



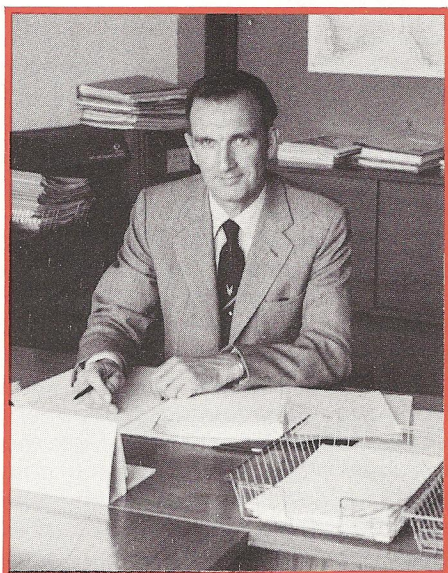
# Fairey Surveys

# newsletter

JUNE 1978

19

News of developments in the world of surveying and mapping



L. Scott, FRICS—Managing Director.

## *Laser Survey Methods in Bahrain*

**I**N Newsletter No. 17, we discussed briefly our intention of using a laser distance measuring device in the task of setting up a geodetic network of first and second order stations on the island of Bahrain. We would now like to outline some of the practical problems encountered with this equipment and our thoughts on possible future uses.

Some time has now elapsed since Fairey Surveys used Laser EDM equipment in Bahrain and the following assessment of the advantages and disadvantages have the benefit of hindsight and a less fevered brow.

The particular instrument used gave rise to some concern due to frequent periods of un-serviceability

which again, drew attention to the problem of using complex instruments when working a long way from the manufacturers base.

Although the manufacturers claimed a maximum range of 25 kms, the longest line achieved by Fairey Surveys was only 12 kms, and that was with considerable trouble. The two main reasons for lack of range were dust in the atmosphere and winds.

The greatest attribute of a laser, that it produces a very narrow, parallel beam of light, is also its biggest problem when applied to survey. In general, to obtain 25 kms ranges it is necessary to set up the instrument in exposed, windy locations, such as hilltops, roofs of high buildings, etc. It was found in Bahrain that the almost incessant and sometimes strong wind caused slight vibration of the instrument.

## Personal Message

**T**HE name of FAIREY has been much in the news in the last few months and in some places this may have led to uncertainties as to the present standing of Fairey Surveys. I would like to take this opportunity to clarify the position and to allay any misgivings which may, perhaps, remain.

In January 1978 the National Enterprise Board, a Government financed Public Corporation, became the new owners of most of the non-aviation interests of the old Fairey Company. The Companies now owned by the NEB are:

Fairey Engineering Ltd.  
Fairey Exhibitions Ltd.  
Fairey Filtration Ltd.  
Fairey Hydraulics Ltd.  
Fairey Marine Ltd.

Fairey Nuclear Ltd.  
**FAIREY SURVEYS LTD.**  
**FAIREY SURVEYS SCOTLAND LTD.**  
Fairey Winches Ltd.  
Fairey Yacht Harbours Ltd.

This new Group, known as Fairey Holdings Ltd., is a wholly owned subsidiary of the NEB, with a new Chairman, Mr. Angus Murray.

With new owners and the new leadership provided by Fairey Holdings, Fairey Surveys looks forward to the challenge of the future with confidence and optimism. To all our clients, past, present and future, we would like to emphasise that it is 'Business as Usual' at Fairey Surveys.



# IT'S A SURVEYOR'S LIFE

**I**T has been said by one of our surveyors that the reason for his enjoyment of the profession is the almost perfect balance between the physical aspects of surviving in the field, the intellectual demands of running a technically challenging survey, and the artistic abilities required for cartographic presentation and in the draughting of map sheets. To this must be added the very high degree of personal responsibility which he must accept for all aspects of a project to ensure that the technical specification and delivery programme are met within the financial resources available.

Whilst improving communications mean that advice and assistance from head office can now be provided within days rather than weeks, the surveyor must still be prepared and able to make far reaching decisions by himself.

In practice this means that as far as the surveyor is concerned, a nine to five job with two days per week to relax is something that other people do. Long hours in the field during daylight, computing in the evening and occasionally making astronomical observations at night are the normal contents of a surveyor's day. He must also find time for the

