

CANADIAN GAS-LASER DISCOVERY

A research team at the Valcartier, Quebec, establishment of the Defence Research Board (DREV) has developed techniques for operating carbon-dioxide lasers at atmospheric gas-pressure instead of the near-vacuum conditions hitherto required by gas lasers. The invention has already led to the construction of prototype lasers producing pulses of radiation with 100 times more power than any other existing gas laser.

The energy is produced in a narrow, invisible beam of radiation with peak powers up to 100 million watts lasting less than one millionth of a second. This power is so high that any material such as wood, steel or asbestos is vaporized instantaneously when exposed to the beam.

The Defence Research Board's discovery is also expected to have major economic importance as well as its obvious scientific significance. Since lasers of this type operate at atmospheric pressure, they can be constructed of many kinds of inexpensive material, such for example, as plastics; even plywood has been used.

GREAT POTENTIAL

The DREV research team of about 20 scientists and engineers is very optimistic about achieving an even more impressive performance from its laser in the near future. The potential fields of application extend well beyond defence and could include special communication by satellite. It is believed that high-power, inexpensive lasers that are easily controlled

will replace conventional machining, cutting and welding tools in many industrial processes. Visions of tunnels being bored by a laser beam may even be realized if the very high powers theoretically predicted for these lasers are achieved.

ADVANTAGES OF EXTREME SIMPLICITY

Many of the advantages of the DREV lasers result from their extreme simplicity. They consist of small plastic containers holding gas mixtures and fitted with mirrors at opposite ends. When an electrical discharge is passed through the mixture, by means of a unique electrode assembly invented at DREV, a powerful surge of infrared radiation is emitted through one of the mirrors, which is semi-transparent. This energy takes the form of a parallel light-beam that can be directed to relatively distant targets for range-finding or focused to a small point near the laser for processing materials.

Lasers were first developed in 1960 and are light sources with unique properties, such as high bursts of energy and the ability to emit very fine beams. They are considered to be the most exciting scientific discovery since the transistor and are used for eye surgery and cancer research. In industry they are used as ultra-precise cutting and welding tools. Among other things, lasers are being used for accurate measurements of the distance from earth to the moon using reflectors placed on the moon by the *Apollo XI* astronauts.

INFLATION BATTLE

Finance Minister E.J. Benson made the following statement in the House of Commons on January 13:

As part of the national effort to curb inflation, the Prices and Incomes Commission is working to secure the support of the business community and professional groups for a program aimed at limiting price increases and charges for services. If meaningful progress can be made in this direction, this initial step will be followed by efforts to restrain increases in wages, salaries and other cost elements that affect prices. This will help to restore a balance between total money incomes and the total quantity of goods and services produced in the economy.

It is important that major discretionary price changes in the Canadian market should be avoided while these discussions are taking place. Such price increases, even if planned well in advance, could easily be interpreted as being made in order to avoid the scrutiny which would follow the adoption of a program of price restraint.

With this in mind, the Government has requested the copper producers and the railways to suspend the price changes announced around the turn of the year and they have agreed to do so. On behalf of the Government, I have also had discussions with representatives of the two banks which had announced increases in their interest rates on instalment loans for consumers; they also have agreed to meet the Government's request to suspend these increases.

I want to make it very clear that the Government will adopt the same attitude toward any similar proposals to raise prices between now and March 1.

STRATFORD SPRING TOUR

The British actor James Donald will play Sir Peter Teazle in the Stratford National Theatre of Canada production of *The School for Scandal* when the company goes on tour this month. Portia in *The Merchant of Venice* will be played by another newcomer to the Stratford Company, Maureen O'Brien, who comes to Canada from Chichester and the West End