INVESTMENT DEALERS' ASSOCIATION
OF CANADA
OFFICERS 1956 - 1957

PRESIDENT
Nigel H. Gunn
Bell, Gouinlock, & Company, Limited, Toronto

VICE-PRESIDENT
F. H. Russell
Nabity, Thomson, and Company, Limited, Vancouver

VICE-PRESIDENT
W. Rees Tagrell
Carlby & McCurthy, Ltd., Calgary

VICE-PRESIDENT
Charles McKeilvio
James Richardson & Sons, Winnipeg

VICE-PRESIDENT
Robert K. Wright
Mills, Spence & Co., Limited, Toronto

VICE-PRESIDENT
G. A. Ross
Collie, Norrie & Gouin, Ltd., Montreal

VICE-PRESIDENT
Harold S. Griffin
Wood, Candy & Company, Limited, Halifax

VICE-PRESIDENT
J. A. Kingsmill
Investment Dealers' Association, Toronto

HONORARY PRESIDENT
Peter Kilburn
Gourchil choose & Co., Inc., Montreal

HONORARY VICE-PRESIDENT
W. I. Berrie
Pemberton Securities Limited, Vancouver

HONORARY TREASURER
E. F. Clarke Kinnear
W. C. Patfield & Company Ltd., Montreal
**Significant Canadian Economic Developments**

By J. R. Hughes*

Royal Securities Corporation Limited
President, Investment Dealers’ Association of Canada

Looking forward to the future with confidence, Mr. Hughes predicts an extremely bright Canadian investment outlook, warns of possible temporary economic growth interruptions, and reports 1956-1957 estimates of very substantial near-term capital requirements which may not be entirely fulfilled because of some strains accompanying current almost fully employed economy. Believes: (1) predictions that the 20th Century would belong to Canada will be fulfilled if fully supported by Canadian willingness to invest and work; (2) it would be preferable to have some Canadian share ownership in foreign wholly-owned Canadian subsidiaries; (3) soundly administered monetary controls can help contain the business cycle; and (4) inflation stops the vitally important savings flow.

---

*An address by Mr. Hughes at the 46th Annual Convention of the Investment Dealers’ Association of Canada, St. Andrews By-the-Sea, N. B., June 14, 1956.

---

**CANADIAN STOCK SPECIALISTS**

Orders Executed on all Canadian Exchanges at Regular Commission Rates or Traded in New York in United States Funds

**CHARLES KING & CO.**

MEMBERS
Montreal Stock Exchange  Toronto Stock Exchange
Canadian Stock Exchange  American Stock Exchange

61 Broadway  455 Craig St. W.  Royal Bank Bldg.
NEW YORK  MONTREAL  TORONTO
Whitehall 4-8974  UUniversity 1-5886  EMpire 4-6407

Direct Wire Connections - TORONTO, NEW YORK, MONTREAL

---

**FIRST IN CANADA**

Incorporated 1932

Calvin Bullock, Ltd.
507 Place D’Armes
Montreal

---

**FIRST IN THE UNITED STATES**

Incorporated 1952

Calvin Bullock, Ltd.
One Wall Street
New York
The Atomic Energy Program in Canada

By W. J. BENNETT*
President, Atomic Energy of Canada, Ltd.

Canadian atomic head reports "we are now able to predict that nuclear power can and will be used" and, though the program is at too early a development stage to supply the data required in a prospectus, forecasts based upon the relationship of future power requirements, costs of conventional power sources, costs of generating nuclear power, and other assumptions, indicate nuclear energy: (1) will be in modest supply until 1970 when it should become increasingly important; (2) offers interesting possibilities for space heating and for production of process heat; (3) requires continuing the uranium industry as a going concern after the 1962 government contract termination date; and (4) will permit uranium production to attain the highest dollar value of metals produced in Canada.

My remarks today will be concerned mainly with the first use. The production of economic power from a nuclear station depends on the solution of a wide range of technical problems. These problems may be grouped under the general heading of capital costs. The great advantage of nuclear power, as compared with conventional thermal power, is the low fuel cost. Fuel costs in 100-megawatt conventional thermal stations on this continent now average from 3 to 4 mills per kilowatt hour. Using present technology, it should be possible to achieve a fuel cost of not more than 2.5 mills per kilowatt hour in a 100-megawatt nuclear station operating at a load factor of 70%. With improvements in technology—and it is reasonable to expect such improvements—this cost might be reduced to as low as one mill per kilowatt hour. On the other hand, the capital cost of nuclear stations will be higher than the capital cost of conventional thermal stations. The capital cost of conventional thermal stations of 100 megawatt capacity ranges from $120 to $160 per kilowatt. The capital cost of the first generation of nuclear power stations—that is, the stations which will come into operation over the next two or three years—will range from $500 to $600 per kilowatt. This cost must be reduced to something like $250 per kilowatt, if the advantage of lower fuel costs in a nuclear station is not to be lost by reason of higher capital charges.

Before I tell you what we are doing to achieve this goal, let us ask ourselves whether the effort (and it is an expensive one) is worthwhile. Or, to put it another way, is there a need for nuclear power in Canada?

Does Canada Need Nuclear Power?

The role of the forecaster is always a hazardous one, and this is especially so when he speaks to an audience which can claim special competence in the business of forecasting. A forecast as to the future role of nuclear power must be predicated, first, on an acceptable estimate of the future power growth rate in Canada; second, on the conventional power resources, either hydro or fossil fuels, which will be available to meet the new demand; and, third, on the minimum cost at which it will be possible to generate nuclear power. There are several methods of forecasting power growth rates. One method is to project the future growth rate on the basis of past experience. For example, we know that the power growth has been at the rate of about 5% per annum over the past 25 years. It is also possible to establish in that period a relationship between the rate of power demand and such basic factors in the economy as the rate of increase in population and the rate of increase in the value of the Gross National Product. If it is assumed that the rate of increase in the population and the rate of increase in the value of the Gross National Product will continue at the present rates of 2% and 4% respectively, and if it is also assumed that the past relationship between those factors and power demand will likewise continue, it is possible to estimate a future rate of power growth as high as 7%.

A second method is to forecast future power requirements by analyzing the requirements of particular industries, since we know that two or three industries now account for over half of the total consumption of electric energy in this country. In using this method, account must be taken of the growth of these particular industries, and some allowance must be made for the possibility that the pattern of industrial development may change in the future. I do not think it is reasonable to indicate that the immediate rate of growth will be as high as 7% per annum but that the growth rate may level off at somewhere around 6% per annum. I have selected a growth rate of 6% for the period of the next 25 years because I believe this is a conservative estimate. On this basis, we will have a total installed capacity in 1980 of 28 million kilowatts and a total installed capacity in 1980 of 67 million kilowatts, as compared to the

*An address by Mr. Bennett before the 46th Annual Convention of the Investment Dealers' Association of Canada, Vancouver, B.C., June 18, 1956.

BONDS

CANADIAN STOCKS

MARKETS maintained in all classes of Canadian external and internal bond issues.

Stock orders executed on the Montreal and Toronto Stock Exchanges, or net New York markets quoted on request.

DOMINION SECURITIES CORPORATION

Associate Member American Stock Exchange

Boston
Philadelphia
London, Eng.
Toronto
New York
Telephone Whitehall 4-6103
Calgary
Montreal
Vancouver
Ottawa
Vancouver
Halifax

SUN LIFE ASSURANCE COMPANY OF CANADA

WORLD-WIDE SERVICE INCLUDING
100 OFFICES THROUGHOUT NORTH AMERICA

$61/2 Billion of Life Insurance in Force

\(\text{Continued on page 10}^1\)
Central and Investment Banking in Canada

By J. E. Coyne*
Governor of the Bank of Canada, Ottawa

In explaining the extent to which the opposite to monetary restrictionism is the case, Governor Coyne states "economic growth this year will be the biggest in our history," that financial expansion has been held to what is possible in the physical sense, and that central bank action did not cause interest rate rise. Points out that the $950 million difference between deposits and loans and investments was met principally by banks reducing government securities by $925 million; praises investment dealers for their help in accommodating the huge distribution adjustment, and for encouraging, mobilizing and directing savings flow, and suggests challenge of improved short-term money market and residential secondary mortgage market be met.

This is what has been happening in the credit field, both long term and short term, in recent months. On the supply side there has been no overall reduction but rather continued growth. But demand has grown even more, and the projects for which funds are required have given every indication of being more, in total, than the physical potential of the economy. This has been true both of Canada itself, and of North America as a whole, and indeed of the greater part of the world. To permit the supply of money to become excessive, to expand to the full extent of the demand at the pre-existing level of interest rates, would in such circumstances be clearly inflationary, it is the duty of central banks not to give way to the demand for such an excessive financial expansion. I am speaking of overall totals, monetary policy as such does not deal with the allocation of financial resources to particular persons or enterprises or regions.

Limiting the rate of financial expansion under such circumstances does not limit or attempt to limit the total amount of physical expansion, whatever amount may be physically possible, but simply seeks to ensure that financial expansion does not exceed our encourage full efforts to exceed what is possible in the physical sense. Too much money chasing the available production of goods and services will not help to achieve the maximum sustainable rate of physical growth of the economy, but may hamper such growth, in addition to bringing all the other evils of inflation in its train.

Interest Rate Rise
Except at a time of marked underemployment of the economy as a whole, any strong demand for money, any rapid increase in the total demand, will cause a rise in interest rates. This rise is caused by the interaction of supply and demand, not by the action of the central bank, except in the sense that the central bank could prevent the rise in interest rates by providing an unlimited increase in the money supply. Normally the rising demand makes itself known through a rise in bank loans and bank deposits, and a fall in the prices of securities as sellers seeking to raise cash exceed those wishing to buy securities at existing levels. Banks too will have to sell securities to acquire the increase in loans, unless the central bank increases their cash reserves, which would be a consequence of the purchase of securities in the market by the central bank. In fact, at a time of rising demand for money, a central bank will usually buy some securities and so add something to the money supply, but not at a fixed level of interest rates or of security prices.

One effect of the normal reaction of the central bank is an increase in the demand for money.

Continued on page 17

*An address by Mr. Coyne at the 40th Annual Convention of the Canadian Paper Dealers' Association of Canada, St. Andrews By-the-Sea, N. B., June 14, 1956.

"We like doing business with the Royal"

"On-the-spot" information on business opportunities in the areas they serve is available through the 791 Canadian branches of the Royal. This familiarity with specific territories is available to American businessmen who want data concerning economic and other conditions in all parts of this fast-growing country.

The Royal offers these services:
- Credit reports
- Factory sites
- Sales representation
- Information on labor, power, raw materials and transportation anywhere in Canada

Write Business Development Department, at Head Office in Montreal.

THE ROYAL BANK OF CANADA
Fourth in North America

New York Agency—68 William Street, New York 5, N. Y.
Chicago Correspondent—Norman C. Allingham, 231 So. La Salle Street

Over 850 Branches in Canada, Cuba, the Bahamas, British West Indies, Central and South America, New York, London and Paris.

TOTAL ASSETS
EXCEED $3½ BILLION

Central and Investment Banking in Canada

During the past two years there have been developments of considerable interest in the fields of both central banking and monetary control, in the relationship between the two. These developments have continued a process which began 21 years ago with the establishment of a central bank in Canada, and which has been going forward ever since, both in peace and in war. Certainly the investment banking business has acquired increased importance in Canada over this period, has come to fulfill an increasingly important function in the financial structure of our economy. That structure as a whole is in consequence stronger, better integrated, more flexible and of more value to the nation through the assistance it provides to economic growth and development, to the increase and diversity of our economic life.

By way of background to the further comments on investment banking in Canada today, I should like to refer to changes in the monetary situation over the past year, and the way in which the monetary operations of the central bank and the credit granting operations of the chartered banks interact with the operations of investment dealers in the distribution of re-distribution of securities and other investments. It is sometime said, inaccurately and with misplaced emphasis, that monetary policy is now restrictive, particularly a year or more ago it was expansive, and that credit has been or is being restricted. These phrases imply that there is less money available, less credit available, today than at some time in the recent past. This idea is sometimes coupled with the statement, also inaccurate, that the raising of the rate by the central bank was intended to bring about monetary restriction and did so.

No Monetary Restriction
The facts are that the total money supply (currency and bank deposits) has not been reduced, but has continued to grow, and that credit has not been restricted but has continued to expand. Savings are continuing to rise, both in bank deposits and in other forms, long-term investors have more money available for new investment this year than ever before; economic growth this year will be the biggest in our history. Bank loans have increased every month so far during the period of so-called restriction, although it seems probable that the rise in total bank loans will slow down before very long; some categories of loans may decline while others go on increasing.

It is always possible, indeed it is normal, for bankers and investors to take different views from time to time of various kinds of loans and investments. In particular, at a time when the demand for money, the desire to borrow money, exceeds the supply that may prudently be made available, it is inevitable that some potential borrowers will be disappointed, some financing will have to be postponed, some loans will fail to meet the higher standards of credit-worthiness adopted by lenders in such circumstances.
Long-Range Planning for Canadian Oil

By W. M. Y. ASH
President, Shell Oil Company of Canada, Ltd.

