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Association of Professional Engineers of Ontario*

"PRODUCTIVITY"

Introduction

The Ontario Engineering Advisory Council is an autonomous body sponsored by the Provincial Secretary for Social Development, the Provincial Secretary for Resource Development, the Minister of Industry and Tourism, the Minister of Colleges and Universities, the Minister of Education, the Committee of Ontario Deans of Engineering, the Committee of Presidents of Colleges of Applied Arts and Technology, and the Association of Professional Engineers of the Province of Ontario. It is convened by the last named body.

The objectives of the Council are to provide information and advice to its sponsoring bodies, and to interested or related institutions or organizations; to foster relationships concerning engineering and engineering related matters, between Ministries of the Provincial Government, post-secondary educational institutions, industry, and the licensing body for engineers in the Province of Ontario; and finally, to undertake research projects, surveys, seminars, discussions, and debates, for the purpose of providing data or opinions emanating from sources and persons suitably qualified.

The Council has been interested in many topics of importance; the subjects of Council seminars held in prior years will provide some indication of the interests of the Council. The following seminars, which have been reported in detail to the sponsors of OEAC, are illustrative:

- (a) 1969 - "Government, Industry and Education: Interaction for Productivity";
- (b) 1970 - "Engineering Education in Ontario";
- (c) 1971 - "Education and the Profession: Engineering's Vital Interface";
- (d) 1972 - "An Industrial Strategy for Canada";
- (e) 1973 - "STI In the Service of Ontario Engineering";
- (f) 1974 - "Science Policies for Ontario";
- (g) 1975 - "Utilization of Technical Manpower".

Industrial Canada, and Ontario as the principal manufacturing province, have become increasingly aware in recent times of the relatively rapid deterioration of both 'productivity' and 'product unit costs' relative to the performance of off-shore competitors, notably the United States of America. In a country like Canada, whose economy is so export-intensive, such a trend can have most severe adverse consequences. Reversing of this trend must surely be one of the most important tasks facing the country today.

The Ontario Engineering Advisory Council, as a consequence, arranged to bring together a number of persons of competence and stature in their own fields, to meet with members of the Council itself in a seminar discussion of some of the factors relating to improvement in productivity. The seminar took place at The Guild Inn, Scarborough, on June 28th and 29th, 1976. A brief account of the discussions which took place is recorded below.

### Objectives

Under the Chairmanship of Dr. Philip A. Lapp, P. Eng., those present addressed themselves to the object of providing, through a series of 'syndicate' or 'group' discussions, pertinent observations, conclusions, or recommendations, as the case may be, relating to improving 'productivity'. Recognizing the many complexities of the subject, an attempt was made to provide specific focus on four elements of the economy having substantially differing characteristics, 'problems', and, perhaps, remedies. The four segments of the economy selected were: "primary industry", "secondary industry", "tertiary industry", and "government".

Dr. Lapp suggested that the objectives of the seminar ought to be the distillation of discussion into specific recommendations addressed to governments, the profession, and to other related bodies. To assist the members in reaching such objectives, four 'key-note' presentations were made from the viewpoints of 'expert' individuals engaged in each of the four specific areas of interest noted above.

### Key-Note Addresses

#### 1. Mr. Howard Hart, President, Canadian Pulp and Paper Association

Mr. Hart made the initial presentation, seeking to present the particular concerns of 'primary industry'. He made the following significant observations:

- (a) Productivity is difficult to define; the non-expert can relate readily to productivity improvement - "how you do things better" is within most people's experience.
- (b) Public perception of the need for product improvement is fundamental; the concerned few will not be effective until members of the public-at-large can perceive the need in their own terms.

- (c) Improving productivity is not simply not 'thinking smarter'; it is hard work; thinking smarter is hard work; advancing technology is hard work; learning new skills is hard work.
- (d) Primary industry is characterized by high capital requirements, the export of most of its products, and the remote location of its production facilities.
- (e) 'Price setters' are those with access to favourable resources and development environment; others must follow.
- (f) The investment community must have a high regard for the performance of applicant firms.
- (g) The very magnitude of capital requirements in the immediate future suggests that much of the total need must be generated within the industry itself.
- (h) High wage demands stemming from remote locations must be met by productivity.
- (i) Productivity improvement is no more important to primary industry than it is to other segments of the economy; those segments need competitive in-puts from the primary sector.
- (j) There is no single contributor on whom responsibility can or should be 'pinned'; human motivation is probably as potent a force for productivity improvement, as any.
- (k) The health of the business sector is the health of the economy. Union and business leaders must find ways to convince their members and employees that productivity alone will bring real wage improvement.
- (l) Government must make productivity improvement a national goal - a pervasive ethic.
- (m) Industry-wide co-operative research ventures are required.
- (n) New responses of management are needed in areas of training, occupational health and safety, work environments.
- (o) Industry needs to tell its story better; it must build public perception of its needs; government must 'back up' the story.
- (p) Profits must be recognized and encouraged. Government leaders must speak up for profits just as their colleagues speak up for guaranteed wages.
- (q) Government incentives must be positive; taxation and accounting regulations must be made current, and must recognize inflation accounting and its effect on replacement of equipment.

