



**Clyde
Surveys
Limited**





Only our name has changed

In an established company such as ours, with its diverse range of skills, there is a risk that even clients whom we have satisfied for many years will be familiar only with the specialism we have provided for their particular needs. The object of this brochure is twofold. First to tell you of our change of name, and second to tell you about the technological innovations we have introduced.

From March 1980 we have changed our name from Fairey Surveys to Clyde Surveys. The new name legally recognises our move from Fairey Group, which in recent years has become essentially an engineering concern, to Clyde Petroleum Group which, as a broadly-based energy and resources organisation, has closer affinities with our business.

Our new parent is internationally established in the exploration and production of oil, gas, coal and minerals, with interests in onshore and offshore United Kingdom, as well as the United States of America, Canada and South America. We believe that membership of this group will bring two benefits to our clients, those of development and of expansion.

Clyde Petroleum has already boosted investment in its survey subsidiary. Major capital purchases have been made for our traditional map-making activities, and there has been funding of high technology hardware for our growing Environment and Resources Consultancy, thus enabling us to offer an improved and more extensive service.

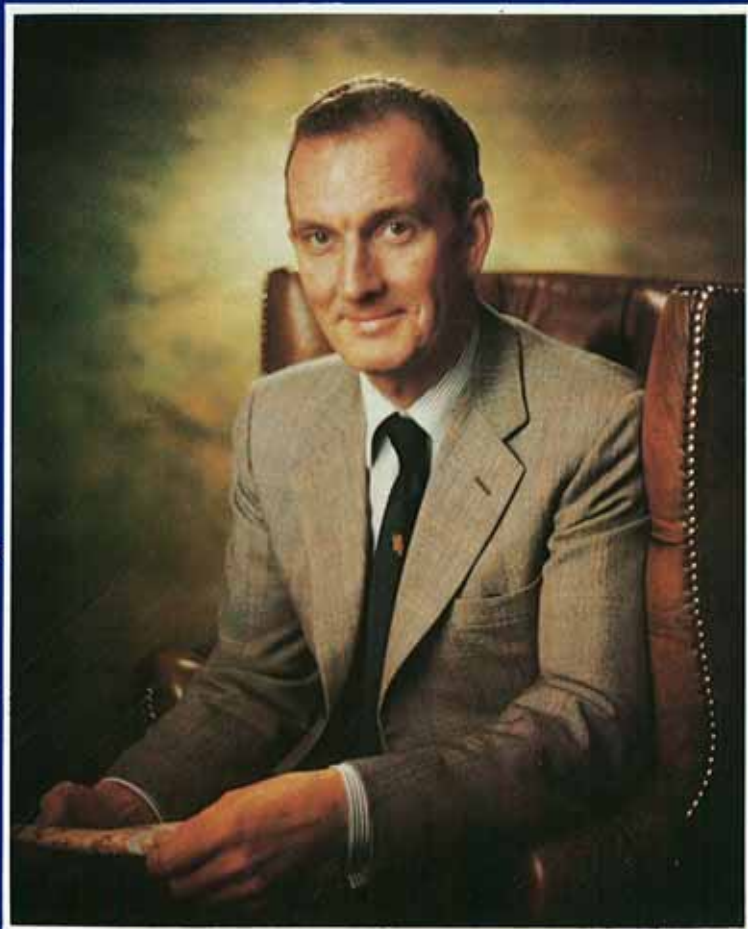
Also, our new group brings together skills in parallel resources activities, and expertise in project financing.

In many essential respects however, there has been no change. Our management and production team at Maidenhead and Livingston remains, as does our commitment to the highest standards of quality, presentation and delivery.

To our many clients who down the years have grown to rely on Fairey Surveys, I can assure you that it will be "business as usual" under our new banner.

With these brief thoughts as background, I invite you to look now at Clyde Surveys, where you will still see many familiar features, but also some new and exciting developments that will enable us to help you meet the challenges of the 1980s.

Only our name has changed!



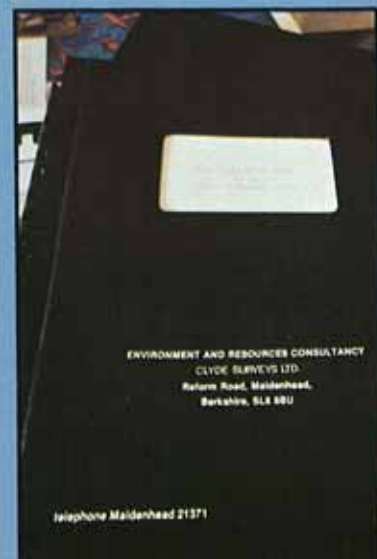
Lawrence Scott FRICS
Managing Director

L. Scott

OUR COMPANY TODAY



W.A.S. Clark, Managing Director, Scotland



ENVIRONMENT AND RESOURCES CONSULTANCY
CLYDE SURVEYS LTD.
Return Road, Maidenhead,
Berkshire, SL6 8BU

Telephone Maidenhead 21371





Marketing executives
W.M. Henry
P.E. Forsey (Director)
B.J.S. Karalus

"Neither the development nor the administration of any area of land, large or small, can be planned economically or carried out efficiently without full and accurate knowledge of its size, its boundaries, and the natural and artificial features it contains."

