

procurement"). Indeed, by a logical twist of which Cardinal Morton would have been proud, it suggests that a low output per man (one third of the American figure) actually offers the British industry a "most powerful advantage" in a "skill-intensive" industry. Without going into any detail, it reports the results of a study which suggests that British costs are very much lower than American ones; on a run of fifty aeroplanes, the advantage is 40 per cent. An aircraft which in Britain would break even on a production run of 130 would need a run of 410 in the United States. "With anything like a comparable run, the British cost advantage is very great", it declares.

It continues in the same vein, showing that Government money invested in the aircraft industry is well spent. The ratio between net aid and sales for the VC 10, the Trident and the BAC 1-11 series is 1 to 14.5. This would have been even better if the VC 10 and Trident had not been tailored so closely to British airline requirements—or even worse if the Concorde had been included. But it was omitted because, says the pamphlet, "it was realized from the outset that although it would achieve very large export sales, it was not a commercial venture in the normal sense". It is a pity that the SBAC did not share this realization with the public a little sooner.

This knockabout stuff sets the scene for the second half of the pamphlet, which tells the Government where it should spend its money next. The answer, unfortunately, is not very helpful, for the SBAC is in favour of supporting almost every kind of aircraft it is possible to think of. In the civil field, for example, it favours supersonic transports, short/medium range subsonic transports, V/STOL inter-city transports, medium size short take-off transports, turbine powered executive aircraft, and light transports for short-range freight and passenger operation. The military list is almost as comprehensive; about the only thing the SBAC fails to mention is the dirigible. In space, oddly enough, its heart and that of Mr Wedgwood Benn seem to beat as one; it favours fewer international obligations, more emphasis on applications satellites, and the development of a European launcher only as a long term project. As a declaration of self-confidence and enthusiasm the pamphlet is a complete success; but it leaves the Government to make the difficult decisions.

#### UNIVERSITIES AND GOVERNMENT

### Hand in Glove

THE University of Surrey and the Ministry of Technology's Royal Aircraft Establishment (RAE) have formally joined forces in research and teaching in a number of departments of both organizations. This is the fifth of a series of links formed between British universities and Government research establishments and is possibly the most far reaching in its arrangements for collaborative higher degree work.

During the five years for which the agreement will initially run, joint research programmes will be set up in which part of the work will be done at the RAE and part at the university. The projects will in general be selected from those areas involving long term interests to the RAE where the university has or expects to have special expertise—these include electrical and control engineering, civil and mechanical

engineering, materials technology and computing techniques. So far only about 60 per cent of the university has moved from the site at Battersea to Guildford, conveniently near the RAE, but, when the rest moves, departments such as the linguistics department, which offers intensive language courses, may become involved.

A joint RAE-university advisory board has been set up under the chairmanship of Mr R. J. Lee, the deputy director of RAE, and Professor D. R. Chick to initiate new joint projects and to carry out annual reviews of existing programmes. No attempt will be made rigidly to define the extent of the programmes.

RAE staff members will be able to work for higher degrees—M.Phil or PhD—from the university through any mutually acceptable research work, whether it is part of a joint research programme or not. They will also be encouraged to join the university Senior Common Room and any appropriate committees, while university members will be able to serve on the RAE planning bodies concerned with their work. Arrangements will be made for seconding members of staff of the university to RAE and vice versa for periods of up to a year. The RAE "will consider sympathetically" applications from research students to carry out their MSc projects at the RAE in areas of mutual interest. Some of the undergraduate sandwich course students will be able to spend their year in industry at the RAE. The university and RAE will cooperate in arrangements for holding specialist and refresher courses.

Schemes for forming links between Government establishments and universities go back to the early sixties. One of the first to be consummated was that between the University of Birmingham and the Royal Radar Establishment, Malvern, which brought about the exchange of three or four officers at a time. Much of the credit for that arrangement goes to Dr George MacFarlane, now Controller at the Ministry of Technology but then head of RRE. A link between the University of Southampton and the RAE was forged in 1966, and the following year the Explosives Research and Development Organization was linked with the University of East Anglia. The University of Surrey is anxious to make quite clear that the scheme now set up is more intimate than its predecessors. Whether it will be the first or the last of its kind is another matter. In spite of the platitudes of the Sutherland Committee, which reported on the relationship between Government establishments and the universities just two years ago, it is now more than likely that the Ministry of Technology is more anxious to have links with industry than with the universities.

