2. CERN

Geneva. While construction proceeds on the high-energy accelerator at Batavia, Illinois, the European Organization for Nuclear Research (CERN) is still seeking enough multinational harmony to get started on a competitive machine. And once again the news from CERN is that the accelerator designers, confronted by new political difficulties, have produced a new plan. This time, however, the plan involves a radical departure from the past, for now it is proposed that the new accelerator be built on farmland right next to CERN's existing facilities, which are near here, on a 1-kilometer-square site bisected by the French-Swiss border.

Throughout a decade of discussions, it was a given of the situation that, because space was lacking at CERN's present site, the new machine would have to go elsewhere, since additional nearby land was considered unobtainable. On the basis of this assumption, site proposals, involving some considerable expense for preparation, were submitted by France, West Germany, Austria, Belgium, and Italy. But West Germany later took the position that since it would be the largest single contributor to the costly venture, the machine should be built on German soil or Germany would reconsider its interest in the project. This view of the matter, formulated at cabinet level, was based on the Germans' feeling that they had had enough of being the biggest payer without ever having any of Europe's cooperative ventures located within their borders. Should this keep up, they warned, German legislators would rebel, and, regardless of how Europe-minded the government wished to be, it might find it difficult to obtain further appropriations for international high-energy physics. On this issue, the discussions became deadlocked, and so they have remained throughout this year.

Confronted by a political impasse and lacking the close government ties that have proved so valuable for their counterparts in the United States, the staff for the proposed accelerator, headed by Britain's John B. Adams, sought to devise a technical solution to a political problem. After literally looking out their windows toward some 16 square kilometers across the road, mostly farmland and mostly in France, they held some very quiet conversations with French authorities and con-

M.I.T. Administration Makes Public Its Intentions

Cambridge, Mass. The Massachusetts Institute of Technology has reached what may be a resolution of its responsibilities toward two of the largest and most distinguished university defense research centers, Lincoln Laboratory in Lexington, Mass., and Draper (formerly Instrumentation) Laboratory in Cambridge.

A decision to cut loose from Draper while retaining ties to Lincoln, already approved by M.I.T.'s Corporation (trustees), was announced to the faculty 20 May by President Howard W. Johnson. The decision constitutes, in effect, a declaration that M.I.T. wants to get out of developing specific weapons systems (as at Draper) but will continue working on broader military problems (as at Lincoln).

M.I.T. decided to begin the tortuous and lengthy process of divesting itself of Draper because it had failed in the short run to find the money needed to implement a policy of "converting" the two laboratories toward a greater civilian emphasis. Furthermore, Draper Laboratory insisted on continuing its "cradle to the grave" involvement with specific weapons systems such as guidance for Poseidon multiple-warhead missiles (MIRV's) and a possible winged successor called SABRE (Self-Aligned Boost and Re-Entry), which would be equipped to maneuver almost all the way down to its target.

Draper Laboratory, with nearly 2000 employees, had a budget of $54.6 million in the year ending 30 June 1969, of which the National Aeronautics and Space Administration supplied $28.4 million (mostly for guiding Apollo mooncraft), the Navy $17.3 million, and the Air Force $7.2 million. The remaining $2 million came from the Army, the Atomic Energy Commission, the Federal Aviation Administration, and various industrial firms. When divestment of Draper is complete, a year or more from now, M.I.T. will lose some $5 million a year in compensation for administrative functions. This pours into M.I.T.'s general treasury and helps support such activities as the library and health services.

Lincoln, with 1770 employees, of which 594 are classed as "professionals," had a 1968–69 budget of $65.5 million, all but $1 million of it from a single Defense Department contract.

During the same period, M.I.T.'s on-campus research, all of it nonclassified, totaled $55.8 million, of which $49 million came from the federal government, including $16.9 million from the Department of Defense.

Although Lincoln worked during the 1950's on developing the Semi-Automatic Ground Environment (SAGE) and Distant Early Warning (DEW) bomber-detection systems, and the Ballistic Missile Early Warning System (BMEWS), its emphasis has become increasingly academic and general. Classified work now accounts for only 40 percent of the total. Lincoln's broad work on communications, radar, and other electronics problems has led it into such nonsecret projects as the 130-foot (39.6 m) "Haystack" radio telescope near Tyngsboro, Mass., and the Large Aperture Seismic Array in Montana.