We can provide that knowledge.

In most countries, map making is a government responsibility, and, as a private sector organisation, our role is to provide a service in those countries where no national department exists, and back-up in the countries where demand for new maps exceeds the scope of government facilities.

From satellite imagery and aerial photography we are able to provide details accurate to between 50 metres and 10 centimetres. Land survey instruments enable us, when required, to measure distances accurate to tenths of a millimetre.

We provide information either in topographic map form, as large-scale plans with contours, 3-dimensional models, or as reduced numerical data in a form suitable for computer design.

Clyde Surveys has the human skills and technical resources to provide consulting engineers, regional planners and project developers anywhere in the world with the information they need to carry out their role, when the maps available do not provide it. Whether the data required is for planning and designing roads and bridges, pipelines and railways, or any other form of civil engineering project, we can supply it.

The Role of the Surveyor

The introduction of satellite imagery made a major impact on those engaged in earth sciences, and with the availability of the high-altitude coverage it furnishes, we are able rapidly to produce regional studies covering the identification of such resources as water, minerals, vegetation, construction aggregates, plus existing land use.

The acquisition, analysis and presentation of these data falls naturally within the traditional disciplines of the surveyor, cartographer and physical scientist. This has led us to extend our technology into energy conservation, pollution monitoring and environmental impact studies, in order to provide planners with vital information seldom obtainable from national mapping agencies.

Tomorrow's Challenge

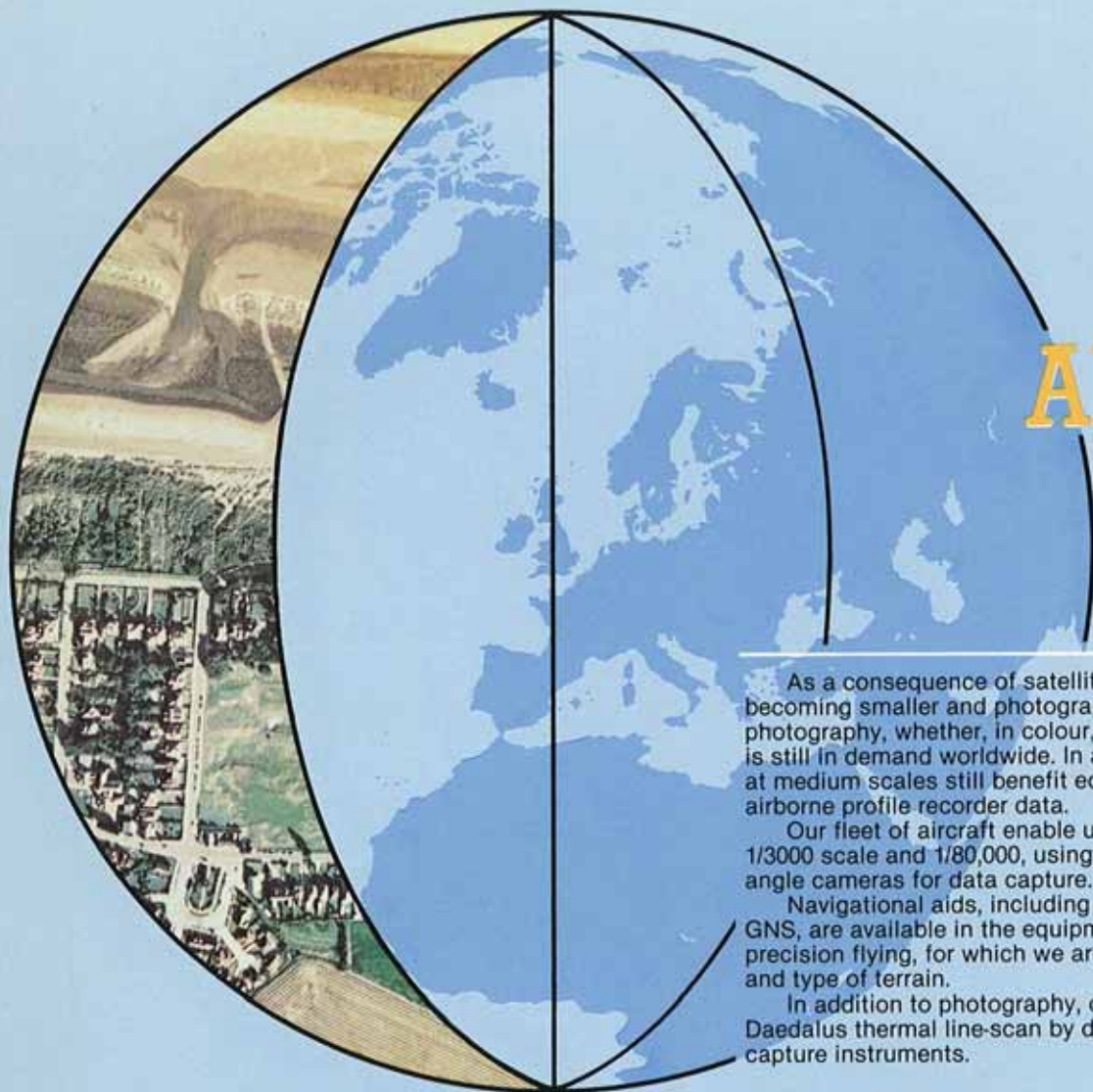
To meet changing demands, Clyde Surveys devote a significant part of their resources to research. For example, The Flight Trials Division operates a "flying laboratory" for airborne testing the latest British imaging systems on behalf of the UK Government. Our Research and Instruments Group includes mechanical and electronic engineering facilities for the back-up necessary to overcome the day-to-day problems that arise in the operation of aircraft and sophisticated surveying equipment in different environments all over the World.

