

CHELMSFORD

NEWS AND VIEWS

Marconi
Radar Systems

ISSUE 6

JUNE 1983

Don't miss the big day of our year



SAT. JUNE 25th

AIRPORT

RADAR

WINNERS

BY the time this edition of News and Views goes to press, the Marconi Radar open day, 1983, will be getting very close.

Great efforts have been made by all involved in the event, and it is hoped that as many employees as possible will take the opportunity of showing their families what our site is like and just what we do.

A description of the proposed route for open day, plus a route map, is included on the centre pages of the special open day enclosure which is part of this issue of News and Views.

Part of the open day event will be free refreshments at the snack bar by the side of E Building, and a souvenir shop, in the bottom end of E Building, where special Marconi Radar souvenirs will be on sale, at very reasonable prices. The employee shop will also be open for all who are interested.

By the way, we are still looking for volunteers to help on open day. All who volunteer will get paid, in accordance with their normal conditions of service, and a free meal will be provided. All applications to Brian Edwards, Personnel Department, B Building, Telephone extension 2101.

People coming to see us at Writtle Road will be able to see just what a complex organisation the Company is, with an exceptionally long list of separate departments, each employing personnel with widely varying skills.

There are operators for the complex and sometimes computer controlled machines in the machine shop; trained toolmakers in the toolroom, where jigs and similar tools are made; sheetmetal specialists in the sheetmetal shop; the skilled painters in the paint shop; the welding specialists; our trained wiremen and assemblers; the experienced test and inspection people; the stores personnel; the packaging department, without whose efforts very little can leave site; the specialist package designers; the purchasing department — we couldn't exist without the very considerable range of bought out goods; the systems areas, where all the various equipments are combined into effective systems; our highly skilled designers, draughtsmen, women and tracers; the research organisation; our field service and technical services group who install and help to maintain our equipment in the field; the installation design specialists; spares and repairs department; our sales and marketing departments; the personnel and training people; the lads who move everything around the site; Jimmy Eaton's people who try to provide us all with somewhere to work; technical information department, providing handbooks and similar aids; transport department, without whose efforts we couldn't deliver anything; the site security gang; post department — very essential...; the library ladies; the site electricians and maintenance lads... we'd be cold and dark without their efforts; the ladies who provision and clean the tea and coffee machines... definitely essential...; quality department, safety; fibreglass department; the standards library.

There are even more... accounts — we wouldn't get paid without them... post design services; repair section; the software specialists; the wordplex section; the telephone ladies; the little department that provides us with labels; the environmental test specialists; the air conditioning and cooling boys; the canteen staff; the printroom — how could we operate without them?; establishments department; all the secretaries... and last, but not I hope least, publicity.

I have tried hard to include everyone. In case I haven't, let me assure them that it was purely accidental...

So it can be seen just what a tremendous number of specialist departments are required to keep the good ship Marconi Radar on its course. All large organisations such as ours consist of a great number of related and intermeshing departments, all important to the health and well being of the whole. The whole hearted efforts of all personnel are essential to maintain the Company in a viable and competitive condition.



AN IMPORTANT Middle-East air traffic control contract has been won by Marconi Radar. The order, which includes our S511 airfield surveillance radar, is for radar and associated equipment for a new airport in Jordan.

The order was gained after intensive effort by our sales, systems and associated departments, against stiff opposition from other manufacturers.

The new equipment is for installation at the Queen Alia Airport in Jordan. Among the items to be supplied are the S511, S3021 displays, Locus 16 computers and a simulation system. Also to be provided are a stand-by power source for the radar head, a S3030 head monitor trolley complete with display, plot validation and decode units and a secondary surveillance system.

Competitive

The S511 is the first of our new range of air traffic control equipments. It is a modern, innovative and competitively priced unit. Several orders have now been gained for units from the new

range, which includes the 'Astrid' display system, a fully autonomous unit incorporating a Locus 16 computer.

S511 is a dual transmitter system, two transmitters being pretty well essential for air traffic control purposes. The signal processor is the S7113, a very advanced piece of equipment. A similar S511 system to that sold to Jordan has been on test and demonstration at the Rivenhall test site for the past year or so. (See picture). All the S511 equipment (except the antenna, of course!) is housed in the cabin at the base of the tower.

Such a set up can be of great help for cases when a quick installation is required. All that is required is a foundation for the tower, a hard-standing for the cabin, plus power and cable routes, and bingo! the whole lot

can go in in a matter of days.

S511 itself incorporates many novel and innovative features. The antenna reflector is constructed from a carbon fibre composite material and is very light, strong and weather resistant. The transmitter-receiver uses a solid-state type modulator which is extremely stable in operation. The modulator uses eight individually fused modules in parallel, enabling fail-safe operation.

The S7113 signal processor uses a combination of up-to-the-minute techniques to supply excellent target detection under all conditions, including those of bad weather and clutter effects.

The sale of the S511 equipment to Jordan is the third sale of similar equipment in recent months, all units developed as part of the S511 range.

A new ideas and improvement scheme

"A new Ideas and Improvements Scheme? Did we ever have an old one?" is likely to be a common and understandable reaction to the above headline. The fact is, a recent Writtle Road Works survey revealed that very few people knew about the existing Suggestion Scheme or how it operated.

Poor publicity was just one of the

criticisms levelled at the old Scheme. Meagre rewards and slow investigation times were others. You see, the problem in the past has been that all WRW ideas have had to go New Street for evaluation. Not any more.

Writtle Road now has its own Committee consisting of Derek Watkins (Chairman), Ted Overy, Alan Thoroughgood, Bob Haste and Ted Jeffrey to oversee the scheme, an Ideas and Improvements Secretary in Waveney Turner of Personnel to handle the

administrative side and a network of investigators to evaluate your ideas.

The new scheme will ensure that your ideas are rapidly and thoroughly evaluated. You will be kept up to date regarding the progress of your ideas, and realistic awards will be made for those ideas the Company can adopt.

So just what sort of ideas are required? The list is endless. Ideas relating to improved electronic and mechanical designs; improvements in efficiency and quality; cost saving

ideas; others which cut down on red tape and paperwork; even ideas for new methods, products and systems. We want them all. Remember, improvements can relate to any part of the site.

But why has such a comprehensive Ideas and Improvements Scheme been devised? The Company benefits are obvious — improved quality, reduced costs, better efficiency. All help to reinforce our market position.

The benefits to those of you who make suggestions are not so immediately obvious. You get financial reward certainly, but the scheme also offers you a real chance to say how things get done and the satisfaction of seeing your ideas in action.

So start thinking now about the improvements you could make. Further details of how to submit your ideas will become available within the next week or so.

'OBOE' RADAR ON THE OFFENSIVE!

PART II

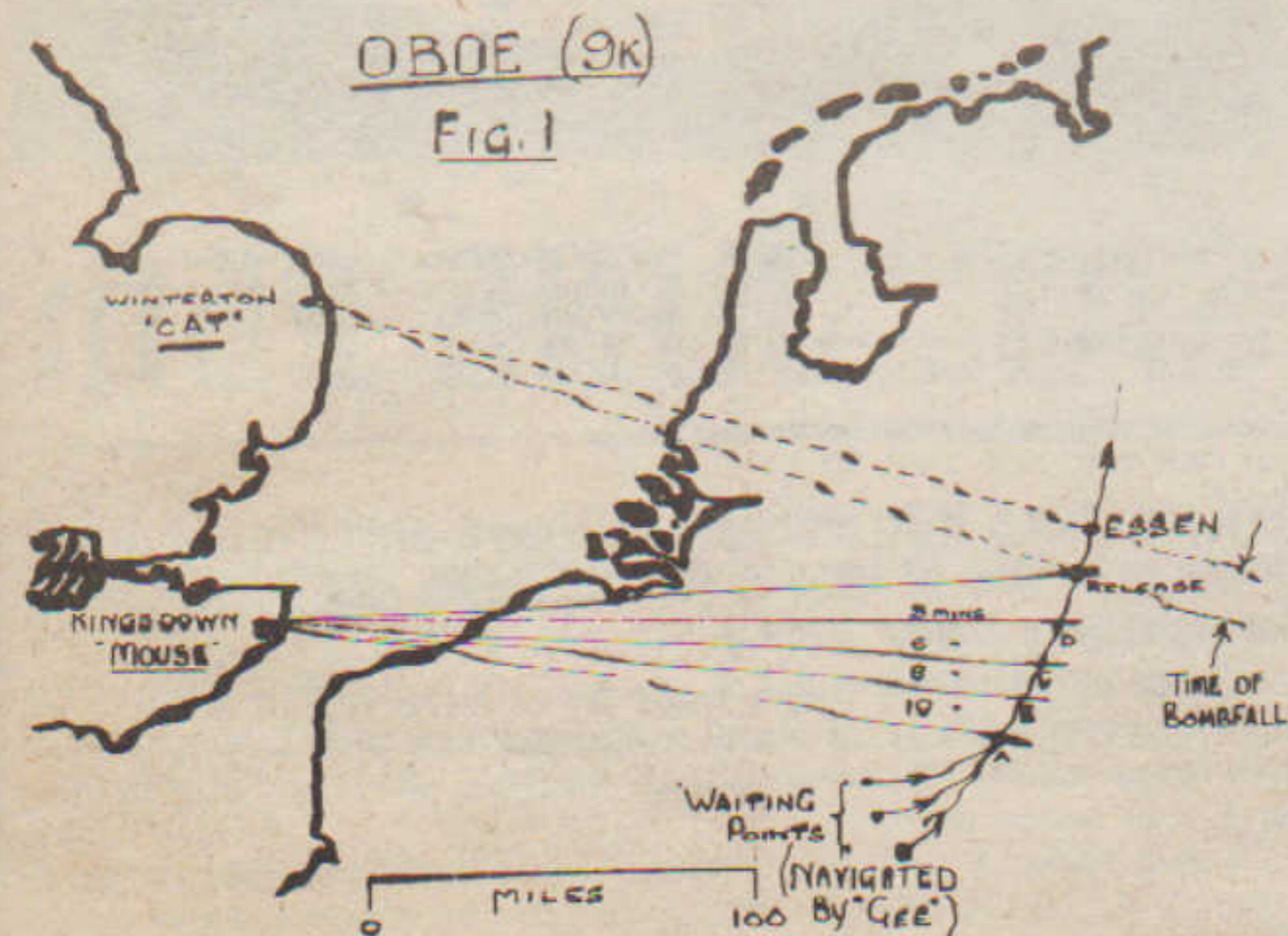
BY BRUCE NEALE

Along with 'Ultra' and 'Project Manhattan', Oboe was one of the best kept secrets of World War II. Even today, some forty years on, particular operational aspects of the system are still shrouded in mystery.

The inaccuracy of our all-weather bombing,

The Mosquito flies on a circular arc centred on the station at a radius equal to the target range, appearing stationary on the tube face, i.e. zero radial velocity.

The purpose of the CAT was to keep the returned pulse exactly in line with the target marker



especially at night, had been recognised for some time; something had to be done.

Oboe was the brain-child of Alec Reeves, the PCM wizard of Standard Telephones and Cables Ltd, who along with Frank Jones of TRE, developed an idea from the back of an envelope to a potent instrument of war. The basic principle of Oboe is really very simple, it was the inspired engineering and operational concept that was the key to its success.

HOW IT WORKS (See Fig. 1)

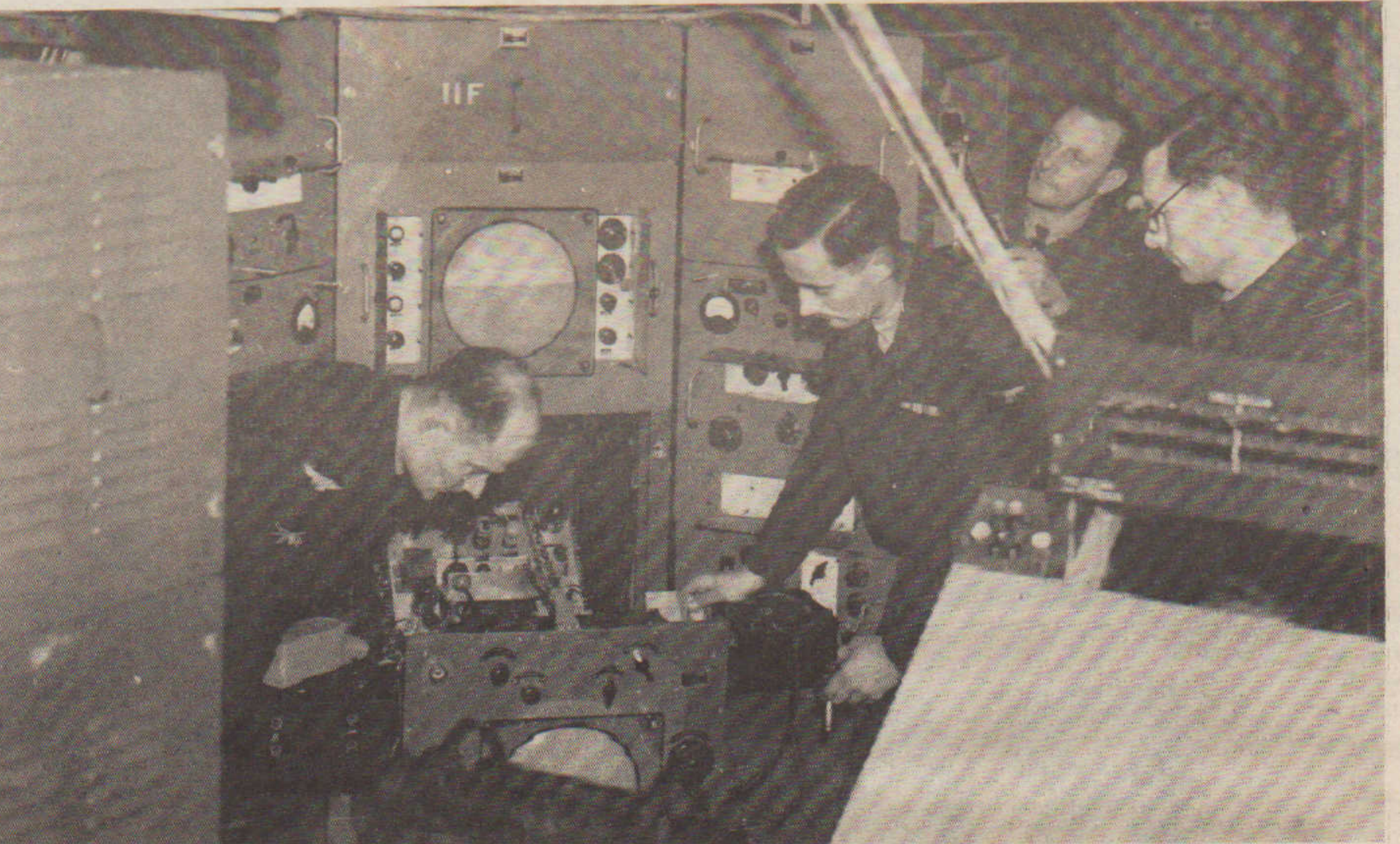
The range of a target, say the Krupps armaments works in Essen, measured from two widely spaced ground stations in the U.K., was derived from pre-war ordnance survey maps and aerial photographs to an accuracy of plus or minus 17 yards! A remarkable feat of cartography and intelligence. One ground station, code named "CAT", controlled the track of the marker aircraft (usually a Mosquito flying at 30,000 plus feet) by interrogating an on-board transponder not unlike SSR of today.

