TONE

SPRING 1957 · 3d

The Magazine of AUTOMATIC TELEPHONE & ELECTRIC CO LTD

MR. C. O. BOYSE · MANAGING DIRECTOR · WRITES ABOUT

The Future

AS your newly-appointed Managing Director in succession to Sir Thomas Eades, I am glad to have this opportunity of expressing some first thoughts.

The task of taking over from one who has been a distinguished figure in the telecommunications industry for many years is no light one, but I shall strive to uphold the high standards Sir Thomas Eades has set. It is my hope, shared I am sure by all of us, that his wise counsel will long be available to us, through his high office of Chairman of the Company.

Mr. C. O. Boyse

And what prospects does the future hold?

We now have a strong order book. At home, our principal customer—the British Post Office—has planned a steady increase in its telephone service over the years to come. In the export market, which absorbs more than half our products, we see the same trend of expansion. But we see, too, greatly intensified competition for new orders, particularly from foreign competitors. Nevertheless, we must not regard this as something to be feared, but rather as a spur to greater efforts from each one of us. The competitive spirit is so much a part of human nature that we create outlets for it in our sports and pastimes. It can also bring a new interest and greater vigour to our work, *whatever our individual jobs may be*, and at the same time help us to achieve lower costs and increased productivity which are so essential to our national aim of better living standards.

In the field of technical developments, big strides are being made. The Strowger switching system has occupied a pre-eminent position in the telephone industry for over half a century, and it will continue to do so for a good many years. But any electro-mechanical system must gradually give way to an all-electronic one, with new techniques, components, processes, and methods. Similarly, new types of line transmission equipment occupy an important position in our expanding range of products.

We, in the A.T.E. Group, are playing a leading part in all these new developments, and here we rely to an important extent on the pioneering work being done by B.T.R. at Taplow for the B.I.C.C. Group and ourselves. Our objective must be to adapt ourselves gradually to meet changing conditions and thus ensure that we can maintain, and indeed surpass, our present level of full activity.

ROOMS WITH A VIEW *Two engineers from Strowger Works served in Port Said during the recent Suez crisis. This was their view of the blocked canal from their billets in an hotel situated close to Casino Quay*

ISSUE NUMBER SIX · SPRING 1957 · 3d.

TONE

THE QUARTERLY MAGAZINE OF
AUTOMATIC TELEPHONE & ELECTRIC CO LTD

★

Editorial committee :

C. E. BEALE, C. H. EVANS, R. A. KEIR,
A. J. MUSKETT, W. S. VICK

Editor : W. J. WALES

All communications :

EDITORIAL SECTION · PUBLICITY DEPARTMENT
ST. VINCENT STREET · LIVERPOOL 3
TELEPHONE: ROYAL 8884

★

Canal Crisis

The world is at flashpoint. In the shimmering heat of the desert, inflamed passions are unleashed. Israeli tanks, aircraft and men are poised for the final thrust at Egypt's lifeline, the Suez Canal. The torrent of words over that narrow strip of muddy water has ended temporarily and the time has come for action. Rightly or wrongly, Great Britain and France decide to intervene. At home, urgent telegrams are delivered to thousands of homes, and many specialist troops, including 32 men from this Company, are hurriedly recalled

RUSH FOR FOOD *Armed British troops stand by as a crowd of Egyptians swarm around a lorry sent to distribute food to the needy of Port Said. Note the fallen telephone wires on left of our picture*

ROADSIDE HALT *Captain King and Lieutenant Birch on a canal road outside the town of Port Said*

to the colours. The lives of at least two of these men from Strowger Works take a dramatic change. Both engineers, they exchange blueprints and pencils for belts and pistols, and the routine of office life gives way to the unknowns of active service . . . all within a few short days.

Ted King has been in Department 712D (Systems, Transmission Division) only a few months after nearly 25 years as a regular soldier. Robin Birch, Department 662 (Circuit Design, Switching Division), has been with the organisation since 1949 and his military experience consists of a two-year spell of National Service. The two men have never met, but they are soon to command a unit with a special mission.

Captain King (T.O.T.) and Lieutenant Birch, both of the Royal Corps of Signals, mobilise at Catterick and then go to different camps. Lieutenant Birch is among those ready to sail for Egypt in the troopship *Empire Orwell* when the

QUEUE FOR FUEL *United Nations troops—nicknamed Bluebells—help to supervise the rationing of fuel following the closure of the canal. Egypt herself is, of course, among the countries hit by fuel shortages*

cease-fire is suddenly announced. A few days later, however, the two officers and twelve other ranks learn that they have been assigned to take over and maintain an important civilian telephone exchange on the outskirts of Port Said in the wake of the Anglo-French invasion.

The fourteen men are flown in a special Hastings aircraft from Lyneham, near Swindon, to Malta. After a brief two-and-a-half-hour stop on the George Cross island they are airborne again and the next halt is Nicosia, Cyprus. Here the halt is even briefer—despite a change in machines. Half an hour later, they are on the last leg of their journey to Port Said.

Port Said is quiet enough as the men arrive, but they don't have to be sensitive to feel the electricity in the atmosphere. The native population, if not openly hostile, is sullenly antagonistic, and the tenseness is emphasised by the sight of armed infantry patrolling every major building and

THERE'S TROUBLE *in the canal and on the canal bank, too, for this tank which skidded off the road*

TICKLISH TASK *A naval diver about to go down to one of the sunken ships. Frogmen worked on other vessels (see below)*

highway. Later, the blue helmets and blue arm-bands of United Nations police troops are everywhere. Yugoslav, Canadian, Norwegian and Swedish soldiers are nicknamed " The Bluebells ".

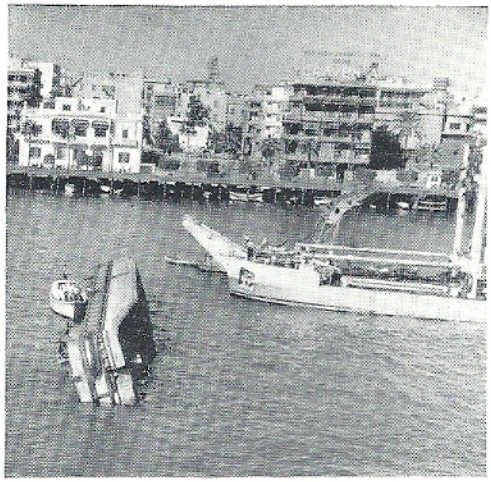
Egypt is no stranger to Captain King, whose military service has taken him to dozens of different countries, but most of the men in the team (all reservists with the exception of one regular) have never been outside the United Kingdom before. The newcomers feel taut and unreal as their eyes pick out bullet scars and rocket shell holes in the walls of nearby offices and shops.

From the roof of their billet—a luxury flat in an English-owned, millionaire-class hotel near Casino Quay—the two officers can see part of the havoc caused by the block ships resting on the bed of the Suez Canal. Salvage vessels are fussing urgently amid the funnels and masts of sunken craft. But there is little time for sight-seeing and the specialists soon find themselves working day and night in the almost deserted and unfamiliar telephone exchange. Many new lines have to be put in to assist military, fire, hospital and consular staffs. Traffic is fairly heavy and the exchange is only partially operational, with all long-distance lines out of order. Captain King's title becomes officer in charge of Port Said system and fault control, while Lieutenant Birch is placed in charge of internal plant maintenance.

The engineers are in Egypt during the rainy season and natural difficulties are soon encountered. Torrential rain causes flooding in and around the exchange building. Cable ducts are under several feet of water and there is a small lake in the battery room. Pumping goes on all the time. The men estimate they are putting enough water into the nearby canal to wash away all the obstructions !

When night falls, the sky outside the engineers' hotel is frequently torn by the glare of tracer bullets. Snipers lurk in the neighbouring buildings during curfew hours and the silence is often shattered by naval patrols dropping charges into the canal to discourage frogmen. No uniformed man is allowed to venture into the Arab quarter unless he is armed and accompanied by three other men. When morning comes, further crops of nationalistic and anti-British slogans decorate the streets.