(r) Industry is the main engine of product improvement; government has the role of making the environment hospitable.

2. Mr. William D. Rooney, Vice-President and Division Executive,  
Canadian General Electric Company Limited

Mr. Rooney then addressed the members of the Council and their guests in the seminar, on the subject of 'Productivity, Wage Rates, and International Competitiveness in Canadian Manufacturing'. Mr. Rooney's remarks were made from the particular perspective of 'secondary industry'. He made the following observations of importance:

- (a) Canada ranks ninth in the world on the basis of annual per capita income - that is ninth in terms of its ability to deliver a high standard of living and support for a growing volume of social programs and wealth-distributing services.
- (b) There is a crisis in Canadian productivity and in Canadian costs. Left unattended, this crisis can lead to substantial reductions in the Canadian standard of living and even more substantial reductions in the ability of the economy to finance social programs.
- (c) Productivity improvements in the government and in other service sectors so lag those of the country as a whole that they operate, in effect, as a brake on efforts to maintain and advance Canada's international competitive position.
- (d) When compared to the United States, Canadian manufacturing is 21% less efficient; recent history indicates that Canada is now losing ground while the U.S. economy recovers at a faster pace.
- (e) The real problem that faces the manufacturing sector in Canada today is the fact that the parity point in manufacturing wages with the U.S. has been passed, while Canada is still as much as 20% away from reaching parity in productivity.
- (f) Canada's deficit in trade in manufactured goods has risen from 1.5 billion in 1960 to 10.5 billion in 1975.
- (g) Canadians are, per capita, by far the world's leading importers of manufactured goods.
- (h) In 1975, Canada sustained a \$5 billion net deficit on current account, which almost equals the total net deficit of all of the industrial countries taken together.
- (i) Capital formation for productivity improvement must be enlarged significantly.
- (j) More effective utilization of the skills of managers and technologists must be accomplished; increased emphasis on management and technological education programs appears essential.

- (k) Trend setting wage settlements in the public sector must be stopped. Canada's wage levels cannot be set by those who do not have to face international competition.
- (l) Already Canada is attempting to support a higher level of services with a lower level of goods-producing activity than any other major industrialized country in the world.
- (m) Rationalization and specialization in selected industries should be encouraged.
- (n) Industry needs to do the following:
  - (i) Invest now for productivity gains.
  - (ii) Prune out low margin product lines on which world competition can't be met.
  - (iii) Improve cost effectiveness of distribution systems.
  - (iv) Restructure much of Canadian industry into larger more productive units.
  - (v) Concentrate limited R & D efforts on those products where a long-term position may be maintained.
  - (vi) Challenge engineers and technologists to develop better manufacturing methods, to reduce material costs, and to reduce energy usage.
  - (vii) Learn how to obtain the willing involvement of the total work force - reduce strike losses.
  - (viii) The level of skill of all employed persons, particularly those in managerial activities, must be up-graded in order to approach the effectiveness of key international competitors.
- (o) Government must create the environment in which the market forces can work to the benefit of Canada, and where aggressive entrepreneurial companies are rewarded by reasonable returns. Specifically are required:
  - (i) Greater tax incentives for a massive investment program aimed at productivity improvements.
  - (ii) The current AIB program should be realigned to encourage productivity improvements, rather than discouraging them.
  - (iii) An internationally competitive tax structure is required to make certain that Canadian manufacturers do not operate at a competitive disadvantage in international and domestic markets due to a lack of competitive features in Canada's tax system.
  - (iv) Government spending must not exceed the rate of growth in GNP; Canadian industry must not be saddled with costs of social programs which are greater than those of the major competitors in international markets.

