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PREFACE

One might ask what interest there could be for a modern high technological company involved in aerospace, in the activities of an early Victorian nail maker, but it was from these small beginnings in 1841 that an unbroken chain of events was forged through two World Wars and five name changes to the current title of TI Reynolds Rings.

This then is the story of the company's growth from those early beginnings, links in the chain without any of which the present company would not exist. It is also the story of a family business, in which successive generations, through their engineering skills and ingenuity, evolved into a business of worldwide reputation.

In compiling this narrative it is only right that we should acknowledge the work put in by Mr. Eric Tyler, former Company Secretary and Sales Director, in writing the story of Reynolds first fifty years, which was published in 1948 as 'Reynolds in Retrospect'. This has been reproduced, with minor additions.

There may be some confusion in that the Company had always counted its history from the registering of The Patent Butted Tube Company on 20th December 1898, hence the anniversary celebrations of 1948 and 1973. The fact was that the manufacture of steel tube was but a new product of the already long established John Reynolds and Sons Limited, in the same way as flash welded rings and hollow extrusions were new products of Reynolds Tube Co. in the 1950s. Therefore, although the 1898 references have been retained, to complete the overall picture our story must begin in 1841.

The principal source of information has been the Company's official records, but much has been gathered from the recollections of a few old employees who had been with the Company for many years, and to them we are indeed grateful for their invaluable help.

One other opportunity has been seized from this occasion, and that is to mention something of the history of Hay Hall.

FOREWORD
To The 1948 Edition
by the Managing Director

The evolution of life is that of growth and expansion, likewise in the industrial field the birth of an idea may be the seed which in later years develops into a large manufacturing organisation.

Such is the case of REYNOLDS TUBE COMPANY LIMITED, which was founded in 1898 by the late Mr. A.M. Reynolds, to manufacture a patented idea, now universally known as - Butted Tubes.

“REYNOLDS IN RETROSPECT” traces the first fifty years of the Company’s life since 1898, compiled from such records that are still available, and the memories of those associated with the Company in the early years.

In the course of research into these records a large amount of interesting details surrounding Hay Hall have come to light, and as this building has been the Company’s headquarters for the last twenty years, it is appropriate to record a few of the more unique features of Hay Hall’s history over three hundred years.

“REYNOLDS IN RETROSPECT” will naturally have a greater interest to those who have had an association with the Company, which by their efforts, enjoys a world wide reputation in the Steel Tube trade second to none.

A.J.S. ASTON
Managing Director

December 1949

FROM WHENCE WE CAME

John Reynolds was born in the year of Waterloo. In the Birmingham trade directories of the first half of the 19th century is listed one William Henry Reynolds as a Malt and Steel maker, presuming that this was John's father, John would have had a grounding in business from an early age. It was in the year 1841 when John, by then a young man of 26, took premises in Moorville Street, Ladywood and set himself up in business as a manufacturer of cut nails. Cut Nails, a staple Birmingham industry, were manufactured by stamping from rolled iron sheet and it was the improvement of these powered processes that John Reynolds was to specialize. By 1847 such was his progress that it was found necessary to move to larger premises at Attwoods Mill, Baskerville Place at 19 Broad Street. It was here that he adopted the title of the Crown Nail Works, presumably from being in the vicinity of the Crown Brewery that was nearby.

In 1851 the Crown Nail Works exhibited at the Great Exhibition, at which John Reynolds was awarded a gold medal for quality and excellence of product, an accolade that was to feature in the Crown Nail Works advertising for years to come. By 1854 production was such that yet larger premises were found in Newtown Row, premises which were to survive until the post World War II development of the city.

As we will recall, through successive generations the Reynolds family were always looking for opportunities to develop business and in 1862 John Reynolds had taken over the Phoenix Nail Works, established in 1825 and Chunk Nails established in 1811, both names being retained in the company's products. John Reynolds retired in 1875, but by then the thriving nail business had, in 1864, been joined by John's two sons, Alfred John and Edwin. The death of Edwin in 1881 left Alfred John in sole charge, but three years later he was joined by his eldest son, Alfred Milward Reynolds, to be followed by his second son John Henry in 1890.

By 1895 the business had been in existence for over half a century and had become firmly established in its trade, and so the Reynolds family began to turn their thoughts to the possibility of another line of business which could be undertaken in their premises side by side with the existing production. The 1890's saw a boom in cycle manufacture with the introduction of John Kemp Starley's 'Safety Bicycle'. It was then that young Alfred Reynolds began to consider the possibilities of manufacturing seamless steel cycle tubing, and to give particular attention to the problem, which was troubling the cycle builders, of how to overcome the weaknesses caused through joining comparatively thin tubes to relatively heavy lugs. It was not long before he found the solution, for he devised a means of manufacturing cycle tubes in the process of which the wall thickness could be increased at the ends only, without increasing the outside diameter, giving the cycle builder the much needed extra strength at the joints and eliminating the necessity of inserting a liner into each end of a tube, which, until then, had been the only means of achieving this.

Tubes manufactured by this process were called “Butted” tubes, and in 1897 Mr. Alfred Reynolds, Junior, took out, jointly with Mr. J.T. Hewitt, an employee of the Company at the time, a Patent on the process of manufacturing Butted tubes. By then a small amount of plant and equipment had been installed, and the manufacture and sale of cycle tubing, particularly Butted tubes, was commenced, production to run alongside the existing nail manufacture.

EARLY DAYS

1898

These were the times of the peaceful and prosperous years towards the end of the Victorian era. True it was that a small war was in progress between Spain and the United States, and that there had also been some disturbances in South Africa, which were to flare up in the following year. But at home it seems the only thing people could find to grumble about was the maintaining of the income tax rate at eight pence in the pound by Lord Salisbury's Government.

In days such as these, when a general atmosphere of confidence prevailed within the business world, the Directors of John Reynolds & Sons Limited decided to form their newly established steel tube manufacturing business into a separate undertaking, and so, on the 20th December 1898, The Patent Butted Tube Company Limited was registered. The Chairman of the Company was Mr. Alfred John Reynolds, the only other Director being his son, Mr. Alfred Milward Reynolds, who was to be actively associated with the Company for the next forty-five years.

The total number of employees engaged on steel tube production was twenty-five, the equipment consisted of one single-chain draw bench, two light double-chain draw benches, together with a muffle, two butting machines, a reeling machine and a small amount of other necessary equipment. Production was devoted entirely to the bicycle sizes of tubing ranging from 1/2" diameter up to 1.1/4" diameter, and principally between 18 and 20 gauge, although lighter and heavier gauges were possible. A limited range of tubes in shapes other than round were also produced, but bending and tapering work had to be sent out as there was no capacity for this in 1898.

1899

It was not long before the Company began to justify the confidence placed in it by its Sponsors, for a report issued by the Directors on the 31st March 1899 reads "..... and further extensions (to plant and machinery) are in progress which when finished will complete the equipment of the works up to their full capacity, which is urgently needed". This reference to an extension was, in fact, some additions to plant which were probably required to balance up existing plant to obtain the fullest output possible, and consisted of an additional draw bench, making four benches altogether, and a further butting machine, making three in all, and some further ancillary equipment.

Although the manufacture of tube and nails were to continue in parallel for the next 20 years, it is with the tube side of the business that the story continues. The Crown Nail Works, under the direction of John Henry, was to continue at Newtown Row until his death in 1945, when it was relocated at Wednesbury, by what we would term today as a management takeover, still retaining its original title of John Reynolds & Sons the Crown Nail Works.

Early in 1899 the Patent No. 24931 which had been taken out by Mr. A.M. Reynolds and Mr. J.T. Hewitt to cover the butting process was assigned to the Company, and the manufacture of butted tubes was the line of business for which the Company became immediately noted, and was soon to become world famous.

In later years the Company was to play its part in two great wars, but there was, of course, the earlier war in South Africa which broke out in 1899. This had virtually a negligible effect on industry and commerce and certainly in Reynolds case there is no reference in any of the Company's reports or records during the three years of this war to indicate any effect on the Company's activities whatsoever.

By 1900 the additions to plant and equipment had been completed and the Works were in full production, but although the Company had enjoyed a successful year there were increased signs of severe competition, the Directors recording in their report for the year a reference to "the general state of the trade and reckless competition still persisted in by other Companies".

The trade remained in this highly competitive state right through the following year, although the volume of business was good. It was felt also that the facilities possessed by the Company were sufficient to give a large output, bringing down manufacturing costs to a minimum, which would enable the Company to meet the excessive competition. In spite of these difficulties the Company appeared to have already established for itself a good reputation as the following statement, taken from the Directors' Report for the year 1901, will show:- "The reputation of the Company's productions stands highest in the trade". It can well be said that today we can take pride in having maintained, and possibly enhanced, a reputation earned for us nearly half a century ago.

In 1901 Mr. A.M. Reynolds was appointed Managing Director, his father retaining the position of Chairman.

1902 to 1904

We now entered another phase of apparent peace and prosperity, and if the life of the community had in any slight manner been disrupted by the event of the Boer War there was undoubtedly an urge in 1902 to get back to normal. It was certainly a year of colour, gaiety and spectacle with the ending of the war in May, and the peace rejoicing in June, to be followed by the coronation of King Edward VII in August. Yet under all this there was approaching the shadow of a depression, for the Company had less business than during the previous year, and everyone was perturbed by the depressed state of prices, having to again make reductions which it was hoped would bring in a greater volume of business.

It was in this year that the Company published one of its earliest catalogues, confined almost exclusively to cycle tubing, particularly butted and taper gauge tubes which were, of course, the Company's speciality.

It is of interest to note that in demonstrating the lightness of the Company's tubes that the catalogue quotes a set of Reynolds butted frame tubes as weighing approximately 4 1/2 lbs. This

is worth comparing with the 1947 catalogue wherein it advertised a set of butted frame tubes in "531" as weighing 3 lbs.

Another interesting feature of this early catalogue is the two pages of "unsolicited testimonials", a form of advertising which was more prevalent forty or fifty years ago than today. Some of these, by today's standards, appear to be very amusing, especially one from an apparently enthusiastic and very energetic gentleman who wrote - "I have taken a great liking to your new tubes and intend to push them".

There is also a number of reproductions from the cycling press of the period which were loud in their praises of "these new butted tubes" as they referred to them.

By 1903 a slump had descended upon the cycle trade, caused no doubt to a large extent by the fierce competition, and whilst in that year the Company's records speak of falling values and prices and a less volume of business, in 1904 they refer to the hope that the continual fall in prices had by then reached the limit.

Undoubtedly these were difficult times, but there did appear to be a gleam of hope for there were indications of improvement in the following year which, to the relief of many, came up to expectations.

1905

Quite apart from the satisfaction over a general improvement in trade those connected with the Company in 1905 had good reason for pleasure and satisfaction of another kind, for it was in this year that a great honour was conferred upon the Company Chairman. In spite of the considerable amount of time and energy that he put into his business he had for the past thirteen years found it possible to also take a live and active interest in the public life of the City of Birmingham. It was in 1892 that Mr. Alfred John Reynolds was prevailed upon by the Conservative Party in St. Stephen's Ward + to become their candidate for the representation of the Ward in the City Council, a vacancy having been created by the election of the previous representative as an Alderman. Mr. Reynolds did not have to contest his seat because there was at the time an arrangement whereby all municipal contests were avoided following as they did so closely the turmoil of a General Election. So conscientiously, and to the satisfaction of the electors, did Mr. Reynolds fulfill his civic duties that at the ensuing municipal elections during the years which followed he was always returned unopposed, his nomination being supported on every occasion, not only by his own party, but the parties representing all other shades of political opinion in the Ward. This was indeed a notable tribute to his personal worth as a citizen, and the Birmingham Daily Post of November 10th 1905 records of Mr. Reynolds "the electors of St. Stephen's, members of all parties had been so satisfied with his representation of them that they had never given him the joy of a contest". And so in November 1905 he was rewarded for his valuable contribution to the affairs of the City by being elected its Lord Mayor.

+ now part of St. Mary's Ward

1906 to 1907

The revival in trade which began to make itself apparent during the previous year had in 1906 become a full flood, and for the first time in the history of the Company a complete night shift was organised, but even by working night and day at full pressure the Company could not keep pace with the volume of business which was coming in, and it was obvious that if this business was to be held considerable extensions would have to be made to the Works, and they would have to be made quickly. There was, however, no further room for extension at Newtown Row, and so towards the end of 1906 the Directors began to look elsewhere for suitable premises in which to expand. It was not long before they found what they wanted, for on the 17th January 1907 the freehold factory buildings, together with certain plant and machinery which were located in Grove Street, Smethwick, were purchased from Champion Weldless Tubes Limited. No time was lost in getting these premises properly equipped, and a certain amount of plant re-organisation as between Newtown Row and the Works in Grove Street was necessary, for it was decided that Grove Street should concentrate more on the production of ordinary plain cycle tubing, leaving Newtown Row to cope largely with the production of butted tubes. By September 1907 Grove Street Works was in full production, the plant capacity consisting of six double-chain draw benches with the necessary ancillary equipment, employing a total of forty work people, whilst at Newtown Row the number of work people had also increased to forty.

The range of tube sizes the Company were then offering extended between 1/4" up to 2" diameter, and the range of gauges from 14 to 22, together with an extension in the range of section tubes, and although other sizes and gauges were possible this was the particular range for which the Company were seeking business.

On the whole 1907 was a fairly successful year, but there had been a revival of the competition experienced in earlier years, especially from abroad, and there came into being an organisation called the Weldless Steel Tube Association, through which it was hoped to improve the state of the trade as regards competition. There was one other event of interest which took place in 1907, and that was the election of Alfred John Reynolds as an Alderman of the City of Birmingham.

1908

The effects of the severe competition which had restarted during the previous year were very marked during the year 1908, and had caused another slump in trade to the extent that the new Works at Smethwick were not being used to their full capacity, and apparently the efforts by British manufacturers to obtain fair prices in combination were abandoned, so presumably this marked the end of the Weldless Steel Tube Association formed only in the previous year.

But to those closely connected with the Company all this was overshadowed by the loss of their Chairman, who died on the 9th November 1908 at his home in Edgbaston, at the age of 67. He is best described in a quotation taken from an article which appeared in the Birmingham Daily Post, November 10th 1908 which read - "Modest and unassuming, the friend of every one, and without an enemy, even amongst his competitors in business and his opponents in politics, he built up for himself a substantial position as one of the most successful commercial men in the City, and then

ungrudgingly entered upon a career of usefulness as a public man in order that he might help to promote the best interests of his fellow citizens.”

1909 to 1913

Mr. Alfred John Reynolds was succeeded as Chairman of the Company by his son, Mr. Alfred Milward Reynolds, a position which he was to enjoy for the next thirty-four years.

The volume of business again began to steadily increase until at the end of the year 1909 the Directors were able to report that the total volume of business received during the year was the largest so far in the history of the Company, but in spite of that there appeared to be little to show for it, and the position was far from encouraging, which was truly evidence of the competition and excessively low prices which still continue, but in spite of all this, with an eye to the future, and realising Smethwick Works had certain limitations, the Company decided to improve matters by making some further additions to the Works by providing a new warehouse and packing department.

In January 1910 another catalogue was published, and among interesting illustrations its collection of handlebars, of which the Company offered quite a large range, and other cycle fittings appear curious beside the shapes which are fashionable today. This catalogue is also not without its selection of “unsolicited testimonials”, one gentleman having written to tell us that he had solved the problem of how to build a bicycle without wheels. He writes - “I wish to say I am very pleased with the butted tubes and use nothing else in all my machines”.

The year saw a great improvement in trade, and the Company reported very satisfactory results, which were continued in the following year, and this steady improvement was now to be maintained right up to the outbreak of the 1914 war, in spite of a wave of industrial unrest which began to sweep through the country, beginning chiefly with the railway strike in August 1911, to be followed by the long coal strike which lasted from February until April 1912. In spite of these difficulties the year 1912 was exceptional in the Company’s history, and for the whole of that year both Works had been employed night and day at full pressure, and had been engaged on the higher class of work which the Company had always tried to cultivate. This comment probably requires a little explanation. From the very commencement in 1898 the policy of the Company had been to manufacture only high grade tubing, known as “A” Quality, but during the years of depression and severe competition the Company had also found it necessary to manufacture and supply a certain amount of the lower grade, better known as “B” Quality, and it would appear therefore that during the latter few years there has been a rising demand for the better class of material.

