Builder of New Science Committee in House, "Tiger" Teague, Retires

In a changing Congress, House Science and Technology Committee chairman Olin E. Teague, who retired this month, personified both old and new. Teague has been an authority figure in the House, one of a congressional breed that seems to be vanishing. And he has also been an innovator who helped to set new standards for committee staffing.

Teague, who served 17 consecutive terms in the House, was a product and a pillar of the postwar Texas Democratic party, the party of Sam Rayburn, Lyndon Johnson, and John Connally, which for more than a generation used its solid home state power base as a fulcrum to influence national affairs.

Teague was elected to Congress soon after World War II when it was almost obligatory for a candidate to be a veteran and desirable to have a good war record. Teague had a very good one, winding up in command of an infantry battalion during a long spell of combat in France. Along the way he was wounded a number of times and received several decorations for bravery. He ended his military career with 2 years in army hospitals.

In Congress, Teague put in a standard apprenticeship under the tutelage of Speaker Sam Rayburn, serving on the Veterans' Affairs Committee and becoming the most influential member of the House on veterans matters. Late in the 1950's he saw new horizons for the country and for himself in the nascent space program and joined the Science and Astronautics Committee as a charter member.

Teague continued to get reelected, usually without serious challenge in either primary or general elections. And although threats arose that he might be redistricted into less congenial electoral territory, the Texas political fates preserved his geographically elongated and electorally safe Sixth District which stretches from the suburbs of Dallas to within long commuting distance of Houston.

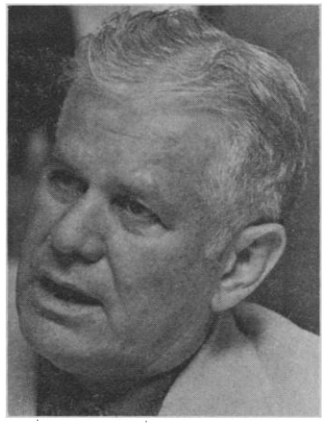
His voting record reflects unswerving support of defense, space, and public works programs, combined with generally conservative stands in other spheres, particularly on social and environmental legislation. The 1972 Ralph Nader Congress Project, which brought a modern populist point of view to its profiles of legislators, noted that Teague voted consistently against health, welfare, and higher education legislation although he championed such programs for veterans. The Nader team reported that business groups in Teague's district were much more enthusiastic about their congressman than were community and minority groups, but acknowledged that opposition to Teague never really posed an election threat.

The fact that Teague was not a mainstream Democrat ideologically seems not to have damaged his standing with his party colleagues. The House has its own hierarchy of values, and Teague's perceived virtues were cardinal ones—personal integrity, concern for the House as an institution, and fairness in exercising power. There was also respect for his toughness; the nickname "Tiger" has stuck with him since high school and gives some inkling of one dimension of his personality. And there was the direct, unassuming manner and the invisible ribbons on his chest. The esteem in which he was held is indicated by his twice being elected chairman of the Democratic Caucus in the early 1970's and named to serve on the House Ethics Committee.

In 1972, the then space committee chairman, avuncular George Miller of California, lost his primary and Teague opted to give up chairmanship of Veterans' Affairs and take over the space committee chairmanship. Teague had headed the manned spaceflight subcommittee through the glory days of the 1960's, but the Apollo program was winding down and it was clear that the time was opportune for the committee to take a broader interest in science. Teague set about educating himself and his committee. For example, after President Nixon banished the science adviser's office from the White House, Teague conducted full committee hearings on science policy. These hearings became part of the process through which the science adviser and his staff were restored to the Executive Office. Teague was one of the founders of the Office of Technology Assessment and served as its chairman for the 94th Congress.

The post-Watergate wave of reform crested in Congress in 1974 with an effort to curb the authority of committee chairmen and distribute power more evenly among rank and file members. Some fairly sweeping proposals to reform the committee system were blocked in the House in what at the time looked like a last stand of the seniority system. In the compromise that followed, the space committee prospered, gaining a new name—Science and Technology—and a broader jurisdiction. The major acquisition was wider authority over energy research. The committee's luck was not unconnected to Teague's standing in the House.

The new responsibilities of the committee entailed a substantial buildup of the staff; its size increased from about 30 at the time of the reorganization to 75 currently, about 50 of them professionals. In the years when the committee had concentrated on the space program, a reasonable level of technical competence on the staff was attained. But under Teague, the committee, in broadening its horizons, set an example of staff professionalization.



Olin E. Teague

Staff jobs on the Hill have traditionally involved an element of patronage with a measure of party and personal loyalty expected and given, notably to the committee chairman. In the last decade, however, the pattern was diversified. On some committees, each majority member may appoint a staff member. On others, particularly since the reforms have effected a decentralization of authority, subcommittee chairmen hire the staff. Staffing on the merit principle has prevailed on the Hill for some years in a few special cases, notably, perhaps, on the Joint Committee on Taxation. In such cases, almost invariably, a high degree of technical expertise has been required, and the fact of joint membership and alternation of chairmanship between House and Senate has usually combined to require that staff serve impartially.

