



Bulletin

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NATO MINISTERIAL MEETING

On his return to Ottawa from the NATO Ministerial Meeting in Bonn on May 30 and 31, which, he said, "took place at a crossroads in the evolution of East-West relations", Mr. Mitchell Sharp, Secretary of State for External Affairs, reported as follows to the House of Commons on June 5:

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The NATO meeting coincided with the completion of President Nixon's talks with Soviet leaders. Secretary of State Rogers reported to his colleagues in Bonn on this historic visit and in particular on the strategic arms limitation agreements. We all welcomed these agreements as an important turning point in efforts to curb the nuclear arms race and enhance international security through nuclear arms control. Along with other ministers, I welcomed the commitment of the United States and the Soviet Union actively to continue negotiations on further limitations. I also expressed particular appreciation to the United States for having regularly consulted its allies in the North Atlantic Council throughout the negotiating process.

On June 3, shortly after the NATO meeting, the foreign ministers of the four powers signed a final protocol bringing the Berlin Agreement into force. At the same time, representatives of the Federal

Republic of Germany, the Soviet Union and Poland exchanged instruments of ratification concluding their non-aggression treaties. The Canadian Government welcomes these agreements as major steps forward in relations between East and West. The Berlin Agreement, it is hoped, marks the end of the recurring tension and instability in and around Berlin that have frequently envenomed East-West relations since the blockade in 1948. The non-aggression treaties should remove another source of tension, allowing the F.R.G. to put its relations with Eastern Europe on a more normal basis.

Together these developments open the way for the alliance to take part in multilateral preparatory talks on a Conference on Security and Co-operation in Europe and for the two German states to begin negotiations on a *modus vivendi*. Such an accommodation is necessary for the success of the Berlin Agreement and for the maintenance of stability in Central Europe. If the two German states can agree on a *modus vivendi* it will pave the way for their entry into the United Nations and a general recognition of the G.D.R.

When one looks back at the many years of stagnant East-West relations, the conclusion of the Berlin Agreement and the non-aggression treaties represents remarkable progress. It vindicates the alliance's policy of making a Berlin settlement the pre-condition for progress on preparation for a conference, and demonstrates that the alliance, through its solid support for Chancellor Brandt's *ostpolitik* is a positive instrument for *détente*.

PREPARATORY TALKS IN HELSINKI
NATO ministers agreed in Bonn to accept the invitation of the Finnish Government to hold multilateral preparatory talks in Helsinki to prepare for a Conference on Security and Co-operation. The exact date on which the European countries, the United States and Canada will sit down to talk about a conference will have to be set by mutual agreement among the po-

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tential participants. With other NATO members Canada will now move to engage other interested countries in planning for this phase.

I should emphasize that a decision to convoke a formal conference has not yet been taken. That decision will depend on the outcome of the preparatory talks. The aim of NATO countries at these talks will be to ensure that our proposals are fully considered and to establish that enough common ground exists among participants to warrant reasonable expectations that a conference will produce satisfactory results.

For example, we want to see more normal contacts and exchanges between countries of different political and social systems in Europe. To achieve this end, the conference should deal in a practical way with measures designed to contribute to the freer movement of people, information and ideas. I was not alone in underlining the importance of this consideration at our meeting last week.

On the military side NATO ministers were agreed that certain stabilization measures could usefully be discussed at a conference in order to create confidence on both sides.

REDUCTION OF MILITARY POWER

In addition to a Conference on Security and Co-operation in Europe, NATO ministers devoted considerable attention to the question of mutual and balanced force reductions (MBFR). Just as we have always considered that progress in East-West political *détente* must be measured in terms of practical results, especially on the Berlin problem, so we believe that any real improvement in security in Europe will remain illusory unless it is accompanied by some reduction in the concentration of military power in the area.

This is not to say that force reductions should be negotiated at a conference. It would be impossible in practical terms to carry out negotiations on such a complex matter among the 35 participants in a conference. Preparations for a conference and for MBFR negotiations should, however, proceed as far as possible in parallel. In order that force reductions complement the political achievements of a security conference, talks on the two subjects should be concurrent but separate.

