NEWS AND VIEWS

Rockets for Rent?

THE Americans have come up with some quite sound suggestions to placate the anti-American members of Intelsat, the International Telecommunications Satellite consortium. Placating is necessary: the temporary agreement under which the American Communications Satellite Corporation and a dozen or so other national communications entities (such as the General Post Office) began organizing a commercial satellite network in 1964 must now be discarded in favour of a permanent agreement. But Europeans have been dissatisfied with the present state of affairs. Not only is Comsat manager of the Intelsat consortium (which now has about 60 member countries), but American industries have run away with most of the contracts for satellite development. And Intelsat has frowned hard on any suggestion of regional independent satellite networks such as that the French are thinking about forming with French-speaking countries in Africa and the Middle East. Negotiations are now going on quietly among representatives of Intelsat's governing committee and it could be that the concessions which Comsat officials have recently aired will satisfy everybody except the French, who would like to see Comsat drop far below the 53·8 per cent majority that it holds when votes are taken.

Some of the concessions were revealed at the recent Eurospace conference in Munich. Intelsat (a Comsat executive said) might allow members to run their own national networks—a move to appease Canada and Japan, who are determined to have their own systems, whether Intelsat likes it or not. (Canada has even approached ELDO, the struggling European rocket project, to take it on as a customer should Intelsat refuse to launch Canadian satellites on the American rockets which have launched the Intelsat satellites now in orbit.) Moreover, Intelsat might go so far as to sell off the national satellite companies, the satellites and allied services or, alternatively, to run them for a fee. These concessions would do no harm to Comsat, which is desperate for the assignment of running an all-American domestic (Hawaii included) system. Intelsat would even run regional systems, but allowing them to be totally independent would be absolutely taboo.

The consortium has a point here. Monopoly is a considerable advantage in the communications industry and the current prospect of incompatible colour television systems should be enough to scare off those who would create competing satellite transmission systems. What Intelsat (or Comsat) should really be thinking about is how to entice the Russians into its own network. A single unified global network, transmitting telephone, radio, data and television, would be a magnificent international achievement, and might even yield enough revenue to make it worth Comsat's while to relinquish a great share of its leading role.

But not all. The simple truth about satellites is that Americans inevitably dominate the field. The representatives of American industry tried to point this out gently at Munich. If the goal is to establish a working and reliable network of communications by satellite as soon as possible and at the lowest price, the contracts inevitably end up in American hands. Why should Intelsat be used as an instrument to subsidize the technological training of European industry? What about the 40 underdeveloped countries in Intelsat?

Rumours are that Comsat will offer to drop to a fifty per cent share of power, or even slightly less, and that it will give up its role as manager. Already Comsat has tried to correct its xenophobic image: foreigners have been taken onto its managerial staff, contracts for Earth stations have been given to Japan, European firms have been allowed (and subsidized) to build the latest versions of the Intelsat III satellites (1,200-circuit models which will be launched soon) and Japanese, European and Canadian firms will get about $20 million worth of sub-contracts from the contracts soon to be awarded for the building of the next generation, the 6,000-circuit Intelsat IV satellites.

Scanning Electron Microscopy

from a Correspondent

THE first conference in Britain to be devoted solely to the applications and instrumentation of the scanning electron microscope took place in Cambridge from July 8–10. The enthusiasm accorded to the conference is a compliment to the pioneers in the field and to Cambridge Scientific Instruments, which made the instrument commercially available in 1965. The conference proper was preceded by three introductory papers, presented by Professor C. W. Oatley, Mr A. D. G. Stewart and Dr W. C. Nixon, which served to provide both a historical background and fundamental appreciation of the physics of this new science.

In the part of the conference concerned with metals and materials, H. D. Blakelock (Morganite Research and Development) described how he has been able to use the large depth of focus available with the microscope to examine the irregular fracture surfaces in carbon fibre composite materials. A desirable feature of such materials is that crack propagation should be inhibited by the presence of the relatively strong oriented fibres within the matrix, thus presenting discontinuities to the progressive cleavage front. Examination of the cleavage front has revealed three modes of fracture which can be related to the relative strength of the composite materials. Fig. 1 depicts a result typical of the condition in which the fibre and matrix are of comparable strength—although fibres have pulled out of the fracture interface, the matrix strength has remained sufficiently high to bond groups of the fibres together.

For the biological application of this scanning