The New Zealand LIFT FAX

The New Zealand Lift Fax is produced bi-monthly for the NZ lift industry. Just send your email address to LEC to subscribe.

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05/2008

EDITORIAL: COUNCILS STILL CONFUSED:

I often wonder if the Disabled Access Lobby realises how much additional cost and disruption it causes the community with its Don Quixote like fervour toward insisting the minimum lift interior size of 1.4m x 1.4m is imposed in all D2 accessible path solutions.

After 25 years of lift industry representation on standard and code groups admonishing the limitations placed on perfectly sound D2 solutions, some compromise as in the latest NZS4334:2012 publication at last recognises the ISO passenger lift mixed traffic disabled access minimum of 1.1m x 1.4m car size, but still the inference that smaller low-rise low-use platform lift sizes dedicated only to a single wheelchair user and attendant is kept untouchable by NZS4121 and NZS 4334.

The question arises, does the disabled access lobby who so religiously hangs on to this obsolete minimum car size, realise how much the additional cost discourages property owners in being proactive towards disables access solutions in buildings.

On the other hand, there are the local councils like Queenstown who seemingly have a history of insisting every lift solution should be at least 1.4m x 1.4m no matter the application. To move a Consent application on, I've seen property owners foot the extra cost of an additional 1.4m x 1.4m platform lift to serve a basement just because the Council couldn't accept a single 1.1m x 1.4m passenger lift solution that could serve all levels.

How many more hours and thousands of dollars have to be wasted by this blind adherence to obsolete prescription where performance is achieved. Ed

WHAT'S GOING UP or DOWN THIS MONTH:

VERTRANS LOOKS TO THE FUTURE:

Ralph Abercrombie has restructured to keep Vertrans Lift Surveys and Certification Ltd alive in the NZ Market as he explores his 70's.

Darrin Bull on old EPL veteran who has been employed and contracted by KONE of late on the ANZ Tower and Sky City modernisation projects had tahen up the position as an interim director with Ralph until March 2015 to settle in to his new role.

Ralph's long time office manager Sharron Tulloch holds the other Directorship with Ralph and all look forward to providing sound lift survey and certification work over the coming year in NZ.

ASSOCIATED LIFTS RESTRUCTURES:

Since the 90's the name Mike Schofield has been synonymous with the lift company Associated Lifts in NZ, but as of last month this has all changed.

Another well known industry name in Ron Perez, past KONE Elevators Pty Ltd NZ Manager has taken over the helm.

It is understood that Mike is heading to the UK to retire near his family and wife Pat.

Ron brings a wealth of industry experience to Associated Lifts in Sales and Management and should bring integrity reflective of the wider industry to this market.

VERTRANS LOOKS TO THE FUTURE:

No its not a mistake, just the other Vertrans, Associates NZ Ltd where we have seen more significant restructuring as reported of late, only this time it's Murray Barrs son Rob Barr who has joined the industry now working for Schindler lifts NZ Ltd along with another Schindler recruit in Kirk Doran who recently left KONE as their Accounts Manager to work for Schindler. The musical chairs continues!

RICHARD BUCKMASTER JOINS KONE DUNEDIN:

The new Area Representative for KONE Elevators Pty Ltd in Dunedin is Richard Buckmaster. Rich has steadfastly kept the lifts around Dunedin in order over the past nearly 20 years representing Schindler and himself as Southern Elevators, and so his wide experience should do well for KONE in the area, an area that has been shaken by retirements and down-sizing by the Multi-nationals over the past 10 years.

D&M Solutions take on Hornby Mall.

Upgrade of the Hornby Mall complex in Christchurch saw the vertical transport systems installed by Associated Lifts Ltd of Matua, Tauranga, with equipment supplied by Koyo Elevators of Suzhou, China..

To provide ongoing maintenance for these units, local lift maintenance provider D&M Solutions was selected upon recommendation by Associated Lifts then manager Mike Schofield.