Shell Oil President believes oil industry has passed the stage where it thinks of profits first and planning afterwards, and analyzes the following principal factors governing and requiring long range planning in economically and strategically important oil: (1) world energy requirements are such that 700 million ton oil production of 1955 will have to more than double to 1,600 tons in 1975, and will, at this rate, increase four-fold at the end of the century; (2) bigness in oil is inevitable; (3) Canadian reliance upon oil and natural gas production rose from 23% in 1946 to 42% in 1954, of total Canadian energy, and increasing reliance on petroleum is certain in spite of known future atomic developments; and (4) effect of monetary depreciation upon oil industry's heavy capital requirements, which in the next decade is expected to add $8 billion to new investment in today's dollars. Deplores efforts to prevent foreign investments, free trade, and liberalized tax legislation.

Underwriter • Distributor • Dealer

Securities of the United States Government and its Instrumentalities

Securities of the International Bank for Reconstruction and Development

Bonds, Preferred and Common Stocks of Industrial, Public Utility and Railroad Corporations

Bank and Insurance Company Stocks

Securities of the International Bank for Reconstruction and Development

Canadian Bonds

Foreign Dollar Bonds

Investment Bonds and Stocks

Canadian Government Municipal and Corporation Securities

Midland Securities CORP. LIMITED

MEMBERS: The Investment Dealers' Association of Canada

Stock orders executed
on all Exchanges

The Midland Company LIMITED

MEMBER: The Toronto Stock Exchange

Toronto, Ontario: 50 King Street West
London, Ontario: Huron & Erie Building
Sault Ste. Marie, Ontario: 116 March Street
Montreal, P. Q.: 215 St. James St. W.
St. Thomas: 354 Talbot St.

Private wires to Eastman, Dillon & Co., New York and MacDougall & MacDougal, Montreal

Canada Needs More Energy

The fulfillment of Canada's great economic potential depends on a strong energy industry. The demand for energy in Canada has increased by 35% between 1945 and 1954. Future economic progress will require growing supplies. Petroleum is easily the most important form of Canadian energy supply. Oil and natural gas in 1954 counted for 42% of total Canadian energy as compared with 33% in 1945 allowing a 17% increase.

Continued on page 21
Canadian Telecommunications Today, Tomorrow

By T. W. Eadie*
President, The Bell Telephone Company of Canada

Canadian telephone industry spokesmen projects an estimated $3 billion plant and equipment investment need in the next 25 years and sees no reason why the major part should not be obtainable from Canadian sources. Mr. Eadie reviews the scope and growth of "the most telephone-minded country in the world," and, in illustrating the high-gear development, cites such major projects as: (1) coast-to-coast microwave relay system, scheduled for operation by the end of 1958; (2) continent-wide automatic switching of long distance traffic, making Canada and the United States one vast telephone exchange; (3) Mid-Canada early warning line; and (4) pure research and practical technology efforts which include the transistor and the Bell solar battery.

There are over 4,000,000 telephones in Canada and they are operated by some 2,600 separate systems. Hundreds of these are small cooperatives, owned by farmers or municipalities. Among the larger operators are the two shareholder-owned companies, like my own, and systems controlled by provincial governments as in the case of the three Prairie provinces. Yet we form a closely interconnected network, and we work in mutual assistance towards a common goal of national-wide telecommunications service.

Barometer of Development

The telephone industry is one of the best barometers of development—whether national or local. The prosperity of a city, the growth of its industry and settlement are reflected, usually magnified, in the demand for telephone service. The extension of service into remote areas is nowadays often by radio—is an indication of successful pioneering. Through the increase in long distance calling you can measure the expansion of trade. In the ten years since the end of the Second World War the national total of telephones and the daily average of calls, both local and long distance, have all more than doubled. As a measure of the special intensity of telephone growth, I would refer to the increases of more than 100% to the 28% rise in population and the 38% rise in volume of gross national product during the same period.

It is therefore in a period of high-gear development, which presents the industry with many challenges to its ingenuity and energy. The quantities of equipment needed to handle the vast telephone traffic have had to be bought at high cost-levels, and they must be maintained in a state of very vigorous productivity if our plant investment is to justify itself economically.

So far as local service is concerned, expansion has not involved any great novelty of either system or machinery. We have added many million dollars' worth of dial switching equipment, we have built hundreds of new exchanges, and put into operation a tremendous volume of wire and cable. Extended Area Service has been developed to provide the most suitable pattern of service for neighboring communities and for metropolitan areas. All this has been done over the last years, but not an especially spectacular one.

For our equivalent to the 3-D technician, I would refer you rather to the expansion of long distance service. Canadians are presently making nearly 1½ million long distance calls every day, more than twice as many as ten years ago. There may be little slackening in this rate of growth in the decade immediately ahead. Good and rapid long distance communications are essential to the national development, and they have been a priority charge for the telephone industry.

Microwave Transmission and Continent-Wide Switching

There are two aspects to all telephone development—transmission and switching. That is, carrying your call with clarity, and delivering it to the correct distant telephone. Progress in each direction must be carefully related. Masterly automatic switching is of little value if the long distance lines are always busy or the conversations over them are incoherent. Radio channels capable of simultaneously carrying hundreds of conversations will do little good unless the calls they carry are switched rapidly and efficiently. So we are now engaged on two major projects—the construction of a coast-to-coast microwave radio relay system and the organization of automatic switching of long distance traffic on a continent-wide scale.

First here is the microwave radio relay picture. The members of the Bell Canadian Telephone System are building a microwave radio relay network from Sydney to Vancouver. Part of it is now operating, and it will be completed by stages. The entire network is scheduled to be in operation by the end of 1958. The Trans Canada Telephone System, as you are probably aware, is an association of the seven major Canadian telephone organizations formed to develop long distance service on a national basis. Each member is responsible for the construction and maintenance of Installations in its own territory. At present a microwave system operates in our Bell of Canada territory between Toronto, Ottawa, Montreal and Quebec City and in but a few months to Winnipeg. It is a vital integral part of this network. This network will also carry television programmes between all the major cities in Canada, serving in all some 28 Canadian cities.

Those are the transmission facilities we are developing for long distance telephone traffic. What are our plans for switching? The ultimate of it is the Canadian telephone system as the transformation of the whole of Canada and the United States into one vast telephone network. There, I am sure, we shall have considerable problems to solve. There is a need for switching to be faster and more accurate, and to do the same work for many more people. We have to design new equipment, and we have to design switching equipment which will not cost the earth. And we have to design it so that it will become obsolete in ten years, instead of twenty years, which is the usual practice. But we shall get there. We have been making progress at a wonderful speed. We are learning to do it, and we are learning to do it much better than we did last year. And we shall do it better still next year. The time has come when our needs for service are no longer being met by a telephone system which is adequate, but by a telephone system which is inadequate. We are faced with the problem of building a telephone system which is not merely adequate, but which is magnificent.

Gairdner & Company Limited
320 Bay Street, Toronto, Canada

We provide a complete service for corporate financing in Canada. Private enquiries from dealers are invited.

Members
The Toronto Stock Exchange
Montreal Stock Exchange
Winnipeg Stock Exchange
Canadian Stock Exchange
Vancouver Stock Exchange

Affiliate
Gairdner & Company Inc.
60 Wall Street, New York 5, N. Y.

Member: The Investment Dealers' Association of Canada

Montreal Kingston Quebec Calgary Vancouver
Hamilton Kitchener London Edmonton Winnipeg

New York
Private wire system
In Attendance at I.D.A.C. Convention

ALLAN, Mrs. BETTY Vancouver
ALMOND, L. F.* Investment Dealers' Association, Montreal
ANASTASIA, A. A. Dow Jones & Co., New York
ANDREWS, H.* Royal Securities Corp., Ltd., Montreal
ANGUS, EWART Angus & Co., Toronto
ANNETT, D. E. Gardiner, Annett Ltd., Toronto
ARMOUR, A. D.* Brawley, Cathers & Co., Toronto
BAKER, T. H.* Ross, Knowles & Co., Ltd., Toronto
BARCLAY, J. M.* Burns Bros. & Denton Ltd., Toronto
BARKER, A. J. Thomas B. Read Company Ltd., Vancouver
BEAUBIEN, A. S. L. G. Beaubien & Co., Montreal
BELL, L. L.* James Richardson & Sons, Toronto
*B mutates Mr. & Mrs.

BELSHAW, J. A. M.* Brawley Cathers & Co., Toronto
BENDALL, A. J. Canadian Alliance Corp. Ltd., Montreal
BENHAM, H. A.* Bank of Canada, Ottawa
BENNETT, W. J. Atomic Energy of Canada Limited, Ontario
BERTRAND, PAUL* Rene-T. Leclerc Inc., Montreal
BLACKMORE, RALPH "Globe & Mail," Toronto
BORIE, W. J. Pemberton Securities Ltd., Vancouver
BRAY, G.* Gainster & Co., Ltd., Quebec
BRETTINGHAM, S. J.* Financial Counsel, Montreal
BYERS, D. J. A. M. Kiddier & Co., Montreal
CADMAN, J. L.* James Richardson & Sons, Toronto
CAMPELL, R.* Royal Securities Corp. Ltd., St. Stephen
CARR, A. B. G. E. Leslie & Co., Montreal
CASSELLS, D. K. Cochran, Murray & Co., Ltd., Toronto
CAZAYAN, H.* Forget & Forget Ltd., Montreal
CHIPPENDALE, ALAN Calvin Bullock Ltd., Montreal

CHURCH, J. A.* Dominion Securities Corp. Ltd., Montreal
CLARK, ROBERT E. Calvin Bullock Ltd., New York
COLVEY, A. C. Canadian Dow Jones Ltd., Montreal
CONNELL, H. B. M. Equitable Securities Canada Ltd., Toronto
COOPER, W. J.* Nesbitt, Thomson & Co. Ltd., Montreal
COYNE, J. E.* Bank of Canada, Ottawa
CRYSDEL, PETER Anderson & Company Limited, Toronto
CUNLIFFE, G. S.* "The Gazette," Montreal
DALY, H. J.* Graham & Co., Montreal
DANIELS, S. M. Eastern Securities Co. Ltd., Picton
DEACON, J. S.* Deacon Findley Coyne Limited, Toronto
DEACON, P. S.* "The Financial Post," Toronto
DREYNE, B. E. L. S. Beaubien & Co. Ltd., Montreal
DINNICK, J. S.* McClelland, Young, Weir & Co. Ltd., Toronto
DOW, D. J.* Nesbitt, Thomson & Co. Ltd., Montreal
DOWNES, W. L.* Kippen & Co., Inc., Montreal
DRURY, R. D. R. D. Sheers & Company, Ottawa
DUFOUR, R.* Nesbitt, Thomson & Co. Ltd., Montreal
DUNLOP, W. S. Oldfield, Kirby & Gardner Ltd., Winnipeg
DYMOND, A.* Equitable Securities Canada Ltd., Toronto
EADIE, T. W.* Bell Telephone Co. of Canada, Regina
EBBELS, W. D. Houston, Willoughby & Co. Ltd., Regina
EDWARDS, J. C.* Matthews & Company Limited, Toronto
EMBURY, FRED A. E. Ames & Co. Ltd., Toronto
ERVWOOD, D. L.* Harris & Partners Limited, Toronto
FAULKNER, D. Wood, Gundy & Co. Ltd., Montreal
FISHER, F. G.* Eastern Securities Co. Ltd., Saint John
FLAEMING, PAUL R. Fleming & Co., Toronto
FORBES, L. J.* Nesbitt, Thomson & Co. Ltd., Ottawa
FORRESTER, W. A.* Merrill Lynch, Pierce, Fenner & Beane, New York
FRIED, D.* Fry & Company Limited, Toronto
GALE, J. R.* Nesbitt, Thomson & Co. Ltd., Montreal
GASSARD, H. L.* Investment Dealers' Association, Toronto
GIBSON, L. T.* Harron & Co. Ltd., Toronto
GODWIN, C. E.* McClelland, Young, Weir & Co. Ltd., Montreal
GOODEHARM, P. S. Wills, Bickel & Co., Toronto
GOULINLOCK, R. W. Jr.* Bell, Goulinlock & Company Ltd., Toronto

GOULDING, E. D. Goulding, Rose & Company Ltd., Toronto
GRACE, J. J. A.* James Richardson & Sons, Montreal
GRIFFIN, F. E.* Greenfield & Co. Inc., Montreal
GRILLS, R. M.* McLeod, Young, Weir & Co. Ltd., Toronto
GRILLS, T. O.* Walwyn, Fisher & Co., Toronto
GUINN, N. H.* Bell, Goulinlock & Co., Ltd., Toronto
HARRIS, R. W.* James Richardson & Sons, Kitchener
HART, F. N.* Dominion Securities Corp. Ltd., Montreal
HAYMAN, J. L.* Goulard, Rose & Co., Ltd., Montreal
HEATH, S. B. Walwyn, Fisher & Co., Toronto
HEBB, R. C.* Dominion Securities Corp. Ltd., Halifax
HENDERSO.N, J.* Dominion Securities Corp. Ltd., Montreal
HENRY, E. P.* Eastern Securities Co. Ltd., Antigonish
HERMAN, H. G. A. E. Ames & Co. Ltd., Calgary
HERENDORF, ROBERT Herron Securities Ltd., Winnipeg
HESLOP, L. B. Bell, Goulinlock & Company, Ltd., Montreal
HETHERINGTON, J. W.* Deacon Findley Coyne Ltd., Toronto
HEWETT, GEORGE* James Richardson & Sons, Vancouver
HICKS, R. E.* Harrison & Company Ltd., Toronto
HILL, G. F.* Harrison & Company Ltd., Toronto

Continued on page 30

Canadian Government, Municipal Public Utility and Industrial Securities

Canada-wide service, with offices at:

Montreal, Que. Toronto, Ont.
Quebec, Que. Ottawa, Ont.
Halifax, N. S. Hamilton, Ont.
St. John's, N. B. Charlottetown, P. E. I.

