his district to have been elected to two consecutive terms. When Aspin last year criticized automobile manufacturers for foot-dragging on emission controls, he got a wounded and angry letter from one constituent, the president of American Motors Corp. in Kenosha. But his stand does not seem to have wounded him politically.

Aspin keeps in touch with home through an ombudsman whom he has instructed to go around to post offices in the district for several days a week. This approach has generated an enormous amount of casework, and other congressmen are reported to be interested in doing the same thing.

A top Aspin target this year is Litton Industries, which has been plagued with delays and cost overruns on a Navy contract to construct nine landing helicopter assault ships at its new shipyards in Pascagoula, Mississippi. The costs and delays became so extreme that the Navy canceled orders for four of the ships. Litton now wants some $400 million for cost overruns and cancellation fees. Aspin calls them "bailout" fees for inexcusable incompetence and warns that Litton may become "the Lockheed of shipbuilding." The Navy is pretty unhappy with Litton anyway, and Aspin hopes to stiffen its back against Litton's demands. But the political situation is complicated by the power of Mississippi's Senator John Stennis (D) and the fact that Litton's former president Roy Ash now runs the Office of Management and Budget.

Aspin is also after Roy Ash. In an article in the *Nation* early this year, he alleges Ash has engaged in questionable business dealings and had manipulated the ledgers when he was at Hughes Aircraft to cover up the fact that the company was making excessive profits on government contracts. Needless to say, Aspin thinks Ash's current position puts him in a blatant conflict of interest.

Aspin appears to be thoroughly unintimidated by his targets of criticism. He has a way of reducing things to digestible chunks, as when he recently described the "games the Pentagon plays." Such games include using the facts in any way that is self-serving, in "heads I win, tails you lose" fashion; making quantitative rather than qualitative comparisons with what the Russians have got (or vice versa); mutual backscratching between the services—"I'll support your questionable weapons if you'll support mine"—and of course, wheeling in the national security threat.

Aspin says his other monolithic target, Big Oil, is also versed in these techniques. For example, when it's profitable to do so, they will argue they're a free enterprise business just like anyone else, and "if the market is better abroad we'll export oil." At other times oil becomes a vital national resource deserving of special treatment, and anyone who wants to reduce depletion allowances or eliminate import quotas is accused of threatening the country's security. Aspin and Senator James Abourezk (D–S.D.) recently introduced bills aimed at breaking up integrated oil companies. A subsequent announcement by the Federal Trade Commission that it was filing a complaint charging monopolistic practices by eight major oil companies was regarded as vindication of this controversial move.

Aspin and his staff sometimes appear to be knocking their heads against a stone wall, but they seem to be getting a kick out of it. They were amused and appalled the other day when it was confirmed that retiring General John D. Ryan was in the middle of a round-the-world goodbye trip with his wife on his private Army jet (the Army wouldn't say where the general was, so a female staff member obtained the information by calling and identifying herself as a friend of Mrs. Ryan). Another staff member found that merely chartering a 707 (the jet's civilian equivalent) to Thailand would cost $135,000. Such junkets are routine for the military. Nonetheless, another press release rolled out.

Aspin says there are two ways to be a good congressman: a junior person concentrates his energy and influence on one or two areas he has staked out, and then proceeds to try to win others over to his position. A senior person, especially a committee chairman, develops his power by being a good legislator. He develops a bill and then figures out where the potential support is. Instead of trying to talk people into it, he fights from common ground, through artful compromises continually broadening his base of support. "Those types of guys never put out press releases," says Aspin.

Aspin presently plans to stay where he is, his constituency willing. He considers himself lucky that he got on the committee at such a young age, for this means he has a good chance of becoming not just a public figure but a powerful one within the House—the kind of guy who doesn't have to put out press releases.—CONSTANCE HOLDEN

APPOINTMENTS

Herbert J. C. Kouts, head, physics division, Brookhaven National Laboratory, to director, reactor safety research division, Atomic Energy Commission. . . . **David P. Gardner**, vice president of extended academic and public service programs, University of California, to president, University of Utah. . . . **James H. Mullen**, president, Jersey City State College, to president, Northeastern Illinois University. . . . **Glenn W. Ferguson**, president, Clark University, to president, University of Connecticut. . . . **Robert J. Kegerreis**, vice president, Wright State University, to president of the university. . . . **Gardner Lindzey**, chairman, psychology department, Harvard University, to vice president and dean of graduate studies, University of Texas, Austin. . . . **Werner A. Baum**, president, University of Rhode Island, to chancellor, University of Wisconsin, Milwaukee. . . . **John A. Simpson**, professor of physics, Enrico Fermi Institute, University of Chicago, to director of the institute. . . . **John H. Moxley III**, dean, School of Medicine, University of Maryland, to vice chancellor for health sciences and dean, School of Medicine, University of California, San Diego. . . . **Ronald W. Estabrook**, chairman, basic science review committee, Veterans Administration, to dean, Graduate School of Biomedical Sciences, University of Texas, Dallas. . . . **Henry G. Cramblett**, chairman, medical microbiology department, College of Medicine, Ohio State University, to dean, College of Medicine at the university. . . . **Ernest B. Brown, Jr.**, chairman, physiology department, University of Kansas Medical Center, to dean of faculties and academic affairs at the medical center. . . . **Richardson J. Mathewson**, associate professor of pedodontics, University of Oregon, to chairman, pedodontics department, University of Oklahoma. . . . **Paul E. Kifer**, director, research organization, Ralston Purina Company, to head, food science and technology department, Oregon State University. . . . **Roy Patterson**, associate chairman, medicine department, Northwestern University Medical School, to

