Briefing

Law of the Sea Conference Sails On and On and On

The Law of the Sea conference, which has become the Flying Dutchman of international negotiations, has docked again in Geneva for what many observers think may be the last chance to resolve a residue of hard-core issues. The conference, launched in 1973 with the ambitious aim of fashioning a comprehensive treaty on the use of the oceans, is now in the midst of its eighth lengthy (19 March to 27 April) negotiating session. Despite agreement on some important points in years past, the 158 countries participating remain seriously at odds on the issue of mining of the seabed.

In a speech before the National Press Club before his departure for Geneva, Elliot L. Richardson, who represents the United States at the Law of the Sea Conference, stressed the importance of the conference and the universal benefits to be achieved if it succeeds, but the tone of his text came across as somewhere between gloomy and grim.

The major polarizing issue continues to be the character of an International Seabed Authority, which since the conference began has been conceived as overseeing the exploitation of the mineral resources of the deep seabeds. The less developed countries (LDC's), organized as the Group of 77, have argued that the authority should be an internationalized mining company harvesting manganese nodules with the benefits to be shared by all nations, particularly the poorest. The industrial nations, led by the United States, have insisted that the huge investment necessary for effective mining operations on the seabed require that individual mining companies reap substantial rewards, with the authority acting as a licensing agency and receiving part of the proceeds from mining in revenue-sharing funds.

In 1976 a compromise was finally reached in which a dual system was accepted in principle. Private industry and state mining enterprises would operate under license from the seabed authority with a portion of proceeds going into a revenue sharing pot. In parallel, the authority would also have an operating arm acting as a mining company mainly for the LDC's.

Still far from agreed upon, however, are details of the composition and powers of the authority, notably the character of its governing machinery. The Group of 77 have plumped for a one-country-one-vote formula that would give the LDC's full control. The United States and other industrial countries have insisted that countries with mining expertise and the requisite funds for investment have weighted representation in the governing apparatus. They back the formation of a council made up of 36 nations which would make management decisions. In his press club speech Richardson warned that without incentives to "entrepreneurs," by which he meant mining companies in the United States and other industrialized countries, there will be no seabed mining.

In his concluding remarks to the press club, Richardson surmised that failure of the conference could bring resurgence of "ideologues and firebrands" as a dominant force in the dialogue between LDC's and industrialized countries. He saw a possibility of "attempts to impose navigation and overflight restrictions on United States commercial and military vessels and aircraft." Failure could also produce tensions in such matters as fishing rights, maritime boundaries, pollution control, and the catch of marine animals. And he saw the possibility of political reprisals and even military action against U.S. mining operations if American companies should begin such operations without a treaty. Congress last year came within an ace of passing legislation that would have given a unilateral go-ahead to U.S. companies permitting them to proceed in the absence of a U.N. treaty.

Richardson's appraisal, a fairly blunt and bleak one by diplomatic standards, may have been partly calculated to bolster his bargaining position in Geneva. But it may also reflect a realistic judgment that without a timely compromise by the major parties involved, not excluding the United States, the seabed authority, the cornerstone of the treaty, will never be put in place.

Another important item of unfinished business is legal definition of the outer continental shelf, but the issue of the seabed authority remains the most difficult.

Is Faculty Management? That's an Issue in BU Talks

Boston University's administration and faculty union on 21 March stepped back from the brink in a bitter collective-bargaining battle that appeared to be leading to a strike. On the eve of a planned 2-day "postponement" of classes by faculty, the two sides reached agreement on major issues that have stood in the way of concluding a contract.

The union did not lift its threat of calling a full-scale strike on 4 April unless a completed contract can be voted on and approved by the faculty by 2 April. But both union negotiators and BU president John Silber have said publicly that they believe that remaining gaps in the agreement can be filled in 2 or 3 days of discussion. The matter may be settled without further Sturm and Drang at BU; however, a court case generated during negotiations could significantly effect unionization at all private universities and colleges.

Contract talks at the big—22,000 students—private university have been notable for their length and rancor. An American Association of University Professors chapter was designated as bargaining agent for faculty in an organizing election in 1975, but AAUP chapter spokesmen have complained that the administration did not begin serious bargaining until recent months. One factor in creating the hard feelings was that BU's combative president John Silber and the university's board of trustees took the line in negotiations that, by unionizing, faculty forfeited their traditional prerogatives to participate in the management of the university in areas such as hiring, promotion, and tenure. Silber, in the early stages, even argued that faculty should lose the right to decide curriculum and choose textbooks. Administration officials note that Silber at this point was applying the "industrial model" of unionization to the university rigorously for effect and that he did not press for extreme changes.

On governance issues, the recently reached agreement, in fact, appears to follow standard arrangements. The BU administration, nevertheless, is still concerned about a National Labor

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Relations Board decision to include department chairmen in the union bargaining unit. Administration officials note that most grievances by unionized faculty are filed, at least formally, against department chairmen, and that this creates an obvious conflict between union and management roles for the chairmen. This is the main issue in the court case which BU has appealed to the U.S. Supreme Court.