- (v) Individual Canadians should be encouraged to save rather than to consume, through additional personal tax incentives.
  - (vi) Improved capital costs recovery systems are required through the recognition of true replacement costs and by the incorporation of LIFO inventory accounting for tax purposes.
  - (vii) A pragmatic and selective tariff policy that recognizes the realities of Canada's economy and its desire for political autonomy is required.
  - (viii) A more specific energy policy is required to reduce substantially future reliance on imported oil, and in order to minimize a potentially crippling drain on the balance of payments arising from declining fossil fuel reserves.
  - (ix) Most importantly, governments must begin to increase their own productivity and plan for and contribute positive gains rather than negative reductions to the country's overall productivity position.
- (p) Failure to allocate more resources to the goods-producing sector of the economy and less to wealth distributing public and private service sectors will result in an absolute decline in the standard of living of Canadians, an increase in employment, and an inability to continue to improve the level of social services.

3. Dr. R. E. Olley, Professor of Economics, University of Saskatchewan, and Consultant to Bell Canada Limited in Productivity Measurement

Dr. Olley presented his commentary from the viewpoint of 'tertiary industry'. The principal points made during his discussion were as follows:

- (a) The one and only source of improvement in standards of living lies in productivity improvement.
- (b) Productivity is a concept which is a tool for managing better. In this context, no task is harder than thinking differently from what we did yesterday.
- (c) The concept of productivity ranges from the classical input-output ratio, to the quality of life. To establish productivity as a catchword, it is first necessary to improve the understanding of other people's notions of productivity.
- (d) The concept of productivity varies for the particular purpose. It entails hundreds of measures, and in establishing these measures, one has to make sure that one can go from measure to measure, with purposeful consistency, to total factor productivity.
- (e) There are almost a limitless number of ways to carry out productivity measures; these measures are immensely complex and expensive, usually.

- (f) When one seeks to improve the ways in which one does things, one must have some specific target in mind. It is essential to clarify what the measure intends to accomplish; it is essential to explain to those involved or assisting, with proper judgement, what the measure intends to accomplish.
- (g) Productivity improvement cannot be legislated into effectiveness. It is essential that all parties become 'involved', and understand the common objective.
- (h) Interpretation of a given measure is not difficult; however, with a wide range of interpretations available, and with ever-changing personnel, it is essential that those involved are continually reminded of the objectives of the program.
- (i) Measurement of productivity can be used to increase the perception of the whole process; it directs attention to the areas in which management initiatives must be taken.
- (j) Productivity measurement is the 'cutting edge' to dig into capital management. It suggests the question, "Ought one to do it at all?", and, if so, "Does it fit properly with all other on-going projects?"
- (k) Productivity measurements can help in the estimation of future in-puts, and the construction of future budgets. It will 'highlight' those areas in which cross-examination will be most useful.
- (l) Productivity measurements can provide a forecast of the labour force, in size and composition, for many years into the future.
- (m) Productivity measurements can serve to describe the size of capital installations year by year into the future.
- (n) Activity in product measurement is now so extensive that large organizations find it necessary to find ways of improving the productivity of the measurement process.
- (o) Productivity measures are often too abstract to be understood by managers; it is necessary to start with the people who are going to do the work.
- (p) Sympathetic reception of the notion of productivity improvement can bring forward useful ideas without the individual knowing the full details of the process. Management must translate from abstractions to realities or particularities at the various working levels.
- (q) No competent manager will attempt to guess what he will get out of a productivity improvement program; it is essential that the process be monitored or measured, if he is to know whether the program has worked.
- (r) No one knows where productivity gains actually come from; no single element can be selected as being responsible; a particular mix of things, peoples, and environments seems necessary.

- (s) Management ingenuity will bring these 'mixes' to effect results; management commitments in productivity improvement programs are essential.
- (t) Measurement is less reliable if carried out only by the expert measurer. There must be a three-way confidence between top management, line managers, and workers directly involved, all of whom must become 'leaders' in the measurement process itself.

4. LGen. W. A. B. Anderson, Secretary of the Management Board of Cabinet, Government of Ontario

General Anderson made his commentary from the viewpoint of 'government'. He made the following observations of consequence:

- (a) To politicians there are few things which exceed the importance of 'public perceptions'; they see their role as leading public perceptions.
- (b) Government must intervene to:
  - (i) deliver a whole range of services which individuals or the private sector in toto cannot do;
  - (ii) to regulate society, establish law and order, and to determine inter-relationships between businesses, big and small, and the affected public; and
  - (iii) to provide leadership, correct planning, and to see that proper approaches are followed.
- (c) Governments may act as catalysts between conflicting or competing demands of (say) management and unions, to mitigate tensions which can come from such conflicts.
- (d) The Ontario Government recognizes:
  - (i) the private sector is where the wealth is generated; it may not be disregarded.
  - (ii) that Government, as a matter of principle, should only provide those services which the private sector is unable to.
- (e) It is the prevailing policy of the Ontario Government to get out of operations wherever possible, and to improve productivity in the delivery of services which it now provides.
- (f) Cost effectiveness in Government is measured by the ability to get re-elected; it is unrealistic to believe that politicians will pursue policies or actions which will ensure their not being re-elected.
- (g) Government is 'labour intensive'; in Ontario, approximately two-thirds of the total government expenditures go into the pockets of government employees or quasi-government employees.



