Of Town, Fraser and Neutrons  

Editors are invertebrate envelope-openers. Most of the ones we know will instantly drop what they're doing to investigate the mail, partly because editors don't like work, partly because the mail might contain a cheque, a manuscript or a letter. All of which is a sneaky way of leading up to some letters we've received lately. Quite a few readers enjoyed the October cover and interview with Harold Town, but at least one man was not impressed. Says he'll be glad when we're "out of Town." (Get it?)

The matter of Simon Fraser's grave (October Review in Review) is open to debate, too. Mrs. A. M. Grant of London, Ont., reports seeing Fraser's grave in St. Andrew's cemetery near Cornwall. Not so, says our original informant, Gordon Skilling, editor of Canadian Oil and Gas Industries: Simon Fraser is restlessly at rest in St. Anne de Bellevue, Skilling even produced a photograph of the grave. Mrs. Grant promptly produced two historical references which say Fraser, the explorer, is buried at St. Andrew's. Perhaps, says Mrs. Grant, St. Anne de Bellevue has the wrong Fraser?

Speaking of wrong explorers, David Thompson didn't name Lake Kinbasket in B.C., as reported in our August article on the Big Bend highway. Reader John L. McDougall of Queen's University tells us that Walter Moberly, a surveyor for what later became the Canadian Pacific Railway, named Kinbasket after an Indian chief.

Another correction: Quebec reader Jean-Claude Samson points out that helium (October Review) has two protons and normally two neutrons (not one of each, as we said). We're embarrassed, and so is the physics professor the editor failed to check the article! Incidentally, J. S. Engel of Hays, Alta., can't understand why shipping helium is such a problem. Why not hook tanks of helium to balloons and tether the latter to a ship? Helium then would, he suggests, "transport itself with no extra baggage and no extra space." Well... why not? One last word about the mailboxes: we keep getting letters with exotic postmarks from Jean Dauda, author of the Winnipeg story (page 14). She's on a six-months' trip around the world and, about now, should be in Tel Aviv, Winnipeg, Tehran;... Oh for the idyllic life of a writer!

Sentimental in a three button suit  

When freelance art director John Richmond devises visual layouts for nostalgic articles like The Penant (page 11) or The Day I Spoke for Mister Lincoln (June issue) we keep telling ourselves that he's just an odd-fashioned boy in a Brooks Bros. suit. Then Richmond—who lives with us with this issue, after three fruitful and stimulating years—confounds us with an avant-garde treatment of None (October issue) or World Oil (page 2). Just another way of saying that the man is versatile—which is fortunate for editors and which is what you'd expect of someone who wears a bowler hat and suede shoes.

Cover: To symbolize the world-wide nature of the oil industry (see page 2) designer Ken Reddick superimposed oil droplets on the national colors of many nations. And, with a little imagination, you can also see the rings reaching through the earth's geological strata for oil.

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EDITOR: ROBERT COLLINS

The high cost of sitting still

Every motorist is concerned with the cost of "running" his car. Often he assumes that the main expense is gasoline. Which is why we set out recently to see exactly where oil and gasoline fit into the annual car operating bill.

Several studies of car operating costs have been prepared by technical magazines, research engineers and automotive associations. We examined four such studies, prepared by four different agencies. The figures in each varied slightly depending on the surveyors' terms of reference. But in each set of statistics a similar theme prevaled: about two-thirds of the average motorist's annual operating expense is "fixed" cost. In other words, the largest portion of your car expense is incurred whether or not the car is running or sitting still.

The remainder is "running" cost. Gasoline, which is part of running cost, accounts for only 20-25 percent of a motorist's total bill.

Here is how one of the typical studies breaks down. It was based on a late model six cylinder standard car, traveling about 10,000 miles a year and averaging 18 miles a gallon.

The total annual cost in this case was $1,099. Of this, $717 (or 65 percent) was fixed cost. The biggest portion of it was depreciation at $555. This is a major consideration on newer cars but it levels off as the vehicle grows older.

(A rule-of-thumb for calculating your own car's annual depreciation: check the classified ads for current price of your make and year of vehicle; take off about 10 percent to get true market value; subtract market value from the price you paid; divide the difference by the number of years you have owned the car.)

Other fixed cost items were insurance at $90 (this varies depending on where you live and how much coverage you buy), licences at $24 (these also vary with car and province) and miscellaneous items at $48. The last include such expenses as parking or garage rental. Some motorists have no such expenses; others pay $10 a month for garage rental; others pay $20-$30 a month for daytime parking space in downtown lots.

The running costs totaled $382. They included gasoline at 2.5 cents a mile, or $250 a year. This was reckoned on gasoline cost of 45 cents a gallon. Variations in the price per gallon of gasoline make less difference, over a year, than most people realize. For instance, the same motorist paying 42 cents a gallon over the year would have saved $17, representing only about 1.6 percent of his total car operating expense.

Oil costs in this study were reckoned at $12, maintenance and repairs at $90 and tire costs at $30. Tire costs are calculated in various studies at from 3/10 to 9/10 of a mile; they depend on the size of car and the way the motorist drives.

Naturally, figures vary with the individual and the automobile, so we don't presume to say that this breakdown will apply to everyone. Nor do we suggest that everyone should get on the road tonight and drive hard to bring "running" costs up to "fixed" costs. This is merely a mathematical reminder that there is more to the annual car bill than gas and oil. Quite a bit more.

EDITOR: ROBERT COLLINS

Kadish, with hat
On the Libyan desert a dark-bearded Bedouin, cloaked in a flowing burnoose, unrolls a length of cable and lays a geophone: a sensitive instrument that oil seismographic crews around the world use to detect underground formations. "Down under" in the state of Queensland a driller brings in another Australian well, one of the new "hotspots" of the world oil industry. East of Moscow near the Volga a stocky Ukrainian twists a valve in a Kuibizhev refinery. High in Bolivia's mountains, a geologist probes the rocks. Whether these men call it el petróleo or licor, each of them is concerned with a universal product: oil.

For those of us that have grown up with place-names like Leduc or Judy Creek or Boundary Lake, the most difficult but essential thing to remember about oil is: it is everywhere. It lies all over the world, in quantities that often dwarf our biggest fields. Many nations produce it; all of them want it. Industrial growth around the globe depends upon it. A nation's economic progress soars in direct ratio to its consumption of petroleum energy. No industry is more world-wide, more essential to the world economy, more entangled in world politics. And because the world of oil is everyone's concern, it is important for Canadians to know how much oil there is, where it is, who produces and uses it, what are its current problems and how these problems relate to Canada. However, problems to the contrary, there is no doubt that this is the age of petroleum.

Ten years ago oil and gas supplied only 43 percent of the free world's and 35 percent of the entire world's energy. Ten years later the percentages were 59 and 45 respectively. In the same period, the use of coal in the free world dropped from 49 to 34 percent.

The Producers
Fifty-four of the world's 123 countries, from Albania to Yugoslavia, produce petroleum. It comes from the gentle farmlands near Rotterdam; from the Sahara Desert, where camels stand in the lee of drill rigs; from the jungles of New Guinea where as much as 120 inches of rain has fallen in one month and where once it took two years to hack and build 30 miles of road from an oilfield to a harbor.

Every day, on the average, 22.5 million barrels of crude oil pour from the wells of the world. Since a barrel equals 35 imperial gallons, this means that if the daily production were poured into one-gallon cans and set up side by side, they would girdle the earth nine times.

Several newcomers have joined the world's oil and gas community in the last few years, notably Australia and North Africa. Today North Africa has discovered greater reserves than Canada but neither it nor Australia matches North American production.

Indeed, nearly one-third of the world's production—about seven million barrels a day—comes from the United States. The Middle East countries run a close second with six million. Then come Russia and Venezuela, with Canada a distant fifth (734,000 barrels of crude oil and natural gas liquid a day in 1962). Nobody knows precisely how much natural gas adds to the petroleum total, on a world-wide basis. But as an example: Canada's 1962 production, including natural gas translated into terms of oil, was about 1,175,000 barrels a day.

by Robert Collins
The Consumers

The world's appetite is likewise enormous. Here, too, the United States leads the field, consuming about 10 million barrels of crude and crude oil products per day. Far back in second place comes Russia using about three million, then the United Kingdom, Canada (we used some 900,000 barrels a day in 1960), West Germany, Japan and France.