The project is nearing completion and incorporates:-

- 1 x 2000kg MRL 1.0m/sec simplex Goods Lift for The Hub.
- 1 x 1275kg MRL 1.0m/sec Passenger Lift. for Farmers.
- 1 x 2000kg MRL 1.0m/sec Goods Passenger Lift for Farmers.
- 1 x 30º 1.0m wide parallel pair of escalators for The Hub.
- 1 x 30º 1.0m wide cross-over pair of escalators for Farmers.

SHORTLAND STREET FLATS:

Michael McKeown wrote to me in August requesting information of the present certification of lifts in NZ, and during those discussions my ears pricked up when he informed me of the association of George Thornburn (see LEC article in Nov 2002 issue 64 on ECC), and the Electric Construction Company in the installation of the Shortland Street flats, 93 Shortland St; Auckland in 1923-24.

Involved in the installation of this early Smith Major Stevens (SMS) traction passenger lift, George was also a founding shareholder of Shortland Flats that was incorporated in 1922, and remained a shareholder into the 1950's.

The building was designed by architects Thomas Coulthard Mullions and Sholto Smith from the firm McDonald Mullions and Smith Architects, and built by builder Noel Cole in 1923.
It is entered as a treasured Historic Places Trust and recognised as a place of historical or cultural significance or value.

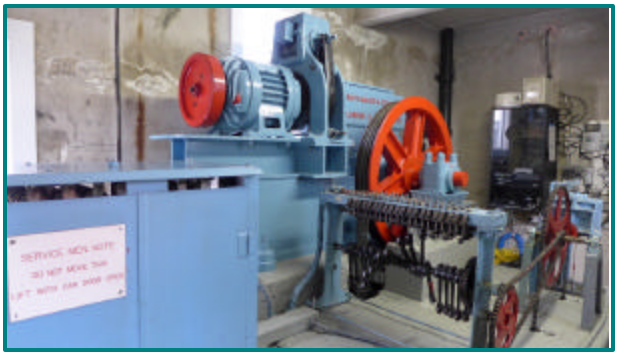
The original SMS controller and DC motor were changed in the 1970s to an Otis controller, AC motor and brake. In the 1980s the lattice landing doors were changed to Metalbilt Metafold sliding gates, approximately 830mm x 2055mm high. They are currently restoring the lift. The first phase, rebuild of the motor, brake and gearbox, has just been completed by Richard Felgate, Felgate Engineering, under contract to NZES (New Zealand Engineering Services) who do the regular lift maintenance. The next phase is work in the hoistway and replacement of the controller. The original floor selector will then not be in use but will be left in place as a heritage engineering example.

The third stage will be replacement of the landing doors with something more suitable for a residence rather than a warehouse. What they would like to see is restoring the lattice gates similar to the lattice gate still in use on the car.
The big question is do current lift/building act regulations prevent them from doing that? If they are prohibited from fitting lattice gates directly could they do so with appropriate additional mechanical or electrical (light curtain) protection? They note that there are US and UK suppliers of lattice gates.
I have responded to confirm that they could install new lattice gates, but would need to ensure any fire requirements or solution achieve present day safe use requirements.

Attached is an information sheet on the gearbox that Michael made up as various bits and pieces were dis-assembled during the rebuild.
(See following fig 1)
Also attached is a lift motor and brake information sheet. **(See following fig 2)**

The part numbers may be of interest. The person who did the rebuild was Richard Felgate of Felgate Automotive and Marine Engineering (FAME) who works as an independent contractor for a number of lift companies around Auckland. In this case he was working for NZES. He was surprised to find that the crown wheel gear was steel (possibly cast) and not bronze. The most noticeable wear was in the thrust bearing assembly. One or two of those parts were replaced with newly machined versions.

