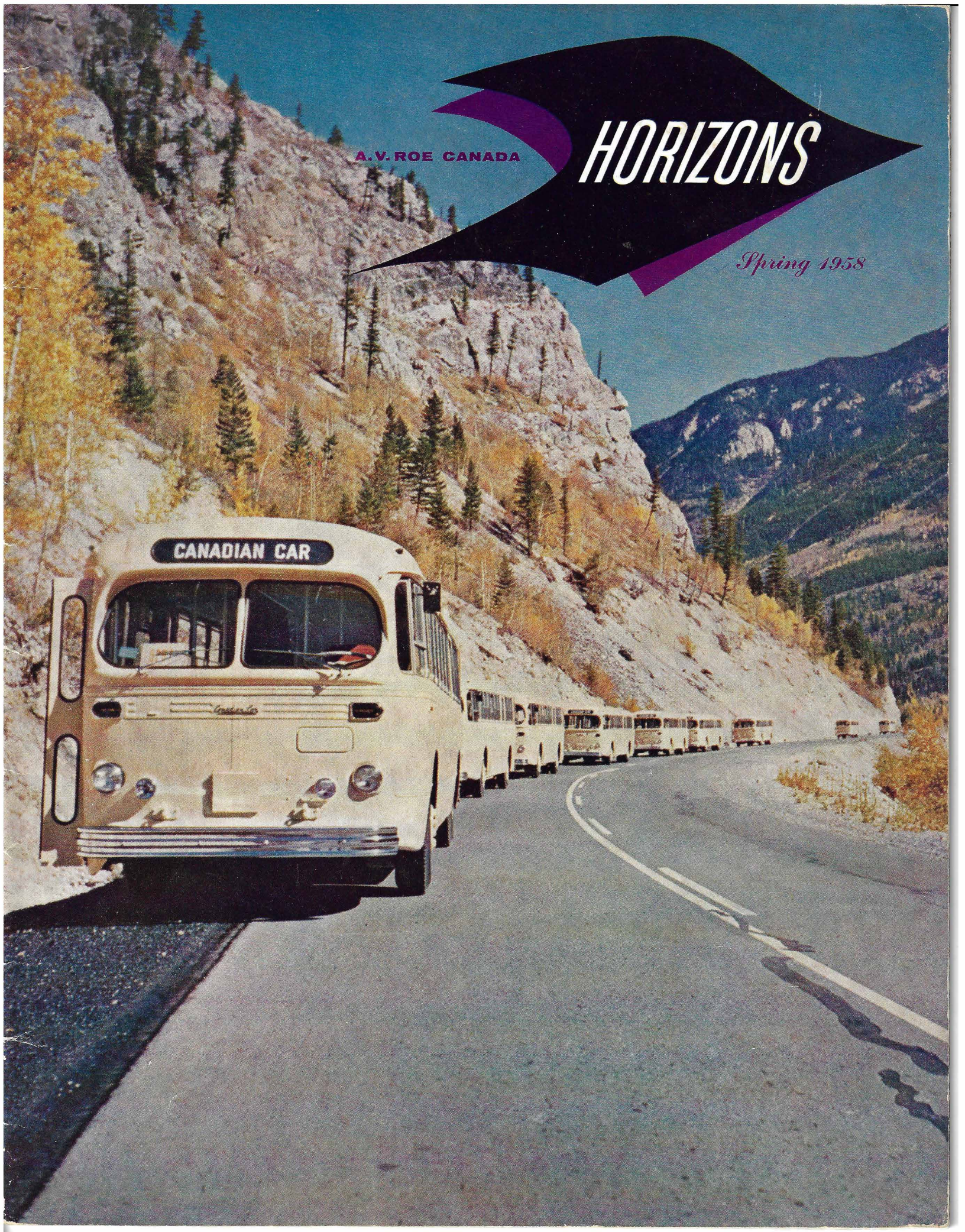
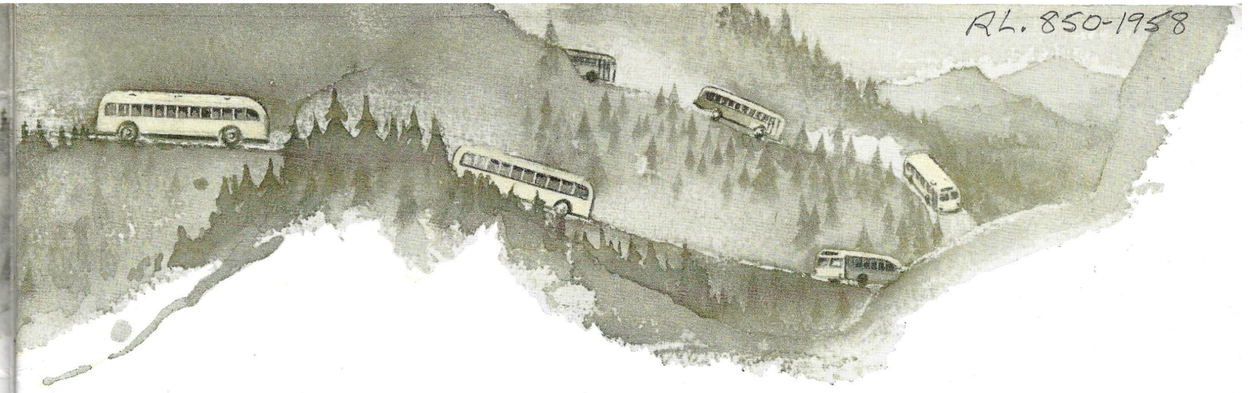
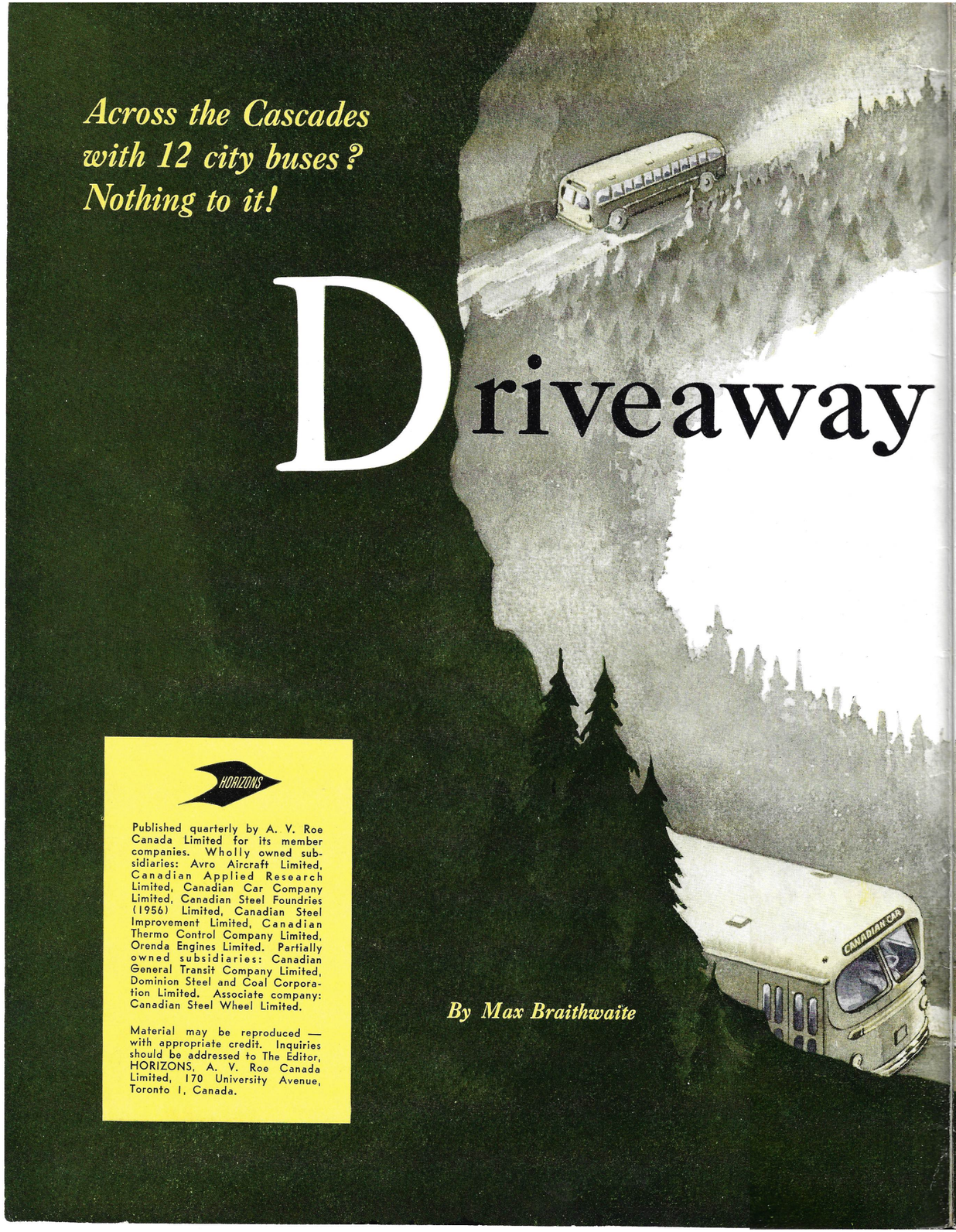

A.V. ROE CANADA
HORIZONS
Spring 1958
CANADIAN CAR

*Across the Cascades with 12 city buses? Nothing to it!*

# Driveaway - and up - and over






HORIZONS

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*By Max Braithwaite*

AT 8:30 on the morning of Monday, September 31, 1957, five shiny new 40-foot-long, cream-colored city buses pulled up close to the boulevard in front of Jimmy Carruthers' house in Nelson, B.C., and stopped. The drivers jumped out, stretched, picked up new fallen apples from the dewy grass or just gazed up at beautiful Elephant Mountain, around which a wisp of white cloud gleamed in the morning sun.

Jimmy, a 10-year-old with a white shirt, blue jeans and a skinned nose, came tearing out of his house to see what was going on.

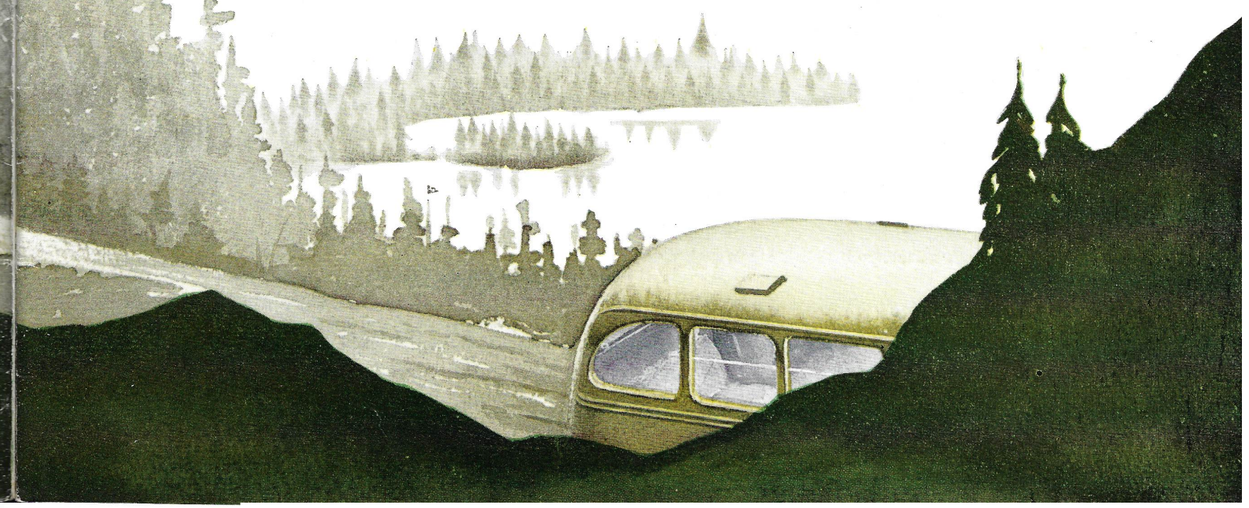
"Where the heck did all the buses come from?" he asked.