1914 - 1918 AND THE IMMEDIATE POST WAR PERIOD

1914

We have now reached a period in history when events were shortly to take place which would change the whole outlook, not only of business, but of every man, woman and child. The opening of the year 1914 found Reynolds peaceably engaged in their normal business, which by then had reached substantial proportions. Indeed, the major political problem of the time, occupying the attention and interest of the man in the street, seemed to be the Irish question rather than what was taking place on the Continent. And so, in common with others, the Company carried on almost completely unaware of the imminent clash of arms which was to come at the height of that glorious summer of 1914.

The year from the business point of view was a good one for the Company, but in October 1914 the Directors recorded that they were a little apprehensive as to the future, although they had already obtained a few Government Contracts for war purposes. These Contracts consisted of supplies of tubing for military bicycles and motor cycles, a considerable number of which were required early in World War 1, and these Contracts were keeping the Works fully employed. Thus there was no immediate change in the Company's productive programme, for this was only to become more evident during the following year.

Upon the outbreak of war a number of employees either joined up or were called up from the Reserve, and the Directors decided that the Company would make a weekly allowance to employees who joined the services, a procedure also to be repeated during the 1939-1945 war. But in the case of the 1914-1918 war it is perhaps of interest to note that the Company paid the first "enlistment allowance" on August 6th 1914, only two days after the declaration of war.

1915

During 1915 changes began to be seen in the Company's production, as it appears that there had become a heavy demand for tube for war purposes, the applications to which they were put being very varied. World War 1 was also obviously not without its manufacturing difficulties and problems over material and manpower. Both the Newtown Row and Grove Street Works had been working at great pressure, but difficulties were being encountered due to the large number of the Company's skilled and experienced employees having volunteered for service in the Forces. This is a great tribute to the patriotic spirit of these men, and in spite of the difficulties created, the Company was proud that there was no lack of volunteers amongst its personnel who were willing to risk so much to defend their country. In this connection it should be remembered that it was not until the beginning of 1916 that Mr. Asquith piloted through Parliament the Military Service Bill enforcing conscription.

There was, during the year 1915, considerable increase in the cost of all manufacturing materials and there had to be several revisions in selling prices, which of course did not make business any easier. During the same year the steel tube trade came under the instructions of the Ministry of Munitions, who assumed responsibility for allocating orders in their respective priorities.

On January 1st 1916 the Government declared The Patent Butted Tube Company Limited a controlled establishment, a procedure which was to be repeated a second time some twenty-four years later. By now the Company's production was almost entirely devoted to the manufacture of steel tubes for war purposes.

It was during 1916 that we commenced to manufacture steel tubing of a rather different character, and for an entirely new application. This was the special high quality precision tubing for aircraft purposes, and it proved to be a line of business with which we were to be henceforth continually associated, and to extensively develop. Perhaps at the time we did not quite foresee its growth to present day proportions, but for many years now the aircraft industry has been commanding a large proportion of the Company's output. As the year in which we entered the Aircraft trade, 1916 can truly be said to have been amongst the most important years of our history.

One contract which was on the Company's books in 1916 is perhaps worthy of mention. It was for what were known as "Russian lance" tubes. These were made from 1.1/16" diameter by 20 gauge tubing and supplied in 10 ft. 2 in. lengths. Apparently they were sent elsewhere to have a point affixed. The inspection of these tubes was, however, very rigid, and was carried out at Grove Street Works by two Russian Cavalry Officers, who usually arrived at the Works in mufti. There were one or two occasions when they appeared at the Works in most magnificent uniforms, complete with jackboots and spurs, and, in accordance with the usual Russian custom, wearing many rows of medals suspended on most colourful ribbons. Before entering the Works the jackboots were removed and placed in the offices and an old pair of boots put on in which to walk round on the greasy floor of the shops. But irrespective of whether the uniform was being worn or not, the tubes were never handled by our Russian friends until each had put on his hands a very clean pair of bright yellow gloves.

1917 to 1918

By the spring of 1917 the demand for tubing for aircraft and other military purposes had reached such proportions that it was quite apparent that the Works at Newtown Row and Grove Street would be unable to cope with it, and so urgent was the need for greater capacity that the Air Board and Ministry of Munitions informed the Company that they would grant them every facility to extend the plant with all speed. The first effort was the preparation of a scheme to enlarge the Grove Street Works, but there were unforeseen difficulties, as well as inadequate space for sufficient extensions, and the proposals for the scheme were dropped. As in 1906, the Company was then compelled to look further afield for a suitable site upon which it could build a factory adequate to cope with the requirements of the Government. By the autumn of 1917 an ideal situation had been located, and the site at Tyseley upon which the present Works and Offices now stand was purchased from the Deykin Trustees for the sum of £5,000. It had an area of just over eleven acres, and included the Tudor period house known as Hay Hall, (of which more anon). The year 1917 was therefore another landmark in the Company's history, being the year in which the important decision was taken to move the firm's activities away from the more central positions in the town to the more suburban district of Tyseley.

Whilst work was continuing night and day at Newtown Row and Grove Street, and the end of the war still seemed very far off, the laying down of the new Works at Tyseley was in full swing, and by the summer of 1918 had been completed and got into production, only the office block remaining unfinished. By today's standards we should consider the planning erection, equipping and getting into production of a factory, even if quite small, inside nine months something of an achievement, especially in wartime, but this was not the view held by the Directors in 1918 when they refer to "delays in the work caused by the many difficulties with conflicting Government Departments as to priorities and materials". Apparently the "every assistance" promised by the Government in the previous year did not come up to expectations.

The end of hostilities found the Company with three Works working night and day to capacity, and the latest extensions at Tyseley had increased the firm's equipment by six double-chain draw benches, together with furnace, tagging and pickling capacity, and to this was shortly added one heavy single-chain draw bench, and work had been found for another seventy-five people.

It was not long after the commencement of activities at Tyseley that the Directors realised, with the valuable space available for development, the desirability of concentrating all the Company's activities in one centre, and with this in view the land and factory buildings at Grove Street were sold to a well known Birmingham firm, who allowed the Company to continue in occupation there as tenants for two years whilst further extensions at Tyseley were planned.

In the aftermath of the Great War, the demands of which saw a prolific number of firms involved in tube manufacture, business in that industry was becoming very 'cut-throat'. Two of the leading companies were Accles and Pollock and Tubes Limited. The directors of Tubes Limited were Arthur Chamberlain, grandson of Joseph and cousin of Neville, the future Prime Minister, together with John Herbert Aston, met representatives of Accles and Pollock with a view to the possibility of a merger in the Midlands steel tube industry. Agreements from that initial meeting led on the 2nd July, 1919 to the formation of Tube Investments Limited. The group, comprising of Accles and Pollock, Tubes Limited and their two associate companies, Simplex Electric and Credender Conduits, this amalgamation of two major tube producers with two tube users, it was felt should guarantee some sort of stability in the difficult days that were ahead.

From that simple beginning Tube Investments were to take in many more companies engaged in the manufacture and use of steel tube until by the end of the second world war the group comprised of some 50 + companies, including Reynolds who joined the Group in 1928.

In the early years of Tube Investments the constituent companies were still under control of their family founders and healthy competition between the firms was within reasonable limitations

allowed. It wasn't until after World War II that TI's influence became manifest, as will later be recalled.

1919 to 1922

Naturally it took quite a long time to wind up the various wartime contracts which the Company had on its books when hostilities ceased. However, no time was lost in reverting to the normal peacetime business of manufacturing bicycle and motor cycle tubes, which, during the latter part of the war, had been carried on to a more limited extent. The production of the very important aircraft material was also continued, and in addition work was commenced on developing a market for tubing for motor car and motor car engines, an industry whose progress was shortly to outstrip anything achieved prior to 1914.

The demand for aircraft tubing had fallen off considerably following the cessation of hostilities, but the Directors foresaw a great future ahead for air transport. Already the exploits of the great pioneers of aircraft and the air routes had begun to arouse public interest by such achievements as those of Captain Alcock and Lieutenant Brown who flew the Atlantic in June 1919, the crossing of the Atlantic by the British Naval Airship R.34 in July, and the successful flight from England to Australia in December, of Captain Ross Smith.

Whilst the demand for aircraft tubing was to be small during the next few years the Company nevertheless continued to improve upon its technique in the manufacture and finish of the special high grade steels required for this type of work.

The two years following the end of hostilities had indeed been boom years everywhere, but, as was soon to be proved, the boom was very artificial and short lived. Those concerned with the management of our Company were not slow to see the gathering storm of depression ahead, and so, during 1920, great efforts were made to carry through extensions at Tyseley, which were to double the size of the factory, and into which the plant and machinery at Newtown Row and Grove Street Works could be transferred, so bringing the whole of the Company's productive resources under one roof. This was accomplished by the summer of 1920 when Tyseley became the Tube Company's headquarters and only place of business.

The extension became known as No. 2 Mill, and it accommodated fourteen chains and other equipment, and the number of employees at Tyseley in 1920, which now represented the total personnel of the Company, was one hundred and thirty. In carrying through these extensions one important addition had been included, and that was the shop for bending and manipulating tubes. This work had previously been placed out with specialist firms, but the provision of facilities to carry out bending, which was primarily at that time for cycle forks, handlebars and other such fittings, was in later years to develop into a department capable of manipulating tubes for all purposes and become a most important side of the business. But some time was to elapse before Tyseley could work to its full capacity, for a serious trade depression burst upon the world early in 1921, which proved to be a black year in the history of many business undertakings. There were also added difficulties caused by a wave of industrial unrest which swept the country, mainly

centred in the transport and coal industries. Although these troubles were of no direct concern, they had their inevitable effect on industry in general, and some idea of the dislocation of trade can be judged from a Government statement, made on September 17th 1921, which said that eighty-four million working days had been lost so far by strikes in that particular year.

Another serious obstacle also confronted the Company which was to become even more apparent in 1922, and that was the shortage, owing to shipping difficulties of high grade Swedish steel, used in considerable quantities.

1923

The year 1923 opened on a much brighter note - trade was improving, the war and immediate post-war years had been negotiated. Nobody was particularly interested in the current activities of a young ex-German Army Corporal who was strutting about in Bavaria, and whose name was as yet known only to a very few. Again it seemed a peaceful, optimistic Britain with a desire to get back to more normal times. Whilst general conditions such as these were prevailing the Directors took what was one of the most important decisions in the Company's history.

To change the name, or trading style, of a well established business is a step only to be taken after the most careful and serious consideration of all the implications. Undoubtedly the most important consideration is the goodwill which is bound up in the name of any successful business. In the Tube Company's case, however, this factor did not weigh so heavily - not because there was anything lacking in the way of that valuable asset "goodwill" - but because the Company's products had always been sold under the mark "REYNOLDS" right from the beginning, even though it had traded under the style of "The Patent Butted Tube Company Limited". So closely associated had precision steel tubes and the name "REYNOLDS" become that people did not always readily connect "REYNOLDS" with The Patent Butted Tube Company Limited. Consequently, after weighing carefully all factors, the Directors decided to associate more closely the name of the Company with the name which had been in continual use in connection with its products, and so, on the 24th May 1923 the name was changed to "REYNOLDS TUBE COMPANY LIMITED".

The general improvement in trade as the year progressed was not without at least one aggravating problem as far as Reynolds was concerned. It was the continual shortage of the high quality Swedish steel. Stocks of this material were becoming dangerously low and consequently alternative arrangements for supplies had to be made. In spite of this the Company managed, towards the end of 1923, to introduce a higher quality cycle tube, made from .55% carbon steel, which became known as "A.A." Quality.

1924 to 1925

Hardly had the year 1924 begun when Reynolds introduced to cyclists yet another high quality material. The experience we had gained in the aircraft field, with its multiplicity of specifications, had brought to notice a High Manganese steel which was found to be eminently suitable for lightweight and racing cycle construction. It was an instant success with the cycling public, to whom it became known as "REYNOLDS H.M." Quality, and its introduction marked a big step forward in the eternal quest for lighter cycle construction, combined with greater strength. The demand for "H.M." was considerable, and it was soon recognised as the finest quality cycle tubing on the market, a reputation which it was to enjoy until superseded some twelve years later by the well-known "REYNOLDS 531".

It was also during 1924 that another type of steel tubing was added to the range by the introduction of a special quality tube suitable for case-hardening. Tubing had been used previously for this purpose but due to drawing difficulties it had never been developed to any great extent, and hollow case-hardened articles were generally made from the solid steel bar - a very expensive method. By using material of a special analysis and employing a different technique for drawing, Reynolds placed themselves in the position of being able to offer case-hardening quality tubing to manufacturers of Chain Rollers and Bushes, Ball Bearing Races, Gudgeon Pins, etc., at a price which permitted a considerable saving on the manufacturing cost of such articles.

Before leaving 1924 one other point should be mentioned - it was the first year after the Great War during which there was a return of excessive foreign competition in the tube trade. In spite of the competition the Company was kept fairly busy through both the years 1924 and 1925.

It was during the year 1925 that Mr. E. Austyn Reynolds, eldest son of Alfred Milward, joined the Board as Technical and Works Director, and who was later to become Joint Managing Director. Mr. Austyn Reynolds served on the Board for over twenty-two years, before resigning to concentrate on the Aluminium Division, where he held important appointments on the Boards of all the Companies of which it is comprised, as well as being a Director of Tube Investments Limited.

Austyn was educated at Eton and then went on to Cambridge. He tended to rebel at times from the strict protocol of the family and when he left University he was a pretty spirited character. In fact stories have it that when he arrived at Tyseley he had to work for a considerable period of time for nothing to repay his father the expenses incurred whilst at University. He was elected to the Board as Technical and Works Director on 15th September, 1925 and he soon made his presence felt in the field of process and product development. Austyn was known as an extremely kind person, with a smile or a quip for everyone, he always liked to work in a pleasant environment and did not relish confrontations, always believing that a happy ship can also be an efficient one. His kind and friendly attitude towards people doubtless contributed to the Reynolds team spirit which flourished over so many years. He was indeed an entrepreneur in many ways, he was clever with his hands and did the most beautiful sketches of engineering gadgetry and machinery and also made architectural drawings of housings and buildings, all of which contributed to Reynolds development. One of his hobbies was a scale model railway system, which he constructed in the garden of his home, the locomotives and rolling stock were to his

own design and they would do credit to any professional model maker. Some of the parts though, rumour had it, were constructed at Tyseley by some of the fitting shop staff. His father made his presence felt at times on these matters and if he felt that the engineering effort was being diverted too much from tube making to model making, he would submit invoices to Austyn for payment, just to keep matters in order. In 1926 Austyn married Joan Sidley, who was the younger daughter of Sir John Sidley who ultimately became Lord Kenilworth. There is little doubt that his father in law, who was in those days in the top flight of leaders of the aircraft industry, in distinguished company of names like Sopworth, D'Haviland, Brabazon, Handley Page and so on, influenced the company, through his son in law Austyn, to get in to aviation. Initially this was in the installation of furnaces and testing equipment that led to Reynolds having it's own AID inspection department and later, the development of aluminium alloys and welded tubular aircraft components, as is later recorded.

1926 to 1927

As the story enters the year 1926 we find yet another wave of industrial unrest sweeping through the country, which eventually culminated in the great general strike. This, of course, had its repercussions in all industries, and Reynolds was to be no exception, for restricted hours had to be worked during part of the year in consequence.

Yet on the whole the year was a good one from the Company's point of view, because there had been a steady increase in the demand for aircraft tubing. Towards the end of the year the Company was engaged on the production of this type of material on a considerable scale. The old Air Board of the war and early post-war years had been superseded by the Air Ministry, who had laid down certain standards of inspection to which it was necessary for manufacturers to conform, and in the year 1926 the Company obtained its Air Ministry approval for inspection and testing. It was soon apparent that the facilities at Tyseley for the production of aircraft material on a large scale were inadequate, so plans were prepared for some extensions and improvement to existing plant which would enable the Company to deal adequately with the growing demand for this type of work.