Although Canada ranks fourth as a nation, we are the world's second largest per capita consumers of petroleum. Oil and natural gas provide 70 percent of our energy requirements. We use the equivalent of 630 gallons of oil per person every year. There is oil heat in more than half of Canada's homes, a tractor for every occupied farm, more than one motor vehicle for every four of our population. Only the U.S.A. stands ahead of us in per capita consumption.

Significantly, though, some of the biggest increases in petroleum demand these days are in the free world outside North America. Between 1960 and 1961, the U.S. consumed 1.1 percent more petroleum and Canada, 5.3 percent. But France used 10 percent more; Italy, 19 percent; West Germany, 21 percent, and Japan's demand soared 33 percent.

How Much Oil is Left?

Obviously then, oil is vital to most leading countries of the world. Have we enough? How much oil is left in the world? The answer: plenty, but not necessarily in the right places.

Two sets of estimates are used in referring to oil and gas reserves: "probable" and "proven." Proven reserves are those fairly-well substantiated by drilling. Probable reserves represent the oil that we think is available, based on our knowledge of reservoirs and the effectiveness of recovery methods.

(Beyond this there are estimates that are even more nebulous, but very impressive. One "ultimate" estimate has it that the world may have as much as 5,500 billion barrels of crude, oil shale, tar sands and natural gas translated into terms of oil. But this isn't oil that we'll get tomorrow, next year or, necessarily, ever. It is simply the amount that some experts think lies within the earth's sedimentary rocks.)

Figures for proven reserves, although more modest, are still pretty impressive at first glance: about 294 billion barrels of crude, excluding tar sands, gas or oil shale. (This is a 1961 figure, the last year for which a world-wide breakdown was available at this writing.) Yet this is only 30 years' supply at the world's present rate of consumption. Moreover, of the free world's reserve (about 235 billion barrels), two-thirds is in four small Middle East countries: Kuwait, Saudi Arabia, Iran and Iraq, Kuwait, a desert shiel'ded smaller than Prince Edward Island, has larger proven oil reserves than North and South America combined.

Other countries are pikers by comparison. The United States, in second place to the Middle East, has reserves of 35 billion barrels (equivalent to about 10 years' supply at the present rate of U.S. consumption). Russia, Venezuela, the Far East, Africa and Canada follow. In that order. Canada's reserves of 4.7 billion barrels represent a measly two percent of the world's proven supply.

Thus, the U.S., United Kingdom and Canada—ranking first, third and fourth as the world's consumers—have only about 16 percent of the world's reserves.

How the Oil Flows

Since most of the world's reserves and much of the world's production lie in low-demand countries, oil is constantly on the move to markets. In normal times, the pattern of flow goes approximately this way: Middle East oil goes largely to western Europe, with other shipments to southeast Asia, Australia and North America. Caribbean oil goes to North and South America and western Europe. The United States exports some product but most U.S. production is for domestic use.

Canada, in the last three years, has exported increasing quantities to the northern U.S. Russia is increasing its exports to the free world.

What's Ahead?

From this, it is clear that no country—least of all the countries of North America—can divorce itself from the world petroleum flow and its problems. What are those problems?

-The intrusion of Russian oil is causing the free world much concern. It isn't a major problem yet, but it could become one. (See page 7.)

-A number of new companies have entered the oil business, particularly in the Middle East and South America. Generally they have no organized markets nor extensive investments in refining or marketing. But they urgently need to recover their exploration and development expenditures. They must sell their oil and they offer severe price competition on world markets.

A fluctuation in price or supply in a far-away country can send a chain reaction back to Canada. The Suez crisis and its aftermath is a good illustration of how events on the world oil scene are felt in Canada. When the 1956 crisis cut off Middle East oil from North America, Canadian crude went into California. For six months it was much in demand. Then the crisis ended. Not only was our oil no longer competitive in California but the post-Suez surpluses of crude and ocean tankers brought strong foreign competition right into the Ontario market. Middle East prices dropped; Venezuelan prices followed suit. These moves, plus the opening of the St. Lawrence Seaway in 1959, forced Canadian crude prices down.

-The growth of nationalism in some countries and the need for economic improvement in underdeveloped areas have led to more government intervention. In some countries the governments enter directly into exploration, refining, even marketing. In certain countries—naturally those of the Middle East—companies operate under special 'concession' agreements. Each concession contains special stipulations that distinguish it from others but, basically, each gives a company the right to develop the petroleum resources in a defined area for a specified length of time. In return for this privilege the company undertakes to explore for and produce oil, carrying out certain minimum drilling commitments, and to pay the host country royalties and other sums.

Because the concession does carry a time limit (albeit a distant one, usually) and a drilling commitment, concessionary companies have a strong inducement to step up production as rapidly as is feasible. And countries which are already major producers continue to open new areas to concessions, partly because sharp competition among the bidders pays the host country handsome revenues in the form of initial bonuses as well as future revenues.

So there are strong and continuing incentives to produce and market extra low-cost crude from prolific producing areas. Currently there is more world oil available than the market can handle. There is no reason to believe the present situa-
tion is much different from those of the past; the oil industry has always had periods of surplus and it has always worked through them. But a situation of temporary over-supply does pose problems to and most of the major producing countries, including Canada, are seeking new markets. Aside from supplying the Canadian market from the Ottawa valley to the Pacific coast, Canada exported some 737,000 barrels a day of crude oil and natural gas liquids in 1962, a 27.4 percent increase over 1961.

The pressures of foreign competition are still felt in Canada. The Middle East and Venezuela oil supplies are so abundant that oil discoveries there are generally bigger than in, say, Canada. Hence, more oil is brought in at no greater exploration and production cost.

Most of this oil must go abroad to find markets. It is comparatively close to ports. There is an ocean tanker surplus in the world that is resulting in lower tanker rates. (It now costs only about one-third as much to move crude oil by ocean tanker as by pipeline.)

So, Venezuelan crude can be delivered by tanker to eastern Canada as far inland as Montreal, for example, at less cost than oil moved by pipeline from the west. Alberta crude could only compete with this by making crippling price cuts at the wellhead. At present wellhead prices, which are already low, western Canadian crude would be at a price disadvantage of 30-60 cents per barrel in Montreal.

However, the sale of western Canadian crude in present market conditions has been increasing and these market patterns appear, over the long term, to be accessible to Canadian crude. In 1947 Canada produced and sold 20,000 barrels of oil and natural gas liquids a day; in 1962, about 737,000 barrels a day. This 1962 production supplied Canada from the west coast to the Ottawa valley, and some was exported to the northern United States. Canadian crude has been accorded a special status under U.S. import regulations and Canada is guarding this delicate relationship. Increasing its exports under the terms of the National Oil Policy but taking care not to glut— and risk losing—this valuable market. (Under the terms of the National Oil Policy, the Canadian industry is endeavoring, on a voluntary basis, to reach a production figure of approximately 800,000 barrels per day of oil and natural gas liquids in 1963.)

If, as has been suggested, a pipeline were built to carry Canadian crude to Montreal, the net gain in Canadian crude oil production would not be 250,000 barrels daily as some people believe. It could be as little as 25 percent of that amount. Indeed, it might upset Canada's special status with the U.S. and place all Canadian exports in jeopardy.

Also, since Montreal is not an economic market for Canadian crude, elaborate government controls would be needed to achieve and maintain this market. Such action would violate the spirit and possibly the letter of Canada's participation in the Geneva Agreement on Trade and Tariffs (wherein the intent was not to increase restrictions on international trade).

These are not the only reasons why the pipeline is undesirable, but they show how a seemingly-dimes- tic situation has international implications, when viewed against the larger world scene.

The Canadian oil industry expects to meet the requirements of the National Oil Policy in 1963. At the same time, the industry is acutely aware that "oversupply" is a temporary thing, and that in the last few years Canada has not been finding enough oil.

It takes six to eight years to bring an oil play to fruition. Canadian production of oil and natural gas liquids increased 14 percent in 1962 over the previous year. Unless we can find crude in greater quantity, our existing markets will be using all the oil we can produce only seven or eight years hence.