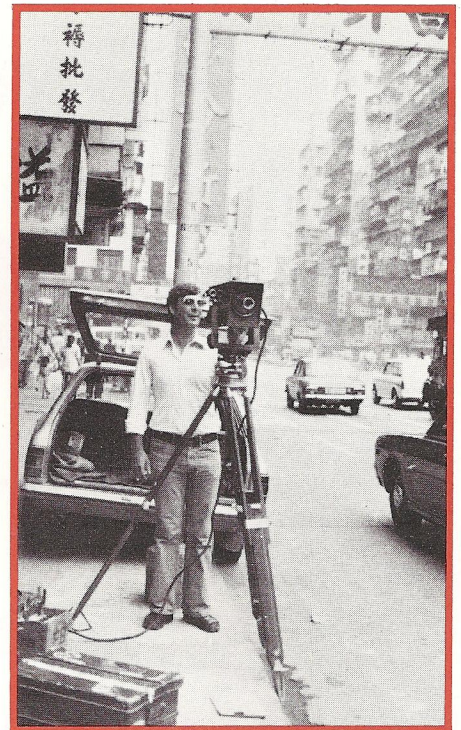
organisation of supplies, transport, labour, accommodation, import/export of instruments, medical care and so on ad infinitum. Overseas, even comparatively simple problems may be compounded by difficult terrain, harsh climate and misunderstandings due to language differences, all this calls, not only for resilience and versatility but also a well developed sense of humour.

It is a famous quote that an army marches on its stomach, and in this respect surveyors are no different. The first priority in any survey is to establish as comfortable a base as possible with good supplies of food and water. Since this base may be hundreds of kilometres from the nearest market town, very careful planning is required.

The nearest source of supply for petrol may be even further away and this represents just the tip of what is probably the surveyor's biggest single headache—transport. Vehicles invariably break down in the most inaccessible places and it is then that a local mechanic who can convert a kerosene can into a carburetter is worth his weight in gold. Whatever the solution adopted to overcome the transport problem, the difficulties just crop up somewhere else. Some years ago, while carrying out a geodetic survey in a remote part of North Sudan, three helicopters were used to transport surveyors in an area of particularly rugged mountain tops which would have been a graveyard for any form of wheeled transport. All concerned enjoyed the last word in company transport but the nearest supply of suitable fuel for the helicopters was more than 500 kms away and the whole operation thus depended upon the supply lorry. Success depended as much on prayer as planning.

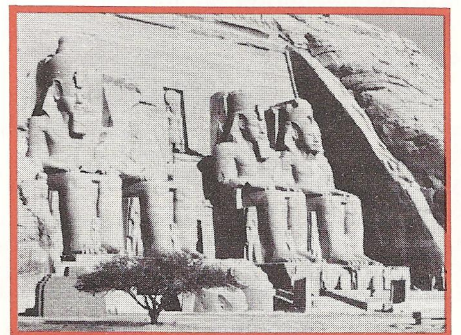
Equally working on a project in Britain is not without its problems. Frequently surveyors are greeted with suspicion and at times even hostility by those who object to developments such as a new motorway or airport which threatens to destroy a local beauty spot. At times like these the surveyor must exercise all the tact and diplomacy at his disposal. At other times, and particularly overseas, he is welcomed with open arms; most of our team have experienced the warm hospitality of Bedouin tribesmen whilst sipping tea with them under the desert sky.

Variety is certainly one of the



benefits of the work. In the last year our surveyors have worked in West and North Africa, the Far East, Central and South America and Arabia; as well as on oil rigs, nuclear power stations, underground railways, roads, reservoirs and other vital installations within the U.K. This variety is not without its tense moments and the experienced surveyor never fully expects to go somewhere until he finally alights from the plane at his destination. One surveyor had recently fastened his seat belt on a plane about to take off for Nigeria when a stewardess informed him that the project had been postponed for a fortnight. The surveyor managed to get off the plane in time, but his baggage went on to Lagos.

Occasionally work does have its glamorous moments, as happened this year when a senior surveyor who was working in Egypt managed to take a break to practice his hobby of photography. The photograph taken in the "Valley of the Kings" is one example of the results he achieved. The other photograph shows Fairey Surveys at work in another part of the world last summer; in a busy street in the centre of Hong Kong.



*continued from page one*

This vibration was great enough over long ranges to cause the laser beam to drift off the retro-reflectors situated at the far end of the line. Canvas or polythene screening around the instrument would appear to be the answer, but is bulky and sometimes difficult to erect, thus being time consuming and expensive.

The accuracy of the instrument was found to be high, and if the problems encountered in Bahrain can be overcome, then the laser as a survey instrument for long range distance measurement is a welcome addition to the tools of trade.

Fairey Surveys are now using a laser EDM on a large contract in Benghazi, Socialist Peoples Libyan Arab Jamahiriyyah, in a similar role. This particular instrument is manufactured by a Swedish Company. It has so far proved very reliable, and although the drawbacks mentioned above have again been encountered, with the correct steps taken to minimise the problems, the resultant accuracy is well worth the effort and expense incurred.



# ANATOMY OF A LEISURE MAP

**T**HE mention of our Small Scales division in a recent Newsletter, evoked much interest and many enquiries, particularly in regard to the production of leisure maps. To follow this theme a little further we would like to outline briefly the stages of a Fairey leisure map from conception to birth.