And, in order to participate in the development of our profession, we welcome a regular flow of trainees from all parts of the world to Livingston and Maidenhead for practical experience on the completion of their studies.

Our company has been involved for more than 50 years in the evolving technology of surveying and mapping. As you will see in the pages that follow, which illustrate four of the major fields in which we operate, we have a very experienced staff, who have at their disposal the most modern equipment and laboratories, plus access to the necessary financial resources to meet tomorrow's challenge.

If you require the kind of information we can provide, we would like to hear from you. Telex 847352, and we will do the rest.





AIRBORNE

As a consequence of satellite imagery, block areas are becoming smaller and photographic scales larger, but aerial photography, whether in colour, black and white, or false colour is still in demand worldwide. In addition, some mapping projects at medium scales still benefit economically from the inclusion of airborne profile recorder data.

Our fleet of aircraft enable us to secure photography between 1/3000 scale and 1/80,000, using both wide-angle and super wide-angle cameras for data capture.

Navigational aids, including Doppler, Decca/Flagman, Omega GNS, are available in the equipment-fit in order to maintain the precision flying, for which we are famous, regardless of location and type of terrain.

In addition to photography, our aircraft are fitted to operate Daedalus thermal line-scan by day or night, plus geophysical data capture instruments.

Maximum Quality of Image

Once the data has been acquired it is necessary to process at headquarters or on-site, so as to ensure the maximum quality of image for the scale and type.

In our laboratories, are to be found the most up-to-date instruments, housed in a series of dark rooms and mosaic areas specifically designed for efficient production of both colour, and black and white originals. Purpose-designed equipment has been manufactured by the Research and Instruments Group to enable black and white films to be processed in field conditions.

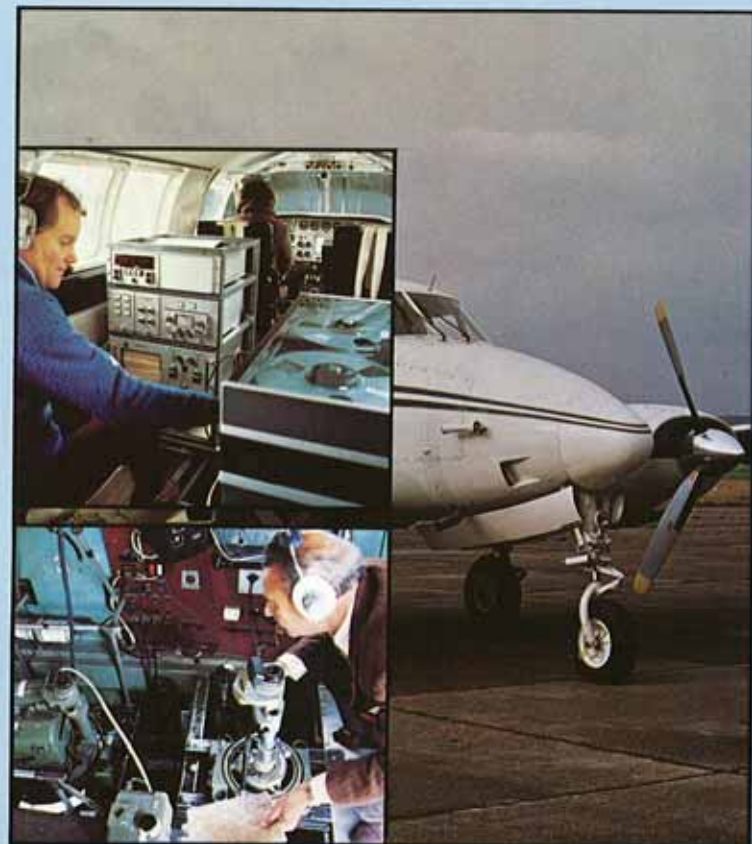
Thousands of Enquiries

The production of contact prints and enlargements, as well as the construction and copying of mosaic sheets and print laydowns, are technical procedures in which we have been pre-eminent ever since the formation of the company in 1923. The very first job the company undertook was a contract for aerial photography and mosaic-type-mapping.

