responded and expected to be called up. He was stunned to be completely rejected as medically unfit. The reason he cites[2] is that 'his heart was an inch lower than it should be'. The probable reason is that the assessment of his heart through the chest showed some displacement, which was taken to indicate enlargement and therefore an underlying heart condition. For a fit 23 year-old, who had just come through the rigours of over six months on the sub-continent without illness, this seems a strange decision, but under the pressure of screening thousands of volunteers at the recruitment centres, where massive queues formed, the medical assessors had no option but to make rapid yes/no decisions. Whether Gilbert was initially worried as to his real health by this outcome is not known, though he was certainly disappointed over the rejection, but he was surely fortunate. Of the men mobilised about 12% died and about 36% overall were casualties

(dead, wounded, missing or prisoner-of-war). Indeed, one in seven of the male population of the UK under 25 died in the War.

So, Gilbert was able to continue gaining experience with Holdsworth, Lund and Co.. for the duration of the War, although activities compared with pre-1914 were heavily curtailed. There was an immediate moratorium on textile exports and the Bradford manufacturers were rapidly turned over to war-related production, which constituted about 50% of all output by 1917. The government took control of the whole industry, from purchasing wool from the Empire to determining the costs at all stages of manufacture, and placed the huge contracts. In driving costs down other producer countries were undercut and the UK ended up supplying uniform cloth, blankets and other materials to the Dominions, United States, French, Belgian, Italian, Portuguese and Russian armies.

Gilbert relates one incident from this period. The company had large stocks of heavy woollen materials suitable for blankets. A government department bought the entire stock and, by mistake, paid one invoice twice. The second cheque, for about £375 (today, the equivalent of nearly £30,000), was returned, but it came back to the Bradford office because 'the Ministry could not possibly have made such a mistake'! In the end, though, they did recoup the money when peace came, through excess profits tax.[2]

A number of letters from friends and work colleagues who were enlisted still survive. Gilbert was obviously concerned for all of them and helped morale by sending cigarettes, pipe tobacco and even food as well as letters. After conscription was introduced in 1916, and no doubt influenced by the fact that his brother Bernard, nine years his junior, was enlisted in the army (ending up in the Royal Flying Corps), Gilbert tried to overturn the original rejection. He clearly thought he could play a useful role in a non-combatant position such as signals or transport. His friends, especially those in France, just hoped that he would avoid the situation in which they found themselves. In the summer of 1918 he was still trying to obtain a medical re-examination when his boss, Mr Lund, was called away to perform some kind of war service. This gave him the opportunity to run a department on his own, which he clearly enjoyed, and before long the War was over.

Musical Lectures and Piano Lessons

Meanwhile, Gilbert was also able to continue his piano playing and increase his knowledge and understanding of music. The Wesley Guild took advantage of this and prevailed upon him to give a lecture in 1918. He chose to give a musically illustrated talk entitled 'An Evening with Beethoven'. The manuscript survives and it is dated 11 November 1918. The Armistice had been signed a few hours earlier, finally bringing the First World War to an end. In his introductory remarks he said:

> *'I make no apology for introducing Beethoven although he was a German. There has been some empty-headed objection during the war to the good music of the bye-gone German composers, but I am pleased that the general good sense of the country has risen above such misdirected patriotism.'*

The lecture considered Beethoven's life history, his music and musicianship and included digressions into the development of music, to put Beethoven's compositional style into perspective, and the development of keyboard instruments. To illustrate aspects of Gilbert's exposition his sister Claris, who by all accounts had a beautiful voice and possessed perfect pitch, sang some songs and a Miss Rider played extracts from a piano sonata and one of the variations.

14th Oct. 1932.

& 21st " "

WHARFEDALE M.C. Speakers.—Assemble your own and save 33%; complete kits ready for assembly in an hour; full instructions; first class results guaranteed.

BRONZE Wharfedale Standard Model (2½ watts undistorted); latest 6½lb. P.M. 7in. moulded cone, etc., £1 complete; three-ratio transformer (30 m.amps.), 7/6; carriage 2/6.

SILVER Wharfedale Superpower Model (5-6 watts undistorted); massive fourclaw magnet (57,000 effective lines), linen cone, leather surround, etc., 50/- complete; three-ratio transformer (50 m.amps.), 10/6; carriage 3/6; equals any speaker, regardless of price.

ABOVE Magnets by Swift Levick; components scientifically matched; 3 days approval; guaranteed 12 months. —Wharfedale Wireless Works, 92-96, Leeds Rd., Bradford. [9643

28th Oct. 1932

WHARFEDALE M.C. Speakers.—Assemble your own and save 33%; first class results guaranteed; 3 days' approval; write for catalogue.—Wharfedale Wireless Works, 92-96, Leeds Rd., Bradford. [9782

4th Nov. 1932.

WHARFEDALE M.C. Speakers, conspicuous for their natural reproduction, assemble your own and save 33%, first class results guaranteed; Kits from 20/-; three days' approval; write for details.—Wharfedale Wireless Works, 92-96, Leeds Rd., Bradford. [9842

11th Nov. 1932.

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CHAPTER FOUR: 1932–1937

Part 1. Wharfedale Wireless Works in Bradford

As noted in the previous chapter, Gilbert had personally experienced the improvement in speaker performance as the designs and technology evolved during the late 1920s and by the end of 1931 he had set his sights on gaining an understanding of how moving coil speakers really worked.

The idea of the electro-dynamic, or moving coil, transducer was first patented by Werner von Siemens (Germany) in 1877. A fine coil of wire is supported within the gap between the pole pieces of a cylindrical magnet so that it can move axially. Passage of current through the coil generates a magnetic field which interacts with the static field of the system causing the coil itself to move. Oliver Lodge, in England, patented a major improvement, which anticipated modern designs, in 1898. The small rigid diaphragm, which the attached moving coil caused to vibrate in sympathy with the current variation, required horn-loading to achieve any real volume. John Stroh invented the conical paper diaphragm terminating in a flat section at the rim of the loudspeaker in 1901 and in 1908 the coil-centring spider was introduced by Anton Pollack. Thus the essentials of this loudspeaker type had been established by 1910, with the magnetic field produced by a mains-energised electromagnet. In 1911 Edwin S. Pridham and Peter L. Jensen, working in California, patented a design which they introduced commercially as the 'Magnovox' in 1915 and this was initially successful in public address use.

In 1925 a research paper published by Chester W. Rice and Edward W. Kellogg, who were working at General Electric in the USA, laid out the basic principles of the direct-radiator loudspeaker, in which a small, coil-driven, mass-controlled diaphragm placed in a baffle produced a uniform response over a broad mid-frequency range. In addition, they designed a mains-driven power amplifier which produced about 1 watt of low-distortion output, allowing the volume from the connected loudspeaker to match that of the original recorded sound. This was without horn-loading, which they concluded was critical to the 'naturalness' of the speaker output. This work then set the scene for future incremental developments.

The Experimenter

Early in 1932 Gilbert saw an advertisement in *Wireless World* for surplus moving coil loudspeakers being sold in London. Typically, he immediately followed this up and bought a couple for 7 s 6 d each. He tells us that:[1]

> *'They were of German origin and were fitted with a small energised field and a high resistance voice coil'*

WHARFEDALE

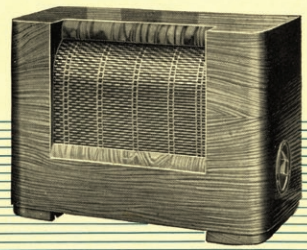
Moving Coil

Speakers . . . . . .

Transformers . . . .

Volume Controls . . . .

1939-40



PRICE LIST

CABINET MODELS

	Less Transformer	With Transformer	V.C. extra
Gem	21/-	25/6	3/6
Moderne	22/6	27/-	3/6
Meritor	26/-	32/-	3/6
Bijou	33/6	39/6	with V.C.
Coronet	42/-	49/6	with V.C.
Corner Cabinet	45/-	52/6	with V.C.
Bronzian	50/-	57/6	with V.C.
De Luxe, Bronze Unit	60/-	67/6	with V.C.
De Luxe, Golden Unit	80/-	95/-	with V.C.
Langham	150/-	165/-	with V.C.

Meritor, Bijou and Bronzian in OAK at 2/6 extra.
All models (except Gem and Moderne) in Mahogany at 2/6 extra.

CHASSIS

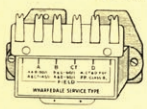
	Flux Density	Less Transformer	With Transformer
Five inch	6300	13/6	18/-
Six inch	6300	14/-	18/6
Standard, 8 inch	6500	16/6	22/6
Coronet, 8 inch	7200	19/6	25/6
Bronze, 8 inch	8500	22/6	30/-
Golden, 10 inch	10000	52/6	65/-
Portland, 10 inch	14000	90/-	105/-

OUTPUT TRANSFORMERS

Service Type 6/- Universal 9/6
Standard 7/6 De Luxe 15/-

TRANSFORMERS

GUARANTEED 12 MONTHS

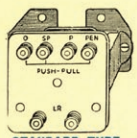


SERVICE TYPE

SERVICE **6/-**
Output Type.

4 ratio—30, 45, 60 and 90 to 1.

Total Primary Inductance 65 Henrys Zero D.C. (Wireless World " 4/37). Ideal for replacement work. Max. D.C. current. 50 m/amps.