Based on a run counter installed 9 September 1993 the lift has made 833,875 movements or runs since then. That works out to 109.6 movements per day, 3,287 per month or 40,000 per year. I don't know if that is reasonable or plausible for a lift serving 7 levels and 50-60 residents and their visitors. If it is reasonable then the lift may have made more than 3.5 million movements in the 33,000 days since it entered service around 1 May 1924.



At least one knowledgeable person believes the present controller is an Otis N6C. I have not been able to confirm that from any markings on the gear or cabinet. What would be most wonderful is to find original service manuals or other documentation for the gearbox. Perhaps one of you readers has access to an old service manual?

fig 1.

Shortland Flats Lift Motor & Brake Information

Motor
Shaft Ø 1 19/32inches 39.2 mm
NB. Measured at clutch-gearbox end 3/8/2014.

Nameplate
(? Indicates character not legible)

OTIS	A.C. MOTOR

SERIAL 24138
SALES NZ 4045
TYPE ?742/6
VOLTS ?OO?
AMP 1.7
H.P. 8.5
N.E.CODE D
PHASES 3 CYC. 50
HRS RISE
R.P.M. 1000
LBS.FT.

MATL. LISTS
G02070 A2
G02077R810
G06060 E1

Brake
Otis 374LJ

fig 2.

Shortland FlatsLift SMS Gearbox Information

93 Shortland Street
Auckland 1010
New Zealand

Gearbox
Manufactured by Smith, Major & Stevens Ltd, London and Northampton (SMS). Installed, in 1923-24, by SMS Auckland agent Electrical Construction Company of New Zealand, Fort Street, Auckland.

Part Numbers
(NB. Cast or stamped)

Limit switch housing – N3191
Limit switch bracket – N7212
Gearbox housing (upper) – N9311

Gearbox housing lid – N9312
(marked "USE CASTOR OIL ONLY IN THIS GEAR BOX")

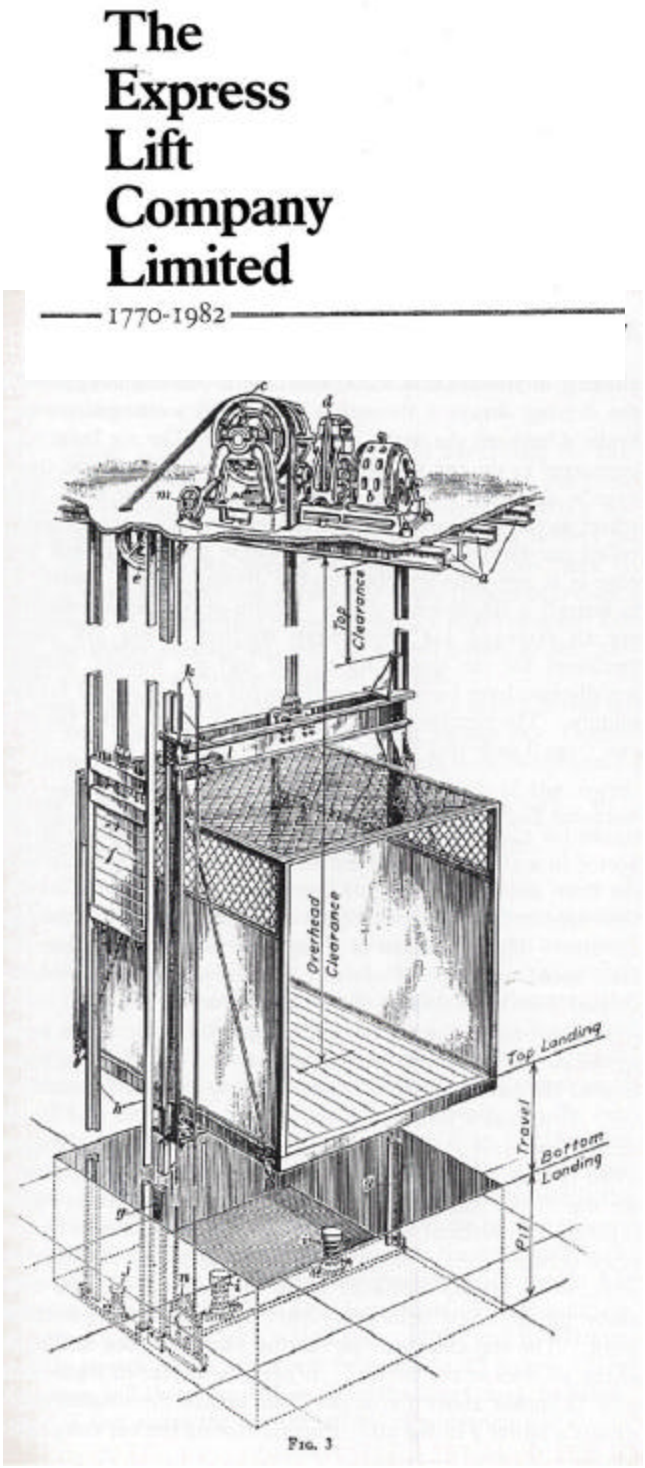
End housing/plate (motor end) – N93367
End housing/plate (thrust bearing end) – N3968
Thrust bearing housing – N9380
Thrust bearing cover –N9813 (stamped inside – 24414)