Very few European civilians remain in the canal area. Rioting, looting and the defacement of British property occur at frequent intervals and the military forces retaliate by distributing food and medical supplies to needy natives. It is, indeed,



SALVAGE WORK *in operation not far from the officers' hotel on the outskirts of the town of Port Said. A capsized vessel can be seen in the foreground*

a topsy-turvy existence, endeavouring to do good for bad and trying to work smoothly surrounded by a population smouldering with hate. It is certainly beyond two engineers suddenly back to soldiering.

Both Captain King and Lieutenant Birch see Second-Lieutenant Anthony Moorhouse, the young Yorkshireman who is later to lose his life after being kidnapped by the Egyptians.

For compassionate reasons, Captain King is flown home. A month and three days after arriving in Egypt, Lieutenant Birch and the other men embark in the liner *New Australia*. They are among the last British troops to leave Port Said. They spend Christmas at sea.

Another member of the A.T. & E. organisation, Captain "Gus" Taylor, Department 712D (Transmission Division), also recalled for service during the Suez crisis, served in the same regiment as the two officers, but he was not sent out to Egypt.

Both Captain King and Lieutenant Birch are back again at desks in Strowger Works. Those few crowded weeks—weeks that may well change the course of world history—are now memories. One or two trinkets, a few snapshots, a couple of Army newsheets and a blue silk flag bearing the emblem of the United Nations are their souvenirs of a difficult job in a difficult land.

PALM AND MAST *Above : a forward British post near El Cap. Below : a lighting tower on the canal with the engineers' hotel in centre of the picture*

Have you ever stopped to consider what far-reaching effects a serious works fire could have on your own life and the lives of thousands of your colleagues?
Even a less serious blaze, in a vital shop or a key department, could have grave consequences. Fire is sometimes a friend but always a foe.

The story behind '00'

EVERY FRIDAY AFTERNOON, the urgent summons of ninety alarm bells echoes around Strowger Works. At our dispersal factories in Liverpool city centre, at Speke and at Stopgate Lane, more bells —and klaxons, too—send men sprinting to the nearest telephones. The top priority line "00" is brought into full use, and a careful check is kept on the minute hand of the clock. What is happening is, of course, part of the works fire drill and a test of the efficiency of brigade members. Comparatively few men are engaged on these practices, but fire prevention is everybody's business and each man and woman in the organisation should be familiar with the safety precautions in operation.

In factories such as ours, where large quantities of electrical equipment are involved and a comprehensive fire-fighting force is already established, there is one short, simple and effective rule for an employee encountering a fire—shut off current in the vicinity and telephone the brigade immediately. That is the sound advice of your works fire chief, Mr. A. Carpenter.

The formation of a works brigade, under the jurisdiction of experienced men, took place about 33 years ago. The then chief officer was a Mr. J. Burns, an ex-member of Liverpool City Police Fire Brigade. Upon the foundations which he laid,

PRACTICE CALL *Deputy Chief Officer W. Steane goes aloft to tackle a situation during practice*

MORE HOSE! *A length of hose is run out by one of the works fire brigade, at our main factory*

EXPERT TRAINING *Fire Chief A. Carpenter (far left) discusses a drill routine with members of the brigade during a lunch-hour practice. The speed limit sign applies to vehicles—not the brigade!*

A.T. & E. have built a reputation as one of the most efficient industrial brigades on Merseyside.

Other companies may have larger forces and more equipment, but their fire risks are probably greater in the first place. The real test of efficiency of an organisation's fire precautions is the number of times the brigade is *not* called to a fire! Over the past twelve years, A.T.M. firemen have dealt with only 112 fire calls. We repeat, fire *calls*, not fires.

Strength of our brigade, including men from dispersal factories, is approximately sixty. All are volunteers and members of the Plant Department. Mr. Carpenter is an ex-officer of the National Fire Service and has had 26 years' service with Liverpool City Police Fire Brigade. He joined Central Fire Station, Hatton Garden, in 1919 when the city still used steam engines. During his service he helped to fight blazes at the old Philharmonic Hall, at the Royal Court theatre and in the German ship *Oklahoma*, which exploded in the Mersey while carrying a cargo of sugar and nitrates. He joined A.T. & E. in 1945. His deputy chief officer on days is Mr. W. Steane, while Mr. J. Hurstfield is in charge at nights. Mr. Hurstfield is also the chief patrolman for all our Merseyside premises.

Works firemen undergo monthly training sessions. They start from scratch and receive tuition in everything from patrol duties to use of appliances, including breathing apparatus. No uniforms are worn, but there are adequate supplies of gum boots, helmets, sou'-westers, waterproofs, axes, etc. Works foremen and many superintendents also receive instruction in fire precautions.

Now, it is a well-known fact that moisture and electricity do not mix, and, in our industry, it is often unwise to use water extinguishers. Appliances discharging carbon tetra-chloride and CO_2 gas are used instead. Whenever sand is employed in fire-fighting on our premises, it is essential that it should be dry. Pet dislike of works firemen are the people who thoughtlessly empty wet tea leaves into sand buckets or remove any of the sand itself.

Works fire equipment at Edge Lane includes some 50 water hydrants, each equipped with a hose box and branch; 600 water, CTC and CO_2 gas extinguishers; about 80 sand buckets, a Harland fire pump capable of turning out 400 gallons a minute; about 180 lengths (each length 75 feet) of fire hose; a mechanical foam-making branch pipe; breathing sets; apparatus for pumping pure air; a hose cart; numerous ladders; cutting tools; axes; goggles; protective clothing and, of course, first-aid sets.

FIRE PUMP AND CREW *A Harland fire pump, capable of turning out 400 gallons of water a minute, is brought out of the works fire station by a group of volunteer firemen, all specially trained for their jobs*

Industrial units work in the closest collaboration with regular fire-fighters and salvage experts, who visit factories on periodic inspections and exercises. In the event of a serious outbreak, the nearest regular fire-station is notified immediately. You may have noticed that all the entrances at Strowger Works carry large red numerals on white backgrounds. This enables the works to route incoming fire tenders closer to the scene of the blaze as each neighbouring station keeps a numbered map of our premises.

Let us assume there is a sudden blaze in one of the departments at Strowger Works. Here is the drill. The person discovering the fire should pick up the nearest telephone, dial " 00 " and he will be connected to the time-office at Brompton Road. The caller should then state his name, department and exact location of the fire (this is most important, particularly in multi-storey buildings).

As soon as he receives the call, the time-keeper presses the fire switch and the alarm bells sound in the works fire station and throughout the factory. Firemen, wherever they may be, dial through on the priority line, ascertain the location and proceed straight to the fire.

Average time from receipt of fire call until " fire out " message is about ten minutes. A fitter and electrician attend with each fire crew. As all the firemen are members of the Plant Department, all are specialists and the fire officers are immediately on hand to decide on the number of men required for each outbreak, there is virtually no interruption in the factory's normal flow of production.

Have we had many really serious fires ? " No, and we won't have any either as long as employees remain safety conscious," says Mr. Carpenter. Trained men are there night and day, seven days a week every week of the year, but you can see that, in the first place, firemen depend largely on the individual—on *you*.

Do you know where your nearest fire-extinguisher is situated and which is the correct one to use ?

£20
Contest Results

NEARLY 4,000 NAMES SUGGESTED

Any good names for a new dial and a new telephone? That was the question we asked on a leaflet contained in every copy of the previous issue of *Tone*. We offered two cash prizes, each of £10, for the best suggestions received. By January 31st, closing date in the competition, we received no fewer than 1,704 names for the dial and 2,042 names for the telephone. More than 500 names for the telephone were received on the last two days of the contest alone.

It was extremely interesting to see the range and variety of incoming entries—some from as close as neighbouring departments in City Factory and others from as far away as Connecticut in the United States. There were names in Latin, names in Greek, borrowed names, short names, long names, names purloined from science-fiction, atlas names and even numbers.

One competitor was enthusiastic enough to design and paint a huge colour poster bearing two of the names he had submitted. Quite a number of entrants sent us humourous notes attached to their entry forms. One man asked: "If Frigidaire is good enough for cooling units, what about Ellodaire for telephones?" In the same vein, we had notes suggesting "Isdatu", "Statue?" and "Ellomate".