"Fort William, Ontario," I told him, and, as any publicity man worth his salt would, added: "They were made there by the Canadian Car Company Limited."

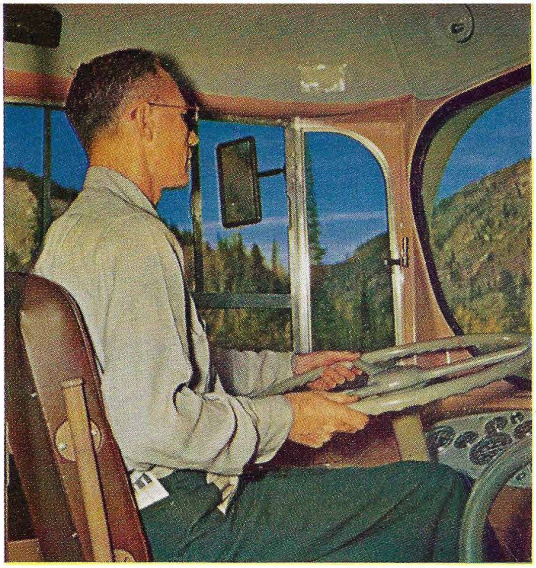
"Where they going?"

"Vancouver. There's seven more still to cross on the ferry. We've driven the 12 of them right across the western half of the country. It's been some trip."

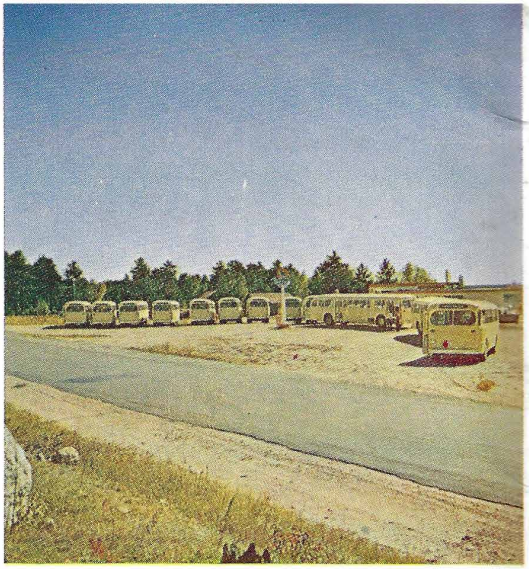
Jimmy dropped on his knees and peered underneath at the engine mounted amidships. "Diesels, eh?" Then he straightened up, eyes widening. "Holy cow . . . you're not going to take them across the Cascades, are you?"



Fort William, where it all began.



Ed. Hughes drove the leading bus.



First pause, Lake-of-the-Woods.

With that one question, Jimmy put his stubby little finger squarely on the problem that had been bugging Maurice Friesen, Can-Car service manager, who was in charge of this "driveaway" . . . whether to cut south and follow the U. S. road through the mountains or to deliver these all-Canadian buses by the all-Canadian route.

For, if you take the southern, all-Canadian route, you must go . . . as they say in the Rockies . . . "over the Cascades". This is 41 miles of roller-coaster, gravel road that twists and turns its tortuous way clear over the top of two mountains between Rossland, B.C., and Grand Forks.

As we had travelled across the prairies, through the foothills and into the mountains, the Cascades had become more and more of a mystery. About an even half of the "informed" people we asked about them said, in effect: "Don't be foolish! The Cascades are murder!" The other half said: "Nothing to it. You can take those buses across the Cascades as easily as you can take them over any mountain road."

**Time of Decision**

So, that's the way it was at Nelson. No decision had been made about the Cascades, but one would soon be necessary. One thing was certain: Maurice Friesen wasn't taking any unnecessary chances with $300,000 worth of new buses. But, as he said . . . "If it's safe, I'd sure like to do it."

The very idea of a "driveaway" itself is intriguing enough. It is simply a method of delivering buses from the place where they are made to the place where they will be used. The Canadian Car Company often hires expert drivers to pilot them to their destination. It constitutes a good shake-down run for both bus and engine.

Stu Barefoot, a photographer for Avro Aircraft Ltd. (a sister company to Can-Car in the A. V. Roe Canada group), and I went along on this driveaway as supercargo . . . Stu to take pictures and I to record my impressions.

And what impressions! At first, the idea of travelling more than 2,000 miles in a bus with a regulated speed of just under 40 miles per hour might seem pretty dull. Actually, it turned out to be a most interesting, humorous, beautiful and rewarding experience. And what better way to see Canada than through the broad windows of a slow moving bus?

**Technicolor Extravaganza**

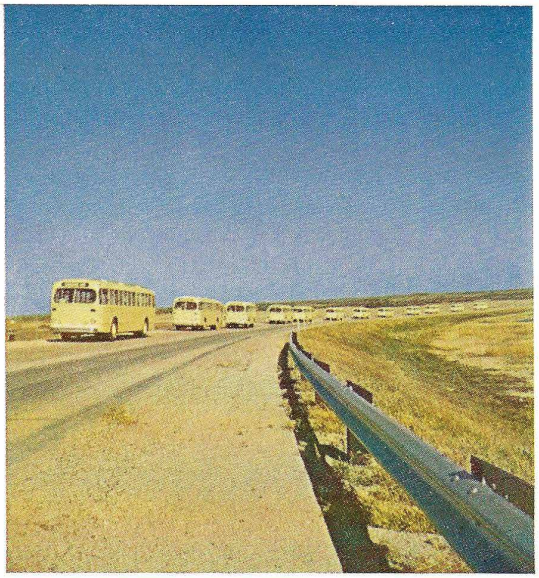
I won't soon forget the sight of the mile-long line of buses crawling across the flat prairies, with the sunrise tinting them in technicolor; or ex-sailor Len Halliman, driver of bus No. 3, arriving at our motel room door every morning with a can of tomato juice and a sailor's hornpipe for no other reason except that he felt like it. Or the frustration on the faces of Winnipeg bus riders on Portage Avenue as they watched 12 empty buses go by without stopping . . . and the look of smug satisfaction on the face of the bus driver as he looked back at them. Or the mountains in their autumn dress of dark green and gold.

The trip began from the 76 acres of the Canadian Car Company Limited plant, in the shadow of McKay Mountain on the western outskirts of Fort William, Ontario. Established in 1913, idle from 1922 to 1937, very busy during the war (1,500 Hurricanes and 800 Curtis Helldivers for the Battle of Britain), the Can-Car plant made a quick and satisfactory conversion to peace-time manufacture in 1945 and has since produced more than 4,000 trolley, gas and diesel buses.

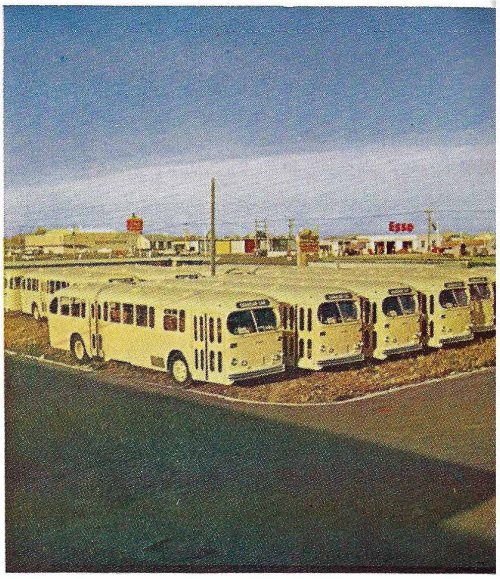
**Bus Builders' Bonanza**

In the late 40's, when most Canadian cities were making the switch from street cars to buses, Can-Car was turning out buses at the rate of three a day. The biggest single order placed in Canada up to that time . . . 250 units . . . was handled by Can-Car for the Montreal Transportation Commission. (This has since been topped by an order for 325 buses, also for Montreal.)

Portage la Prairie, refueling stop.



The sweep of the Canadian prairies.



Second overnight park at Regina.

The buses delivered to Vancouver are the result of many years of experience. Just under 40 feet long, eight and a half feet wide and 10 feet high, they will seat 52 passengers and carry as many more standing up. The exterior is a gleaming Rinex cream, while inside orange upholstery, pink walls and mottled grey floors are planned to relax the passengers.

But the feature we appreciated most in the long haul over many different kinds of roads is the air suspension system. Designed by Can-Car, this "air ride" carries the body of the bus on air-filled bellows controlled by automatic valves so that, regardless of size of load, the bus always rides even, and vibration and shock are cut to the minimum. It works!

**The Tablecloth Map**

Maurice Friesen and his first and second mates, Earl McQuigge and Frank Ramsdale, service representatives for Can-Car, had planned every detail of our trip right down to where we would spend each night and eat each meal. They had also planned the route. Maurice Friesen explained it to us on Wednesday at lunch. "We'll go by the Canadian route to Cranbrook, B.C.," he said, drawing an invisible line on the tablecloth with the blunt end of his fork, "and then we'll cut south and cross into the U.S. at Kingsgate, go through the states of Idaho and Washington, and up to Vancouver. Okay?" He looked at Stu and me as though expecting an argument.

**Sowing the Seed**

But we were there to take pictures and observe, not argue. "Fine with us," we agreed. "Of course, it might make a better story if we went through Canada all the way . . . but if we can't, we can't."

Friesen then explained that snow had been reported from the West two days earlier and that the Canadian route through the mountains might be too risky. "But," he shrugged, "if we happen to get perfect weather . . . who knows . . ."

No more was said, but I suspect that from that moment the 41 miles of gravel road were never completely out of Maurice Friesen's mind.

The next morning we were up at 4:30 and at the Can-Car plant well before 6:00. The temperature was just below freezing. The 12 buses were lined up nuzzling at the gate, and most of the drivers had already arrived.

Before the trip was over, we became good friends with all these drivers. They had been hand-picked for their ability to handle heavy equipment and to use their heads. Eight of them worked for the Fort William Transit, either as drivers or ex-drivers, two were Can-Car employees, one worked for a construction company while the other was a car salesman. Most had gone on previous driveaways and had carefully saved time from their holidays or by other means to go on this one. All were family men.

Stu Barefoot and I got into the lead bus with driver Ed Hughes. Ed, an ex-navy L.T.O. who is assistant manager of the Fort William Transit, is a slim, pleasant man of medium height.