Worm gear (steel) – 24661 V
(1 ¾" nominal ?, 1 ¼" BSW thread on thrust bearing end)
Crown wheel (cast steel) – 24414 1 HH
Nameplate on top of gearbox housing (thrust bearing end) –
STOCK No. 24414 GEAR No. I PITCH 1 ¾ x 99/2
HAND A

Pedestal bearing cap – N6539 (marked "USE MINERAL OIL ONLY")

With the theme this month on past UK Lifts I thought it might be suitable to provide some old photo's of SMS equipment of that era along with an articles Michael forwarded on the Express Lifts Co Ltd that many of us remember prior to their demise and Otis takeover in 1997.

Other Otis Notable acquisitions.
Pre-Industry Years - Becker Equipment & Lifts Limited (United Kingdom)[3]
1914 - Waygood & Co. (United Kingdom)
1982 - Evans Lifts Limited (United Kingdom)
1995 - Boral Elevators (Australia)
1997 - Express Lift Co. Ltd. (United Kingdom)
1999 - LG (elevator division) (South Korea)
2011 - Marshall Elevator (United States)
2012 - CemcoLift (United States)[4].



An old SMS Nameplate.

A derelic SMS bedplate machine and motor.

A Brief History of the Express Lift Company Ltd.

Introduction

THE Assyrians and the Egyptians used pulleys and buckets to distribute the waters of the Babylon and the Nile for irrigation. Later the Greeks, Romans and the Chinese used continuous buckets on a wheel driven by treadmills.

Many centuries later Napoleon wrote to his wife, the Arch-Duchess Marie Louise referring to a 'flying chair'. Such a device is said to have been installed even earlier in Windsor Castle for Queen Anne to match that at the Palace of Versailles.

It was not until 1850 or thereabouts that lifts began to play a significant part in the handling of goods and passengers in buildings. They were mostly manufactured by general engineers and driven by belts through the main plant machinery.

Early in the 20th century at least three British general engineering companies had begun to specialise in the manufacture of electric lifts. Two of these companies led to the foundation of The Express Lift Co. Ltd. as we know it today.

Smith Major & Stevens

In 1770 Mr Smith founded a small engineering business at 69 Princes Street, London, the present site of the Prince of Wales Theatre.

He won an ironmonger of considerable inventive talent. Among other things he invented an early door spring or closer for locating in the floor under the door. This continued in manufacture right up to 15 years ago under the brand name of Janus, the name of the 'new' Battersea factory.

In 1878 his successors joined with Archibald Smith & Stevens with new premises in Battersea, the JANUS Works. They made hand powered and hydraulic lifts and rope stranding machines.