The returned pulse was displayed on a CRT with a delayed, magnified time-base (one mile filled the whole 12" screen). The precise range of the target from the CAT station was set up on the tube by a strobe marker.

the target range, dashes if it was greater. The dots and dashes merged into a continuous or 'equi-signal' note when the Mosquito range and target range coincided, i.e. it was precisely on track.

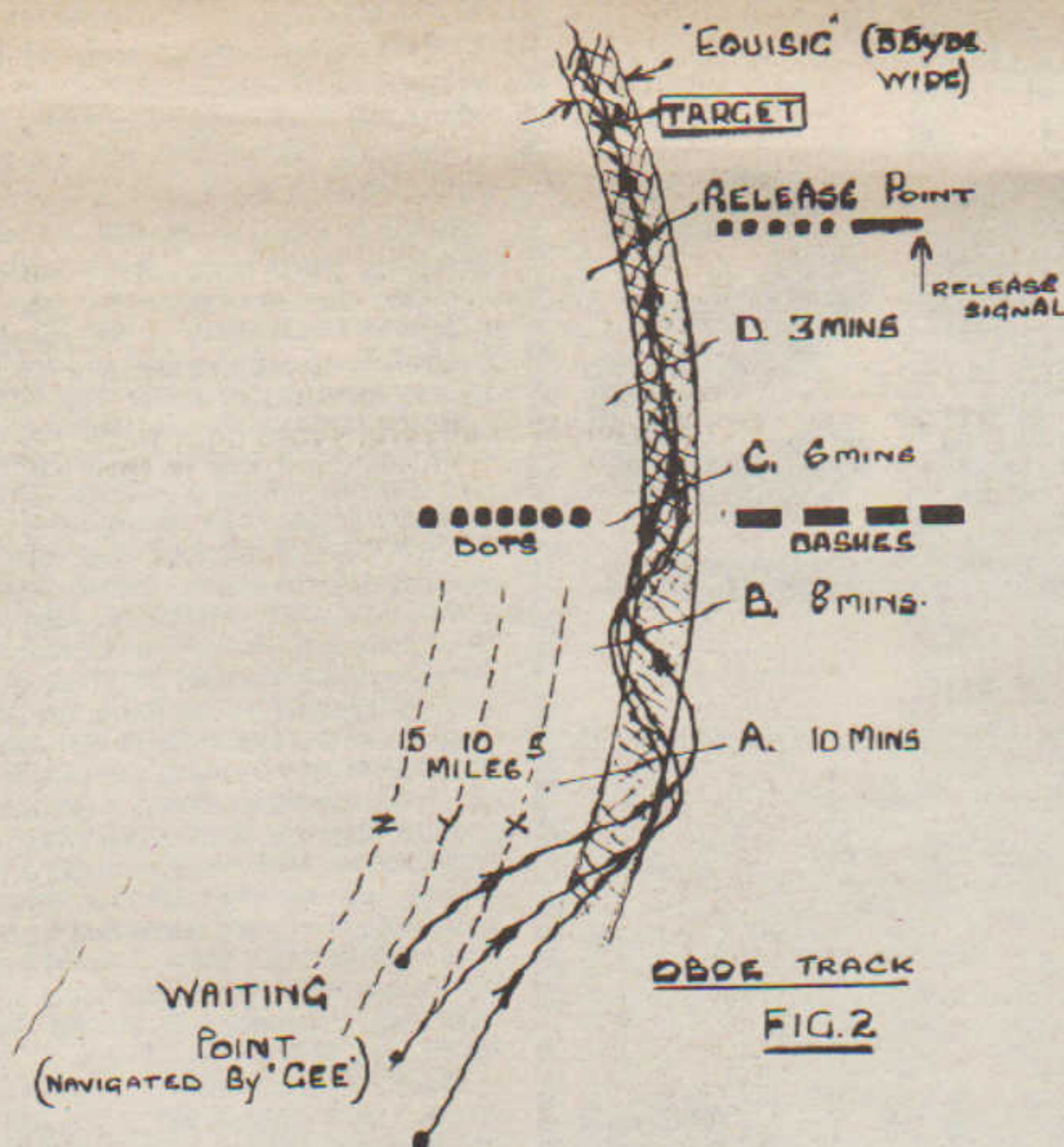
The dot/dash signal was transmitted automatically by width-modulation of the primary interrogating pulse.

The sensitivity of the system was such that a deviation of plus or minus 17 yards from the circular arc would cause either dashes or dots to be sent, thereby enabling the pilot to steer along an 'invisi-



OBOE Control Console — open for maintenance. Note: Long range CRT (upper), short range, magnified timebase (lower). Winterton IV 1943.

strobe by automatically signalling 'dots' or 'dashes'; dots if the Mosquito range was less than



ble' track some 35 yards wide in the sky above the target; there was no beam as such (See Fig. 2).

The other ground station code named MOUSE, signalled the Mosquito as it passed a number of 'milestones' along the arc until it reached the release point — the intersection of the Cat and Mouse ranges — when the bomb release signal (five dots and a dash) was given automatically. Like the Cat station, the target range was set by a strobe on a CRT with a delayed, magnified time base. Unlike the Cat,

the returned pulse moved along the trace as the Mosquito approached the target region.

The precise release point along the arc was influenced by many factors, eg., Time of bombfall, trail distance (a function of bomb ballistics and airspeed), meteorological data, the velocity and heading of the Mosquito just prior to release plus instrumental corrections (See Fig. 3).

These were taken into account by the Mouse computer (aptly named the Miestro!) the release point being continuously and automatically cor-

rected to ensure that the predicted impact point of the bomb (or Target Indicator) was within the target zone.

There were several Oboe stations (Type 9000) around the East and South Coast of England (from Cleadon in Durham to Sennen in Cornwall) any of which could be nominated to perform a Cat or Mouse function depending on the target location.

Early stations (Mk. I) used modified CHL equipment working on 200 MHz using pulse space modulation for signalling.

Later stations (Mk. III)

worked in S band and used pulse width modulation as already stated.

Early Oboe suffered from two limitations: (1) its range was limited to just beyond the Radar horizon, about 250 miles and each pair of ground stations could only handle one Mosquito every fifteen minutes.

The next issue of 'News and Views' will describe the ingenious way in which these limitations were overcome and the vital part Oboe played in the destruction of V1 and V2 supply dumps together with the support of the D Day landings.

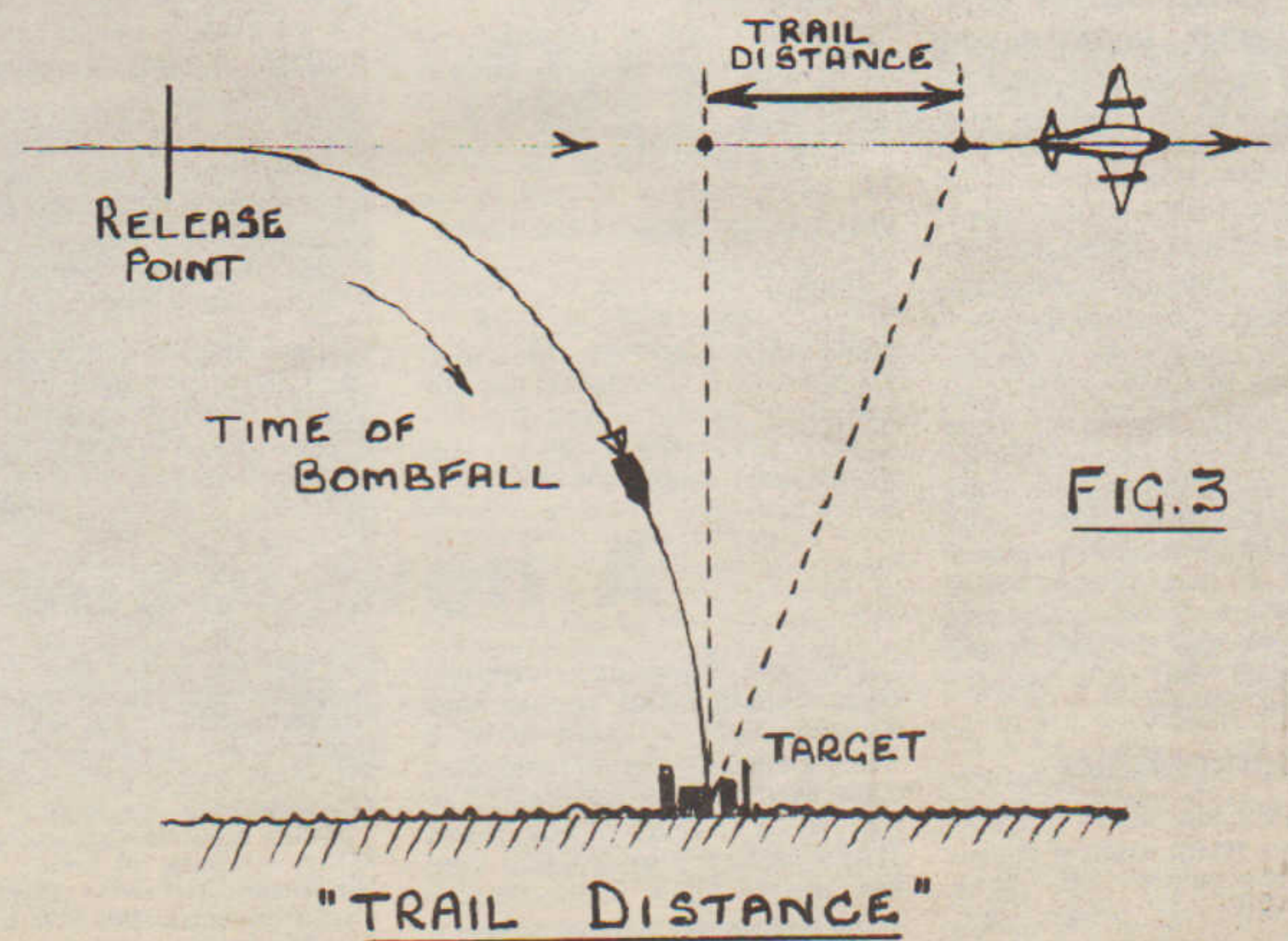
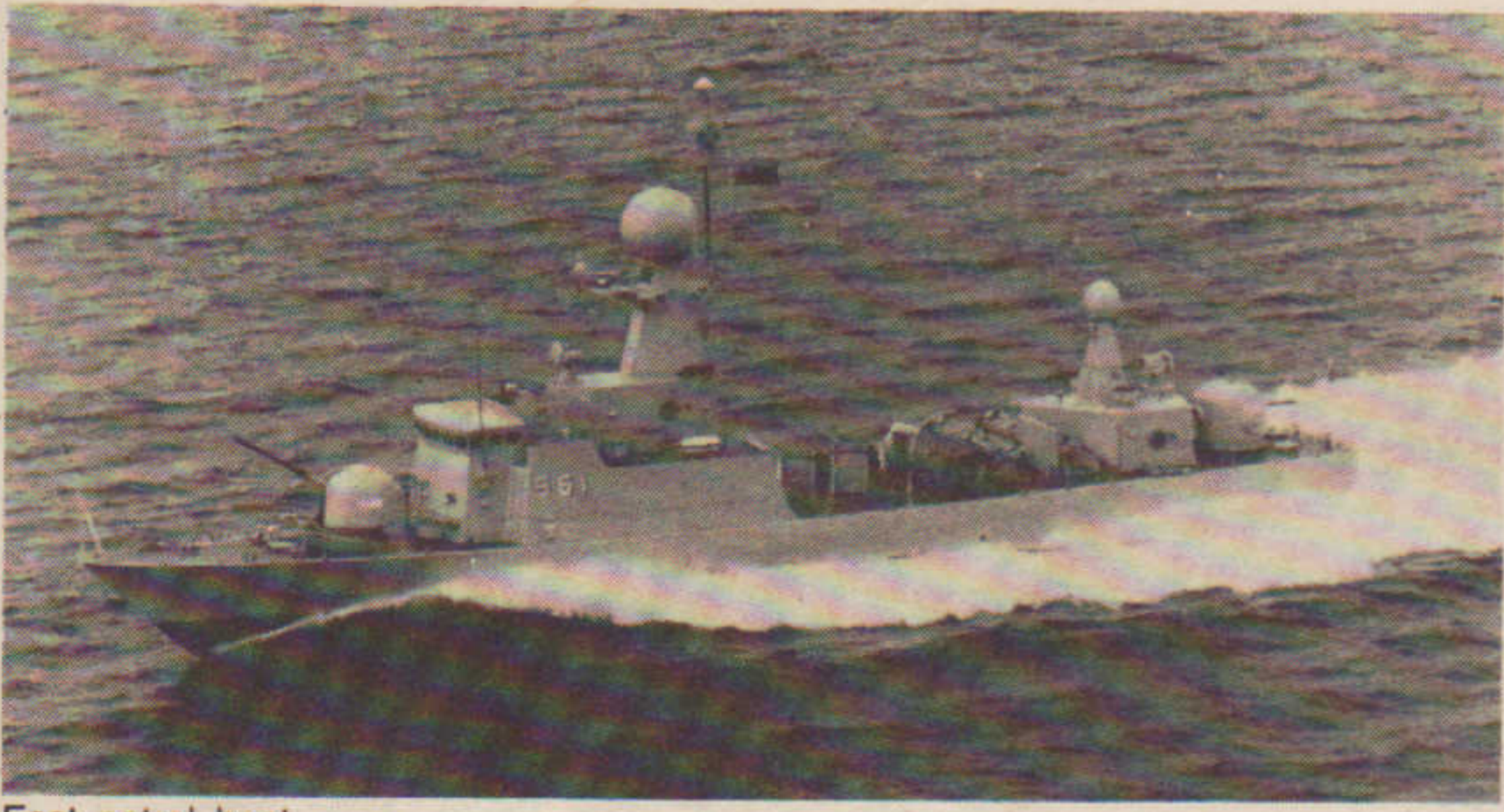
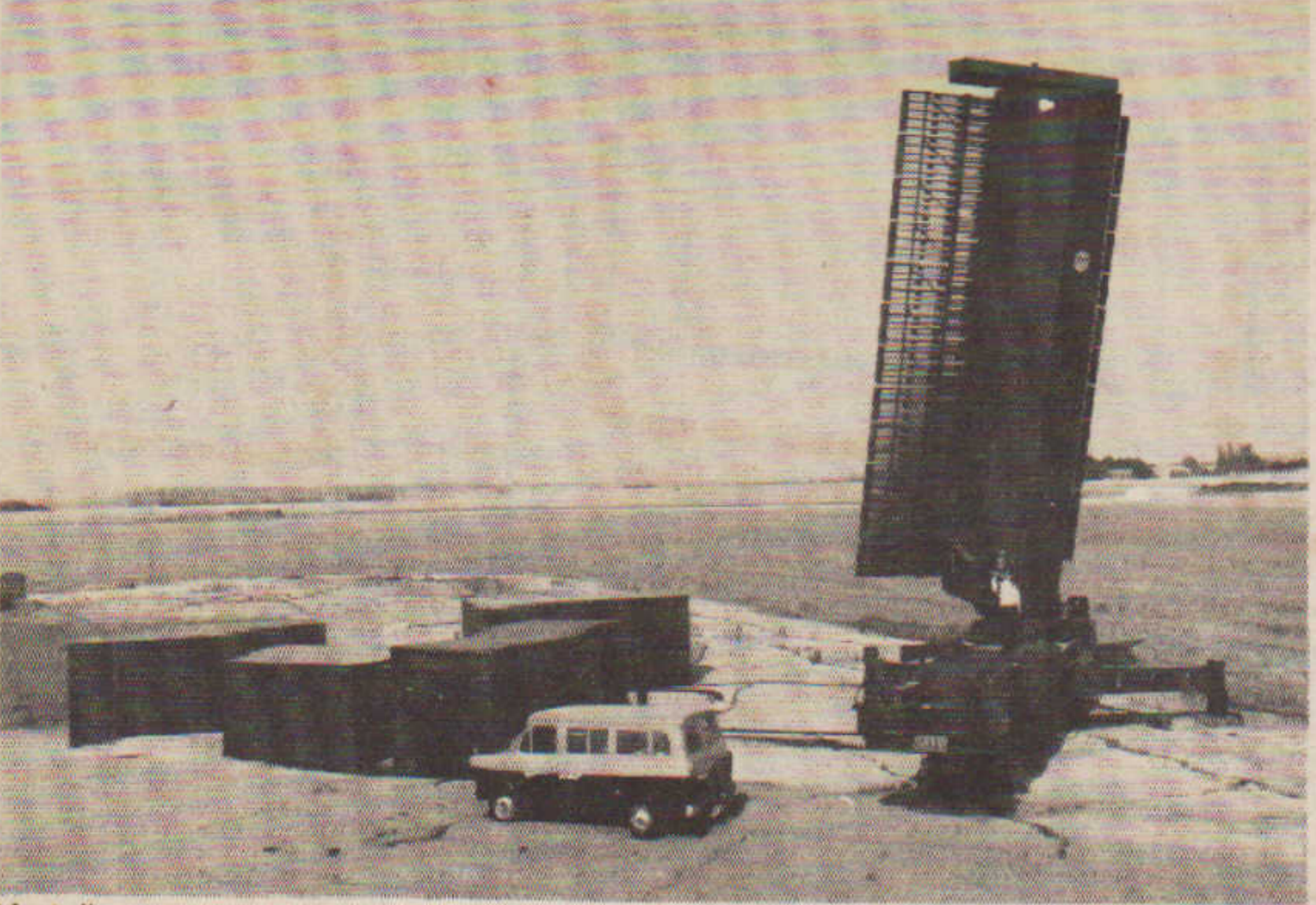