Underwriters — Distributors — Dealers

Royal Securities Corporation Limited

244 ST. JAMES STREET WEST, MONTREAL 1

Royal Stock Exchanges

Members:
Montreal Stock Exchange
Canadian Stock Exchange

The Toronto Stock Exchange
Canadian Securities

Our organization underwrites, distributes and deals in securities of the

CANADIAN GOVERNMENT

PROVINCES

MUNICIPALITIES

and

CORPORATIONS

Harriman Ripley & Co.
Insure  
Underwriters and Distributors of Capital Issues
63 Wall Street, New York 5, N. Y.

BOSTON  PHILADELPHIA  CHICAGO

CLEVELAND  DETROIT  READING

Canadian Issues

During the past decade we have been instrumental in underwriting and distributing a major portion of the new issues which have been placed in this country by the Government of Canada and its subdivisions.

Among these issues have been:

GOVERNMENT OF CANADA

PROVINCE OF ALBERTA

PROVINCE OF BRITISH COLUMBIA

PROVINCE OF MANITOBA

PROVINCE OF NEW BRUNSWICK

PROVINCE OF NOVA SCOTIA

PROVINCE OF ONTARIO

PROVINCE OF QUEBEC

PROVINCE OF SASKATCHEWAN

CITY OF EDMONTON

CITY OF MONTREAL

CITY OF TORONTO

CITY OF VANCOUVER

CITY OF WINNIPEG

Smith, Barney & Co.

Members New York Stock Exchange and other leading exchanges

14 Wall Street, New York 5, N. Y.

PHILADELPHIA  CHICAGO  BOSTON

Albany  Allentown  Hartford  Minneapolis

Keeping Canada's Air Transport in Forefront

By J. E. NICKSON*
General Sales Manager, Trans-Canada Air Lines

Commercial impact, economic growth results, and coming developments in Canadian aviation are depicted by Trans-Canada Sales Manager. Finds the future exceedingly bright in Northern, Mainline and International types of operation. Mr. Nickson observes: (1) it will be a problem to put commercial-paying aircraft through sound barrier speeds; (2) little prospect for atomic civil aircraft in next 15 years; (3) rapidly rising investment in planes of advanced technological and design progress constitutes a financing problem; (4) consumer air rates to decline in next 10 years, providing decreasing cost per seat or ton mile is not offset by expected rising labor costs; and (5) many improvements will have to be made to accommodate tomorrow's endless air possibilities.

Air Versus Rail Mileage

In 1955, based on actual and estimated figures for the first seven months of that year, the various air carriers flew 1,200,000,000 miles—an increase from 1945 of 90%. The railways provided 2,600,000,000 passenger miles—a decrease of 55%.

These figures give you some idea of the growth, since the end of the war, of civil aviation in Canada.

Now—looking to the future, what do we see? It seems to me that just about our starting point is to refer to the Gordon Commission briefs concerning the growth of this country. You will recollect that prognostications have been made that the population will increase by 22% to over 19,000,000 in the next 10 years, and then continue to climb to 28,000,-

Further, it is the prediction that the Gross National Product will increase by 38% to $60 billion in the next 10 years and continue upward to reach $70 billion in 1960.

I have been asked to speak on the subject "Keeping Canada's Air Transport in the Forefront." I presume this means forecasting future developments for civil air transportation in Canada. In making forecasts, I find it at this time extremely difficult to look beyond a period of 10 years, much less a period of 50 years, after which others may have to give forecasts.

Basically, the problem is "What is the outlook beyond 10 years for aircraft development?" that is, the means by which people and goods are actually moved.

Jet Aircraft Age

You have no doubt heard or read about the recent purchases by many of the major airlines of the world of jet aircraft. This is most significant development.

It anticipates the elimination — gradually, I will admit — of the piston-engine aircraft on long-haul and international routes, and subsequently the shorter-haul routes.

With respect to the shorter-haul routes, we are today operating turrine powered aircraft with geared propellers, and it is possible to foresee within the next 10 years the replacement of this type of aircraft by some of the carriers with small jets.

The jet age is a new development in history of civil aviation. I don't know if many of you are aware of the fact the aircraft which have been ordered, will cruise in the neighborhood of 550-550. In other words, their maximum cruising speed will be near the speed of sound, Mach 1, and in actual miles per hour should be around 550.

At the present time, the major carriers of the world in multi¬

dimensional aircraft, have these aircraft cruising in the neighborhood of 500 to 530 miles an hour.

Entirely apart from the particular airplane problems of introducing a completely new aircraft with a new power system, the impact, commercially, on the nation and on other nations of moving the cruising speeds from, say, 300 to 500 miles an hour, is very extensive.

Therefore, we feel we can look Continued on page 23

*An address by Mr. Nickson before the 14th Annual General Meeting of Canadian Manufacturers' Association, Toronto, June 6, 1956.
The Atomic Energy Program in Canada

The continued installation of atomic energy stations, which are currently busy, can be expanded to the extent of 25 million kilowatts, by 1980. More evidence of this is the 16 million kilowatts installed as at Spring 1955. This goal of 25 million kilowatts will be achieved by 1965, of which 18 million will be installed.

Nuclear capacity is being expanded in all parts of the country, and the Atomic Energy Commission (AEC) has announced plans for two more generation plants, each to have a capacity of 2 million kilowatts. This is the equivalent of 200,000 homes. In addition, the AEC will build a nuclear power plant in the western part of the country. Total installed capacity will reach 4 million kilowatts by 1970, and 8 million by 1980.

The Atomic Energy Commission has set the beginning of 1970 as the zero point by which to measure the progress of atomic energy stations. This is the year when the installation of atomic energy stations will reach 25 million kilowatts. The AEC will supply 25 million kilowatts by 1980, by which time the total installed capacity will be 16 million kilowatts. The AEC will supply 8 million kilowatts in 1970, 20 million kilowatts in 1975, and 30 million kilowatts in 1980.


some reduction in nuclear power costs as the result of improvements in technology.

However, for the purpose of this forecast I have assumed a cost of 6 mills, although I think this is a conservative estimate. On this basis, of the 21 million kilowatts of thermal capacity in 1980, something like 7 million kilowatts will be nuclear. To the extent that nuclear power costs can be reduced below 6 mills, the contribution of nuclear power to the total installed capacity in 1980 will be greater. It may be of interest to note that in its submission to the Gordon Commission, Ontario Hydro has forecast a nuclear installation of 400,000,000 kilowatts in 1985 and between 6 million and 7½ million kilowatts in 1980.

My forecast indicates that the part played by nuclear energy in supplying Canada's power requirements will be a modest one up until 1979. After that period we would expect that the role of nuclear power would become increasingly important and that by 1980 nuclear power plants would account for over 10% of the country's total generating capacity. Beyond that period the percentage will increase sharply. I think it will be evident that the accuracy of the forecast depends on our success in developing economic power reactors.

What are we doing about this?

Fundamental Research

We are doing three things. First, we are carrying on fundamental research in physics, chemistry, biology, physical metallurgy, and associated sciences. Second, we are testing fuel systems, materials and components in the NRX reactor. Third, we are undertaking design and feasibility studies with supporting engineering development for power reactors. I should point out at once that, while I have described these three activities separately, they are in fact very closely related. Although sufficient scientific data are not available to permit a beginning in the applied field, the boundaries of scientific knowledge have been pushed forward by experiments. If Canada is regarded today as one of the leading countries in this new science, it is simply because of the emphasis we have placed on fundamental research. This emphasis must continue if we are to maintain our position.

The research scientist has a dual role. He must provide the data for the design of the future and possibly the ideal power reactor, and he must also provide expert advice in connection with current reactor projects. The testing of materials and components is an essential part of power reactor development. This can only be done in reactors like the NRX reactor at Chalk River where it is possible to stimulate the conditions, such as irradiation and temperature, which will prevail in a power reactor. I should remind you that the NRX reactor at Chalk River provides facilities for this type of work which are not found anywhere else in the free world, and this will explain why it has been used so extensively in the United States and United Kingdom atomic energy programs, as well as in our own program.

I might mention a project of current interest. The selection of specific fuels for the large demonstration power reactor known as the PWR which is now being built in the United States was made as the result of experimental work carried out in the NRX reactor. Our new reactor, the NRU, which will come into operation late this year, will have even better facilities for experiment and testing. The General Electric Corporation, which is heavily involved in the United States power reactor development program, is now discussing with us the use of the NRU reactor for loop experiments.

Design and Feasibility Studies

Design and feasibility studies, with engineering development, are necessary if the results of research and experiment are to be given a useful application. Or, to put it another way, at some stage in the project.
The Atomic Energy Program In Canada

Continued from page 11

every research and development and operating a power reactor. Our first design and feasibility study began early in 1954. From it came the outline specification for the demonstration power reactor known as the NPD (Nuclear Power Demonstration) which we are now building in association with Ontario Hydro. The design of this reactor, which is expected to come into operation in 1958, is based on the technology which we have pioneered at Chalk River. It will have an electric output of 20,000 kilowatts. Its primary purpose will be to demonstrate that a nuclear station can be operated as a reliable source of power.

The NPD will not produce power at competitive costs nor will it produce all the information which is required for the design of a large central power station. Consequently, we also have under way a preliminary design study with supporting development programs for a large power reactor—in the range of 100-200 megawatts. In addition, we are considering design studies for other types of reactors which we believe may have a useful place in the Canadian economy—for example, a dual-purpose reactor which will provide power and process heat for the pulp and paper industry, and a small reactor which will supply power and space heating in remote areas of Northern Canada where the cost of conventional thermal fuels is excessive.

At the present time the annual cost of energy for all purposes in this country, before distribution cost, is something like a billion and one-half dollars. Hydro energy accounts for about 10% of this cost; fossil fuels account for the balance. A substantial part of the fossil fuel requirements is now imported at an approximate annual cost of half a billion dollars. The annual growth rate of energy requirements for all purposes is approximately 4% per annum. I offer these statistics in support of my opinion that the use of nuclear energy for space heating and for the production of process heat has very interesting possibilities.

Partnership With Utilities and Manufacturers

From the inception of the power development program we have recognized two basic principles—first, that nuclear power plants will be owned and operated by those who are now in the business of producing power—the utilities—and, second, that these plants and their components will be designed and built by manufacturers. These principles have determined the manner in which we are carrying out the program.

The participation of the utilities takes two forms. First, we have an Advisory Committee on Atomic Power on which the utilities are represented, and, second, we have established at Chalk River a Nuclear Power Branch, the personnel of which has been recruited from the utilities. The Advisory Committee on Atomic Power serves a dual purpose. First, it permits the utilities to evaluate the economic importance of nuclear power in terms of their respective power needs and, second, it enables us to give our program the shape and direction which is best suited to those needs. The Nuclear Power Branch is responsible for carrying out the design and feasibility studies on various types of reactors—to which I have already made reference—and works in close contact with the scientific and engineer-
ing staff at Chalk River. Under this arrangement we are providing for the maximum inter-play of ideas as between those who must operate power plants and those who are responsible for their design.

The participation of the manufacturer can involve two stages. First, he must obtain the kind of information about power reactor development which will enable him to determine what part, if any, his company can play in that development. Second, he can undertake the design and fabrication of power reactors and their components, with supporting engineering development programs. At the information stage we are supplying technical literature on power reactor development and we are also arranging frequent conferences at Chalk River, both for individual companies and associations. For example, recently a two-day conference was arranged for the Pulp and Paper Research Institute.

Participation in engineering development, design and fabrication is obviously the most important side of our partnership with industry. This participation began in a major way on the NRU-project. More than 100 Canadian companies have been engaged on the fabrication of parts for this reactor, involving special designs outside of normal manufacturing experience. The contract for the detailed design and construction of the NFD reactor has been placed with a manufacturer. Contracts have also been placed for the design of a research reactor of the swimming-pool type and for the design and manufacture of a loop system for the NRU reactor. Proposals have been invited for the supply of fuel elements for the NRU reactor and for the components of the reactor of the NRX type which we are building in India under the Colombo Plan.