- (h) Government has an ambivalent position in collective bargaining; there is always a third person in the ring - in private actions as well as in public disputes; in trials of strength between employer and employee, the third party is the 'public', the party with the biggest stake in the conflict.
- (i) There is a prevalent mythology that Government is a 'pace setter' in collective bargaining with its own employees. This is a distortion of a complex situation.
- (j) Productivity improvement in Government may mean efficiency or effectiveness; the options are many, the priorities are difficult.
- (k) The Ontario Government has launched a straightforward jargon-free frontal attack on productivity improvement by 'management by results', a program whereby the 'manager' makes a contract with the Government as to what he intends to do with the money and staff he is given.
- (l) Written contracts with the management board for Government activities, whether they involve 'hardware' or 'software', are considered to be practical; there is movement to get all Government expenditures under control through 'management by results'.
- (m) It is the determination of the Ontario Government that the grand total of fiscal expenditures for the year 1976 will not exceed the same expenditures for the previous year, 1975, by more than 11%.
- (n) In every month of the current fiscal year to date, the total number of direct employees of the Provincial Government has diminished.
- (o) It is possible to make controls work; it is possible, though politically hazardous, to introduce financial constraints.
- (p) The current escalating problem is that of the overlapping of four levels of Government. The British North America Act does not insist on quadruplication of services, and the potential for rationalization of these 'tiered services' exists; within five to ten years, there may well be a public outcry for rationalization of these multiple level programs.

At this point, the Chairman thanked the speakers most sincerely for their presentations, and invited them to continue, if possible, with the discussion groups which would consider their particular area of interest.

## Discussion Group Reports

### Group No. 1 - "Primary Industry"

Under the chairmanship of O. J. Zanatta, P.Eng., President, Association of Professional Engineers of Ontario; I. Bernolak, Productivity Analysis Branch, Department of Industry, Trade and Commerce; Dr. B. Etkin, P.Eng., Dean, Faculty of Applied Science and Engineering, University of Toronto; G. A. Fletcher, CET, Past President, Ontario Association of Certified Engineering Technicians and Technologists; M. L. Garland, P.Eng., Ministry of Industry and Tourism; H. Hart, President, Canadian Pulp and Paper Association; G. J. McGee, P.Eng., Acting General Manager, Canadian Council of Professional Engineers; and J. D. Wilson, P.Eng., Manager, Supply Planning and Resources Development, Ontario Hydro, undertook a review of their 'primary industry' assignment from the following basic premises:

- (a) The Canadian economy relies more on export activity than do most other countries.
- (b) Canada's out-put and cost performance are falling rapidly behind those of its international competitors.
- (c) Secondary industry must have competitive in-puts from primary industry.
- (d) Primary industry is capital intensive, and its productivity performance must be highly regarded by the investment industry.
- (e) Improvements in productivity alone will bring real wage improvements, or will improve the standard of living.

The group discussions recorded certain observations relative to 'primary industry':

- (a) Data currently available appear to indicate that the productivity level in Canadian primary industry is such that competition in world markets is possible at the present time.
- (b) Productivity measurements in primary industries are relatively well defined and uniformly applied.
- (c) Present trends, however, are not such as to provide a climate which will attract the capital required for future growth of primary industry.
- (d) Canadian secondary industry has not developed in extent or in the diversity necessary to supply sufficient capital equipment to meet the growing needs of Canadian primary industry.