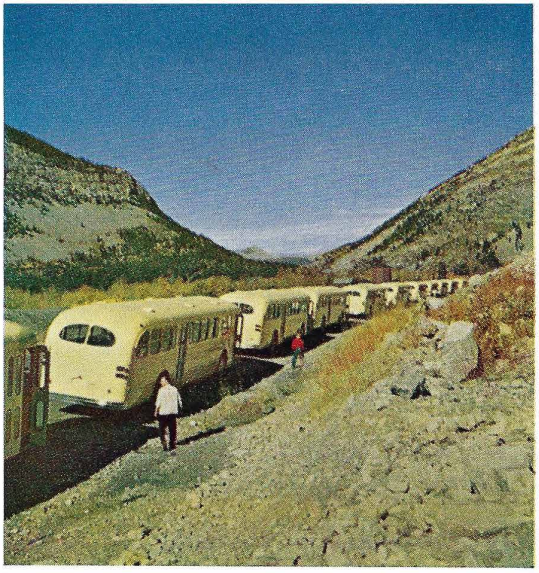
**Driveaways Were Old Stuff**

Driveaways were old stuff to him. He'd been over the route to the west coast before, having helped deliver five coaches to Victoria last June.

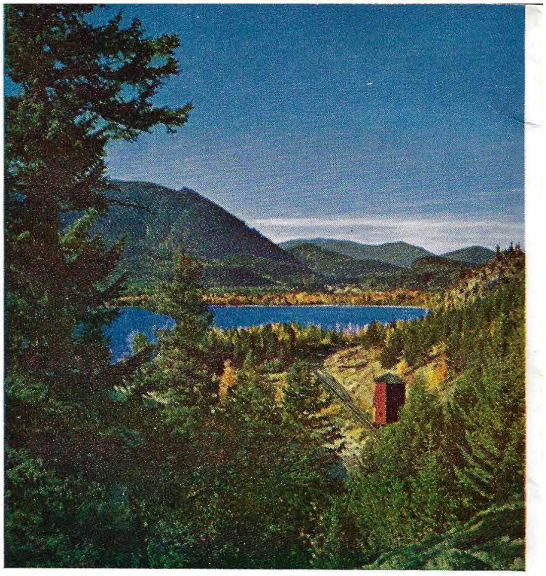
After hanging up his overcoat and good suit on the rails of the bus (the drivers were coming back by T.C.A.), Ed adjusted the driver's seat for height, distance forward, tilt and snugness of back rest to suit him. Then he worked a lever at his left hand and closed the front door with air pressure.

He pushed another button on the panel beside him and the big A.E.C. English-made diesel engine underneath the coach began to rumble. He tested the air brakes a couple of times, and shifted the lever into the "drive" position, explaining as he did so that, except to back up, he wouldn't have to touch that lever again. The transmission is fully automatic.

Begin and Braithwaite refueling.



Site of the Frank Slide tragedy.



Moyie Lake, 40 miles from Yahk.

"And don't worry about the cold," he grinned. "Soon as this baby warms up I'll turn on the heater and you'll be warm enough."

He swung the big bus through the gate, turned right towards Highway 17, and we were on our way. First stop, Winnipeg. Second stop Regina, third stop Lethbridge, Alberta. Thirteen hundred miles in three days.

It was more than a dozen years since I'd done any travelling on the prairies, and I had unpleasant memories of washboardy gravel roads, mud holes and dingy, greasy eating places in small towns.

### Prairie Roads and Motels

I was in for a pleasant surprise. The Trans-Canada Highway across northwestern Ontario and the prairie provinces is excellent, with Saskatchewan having perhaps the finest road of all . . . smooth, straight, and, in many places, with paved shoulders. The motels and coffee shops where we made our stops were as clean, comfortable and modern as you'll find anywhere.

We got a break in the weather, too. Each morning the sun came up in a cloudless sky and sank the same way in the evening. We shed windbreakers and sweaters as the temperature rose, as we went west, reaching a maximum at Lethbridge of 88 degrees.

The three-day trip from Fort William to Lethbridge was almost completely uneventful. Up every morning at 5:00, on the road shortly after, breakfast at around 7:00, lunch at noon and finish the day's driving around 6:00. The 12 motors purred like contented tigers and not one of the servicemen so much as peeked underneath a bus. We refueled at Portage la Prairie (581 gallons) and at Swift Current (880 gallons). The tall orange and grey television microwave towers spaced at regular intervals along the route, and the trans-Canada pipeline served to remind us of the unity of this varied land.

I rode in bus number two with Harold Prouty, assistant traffic manager of Fort William Transit, and talked about his grown-up children and one grandchild; with Len Halliman, a bus driver for F. W. T. ("It's great to be driving a bus and not have to pick up passengers"); with Harold Steele, another driver for F. W. T. and a sports fan with whom I argued about the Rough Riders and Alouettes; with Gord Mills, a F. W. T. toolroom employee who talked politics, and with Bill Frost who had never been out West before.

During the last afternoon, I rode in Earl McQuigge's bus and talked with Maurice Friesen, a handsome, athletic, prematurely-grey man of 38, who handled this convoy with the crisp efficiency of a sea captain.

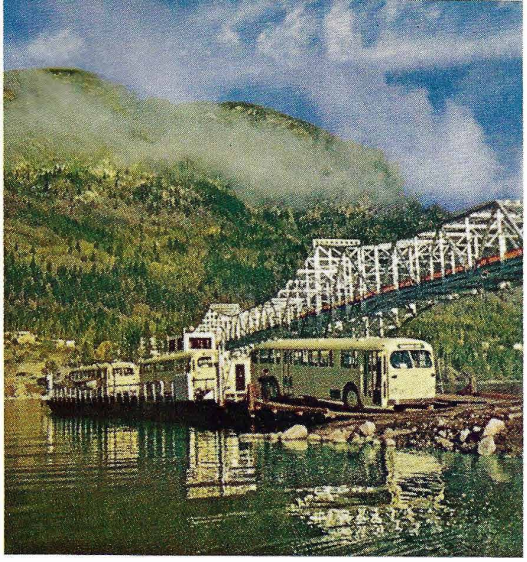
"Now that the first three days are almost over I can breathe a little easier," he told me, leaning back on the front side seat. "If there'd been anything wrong with any of these buses it would have shown up by now." He told me that Canadian Car Company had been conducting driveaways since 1950. He, personally, had been in charge of about 50 expeditions, delivering more than 350 buses. Never before, however, had he taken as many as 12 at one time.

### Snow Storms and Rescues

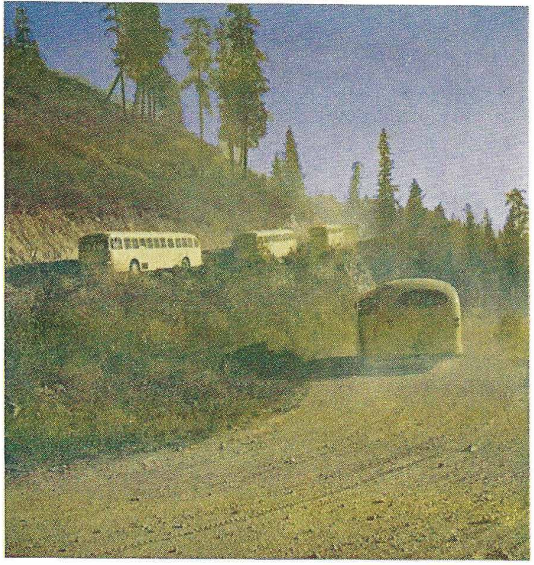
He told about driving through snow storms in Northern Ontario, of rescuing motorists who had hit the ditch (he carries a full line of first aid equipment and fire extinguishers), of taking six buses through Alberta roads where no cars dared venture.

"That all sounds pretty exciting," I said, "but so far this junket has been like a pleasant ride in the park . . . perfect weather, perfect roads, no bus trouble, not even a flat."

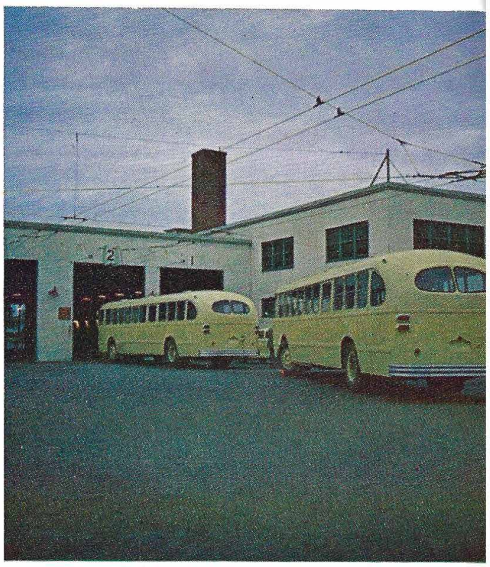
"We aren't there yet," he warned, and spread the road map out on the floor. "You know," he said, rubbing his chin, "I really hate going through



Ferrying buses wholesale at Nelson.



Almost like a dog chasing its tail.



Twenty-four thousand bus miles later.

the States. We have to put the buses in bond at the border, go through a lot of red tape, get in-transit stickers in each state we go through, and if anything should happen to one of these English-made motors we might be held up for days waiting for parts to get through customs."

I kept my mouth shut.

"I'll check at Lethbridge and find out just what that Cascade road is like," he added thoughtfully.

At Lethbridge ("the irrigation capital of Canada," population 32,000) we lined up the buses in the parking lot of the Dominion Stores Foodmarket and stayed at a motel across the road.

**"Don't Go Near Them!"**

As we pulled out the next morning, still clear and sunny, and drove through the rolling wheat land where strip farming makes a patchwork quilt of the fields, the mountains seemed only a few miles away. Actually, they were more than 50.

At the cattle town of Fort Macleod, where we stopped for breakfast, drivers Ron Lambert and Bob Anderson got into conversation with a tall man in a ten-gallon hat who professed to know all about the Cascades, and said: "Don't go near them!" The first of a long list of conflicting reports.

By mid-day we were in the mountains. We briefly paused at the site of the Frank Slide where a roadside plaque and a scrawled chalk message "Jesus Saves" on a flat rock reminded us of that night in 1903 when a good part of the side of Turtle Mountain slid into the valley and buried a town.

A fly fisherman after rainbow trout in beautiful Crow's Nest Lake paused to watch the long line of buses winding around the mountain and gleaming in the deep green and gold of the mountainside.

**Fuel Oil and Hamburgers**

The grades were getting steeper now, but the buses didn't seem to mind a bit. By noon we were in Cranbrook, where we filled the buses with 528 gallons of fuel oil and ourselves with pea soup, hamburgers and pie.

From Cranbrook it was 40 miles southwest, past beautiful Moyie Lake, to the town of Yahk. This was the first point of decision, because it is here that Highway 95 cuts south into the United States.

We turned northwest to Creston, where Delicious and McIntosh apples as big as grapefruit hung from propped branches. And then north along the side of Kootenay Valley and Kootenay Lake. It's impossible to describe the beauty of this long, slender lake, set like a glittering necklace between two ranges of mountains, but the drivers had little chance to admire it, because the road runs along a sheer cliff with rock so close to the right side that it was often necessary to swing the 40-foot buses into the left lane to avoid scraping their sides.

Loading the buses onto the ferry at Kootenay Bay to cross the lake was a further test of their manoeuvrability. But all made it without so much as a scratch, and the trip down to Nelson, where we spent the night, was fast and easy.