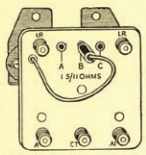


STANDARD TYPE

STANDARD **7/6**
Output Type.

3 ratio, 36, 60 and 72 to 1.

Total Primary Inductance 45 Henrys. Screw Terminals. Max. D.C. current. 50 m/amps.



UNIVERSAL TYPE

DE LUXE **15/-**
Output Type.

6 ratios with Wander Plug.

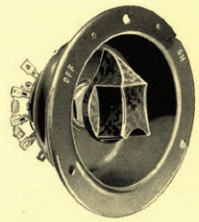
Similar to Universal Model, this larger Transformer is recommended where speech input is 5 watts or more. Total Inductance 38 Henrys. Zero D.C. 20 Henrys, 40 m/amps. Max. D.C. 70 m/amps

UNIVERSAL **9/6**
Output Type.

6 ratios with Wander Plugs
Exactly as used on our Bronze Speakers.
Max. D.C. current. 50 m/amps.

Primary	Wander Plug Socket	Ratio	Approx. Impedance with 2 ohms speaker
Al and CT	A	30 to 1	2,000 ohms
"	B	35 to 1	3,000 ohms
"	C	45 to 1	4,500 ohms
Al and A	A	60 to 1	8,000 ohms
"	B	70 to 1	12,000 ohms
"	C	90 to 1	18,000 ohms

"TRUQUAL"



LOUDSPEAKER VOLUME CONTROL

The "Truqual" Volume Control is of the constant-impedance type and does not cause distortion.

The control is strongly made with self-cleaning contacts.

PRICE with recessed escutcheon
5/6

PRICE without recessed escutcheon
4/6

STANDARD TYPE
For Speakers of 1/5 ohms

TRUQUAL TYPE "98"
for Speakers of 6/15 ohms

HEAVY DUTY MODEL
(at 1/- extra) for Speakers handling 5/10 watts.

Wharfedale SPEAKER SWITCH

A very useful fitting for any Set operating a LOW IMPEDANCE Extension Speaker

The Switch may be mounted on the side or the back of the Receiver, and gives the following connections by turning the knob:—

1. Set Speaker only.
2. Extension Speaker only.
3. Both Speakers.

PRICE 3/6

Figure 5.4a 1939/40 catalogue.

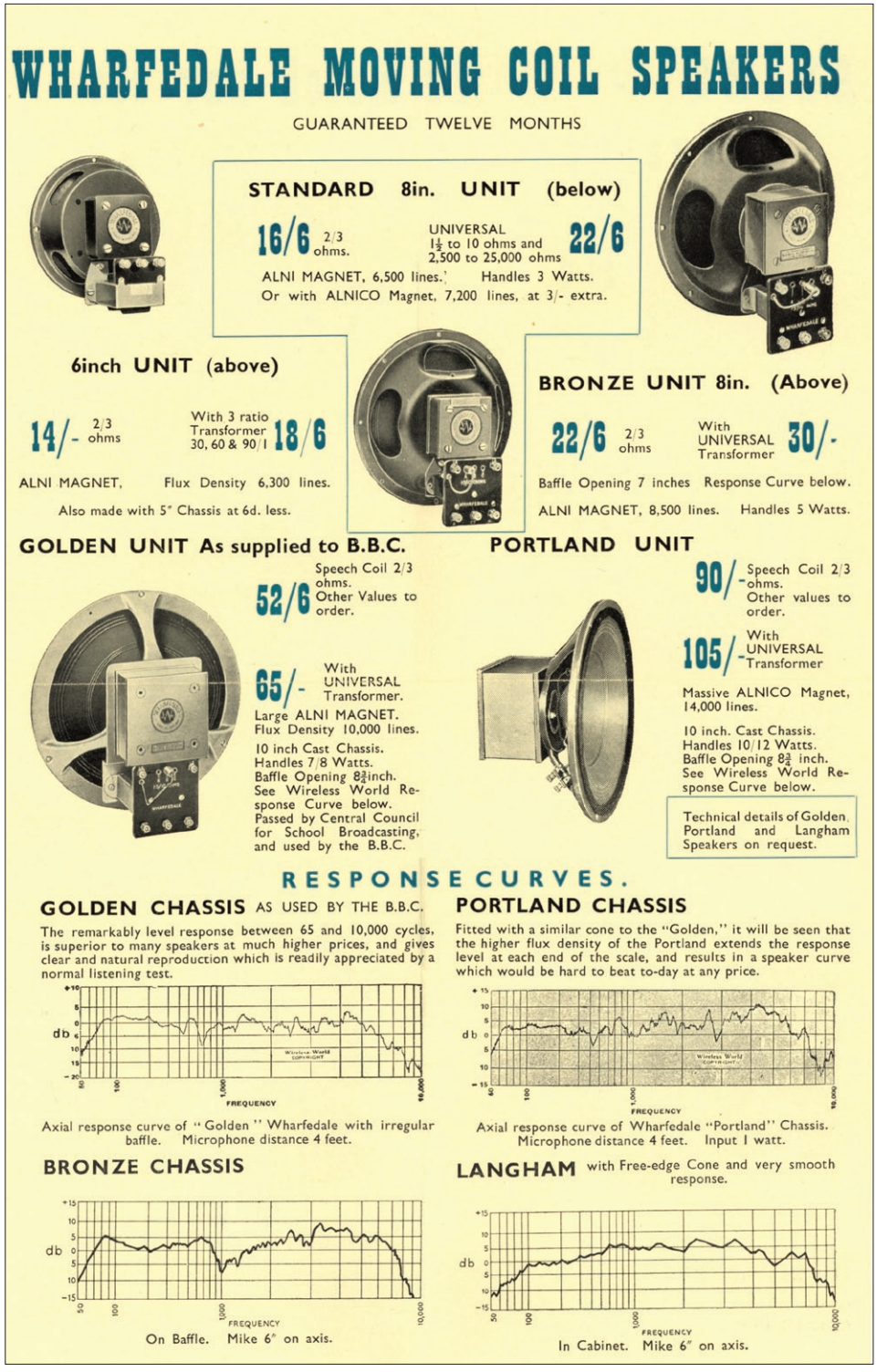


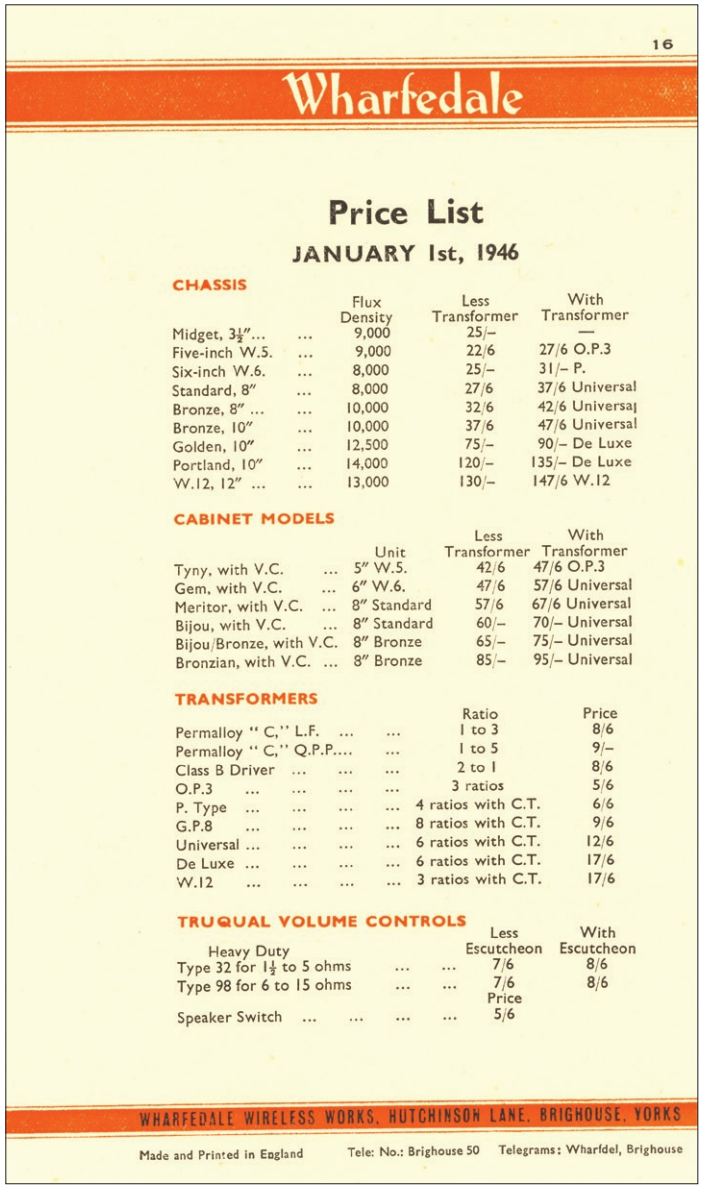
Figure 5.4b 1939/40 catalogue.

Figure 5.12 Assembling (right) and magnetising (left) loudspeakers, Brighouse, 1942. (Photo courtesy of the Escott family.)

Figure 5.13 Gilbert in his office, 1944. (Photo courtesy of the Briggs family.)