Unfortunately the explorations on MBFR have not yet begun because of Soviet unwillingness to receive Manlio Brosio, former Secretary-General of NATO, as an explorer. More recently, however, the Soviet Union has expressed its willingness to explore procedures for negotiations on MBFR. At the Bonn meeting NATO ministers affirmed their support for multilateral explorations. The next step will be to find means of translating this idea into action. I suggested in Bonn that a group should be selected among NATO members to engage the Soviet Union and other interested countries in preliminary talks to seek sufficient agreement to bring about negotiations. Considerable interest was shown in the

Canadian idea at the meeting and we hope alliance members can reach accord on some form of group approach in the near future.

The atmosphere in Bonn was very much influenced by the promising progress recently made in the broad negotiating process by which we hope to resolve the underlying causes of tension, including the division of Germany. NATO countries responded by expressing their intention to pursue the opportunities for progress on both preparations for a conference and explorations for MBFR. We should have no illusions about the difficulties that lie ahead. In many ways the task which now faces us is the most difficult of all. We shall have to combine continued defence preparedness with pursuit of *détente*, alliance solidarity with willingness to seek accommodation with the other side and firmness on basic principles with flexibility on means.

Canada has direct and identifiable interests in both security and co-operation in Europe. That is why we have supported alliance policies in defence and *détente* in the past and why we intend to work with our NATO allies in the continued search for improved East-West relations through mutual balanced force reductions and a Conference on Security and Co-operation in Europe.

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ST. LAWRENCE CLEAN-UP

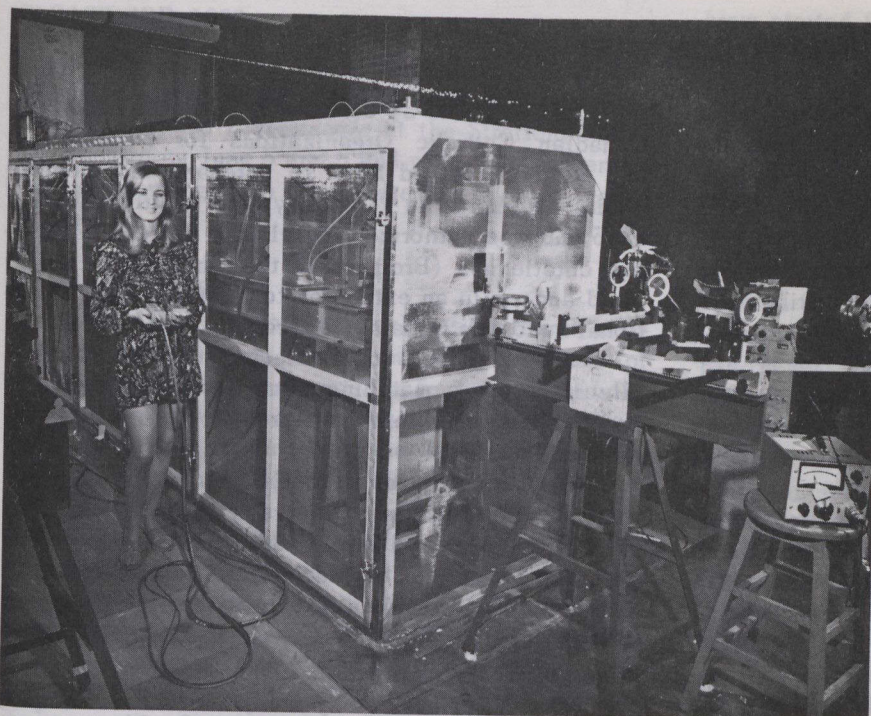
A clean-up of the St. Lawrence River has been brought closer to realization by a \$400,000-under-taking signed in Montreal on May 15 by the Federal Government and the Province of Quebec, which calls for an immediate start on integrated studies of requirements to restore the quality of the water.

The Minister of the Environment, Mr. Jack Davis, signed for the Federal Government and Dr. Victor Goldbloom, Minister of State responsible for the Quality of the Environment, for the province.