FIG. 3

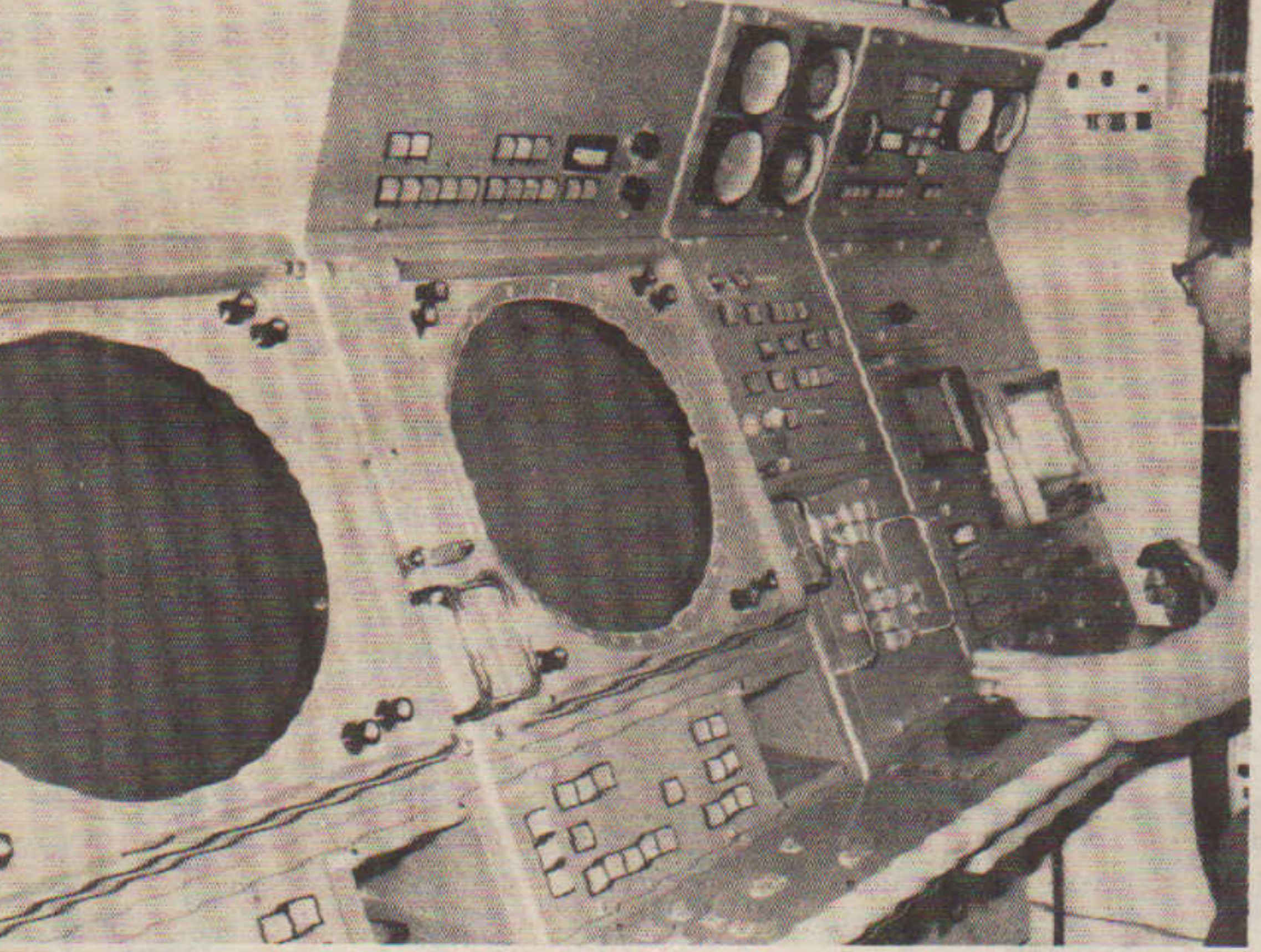
An Open Day souvenir A COMPLEX RANGE OF PRODUCTS



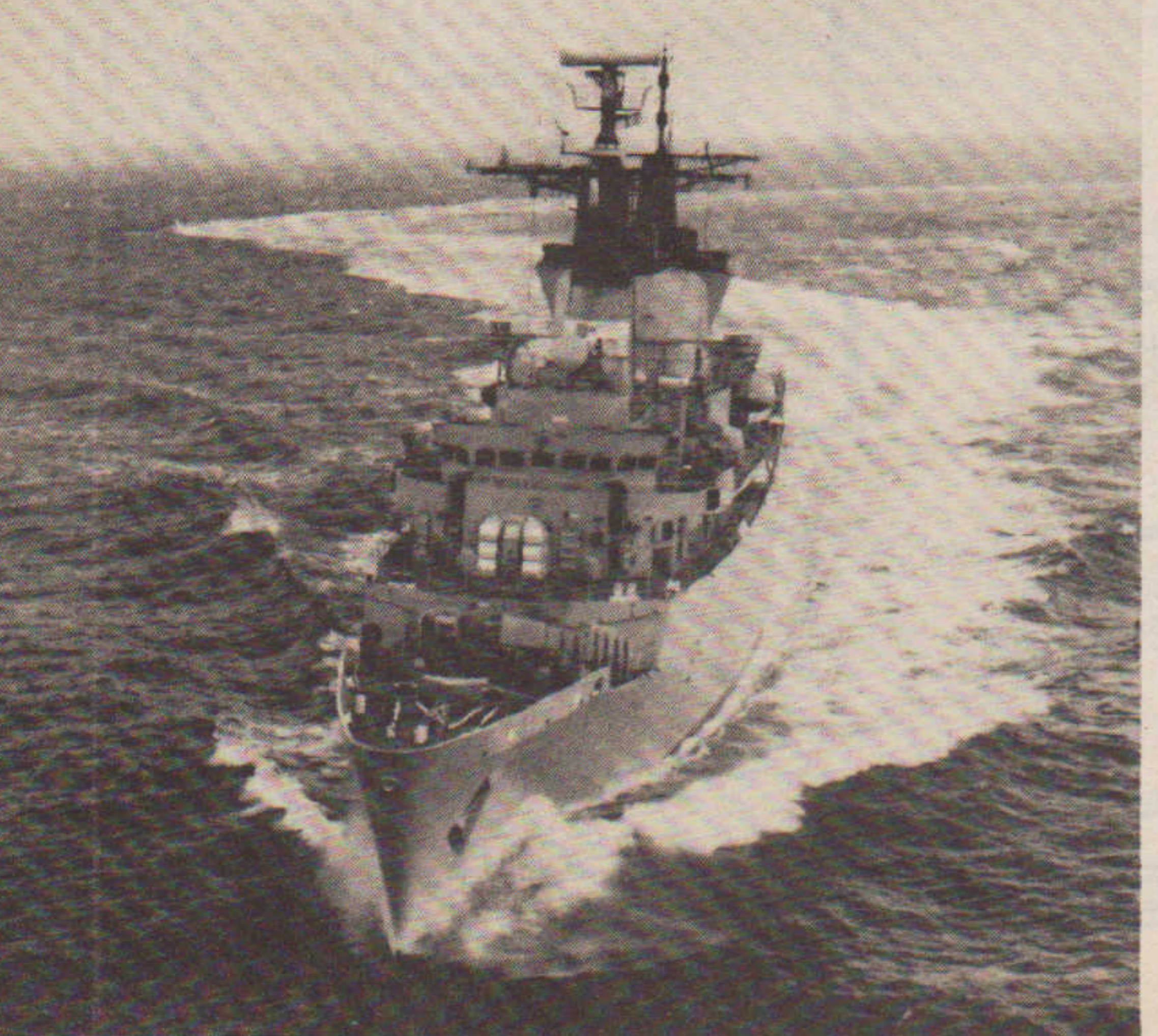
Fast patrol boat



Martello



FPB weapon control suite



HMS Broadsword

THE majority of us at Writtle Road, working happily away in comparatively small sections, doing specific tasks on what is probably a small part of the Company's total product range, are naturally very familiar with our own bits of hardware and software. But how many are fully aware of the whole range of products made by Marconi Radar Systems Limited?

The products produced at Writtle Road are probably well enough known ... although it is surprising how some of us are unaware of the complete breadth of the site's activities.

The full range of Marconi Radar's products is extremely complex. Land based defence radars, commencing with Martello — who can be unaware of Martello! Other land based radars such as the S600 series of mobiles, recently sold to the Ministry of Defence for an urgent requirement.

“ The new light-weight Seawolf system, gained after massive effort by all concerned; light-weight Sea Dart, enabling a large missile to be fitted into quite small ships. ”

Large naval radars; the big arrays to be seen on ships such as HMS Birmingham and HMS Bristol; smaller arrays — although only slightly smaller — like the 1022, using our squintless feed principle. GWS 25/Seawolf, used to great effect down in the Falklands; GWS 30/Sea Dart, also used in action in the South Atlantic.

The series of smaller naval radars, for the smaller ships, featuring nimble tracker radars and lightweight surveillance antennas. Our new S1800 series of radars, modern equipments building up from simple arrays to complex multi-reflector jobs ... although the word 'reflector' can be a misnomer, for planar array types do not strictly have reflectors. The S1800 series, by the way, features a novel and unique form of stabilisation.

MODERN

The new lightweight Seawolf system, gained after massive effort by all concerned; light-weight Sea Dart, enabling a large missile to be fitted into quite small ships.

Our air traffic control range, very modern, from the brand new S511 airfield surveillance radar to the much larger S513 terminal area radar. The

futuristic S1095 secondary surveillance antenna. Air traffic control display systems, like the exotically named Astrid system.

Our large and extremely complex air defence cabins, containing five or more display positions and a powerful computer system in a readily moveable format. Very large permanent installations such as the Scottish Air Traffic Control Centre at Prestwick, with forty or so of our Locus 16 computers.

“ Our 'Digilux' touch mask system, where the simple touch of a finger, breaking beams of invisible light, provides instant and programmable interface with the computer. ”

The small and 'flexible' Locus 16 is used in the majority of our systems nowadays, in air defence, naval and in air traffic control applications. We have great experience in computers. The Myriad range, of several years ago, was at one time the fastest computer in the world. (They weren't on wheels of course ... just very fast in operation!)

The rather peculiar looking electronic counter measures vehicle. (We in Publicity have been known to refer to it as the 'elephant's feeding bottle'! Look at the illustration and you'll understand why.)