Looking to the Future

The products on offer in 1946 are collected in the price-list from the same catalogue (5.14). The list appears to be almost the same as that of 1941/2, but as far as the speakers are concerned this is deceptive. Research and development had continued in the interim and all the units had been redesigned. Most models now had open die-cast chassis replacing pressed steel, which reduced audible resonances and gave greater coil-centring precision, whilst magnets now employed the recently developed Alcomax and Ticonal materials, which gave significantly higher flux densities whilst reducing size and weight. New bakelite coil-centring devices had also been designed and manufactured. Overall these changes led to significant improvements in performance but prices were, on average, little changed from late 1942. Gilbert's pricing policy had evolved as his products became



16

Wharfedale

Price List

JANUARY 1st, 1946

CHASSIS

	Flux Density	Less Transformer	With Transformer
Midget, 3½"... ...	9,000	25/–	—
Five-inch W.5. ...	9,000	22/6	27/6 O.P.3
Six-inch W.6. ...	8,000	25/–	31/– P.
Standard, 8" ...	8,000	27/6	37/6 Universal
Bronze, 8"	10,000	32/6	42/6 Universal
Bronze, 10" ...	10,000	37/6	47/6 Universal
Golden, 10" ...	12,500	75/–	90/– De Luxe
Portland, 10" ...	14,000	120/–	135/– De Luxe
W.12, 12"	13,000	130/–	147/6 W.12

CABINET MODELS

	Unit	Less Transformer	With Transformer
Tyny, with V.C. ...	5" W.5.	42/6	47/6 O.P.3
Gem, with V.C. ...	6" W.6.	47/6	57/6 Universal
Meritor, with V.C. ...	8" Standard	57/6	67/6 Universal
Bijou, with V.C. ...	8" Standard	60/–	70/– Universal
Bijou/Bronze, with V.C.	8" Bronze	65/–	75/– Universal
Bronzian, with V.C. ...	8" Bronze	85/–	95/– Universal

TRANSFORMERS

	Ratio	Price
Permalloy "C," L.F.	1 to 3	8/6
Permalloy "C," Q.P.P.... ...	1 to 5	9/–
Class B Driver	2 to 1	8/6
O.P.3	3 ratios	5/6
P. Type	4 ratios with C.T.	6/6
G.P.8	8 ratios with C.T.	9/6
Universal	6 ratios with C.T.	12/6
De Luxe	6 ratios with C.T.	17/6
W.12	3 ratios with C.T.	17/6

TRUQUAL VOLUME CONTROLS

Heavy Duty	Less Escutcheon	With Escutcheon
Type 32 for 1½ to 5 ohms	7/6	8/6
Type 98 for 6 to 15 ohms	7/6	8/6
	Price	
Speaker Switch	5/6	

WHARFEDALE WIRELESS WORKS, HUTCHINSON LANE, BRIGHOUSE, YORKS

Made and Printed in England Tele: No.: Brighouse 50 Telegrams: Wharfdel, Brighouse

Figure 5.14 Price-list, 1946.

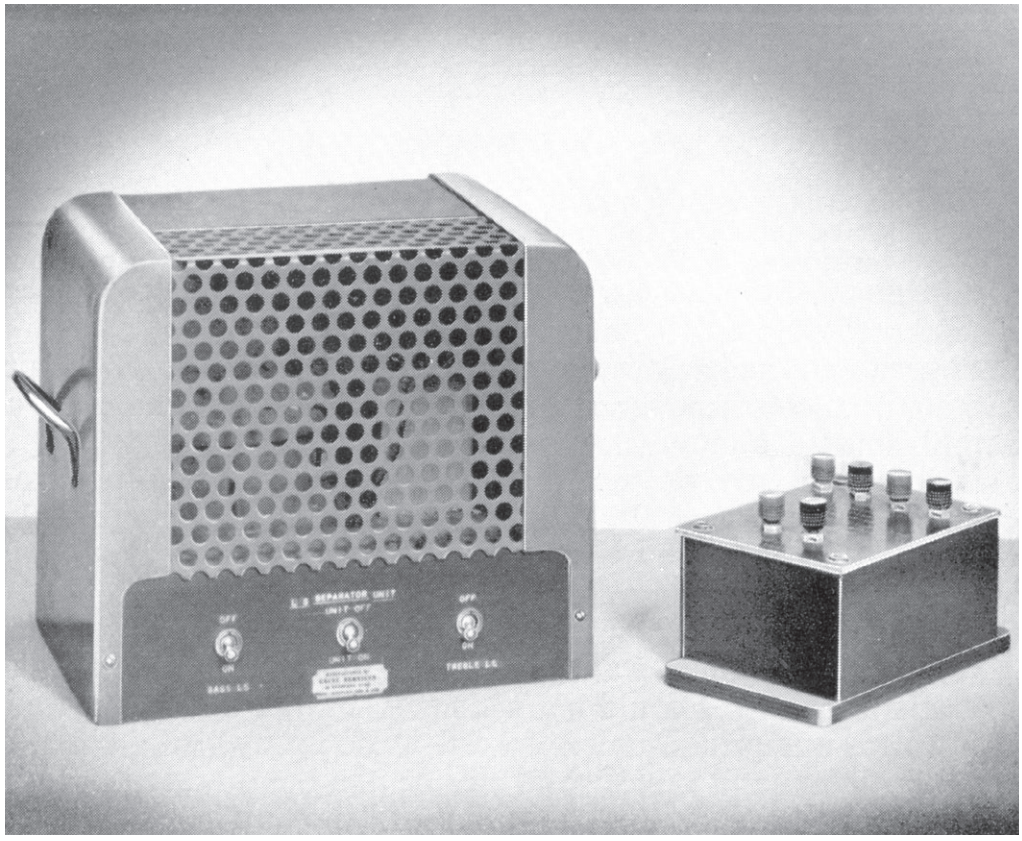


Figure 6.8 Thistlethwaite demonstration crossover and commercial model (1947). Reproduced from *Loudspeakers*, 5th Edition.

price needed to be no more than £5. Ernest Price was probably given this challenge and the resulting unit is also shown in (6.8). It was essentially a first order network (referred to as a 'quarter section' type) with a crossover at 1 kHz which actually sold, as a 'loudspeaker separator unit', for under £4 (75 s).

The bigger task was to design a two-speaker unit with the desired superior reproduction properties. Fortunately, the recently developed W10/CS with its sensitivity up to 18 kHz provided the ideal treble speaker to couple with the W12 for the bass. Gilbert drew on all his experience and came up with the corner unit shown in (6.9); his reflections on the design philosophy accompany the pictures in the brochure. During the evolution of the bass enclosure, listening tests suggested that soft suspension for the W12 speaker would be advantageous and so a cloth surround was used on this too—leading to a W12/CS variant being offered for use in acoustic chambers, again at a 10 s premium. The corner cabinet was fitted with a new type of volume control, based on a tapped choke, designed to be compatible with the crossover and avoid frequency distortion. This was state-of-the-art sound reproduction 'regardless of cost' and the price was a hefty £48 10 s (the equivalent of about £1400 today). The choke-type volume control (6.10) was sold as a separate product from the following year, along with a switch box which had been developed to facilitate the comparison of speaker systems, particularly in demonstrations of this model.

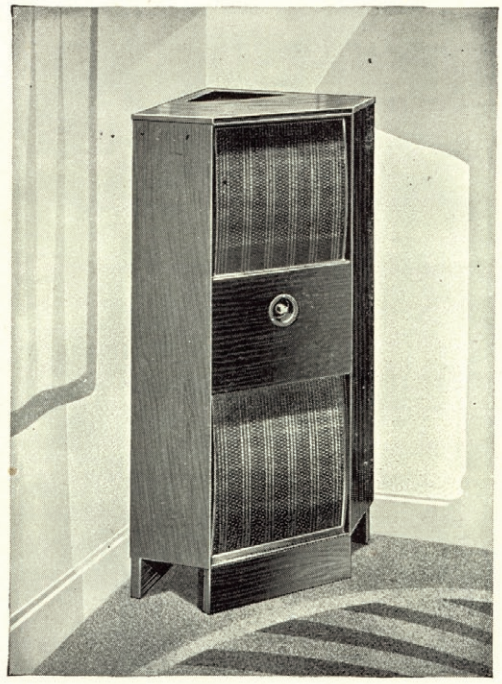
12C

Wharfedale

REGD.

Corner Cabinet

Twin Speakers



Height 42″ Width 25½″ Depth 18½″ Weight 90 lbs.

Maximum Input 10 Watts.

Impedance 6 or 15 ohms, without Transformer.

Any Transformer ratio available to order.

Fitted with specially made choke type Volume Control.

CABINET in solid Mahogany, also available in solid Oak in any shade to order.

This model has been produced to give the best possible reproduction regardless of cost. The object is of course to obtain a good balance between treble and bass, without audible resonance.

