

## SPACE

**Beware of Imitations**

WITH the US Air Force plan for a manned orbiting laboratory (MOL) scrapped, NASA will have to be careful that its civilian reputation goes unscathed. Much of the justification for the cancellation, announced last week, is that the MOL is a costly (\$3,000 million) and rather inferior duplicate of some parts of the Apollo programme. Little has been made public by the Air Force about what the two men in the MOL were supposed to do, but the chances are that the Apollo Applications programme could have done equally well, and there are now likely to be military minded people hoping that room will be found for them in NASA's plans. Whether NASA will be able to resist remains to be seen. Purity will no doubt be harder to maintain after the Moon landing, when the question of what to do next becomes pressing. NASA is already committed to a programme of earth resources satellites, and will have to live with the kind of rumpus kicked up over the release of many of the Apollo 7 photographs said to be of "sensitive" areas. Even worse, it is not far to go from a dispute of this kind to an accusation of spying.

So far, \$1,300 million has been spent on the MOL, which makes its cancellation an event as important, if not as traumatic, as the cancellation of Concorde would be. And, like Concorde, MOL has been on the razor's edge for some time. Its chances seemed to have improved with the arrival of the Nixon administration and the appointment as Secretary of the Air Force of Dr Robert Seamans, once deputy administrator of NASA and known to favour a strong military effort in space. Earlier this year, Dr Seamans aired his views on the importance and urgency of MOL before the Senate Armed Services Committee. But the final nail in the coffin seems to have been the \$576 million requested for the project in the 1970 defence budget, making it the third most expensive item after the Sentinel anti-ballistic missile system (\$1,800 million) and the Poseidon submarine-launched missile (\$1,200 million). Dissatisfaction with the way the Pentagon has been handling expensive projects, such as the C-5A transport plane and the B-70 bomber, meant that there had to be cuts, and MOL seems to have been the most expendable item.

As recently as three months ago, there was talk of recruiting a further batch of astronauts to add to the fourteen already in training for duty in the MOL. Then the first manned launching was expected towards the end of 1971, from the Western Test Range in California. Since approval of the project in 1965, the date when test flying of the laboratory—based on the Gemini capsule—could begin has already been postponed twice.

## POPULATION

**Bursting Seams**

THE population of the world is increasing at the rate of 2.2 persons per second. On the average, 3.9 babies are born every second but just under 1.7 persons die. Of the 331,000 babies born each day, only 51,000 are born in industrialized countries. In the year ending July 1, 1969, the population of the world will

be about 72 million greater than the previous year, but forty years ago the population was increasing only by about 20 million a year. For the world as a whole, the present rate of growth is 2 per cent a year, but regional rates vary from about 1 per cent in Europe to more than 3 per cent in Latin America.

DISTRIBUTIONS OF WORLD POPULATIONS AND BIRTHS PER YEAR

	Per cent world population	Population	Per cent births	Number of births
Asia	56	1,990 million	63.4	75.620 million
Africa	10	344	13.3	15.824
Latin America	8.0	276	9.0	10.964
North America	6.0	225	3.4	4.050
Europe	13.0	456	6.9	8.208
USSR	6.5	241	3.6	4.356
Oceania	0.5	19	0.4	0.456

These are a few of the figures in the World Population Data Sheet for 1969, just published by the Population Reference Bureau in Washington. The table shows the distribution of world population and of world births each year. The countries with smallest resources for rearing and educating children have the youngest populations. More than 40 per cent of the people in underdeveloped countries are under 15 years old, compared with 30 per cent in North America and 25 per cent in Europe. This, of course, represents an enormous built-in fertility potential in the overpopulated and underdeveloped parts of the world. By 1980, these countries will have twice as many women in the high fertility age groups, 20-30 years old, than in 1965. As a result, even if fertility control programmes begin to make inroads on the birth rate, the actual number of births will almost inevitably rise over the short term because of the enormous increase in the proportion of women of child-bearing age.

In Europe, Hungary has the lowest birth rate—14.6 per 1,000. Roumania, which previously claimed this distinction, had until 1966 a birth rate of 14.3 per thousand, but, since abortions were declared illegal in 1967, Roumania's birth rate has shot up to 27.1 per thousand, the highest in Europe except for Albania, where the rate is 34. Luxembourg, Belgium and East Germany have the slowest growing populations in the world, 0.1 per cent a year, compared with rates of 7.6, 4.1 and 3.8 per cent in Kuwait, Jordan and Costa Rica respectively.

China remains the great question mark on the demographic map. UN statistics for China are obviously contradictory—a population of 740 millions, a birth rate of 34 per 1,000 and a death rate of 11 per 1,000, and an annual increase of 1.4 per cent. Other estimates of China's population exceed the UN figure by 50 million or more but it is questionable whether even the Chinese themselves know their country's population.

The last time the mainland Chinese published population statistics was in January 1958, when the population was said to be 646 million. For nearly a decade afterwards, Chinese politicians continued to quote their population as 650 million, but since 1966 there have been references in political speeches first to a population of 700 million and, in February 1968, to 750 million.

According to R. M. Field (*China Quarterly*, No. 38, 158; 1969), if these figures are based on census data, they must date from the registration that took place during the summer of 1964. According to the projections and estimates prepared by Dr J. S. Aird, of the US Bureau of the Census, the Chinese population in 1968 was probably between 754 and 793 million and the rate of growth is probably greater than 1.5 per cent per year.