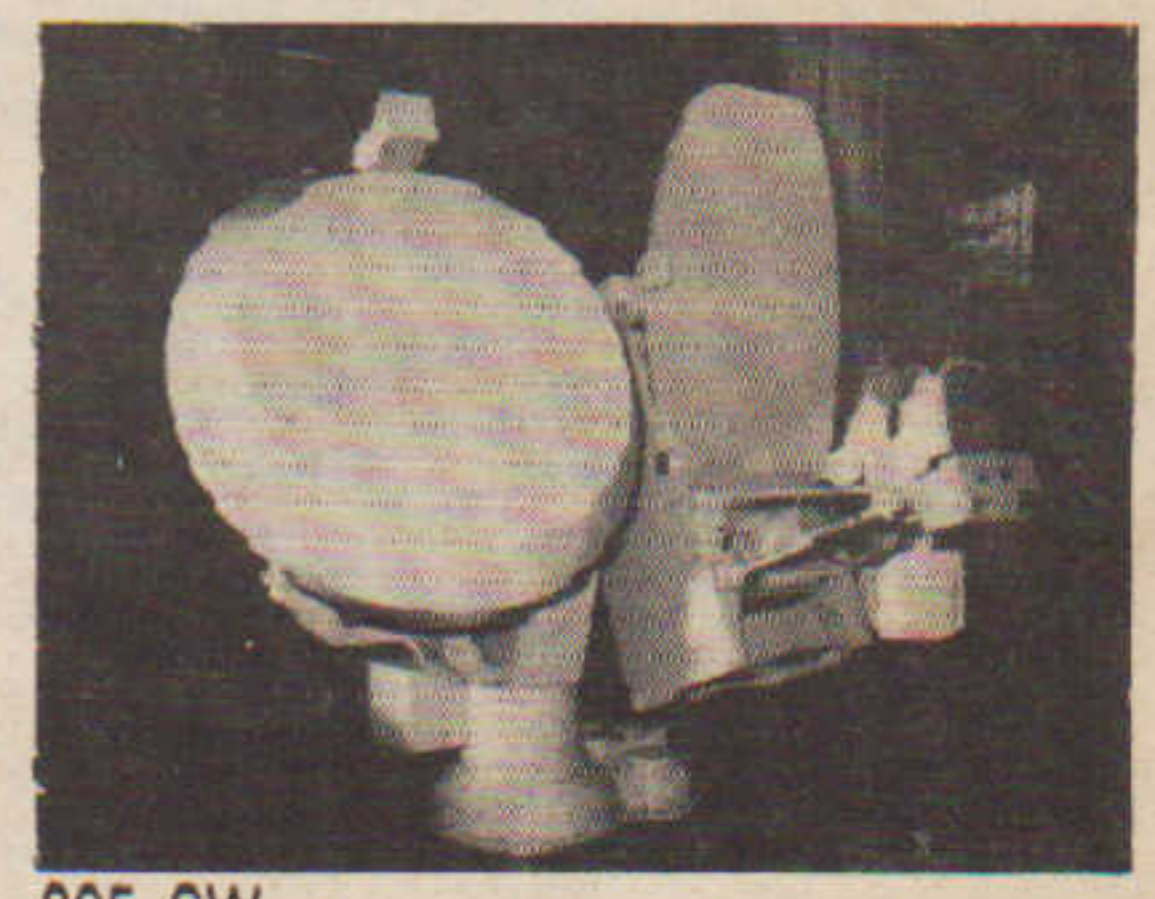
WARNING

Our 'Digilux' touch mask system, where the simple touch of a finger, breaking beams of invisible light, provides instant and programmable interface with the computer.

The Sea-Watch Racons, 'Racon' being a contraction of 'Radar Beacon'. These extremely useful devices act as warning indicators for sea hazards such as rocks and sandbanks, oil rigs and gas platforms. Racons operate in a somewhat similar fashion to secondary radars, appearing on standard ship's radar screens as easily identifiable coded responses.

The IVR-Met series of weather transmissometers, for measuring the density of fog and other weather hazards. IVR-Met is used alongside airport runways, for measuring landing visibility conditions, in motorway tunnels, to check the build up of dangerous fumes, on board ships and oil platforms, for accurate visibility measurement.

Another interesting product is TEPIGEN, our computer generated imagery system. TEPIGEN is a very clever way of producing fully computer controlled pictures on television type screens. It is used in CASSIM, the new marine simulator in Cardiff, where our



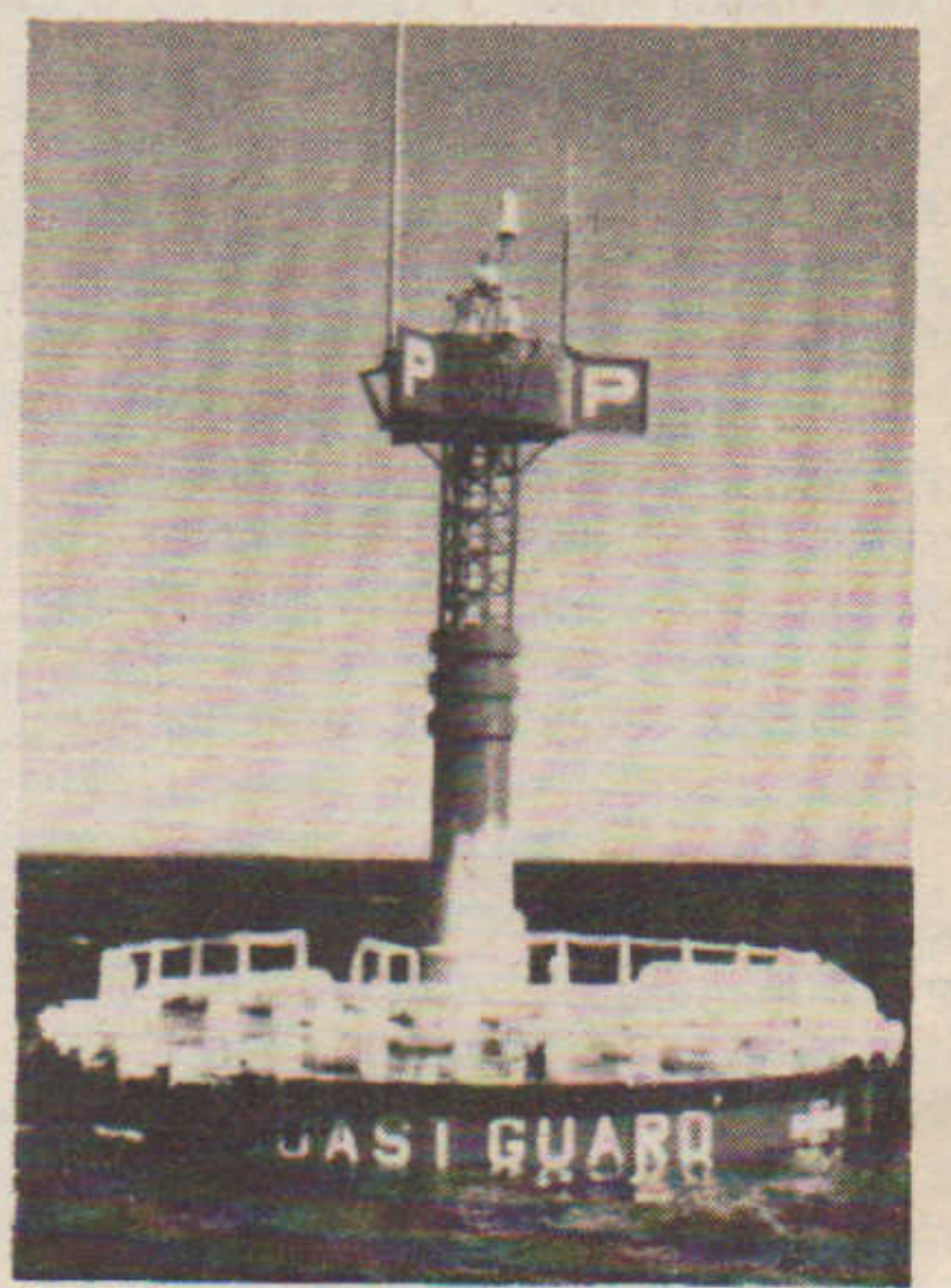
805 SW



S511 ASR



Locus 16



Sea-Watch 300 Racon on US Buoy

continued

Tour around the site

ON June 25th, our Writtle Road site will be open to the public, for the first time since 1978. We hope that all who are interested will take the opportunity to bring along their families to see just what we do and how we do it!

There will be lots to see and even free gifts for the children, including sticks of Marconi Radar rock — with Marconi Radar all the way through! — and Marconi Radar balloons.

There will be a souvenir stall, at the lower end of E Building, where souvenirs such as Marconi Radar tee shirts — complete with a free jockey style cap! — will be on offer.

The route around the works is designed to show as much as possible of our manufacturing and assembly capability, with demonstrations and picture boards, etc., to add interest. Where possible, machines and suchlike will be in use, to show just how we make our products.

All visitors will enter the site by the Writtle Road main entrance, with a car park provided near the entrance. From the main entrance, visitors will walk past the gatehouse towards the A Building goods entry, passing on the way our impressive Martello radar, which we hope to erect on the car park adjacent to K Building.

COMPLICATED

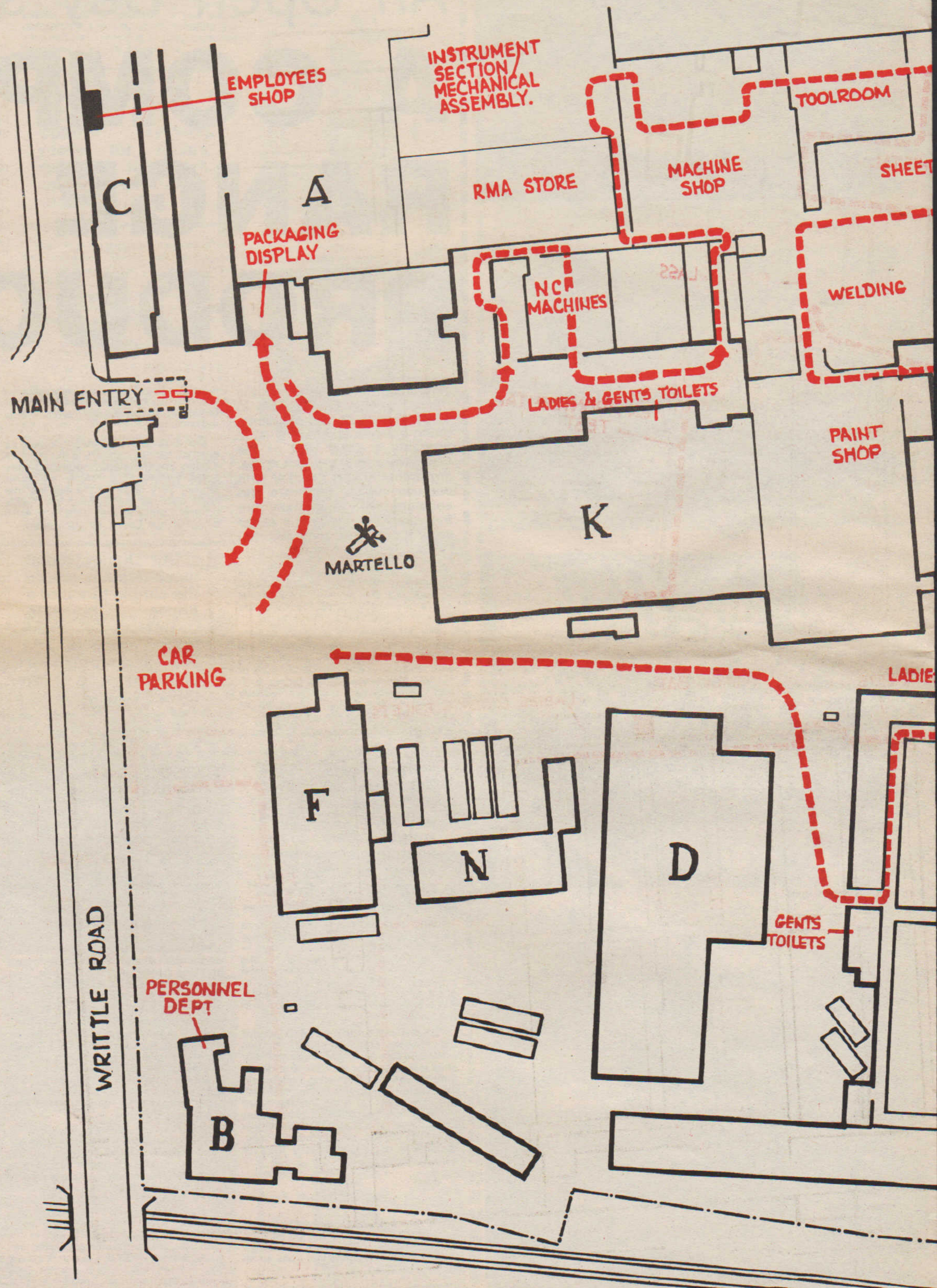
In the goods entry bay, a display of our modern packaging methods will be shown.

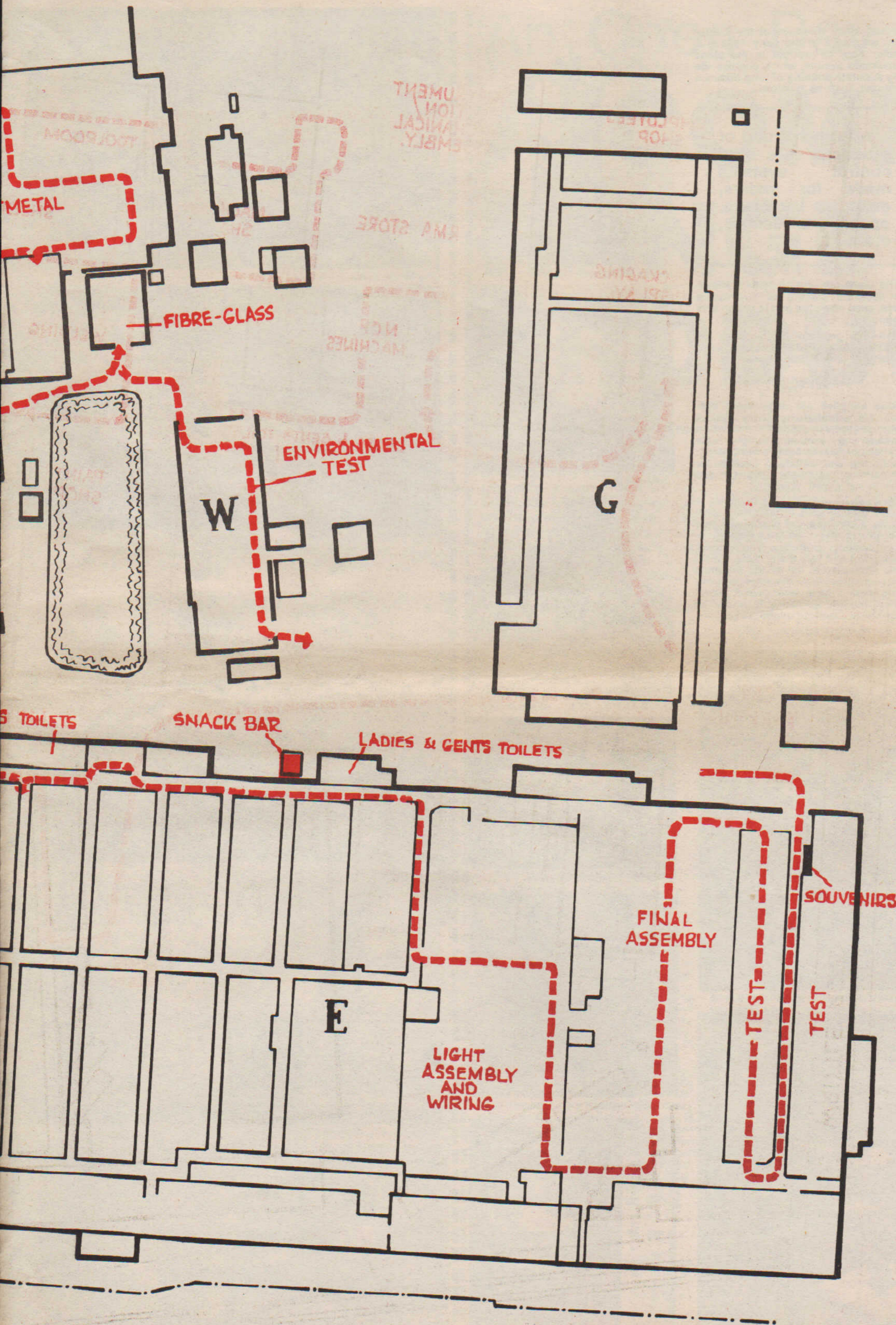
The route then enters the NC inspection facility, where computerised inspection machines can be seen, and then enters the NC machine area, where our complicated 'squintless' feeds and similar devices are milled out, on numerically controlled (hence 'NC') machines.

