

was published earlier this year. Called the Climatic Impact Assessment Project (CIAP), that study resulted in an estimate that a fleet of 100 Concorde flying in the stratosphere for 4.4 hours a day would deplete the ozone layer by about 0.4%. The two estimates are well within the uncertainty range of the calculations, and Dr Henry M. Booker, the chairman of the academy committee, suggested in a statement last week that both of them indicate that "strict measures might be needed to protect the environment from the effects of future large-scale flight operations in the stratosphere".

Yet another report on the environmental effects of supersonic aircraft is expected to be published soon by the British Meteorological Office's Committee on the Meteorological Effects of Stratospheric Aircraft (COMESA). According to pre-publication snippets provided recently by Dr R. J. Murgatroyd, COMESA's chairman, the report will conclude that 1,000 Concorde would be expected to reduce the ozone layer by about 3%.

Much has been made of the fact that all those studies predict that the effects of Concorde on the ozone layer will be much smaller than natural fluctuations—concentration of stratospheric ozone can vary by as much as 25% from day to day, for example. But the academy committee notes that aircraft flying in the stratosphere will cause a systematic reduction in ozone concentration, superimposed on the daily fluctuations.

"Remember that skin cancer is an integrated effect (of exposure to ultraviolet radiation) over a long period of time", Booker said last week, and he noted that average exposure to ultraviolet radiation seems to be the chief factor which causes the incidence of skin cancer to vary with latitude.

Because the ozone layer is much thinner at the equator than it is at the North Pole, the amount of ultraviolet radiation reaching the Earth's surface at low latitudes is much greater than at high latitudes; sure enough, geographic variations in the incidence of skin cancer are closely correlated with geographic variations in ultraviolet flux.

The upshot of those conclusions is that if either the supersonic fleet or the fleet of high-flying subsonic aircraft is increased in size, or if a new generation of supersonic airliners, designed to fly at greater altitudes, is brought into service, potentially serious health hazards may result. The academy committee therefore suggests that regulations should be drafted post-haste to ensure that cleaner engines are developed and installed. It suggests that the best forum for drafting such regulations is the International Civil Aviation Organisation, and the World Meteorological

In exceptionally blunt language, a high level advisory committee last month expressed concern about the ordering of priorities within the much-publicised cancer research programme in the United States. In particular, the committee indicated its "astonishment" at the low priority accorded to studies on environmental carcinogenesis, and it took a swipe at the massive amounts of money that have been poured into research on possible human cancer viruses.

The committee, a special subcommittee of the National Cancer Advisory Board, said in a report delivered to the board last month that although there is "widespread recognition of the importance of environmental chemical carcinogenesis", the National Cancer Institute (NCI) seems to have given such studies a low priority in terms of expenditures. Less than 10% of the cancer budget is spent on research into the environmental causes of cancer, the committee estimates.

Those concerns are the latest in a long line of grumbles from biomedical scientists about the content and direction of the so-called war on cancer. The grumbles have mostly been concerned with the fact that the cancer programme has been soaking up funds at the expense of other areas of biomedical research, and that it has adopted a highly targeted approach which has emphasised applied rather than basic research. But in this case, the committee is arguing that an area of research dealing directly with cancer control and prevention is being relatively neglected.

The report, which resulted from two days of meetings by the subcommittee under the chairmanship of Philippe Shubik, Director of the Eppley Institute for Research in Cancer, University of Nebraska, lists a number of recommendations for increasing the research effort on environmental carcinogens. The preamble to the report describes the committee's concerns in graphic language.

"There was an obvious sense of general astonishment throughout the meetings that the National Cancer Programme does not appear to have accorded an adequate priority nor sense of urgency to the field of environmental carcinogenesis, particularly when this concerns chemical carcinogens", the committee states. Later in the report, the committee suggests that "epidemiology thus far seems to suggest that a viral etiology for most human cancers is an unlikely eventuality; in view of this, the distribution of the budget of the NCI in the area of etiology with its emphasis on viral oncology should perhaps be reconsidered; perhaps the time is ripe for a reordering of priorities or at least for an in depth examination of this basic conclusion".

But the committee recommends that "the NCI should foster the development and validation of new and innovative bioassay techniques" for detecting and identifying potential carcinogens in the environment. In particular, the committee suggests that more special centres for research on environmental carcinogenesis should be established in the United States.

logical Organisation.

Although no threat is likely to be posed to the ozone layer by the handful of Concorde now scheduled to enter service, the academy's report is likely to strengthen opposition to any operation of the aircraft in the United States. It should be noted that the report has been published at a crucial moment, for public hearings open on April 14 on a request by British Airways and Air France for permission to land Concorde at John F. Kennedy Airport in New York and Dulles International Airport in Virginia, for a small number of proving flights later this year.

Last month, the Federal Aviation Administration (FAA) tentatively recommended that such permission should be granted, but a final decision will not be made for several weeks. In an environmental impact statement on the request for landing rights, the FAA noted that Concorde's engines emit substantially greater levels of some pollutants—particularly carbon monoxide—

and create more noise than any other passenger aircraft, but it suggested that "the environmental consequence of the limited volume of Concorde operations requested are not so severe as to compel a refusal (of the request)". Opponents, of course, did not agree.

Meanwhile, a bill has been introduced into the House of Representatives by Lester Wolff, a New York Congressman, which would prevent Concorde from landing anywhere in the United States unless it meets the federal noise and pollution standards which apply to subsonic aircraft. A few days before the FAA announced its tentative recommendation to grant the request for landing rights for Concorde, the Environmental Protection Agency proposed noise standards for supersonic aircraft which would be less stringent than those for subsonic aircraft. Hearings will be held on Wolff's bill in July by the Public Works Committee and, if passed, it would effectively deny Concorde access to the United States. □