These are only a few of the highlights of a large and expanding program of industrial participation, but I believe they serve to clarify the respective areas of responsibility. Atomic Energy of Canada Limited must accept the responsibility for supplying the data necessary for the design of nuclear plants, whether they be used to generate electric energy, for space heating, the production of process heat, or for all three, since the nature of the research and development program and its expense are undoubtedly beyond the abilities of the Canadian manufacturer.

The manufacturer, if he is to be in a position to supply the domestic and foreign requirements for power reactors and their components, must be prepared to give effective application to the data which are supplied by Chalk River. This will not be an easy task, since power reactors and their components do not lie within the normal design and fabricating experience of the Canadian manufacturer. Last we become too discouraged on this score, I might point out that a similar situation exists in other countries. Working as partners, I believe we can create a prosperous industry.

Uranium Production and Purchasing Policy

The development of economic power reactors is one part of the Canadian program in atomic energy. The production of uranium, the raw material for atomic energy is another part—and one in which we happen to have a very large stake. Canada began to produce uranium for the atomic energy program during the war years and this policy was continued in the postwar years. While the main objective of the program in the immediate postwar years was, and still is, the supply of uranium to the United States for military projects, we have been conscious

Continued on page 14

MATTHEWS & COMPANY

LIMITED

Established 1909

* * *

Members:

Toronto Stock Exchange
Investment Dealers' Association of Canada

220 Bay Street
Toronto, Ontario
EMPire 4-5191

Direct Private Connections with 30 principal cities in the United States of America

R. A. DALY & COMPANY

LIMITED

Members
The Investment Dealers' Association of Canada
The Toronto Stock Exchange

UNDERWRITERS AND DEALERS
IN CANADIAN GOVERNMENT, MUNICIPAL
AND CORPORATION SECURITIES

Private wires to Montreal and New York
Orders executed on all Exchanges

44 KING STREET WEST
414 ST. JAMES ST. WEST
TORONTO
MONTREAL
EMPire 4-4441
Marquette 8089
The Atomic Energy Program
In Canada

Throughout the program that we were developing a resource which would have an important bearing on the peaceful uses of atomic energy.

I am sure you are familiar with the current policy covering the purchase of uranium. Briefly stated, the position is as follows:

The policy of encouraging uranium production by private companies was first announced in March 1948. Those of us who had some part in establishing that policy were convinced that the mining industry and our investment houses would be prepared to risk investment in uranium production if a decent incentive were provided. This incentive is now set in two forms:

—first, a guarantee that Eldorado will purchase all uranium which is offered under a published price schedule and, second, a guarantee that Eldorado will purchase uranium under a special price formula. In the latter case, the guarantee is subject to certain conditions — namely, that applications for special price contracts shall have been submitted on or before March 31, 1956, and, second, assurance that production will commence not later than Sept. 30, 1957. As it happens, all purchases made to date have been made under the special price formula and on the basis of our present information this situation is likely to continue.

The results of the purchasing policy have been quite remarkable, when one considers the short period that it has been in effect. At the present time special price contracts have been written for a total value of approximately $700,000,000. Our expectation is that this amount will be in excess of a billion and one-quarter dollars when the negotiation of contracts now in process has been completed. This means that the area value of our uranium sales, when all of the mines including Eldorado’s mines are in full production, will be at the rate of approximately $300,000,000 per annum, ranking uranium in first place in the annual dollar value of metals produced in Canada.

Since this income will be derived in large part from export sales, uranium production will have a significant effect on our trade balance.

It is estimated that capital expenditures for plant, equipment and machinery, housing, power lines, roads, etc., will be approximately $270,000,000. Preproduction expenditures—that is, expenditures on diamond drilling, shaft sinking and mine preparation—will account for an additional $57,000,000. Operating expenditures, during the production period of the contracts, for wages and salaries, supplies and services, will total approximately $863,000,000, 60% of which roughly half will be for wages and salaries. The new and important industry will provide direct employment for about 15,000 people and employment for many others in the various industries which support a mining operation.

Certain of the member companies of your Association have played an important part in the financing of this development. Approximately $100,000,000 of the capital required has been furnished by investment houses, and the major part of this has come from Canadian investment houses. We estimate that an additional $180,000,000 will be required to finance the companies which now have contract applications in process. I hope that a substantial part of this financing would also be supplied by Canadian investment houses.

The statistics I have given you suggest at once the importance of maintaining the uranium industry as a going concern in the period after March 31, 1952, the present
buying domestic requirements of the end of the purpose, and these requirements have been of significance in having been made for military projects. There is no information available at this time as to what the level of demand for military purposes will be after March 31, 1962. The use of atomic energy for tactical warheads and for the propulsion of various types of naval vessels is a new development which may have some effect on the military requirements for uranium beyond 1962. There may also be some significance in the fact that the United States Atomic Energy Commission has extended its domestic buying program to the end of 1966. While the primary purpose of this extension is to develop new ore reserves to replace present reserves, it also indicates that the United States foresees a substantial demand for uranium beyond 1962. What part of this demand will be for military uses and what part will be for civil uses I do not know, nor do I know whether the demand will be such as to require heavy imports beyond 1962. Obviously it is very much in the interest of the producer who now has a contract or who may receive a contract that he should obtain this information as soon as possible, but it is likewise obvious that it is difficult to forecast both military and civil requirements beyond a certain date. Each of the special price contracts contains an option clause which permits the buyer to extend the contract at a renegotiated price. It may be anticipated that the situation with respect to the exercise of these options will be clarified well in advance of the expiry date of the present contracts.

What do we know about the probable demand for uranium for civil purposes—that is, for power programs? From my previous remarks it will be clear that we are now able to predict that nuclear power can and will be used. The extent to which it will be used and the areas in which it will be used will depend, first, on future power requirements and the conventional sources of energy, and their cost, which will be available to meet those future requirements, and second, on the cost of generating power in a nuclear power plant. I think I have also made it clear that there is a close relationship between these two factors.

For example, if we assume that nuclear power can be generated at competitive costs not later than 1963, it is not too difficult to predict in what regions of the world nuclear power will be used in that year. However, even if we were able to arrive at a reasonably accurate estimate of the amount of nuclear power which will be generated in a given region by 1965, we would still be unable to forecast the amount of the uranium requirements for this power, since this will depend on the type of power reactor and the fuel system which are used. Power reactors differ in many ways but they differ particularly in the amount of energy which they can extract from a ton of uranium, or what is commonly called the difference in the burn-up factor. I think it may be helpful at this point if I attempt to give you a brief description of what is meant by the burn-up factor, since this is necessary to a proper understanding of the economics of nuclear power.

Burn-Up Factor Described

If it were possible to utilize all of the heat potential of a ton of natural uranium, the requirements of uranium for a nuclear power program would be very small. As it happens, there are physical limitations and cost limitations which stand in the way of the full utilization of the heat potential of a ton of uranium. The continued on page 16

Thomson Kernaghan & Co. Ltd.

Members
The Toronto Stock Exchange

Specialists in Canadian Industrial Mining and Oil Securities

Directors

E. B. Kernaghan  F. C. Woolley
W. W. Davison  K. W. Sutherland
J. F. Willis

67 RICHMOND STREET WEST
TORONTO 1

Empire 8-5771 Empire 44256

KERNAGHAN & CO. LIMITED

Members
The Investment Dealers' Association of Canada

Underwriters and Distributors

Government of Canada Bonds  Provincial and Municipal Debentures
Treasury Bills  Corporate Bonds and Shares

Statistical information on Canadian Securities supplied promptly on request. Orders executed on the Toronto Stock Exchange through our affiliate Member Corporation.

Direct private wire with Goldman, Sachs & Co.
30 Pine Street, New York

EQUITABLE SECURITIES CANADA LIMITED

Members: The Investment Dealers' Association of Canada

220 BAY STREET  437 ST. JAMES ST. W.
TORONTO, CANADA  MONTREAL, CANADA

Watt & Watt

Incorporated Members National Association of Security Dealers, Inc.

70 Pine Street, New York 5, N. Y.
Wiltshire 4-3252

Affiliate of Watt & Watt
6 Jordan Street, Toronto

MacMillan
Toronto Stock Exchange
Montreal Stock Exchange
Winnipeg Grain Exchange
Investment Dealers Assn. of Canada

PRIVATE WIRE BETWEEN

New York  Buffalo
Montreal  Fort William
London, Ontario

Canadian Securities
The Atomic Energy Program In Canada

..

...
Central and Investment Banking
In Canada

is therefore to meet part of the demand and to that extent damp the rise in interest rates. Central bank action does not usually cause changes in interest rates, but restrains them, moderates them. But since only part of the demand is filled by an increase in the total supply of money, interest rates do rise until there is some abatement of demand, and/or there is a change in the distribution of the existing supply of money, some existing holders being found who will put their money at the disposal of some at least of those who are seeking to borrow. There is thus an increase in the rate of use of the existing money supply, a shift from the inactive deposits to active, as it were.

It is important to recognize that this potentiality always exists to a greater or less degree, and can at times work against central bank policy. It is particularly important that the process of activation of inactive money should commence before inflationary developments gain too much strength, rather than that expansion of the total supply should continue without limit until it is found necessary to restrict the supply under conditions where very drastic action might be necessary, because the restriction would then have to be sufficient to offset the belated process of activation of previously inactive holdings on a very large scale. The change in interest rates when it finally occurred would then be violent rather than gradual, and failure to moderate earlier the expansion of credit would lead to a severe contraction.

Perhaps all this sounds rather theoretical, but it is in fact a very practical matter in central bank operations and was very much in our minds in connection with the developments of the past 12 months.

Bank Rate Role

Returning to what happens when the demand for money continues to rise after a condition of generally full employment has been reached, the rise of interest rates in the market may continue to the point where another method of increasing the total money supply may be involved, namely, recourse by the chartered banks and by money market dealers to the central bank for short-term loans or purchase and re-sale arrangements. To meet emergency situations and for the smooth functioning of the money market the central bank occupies the position of a lender of last resort. It must always be ready to act in that capacity, for a price, and the price is represented by the rate of interest which the central bank charges on its advances, in this country called the bank rate.

We are speaking of a situation in which the central bank has

Continued on page 18
Central and Investment Banking In Canada

been conducting its open market operations from day to day according to its best judgment of what is appropriate in the circumstances. If it is not prepared to increase the overall money supply without limit by purchasing all the securities offered to it at a given level of security prices, it would be frustrating its own objectives to do so by making loans on a large scale. It must, in such circumstances, raise its lending rate, the bank rate.

In theory the bank rate could be changed every day in very small fractional amounts, but it is usually considered more convenient to do it in rounder amounts at intervals. The Bank of Canada Act requires that the rate shall at all times be made public.

I will not take time on this occasion to relate the history of developments in the use and significance of bank rate and of the short-term money market in Canada. This was covered in some detail in our annual reports for 1955 and 1954. There have been changes in other countries too.

Before the first world war a central bank’s discount rate was chiefly significant in terms of movements of foreign exchange and the maintenance of the gold standard; for awhile in later years changes in central bank’s discount rates, though recognized as instruments of domestic policy, tended to be rather infrequent and to occur only when it was desired to emphasize a major change in the economic outlook. In recent years much more frequent and more flexible use of bank rate has been noticeable, particularly since 1951. In the United States, and by February, 1955 the development of our own money market had reached the point where bank rate could be put into commission as an operating factor rather than merely as a symbol.

The question of timing remains of importance. Unless the central bank is going to tie its rate to some fixed relationship with other rates, Treasury Bill rates, for example, the time a change in bank rate may seem on occasion to lag behind, or alternatively to lead the market. A change in the bank rate in either direction may be followed by further market change in the same direction, though not invariably so. Upward movements are more likely to synchronize closely with market changes than downward ones, and an upward change retains some symbolic significance, arising out of the circumstances which gave rise to it, for it indicates that the central bank feels that the increase in the

Over Fifty years of specialized financial service to Canadian brokers, banks and institutions

Branch Offices located at

363 Dominion Bank Bldg. 360 St. James St. West
TORONTO MONTREAL


LAIDLAW & CO.
Established 1842
25 BROAD STREET, NEW YORK 4, U. S. A.
Members New York Stock Exchange and other leading Exchanges
demand for money at current lev-
els of interest rates is excessive.

Bank Deposits, Loans and
Investments, and Sale of
Governments

A description of the movement
of bank deposits over the past 12
months will provide a good illus-
tration of several points made
above and will lead me into a dis-
cussion of the part played by in-
vestment dealers in the adjust-
ment of demand and supply in the
financial field. Total Canadian
deposits of the chartered banks
(adjusted for changes in “float”)
rose by $150 million in the 12
months ending May 30, 1935. This
was more than accounted for by
a rise of $310 million in personal
savings accounts and of $235 mil-
lion in Government of Canada
balances. All other deposits (ad-
justed for changes in total float),
i.e., the bulk of the “commercial
cash,” fell by $490 million for the
period as a whole, despite the
great rise in bank loans, in gen-
eral economic activity, and in
spending of all kinds.