Next on the route is A Building, entered by the corridor adjacent to the metrology room, where gauges and suchlike are calibrated with extreme accuracy.

Next door to the metrology room is the mechanical inspection room. Opposite, in Charlie Rand's office, a display of models made by Charlie's people will be seen, all made for very special occasions.

Skirting the side of the machine shop, the route then passes the material stores and enters the instrument section, and then on to the machine shop again. Passing a broad selection of modern machinery, the tour enters the toolroom, where jigs and machine





tools, etc., are made and then goes into the sheetmetal area, where panels, special steel cases, cabinets and suchlike are constructed.

WELDING

Passing the specialised heat treatment room, next comes the welding area, followed by the paint shop, with its specialised spraybooths and ovens.

Leaving the paint shop, the route leaves A Building by the door near the site reservoir. Opposite the reservoir is the fibreglass department, where units such as composite antennas are made on purpose-made moulds. The route then enters the environmental test building, via the large doors at ground level.

In environmental test, the large specialist machines used for vibration and shock tests can be seen. The route then enters the environmental chamber, the largest such facility in England, where climatic testing is carried out.

After environmental test, the route heads for the lower end of E Building, passing near to the snack bar, where refreshments are available.

SOUVENIRS

E Building is entered by the lower doors and just inside the building will be found the souvenir shop, where Marconi Radar souvenirs can be obtained at very reasonable prices.

Leaving the souvenir shop, the route enters test department, where units such as our high power transmitters are fully tested and proven. After the tour of test, the main assembly area is entered. Here the complex transmitter and display cabins are wired and assembled, together with related items such as equipment cabinets and radar antennas.

In the main assembly area, a display will also be found showing the complete range of Company products. The route then enters light assembly and wiring, finally passing into the E Building office area.

In this area will be found the computer and word processing rooms, together with the radar display room, where working radar displays can be seen. In the computer and word processing rooms, by the way, it is hoped to produce personalised sample pages at request.

E Building is the final building on the tour and after leaving the building, all visitors will walk up the site main road between D and K Buildings back to the front of the site and the car park.

NO CAMERAS

There is one important thing to be noted. As usual at Marconi Radar, Writtle Road, cameras will not be allowed on site, and everyone who brings one will be asked to leave it in the main gatehouse for collection when leaving.

We have clearance to allow people to see our equipment — but definitely not to take pictures of it!

A complex range of products, continued.

salty sailors are trained in ship handling and other marine occupations — but on dry land with no possibility of running aground or on a rock!

Other uses for TEPIGEN include gun aimer training, aircraft pilot training and many other simulation purposes.

UNUSUAL

Yet another unusual product is CMM, short for 'computerised modular monitoring'. CMM is a computer operated means of remotely monitoring and controlling complex electronic installations such as radar sites and communication headquarters.

Using remotely positioned monitoring and switching points, CMM gathers information of the state of the equipment, transmitting it back to the central point where it can be displayed on a video screen.

“ Other uses for TEPIGEN include gun aimer training, aircraft pilot training and many other simulation purposes. ”

This enables faults to be spotted and dealt with at an early stage. CMM also performs certain switching operations.

ACCURATE

Another of our products is the Company's range of armoured fighting vehicle weapon control systems. These, again computer controlled, enable the vehicle's weapons to be kept accurately on target, even when the vehicle is on the move.

We have been involved in this type of

product since the days of the Centurion, way back in the early 1940's. A similar type of product is the plane conversion system, which enables the very accurate pointing of long distance weapons such as howitzers.

“ A further group of products are the control systems made for radars, guns, launchers, optical telescopes, etc. ”

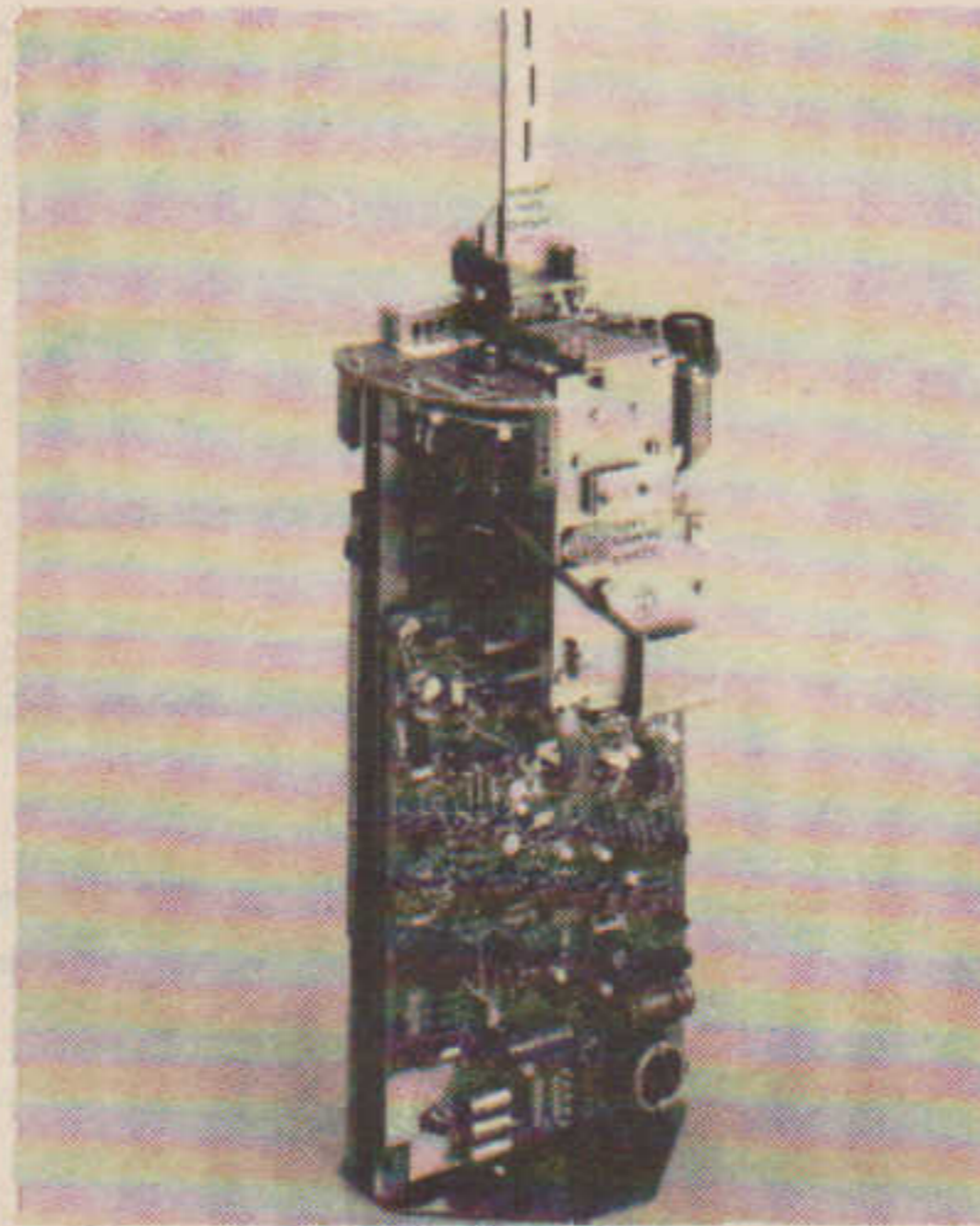
The plane conversion system allows the accurate placing of successive shots, even when the gun is not on firm ground.

A further group of products are the control systems made for radars, guns, launchers, optical telescopes, etc.

MINES

Also supplied are degaussing systems, for safeguarding ships against magnetic mines; cathodic protection systems, for protecting ship's hulls against corrosion; battery controlling, monitoring and switching devices for submarines; regulators; inverters and even more similar products.

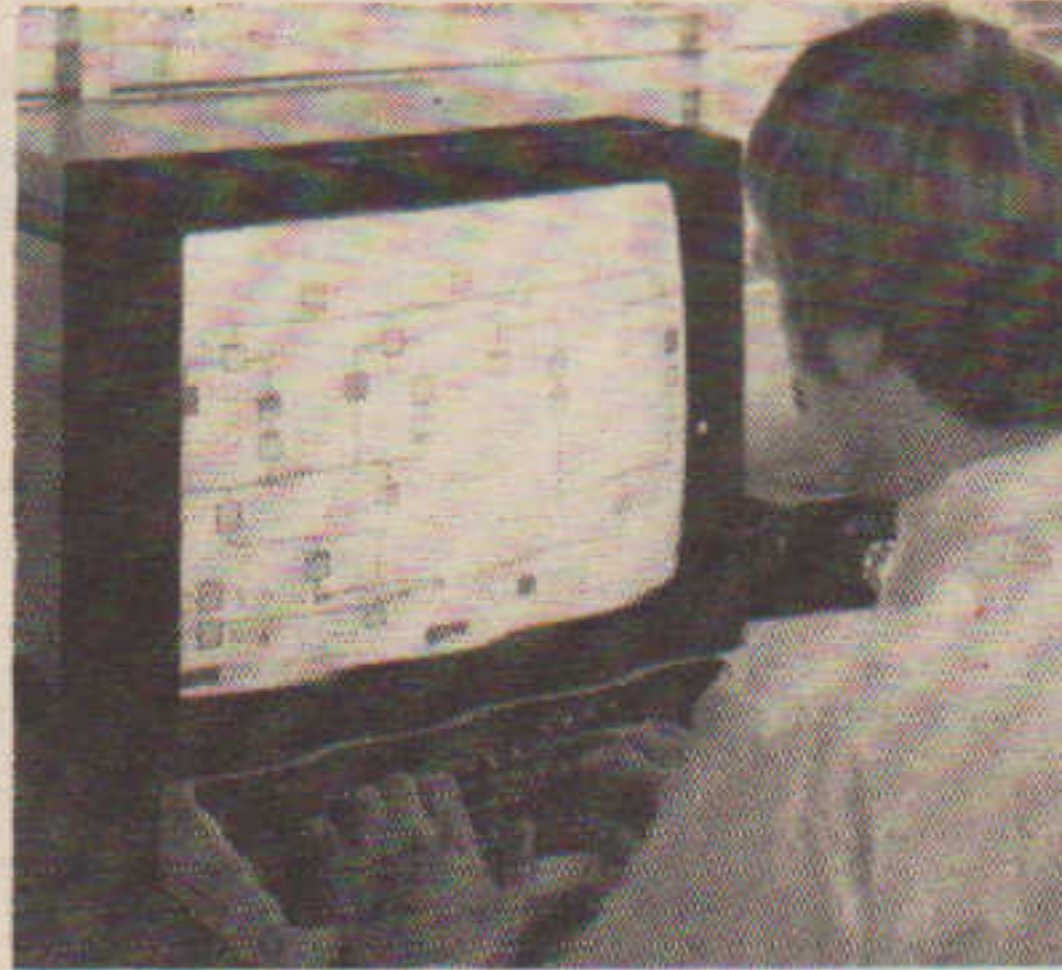
So it can be seen that the Company is a very complicated organisation, producing a complex and extended range of products which require a wide variety of systems, software, engineering, production and very many more skills. I have attempted to list all the products that I can remember. There are probably more that I have overlooked. Don't worry, though, someone is bound to ring me up and complain ...