By the middle of 1927 the extensions had been completed and the new equipment installed. These additions consisted of a large warehouse complete with heat treatment, inspection, packing and despatch facilities, and were used exclusively for the handling of aircraft material.

Included in the orders for aircraft tubing was an increasing amount of manipulated work, and by the end of 1928 it had been necessary to add further equipment to the Manipulation Department which, up to then, had been chiefly concerned with the bending of cycle and motor cycle components. The carrying out of this type of work was a part of the Company business which was from then onwards to develop, to extensive proportions, which will be recalled.

1928 to 1932

1928 proved to be another landmark in Reynolds history, for it was that year the firm was acquired by TUBE INVESTMENTS LIMITED. Among newly found Associates Reynolds must have seemed quite a small unit in the T.I. family, but not many years were to elapse before it had grown from one of the smallest to one of the largest and most important firms in the Group. It is interesting to note that the Company was not subjected to a takeover, but joined the Group voluntarily.

This event tends to overshadow all else which occurred at Reynolds during 1928, but two items of interest are worth mentioning. One was some further additions in our Mill to enable catering for larger and heavier gauge tubes, and the other was the decision which was taken in December to employ female labour on work such as cutting-off and packing, the first time that women were employed in other than the Company's offices.

Whilst the aircraft business was constantly increasing it should be remembered that there was no "let-up" in the demand for tubing for cycles, motor cycles, and other commercial purposes. But the demand of the aircraft industry for steel tubes covered a wide and varied field, and included a wide range of section tubing. By 1929 there had been such an increase in the demand for this, especially in such shapes as squares, ovals and streamline, that certain additions and alterations to the draw bench capacity were necessary to facilitate the production of a greater range of these sections.

One other item of interest should be mentioned, and that refers to the future Managing Director, Mr. A.J.S. Aston, for it was in 1931 that he joined the Board of the Company, an event whose significance will be later told.

What was life like working at Tyseley in those far off inter war years of the 1920s and 30s? Until the introduction of aluminium in the latter half of the 30s, Reynolds sole area of business was the manufacture of cold drawn steel tube, and from it, using the butting and manipulation processes, the production of cycle frame components. Of the near 12 acre site which had been purchased in 1917, only the area near the main gate was built. This consisted of half the front office block, the brick built tube mills, and opposite them on the other side of the drive, the electricity sub-station and garage. Behind these, further down the drive, was the fitting shop, where the main job was to make tooling and keep the antiquated machinery going. Hay Hall was virtually derelict and whilst some use was made of the rooms, eventually becoming offices, the cellars were used for storage of surplus equipment,

To the right of the Hall was the duck pond, fed by underground springs. These became evident when the pond was eventually filled and built over, and why years later, when deep pits were dug for the hollow extrusion presses, people couldn't understand why they quickly filled with water. A small portion of the land adjacent to the railway had been sold by Alfred Reynolds to the Railway Company in exchange for which he acquired certain privileges. These included, when he was living at Stratford, stopping the train at Tyseley to take him home. Any time he was not travelling, a call was made to Snow Hill and the train didn't stop.

Machinery was mostly the original brought from Newtown Row, any additions being bought second hand. One improvement was that draw benches and butting machines were now driven by individual electric motors, though other equipment, including the whole of the fitting shop, was driven by shafting, belts and pulleys, the flapping of the belts causing noise levels far in excess of modern legislation. Not only noise levels but working conditions in general would hardly meet today's requirements. Working hours were 7.30 a.m. to 6.00 p.m. with 1 hour for dinner, ("lunch" was only for the upper class) and a 5 ½ day working week. Tube drawing involved first, de-rusting and de-scaling of the hollows (rough tubes, made by a hot process at other factories) in long tanks of diluted sulphuric acid. When the tubes were immersed in these they had to be agitated. This usually involved a man standing over the immersed bundle moving the tubes about with a long bar. Around the works you could always pick this man out as his clothes were peppered with holes, his shirt being the original string vest. After pickling and washing the tubes were then immersed in tanks of lubricant, a concoction of soap and lanolin, in a hot solution. This of course got everywhere. Floors were scraped every year, the dried up lubricant having built up by several inches by the years end. To work in this environment the tube drawers wore clogs. Protective clothing was minimal, consisting of a sack bag made into an apron and tied with string. "Gloves" consisted of more squares of sacking with a hole in one corner for the thumb. The original draw benches had two men, a drawer and a "dogger". The doggers job was to return the dog trolley from the end of the bench after being released from the chain. This situation was gradually improved, first the dogger being replaced by a rope and pulley arrangements, before being fully mechanised. It is interesting to note that one of the original benches employing a dogger was still in use at the time that the tube mills were closed in the 1980s. To grip the tube for drawing one end had to be closed up, or "tagged", to enable the dog bits to get a firm hold. In the early days this was done by hand, blacksmith fashion, men hammering hot tube ends on an anvil. This operation was later replaced by the introduction of mechanical tagging hammers. The noise of these hammers was such that it was impossible to hear anyone talking, a problem solved years later by two operators who happened to be deaf and dumb. They could lip-read! Heat treatment, another basic factor of tube drawing, was originally carried out in coal fired furnaces situated at the far side of the tube mills. These were stoked from an outside lower level adjacent to the canal. The chimneys for these can be seen on the early pictures of the works and there is still some evidence of the two levels that provided the stoke holes.

Although the work force worked hard, they also played hard. During the summer months a group could often be seen in their dinner hour, swimming in the canal. Originally Redfern Road went right through and across the canal over a bridge, from which the more adventurous used to dive, until one day the canal was drained for maintenance, revealing an assortment of scrap tube ends sticking up in the mud. What the repercussions from the management were is not known, but it certainly dampened the ardor of the swimmers, especially the divers.

Tales of the workers loyalties were numerous, one in particular being quoted. It was during one of the periods of recession that marked the end of the 1920s that Alfred gathered the workers

together in the tube mill. Telling them how bad trade had become, he asked that they all accept a 10% cut in wages to keep the Company going. Of course for the good of the firm everyone agreed!! In reality there was no choice, for these were times of high unemployment and jobs were hard to get. It was either lower wages or none at all. The sequel to this tale was the arrival shortly afterwards of a new delivery vehicle, obviously ordered some time earlier. However coincidental, this was always referred to as “the 10% lorry” for everyone was sure that it had been paid for by their 10% cut. This then was the lot of the employees of that era. To quote Charles Dickens “They were the best of times. They were the worst of times”.

1933 - 1934

The close association enjoyed for so many years with the aircraft industry had made the Company aware of the fact that there was already a big demand for tubes, not only in steel, but also in light alloys. The development of the use of this material in aircraft construction had been rapid, and already there were many instances where it had superseded steel.

Sir John Sidley introduced Austyn to a Mr. Devereux of High Duty Alloys who was an early pioneer in aluminium materials and forgings and this liaison triggered off the commencement of Reynolds aluminium activities. The aluminium division was but one of the Tube Company's developments that Austyn Reynolds fostered as will be told. Under the technical directorship of Austyn Reynolds the 1930s saw the greatest extension of plant and diversity of products in the tube companies history. Diversity that would have profound effects on Reynolds future.

With an eye to the future requirements of the industry for light alloys, and to keep abreast of its development, the Directors reached the decision that the Company should embark upon the manufacture of this material, and so, during 1933, a certain amount of experimental tube drawing was carried out in the Steel Mills. So successful were these experiments that by the end of 1933 small quantities of aluminium alloy tubes were being manufactured and supplied to aircraft constructors.

In addition to this the Directors realised that it was also desirable to extrude the Company's own requirements of hollows from which the tubes could be drawn, and the installation of extrusion presses for this purpose would also open up the vast field of manufacturing extruded sections. Consequently during 1933 plans were got out and work commenced upon the erection of new buildings to house a complete extrusion plant and tube mill, together with all the necessary furnace and other ancillary equipment.

By the month of May 1934 the extension for the Aluminium Alloy Department had been completed, fully equipped, and production commenced, and very soon the Company found itself

in possession of a good volume of orders from aircraft manufacturers for tubes and extruded sections in light alloys.

1935

The Reynolds story so far has traced the growth of business from the day the firm was founded, and looking back its growth and development up to 1934 would have been considered impressive, but the expansion of the Plant and trade over the ten years beginning 1935 was so rapid, it might be said, so vast, that it eclipsed anything that had taken place in that direction since the beginning of the Company's history. It is almost true to say that over this period of ten years scarcely a month went by without some work was in progress, large or small, which would increase capacity. To a large extent this can be traced to the vast amount of work which followed the Government's decision to expand and re-equip the Royal Air Force, a decision which was taken just at the time when the Light Alloy Department was getting into production. This programme of expansion was continued and developed right up to the outbreak of war, and there followed enormous demands for light alloys for war purposes.

The growth of the Light Alloy venture was so great that perhaps it tended to overshadow the long established steel tube business, and before continuing the story in relation to efforts with light alloys it is worth putting on record a great stride which was made in the development of lightweight cycle tubing. Ever since the introduction in 1924 of "H.M." Quality Reynolds had never ceased in its endeavours to find something even better, a difficult task indeed. But again through intimate knowledge of aircraft steel the Company was ultimately able to develop a super-light, high strength, steel tube for cycle construction, which still holds its place amongst all the material available for this purpose. The tubing was "REYNOLDS 531", which became world famous.

In 1935 an inspired move by Austyn came up with the Reynolds 531 nomenclature for the manganese molybdenum bicycle tubing which he was developing at that time from Swedish raw material. It will never be known how he alighted on the magic numbers, but being the man that he was the final inspiration probably occurred after a good meal and over the liqueurs. The figures were of course the ratio of the three main elements in the steel's chemical composition. The development of this trade mark has of course had momentous effect on the company's prosperity in the cycle field. Full credit for the development in the early days must go to Austin Reynolds, both for the metallurgical and the practical aspects of manufacturing butted tubes, super resilient forks, pencil seat stays and the multiplicity of shapes and sizes called for by the enthusiastic racing cyclists of the day. He was also responsible for establishing contact with Monsieur Dupieux whose son Roger became Reynold's Paris concessionaire and with whose help Reynolds 531 became a household name on the continent. Austyn's flair for the artistic side of life found an outlet in the company's promotional literature, some of which is generally considered to have never been bettered. Also the early Reynolds exhibition stands were virtually all designed by him. It must not be forgotten that after the introduction of aluminium into the Company's activities, that along with steel components he also introduced aluminium in to the scene using an RR56 alloy to make handlebar stems, lamp brackets, handlebars, wing nuts and seat pillars, all in the

quest for saving weight. Reynolds 531 cycle tubing revolutionised cycle building almost to the same extent as the introduction of the patent butted tube had done some thirty-seven years previously. So great a stride forward was it considered to be that the Cyclists' Touring Club awarded to the Company their plaque for the most meritorious contribution during the year 1935 to the benefit of cycling.

The year 1935 was indeed a vintage year for Reynolds Tube Company for it was at that time the last of the Reynolds family to be associated with the firm joined the Company. This was Anthony Reynolds, the son of a younger brother of John Henry and Alfred and cousin to Austyn. Anthony Arthur Reynolds was educated at Oundle School Northamptonshire and had served an apprenticeship with the Austin Motor Company, in those days one of the leading organisations to offer engineering apprenticeships. At the age of 22, after finishing his engineering apprenticeship with qualifications in mechanical engineering, he approached his Uncle for a position in the family business, to be taken on at the princely sum of £3 10s 0d per week as the assistant to his cousin Austyn. In those days of social politeness, amongst the workers the Directors were always known by their titles of Mr. Alfred and Mr. Austyn, consequently when Anthony joined the Company he was Mr. Anthony, though with the familiarity of the post war era he was always known throughout the works as Tony.

Tony had all the engineering attributes of his family predecessors and in due course took over his cousins position as Technical Director. The product divisions of the 1970s that ultimately became separate companies all began at the instigation of Tony Reynolds with post war development.

From his father in law, Sir John Sidley, Austyn had acquired drawings for welded tubular aircraft engine mountings. Rumour had it that Austyn had intercepted these drawings when Sir John was on his way to Accles and Pollock, however, Tony, having had experience of welding during his apprenticeship days, was given the task of developing a department to manufacture these units. Being a completely new activity a lot of expertise had to be learned and Reynolds, in conjunction with the Air Ministry, played a big part in writing the rule book for welded tubular assemblies.

The story now takes us back to light alloys, for so great was the volume of work in hand that already it was quite apparent that plant for the production of this material was totally inadequate, and immediate decisions were taken, as a result of which equipment and floor area would be more than doubled.

1936 to 1938

Work on a major extension was begun in 1936. The existing floor space for light alloy production was to be devoted entirely to the expansion of extrusion and heat treatment plant, and a number of new small and medium sized presses were ordered. The extension, which consisted of a shop 600 ft. by 120 ft. was therefore equipped as a mill solely for the production of light alloy tubes.

All this proved to be a well timed move for in March 1936 the Government's Air estimates provided for a further increase in the strength of the Royal Air Force which would treble the number of Home Squadrons by 1938. This meant, of course, that firms manufacturing material or equipment for aircraft construction could soon expect to receive an even greater volume of work than they were already handling.

There was also another question which had been under consideration for some time and that was the need to be in a position to supply sheet and strip manufactured from similar alloys to those from which we were making tubes and extrusions, and to be complimentary to our tube and extrusion production. So the year 1936 saw an entirely new project embarked upon, and in factory space which Tube Investments Limited had available at Oldbury, the laying down of a complete sheet and strip rolling mill was begun. This, however, was to be a separate enterprise, and a Company known as Reynolds Rolling Mills Limited was registered in May 1936 to undertake the work. Naturally it was destined to have close associations with Reynolds Tube Company Limited.

Early in 1937 the new tube mill at Tyseley had been completed and brought into operation, and during the same year the additional extrusion presses were also installed and put to work, and yet by the end of the year with all capacity working night and day at full pressure the Company could still not keep abreast of the ever-mounting volume of orders coming in. By that time sufficient orders were on the books for extrusions alone to keep the plant working continuously for over twelve months ahead. It was also during 1937 that a shop was especially laid out for the production of Spar Booms for the famous Spitfire aircraft, work the Company was to be engaged upon for several years, and during which time many thousands of sets were manufactured.

Not many months of the year 1938 had elapsed before another decision had to be taken to find a means of dealing with the extrusion position, and in consequence during this year work was commenced on yet another major extension which would house some more and larger extrusion plant, included in which was a press of 5,000 tons pressure, which at that time was one of the largest in the country.

Whilst at the time the "spotlight" was focused largely on light alloys, the Steel Mill was also exerting itself to capacity, and early in 1938 had added an entirely new product to its range. This was Barronia Tubing - a copper, tin, iron, brass based alloy, eminently suitable for plane

condenser, oil and water coolers, aircraft pipes and pipe lines on hydraulically actuated apparatus.

But whilst Reynolds, like many others, were thus busily engaged at home, disturbing and sinister events were taking place on the Continent - events which were to lead up to the Munich crisis of

September 1938, and it was soon obvious that the country had reached the prelude to the inferno of war, soon to burst upon the world.

WORLD WAR II

1939

The early months of 1939 were very different from those of 1914. In spite of the fervent hopes of everybody that war would be averted, it could not be said that its outbreak in September 1939 came as a surprise to anyone. Ever since “Munich” Reynolds, in common with many other firms, had been “taking precautions”. The black-out problems had to be tackled, whilst sandbags were piled up at strategic points, and camouflage paint appears on roofs and walls. Air raid shelters were constructed and volunteer Fire Service and ambulance squads were being trained.

During May 1939 the new 5,000 ton extrusion press came into production, which, together with existing presses, put the Company in the position of being able to handle orders for extrusions of any size. But still the work poured in and with all these additional resources capacity was still insufficient, so after consultation with the Air Ministry, it was decided that a shadow factory at Redditch should be erected and equipped to supplement production at Tyseley.

The Steel Tube Division was also getting “keyed up” to war production, and by Christmas 1939 cycle tube and cycle component production, which had continued without interruption since 1898, was completely suspended. The space and labour thus made available was immediately switched to the manipulation and fabrication of aircraft engine mountings and similar work.