In the 12 months, bank loans
and non-government investments
rose by $1,500 million, or 20%.

During the early part of this pe-
riod there was in consequence
some expansion of total bank
assets (and therefore of deposits)
but to an increasing extent the
expansion of the chartered bank
loans and non-government invest-
ments had to be financed by the
liquidation of their holdings of
government securities. The one
has been fully matched by the
other for the past six months, and
for the 12 months as a whole the
reduction in chartered bank hold-

ings of government securities
amounted to $295 million. This
was the net result of an increase
of $335 million in Treasury Bill
holdings and a decrease of $1,330
million in holdings of government
bonds.

Accommodating such a huge ad-
justment in the distribution of
government securities (in addition
to the large sale of Canada Sav-
ings Bonds) was quite a challenge
for our financial machinery, and
those who worked together to
make it possible, and particularly
the investment dealers, can take a
considerable measure of satisfac-
tion from the manner in which
the challenge was met.

Distribution of Governments
You may be interested in the
figures, on the bank of prelimi-
nary estimates for the end of May.
It appears that, a part from Can-
da Savings Bonds, $400 million
in government securities was tak-
en by the general public, another
$400 million by government in-
vestment accounts (using money
which originated with the general
public), and about $40 million was
accounted for by net reduction in
the outstanding amount of direct
and guaranteed marketable secu-
rities of the Government of Can-
ada. Only $80 million was added
to the holdings of the central bank;
this was approximately equal to
the increase in active note cir-
culation.

The $440 million taken in one
form or another by the govern-
ment and government accounts
was not provided by running
down government cash balances;
on the contrary these rose by
about $300 million. Not only
you might say that the increase
in Canada Savings Bonds bought
by the general public to the net
amount of $160 million (net of re-
demptions during the period)
provided most of the funds used
in the acquisition of securities by
government accounts; an alter-
native way of looking at it would
be to match off the net increase
in Canada Savings Bonds with

the increase in the government’s
bank balances. On this view, the
funds used to purchase market
securities for government ac-
counts were provided by the gen-

Continued on page 20

OPPORTUNITIES IN CANADA

Our facilities can be of valuable assistance to those interested
in the industrial development of Canada and of benefit to
investors in selecting suitable investments through which to
participate in Canada’s assured growth.

NESBITT, THOMSON AND COMPANY,
Limited

Members of The Investment Dealers’ Association of Canada

Head Office: 355 St. James Street W., Montreal

Branches in the principal Cities of Canada

NESBITT, THOMSON & CO.

Members Montreal Stock Exchange — Toronto Stock Exchange

Canadian Stock Exchange

NESBITT, THOMSON AND COMPANY, INC.

25 Broad Street, New York 4, N. Y.
140 Federal Street, Boston, Massachusetts

Direct wire connections between
New York, Montreal, Toronto, Ottawa, Hamilton, Kitchener,
London (Ont.), Winnipeg, Calgary and Vancouver.

Canadian Securities

Enquiries invited regarding Canadian
Government, Municipal and Corporation Bonds
Preferred and Common Stocks

BANKERS BOND CORPORATION
LIMITED

Business Established 1912

44 KING STREET WEST, TORONTO

KITCHENER LONDON HAMILTON

Members of
The Investment Dealers’ Association of Canada
The Toronto Stock Exchange

DOHERTY ROADHOUSE & CO.

MEMBERS

THE TORONTO STOCK EXCHANGE

THE INVESTMENT DEALERS’ ASSOCIATION OF CANADA

HEAD OFFICE

255 BAY STREET, TORONTO

LOCAL BRANCHES

BLOOR AT BAY ST. CLAIR AT YONGE

BRANCH OFFICES

HALIFAX, N.S. KIRKLAND LAKE, ONTARIO
TIMMINS, ONTARIO NORTH BAY, ONTARIO

Private Wires: New York • Montreal • All Branches

Calgary • Vancouver

Partners

T. H. ROADHOUSE
JAMES W. COCHRANE
CLIFFORD T. LOW
C. B. DIXON
W. H. JACOBS

D’ARCY M. DOHERTY
JOHN M. ROGERS
J. M. WILLIAMS
JOSEPH COLQUHOUN
D. G. BANNERMAN
Continued from page 19

Central and Investment Banking
In Canada

crual in a different form, namely, in part by an excess of government revenues over expenditures, in part by public purchase of government annuities, in part by funds accruing to the Superannuation Fund, and in part by other receipts of the government.

While the net increase in total holdings of government securities by the Bank of Canada was not large, there was a big change in the character of our holdings, chiefly as a result of the retirement of our holdings of $675 milli¬

#### CHARLES H. BURGESS & Co.

**DEALERS IN INVESTMENT SECURITIES**

**SINCE 1909**

Members Toronto Stock Exchange
Incorporated by Royal Charter of the Province of Canada

255 Bay St., Toronto
Branch—Brantford, Ontario

A Copy of our monthly
Investors' Digest
is available on request

WILLS, BICKLE & CO.

MEMBER OF THE TO

THE INVESTMENT EXCHANGE OF CANADA

41 King Street West
Empire 8-3981

Toronto 1

#### ANDERSON & COMPANY

LIMITED

TORONTO

Canadian Government, Municipal and Corporation Securities

A. L. Anderson
A. L. Howard
B. R. Mason
P. B. Crystall

A L. Anderson

Canadian Government, Municipal and Corporation Securities

A. L. Anderson
A. L. Howard
B. R. Mason
P. B. Crystall

#### THE COMMERCIAL and FINANCIAL CHRONICLE

Thursday, June 21, 1956

ARE YOU BUYING
OR SELLING
ANYWHERE IN CANADA?

Visiting U.S. executives are amazed at the speed and extent of Canada's recent economic progress, and the opportunities it provides for further expansion. You are invited to receive the monthly Commercial Letter of The Canadian Bank of Commerce. It supplies up-to-the-minute
cens on Canadian raw materials, finished products, and sales, as well as economic developments—current commercial trends. Your letterhead request will be filled to the letter. Write to our Business Development Division, 25 King Street West, Toronto 1, Canada.

We don't advise speculate securities.

The CANADIAN BANK OF COMMERCE

Head Office—Toronto

New York • San Francisco • Los Angeles
Seattle • Portland, Ore.
Resident Representative—Chicago
and more than 700 Canadian Branches

tions—de¬
its influence gradually and in the most flexible manner, preferably by continuous small adjustments rather than abrupt drastic changes; it must be ready at all times to adapt to actual conditions rather than adhere to preconceived ideas.

One factor which I need hardly emphasize in talking to investment dealers is that effective monetary policy in a free economy would be completely incompatible with rigidity of interest rates. Variations in interest rates, especially those applying on marketable securities, are evidence of changing conditions in the supply and demand for money and credit, and a necessary and desirable consequence of such changes. Fluctuations in the price of money are to be preferred to fluctuations in the price of goods, that is to say, in the cost of living and the costs of production of our economy, and can be an important influence in minimizing unemployment and facilitating healthy growth of the economy as a whole.

Monetary policy as such operates indirectly without specific direct controls. Direct controls whether of fields of credit or of production and distribution, may under some circumstances appear temporarily necessary in the public interest, but monetary policy in the strict sense of the term is within the limits of its effectiveness, the alternative to direct controls. It is an essential instrument of freedom in the economic sphere. Indeed, the whole of our financial structure in this country as it has developed and as it is further developing today is an instrument for the buttressing of economic freedom and the encouragement and development of the highest possible degree of economic and social welfare. All those who are concerned in the overall financial process, all of you here today, are contributing to this objective and share responsibility for the degree of progress that may be from time to time achieved.

Continued from page 6

Long Range Planning for Canadian Oil

for relative efficiency. An increasing reliance of the Canadian economy on petroleum is certain.

Canada occupies an important position in the free world's oil picture. She has great reserves capable of development and this is in a situation on which the Western Hemisphere is becoming increasingly dependent on the Eastern Hemisphere for its petroleum supplies. Canadian petroleum therefore has particular strategic significance. The capital requirements to assure Canada's potential petroleum growth are so enormous that she must take advantage of every monetary source available to her, domestic or foreign. This again calls for long range planning. And I will have more to say about it.

Monetary Depreciation of Income

One of the oil's serious problems, which it shares with industry generally (but feels more acutely than most because of its diversification) is the depreciation of our income.

Depreciation of money has far-reaching repercussions on the pace of economic progress. It is particularly important to oil companies which typically have continuing high capital requirements. Inflation, as well as growing into profits and thus diminishing the principal source of new capital funds, simultaneously reduces the real value of past accumulations intended to cover the renewal of assets. Tax allowances, and corresponding provisions for amortization during the life of capital equipment, pay no regard to the declining value of money. It thus becomes necessary to supplement these with additional provisions from tax profits. These provisions also, however, are subject to a steady decline in their real purchasing power. So-called profits must therefore make good the loss in money values in respect of past investment, as well as providing capital for modernization and expansion.

Consider this gravity of this in relation to the total bill we have to face. It is generally estimated the total bill facing the oil industry in Canada over the next decade is some $8 billion (eight thousand million) of new investment in today's dollars. The construction content of this bill is presently inflating at the rate of one-half of one percent per month. Think of that in terms of long range planning. It brings me to the main and concluding part of my remarks.

With a task of this size facing us surely it is the height of folly to consider any restraint on the free flow of capital from any source? Surely the important thing is the greatest possible use of capital from all sources to create the greatest possible growth in real wealth per capita. We have seen that this means parallel maximum energy consumption. It also means maxi-

Continued on page 22
SAVARD & HART INC.
Members of The Investment Dealers’ Association of Canada

230 Notre Dame St. W.
1203 Phillips Square - 50 Jean Talon West
MONTREAL

SHERRBOOKE — TROIS-RIVIERES — QUEBEC — SOREL

SAVARD & HART

Members: Montreal Stock Exchange
Canadian Stock Exchange
Toronto Stock Exchange

Head Office: 230 Notre Dame St. W., Montreal

Branch Offices:
40 Exchange Place — 65 West 44th St., New York City
11 King Street West, Toronto

QUEBEC — TROIS-RIVIERES — SHERBOOKE — CHICOUTIMI
ST. JOHNS, P. Q. — DRUMMONDVILLE
THEFTOF MINES — MIAMI BEACH

Keystone Fund of Canada, Ltd.
A fully managed Canadian Investment Company seeking long-term CAPITAL GROWTH and certain TAX BENEFITS under Canadian Laws

The Keystone Building
50 Congress Street, Boston, Mass.

Please send the prospectus describing the Keystone Fund of Canada, Ltd.

Name ________________________________

Address ________________________________

City __________________ State ____________

STOCK AND BOND BROKERS

GRAHAM & CO.

Members
Montreal Stock Exchange
Canadian Stock Exchange
Investment Dealers’ Association of Canada

437 St. James St. W. • Montreal

---

Long Range Planning for Canadian Oil

num jobs for Canadians—maximum employment and maximum management.

Shortage of Skilled Help

In looking at a total bill of $8 billion for the oil industry in 10 years and the fields of endeavor in which it will provide opportunities for Canadians, one sees the following picture. A classic division of capital investment by the oil industry is:

Exploration & Production. 75 %
Refining and Chemical. 10.6
Pipe Lines and Maritimes. 6.6
Marketing. 6.2
Other. 1.6

You will see from the foregoing what a preponderant share of the oil industry’s activities is carried out by men and women trained in the applied sciences. And once again we find a sphere where Canada is not planning big enough. The things I have advocated—maximum employment and maximum management for Canadians—are impossible unless Canada produces the necessary numbers of professional personnel—especially people qualified in the applied sciences. At the moment there is no reason to fear that she may not do so. In this government, industry and our educational institutions face a serious responsibility for biggest in long range planning.

I believe government, industry and education will realize the danger before it is too late. I believe that young Canadians—those with the proper guidance from these three—will realize the great opportunities in a career in the applied sciences which they all too far too realize today. If we succeed in this—and surely this must be our aim—how can we limit those opportunities by restricting the flow of capital into our country?