**Schoolboys' Delight**

The ferry across the river at Nelson (the new red and grey traffic bridge was to be opened in a week) could handle only a couple of buses at a time along with the commuters' cars, and Frank Ramsdale, driving the last bus, found himself left behind. Then he shared the ferry with a school bus loaded with kids, and naturally they had to pile out and into Frank's bus for a thorough inspection. Frank didn't mind, especially when he heard one of them remark: "Boy, this sure makes that old crock of ours look sick!"

Coming out of Nelson, the convoy got split in two and we lost half our buses. The first five, led by Ed Hughes, with Maurice Friesen as passenger, went down Highway 3A towards Trail, B.C. The next three, led by Fritzie Begin, followed the same

route some distance behind, while the last four, with Earl McQuigge in the lead, took Highway 3, which also leads to Trail.

Since there is no place to park five buses in the town of Trail, which is built literally on the side of a mountain, the first five buses pushed on upward to Rossland. There's a tricky turn coming out of Trail. Fritzie took the wrong one and headed back towards Nelson on Highway 3.

**Face to Face**

So, Earl McQuigge, boiling along Highway 3, was suddenly confronted with the spectacle of three Can-Car buses coming towards him. He flagged them down and, after some difficulty, managed to get them turned around and headed in the right direction. But in Trail, Fritzie took another wrong turn and started up the mountain towards the smelter. This time, a co-operative Mountie gave chase and brought back the wayward buses.

In the meantime, Maurice Friesen and five drivers were wandering up and down the streets of Rossland, asking passing motorists: "Have you seen seven buses in the mountains?" and receiving some curious looks in return.

Just beyond Rossland, 3,420 feet above sea level, is the point of no return so far as the Cascades are concerned. Here the road splits . . . a fine paved one going south into the U.S. and a scruffy gravel one going right up the side of a mountain that is exactly one mile high.

Right here Maurice Friesen had to make his decision. The garage man said: "I wouldn't do it. The road through the U.S. is only 35 miles farther and a lot better." A transport driver who had just come over it said: "Not bad. In fact the road's in the best shape it's been all summer." The clerk in the Department of Highways office explained that they were hauling 50-foot pipe over the road.

**The Practical Answer**

At noon Earl McQuigge arrived with the other buses, and a suggestion: "We could hire a taxi to lead us across," he said. "Stick a big sign on the front, warning approaching cars."

We had lunch. Maurice Friesen stood up and said: "Come on . . . let's get the show on the road."

"Which way we going?" Ed Hughes asked casually, while 12 pairs of eyes were on Maurice's face.

"By the Cascades. I'll be out in front in a taxi to stop the traffic. We won't have any trouble."

To describe the trip up one side, over the top and down the other side of those two mountains would take a story in itself. I started counting the hairpin turns, or "switchbacks" as they call them, and lost track somewhere around 20. At times the front end of the bus, which is about four feet ahead of the wheels, was hanging over several hundred feet of nothing. At one point, near the second summit, I looked down and could see no less than three lines of buses zigzagging, nose to tail, up the side of the mountain. Going down the other side, the buses seemed literally to stand on their heads. But the air brakes kept everything under control, and the big engines had no trouble.

**A Piece of Cake**

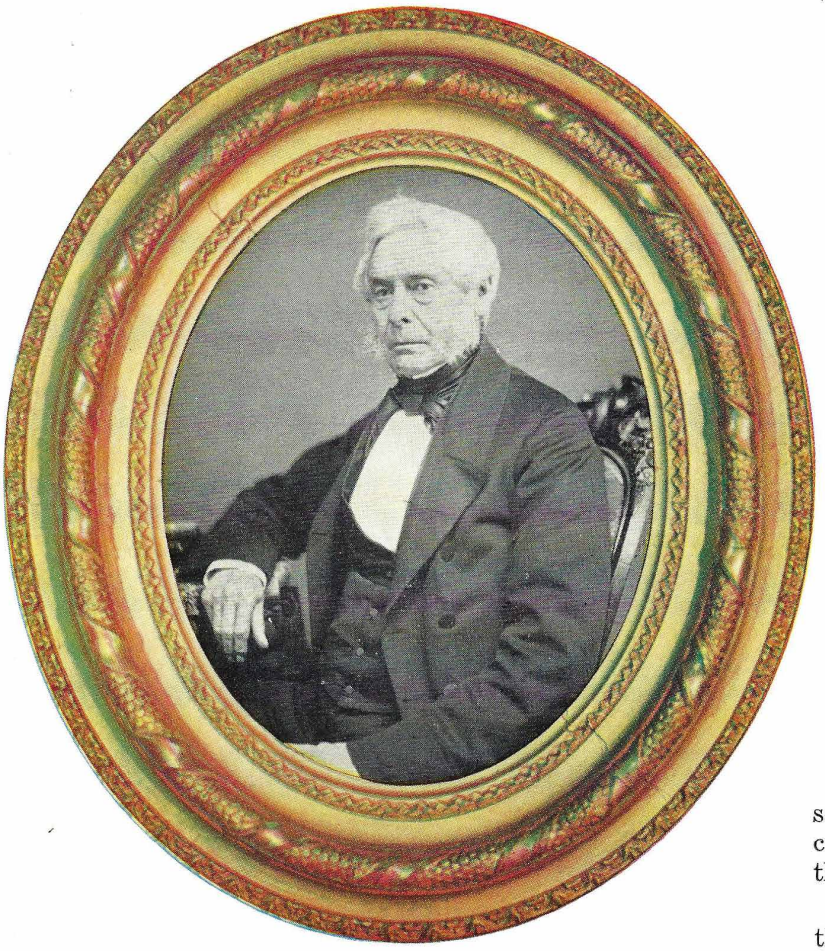
Actually, it turned out to be a piece of cake. All the drivers agreed that, at no time, were they in the slightest danger. The taxi in front kept the oncoming cars, trucks and buses at the safe passing points. It was dusty, but dust wipes off.

The trip from the Cascades into Vancouver was anti-climactic. We went over a couple more ranges and up and down some steep grades between Penticton and Hope, but nothing to get excited about.

When we finally arrived in Vancouver, with all the buses running perfectly, and left them at the Oak Ridge garage of the B. C. Electric Company, we felt as though we were parting from old friends. But we knew they could take anything Vancouver traffic had to offer.

After all, they had travelled over 24,000 bus miles without any kind of trouble whatsoever. And they had come the all-Canadian route too . . . over the "Cascades".

**Maurice Friesen, Can-Car service manager, handled his extraordinary convoy with the crisp efficiency of a sea captain.**



# The REAL FATHER of the SEAWAY

*By Duncan McLeod*

WILLIAM HAMILTON MERRITT was an American who saved Canada from probable annexation to the United States.

A New Yorker by birth (in 1793), a captain of the Canadian Militia in the Battle of Lundy's Lane, sometime bankrupt, one-time president of the Executive Council of Upper and Lower Canada, Merritt should go down in history as the Father of the Seaway. But he won't.

He might also have become the — not "a", but "the" — Father of Confederation. (In 1859 he introduced a motion in the Legislature that all provinces should unite in a confederation which would end the multiplicity of governments and permit the money thus saved to be diverted into such great public works as the Seaway for the benefit of all. His motion was defeated 51 to 7.)

**No Time for Caution**

Merritt confirmed an early reputation for audacity by courting the daughter of New York State Senator Jedediah Prendergast while still being held as a prisoner-of-war. (He had been captured at Lundy's Lane when he scouted too closely to the positions of the American invaders.) Then, Merritt had the temerity to bring his bride back to a Niagara Peninsula community that, in 1815, regarded all Americans as "the enemy". Near the tiny hamlet of St. Catharines, the Merritts dammed up Twelve-Mile Creek to operate a gristmill and sawmill, built a general store, distillery, potashery, coopery and blacksmith shop, and by 1818 had run themselves $14,800 into debt.

Merritt looked the facts in the face, noted that the promise of the new Erie Canal was drawing settlers down into New York State, reasoned that a waterway past the bottleneck at Niagara Falls would be invaluable to Canadian development west of Lake Ontario — as well as to his own business — and concluded that the government of Upper Canada was unlikely to take the initiative in improving the situation.

**"Leave Canada, Young Man!"**

He discussed it with his father-in-law, and Senator Prendergast urged him "to leave a country so devoid of enterprise, and become a citizen of a young and progressive republic, where a man might hope to make his mark." But before he could make up his mind, an insignificant event altered both Merritt's life and the course of North American history. Twelve-Mile Creek began to run dry, and Merritt and other millers who depended on it had to look desperately about for more water to run their mills.

Merritt suggested that another stream above the Niagara escarpment might be channeled into the Creek. They investigated and found that only a four-mile ridge of land separated Twelve-Mile Creek from the Welland River. But the four miles might as well have been 40, considering the meagreness of the millers' resources . . . until Merritt had a brilliant inspiration. Why not dig a ditch deep enough to float barges from the top of the escarpment into the Welland River and thence to the upper Niagara River and on into Lake Erie? All that would then be needed would be an incline

railway up the escarpment from Twelve-Mile Creek to the canal, and Merritt would have both water for his mill and a way of answering the Erie Canal development and its depleting effect on the settlement of the western part of the province.

He organized the millers' petition, submitting the idea "as a matter of great national importance"; but the Legislators of Upper Canada disagreed.

The government had its own plan for connecting the St. Lawrence-Great Lakes system, but at the western end it involved a canal from Burlington Bay to the Grand River flowing into Lake Erie; and at the eastern end of Lake Ontario, the proposed route was due north from Kingston to the Ottawa River and thence to the St. Lawrence.

**First Welland Canal Company**

The Burlington Bay-Grand River route would not suit Merritt at all; so, while military and government officials were deliberating over their course, he borrowed enough money to pay his most pressing debts and set about forming the Welland Canal Company. Millers, merchants, and tavernkeepers around St. Catharines comprised the nucleus, and then Merritt carried his promotional activities to York and succeeded in his petition for a charter, with a capitalization of $200,000.

He argued most convincingly that his proposed canal, and a second one by-passing the rapids of the St. Lawrence, would together cut shipping costs between Montreal and Lake Erie from $25 a ton to $6.50 a ton. Further, he declared, their net effect would be to save Canada from possible bankruptcy and annexation to the United States! (This opinion has recently been supported by H. G. J. Aitken, a Harvard University economist.)

Merritt was so persuasive that he left York with the name of the Hon. John Henry Dunn of the Legislative Council as his president; and, anticipating the practice of 20th century fund raisers, proceeded to Montreal to exploit this prestige association. In short order, he had sold $80,000 worth of stock; but then Dunn resigned. Senator John Barentse Yates, a colleague of Merritt's father-in-law, and head of the New York State Lottery, was approached next, and he was sufficiently impressed to make an $80,000 investment out of his Lottery funds.

**More Money Needed**

Irish laborers were recruited from the Erie canal project and work on the Welland canal was begun. Locks, instead of an incline railway, were to carry ships over the escarpment; and a tunnel, instead of an open-cut canal, would traverse the ridge above the escarpment. The cheaper tunnelling method, however, proved unpractical; so the company was faced with an unanticipated need for $600,000 to dig a deep-cut canal.

To make his petition for a new charter (increasing capitalization to $800,000) palatable to the Legislature, Merritt made it a condition that all directors of the company must be British citizens resident in Canada. And, further, he limited his sale of shares to Senator Yates to $300,000. Merritt then looked to England for additional capital, and personally beseiged the Chancellor of the Exchequer to obtain a government loan.