And so, when war was declared on September 3rd 1939, come what may, no firm could have claimed to have been more prepared for the event than Reynolds.

1940

The events of May and June 1940, which brought to an end the so-called period of “phony” war, and culminated in the evacuation of the British Expeditionary Force from Dunkirk, had a salutary effect everywhere. The enemy was now within striking distance across the channel, and the country was on the defensive. The immediate demand from the newly organised Ministry of Aircraft Production, who had a few months previously taken over production affairs from the Air Ministry, was for Fighter type aircraft, and the material from which to make them.

For years Reynolds had been working both day and night shifts but now something extra was required. The response was to institute longer hours by working night and day on a full six-day week basis, leaving only one day for the carrying out of running repairs and maintenance of plant and machinery, which is particularly heavy in business of this type.

At the same time there was a ready response for volunteers to join the newly formed L.D.V. - later to become the Home Guard, a full company of which, comprised entirely of Reynold’s own employees, was attached to the Works for the remainder of the war. Many of those who volunteered for the L.D.V. or “Parashots” as some people called them, forgot, in their eagerness, their loyalties to Fire or other A.R.P. services which they had previously joined, and this took a

little bit of sorting out. There is no doubt that, during the first few weeks, quite a few who found themselves late at night patrolling waste ground in the precincts of the factory, were more afraid of the rifle they carried than of anything which might have dropped from the skies. Sadly, patrolling the factory resulted in one fatality when two members of the patrol, in the darkness, fell from the roof of the sub-station in Hay Hall Road.

By the summer of 1940 the new factory at Redditch was well advanced, whilst, at the same time, an additional extrusion press of 2,500 tons' pressure was being installed at Tyseley. On the Steel side a wide variety of aircraft structures were then being undertaken and it had become necessary to acquire more space and equipment for this type of work. Having no more space available at Hay Hall we were fortunate enough to be given the opportunity of acquiring for the duration of the war, large area of floor space in neighbouring factories, in which we were able to considerably develop and extend the assembly of aircraft structures.

The beginning of August brought our first taste of bombs - of the incendiary variety. A shower fell across the Works late one night, but all were effectively dealt with and no damage done. But on the night of Tuesday, November 19th 1940 disaster very nearly overtook. A parachute mine exploded over the roof of one of the extrusion shops, causing extensive damage to this and all other buildings. Providentially there were no casualties due to the fact that only a few minutes earlier, as things were getting "too hot", the work people had been sent to the shelters. It was also fortunate that very little damage was done to plant or equipment.

The Tyseley plant was fortunate to have survived so lightly, for among captured Luftwaffe intelligence files were maps of Hay Hall works, giving Reynolds target number GB732. These maps were part of a photo reconnaissance undertaken by the Luftwaffe in the summer of 1939 of all of Britain's industrial areas.

1941 to 1942

With the excitement and experiences of the previous year behind, Reynolds found itself settled into what was to be a more normal wartime routine. The factory at Redditch was devoted extensively to light alloy tube production, and was complete with extrusion presses upon which the necessary hollows for the tube mill were produced.

Towards the end of 1941 the Ministry of Aircraft Production indicated that there was still not enough capacity in the country for manufacturing sufficient extrusions, and the Company was asked to erect another shop alongside the tube mill at Redditch in which could be installed some

more presses. The work was put in hand, and the area of this new shop had the effect of doubling the size of the Works, and by December 1942 this extension was also brought into operation.

At Tyseley, in the Steel Tube Division another new and interesting contract had arrived, which was for the manufacture of parts of a bomb barrel assembly. This was a weapon soon to become universally known as the P.I.A.T. Bomb. Space had to be found for this as it was work of a special nature which could not be run in with any other that was in hand, and again Reynolds were fortunate in acquiring some more space in a neighbour's factory, in addition to that which was already being occupied for the production of aircraft structures. This was another contract which was to remain until the end of the war.

1943

By 1943 the rapid crescendo of production from the 1939 level had undoubtedly reached its peak, and the turn of events in the Middle East had considerably brightened the outlook, which gave added zest to everyone's effort.

For the Company, however, the year was accompanied by a note of sadness, brought about by the death of our Chairman, Mr. Alfred Milward Reynolds, on the 28th July 1943. He had made innumerable friends in both the business and private life of the City of Birmingham, where he was for many years a Member of the Council of the Birmingham Chamber of Commerce, and a Guardian of the Assay Office. He also left many friends in Stratford-upon-Avon, where he had made his home, and took great interest in local affairs. He was a Town Councillor from 1935 up till the time of his death, and served on several local Committees. Among his other interests he was Vice President of the Warwickshire Agricultural Society, President of the Alveston & District Horticultural Society, and a Founder Member of the Warwickshire Orchestral Society.

Mr. Reynolds was succeeded as chairman by Mr. I.A.R. Stedeford, who was also Chairman of the Company's Parent Organisation, Tube Investments Limited.

With the death of Alfred, Austyn took on the roll of Managing Director jointly with John Aston. Arthur John Street Aston was the son of Herbert Aston, one of the founders of Tube Investments, he joined Reynolds in 1931 and it was said at the time that he was put in to the Company to safeguard the money that TI had injected into the business. Whether or not this was true, John Aston was certainly a financial man and guided the Company through a very profitable future. Unlike his fellow directors, John was a very quiet man, rarely seen outside his office in the old house. On occasions he would walk alone around the works, quietly acknowledging the polite 'good mornings' of those he came into contact with. He would make no comment on what he saw, but there is no doubt that the repercussions of his tour would be the subject of discussion with his fellow directors, for his eagle eye rarely missed anything untoward. Although noted for his managerial and financial acumen, John Aston was not unknowledgeable in engineering, as those privileged to visit his office noted from the full set of aeronautical engineering encyclopedias in his bookcase. This was also demonstrated on one occasion, when, after working late his car would not start, it was reported to the garage manager next day, that with the work's policeman

holding a torch, John tinkered with the carburettor until he had rectified the problem. Needless to say the garage was required to give a full explanation of the fault the following day.

1944 to 1945

During the early months of 1944, accompanied as they were by a feeling of eager anticipation, culminating in the heroic deeds of June 6th on the Normandy Beaches, everything continued at the same tempo. After the landings in France had become firmly established, however, there was a notable decline in the demand for light alloys for aircraft construction. But at the same time, in addition to normal war production, Reynolds acquired during 1944 two new and important contracts. These, like the P.I.A.T. were for army requirements. The one was for extrusions to be used for the decking of pontoons for Bailey bridges, and the other was the fabrication of frames, called “carriers”, for wireless receiving and transmitting sets, chiefly for use in the Far East. The latter contract involved a large amount of sheet and strip, and was later transferred to the Company’s Associates, Reynolds Rolling Mills Limited.

The end of the war was undoubtedly in sight and thoughts began to turn to making post-war plans, for although there would have to be the transitional period between war and peacetime production, the need for being “off the mark” in the post-war trade with the minimum of delay was already apparent. But whilst all this planning was in progress there was no “let-up” in the production of material against the numerous war contracts still on hand.

Although the end of the war in Europe might have come at any time there was not reason to assume, early in 1945, that the war in the Far East was likely to terminate in the near future. It is therefore worth recording that as late as March 1945 Reynolds undertook yet another War Office contract, primarily for the Far East. The article called for was a light alloy hollow sphere which was part of the equipment for a portable flame thrower. This contract made use of a new manufacturing technique which had been developed during the war, known as the “hot-die-cold-metal process”, and many thousands of these Spheres were produced. This process was to develop ultimately in to Hollow Extrusions, as part of post war diversity by Tony Reynolds.

There can be no better account of Reynolds wartime history than that given by Austyn Reynolds himself. In April 1945 at the request of a gentleman at Tube Investments, Austyn wrote the following resume of the war years at Reynolds. Mention has already been made to some of this, though if only for archival interest Austyn’s letter is reproduced in full:-

D.M. Moffatt

TI Group Services 13th April, 1945

“The declaration of war found the Company already fully engaged in the production of materials urgently required, mainly for the expansion of the R.A.F, and in the process of planning a Shadow Plant for M.A.P near Redditch, for the additional production of light alloy tubing.

Our labour force at the outbreak of war was 1113 which during peak production reached 2055.

In order to provide the maximum quantity of aircraft steel tubing, the production of our well known cycle tubes and specialities was suspended completely by Christmas 1939, and all the available space, plant and labour switched to the manipulation and fabrication of aircraft engine mountings, mainly for the Whitley Bomber, the largest bomber the Air Force then had at their disposal. Much of our general production at that time was for aircraft now long obsolete - Fairey Battle, Avro Manchester, and many others including the Spitfire, which with continual modifications, has remained in production to the present day. We had been entrusted with the manufacture of the prototype Spitfire light alloy tubular wing spars and 18,037 sets have been supplied to date, valued at over £2,000,000.

Lack of space for increased production of aircraft components demanded re-organisations. The manufacture of Spitfire spar booms was transferred to Broadwell Works in January 1939, followed by a Shadow Plant at M.A.P. Redditch works which came into production in November 1942. Part of the C.W.S. Cycle Factory was taken over in November 1940 for the production of welded steel engine mountings, and later part of Glazebrooks Paint Factory was taken over for the same purpose.

During the period we produced:

4,127 Whitley Engine Mountings
2,976 Beaufort Engine Rings
1,411 Beaufort Engine Mountings
2,130 Beaufighter Engine Mountings
4,138 Standard Merlin Engine Mountings
1,717 Lancaster sub-frames
2,189 Bristol Engine Rings

and production of the last three mentioned still continues. A further shop was taken over from the C.W.S. to produce the P.I.A.T. Bomb barrel assembly of which we supplied 3,614,544.

On 19th November 1940 considerable damage was sustained as a result of an enemy land mine. Over 11,000 sq. yds. of sheeting and glazing in the main shops was lost, besides considerable damage to other buildings, office windows and the like. This was the first major repair to be undertaken by the newly formed Reconstruction Panel who performed their task excellently. Approximately 4,000 roof and wall sheets, besides 3,000 flat sheets to replace glass, were fixed in less than 4 weeks by five contractors, the sheets being brought in from other areas including London and Manchester. Production was considerably curtailed but complete blackout conditions were re-established within 4 weeks when the night shift was able to resume. In the meantime all available labour was employed on clearing up the debris and salvaging stock, little of which came to any harm despite the fact that there was a heavy rainfall in the morning after the incident.

Practically no structural damage to buildings evidenced itself at the time, but in 1943 considerable distortion of one shop 600' x 120' was discovered and measures had to be taken to rectify it.

The Aluminium Control, later known as the Light Metals Control, was set up early after the outbreak of war to distribute the available raw material, ensure maximum utility of scrap, and to allocate orders for production amongst the several fabricators. Due, it must have been, to lack of foresight the Aircraft Industry was expanded at a greater rate than material production with the result that the Light Alloy Industry was continually harassed for greater output and blame often levelled unfairly.

Many Shadow Plants were put in hand to expand production. In 1940 we ourselves undertook the erection and equipment of an additional extrusion plant on the M.A.P. site at Redditch, which like many others undertaken by the Industry never attained anything near full production before the decrease in aircraft requirements arrived, besides which, production facilities, once far from adequate, were now overdone. Such situations no doubt, were common throughout the country in many directions due to the continual shifting requirements of the war.

Up to the end of 1944 we had delivered 72,500,679 feet (13,750 miles) of light alloy tubing and 32,533 tons of extrusions.

Our associated Company, Reynolds Rolling Mills Ltd. had a less eventful time and was mainly concerned in improving production. With little in the way of additional plant they increased their production of sheet and strip from 1,792 tons per annum in 1939 to 4,594 tons per annum in 1944.

By December 1943 peak requirements for M.A.P. had been reached. The war was entering a more favourable stage for the Allies - aircraft losses were comparatively light although our bombing had been intensified and fighter opposition over enemy held territory was diminishing.

Conditions changed rapidly and within a few months the output, not only of our light alloy products, but steel tubing also, dropped quickly so that by June 1944 our Redditch Shadow Plants were practically closed down and by the end of the year our Tyseley Works were only employed 75%.

But if the war in Europe made so little claim on our production the release of aluminium alloys for the other Fighting Services early in 1944 created intense interest in their use for all kinds of fighting equipment for the Far East. Naturally it was to be a slow change over - designers and draughtsmen had little knowledge of light alloys, but with interest once aroused it would now appear there is almost limitless scope and the near future will see much equipment for the Far East in light alloy, and considerable orders have come to us for materials and fabrication making use of new techniques such as the Hot-Die-Cold-Metal Process and our experience in built-up components.

Part of the M.A.P. Tube Plant at Redditch is being turned over to the production of an initial quantity of 100,000 spheres in light alloy for flame throwing equipment, and a bay at the Rolling

Mill to the production of Wireless Carriers, utilising not less than 40 tons of sheet per month. Large quantities of extrusions have been supplied (400 tons in two months) for the decking of pontoons for Bailey Bridges and further development along these lines is expected almost immediately.

To stem the wholesale stoppage of Aircraft Shadow Plants, M.A.P. have sponsored the design and construction of a pre-fabricated Bungalow in aluminium alloy, and the tentative programme will make considerable calls on the Light Alloy Industry. In fact, peak production will be considerably greater than that of the war period.

That this and the Far East requirements are likely to clash can already be sensed. The result will be interesting. Meanwhile little real progress can be made in stimulating post-war uses of our products, but some steady progress is being made and will be intensified as the other urgent demands of the Services contract.”

TODAY, TOMORROW AND THE NEXT DAY

1946 to 1948

With the war behind - the rejoicings and cheering having died away, another era had ended. For years the whole of Reynold's activities had been concentrated on the single vital purpose of winning the war, and now once again the arts of peace had to be cultivated.

In spite of deep laid plans for a changeover from wartime to peacetime production, a certain minimum period of time was necessary in which the transition could take place. Yet, hardly had the cease fire sounded than orders for post-war requirements cascaded in. Most heartening of all was the large volume of orders which came in from all over the world - vital export business, which, from then onwards, was to gather impetus to reach the huge proportions of the coming years.

With the concentration at Redditch Works of the bulk of light alloy production, plans were made to increase the capacity for Steel Tube production, and the new Mill for this purpose was then complete and in operation.

The Light Alloy Division was perhaps not so troubled by the changeover from wartime to peacetime production as was the Steel Tube Division, and the Assembly and Manipulation Departments. The first important post-war contract that was obtained for light alloys was for the supply, in vast quantities, of extrusions for the manufacture of prefabricated aluminium houses - work upon which was still being engaged upon. There were numerous other applications for which the Company supplied light alloys after the war, and amongst them were tubes for scaffolding and electric conduit.

It is at this stage that the story of Reynold's activities in light alloys must be left. The growth and development of this side of the business had been so rapid that by the end of the war the time had arrived when it should assume its own individual identity. Whilst, of course, remaining within the family of Tube Investments, the Light Alloy Division was formed into a separate Company, which was registered in August 1947 under the title of Reynolds Light Alloys Limited, and subsequently became part of T.I. Aluminium Limited.

This history must therefore continue with post-war activities in Steel Tubes, assemblies and manipulations, all of which then comprised the entire business of Reynolds Tube Company Limited. The demand, both from home and overseas customers, for Steel Tubing in the random length had been phenomenal, and many millions of feet had already been supplied. Of manipulations and assemblies, these were both numerous and varied, and include a wide range of sports goods, such as tennis net posts, vaulting poles, tent poles, and sailing dinghy masts. In addition to these were tubular frames for the furniture and office equipment industries, and parts for textile machinery. The production of aero engine mountings and rings continued without interruption, whilst the manufacture of cycle tubing and tubular parts was at a greater level than at any time in the Company's history to that date, all of which details will later be recalled.

THE FUTURE

1948 saw the Company celebrating 50 years of tube production. A highlight in the celebrations was a dinner for a large number of the employees at Birmingham's Grand Hotel. Also, to mark the occasion, Eric Tyler, the then Company Secretary, produced "Reynolds in Retrospect", a history of Reynolds from 1898, and which is reproduced as the early part of this current narrative.