## CANCER

### A Collaborative Network

THE International Agency for Research on Cancer, which was established in 1965 within the framework of the WHO, is nearing the end of its first quinquennium and before the end of this year the governing body has to raise the funds for the next quinquennium. At present the agency, which is housed in temporary accommodation in Lyons, runs on a modest annual budget of between \$1.6 and \$1.7 million, collected as ten annual contributions of \$150,000 from the nine participating states and from the WHO itself. With the prospect of a new fourteen storey block in Lyons, to house its administration, library and laboratories, which is being paid for by the French Government, the Département du Rhône and the city of Lyons, the agency should be in a strong position not only to obtain renewed subscriptions from its nine members (Australia, France, Israel, Italy, Holland, Britain, West Germany, the USA and the USSR) but also to recruit some new members.

When the agency was set up to foster international research on cancer it very wisely decided not to duplicate laboratory work but to concentrate on problems that demand an international approach. With its limited budget it settled for programmes of cancer epidemiology and environmental cancer biology and a fellowship scheme. And the initial fears, which may account for the short list of member states, that the agency would draw off manpower and money from national cancer research institutes, have proved groundless. As the recently published annual report for 1968 says, the agency has repeatedly had to turn down, because of lack of funds, suggestions for international collaboration from national institutes, but it has been able to contract out specific research projects with national laboratories giving emphasis to work in the underdeveloped countries. For example, the agency is sponsoring cancer registries in Malawi, Tanzania, Singapore and Kenya. Many of its other contracts with laboratories in underdeveloped countries are for research on the epidemiology of locally prevalent forms of cancer while work done in the industrialized countries is chiefly on environmental carcinogens such as asbestos and N-nitroso compounds.

One of the aims of the agency is to act as a neutral organization through which governments can collaborate on problems that have either economic or political overtones and are the subject of strong lobbying. The agency is making and publicizing, for example, such unwelcome discoveries as the correlation between high rates of oesophageal cancer in Brittany and the large consumption of Calvados, and the presence of the carcinogen diethylnitrosamine in Malawi gin. But the work of the agency is not all a matter of developing a collaborative network among existing national insti-

tutes and correlating the epidemiology of cancer. It has some laboratories in its temporary building and plans for more in its new home, where work on viral and chemical carcinogenesis, for example, will be extended.

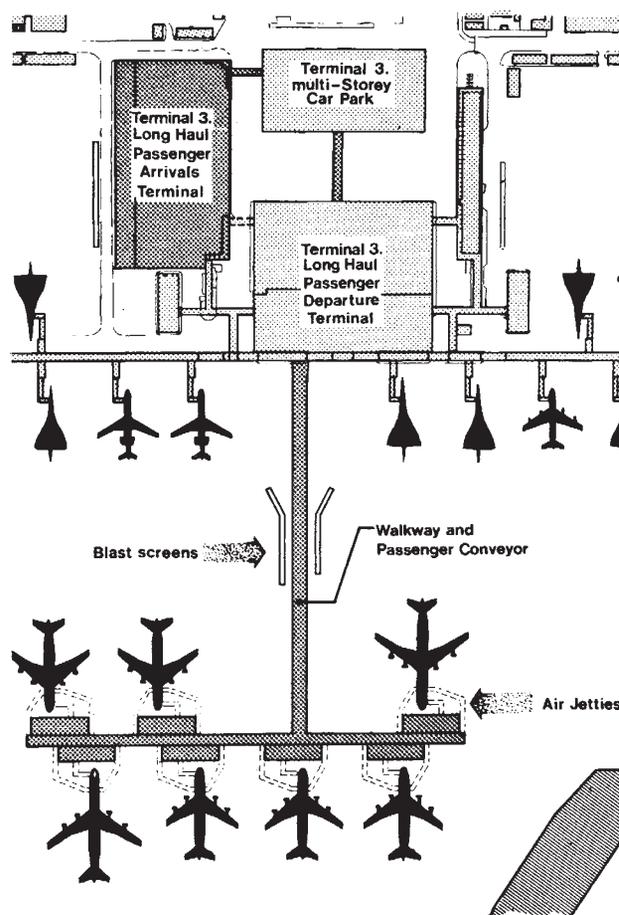
The other string to the agency's bow is the organization of international meetings—there were seven in 1968—and the fellowship and training scheme. The number of applicants for both travel and research training fellowships is increasing by between 30 and 50 per cent a year and, in contrast to the rest of the work of the agency, emphasis in the fellowship programme is not on epidemiology but on cell biology, biochemistry and virology.

## AIRPORTS

### No Exit from London

AN annual increase of 13–14 per cent in passenger traffic at Heathrow London Airport is expected from the introduction of the Boeing 747 jets next April. These aircraft, which are having their final tests at the end of this year, will each carry an average of 350 passengers. The first 747s will belong to Pan American, TWA and BOAC, but by 1973 there will be 250 of them arriving at Heathrow each week, so that the number of passengers will be about 23 million, almost double the 1968 figure of 13.7 million.

To accommodate this increase, the British Airports Authority has planned £12.5 million worth of additions and extensions to the existing Heathrow facilities,



Heathrow Airport, London. South-west terminal expansion.