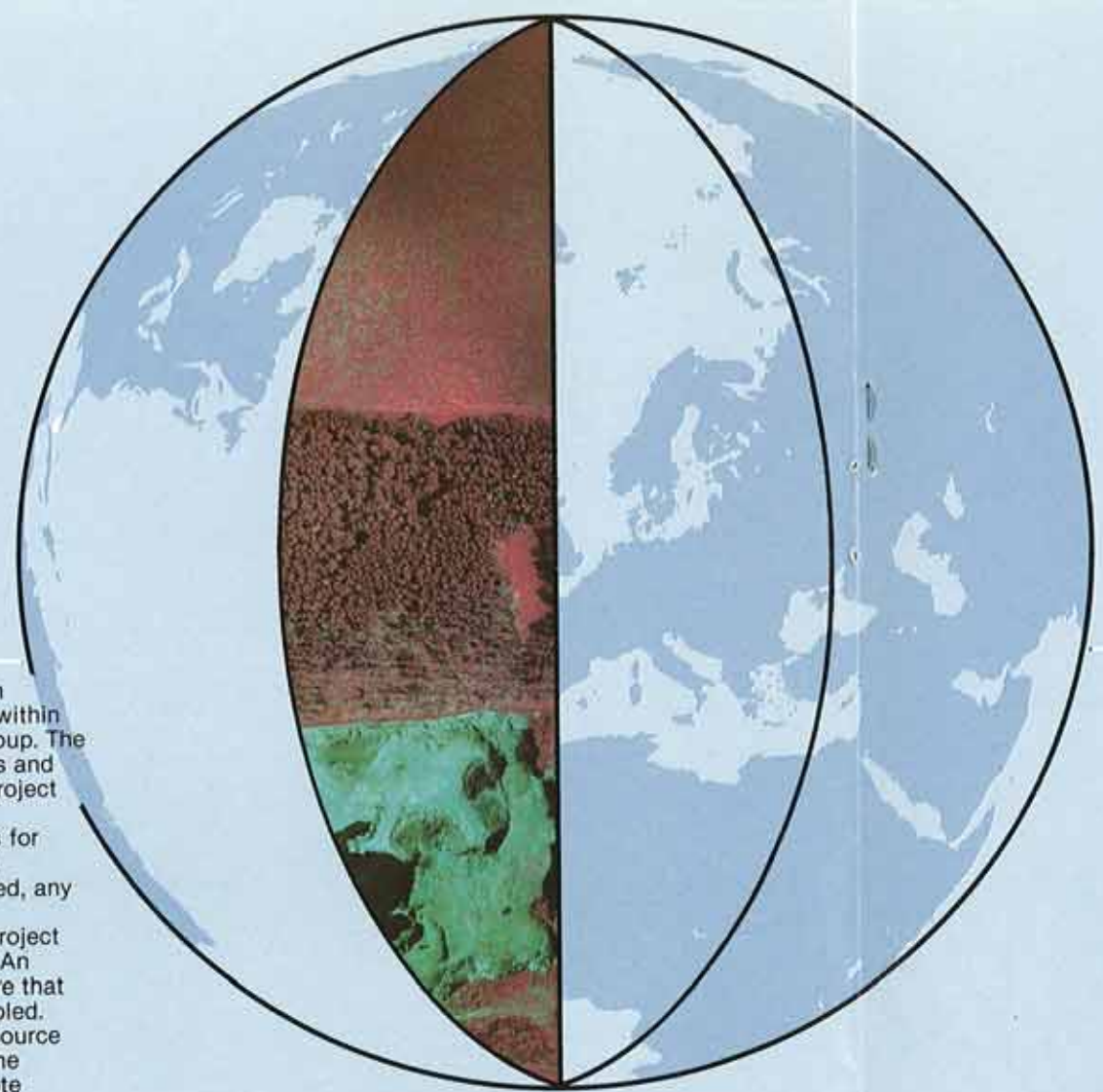
Safe custody and storage of original aerial films is a major undertaking for a company like ours, whose operations have spread over such a long time-frame. Sortie plots vertically filed enable our library staff to deal efficiently with the many thousands of enquiries we receive for copy material to be used in educational and investigational studies.