The industrial revolution was a time of rapid change. It was Archibald Smith who invented the vee groove rope drive for winding purposes in the British Patent 447 beam sutreen. The application to lifts with steel ropes followed in 1884.

A catalogue of Archibald Smith & Stevens dated 1880 listed by name 126 hydraulic installations, 26 belt lifts and over 400 hand operated lifts, which had been built by the Company.

S.M.S. Tredarel admiral gear with cover removed.

were taller, lifts faster. Modern safety gears were replacing old gravity type safeties and by 1920 cam shaft control systems were being introduced, although engineers like C. G. Major still argued the safety of the old systems.

Single phase AC lifts with 25 or 50 cycle supplies were common as were 2 phase – 3 wire supplies direct from the National Supply Grid. Single phase equipment was supplied in Newcastle – right up to 1955. Manually operated switch gear for controlling the lift from the car was about to be superseded by the ordinary push button control widely introduced in 1910-12, although the first installation was in 1902. During this period the levelling of lifts up to speeds of 500 fpm had relied upon the skill of the lift attendant and his car switch. Push button controls and the lean as element of strikes finally saw the end of the Lift Car Operator or 'Bell Hop' in the mid 1950s and full acceptance of fully automatic controls.

In November 1929 Express introduced the gearless self-levelling lift, the first time lifts had truly run 'true floor'. This was designed as a specific requirement to obviate an Otis patent, an interesting glimpse of the Company's ready acceptance of engineering challenge.

In 1929 the Company achieved a special engineering first at the Savoy Hotel in London by installing hydraulic equipment to raise and lower the whole of the dance floor, to be repeated 10 years later in the swimming pool platform at Earls Court. At the other end of the scale a personal lift was installed in Sandringham House for King Edward VII and another in George Bernard Shaw's private house in Ayot St. Lawrence. During this period the Company started installing Ward Leonard equipment bought from Westinghouse of America under licence. This equipment was soon to be produced in Northampton by Smith Major & Stevens, the first British manufacturer of gearless lifts.

The winding machine of the lift at Woolwich Tunnel prior to reconstruction.

With all these new innovations and faced with a rapidly expanding world market it was natural for two of the leading companies of the day to come together. Mergers had first been discussed in 1928 between Waygood-Otis and the SMS Company. But it was SMS and The Express Lift Co. Ltd with GEC backing who finally agreed to merge in 1930. Northampton became the administrative centre of the new Company – the largest British controlled lift manufacturing company. The Westinghouse Licence Agreement for the exchange of patents and manufacturing know-how was retained.

The Express Lift Company Ltd.

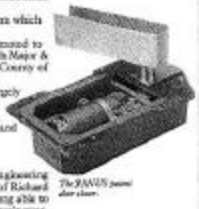
The early 30s were an era of consolidation for the Company. Planning the way forward fell to such memorable characters as J. A. Phelps, Managing Director, J. J. Lewis with his bowler hat and brolly, J. Wilkins and Bill Cove in London, Tacky Hall and Bill Heppie in Northampton, George Cherry, Bert Wiggett and Bill Dixie on the engineering side. Dick Osborne who had come in from British Thompson Houston at Rugby and was later to form and run the Service Department as a separate entity. Mr A. G. Poulton and Mr George Cherry, two senior engineers, were both ultimately to leave to give backing and drive to Jenson Lifts and Evans Lifts, whilst Mr E. W. Wood left to become the Chief Engineer of Wadsworth Lift Co. A process which has continued right up to the present day with Edward Kruger going to Bernie Lift Co., Keith Parkin to Harrenrod & Champness and J. O. Trundle to Otis.

In addition it maintains over 1000 other lifts the Company had in service. In 1882 Archibald Smith & Stevens produced a special hoist lift traction unit and by 1888 the Company were designing carriage lifts which were considered unique and a forerunner of the motorcar lift.

By 1893 traction drive had almost replaced the drum drive system which was becoming clumsy as building height increased.