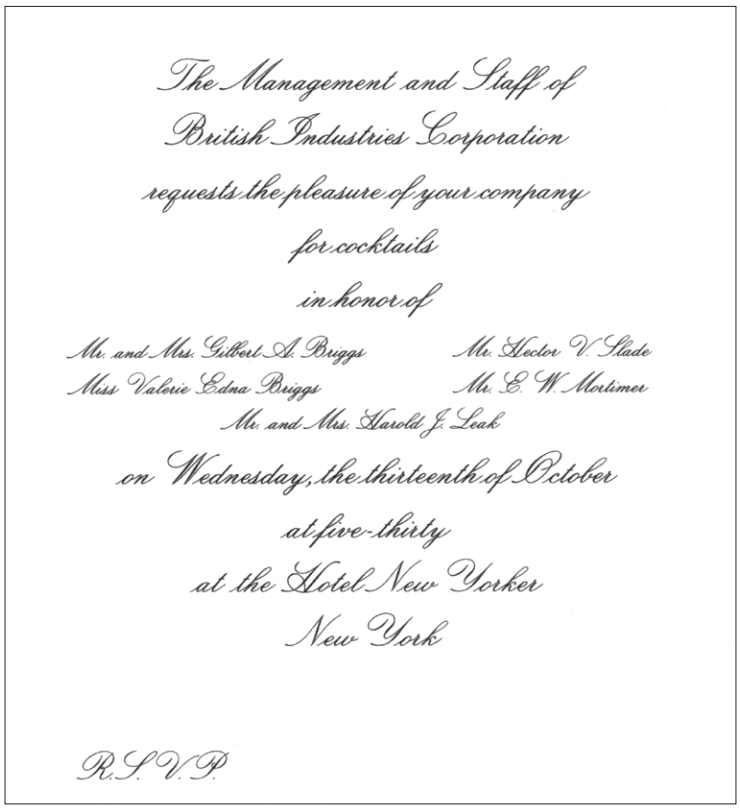
The WHARFEDALE W10/C.S. UNIT is used for the Treble, with effective response-up to 18,000 c.p.s., and a W12 UNIT with cloth suspension is used for the Bass, going down to 40 c.p.s. without frequency doubling.

The new WHARFEDALE L.S. SEPARATOR is fitted, with a cross-over at about 1,000 cycles. Reflection from the back of both speakers is arranged.

WHARFEDALE WIRELESS WORKS, BRADFORD RD., IDLE, BRADFORD

Telephone No.: Idle 461 Telegrams: Wharfdel, Idle, Bradford

Figure 6.9a Twin-speaker corner cabinet, 1947 brochure.



The Management and Staff of
British Industries Corporation
requests the pleasure of your company
for cocktails
in honor of

Mr. and Mrs. Gilbert A. Briggs
Miss Valerie Edna Briggs
Mr. Hector V. Slade
Mr. E. W. Mortimer
Mr. and Mrs. Harold J. Leak

on Wednesday, the thirteenth of October
at five-thirty
at the Hotel New Yorker
New York

R.S.V.P.

Figure 7.11 BIC cocktails invitation. (Scan courtesy of the Briggs family.)

Figure 7.12 Gilbert with Harold Leak, Muriel Leak (left) and Edna (right). New Yorker Hotel, 1954. (Photo courtesy of the Leak family.)

The Arrival of Raymond Cooke

In the summer of 1955 Gilbert invited Raymond Cooke to join Wharfedale as Technical Manager. When and why he decided to do this has not been recorded, but a number of factors were involved. He was now in his 65th year with an expanding company to run and two related activities which were demanding: writing/publishing and lecture-demonstrating. The importance of the US market meant accepting that travelling there on a regular basis would continue. His health was not great; some aspects have been dealt with in earlier chapters but additionally he was a migraine sufferer—attacks would follow bursts of intense concentration like night follows day—and there was a legacy of years of heavy cigarette smoking. Not long after the end of the War his GP changed and on his first check-up with the new doctor he was told that if he did not give up smoking he would be dead within a couple of years. Gilbert stopped immediately but continued to carry a silver cigarette case to prove that he had chosen this path! Several years later he wrote that he had enjoyed his audio life:[9]

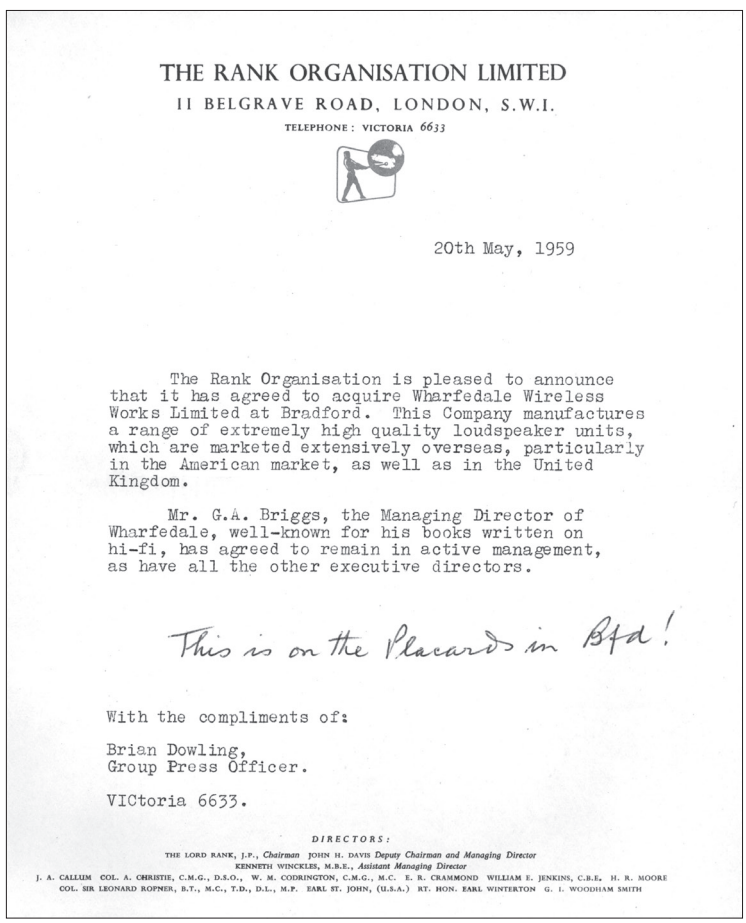
> *'tremendously, apart from many illnesses and migraine attacks brought on by strain and overwork. Recovered good health at the age of 65 by deciding to put health first, work second and money last.'*

So, looking after his health was clearly one factor and handing over some responsibility for the technical developments at Wharfedale would certainly ease the workload. The marketplace was changing rapidly and it had probably been clear for some time that new initiatives were required to come up with the compact systems which were being demanded, without sacrificing the reproduction quality so carefully established over the years. New, younger blood and a complementary technical experience were called for.

Comparing him with Gilbert, in many respects Raymond Edgar Cooke was a 'chip off the old block'. Born in 1925, he had started playing the violin aged eight, was passionate about classical music and an avid concert-goer. On leaving Doncaster Grammar School during the early years of the War he had worked as an analytical chemist with the London and North Eastern Railway (LNER) and become interested in sound reproduction. He served as a radio operator in the Fleet Air Arm, on the aircraft carrier HMS *Hunter*, from 1943 to 1946 and then resumed his career in chemistry, but soon decided that electronics and audio was what he wanted to do. In 1948 he started a degree course in electrical engineering at Battersea Polytechnic, London and he was in his final year of this when he first met Gilbert in 1951, as described in the previous chapter. After graduating he worked for Philips–Mullard in television tube production and then, in 1954, moved to the BBC Engineering Designs Department and worked alongside such notables as D.E.L. Shorter and Dudley Harwood (founder of the Harbeth Company) on the development of record and tape reproducers for broadcasting. His spare-time work on loudspeaker enclosure behaviour, started during his degree, had carried on in collaboration with Gilbert during 1952 and beyond. They would have been in communication throughout the production of *Sound Reproduction 3*, into 1953. Whilst at the BBC, but seemingly not as part of his work there, Cooke was developing some revolutionary ideas about bass reproduction and required chassis diameter, described later, and he claims[10] to have made Gilbert aware of these before he joined Wharfedale. This may well have been the moment when Gilbert realised he had been presented with a golden opportunity. He invited Cooke to come and visit Wharfedale and offered him the job of Technical Manager over lunch. (As noted in

Rank Take-over—Official

In May, the announcement that the Rank Organisation had acquired Wharfedale Wireless Works was headline news in Bradford, as Gilbert indicated on a copy of the Rank press release which he sent to his daughter Valerie (8.3). What lay behind the delay between Gilbert's 'transfer' and the formal announcement is not known, but it is probable that he had signed a 'Heads of Agreement' in September 1958 and the working through of all the details went on until May 1959. One of these was the setting up of a pension scheme—something Gilbert had wanted for his employees but which Wharfedale Wireless Works Ltd did not have the resources to fund. He took the opportunity to persuade Rank to establish a Wharfedale fund, which was replaced in a couple of years by the general Rank Organisation scheme. John Davis and Kenneth Winkles, MD and Assistant MD of the Rank Organisation, respectively, joined the Wharfedale Board at this point and Edna's anomalous directorship finally came to an end. Gilbert had indicated his intention to retire fairly soon and in June Rank appointed John Balls, an engineer working for ICI in Sussex, as MD-designate to understudy him. For contractual reasons Balls could not move to Idle until November, but Gilbert kept him abreast of what was happening there. When he did move to Yorkshire, Gilbert almost immediately sent him off on a 'world tour' to get to know the overseas agents.



THE RANK ORGANISATION LIMITED
11 BELGRAVE ROAD, LONDON, S.W.1.
TELEPHONE: VICTORIA 6633

20th May, 1959

The Rank Organisation is pleased to announce that it has agreed to acquire Wharfedale Wireless Works Limited at Bradford. This Company manufactures a range of extremely high quality loudspeaker units, which are marketed extensively overseas, particularly in the American market, as well as in the United Kingdom.