This mounting appetite for oil is not just confined to Canada. In the next 10 years the free world is expected to increase its oil consumption by 70 percent and its use of natural gas by 100 percent. The ability to achieve higher living standards depends on constant improvement in productivity. A crucial factor in increased productivity is the reserve of more energy. For most countries this means oil. This is why the oil situation is so important whenever a Canadian province builds a new highway or an Italian family buys a motor scooter or a band of migratory African hunters settles on a farm. If the 1.5 billion people of the free eastern hemisphere were to raise their oil consumption this year to even one-quarter the per capita consumption in North America, it would double the present world demand. The world of oil, like the world itself, is an ever changing thing.

Besides being more accessible, Russian oil is state-controlled. This means Russia often conducts direct government-to-government deals, sometimes exerting political pressure on a prospective buyer that no private company could apply. Furthermore, she can set prices almost at will, and her prices to free world nations are extremely low. Russia frequently makes up for this by charging her satellites almost twice as much. For example, East Germany has paid $2.69 per barrel for Russian crude, while West Germany paid $1.38.

Not only does Russia offer cut-rate oil but she will bend-tail a deal to suit a customer. She will accept local currency (whether or not it is readily convertible into stable currencies), will extend tempting long-range credit terms and, if necessary, will even sell crude oil for sugar, coffee, rubber, tea, cotton, wool, pipeline equipment, ships, even factories.

Private oil companies, with stockholders to consider and normal expenses to meet, find it very difficult to compete with this kind of activity. However, western nations don’t advocate Russia’s methods but they have to deal with her. Indeed, there are indications that some western nations are becoming disenchanted with the idea of an Eastern European Common Market warren that it is dangerous to depend on the USSR for more than 10 percent of a country’s needs.

For one thing, Russia might use such economic dependence as a means of securing political favors. Furthermore, the deals do not always turn out to be economically attractive. For example, Greece engaged in a trade agreement with Russia, involving an exchange of agricultural products for Russian oil products. But one year, it’s reported, Russia didn’t deliver all of the fuel oil she promised. The next year, when Greece asked for bids on a given quantity of fuel, Russia offered less than half that quantity at a very high price.

Russian exports have increased very rapidly in the last few years. Western experts are inclined to think this growth may slow down. It is estimated that 1966 Russian exports to the free world will total about $6 billion, but that this amount will then represent only four percent of free world demand. The economically realistic estimate of the Soviet oil offensive; it depends not only on the Russians’ plans and production efforts, but on the reaction of free world governments.
FANTASY ON THE DRILL FLOOR

Ostensibly, there is nothing graceful or musical about the business of drilling for oil. At times it can be the toughest, noisiest, dirtiest job in the world. Those are the times when a drilling bit is being changed down on the rig floor, inside the steel tracery of the derrick. And, believe it or not—square dance steps to the contrary—the men on these pages are changing a bit.

When the bit becomes dull the crew must lift and disassemble the drill stem, consisting of many 30-foot sections of pipe, threaded together into 90-foot lengths, weighing 1,500 pounds.

They stack the lengths against a side of the derrick (on a deep well they may stack more than two miles of pipe), change the bit, then lower the stem back into the ground, section by section.

This is tricky, back-breaking, gut-straining work. It is all sweat, mud, muscle, speed, precision, the crash of tons that hold and steady the pipe, the whirl of the chain that spins pipe sections together, the deepening growl of the engine.

The men who do this job are aptly called roughnecks. Whatever their backgrounds—farms, schoolrooms, other laboring jobs—they have this in common: strength and agility. We doubt if there are any ex-ballet dancers among them. But at an Imperial rig in northeastern B.C. one night, photographer Harry Rowed caught the unconscious grace and rhythm of two roughnecks as they changed a drill bit. Then, taking figures from the original prints, art director John Richmond devised this drill rig fantasy. Now turn the page.
These are the original pictures which photographer Harry Rowed took at a rig in northeastern British Columbia, and which we turned into the playful layout on the previous two pages.

By Chester Bloom

Bill, the airplane mechanic, was a pessimist, and in that summer of 1921, at Fort Simpson on the Mackenzie River of sub-Arctic Canada, he had a right to be. For months he had been punching new rivets in the two new Junkers all-metal planes which Imperial had been attempting to operate in the new Arctic oilfields (and which, because of extremely hazardous flying conditions, the pilots had been crashing on skis, wheels and boats). The pilots were not to blame for they were pioneers in a new land, without adequate ground service or repair parts, but Bill had got so he riveted in his sleep.

This was long before the time of radio and efficient airmail service to Canada’s far north—in fact, these planes and their pilots were pathfinders for Canada’s present highly developed Arctic air services. In those days, it took six weeks to send out by slow steamboat up river for new parts and another six weeks to get them back down the 1,400 miles of waterways from Edzooom. But give Bill a piece of galvanized iron, plenty of empty tin cans, and a few joints of old stove pipe and he would patch up the holes in the all-metal wings, brace the crumpled rudders and tails, and fix the fuselage.

A month of his labor on one of the machines had made it...
Five new, used the pilot had taken it on to Fort Norman, 320 miles down the river. Meanwhile, Bill went to work on the other one which was a much smaller job. The left wing was completely gone. A messenger had been sent back to civilization with authority to spend several thousand dollars of the company's money for a new one. Meanwhile, Bill were ahead fixing up the rest of the plane as best he could.

"Bill," I said one day, "I'm just waiting here at Fort Simpson to take off with these boys when they make their next trip back and I'll be glad to help you if there is anything I can do."

"You'll be killed," retorted Bill in the spirit of the true pioneer, "They crash a plane every time they fly. You cannot hold the block while I fly."

So, day after long, northern July day we worked, smoothing out with a hammer the pieces of crumpled duralumin metal, punching new rivet holes in them, finding the cases of right weight to tack them with, and cutting up pieces of old galvanized iron to brace the tail. I tried everything in the way of conversation during those long hours; from baseball to the company's chances of finding oil but it was no go. Bill's conversation was confined to a monosyllabic "yes," or a grunted "no." After 10 days of this, I tried a new tack.

"Bill," I said glumly one rainy morning as we dug the tools from the mud, "I've been away from home now three months and not heard a word from anyone. I suppose when I get back I'll find my house burned down, my wife gone, and that the company has fired me."

But if Bill could have visualized what happened, he would have swallowed all his rivets and jumped in the river.

After three months, when the new wing should have arrived, everyone at the post was anxiously watching up river for the steamboat. Bill had put the last of about 1,000 rivets into the repaired plane. He announced it was all ready, when the new wing was bolted on, for some lucky pilot to crash again. The pilots themselves flew the first plane back to our location at Simpson, ready to go back out to Peace River and Edsonland when the second one got its wing. Bill inspected their plane, disappointedly found no damage, and predicted that they were sure to drown us all now.

The great day finally arrived. The steamboat puffed with the glinting new metal wing, 25 feet long, weighing some 700 pounds, securely lashed to a barge. The half dozen white men, 15 Indians and 50-odd half-breeds at the post cheered and lent their muscular backs to unloading the heavy wing. Bill danced around in an agony of apprehension. Though tough and durable, the duralumin metal was hardly thicker than a piece of soft cardboard and Bill's worry that a half-breed had a careless hand in it shocked even the steamboat captain who prided himself on his vocabulary.

At Fort Simpson, there was a wide, shelving beach in front of the high cut bank on which the post was built. Steamboats could not get close in to the bank during low water. It was necessary to get the wing overland first to the beach, and then carry it up to the cut bank. We sweated all afternoon at the job and finally tenderly landed the mass of metal inside the packers' yard of the trading company post, on the thick, solid grass.

Everyone breathed a sigh of relief and even Bill looked satisfied. We all went into the post and sat down to a well-earned dinner. Bill remarked that he intended to bolt the wing in place on the plane that very evening. He had hardly got the words out of his mouth when an Indian set up a terrific yelling. We sprang to our feet, startled, but Bill alone seemed to grasp the import.

"My God, that horse," he exclaimed, "did anyone leave the gate open?"

There was a simultaneous rush for the door.