With the forming of TI Aluminium, Austyn Reynolds gradually opted out of the products of the Tube Company to concentrate on the expansion plans for the aluminium activity. These not only covered the extrusion and tube plant at Redditch, but rolling mills in South Wales and ultimately the purchase of British Aluminium. With the departure of Austyn from Tyseley, as has already been told, his position as Technical Director was ably taken by his cousin Anthony, on whose shoulders fell the post-war development of Tube Company's activities. His enthusiasm for the job was such that whatever project was embarked upon, Tony entered it whole heartedly. To promote Reynolds boating products he attended Cowes Week and joined the Royal Yachting Association. When the Company was fully emersed in the motorcycle industry, together with the Sales Director Eric Tyler, he was a regular attendee at the Isle of Man TT, then the mecca of motorcycle sport. The development of a Reynolds moped then saw Tony leaving his Jaguar in the garage and arriving to work each day on a sample of the Company's product. The Company owed a lot to his enthusiasm, ingenuity and hard work, which was to ensure Reynolds maintained a leading roll in it's areas of business.

Apprentices

Another innovation that started in the immediate post war period was the introduction of a Reynolds Apprenticeship Scheme. This was probably again at the instigation of Anthony Reynolds, remembering his own years as an apprentice at the Austin Motor Co. Boys, on leaving school (15 year olds at that time) were contracted to the Company for a 5 year period of training, either engineering or commercial. This was a three way contract between the Company, the boy and his parent(s), each expected to play their part in the boys training. The apprentice was seconded to the various departments around the works for periods of 3 to 6 months. This included production, engineering, maintenance and drawing office, to give an overall grounding in engineering practices. In addition to this they were also enrolled at the local technical college for one full day per week schooling, where they studied for academic qualifications such as Higher National Certificate and City & Guilds in Engineering & Commerce.

At the end of each year apprenticeship tests were held to assess a boys progress, a prize being awarded to the "Apprentice of the Year". These tests, as well as school and general progress, used to include the practical making of small engineering items such as set squares and scribing blocks. This practice lost some of its value when it was discovered that the more wily boys were persuading the tool room or fitting shop machinists to do a lot of the work for them. At least it showed initiative!!

The Company took into the scheme about 10 young people per year, resulting in perhaps as many as 50 apprentices undergoing various stages of their training at any one time. It was made very clear by Anthony Reynolds, that at the end of their 5 years apprenticeship their term of

employment at Reynolds ceased, and if they wished to stay on they first had to ask him if there was a vacancy. Although a fact, this of course was one of Anthony's ploys to keep them on their toes, as inevitably the majority stayed on, eventually aspiring to management positions, or in the case of a few becoming Directors of the later diversified Companies.

Over the years some hundreds of boys benefited from a Reynolds Apprenticeship, those that left for other Companies taking with them a high degree of basic engineering training.

By the end of 1948 the aircraft assembly department had been relocated in an area in No. 2 Extrusion, which had been vacated by the aluminium division. Although Reynolds light alloys was now based at Redditch, the shop containing the 5,000 ton extrusion press had been retained at Tyseley, as this equipment was considered too costly and too large to move. It was alongside this press that work continued on the production of engine mountings for Rolls Royce Merlins and DC4s. The workforce on these assemblies had of course been much reduced, to coincide with the tapering off of government orders, though this work was to continue for at least another two years. During this time there was a slight upturn in aircraft work when Reynolds received orders for circular engine mountings for the Bristol Hercules and the larger dynophocal ring for the Rolls Royce Ambassador engine. These differed from the long established light gauge tubular structures in that they were basically a rectangular section of heavy gauge formed in to semi-circles in the tube manipulation department. In the aircraft assembly department they were then welded to a circular form and numerous brackets and attachments welded on. Also in the aircraft department these components were fully machined to very close tolerances. To accommodate this work more space was needed and a move was made in to the large area that had previously housed the aluminium warehouse.

To maintain the expertise that had been developed from tubular welded assemblies, concerted efforts were being made to find commercial work to replace the aircraft work on which this experience had been built. To this end orders were obtained for tubular welded stands for cash registers and adding machines. This was of course before the days of computers, and calculators and the machines in question were relatively large and expensive items, consequently a high degree of quality and finish was demanded in the stands to accommodate them. One could not have pretty young office girls snagging their expensive nylons on rough welding. Many thousands of these stands were made, the contract requiring them to be finished, painted and packed into cartons for delivery as far afield as places such as Dundee. This necessitated an expansion of Reynold's transport department, where their up to date Leyland lorries were fitted with large trailers to ship these relatively light, but bulky products.

A problem that arose with the transfer to commercial work was in the question of workers remuneration. The department had always been run on a 'peace-work' system, each operation being timed and a price given. On the assumption that the commercial world would not pay such a high price as government contracts, the management decided that peace-work rates would be lower. A ceiling of 36/- per day (£1.80) had been put on aircraft work, but this was reduced to 28/- (£1.40) for commercial work. Although the workforce were obviously not happy with this situation, it was accepted as the price one had to pay for the country being at peace. How they were convinced of this is a mystery, but the management must have been very persuasive.

The opening years of the 1950's a new enterprise was embarked upon, with the formation of a marine department. With the peacetime resumption of leisure activities there was a large increase in boating and yachting and with it's knowledge of working with aluminium Reynolds entered into the business of supplying masts, booms and deck stanchions, pulpits and other marine items for a variety of private yachts. Apart from individual designs the Company also received a large order from Fairey Marine for it's dinghy masts for their Firefly range. These were actually made by Reynolds Light Alloys but sent to Reynolds for reforming of the sail track to accept the fittings.

Some notable orders for masts for the larger boats came from such notables as Crown Prince Harold of Norway and the Marquis of Milford Haven. These were sixty foot masts in aluminium, of which quite a number were made. They were basically a 5" diameter x 10 gauge tube, ovalled and tapered over the top twenty feet. Tapering was achieved by cutting out a long 'V' section closing the gap and welding, after straightening the weld was then covered by a riveted sail track. A problem that Reynolds had with this post-war development was that it's sales department was never geared up to dealing with orders from individual members of the public and consequently much of this work was done on a nominal 'charge for development' basis. What may have been lost in profit though, was more than compensated by world wide publicity. The final outcome of this was that at least one of Reynold's original customers, namely Ian Proctor, went into the business of mast manufacture on his own account, cashing in on experience learned from Reynolds and eventually becoming one of the largest suppliers of masts to the boating fraternity.

From sixty foot aluminium masts to flag poles was but a small step and in this field the Company were able to market their products through Piggot Brothers of London, suppliers of this type of article as sub-contractors. A walk around many of the countries big cities, particularly London, one could see Reynolds flag poles prominently displayed on or in front of numerous buildings. Notable amongst these is the Shell Centre on London's South Bank, where forty five poles were supplied and erected including two of seventy five feet on the tower roof. These latter were made in four sections of ten inch diameter 8 gauge aluminium, joined together by expanding liners of Reynold's design. Other flagpoles of note were the sixty foot poles for the Co-op Insurance building in Manchester and of the five seventy five foot poles outside Glasgow Airport.

Production of flag poles involved much more than the shop floor manufacture, for each pole had to be designed with consideration for flag size, wind speed and location, all of which were calculated by Reynold's drawing office. This was not always so, for in the early days at least one disaster occurred, when, supplying the demand for the Coronation celebrations of 1953, a number of poles were made for the Dundee Corporation. Unfortunately these were not only adorned with flags, but also strung between with bunting. As a result of a very heavy thunderstorm, the weight of all the wringing wet material was too much, causing some of the poles to collapse. What compensation was arrived at is not now known, but Reynold's representative certainly had to grovel before the town's Mayor and Corporation. From situations such as this experience was gained.

The versatility of Reynolds Tube Company was never greater than in the immediate post-war years. In the quest for new outlets that would make use of the acquired skills of the manipulation and welded assembly departments, the Company took on many and varied projects. Most were 'one offs' that were taken on out of enthusiasm and in the hope that it would open up new areas of business. These ranged from special equipment for the aircraft industry, such as a servicing stand for Trans Canada Airways (an early sophisticated version of the now common scaffolding tower), to equipment for circus artists. Included in the latter was a complicated structure for an aerial trapeze act, The "Anjolis" which on completion was demonstrated in the roof girders of the former No. 1 extrusion. Also demonstrated, at Reynold's sports day, (another innovation of Tony Reynolds held at the Company's sports ground in Olton), was a hundred and twenty foot swaying pole made in sections, on top of which a circus artist called "Reno" performed a series of acrobatic feats, not least of which was the way in which he assembled the equipment by climbing up the pole, feeding on each section until he met the optimum height. From the sublime to the ridiculous the Company also made a giant safety pin for Coco the Clown.

Notwithstanding all these diversions, the tube mills were still producing vast quantities of steel tube in a variety of specifications and sizes and with full order books. Sections, such as square, hexagon, oval and streamline etc., were a speciality and again, at the instigation of Tony Reynolds, some development work was done on producing the dinghy mast, such as the Firefly, in Reynolds 531. Dies were made to produce the mast section complete with sail track. A number of these were made on an experimental basis and offered to sailing enthusiasts for trial at boating centres such as Kingston upon Thames. Although technically successful, probably due to costs, inroads could not be made into the rapidly growing markets supplied by such as Ian Proctor.

With all this interesting work, apart from the cash and adding machine stands, nothing had yet come along that would give long term orders and also utilise the skill and experience of manufacturing close tolerance tubular welded assemblies.

In the late 1940's, over in Northern Ireland, a motorcycle enthusiast named Rex McCandless was developing a motorcycle frame using an all welded type of construction. The traditional methods of hearth brazing tubes into cast or forged lugs was still being used by the motorcycle manufacturers of the day. Taking his ideas to Norton Motors, McCandless produced a number of frames for the works team in the 1949 TT Races. These were so successful that Norton decided that their future racing machines would all have the revolutionary "feather-bed" frames. (A Norton works rider of the day, Harold Daniel, after a lap of the TT course described the bike as "like riding a feather-bed). Having no experience in this type of construction, Norton, who had been tube customers of Reynolds since the early days of the century, approached the Company for production quantities of the new frame. This, at last, was a process in which Reynolds excelled. The first Norton "feather-bed" frame was produced by Reynolds in January 1951. Made from 1 ¼ dia. x 16 gauge 531 tube, bent by the manipulation department to shape, this saw the birth of a whole new area of business. Absorbing all the skills of it's aircraft welded structures experience, Reynolds were to pioneer and provide a service for what, in subsequent years, would become the accepted method of motorcycle frame construction. With the production of Norton frames, a road version had been introduced by 1953, Reynolds reputation in the motorcycle industry grew,

helped by the boom in motorcycling of the late 1950's. At the height of its production, Reynolds were producing over 450 motor cycle frames per week. The popularity of the motor cycle also saw the introduction into Britain, from the continent, of the scooter and the moped. As a result of which, companies, other than the traditional motorcycle manufacturers, came into the market. To meet this demand at Reynolds, a design facility was offered along with frame production. Cycle firms such as Dayton and Hercules, vehicle builders such as Willenhall Motor Radiator Company and even organisations better known for football pools, like Vernons, bought along the ideas for scooters and mopeds, which Reynolds, in most cases, completely redesigned. For contracts such as these Reynolds were able to offer a complete package, including the ultimate testing for road worthiness and fatigue life, making good use of the Motor Industries Research Associations resources at Nuneaton, of which TI were members. With the knowledge gained from this, Reynolds Tube Company became a noted authority on design and construction of commercial light gauge tubular welded structures.

From the contacts the Company had with Norton Motors and the Isle of Man TT Races, it was not long before Reynolds motorcycle department was asked to design and manufacture special lightweight frames for the top exponents in motorcycle racing. Stars of the 50's and 60's, world champions like Geoff Duke and John Surtees, all came to Reynolds to improve their chances of success. It was from press reports of these, that, coupled with the already well known name of Reynolds 531, a world wide reputation as experts in frame construction was enjoyed. The Company visitor's book read like a 'Who's Who' of motorcycling.

An early motorcycle development embarked upon was steering and front suspension. A close acquaintance of Tony Reynolds was the patentee of front suspension known as the Earles Fork. A licence for the production of these forks was assigned to Reynolds, and a good number were made, mainly for lightweight motorcycles and scooters. In due course, especially for the racing specials, the Earles Fork was developed but ultimately superseded by a Reynolds fork, featuring short leading links pivoted within the wheel diameter, instead of outside as in the Earles Long Link design. These were highly successful in the hands of top grade riders like Geoff Duke, though in spite of their technical superiority inroads could not be made into the products of the established motorcycle manufacturer, where the more simply produced telescopic fork reigned supreme.

With the aforementioned popularity of the moped, basically a pedal cycle with a 50 cc engine attached, Anthony Reynolds saw a potential for Reynolds business. At Tony's instigation, Reynolds design team produced tubular welded frame sets which would accept a variety of proprietary engines. These frames incorporated front and rear suspension, that although universally accepted for the motorcycle, was an innovation on mopeds. Although the Company made a number of fully road going prototypes, all taxed for the road, the ultimate idea was to produce a frame set that could be purchased by any prospective manufacturer and fitted with an engine of his choice. Despite the Company's efforts exhibiting at cycle and motorcycle shows at home and abroad, this was not to be. The final outcome was a review of the Reynolds product by a committee representative of Tube Investments Cycle Division, that, after a demonstration on the Hay Hall car park, bought all design tooling and development for proposed manufacture by one of their companies. At the 1956 Earls Court Cycle and Motorcycle Show, a Reynolds inspired

machine was exhibited under the Dunelt name (Dunelt was a pre-war motorcycle manufacturer acquired by TI). This was the only one made, rumour being that it's technical superiority would have an adverse effect upon the then current mopeds being marketed by Raleigh and Phillips, both TI companies.

Before leaving the story of Reynolds motorcycle activities, mention must be made of the welding service that the Company provided at the annual Isle of Man TT races. Begun in 1954 at the instigation of Norton Motors to service their welded frames made by Reynolds, the facility soon became available to all competitors. Damaged frames were a regular occurrence in race practicing sessions, and has as been recalled the Company's presence and free service, together with 531 and the Tour de France, did more to promote the Reynolds name throughout the world than any other form of advertising.

Prime Minister Harold Macmillan's 'wind of change', blowing through Africa in 1960, had already been stirring in the corridors of power at Tube Investments. In 1952 there was a trend in British industry to take in University graduates as trainees for future management, a trend to which TI subscribed. These young men were installed in numerous companies, like Reynolds, to experience their future careers. In 1953 five of these graduate trainees arrived at Tyseley to spend the next six months seconded to various departments.

The Tube Company still retained an atmosphere of a family business, where supervision and management were all long serving employees who had started at grass routes. The foreman, aided by a charge-hand, ran a department being responsible to the Works Manager who in turn answered to the Directors. It was in to this structure that TI's graduates had to be integrated and so the position of Departmental Manager was created. Although at first a position of convenience, the department still being run by the foreman, as these older hands retired, departmental management became more significant. Whilst some of TI's initial graduates moved to higher positions in other companies, the Reynolds intake, presumably influenced by the 'family atmosphere', in the main stayed with the company, eventually becoming Directors. Up to this time Reynolds, with it's home grown management, had shown little outward sign of being part of the TI Group, which in turn were content to exert minimal influence with their more profitable companies, but with the influx of TI personnel and the introduction of Group Services, the winds of change were indeed blowing throughout the organisation.

Development of war time experience was not only confined to welded assemblies, for the 'hot press' process, originally installed for the production of aluminium alloy spheres for military flame throwers, was now producing components for artificial limbs. A large order was also procured for aluminum bobbins for the textile industry to replace the traditional wooden bobbins used for cotton spinning, of which some 20,000 per week were made. Although these were very welcome orders, in this transitional period in the company's history, the future of this department lay in aluminium cylinders for both commercial and military usage.

