

Administrative Studies at the University of Oxford and chairman of the board of governors, sees the main role of the centre as one of "putting people together with a view to learning from each other". Professor Halsey cited as an example research projects on socially deprived children already under way in Britain, West Germany and Sweden which will benefit from a central source of information and assistance. He also hopes that the centre will be able to add training courses for educational administrators to acquaint them with new developments and training techniques and equipment.

Rent-a-Brain

How should rental charges for computers be decided? In December 1967, IBM United Kingdom announced its intention of increasing selling and rental prices for computers, and the proposed increases were referred to the Prices and Incomes Board which reported on them last week (Cmd 3669, HMSO, 2s.). In fact, however, the report covers only rental charges, for its terms of reference made no mention of selling price. It seems to have been agreed that, because of the international ramifications of IBM, it would have been almost impossible to judge whether the price increases were justified, so that the board has been left with the task of deciding whether the increase in selling price is a sufficient cause for an increase in rental charges.

This reduces the report almost to triviality, but not quite. For commercial reasons, which the board accepted but did not make explicit, IBM argued that it was necessary to maintain a delicate balance between selling and rental charges. Selling price usually works out at four years rental, a rule which evidently makes it hard for customers to choose. From IBM's point of view, the arrangement gives a good mixture—a steady income from rentals, and a quicker cash return on sales. It is also a hangover from an agreement in the United States in 1956, in which IBM, threatened by anti-trust legislation, agreed to offer machines for sale and lease at equivalent prices.

The Prices and Incomes Board has now accepted the logic of IBM's argument and, because the increase in selling price had not been challenged, it has been obliged to agree to a ten per cent increase in rentals for all new contracts. For older contracts, IBM argued that costs of maintaining the older machines had risen, and that, in any case, the real cost of a machine is equal to the revenue the machine would yield if it were transferred to a new customer. The board accepts the first of these arguments, but not the second. Its report says that older machines do not have any increased value in alternative uses. Rentals signed before January 1, 1968, should therefore be increased only enough to cover the costs of servicing them—7 per cent. Rentals on the machines which preceded the 360 range should be increased by even less—5 per cent—because it is presumed that software development on these older machines is not such a burden. This recommendation applies to all contracts on machines announced before April 7, 1964.

IBM is still considering these recommendations, and will be telling its customers how it feels later this week. If it does not accept the PIB argument, it will have to argue it out with the Ministry of Technology, which is still engaged on discussions arising out of a previous PIB

report on the prices of hearing-aid batteries. If agreement cannot be reached voluntarily, the current Prices and Incomes legislation allows the ministry to make an order, although it is much more likely that the issues will be settled amicably by discussion.

Canada's New Telescope

THE fashion for large optical telescopes is afflicting the Canadians, who are now firmly set on the construction of a 150 inch instrument at Mount Kobau in British Columbia. The Queen Elizabeth II telescope, as it is to be called, is expected to be completed in 1975, when it will join the several large optical telescopes now being built in the United States, the Soviet Union, Europe and Australia.

This new crop of telescopes should prove easier to build than the previous generation of large instruments, which included the 200 inch on Palomar Mountain, chiefly because of the development of new materials for mirror blanks. The Hale telescope on Palomar Mountain, completed in 1948, has a 'Pyrex' mirror, as does the 98 inch Isaac Newton telescope at the Royal Greenwich observatory—both were cast from the same 'Pyrex' glass. Since then, however, two new materials having better thermal properties have been developed. The Canadian telescope, in common with telescopes for the Kitt Peak National Observatory and the European Southern Observatory, has a mirror of fused silica. The coefficient of expansion of this material is less than one-fifth that of 'Pyrex'. The second material is a glass ceramic called 'Cer-Vit', developed in the United States, which is to be used in the Anglo-Australian 150 inch (*Nature*, **218**, 418; 1968).

A crucial part of the design of a telescope such as the Canadian instrument is the support of the mirror in such a way as to avoid distortion of the optical surface. In the Queen Elizabeth II telescope a system of pneumatic bellows fixed to the back of the mirror provides axial support. Radial support is supplied by 32 counter-weight lever systems arranged around the periphery of the mirror. Only the axial support system operates when the telescope is pointing at the zenith and all the reaction is in the direction of the optic axis. As the telescope is tilted away from the zenith, the radial supports come into action to preserve the shape of the mirror. The designers of the Queen Elizabeth II telescope are hoping to allow for the frequent changes in seeing conditions at Mount Kobau by making the changeover from operation at any of the foci to another as rapid as possible.

Proving Pressure Vessels

SOME time in September, tests will begin at the Heston Laboratories of Atomic Power Constructions of the one tenth scale models of the pressure vessel for the first commercial advanced gas cooled reactor at Dungeness. The vessel, in common with the last of the Magnox series of reactors, is made from concrete prestressed with steel. These pressure vessels are now thoroughly tested and proved by experience, and British nuclear engineers cannot be blamed if they feel somewhat self-satisfied; the experience in the United States with steel pressure vessels has not been so happy. The reliability of prestressed concrete pressure vessels is one of the