The only horse north of Great Slave Lake, in the🇺🇸 that the mission at the post, had wandered into the yard for the first time since he arrived. Bowed over the grass and stepped on the metal wing.

A huge, iron-shod foot had gone right through it and he was trying to pull loose while the excited Indian berated him.

"Let him alone!" shrieked Bill, "I'll get him out."

But the scared Indian lashed at the horse with a slippery switch and the frightened animal proceeded to kick himself house, vigorously. Before he finished, he got all four feet through the wire and Bill was in tears.

Well, that's all there was to it. Except that Bill worked another 10 days riveting tin cans over the holes, and I had become a real pessimist myself. Bill performed a wonderful job in repairing that wing and the rebuilt machine flew like new. It took us out to Peace River, only to crash again and sink. The plane was salvaged—but never flew again.
WINNIPEG: where everybody's on stage

by Jean Danard

Winnipeg was the birthplace of Canada's first ballet company. Its symphony has played more Canadian works than any other. Its largest theatrical group—the Manitoba Theatre Centre—is one of the few year-round legitimate theatres in Canada, and was recently cited by the Canada Council as a working model for others.

Winnipeg's week-long spring music festival, the largest in the Commonwealth, runs in five different halls from morning to midnight, drawing 20,000 competitors. The local art gallery's collection of Eskimo sculpture is, says the director Dr. F. S. Eckardt, "unique on the continent, probably in the world" in terms of size and variety.

Winnipeg also has drama schools, Easter egg painting, junior puppeters, craft displays, painting in the parks, musicals (four chamber music groups alone), authors' and painters' groups and an antique arts group dedicated to "conserving beauty in old things because it is tranquil." There is also children's theatre, theatre-in-the-round, summer theatre, German theatre and French theatre.

"All we lack now," says Ann Henry of the Tribune, "is good Yiddish theatre.

Which would not be at all incongruous; there's a Jewish musical club with its own choir, orchestra and annual competitions. Winnipeg's 40-odd ethnic groups have helped enrich its culture. There are at least 10 male choirs including Ukrainian, Swedish, German, Norwegian and Danish groups. The Mennonite radio station at Altona, 50 miles southwest, claims to have the best classical music library in North America and says it holds half of Winnipeg's radio listeners every day.

Isolation has fostered art and culture in Winnipeg. Young, old, professional, amateur all take part.

To feed variety to Winnipeg's musical diet, there is the symphony orchestra, conducted since 1958 by Toronto-born Victor Feldbrill. Last season it put on 50 concerts, only seven of which were out-of-town and five of which were "pop" concerts. The 100-concert subscription series played to an audience of 75,000, 89 percent capacity of the 30-year-old hard-seated Civic Auditorium. The "pop" concerts were so well-attended that 10 were scheduled for 1962-63.

"They're designed for family listening," explains Feldbrill. "People come with babies in arms and we get the odd yowl from the audience, but this doesn't offend us at all."

In the last three seasons Feldbrill has increased his audience by 10,000. Under him the WSO is becoming as respected as the Royal Winnipeg Ballet. The latter, founded by Gwenneth Lloyd, gave its first performance in 1940 and hasn't missed a season since. It has played in 70 other Canadian towns and cities and toured the U.S. three times (usually playing to overflow houses).

Twenty-six ballet performances last year played to about 43,000 people. Last March, Broadway choreographer Agnes de Mille came up to help stage her ballet "Briseis: Weared," and a capacity audience of 1,400 gave the performance a standing ovation. The same evening (what other city with Winnipeg's 500,000 population would be rash enough to have two big openings on the same night?) a full house of 814 enthusingly applauded the opening night of Keene Enright's "Separate Tables" at the Manitoba Theatre Centre at Portage and Main. Now in its fifth season, the MTC last year racked up 242

And Winnipeg does. It has 1,030 organizations, most of them associated with "culture" and including one that exists solely to keep track of all the others. One way or another nearly every Winnipegger is mixed up in the arts. Some are performers, some are fund raisers and promoters, the rest are audiences. It's easier to get people to a play in Winnipeg than it is in New York. The Royal Winnipeg Ballet is not only well attended in Toronto and Vancouver but also in their own home town—quite a feat for a home product.

This is not to say that Winnipeg audiences accept every offering without question. Most of them are knowledgeable, critical, even emotional. One middle-aged woman recently canceled her symphony subscription because she considered a performance of Ravel's Rapscallion Exque de "indecent."

Although few could get that worked up over the lietting Spanish music, no true Winnipegger was shocked or amused at the depth of her indignation. The arts are important to Winnipeg. They reach into the city's roots to 1870 when plays were put on in Lower Fort Garry. The now-defunct Walker Theatre was importing vaudeville in 1903. The Women's Musical Club (seven concerts annually) is in its 65th season; the Celebrity Concert series (12 a year) dates back to 1911.

drawings by William Winter

When you consider its cheerful state of geography and weather, the miracle of Winnipeg is that it's a horde of culture.

No one, even in the local Chamber of Commerce, would deny that Winnipeg is geographically remote from other centres of the arts 1,500 miles from the nearest permanent theatre, in Toronto) and indeed from any other sizable city. Winnipeg, further, can be bitterly cold in the winter (it's the last stronghold of the policeman's buffalo coat) and wind swept any time of the year. The main intersection, Portage and Main, sometimes feels a little like the Khyber Pass. And at one professional football game in towns last autumn, the officials had to hold down the ball between plays; it kept blowing away from the line of scrimmage.

Seemingly this is the last place where people would bother to venture out almost nightly to the ballet, theatre or symphony. Yet Winnipeg—out of its environment but because of it—literally wakes up and goes to bed with culture.

"We look inside ourselves because there's blankets outside," says Ann Henry, Winnipeg Tribune drama critic. Leonard Ureh, a realtor who arrived from England 30 years ago hearing a violin and a cricket bat—symbols of a gentler society—says Winnipeg has "an indigenous culture forced upon us by geography." Bruce Hutchinson in 'Canada, Tomorrow's Giant,' wrote, "Winnipeg... alone in the terrifying vacuum of the plains must think its own thoughts, invent its own pleasures and do its own work."

Imperial Oil Review, February 1963
performances in eight months before an audience of 112,000, four times the size of its first-season crowd.

The formula for success seems to lie in the fertile brains of artistic director John Hirsch and general manager Tom Hendry, both still in their early 30’s. The pair met over a two-cent cup of coffee in the University of Manitoba canteen in 1950 and have been wrapped in many of the same stages props ever since. Hungarian-born Hirsch arrived in Winnipeg in 1948 as a teenager with an imperfect command of English. Within three years he was teaching English at the university and had cast Hendry—a chartered accountant by profession—in his first production. In 1957, a bank loan of $1,500 enabled them to start Theatre 77, a semi-professional group which merged the following year with Winnipeg Little Theatre. The Hirsch-Hendry partnership is a good one. Last season, in addition to its three-year-old drama school, eight regular monthly plays and two for Children’s Theatre, the Manitoba Theatre Centre also:

- Launched a studio theatre to put on original Canadian plays;
- Sponsored a bilingual classics festival in which Le Cercle Molière (the St. Boniface theatre group) presented “Le Médicis Malgré Lui” and the University of Manitoba presented Shakespeare’s “Measure for Measure”;
- Tourd nine Manitoba towns with a murder mystery;
- Took Shakespearean actors to high schools for readings and discussions of plays on the curriculum;
- Started an apprentice training plan with a modest living allowance, free tuition, stage and production practice; and
- Carried out drama workshops in both Brandon and Winnipeg.

All of this does not save Winnipeg’s hunger for theatre. Le Cercle Molière brings French-Canadian drama to the city. A new German theatre group was so exuberantly received last year that it planned a two-month fall tour of 40 Canadian and American cities. The RCAF Drama Club, composed of amateurs, gives “professional” performances. And for seven summers, Winnipeggers have enjoyed the open-air muscians of Rainbow Stage. Three years ago, four performances were rained out and 16 more threatened by rain; nevertheless it was a record year.

Nearly every year seems to be a “record” year in some field of artistic activity. For the exhibition of Van Gogh paintings two years ago, 50,000 people paid admission to see the month-long show.

