because bureaucrats refuse to act," suggesting this made them implicit allies of the KGB.

Research Council Lauds Aid to Aircraft Industry

The National Research Council has tolled a warning bell on behalf of the U.S. aircraft industry, which believes that its preeminence in world markets may be partially threatened for the first time. Noting increasing competition from abroad, the council strongly endorses continuing efforts by the National Aeronautics and Space Administration (NASA) to supply the industry with technological breakthroughs at government expense.

NASA currently spends about $500 million annually researching issues of interest to Boeing, Lockheed, McDonnell-Douglas, and smaller corporations, including such problems as how to reduce fuel consumption, pollution, and noise emission. The research council suggests that not only should NASA's basic research be strengthened, but also that the agency should somehow support the education of more engineers for the industry to hire, and that the agency should gather news of technological breakthroughs overseas and distribute it to American firms.

The basis for the council's report is a workshop in Woods Hole, Massachusetts, held last August. The participants, most of whom were industry representatives or consultants, were alarmed by the fact that most orders for business jets and commuter aircraft (in the short-haul mid-size range) are now held by manufacturers in Europe, and to some extent, in Canada and Japan—upsetting the uniform pattern of American dominance. The participants concluded as a result, according to H. Guyford Stever, chairman of the research council's engineering assembly, that "there is an urgent need for a clear and emphatic statement to reaffirm, clarify, and strengthen NASA's role in aeronautics"—a need that the report presumably satisfies.

Asked about the appropriateness of having a federal program reviewed by the industry it benefits, Albert Evans, a council staff member, says, "Yes, we could ask other people, and maybe we should do that, later. But clearly the most important group to survey first would be those that are supplied by the program."

Many of those sampled went so far as to suggest that NASA should test its inventions, demonstrate them, and then tailor them to the aircraft industry's specific needs. An example of such a program is NASA's current effort to adapt lightweight materials of carbon fibers embedded in plastic to airline use—a program under which Boeing alone has received $20 million in federal contracts.

One of the workshop's few panelists from outside the industry, Joseph Bidwell of General Motors' research laboratory, questioned whether NASA's role ought to include such work, traditionally reserved to industry itself. No such industry-federal program now exists for the automobile, although Congress has recently urged that a joint research effort be established on the NASA–aircraft industry model.

DOE Pursuit of Reprocessing Expected

Among the few government programs exempted from President Reagan's budget-cutting is the Department of Energy's support for research leading to the start-up of a nuclear fuel reprocessing plant at Barnwell, South Carolina. Energy Secretary James Edwards, a former governor of that state, told reporters recently that he endorsed completion of the plant, previously a victim of President Carter's concerns that the United States was establishing a poor international precedent in the area of nonproliferation.

Edwards is expected to follow the advice of the Reagan transition teams that looked into the nonproliferation and reprocessing issues. The teams, which included representatives of the nuclear industry, recommended that DOE fund research to support the potential acquisition of the Barnwell facility from Allied General Nuclear Services, an oil company consortium that owns it now. The idea is that Barnwell be operated under contract "as a large scale spent fuel recovery [plant] and an international plutonium storage and safeguards demonstration," according to the transition teams' report. Although such a plan would ease the industry's problem of nuclear waste storage, it would enrage environmentalists and others concerned about discouraging international trade in plutonium.

NTSB Urges Airplane Safety Improvements

Investigators of the Saudi Arabian airplane accident that resulted in the death of 301 passengers last August have determined that important improvements are needed in the fireproofing of the luggage and cargo compartment in the plane involved, the Lockheed L1011. The National Transportation Safety Board (NTSB), which has been advising the Saudis, has recommended that Lockheed install either a more fire-resistant liner for the compartment or a remote-controlled extinguishing system.

The NTSB's recommendation stems from a conclusion that the in-flight fire that caused the deaths originated near the luggage compartment. The Saudis suspected at first that an incendiary device might have been hidden there, but tests of burned airplane material at England's Scotland Yard ruled out that possibility. Investigators are still unsure of the fire's cause, but they know that it quickly burned through the luggage container's lining and the cabin floor and carpet material, filling the cabin with smoke (see *Science*, 6 February) and destroying certain engine controls.

FAA regulations require that such fires self-extinguish from lack of oxygen before spreading elsewhere. Lockheed claims that the L1011 containers meet this requirement, but the NTSB says "the design does not comply with the [regulation's] intent." Tests showed that a flame could easily spread before all of the oxygen in the large containers is exhausted. Such containers are also used on DC-10s and Boeing 747s, although Boeing says that its cargo compartments already have the fire-extinguishing systems called for by the NTSB.

—R. Jeffrey Smith