The larger question of the legality of collective bargaining in private colleges and universities is the subject of another case, involving Yeshiva University in New York City, which the Supreme Court in February agreed to hear on appeal. In the Yeshiva case, the U.S. Court of Appeals for the Second District in New York last year ruled that Yeshiva faculty performed broad management functions and, therefore, were not eligible as employees to bargain collectively under the National Labor Relations Act. In the BU case, the First Circuit Court of Appeals in Boston found that BU faculty were not management and could, therefore, unionize under the federal statute. An apparent conflict was created by the decisions and BU officials hope that whatever the decision in the Yeshiva case, the court will agree to hear the BU appeal.

BU, the fourth largest private university in the country, is the most sizable private university to be unionized so far, but is by no means the first. Faculties in about 80 private colleges and universities have concluded union contracts since the early 1970's, including such sizable institutions as Adelphi, Hofstra, Fairleigh Dickinson, and St. John's universities in the New York area and the University of Bridgeport. Faculty in public colleges and universities are not directly affected by the cases because they are covered by state labor laws rather than federal legislation.

It seems possible that the courts may not provide a clear-cut answer on the unionization issue. In the Yeshiva case, the appeals court judges appeared disposed to examine the extent of the faculty's actual role in management in a particular institution. If that were to become the standard, the ironical effect could be that antiunion university administrations, to thwart unionization, might find themselves thrusting more power on the faculty.

—*John Walsh*

because they fused. By 1848 he produced elements from paper strips carbonized in a fireclay crucible containing charcoal. By 1855 he had succeeded in producing strong and flexible carbon spirals.

But since the vacuum in the bulb was incomplete, his experiments at the time were doomed to failure. The carbon oxidized, and the filament disintegrated. Swan thus quit his experiments sometime after 1860. Meanwhile, in 1865, a German chemist living in England, Hermann Sprengel, invented a pump which gave a much better vacuum. In 1877, Swan, by now having invented the dry photographic plate, returned to his carbon filament experiments, only this time with the new pump. Results were encouraging. By 1878 he found that if the carbon filament was illuminated for a short period while the pump was still working, it pulled out impurities released from the incandescing filament. The lamp thus lasted much longer, and the blackening on the inside of the glass bulb, which was a problem in earlier lamps, was eliminated. Edison, the Swan supporters note, did not hit upon this process until April 1879.

On 3 February 1879, Swan demonstrated his new bulbs before an audience at the lecture theater of the Literary and Philosophical Society of Newcastle. According to Kirby, it is this date, when the bulb was first shown to the public and some 8 months before Edison claimed success with a carbon burner, that the English celebrate as the birth of the incandescent bulb.

So why hasn't Swan received any credit in the past? Edison, says Kirby, had so many firsts to his name that people naturally assumed that he was first with the light bulb. The situation was compounded, he adds, by "the powerful publicity machinery which Edison himself developed and utilized to assist in the commercial success of his developments." It adds up, says Kirby, to an unjust prejudice against other contenders.

Not so, say the Edison backers. They claim that after an examination of all the facts the balance still tilts in favor of Edison—even though Swan may have built an early carbon burner. Their main claim is that Swan worked on a bulb whereas Edison perfected not only a bulb but a whole electrical system that could compete with the gas light. The electrical generator was an important part of that system. Its rapid development by Edison brought about the practical distribution of electrical power from a central source in the same way as gas. Another example is circuit design. Edison employed parallel rather than series installations, so that when one bulb failed, as often happened in the early days, the rest of the bulbs did not go out, as was the case with the series system first used by Swan. And the Edison people note that today's electrical distribution system is nothing but a highly sophisticated version of Edison's system.

But parallel circuits did present Edison with a problem. Each added lamp (and he pictured thousands) reduced the total resistance of the circuit. This, according to the laws of electronics, meant that a huge current would be needed to power the load. It was impossible. The power lines from such a central distribution system would have to be of such vast diameter that there would not be enough copper in the world for even a modest system of parallel lighting. To get around the problem, Edison had to make the resistance of his lamps very high. The diameter of his power lines could then be kept reasonably small.

The hallmark of such a high-resistance carbon lamp is a very thin filament—and therein, say the Edison backers, lies the critical difference between the English lamp of 3 February 1879 and the American lamp of 21 October 1879. Edison's filament was thin. Swan's was thick. It sounds insignificant now, but billions of dollars worth of business hung in the balance. Edison's bulb could be used in parallel circuits employing thousands, even millions of bulbs; Swan's only in small series systems. Swan may have worked with a carbon burner earlier than Edison, but it was Edison, say his backers, who took the carbon filament and made it work for the masses.

By the time of the Paris exhibition of 1881, Edison had completed most of his system and decided to ship a unit over to France. Once at the exhibition, Edison found himself face-to-face with Swan, who was exhibiting in a nearby booth. When it came to giving the official prizes, it was Edison who won the Diploma of Honor, and Swan who had to be content with a prestigious, but definitely inferior, Gold Medal. Said Swan: "The jury had a difficult task to perform and I suppose they did the best they could with it."

It was not just a matter of individual prowess, say the Swan historians. The two men worked in very different climates. In the United States, for instance, Edison was able to attract large-scale capital to support his large-scale visions. By 30 September 1878, just 3 weeks after he first set out to invent an incandescent lamp, a syndicate of leading financiers, including Morgan and the Vanderbilts,