An early achievement in the process was the production of oxygen cylinders for John Hunt's 1953 British Everest expedition, which successfully saw Edmund Hillary and Sherpa Tensing conquering the world's highest mountain for the first time. Although this saw Reynolds on 'top

of the world', it was but a start in aluminum cylinder development and the supply of oxygen cylinders for an Everest expedition was undertaken again in 1975 for the British South West Face expedition led by Chris Bonnington. These 1975 cylinders bore little resemblance to those of 1953, in that the early cylinders were made from a dural type extruded aluminum tube, necked at both ends by the hot press process, one end was then plugged whilst the other end took the on/off valve. Short and stubby and relatively heavy, these were carried in a pack of three on the climbers back. By 1975 Reynolds hollow extrusion process was well established and used in the manufacture of these later climbing cylinders. Designed by Reynolds to achieve maximum performance at high altitudes, they weighed only 7 ½ lb. with a capacity of 800 litres, pressurised to 3300 lb. per square inch. Two feet in length and four inches in diameter, they were carried snugly in pairs within the mountaineer's back pack. It is interesting to note that this later expedition recorded that one of the 1953 cylinders was now being used as a gong, calling the Lamas to prayer at the monastery of Thyangvoche at Khumvu, one of the more unusual uses of a Reynolds product.

The Reynolds HE process mentioned in the production of the '75 Everest cylinder, was instigated by a chance visit by Anthony Reynolds to Clermont Ferrand in June 1953. Talks with the Biginelli brothers resulted in Reynolds purchasing the manufacturing rights to the process. Initially two presses were bought at a cost of some £30,000 for the process which embodied techniques that were then unique to the UK. Described as a backward extrusion process, it had the ability to produce thick end, thin walled cylinders from hot billets. Originally developed to manufacture munitions for NATO in the form of steel cartridge cases, with the decline in armaments the techniques were developed for commercial use in the form of hydraulic cylinders for various applications, as well as the aforementioned aluminum gas cylinders, all of which supplemented the already established hot press department.

This post-war period of development and expansion saw the emergence of yet another process that was to become a major part of Reynolds business in the years to come. This was the manufacture of flash butt welded rings. By the end of the war piston engined aircraft were being superseded by jets, a situation which, apart from random tube supplies, appeared to see the end of Reynolds involvement in the aircraft industry. However, in March 1952, Anthony Reynolds was visited by two Rolls Royce, Derby technicians. On a visit to the USA to investigate the American methods of jet engine ring production, they had found that the US engine makers were employing extruded sections which had small machining allowances, whereas Rolls Royce machined their rings from heavy uneconomical forgings. Principally in stainless steel alloys, some 95% of this expensive material was being machined away to make the finished product, which apart from material waste also involved costly machining hours. From its reputation for piston engine mountings, Anthony was asked if Reynolds could produce rings from extruded sections, rolled and flash butt welded in the manner of the Americans. Although having no experience in working with and welding these types of stainless steel, Anthony agreed to look in to the possibilities. With the cooperation of Chesterfield Tube Company, a TI associate company who were already experienced in extruding stainless steel for tube hollows, raw material was obtained and a start made. Bending was by an existing three roll bender in the manipulation department and for welding a flash butt welding machine was purchased with a 6 ton upset capacity which could flash

butt weld stainless steel up to $\frac{3}{4}$ sq. inch cross sectional area. From this small beginning flash welded rings became a major product of Reynolds Tube Company.

Whilst these activities opened up new areas of business for Reynolds, the manufacture of tube and the promotion of Reynolds 531 was also enjoying a post-war boom. In the cycle industry 531 was more popular than ever and by the 1970's Reynolds could claim that their 531 tubing had been specified for frames and forks of 24 out of 25 successive winners of the Tour de France, as well as the majority of place men. Such was the success of Reynolds 531 butted tubes, that during this period the company was supplying over 20 countries worldwide, including the Soviet Union, with 531 butted cycle components.

In July 1962 Reynolds Tube Company were granted home office approval for the commercial manufacture of aluminum alloy gas cylinders and were indeed the first to be approved to the new regulations governing storage and transportation of compressed gases in these containers. In February 1963 the Royal Navy, to whom Reynolds were sole suppliers of diving cylinders, carried out deep diving tests off the Canary Islands. In these tests, carried out from HMS Reclaim, Reynolds cylinders, ranging from 150 cu.ft. storage cylinders with a working pressure of 3000 lb. per sq. inch, to the diver's emergency cylinder of 14 cu. ft. were employed. The result of this exercise was a record dive to 450 ft., Reynolds could now claim to have reached both the heights and the depths of man's achievements.

Another development in alloy cylinder design was the buried valve, in which the neck of the cylinder was extended to protect the valve which could now be covered by a simple plastic cap. This feature, patented by the Company, won a Council of Industrial Design Award for 1967, where a presentation was made to Anthony Reynolds by the Duke of Edinburgh. Apart from supplying aluminum cylinders for the Navy and for civil and military aircraft systems, Reynolds products now ranged from commercial cylinders for beer dispensing to equipment for gas analysis and fire extinguishers.

In 1965 Peter Bardsley, the first of TIs graduates to be employed by Reynolds, was appointed to the Board as Production Director. The other members of the board still comprising of the long serving John Aston, Anthony Reynolds, Eric Tyler and Matt Wier, respectively Managing, Technical, Sales and Financial.

The next ten years saw Reynolds Tube Company employing the fruits of their post-war developments. The tube departments were now supplying Reynolds 531 tubing for such diverse products as wheelchairs for the Ministry of Health and the front sub-frame of the E type Jaguar, the latter employing some 40 ft. of 531 steel tubing, most of which was 20 gauge rectangular section, all of this in addition to the aforementioned demand for the company's cycle orders. In the welded assembly departments healthy orders from Norton Motors called for 450 frames and rear swinging arms per week for their Commando model, to a design initially modified in the light of Reynolds experience. The HE department, in addition to aluminum alloy gas cylinders, were producing cylindrical extrusions in carbon and alloy steels with integral ends of a variety of forms made to very close tolerances. These were used as components of pit props, railway buffers, earth moving equipment and numerous hydraulic applications. One of the smallest of these

precision extruded cylinders was for the bodies of the rocket pack in the Martin Baker Aircraft Ejection Seat, extrusions which Reynolds developed in conjunction with Sir James Martin. A significant development in the HE department came in 1973 with the death in France of Pietro Biginelli resulting in the closing down of his small factory at Clermont Ferrand. Reynolds purchased most of the plant, which was shipped across the channel in 13 lorry loads, this equipment, including a 2000 ton press, was to form the installation of a third HE department in the old roadway shop.

The ring department was also expanding, with orders from European aircraft manufacturers, such as Alfa Romeo of Italy and MTU Germany. Exhibiting at air shows such as Farnborough, Paris and Tokyo bought further orders from companies like Fiat and Volvo Fligmotor, both producers of aircraft engines. On the home market, in 1970, Rolls Royce placed orders with Reynolds for over 1 million pounds worth of rings for the RB211 engine, these ranged in diameter from 2 ft. to 7 ft. in titanium, nickel based alloys and stainless steel. This period saw Reynolds Tube Company at it's highest and most profitable level, although as an integral family business it was soon to fall victim of it's own success.

Managers Weekends

It was in 1969 that the training dept., when unloading the vehicle after an apprentices' weekend in Wales, was asked by Tony Reynolds "What's all this business of taking these lads out for the weekend all about?" It was thought that the best answer to this question was to run a similar event for Senior Management. To this end, in early March 1970, a group of brave "volunteers" ventured forth into the wilds of North Wales to pioneer what was to become an annual event. The group, over the years, was to include Production and Sales Managers, Company Secretary, Chief Inspector, Chief Accountant, Development Managers and other members of Senior Staff. Although the Directors were invited they always seemed to have other engagements on the dates in question. Although never attending they always gave their blessing and full support.

As with the apprentices' the formula for these weekends was first a venue with the bare necessities of a roof over ones head, something to sleep on, and some cooking facilities, all on a strictly "do it yourself" basis. More often than not the early venues were remote and primitive, YHA hostels that were officially closed for the winter. The programme, organised by the Personnel Manager and one of the senior staff was for the party to leave Tyseley on Friday evening in the Works Minibus, (Garage Manager driver) stopping off en-route for dinner at a wayside hotel, (a last taste of civilisation), arriving at base in the late hours. On arrival ones first essential was to find a suitable bunk to lay out sleeping bags etc., often in pitch dark as venues with electricity were an added luxury. Next morning, after breakfast, (Chief Inspector appointed Chef), the group set off for a 12 - 15 miles walk, taking in mountains, valleys, and other aspects of the particular countryside area, arriving back at base in the late afternoon, physically tired but mentally rejuvenated. While some were prone to sleep, the Chief Cook and his helpers prepared the evening "banquet". The high standard of living and the degree of comfort that could be achieved in what were primitive conditions, had to be seen to be believed, notwithstanding having

raided the Senior Staff Canteen before departure. Crisp white tablecloths laid out in correct etiquette with the canteen silverware was only surpassed by the excellence of the 4 course meal.

For these occasions, still being in the grip of winter, huge log fires were the norm. It was around these that the subtle benefits to the Company, of such get togethers of senior staff were acquired. For managers who can see each other every day of the week, though rarely to converse with each other than on aspects of their work, to go away for a semi-strenuous weekend in some remote and inhospitable corner of the country may seem incongruous, but it has been proved that these events enable them to see a different side of each others natures, to sort out differences, and to instill a team spirit, all of which was conducive to a more efficient working week.

Although to the participants, the organisation of these weekends seemed casual, this was far from the case. Apart for arranging a venue, the two organisers reconnoitered the area the week before, including all of the walks, which often necessitated taking compass bearings and noting landmarks. The wisdom of this was substantiated on more than one occasion when, on the day, heavy mist and deep snow were encountered in the Welsh Mountains. It was all part of the adventure to traverse seemingly impossible routes, only the leaders knowing where they led.

The weekends usually concluded on Sunday with a shorter walk or more often a visit to some tourist attraction on the return journey to Tyseley. Over the years these events have been located not only in Wales but in other areas such as the Peak District, the Lakes and Exmoor.

In later years, Industry and Commercial Psychology experts came to recognise the advantages that these type of events could bring to Business Organisations, resulting in setting up professionally run courses for the purpose. Although unaware of it at the time and with different motives in mind, Reynolds were probably pioneers in such managerial training.

In January 1972 John Aston relinquished the Managing Directorship of Reynolds Tube Company. John had controlled the fortunes of the company for over 32 years, although it had been initially rumoured that he had been put in to keep an eye on TI's interests, he quickly became a Reynolds man, no doubt falling under the persuasive influence of Alfred himself. In keeping the Company profitable, he was able to retain Reynold's individuality when Associate companies were becoming more and more bought under the Groups control. As a financial man and a director of the parent group, in the late 1940's he was instrumental in setting up of the TI Pension Scheme. Although appointed Company Chairman, his retirement as MD, the first of the "old guard", was to herald changes which would eventually see the division of the company's interests. On 1st February, 1972 Robert C. Stevenson was appointed MD. Bob Stevenson had been in TI since 1946 and had become director and general manager at various TI companies, the last of which being Tubes Limited, prior to this latest appointment.

1973 saw the celebration of the Patent Butted Tube Company's 75th anniversary, which under the orchestration of Anthony Reynolds was to be a grand affair. Never one to do things by half, Antony planned a series of events, beginning with 3 days of partying at the Company's sports ground in Tamworth Lane, Shirley. The first 2 days dances were arranged for some 500

employees and guests, whilst on Saturday 12th May a dinner dance was held for a 100 of the company's current and former employees who had served for 25 years or more. All of these events taking place in a 5,000 sq. ft. marquee that had been erected alongside the club house. Also at the sports ground in the following month, the annual sports day was extended in to a gala which included an evening dance and also a draw for the holder of a winning programme with a prize of a holiday for two in Ibiza. On the business side a 2,400 ft square marquee was erected on the car park in front of Hay Hall in which was exhibited the company's products both past and present. These included a Rolls Royce Spey engine, a formula 2 racing car, Eddie Merckx Tour de France winning bicycle and a Martin Baker ejector seat. Also exhibited were Royal Naval and Everest Expedition oxygen cylinders and a Norton racing motorcycle, as well as other examples and photographs of the company's history. A display of more than 50 of the company's products. During an Open Week more than 200 guests from industry throughout the UK attended, the local community were also not forgotten, 14 local schools and technical colleagues being invited, also included was one day for the families of the 900 Reynolds employees.

Although Hollow Extrusion and Flash Welded Ring Departments were gradually overshadowing tube production, Reynolds tube mills were not to be left behind in technical advancement. One such development was the drawing of a round tube 3/4" diameter with a hexagon bore, a difficult section to produce. In cut lengths of 75 and 50mm these tubes were used to form the core of the flexible bushes which formed the links of tank tracks, with some 2,400 of these bushes being used in each tank. The rubber component of which had a limited life, there was a continuous demand for this precision product. An off shoot of the development of these tubes was a brush defrazing machine for which Reynolds registered a patent. On 531 cycle promotion too the Company was not lacking. To meet the expanding American market demands, boxed sets of 531 cycle tubes were made available to the hundreds of small builders in the US. Previously frame and fork tubes had only been sold through quantity importers but with the introduction of these individually packaged sets a much wider market was catered for. Such was the reputation of Reynolds 531 cycle tube in the US, that one enterprising cycle builder used the famous green, black and gold decals to his own ends. This decal displayed on every genuine 531 framed bicycle stated "guaranteed and built, with Reynolds 531 butted tubes, forks and stays". What this man did was to have printed an identical decal but with the tiny 'not' inserted between guaranteed and made, which he then attached to his cheap inferior cycle frames. Reynolds answer to this was to take out a registered design for all of their 531 transfers, though it was felt in some quarters that an opportunity to proclaim the worldwide appeal of the company's product had been missed.

In April 1974 the Flash Welded Ring department of Reynolds Tube Company announced a contract to supply rings to Ishikawajima-Harima Heavy Industries of Japan, resulting on the first time exhibiting at the International Aerospace Show in Tokyo. The press release at the time proclaimed that the company were now producing flash welded rings for 18 different engines and used in more than 70 different aircraft. Over 35% of Reynolds ring production was exported to markets in Australia, Belgium, France, Germany, Italy, Sweden, Switzerland and now Japan.

Robert Stevensons time as MD ended with his early retirement in June 1974, it appeared that prior to his appointment at Reynolds he had suffered a serious medical setback that influenced this decision. In his place TI appointed Mr. R Peter Stedeford, a nephew of the former TI Chairman

Sir Ivan Stediford. Before holding senior posts within the TI Group, Peter Stedeford had been MD of Tubes Limited, having spent his working life there, apart from wartime service in the RAF. It seems ironic that Tubes Limited, the co-founder of the TI Group and apparently the training ground for many of the top people, should in a few years be one of the first companies to be closed down and its site sold under a new TI regime.

The mid 1970's saw Reynolds Tube Company continuing to flourish under Peter Stedeford's direction, its 3 main areas of business being all highly profitable. Had this not been so the Company could well have gone the same way as its associate Tubes Limited, for although its tube production was still very viable (even in 1977 it made 40% of the company's profit) the end for Reynolds basic product was in sight. The first steps in changes to company policy and organisation came in 1976 when first the HE department was made a separate division under the Directorship of Peter Bardsley, to be followed by the end of the year by the ring division, Director Mike Fox, another TI graduate, and finally the tube division under "Pres" Pressdee, the only one of the three to be promoted from Reynolds traditional background. These 3 divisions were to be autonomous in both production and sales, under the general managership of their 3 directors, though at this stage, maintenance, tool room and technical services was still to be company functions giving central support. The first crack in the integral family business had appeared.

Anthony Reynolds had served Reynolds Tube Company for over 40 years, but having suffered a heart problem the previous year and with the changes in company structure he had decided to opt for early retirement. So on 31st December 1976 the last of the Reynolds family left Tyseley. As has already been recalled the success and growth of the Tube Company in the years following the Second World War were due almost entirely to the inspiration and technical leadership of Anthony Reynolds. His far sighted thinking in such products as hollow extrusion was often criticised but his determination prevailed, it was unfortunate that his leaving the Company was clouded by his resentment at what he thought was lack of appreciation at high level. Like his family predecessors he had made an individual contribution to the Company's progress, a contribution of which he was justly proud. But the day of the individual was now over, the Company would no longer be run from within, its future policy being decided by people remote from the day to day skills of men such as Tony Reynolds, the pride of the shop floor worker in his job, and the enthusiasm of the sales force for marketing the company's product. To retire to the comfort of a fireside armchair and slippers was not in Anthony's makeup, for work was his hobby. At his home in Lowsonford, surrounded by 50 acres of farm land, his innovative brain found outlet in devising better ways of erecting fences, making gates and even landscaping, but even with all of this he could not leave behind his engineering talents. In a small office in Henley in Arden he set himself up as a consultant and much to the embarrassment of some at Reynolds was approached by many of the same people who had sought his advice as the Company's Technical Director. Even with all of this he still found time and took pleasure in designing, constructing and patenting a portable hydraulic log splitter, which he would hire out, complete with himself as operator, towing it to site behind his car. It was inevitable that his pace of life was to take its toll, for on November 24th 1979, whilst working in his fields, he succumbed to a fatal heart attack. His retirement had not been long but there was no doubt that he had enjoyed every minute of it and would not have wished it to end any other way.