Under the terms of this interim pact, the two governments agree to pay up to \$200,000 each for the 1972-73 operations, which represent the first phase of a broad program of improvement, other aspects of which are still under discussion.

Studies will determine the types and degrees of treatment needed to restore the quality of the water in the most effective and economic way. The investigations will deal with the 100-mile stretch of the River between Cornwall, 75 miles upstream from Montreal, and the Varennes region, 25 miles below the metropolis. Use will be made of additional information from other projects on the Great Lakes, the Ottawa River and the Gulf of St. Lawrence.

One of Canada's largest rivers, the St. Lawrence serves almost the full range of uses to which a waterway can be put, including water-supply, waste-disposal, shipping, fish, wildlife, recreation and power-development.



Emission from powerful new NRC laser reflected from mirror at far right ionizes the air (streak at upper left) as laser generates billions of watts of power in less than a millionth of a second.

POWERFUL NEW LASER

A new laser capable of generating billions of watts of power in pulses lasting less than one ten-millionth of a second has been developed at the National Research Council of Canada.

The powerful instrument was designed by two scientists, Drs. A.J. Alcock and M.C. Richardson, in the laboratories of NRC's Division of Physics in Ottawa. They developed the laser during research into the production and analysis of plasmas using high-energy lasers.

The device is an addition to a family of TEA (transversely-excited atmospheric pressure) lasers first invented by Canadian scientists at the Defence Research Establishment Valcartier (DREV), Valcartier, Quebec. Much interest in these lasers has been shown by physicists and engineers the world over since DREV reported their findings two years ago. The TEA carbon-dioxide lasers are characterized by their low cost, high efficiency and relative safety of radiation produced.

ADVANTAGES OF TEA LASERS

Scientists have pointed out the attractions of TEA lasers, particularly for industrial uses such as drilling, welding, cutting and machining, due to the high power which they generate. The laser developed at NRC can give gigawatt (billions of watts) powers in pulses lasting only 50 nanoseconds (50 billionths of a second). It is believed to be the first laser capable of generating such power in such pulse times.

The NRC work constitutes a distinct improvement over existing TEA laser designs. On a low

budget, Dr. Richardson, assisted by Kurt Leopold and Peter Burbyn, managed to have a working model of their relatively large TEA laser ready in just under four months of intensive laboratory work.

Still another advantage of the new laser is that it is built in modular form, and is easily amenable to commercial development. The laser is made up of a number of box-like modules, all identical and each one a complete unit.

MARKETING

Commercial development and marketing of the new laser will shortly be undertaken by an Ottawa firm which has been licensed by the Canadian Patents and Development Ltd., a subsidiary of NRC, under the original TEA laser patents.

The firm, Lumonics Research Limited, was the first Canadian manufacturer to concentrate exclusively on the design and production of lasers. A second firm, Gen-Tec (1969) Inc. of Quebec city, is developing another type of TEA laser. TEA lasers are powerful enough to instantly vaporize all known materials, and there is mounting interest among plasma physicists in the possibility of using these lasers to produce plasma fireballs with temperatures comparable to those on the sun. Large research programs in several countries are currently directed at studying the production of these extremely high-temperature plasmas for controlled thermo-nuclear fusion.

The NRC physicists presented a paper of the new laser at the seventh International Quantum Electronics Conference in Montreal last month.

AID PROGRAMS 1971-72

Non-profit organizations active in international development received nearly \$12 million from the Canadian International Development Agency to help finance 421 projects in 74 countries in the 1971-72 fiscal year.

The organizations themselves raised, from private sources, more than twice the CIDA contributions, to bring the total for all programs to more than \$37 million.

Canadian non-government organizations involved in international development represent the efforts and contributions of thousands of Canadians to assist the Third World.

In Paraguay, for example, the Mennonite Central Committee is helping 1,000 nomadic aborigine families to settle on farms. Supported by a \$44,000-CIDA grant for the first year, the Committee is engaged in a \$358,000 three-year project to establish agricultural co-operatives, schools and health services.