#### PLANNING

### City for Learning

MILTON KEYNES, the new city planned in an area of north Buckinghamshire about midway between London and Birmingham, moved a step nearer reality last week with the publication of the interim report of the consultants to the development corporation, Llewelyn-Davies, Weeks, Forestier-Walker and Bor. The planners aim to create a city for 250,000 people by the end of the century on a 21,000 acre (8,863 hectare) site taking in the existing towns of Bletchley, Wolverton and Stony Stratford and some other small villages including the one after which the city will take its

name. The plan is the most ambitious yet for a new town in Britain. Throughout, there is an emphasis on freedom of choice and variety. The planners have set their goals high. They see Milton Keynes as a city of quality where the residents will have high incomes, short working weeks and consequently plenty of time for leisure; where homes will be spaced apart with trees and greenery more evident than buildings; and where homes, jobs, schools, and health, shopping and recreational facilities, are all freely accessible. It will be a city influenced by market forces, with the public free to choose between public and private methods of transport with, at the same time, congestion-free motoring and easy parking. Above all, the planners see the city as balanced throughout its development—something earlier new towns failed to achieve.

In the field of social services, the planners see Milton Keynes as the “scene of educational advance and innovation”. They suggest it could be Britain’s first planned “city for learning”. While they would like to see nursery and primary schools within walking distance of the family home, they say that, with easy travel, this would not be necessary with the later schools. The break-away from the rigid catchment areas, “neighbourhood units”, complete with schools, health clinics, shops, and so on, is a noteworthy feature of the scheme, and it incorporates recent thinking that towns should be built to allow for the maximum freedom of social development, movement and choice. Churches, social groups, employment patterns and many other groupings would together form local communities which would vary and overlap widely. It is suggested further that secondary schools might be grouped to share advanced teaching centres and, eventually, a university could develop out of the concentration of colleges for advanced further education proposed near Stony Stratford, or from the existing college at Cranfield, or both.

Particular attention is paid in the report to the siting of clean and quiet factories in the residential areas. These would be equipped with nursery schools to meet the need for the employment of married women. A grid type of road network consisting primarily of ground level roads 1 km apart in each direction throughout the residential areas would mean that the average journey to work would only be 10 to 15 minutes. But all the areas of the city must also be accessible by public transport—“a safe and environmentally attractive transport system, one which minimizes nuisance from noise and pollution”. After investigating forty-six types of public transport, some existing and some possible in the future, the consultants recommend a road-based system using small buses. This type of system, they say, could be brought relatively close to the doorstep of every home at a reasonable cost—it is calculated that about a thousand fourteen-seater buses giving a 2.4 minute service in peak periods would cost £2 million a year to run. The later introduction of a development in transport called “dial-a-bus” or “telebus” is also recommended. The passenger “dials” his destination at the bus stop near his home, and a central computer would then route a bus to pick him up. The planners are also allowing for the possibility of using systems like the monorail in the city.

“Recreation in the future could be a bigger business than any single industry” in Milton Keynes, and accordingly the planners have allocated some 5 to 6 acres of land per 1,000 population for outdoor recreation—this figure excludes land allocated for playing fields, local parks and gardens. Among the proposals are the development of a linear park along the Grand Union Canal, the conservation of all the existing woods, and the building of an international golf course.

This interim report presents the concepts of the plan, rather than firm decisions. Inevitably, it brings out the enormous practical, social and economic



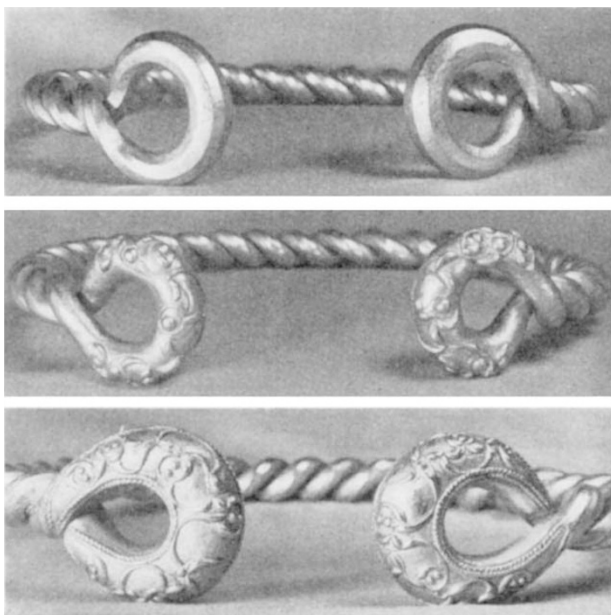
Sketch map of interim proposals for the new city.