OPERATIONS



REMOTE SENSING



The Environment and Resources Consultancy Division integrates the use of modern remote-sensing techniques within the overall range of activities undertaken by the Clyde Group. The technology involved produces natural resource inventories and monitors environmental change on a global, regional or project basis.

The resultant data presents a clear and reliable basis for planning and implementation by the Consulting Engineer, National Administrator or Agricultural Planner — or indeed, any cost-conscious decision makers.

Data acquisition commences as soon as one of our project leaders has determined the project needs with the client. An objective and professional appraisal is essential, to ensure that the correct methods and the relevant services are assembled. Once these initial procedures have been completed, the source materials and scientific techniques are tailored to meet the requirements of each individual project. The various remote sensing systems — satellite, radar, thermal linescan, multi-spectral photography as well as conventional black and white, colour, colour infra-red, are used singly or in combination to best effect.

Multi-Disciplined Staff

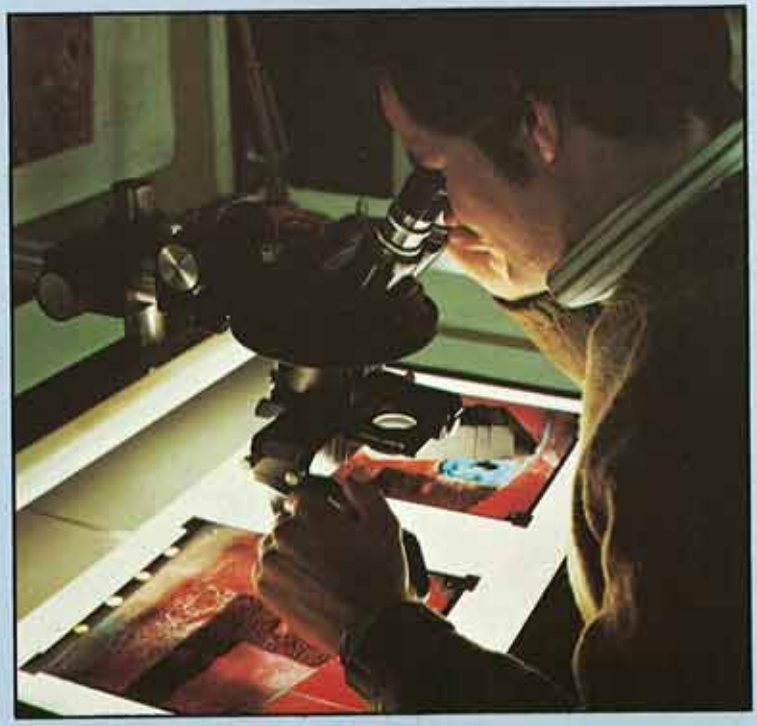
Data analysis involves not only the skills and experience of a multi-disciplined staff, but also requires a range of modern equipment to achieve scientific integrity in the evaluation stages. Clyde Surveys maintains a full range of such equipment for use by our physical scientists. A further important asset is the full scope of presentation facilities provided by the other production divisions of the company, particularly the photographic laboratories, drawing office and reprographic departments.

Ground truth studies are an extremely important stage in the whole process and the ability to mobilise staff to the many overseas locations from the United Kingdom is something in which Clyde Surveys has excelled for more than 50 years. The ongoing logistic support and the facilities for supplementing the field parties with local staff, to assist with the process of transferring the technology and expertise of the company to the client, all exist within the Clyde Group.

First class presentation of the data, on completion of the evaluation is the final essential ingredient. Comprehensive reports (translated from the original English if required) are compiled; these are fully documented with descriptions of methodology and supporting maps, diagrams, imagery and overlays. All such reports are carefully vetted by qualified scientific officers to ensure that the project objectives have been fully met.

- We specialise in:-*
- Natural Resources Inventories
 - Rural and Urban Land Use
 - Engineering Resources Surveys
 - Water Resources
 - Environmental Impact Studies

- Energy Conservation
- Pollution Monitoring
- Consultancy/Training Assignments



LAND SURVEY

From the earliest days of aerial mapping, land surveyors have supplied the essential ground control for photogrammetric map production.

Evolving from this early and limited role, our Land Survey Division has developed the resources to give the complete range of land surveying services, from topographical surveys, through setting-out, to structural monitoring, anywhere in the world. It has both the staff and equipment to meet the most demanding requirements.

The Division stands in its own right as a fully-operational land survey unit. This is further strengthened by its integration within Clyde Surveys, which gives it access to the company's entire resources.

The Division is staffed by qualified surveyors, most of whom have long and extensive experience of collecting data under the most varied and testing conditions.

Complete Spectrum

Its equipment covers the complete spectrum of modern instrumentation, suitable for surveying anywhere in the world, and it is backed by Clyde Surveys international logistics services.



Whatever the requirement, from geodetic data on a national basis, to metrology inside a nuclear reactor, our surveyors have available the appropriate combination of electro-magnetic distance measuring instruments to gather the required information with speed and efficiency.