Following the completion of its discussions, the group set before the plenary session of the Council certain recommendations as follows:

- (a) That productivity improvement be established in Canada as a national goal.
- (b) That the groups here assembled support the Premier of the Province of Ontario in his statement of August 27th, 1975, "I propose that we establish such a body, (Commission on Productivity), through a series of task forces for Ontario, representing Government, labour and business, to deal specifically with the substantive matters relating to productivity."
- (c) That this seminar recommend to the Councils of the Association of Professional Engineers of Ontario, the Ontario Association of Certified Engineering Technicians and Technologists, and the Ontario Region of the Engineering Institute of Canada, that they actively support the Premier's proposal, and further that the Councils of the foregoing bodies offer their support to the appropriate Ministries of the Provincial Government, and by mutual agreement establish those positive and practical steps which could be taken by the Associations themselves and by their individual members in furthering the cause of productivity improvement.
- (d) That this seminar recommend to the President and the Council of the Engineering Institute of Canada and of the Canadian Council of Professional Engineers that those bodies take similar initiatives with Departments of the Federal Government.
- (e) That the Government of Canada take all steps necessary to establish a 'national productivity centre' and to encourage each Province and municipality in Canada to do likewise; such organizations to have the following broad objectives:
  - (i) development of productivity improvement programs in existing industry;
  - (ii) development of improved labour-management relationships and co-operation directed towards the common goal of improved productivity;
  - (iii) the provision of direct assistance to industrial development programs;
  - (iv) the encouragement of manpower development through educational processes;
  - (v) the encouragement of productivity improvement as an essential work ethic;
  - (vi) the development of methods of measurement of product improvement, and channels for reporting or 'feedback'; and
  - (vii) the development of Government policies which would encourage equipment replacement and capital formation.

Group No. 2 - "Secondary Industry"

Under the chairmanship of D. I. Gallagher, P.Eng., Principal, D. I. Gallagher and Associates Limited; W. D. Rooney, Vice President and Division Executive, Canadian General

Electric Company Limited; J. E. Lockyer, P. Eng., Vice President and Assistant General Manager, Engineering, Spar Aerospace Products Limited; S. Lush, President, Supreme Aluminum Industries Limited; M. M. Thom, Manufacturing Manager, Square D Company of Canada Ltd.; P. A. York, P. Eng., Assistant Deputy Minister, Ministry of Industry and Tourism, undertook discussion of their topic, 'secondary industry', from several premises, as follows:

- (a) Canada has a critical productivity problem which is not widely recognized or understood.
- (b) Canada's productivity is adversely affected by its dismal strike record.
- (c) Canadian productivity, by reason of scale and other factors, continues to lag that of its chief competitor, the USA, by some 20%.
- (d) Wages in Canadian secondary industry have now passed the point of parity with those of its chief competitor, the USA, in some instances by as much as 20%.
- (e) A major decline in Canada's standard of living is inevitable, without substantial improvements in its productivity.

The group discussion recorded a number of observations, which are noted below:

- (a) Secondary industry has not been 'telling its story' sufficiently explicitly, or frequently.
- (b) Secondary industry in Canada operates in a 'cold climate' created by tax, tariff, and restraint regulations.
- (c) The factor of 'scale' continues to work against secondary industry. Rationalization and specialization in selected industries are essential to reaching viable and competitive 'scale'.
- (d) Better performance on the part of the 'engineering team' is required to develop better manufacturing methods, to reduce material costs, and to conserve energy.
- (e) A successful productivity improvement program requires the direct involvement of all members of the production team; in turn, this requires education and motivation.
- (f) Motivation of secondary manufacturing employees to the acceptance of productivity improvement requires a benefit to those employees arising directly from their efforts - 'success sharing'.
- (g) Major efforts on the part of Government, management and labour are required to reduce the losses arising from strikes in both the public and private sectors.
- (h) An immediate recognition of 'inflation accounting' is needed to give industry an opportunity to replace obsolescent equipment.

- (i) Increases in Government spending should be limited to productivity improvement increases, to avoid a negative effect on overall productivity.

As a result of its discussions, the group set before the plenary session of the Council certain recommendations as follows:

- (a) That the Ontario Engineering Advisory Council recommend to the Canadian Manufacturers Association that it develop a mass communications program to explain the 'productivity problem', and its importance to the survival of secondary industry, to the industry itself, to organized labour, and to the public-at-large.
- (b) That in such an educational program, with CMA the initiator and the disseminator, co-sponsoring by the Ministry of Industry and Tourism and by organized labour would be most desirable. Such programs should include the use of illustrated booklets for distribution through industrial Associations, companies, unions, schools, colleges, and universities in Ontario.
- (c) That an Ontario Productivity Council be formed, reporting to the office of the Premier of the Province or to an independent Ministry, having access to an appropriate secretariat, and to be funded jointly, if possible, by industry, labour and Government.
- (d) That such a Council would have, as its basic mission, to conduct research, to develop and record data, to publicize findings, in co-operation with an appropriate Federal agency, such as the Department of Industry, Trade and Commerce.
- (e) That Government, in its unique position, should encourage Government, management, and labour co-operation to minimize productivity losses arising from strikes and labour unrest.
- (f) That productivity improvement rests on motivation of employees directly involved, that such motivation can result from permitting employees to benefit directly from their own productivity improvements and, therefore, that Federal Government agencies should provide tax incentives to both individuals and employers which can make 'success sharing' a useful tool.
- (g) That Canada should develop an industrial strategy which will identify and rationalize problems of scale, taxes, and tariffs to the point where Canadian secondary industry is, at least, not operating in an environment less favourable than those of its competitors.
- (h) That Government provide appropriate incentives to assist in the formation of capital, in the development of sources of capital, and in the reduction of the costs of capital.
- (i) That secondary industry make better use of technology and of research facilities already available in this country, with particular emphasis on manufacturing processes.