Mr. G.A. Briggs, the Managing Director of Wharfedale, well-known for his books written on hi-fi, has agreed to remain in active management, as have all the other executive directors.

This is on the Placards in Bfd!

With the compliments of:

Brian Dowling,
Group Press Officer.

VICtoria 6633.

DIRECTORS:
THE LORD RANK, J.P., *Chairman* JOHN H. DAVIS *Deputy Chairman and Managing Director*
KENNETH WINCKLES, M.B.E., *Assistant Managing Director*
J. A. CALLIM COL. A. CHRISTIE, C.M.G., D.S.O., W. M. CODRINGTON, C.M.G., M.C. E. R. CRAMMOND WILLIAM E. JENKINS, C.B.E. H. R. MOORE
COL. SIR LEONARD ROPNER, B.T., M.C., T.D., D.L., M.P. EARL ST. JOHN, (U.S.A.) RT. HON. EARL WINTERTON G. I. WOODHAM SMITH

Figure 8.3 Rank press release. (Scan courtesy of the Briggs family.)

For several years an outside observer would have been hard pressed to detect any difference overall. The company name remained unaltered and there was no mention of the parent company in brochures or advertising. Rank had learned the hard way, from previous take-overs, that an immediate, strong association of their name with a well-known brand led to a drop in sales, so they kept a very low profile. Eventually, the Rank logo (as on the letterhead in (8.3)) was added to the side of company vans and to the Wharfedale letterhead, but this only happened at the time of Gilbert's 'retirement' (January 1964). Gilbert reported to Kenneth Winkles, with whom major policy decisions had to be agreed, and he attended certain Rank Board meetings chaired by John Davis. Wharfedale was well-run and reasonably profitable, but a relatively small enterprise within the Rank Organisation so, at least initially, Gilbert was left to run the business more-or-less as before.

Not long after the acquisition, Rank summoned the Wharfedale 'Personnel Officer' to the London Head Office for a meeting of all such representatives from within the Organisation. This posed a slight problem since there was no such person. Dorothy Stevens had already got 16 years service under her belt and, having been there since the intimate days of the War when there were only about 20 employees (by 1959 the number was around 60) there wasn't much she didn't know about the operation. Gilbert asked her to go into the lions' den. Her novel presentation went down well and the head of Personnel expressed an interest in visiting the factory; Dorothy said he would be most welcome and she would arrange it with Gilbert. When he came, she was dispatched to meet him at Leeds railway station—driving Bill Escott's Jaguar, which doubled as the company car for such purposes. It had a habit of stalling when idling and could be difficult to restart, so she was instructed to keep the engine running at all costs. As she approached the station she was brought to a halt at traffic lights. She was so scared that the engine would die that she revved it like a racing car and never forgot the various indications of admiration she received from other (male) motorists! The Personnel chief's verdict was that Wharfedale was a very happy place to work.

Driven by Stereo

The intensive development work during 1958, driven by the arrival of stereo discs and the ensuing hype about the glories of stereo sound reproduction, led to a raft of new products from the end of that year; the Column 8 and PST/8 cabinets have already been described. The thinking behind these was two-fold: firstly, how best to cater for those who already possessed good quality single-channel equipment and who would be unwilling to start again from scratch and secondly, how to interest those buying into hi-fi for the first time and wanting stereo. In both cases there were considerations of budget, performance and footprint (occupied floor space), but in the former the added issue of how best to match existing speakers. As always with any significant new development, Gilbert's 1959 sales leaflets for the new products described the logic behind the designs, allowing the potential purchaser to choose their optimum solution.

The spring 1959 offerings included three cabinet systems, the W2, W3 and W4 (all based around a new 12" bass chassis, the WLS/12) and the AF12 reflex cabinet designed for the 12" units with foam surround but especially for a completely new twin-cone chassis, the Coaxial 12. The three cabinet systems were arguably the first products with a modern feel and the first thought-out range or 'family' of loudspeakers in which performance for a chosen retail price was optimised whilst striving to minimise the size, particularly the occupied floor space. They were, as the names might imply, respectively, two-, three- and four-way systems. Raymond Cooke, convinced well before he joined Wharfedale that a 15" speaker in a large enclosure was not essential for really good base

sound reproduction in schools, at the Annual Conference of the National Committee for Visual Aids in Education (Bedford College, London, July 1957). Schools broadcasting had become an important feature of education, with improved quality following the introduction of VHF transmissions, but often the reproduction was compromised by the acoustic characteristics of the listening space. Lecturing and demonstrating in similar environments meant Cooke had recent first-hand experience of the problems and he put a lot of effort into researching and preparing this talk. It cannot be a coincidence that some 18 months later Wharfedale launched the LS/7 line source speaker for use in school halls, churches etc. and a new portable unit for classrooms—the P8 (which was smaller than previous models). The entry for the LS/7 in the new catalogue provides all the essential information, as would be expected (8.7).

The Wharfedale 60

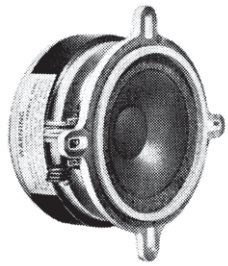
After the hectic activity of the previous two years, 1960 appeared—at least from the new products viewpoint—to be much calmer; only one new item appeared in the UK. This was the SM-1 stereo mixing (1:1 ratio) transformer, designed to assist with the uprating of mono equipment to stereo. The advertised applications were threefold: combining the bass from two stereo channels into a common woofer; adding a third full-range speaker to reduce the 'hole-in-the-middle' effect; combining the bass output from both channels in a full-range speaker on one channel so a small unit operating above 300 Hz could be used on the other channel. This followed the publication, at the end of the previous year, of *Stereo Handbook* which, as described in Chapter 12, aimed to provide some clarity in a confused world. Meanwhile the transformer product range had been reduced to include just the OP3, P-Type, GP8, W12, W15 and WMT1.

However, across the Atlantic, in Port Washington, Wharfedale Audio Products was gearing up to launch a novel new product onto the North American market. This was the Wharfedale 60, designed in the UK and named after the year, as indicated in the flyer reproduced in (8.8). It was a two-way system with a 12" bass unit (W12/FS) and 5" tweeter (a variant of the original Super 5) and with dimensions of 14¼ × 13 × 24" (just over 2½ cu ft volume) it was marketed as a potential bookshelf speaker. Its unique feature was the use of sand-filled panels to produce a completely non-resonant cabinet. The fully-veneered version sold for $105. All the components were supplied from Idle, but the furniture-styled cabinets were locally sourced and the systems assembled at Port Washington. The drive units used were specially produced for the system and were not included in the list of units for sale through BIC.

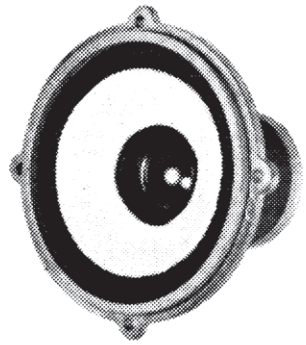
The appearance of this product was another logical step in the progression from putting Wharfedale speakers into other people's cabinets, started some four years earlier, followed by the production of 'Americanised' versions of UK cabinet systems of increasing differentiation. The Wharfedale 60 (later simply W60) had no UK equivalent and was created for the US market in response to BIC's particular requirements. They also sold a kit for a DIY two-way system, based on this design, with the standard US 12" and 4" units (WNA/12 and WNA/4), crossover components and cabinet construction details. The origin of the image of Gilbert in (8.8) is interesting. Another of the framed photographs which he had hanging on his office wall, at least after he retired from Wharfedale (see Chapter 10), is shown below (8.9).

It was probably taken in mid-1956 and shows Gilbert with Arnold Hatton (not long before he left for the USA) and an unidentified lady discussing a new device from Mullard for tuned ultrasonic tinning of aluminium voice-coil wire. Hatton would surely have taken this picture with him to the

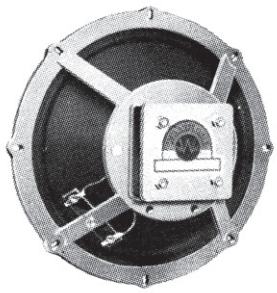
Figure 8.8 BIC Flyer for the Wharfedale 60, USA 1960. (Scan courtesy of the Briggs family.)



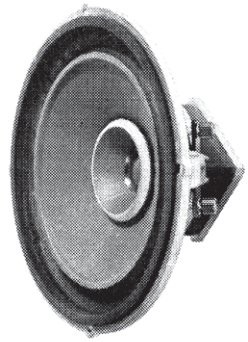
Super 3



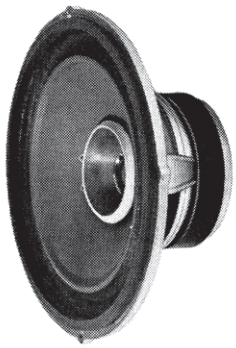
PST/4



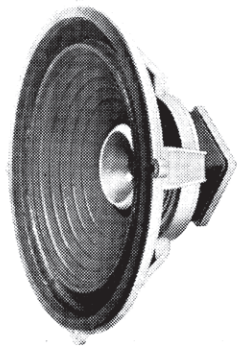
8" Bronze



8" Bronze/RS/DD

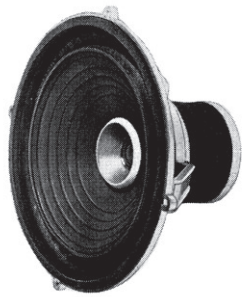


Super 12/RS/DD



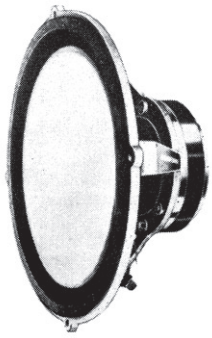
10" Bronze/RS/DD

Golden 10/RS/DD



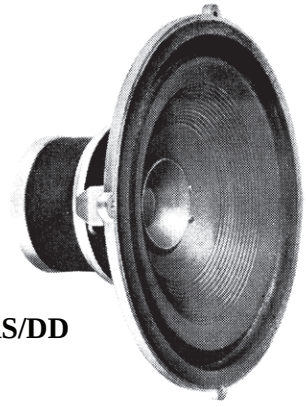
Super 10/RS/DD

Figure 8.25 Chassis listed in 1964.