chairman of the department. . . . **Clyde M. Senger**, professor of biology, Western Washington State College, to chairman, biology department at the college. . . . **Karl R. Johansson**, deputy director for scientific affairs, Wistar Institute, to chairman, biological sciences department, North Texas State University. . . . **G. King Walters**, acting dean of science and engineering, Rice University, to chairman, physics department at the university. . . . **Albert J. Stunkard**, head, psychiatry department, University of Pennsylvania School of Medicine, to chairman, psychiatry department, Stanford University School of Medicine. . . . At the University of Florida: **Harry H. Sisler**, executive vice president, University of Florida, to dean, Graduate School; **John W. Hardy**, curator, Moore Laboratory of Zoology, Occidental College, to chairman, natural sciences department; and **William R. Maples**, associate professor of anthropology, University of Florida, to chairman, social sciences department. . . . **Erich H. Windhager**, professor of physiology, Cornell University Medical College, to chairman, physiology department at the college. . . . At the University of Miami: **John E. Davies**, associate professor of medicine, School of Medicine, to chairman, epidemiology and public health department; and **Francis Williams**, research biologist, Scripps Institution of Oceanography, to chairman of fisheries and applied estuarine ecology. . . . **Joel Greenspoon**, professor of psychology, Temple Buell College, to chairman, psychology department, College of Arts and Education, University of Texas of the Permian Basin. . . .At Howard University School of Medicine: **William L. West**, professor of pharmacology, to chairman, pharmacology department; and **Melvin B. Jenkins**, professor of pediatrics, College of Medicine, University of Nebraska, to chairman, pediatrics and child health department. . . . **Tomas A. Arciniega**, professor of educational administration, University of Texas, El Paso, to dean, School of Education, California State University, San Diego. . . . **James M. Sawrey**, chairman, psychology department, California State University, San Jose, to dean, School of Social Sciences at the university.

(Continued on page 472)

RESEARCH NEWS

Deep Sea Drilling: Research Lags Exploration

Week after week, month after month, the *Glomar Challenger* plies the world's oceans, drilling and coring sea-floor sediments. Every 2 months, it docks to take on a fresh scientific staff that to date has included some 330 investigators from 23 countries. Periodically the ship's load of samples is transferred to repositories at Scripps Institution of Oceanography in California and Lamont-Doherty Geological Observatory in New York, which together contain more than 25,000 meters of recovered cores. Now on the thirty-first leg of its continuing voyage of discovery, the *Glomar Challenger* has traveled more than 160,000 nautical miles and has drilled 450 holes into the ocean floor at 300 sites located in every major ocean basin except the Arctic. Technical innovations demonstrated with the ship range from extremely accurate positioning of the vessel and an ability to reenter a drill hole to successful operation of the longest drill string ever suspended from a floating platform.

Like its namesake, H.M.S. *Challenger*—whose pioneering 3½ year voyage a century ago marked the beginning of oceanographic research—the *Glomar Challenger* began its expedition in a time of scientific ferment. The *Challenger* set forth not long after the appearance of Darwin's *The Origin of Species* and opened investigation of the great ocean basins. The *Glomar Challenger* began its voyage for the National Science Foundation's Deep Sea Drilling Project (DSDP) during the conceptual revolution and debate over what is now called plate tectonics and hence had as a principal goal the determination of marine geologic history. Of particular interest were what at the time could only be called radical geophysical hypotheses—continental drift, sea-floor spreading, the notion of continually shifting crustal plates.

In 5 years of plumbing the sedimentary record contained in the sand, silt, volcanic ash, and fossil debris that overlie the oceanic crust, the drilling project has unequivocally established the geological youthfulness of that crust in comparison to most continental rocks and has helped confirm that sea-floor spreading and widespread crustal motions have occurred. These results, which became apparent early in the project, gained for the DSDP a reputation as one of the more successful examples of big science. More recently the results announced at the end of each leg of drilling, and examined in greater detail in an initial report by the scientific staff of each cruise, have been relatively modest. Cumulatively, however, they add up to a much broader, if still incomplete, picture of the history of the ocean basins than was heretofore available.

The pattern of movements of the crustal plates, for example, appears to be more complex than anticipated. In addition to east-west motion (away from the mid-ocean ridges where new crust is formed), the Pacific plate is moving northward, as is the floor of the eastern portion of the Indian Ocean near Australia. Vertical motions, both subsidence and uplift, also appear to have occurred. A major submarine ridge in the Indian Ocean, more than 2000 kilometers long and now more than a kilometer below sea level, has deposits of coal and shallow water shells that indicate it was once a chain of islands with swamps and lagoons. More generally, most oceanic crust appears to subside as it grows older and moves away from spreading centers toward deep ocean trenches.

The drilling has turned up evidence of petroleum and mineral deposits that may eventually be of commercial importance. Petroleum and natural gas were found for the first time in deep sea conditions in salt domes under the Gulf of Mexico. Trace amounts of natural gas have been detected in cores from many parts of the world. Sedi-