Many employees and their friends took advantage of the fact that they could suggest as many names as they wished and "permed" their best ideas for both dial and telephone. On the other hand, many people pinned their faith on the one name. It made no difference, every entry was considered.

Several suggestions cropped up time and time again. Among the most popular were "Dimpledial", "Nudial", "Easidial", "Futurephone" and "Newline". A few of the more unusual were: "Jingola", "The Jolly Roger", "Kismet", "The Proud One", "Phantom", "Boffin" and "Double Top". There was also a fair number of competitors who sent in variations on the "Marilyn" and "Monroe" lines. "Princess" and "Grace" name-links provided a few topical touches.

Norman Bell, the Liverpool winner

In general, however, entries showed a remarkable degree of ingenuity and there were many top-flight ideas from employees, their relatives and friends. The interest aroused by the competition was certainly encouraging from both a Company and Company publication points of view.

And now to the contest winners . . .

The £10 prize for the dial has been awarded to Mr. Norman Bell, a machine tool-setter in Department 75 at Strowger Works. His winning suggestion was "Worldspan". The prize for the telephone name was won by Mr. John Hodgson, a salesman in Leeds branch office of Communication Systems Ltd., a subsidiary company. Mr. Hodgson's winning idea was "2,000 Phone".

The Company is, of course, under no obligation to make use of the names which were selected.

We'd like you to meet...

Harold Patterson, a group leader on uniselectors in Department 89 at Strowger Works, is a man who likes to break human hairs—from a distance of eight feet with darts. Holder of many trophies, his cigarette-spearing and match-igniting tricks helped Company employees raise £1,000 for the British Red Cross during the war.

* * *

With no fewer than nine languages at his command, **Roger Lahorgue,** Training School, Strowger Works, is often in demand as an interpreter. A former seafarer, he rose from the rank of stoker to second engineer on a single trip from Aberdeen to Massawa on the Red Sea. He is a native of Bidache in the Pyrenees.

* * *

Vera Jevons, relay designer, Department 662, trained in the evenings at Liverpool's famous Hatton Garden centre as a member of the Auxiliary Fire Service. Now, after two years, she's a leading firewoman.

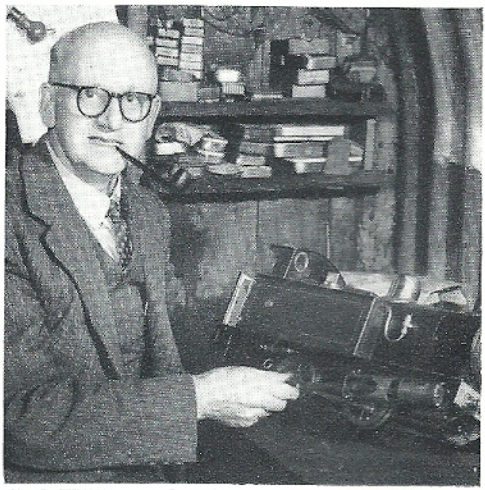
* * *

Bill Blundell, of Department 25, Strowger Works, once rode a push bike under ten feet of water. It was part of a Navy display in Sydney, Australia, in aid of the submarine Affray disaster fund. Bill himself escaped from a sunken submarine, H.M.S. Shark, during the war.

* * *

A man who, by day, works with modern machinery turns at night to making models of vintage steam engines. He is **Jack Williams,** a Department 01 inspector. Vice-president of the Merseyside Live Steam and Model Engineering Society, Jack may take as long as five years to build a perfect model.

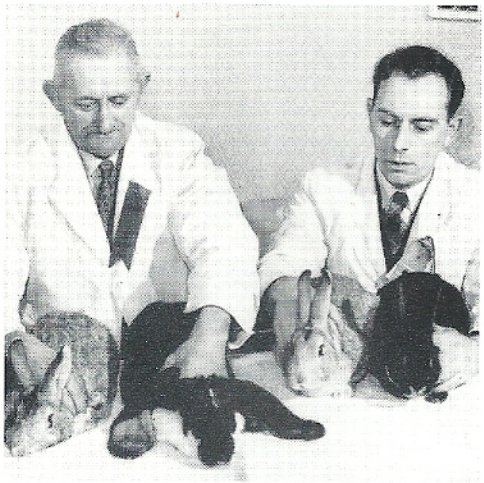
Vera Jevons—trains for fires



Jack Williams—fires for trains

Bill Blundell—underwater cyclist

Vera Cliff—road racer



Percy and Ray Ellis—export orders

Charles Ford—expert woodworker

Elsie Follett who, as a policewoman, once controlled Liverpool traffic at such busy points as the Mersey Tunnel entrance and Church Street, now helps circularise leaflets for Company traffic signals and telephones in the Publicity Department, City Factory.

* * *

Man who draws his comedy script material from everyday happenings, **Harold Penlington,** auto-tool-setter, Department 32, has been a spare-time comedian for thirty years. He has appeared at nearly a thousand concerts and has broadcast, too.

* * *

Twenty-year-old **Vera Cliff,** Department 15, has been a cycling enthusiast for only three seasons but already she holds a shield and two medals for her racing skill. A member of the Merseyside Wheelers, Vera's weekend spins with the club usually total 150 miles.

* * *

For over 50 years, **Percy Ellis,** Telephone Systems Planning, has kept rabbits for exhibition, pelt and export purposes. He and his son, **Raymond,** Department 668B, are joint holders of the Blue Riband of the National Seal Rex Association. Dealers from as far away as South Africa consult the family.

* * *

Walter Mitchell, an electro-plater in Department 08, is a firm believer in physical fitness. A one-time heavyweight boxing champion he left the ring after a leg injury received while parachuting on D-Day. He now captains Everton water polo team, however.

* * *

Another employee from Department 08, **Charles Ford** is a self-taught expert in fine marquetry—a wood-working craft he acquired while a prisoner of war in Stalag 20B, the most northerly camp in Poland.

* * *

Bill Houston, a sheet metal worker in Department 06 at Strowger Works, has built a home aquarium in six months of his spare time. The thermostatically-controlled aquarium has concealed electric lighting and contains water plants and more than a dozen varieties of tropical fish with exotic names such as angels, zebras, harlequins, tiger barbs and swordtails.

Busy Lines

PEOPLE · PLACES · EVENTS

From Gibraltar, naval base of vital strategic importance to Great Britain, comes an order from the Admiralty for a new 600/1,000 line B.P.O. No. 3 P.A.B.X. At home, the War Office have ordered a 1,200-line switchboard for an important Southern Command garrison. C. S. Ltd. obtained both orders.

* * *

Company installation men are putting in equipment at 24 telephone exchanges in Uganda, Kenya and Tanganyika. Job is scheduled for completion in 1958. Some exchanges are situated on the shores of Lake Victoria—a lake which is roughly half the size of Great Britain.

A total of almost 2,000 extra lines are now being installed in St. John's, Newfoundland.

* * *

Almost on our doorstep : we are installing a 250-line internal exchange at Messrs. Owen Owen, Liverpool, and Installation Department men are putting in an extra 1,800-lines extension to the G.P.O.'s Stoneycroft exchange at Old Swan (Strowger Works is Stoneycroft 4830).

* * *

More than 1,000 employees, relatives and friends attended the Sports and Social Organisation's winter dance at the Grafton Rooms, Liverpool.

* * *

Contract Department is " in the groove ". With the experimental installation of 18 new " Telecord " Dictaphone Timemaster telephones, key personnel can dictate straight on to Dictabelt records in the typists' room. Typists don headphones and play back letters. Many thousands of words a day flow on to these 3¼-inch records.

IN THE GROOVE *Part of the experimental equipment which has been installed in Contracts Department at Strowger Works. Key personnel can now dictate letters on to specially-made records*

DISCS DISCUSSED *Some of the typists who "play back" letters from records in Contracts Department*

ANNUAL AWARDS *Mr. J. A. Mason presenting a prize to one of our students in the cinema*

Mr. C. H. Evans, Personnel and Welfare Manager for the past 16 years, was among those who received the M.B.E. in the recent Honours List. He started work with the organisation when he was 15½, serving first in the laboratory and engineering departments at Liverpool before moving to London on installation work.