In the Philippines, the Responsible Parenthood Council, with the backing of the Governor and the Bishop, is teaching family planning to couples in Tarlac Province. A CIDA grant of \$20,000 matches a contribution from Oxfam of Canada for the scheme to this entirely indigenous group.

In Africa, both the smallest and largest private

projects supported by CIDA were begun in 1971. The Canadian Catholic Organizations for Development and Peace received \$300 to purchase bicycles for social workers in Dahomey. A contribution of \$315,000 was authorized to help the Frères des Ecoles chrétiennes (Brothers of the Christian Schools) build and equip an extension to their technical-vocational school in Douala, Cameroun.

CIDA's support to private organizations is usually made on a matching-grant basis up to 50 per cent of the total cost of a project. It launched the program in 1967.

The largest grant in 1971-72 - \$4.85 million - went to the Canadian University Service Overseas (CUSO), which raised nearly \$8 million in other funds, goods and services, to place 1,250 volunteers in 40 countries. The Canadian Executive Service Overseas (CESO) received \$682,500 toward a \$2.3-million program with 151 volunteers in 20 countries.

CIDA contributions by area, with number of projects in brackets, were: Asia, \$1.1 million (61); English-speaking Africa and the Middle East, \$929,000 (86); French-speaking Africa, \$945,000 (61); South America, \$863,000 (63); Central America \$224,000 (22). The remainder went to multinational and "in-Canada" projects.

NEW GRAIN COMMISSION BUILDING

Agriculture Minister H.A. (Bud) Olson joined Public Works Minister J.E. Dubé and Supply and Services Minister J.A. Richardson at the laying of the cornerstone of the Canadian Grain Commission Building in Winnipeg, Manitoba on May 12.

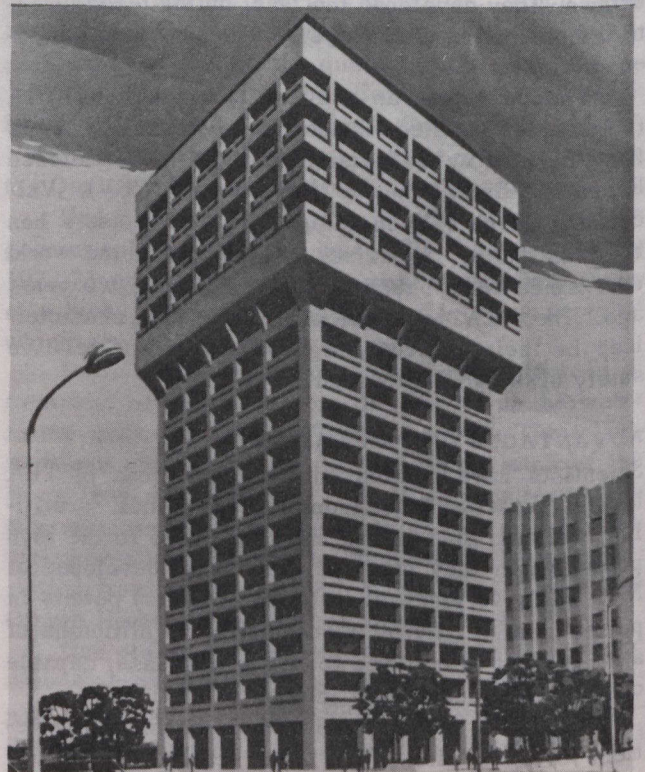
The \$5,800,000-building, which is being constructed by the federal Department of Public Works, should be ready later this year.

The Canadian Grain Commission is responsible for the administration of the Canada Grain Act, and for the general supervision of grain-grading and handling in Canada.

H.D. Pound is chief commissioner, assisted by assistant chief commissioner C.L. Shuttleworth, and commissioner F.M. Hetland.

While the headquarters of the Commission is in Winnipeg, administrative and clerical, chemists, technicians, weighmen, inspectors and other specialists are located at 17 centres across Canada.