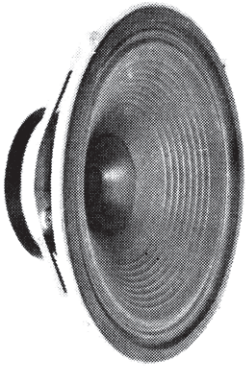
W12/RS/PST

RS/12/DD

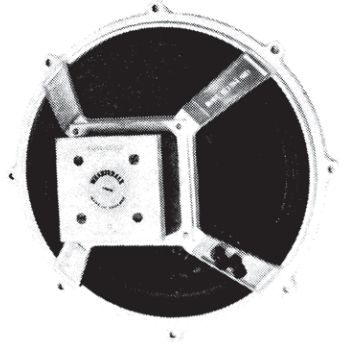


Super 12/RS/DD

W15/RS



W12/EG



W15/EG

Figure 8.25 (continued) Chassis listed in 1964.

Later on in the piece:

'I think the most difficult section for any loudspeaker is the part that receives least publicity, namely the mid-range from, say, 300—3000 Hz. There is no doubt that this is where the human ear is at its most sensitive and most easily upset by deficiencies of any sort. This was the worst area of the older W3 landmark, not because the response was poor or notably irregular, but because of the presence of overhangs or delayed resonances. . . . In the Dovedale III steps have been taken to minimise such troubles and taken together they have produced a most marked improvement.'

and finally:

'VERDICT: The Dovedale III is an impressive example of what can be done by further work with well-tried principles and it must be regarded as a welcome addition to the ranks of the middle-sized, middle-priced loudspeakers'.

At the same time that this work was being carried out, there were projects to introduce new models which had, in their original incarnations, been designed for the US market and assembled by BIC-Wharfedale. The 'Melton' was a two-way system (12" bass and 3" tweeter), slightly larger than the 'Linton' and derived from the W40D whilst the 'Rosedale'—a new flagship to replace the aging 'Airedale'—was a three-way version of the four-way W70D, incorporating a 15" bass unit. Unusually, the Rosedale kept the furniture-style cabinet of the US model and was marketed as 'for the connoisseur' and 'for the traditionally furnished home'. These derivatives did not have the sand-filled panels which characterised the US 'Achromatic' range. So, by the end of 1969 there had been a transformation in the Wharfedale range and the marketing was emphasising the leisure aspects of listening to well-reproduced music in the home. The five systems in the range are shown in (9.7)—Gilbert would surely have approved of the way in which the cabinets nestled against real musical instruments, even if a piano was not involved.

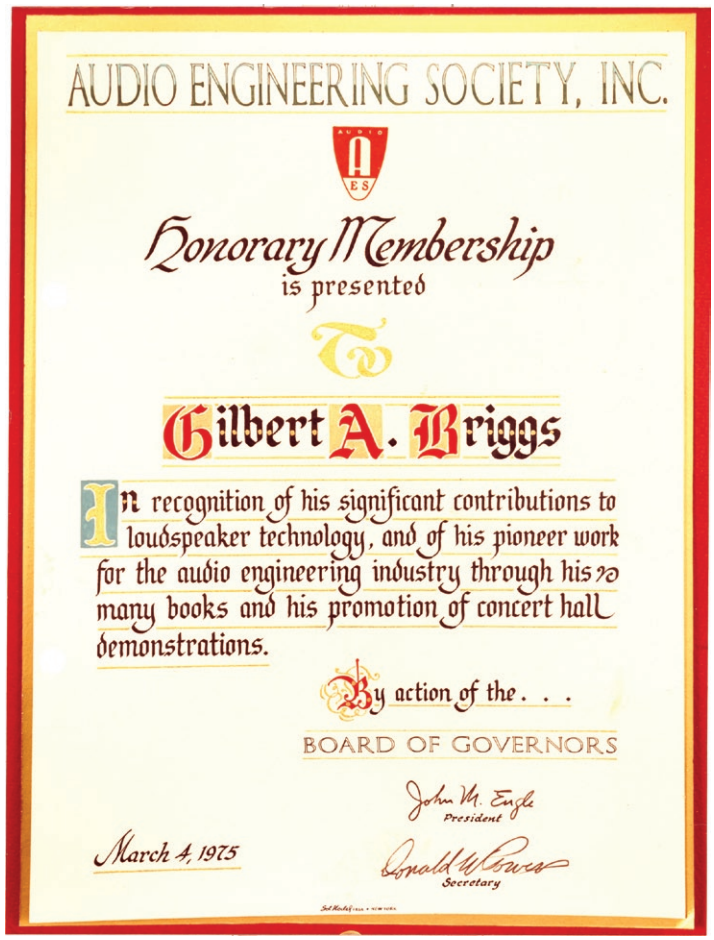
Big Ambitions

The following appeared in *The Gramophone* towards the end of 1969:[4]

'With their recent acquisition of H J Leak Ltd, and expansions of the Wharfedale factory by 50,000 square feet plus another 100,000 square feet being built, Rank Audio Visual seem set fair to become a real force in the audio world. The joint Managing Director, Gus Smith, told us at a press show recently that this is a planned operation to lift at least a part of the UK industry out of the 'cottage industry' phase so that it can compete with the larger Japanese and other foreign corporations. When I asked if this was not incompatible with their importation of Japanese Akai and Rotel products, he was quite clear that these lines were a useful stop-gap so long as Rank were not making comparable items.'

Although part of the Audio Visual division of the Rank Organisation, this was not delineated in Wharfedale marketing which (until 1971) only identified the products with Rank Wharfedale Ltd. For many years Wharfedale had exported about two-thirds of its output with about one-third going to North America. Whereas the remainder had initially gone mainly to the Commonwealth

Figure 9.7 Loudspeaker range, as depicted in a brochure printed in December 1969. Left side, top-bottom: Rosedale, Dovedale III, Super Linton. Right side, top-bottom: Melton, Denton.


AUDIO ENGINEERING SOCIETY, INC.

Honorary Membership
is presented
To
Gilbert A. Briggs

In recognition of his significant contributions to loudspeaker technology, and of his pioneer work for the audio engineering industry through his so many books and his promotion of concert hall demonstrations.

By action of the . . .
BOARD OF GOVERNORS

John M. Eargle
President

March 4, 1975

Donald W. Rowe
Secretary

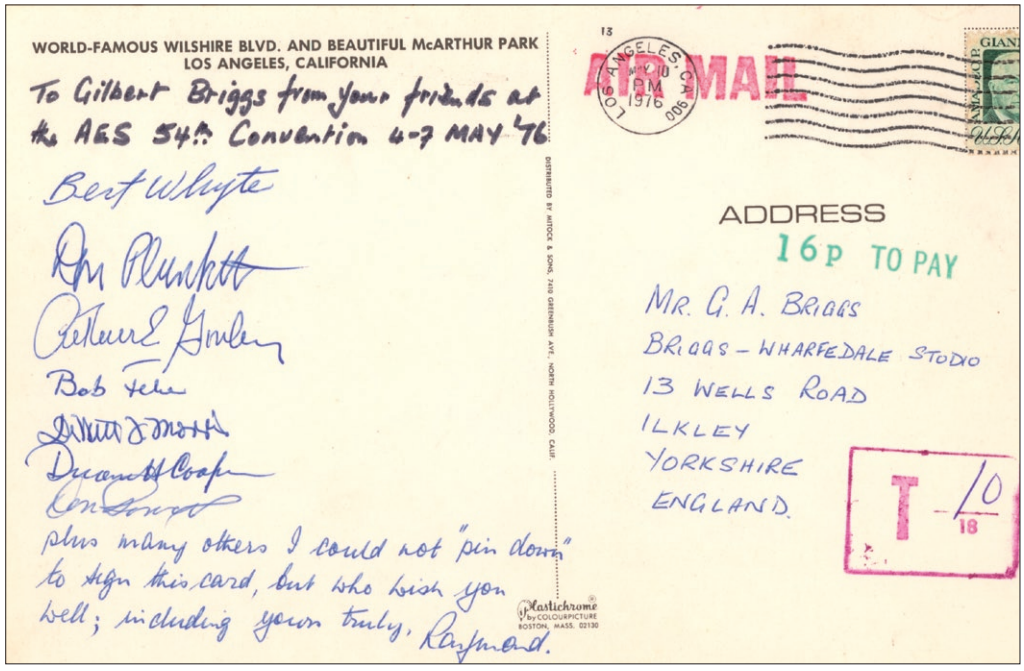
Figure 10.9 AES citation. (Scan courtesy of the Briggs family.)