- (j) That secondary industry improve its utilization of such resources as the National Research Council, the Ontario Research Foundation, and the multitude of university research facilities and abilities available in the Province of Ontario.
- (k) That colleges of applied arts and technology and universities increase their emphasis on the training and development of technical manpower directed towards the increasing of the efficiency of industrial production processes.

Group No. 3 - "Tertiary Industry"

Under the chairmanship of Dr. R. J. Uffen, P.Eng., Dean of Engineering, Queen's University; G. T. Isford, Educational Officer, Ministry of Education; E. R. Jarman, P.Eng., President, London Cable TV Limited; Dr. P. A. Lapp, P.Eng., Principal, P. A. Lapp and Associates Limited; Dr. L. A. McLeod, Policy and Planning Co-ordination Office, Ministry of Colleges and Universities; Dr. R. E. Olley, Professor of Economics, University of Saskatchewan; and A. H. Wilson, P.Eng., Science Advisor, Science Council of Canada, undertook exploration of their topic, 'tertiary industry', from several premises, as follows:

- (a) Canada is entering a post-industrial era; tertiary industry is growing much faster than is secondary or primary industry.
- (b) Already employment in service industries has exceeded employment in primary and secondary industries.
- (c) Productivity is more difficult to define; productivity improvement is more difficult to achieve in tertiary industries, than in primary or secondary industries.
- (d) Productivity improvement provides the only means by which the standard of living can be maintained; the burden for productivity improvement cannot be left to the goods-producing sector, but must be shared by tertiary industry, as the cost of services drastically affects the abilities of the goods-producing sector to become competitive.

From these premises, the group developed a discussion which brought forward certain observations, which are recorded as follows:

- (a) Tertiary industry is extremely diverse, including on one hand the huge public monopoly, such as Bell Canada, and on the other hand the small one-man consulting engineering office; in between are various degrees of distribution, transportation, communication, public utilities, and many other service organizations.
- (b) Productivity is improved when the individual is able to optimize his own abilities and to achieve self-respect, pride of accomplishment, and understanding of his own role.

- (c) Under-utilization of all kinds of manpower seems more apparent in tertiary industry than in either primary or secondary industry.
- (d) Tertiary industry has not yet developed effective research capabilities.
- (e) There are certain situations where public interest, need or safety is paramount, and where Governments must control, regulate or even operate tertiary industries.
- (f) Improved managerial skills are needed, and can be learned, in order to improve productivity through better labour relations, employee incentives and motivation, mutual trust and respect.
- (g) It is often difficult to measure productivity in tertiary industries where high social desirability is the *raison d'etre* for existence.
- (h) Government involvement should be restricted to those cases where the protection of the public interest or the achievement of desirable social goals is involved, and some traditional Government operations, such as liquor stores, should be abandoned outright.

As a result of its discussions, the group recorded the following recommendations relative to 'tertiary industry':

- (a) That Governments make facilities more readily available at various appropriate levels within the educational system for the teaching of modern management skills, related particularly to behavioural sciences and inter-personal relations, and to productivity improvement and modern methods for measuring productivity.
- (b) That tertiary industry should introduce 'management training programs', such as the 'management grid' system of organizational development, involving personnel from all levels of management and supervision, and carried on in co-operation with appropriate post-secondary educational institutions.
- (c) That Government should recognize, for tax purposes, replacement costs rather than original price for capital cost allowances in tertiary industry, as well as in primary and secondary industries.
- (d) That tertiary industry should be allowed profits adequate to generate internally a high proportion of the necessary capital for productivity improvement.
- (e) That tertiary industries appeal to their employees to observe all reasonable measures to conserve energy, to reduce waste of material, and to adopt a concept of a 'conserving' society.
- (f) In order to reduce under-utilization of skills, industry, trade unions, and educational institutions should re-assess apprenticeship programs and should develop programs for more effective craft training.