In 1928, he returned to Liverpool and became personal assistant to the chief engineer. Subsequently, in 1935, he served in a similar capacity to the commercial manager and, later, to the works manager.

* * *

Twenty-nine retiring colleagues, sharing 1,073 years of service, were guests of the Works Supervisory Staff at a dinner and entertainment held at Liverpool Airport, Speke. Chairman was Mr. J. A. Mason, Director (Production).

Mr. W. S. Vick, Deputy Manager (Works Control), toasted the guests and the response was given by Mr. H. Roberts. Mr. G. Steel proposed the toast to the Company and Mr. G. Bennett, Manager (Liverpool Factories) replied.

* * *

Two hundred and sixteen A.T. & E. students shared 290 cash awards totalling more than £1,000 at the annual distribution of prizes for successes gained in professional examinations. Mr. J. A. Mason, who made the awards in the Company's cinema, said the results of employees' technical examinations were very encouraging, but he would also like to see a greater number of students gaining awards for commercial subjects.

* * *

Among the list of new users of equipment built by A.T. & E. in one month recently were a big milling organisation in London, an inn in Belfast, an electricity board in Kincardine and a garage in Cardigan. A small but representative selection of many customers in England, Ireland, Scotland and Wales !

* * *

We have been awarded a contract for the supply and engineering of a complete U.H.F. Frequency Modulated wide-band radio-telephone link in Portugal. Our carrier equipment will be installed by the Anglo-Portuguese Telephone Company, at two terminal points—Graca, an automatic exchange in the centre of Lisbon, and Montijo.

* * *

As part of the railways' modernisation plan, the British Transport Commission have ordered from us a 900-line P.A.B.X. for York.

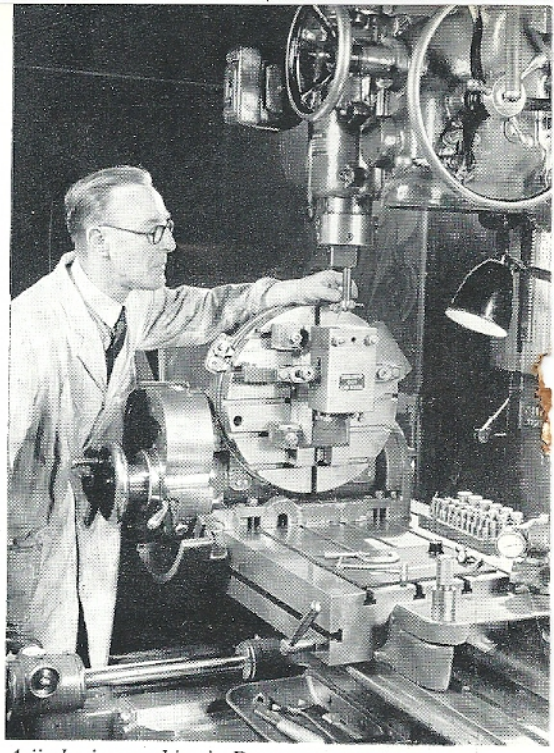
* * *

The growing number of overseas orders for the P.A.B.X. Type 211 switchboard is a tribute to Strowger Works personnel. Since the first 211's were sent out to Malaya and Venezuela at the beginning of 1956, orders have flowed in from many other parts of the world.

Number five in a series

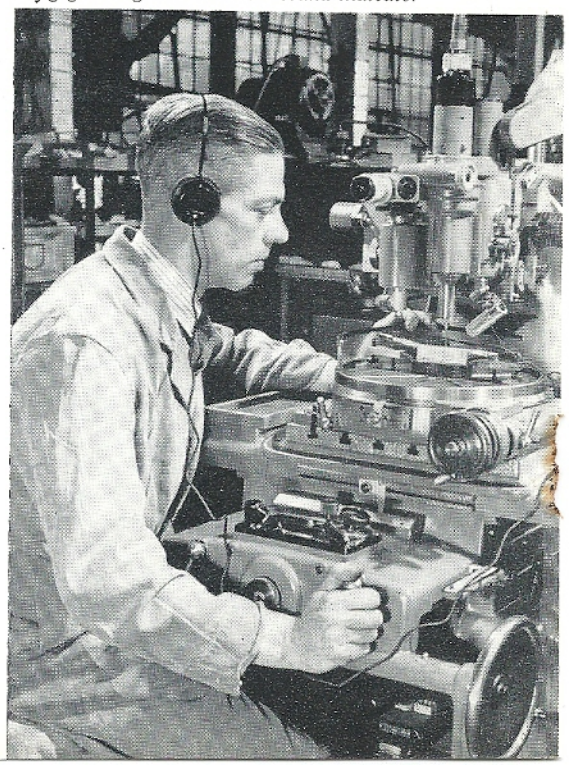
Portraits of an Industry

Before your eyes have time to reach the end of this sentence, several thousand telephone users, in many different lands, will have started to make calls on equipment manufactured at Strowger Works. Somewhere on Merseyside, a businessman will probably be speaking to a colleague ; in Melbourne, a housewife may be talking to a friend ; and, in Buenos Aires, a doctor is perhaps summoning a nurse. In lonely farmsteads and booming cities, modern man has become dependent on ingenious equipment manufactured by organisations such as our own. It is, in fact, no exaggeration to claim that whole economies now rest on the efficiency and reliability of communications. The strength of such foundations stems, of course, from the ordinary men and women working within the telecommunications industry. A wide variety of jobs is undertaken by A.T. & E. employees; but all contribute something to the world-service that has developed.

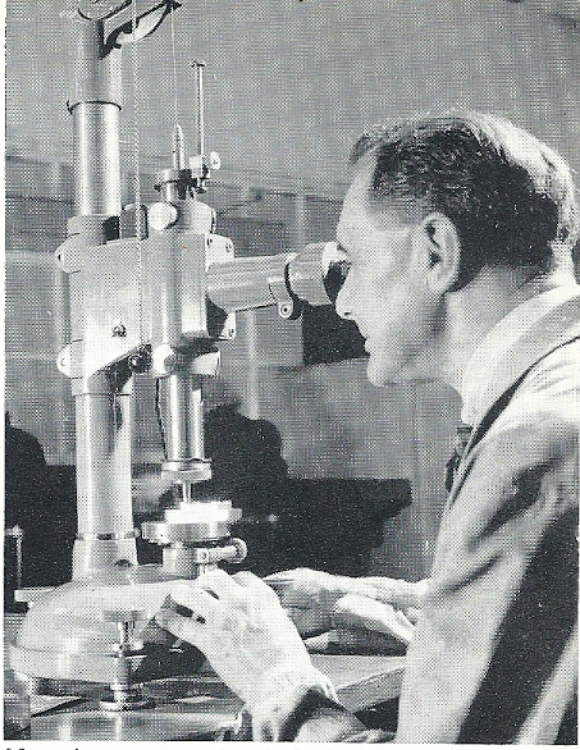


A jig-boring machine in Department 01

A jig-grinding machine with sound indicator



A works chemist using covered balance



Measuring a gauge used to check telephone parts

Measuring screw thread gauge in the Gauge Room

The draughtsman's board in one of the offices

ONE MAN AND HIS HOBBY *Jim Bold, auto-setter in Department 94, checks over part of the equipment he uses in his hobby of astronomy. Jim's interest in stars follows wartime aircraft-spotting work*

The sky's his limit

Watching the sky from a factory roof during a wartime winter's blackout can be a very unrewarding business. But not for Jim Bold. His two-hour spells of duty searching for enemy aircraft over Liverpool sparked him off on the study of astronomy, a study which has become an almost passionate spare-time pursuit.

Jim Bold, an automatic machine setter in Department 94 at Strowger Works, used to belong to No. 38 Liverpool Spotters' Club, a body affiliated to the National Association of Spotters' Clubs and a link in the nationwide chain of aircraft recognition centres established by the Royal Observer Corps. Those lonely watches on the windy roof of Strowger Works were frequently uneventful. It wasn't every night that a German seaplane landed on the Mersey, sowed a chain of sea mines and took off again right under the guns of our coastal defences (*this incident is true*). Yes, there was usually time just to gaze in wonder at the heavens and marvel at the immensity of the universe.