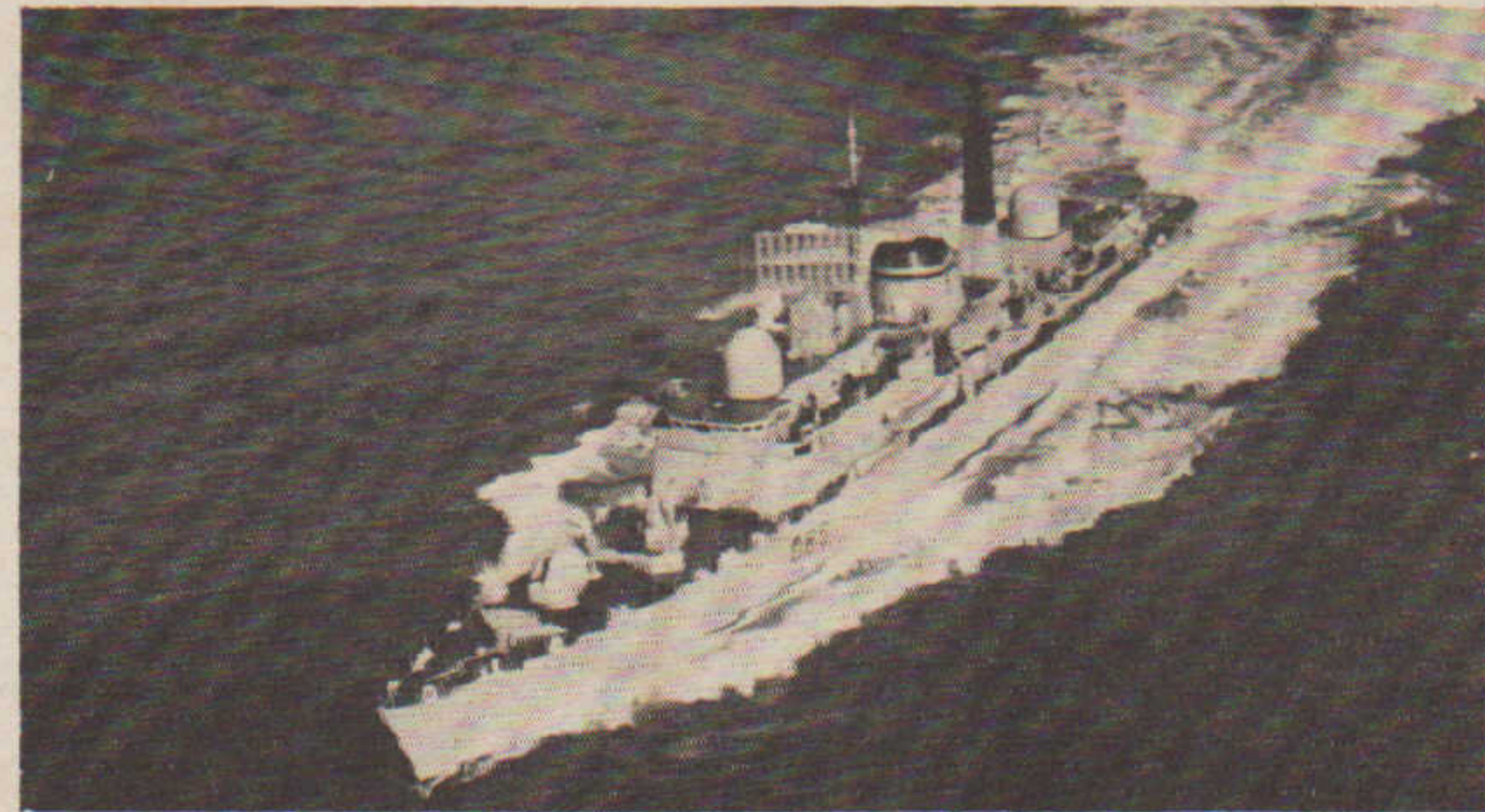
Interior of Racon



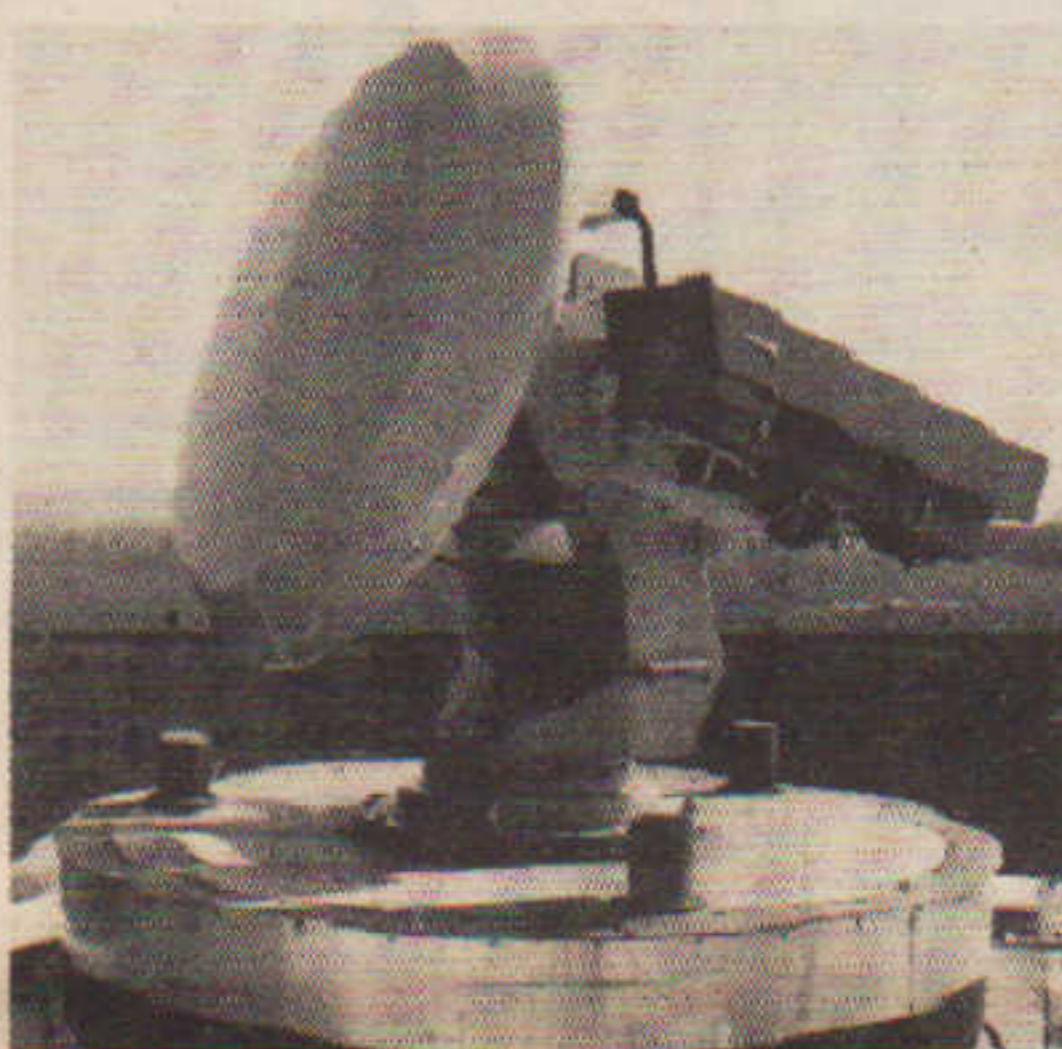
Operations cabin



GMM display



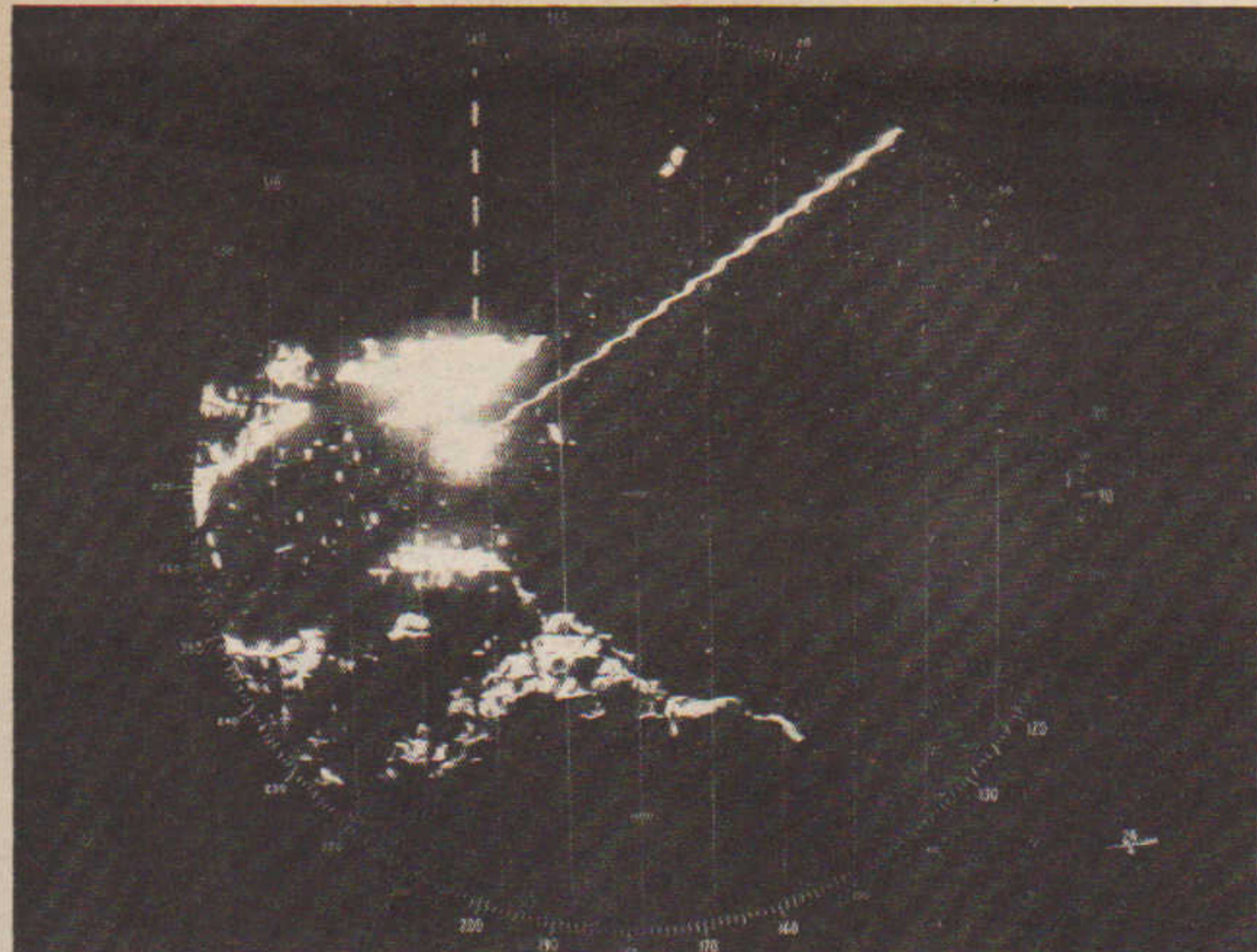
HMS Birmingham



ST858 tracker radar



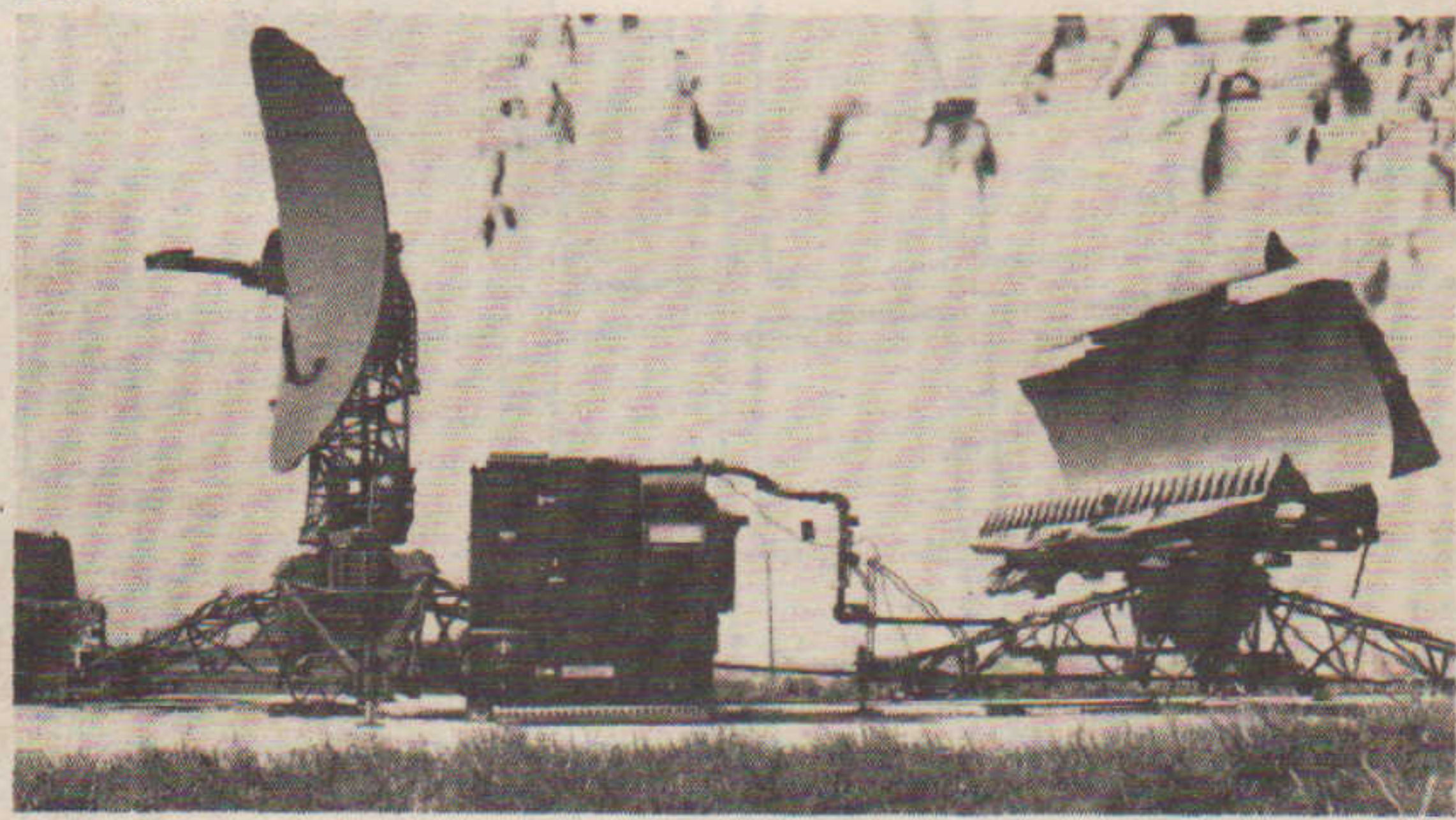
EGM vehicle



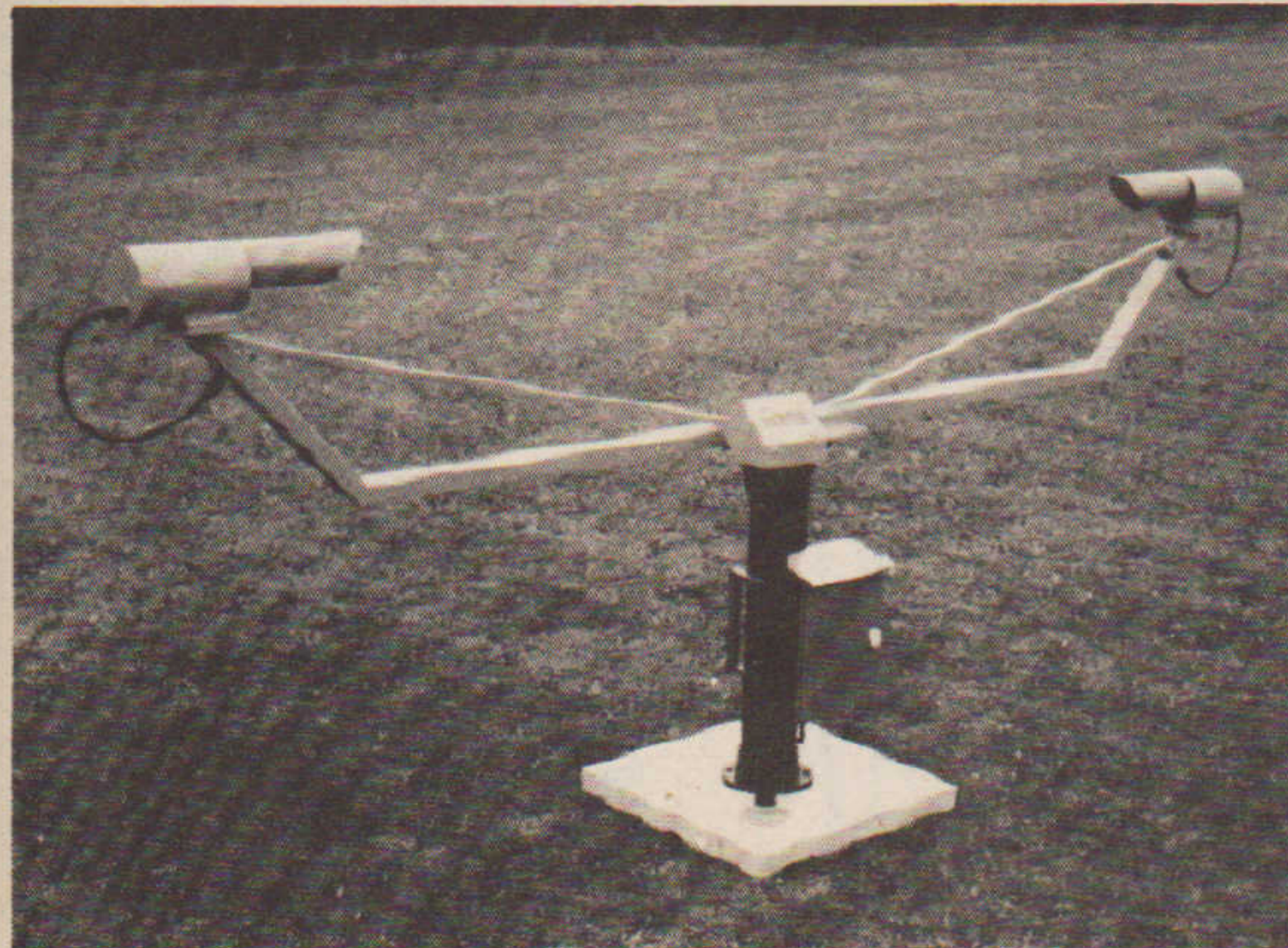
PPI display with Racon response. (The response is above the angled trace.)