““There was a constant line-up,” recalls Mrs. J. J. Lander, then chairman of the art gallery’s women’s committee.

“People came by the busload, from Edmonton, Regina and Minneapolis.” In most other cities this torrent of attendance would have overwhelmed the gallery staff. Not in Winnipeg. The women’s committee produced 150 volunteers who cheerfully took six-week training course followed by four weeks of guiding.

The committee coped with a similar flurry one Saturday last June when, to escape the cramped quarters of the gallery, it moved its annual arts fair outdoors to Assiniboine Park. The show of oil, watercolors and pottery from 50 Manitoba artists was scheduled to start at 11 a.m.; visitors arrived at nine. In other years the fair had attracted a maximum of 800 people; last year’s show brought thousands. By 5:30 p.m., before the evening crowd arrived, 100 pieces of art were sold. Setting up a show outside gallery walls is not unusual in Winnipeg. “Art is so popular we simply don’t have the facilities for major exhibitions,” explains one staff member. Proper facilities for the symphony is also a problem. Victor Feldbrill openly refers to the Civic Auditorium as “an overgrown barn,” and adds: “Our public would be completely bowled over if it could hear the WSO in a place such as Toronto’s Massey Hall.”

Probably in 1967 a long-awaited arts centre will climb into the skyline. Models of buildings already have been submitted. Premier Roblin’s government is openly sympathetic to the project and is expected to pay most of the costs.

If the Arts Centre has spare room in the beginning, it won’t last long. Winnipeg is raising a younger generation that gobbles up art, music and drama as avidly as the adults. Each spring thousands of children spend their Easter holidays on a week-long Festival of the Arts featuring ballet, square dancing, art exhibits, musical concerts and a science fair. In 1961 a 10-year-old was even “throwing” pottery. The festival became the largest ever in its kind in Canada in 1962 when it drew 35,000 youngsters.

At the art gallery there’s always a waiting list for the Saturday morning student painting classes. Supplies and tuition in any medium are free for the 200 that the gallery can handle. And at the Children’s Theatre (two plays and a ballet, twice yearly for five weeks) a sell-out is common. Tickets sell at three for $1.25. “We feel it’s an investment,” explains MTC’s Tom Hendry. “The children react very well even to a Shakespeare play. If the performance is good, we’re no trouble with them running up the aisles.”

All this interest is not entirely spontaneous. Much is engineered by the performers and the volunteer groups. Winnipeg groups future audiences somewhat in the way pro hockey teams raise “farm” players. To encourage the theatre-going audience of the future, $35,000 worth of tickets was sold by the MTC to 8,000 high school and university students in the 1960-61 season. Last season students could go to three productions for $2.50. For four years now the ballet people have given hall demonstration to 10,000 students in schools. The symphony last year played 20 special school concerts. Working with new adult audiences is considered just as important. To launch the Manitoba Theatre four years ago there was a marathon telephone campaign—to get an audience—with eight women on telephones almost around the clock. “I’m determined to get through that telephone book,” said Hendry at the time. He didn’t—quite—but when the volunteers ran out of breath not many people in Winnipeg were unaware of the new group. Last season a new group calling themselves the “Curtain Raisers,” sprang up to assist with such promotion. The symphony people, too, have their telephone and education committees. With this kind of organized audience-raising and publicity, few Winnipeggers ever fail to hear about a cultural innovation. And because they are Winnipeggers, they’re always game to sample it. Not long ago an elderly lady napped symphony conductor Victor Feldbrill at a cheese counter to tell him she and her husband were “quite distressed” at a jazz work he planned for the next program.

“But we’re both coming anyway,” she assured him. “We’re going to give it a chance!”
HENRY FORD
AND
SNOWDRIFT

by Bill Stephenson

In the little Quebec village of Valcourt (population 858), 75 miles east of Montreal, everyone knows that Armand Bombardier—the frail, scholarly founder of the village's largest industry, the Bombardier Snowmobile Company, and inventor of the Snowmobile, the Penguin, the jaunty little Skidoo and a host of other machines—is a mechanical genius. But the news that he's planning Ford's retirement retirement, they claim, which keeps the 55-year-old Valcourt native from being publicly recognized as the equal of Ford, Marconi and Edison in the roster of the 20th Century's greatest benefactors.

For once, local chauvinism cannot be discounted. For Armand Bombardier is in the backwoods of the world where Ford was once king, the man who has made it possible for explorers, trappers, oil surveyors, missionaries, forestry men and other travelers to saod over impossible terrain in comfort, safety and double-quick time. Ford chased the horse off the highway. Bombardier has not only chased Dobbin even deeper into discard, but is doing much the same for the Hoky-duck, the male and even the carrel. And like the famous "flyer," Bombardier vehicles are so cheap and easy to operate that one need not yearn to wander in the uncharted wilderness.

"Armand's dream from the very start was to produce an inexpensive vehicle which would literally go anywhere," says his admiring younger brother, Raymond. "We think he's already accomplished this several times over. But he still goes on experimenting."

The uses to which Armand's brain-children have been put are almost endless. The 13,000-odd Snowmobiles produced since 1917, all of which look like cabins on tracks, fulfill ordinary duties as well as husky, pull-in, tow, pickup and hula hoops, taxis, trucks and pleasure craft. But 150 of them, armored for more safety, were used by the Canadian Army during the war, and another batch was sent to Britain for the invasion of Norway which never came. Bell Telephone and Federal Electric use about 300 Snowmobiles and tractors to service Dew-er across muckstreets. Snowdrift is a quiet man who likes to work in the shop

ground was much too tough to travel. This winter the company replaced old Bombardier only belonging to one crew with new types.

But in spite of these uses in the oilfields, Bombardier's biggest seller by far is the speedy little mechnical dog-team known as the "Skidoo." Armand's original dream came true. It looks like a motor scooter mounted on toy trucks and sounds like a runaway washing-machine.

The Skidoo, Bombardier's bid to put fun and dash into winter travel, weighs only 230 pounds and goes 50 miles an hour on a gallon of oil-gasoline mixture. It will burble over snowy hills, ditches and snowbanks, through woods and across frozen lakes at up to 30 miles an hour, with a 300-pound load aboard. Its handle-bar controls can be mastered in a few seconds. With its low cost ($600 for the single-track, seven hp model, $895 for the double track eight hp model, i.e., Bombardier, its cheap operating expenses and ease of handling, it has started an entirely new winter sport.

When the Skidoo first came on the market in 1939, only 300 machines were produced and delivered. So swiftly did it catch on, however, that this year's schedule calls for the manufacture of at least 6,000. Most orders are for Canada, but hundreds are destined for the U.S.A., Finland, Sweden, Norway, France, Switzerland, Germany and even Japan, in all of which areas Bombardier has commercial representatives.

In the more settled parts of the world, the Skidoo is mainly a pleasant craft, a sort of winter equivalent of a yacht or motorboat. The company has hundreds of letters on file from grateful Canadians who used to go south for their winter vacations, but who now take their Skidoos instead. "My wife and I have never enjoyed winters so much since we were children," wrote one retired industrialist from Quebec City, "We have a Skidoo," wrote a new-come from Vermont, "It couldn't have been nicer."

Five thousand men in Montana, Que., leery of the possibility of heart attacks from too-violent skiing weekends, now get just the right amount of exercise Ski-doo racing every weekend. Even when they are not racing, they can cover 30 miles in an hour—times of times—seldom sustain more than a few bumps.

Another spectacular development has been the number of Skidoos stumped in Quebec and New England, for racing or rallying. Best known annual event is the race held by the Commerde Yacht Club of Montreal on the Bock river, which 40 or more take part. But a widely publicized event last year had Timmins Golden Jubilee celebrations saw Mayor M. A. Palouino, of Cochrane, head up a 16 Skidoos "pousse" and travel 70 miles to challenge—and defeat—Mayor Leo Del Villano, of Timmins, in a rolling Skidoo race, at 50 below zero. Less organized but zanier races are held in Valcourt itself, however, where course often winds through thick bush, along cliff edges and even off ski-bits. Around himself is often a contestant, he drives—as do most Quebeckers—standing up. Among his competitors in one race last year were a five-year-old and a 72-year-old.