Some of the stars up there were familiar to Jim, although most of them were unknown specks, barely visible even with the aid of his powerful binoculars. But here was a challenge ! Could he fill in the gaps in his knowledge and begin to appreciate more deeply the beauties of those distant green, blue, orange and red pin-points of light ? Reference volumes and lectures were a beginning, followed by a Workers' Educational Course at Liverpool University and membership of the Merseyside Astronomical Society, a body which later amalgamated with the old-established Liverpool Astronomical Society.

The Liverpool Society have a five-inch lens telescope on the roof of Liverpool College of

Technology and Jim was able to use this instrument while he was building his own three-inch model from Government surplus stock in the workshop of his home at Almonds Green, West Derby. The project took him about six months and speaks highly of his engineering ability.

That early instrument furnished many thrills for Jim, enabled him to explore the heavens as long as he wished, and he was able to make his own star charts. Some people thought he was a crank and they just could not understand why he sometimes got out of bed at two o'clock in the morning to stare at tiny flickers of light many millions of miles away. A few folk could appreciate his quest for knowledge, however, and neighbours and friends have joined him in back-garden vigils for glimpses of beauties that mankind has largely overlooked.

Jim sold his first three-inch telescope and now owns a splendid three-inch Government surplus reflecting instrument, valued at about £180. But while he is using this, he is also building a six-inch reflecting telescope—a most ambitious project which will take at least several years to complete.

The workshop in which this new venture is taking shape is something of a treasure trove for the amateur engineer. Using carefully acquired family tools (two elder brothers were both engineers) Mr. Bold has ingeniously adapted a number of wartime sea navigational aids, such as the plath-gyro sextant, as astronomical assets.

Apart from astronomy—not to be confused with astrology, which is predicting the future by the stars and an occult science—Jim is also an instructor and lecturer in motor-cycle maintenance for Liverpool Education Committee. A third and perhaps most surprising example of his scientific initiative is the large scale model which he has built of the Tabernacle, referred to in the Old Testament. Mr. Bold set out to prove that Biblical references to size, weight and materials used in the construction of the ancient Tabernacle were correct and still applicable. It took him several years to collect all his references, materials and information for the model which contains more than one thousand different pieces, not counting the many parts in the jigs, dies and moulds used to produce the pieces.

Married, with three children, Jim Bold at the age of 36 is a man of many interests, a genuine seeker of knowledge. And he obviously derives tremendous fun from his philosophy of " finding out."

WORKSHOP TYPE *When he's not studying stars Jim Bold is usually to be found in his workshop helping to repair motor-cycle engines for night school pupils*

HIS GARDEN *is his observatory. Inside the house, Mrs. Bold watches television while Jim marks up his star charts with painstaking accuracy*

Like to live dangerously ?

Toughest sport of all

Want to get away from factory life ? Like to live dangerously every now and again ? Are you looking for the toughest, most terrifying sport of all ? Would you care to purify your spirit with a spot of self-imposed torture guaranteed to make your nerves tingle with terror ? Well, spend a weekend or two at Joe Longden's hobby, speleology—caving or pot-holing, in other words. After several hours in darkness, splashing along icy streams, clawing over weird rocks, squeezing through drainpipe-like tunnels and brushing away sharp-toothed bats, you'll discover whether or not there's room for you in the caving society that Joe would like to form at Strowger Works.

Joe, a tall, slim, fair-haired young man, is a comparative newcomer to our organisation. He donned white overalls in the laboratory of A.T. & E.'s Finishing Department only last November after a three-year spell in Manchester on organic chemistry work. Five days a week he spends in an atmosphere of test tubes, bubbling flasks and general research into plating processes, but his weekends and vacations are largely devoted to adventure in one or more of the many caves, pots or mines that honeycomb the crust of the British Isles.

The underground attractions of Lancashire are relatively few, so Joe makes use of a sturdy trials motor-cycle to travel from his home in Leafield Road, Speke, to the caverns of Cumberland, Westmorland, Derbyshire, Yorkshire and North and South Wales. He is usually accompanied by at least one friend, and the equipment they carry includes overalls, steel-toed climbing boots, 60-lb. packs, 100-ft. of strong rope, miners' helmets, acetylene lamps, torches, camping equipment and food.

Entrances to most of the known caves in this country are pin-pointed in several reference books.

IRON NERVES *help when it comes to negotiating tight squeezes such as this in some gloomy pothole*

They have to be because some are only inches across, extremely difficult to find and barely large enough to squeeze into. Few British caves are deeper than 400 feet, but that is deep enough for most people in view of the hazards so frequently encountered. Joe and his friends usually set up camp, don their protective clothing, arrange an elaborate system of wire ladders and ropes, take a good look at the sun and disappear into the darkness for at least several hours.

What are their feelings as they lower themselves painfully and slowly deeper and deeper into the earth ? Why do they do it in the first place ? What is there at the bottom ?

It is difficult to put into words the attractions of caving. Going to see the stalactites (they're the ones that point downwards) is only a small part of the story. The thrills, the mystery, the physical

A CHILLY CRAWL *Joe Longden is forced to crawl on his stomach through an underground stream during the descent of a narrow cave in the hills of Derbyshire, one of his favourite potholing and caving districts*

challenge—all have their places. Two well-known speleologists summed it up as follows: "A caving trip is an adventure, and as such appeals to that restlessness of spirit which resides in some form in the heart of every man; the same irresistible urge which carried men from this little island to the far corners of the earth. It is the same lure of the unknown which has inspired men to cross the widest deserts and to climb the highest mountains, and which finds its greatest satisfaction in the ultimate ambition of every explorer—to set foot where none has been before".

The first time Joe Longden went underground he suffered agonies from claustrophobia and the fear of becoming trapped. "But it's like mountaineering, you know, you soon become used to it," he says. The average person takes longer than "soon" to forget that more than a million tons of rock are poised a matter of inches above his head waiting to snuff out life.

Below the surface, day and night, winter and summer, have no meaning. Sounds are magnified and distorted, the atmosphere is close and clammy, and there are always surprises just in front of your nose. One moment you can be slithering downwards over hard, sharp rock, the next you are chin-deep in a swift-flowing, spine-chilling stream which has to be negotiated. In the light of your caver's torch, rock forms take on grotesque shapes, sometimes funny, sometimes frightening. Mutations of surface insect life are glimpsed briefly and an occasional bat squeaks in angry protest at the unwelcome visitor.

Exactly what you'll find down there is, of course, up to yourself. Questing Man has few natural obstacles left to conquer on the world's surface.

REFLECTIONS *of a caver in an underground pool. Below : Joe Longden at work in the Finishing Department at Edge Lane*

Beneath his feet, however, there lies a host of unexplored labyrinths and streams leading to great caverns and galleries that contain the strange secrets of countless thousands of years.

Many British caves have already yielded up their treasures and a summer never passes without hundreds of holidaymakers visiting the famous Wookey Hole, Cheddar Caves and Peak Cavern. A lot of folk will also know of Gaping Gill Hole, Ingleborough, which is large enough to accommodate York Minster and is honeycombed with three and a half miles of passageways. The descent of this particular hole can now be made by bosun's chair, but during the war a German airman went down the hard way. After his machine was damaged, he baled out and floated straight down the hole—parachute and all.

Joe Longden's introduction to caving was a little less precipitous, but he, too, has had his fair share of excitement in places with such strange names as Disappointment Pot, Great Douk Cave, Suicide Cave, Peak Cavern, Giants Hole and Thor's Fissure. Yes, Joe has quite literally been in some pretty tight spots during the past few years, but his interest in caving has never flagged. As a member of the British Cave Research Group, he has located many insect specimens for the British Museum, as a photographer he has obtained some unusual colour photographs of rock formations and subterranean scenes, and as a music-lover and outdoor-type his appreciation of sound and sight is tempered by the very lack of both while he is underground.