These include theodolites, tacheometers, levels, lasers, alignment telescopes, magnetometers, echo-sounders, and underground services detectors.

After checking in the field for completeness and accuracy of the data gathered, processing is undertaken at our central laboratories using powerful in-house computing facilities, which enable rigorous computation and adjustment of large surveying schemes to be executed.

The results of the survey are presented in the desired form as reports, co-ordinate lists, setting-out data, digital tapes and cards, or fair-drawn sheets.

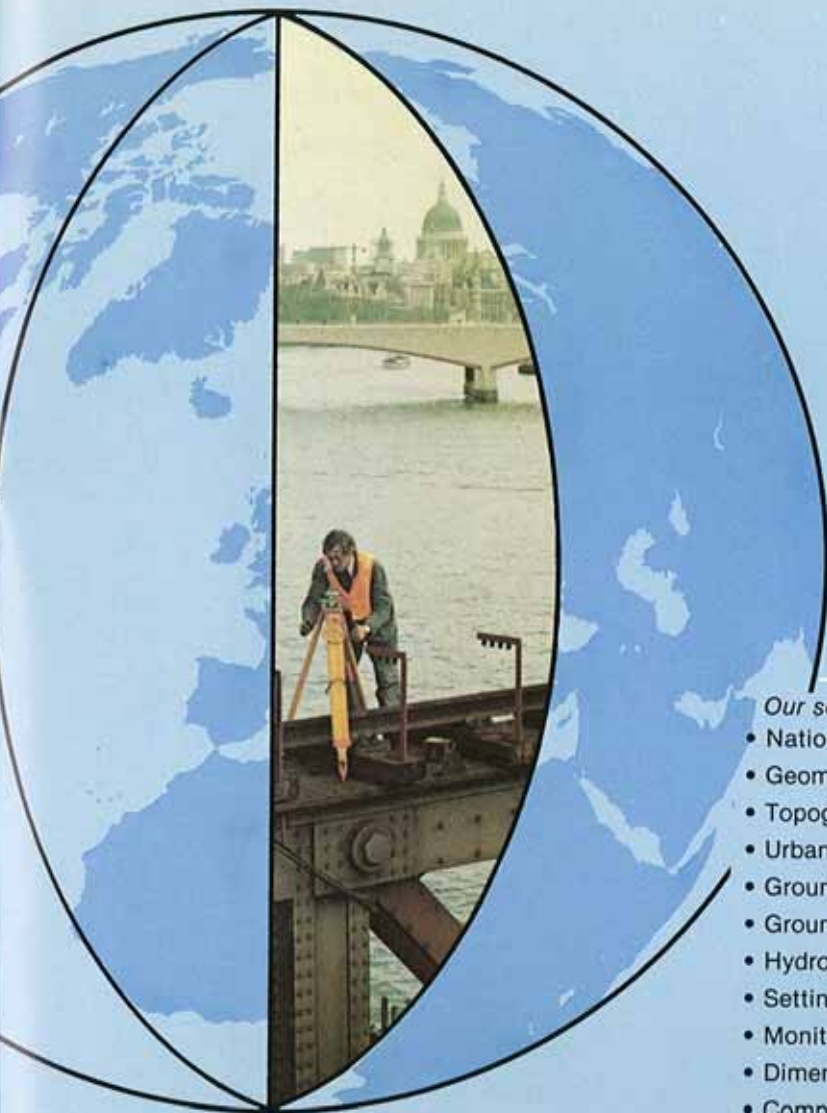
In addition to the computing facilities available, automated plotting fair-drawing and reprographic services are provided by the Map Production Division.

Land Survey also collaborates closely with the Research and Instruments Division in the design and manufacture of specialised surveying ancillaries and tools needed for unusual or difficult conditions. For example, phase-free spinning targets for nuclear reactor surveys, lasers for bridge suspension-cable alignment, callipers and jigs for structural dimensions, and adaptors for surveying instruments, have all been devised and made when the need has arisen.

This support from the Research and Instruments Division enables Land Survey to execute surveys of the most specialised nature and to the highest precision, a sphere in which the division has a high reputation.

Conversely, there is a feed-back to the Research and Instruments Division of practical experience in the field which enables the division to perfect its designs. Out of this has come a range of well-proven ancillaries which, in addition to using ourselves, we sell.