Should Welcome Foreign Capital

Nothing in my view could be more serious for Canada than smallness in planning in this matter of foreign capital. I have tried to show you the magnitude of the energy task facing our nation. But the very magnitude of the vast cycle makes it difficult to see it totally. One tends to concentrate on details of the landscape. And that is just the danger. I feel so strongly about this subject that when I talk about it I want to use terms which will shock my hearers into sitting up and paying more attention than I usually am lucky enough to get. I want to say something like this—that talk of restricting foreign capital is to my mind not merely smallness in planning, but literally "small-town"

Improve Our Tax Laws

Instead of crying about foreign investment in the oil business and let’s face it—foreign investment has been willing to take risks in the past which we Canadians were reluctant to take—we should first put our own house in order. I appeal for no restraint on the investment dollar available for investment from Canada. But I appeal also to our government to remove restraints on our own Canadian investment dollar. It is only recently that a many-year-old deterrent against forming subsidiaries with more than 5% Canadian capital has been recognized by government and seems likely to be removed. Every oilman knows a domestic Canadian company drilling for oil is at a serious disadvantage taxwise against United States company charging its Canadian drilling operations with a United States income. This is because the United States tax treatment of oilfield depletion is substantially more realistic than that prevailing in Canada. And because a far-distant government in the United States allows the cost of foreign exploration for oil to be treated taxwise as though it had occurred at home. That is bigness in tax planning. A simple step by which the Canadian Government can put the Canadian oil company on a par with the United States oil company, and consequently the Canadian investor in oil on a par with the United States investor, is by placing the Canadian tax treatment of depletion on a par with the United States. That would be bigness in planning.

Time does not permit me to go into these tax questions in detail. But I did go into detail at your annual meeting two years ago. I mention it in general today only to explain how thinking Canadian oilmen, who are trying to plan long range, approach this matter of foreign capital. The positive approach is to remove the deterrents on Canadian capital. The negative one—which unfortunately has all too tempted an appeal to prejudice—is to shut the other one out.

Oilmen Are Free Traders

So I am one Canadian (one of many I know) who says—"Welcome" to the dollar that offers to help us develop our country, no matter where that dollar comes from. Rather than say to the foreign investor—"We don’t want you" I would say this. I would say—"Come in and help us develop our country. Then go to your own country and help us sell our goods to your fellow-countrymen. As an investor in us you are vitally interested in our success. Mr. Gelinas, I would say to the foreign investor—"Oilmen are by nature free traders. We put no tariff on your oil coming into our country. In your country work for the removal of the tariff against our oil which you need and in which you are investing.

Threshold of Industrial Development

Canada stands today, I believe, on a threshold of industrial development similar to that of the United States some 50 years ago. Much of that great growth which the United States experienced, certainly in the first half of that era, was financed by foreign, and especially British, capital. I lived as a Britisher in the United States for many years. I never heard that this foreign investment ever led to any foreign domination of the United States. Indeed I never heard that any American ever feared such domination as a result of foreign capital. He was delighted to accept it and to use it in the development of his country. If we will accept capital from all sources to help us develop our country over the great half century that I am sure lies ahead of us, I predict we will be a predominant exporter of capital to other countries by the year 2000. The shoe in fact will be on the other foot. Already we have invested in countries outside Canada about half of the total foreign investment in Canada now. And as our foreign investment increases—as increase it will—I trust that these foreign countries in which we will invest not expect anything similar to the status of which some of my fellow Canadians today exhibit towards others who pay us the compliment of investing in us.
Continued from page 9

Keeping Canada's Air Transport In Forefront

only 10 years ahead and be prac-
tical about it, at this time.

Speed of Sound Commercial Problem

We believe, and I think a great many in the industry feel the same way, that it is going to be a technically difficult problem to push a civil aircraft through MACH 1, the speed of sound.

The technical complications are very serious. I should mention that it is only recently that military aircraft in normal level flight have gone through MACH 1 into the higher speed ranges, and it would seem to us that it is infinitely more complicated to put a commercial vehicle through the sound barrier, without disturbance to passengers, and at the same time, at an economic cost.

Pitfield's Dominion-wide network of wires, reaching the twelve key Canadian financial centers, can give you firmer markets—faster.

W. C. Pitfield & Co., Inc.
20 Broad Street, NEW YORK
H  2-9250
Montreal • Saint John • Ottawa • Toronto • Victoria • Calgary
Halifax • Montreal • Cornwall • Winnipeg • Edmonton • Vancouver

Mr. & Mrs. W. C. Pitfield, Bell, Gourlay & Company, Limited, Montreal; Mr. & Mrs. F. E. Grillo, Greenan & Co. Inc., Montreal; Mr. & Mrs. Joseph Pope, Byrne Bros. & Denton, Limited, Toronto
Mr. & Mrs. Stanley Nixon, Dominion Securities Corp. Ltd., Montreal; Mr. & Mrs. D. H. Ward, Dominion Securities Corp. Ltd., Toronto

Intercity Securities Corporation Limited

Members The Investment Dealers' Association of Canada

Telephone EMpire 3-5301

Walter F. Wilson
Arnold O. Paxton
Edmond J. McDonnell
Nevin R. Adams

335 BAY STREET
TORONTO, 1, CANADA

INTENSITY SAVINGS Corp.

N. L. MACNAMES & COMPANY

LIMITED

Members of the Investment Dealers' Association of Canada

13 Melinda Street, Toronto 1

Empleyes 3-5313

Telephone Jackson 7-6056

INVESTMENT TYPE BONDS & SHARES

J. R. Meggeson & Co.

LIMITED

ROYAL BANK BUILDING
TORONTO

ESTABLISHED 1921

MEMBERS: THE INVESTMENT DEALERS' ASSOCIATION OF CANADA
Continued from page 23

Keeping Canada’s Air Transport In Forefront

and techniques. It is reasonable to forecast that due to these advances in the engineering of aircraft, plus an additional 1.5 million line miles flown on mineral and oil exploration, we can double the number of these surveys in Canada.

Canadian registered aircraft point, since 1962, are operating approximately operating on aerial survey work three million square miles of Canada, in countries all over the world.

Green Bay Mining & Exploration Limited

Report available on request.

DE PONTET & CO., INC.

Members New York Stock Exchange

“Year Broke of Home and Abroad”

40 WALL STREET, NEW YORK 5

Tel: Dibby 4-1440 Tel.: NY 326

7, Avenue George V, Paris, France Palais St. James, Montre Carlo, Monaco

1, rue de la Cite, Genrev, Switzerland Hotel Carlton, Cannes, France

McDOUGALL & CHRISTMAS

Members:

Montreal Stock Exchange

Canadian Stock Exchange

The Investment Dealers’ Association of Canada

529 St. Francois Xavier Street

Montreal

Tel. HA 3261

Branches: 14 Metcalfe Street, OTTAWA, Ont.

Tel. CEntra1 8-7121

Of course, we have all read about the DBW and Mid-Canada Airlifts. These now absorb the attention of many civil carriers and probably will continue to do so for years to come. As of January 1956, some 42,000 tons had been moved by air on the DBW-line alone. The wealth of experience gained in the operation and maintenance of multi-engined aircraft under severe Arctic conditions has been of inestimable value to our civil carriers and to this country.

We can see nothing but an extremely bright future for the development of civil aviation on our Northern areas.

Mainline Activities

In discussing mainline developments, it is a little easier to define the future. Here we have a record of what has happened, which is statistically sound, and we have forecasts of the next 10 years of our thinking on what will happen. Taking Toronto as an example and dealing only with our own company statistics for the moment: At that point, in 1956 we believe we will process approximately 800,000 passengers and by “process,” I mean earmark and deplane. In 1965, we anticipate that 1,700,000 passengers will be processed — a growth of about 112.5. These figures do not include “through” passengers. I think you will recognize that the future offers quite a challenge in the planned development of air transportation in Canada.

At the risk of bringing to your attention things that might happen on mainline services in Canada, I would like to make the following observations:

Improvements Will Have to Be Made

New runways will have to be built, and at some airports, present runways will have to be increased in size. In some cases at the larger airports, existing runways will need considerably strengthening to bear the weight of the new and heavier aircraft types and, in other cases, new airports will have to be built in their entirety.

The problem of congestion at airports is becoming increasingly acute. Measures must be taken for the creation of satellites which will permit the segregation of military and lighter aircraft in the growing volume of civil aviation operations.

New and larger terminal facilities must be provided at the majority of Canadian airports. These should include adequate accommodation for the handling of passengers, mail and cargo as well as for ground transportation.

The past ten years have shown a rapid development in the technical and medical developments over land, sea, and in the vicinity of airports. It is expected that this trend will continue, and it would seem that advantage will have to be taken of these technological improvements which translate themselves into improved regularities, safety, and further freedom from dependence upon the weather.

It can be forecast that the current program of replacement of the existing Canadian system of medium-frequency of radio ranges will be carried to its logical conclusion, and that installations of navigational aids in the vicinity of airports will be greatly improved and augmented.

Automatic approach aids should be installed to make it possible for civil aircraft to operate safely under far worse conditions of cloud and visibility than is now possible. The effect of this development on flight regularity naturally should be marked.

Airborne radar will continue its spectacular development with respect to storm surveillance and navigational systems, as well as flight control of the aircraft itself.

As in the past, it can be expected that the most dramatic progress in technological improvements will be made in aircraft design and construction. We are already seeing these improvements, at least on paper.

From the inception of aviation until April 1, 1955, all civil aircraft on this continent were powered by one form or another of the piston-gasoline engine. On that date, the turbo-propriely-powered aircraft came into scheduled use in North America. It is safe to predict this type of power will rapidly replace the piston-type engine over many routes during the next 10 years.

Full Jet by 1965

As I mentioned previously, it is safe to forecast that the full jet engine will come into extensive use on the longer national routes during the next 10 years.

The use of rotary-winged aircraft in mainline operations is difficult to predict at the present time. Although important advances have been made in helicopter design, an aircraft capable of operating economically and with an adequate margin of safety for civil use, has not emerged.

Serious consideration also must be given to the development of an
entirely new type of vertical-thrust aircraft, and recently those of you who read “Time” magazine will have noticed some discussion of this matter.

The nature of aircraft which will transport freight in the future is also a matter of intensive study. Whether cargo and mail are more economically carried as part of the payload on a passenger aircraft, or in aircraft either designed or modified for that specific purpose, depends upon the relationship of the volume of cargo traffic and passenger traffic on any specific route.

At the present time, with a few exceptions all-cargo aircraft in current use are adaptations of basic passenger aircraft, and it is not unlikely this condition will continue for some time to come.

Consumer Rate, Labor and Tariff Unit Costs

With respect to the cost of air transportation—a very important item to all those present—we anticipate the price of labor will continue to rise.

On the other hand, it is hoped and expected that other costs will decrease.

We are aware of the fact that capital outlay per installed aircraft seat will rise, but it would depend upon the cost per seat mile or per available ton-mile, to decrease slightly as aircraft speeds increase, providing the rise in labor costs does not offset the effect of the increased speed.

Weighing the factors which would seem to affect future cost trends, it would seem reasonable to forecast a downward tendency in both the direct and indirect cost per unit of air transportation provided. This being so, it would also be reasonable to forecast that the cost to the consumer of air services should decrease over the next 10 years.

International Operations

In briefly mentioning international operations, Canadian carriers now serve South America, Mexico, West Indies, Bermuda, the United Kingdom, France, Germany and Holland.

As well, a Canadian carrier serves Australia, New Zealand, Hong Kong, and in addition, Hong Kong and Japan.

In the next 10 years, it seems to me there will be further expansion of Canadian international services, but, of course extension depends to a great extent on arrangements made between governments.

International air routes require what is called a “bilateral” agreement to be negotiated between governments, and these are usually settled on a quid pro quo basis.

Insofar as international negotiations are concerned, Canada is particularly well situated, geographically speaking. By flying the polar or sub-polar routes, the foreign carrier is able to shorten distances between points in different countries—but agreement is required if these aircraft fly over Canada and land, for other than refuelling purposes.

Today, a fair number of carriers are considering such a route, or routes. My point is: if this trend continues—and there is reason to believe it will—this nation will be, and in fact is now, in a sound bargaining position insofar as international routes are concerned.

In passing, I would like to make reference to the International Air Transport Association, of which most of you will have heard.

This is a very wide-spread organization with headquarters, incidentally, in Montreal, and is an association of all the major international carriers.

As a result of the activities of this association, and with the cooperation of the airlines, it is now possible to ship air between all the principal cities of the world, and to transport passengers by air between the principal cities of the world, on a standard waybill or ticket at rates usually determined combinations of fares.

The association is not a rate-making group, however—it is a rate-agreeing group, but all governments of the member carriers must approve resolutions agreed at any general meeting of IATA prior to their becoming effective.