Always aware of the importance of public opinion, he waylaid the editor of The London Times, explained his Welland Canal plan, and the following day was gratified to see that influential newspaper advocating his case. He came home from England with $200,000 of the British government's money, plus smalier amounts from private investors (including that arch-conservative, the Duke of Wellington).

Back home, super-salesman Merritt showed another side of his complex character. His workers were bogging down with fever and ague in the pest-ridden swampland through which they had to cut a feeder canal, so Merritt went among them every day, despite his own ill-health, to offer them encouragement.

**The Human Touch**

One day he noticed a worker who seemed especially weak, and he asked his foreman, William Ahern, what the man's trouble was.

"His wife and two children have been down with the fever for two weeks," Ahern explained, "and poor Dolan, instead of sleeping, has been sitting up nights caring for them."

Merritt called the workman over, told him to go home, and ordered a doctor sent, at his personal expense, to take care of the Dolan family.

"And no matter how long this poor man may be away from the works," he instructed the foreman, "remember that his pay goes on until his wife recovers."

By November, the 27-mile feeder canal was completed, and on November 27, 1829, two schooners made the first trip from Lake Ontario to Lake Erie.

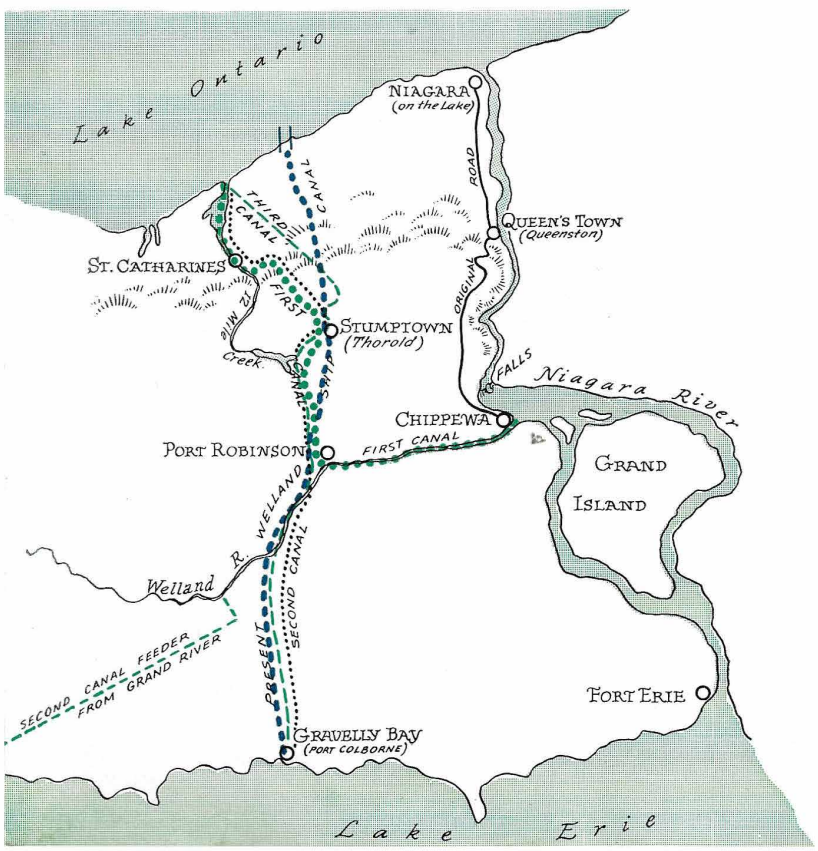
No sooner was this accomplished, than the indefatigable Merritt left for York to press his campaign for a series of canals around the St. Lawrence River rapids between Prescott and Cornwall. He wrote in The York Freemason, and published a pamphlet for distribution to members of the Legislature, in which he alleged:

*"It is a reproach upon the intelligence and enterprise of the country that this improvement has not been commenced long since. The cost of transporting a ton weight of merchandise from Liverpool to Montreal, a distance of 3,200 miles, is only $2.50. But the cost from Montreal to Prescott, only 120 miles, is $16! Further west it is prohibitory . . ."*

The following spring, schooners found it almost impossible to beat upstream through the Niagara current into Lake Erie, and it became apparent that the Welland Canal would have to be extended to Lake Erie. But the company owed its workers so much back pay that they refused to lift a shovel, and the whole enterprise tottered on the brink of bankruptcy. Merritt sent to Montreal for new Irish immigrants, and these brought Asiatic cholera with them. Despite all this, the extended canal was completed in June, 1833 — and its wooden locks leaked so badly they wouldn't work.

**The Political Route**

Merritt, as usual, advanced in the face of defeat. He entered politics, was elected to the Upper Canada Assembly, negotiated another government loan, and finally introduced a motion that the government buy the Welland Canal "and complete it with stone locks on a scale commensurate with its importance". His motion passed by a majority of one and was hesitantly shelved. They had had enough of "Merritt's Folly".




Later, after he was cleared of a charge of fraud, his Act to buy the canal and complete it was implemented, and Merritt was made president of the Welland Canal and chairman of a committee for the improvement of the St. Lawrence.

**A Tory Reformed**

Rebellion flared and sputtered out in '37, and in the ensuing shift of the political wind, a new Welland Canal president was appointed. Merritt feared that his Tory party intended to abandon the canal, so he switched to the Reform party and was elected to the newly-created Legislative Assembly of Upper and Lower Canada. There, he introduced a bill to make $6 millions available for the Welland and St. Lawrence canals. His bill succeeded, and he was again the head of the Welland project.

The year 1850 saw both the Welland and St. Lawrence Canals completed and Merritt rewarded for his efforts by being appointed president of the Executive Council of Upper and Lower Canada. He resigned the same year to become Commissioner of Public Works for the two provinces, and in order to complete his dream of the St. Lawrence Seaway by building yet a third canal — connecting Lake Superior to the rest of the great waterway system.

As he himself phrased it:

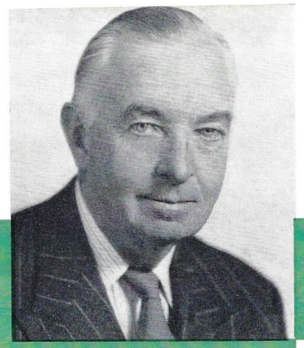
*"I feel a strong interest in seeing work on our great inland waters finished on a scale commensurate with their extent at the earliest possible moment, confident that their success will exceed the expectations of the most sanguine . . ."*

He had surveys completed, but lacked the necessary funds. It was then that he introduced his motion for Confederation; and when this was defeated, he resigned from the Department of Public Works and became an Independent member.

**No End of Controversy**

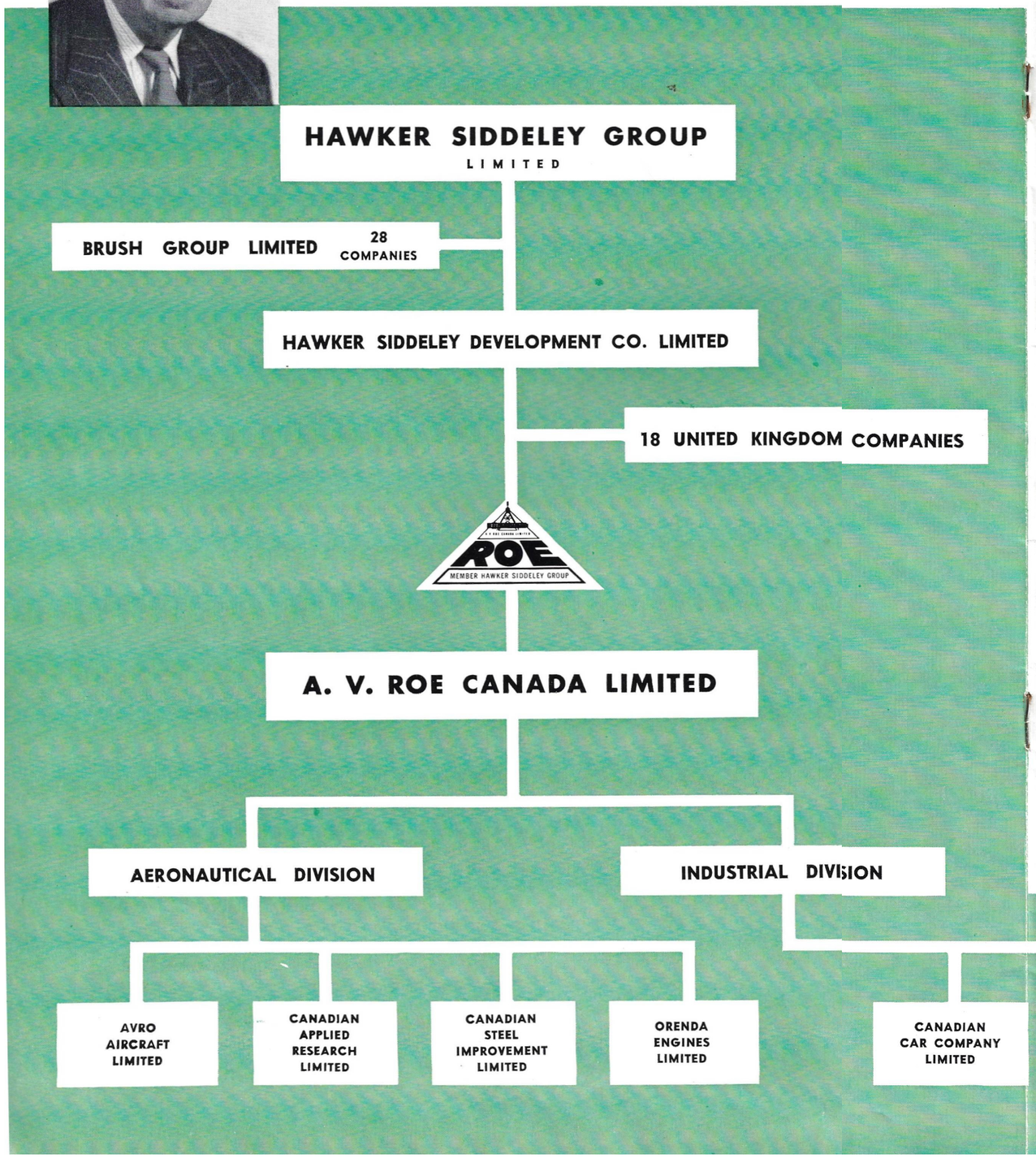
For the remainder of his life, Merritt's bold ideas embroiled him in public controversy here and in Great Britain as well. His promotion of the first railways in Southern Ontario, it was said, "would benefit the Americans, since they are along the line of an extended, unprotected frontier." His proposal of increased political and economic ties between Canada and the British West Indies was rebuked by Earl Grey, then Colonial Minister, as "being against the best interests of Britain". In 1862, having invested his fortune in an unprofitable railway along the Welland Canal to overcome the fact it was now too small for larger lake vessels, Merritt went to Quebec to organize a company to ship grain to Europe.

In Montreal he suffered a stroke, and asked to be taken home. As the steamer "Champion" was passing through his Cornwall Canal on July 5, Merritt died. He had made a much greater mark than is indicated by the small stone cairn at Allenburg, ineffectually honouring his memory.