Our service at a glance

- National and geodetic surveys
- Geomagnetic surveys
- Topographical surveys
- Urban and engineering control networks
- Ground control of aerial photography
- Ground surveys — scales 1/50 to 1/5,000
- Hydrographic surveys
- Setting-out
- Monitoring
- Dimensional surveys of structures
- Computation
- Digital ground models
- Automated plotting
- Project consultancy



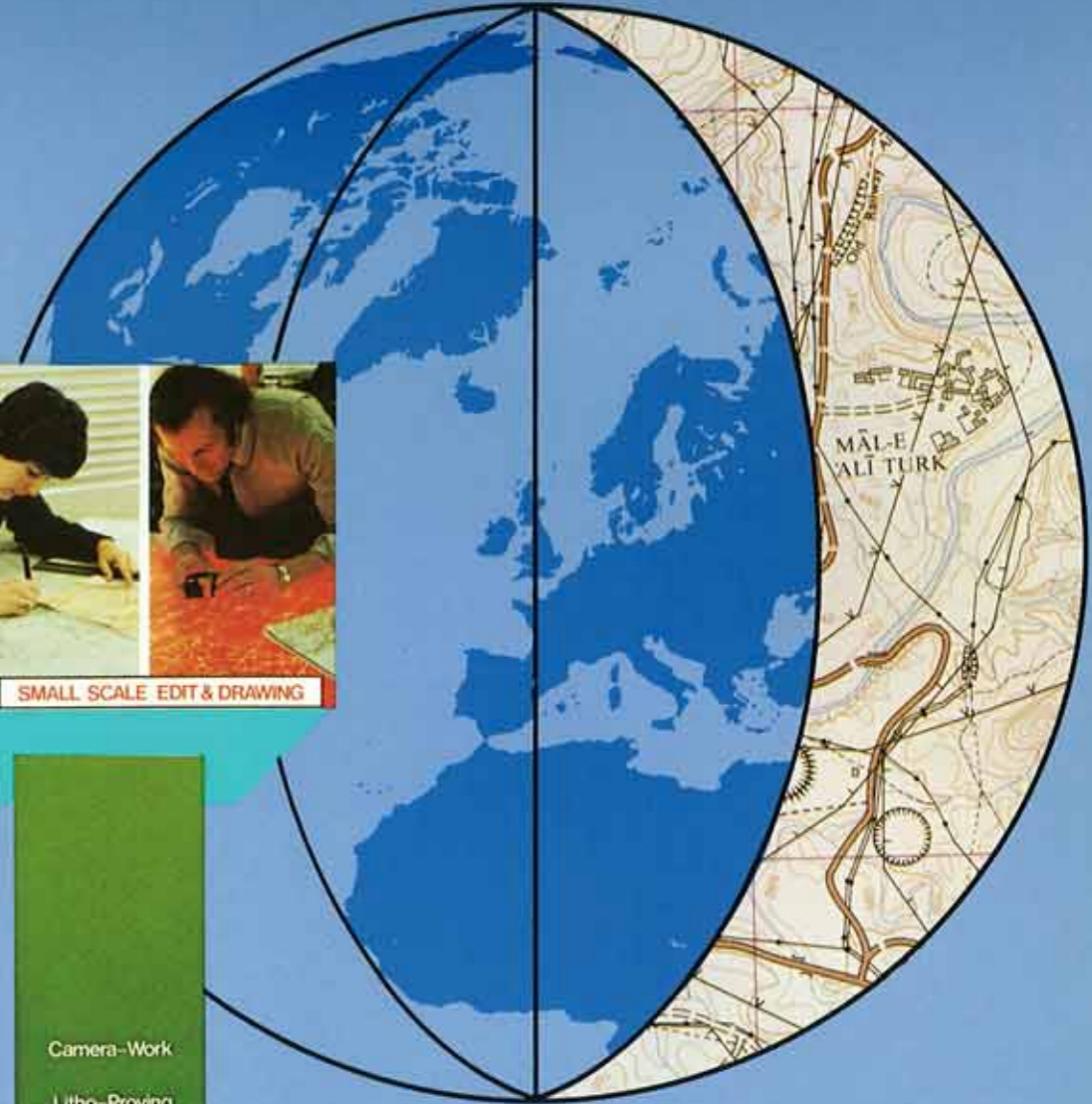
MAP PRODUCTION



DATA ACQUISITION



SMALL SCALE EDIT & DRAWING



Our first contract was under the name of The Air Survey Company of India, and ever since, our clients have required us to provide a measurement and map presentation service from aerial photography.

As the instruments designed to perform this role have developed, so our map production division has responded to use these tools efficiently. In common with any other production sequence, each stage has to be meticulously complete in itself, whilst the total process is integrated by overall planning to ensure maximum quality and economic efficiency.

Our present-day mapping systems are designed to meet both current and future demands. These mapping systems are based on our own research studies into production methods and are aimed at the most efficient and economic combination of man and machine.

On-line acquisition of digital data has been coupled to off-line computational reduction and automated plotting; with, of course, human monitoring and intervention at all necessary stages.

Production Management

All production processes are closely integrated under one roof, with departments strongly linked both physically and technically. For instance, to produce an orthophoto map successfully, close liaison between photo-laboratory, photogrammetric scanning, mosaicing and cartographic enhancement is necessary. This must be combined with reprographic control at all stages if the end product is to be of the highest possible quality.