In 1900 another brilliant engineer, Mr Charles Major was promoted to become a Partner of Archibald Smith & Stevens, and the first Smith Major & Stevens was founded and at once planned a 'new factory' in the County of Northamptonshire to replace the old JANUS Works in London.

SMS completed a number of ship installations engineered largely by P. H. Stevens. It was Mr Stevens who invented the tension bull testing equipment in 1904, which has been used throughout the world until modern times and remains in service at the All England Club, Wimbledon.



The JANUS patent door closer.

Easton Lift Co.

In 1822 an engineer named Josiah Easton founded his own engineering company. He had first partnered Richard Waygood the founder of Richard Waygood & Co., but two such dynamic entrepreneurs were not long able to work together. They dissolved their partnership to start separate businesses, each of which has had tremendous influence on the lift business in this country and the world. First came Easton & Anson in the Strand, London, utilising patents bought from the Montgolfier Brothers of France to make hydraulic rams.

Josiah Easton then joined with Mr Anderson and later Mr Gouldon. They designed and made anything connected with hydraulics, but soon started to make use of the new source of power, electricity! Notable at this time was their installation of 100 person lifts travelling 90ft for the Mersey Underground Railway.

Mr Charles Major.

In 1903 the Easton Lift Co. was installing the first lifts in the Greenwich and Woolwich Tunnels under the Thames, and their footplate controllers were not to be replaced until 1933 to the then modern rheostat systems. These lifts had 64 brake horsepower motors rack driven on 5ft pulleys carrying 60 and 40 persons. By 1910 they had installed some 35 lifts of 100 person capacity for the underground railways, at the time the largest lifts in the world.

During the First World War much of their work was concerned with the supply of ships' hoists and derricks, hydraulic ramps and small lifts for HMS Neptune, Monarch, Conqueror, Thunderer; well-known names in England's maritime history. The electrical drives were supplied by GEC, the main contractor.

Between the Wars GEC – The Easton Lift Co.

In 1907 The Express Lift Company Ltd was formed by the Easton Lift Company and The General Electric Company. Their joint interest had evolved during their industrial efforts in the production of munitions and materials of war. It was on the outbreak of war that the Admiralty placed large contracts with GEC and started their involvement with electrical hoists. It is interesting that during this period 'Bill' Haggett worked on radios and Naval engineering with Dr A. H. Railing, later to become Sir Harry Railing and Chairman of GEC and The Express Lift Company Ltd.

Design and Engineering ability were at a premium and no scheme or development was too difficult to tackle. Industry was expanding – buildings

In 1931 the Company installed their first escalators in the Earls Court Exhibition Centre, London. They were of Westinghouse design but like the Ward Leonard equipment a few years previously were soon to be manufactured at the Northampton Works.

In 1932/4 came the introduction of the low voltage controller. The 40 volt telephone type control equipment replacing the old floor setters by inductors and screw type door closers with harmonic door closers. In 1935 the introduction of Slip Ring VV power controls led to the development of the addy current braking systems still in use by some companies.

In 1933 GEC acquired the whole of the share capital ensuring the use of the GEC worldwide outlets for lifts and financial backing for further expansion and development.

In 1936 V. H. C. Amberg, who was Head of GEC Telephone Manufacturing Company Coventry, was asked by Lord Hirst to take over the running of Express Lifts. In recognition of his efforts 'VA' was appointed an Associate Director of GEC in 1964.

The rebuilding of the Company under 'VA' in no way interrupted the flow of engineering development and regenerated a great deal of work for large corporations like Imperial Tobacco and John Lewis stores.

The dance floor at the Savoy Hotel (raised and lowered).

By 1939 Ron Stevens with his electrical and radio fanaticism was leading the Company towards a further change in lift controls. These were developed and perfected by S. T. Hunt, later to be the Chief Engineer, and finally Engineering Director, who introduced the floor selector and relay control system that was to create a new era of reliability and speed.