Now, what about this speleological society which Joe would like to see formed for employees at Strowger Works? Are you interested? No previous underground experience is necessary, but it will help if you are keen on climbing and, obviously, you must be physically fit. Membership would be open to women, too, and they usually manage quite well in caves where the descents are only gradual and it is possible to climb with the aid of ropes, but girls are handicapped in pot-holes where tackle, ropes and ladders and powerful arm and leg muscles are needed for the sometimes vertical descents.

To sum up, caving is a pursuit with a difference. It is an entirely absorbing pastime for men of Joe Longden's temperament. It matches the thrills of exploring the unknown and defying physical obstacles with the added fillip of intellectual challenge. It is the most absolute of sports.

MOBILE WORKSHOP *The new van which is being used for the maintenance of V.H.F. radio telephone equipment within a 25-mile radius of Liverpool. The van's code call is "zebra"*

Code name: ZEBRA

A new 15-cwt. Austin van has recently been equipped as a mobile workshop for the maintenance of V.H.F. radio telephone equipment and is now serving our various customers operating within approximately a 25-mile radius of Liverpool. Primary object of the vehicle is to facilitate the half-yearly routine overhauls which we carry out under the terms of our agreements. It will also help in locating faults on site and improve the general efficiency of our maintenance service.

The workshop's equipment includes facilities for connecting into customers' mains supply, mains lighting and distribution board, 12-volt auxiliary battery and charging plant, 12-volt distribution board with a change-over arrangement incorporated to facilitate the use of either the auxiliary or vehicle battery, R.F. signal generator, valve tester, audio and V.H.F. power output meters, avometer and a complete set of spares for all types of equipment in use.

The spares carried include complete radio-telephone power units, transmitters and receivers. What is probably a novel feature is the fact that these units have been installed in the vehicle as complete working sets. This necessitated the fitting of three aerials which, by means of a channel switching arrangement, enables the engineer in charge of the vehicle to receive and transmit on any of our customers' frequencies. For this purpose a special multi-frequency licence has been granted by the Post Office, who have allotted the code name "Zebra" to the vehicle.

This feature provides many advantages from the efficiency viewpoint. For example, the performance of our customers' equipment can be monitored during times when the workshop is travelling from job to job and, by this means, any deterioration in performance will be evident to the maintenance engineer in charge of the vehicle and he will be in a position to attend to faults before they are reported and possibly prevent complete breakdowns. When customers report deterioration in performance in areas where the signal is marginal, we will be able to determine, more easily than hitherto, whether the trouble lies in the base station or mobile equipment. If a customer reports a fault, our maintenance headquarters will be able to intercept the workshop by requesting the customer's operator, in whichever area the vehicle is working, to call up "Zebra" and ask the engineer to report to his headquarters.

In addition to our radio telephone contract commitments, we also have maintenance contracts with the same customers for remote control apparatus, and, as the vehicle will also be used for this work, the radio system will prove to be a great asset.

FANCY THAT!

City Factory is immediately adjacent to Lime Street Station, Liverpool. The works main entrance is only yards away from one of the goods and passenger gates at the terminal. At five minutes to eight one morning, as our employees were hurrying in to work, the time-keeper was startled to see a sailor, carrying full kit, stroll in and head for the main stairs.

The time-keeper went across to the sailor and asked: "What do you want? Are you looking for somebody?"

The matelot put down his kit bag, stared frostily at the time-keeper and replied: "If it's of any interest to you, chum, I'm going to get myself a cup of tea before my train moves out. Now, where's the buffet in this —— joint?"

(FROM MR. J. B. DRURY
TIME OFFICE, CITY FACTORY)

Our maintenance men were puzzled. Each time the customer reported a fault on a particular telephone linked to a new exchange, a man was sent across to check the instrument and wiring. Each time he arrived, the repair man carried out a check and everything functioned splendidly. It began to grow monotonous—fault report, man sent, no fault to be found.

Then somebody noticed that the reports kept coming in at about the same time every few days. Next time a fault was due to develop, a maintenance man stood by in the customer's office and

the "mystery" was soon solved. It happened during a periodic lull in the normally busy routine of the office life.

One of the typists came in with a pair of wet nylons, placed the telephone on a nearby window ledge, draped her stockings over the taut telephone cord and left them to dry.

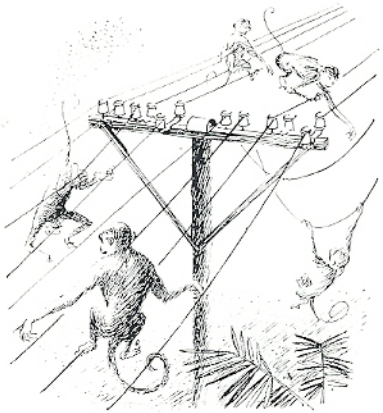
Before our men could reach the premises the instrument was back to normal. Office washing has now ceased, we understand.

(FROM "ST. BRUNO",
NAME AND DEPARTMENT SUPPLIED)

* * *

Tales of rats gnawing through cables will be familiar to many people. But did you know that in East Africa our telecommunications engineers have had more than a little bother with monkeys, giraffes and even elephants?

Glistening new copper wire on overhead lines



frequently attracts the monkey population, large numbers of which swing on the wire and break it down. It has been found advisable to install old wire, which is far less noticeable. Giraffes travelling at high speed can overturn three spans of wiring on the telegraph poles. All new overhead lines in giraffe country have to exceed the height of the animals.

Telegraph posts in the Tsavo Game Reserve are often used by elephants as scratching posts, a practice which disturbs the transmission lines—even if the posts themselves can withstand the strain.

(FROM AN OFFICIAL PUBLICATION)

* * *

Surprising, isn't it, how printed forms mislead even the best of us? A couple of years ago, two employees provided first-class examples of mental aberrations (there can be no other explanation) when faced with simple printed questions.

One person, probably the holder of a number of academic qualifications, was filling in a form which demanded: "Certificates obtained". His answer: "Two—birth and marriage".

The other employee may possibly blame handwriting for the howler that appeared on his printed form . . . but then again, it might have been the truth! In the space for the reply to a query concerning "previous tuition" the answer supplied read "Private torture only".

(FROM W.A.T., STROWGER WORKS, FULL NAME AND DEPARTMENT NUMBER SUPPLIED).

The A.T. & E. "regulars" were walking towards Strowger Works one morning. The girl who had been on the tram with them was now walking along just in front of them. "Hello, there," said one friendly soul, "I hadn't noticed you on our tram before. Which department are you in?"

"I'm in the Plating Shop," the girl replied, "but I've been there only two days."

"Well, you're taking the long way round to the Plating Shop," said the regular, "I'll show you a short cut."

The girl was soon inside Department 08/09

and her guide went on his way. Some time later, however, the girl—looking very worried—stopped an overalled figure and asked: "This *is* the Plating Shop, isn't it? You see, I've forgotten where I should be working. I joined Meccano only a couple of days ago."

(MR. J. QUADRIO, MILTON ROAD GATE, STROWGER WORKS)

* * *

Contributions to Fancy That *are invited. Your amusing anecdotes—or even ideas for personal, human stories—similar to those above should have a definite Company angle to them.* Tone *will pay a guinea for each item accepted and published.*

They puzzle their workmates

Still *more* TWIN LINKS

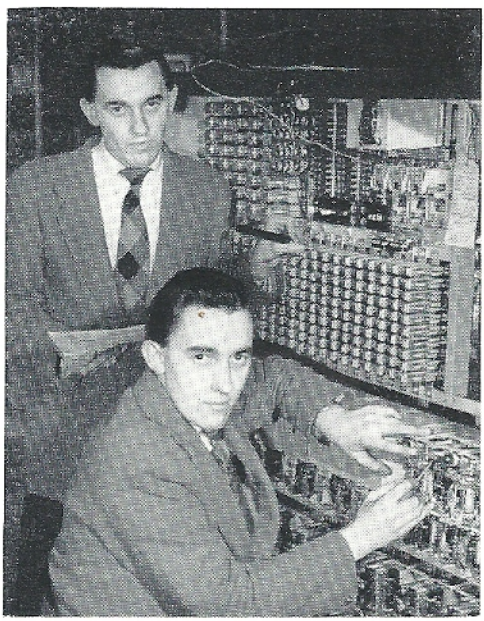
Remember our cover picture of the Fitzgerald twins last summer . . . the " inseparable " twins as they were called in Department 93? Well, there was something about twins working together which sparked off quite a lot of interest so we've been looking around our organisation and found more of these fascinating twosomes. One link we found they all have in common—that of identity problems. Even though colleagues may sometimes have known them for years they still cannot tell them apart.

