



The Reflectograph (Rudman Darlington)

From can openers to professional tape recorders

Yes this is absolutely true, the firm was founded it is thought in the early post war years initially making tin can openers, camping equipment and bottle making machinery. The company was founded by Jack Rudman and Thomas Darlington and was based at the Clyde Works, Lichfield Road, Wednesfield Staffs. The factory is believed to have been in an old Victorian building now thought to be demolished. It is a matter for speculation as to how the firm got involved in the design and manufacture of a professional tape recorder, and could be as a result of a personal interest by one or both of the founders.

The firm set up Rudman Darlington Electronics Ltd and had by late 1952, produced their first Reflectograph model. (The early machines ran with the opposite track sense as was not un typical of the period. Later machines adopted the standard tape direction and track sense). This appears to have been co-designed with Dr James Cunningham Sands an engineer who was to feature almost throughout the history of the Reflectograph and the later buyouts by other concerns. It is possible that he was initially bought in on a consultancy basis. The unique deck that featured on all the early models was built to a very high standard and was certainly in the same league as Ferrograph in terms of quality and performance. the deck and some of the parts such as the retractable head pad arms were die cast, also known as "Mazak" which over time, could become brittle. It is thought the castings were made by a local firm.

The one feature that stood out was the Vernier speed control that was fitted to later decks allowing the user to accurately set the speed anywhere between 3 and 8 ips this facility appeared fairly early on. Equalisation was to CCIR at 7.5 ips. (There does not appear to have been any high speed versions i.e.: 15 ips). The reason given by the firm for this feature was to overcome the fluctuations in the UK mains supply at the time, although other firms seem to have got

around this with feeding the deck motors from the mains transformer in auto fashion to the later use of synchronous hysteresis motors. The variable speed facility persisted until the demise of the original design of the deck in the very early 1960s. Early decks were in a cream stoved enamel or a hammered, grey paint finish. The deck does appear to have been made available to the home constructor although it does not appear to have been a popular choice. Commercially though, at least one company, Specto Ltd incorporated the deck into one of their own early tape recorder designs.

Although it would appear that the Reflectograph was moderately successful during the mid 1950s, Rudman Darlington decided to dispose of its interests in the the business and in early 1958, all development and production passed to a newly formed company Multimusic Ltd, Hemel Hempstead. This company was a subsidiary of Multicore Solders Ltd and was formed to handle their magnetic tape accessories such as the "Bib" splicer which had been invented by Richard Arbib, who was to later become their managing director. As for Rudman Darlington, it would appear they carried on with their original business of can openers and appear to have survived into the mid 1960s. What little records survive at Companies House, London suggest the firm was dissolved in April 1968. Unfortunately very little else if anything survives from the Rudman Darlington days, so I would welcome any further history and insight into the company.

Dr James Cunningham Sands moved to Multimusic, becoming their technical manager at Hemel Hempstead. Production of the existing range continued with the Reflectograph Models 500, 501 and 400 series. The 500 was now available in "two tone" luxan hide and pigskin coloured Rexene. Two specialist Reflectograph continuous music decks were also advertised under Multimusic and known as the Model 81 and Model 90 Series. It is assumed these were also carried over as part of the buyout. These particular decks appear to have disappeared shortly afterwards.

By 1959, two further models, the 500 and 570 had appeared on the market, Mono and stereo respectively. These appear to have faired better in terms of sales and examples of these turn up from time to time. It would certainly appear that Multimusic gave the recorder plenty of advertising and the reviews of the 500 series were very favourable and deservedly so.

In February 1960, an announcement was made to the trade with regard to a new Multimusic tape deck, shortly to be made available to manufacturers of high fidelity equipment, Although the only known recorder to actually feature the deck was the later Dynatron 1200 Specialist. The new deck which would be known as the Reflectograph 248 was styled by industrial designer, Douglas Scott whose claim to fame was the design of the London Transport Routemaster double decker bus during the mid 1950s.

The electronics and mechanics were designed by James Cunningham-Sands, who would also design the new Reflectograph A & B series machines that would incorporate it. This it would appear, would be his last Reflectograph design. The deck was not separately available to the public, a radical departure from previous company policy. The new deck contained no belts or interwheels and in operation there were only five moving parts, with three of these being the motors themselves. The styling of both the deck and recorder were a radical departure from the original Rudman Darlington designs of the 1950s, ushering in a new high quality design of recorder for the 1960s. Whilst gaining an attractive design, the deck lost the variable speed ability, lacked a high speed option of 15 ips, and could only accommodate a maximum spool size of 8^{1/4} inches. It was not a machine designed to be moved around, moreover it was better suited for semi permanent installation and for that reason was considered cumbersome. The complete machine finally went into production quantity in late 1960, but does not appear to have been particularly well received despite good marketing and the appearance at well known audio shows of the period.

Two other Models prefixed C and D were also issued , the former was a stereo recorder and the latter, designed for copying work. In the summer of 1961, Multimusic finally abandoned the Reflectograph and sold the interest to Pamphonic Reproducers, who marketed the range as Pamphonic Reflectograph. Pamphonic were very well known for public address amplifiers and coincidentally had also during the 1950s, marketed a range of high powered amplifiers utilising a brick system of modules, totally unconnected of course with Reflectograph at the time. Pamphonic had originally been absorbed into the Pye group during the 1950s as had Dynatron which had originally been sold to Ekco Radio by Ron and Arthur Hacker of Hacker Radio fame, in 1955, and who in turn by 1960, had become part of the Pye group. With the Reflectograph range now part of the empire, production moved to Westmoreland Road, Queensbury London, partly to meet the demand of an increase in production of the Reflectograph decks and recorders and also the Dynatron Specialist. Pamphonic also produced the `Cosmonaut Reflectograph` cabinet to compliment the recorder. Sales were disappointing and by the close of 1964, all production had ceased.

The remaining stocks of machines were sold off over the following year through Laskys who where a well known electrical retailer of the period, having two stores, one on the Edgware Road and the other on Tottenham Court Road in London. No further attempt appears to have been made to resurrect Reflectograph, and Pye along with its smaller subsidiaries was absorbed into the Dutch giant, Philips in 1967.

The Reflectograph RR 102 industrial version originally released in late 1956 was used by the BBC amongst others. These new series of machines adopted the brick system which was a modular amplifier that could be incorporated into different configurations, it also made for ease of servicing. The BBC was a user of the RR102, particularly in the Radiophonics [sic] workshop under Daphne Oram.



The Domestic "Home Model" RR102 available in Olive Green or Black, Rexene covered cloth cabinet.



The Reflectograph RR (Record / Reproducer) Series 100 from 1955 was a very early hybrid design featuring both valves and transistors. In this model, no power output stage was fitted just separate record (valve) and replay (transistor) channels. On playback, only the deck was powered with all the other circuits switched out. The transistorised replay amp ran on a small dry battery taking full advantage of low noise and hum. A plug in module, known as the Model "T" was available to industrial users for the recording of specialised signals. The machines' cabinet was not dissimilar in appearance to the Ferrograph although the later ones took on a completely different look.