After the 1939/45 war the Company made its first priority the design of reliable equipment at the bottom end of the market for multistorey housing associations springing up due to war devastation.

Large cities like London, Plymouth, Manchester and Coventry, created a totally new market. Land was valuable so blocks varied from 10 floors through to 22 and even higher. The Company evolved a specification and design to become the standard throughout the UK. Production reached a maximum of 650 identical lifts in one year, and the Company went on to manufacture and install many thousands of flats lifts up to 1968. It is interesting to note that at the height of the post war boom the Company received a postcard inviting them to tender for 1000 lifts from a Mr K. Wood, at that time unknown, later to lead the Bison Floor Slab Company constructing 'industrialised' flat blocks.

In June 1950 the Company restarted its own house magazine called the 'Connector'. This was a follow-up of an earlier magazine 'Service' which had been so popular in the late twenties. 1950 also saw the launching of the new Apprentice Association that was to be the breeding ground of many of our later engineers, senior managers, and directors. It was also the year of expansion in South Africa with the purchase of the Premier Lift Company, and Express installed the first pushwar gearless lifts in South Africa at the Grand Hotel in Cape Town. Our long association with South Africa is shown by a tender dated 1929 for the complete supply and installation of a 300 ft per minute Passenger lift for Sun Insurance, price £697!

Mr V. H. C. Amberg

Abbey Works, Northampton, circa 1913.

1950 saw the completion of Liverpool Cathedral started in 1910, but delayed through the war and finance. Express installed a hydraulic lift to bring chairs from the crypt to the nave, lifting up the marble slabs in the nave at the same time as the 250 chairs arrived at ground level.

August 1955 saw the reconstruction of the Woolwich and Greenwich tunnel lifts installed in 1903 and already reconstructed in 1933, this time with 80 hp Ward Leonard sets.

The Company continued to find export markets and installed the lifts in the tallest building in Southern India, the United Indian Fire & General Insurance Company in Madras. Orders were received from Salisbury Rhodesia and Takoradi Harbour in Ghana, where the Company installed 12 heavy goods lifts in dockside warehouses.

Some old house magazines.

Through the 50s and 60s engineering development continued to be a major Company strength. In this period the Company introduced rectifiers to replace the troublesome exciters. In the office market the Company was soon to lead the industry with new group control systems. It was at this time that the Company received the Royal Warrant posted in the London Gazette in December 1959 for the Sandringham lift installation.

In May 1960 the Company completed an installation of 25 lifts, 17 at Bucklesbury House and 8 at Temple House. No less than 16 were high speed lifts. The erection of the latter building had been delayed whilst archaeologists excavated the pre-Roman Mithras Temple uncovered by the foundation excavations. These Express group traffic systems were to last the Company some 20 years until integrated circuits appeared in the lift industry in the 70s.

But time was passing and with it an era. Many of the employees who had helped to weld the two companies together were passing on their way. C. C. Kitchen and William Pullen who had both joined Archibald Smith & Stevens in the 1880s retired after 57 and 60 years' service respectively. Other well known characters were G. L. Davies, Charles Russell, Miss Phoenix who had joined Express Lifts in 1913 in Liverpool all retired in April 1951. But the new wave were continuing to make their mark when S. T. Hunt was awarded the OBE in 1975.

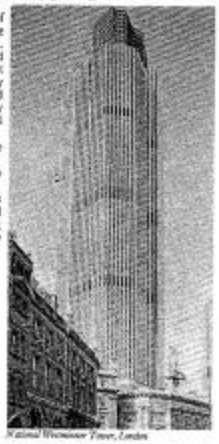
Engineering skills, carefully nurtured through extensive training of apprentices and University graduates, still predominate and motivate the Company. Express pursued solid state controls in common with many Companies but in 1978 launched the first microprocessor group control system at the Marks & Spencer headquarters in London. Nearby the Company was busy completing 22 high speed lifts, five of them double deckers at 1400 ft per minute, in Europe's tallest office block, the Natwest Tower. These achievements, typical of events throughout the Company's long history, were winning many commercial advantages. Substantial corporations long used to accepting American dominance of the elevator market were buying British in large numbers. But development is not just technical advance. Express have always prided themselves on supplying reliability and safety. These twin objectives which are being improved upon yet again by the 'processor era' are enshrined in the following extracts taken from 1910 and 1913 catalogue of Smith Major & Stevens.

