pected to increase, the National Institutes of Health, which is expected to suffer relatively modest cuts, and DOE's nuclear energy programs, which will almost certainly be favored with substantial increases. Until the complete budget revisions are available, it is difficult to discern the Administration's overall budgetary intentions for science and technology, and indeed, it may have no explicit policy in mind.

The Reagan Administration's budget proposals are largely the work of OMB Director David Stockman, and they are being made without the benefit of assistance from the White House Office of Science and Technology Policy (OSTP). Until the Administration gets around to appointing a presidential science adviser, OSTP will be kept on the sidelines of the budget battles. The officials who are holding the fort at OSTP say that they have had no input so far in the shaping of the budget cuts, and they do not expect to be invited to participate. By the time a science adviser arrives on the scene, most of the crucial decisions will have been made.

The budget proposals are also being shaped before many sub-Cabinet appointments are made. There is, for example, no assistant secretary in DOE responsible for conservation and solar programs, and thus the budget cuts in those areas are being put together in the absence of a strong champion for the programs that are scheduled for the knife.

The OMB proposals are likely to undergo substantial change as they wend their way through the Administration and the tortuous appropriations process on Capitol Hill, but they have already provoked protests from the scientific community (see box on page 901). OMB is well aware of the opposition. Its Black Book notes that the NASA budget changes will cause "strongest reaction from the space science community," and suggests that "there will be strong opposition to the NSF changes from the scientific community, particularly social scientists, and the science education community."—COLIN NORMAN

"Black Book" Threatens Synfuels Projects

Reagan's free-market energy policy could delay or kill large coal liquefaction plants; Democrats protest

Having lifted the last trace of government controls on oil, the Reagan Administration is in an excellent position to argue that industry should get to work and find new sources of fuel without requiring much federal aid. That is precisely what the new White House staff is arguing.

The infamous "Black Book" of suggested budget changes drawn up early this year by David Stockman, Reagan's chief of the Office of Management and Budget (OMB), recommends drastic shifts and cuts to let private companies shoulder a greater risk in developing new liquid and gaseous fuels. Stockman has aimed a sharp blow at the Carter Administration's synthetic fuel subsidies and at the independent agency created in 1980 to finance them—the Synthetic Fuels Corporation (SFC).

The Black Book itself warns the President that all this is controversial. These proposals, it says, "will be strongly opposed by project sponsors and the array of business and labor interests that would benefit from government-subsidized construction programs. . . ." It anticipates "negative public and media reaction" as well, with heavy bipartisan flak from congressional delegations expecting to have synfuels plants built in their states: West Virginia, Kentucky, Ohio, Alabama, and Illinois.

The reaction has been swift indeed, but as far as the companies are concerned, muted. The most visible protest so far has been led by Representative James Wright (D–Texas), the number two Democratic Party leader in the House and prime mover behind the Energy Security Act of 1980, which created the synthetic fuels program. Wright and 33 other congressmen, including House Speaker Thomas O'Neill (D–Mass.), sent a letter to the President on 6 January asking him to keep hands off. They warn that "the synthetic fuel program continues to enjoy substantial majorities in the Congress." The letter argues that reducing the government's loan guarantees and price supports would "contribute nothing to your efforts to balance the budget" because these commitments do not represent actual expenditures. And as for Department of Energy (DOE) funds for synfuels, the congressmen write, "these funds must not be rescinded." Richard Olson, Wright's assistant who delivered the letter to the White House, said last week that no reply has been received.

Wright's letter warns, "the synthetic fuels program continues to enjoy substantial majorities in the Congress."

Meanwhile, a private lobbying campaign goes on behind the scenes. According to a knowledgeable DOE official, Gulf Oil has brought a team of experts from Colorado to present its case for synfuels to the White House. Gulf is particularly panicky, for reasons explained later. Other synfuels investors are concentrating their lobbying on Capitol Hill, for they apparently think their proposals are less vulnerable and can await salvation by Congress alone.

Stockman's tactics, one industry observer says, are to "stomp on everything in sight and then wait to see what Congress forces down his throat." This oil person, like others in the industry, thinks it is too early to guess how many of Stockman's proposals might stick, but seems confident that Congress will hold out against any major revision of the subsidy plan.

The economic principles behind Stockman's assault on DOE and the synfuels program are set out in the Black Book as follows:

- Government support should be focused on longer-term, high-risk R & D with potential for high payoff.
- Government involvement could continue only through "proof of concept" at the process development unit scale.
- Nearer term technical support for processes would be limited to cases where the government has a unique technical resource or facility.
- Industry would be responsible for supporting demonstrations and commercializing the technologies as they become economic.

