

American; as things are, it is also literally insoluble. This year's cuts in university budgets will have ensured that, next year, the research councils will be seeking with less success than in recent years sparks of inspiration on which to spend their own then diminished funds; except in the most ivory of towers, demoralization has now gone too far. In the long run, British universities will survive as teaching institutions and as places at which research is carried out only if there is a greater plurality of sources of funds — among which the contribution of students towards the cost of their education must be a principal ingredient. (This last thought should publicly be suppressed, for there is a danger that the hard men at the Treasury will misread it as a proof that all support for students should be done away with and not simply as a sign that the arbitrary limits on size now imposed on individual universities are diseconomies.) Dr Press's symposium next week will be an instructive occasion. It is to be hoped that the participants can spare a thought for those even less fortunate than themselves.

Airborne radar for all

Selling AWACS aircraft needs diplomacy. Is the United Nations the buyer of last resort?

When is a defensive weapon system offensive? Most simply, when it is an AWACS aircraft. This seems to be the lesson of Libya's angry reaction last week to the American decision to base two of these airborne radar aircraft in Egypt, of the earlier Israeli reaction to the United States Administration's plan to sell seven of the aircraft to Saudi Arabia — and of President Reagan's difficulty in persuading Congress that the sale should be allowed. On the face of things, a system designed to give early warning of attack would seem to be an unadulterated boon, contributing to stability and the avoidance of war. The objectors to United States plans for AWACS think otherwise. In an interesting and important way, the objections are correct.

Offensive and defensive weapons are always complementary and cannot in the last resort be sharply distinguished from each other. If one of two potential adversaries acquires a more effective system of defence, the other's offensive weapons are necessarily diminished. Thus must professional archers have been angered by the development of lightweight personal armour in the fifteenth century. The irony of the proposed sale of AWACS aircraft to Saudi Arabia is that the United States has been the chief supplier of offensive aircraft both to Saudi Arabia and to Israel, so that the transfer of the radar aircraft (already in place, but operated by the United States Air Force) would effect a retrospective devaluation of the American aircraft in service with the Israeli air force, at least in relation to Saudi Arabia. Part of President Reagan's trouble in persuading the Senate to agree to the sale — the House of Representatives has already denied him, but a veto requires unanimity of both houses — is inescapable by those who supply bows and arrows to one of a pair of potential adversaries and armour to the other. The supply of arms that neutralize each other looks foolish, escalates the level of possible combat and is a waste of resources. But the President's case would be stronger if there were some evidence that the sale would help to resolve the mounting problems of security in the Middle East.

To be fair, the Administration's case is not entirely unrespectable. Of all possible pairs of combatants in the Middle East, Saudi Arabia and Israel are the least likely. Moreover, the Saudi need of radar aircraft stems from anxiety about the stability of the Persian Gulf; the aircraft would probably spend their time looking north and east, not towards the West. But because the AWACS aircraft are capable of gathering military intelligence and because the Israelis have no assurance that information about aircraft and other military hardware within Israel would not be passed on to more probable adversaries, it is understandable that the Israeli government should have taken fright.

Yet is there nothing that might be done constructively to take the edge off this anxiety? It would be too much to ask that Saudi Arabia should forswear hostilities against Israel — in the present

climate of the Middle East, that would further inflame the opinions of other Arab states against Saudi Arabia as well as Israel. But there must be some basis for an accommodation. An agreement that Saudi Arabian AWACS aircraft should not fly over Jordan — a sizeable buffer state — would be a good start, helping to assuage Israeli susceptibilities while acknowledging Saudi Arabian sovereignty. If the Administration wants the AWACS sale to go through, it should bend its energies in that direction.

The United States should also be looking for more constructive ways of using the technology of airborne radar. These devices, the British Nimrod like the United States AWACS, are effective means of surveillance for other airborne machines, missiles as well as aircraft. Their usefulness in keeping track of what happens on the ground is less well established, although much can apparently be done. Such airborne radar systems might thus be invaluable in monitoring what happens when exhausted combatants have agreed that a United Nations peacekeeping force is preferable to the prolongation of war. As things are, airborne radar over southern Lebanon is more urgently needed than near the Persian Gulf. Is it too much to hope that the United Nations, usually the luckless peacekeeper of the last resort, will at some stage have access to this technology?

A Daniel for the lions

The British Government's new Science Adviser should tread carefully but also bravely. Caution will not help.

The British government, like most of its predecessors uncertain about the quality of scientific advice it wants, this week appointed Dr Robin Nicholson as a kind of between-stairs adviser on scientific matters. Unlike legendary (and partly malevolent) people like Lord Cherwell, he will not be a confidant of the Prime Minister, but will have access to her. Unlike his immediate predecessor, Dr John Ashworth (now the unfortunate vice-chancellor of the University of Salford), he will be only partially responsible to the head of the Central Policy Review Staff. By his own account, but like earlier incumbents of similar posts, he will have to spend several months learning his way about Whitehall. In the process, like some earlier incumbents, he may be captured by the notion that government is too difficult for people whose qualifications are merely intellectual ability, technical insight and energy. Here, then, is a simple recipe for Dr Nicholson:

- Do not be patient (or too patient); this government has only two years left, and you will not be reappointed. (You have only been seconded for three years, in any case.)
- Make a constituency, even if that means spending more time talking to working scientists than to other civil servants. Even (or especially) the least revered of your predecessors have known what is happening at the bench (which is why they could often get away with murder). Giving people a sense that their opinions will be valued is good for them, while many Whitehall denizens (who travel infrequently) are mightily impressed by tales brought back from north of the River Trent.
- Write no substantial memoranda; they will be photocopied.
- Do something to help British higher education (polytechnics as well as universities) in their present plight. The colleagues with whom you will be sharing the official car-pool cannot be as indifferent as they seem to the fates of the institutions at which they were so narrowly educated.
- Do something to bring the Advisory Council on Applied Research and Development within the ordinary ambit of professional discussion; there is no *a priori* reason why it should behave as if it were another kind of think-tank.
- Do something useful; bringing Britain's defence research establishments within the scope of technical discussion is the most obvious need. Do not in the meantime worry whether the Ministry of Agriculture (to which are joined Fisheries and Food) has struck exactly the right balance between basic research and the cost of its advisory services.