At the present time, there is quite a substantial move afoot to Continued on page 26

Underwriters and Distributors

Quebec Municipal, Religious and Corporate Securities

RENE T. LECLERC
Incorporated
132 St. James Street West
MONTREAL
Continued from page 25

Keeping Canada's Air Transport In Forefront

introduce a third type or class of carriage of persons on the North Atlantic Services, which will undoubtedly—if approved—be provided on other international routes. The way things are shaping up makes it seem that within the next few years we can look forward to a three-class type of service: First-class Second-class Tourist-class I would forecast that the rates for Tourist-class service on the North Atlantic segments will be competitive, as far as initial dollar outlay is concerned, with Tourist rates provided by shipping companies. This, if it comes about, means a large expansion of the market for air transportation on the international routes, such as I have mentioned. It means that possibly for anything from $175 to $550 one-way a passenger will be transported by air to Europe in a matter of 10 to 12 hours, and probably a good deal faster than that in the years 1960 to 1965. On the basis of the topic assigned me, I have attempted to give you some idea of the outlook in the next 10 years, sketchy as it may seem. Impact Upon Canadian Commerce But what does all this mean to Canadian commerce? How are we and our business affected? How does it concern our planning for the future? I don't think any of us should sit idly by and not take into consideration the progress which will be made in air transportation in Canada in the next 10 years, not to speak of the international routes. Can we, as businessmen, neglect the following estimates, for instance, with regard to the speed of the movement of people and goods between the cities named, which I feel are practical and foreseeable by the years 1960 to 1965? For example, we forecast the elapsed flying time between Toronto and London, England will be 6 hours 45 minutes by 1965. Toronto and Halifax will be 2 hours 5 minutes by 1962. Winnipeg and Toronto will be 1 hours 10 minutes; Toronto to Vancouver will be 4 hours 45 minutes; and Vancouver to Newfoundland will be 7 hours 45 minutes, allowing 1 hour for connections. As an example of what this means, it would seem quite within reason to forecast (dependent on actual schedules) that an Eastern businessman could go to the West Coast, do a few hours' business and return to Toronto, say, to sleep in his own bed that same night. It is quite within reason to expect that, providing the means of communication are available to his shop and that warehousing, shipping arrangements, etc., are geared accordingly, a customer in a shop in Vancouver could receive his order from an Eastern manufacturer within 12 hours of having placed it. Truly, the development of the jet age which is now upon us will play a most important part in the future development of this country. Some people say "Why do we need to go any faster than we do today? Why is it necessary, or desirable, to fly from Toronto to Vancouver in 4½ hours? When we think of the impact of closer communication between the various parts of this country, and the better understanding that results as a by-product of that closer communication — I think we can quite rightly say that the higher speeds forecast can have only a beneficial effect on the knitting together of this nation, and from the international viewpoint, the creation of a better understanding between all people.
that is being developed in the United States. These projects are far more than fascinating examples of technical progress. The fundamental fact is that only through high-speed automatic switching and microwave radio relay or its equivalent can we handle efficiently the rising volume of long distance calls. They are the product of telephone operations on a national—indeed a continental—scale. Work of similar scope has been undertaken in the service of the national defense.

Mid Canada Early Warning Line

The Trans Canada Telephone System was appointed management contractor for the Mid Canada early warning line; our company is acting as the project agent. Stretching across the country westward from the Labrador coast, the Mid Canada line is part of the great network of radio stations and communications systems that has been developed jointly by Canada and the United States. Hundreds of telephone engineers and skilled craftsmen are presently employed on the undertaking in cooperation with representatives of other Canadian industries. They are working under rugged conditions—far from roads and railheads—where all supplies must be delivered by plane and helicopter, or by land craft on stony beaches, or by tractor trains driving across the frozen wastes. That we have been able to set up the vast technical and administrative organization required for this undertaking without disruption of our regular service commitments, is, I think, an important commentary on the resources and abilities of the Canadian telephone industry.

There are a number of different ways of viewing telephone development. I have mentioned some of them—the increase in customers and calls, the addition of equipment to meet demand for service, the geographical expansion of our activities both through work in national defense and by the provision of communications for distant mining settlements or farming areas. I would like now to tell you something about what I might call development through diversity. It follows from our awareness of the very many types of information that telephone facilities are designed to transmit, microwave radio relay carries television programs. Printed messages are sent by teletype over Canadian networks. Many of you will be familiar with this service in your own offices. Other special services include the transmission of news photographs and radio programming material and instructions needed to control electric power grids and oil pipelines, blueprints and diagrams, coded data for processing by electronic computers. Tele¬phone service is available in many parts of the country at both to vehicles and shipping. My own company, for example, operates mobile telephone service across the most populous and industrialized sector of Canada—from Windsor to Quebec City. The Northwest Telephone Company provides telephone service by radio up the B. C. coast to over 1,500 tugs and fishing boats.

Mechanization

These are some features of the 1969 telephone picture—as it appears to the public. I would ask you now to accompany me on a brief visit behind the scenes—to see what is being done technically in order to consolidate these advances and prepare for new ones. The first broad trend of development is ever-greater mechanization. The word "mechanization" is pretty controversial in many quarters, but it's an old standby in the telephone industry, in fact our long-tried aid in meeting decided for service.

Thirty years and more ago we began to mechanize local telephone service—that is, to convert it to dial—primarily because we couldn't provide enough service in any other way. Today we are converting long distance dial service to dial — with Direct Distance Dialing. And we are of course still pursuing a vigorous program of local mechanization. Today over 70% of all Canadian telephones are dial-operated. One important development along these lines is the rapid spread of unattended dial offices. In small communities—and certain suburban areas—we are installing dial offices which operate without any permanent attendance. Plant men make scheduled visits for maintenance. In larger cities calling assistance are switched automatically to an operator at central location. The service is efficient and economical to operate.

But it has one drawback—a drawback common to all processes of mechanization. It does lessen the occasions for personal contact. In this case between telephone employees and our customers. We have learned over the years how much people expect and appreciate friendly, helpful service from their telephone company. Such treatment is an important, even though an intangible part of the quality of service. We are doing all we can to maintain the tradition in changing circumstances.

And this calls above all for awareness, for mechanization an aid to better service and never an end in itself. We have needed, as I mentioned, equipment of great complexity to provide efficient service. This has been created through a tremendous effort of scientific development. Not only of applied science but of what I might call research in depth.

It is not just a question of adapting known materials and proven scientific facts to our daily operations. The telephone scientists must hunt out materials and scientific data to be useful not only in the immediate but in the quite distant future. Pure research and practical technology are both essential.

Solid State Physics

In the past decade solid state physics has provided our most profitable area of research. Telephone scientists began to seek knowledge here before the first world war, and their research yielded over the years a number of helpful devices. But their most recent discoveries constitute a

Collier Norris & Quinlan

MEMBERS

MONTREAL STOCK EXCHANGE

CANADIAN STOCK EXCHANGE

Collier Norris & Quinlan Limited

The Investment Dealers' Association of Canada

Montréal

Toronto

Drinkwater Weir & Co. Limited

Investment Securities

Members of

The Investment Dealers' Association of Canada

233 Notre-Dame Street West • Montreal • Harbour 6161

Oswald & Drinkwater

Members

Montreal Stock Exchange

Canadian Stock Exchange

The Toronto Stock Exchange

233 Notre-Dame Street West • Montreal • Harbour 6161
Canadian Telecommunications

Today, Tomorrow

veritable treasure house; they include the transistor and the Bell solar battery. Developed primarily for the telephone industry, these devices have application wherever electricity is put to the service of man—from the most compact hearing aids to immense electronic calculators.

The transistor, discovered in 1948, was the breakthrough. Here is one of the latest varieties of transistor, and here is an enlarged model. Most transistors are made of germanium, a semi-conductor of electricity. While normally resistant to the flow of electricity, germanium can be made to conduct electric currents effectively when treated in a certain way. It is a by-product of lead and zinc refining, but has to go through an extremely detailed process of purification. With a measurable impurity of one part in ten billion, germanium has been described as "the purest substance ever achieved by man."

What will the transistor do? Regard it first in relation to the vacuum tube. A transistor will do most of the work done by a vacuum tube. Say a tube of this size. It will amplify electric power, control it as a valve would or act as an electronic switch. There are still, of course, new developments in the gas-tube field. For example, this compact vacuum tube which is the work horse of the microwave radio relay system, it will amplify up to 480 telephone conversations at the same time. But the latest transistor will amplify 2,500 conversations on a single telephone line.

The small size, the compactness is one quality of the transistor immediately apparent. And other components of transistorized telephone equipment can be similarly reduced in size, affording important savings in space and raw materials. This is a complete ten-stage transistor-oscillator assembly. Here is the piece of equipment it can replace.

Also the transistor is solid, and this makes it remarkably rugged. We expect it to have far longer life than the average vacuum tube. It needs no warm-up period but goes to work almost instantaneously. You will recall it takes several seconds to warm up the tubes of a regular radio receiver.

Another advantage is the low power requirements. Almost one one-thousandth of a vacuum tube's. This is another kind of transistor oscillator prepared for demonstration purposes. Plug in the power and it will sing at you, even if only on a single note. A battery is needed, but the power supply required to operate the transistor is so minute that with just a coin as a back of dump paper we should be able to construct an adequate wet-cell battery. Perhaps I can test my credit at the same time; would you please lend me a nickel and let me see what effect it has on it. The slight chemical reaction between the ink and the metal coin produces our current. Now I'll connect the oscillator.

The transistor has made possible a telephone set you can carry around in your pocket—shaped just as you want it. I haven't got one in my pocket—not yet, and I hope that I never shall but I have here a related device—a complete radio transmitter, with microphone and antenna. I'm going to switch off the public address system and broadcast to you over transistor station VELLU. This is a transistor-operated radio transmitter. It contains a power supply adequate for several months' round the clock broadcasting.

The transistor is already doing a number of telephone sets for the hard of hearing, and we are experimenting with sets in which musical tones operated by transistors take the place of the familiar bell—at a considerable saving in electric current. It takes much more electric current to ring your telephone bell than it does to carry the conversational.

Bell Solar Battery

I mentioned other solid-state discoveries. Perhaps the one with the greatest appeal to the imagination is the Bell Solar Battery. It can convert energy from the sun directly and efficiently into usable amounts of electricity. The solar battery attains an 11% efficiency which compares favorably with steam or gasoline engines. It has no moving parts; nothing is either consumed or destroyed by its operation, and in theory it will last indefinitely.

However, I trust you will not get the impression that we have here the answer to the world's power problems. For in the communications industry we're interested above all in the availability and ready source of energy—rather than the amount. It requires only a fraction of a watt to energize a modern telephone, and a solar battery easily provides this. Now here is a solar battery that consists of three small pieces of specially treated silicon. Each is about the size of a quarter. I will connect the solar battery with this telephone set; the telephone is also connected with the public address system. The solar battery is naturally sensitive to any kind of light. Even the light from a match. That was a rather more explosive sound than you'd expect from striking a match.

I have a light on my lectern here. Let's see what effect it has on the solar battery. The noise you now hear is created by the 60-cycle alternating current that powers the light. To imitate the sun efficiently we must have a direct current light source, and so I'll put this battery-operated spotlight to work. The telephone over which I am now speaking is quite dead. But when I place the solar battery in the path of our substitute sun you should hear me quite distinctly. The Bell solar battery is converting the light into electrical energy which in turn is operating my telephone.

I remove the battery from the light—and I have to rely on my own unaided voice. Put it back, and I can talk to you over the telephone—powered by the solar battery. Last year saw the first practical application of the solar battery in the telephone industry. Down in Georgia a battery with 432 discs supplied power for amplifier stations in the transmitting rural telephone system I spoke of earlier. And I would mention that the usefulness of the solar battery is not limited to the telephone. It can be used in a hundred and a thousand ways, in the industry, in the home, and it has great potential.
producers can be stored in batteries for night-time use. And now, you may well ask, where do we go from here—in what we in the telephone industry, among others, rather loosely call the electronic era?

Well, in 1958 the Bell System is going to test its first electronic office. Even in the modern telephone exchange, switching is still an electro-mechanical operation, however rapid. With the use of transistors and the various other miniature devices for storing information and making connections, the completely electronic exchange begins to take shape. So little electric energy is required to transmit telephone communications that the tiny silicon devices can handle vast quantities of traffic.

There will be no mechanical movement, just the ultra-rapid journeying of electric current through thousands of tiny, fantastically sensitive components. We may have to wait quite a time before the electronic office becomes standard equipment, but I have no doubt it will be one day—briefly—though a little slower in development and operating costs.

Capital Investment Required

But, all of this, as you well know, requires a high level of capital investment. Growth must be financed principally from outside the business and for more than a quarter of the common stock financing in this country. From year to year this proportion has varied considerably—in two of these 10 postwar years our equity financing accounted for nearly 70% of all such financing in Canada. And I would like to emphasize how much the telephone company's directors have appreciated the helpfulness and goodwill manifested by your profession. But surely in return we have done something to expand in no small measure the volume of your operations. If that be true, I am sure you will welcome our calling upon your good offices frequently in the future.

The total telephone plant, that is to say, the plant and equipment of the telephone industry is now in the order of $1,500,000,000. Because of the vast distances that have to be traversed and the rapid postwar growth, investment per telephone is higher in Canada than in the United States. At present the industry is spending more than $200,000,000 annually on new construction. In the brief that I was privileged to present to the Gordon Commission on behalf of the Canadian Telephone System, Continued from page 3

**Significant Canadian Economic Developments**

be more sensitive to changes in business conditions. In line with this trend, the risks of the responsibilities of the Bank of Canada, the larger money policy problems being followed should be viewed as a form of "brake" in the economy designed to prevent it from being over-accelerated.