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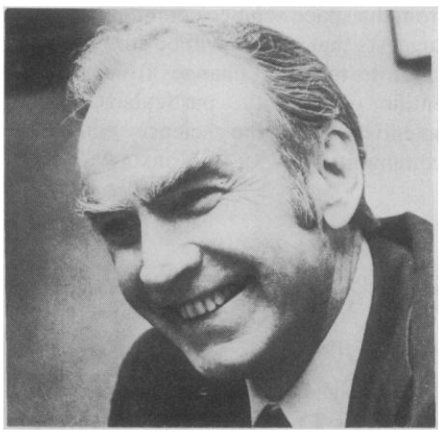
Using these points as a guide, Stockman has proposed that the DOE be relieved of all responsibility for funding "all major synfuel construction projects," and that the authority be given to the SFC instead. Further, he would declare the SFC operational, thereby shutting down the "interim" alternative fuels funding program set up by Congress last year to get the money flowing. This kitty is administered by DOE and the Defense



Synfuels' best friend

Representative James Wright

Department. This recision alone would cut the budget by $5.3 billion. Stockman would also cancel five synfuel demonstration projects in the DOE budget, including three coal-to-gas projects and two others called Solvent Refined Coal I (SRC I) and Solvent Refined Coal II (SRC II), which will produce liquid and solid fuels. These projects would have to seek funding from the synfuels corporation, which requires that 40 percent of costs be borne by private investors. SRC I and II have no more than 10 percent private support. Next, the trimmed-back DOE coal budget would be used to focus on "advanced research, supporting process development research, and continue through fiscal 1983 testing programs on existing coal liquefaction pilot plants."

The basic rationale, according to the Black Book, is "to support a limited number (5 to 8) of first-of-a-kind operating plants to demonstrate technical, economic and environmental problems and costs, and to rely primarily on the private sector to minimize the net expenditure of federal funds. In short, government would aid demonstration of synfuels capability but not subsidize building significant capacity."

Elsewhere in the book, Stockman recommends a flat abolition of the programs giving loans and tax breaks to farmers for producing alcohol fuels. These "have a limited potential to displace oil consumption," Stockman's brief says, and yet they receive over $18 per barrel in federal tax subsidies. The loan guarantees to alcohol producers "help marginal projects attract private financing which would otherwise go to more productive investments."

These revisions are defended in economic terms. But there is another assumption implicit in Stockman's approach which will come out and eventually cause trouble. It is that the oil supply crisis which inspired the creation of the synfuels program is not as severe as the last Congress believed it to be, or in any case, that it will not be mitigated by a panicky investment in gasification and liquefaction plants. The Black Book says virtually nothing about the national security argument, but this is something which the program's backers will be sure to raise. For example, one synfuels loyalist at DOE said last week, "What we really need right now are some more gasoline lines, but I guess we can't count on any shock in the Middle East in the next week."

One of the projects that seems to be in immediate peril is SRC II, whose prime sponsor is Gulf Oil Corporation's subsidiary, the Pittsburg Midway Coal Mining Company. That company joined with the governments of West Germany and Japan to co-finance the SRC II coal liquefaction project on a 50:50 basis with the U.S. Department of Energy. If the United States cancels the agreement and asks that it be turned over to the new synfuels corporation, the entire scheme may come undone. At least that is what Gulf is telling the White House. The problem, it seems, is that the Japanese are outraged by U.S. ambivalence toward a project that took 2 years to negotiate. And the Germans, who are just entering a new fiscal year, have said they will get out if the United States is losing interest. The German parliament is considering that option at the moment.

"Stockman is incorrect in assuming that Gulf can do this project without government involvement," says Dan Denning, a company spokesman. "We need a $1.4 to $1.5 billion plant to demonstrate the technology" on a commercial scale, and "not even Gulf, given our other investment opportunities, can afford that. We should not lose sight of the fact that the world crude oil situation is the same as it was a year ago," Denning warns, and he claims that Gulf has studies showing that Middle East oil producers could cut back production by 8 million barrels a day without affecting their economic programs. Some OPEC coun-

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Moscow Sunday Seminars Resume

Soviet authorities have permitted the resumption of a weekly seminar for scientists who were fired from their jobs after applying for emigration. Known as the Moscow Sunday Scientific Seminar, the gathering forms the only opportunity for the rejected emigres to exchange the results of their independent research. Until last November, the seminar was held at the home of Victor Brailovsky, a cyberneticist, who was then arrested on charges of defaming the Soviet state. Brailovsky's wife Irina, a mathematician, had attempted to continue the meetings, but was prevented from doing so when Moscow police barred the participants' entrance.

At least three seminars have been held since the police relaxed their harassment last month. Earl Callen, a physicist at American University, and Anthony Ralston, a computer scientist at State University of New York at Buffalo, attended the seminar in Moscow on 8 February, when 15 to 20 unemployed Soviet scientists heard a presentation on plastic deformation in crystals by Boris Resnikov. Ralston says that most of the participants were in good spirits, "although they were depressed about their children's futures." The participants were aware of the "seminars in exile" held at major American universities since Brailovsky's imprisonment, and also of Western denunciations of the Soviets' behavior at the Madrid conference on human rights. Ralston says that no one speculated about why the Soviets had permitted the meetings to resume.