The process of divestment of Draper will take place in two steps. The first step begins 1 June with the formation of a separate Draper Laboratory division under a ten-man board of directors, temporarily headed by the Laboratory's sprightly, 68-year-old founder, Charles Stark Draper, and including James McCormack, former M.I.T. vice president for defense labs and recently retired chairman of COMSAT; Carl Kaysen, director of the Institute for Advanced Study in Princeton, N.J.; and Emanuel R. Piore, former chief scientist of the Office of Naval Research and now a vice president and chief scientist of IBM. The board will work on such problems as the exact

cluded that there was no reason why a redesigned accelerator could not be constructed within a proton's throw of the present CERN campus and its 28-Gev accelerator. History records that over the years suggestions for using nearby land were raised now and then, but the five bulging proposals for faraway sites are ample evidence of the long-standing assumption that the new laboratory would have to go elsewhere. In fact, most of CERN's 12 member nations have already ratified a treaty to provide a legal basis for a second CERN.

Just how, if at all, a site within France gets around the German objection is not clear. But it has been suggested that the new plan provides the Germans with a face-saving exit; furthermore, some people hope that the Germans will have an incentive to take that exit, since building and operating next door to the present CERN center is expected to be considerably less costly than setting up an altogether new research facility at a distant site. All that the Germans will say at this point is that the decision was made by the cabinet and can be unmade only at that level. Some of them express puzzlement as to why they should be interested in a face-saving exit. Nevertheless, advocates of the new plan strongly hint that the Germans are sympathetically interested.

The views of the present tillers of those 16 square kilometers are yet to be expressed, but it may be that no one has yet told them the news. CERN officials explain that the matter is naturally a sensitive one and must be broached in a suitably diplomatic fashion. They explain that, since it is planned to put the accelerator underground so as to get down to a firm foundation, there will be little permanent disruption of the surface; few, if any, of the buildings that are there now will be affected and, when the work is completed, the present farming activities will in all likelihood be able to continue. As for the French government, it is still formally backing the site that it has offered near Saint-Tropez, but then there are reports that it is backing a site in an economically depressed region of Belgium, motivated either by a desire to block the German site or to induce the Belgians to buy more Mirage fighter planes, or both. But it is said that the French like the new plan and have quietly approved of it. Sites in Austria and Italy are also on the official list, but have never been considered seriously in the running.

The possibility of using land next to CERN's present laboratory is enhanced by another aspect of the newly pro-

on Disposition of Draper and Lincoln Laboratories

form of private corporation into which the lab will be converted, the search for a new laboratory director, and the transfer of pension rights and union wage contracts to the new firm. The second step, total separation, could come within a year or could take much longer, Johnson told the faculty.

The decision on the laboratories culminates a year and a half of dissent, demonstrations, and take-overs. The almost continual crisis began in the fall of 1968 when a soldier absent without leave was harbored in the M.I.T. student center for a few days until police arrested him. The incident crystallized antiwar feeling among many M.I.T. students and faculty who had shied away from protest until then. Among the results were the all-day discussion of the dangers of science held at M.I.T. and other campuses on 4 March 1969 and a demonstration against Draper lab's work on Poseidon in which demonstrators burst into Johnson's office.

On 25 April 1969, Johnson announced formation of an all-institute panel under Dean William F. Pounds of the Sloan School of Management to consider M.I.T.'s future ties to the laboratories. The panel proposed, on 31 May, a policy of gradual conversion to civilian projects like air traffic control and declared the Poseidon program "inappropriate for Institute sponsorship." That view was specifically endorsed by the M.I.T. Corporation on 3 October.

The fall term of 1969 opened with an announcement that Draper would step down as head of the laboratory (which was to be renamed for him) on 1 January, 6 months earlier than planned. But radical pressures continued to rise. Demonstrators disrupted a General Electric recruiting session on 29 October, blocked one entrance to a Draper Laboratory building on 4 November, and occupied Johnson's office for several days in January, causing $6000 in damage before they left.

In late December, it was announced that Draper would not merely be a consultant to the lab, but would be called deputy director. This move was taken as a sign that Draper was definitely going to stay and fight. Both at M.I.T. and in the press, he continually predicted that significant funds for conversion would not turn up and asserted that the military guidance work of the lab was essential to the nation. With characteristic impishness, Draper created several minor storms with his predictions, beginning a year ago, that he might, regretfully, have to take his people away from M.I.T., that he hadn't resigned as director but really had been fired, and that officials within NASA were thinking that Draper's lab, once separated from M.I.T. would be an ideal tenant for the just-completed buildings of the Electronics Research Center, whose closing was announced 29 December.

Early this year it became apparent that potential money for big, new, civilian projects had evaporated. On 25 March the Department of Transportation announced it would take over the NASA center in Cambridge on 1 July and rename it the Transportation Systems Center. This step dried up any loose money for air traffic control research at Draper lab, and the M.I.T. administration realized there was no alternative to divestment.

The decision to cut loose Draper amounts to trading one headache for another. With the issue of Defense-related laboratories at least partially settled, M.I.T. must begin immediately to seek millions of dollars in new research support. As Hill said immediately after the announcement, "We'll have to live by our wits."

—VICTOR K. MCELHENY

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