# "We have become one of the leading industrial organizations in the U.K. and Canada"

*. . . Sir Thomas Sopwith*




*Following are highlights from the 1957 report by Sir Thomas Sopwith, chairman, Hawker Siddeley Group Limited.*

### Expansion and diversification

The acquisition of the Brush Group and Dosco has changed the character and structure of the Group. Two years ago the net assets of the Group were divided in the proportion of 85 per cent. aviation and 15 per cent. industrial. Today, they are roughly 30 per cent. aviation and 70 per cent. industrial.

### New fields entered

Largely as a result of our diversification policy the Group's new interests include, among many other things, steel production, shipbuilding and ship repairs, complete power plants for the generation, distribution and utilization of electricity, marine generating sets, steam turbines, most sizes of diesel engines, coal mining and many kinds of steel structures including bridges and power transmission pylons.

### Success in export markets

During the year the Group has achieved considerable success in the export field.

This will help to keep our factories well occupied for some little time to come. The export order book includes contracts with the Indian Government, of a value approaching £30 million, for Hawker "Hunter" fighters and two-seat trainers, and with Germany for 68 "Sea Hawks". Avro Aircraft CF-100s are being delivered to the Belgian Government, having been selected in open competition with the leading interceptors of the type in the free world, and a large number of "Orenda" engines are being supplied to Germany for use in F-86 "Sabres". Brush has obtained orders for large diesel electric generating sets for French Guinea, and 200 generating sets for Tripolitania.

In recent years the exports of the Brush Group have exceeded 65 per cent. of its annual turnover.

### Guided missile progress

The performance shown by Sir W. G. Armstrong Whitworth Aircraft Ltd.'s "Seaslug", which is the first Naval guided missile to be developed in the United Kingdom, has been encouraging. It has been fired with success and, we believe, is the first surface-to-air missile in this country to be operated under Service conditions.

For the first time, a corner of the veil of secrecy has been raised in connection with Avro's (Manchester) activities in the weapons field, by the disclosure of its new stand-off bomb. This new weapon, capable of carrying a nuclear head, is the natural and logical armament of all the "V" bombers. Other companies in the Group are making their contributions in this field.

### Nuclear power developments

Hawker Siddeley Nuclear Power Co. Ltd. is now well established and the company has been examining a number of reactor system projects for land and marine use. It has also been carrying out research and development, particularly in metallurgical and chemical fields for reactor systems of advanced character.

In equal partnership with John Brown & Co. Ltd., a company known as Hawker Siddeley John Brown Nuclear Construction Ltd. has been formed to act as the focal point for the resources of both groups of companies in this field.

It must be emphasized that all this nuclear work is of a long-term and exploratory nature.

### Progress in civil aviation

Work is well under way on the Armstrong Whitworth A.W.650 "Freightercoach". Assistance from other Group companies is making a significant contribution to producing the aircraft quickly, and its prospects for sales look promising. In addition, Armstrong Siddeley is now actively developing engines for the civil market.

### Supersonic interceptor unveiled

In Canada Avro Aircraft unveiled the "Arrow", a very advanced long-range supersonic interceptor.

### Advanced new turbo-jet unveiled

Orenda Engines has developed a supersonic turbo-jet, the "Iroquois", which will be used in production versions of the "Arrow" and, it is hoped, in other aircraft. An agreement has been signed for this engine to be manufactured in the United States by the Curtiss-Wright Corporation.

### First diesel-electric locomotive delivered

As the first stage of their policy of modernization, British Railways have ordered a number of diesel-electric locomotives. Twenty have been ordered from The Brush Group Ltd., the first of which is now in service.

# Canada's BIGGEST FOUNDRY

*By Clive Baxter*

TOWARD the eastern end of bustling Montreal Island stand the long, smoke-stained buildings of Canadian Steel Foundries (1956) Limited. From time to time, its giant furnaces bathe the scene in an unearthly glow. This is Canada's biggest foundry.

From its doors in 1957 came a third of the castings needed so urgently by a fast-growing industrial giant of a country.

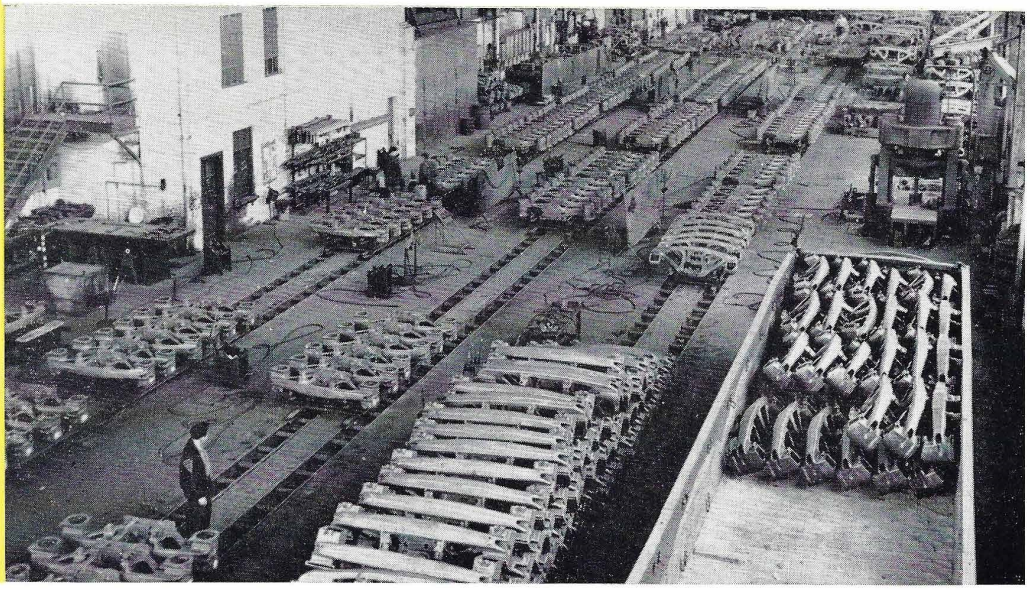
Things have changed in the area of Longue Pointe, the foundries' present home. In the lifetime of a number of today's employees, it stood sombre and powerful at the far end of the streetcar line that wound out from the then far-off homes of Montreal. Now the city has expanded to envelop it. New homes, schools and fine roads surround the plant.

But other things remain unchanged. Chief among these is the part the foundry plays in the Canadian economy. It was built to fill a pressing need, and has been doing so ever since.

**Began in 1880**

The story dates back to 1880, when a new company, Canada Switch and Spring Limited, came into being. Its role was to supply the connecting parts for the network of new railway lines that were reaching across this young nation. A foundry was built at Point St. Charles. Dust-caked men began to ship the key links of railway.

Shortly before 1900 the company changed its name and became Montreal Steel Works. Work went ahead without any major changes until 1911. Then the name became Canadian Steel Foundries Company, Limited, a subsidiary of the recently incorporated Canadian Car and Foundry Company.



Cast steel truck frames and side frames for diesel locomotives and railway cars make up a quarter of the foundry's tonnage.

Demand for railway equipment increased month by month. Those were days when Canada's future literally hung on just how quickly the steel arteries could be made to grow across the land. Canadian Car and Foundry had come into existence to help meet the nation's need.

**Full Capacity Plus**

Soon the new company was working at capacity, but the demand for steel castings kept mounting.

Top management decided on a sweeping expansion program, and in 1912 a new foundry was built at Longue Point. The latest ideas of the day went into its design. The staff reported for work at the world's most modern foundry.

The 1930's saw a falling-off in work pressure at Longue Point, as everywhere else. But World War II threw down a new challenge. More work than ever before was turned out.

In 1935, to knit the Can-Car family more closely together, the Canadian Steel Foundries Company was made the Steel Foundries Division of Canadian Car and Foundry Company Limited.

By 1943, the foundry again could not keep up with the needs of its customers. Another major expansion and modernization program was undertaken. This was predominantly to fill the wartime demands, but with peace it was converted to civilian requirements.

Postwar Canada hit its real economic stride. And the country was hungry for steel. By 1954, still greater production capacity was needed — and provided — pushing Canadian Steel Foundries to its present position of leadership, and enabling it to turn out a third of the nation's total steel casting volume.

The 1954 program, alone, cost $4 million. Today new methods and equipment are under constant study, to keep up with latest foundry techniques.

**Joined Roe Group in 1955**

In October, 1955, Can-Car became a part of the A. V. Roe Canada group, and in September, 1956, the Roe policy of decentralization resulted in Canadian Steel Foundries (1956) Limited.

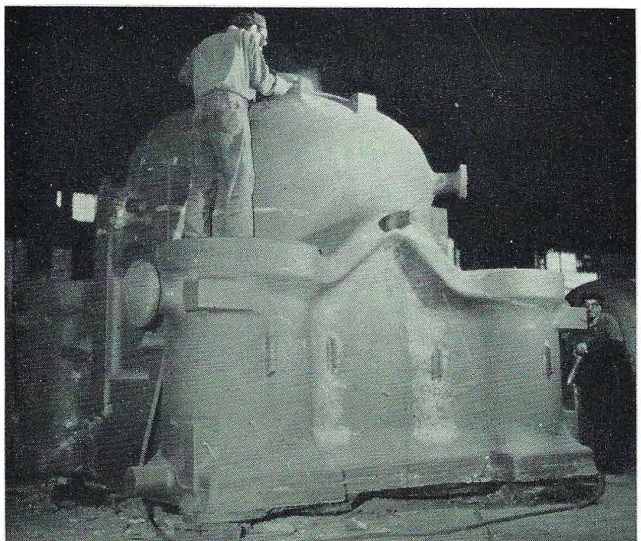
As with any great industrial concern, Canadian Steel Foundries means many things to many people. To the layman visitor, it is a world apart. When he leaves the ultra modern office block, the newcomer is plunged into an atmosphere of furious noise and movement.

Within the high ceilinged chambers of the plant are contained really five separate foundries.

The first of these handles pit castings. These are the big boys that can weigh up to 200,000 pounds each. When this writer visited the plant, work was going on to produce unbelievably huge turbine blades for hydro-electric projects. They towered two or three times over a man's height. These are poured in pits up to 24 x 27 x 14 feet deep.

Then there are the truck frames. These are the

One of Canada's heaviest castings is given a clean-up.



The sun shafts deep into foundry shadows to catch the atmosphere for this unusual camera study.

steel "skeletons" that secure railway cars and diesel locomotives. These units make up approximately one-fourth of the foundry's tonnage.

Further along come small, miscellaneous castings. These can weigh as little as four ounces, and are produced for the myriad needs of industry. The majority of the work here is on parts for railway couplings. Then there is a section producing side frames and bolsters for freight cars, and finally a jobbing shop to turn out the "bodies" of the railway couplers and other assorted railway castings. Throughout a tour of this labyrinth, one is struck by the dedication of the 1,200 foundry men. They are steelmen, and they take pride in their calling.

While their working conditions could never be described as luxurious, the men of Canadian Steel Foundries today work under circumstances their fathers would not have believed possible. There is still dust in the air, but today enormous suction machines draw out the major part of it. The floors are now concrete — only a few years ago they consisted of rough ridges and holes covered with sand. Even in 1958, few other foundries anywhere in the world have a smooth concrete floor.

### Like a Dowager Reducing

Whether easing the metal into the five furnaces where 2,900-degree heat transforms hard steel into a volcanic, bubbling liquid, or operating the shakers — which shudder the finished castings, like a dowager on a reducing machine, to clean off loose particles of sand and metal — they work without pause.