Callen says Irina read a statement denouncing the authorities for continuing to imprison her husband without making specific formal charges against him, a circumstance permitted under Soviet law for up to 9 months if approved by top officials. Officials have only recently begun to inquire among Brailovsky's friends and acquaintances for detailed evidence to use against him, evidence that Irina says does not exist. Noting the continuing refusal of certain academic scientists to attest that neither she nor her husband ever had access to state secrets, Irina said, "we are kept here

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tries may find an advantage in cutting production, he adds. "We're a major oil company; we know something about exploration and production." The United States imports 8 million barrels of oil a day, and Denning says, "We're not going to produce enough to make up for that, even with decontrol" of prices. SRC II should be supported in the name of national defense, he concludes, "so that you can bring one of these things to Wall Street and get private financing."

The SRC I project, whose major sponsor is the Air Products and Chemicals Inc., is in a similar but less precarious fix. Edward Donley, the board chairman of Air Products, says he has been in "almost daily" communication with Stockman over the last 2 weeks, and that he sees no evidence of long-term energy planning at the OMB. The approach, Donley found, is to cut everything that is cuttable, and then to let Congress and members of the Administration argue for exceptions in the national interest. An exception should be granted for SRC I, Donley argues. Shifting the solvent coal projects from the DOE budget to the synfuels corporation would be no help, he points out, because SRC I and II do not meet the corporation's requirement of at least 40 percent private financing. The SFC law would have to be amended to allow the SFC to support noncommercial, largely public-financed ventures like his own SRC I.

Representative Wright's letter to the President also included a special plea to rescue three synfuels projects from the ax. These include two oil shale projects in Colorado, one proposed by an Exxon-backed corporation called Tosco, and the other by Union Oil. The third is a coal-to-liquids project called Tennessee Synfuels, backed by Koppers Co. Inc., Cities Service, and the Continental Group, Inc. The three were declared "winners" in early January by pre-Reagan DOE officials in the first round of competition for federal aid under the interim synfuels program. That is the program Stockman wants to abolish. "These projects should not be held back by a false sense of economy;" the Wright letter says, for "our country desperately needs to move ahead in deploying this technology." As Wright's aide said, "We are concerned that several months of earnest effort on the part of private industry applicants and the DOE not be wasted." But Reagan's staff may want to pick its own winners.

The outcome of all this pulling and hauling can hardly be predicted. Nor is the situation helped by the fact that the still undefined purposes of the synfuels corporation must be laid out by a still unnominated chairman. It is clear, however, that the Black Book proposals should be regarded as tentative in the extreme.

—ELIOT MARSHALL

Compensation for Victims of Vaccines

Government report, prompted by swine flu lawsuits, suggests solutions to compensate injured

During mass immunization campaigns, a few individuals are inevitably injured as a result of severe reactions to a standard vaccine. These children and adults, who may suffer lifelong disability, are left to recoup damages through expensive, protracted lawsuits because no federal program to compensate them now exists. The outlines of such a program have now been sketched out in a recent report by the Office of Technology Assessment (OTA), which discusses options for Congress to consider if and when legislators decide to act on the problem.

"Society has the obligation to minimize the consequences of injury" when a person is harmed rather than protected during a national immunization program, according to the technical memorandum, "Compensation for Vaccine-Related Injuries."

The court system is neither swift nor equitable to the victims, says Lawrence Miike, a physician and lawyer who was staff director for the report. "The legal system is a terrible way to go. It takes years to get a settlement and only a few who push their cases get anything." For the few who do reach a court settlment, "it's a jackpot situation. The court system doesn't award anything to most of the injured."

The risk of serious injury from vaccines is quite small, especially from the vaccines against childhood diseases. Nevertheless, when reactions do occur they can be severe. In immunizations against diphtheria, the chance of convulsions is one in 5000. For taking the live poliovirus vaccine, the risk of paralysis is one in 4 million. The reasons that some persons suffer reactions are not clear although foreign proteins found in a standard preparation may be responsible in some cases.

> "The legal system is a terrible way to go. It takes years to get a settlement and only a few who push their cases get anything," says the report's staff director.

The agency report was requested by former Representative Harley Staggers (D–W.Va.) when he was chairman of the House Committee on Interstate and Foreign Commerce. Staggers, who retired after the past session of Congress, took an interest in the issue of compensation because of an earlier OTA report that reviewed federal immunization policies, including the swine flu vaccine program and the lawsuits that followed. The need for a systematic way of awarding damages to vaccine victims has also been highlighted by three lawsuits that were settled before the swine flu immunization program in 1976.

In all three court decisions, the manufacturers were held responsible for damages, but not because of any wrongdoing in producing the vaccine. They were charged with failing to warn the person