- (g) That the tertiary industries form co-operative research and development organizations (analogous to those in primary and secondary industry), to monitor scientific research, to co-ordinate technological development, to disseminate information, and to initiate research and development programs aimed at improving the productivity in those industries.
- (h) That simple productivity (performance) measures, easily understood by the employee, be introduced into tertiary industry. The results should be made available to the employee for purposes of comparison, personal incentive, and source of satisfaction.
- (i) That sophisticated productivity measures, such as the total factor productivity (TFP), be developed for large service organizations where the high cost of collecting the data can be justified.
- (j) That Governments at all levels re-assess their existing interests and operations with the intent of returning to private enterprise those services which can be provided without jeopardizing the public interest.

Group No. 4 - "Government"

Under the chairmanship of R. F. Shaw, P.Eng., President, Engineering Institute of Canada; Gen. W. A. B. Anderson, Secretary, the Management Board of Cabinet; R. M. Dillon, P.Eng., Deputy Provincial Secretary for Resources Development; G. M. McHenry, P.Eng., General Manager, Personnel, Ontario Hydro; P. Newman, CET, Executive Director, Ontario Association of Certified Engineering Technicians and Technologists; L. C. Sentance, P.Eng., Acting Executive Director, Association of Professional Engineers of Ontario; Dr. M. F. Walmsley, Executive Officer, Provincial Secretariat for Resources Development, undertook the discussion of their topic, 'government', from certain premises as follows:

- (a) Government must continue to act to regulate society, to ensure law and order, to provide certain services, and to define business relationships; in short, Government is the creator of the environment for the private sector.
- (b) Government must continue to act as policy-maker, to identify the public interest, and to influence the formation of public perceptions.
- (c) Government will continue to be the largest employer in the country and, as such, will be a 'trend-setter' in employment relationships and conditions.

The group discussions brought forth a number of observations, as follows:

- (a) The private sector is where the wealth is generated; it cannot be disregarded by Government.



- (b) Legislation has become so complex that it is confusing to both the bureaucracy and to the public involved.
- (c) Government should not accept, as a measure of productivity, the amount of legislation it passes.
- (d) Government is labour intensive and should be a leader in motivation of its own employees.
- (e) There appears to be no recognition of or dedication to productivity improvement as the principal ingredient of national objectives.
- (f) Government, in playing a proper leadership role, should be prepared to 'change its mind' on the basis of thoughtful reconsideration.
- (g) Countries with federally controlled labour legislation appeared to have experienced better results than has Canada with its fragmented provincial legislations.
- (h) Government's contribution to national productivity appears now to be negative rather than positive; a reversal of this situation could have major benefits for the country as a whole.

As a result of its discussion, the group set before the plenary session of the Council certain recommendations, as follows:

- (a) Government intervenes in many areas of society with 'quality of life' objectives, such as human rights, security, and protection of the environment. Such intervention may interfere with the maintenance and development of 'productivity'. Governments, therefore, are encouraged to adopt productivity improvement as a national objective in such interventions, to provide a necessary counterbalance to the effect of other objectives.
- (b) Governments should adopt scientific methods for the improvement of productivity in the public service.
- (c) Governments must establish tax and tariff regulations and other incentives which will encourage the private sector and the public itself in saving for the formation of capital. This should be done on a selective basis, as determined by a thorough study of Canada's potential.
- (d) Governments can assist productivity improvements by relinquishing involvements in activities which private interests can do better.
- (e) Governments should plan to get out of or delegate those activities which another level of Government can do better. Delegation may be 'up' or 'down', as is appropriate to the situation.

- (f) Governments can help diffuse the 'confrontation philosophy' by providing a forum for senior government, management, and labour representatives to seek labour peace and productivity improvement.
- (g) Governments should reappraise and modernize the principles of the relationships between management and labour, and should revise legislation accordingly.
- (h) Governments should become 'salesmen' of the importance of productivity within the public service, as the principal means of regaining credibility, and avoiding situations where the interests of the public-at-large and of the private sector employers be adequately maintained. The current conservation program could serve as a 'model'.
- (i) Governments should establish programs to improve public perception of the importance of productivity improvement.