One person who has no trouble in identifying the youthful Maloney twins is their father, who works in Department 97, but that doesn't go for other members of our organisation. Kathleen is a messenger for Merchandise Warehouse, which Maureen, who is a messenger for Department 669 (Engineers), often has to visit in the course of her duties. This has often led to complications, which the twins, with impish high spirits, enjoy.

Identity problems, too, trouble immediate colleagues of brunette twins Wendy and Pamela Hughes. Wendy is a clerk in Department 669 (Engineers) and Pam is a Purchasing Department filing clerk. They both have the same recreational hobbies—piano playing, swimming and dancing.

And, after two years with the Company, Wendy answers as happily to the name of " Pam " as Pam does to " Wendy." They say it's easier than endless explanations.

Now we turn to male twins who think alike, look alike and share the same ambition. Functioneers Norman and Bill Richardson have each found it helps a lot to have a twin with the same aim in life—to be an engineer. It's easier to study when you share the same handbooks. Bill (he works in Department 34) was disappointed at the age of 11 when he failed to pass the entrance examination which sent his brother on to a high school. He felt that his own secondary modern school education might handicap his chances of becoming an



SAME AMBITION *Norman and Bill Richardson share the one ambition—to become engineers*

DIFFERENT DRESSES *as a rule but Marion and Edith Smitton baffle even their relatives with their similarity*

Wendy and Pamela Hughes (left) pictured with the Maloney twins, Kathleen and Maureen

engineer. But he studied hard and it is now Norman (Department 24, Inspection) who confesses he has trouble in keeping up with Bill. They both do the same work—testing new equipment. Their aim is to gain the City and Guilds (Engineering) Certificate at the same examination.

At our Stopgate Lane factory, Margaret and Christine Shacklock have worked side by side on the assembly bench for seven years. Because they're twins they share the jokes that only twins know, such as " Well, I'm fifteen minutes older, so naturally I'm a bit taller than you." And they share everything else, too, including hobbies, clothes and friends.

Identical twins who baffle even their relatives are 24-year-old Marion and Edith Smitton, from our City Factory. Marion has been a Despatch Department typist for three years, but Edith joined the Company only a few weeks ago as a records clerk. They don't dress alike, but nevertheless, Edith is very often mistaken for Marion by even her sister's future husband !

Recognise her ?

Yes, it's our Spring cover-girl, nineteen-year-old Joan Smith. A comparative newcomer to the organisation, Joan has been in Department 25 at Strowger Works for about twelve months

Radio Transmission Expert

Air Vice-Marshal Oswyn George William Gifford Lywood, C.B., C.B.E., L.M., whose death occurred at the age of 61, at his home at Woodlands, near Sevenoaks, on February 3rd, had, in addition to his brilliant service career, made outstanding contributions to the British telecommunications industry.

Air Vice-Marshal Lywood became a director of A.T. & E. on his retirement from the R.A.F. in 1946. His senior appointments during the last war included those of Director of Signals at the Air Ministry and, from 1942 until his retirement, Air Officer Commanding No. 26 Group R.A.F.

Until ill-health forced him to resign from the A.T. & E. board in 1955, he devoted himself energetically to the Company's activities particularly in the radio transmission field. After his resignation, he remained a valued consultant and continued as chairman of A.T. & E. (Bridgnorth) Ltd. till his death. His original association with the group was as managing director of British Telecommunications Research Ltd. at Taplow.

He was a pilot in the Royal Flying Corps, officer in charge of the B.E.F.'s first wireless telegraphy signals unit, an air display organiser, Indian service veteran, inventor, and a valued counsellor and an executive officer associated with both Fighter and Coastal Commands of the Royal Air Force.

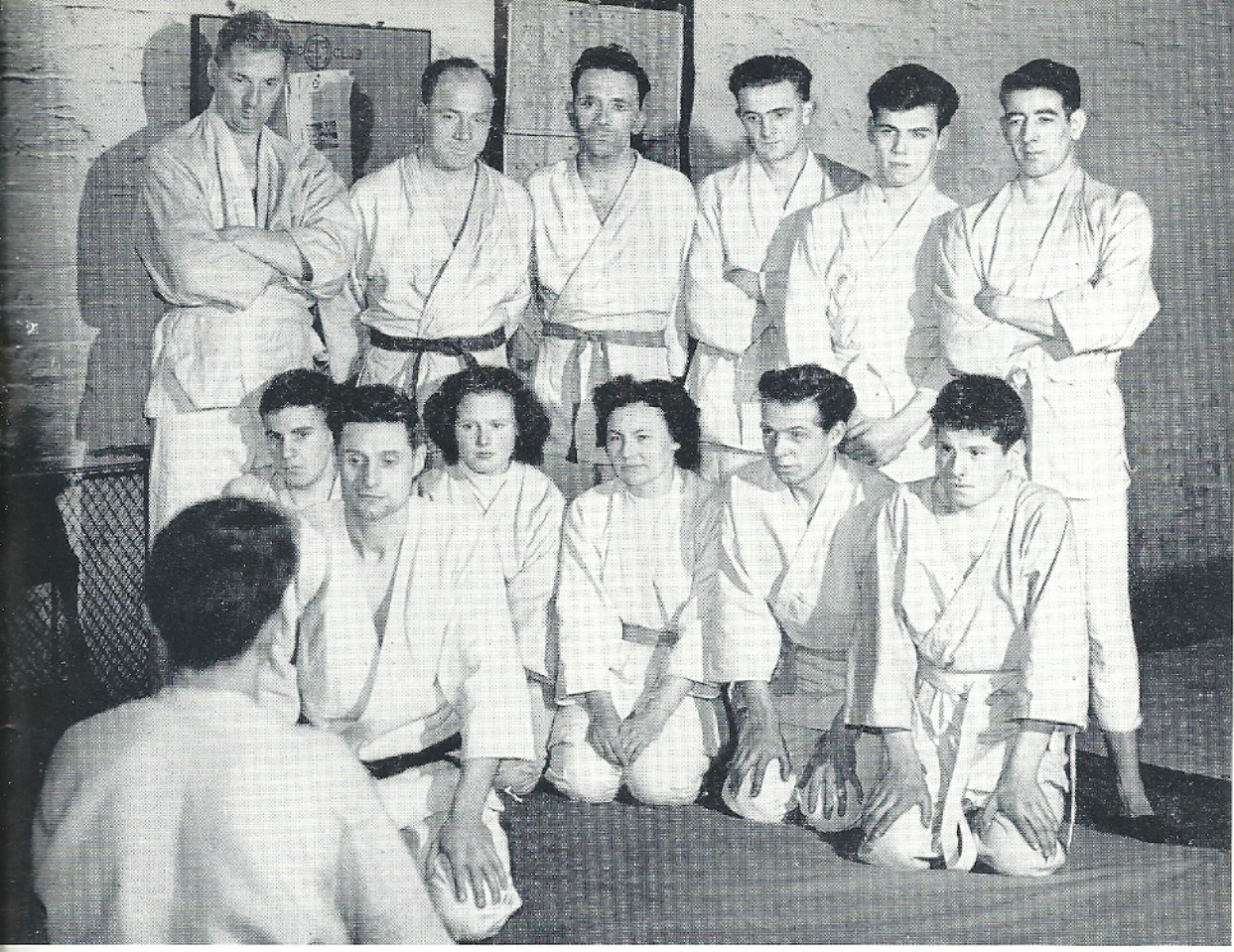
SAFETY FIGURES ISSUED

Although employees are becoming increasingly safety conscious, it is a strange fact that, for the first time in nine years, A.T. & E.'s accident frequency rate showed an increase last year. This is revealed in the recently issued annual report of our Accident Prevention Advisory Committee.