Why do we produce leisure maps? Our research has shown that where maps are available for popular holiday areas they are usually slightly modified reprints of national mapping and are of very little use to a tourist. A case can therefore be made for producing cartography for the holidaymaker which is attractive in appearance and price and is also informative in the areas where his interests lie, namely holiday activities.

We launched into the holiday map business with three Mediterranean Islands; Corfu, Cyprus and Rhodes, and one Caribbean Island, namely Jamaica, to enable us to assess the response of both the European and American holidaymakers. The venture proved successful and more titles have been added each year.

Preparation for a new title must be both comprehensive and thorough, before production can begin much initial research is necessary. We must find the answers to certain questions, such as: Does the proposed area make a good cartographic subject? How many tourists have visited during the previous five years? Do the annual figures indicate a trend? From which country do the tourists mainly come? Is there a need for the map to be printed in different languages? How many holidaymakers can be expected to buy a map? What is the competition from existing maps? From the answers to such questions the commercial probabilities are assessed. At an early stage it is also important to investigate distribution outlets and to clarify the position regarding importation and currency regulations.

Assuming that the results of this preliminary study are favourable, the first move is to seek the assistance and co-operation of the Ministry of Tourism in the country selected. This co-operation is usually given willingly. Material in the form of survey maps, photographs, guide books, hotel lists, marine



*Preparation for a new small scale map.*

information, notes on historical monuments and many other items of interest to visitors may be available from the ministry. Great care is taken to choose the best possible scale for the new map and the most pleasing presentation. All Fairey leisure maps feature one or more town plans in detail and again assistance is sought from the appropriate ministry to determine which town plans would be most useful for the majority of map users.

At this stage a draft layout will be prepared showing mapping areas, town and site plans, and information panels. The base maps may now be compiled usually from the best available official topographic maps and sometimes with the assistance of aerial photography. All features of tourist, leisure or travel interest are identified and plotted.

Final verification and updating is

undertaken in the field where civic and tourist authorities are approached on the spot and all major tourist attractions are visited to ensure maximum authenticity. The editor carrying out the field checks will also verify street names, road classifications, footpaths, beach access, hotel sites, museums, places of historical interest, leisure activities and many other facilities which add to the enjoyment of a holiday. The results of these field checks are added to the compilation, descriptive text is written and hotel lists prepared.

In the Drawing Office cartographic skill and artistic ability ensure a product which presents the minimum of problems for the printer and has both authority and an attractive presentation, with all the leisure features clearly defined.

In the seasons that follow a publication, periodic revisions become necessary and occasionally further field verification is required. Often the helpful comments from map users and tourist authorities supply sufficient data to enable our Drawing Office to prepare for updated reprints. For instance, having recently been advised that many holidaymakers on the Island of Malta prefer to go sightseeing by bus, we are preparing to add local bus routes to our leisure map of Malta when it becomes due for revision.

Quote from a letter received at Reform Road this year:

Dear Mr. Tompkins,

I felt I had to put pen to paper, to thank you for sending me that superb map of CRETE.

It was truly a work of art!

Yours faithfully,

W. H., Feltham, Middx.

## PHOTOGRAPHIC SERVICES

**T**HE wide range of uses for which aerial photography, as a source material, can be adapted are well known to most planners, researchers and engineers in both the public and private sectors of business. Perhaps what is not so widely appreciated is the large aerial film library maintained by Fairey Surveys. The films are stored on behalf of the clients who originally commissioned the photography and to whom a small Royalty is paid when any orders using their film are serviced by the library.

A constant flow of requests for contact prints, enlargements and



*Compiling a Mosaic in the Photographic Department.*

mosaics from this photographic cover keeps our library staff busy searching through films and cover charts. Should the contact scale of 9"x9" not be ideal for a particular



purpose, enlargements up to a factor of 'X 6' can be provided from a portion of the negative without loss of definition. Greater enlargements can be effected, although some loss of resolution may then be experienced. To obtain a better overall view of a larger area we can produce a 'mosaic' which is compiled from many prints then copied and supplied to the customer as a single print of manageable size.

In an average year the Operation Division of Fairey Surveys expose and process, on contract, approximately five miles of aerial film containing over 30,000 individual prints; and the demand for aerial photographic cover is currently increasing. At the last check, our film library staff estimated that they had something approaching 50 miles of processed film in their safe keeping.

Our coverage of the U.K. is far too extensive to list in the Newsletter, but among the large authorities for whom cover is held are; Berkshire, Nottinghamshire, Tyne and Wear, Northamptonshire, Glamorgan, Derbyshire, Wiltshire and Oxfordshire. North of the border has not been neglected either, in fact since the opening of our Scottish office at Livingston, we have photographed many large areas of Scotland including most of the coast line which is in colour.