At this point in the plenary session, general discussion of all of the perspectives of the four groups took place. At the end of this interchange, R. M. Dillon, Chairman, made a recapitulation, which is summarized in the following conclusions:

- (a) Canada's productivity indices appear to be deteriorating relative to those of nations with whom it competes on the world market.
- (b) Canada's standard of living and quality of life depend on maintaining an adequate share of world markets for export trade.
- (c) Improved productivity should be established as a national goal through the joint efforts of Government, management, and labour.
- (d) Great emphasis must be placed on educational programs at the national, provincial, and local levels.
- (e) Establishment of new measures of productivity, with special emphasis on the quality of work environment and improvement in labour-management relations appear to be key factors.
- (f) Practical projects are required to be structured to fit local conditions, and to 'tackle' problems on the shop floor.
- (g) The emphasis should be on the development of new attitudes, rather than the creation of additional layers of bureaucracy. The idea is to bring together existing bodies and organizations for more effective collaboration.
- (h) Improved productivity will require co-ordinated effort of Government, labour, and management. Government plays a key role with special emphasis on:

- (i) the provision of tax incentives and other measures to encourage productivity improvements;
- (ii) initiation of productivity improvement projects amongst its own employees; and
- (iii) controlling Government expenditures at a level commensurate with current productivity.

### Recommendations

Following the Chairman's summation, the meeting framed certain recommendations, as are recorded below:

1. The Ontario Engineering Advisory Council in seminar session, being convinced that productivity improvement must become a national goal, a pervasive ethic, and being further convinced that the Federal Government is uniquely capable of giving leadership in such a program for attitudinal change, recommends to the Federal Government, through the Office of the Prime Minister, the formation or designation of a National Centre for Productivity in which, or by which, representatives of Government, Labour, Management and Technology can contribute usefully and effectively to the development and inculcation of new philosophies and mechanisms for productivity improvement in and by all of the contributing groups. In such an endeavour, the Ontario Engineering Advisory Council would encourage its sponsors and all members of the technological community to work with any designated organization.
2. The Ontario Engineering Advisory Council in seminar session recommends to the respective councils of the Canadian Council of Professional Engineers, the Engineering Institute of Canada and its constituent Societies, and the Canadian Council of Engineering Technicians and Technologists that they endorse and support the concept of Federal leadership in productivity improvement through the formation or designation of a National Productivity Centre which would bring together representatives of Government, Labour, Management and Technology; it recommends further that this endorsement and support be made known not only directly to the Office of the Prime Minister, but through the normal Federal Agency relationships of the respective organizations.
3. The Ontario Engineering Advisory Council in seminar session, being convinced that a national goal of productivity improvement must have a practical embodiment in the Province of Ontario, recommends to the Provincial Government, through the Office of the Premier, immediate implementation of the principles enunciated by the Premier himself in August 1975, "...I propose that we establish such a body, through a series of task forces, for Ontario, representing government, labour, and business to deal specifically with the substantive matters relating to productivity." In such a program, the Ontario Engineering Advisory Council sees a special opportunity for contribution on the part of the technological community and, consequently, recommends that it be identified

specifically as an appropriate partner of "government, labour and business". To this end the Council offers to use its full influence toward direct support by the various organizational elements of the technological community.

4. The Ontario Engineering Advisory Council in seminar session recommends to the respective councils of the Association of Professional Engineers of Ontario, the Ontario Association of Certified Engineering Technicians and Technologists, and the Ontario Region of the Engineering Institute of Canada that they endorse and support provincial initiatives in productivity improvement through the establishment of task forces in specific areas, each of which would contribute to a provincial co-ordinating body; it recommends further that this endorsement and support, together with details of any initiatives particular to the individual organizations, be made known not only directly to the Office of the Premier but through the normal provincial ministry relationships which now exist.
5. The Ontario Engineering Advisory Council in seminar session, recognizing not only the need for national goals and provincial action in productivity improvement but the need for bringing appropriate emphases to the local or 'grass-roots' level, recommends to the councils of the Association of Professional Engineers of Ontario, the Ontario Region of the Engineering Institute of Canada, and the Ontario Association of Certified Engineering Technicians and Technologists that they mount individual, joint, or co-operative 'productivity programs' to be carried out through their respective local Chapter or Branch systems; it recommends further that any such programs should be appropriately co-ordinated through a steering committee, and that they be undertaken with the active co-operation and involvement of the twenty-one regional offices of the Ministry of Industry and Tourism.

### Summary

The foregoing report has been prepared for the consideration and the interest of the participants in the seminar, for the sponsors of the Ontario Engineering Advisory Council, and for individuals and agencies of Government, industry, and post-secondary education, as have expressed an interest in the subject of 'productivity'.

Specifically, the recommendations of the seminar will go forward directly, over the signature of the Chairman of the Council, Dr. P. A. Lapp, to the officials of Government, and to the councils of the organizations specifically mentioned.

LCS:bjc

July 28/76