The practical uses of the Skidoos range from transporting city dwellers to their cabins to their pleasure, helps to Eskimos hunt seal. Hundreds of Arctic dwellers are now buying them, attracted by the speed, economy and ease of operation. Father Andrew Revello, a Catholic missionary who introduced the Skidoo to King William Island in the Eastern Arctic in 1895, estimates that he can comfortably cover up to 500 miles in 48 hours, the cost of less than $60.

With a six-dog team, the same trip would take more than a...
month, require up to 16 pounds of fish per day, and cost about 75 cents a mile. Many Montesinos, particularly around Churchill, now use the Skidoos for another ironic task; rounding up for destruction stray dogs put out of work by their successor, the mighty little Skidoos.

The family which puts out all these marvelous machines is made up of six brothers, only four of whom are in the vehicle business. Besides Joseph Armand Bombardier himself there are, in order: Léopold, in charge of tolling; Raymond, head of sales and service; and Gérard, production manager. Théo- phile, the second oldest, is not in the main company, but sub-contracts on tracks and seats. George, the fourth brother, is an insurance salesman in nearby Kingsbury, where Armand’s eldest son, Germain, 15, heads a wholly-owned subsidiary company manufacturing hundreds of parts needed for the vehicles.

Armand, according to his brothers, was “always feeding around with machinery,” as a child and as a student in Sherbrooke. When he was 16, he put together his first snow buggy, a four-wheeler, powered by a car motor and a handoperated propeller. When he tried it out on the main street of Valcourt one Sunday afternoon it panicked women and horses, brought down snow off nearby roofs and brought down parental wrath with a vengeance. “This is no way for a classical student to act,” thundered Bombardier père. “From now on you will stick to your books!”

When Armand graduated in 1926 however, his storefront-farmer father relented and set him up in a garage. This garage—an Imperial Oil building—was to become the first manufacturing plant of the Bombardier Company. It still stands, but is no longer a service station, though Bombardier still uses large quantities of Imperial Oil products.

Valcourt, in the late 1920s, was like most of Quebec—almost roadless in winter. In summer cars and buggies could travel to Waterloo, 15 miles away. But in winter this was a tough task. What was needed, Armand reasoned, was a conveyance which didn’t require roads. It should sell, at least in Quebec, like good pea soup.

The snow buggy he had built didn’t need roads, but it did need flat surfaces. On rough ground, it was highly unsafe. From 1926 till 1936 Armand spent everything he made or could borrow from relatives on trying to make a good snow vehicle. He tried ordinary wheels with chains, powered by a front-end motor. Not enough traction. He tried steel tracks and conveyor belts. Not enough speed. In 1936, he hit upon the sprocket-and-track principle which—together with a floating suspension—are still the secrets of Bombardier superiority. But he first put the sprocket in the rear, did not get the qualities he knew he needed till the following year, when he moved the two sprockets to the front. From 1937 on, therefore, the Bombardiers were in business.

“Our big sprockets in the front,” explains Roland St. Pierre, an engineer who has been with the firm since 1942, “the tracks have a tendency to crawl up and over, which is exactly the action you need in a tracked vehicle.”

By 1940, these seven-passenger Snowmobiles were all over Canada. In Quebec towns, as many as 20 of them—privately-owned or taxies—would be lined up outside movie houses at weekends. Some entrepreneurs made fortunes using them as buses to carry workers to war plants, causing the Bombardiers to wonder if they were in the wrong business. Doctors found the Snowmobiles especially valuable. “I wish I had five dollars for every baby born in our Snowmobiles,” says Armand.

In 1940, their civilian work frozen, the Bombardiers turned to making tracked vehicles for the Army. In 1963, Armand devised the “Penguin,” a heavily-armed amphibious Brem carrier. Though the Army liked the Penguin, Armand was not at all satisfied with its performance, and was relieved when lack of space at Valcourt forced its production to be moved to Montreal. Many Penguins were used in Italy and the Pacific Islands.

In 1947, the first 12-passenger Snowmobile rolled off the assembly line, and orders for at least 1,000 a year were assured. But Armand suspected the days of his first money-maker were numbered. New roads were opening up, towns were allotting budgets for snow clearance, cars were getting good snow tires. He decided it would be prudent to start branching out.

His first new product was a “Tractor Track Attachment” to enable farm machinery to get a better grip on soggy ground or steep slopes. It was an instant success, helped farmers reach land they had not plowed for years. Encouraged, Bombardier tackled another problem: a machine for oil research. For this he tried a truck-bonded Snowmobile with wheels in front, called the TN. It worked, but not well, because the balance was wrong. He tried another model with tracks on front and rear, the TD. It was better, but it too lacked proper balance. Finally Armand saw that what was needed was neither skis nor wheels but a fully-tracked vehicle—and thus the Muskog Tractor was born. All other tracked vehicles of the company are modifications of this machine.

John Clifford, a road builder for the National Capital Commission and owner of John Clifford Ski Town at Camp Fortune, Quebec, has called the “best all-around vehicle in the world for rough hush work.”

What is astonishing about the production-line methods of this unique Canadian company is that, apart from motors, transmissions and a few other parts, the vehicles are almost homemade. The huge sprockets, for example, are not only homemade but hand-made, the workmen carefully placing square after square of alternate rubber and textile in the form before vulcanizing. Steel wheels were made in one Valcourt shed fit nearly all vehicles, and special Bombardier tires with a test load pressure of up to 120 pounds fit these wheels so snugly that stumps or overcroppings can hardly ever snag them. Even crossbars, rubber and steel grummers, hub-caps and a hundred other small parts are made in Valcourt and Kingsbury.

Not only does Bombardier produce its own parts but in many cases it produces the machines which make the parts. The press which stamps out the Skidoo chassis is homemade, as is the ingenious wheel on which the rubber tracks are laid out and vulcanized. For heavy work, tractor track bolts are reinforced with steel wire, lovingly wound on by hand by careful craftsmen. Even many aluminum parts are made from ingots in homemade forges.

“Our aim is to be totally self-sustaining,” says L. L. Parasy, promotion manager for Bombardier. “We may even make our own motors one day.”

The Bombardier company is not just another large business in a small town; it is part of the town. Many of the 300-odd employees have spent their whole working lives with the firm. The company, in turn, has financed many local causes, including the Civic Centre, and it offers loans to help employees build homes. The Bombardier brothers themselves live extremely simple lives.

Armand’s only recreation, for instance, is a two-week hunting trip each October, on which he admits he mostly “just sits around and figures.”

The latest mechanical result of Armand’s creative processes however is a machine for the forestry industry known as the “Feller-Buncher,” which even the super-conservative Bombardiers believe is at least a decade ahead of anything in the field. This marvelous little machine saws down trees and carries them (up to 20 at a time) to a Bombardier processing plant nearby, which takes off branches and cuts the trees into small logs for shipment to pulp mills. Three of these combined units are already being tested in the BaieComeau area, and first reports indicate they may represent a major breakthrough in automation of the lumbering industry.

What else may be hatching in Armand’s brain is hard to say. But meanwhile the Bombardiers go busily on, doubling the size of their plants, searching for new and better ways to produce right around the parts they need. The brothers know they are the biggest vehicle plant in Quebec and suspect they are the biggest Canadian vehicle plant in the country. But they are especially proud that they have pioneered and prospered in the production of the kind of machine in which Canadi ans should be specialists.

“If Henry Ford had lived in our kind of country, he might have produced the kind of machines we make,” says Raymond Bombardier. “But my brother Armand has done it instead. We sincerely believe he will eventually be recognized as one of the greatest Canadians who ever lived.”
Today motivation is one of the most important forces in education—but we don't know how to stimulate it

by Ron Kenyon

For several years we watched our son's school marks with growing dis- may. Each year he somehow stole home into the next grade but we had to hold our breath for the umpire's decision.

Our son is far from dull. At age 10, after standing around a few Tegla watching a play bridge, he took a book and won. As a hobby he took up chem- istry and set up many an experiment that amazed his mother and me. He helped me make photographs and was soon able to develop and print. He car- ried off second prize in a barbers' judging and first prize in a town parade.