Next door to the main foundry is the model train fan's full scale heaven. Here are produced the switches and "frogs" that form the interlocking parts of a rail system.

The company often is called upon to plan and supply a track layout for an industrial siding. When this is done, the track is brought in — it is not made by Canadian Steel Foundries — and laid out on the floor. Manganese frogs, switches, etc., are connected (in sections if their size dictates), match-marked and taken apart again and shipped to the site to be installed.

### For Railways of the World

Who are Canadian Steel Foundries' customers? By far the major part of the production still finds its way to the railways. That has always been the company's raison d'être. And today, not only Canadian lines are served, but railways across the world. Other sides of industry, too, are on the customer list. A rough breakdown of 1956 dollar sales showed 66.7 percent went to the railways in the form of castings, 6.8 percent in track work. The remainder was largely accounted for by deliveries to hydro-electric and similar projects.

The railways usually received the production indirectly, as part of another finished product. A considerable percentage of the finished castings, for instance, go to Can-Car to be built into railway cars and locomotives.

Castings from Longue Pointe have found their way to railways in such diverse places as South Africa, New Zealand, South America, India (120 steam locomotives), Pakistan, Argentina, New South Wales (diesel locomotives) and Jamaica.

Turbine castings are employed in the Indian power development at Warsak and in Chile. Cast-

ings are also in use in a new Pakistan cement plant. The majority of these were supplied as part of Canada's Colombo Plan contribution.

How does a steel foundry stay on top in its field? Canadian Steel Foundries does it by pioneering many new methods and by quickly utilizing the best ideas from the rest of the world.

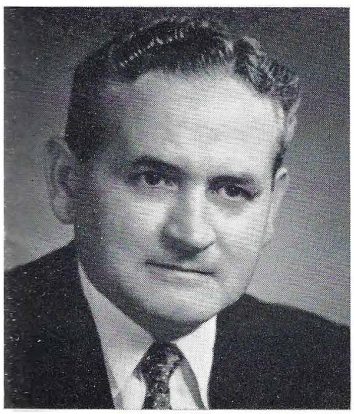
Take, for instance, the matter of sand. Castings are packed in a cement-like casing of special sand while they take form and cool. This is not just any old sand from the local beach, but a "bonded sand". It comes from Ottawa, Illinois, and it is expensive even before the long haulage charge is added. Yet a ton of the sand is used for every ton of castings. And, in the old days, it was only used once. Canadian Steel Foundry engineers worked long and hard on a method that now recovers up to 80 per cent for re-use. They have also developed additives that increase its efficiency.

**Sand Handling Modernized**

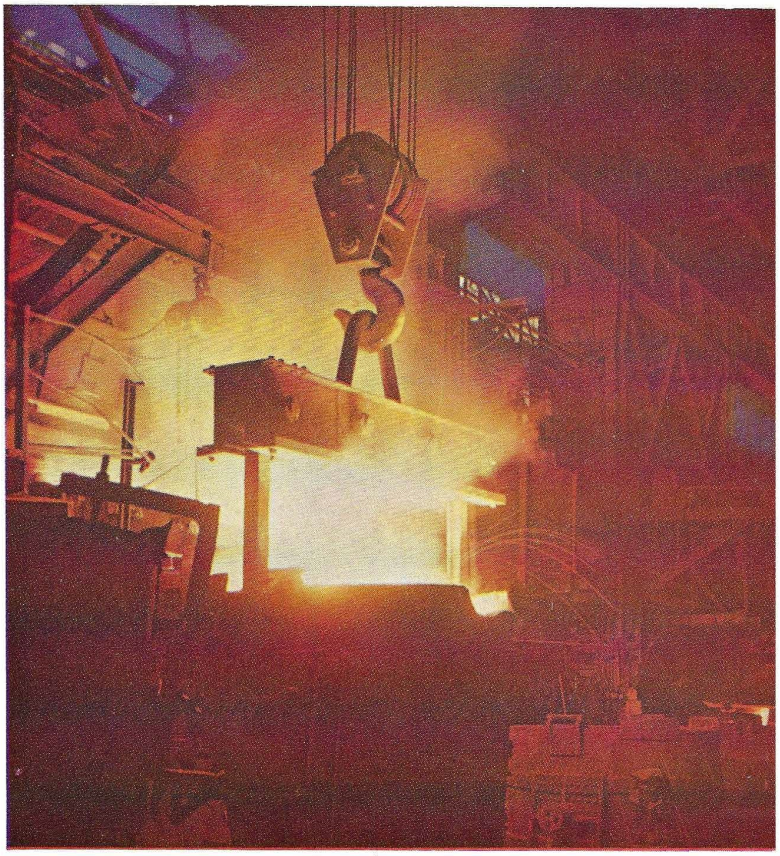
Handling the sand is critical too. Once, it was piled in big heaps out-of-doors. When needed, it was transferred from the piles in trolleys, taken to the castings and then laboriously shoveled and packed hard around the mould.

The old-fashioned method worked, but it was time-consuming and added to costs. Now a system of silos and overhead conveyor belts takes care of the sand and automatically delivers it to the "sand slinger".

This unusual machine almost defies description. A driver sits on an outside seat — rather in the fashion of a steam roller or bulldozer operator — and drives the giant slinger along tracks to the casting. High above his head is the sand supply. This pours down into a funnel, from which it is blasted at the rate of a ton a minute into the space around the mould. By deft manipulation, the operator can swing the elephant-trunk blower back and forth to pack the sand firmly into every crevice.



*"The steel casting industry is constantly developing new techniques to meet the demands of Canada's rapidly expanding economy," stated G. L. McMillin, Canadian Steel Foundries' vice-president and general manager. "As a leader in the field, we are striving to learn new technological processes, to achieve greater production know-how and the development of an improved product. This objective is being reached by the application of teamwork and by the zeal of our people."*



**A crane-suspended ladle fills moulds with liquid steel.**

Describing this sand slinger system, the authoritative U. S. magazine, *Better Methods,* wrote: "In concept, design and construction, this system is one of the most modern ever installed."

Canadian Steel Foundries chalked up another "first" with the use of plastics for making up patterns for moulds.

Previously the pattern — or the model — of the final casting was made either from wood or concrete. Wood was easy to handle and cheap. But if a number of moulds had to be made from one pattern, concrete was the only substance strong enough.

**A Place for Plastics**

Canadian Steel Foundries experts thought plastic could be added to the team. Considerable experimenting was carried on under the leadership of the foundry's metal pattern shop foreman and it was found that, the more intricate the pattern, the more suitable in every way was plastic. Its smooth surface produced a mould with an absolute minimum of rough edges to require machining later.

Now plastics are rapidly being accepted in steel production across the world. The same men who pushed ahead with the idea are already at work on other dreams that may soon play their part in improving production. Since Canadian Steel Foundries is a part of the Roe Group, experiences can be shared with other members of the team in pushing back new frontiers of production in steel and other materials.

# Giving to Education is not Charity

At a time when 10 out of 32 recommendations drafted by the recent Canadian Conference on Education in Ottawa deal with financing, and when the executive director of the Canada Council, Dr. A. W. Trueman, states categorically that there "is nothing wrong with Canadian education that a great deal of money, properly applied, would not set right", it is fortunate that Canada's Industrial Foundation on Education has published its first report on corporate giving to higher education.

The Industrial Foundation on Education, headed up by Crawford Gordon, president and general manager of A. V. Roe Canada Limited, grew out of a conference of Canadian industrialists, educators, and government officials assembled at St. Andrews-by-the-Sea, New Brunswick, in the fall of 1956. That conference sought to establish the significant relationships between industrial and technicological progress and education in the critical years to come. The Foundation was set up as a continuing research organization to discover, correlate, and communicate facts affecting the areas of mutual interest to Canadian industry and education. S. H. Deeks is executive director, with headquarters at 170 University Ave., Toronto.

"The Case for Corporate Giving to Higher Education," as the Foundation's first report is entitled, reveals that 1956 university costs stood at $85,-100,000 (more than double what they were 10 years earlier), and 1956 contributions from industry and commerce totalled $2,697,000 (up 1.8 times since 1946). Enrolment in our universities in the 10 years increased from 44,600 to 71,600.

In 1946, contributions from industry and commerce amounted to four per cent of university costs — current and capital — but, despite an increase in giving of $1,217,000, this source by 1956 met only 3.2 per cent of total costs.

Looked at another way, Canadian business and industry were investing $33 per student in 1946; $38 per student by 1956. Average contribution per student made by U.S. corporations to universities was reported at $30 in 1956. It is pointed out, however, that the U.S. is equipped to enroll about 30 per cent of its college age group in universities; but Canada has the educational plant capacity for only 8 per cent of the same age group.

The Foundation reports the rate of corporate giving in 1957 more than doubled that of 1956. One explanation lies in the number of appeals for capital expansion last year as compared with 1956. By tradition, major giving by business and industry has been in response to specific building programs.

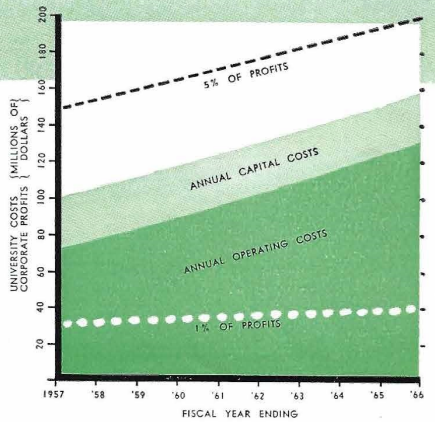
"Corporations have shown themselves willing and able to respond when the need is made known to them," the report observes. "The fact that this response has been related to appeals for capital expansion indicates an apparent belief on the part of industry that fees, government grants, and endowments are adequate to meet current costs. The need for a continuing program to keep corporations up to date on university needs is indicated."

"Why should corporations support education financially on a voluntary basis?" asks the Foundation. "Why not increase taxes to cover the whole cost of our educational institutions?"

In answer to its own question, the report submits that free enterprise in education is a natural corollary to free enterprise in industry.

"It is in the best interest of industry and commerce to ensure that our educational system functions efficiently and effectively," the Foundation avers. "The amount of money contributed to developing our human resources is no less an investment than the amount put into the development of Canada's natural resources. Giving to education is not charity — it is an investment upon a quid pro quo basis."

Fast on the heels of the Foundation's report on corporate giving, there have followed two further contributions to understanding in this complex field: "The Case for Increasing Student Aid," and "The Case for Increasing Motivation of Intellectually Qualified Secondary School Students."




*This graph is based on a forecast prepared by Dr. Claude T. Bissell, president-elect of the University of Toronto, which envisages an enrolment of 130,000 students in Canadian universities by 1966 (as against 73,500 in 1956-57.) Such growth would require a capital expenditure of some $300 millions over the next 10 years, plus a gradual increase in annual operating costs from the 1956-57 level ($73.5 millions) to a 1965-66 level of $130 millions. The graph shows relationship between mounting university costs and one per cent and five per cent of estimated corporation profits before taxes. (Five per cent is tax-free maximum for voluntary contributions; and one per cent, before taxes, has been suggested as "a reasonable contribution" to education. The 1955-56 giving to universities was approximately .09 of one per cent of profits before taxes.)*

*By Lorne R. Carson*

# READY!

STEP by carefully calculated step, man is climbing up and out to an unlimited new world of fantastic realities — into space. That he has gone so far in so short a time, relatively speaking, is due to what has been learned not only about mathematics and physics and their imaginative application, but also about man's own body and mind.