The last of the directors who had served the Company for so long retired in August 1977. Eric Tyler had joined Reynolds in February 1934 as Assistant Secretary. With the Company's diversification into the aluminium market, when the separate light alloy companies were set up, Eric was appointed secretary, eventually holding the secretarial office in no less than 4 of the Reynolds associate companies. In 1945, after an official visit to France, he directed his mind to sales interests and on the merging of the alloy interests into one company, TI Aluminium, he relinquished all other appointment to become Commercial Manager, as well as Secretary, of Reynolds Tube Company. In 1952 he was appointed to the Board as Sales and Commercial Director. Eric Tyler made many contributions to the growth and development of Reynolds, leading a sales force that created a worldwide market for the company's products. He took a special interest in the market for flash welded rings, where export selling became a large part of Eric's life, clocking up over a million miles of air travel throughout the northern hemisphere. As a highly successful international salesman he excelled, always totally involved in his work and his dedication to the Company. Like AAR he was part of a Reynolds Tube Company, the likes of which would not be seen again.

Tube Investment's influence in the associate companies hit hard on 1st April, 1977 when it was decided that all would include TI in their titles and so on that date Reynolds Tube Company ceased to exist, it had now become TI Reynolds Limited. It was felt by the powers that be within TI that it was time to promote a corporate image with a view to enhancing a worldwide reputation on the industrial scene, but for small companies like Reynolds there could be drawbacks. Reynolds 531 reputation in the cycle market remained supreme, cycle companies on the continent such as Peugeot, Gitane and Lejeune when told they would now buy their tube from TI Reynolds became dubious as their main competitor in the sporting field was also TI, TI Raleigh. The fact that Reynolds had been a TI member since 1928 had never been considered, even if it was known, so hard salesmanship had to be resorted to convince Reynolds continental customers that Raleigh had no preferential treatment. In spite of all these changes, the Company throughout 1970s continued to make a healthy profit, averaging £1 ½ million throughout the decade, rising to £2 million by 1980. Tube was still a predominant money earner, only to be overtaken by the ring division in 1978.

The profitability of Reynolds was in no small measure due to the continued development of the company's products, Reynolds 531 cycle tube, for so long the predominant material for the frame builder, was now being challenged by the 'new age' material, titanium, as well as advances in aluminium alloys and welding techniques. To meet this challenge, in 1975 Reynolds produced their 753 cycle tubing. To the market this was a new material, though in reality it was a further processing of the manganese molybdenum 531. At 75 ton per square inch this could be used in gauges as thin as .3mm (hence 753), this countering the weight advantages of the new materials. True this needed extra skill in joining techniques but Reynolds also provided technical back-up, its representatives travelling throughout Europe to assist customers with their difficulties.

Also in 1975 there began an increased popularity in Go-Kart racing, these tiny small wheeled vehicles driven mostly by 50cc lawn mower engines, as competition got fiercer, demanded better designed frameworks, yet another market for Reynolds 531 tubing.

Hollow Extrusions were also continuing to develop, especially in the field of diving cylinders, in conjunction with the manufacturers of Typhoon diving equipment new lightweight aluminium alloy cylinders were developed with capacities of 62.5 and 75 cubic feet, working at a pressure of 3000 lbs per square inch. By 1976 Reynolds were reported to have produced over 250,000 cylinders, including the specially designed oxygen cylinders for admiralty diving and the cylinders for the successful attempts on Mount Everest.

Reynolds involvement in yet another record attempt occurred in 1971, when a team of cave divers working deep in Wookey Hole cave in Somerset set out to break the British Cave Diving Record of 130 ft. In July 1976 2,600 diving feet in from the caves mouth the 25th air chamber was discovered and a further 100 feet in a well some 150 feet deep where the record attempt would be made. Oxygen cylinders, together with financial backing, were to be provided by Reynolds Tube Company.

The profitability of the Company continued to grow throughout the 1970s and Reynolds future direction was gradually becoming evident, in 1977 out of total sales of nearly 12.9 million the Tube Division made 40%, but by 1980 although still having tube sales of over 5 million this had dropped to 16 ½% of the company's business. The reason for this was the steady growth of the flash welded ring division which made no less than 64 ½% of the company's sales, HE, although continuing to be profitable, was due to the nature of the product, subject to more commercial fluctuations. Disarmament, closure of railways and mines had all had an effect with Reynolds potential customers, but with hard work being put in by both sales and technical staff, this unique Reynolds product was still a viable activity, production of aluminium alloy cylinders having reached some 300,000 by 1979.

Reference has already been made to the retirement of principal directors, there remained the position of financial director, a post held by Matthew Weir until his retirement in 1973. He was succeeded by Harold Tippets, who had been with Reynolds since 1939 when he joined the Company as Chief Accountant. Harold retired in 1978, the position being taken by Lesley Alyes who came to Reynolds from the board of TI Weldless. Although very much background figures these financial directors all contributed greatly to the company's success and played no small part in its profitability.

In spite of the tube divisions decline in importance in Reynolds activities, its expertise in welded assemblies was still highly sort after. When Richard Noble an aspirant to become the fastest man on earth required a framework for his record attempt car, Thrust 2, he was directed to Reynolds. Early in 1978 a meeting was held with Reynolds personnel to ascertain the extent of the requirements and agree to the project. This involved the construction of a framework using some 750 feet of 2 inch square x 16 gauge 531 tubing, the finished structure would be some 30 feet long x 10 feet wide and weigh half a ton! An attempt on a world land speed record was bound to create publicity, especially with the promotional expertise of Richard Noble. In May 1978 Thames televisions descended on the Tyseley works to record the progress on the project for their "Drive In" programme. Huge vans arrived at the works and cables started to snake down the drive and across the shop floors. Although construction was yet to be started cameras were set up in the drawing office and the steel mill and in front of Hay Hall. Presented by Shaw Taylor,

Reynolds activities were recorded in full with emphasis on design and tube drawing in preparation for Project Thrust. Unfortunately the resulting programme, although shown in all other regions, for some reason was not transmitted on Midland ITV, however the Company acquired a copy of the programme to show its work force. Despite all the publicity (BBC, daily press and motoring magazines also visited Reynolds) construction was not able to start until much later in the year due to finalising the working drawings. Unfortunately this coincided with the divisionalisation of the Company, resulting in a decline of interest at Director level, it was only with the doggedness of those involved in the fabrication that the project got under way, although this the largest welded assembly ever undertaken at Reynolds had to be constructed in a space less than its total length, the front section being fitted at another site. Despite those difficulties the framework was successfully constructed, being finished off and the engine fitted at the TI Research Department at Walsall airport early in 1980. From Walsall the structure was delivered to the Thrust Workshops in the Isle of Wight where the car would be finally built. After many frustrations, mainly due to the weather, on 4th October 1983 at the Black Rock Desert in Nevada, Richard Noble achieved a speed of 633.468 mph to attain the world record. Reynolds could now claim to have been part of mans achievements in being the highest (Everest), the deepest (Royal Naval diving) and now the fastest on earth.

For a company to have one of its members appointed to be the City's Lord Mayor is indeed an honour, to have two must at least be an exception. George Canning had been at Reynolds for six years working in the personnel office. He had been a Birmingham Councillor since 1963 and it was in recognition of his work on the City's Housing Committee that he was elected to be the Lord Mayor. For his civic duties George was given a 12 months leave of absence from the Company, but during his year of office in 1979/80 he managed to keep in touch with his colleagues at work and quite a few were entertained by him in the Lord Mayor's Chambers at the Birmingham Council House.

A small group of Reynolds senior staff conceived the idea of a company magazine and with the blessing of the directors the first issues appeared in the Spring of 1976. This was to be produced quarterly and was appropriately to be called "Hall Mark". From the onset it was emphasised that this would not be a 'management mouthpiece', being BY, FOR AND ABOUT REYNOLDS. The 'editors' all being dedicated Reynolds men ensured that this initial policy was adhered to and quite a number of questionable anti establishment articles appeared. Amongst the regular features on company history and gardening were day to day happenings. such as retirements and company organisation. On the latter articles by the directors gave a lasting record of the changes that were taking place in this time of transition in the Company's history, from a family business to a high technological unit of TI Group plc. The magazine continued until issue 17 in the winter of 1981 by which time it had been gradually taken over by a TI appointed editor and its original employee involvement had been lost.

By the 1980s Tube Investments were no longer a group of small companies with the predominance in tube manufacture and its relative consumer products. Since 1945 significant changes had taken place in world trade, Germany had become the foremost manufacturing force in Europe, whilst in the Far East Japan had become a major manufacturing and exporting nation, learning to exploit cheap labour costs to sell low added value products into the Western markets.

In this new industrial environment TI began to withdraw from commodity products, such as bicycles and consumer goods, to become more involved in being an international group concentrating on specialist engineering. To this end by 1982 it would no longer be Tube Investments but became TI Group plc,

With this future policy in site the end of Reynolds basic product for over 80 years was inevitable. On 4th April 1980 a briefing document signed by Peter Stediford stated that over the following 12 months the manufacture of cold drawn tube would be phased out at Reynolds. The Company would be concentrating all its efforts on its engineering skills in the ring and hollow extrusion departments. The cycle division would remain and 531 continue to be sold as a Reynolds product, though its manufacture would be transferred to Accles and Pollock. In the months following Reynolds tube orders were gradually transferred to A & P, although it would appear that account had not been taken of Reynolds superior credibility in this market. Many customers were unwilling to renew their orders with Accles and much of Reynolds original business was lost. In the closing down of the steel mills redundancies were inevitable, though with the transfer of some employees to Rings and HE and the early retirement of many of the old hands, this was kept to a minimum. Reynolds employees had always been predominantly long serving, especially in the tube departments and for these good severance terms were offered.

It seemed that the ceasing of tube drawing at Tyseley gave added impetus to the development and promotion of Reynolds 531 cycle components, for the now 531 cycle division entered the market with renewed vigour. Harrison Cowley, the PR company used by Reynolds, as part of their contract compiled a complete folio of all Company mentions in the world press. These were very extensive and the file for 1981 shows that some 90% were concerned with Reynolds 531 cycle business. Development of 531 cycle components was an ongoing process and to this end Reynolds SL (Superior Lightweight) and Reynolds SMS had been launched, the latter a less expensive tubing for the sports and touring range of bicycles. At the other end of the scale, at the New York International Cycle Show in February 1981, the Company introduced its latest development, Reynolds Speed Stream. These were cycle tubes with a streamline or oval section in place of the conventional round to cater for the attempts then being made in competitive cycling to reduce wind resistance.

In 1935 Reynolds had been awarded by the Cyclist's Touring Club a silver plaque for the greatest advance in cycling in that year for their 531 tubing. In December 1980 the Company was again honoured when the Guidon D'Or (Golden Handlebar), the leading French award for distinction in helping cycling was presented to TI Reynolds for their contribution to cycle frame building. It was the first time the award had been made to a British company and only the fourth time presented outside France. The presentation was made at a reception at the Metropole Hotel in Birmingham where an impressive guest list included the French Minister of Sport, Monsieur Soissons, the then Chairman of TI, Sir Brian and Lady Kellett, the Director of the Tour de France, Jacques Goddet and the President of the Guidon D'Or Organisation Monsieur Jacques Lohmuller who made the presentation. It was rather ironic that his presentation speech concluded with the words "Long Live Reynolds Tube" "Long Live the Guidon D'Or". A message of congratulation was also received from Hector Monroe, the then British Government Minister of Sport.

While the future looked rosy for the 531 cycle division, Reynolds welded assemblies were all but finished. With the demise of the British motorcycle industry the last production motorcycle frame had been made at Reynolds in the mid 1970s, though a few specials continued to be made. However the company's reputation in this field was not so easily dispensed with and possibly with the publicity given to Project Thrust, Reynolds were once again approached to design and construct yet another record attempt project. This was for a high speed sand yacht chassis in 1" and 1 1/4" 18 gauge 531 tubing, some 80' being used in its construction, speeds in excess of 100 mph were aimed for and although the project was completed the results were not followed up due to the Company's reorganisation at the time, though success in the European Championships was recorded.

The final welded assembly that Reynolds embarked upon came again from the publicising of 531 tubing, a call from the Central Electricity Generating Board, Engineering Department enquiring on the use of 531 led to Reynolds designing a trolley for servicing overhead high tension wires. These trolleys were hoisted manually up the electricity pylons and slung on the overhead power cables for routine servicing of the line, running along on pulley like wheels. The design was in the form of a basket, large enough to accommodate two men and suspended by pivoting arms which carried the wheels. To control the position of this device on the cables the wheels were braked in dead man fashion, one had to depress a pedal to release the brake. The CEGB's original equipment had been a riveted construction made from angle section and weighing some 185lb. Redesigned by Reynolds as a lightweight tubular construction, weight was reduced to only 60lb a much more easily handled piece of equipment. Needless to say this delighted the CEGB engineers and after evaluating the prototype an immediate order was placed, a small batch were made but unfortunately agreement could not be reached on price, an extortionate figure having been quoted, undoubtedly based on the remuneration that the Company was then receiving from its high technological but low labour intense products. Also, in anticipation of a worldwide market, collaboration was entered into with a firm specialising in supplying such equipment to electrical generating and transmission industry throughout the world. With their available resources this Company was able to have the Reynolds design made at a more reasonable cost elsewhere.

With the loss of this order, Tubular Welded Assemblies at Tyseley finally came to an end, though the skills that had given Reynolds a worldwide reputation were not lost, but were diverted to an entirely new product. In May 1981 TI bought outright the American firm King Fifth Wheel makers of components for the American aircraft industry, supplying flash welded rings to the major US plane makers, complimenting Reynolds European business. This company was to combine in close co-operation with TI Reynolds Ring Division to provide the greater part of the worlds market in this field. With the acquisition of King Fifth Wheel, TI also acquired their wholly owned subsidiary, the Abar Corporation. Abar were specialists in high vacuum furnaces and heat treatment technology. To expand the business into Europe, TI bought Abar to Reynolds and what was left of the welded assembly department was given a new lease of life, eventually becoming TI Abar. With this new opportunity the skills that had been expended in tubular structures were quickly adapted to the building of high vacuum furnaces, so much so that some of the Company personnel made numerous trips to the US to inform and instruct their American counterparts on the latest manufacturing techniques developed at Reynolds.

By the end of 1980 and in to 1981, the relevant issues of Hallmark were continually reporting changes in Reynolds organisation. With the ceasing of basic tube making it was also announced that the Company would revert to a functional company structure, with directors responsible for all company sales and production. To what extent the autocratic divisionalisation had not come up to expectation was not stated, other than they had served their purpose and it was time for a change. To this end, by the turn of the year, Reynolds listed no less than 8 directors, each assigned to facets of the company's business, that of sales, production, technical engineering and finance all had their own directors, most being brought in to the Company from elsewhere.

By the spring of 1981 Peter Stediford had moved on and Tony Roger was appointed to the Managing Directorship. Such was the atmosphere at that time that in his introductory article in the pages of Hallmark he openly admitted that he was "looked upon as liquidator" though he flatly denied this, however time would tell.