CASSIM 'Tepigen' simulator



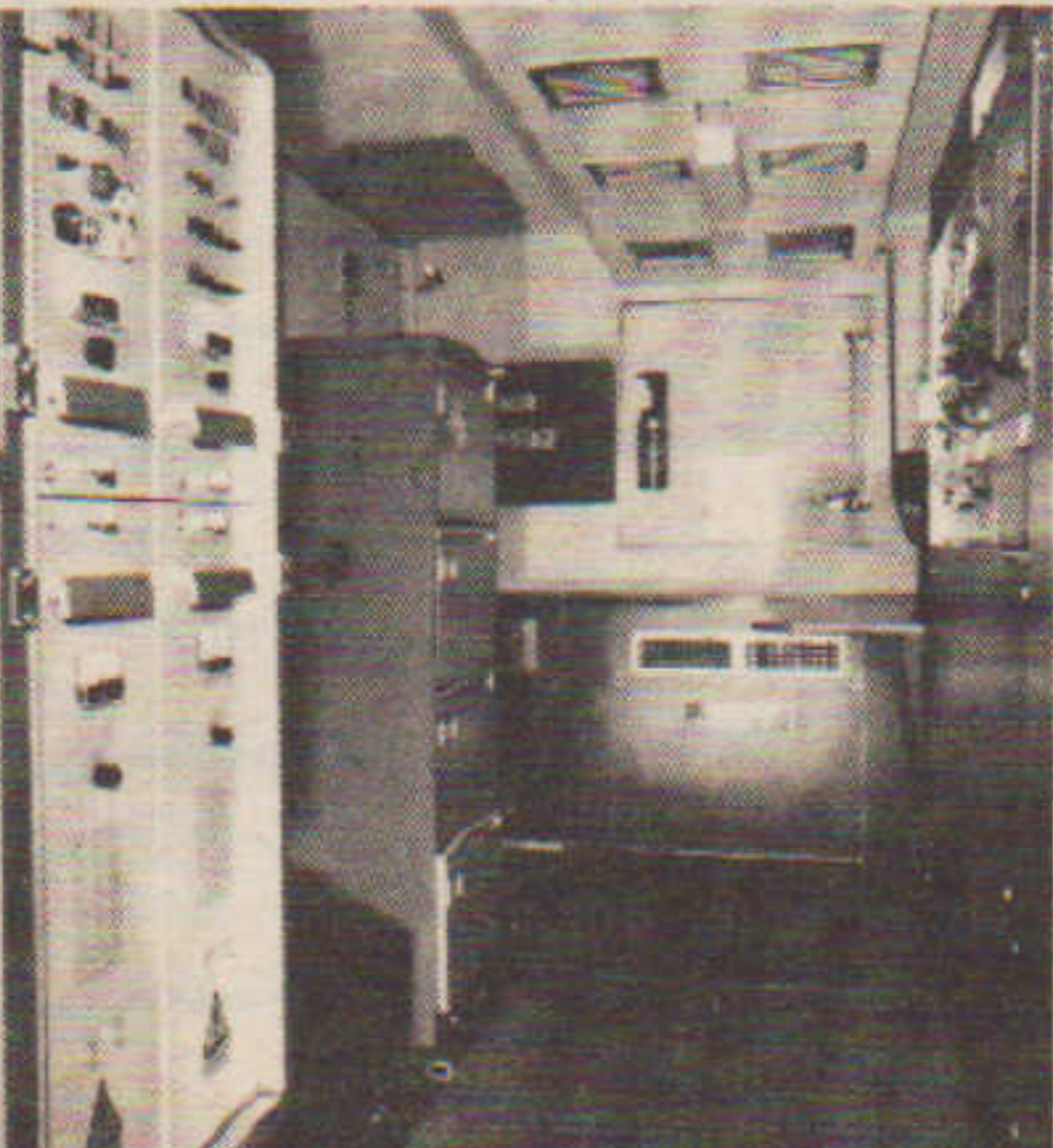
S600 Convoy deployed



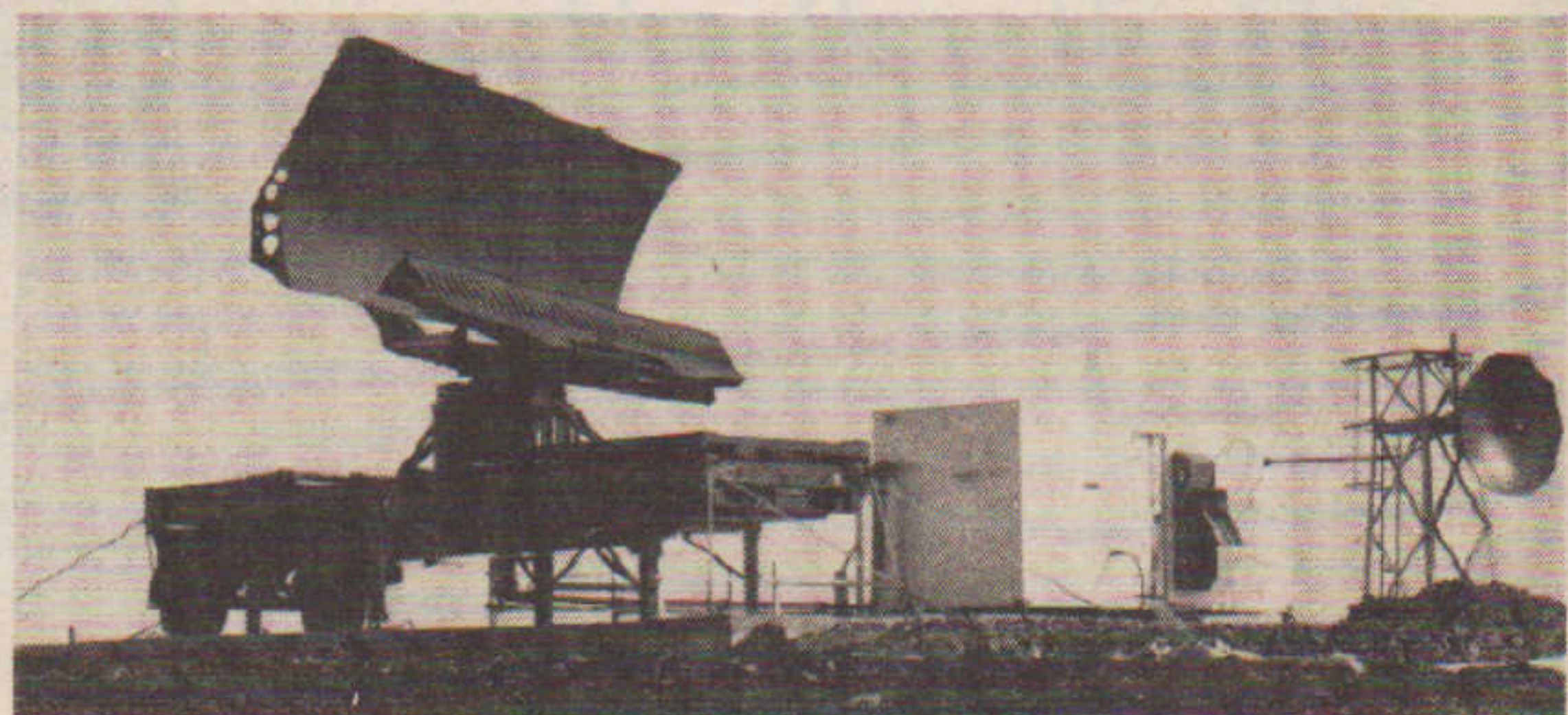
IVR-Met transmissometer



ASTRID display



Transmitter cabin



S1061 antenna at Sumburgh

CAN WE ACCOUNT FOR IT?

This is the second article in the series 'Management of Manufacture'. Written by Alan Adams, it outlines the activities of the works accounts department.

The Writtle Road works can be looked upon as a business in its own right, selling its services at a price to the Company's divisions — Naval, Air-space and Support — and even to the Leicester divisions, if so required.

In this context it operates as a manufacturing division, with its own accounts department to serve the needs of the divisional staff.

All businesses must have a plan for the future, which requires constant updating as the economic climate changes. This plan is known within the company as a budget.

THE SEASON

The budgeting season spreads throughout the year, commencing each mid-year from July onwards with the run up to a review of the current year's budget, followed by the budget for the following year. There are also quarterly reviews of the current budget.

These budgets are compiled by the accounts department

from a number of sources.

All plans must have a starting point and that starting point commences in the market place with sales of the Company's products.

Obviously without sales there will be no profits, nothing to manufacture — and no employment.

To form the plan each year, it is therefore necessary to relate the manufacturing resources in terms of people, skills, space and machines to the load derived from existing and expected orders during the next eighteen months to two years.

SYSTEM REQUIREMENTS

The wide variation of manufactured products caused by the widely different system requirements from the divisions, ranging from shipborne radar and guided missile systems such as 805SW to ground based radars like Martello, require an equally wide variation of skills in fabrication and assembly.

It is therefore necessary to relate the resources in plant and personnel to the articles to be manufactured, by a plan that ensures that the delivery needs of the customer are adequately met, with all directly and indirectly booked hours going to the correct contract. These booked hours can be stretched somewhat by the amount of overtime worked during the year.

Once the total direct hours that are required in the year have been established,

calculations can be made upon grouped sectional overhead costs, to give the various overhead rates required by each manufacturing activity.

These, plus the hourly direct labour rates and costs of the materials required, give the all-up costs of the work production products.

CREATION

It does not end there, however. The plan once agreed will require monitoring and controlling throughout the year. Any large size of manufacturing operation leads to the creation of raw and component stocks, to enable the units to draw their requirements without delay.

This is called the stock inventory and requires constant auditing to monitor size against cost/value, obsolescence or otherwise. Stock losses and obsolescence over long manufacturing cycles can cost the Company dearly in reduced profits.

To this end, a variety of statistics are produced, not only for local management but also for the Ministry of Defence, where involved.

The Ministry of Defence is one of our best customers, whose technical cost and accounting officers seek to confirm that our direct labour, overhead and material costs are fair and reasonable for the pricing of MoD contracts.

Statistics such as these are known as performance analysis statistics and cover each section and group

activity, together with the utilization of hours, direct and indirect, waiting time, overheads and our progress throughout the year.

Similarly, the performance rating for the bonus scheme is also an indication of our progress towards higher efficiency. The calculation of this into the bonus to be paid to each person on this scheme is one of the many preoccupations of the works account staff.

Cost control also starts with the budgets, and each month overhead section reports are circulated to the group managers to enable them to monitor their current progress against the monthly budget expenditure on each cost code on the sections in the works. Similarly, the hours worked each month are also available on a section basis.

Many cost and hour details can be obtained from the work-in-progress returns, which are available on a monthly basis, or through visual display units.

DISPLAY

Now that we have entered the era of product management on a more advanced degree than previously, there is a continuous monthly reporting of costs to the project managers of the appropriate contracts.

Although further computer aided mechanisms are in the process of being set-up for the project and divisional managers, at present the work-in-progress computer files are available for investigation on visual display



units and on print-outs, to provide verification that the forecasts by other means are likely to be correct.

Works accounts generates a number of reports other than those mentioned above, including its own mini-style works accounts reports for local and general management. Some of these reports will be for special occasions or purposes, including internal audit reports relating to the manufacturing function.

The department en-

deavours to react in a dynamic manner to the changes in the prevailing economic conditions, and in particular to the changes required to meet the very competitive era in which we now find ourselves.

In this context, it is essential that we keep the works costs to a level commensurate with this competitive environment, and to inform our local management by all the means available of whatever steps are necessary to do this:

MARCONI NEWS BULLETIN

MARCONI WORKS, CHELMSFORD.

JANUARY, 1977 PRICE ONE PENNY FIRST YEAR—No. 1.

EDITORIAL

In a large undertaking there are always items of interest — at work or play — which are known only to the small circle directly concerned, and it is felt that the introduction of the Marconi News Bulletin (which will be issued every two months) will bring such items to the notice of all, thus linking up one section with another. We are sure that by making everything a matter of common interest the Bulletin will also be the means of inspiring still greater confidence and friendship between Company and Employee.

It is hoped that, by keeping social and athletic events to the fore, the Bulletin will promote greater interest in the lighter side of our activities. It may even be that, knowing their deeds will be recorded, our athletic friends will pull out that little bit extra and surpass anything yet achieved by the Works in the realms of sport.

With your support, there is no reason why the new Bulletin should not become a permanent institution, keeping alive for all time the happenings of our day.

Your suggestions and criticisms are invited, as they will assist in keeping the Bulletin right 'up to Marconi standard.'

Though a trifle late, we take this opportunity of wishing all readers a happy and prosperous New Year.

AN APPEAL

To the one or two individuals who make a practice of 'borrowing' a lamp or lantern from another cycle when their own fails, we would point out that such actions show a deplorable lack of consideration for their fellow men, to say the least of it.