The upward trend was apparently general throughout industry in 1956, but it is encouraging to note that our frequency rate is still well below the average in the electrical engineering industry as a whole. Our rate is also still the lowest in the much narrower category, "telecommunication equipment engineers or manufacturers".

Last year, we had a total of 52 accidents causing loss of time, 42 of which were over three days and consequently notifiable. Total man hours lost was 7,365, the equivalent of 167 workers being off for a week. Nearly 16 per cent of industrial accidents, on a national scale, are caused by "power-driven machinery in motion". Not one of our reportable accidents fell into this category and this is an excellent record. Nine meetings of of the Accident Prevention Advisory Committee were held in 1956 and 90 major and minor recommendations were made. Our National Industrial Safety Week efforts were adjudged the best to date.

Award winners (with their department numbers in parentheses) in the "Spot the Hazards" competition during the above safety week were: James N. Bold (94), R. F. Clarke (678), Leslie Thomas (94), Dorothy Ambrose (921), Walter Purcell (52), Robert King (20), Henry Shaw (01), John Gornall (473), Eunice Bellis (94). Aubrey Lloyd, Department 23, won the competition for the best safety recommendation.



2,000-YEAR-OLD SPORT *Judo originated in Sumatra 2,000 years ago. These twentieth-century enthusiasts from the A.T.M. Club gather to receive instruction in a Liverpool church hall*

The gentle art of JUDO

It all looks so easy . . .

There are something like six million " votaries " of the art of judo scattered throughout the world. Included in that very impressive total are some sixty enthusiasts from a mixed club run by Automatic Telephone & Electric Co. Ltd. The club meets twice a week in a most unlikely place—a church hall in Green Lane, Old Swan, the centre of an old-established Liverpool residential district.

The A.T.M. Judo Club was started fourteen years ago by a life-long devotee of the sport, Mr. Jack Hayes, one of the veteran members of Department 01 at Strowger Works, who is at present club manager and secretary. Mr. Hayes gained his own introduction to judo as a young cadet in the army nearly fifty years ago. He was fascinated by the prowess of a Japanese instructor who was taking a class of civil and military policemen. It all looked so easy, and the advantages weren't always with the muscle-bound types !

It was only when Mr. Hayes delved deeper into this 2,000-year-old sport, a product of Sumatra, that he realised it wasn't as easy as it looked. " If I lived to be 100 I'd never be able to learn all the

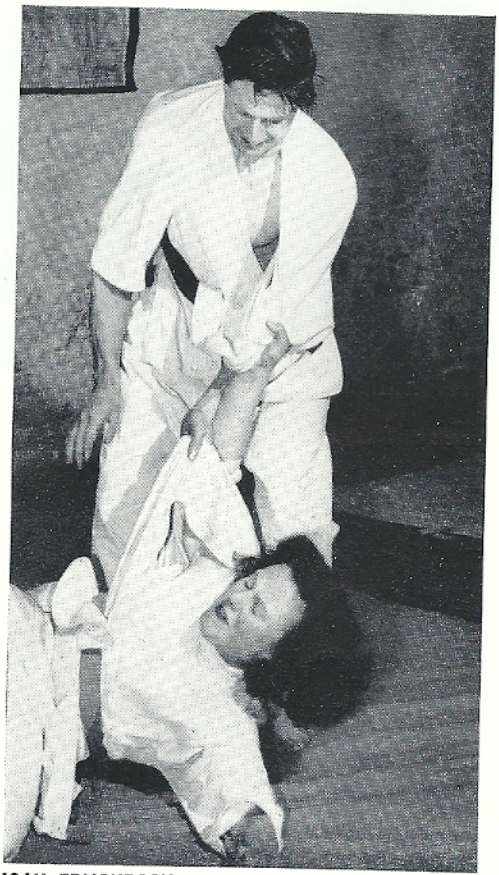
ALF LEIGH, *Brown Belt holder and chief instructor demonstrates an advanced course strangle-hold*

subtleties of the game," he says. We asked Mr. Hayes to tell us just a few of the facts he has acquired and to sketch out the history of the club he formed.

Judo, we were told, is the name now commonly given to jiu-jitsu, which has long been practised by both sexes in Japan. It is sometimes translated as " to conquer by yielding " or " the art or principle of giving way ". Primary objective for participants is to stay relaxed, mentally alert and absolutely even-tempered. Your " opponent " or " partner " is used as a weapon against himself and emphasis at all times is laid on body balance and the ability to take a fall. A good judo exponent knows how to land on a concrete floor as safely as on a canvas-covered coconut practice mat.

The A.T.M. Club exists to give tuition and practice to all phases of the sport and it is affiliated to Budokwai, the Japanese governing body, and the British Judo Association, the controlling organisation over here. Long before he started the works club, however, Mr. Hayes inaugurated the first club in Lancashire.

The A.T.M.'s chief instructor is Mr. Alf Leigh, of Department 132, Strowger Works. Alf is graded as a Brown Belt at the moment, but he has been recommended for a Black Belt—and that's just about top honours in the sport for most people outside Japan. By the way, Alf also holds the George Medal for gallantry. When it was awarded him at the age of 17, he was then the youngest holder of the G.M. in the country.



JOAN EDMONDSON, *women's senior grader, takes falls with ease—despite her pained expression*

SPORTS DAY *exhibitions are now staged regularly by the works club—and very popular they prove. The club will give a demonstration at the next sports day on June 29th*

Entrance fee to our Judo Club is ten shillings for those over 18 and half that amount for juniors.

Club president is Mr. F. J. Vanner, and the club challenge trophy bears his name.

The reader will have gathered already that a participant's skill in this sport is measured by the colour of the sash, or belt, worn around the waist of a two-piece, heavy-duty outfit. Periodical grading examinations, conducted by visiting experts, enable judo club members to acquire first their white belt, then their yellow, orange, green, blue, brown and black belts (in that order). The works club prefer would-be members to be over the age of 16. Women enjoy equal advantages (both in and out of contests) with the men, and there are currently about half a dozen female members, the senior grader being Joan Edmondson, a Green Belt.

Is it dangerous? In the long history of the A.T.M. Club there has never been an injury, and, judging from the physical appearance of both male and female enthusiasts, it is a splendid way to keep in the peak of condition and really appreciate the benefits of self-discipline. A fair degree of skill also ensures plenty of confidence in the event of an outside attack. More than one would-be assailant who has selected a judo exponent as his target has been tamed smartly with a quick hip, leg or arm throw and held helplessly to await the arrival of the police.

The British Judo Association is anxious that students should make sure that instructors claiming the internationally-recognised grades are really entitled to them. Some folk were prepared to cash in on the popularity of judo and, only then, could it become dangerous. After all, it would hardly do for the Teddy Boys and roughnecks to get hold of the advanced-course sacrifice throw (Sutemi) or the refinements of strangulation (Shime-Waza).

Many members of the organisation will have watched with interest the contests staged by members of A.T.M. Judo Club during the Sports and Social Organisation's annual gala day, and perhaps they are baffled by the lack of rules. Briefly, a contest, which starts with the ceremonial bow, lasts for five minutes or until one of the contestants scores two points. Throws, locks and holds each count one point.

The following actions are among those barred: throwing the opponent on his head; twisting and bending fingers, toes, jaw, head or spine; kidney squeezes; pinching and nerve pressing blows. The true exponent would be horrified at the use of such brutal methods for his instructor is always instilling into him that judo is "the way of gentleness."

Credits

The picture of Mr. C. O. Boyse, on the inside front cover, was taken by Elliott & Fry Ltd of London.

Photographs on page four and the top of page five, together with those on page 18 and the top of page 20, were supplied by courtesy of Picture Post Library, London.

Published by AUTOMATIC TELEPHONE & ELECTRIC CO LTD · STROWGER WORKS · LIVERPOOL 7
and printed by C. TINLING & CO LTD · LIVERPOOL · LONDON AND PRESCOT