Sports & Social Club

The fraternity of Reynolds employees was not confined only to working hours, as for many years the Company supported a very active Sports and Social Club. It was in 1926 that workers who played football, in forming a works team, established the first Sports Section. The team competed in the Birmingham Works Amateur Football Association, and their handbook for that year listed Reynolds home ground as Hay Hall Road Tyseley, the pitch being where later the AID Warehouse was to be built. Other grounds were to follow, including Birmingham park pitches, before the Company had its own Sports ground. Early Sections were self supporting to the extent that the footballers had to go to the Works Manager to ask if the Company would buy them a football, which was probably the Company's first official recognition of the clubs existence, apart from providing the use of the pitch. For over 50 years football was a major element of Reynolds Sports & Social Club, as late as 1981 still running three teams in Business Works Leagues. Reynolds footballers won many honours, hardly a year going by without a cup or shield being won or being played for in a final.

Following closely on the Football Section, the fishing enthusiasts within the Company, proposed in 1930 to hold a fishing contest at Upton-on-Severn, an event which some 30 employees entered. It was not known what the entry fee was, but the first prize of a dinner service was well worth contesting for. Like football the Fishing Section of the Club was to enjoy many, many years of friendly competition.

A cricket section soon followed, again acquitting themselves well in local works competition, adding further to the Clubs growing collection of "silverware".

Such sporting activities were of course grossly curtailed during the war years, but after 1945 Reynolds Sports & Social Club rapidly expanded, the influence of Anthony Reynolds, as the Clubs Chairman, possibly being a prime mover. Sections for indoor activities such as darts, table tennis, snooker and bridge were established, these being held mostly in the Works Canteen. An early postwar section was a .22 rifle club, which consisted mainly of ex members of the Works

Home Guard Unit. A range was set up in the basement at the bottom of the main drive, beneath the Alloy Warehouse. Yet another section was formed by the works golfing enthusiasts, playing matches and tournaments on courses as far afield as Hawkstone Park in Shropshire as well as at local venues. Table Tennis was another Works League in which Reynolds entered a team, with yet again top class performances.

A major advancement in the Sports and Social Club story was, in the 1950s the leasing of a Company Sports Ground at Olton, Solihull. It was here that the first annual Sports Days were held, with all the usual sports day activities such as races for all ages from employee's children to "Geriatrics". There were also side shows and demonstrations from local and national organisations.

By this time the Club had become an official part of the Company structure, all employees over 18 years of age being required to pay a contribution of 2d (old pence) per week. For 16 to 18 year olds this was reduced to 1d whilst under 16s were free. Although these figures were increased in the 1970s, they never amounted to a great deal, but it entitled all employees to partake in any of the Clubs activities, including for the over 18 year olds, the use of the bar in the works canteen, outside working hours.

By 1974 Solihull Council had requisitioned the ground at Olton for a housing development, but had offered the Company an alternative site at Tanworth Lane, Shirley. This six acre site included farm buildings which, after renovation, enabled the Club to considerably extend its social activities, a far cry from Olton which boasted no more than dilapidated changing rooms/come "pavilion".

Within the next two or three years planning permission was obtained for alteration and extension of the existing buildings to provide a bar, television lounge, committee rooms as well as a large area for functions with a dance floor to accommodate 120 people. The grounds had facilities for football, cricket, putting and golf practice as well as being a pleasant countrified environment.

The Club was open every evening after working hours and from 4 p.m. Saturdays and lunch time on Sundays, a truly social facility enjoyed by all employees.

Unfortunately, due to the policy changes taking place at Tyseley, in the 1980s Sports & Social activities began to diminish and with such things as the closing of the tube mills, there was a considerable increase in retiring personnel. To cater for these, in 1983 Reynolds Retired Employees Club was formed for ex employees and their spouses. This new club continued to meet at Tanworth Lane until 1989 when the lease on the ground was terminated and the facilities sold off by Tube Investments. The R.R.E.C. continued to function, independent of the Company, and found a new venue at the premises of the Acocks Green Conservative Club, where it still meets.

Reynolds not only provided facilities for their employees leisure hours, in the three decades or so following World War II the Company catered for the workers almost every need in the way of welfare. A surgery was established in the area of Hay Hall, where a resident nurse administered

first aid and treatment for minor ailments. More serious complaints could be dealt with by the "Works" Doctor, who was in attendance on 2 days per week. Dental treatment was also available, Mr. Crossley the dentist, holding surgery on Tuesdays and Fridays, all of which saved an employee having more time away from work than was necessary. Also on the medical side were regular 6 monthly visits by the chest Xray unit and for the public spirited opportunities to donate blood when the blood transfusion called, despite some wags claiming that the Company had already drained them dry. Apart from the physical well-being an employee's spiritual needs were also provided for with occasional visits from the Area Industrial Chaplain.

For daily amenities the Company provided an excellent canteen facility, this catered for all levels of eating, from the workers quick snack to the Directors 4 course lunch. Directors had always dined in the old house which had its own kitchen, but within the canteen building, situated at the end of the works and adjacent to the canal bank, there were no less than 4 dining rooms, according to ones status. Such class segregation would today be frowned upon, but at that time it was not only felt to be justified but also expedient. First there was space, any one room not being large enough to accommodate all those wishing to eat, also, by the same token, the canteen staff would have been unable to cope had all arrived at the same time, so works and staff lunch break were staggered. Again visitors were catered for and could be entertained at a level becoming their importance and the need to create a good Company impression. Whilst there was no difference in the quality of food that was served it was in the levels of service and decor that the segregation lay. Self-service in the works canteen gave time for a pint at the bar or a game of snooker before resuming work, whereas in the staff rooms, with waitress service, the whole lunch hour was taken up with eating. Although it was generally accepted that one should "hang up one's keys" whilst dining, it was inevitable that subjects appertaining to the daily tasks would be discussed, giving another excuse for separate dining areas. Although all of this would hardly fit in with current policies of a classless society, at the time it worked well at Reynolds, being accepted as part of the system. Up until the end of 1978, canteen staff, including a manageress, were all Reynolds employees, but after that date the Company decided to bring in an outside catering organisation, Batemans Limited, a start of the devolution of Reynolds internal services.

Over the years the factory services had been built up to a self sufficiency that was almost independent of outside contractors. Apart from the normal fitting shop personnel that maintained the machinery, the tool room made all the production tooling, this included, apart from plugs and dyes for tube drawing, jigs and fixtures for assembly work, mechanical handling devices for Hollow Extrusions and the tooling required for ring production, all of which was designed in the Company Drawing Office. In addition to this, the Company also employed its own plumbers, carpenters, brick layers, painters and of course electricians.

There was a tool stores where special or little used tools could be taken out on loan for a specific job and a general stores where an employee could, on production of a requisition signed by a foreman, withdraw anything from a nut and bolt to a toilet roll. The transport department ran a fleet of lorries, from standard Bedfords to Leylands and Albions, vehicles with special extended bodies to cater for 20' random tube lengths. To keep the fleet running, the garage was equipped to carry out all aspects of repair and maintenance.

In keeping with Reynolds flare for innovation and future thinking, as far back as 1939, in conjunction with Jensen Motors Limited, the Company had built a vehicle with a chassis and body constructed entirely from Reynolds Light Alloy Sections, Sheet and Strip, with a payload of 4 ½ tons the vehicle weighed less than 50cwt. This was no showpiece but carried the Company's products for many years, covering many hundreds of thousands of miles.

With the segregation of Reynolds products all of this was gradually dispersed and more and more outside contractors were bought in, further diminishing the Company's community atmosphere.

EPILOGUE

In this, the story of Reynolds, the only individuals that have been written about by name have been the Directors. This was inevitable as it was they, from John Reynolds in the 1840s to the succession of Directors of the 1980s & 90s, who were the ones that set the Company's policies and guided its fortunes over nearly 160 years, even though the latter ones may well have been mainly servants of a higher authority. But Directors alone could not have brought the reputation

for excellence and quality of product that Reynolds enjoyed worldwide. It was the dedication and pride in job of the work force that made Reynolds a leading name in its various areas of business. From the Senior Staff to the humblest of shop floor workers, all made a contribution and were part of this Reynolds story. Over the years, through its gates came families, father and sons were numerous, brothers cousins and uncles, daughters and wives were common, families that made Reynolds a truly "Family Business". Third generations in Reynolds employ were no exception, and on more than one occasion Grandfather, Son and Grandson all worked for the Company at the same time. Long service with the Company was usual, many employees having worked for Reynolds over 25 years, a number even reaching the magic 50. For these the Company instituted an annual 25 year Fellowship Dinner, to which all employees, past and present, having reached that goal were invited. Although stories of this vast work force would probably fill another volume, it was felt that to name individuals would not do justice to those omitted, therefore let their stories be left to the memories of those with whom they worked, stories that will be told wherever employees of Reynolds gather.

Finally to epitomise the Reynolds Spirit is the story of a shop floor labourer:- Walking through a workshop one day, a manager passed a man leaning on a broom contemplating the area he had just swept. Turning, the man called to the manager, and in all sincerity said "Hey Gaffer, don't you think I've made a good job of that"

Truly the Reynolds Spirit - Pride in a job well done!

APPENDIX

INTERLUDE - HAY HALL

It may be worth while, at this point in our story, to break off for a moment to mention something of the ancient manor house known as “HAY HALL”, which the Company acquired with the land at Tyseley, and which is now used as offices.

It seems unfortunate that an authoritative history of this house and the families who have lived in it has never been written, and it would be a matter of great regret to many if, one day, it should be demolished, its existence forgotten, and its history left unrecorded. Fortunately repairs to the fabric which are being undertaken at the time of compiling this history should ensure the preservation of the building for many years to come.

The house was probably built between the years 1275 and 1300, most likely by Robert de lay Hay, who is known to have been living here before the year 1327. It is significant to note that the massive oak roof trusses still supporting the roof today are identical in design, and the general structure bears a striking resemblance to other ancient buildings in the locality built around the same period (notably Solihull Hall, built by Sir William de Odingsells, who was Lord of the Manor of Solihull from 1264 to 1295. It also bears a striking resemblance to the architecture of the Guild Hall in Henley-in-Arden). Some arch beams were found to be ornamented with a black pigment, whilst behind lime wash on an old plastered wall was found a decorative design, probably dating from about the year 1520. The design consisted of some sort of flower and scroll work, and would indicate that the room was one of importance. The remains of wattle and daub + partitions dividing the upper rooms of the house can still be seen.

Additions during the early Tudor period converted the house to an ‘H’ shaped design. The porch (once the front entrance but which is now regarded as the back) and one side of the building show half timbered construction, which probably dates back to the late thirteenth or early fourteenth century. The north east wing with its blue diapered brickwork is of the Tudor period, whilst a substantial Georgian addition, which now forms the front of the house (but was once the back) was made during the late eighteenth century, probably about 1790. The centre of the house originally had a large open hall, which was later partially filled up by internal walls and floors, making it into a number of smaller rooms, but the original plan of the interior can still be traced from the mullioned windows which lighted it, a large open fireplace, and the original roof trusses, all of which still exist. A pool at the back was filled in fairly recently, and this was probably the remaining part of the moat which at one time surrounded the house.

+ clay bound together with hay and straw worked in between inter-woven hazel branches.

Inserted in a window in the Tudor portion of the house is some stained glass bearing the letters ‘A’ and ‘E’, which are bound in the design of a tasseled cord. These letters probably stand for Anne and Edward, and the window put in to commemorate the marriage of Anne Gibbons and Edward Est, about the year 1538. It is perhaps worth noting that the tasseled cord binding these

two initials is identical in design to the tasseled cord which binds the letters 'W' and 'S' on the signet ring of William Shakespeare, who lived in about the same period as Anne and Edward Est.

A lot of local legend appears to link up the Hall with the names of a number of Royal personages who have long since passed into history, but a study of manuscript records which are still in existence, and which are probably the only reliable authority relating to the Hall, do not indicate that Queen Elizabeth found time to put in a night there amongst all her other believed appointments for "sleeping out", neither is there any evidence that King Charles 1st, or any other of the Stuart kings, used the Hall as a place of refuge. There is no evidence of the existence in the past of a subterranean passage which linked the Hall with the local Church, through which, centuries ago, mysterious and sinister monks are supposed to have passed from the one establishment to the other, the motive for which the legend has never quite made clear.

Bulpitt in 1922 mentioned Hay Hall in his "Yardley Charity Trust" as a building "of little interest to the antiquarian". This may or may not be true, but historical interest in any ancient house usually centres around the families who have from time to time lived in it, and Hay Hall can truly be said to have housed its full measure of interesting people whose activities and deeds are too numerous to mention in this brief account.

The house and the neighbouring district of Hay Mills undoubtedly derived their names from a family by the name of de la Hay + and the first authentic record of the existence of Hay Hall occurs in Frowde's "Worcestershire Place Names", which quotes as follows:-

"Hay Mills, Hay Hall, in Yardley (on the Cole river) 1327.
Robt. in the Hay".

It can be assumed, therefore, that Hay Hall had already become established in 1327 as an important house of the district, but probably only very little of the house as it stood then exists today, much of it having been pulled down and from time to time gradually rebuilt more on the present lines.

+ HAY - derived from Anglo-Saxon "hege" meaning an enclosed space.

The de la Hay family continued to occupy Hay Hall until 1423, when Marion de la Hay, who appears to be the last survivor of her family, married Thomas Est, who at the time of his marriage was described as being of Kenilworth. Among the appointments held by this worthy was Governor of Kenilworth Castle, and one of the gentlemen of the bedchamber of Kings Henry V and VI. He was also a distinguished soldier in the wars with France during the reign of Henry V. He died in 1462 when the house passed to his son, also a Thomas Est. The Est family lived in the house for nearly three hundred years, and seemed to have been a family very varied in outlook and

character. They were great benefactors of the church at Yardley, and although they had many of the virtues of their day, it must be confessed they also had some of its faults, and several members of the family at times found themselves on the wrong side of the law.

In 1537 Edward Est was plaintiff in a Star Chamber case.

In 1563 Henry Est surrendered to the “Fleto” (famous London prison) and was granted pardon of outlawry passed on him for debt.

In 1610 Edward Est was brought up at Worcester Quarter Sessions for an alleged assault on an ale house keeper of Yardley.

In 1631 the same gentleman was brought up again, together with his son Thomas, on a charge of causing riot, and five years later the son Thomas was again charged at the Worcester Quarter Sessions with assault.

In 1637 “certayne differences fell out” between Charles Dod and Thomas Est on account of Est’s “disgracefull words against ye Coate of Armes of ye sayd Charles Dod”. Peace was restored by the mediation of James Archer, Vicar of Yardley.

On the other hand, another son, also named Edward, managed to secure for himself a place on the other side of the law by becoming a Barrister of the Inner Temple in London, but he died in 1625 when only 27 years of age. Of the others perhaps the last of the family who lived at Hay Hall is worthy of mention. He was another Edward Est who was born in 1633, and through an accident lost his sight when a small child. Bulpitt records “he got by heart all the scriptures of the old and new testaments, besides other religious works”. This is presumed to mean that he acquired a complete and thorough knowledge of these, which was no mean feat for a man living nearly three hundred years ago, and who was blind from childhood. He died a bachelor in 1703 in his seventieth year.

After the death of Edward Est a number of families appear to have lived in the Hall for relatively short periods, and it changed hands frequently. It was also converted into two residences.

Of all the many occupants of the Hall over the last one hundred and fifty years only one is of interest - a certain Dr. Gilby who was living at Hay Hall in 1810, for it was in this year that the Hall was damaged by fire. In Aris’s Birmingham Gazette of June 1810 a letter is published in

which Dr. Gilby seeks to publicly express his great thanks to his neighbours for the prompt and ready assistance they gave in stopping the progress of a fire which threatened the complete destruction of the whole of his house. Dr. Gilby also did not omit his thanks to Mr. Simms, the organist at St. Philips + who happened to be staying in the house at the time. It is doubtful whether this fire was as severe as one would be led to believe by the tone of Dr. Gilby's letter, as a considerable number of the roof timbers in the house today are considerably older than 1810. Dr. Gilby did not stay on at Hay Hall long after this fire, and he appears to have let the house from time to time to tenants, and 1852 the property was sold to James Deykin. A few years later James Deykin created a Trust, under which the income from the property was to benefit his daughter and her children and their heirs, and finally in 1917 the Deykin Trust sold the property and land to The Patent Butted Tube Company Limited for factory development.

+ Now Cathedral Church of Birmingham