An artist's drawing of the new Canadian Grain Commission building in Winnipeg, which will be ready later this year. This building will also house the new International Grains Institute.



STRATFORD 1972

Governor-General Roland Michener and Mrs. Michener attended the opening performances of *As You Like It* and *Lorenzaccio* at the Stratford Festival Theatre on June 5 and 6 and were also present at the traditional gala in the theatre foyers, promenades and terrace.

LEAR TO LORENZO

Stratford's twentieth season includes sixteenth century classical drama and première productions of works by Canadian writers. The four productions at the Festival Theatre are representative of four centuries of drama, ranging from the Jacobean period to eighteenth century England and to nineteenth century France.

Shakespeare's *King Lear* has been called the greatest of all tragedies and, it has been said, "remains in our memory lit by bursts of lightning" – a powerful and moving figure engulfed by forces he cannot control. Stratford's production, which opened on June 7, features William Hutt in the title role and is directed by David William.

As You Like It, a play far removed from *Lear's* sombre realm, is the Bard's one experiment in the pastoral form. It was written between the histories and tragedies, leading Edward Dowden to observe that Shakespeare "was himself in his Forest of Arden" when he wrote the play, having sent "his imagination into the woods to find repose...refreshment, a sunlight tempered by forest boughs". William Hutt directs Stratford's 1972 production of this delightful romantic comedy.

Alfred de Musset's *Lorenzaccio* introduces a great classic of nineteenth century French theatre to English-speaking audiences. The play poses universal questions about sophisticated political power structures – not the least being how to change them, a theme of particular relevance for North American audiences in 1972. In casting Pat Galloway in the title role, director Jean Gascon follows a tradition begun in 1896 when Sarah Bernhardt played the role of Lorenzo in the first production of the play at the Sarah Bernhardt Theatre in Paris.

Opening on July 25 at the Festival Theatre will be *She Stoops to Conquer*, the high-spirited eighteenth-century comedy that won for Oliver Goldsmith the distinction of having written "the best play of his time". Michael Bawtree directs the production.

TV DOCUMENTARY FILM

An hour-long documentary in colour to commemorate the twentieth season of the Stratford Festival was broadcast coast to coast over the CBC television network on June 4. The film, *Stratford 20 Years Young*, was narrated by William Hutt.

The director, Michael Rothery, and his camera

crew started filming late last summer with segments of *Volpone* and *There's One in Every Marriage*. They travelled in Canada, Britain and the U.S. to interview some of the people who are part of the Festival's history – such people as Christopher Plummer, for many seasons a leading member of the acting company; Alan Bates, who played the role of Richard III in 1967 and Kate Reid, a distinguished Canadian actress with strong Stratford ties forged in many seasons on the Festival stage.

Some footage filmed in Belfast in 1969 which has never been seen before, with Stratford's first Artistic Director, the late Sir Tyrone Guthrie, was incorporated into the program. And there were a few nostalgic memories brought on by a sequence showing Alec Guinness in the tent theatre, as rehearsals progressed toward the first opening night, July 13, 1953.

Artistic Director Jean Gascon spoke for Stratford today and the film crew sought out such longtime associates of the Festival as Tanya Moiseiwitsch, who designed the thrust stage for the Festival Theatre, and Michael Langham, for 12 years Artistic Director.

Music was by Louis Applebaum, who has written the music for 27 Stratford productions since that first season.



CANADA'S FIRST OLYMPIC TORCH AWARDS

Two Ottawa-born "bright particular stars" in the Canadian sports firmament – the former Barbara Ann Scott (now Mrs. King of Chicago) and the former Nancy Green of Rossland, British Columbia (now Mrs. Raine of Montreal), were honoured last month, at a lunch given by the City of Ottawa as outstanding performers in the Winter Olympics. Mrs. King (left), who won the women's world figure-skating championship in 1948, and Mrs. Raine, who became the world's top female skier in 1968, are shown holding the first Olympic Torch awards ever presented in Canada.