difficulties facing planners of new towns. It is an excellent theoretical exercise, but how will it work in reality? Some crucial points remain in doubt. Will development of the city be coordinated sufficiently, both internally and regionally? Many of the planners' proposals for the city have had to be guesswork because the Government's economic strategy for the south-east will not be completed before December 1969, the date of the completion of the master plan for Milton Keynes. The city's future depends on the attraction of the right industries—if it does not succeed it could become a dormitory town for Birmingham. Another problem is water supply. Buckinghamshire Water Resources Board only has definite sources of supply decided up to 1975—only the first six years of the thirty years of rapid growth of the city as proposed in the report.

#### ARCHAEOLOGY

### Treasure Trove



Three of the five late Iron Age gold torcs or neck collars which were found last October at Belstead near Ipswich by a workman driving an excavator. The torcs, declared treasure trove in December, are now on permanent exhibition at the British Museum and their finder has received a £45,000 reward. Each is about 8 inches in diameter and their weight ranges from 858 to 1,044 grams. Four of the five are decorated in the same style as the torc found several years ago at Snettisham in Norfolk and also now at the British Museum. The Snettisham torc was found with a silver coin of the second quarter of the first century BC stuck in one of its decorated ring terminals. Because of similarities of style the Ipswich torcs are believed to date from this period. They are particularly valuable to archaeologists because they are unfinished and thus reveal the methods used by Iron Age goldsmiths. The three illustrated, for example, show the sequence in which the incised decoration was built up on the ring terminals. (Photographs by courtesy of the British Museum.)

#### CONSERVATION

### Naturalists to Unite?

NATURALISTS seem to have been taken by surprise by the memorandum "Plan for a Merger" in which Sir

Landsborough Thomson has set out proposals for a society to coordinate bodies concerned with nature conservation in Britain. Sir Landsborough proposes a merger of the Royal Society for the Protection of Birds, the Society for the Promotion of Nature Reserves and the Council for Nature. This is not a new idea; the SPNR and the RSPB already have a liaison committee which agrees that a merger is a good long term aim, and throughout 1968 there were discussions with the Council for Nature about the formation of a new organization. Sir Landsborough Thomson's document, produced independently of the Council for Nature of which he is chairman, is intended to give some impetus to this process of rationalization, which many people believe cannot be hurried.

There is considerable overlap of function between the existing organizations, although each originally had a distinct purpose. The RSPB, with more than 30,000 members, has 104 acres at its headquarters in Sandy, Bedfordshire, where 13,000 birds are kept and ecological work is carried out. The SPNR devotes most of its energies to being the national mouthpiece of the county naturalists' trusts (which now cover the whole of England, Wales and Scotland), encouraging local government, river authorities, sporting organizations and similar bodies to adopt an enlightened attitude to conservation. The Council for Nature was set up in 1958 to represent and coordinate the voluntary conservation movement as a whole. More than 400 societies are affiliated, and several of them, including the RSPB and SPNR, are represented on the council. It is the fact that the Council for Nature is an affiliation of societies and not an autonomous society that is worrying some people about the merger—it looks as if the Council for Nature would be merging with part of itself. Last April a new constitution was adopted and the old executive committee was replaced by the present council of members elected by the affiliated bodies. These changes were regarded at the time as a step towards closer cooperation with other voluntary bodies.

Sir Landsborough Thomson's proposed constitution for the new merged society suggests that there should be both corporate and individual members, with all bodies associated with the Council for Nature as corporate members and the county naturalists' trusts as "associated trusts". Members of the RSPB and the SPNR would be able to be members of the new society, which would have a name such as the "Royal Society for Bird Protection and Conservation"—fresh permission would probably be needed for the "Royal" title. Two councils are suggested, one elected and executive and one appointed and advisory. The proposed constitution includes provision for a magazine, on the lines of *Birds* now published by the RSPB, but with a wider scope and title such as "Birds and Habitat".

#### POLLUTION

### London grows Cleaner

THE River Thames and London's air are becoming progressively cleaner. That is the cheerful message of the annual report for 1967 of the Scientific Adviser to the Greater London Council which says that, for the first time for more than half a century, "not a single sample (from the Thames) at any time during the year was devoid of oxygen". The river is sampled in