Whilst admitting that it is rather exasperating to be faced with a walk home because one's lamp is out of action, it is even more annoying to be placed in this position owing to the depravations of others.

We would appeal to the individuals concerned to show a better spirit by taking the consequences of their own neglect instead of resorting to the mean practice of 'passing the buck.' If they will pause for a moment to think they will surely realise that the colleagues from whom they 'borrow' may well be left in a far worse plight than they are in themselves.

Looking back — an old Marconi News ... and it was expensive!

AFTERNOON TEA FOR EMPLOYEES

We are pleased to announce that the Managing Director has agreed to facilities being provided to enable employees to obtain tea during the afternoon, between the hours of 3 and 4 o'clock, and arrangements will be made to give effect to this concession at the earliest possible moment.

A charge of 1d. per cup will be made for the tea and all profits arising therefrom will be paid into the funds of the Marconi Athletic and Social Club.

CHELMSFORD

A year ago we watched the dismantling of the landmarks for so long associated with the name 'Marconi' — the two 50ft. masts. This year we have witnessed the new extension arise from an apparent chaotic jumble of building material — presenting a modern front to mark the home of one of the world's most modern industries.

Such is the march of progress; the removal of the obsolete, the expansion and modernisation of buildings and equipment. These activities are healthy signs, as in these days of intense competition one must go forward or perish.

From the human point of view, however, progress is moving in quite a different direction. Employees are taking a definite interest in the welfare of their employees, and many large undertakings, in common with our own, are introducing pension schemes to make some provision for employees in their old age.

The construction of the ground floor of the canteen, for use as an additional dining room, is a direct advantage of the extra accommodation provided by the new extension. The cost of the necessary equipment for this dining room has been largely defrayed by a generous grant from the Management.

The Girls' Club, having served as a store for several months past, has also been re-conditioned and restored to its former and more congenial use.

OBITUARY

PERCY — We deeply regret to record the death on the 17th November of Mr. P. W. Percy, at the age of 35.

Mr. Percy was employed in the machine shop and had been in the Company's service for 20 years, joining as a boy in 1916. We desire to extend our deepest sympathy to his relatives in their sad bereavement.

MESSAGE OF SYMPATHY

It was with great regret that we learned of the sad loss suffered by Mr. W. A. Taylor, foreman of the carpenters' shop, through the death of his wife, and desire to join with his friends in extending our deepest sympathy. The late Mrs. Taylor was a vice-president of the Girls' Section of the Marconi Athletic and Social Club.

IT'S YOUR PAPER AFTER ALL...

Very many people these days are not at all keen to write; "I can't remember the rules," they say, 'leave writing to the experts.' How wrong they are.

Most of us can write in a fashion. We write letters, don't we? (In my case, only when forced!) But writing articles can be far more interesting than writing letters.

When writing a letter, people tend to 'dry-up', it is difficult to remember small interesting details, nothing seems to have happened.

DIFFERENT

But writing an article is something entirely different. For one thing, you are writing about a speci-

fic thing; a hobby, something that happened at work, something you are very familiar with.

If you feel strong enough about a subject, your feelings will show in your writing. Don't worry about too careful English — a mistake or two is not catastrophic! You're not writing for an English exam! The important thing is to try.

"Ah!" you'll say, "Why on earth is this bloke going on about writing? I bet he has an ulterior motive!" — And so he has...

The motive concerns this paper. The whole reason for the existence

of News and Views is to increase communication. Communication between you and me. Communication between all at Writtle Road — and by all I mean YOU.

So come on, get writing!

WORDS, WORDS, WORDS

We need all sorts of words. Words about your problems at work. Words about your hobbies. Words about your interests... even words about this paper. If you feel that it should be improved, if you have any suggestions for certain articles.

It's no use just mumbling into your coffee and saying to your mate, "What on earth is that silly twit on about? He ought to be seen to." If you keep it to yourself we'll never know...

So come on, get out that piece of paper and write to me. Bits about gardens... perhaps you are reconditioning an ancient car or motorcycle... building a model engine... distilling perfect scotch (no, on consideration, not in that case!)... searching the Chelmer Canal for the Loch Ness Monster... Whatever your interests, write in and tell us about 'em!

Golf

PRESIDENT AND CAPTAIN'S DAY

This year's event was held on the Stoke-by-Nayland Club's two courses, on May 20th. Forty players attended what turned out to be a very successful event.

In the morning the 'President's Putter' was played for as first prize for this Stapleford Competition which was won by Des Taylor of MIMCO. The runner-up was Jim Mitchell of Radar, with Martin Jackson of M.C.S.L. third and Fred Robertson of Radar fourth. The Special Nine Hole prize was won by David Pearce of Radar with a score of 21 pts.

In the afternoon, the Captain's Medal, a stroke play competition was won by Peter Tourle of EEV. The prize was a handsome set of crystal glasses. The second prize went to M. Hardy, also of EEV on count back from Don Thurgood. Radar. Roger George took fourth place.

A scratch prize (nearest to his handicap), was won by Des Taylor on count back from Jim Hogan. Radar.

THE SUTHERLAND SHIELD

This competition, a 'four ball better ball' event, was played at the Three Rivers Club, Cold Norton, on May 27th. This year's winners were Sid Woodhall and Alan Stevenson of Radar, with a score of 38 pts. The runners-up were Radars Jeff Clarke and Don Thurgood who tied jointly with Ted Ellis and John Sullivan of M.C.S.L.

Spare a thought for the unfortunate Baddow team who, on arriving at the car park at West Hanningfield Lane, to set off for the match, found their car with clubs aboard, had been stolen.

THE PAUL FARNWORTH SILVER SALVER

This Knock-Out competition is now under way, the early rounds having already started. The competition will continue through the summer, culminating in the final at the end of September.

WANTED:

Competent goalkeeper to play in the Radar Software Inter-departmental football team. This is a thriving team with a good track record (league division 1 winners 1982-83) who are now short of a good goalkeeper for the 1983-84 season.

If you would like to play 7 to 10 midweek games per season, for a team with a very active social life, please contact: Steve Judge, Telephone 3089, G84, Writtle Road.

SOFTWARE 'A' ARE CHAMPS



League President Mr G. D. Speake presents "Player of Match Award" to Malcom Box, Radar Software and Trophies to linesmen Mark Ward and Ray Pitt, Radar Supplies.

ON AN evening when the sun shone but a very cold wind chilled you to the bone, the lads of Radar Software 'A' team faced up to the daunting task of beating the Computer Centre, Baddow for the right to carry off the 1983 Jubilee Cup.

Their chances of doing so were not considered good as C.C.C. in great form, were already Division 1 Champions.

However, the Writtle Road side really turned it on and ran out 2-1 winners in what was a hard fought Cup Final. An early goal by Ken Tracey put the Radar lads in a good position to apply the pressure and this they certainly did. Playing some very good soccer, in gusty conditions, they were spurred on by their mid-field wizard Bernie Walsh, who had a great game, by Howard West whose roll as sweeper was well executed and by Man Of The Match Malcom Box who dominated in the heart of their defence.

Then John Smith hit a really cracking goal from all of 25 yards out to put the Radar lads two up. After a dour struggle in the second half, the C.C.C. lads pulled a goal back but never looked like cracking the Radar defence again and so the Cup was won by a very good Software team who did Marconi Radar proud.

At the Trophy Presentation evening, held on Thursday 19th May at M.A.S.C., the League President Mr. G. D. Speake, presented the Cup to Howard West the Radar Software 'A' team captain and also presented the Man Of The Match Award to Malcom Box. Other trophies presented were, Division 1 Champions, C.C.C., Division 2 Champions, Supplies New Street and Division 3 Champions, D.C.M.U. Widford. Marine 'B' team won the Sportsmanship Award for the third time.

The first of this year's friendly Representative matches was played at the new Southend Borough Combination ground, Eastwoodbury Lane, Southend, which resulted in a 3-1 win for the Southend side. Marconi scored first with a good goal worked by Radars Ken Tracey and Graham Hudgell, finished off by Terry Elton, Maintenance New Street, from a difficult angle.

In the second half the Southend lads equalised with a scrappy goal which Radars excellent goalkeeper Robbie Tyler, just couldn't hold. This was followed by a very harsh penalty against Marconi which no one on the ground but the Referee could understand. The Marconi captain, Bernie Walsh, made an innocuous tackle in the area and was penalised. Later Southend scored again after a spell of pressure from Marconi had come to nought. It was a very hard fought game with some bruised shins at the final whistle. The good news was that all concerned, including spectators, were very pleased with the excellent play and good sportsmanship displayed by the Marconi lads.



League President Mr G. D. Speake presents Jubilee cup to Software 'A' Manager, Phil Prowse.



League officials, Trevor Hargrave, Data Systems, John Knight, Accounts, Mr G. D. Speake President, Phil Champion, Chairman and Ray Pitt, Supplies, with the league trophies presented at M.A.S.C.



Nigel Pars and Simon Baker with vacuum forcing machines

R. Dorking, 'A' Building Sheet Metal Section, extension 2750, or Mr. M. L. Groves, Room E 157 Mezzanine Floor, extension 2524.

LETTERS TO THE EDITOR

I must comment on Russ Davis' eulogy on engineers in the April issue of 'News & Views'.

Of course an engineer can get the lid off a jar of jam — we have to for the benefit of those sales types who always want "Jam on it" — How? you may ask — well the selfsame lever needed to prise the salesmen out of sticky patches.

Engineers can be very tactful and always tell the truth — the and truth — the or truth — the not and truth as dictated by whatever devious circumstance. Didn't engineers invent the truth Table?

The inference that engineers are argumentative and indecisive is surely an example of "clouding the issue a little bit" and I don't think I can agree. There is obviously room for debate on this point.

Engineers are obviously superior to Greek gods — America recognised this by code naming her space programme "Apollo" in honour of the engineers working on it. Engineers have a right to take mortals on sufferance — aren't

they themselves among the immortals. Contrary to popular belief, the world was not a solo effort but designed by a group of dedicated engineers. Admittedly it's been changed over the years by war, mayhem, politicians ... and salesmen. Much of the early work is unrecorded since the modification label became obscured by ice from a faulty chiller plant at the South Pole, but they were early days, even for engineering!!

The fact that engineers are keen of eye, perfectly co-ordinated brilliant of brain and visionary in concept has no bearing on the lack of modesty implied in the article.

However, we do have a sense of humour and are fully cognizant of the value of the sales people — in fact grateful to them for the problems they generate for engineering intellects to feed upon. Otherwise all engineers would have to emigrate to another planet more deserving of our talents and capabilities — leaving salesmen to peddle cardboard models of anti-dinosaur devices.

J. K. Gregory

Letter to the Editor:

The catalogue, 'The World of Employee's Sales' and its associated price list were unveiled recently. Several interesting little details were included among the small print ...

How about this as a sales tactic in the price list: "A number of points have been outlined above, in order to draw your attention to the employee's responsibilities when making a purchase from Employees Sales."

Well they did tell you — but you may have missed:

"Prices do not include delivery."

"Price guarantee and free service 'ITT products only ..."

"Any goods not ITT found to be faulty must be returned to the shop within two days ..."

Seems to rule out Thursdays and Fridays as buying days ... "Any fault occurring after the two days, the goods should be returned by you in accordance with the instructions on the manufacturer's warranty guarantee ..." Get a quick look at the Hitachi guarantee — it's a long way to Tokyo ...

For sheer doubletalk, the ultimate paragraph receives the gold award! "All terms of guarantee above shall not affect the purchaser's statutory rights. Subject to such rights, the Company shall not be liable for any consequent losses incurred by the purchaser resulting from any defects in the products sold hereunder."

Or don't call us, we'll call you ...

With all the goodies on offer, it seems wrong to carp — although someone was heard to suggest that it seems more profitable to store ITT goods than sell GEC ones at reduced prices.

Caveat emptor
F. H. Barchou.

In reply to Mr. Davis' statement (News and Views Issue 5) regarding the non-smiling faces of software engineers, perhaps it's because we seem to spend our lives trying to implement systems to costs and timescales promised to customers

by over-optimistic sales staff who, judging by Mr. Davis' earlier statements, operate with the minimum of consultation with hardware and software engineers alike. Mr. Davis' article merely served to confirm my worst fears.

P. J. Prowsp

EXERCISE IN COLLABORATION

A recent piece of collaboration between our apprentices and the Mayflower School in Billericay resulted in the manufacture of some useful pieces of equipment for the school.

The Company has had useful contact with the school for over three years, since Brian Munden, the Mayflower's Head of Engineering Studies, was on secondment at Writtle Road.

The project commenced after a visit to the school by John Davidson, a Marconi Radar training instructor, who discovered that the school's engineering department had produced provisional designs for certain items of equipment which they hoped to produce.

John, aware of the fact that the Marconi Radar Craft Training Department was on the lookout for worthwhile training exercises, suggested that some of our craft apprentices could usefully assist.

The project was instituted by John Davidson and Ted Cranfield and it was decided to develop and make an easily

adjustable tool post to fit the school lathes and also a vacuum forming machine for moulding plastics. The exercises were planned to give the apprentices involved experience in investigating, planning, designing and making specific articles, the articles concerned being of particular use to the school.

The apprentices concerned were Stephen White and Nigel Pars, who were involved in the construction of the vacuum forming machine, and Simon Baker, who co-ordinated the construction of the adjustable tool posts.

The manner in which the projects evolved, involving personal visits to the school and also collaboration with the school engineering department, were of great training value, and the entire project was carried out with enthusiasm and skill.

The school has since written a letter to Bob Scott, our General Manager, praising the efforts of the apprentices and all associated in the training department.

CHARITY BEGINS AT WORK!

The Marconi Employees Charities Fund is a very good cause. A lot of employees at Writtle Road part with their hard earned cash for the Fund, which pays great attention to the viability of the charities which it supports.

If you, like myself, are doubtful concerning the antecedents of certain of the well known charities, why don't you make a monthly or weekly donation to the Marconi charities fund? They take great care in making certain that the donated money is used to the best advantage.

The Marconi Employees Charities Fund hands out over £12,000 a year, the amount donated by the employees being matched by a donation from the Company. Recent allocations, apart from pay-

ments made on a regular basis to local organisations, were made to CHARMS (Chelmsford Action for Relief of Multiple Sclerosis) towards the cost of a decompression chamber, and the Chelmsford Hospice, both of which received £500.

How the money is spent can always be seen on the site notice boards, in the form of minutes of the quarterly meetings.

Roy Ransom, chairman of the Charities Committee, is keen to get more people to join the Fund. A contribution of 5p per week, a cost of £2.60 per year, gives, with the Company contribution, over £5

per year, a very useful figure.

If you wish to help, forms are available from the Personnel Department, or Mr. A. Blake and Mr