

are in favour of building it if it does not imperil the budgetary restrictions outlined here, which makes it something of a problem. On the other hand, the committee does emphasize the urgent need for drastic reorganization, bringing together again all the activity at present dispersed and, above all, recovering the work now under the wing of the Atomic Energy Commission.

The physicists are not unanimous in their reaction to these points, which cannot in any case be examined seriously from the point of view of France alone. The uncertainty hanging over the 300 GeV of CERN, the ambiguous attitude of Germany which had envisaged a Franco-German 45 GeV and which, tired of Paris beating about the bush, is now talking of building such an accelerator itself, has decidedly complicated the issue. However, whatever the position of the French particle physicists on the opportunity for building the 45 GeV machine and on the choice of technical solutions, they would, at all events, like the government to make a quick and clear decision. They are also surprised, and apparently justifiably so, that the question of priority from which their subject has benefited is being called into question at this point, particularly so because the committee of wise men states that the effort has been a "paying one". A change in policy will surely compromise the results so far achieved—these have already for some time been a bit precarious because of the antiquated equipment—without necessarily making certain of marked progress in other fields of research. However, "a fine sprinkling of funds" has so often been a characteristic of French research and development programmes.

Machine Minding

NEXT month the British Computer Society will have to decide whether to go ahead with the plan to turn itself into a professional body. The plan, put forward in June 1967, proposes that the society should become the learned institution for computer scientists, establishing four grades of membership—student, associate, member and fellow. Ultimately, admission to the society will be controlled by examination, and the society aims to do for the computer scientists what the engineering institutions have done for the engineers.

Not all the present members of the society are enthusiastic about the plan. Some say that computer science is still too young and diffuse a discipline to be easily examinable, others that experience will always be worth much more than paper qualifications. Many of the existing members of the society are computer users rather than scientists, and one member of the society compared the present efforts with a hypothetical situation in which all those who used television sets had to become qualified as electronic engineers. For all this, the plan is almost certain to be approved at the extraordinary general meeting at the end of March.

The simple reason for this is the remarkable way in which the membership of the society has increased since the plan was announced. Although the reference books list the membership of the society as 3,000, it has now reached a figure of 18,000, 10,000 of whom have joined since the new plans for the society became public knowledge. Although the secretary of the society, Mr J. G. Mackarness, sees this as evidence of

general approval for the society's plans, others see it as a rush to get into the society before the examinations are established. Existing associate or ordinary members will be exempt from the examinations if they have more than seven years experience—if not, they will have to serve an apprenticeship as subscribing members until the seven years are up, when they will become members without examination. Existing student members will only have to take examinations if they are under twenty-one on May 1 this year.

In fact, the society had a problem in pitching the terms at exactly the right level. If all existing members had to take examinations—as properly they should if the society is to become as respectable as the engineering institutions—then new applicants would have been discouraged. The society admits that its reserves are "tiny", and hence needed to increase its subscription income substantially. This has been done most successfully, but possibly at the cost of losing credibility as a learned society. Moreover, subscription income will increase substantially again soon, for the rate for subscription is to double from £5 a year to £10 for members—a figure "very much in line with other professional bodies" according to Mr Mackarness, particularly as publications of the society are sent free to members. When the decision is taken at the end of March, only a fraction of the membership will be able to be present, but the rest—including those who have joined in the last year—will be able to vote by proxy.

Too Many Institutions

UNDETERRED by the refusal of the Institution of Heating and Ventilating Engineers to contemplate a merger with his institution, Mr H. G. Conway, president of the Institution of Mechanical Engineers, had another try on February 16. He was invited to speak at the annual dinner of another engineering institution, the Institution of Plant Engineers, and made use of the occasion to offer the plant engineers a merger with his own institution. Mr Conway was anxious not to be cast in the role of an empire builder—"My own institution has no territorial ambitions or illusions of grandeur. We presidents come and go. . . . We speak of our profession as our conscience may dictate. Some of us feel that if a few of our institutions could get together we would have benefited the engineering profession as a whole".

The terms offered for the merger are generous, and very similar to those turned down by the Institution of Heating and Ventilating Engineers (see *Nature*, 217, 498; 1968). The plant engineers would form a divisional section with a good deal of autonomy. They could elect their own president and council, hold their own meetings and publish a journal. The alternatives, Mr Conway suggested, were either to apply for status as a chartered engineering body—which he thought unlikely to succeed, as there was a general view that the present proliferation of institutions is wrong—or become a technician body and aspire to chartered technician status.

