

Nobody should be surprised if, some months from now, present anxieties about nuclear weapons based in Europe are outmatched by fears that, without them, one half of Europe or the other will be defenceless.

Finally, there is the problem — strictly, the red herring — of Mr Brezhnev's proposal for an international committee of distinguished scientists to consider the consequences of nuclear war and to tell the world what they are. In the past few months, the Soviet Union has introduced resolutions to this effect in the general assemblies of the World Health Organization and the UN Environmental Programme. By all accounts, a similar proposal will soon be put to the general assembly of the United Nations. In reality, however, there is no shortage of documents spelling out the horrors of nuclear conflict. Most of them agree that the consequences would be appalling. What is needed is not another chilling document but a more constructive attempt to show how nuclear war can realistically be avoided. While the scientific community has much to contribute to such an investigation, it has no special competence to say what is strategically and politically possible. But that, of course, is why the two superpowers are sending delegations to Geneva.

Equity in research

British research councils are saying that universities must also invest in research. But can they? And fairly?

The Medical Research Council has helpfully made public the letter in which it has told British universities that they need not apply for research grants on behalf of department which are inadequately equipped (see page 201). By this means, universities will at least know where they stand. And it is only right that a substantial grant-making agency such as the council, which is in principle well placed to compare the utility of money spent in university departments and in its own establishments, should do what it can to ensure that grants are not wasted because universities cannot give their recipients adequate support. One problem, of which the council must be well aware, is that in the process of saying no to applicants whose universities cannot support them properly, it may be denying good people a run for their money. For who can be sure that the academic departments which universities decide must be cut back will never include among their staffs potentially creative people? By doing what it must — concentrating support in the departments that universities themselves decide to back generously — the council (like other British research councils) is in danger of backing mediocre horses. This is another way of saying what has been clear all along — that the dual-support system (by which universities pay for the overhead cost of academic research, and research councils for the extras) has long since broken down. The question now is what should be done to put things right. To remark that a committee under Sir Alec Merrison has been brooding on the question for the past two years is not a sufficient answer.

The plain truth is that it will be intolerable (but also a dangerous waste of talent) if research councils such as the Medical Research Council think it prudent not to back particular people because the universities concerned have chosen to be mean to the departments in which those people work. The simple solution is obvious but probably unattainable — let the British research councils pay the full cost of the research projects that they back, transferring the cost of the overheads they would then incur from the budget of the University Grants Committee: the universities would kick up too much of a fuss. Another would be to consider grant applications from all university departments, and to use research council money to help ensure that successful applicants are able to migrate to places where research could be carried out effectively. The device now used in the Netherlands (see page 202) by which universities are subsidized under the two separate headings of teaching and research would be even less welcome to British universities — but, on that account, might be an efficient spur to change. Whatever stratagem is used, there is a crying need that

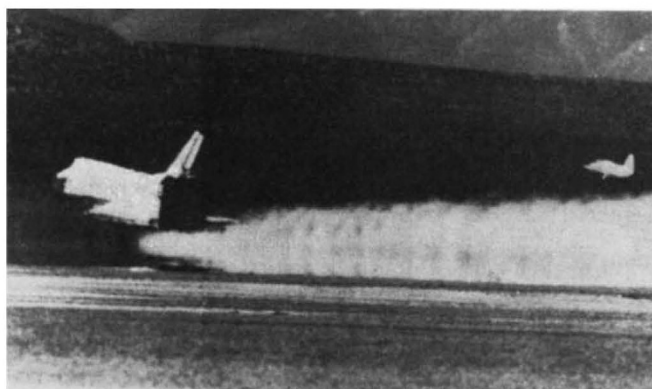
something should change. For to be unable to make research grants to people likely to use them well is not merely inequitable to those concerned but unfair to the rest of us.

Come back, Columbia

The shuttle looks like a success. Might it be a better one if NASA had time to think?

The second test-flight of the shuttle spacecraft was in no sense the near-calamity it has been represented to have been. That one out of three fuel cells should have functioned inefficiently, but that the spacecraft should nevertheless have performed well for more than two days, can just as well be taken as a proof of the good sense of its designers and of the flexibility of the system they have devised. It is not as if the shuttle were simply another kind of aircraft, whose development would no doubt have followed a more conventional course, with a succession of test-flights gradually extending its performance. Instead, it has gone almost in one jump from the drawing-board to full flight. In the steady enlargement of the regimen accessible to manoeuvrable passenger-carrying vehicles, the shuttle is a landmark of an innovation. Two years late though it may be, the US National Aeronautics and Space Administration deserves full credit for making it fly at all.

Two groups of problems nevertheless persist. First, the cost of the remaining development threatens to be an insupportably large fraction of the total space budget, with the result that NASA cannot sustain its modest interest in the less spectacular parts of its research programme even though it has been shielded from the full rigours of the 12 per cent budget cut decreed last month. It



cannot be that this is what the White House intends. And even though the potential military importance of the shuttle has led some to suggest that the Pentagon might shoulder some of the responsibility for it, its importance as an economical means of launching satellites of great commercial importance is, rather, an argument (if one were needed) that budget-balancing by means of across-the-board cuts is no way to conduct government business. But there are also problems with the shuttle itself, last week's success apart. Now, not later, is the time to be sure that solutions adopted ten years ago to technical problems such as the heating of the spacecraft in the upper atmosphere are still the best.

The important need, now, is to get the shuttle right. The United States space administration is understandably anxious not to delay much more. The customers are restive, and the political dangers for an agency that fails to deliver could be serious. But, to many people's surprise, space travel in the modest mould represented by last week's Columbia has come to stay. It will be economically important and, in the long run, a cheerful influence on people's spirits. The space agency will no doubt say that all the technical problems — the engines, the heat shield, the turn-round time and the next rocket stage — are continually being looked at. It would be best if this re-examination could be comprehensive, and public. For then the pressures from would-be customers, at the Pentagon and elsewhere, would be diminished. As would the risk of losing great benefits for want of a little forethought.