In regard to the broader aspects of monetary policy, I say that other economic and technical developments have clearly demonstrated the necessity of building into our free enterprise economies certain checks and balances in order that progress may be achieved in orderly fashion. The evils of both inflation and deflation are all too well known, at least to those of us who experienced the great depression of the 1930's which shook the entire world, swept away savings and employment, slowed economic progress to a snail's pace and fanned the flames of the ensuing terrible world configuration.

As I have said on several other occasions, I believe that soundly administered monetary controls will help to contain the business cycle within more narrow limits than in the past and reduce the tendency towards booms and recessions. Our experience in the application of checks and balances has been actually rather limited—much is still to be learned. I believe it is sound that our monetary authorities should resist the forces of severe inflation for many reasons, not the least of which, is the fact that it discourages saving. Canada is a growing country requiring a vast amount of capital for its development. Much of this capital must come from the savings of the Canadian people and the conversion of these savings into capital is one of the principal functions of our industry.

**Volume of Financing**

Turning to the matter of the volume of financing, I may say that the year 1955 was an extremely active one, although the total volume of public bond financing for the year, aggregating $2,670,000,000, was down sharply from the 1954 total of $4,500,000,000. The smaller amount in 1955 was principally the result of lighter Government of Canada financing, which amounted to $1,354,000,000 in 1955, compared to $3,200,000,000 in 1954. Total Canadian public bond financing during the first four months of the current year amounted to $700,000,000 which compares $900,000,000 in the same period of 1955. The increase this year was entirely due to a marked rise in volume of issues placed on the market by corporations. Corporate issues totalled $422,000,000 in the first four months of the year compared to $234,000,000 last year. Provincial financing dropped from $196,000,000 to $141,000,000 and municipal financing declined from $130,000,000 to $107,000,000.

Of the total volume of public bond financing the first four months (amounting to $760 million) issues placed in Canada totalled $458,000,000 and those placed in the United States to $212,000,000. In the same period last year out of the somewhat smaller total (of $560 million) sales in Canada amounted to $405,000,000 and those in the United States to $65 million.

At this point I should like to refer briefly to growth of our Treasury Bill Market. It is gratifying to note that the size of our market has increased from $100,000,000 in 1948 to $500,000,000 in 1956. And we now have a very liquid market in bonds of all maturities with a value of over $1,000,000,000 in our hands. We are sure that you will welcome our efforts to further improve the market and this is a contribution to the development of the markets in the bonds of the individual Canadian companies.
Significant Canadian Economic Developments

Continued from page 29

In Attendance at I.D.A.C. Convention

HILLS, H. H.
Royal Securities Corp., Ltd., Halifax
HOCKIN, T. M.*
Isard, Robertson & Co., Ltd., London
HOWARD, G. B.*
F. J. Brennan & Co., Ltd., Charlottetown
HORSEMAN, W. C.*
Public Relations C. P. R., Saint John
HUDSON, G. L.*
Morgan, Ostiguy & Hudson Ltd., Montreal
HUGHES, J. R.*
Royal Securities Co., Ltd., Montreal
JENNINGS, J. A.*
Harrison & Company Ltd., St. Thomas
JONES, R. M.*
Eastern Securities Co. Ltd., Charlottetown
KINGSMILL, J. A.
Investment Dealers’ Association, Toronto
KINNEAR, E. F. C.*
W. C. Pitfield & Co., Ltd., Montreal
KIPPEN, E. D. B.
Kippin & Co. Inc., Montreal
KIPPEN, W. BRUCE
Kippin & Co. Inc., Montreal
KNOWLES, J. H.*
Ross, Knowles & Co. Ltd., Toronto
LANG, A. G.*
Merrill Lynch, Pierce, Fenner & Beane, Toronto
LAWTIER, J. L.*
A. F.Francis & Co. Ltd., Hamilton
LEE, H. T. I.*
Dominion Securities Corp., Ltd., Toronto
LEFARTE, L. P.*
La Corporation de Prets de Quebec, Quebec
LIPST, E. C.
A. E. Amos & Co. Ltd., Toronto
LOVE, GORDON & CO.
Seagrams, Saint John
MACKAY, D. C.*
W. C. Pitfield & Co. Ltd., Saint John
MACKEN, D. W.*
Royal Securities Corp. Ltd., Montreal
MACKEN, ROLF
Greenfield & Co. Inc., Montreal
MCLAHEN, D. L.*
Lieutenant-Governor Province of New Brunswick, Saint John

*Denotes Mr. & Mrs.

MacLEAN, C. W.*
Gaidner & Co. Ltd., Toronto
MacMURRAY, J. A.*
Eastern Securities Co. Ltd., Saint John
McIVER, M.*
W. C. Pitfield & Co. Ltd., Vancouver
McCARTY, D. A.
Mills, Spence & Co. Limited, Montreal
McKELD, N. D.*
G. E. Leslie & Co., Sydney
McKewan, A. D.
Eastern Securities Co. Ltd., Toronto
McKELVIE, CHARLES*
James Richardson & Son, Winnipeg
McKINNON, N. K.*
Harris & Partners Limited, Toronto
McQUEEN, R. A.*
Eastern Securities Corp. Ltd., Montreal
MADLEY, J.*
Merrill Lynch, Pierce, Fenner & Beane, Toronto
MARTIN, A. A.*
Royal Securities Corp., Montreal
MEIKLE, W. D.
Cochran, Murray & Co. Limited, Kitchener
MICHIE, E.
Bell Telephone Company of Canada, Montreal
MILES, E. S.*
Burns Bros. & Denton Limited, Toronto
MILLS, JOHN
Mills, Spence & Co. Limited, Toronto
MILLS, C. A.*
Bankers Bond Corp. Limited, Toronto
MORTON, J. N.
Molson Securities Ltd., Montreal
MURDOCK, G. E.*
Belanger Inc., Montreal
MURPHY, H.*
MYLES, P. B.
Geneva & Co. Limited, Montreal
NEVILLE, E.*
Dominion Securities Corp., Limited, Montreal
NEWMAN, S.*
Dominion Securities Corp., Ltd., Montreal
OBORNE, J.
Neshitt, Thomson and Co. Ltd., Toronto
OUDIN, R.*
Dawson, Hannaford Limited, Montreal

G. E. LESLIE & CO.
Business Established 1900

Members:
• Montreal Stock Exchange
• Toronto Stock Exchange
• The Investment Dealers’ Association of Canada

Branches:
• Montreal Office
• Toronto Office

Private wire system to Branches, Toronto and New York

The Royal Bank Building, Montreal
Telephone: Halbour 8231

Government, Municipal, Corporate Bonds, and Stocks

GRENIER, RUEL & CO. INC.
Investment Dealers
71 St. Peter Street, Quebec City, P. Q.

Eastern Securities Company
Limited
Est. 1910

Government, Municipal and Corporation
Securities

MEMBERS
OF
THE
INVESTMENT
DEALERS’
ASSOCIATION
OF
CANADA

Offices:
Montreal, N. B.
Office, 220, 2nd Avenue, E.

Thomson, N. B.

C.""
R. C. Bertram, McCusig Brothers & Co. Ltd., Montreal; E. S. Miles, Burns Bros. & Denton, Ltd., Toronto; Jim Edwards, Matthews & Company, Toronto; John Winslow, Winslow & Winslow Ltd., Woodstock, N. B.

PATTERSON, C. S.
Bell Telephone Company of Canada, Montreal

PATTERSON, HON. D. S.*
W. C. Pitfield & Company Ltd., Saint John

PENNY, J.
Royal Securities Corp., Limited, Toronto

PEPALL, W. G.*
Bell, Goulstone & Company, Ltd., Montreal

PERGOLE, D. A.*
Galloway & Company Limited, Toronto

PHIPPS, S. R.*
James Richardson & Sons, Toronto

PFEIFFER, W. C.*
W. C. Pitfield & Company Co., New York

POPE, J.
A. E. Ames & Company Limited, Montreal

PITFIELD, W. C.
W. C. Pitfield & Company Co., Inc., Montreal

PRICE, W. H. Jr.
Ceder, Hammond & Nanton Limited, Toronto

PURDY, C. E. M.*
Stansbury & Company Limited, Saint John

RATCLIFFE, T. A.*
Harrison & Company Ltd., Toronto

RAYWORTH, L. M.
Nesbitt, Thomson and Co., Ltd., Moncton

READ, W. F.*
W. C. Pitfield & Company Limited, Moncton

*Donates Mr. & Mrs.

REEVES, Miss Fern
"Court Reporter," Montreal

RIDDLE, FORBES
"The Canadian Press," Toronto

RILEY, C. J.*
F. J. Brennan & Co. Ltd., Moncton

ROBB, E. K.*
Eastern Securities Company Ltd., Fredericton

ROBICHON, PAUL*
Savard & Hart Inc., Montreal

ROBINSON, ROGER
C. P. W. Photographer, Montréal

ROBINSON, J. M.*
W. C. Pitfield & Company Ltd., Halifax

ROBTAILE, S. H.*
LaJoie, Robtaille & Co. Ltd., Moncton

ROGERS, J. C.*
H. C. Flood & Co. Ltd., Montreal

ROSE, F. N.*
Dow Jones & Co., New York

ROSS, DONALD
Wood, Gundy & Company Limited, Toronto

ROSS, G. A.*
Collier, Norris & Quinlan Ltd., Montreal

ROSS, G. W. W.*
Royal Securities Corp. Ltd., Saint John

ROVAN-LEGG, S.
Stansbury & Company Limited, Halifax

RUSSELL, F. H.*
Nesbitt, Thomson and Co., Ltd., Vancouver

RYLEY, G. G.
Midland Securities Corp. Ltd., Montreal

SAMPSON, S.
A. M. Kidder & Co., Montreal

SEYMOUR, H. F.*
Greenhills & Co. Inc., Montreal

SHENFIL, J. B.
Gardiner, Annett Limited, Montreal

SKELLY, D. A.*
A. M. Kidder & Co., Montreal

SMITH, H. D.
"The Telegram," Toronto

SOPER, W. Y.*
W. C. Pitfield & Company Ltd., Halifax

STANBURY, W.
W. C. Pitfield & Company Ltd., Toronto

STEINER, R. N.*
A. E. Ames & Co. Limited, Toronto

STEFHENS, C. G.*
James Hardies & Sons, Toronto

STEVENSON, R. H.
A. E. Ames & Co. Limited, Montreal

STEWART, G. C.*
Royal Securities Corp. Limited, Toronto

SWANSON, A.*
Burns Bros. & Denton Limited, Montreal

SWINDELL, G. S.*
Wood, Gundy & Company Limited, Winnipeg

TAPRELL, W. R.
Carlisle & McCarthy Ltd., Calgary

TAYLOR, G. H.

THOMPSON, C. R.
Nesbitt, Thomson and Co., Ltd., Halifax

TREEuell, FRANK
Greenhills & Co. Inc., Toronto

TRIGGER, R.*
"Investment Dealers Digest," New York

VIDRICARE, H. J.
James Hardies & Sons, Montreal

WADDS, R. W.*
McCreed, Young, Weir & Co. Ltd., Toronto

WALKER, T. F. B.*
B. A. Daly & Company Limited, Toronto

WARD, D. H.*
Dominion Securities Corp. Ltd., Toronto

WATT, CLYDE
Wood, Gundy & Company Limited, Saint John

WATT, G.*
Gardiner & Company Limited, Toronto

WEBB, A. H.*
Credit Interprovincial Limited, Montreal

WEBB, D. L.*
J. H. Crang & Co., Toronto

WELLS, F. H.*
W. C. Pitfield & Company Limited, Halifax

WEST, E. B.*
A. E. Ames & Co. Limited, Toronto

WHITE, W. Y.
G. E. Leslie & Co., Halifax

WHITTEN, F.*
C. J. Hodgson & Co. Ltd., Montreal

WILDER, W. P.
Wood, Gundy & Company Limited, Toronto

WINSLOW, J. E. C.*
Winslow & Window Ltd., Woodstock, N. B.

WOOD, J. M. DUFF
Fry & Company Limited, Toronto

WRIGHT, E. J.*
Geoffrion, Robert & Gelinas Inc., Montreal

WRIGHT, R. K.*
Mills, Spence & Co. Limited, Toronto

WYNCH, A.
"Toronto Daily Star," Toronto

YOUNG, N. D.*
Dominion Securities Corp., Ltd., Toronto

SHARING CANADA’S GROWTH

Montreal Stock Exchange

Canadian Stock Exchange

Canada’s "Industrial" market place since 1874
for the shares of major Canadian and U. S. corporations.

One of Canada's leading exchanges for the trading of mining, oil and industrial securities.

Canada's Security Market Places

The 100 member firms with 425 offices throughout the world serve the investor and assure prompt execution of orders.

W.H. WHITE LTD.
FREE BOOKLET AND MONTHLY REVIEW

453 ST. FRANCOIS XAVIER ST. MONTREAL, QUE.