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On Science and Technology, Teague carried the merit principle in staffing further than it customarily had been in the House. Staff members were hired according to qualifications for a particular job and were expected to serve all committee members regardless of party. Present and past staffers attest that as job applicants they were never asked their party affiliation. A recruiting system was developed under which criteria were set for open positions and then applicants were interviewed by senior staff members whose recommendations were taken seriously. Science and technology soon outdistanced other committees in the number of Ph.D. scientists and engineers employed.

The system has not worked frictionlessly. Republicans chafed for years because of tight limits on staff available to the minority. When Representative Charles A. Mosher of Ohio was ranking Republican he agreed generally with Teague on staffing principles. But Mosher retired 2 years ago and the current ranking Republican, John W. Wydler (R-N.Y.) has pressed the prerogatives of the minority to appoint some staff as allowed in recent reforms. Observers say, however, that quality control on staff has been maintained.

Teague's heir apparent as chairman is Representative Don Fuqua (D-Fla.). An eight-termer, he is regarded as knowledgeable and diplomatic and is expected to have no trouble in getting his chairmanship confirmed by the caucus or in dealing with members of the committee. Like Teague he is a conservative and, also like Teague, his experience as ranking majority member has been mainly on space matters, since he has chaired the subcommittee on space science and applications. But during the past Congress the chairman's health has been poor and Fuqua has worked closely with Teague, giving Fuqua a runnning start on the chairman's job. Fuqua, of course, faces changed circumstances in which a chairman is expected to reign but not to rule. Nor can he draw on the kind of congressional capital that Teague built up during his three decades in the House.

As for Teague, it is hard to sum up his career. He never felt impelled to run for the Senate or to seek the topmost rungs of the leadership ladder in the House. Presumably because of his own experience, he felt an obligation to a special constituency and left an indelible imprint on veterans' programs.

The move late in his career to the chairmanship of the Science and Technology Committee put him at the center of national science affairs, and his own standing in the House enabled him to strengthen decisively his committee's position.

His personal impact on science and technology issues is difficult to assess in detail. It is evident, for example, that when the National Science Foundation's education directorate was under attack because of a controversial school behavioral science course, Teague's actions as chairman helped keep the congressional reaction under control. And clearly, Teague played an important role in the come back of the science adviser. But it is probably not for specific actions that Teague has earned the high regard in which scientists who have dealt with him almost invariably seem to hold him. Teague has evinced an old-fashioned, perhaps somewhat unreflective but nonetheless unselfish, sense of public service and it is really through this quality that he has left his mark on science policy.

—JOHN WALSH

RESEARCH NEWS

Array Processors: Maxi Number Crunching for a Mini Price

Stimulated by ever cheaper and smaller components in the shape of microelectronic circuits, the minicomputer and, coming a decade later, the microcomputer have made it possible for researchers to own and operate their own computers, which they then dedicate to particular ends by way of the programs they write. A new trend, also driven by microelectronics, is now in view in which specialization is achieved by the organization of the computer circuits (hardware) themselves. At the leading edge of this changing scene is the array processor.

A device especially designed to carry out, at high speed, arithmetic operations on large arrays of numbers, such as vectors and matrices, the array processor can, with some limitations, transform a minicomputer into a computer for large-scale scientific computation—that is, into a number cruncher. Because of the modest financial investment required, about that of a minicomputer itself, it is becoming economically feasible for some researchers to do involved computations that once were not affordable, while others are able to process enormous volumes of experimental data, even if the computations themselves are not demanding. And, interestingly enough, far from hastening the demise of the central computing facility, the array processor may reverse the fortunes of those unable to purchase the newest maxicomputers by elevating a pedestrian large or mainframe computer into the near supercomputer class, although again there are some important qualifications—no one is getting something for nothing.

The largest group of users of array processors is in the field of signal processing, and the devices were originally designed to meet the needs of this group. One kind of signal processing is the analysis of radar reflections in "real time"—that is, as they are received—for enemy aircraft or missiles among a host of false signals and a large background "noise." A second type of signal processing is image analysis of microwave, infrared, or optical satellite photographs. Here, real-time response may not be necessary, but the volume of data generated is overwhelming—a Landsat-type satellite produces photographs at the rate of one each 20 seconds.

The champion users of array processors are those in the geophysical exploration business, primarily hunters of oil and natural gas. The now dominant means of accomplishing the exploration is, according to Donald Townsend of the Exploration Services Division of Geosource, Inc., in Houston, by seismic reflection surveys.

A large pad carried beneath a heavy truck is excited to vibrate at a known frequency, thus launching waves into the earth. Over a 10-second interval, the frequency is swept from, for example, 10 to 50 hertz. An array of up to 48 microphones (geophones) records, every few milliseconds over a period of 15 to 20 seconds, samples of the intensity and times of arrival of sound waves traveling through the earth and reflecting from boundaries between structures, such as rock layers and fluid-filled porous mate-

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