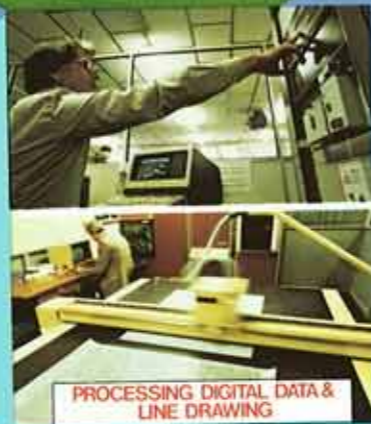
Production management is a vital factor in this teamwork and many of our supervisors have over twenty five years of map production experience.

To satisfy demand for our cartographic products at small scales, we still maintain a large drawing-office staff, despite the number of drawing tasks related to engineering plans being reduced by machine-aided digital mapping techniques. Skills involved in map ornament, cartographic design and relief presentation will be in demand for a long time to come.

The last 15 years has seen a major expansion of the service our drawing office provides to publishers specialising in atlas, touring map, and thematic cartography covering many topics, such as the wine-producing areas of the world.

Skills

Our human skills and technical equipment place us in a unique position to provide this service from within an integrated production unit. These advantages are used by every type of organisation that needs a well-designed, reproducible map as a basis for publication, from a departmental report to a leather-bound atlas.



PROCESSING DIGITAL DATA & LINE DRAWING

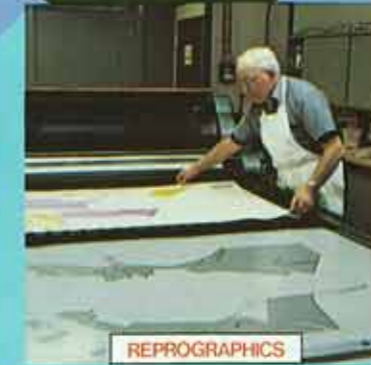


2nd STAGE DRAWING

Volumes
Areas
Profiles

Camera-Work
Litho-Proving
Photo-Mechanical Processing

Cartographic Examination



REPROGRAPHICS

In our own right we publish a popular series of leisure maps, which make professional cartography available to the holiday maker at an economic price in the tourist regions of the World.

Be it a resources report produced by our Remote Sensing specialists, a topographic map using photogrammetry, or a site survey measured entirely by land survey, our Livingston and Maidenhead map production facilities ensure presentation is of the highest quality.



Clyde Surveys Limited

ORGANISATIONS FOR WHOM WE ARE CURRENTLY WORKING INCLUDE

UK Government Departments

Department of the Environment
Ordnance Survey
Scottish Development Department
Highland and Island Development Board
Directorate of Overseas Surveys
Property Services Agency
Welsh Office
Ministry of Defence
Department of Industry

Overseas Government Departments

Ministry of Communication — SAUDI ARABIA
Ministry of Petroleum — SAUDI ARABIA
Saudi Arabian National Guard
Ministry of Information BAHRAIN
Ministry of Information QATAR
Cameroun Development Corporation
United Nations Development Programme
People's Democratic Republic of BENIN
Federal Surveys NIGERIA

Consulting Engineers

W.S. Atkins & Partners
Dalgety Agricultural Development International Limited
Sir Alexander Gibb & Partners
Sir William Halcrow & Partners
Jamieson McKay & Partners
Sir Robert Matthew Johnson — Marshall & Partners
Scott Wilson Kirkpatrick
Sir Owen Williams & Partners

Countries in which we are represented

Argentina, Bahrain, Cameroun, Canada, Ecuador, Egypt, Ethiopia, Greece, Holland, Iraq, Jamaica, Kenya, Kuwait, Libya, Malta, Nigeria, Oman, Saudi Arabia, Sudan, Thailand, United Arab Emirates and the United States of America

CANADA
Labrador
Forestry Survey
1951

CARIBBEAN
Island Surveys
1952-1953

NIGERIA
Township
Mapping
1975 onwards

CENTRAL AFRICA
Kariba Dam
Project Mapping
1952

ARGENTINA/CHILE
Boundary Survey
1966

BURMA
Irrawaddy Delta
Aerial Survey
1923-1924

SARAWAK
Forest Survey
Detail Survey
1927-1928

AUSTRALIA
Mount Isa Thermal &
Multispectral Surveys
1971



Registered Office

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Cables: Airimap, Maidenhead

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Livingston, West Lothian EH 54 5DG
Telephone: 0589 34173/4 Cables: Airimap, Livingston

Group Office

Clyde Petroleum Limited
78, St Vincent Street Glasgow G2 5TX
Telephone: 041-226 3422 Telex: 777420 Clypet G.



Clyde Surveys Limited

MAP
MAKERS
TO THE WORLD