He went on to serve on the Board of Governors for several years before becoming the first ever British President of the Society in 1983. From the AES convention in Los Angeles, the following year, he sent Gilbert the postcard reproduced in (10.11).

More Interviews

Not long after this Gilbert was being tape recorded again, this time for a programme called *Oasis* put out by Radio Leeds. The musical magazine programme included all kinds of items relating to the music scene in the area covered by Radio Leeds, with live and recorded interviews one of the features. The presenter and producer was Peter Byrne, whilst Roger Beardsley, the co-presenter, was the audio professional on the team responsible for the sound recordings. One day during a planning meeting Byrne recalled the Wharfedale concert-demonstrations at the Royal Festival Hall, some 20 years earlier, which he was able to attend because he was working for the BBC in London. Beardsley, knowing that nearby Idle was the home of Wharfedales, felt that Gilbert should be recorded for the programme, if he was still alive. It did not take long to track him down. They interviewed him in the Ilkley office and because the material was longer than normal it was broad-

Figure 10.10 Raymond Cooke with Gilbert Briggs at Ilkley in 1975. (Photo courtesy of the Cooke family.)



WORLD-FAMOUS WILSHIRE BLVD. AND BEAUTIFUL McARTHUR PARK
LOS ANGELES, CALIFORNIA

To Gilbert Briggs from your friends at the AES 54th Convention 4-7 MAY '76

Bert Whyte
Don Plunkett
Arthur E. Imber
Bob Fehr
Dwight Brown
Duane H. Cooper
Don Sorg

plus many others I could not "pin down" to sign this card, but who wish you well; including yours truly, Raymond.

DISTRIBUTED BY HITCHCOCK & SONS, 2420 GREENBRIER AVE., NORTH HOLLYWOOD, CALIF.

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13 LOS ANGELES CALIF 90 APR 10 PM 1976

AIR MAIL

ADDRESS

16p TO PAY

MR. G. A. BRIGGS
BRIGGS – WHARFEDALE STUDIO
13 WELLS ROAD
ILKLEY
YORKSHIRE
ENGLAND.

T 10/18

Figure 10.11 Postcard from 1976 AES convention, Los Angeles. (Scan courtesy of the Briggs family.)

Figure 11.10 John Collinson with turntable and Peter Walker with amplifier controls, St. George's Hall, Bradford, 1955. (Photo courtesy of IAG.)

Again there were three live versus recorded items, this time involving oboe, piano and organ. The world famous oboist, Leon Goossens, was to become a stalwart of these events over the years, his popularity as much for the humorous stories told when introducing pieces as for the uniquely exquisite oboe sound he produced. Gilbert regarded him as 'a raconteur of the first order'. Edgar Knight again performed in the style of Geza Anda and it is probably through Edgar that Leon Goossens became involved. The pair had planned programmes and performed together before the War and had in all likelihood first met at the Royal College of Music which they attended as prodigies (Knight was born in Bradford in 1899, Goossens in Liverpool two years earlier). The organist was Mr G. Hankin. This time the output from the 60 watt Quad amplifiers could be shared by up to four three-speaker corner units and the pickup and variable speed turntable were 'Connoisseur' units made by A.R. Sugden and Co. Ltd of Brighouse. Arnold Sugden, another of the audio pioneers, made an early two-channel (stereophonic) tape recording of the oboe/piano pieces by Edgar Knight and Leon Goossens in St. George's Hall, for the live versus recorded item.

In his programme Introduction Gilbert was at pains to reiterate that the event was non-profit-making. The tickets had been priced at 3/6 and 2/- which, after losing 1/5 and 9 d respectively to entertainment tax, left enough to cover expenses only if the event was a sell-out. The printed programme cost 6 d and two pages are reproduced in (11.11) to illustrate the format which remained unchanged for subsequent events. The inside front page was always an introduction written by Gilbert. Record details include the playing speed (78 rpm etc.) and the type of groove width (Std = standard, Mic = microgroove).

ST. GEORGE'S HALL, BRADFORD

(Manager: Bernard Beard)

SOUND REPRODUCTION

A NON-TECHNICAL LECTURE-DEMONSTRATION

by

G. A. BRIGGS

FRIDAY 1st APRIL 1955

Commencing at 7.30 p.m. prompt

Concluding at 9.40 p.m.

LEON GOOSSENS	Oboe
EDGAR KNIGHT	Piano
G. HANKIN	Organ

Steinway Pianoforte Wharfedale Loudspeakers

Quad II Amplifiers—60 watts

Connoisseur Pickup (Mark 2) and Variable speed Turntable

PROGRAMME . . . . PRICE SIXPENCE

(*Subject to alteration without notice*)

Promoted in the interests of the Science and Art of Sound Reproduction by
WHARFEDALE WIRELESS WORKS LTD · IDLE · BRADFORD · YORKSHIRE

Figure 11.11 Front page of programme.

About Your Hearing by G.A. Briggs with J. Moir

May 1967, 132 pages, price 15 s 6 d (paperback) or 22 s 6 d (hardback)

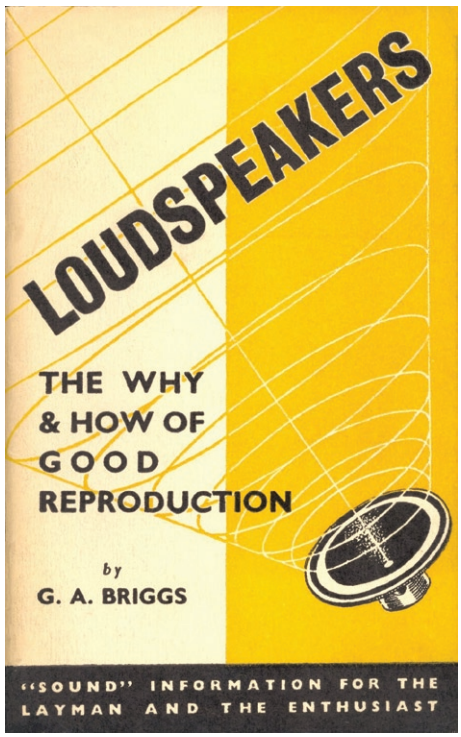
With no technical support to call on, and following his lack of success with the self-published *Puzzle and Humour Book* of 1966, Gilbert returned to an audio-related subject which Rank Wharfedale were happy to publish, but which did not require experimental input from Ken Russell. As with musical instruments, the subject of hearing had cropped up in previous books, and this is the area he decided to try and write about. James Moir was happy once again to act as sub-editor and as usual collaborators old and new were charmed into making specialist contributions. Not the least of these was a Harley Street consultant in ear surgery, who had to be anonymous for professional reasons (and whose identity remains unknown).

Gilbert started with a short historical survey of devices used to increase hearing levels before discussing the relationship between sound and hearing. Then followed chapters on how the ear works, hearing tests, forms of deafness, hearing aids, noise, listening to reproduced sound with hearing impairment, surgical treatment of deafness and issues relating particularly to children. In a final chapter the 'questions and answers' technique which Gilbert had found useful in earlier books, was invoked for the last time, since this was to be his final book. He admitted it was the most difficult, but it kept him occupied and his persistence in tracking down unusual statistics and interesting illustrations was undiminished. The print run is not known, but it was probably his usual, by this time, 5000. The subject was, by some distance, the furthest from the core established 20 years earlier, and sales may have suffered for exactly the same reason that his Voluphone suffered in 1937/8 (see Chapter 4). Five years after publication sales had reached 2400.

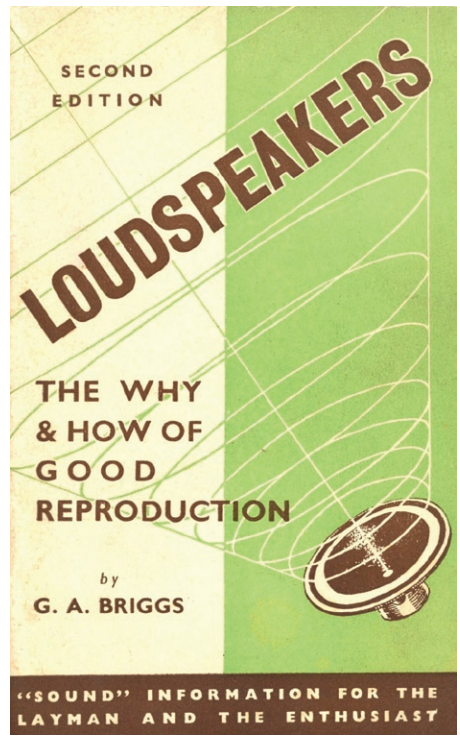
Conclusion

The helpful sales assistant at Webb's Radio, who suggested that Gilbert write a much-needed book about loudspeakers, launched a minor publishing phenomenon. There was no competition in the UK and the available textbooks from the USA were expensive and difficult to come by in the post-war period. Either by luck or intuition, Gilbert's formula for the layman's guide found an immediate resonance, not just in the UK but in the USA, where there was competition in principle, and around the world. His style developed quickly and became highly idiosyncratic, soon being turned into a selling point. His following, built up through *Loudspeakers* and *Sound Reproduction*, was loyal and most of his books were snapped up in their thousands within months of being printed. His particular appeal to the DIY audio enthusiast was amply demonstrated by the spectacular success of *Cabinet Handbook*. Though not published until 1962, 14 years after his first offering, it was still selling about 1000 a year in 1972 when sales had passed 33,000.

