be connected, but both are being studied by investigating boards. The Delta and Atlas-Centaur are to be used for almost all of NASA's launchings until the space shuttle begins its operational missions in 1979 or 1980. Of 21 launches currently scheduled for 1978, for example, 12 are assigned to Deltas, 6 more to Atlas-Centaurs and only 3 to the smaller Atlas F.

Of more immediate concern is the launch of the double-payload International Sun-Earth Explorer mission (one satellite each from NASA and ESA), which has been scheduled to take off on Oct. 19 aboard a Delta. The next Atlas-Centaur launch, another Intelsat IV-A, has been targeted for Nov. 10. With its two key rockets under investigation, however, NASA may find its schedule slipping, even if the time only goes to be sure that nothing is chronically wrong.

A similar case of successive malfunctions took place in 1968-69, when three payloads were lost in less than 12 months—all using the supposedly "old reliable" Delta. Yet investigations showed apparently unrelated causes rather than any common thread, "a case," said one engineer, "of statistics catching up with us." □

Sixth Salyut space station launched

Salyut 6, latest in the Soviet Union's series of space stations, was fired into an earth-circling orbit on Sept. 29, with indications that a crew of cosmonauts would soon go aloft to occupy it. The previous station, Salyut 5, was destroyed during atmospheric reentry on Aug. 8, ending a nearly 14-month lifetime during which it was manned by two different crews and unsuccessfully approached by a third.

"We are preparing astronauts now to work on board the orbiting stations," said veteran cosmonaut Vladimir A. Shatalov on Oct. 3, "and a launching will follow soon . . . ." In addition, besides the Oct. 4 20th anniversary of Sputnik 1, there is the coming 60th anniversary of the Russian Revolution, with both events being likely candidates for Soviet commemoration in space.

Shatalov's use of "stations," in the plural, could be a reference to Salyut 6 and others to come, or it could be merely a broad usage describing the Salyut and the spacecraft that would carry the crew to meet it. Salyut 5 was said by Soviet officials to carry at least two docking ports, so that an additional spacecraft could be sent up to resupply the station, but this capability was not used. Multiple dockings, however, are one way to assemble large, modular structures in space, and both the U.S. and Soviet space programs include studies of such possibilities. It has thus been speculated that there might be an attempt to join two Salyuts together in orbit, thus creating a large station, presumably with a crew of at least four people. □

Gene-splicing bills suffer setback

It was three steps back last week for recombinant DNA legislation. Both in the House and in the Senate the DNA bills ran into unexpected delays and opposition. However, deadlines for possible enactment this year have long since passed. The continuing work on these bills now aims for settlement in the next Congressional session.

Sen. Edward M. Kennedy (D-Mass.) withdrew support for his own bill, which has already passed the Senate Human Resources Committee. "I am concerned about the fluctuating scientific data and the emotional atmosphere of the debate," Kennedy told a meeting of medical writers. Kennedy proposes instead compromise legislation to extend the current National Institutes of Health guidelines for one year to all parties conducting recombinant DNA research and to establish a national recombinant DNA study commission to recommend, after nine months, whether permanent legislation is necessary.

Kennedy cited new work by Stanley Cohen of Stanford University as challenging the belief that recombinant DNA research can produce novel organisms. "Dr. Cohen believes that by using this technique [recombinant DNA], scientists can only duplicate what nature can already do," Kennedy says.

Recent experiments by Cohen and Shing Chang demonstrate that within bacteria small, independent rings of DNA (plasmids) can be snipped and resealed by the same enzymes that scientists use to engineer plasmids outside the cells. Fragments of DNA either from bacteria or mouse mitochondria were clipped from or inserted into plasmids within bacteria. "It seems reasonable to speculate from our findings that restriction endonucleases [the enzymes that cut DNA at specific sites] may play a major role in the natural evolution of plasmid, and perhaps chromosomal, genomes," the researchers conclude in a paper to be published in an upcoming issue of the PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES.

Cohen's results may provide Kennedy with a graceful retreat from his strong position on recombinant DNA control, although they are not decisive on the question of hazard, some scientists suggest. Cohen's experiments do not conclusively establish that such genetic recombination occurs in nature. For example, the bacterial cells in the experiments are treated with calcium chloride so that the plasmids may enter. The work does not address incorporation into plant and animal cells, nor does it answer the objection that products of genetic recombination may be hazardous, even if recombination occurs in nature.

In a separate action, the Senate Committee on Commerce, Science and Transportation announced that it will hold hearings next month to examine the effect of the proposed legislation on the conduct of basic research and the freedom of scientific inquiry. Committee Chairman Sen. Warren G. Magnuson (D-Wash.) says the bills "appear to go considerably beyond previous legislative attempts to control the use of potentially hazardous materials."

In the House last week, commerce committee Chairman Rep. Harley O. Staggers (D-W.Va.) blocked a vote on the bill proposed by Rep. Paul G. Rogers (D-Fla.) and approved by the Health and the Environment Subcommittee. The commerce committee will consider the recombinant DNA bill again this week. □

The right brain: Surviving retardation

As the mysteries of the left and right hemispheres of the brain begin to unravel, it is apparent that although the halves function autonomously in many ways, they may also support, complement and even inhibit each other. Both the autonomous and inhibitive aspects of hemispheres were strikingly portrayed in two studies presented recently at the annual meeting of the American Psychological Association.

In one study, University of Houston researchers report that some youngsters classified as retarded in the left brain functions of speech, writing, logic and mathematics, are normal and above average in the right brain-controlled processes of creativity. In the other study, University of Connecticut psychologists find that persons with left brain damage frequently are more expressive and nonverbally communicative than either persons with right brain damage or nondamaged individuals. The researchers suggest that in many "normal" people the left hemisphere may actually inhibit the right side's facility for "spontaneous nonverbal expression."

The Houston research, conducted by Patricia L. Musick, set out to examine the possibility—which had been implied in several previous studies—that persons who are considered retarded by the usual language- and mathematically-oriented criteria may not be retarded in their right brain functions. "It has been assumed that children with retarded mental development would follow the same stages of growth [in creative development] as the typical child, but at a much slower pace," says Musick.

The psychologist chose a sample of eight 3- to 9-year-olds, ranging from moderately to profoundly retarded. The drawing and painting ability of each was evaluated during one semester by specialists in "creativity for the handicapped." During the next semester, each of the specialists worked with one of the eight children in a program designed to

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