Over the years we went to see a suc- ceSSION of teachers, usually about mid- year when our son looked like striking out. We didn't want to antagonize those teachers. We welcomed them with un- necessary profundities for the hard work they were doing (we hoped), while sug- gesting that we knew that we were glad to see them what we would do to help if they would only tell us what to do.

They came and went with a veiled and wary courtesy. They acted like hunters on safari caught out without a rifle and facing a wildly ferocious, two-millimeter elephant. They backed away behind desks making placatory noises.

Finally, I decided I wasn't going to get any help. Whatever was to be done would have to be done by us. The problem was: do something about his son backed motivation for school learning. Motivate him to enjoy study and the process of learning.

A year later, after I had interviewed, telephoned and written to nearly 70 educational authorities, authors, and read reports by the box full, I concluded that half my hypothesis was correct: our son did lack motivation. The other half, that he or any child could be supplied with motivation, proved to be a good point.

I had uncovered a difficulty which affects thousands of Canadians of all ages. As a problem that one tor the very roots of our society, for without the drive to learn work or play, we are certainly civilization will die. There seems to be no answer, except that motivation is partly achieved by trial and error and it is a mainstay of our society.

Poor motivation is the biggest single problem our children face in school work. The Industrial Revolution on Education, which is sponsored by Cana- dian industry, reports that 40 percent of young Canadians in the high school have no in- telligence never complete university. In other words, nearly half of our most in- telligent children have no potential to go on or to lack the drive to go to university.

A few years ago the Canadian Re- search Council on Education in Educa- tion investigated the reasons for school "drop outs." Some of the ex-students surveyed gave reasons related to the school: they disliked the subjects or the teachers, or they just "weren't inter- ested." A further 16 percent gave per- sonal reasons for leaving—financial, health or the attitude of parents.

In both categories, which totaled 60 percent of those interviewed, lack of motivation seemed to play a role. They didn't want an education enough to overcome the difficulties—difficulties that, in one form or another, always beset any path to success.

But haven't some kids always, like Huck Finn, skipped school to go fishing? Probably they are just caught between two factors that make the problem acute today.

First, there are fewer jobs now for un- trained workers. In a five-year span of the Canadian Conference on Education, Lewis S. Bezzite, a former superintendent of Schools, and Edward F. Sheffield, a research officer with the Canadian Universities' Foundation, put it this way: "From school to work"; one of the "correct" lines, will be his road to a better life. In brief, the necessity and the opportunity are there for every child a good education can give. Still, in the years ahead we will find the numbers of those who take the "correct line" too small, and the road to better life is too long for the majority.

In the West this approach would de- scribe the principle of democracy. Most of the educational aims are more realistic and more difficult to explain to the working man; he is made aware that education, along the "correct" lines, will be his road to a better life. In brief, the necessity and the opportunity are there for every child a good education can give. Still, in the years ahead we will find the numbers of those who take the "correct line" too small, and the road to better life is too long for the majority.

In trying to find out how to motivate in a democracy you feel like the first man landing on the moon. There are theories about it but no first-hand scien- tists to prove them. Fortunately for all, there are young researchers everywhere. No scientist seems to have landed squarely on the surface of the moon. Everything has been done at long range. There are provocative studies by ad- vertising agencies on motivating the public toward deodorants of toothpaste. There are reports on rat intelli- gence and on the learning ability of dol- phins—but how do they have a bearing on the child in the schoolroom?

Professor Raymond B. Fox, of North- ern Illinois University, sent a class of adult students to the library to search out children either more or less advanced than in the 1950's on motivation in the school- room. He was astonished at the scarcity of material. The studies available were so limited in scope that they contributed "little or nothing to the solution of classroom problems in motivation."

One reason for this research gap may be that schools are unwilling to have scientists mess around in their class- rooms. One Nova Scotia educator wrote me: "Research and experimenta- tion in this field is desirable as long as the experimental design assures that no more harm will come to the child in the experiments than would be expected to occur normally."

I found not a single educator with a positive answer to the motivation prob- lem. A British Columbia educator wrote me pessimistically that "motivation is a high-maintenance consumer; the mechanisms of which would require a psychologist- up to a teacher to understand as easy to use as this whole field is very difficult indeed."

At that he was understating the prob- lem. The psychologists don't under- stand the.html, all the sublevels either. One of the most knowledgeable experts on the motivating process in the classroom is Dr. Richard Alpert, of the Center for Research in Personality at Harvard University. He talks about motivational activa- tions to a "hedgehog." He outlines bravely certain theories which are only 31 years old. He puts back of classroom motivation but he admits that he is "teaching on theoretical terri- tory fraught with controversial land- mines" and that it is hardly a state- ment he makes to "which some psych- ologist would not take exception."

First, he defines motivation and at- tempts to lay down some ground rules for understanding it. Motivation, he says serves to "energize, select and direct the behavior of an individual."

Motivation, as he sees it, appears in the interactions with one more important than another,
When the more powerful motives are operating strongly, the lesser ones disappear. This is true even in the classroom, where students turn their heads to the right direction. This training, or shaping of a behavior pattern, can be done merely by reinforcement at a desk. In this way, turning the head in the right direction is immediately given a reward of food.

Dr. E. Frederick Skinner, a Harvard psychologist, adapted elements of this technique in developing programmed learning for children and adults. The lessons are given as questions designed with scientific care so that the student will get most of the answers right. It is given the answer immediately (too wait for exam results or for papers to be marked). The approach is to be easily learned.

This was illustrated nearly by a classroom survey in the United States where the students sometimes are given multiple-choice tests: different methods. The first method used is a choice of different answers. The students are asked to select the correct one of those given. This method has been successfully established by using the drive to satisfy hunger.

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Professor James K. Buros, of Temple University, Philadelphia, has called "the self-regulation of behavior" the "social inventory" of the classroom. The teacher says, "We have a student who has a behavior pattern s and the child's favorite hockey forward, and 14 a weakness of the child's motivation allows to pass him on to his weaker motive to learn."

When the less powerful drives may be actually in conflict with schoolwork. Children want to run and play rather than be cooped up at a desk. In the case of boys, especially, there is a strong desire to "look big" to one's fellows. In North America, boys and girls are taught to regard academic success as admission and sink avow high marks.

Another theory of motivation holds that there are "needs" in the environment that say to a person "you are going to enjoy this" or "vice versa. Hockey is a pleasant cure to most boys. If you start an arithmetic lesson with a problem relating to hockey, you may key the boys' minds. Howard Afric, a student of motivation, finds that through teaching themselves the children become utterly involved in their own showing and interested in improving their standards. Again, there is that important factor: interest.

Getting back to our own experience, our children are doing a little better this year. I don't think this is just because we are more knowledgeable. He has a teacher who has not been burdened into indifference; a teacher who is interested in his charges and his parents, and who is trying to instill a responsive interest in them. This teacher strides out from behind his desk, shakes his hand firmly, looks into the eye and says: "I'd like to see you again in a month, please. Your son could be doing better."
A couple of years ago Jim Tait, at 67, felt he had reached the end of the line. The only support for himself and his wife, Gertie, was a meagre pension. Da Manoir offered them one of the three employee cabins at the rear of his service station. "That first winter," Guy says, "Jim had a heart attack. He didn't go to hospital, just lay there in bed. He seemed to have lost the will to live."

Da Manoir asked Tait if he'd take over a couple of gasoline pumps that the former planned to install at Des Joachims. Tait didn't think he could handle the job. Da Manoir installed the pumps anyway, plus a little service station with a two-room apartment at the back for the couple.

"Well sir, when he first arrived at the station he could hardly lift his feet over the doorstep," says Da Manoir. "Now, so help me, Jim could play football—and he's going to sell 75,000 gallons of gas this year."

The fates which linked this man at the side of the Tains were at work in the 19th Century, when a title conferred on the Du Manoir family established a tradition of Du Manoir sons seeing careers in the French army. Guy's father, Richard Jules, Comte du Manoir de Jassy, followed this tradition, but he left the French Foreign Legion in 1905, emigrated to Canada and settled in the village of Westmount, southeast of Pembroke. There he began a new and successful life—first as a house painter, later as an interior decorator of churches. He married and raised two girls and four boys, the second youngest of whom was Guy. (One of Guy’s ambitions today is to pay his first visit to the family estate near Bayeux, France. An elderly aunt now occupies the estate, although the title has passed to Guy’s oldest brother, Wilfred, a retired major living in Ottawa.)