Should you wish to discuss a requirement, please contact Mr. Peter Sharman, who leads our library and off-sales services at Maidenhead.

## ENVIRONMENTAL AND RESOURCES NEWS

**T**OULOUSE, in France, was the chosen venue this spring for an international conference on, 'Earth Observations from Space and Management of Planetary Resources,' organised by the European Space Agency and the Centre National Etudes Spatiales.

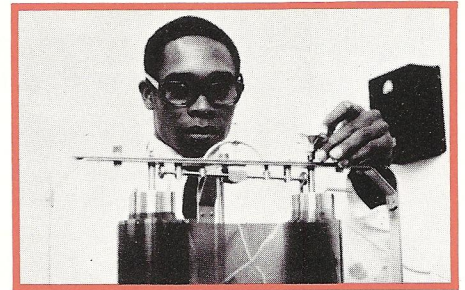
Fairey Surveys' staff were among the 600 delegates from all over the world for whom the highlight of the conference was the one-day parliamentary hearing on; 'Europe's Specific needs in the field of Remote Sensing'. Members of national parliaments and their scientific advisers met to hear experts discuss the objectives of technical and scientific programmes, the different options that are open, and to obtain better knowledge of their likely social, cultural and political consequences.

## REUNION

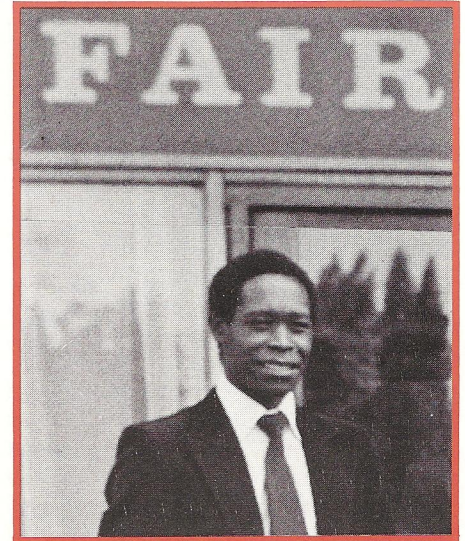
**A** RECENT visit by a group of students from I.T.C. Holland, brought an unexpected moment of nostalgia to Reform Road, when it was found that the party included Frank Oyuga from Kenya.

Frank came to Fairey Surveys for on-the-job training as an aerial camera operator in 1968. After successfully completing a course including flight planning, aerial photography, film processing and printing he returned to the Survey Department of Kenya where he immediately undertook the role of the first ever Kenyan aerial photographer, flying an average of 250 hours a year.

He trained on-the-job as a navigator in 1971 and has been acting in that capacity since then. During the 1976 season his department decided to send him to I.T.C. Enschede in Holland to take the Post Graduate Specialisation Course in Survey Flights. Frank started his course in 1977 and visited Fairey Surveys with a party of fellow students in May 1978.



1968: Frank Oyuga training at Fairey Surveys.



1978: Frank revisits Fairey Surveys.

## NEWS IN BRIEF

**T**HE following list of papers by Fairey Surveys staff have recently been presented and copies are available on request.

- (1) 'Aerial Photography and the Use of Helicopters in Hydrography' by B. J. S. Karalus. (Report of the Hydrographic Society Symposium on 'Depth Measurement and Sonar Sweeping', at Southampton University, April 1978.
- (2) 'Airborne Camera Environment', by F. J. Worton. (Photogrammetric Record, October 1977).
- (3) 'Remote Sensing: Statistical Testing of Thematic Map Accuracy', by J. L. van Genderen, B. F. Lock and P. A. Vass. (Remote Sensing of the Environment Vol. 7).

- (4) 'Guidelines for using LANDSAT data for rural land use surveys in developing countries', by J. L. van Genderen, P.A. Vass and B. F. Lock. (I.T.C. Journal 1978-1).

## Landsat Products Service

**F**AIREY Surveys now offers as a service the acquisition, processing and interpretation of LANDSAT products. Imagery can be supplied promptly from either our own library or through direct links with data centres. The company's long experience in all aspects of film processing, together with modern laboratory facilities ensures the best possible results to meet any specific needs. Other LANDSAT services include; mosaicing / interpretation / analysis / image enhancement and training in the use of LANDSAT data.

Further details and order forms are available on request.

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If you require further information on items featured in Fairey Surveys' Newsletter or would like to be added to the mailing list for future issues, please contact: Mrs. E. V. STORRIE, Fairey Surveys Limited, Reform Road, Maidenhead, Berkshire, England. Telephone: Maidenhead (0628) 21371. Telex: 847352. Cables: Airimap, Maidenhead.