The Institution of Plant Engineers is taking the offer quietly. It says only that it has "taken note" of Mr Conway's suggestion, which will be "carefully considered by the council of the institution", and a further statement will be made in due course. The

mechanical engineers will be hoping that this time their efforts to act as a reorganization corporation for the engineering industry come off. Others, scanning the list of engineering institutions, can easily see some candidates for mergers. The Institution of Railway Signal Engineers and the Institution of Locomotive Engineers look obvious bedfellows. And it is hard to see why the Institution of Mining Engineers, which looks after coal and iron ore mining, should be a separate body from the Institution of Mining and Metallurgy, which covers mining other than coal, and metallurgy other than iron. The most improbable institution of all is the Institution of Polish Engineers in Great Britain, established in 1940. Surprisingly, it still has 500 members.

Long Short Story

THE appointment at last of a new chairman to Short Brothers and Harland, the Belfast aircraft company, marks the end of an episode which has won few friends for the Ministry of Technology. Some two-thirds of the company is owned by the British Government, which therefore has an important say in its operation. In June last year, readers of the *Daily Express* and the then chairman, Mr C. E. Wrangham, in that order, discovered that Mr Wrangham was to be asked to resign his job. It seems possible that the Minister, Mr Benn, had not even met Mr Wrangham.



Air Vice-Marshal E. M. F. Grundy.

Mr Benn has not yet given the board of Short Brothers or the House of Commons a reason for his decision. In reply to six questions tabled on the matter on July 11, 1967, Mr Benn referred in the House of Commons to the substantial loss incurred by Shorts on the Belfast air freighter before Mr Wrangham's chairmanship, and the need for a reorganization to regain profitability. "This reorganization, which has already begun, can, I believe, best be carried through under the leadership of a new chairman." The ground for Mr Benn's belief, it has been suggested, was the Government's desire to see the company diversify itself out of the aircraft industry. Was it Mr Wrangham's fault that he was too successful in keeping Shorts in it? The company's troubles began in 1960 when it accepted a government order for ten Belfast aircraft in the belief that further orders would follow. None did, and the consequent loss of some £15 million made the company heavily dependent on government funds. Since that time Shorts has developed the Skyvan, a small two-engined freighter, and has built up a thriving

export market for its Seacat guided missile. Substantial hopes are also placed on Blowpipe, a radar controlled guided weapon against low-flying aircraft which can be carried and operated by one man. In addition, the company has contracts for the wings of the Fokker 28 and 228 jet airliners, the engine pods for the Rolls-Royce RB 203 engines and the wing tips of the Phantom. In 1967 the company won the Queen's Award to industry.

It may be a measure of disenchantment in British industry with the Ministry's handling of the matter that it has taken until now to find a new chairman for the company. He is Air Marshal Sir Edouard Grundy, who has been managing director of Royston Instruments since 1966. Royston Instruments, which manufactured the Midas flight recorder, was a member of the Royston Group of Companies, now in liquidation. Sir Edouard has had a distinguished career in the Royal Air Force and was Controller of Guided Weapons and Electronics in the Ministry of Aviation from 1962 to 1966. His experience of the RAF, government and industry should stand him in good stead if he is to keep Shorts in business and retain Mr Benn's favour.

Beyond the Classroom

How can any institution in America now be in education and not in politics? The answer of the Dean of Harvard's Graduate School of Education is that it cannot. His report for the academic year of 1966-67 is a chilling document. The American faith in the public—that is, tax-supported and tuitionless—school is no longer justified. Urban schools are failing the "deprived" today, as suburban schools failed the "academically talented" fifteen years ago. And the Federal Government's entrance into educational reform—marked by an initial infusion of \$1.2 billion in 1966—has not justified the hopes held out for it. The critics—white and Negro—are right to be disillusioned.

Even the enthusiasm which greeted the entrance of large corporations such as IBM and Time Inc. into the business of selling textbooks and making teaching machines seems to have been misplaced, according to Dr Theodore Sizer, dean of the school. Dr Sizer maintains that many of these companies have been rudely shocked. The school market is scattered and requires a large sales force; local school boards have little money for experimentation and teachers prefer to buy what is familiar. And "the gadgetry of computers and teaching machines and the rest has yielded interesting, but financially intolerable, results". Malaise has hit the education profession itself. State commissioners of education seem ready to wrest control away from the Office of Education in Washington; the private philanthropic foundations and the National Science Foundation give hints of stopping their outpourings of money into educational reforms. And the teachers themselves, underpaid—their average salary in 1966-67 was \$6,820—are not only having success at becoming trade unionists but are being truculent as well. The state of American education is uneasy indeed.

Dr Sizer could almost be accused of exaggerating the darkness to accentuate the light of his own school at Harvard. It has faced the challenge pretty squarely, by accepting as a fact the proposition that much of