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More trouble for the hapless shuttle

Ironically, the shuttle device for putting objects into orbits about the Earth is being threatened now by commercial as well as technical problems (see page 789). After a decade of planning, much of it imaginative and some of it over-imaginative, it now appears that the shuttle may not be able to hold its own commercially with other means of launching satellites. The European rocket Ariane appears, in the short run at least, to be able to offer launching facilities more cheaply than comparable rocket systems in the United States, and there is at least a possibility that the shuttle itself will not be much cheaper (see page 789). In any case, the shuttle is so far behind schedule, and demands from the Pentagon on its services so clamant, that it may be some time before the device is able to perform the general service for which it was designed — making sure that the world is well supplied with telecommunications satellites (on which it is now dependent), assisting with the exploration of the Solar System and the regions beyond and giving all of us the sense that space, as we have learned to call it, is part of our domain. The irony is, of course, that the shuttle, intended as a way of cheapening the launching of satellites, should appear to be threatened by an upstart competitor from Europe. Especially in France, people will be recalling the legend of David and Goliath. The snag is that, in the end, we shall all be losers.

A device such as the shuttle (intended to have its second trial flight next month) is not merely desirable but essential. When the National Aeronautics and Space Administration decided, at the end of the Apollo programme, that sending a man to Mars would be a less useful application of the skills that it had acquired than the building of a reusable launching system, it took the right decision. Better to go step by step than to hunt for yet another worldwide television hook-up. But the shuttle, as it has been developed, is something of a bastard. The original conception of a launching device that could be used over and over again has been adulterated by arranging that the largest items of equipment, the launching rockets, should fall into the sea and be lost. Some time in the coming decade, after the system as it stands has proved itself, attention may be turned again to the recovery of these items. In the meantime, there is a serious danger that the shuttle will limp along, working principally for the military, and that the usefulness of Earth satellites will be denied.

In all the circumstances, it is necessary that the space administration, or perhaps even the US Congress, should stand back from the problems that now afflict the shuttle and ask where, in the end, it is meant to go. The issues that must be settled are not simple, but neither are they beyond comprehension.

First, there is a case for asking whether the present concept of the shuttle, as embodied in the spacecraft called "Columbia", is the most appropriate, given what has been learned in the past ten years; if it is not, the space administration (or Congress) should be prepared to write off the huge expenditures of the past decade, and to start again. Such a question could be settled only after a careful technical enquiry, but this is the time at which to make it. Second, there should be a more sober appraisal than there has been so far of the utility of being able to put satellites into orbits — a futuristic appraisal of the market. For the past several years, telecommunications authorities have been assuming that there will always be some way of launching their relay stations, and that the cost will be a small part of the cost of providing them with signals; in present circumstances, in which the benefits of terrestrial switching circuits are only just becoming clear, is that assumption still valid? And, since it would be not merely a black mark for the shuttle project but an international tragedy that the Large Space Telescope should not be launched, or not launched more or less on time, how should such projects be organized? Finally, there are questions about the future, and of several kinds. Do the difficulties that have afflicted the shuttle in

the past few years imply that it has been discovered empirically — the hard way — that even the United States is no longer capable of everything? What in the medium term, say by the end of the century, is the utility of the Earth orbit? Science and the Pentagon apart, telecommunications will have to bear the burden. And what of the more distant future? Science fiction, which has a habit of becoming fact, would suggest that the time will come when people will think it intolerable that they should be prevented by the lack of facilities from going where they choose. Such conceits, always infuriating for those concerned with next year's budget, are nevertheless historically (so far) undeniable.

Agony in London

Whom the gods would destroy, they first make seem ineffectual. This seems to be the underlying trouble at the University of London, which has just been through the traumatic process of dividing the public grant for the present academic year (which began financially on 1 August) among its several schools and specialized institutions. But the university, which is a microcosm of the British university system as a whole, is not entirely to blame. Both the university and the University Grants Committee earlier in the year were faced with an impossible task — that of saving large amounts of money so quickly that they could not properly take account of academic and educational considerations. Solomon himself would have been hard pressed to make an equitable division of the diminished budget. Yet both the university and the grants committee have responded with delay. The grants committee let its dependants know only on the eve of the academic year what they would have to spend in the three succeeding years. The University of London, in which financial decisions are delegated to a body called the Court, has delayed a further six weeks and has announced financial allocations (*Nature*, 20 August) which are inconsistent both with the principles laid down by the grants committee and with the interim recommendations of the committee (under Sir Peter Swinnerton-Dyer) which the university had set up to suggest how its organization might be adapted to much smaller budgets.

What has happened, and is about to happen, at the University of London is important because it is among the most important of the universities in the United Kingdom. It has more students than any other British university, and is comparable in size with the Berkeley campus of the University of California. The university is the largest single source of physicians in the United Kingdom, but also has specialized institutions for training architects, veterinarians, pharmacists and even agriculturalists. Constitutionally, however, the university is not an integrated whole but an agglomeration of titularly autonomous institutions so loosely held together that they are a federation on the Canadian pattern, not that of the United States. The separate institutions include a dozen medical schools (soon to be fewer), internationally known centres of teaching and scholarship such as the London School of Economics and Imperial College, a host of graduate institutions (not only medical) whose importance nationally and internationally is beyond dispute and no fewer than eight more general colleges, scattered over twenty-five miles, which differ in size, the pattern of courses offered to undergraduates and their reputations in research. The question now is whether last week's decision by the Court will have