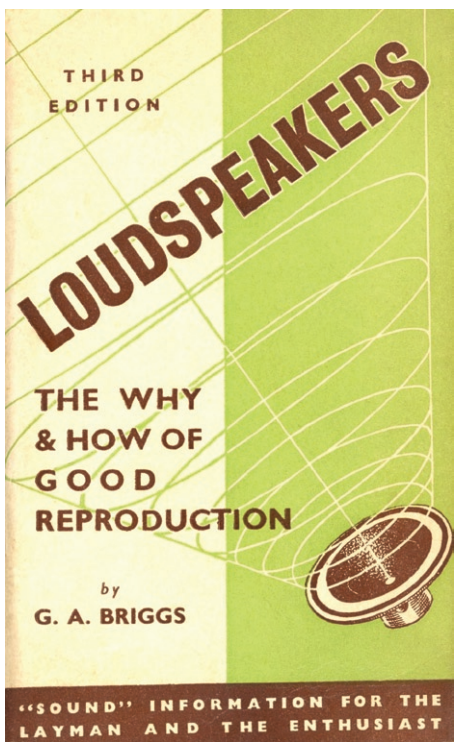
There are many testimonies to the fact that these books not only introduced many young people to audio and hi-fi, and passed on the author's passion for music, but led many of them to a career in the industry. Thanks to Gilbert's love of statistics and tabulations the information on how sales were going was constantly laid before the public through advertisements, sales leaflets and book covers, and is the source of all my data. Whilst 260,000 copies sold is a remarkable statistic, the number of readers must be many times greater, through library and personal lending. It is therefore safe to conclude that Gilbert's books were not only hugely influential in terms of education, but also of incalculable benefit to the Wharfedale brand.



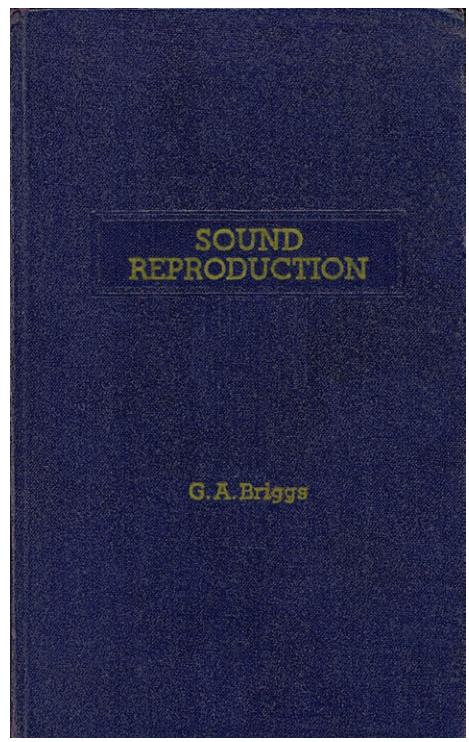
LS1 1948



LS2 1948



LS3 1949



SR1 1949

Appendix 3: Published Articles by G.A. Briggs

Gramophone Needles and Grooves, *Industrial Diamond Review*, 10 (110), Jan 1950, 11–18

The Loudspeaker and the Ear, *High Fidelity*, 1(3) (Winter 1951) 17–21

Response Curves, *High Fidelity*, 1(4) (Spring 1952) 66–74

Room Acoustics, *High Fidelity*, 2(1) (Summer 1952) 69–74

The Loudspeaker, *High Fidelity*, 2(2) (Sep–Oct 1952) 39–43

Enclosures for Loudspeakers, *High Fidelity*, 3(4) (Sep–Oct 1953) 98–102, 126, 129

Enclosures for Loudspeakers, Part II, *High Fidelity*, 3(5) (Nov–Dec 1953) 97–100

Enclosures for Loudspeakers, Part III, *High Fidelity*, 3(6) (Jan–Feb 1954) 89–92

Enclosures for Loudspeakers, Part IV, *High Fidelity*, 4(1) (Mar 1954) 86–88

Sound Reproduction in the Royal Festival Hall, *The Gramophone*, 1955 (Feb), 464

Sound Reproduction in the Royal Festival Hall (with P. Wilson), *The Gramophone*, 1955 (Apr), 509

Mesures sur les Baffles (Measurements on Baffles), *Toute la Radio*, 22 (195 and 197), May 1955, 169–173 and July/August 1955, 255–259

Electrostatics, Watts, Realism and Concert Halls, *Audio*, 41(2), Feb 1957, 26, 28, 58–59.

All about Audio and Hi-Fi, *Radio and TV News*, May 1957 – Mar 1958:

Part 1: The Listening Ear, May 1957, 41–42

Part 2: Room Effects, Jun 1957, 38–39

Part 3: Room Resonance and Stereo, Jul 1957, 34–35

Part 4: Testing Loudspeakers, Aug 1957, 40–41, 95–97

Part 5: Checking Speaker Performance, Sep 1957, 66–68, 104

Part 6: Electrostatic Speakers and Transient Response, Oct 1957, 63–65, 106–107

Part 7: Transient and Directional Effects, Dec 1957, 60–61, 192

Part 8: Speaker Power and Efficiency, Feb 1958, 56–57, 146–147

Part 9: Speaker Mounting, Mar 1958, 64–65, 120

Fourth Festival Hall Concert (with P. Wilson), *The Gramophone*, July 1959, 81

Polystyrene Diaphragms: Absorbing Resonances in Shallow Enclosures, *Wireless World*, Jan 1962, 44–45

Appendix 4: Wharfedale Products 1932–1978

This listing is derived from a database assembled during the late 1970s by Les Halliwell of the Rank Wharfedale service department. The year that a product first appeared usually came from historical catalogue information, which may mean that a product launched towards the end of a year was actually given a 'start' date for the following year. Similarly 'finish' dates may be in error, but this is less likely. The prices before 1973 include any purchase tax. VAT replaced purchase tax in 1973 and for the items listed between * and ** it is not clear whether the price included tax. Prices following ** do include VAT. All prices have been converted to the current decimalised system.

	Type	Model	Start	Finish	Price (£)
1	Chassis (Driver)	Bronze Wharfedale	1932	1934	1.98
	Chassis	Blue Wharfedale	1933	1934	1.63
	Chassis	Cadmium Wharfedale	1933	1934	1.33
	Chassis	Golden Wharfedale	1933	1934	2.93
	Chassis	Bronze (8") relay	1934	?	not retail
	Chassis	Golden (10") relay	1934	?	not retail
	Chassis	Junior (8")	1934	1936	1.63
	Extension speaker	Bijou	1934	1956	1.98
	Extension speaker	De Luxe	1934	1936	2.62
10	Extension speaker	Nubian	1934	1936	2.02
	Extension speaker	Rexine Junior	1934	1936	1.93
	Extension speaker	Type E Bronzian	1934	1936	1.67
	Misc	Class B unit	1934	1935	2.85 + valve
	Transformer	Standard (output)	1934	1946	0.38
	Transformer	Universal (output)	1934	1953	0.48
	Chassis	MR relay (8")	1935	1936	not retail
	Extension speaker	Grecian	1935	1936	1.30
	Extension speaker	MR relay	1935	1936	not retail
	Misc	Hand Microphone	1935	1939	1.38
20	Misc	Truqual Volume Control	1935	1966	0.15
	Transformer	De Luxe (output)	1935	1953	0.75
	Chassis	Standard (8")	1936	1950	1.18
	Chassis	Twin Cone Auditorium	1936	1937	4.50
	Extension speaker	Bronzian	1936	1956	3.28
	Extension speaker	Console	1936	1940	7.00
	Extension speaker	Coronet	1936	1941	2.48
	Extension speaker	Oval Type Relay	1936	1937	0.98
	Extension speaker	Ring Type Relay	1936	1937	1.25
	Misc	Voluphone	1936	1939	1.98

A pair of WHARFEDALES

In later life, Gilbert Briggs was given the accolade ‘father of hi-fi’ and this was richly deserved. He started Wharfedale Wireless Works in 1932 and designed the famous Wharfedale loudspeakers himself for over 20 years. He wrote 21 books on all aspects of audio for the layman between 1948 and 1967, published through Wharfedale, which sold well over a quarter of a million copies worldwide. He also staged audacious concert-demonstrations featuring ‘live versus recorded’ performances in such venues as the Royal Festival Hall, London, and Carnegie Hall, New York, throughout the 1950s. Yet, he had no formal relevant training when he started Wharfedale, virtually bankrupted by the Depression which ended his 27 years in the Bradford textile industry - just a passion for music and a drive to improve the reproduction of sound.

In his thoroughly researched book, David Briggs interweaves a biography of this remarkable man with a history of the Wharfedale Company and its products from 1932 to 1978. Along the way we encounter many of Gilbert Briggs’ fellow audio pioneers, such as Peter Walker, Harold Leak, Cecil Watts, Arnold Sugden, Edgar Villchur and Raymond Cooke, and relive the most exciting period in the history of high fidelity sound reproduction. Lavishly illustrated with archive photographs, brochure material and advertisements this book will delight Wharfedale fans, audiophiles and those who simply want to know more about the personality behind the brand.

With a Foreword by Lord Broers

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