INVENTIONS WANTED

Beside such Canadian discoveries as insulin, pabulum, the telephone and the cobalt bomb used in cancer treatments, a new type of can-opener sounds pretty insignificant. David Dubeta of Edmonton, who has designed it, however, figures it's the best can-puncturing device on the market, because it improves the flow of liquid from the can.

Noel Labonté, of Jonquière, Québec, has invented a new type of double-bed to keep restless sleepers apart. Monsieur Labonté says a cushioned separator, running like a hump down the length of the bed, should keep one sleeper from disturbing the other.

Anne Lambrecht, of Ceylon, Saskatchewan, has developed a new tricycle. The idea is to mould an animal's shape over the three wheels so a child can ride a horse, elephant or camel if he chooses, and steer the trike with reins or handlebars.

And Alberta rancher George Connell, who runs 100-head of cattle in Stavely and spends more time in the saddle than out, has produced an idea involving "sure-grip" saddle-chaps. His chaps reduce slippage between rider and saddle and make horse riding less of a punishment and more of a Pullman coach ride.

While these inventions don't approach the social impact of the first sewing machine, the first telephone exchange, the first electronic microscope, the first electric cooking oven, the first speedometer, the first snowmobile, the first television camera or the first sulphur matches other Canadians invented, they do follow a tradition by making a contribution to human progress and convenience.

By seeking a patent from the Canadian Government they protect the fruits of their inventive genius.

PATENTS AND PROTECTION

For offering full disclosure of the invention and its workings, the Canadian Government gives the inventor 17 years' worth of protection. In this period, the inventor alone can commercialize on the patented idea. After 17 years the protection ends and the invention is open for anybody to use without paying any licence fee.

This is what the Federal Government, through the Patent Office, which comes under the administration of the Department of Consumer and Corporate Affairs, granted Messrs. Labonté, Dubeta, Connell and Anne Lambrecht patents for their inventions. They were only four of hundreds granted, and Canada issues about 30,000 patents a year. Most of the patents issued and most of the 30,500 applications for patents received last year originated from abroad, with the United States leading the way.

Last year's patents reflected areas of social concern and comfort - anti-pollution devices for exhaust controls, synthetic foods, antibiotics, refuse-compactors, tobacco substitutes, seat-belt retractors,

ski boots and tape cassettes. One idea that may be patented in Canada this year is an American engineer's idea for taking the static electricity out of carpets. He says that insulated copper wires laid in rugs will eliminate this insignificant but trying problem.

AN IDEAS SHOP

Canada's Patent Office in Ottawa is essentially an ideas shop for scientists, technicians and manufacturers. The patent library is an information mine offering details on the latest technological advances man has devised.

Only a small percentage of patents granted are commercially successful; some are quickly superseded by better inventions and others fail to win public acceptance.

The patent issued by the Canada Patent Office only protects the inventor's rights in this country. If he wants world-wide protection then he must patent the invention in every country.

At least half of all the patent applications filed in Canada concern mechanical matters, 30 per cent are chemical in nature and about 17 per cent are electrical. The Department's 200 patent examiners, who are scientists or engineers, determine basically two things - is it new and useful, and, does it possess inventive ingenuity. Occasionally it takes months of research to determine the presence of these factors in a patent application.

ST. LAWRENCE CLEAN-UP

(Continued from P. 2)

Increasing concern has been expressed recently about the deteriorating quality of the water, with serious questioning of its ability to satisfy fast-increasing demands. Although most uses are under provincial control, the Federal Government's responsibilities for navigation, fisheries and international matters make the St. Lawrence River one of national concern.

The 100-mile stretch covered by the interim agreement is a small part of the River's total length. It presents, however, numerous complexities in water-management, arising out of the infusion of Ottawa River water, high-population density, concentration of industry, major port developments and the influence of the St. Lawrence Seaway.

The present agreement was initiated last August, when the Canada-Quebec Consultative Committee on Water recommended that a Joint Working Group on the St. Lawrence be established. Within a month one was set up consisting of officials from Environment Canada, the federal Ministry of Transport, the Environmental Protection Service of the Government of Quebec, the Quebec Department of Natural Resources and the Quebec Water Board.