Du Manoir finished his high school education in Westmount, took a business course in Pembroke and headed into the Ottawa valley woods as a provincial lands and forests department employee. His deep attachment for the outdoors began at that point, so did his respect for the hazards of such a life—wolves, for example.

Twenty horses at a lumber camp were struck with distemper; Da Manoir was dispatched six miles through the snow, on foot, to pick up a 60-pound wooden case containing serum. He had just begun his return hike, picking the serum on his back, when he heard wolves. They were following him, baying. Da Manoir sprinted for camp. "When I finally rushed into the cabin and collapsed in a heap they were at the camp stable, less than 300 feet behind me. Ever since that night I’ve hated the very thought of timber wolves."

Da Manoir was still with the department when he married Irene Dashny, daughter of a construction foreman at the Des Joachims hydro project. Today they have four children.

By 1950 he had a job as scaler with an Ottawa valley lumber company. Then he operated the service station at the Beechway Hotel in Point Alexander. Six years later he moved into his own newly-built service station and bulk oil plant a quarter-mile down the highway, which he leases from Imperial.

Da Manoir had taken an interest in school affairs shortly
after moving into Point Alexander ("They were building a new school and I thought I should be a part of this thing") and at age 23 was elected to the school board. Five years later he became reeve of his United Townships Council, and his repu-
tation as someone who cared about "the little man" was la-
unched.
His concern for hard-pressed people is genuine. Although
his childhood was not one of severe hardship, he knew that his
parents had sacrificed to put six children through school in the
Depression years. In the woods, he completed his "education in the
School of Hard Knocks," and he has a fraternal regard for
fellow-alum.
"I'm surrounded by good families who just can't make ends
meet," he says. "Now in Deep River (the model town a few
miles along the highway) you have Dr. So-and-so at $12,000
—how much help does he need? But the guy with a family
making about $2,000—it's all he can do to stay alive."
Du Manoir's feelings about Deep River (he calls it "one
square mile with a hundred problems") is a problem
that goes beyond the usual community rivalry. Deep River, the
model town of 3,000, was built after World War II to house
scientists and other employees of the nearby Chalk River
atomic research station. Located within the boundaries of Du
Manoir's townships, it nevertheless has its own town council.
Fortunately there is a rift between the town administrators
of the sophisticated urban community and those of the predomi-
nantly rural council. During one joint meeting, one of Du
Manoir's councillors—moonlighters who were living—
told his Deep River opponents, "I would just like to remind
you, ladies and gentlemen, that education is not at all the
same thing as intelligence."

Du Manoir himself immediately went on the offensive when
the Deep River deputies complained about "shacks" which
school workers had built along a stretch of highway. He
could hardly defend sub-standard housing but he reminded
the meeting that "not all the people in this area are fortunate
enough to have houses handed to them on a silver plate"—a
pointed reference to the National Housing Act role in estab-
lishing Deep River. Since then the shacks have been con-
demned and torn down as they became vacant, but not at the
price of evicting the occupants.
There is reason to believe, though, that these shills
would have been more frequent and more serious had not Du
Manoir been the dominant spokesman for the townships.
Mrs. E. G. Sinclair, deputy reeve of Deep River, sits with
Du Manoir on Renfrew County Council. The pair have had
sharp disagreements, but the articulate, homely housewife
(hot husband is a dental surgeon) who also serves as
night school teacher, nevertheless admires her sometime adversary.
"Guy is probably one of the outstanding men in Renfrew
County," she says. "He likes people, and people like him. He's
intelligent, and has learned to say what he wants to say in a
few words. He has a great knowledge of the people of the
area and he certainly understands the township-Deep River rift.
I think he's responsible for good progress in bridging that rift.
He's made us more aware of township problems."
Early one fall afternoon, Guy led us at the excursion—in the
form of a visitor from Ottawa—to get out of his townships
away from township problems, and off on a drive into his beloved
woods.
It began with a stop at Jim Tait's Deo Joachim's (calculated
to strangle the non-French, this word has mercifully been con-
tracted by the people of the area to the bibulous "Svishl"
"service station. As lively as previously advertised, Tait led the
way into his kitchen where Gertie served lunch.
Then back to the car, over the massive "Swishla" dam, and up,
up into the Laurentian woods, in their full finery of ever-
green, sparkling yellow and blazing red. Du Manoir breathed
depth and sighed: "The hills of home."
As he swung the car expertly onto a narrow, serpentine
logging trail, he pointed out the hazards facing a tank-truck
driver on this route in winter. Du Manoir went out on a limb
to guarantee fuel deliveries to seven logging camps stretching
as far as 70 miles into the woods; he personally bullied his
tankers through the first trip into each camp to show his driv-
ers it could be done. Last winter Du Manoir tankers made
300 trips into the wilderness.
Through a break in the tall trees, he pointed across the river
to the lodge of a Philadelphia man. As a county representa-
tive, Du Manoir has traveled to sportsmen's shows in New
York City and Cleveland to spread the gospel of vacations in
the Upper Ottawa valley; on a more practical plane, that
morning he had made arrangements with a local man to repack
the Philadelphia man's camp to put an end to petty vandalism
committed there.
Suddenly the trail curved into a clearing, where a farmhouse
saddled close to the ground beside three ancient unused sta-
bles. This was one of a string of "stopping places" on the log-
ging trails where, as long as 100 years ago, teamsters perked
their load of logs, stabled the horses and walked into the
cheery warmth to dry their clothes, slake their thirst and tie
into some hot food. The elderly owners—descendants of the
original proprietors—still live there, do a little plot-farming
and operate a tiny licensed tavern for the woods trade. Du
Manoir chatted with the couple, bought a ticket on a church
raffle, and headed back to the trail.
His expression hardened as he told how thugs several years
ago robbed the couple of their life savings—several thousand
dollars.
"The old people have never been the same since," he said
angrily. "Guy, would I love to have walked into the middle
of that holdup—with about two feet of inch-and-a-half pipe
in my hand."
Then he relaxed, pointed out a particularly breath-taking
view of the autumn woods and said: "A fellow really has to
love all this to work here. And I do. To me the Queen Elizabeth
Way is just another strip of tar."
Then the Eagle Lumber camp suddenly appeared, and he
revelled in a 20-minute session of trading insults with Ludovic
Pich on their respective business practices, size of family
and moose-hunting prowess. On again, then through a narrow
avenue of towering hard maples whose crimson foliage bathed
the trail in a suffused red glow, as from off-stage spotlights.
There was a momentary halt while Du Manoir grabbed an axe
from his car trunk and with a few deft swipes cleared a fallen
tree from the trail. Then the car pulled up at "The Tramps'
Retreat." A summer place he and 14 friends had just finished
building on the shore of a leased lake.
From there the trail ran deeper into the woods, until it
emerged at a logging camp which supplies the Eagle Lumber
mill. Du Manoir and his visitor sat down in the cookhouse to
a steaming supper of pork chops, homemade bread, creamed
beans, pickled beets, cake and raisin pie. (This is an occu-
panational hazard for Guy who, watches his weight carefully
but just can't seem to cut it down.)
It was dark now, and as the car sped home through the
moonlit pines, Du Manoir spoke thoughtfully of his plans. He
certainly would have to get over to France to inspect the
ancient ancestral home!
Then there were his public duties. He intended to stand for
warden of Renfrew County next year (Mrs. Sinclair in Deep
River had said he stood a good chance to get it). Finally, he
thought he might just have a stab at winning a 130-mile trip
down Highway 17 to the House of Commons in Ottawa.
In view of Guy's popularity, it seemed possible. And it
raised the intriguing prospect that, barring spectacular success
in pushing away from cookhouse tables, Guy would make the
current Commons heavyweight, 300-pounds. Jack Garland of
Nipissing, suddenly appear positively svelte.
Yet it's certain that if Guy du Manoir should be summoned to
Parliament, he will not miss an opportunity to climb into car
or tanker truck and get back to those logging trails of the
Upper Ottawa valley. The National Capital Commission's
Gatineau Parkway is, after all, just another strip of tar. 