"The reliability of a lift installation is a matter of such importance that a choice should only be made after the most careful and painstaking consideration. The particular service conditions should be studied from all aspects, and instant, unfailing operation at any and all times should be the ideal. Absolute safety in all circumstances should be most rigidly and uncompromisingly insisted upon, and no safety appliance which has not proved its efficiency in actual service should be taken on trust."

"NOT A CATALOGUE – Don't Burn before Reading."

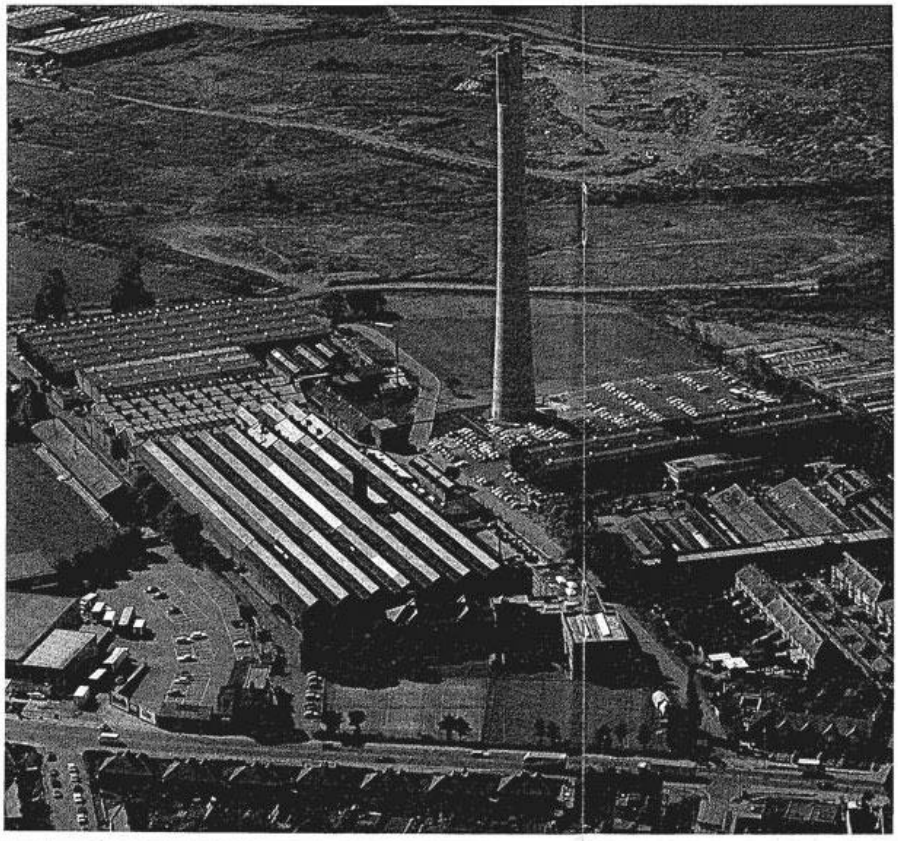
"Afterwards we aspire to raise your thoughts to higher ideals, that later we may lift yourselves."

But development both of a Company and its products does not end. Express have just completed the construction of the world's tallest Test Tower at 418 ft (127.25 m). Development and Research now employs 49 engineers. The largest number ever.



National Westminster Tower, London

EXPRESS — 1770-1982



The Express Lift Company Limit
Abbey Works,
Northampton
showing recently completed Test Tower.

I