Flight into space is not the achievement of the pilot alone, courageous and skilled though he is; it is the achievement of literally thousands of men and women who have learned to work in a realm so exacting that survival and perfection become inseparable.

Perhaps man's greatest achievement in all this world of wonder lies in the degree to which he has developed his aptitude for responsible teamwork. And this is nowhere displayed more convincingly than in the preparation of men and machines for the race into space.

How well prepared is man for his entry into space? The Royal Canadian Air Force Institute of Aviation Medicine is at work on this problem. They are concerned with the human part of the

### *MAN — SUBSTITUTE FOR MACHINE*

*Much has been heard about machine as a substitute for man, in flying and elsewhere; but now the argument has been reversed.*

*Maj. Gen. J. W. Sessums, Deputy Chief, USAF Air Research and Development Command, recently told the Institute of Aeronautical Sciences in New York that "man is needed to serve as a substitute for an almost impossible electronic complexity."*

*And in Los Angeles, Brig. Gen. Donald D. Flickinger, Air Research and Development Command director of human factors, declared that the art of airmanship cannot be taken over by "black boxes". The reaction time of a trained pilot is shorter than that of a computer-controlled servo loop, especially where a selection of alternatives is involved. Few flight situations can be reduced to a go, no-go decision, he submitted — "Red Light, Green Light, Idiot's Delight" instrumentation is out.*

"man-weapon system". With laboratories located in central Toronto and at Downsview airport, north of the city, the "human engineers"—medical specialists, biologists, psychologists, anthropologists and the many associated professionals, are steadily inching man past the frontiers of space—in safety. (To the R.C.A.F. scientists, flight above 50,000 feet is space travel, from a physiological standpoint.)

Some of the human stresses found aloft are pressure-breathing, explosive decompression, decompression sickness, "G" (gravity) forces, disorientation, heat, cold, meteorites and cosmic radiation. Any of these, pushed beyond certain limits, can be, to say the least, uncomfortable, and, pushed a little farther, fatal.

**Space Samples on Earth**

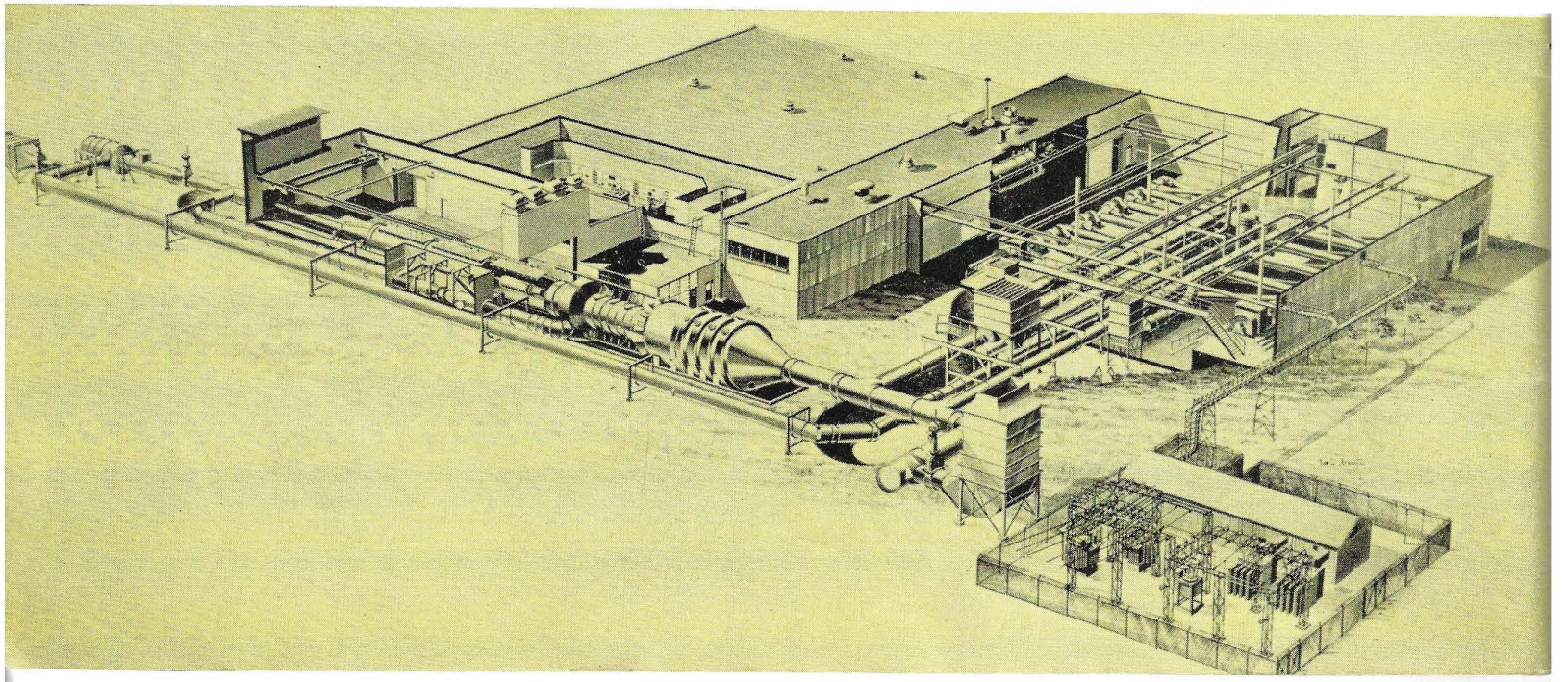
By bringing down little samples of space to earth, man can test what lies ahead. Decompression chamber, tropical room, cold room, human centrifuge — these are the samples of the space world they are testing.

Where practically no air or pressure exist, what does a man breathe, and how? The decompression chamber, a huge steel-bound cylinder in which a man can be sealed and from which air can be extracted until only near-space conditions remain, simulates realistically the effects of anoxia (lack of oxygen), pressure changes with altitude, and the shock of explosive decompression (explosive pressure-changes such as would assault a pilot should he be ejected from his pressurized cockpit into space). In these space samples, his pressure suit and other equipment are put through their paces. Intended primarily as an emergency outfit, this "space suit" might be regarded as a temporary cockpit suddenly and automatically coming into action to minimize the explosion into space should cockpit pressure fail or ejection from the aircraft be necessary. It is as vital as the parachute in bringing a man safely down from space to earth.

**Breathing Needs Help**

Lack of atmospheric pressure at very high altitudes makes it impossible to sustain life by normal breathing — even of pure oxygen. A "pressure

**New supersonic test facilities at Orenda will study engine performance at altitudes beyond 100,000 feet.**



breathing system" is needed. This consists of a face mask inside the "fish bowl" space helmet for getting oxygen into the lungs, plus an automatically inflating vest to squeeze around the chest and assist the man to exhale.

Now add to all this a "G" (for gravity) suit around the lower part of the body and you have just about what the well dressed space man should wear. The "G" suit has a system of air bladders around the abdomen and legs which inflate automatically to counteract the weight forces which would otherwise interfere with the circulation of the blood. Without a "G" suit, blood would be drained from the brain and forced into the abdomen and lower limbs.

What about heat and cold? The range in space flight may extend from 65 degrees below zero to boiling point. Fortunately, experimenters don't have to subject human guinea pigs to the deep freeze or a cannibal's stew-pot to get their data here. They have constructed a "copper man" to go through the discomforts without complaint. Built to life size and electrically equipped, "Copper Joe" signals his temperature reaction to any new piece of flying clothing or equipment, whether from within the cold room or under ultra-tropical conditions.

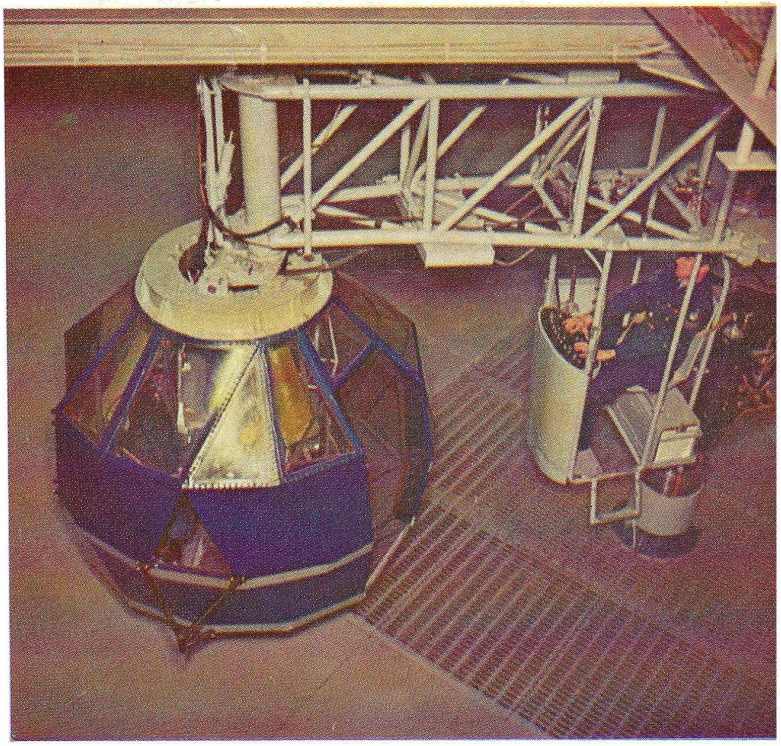
**The Complementary Part**

Clothes may make the man, but they are only part of the "man-weapon system".

The aircraft to bear him aloft is his complementary part. And the CF-105, designed and produced by Avro Aircraft Limited, is a good example of what the pilot of the future can expect to complete his flying equipment.

This Canadian machine is a huge, white, delta-winged supersonic vehicle for space, whose creation and construction were as challenging and as vital as the life that guides it from within. Week by week, month after month, engineering researchers worked on, probing for aerodynamic data that would prove their creation structurally sound. This was a new dimension in design. Not only must their aircraft be stable and controllable, but it must withstand rapidly changing extremes of heat and cold (heat that would rise to 720 deg. F. at 2,000 miles per hour). It must endure vibration from engine and from speed that could crack the skin panels or tear loose the rivets. And it must carry hundreds of items of mechanical, hydraulic, and electrical equipment which will operate without fail at severe temperatures and high altitude.

And of course, nothing moves without power. So the engine, too, must be prepared to go through the changing temperatures and pressures from earth to thin, cold space. At Orenda Engines Limited, across the road from Avro Aircraft at Malton, Ont., a huge high altitude test tunnel, the first in Canada, will soon have supersonic winds blasting through its chambers to facilitate continued development of the "Iroquois" turbo jet and simulating heights and speeds the engine will reach later with the Arrow in space.



**The R.C.A.F.'s "human centrifuge" tests effects of gravity.**

Is technology on the verge of outstripping human physical limitations? Is this machine, now ready to work in the realms of space, confined to just the fringes because man is going along? Would it not seem simpler were there no problems of insulating man against heat and cold, were the position of instruments in the cockpit of little significance, and the complicated system of emergency ejection from the cockpit unnecessary? Add to this the complications and demands for oxygen supply, pressure suits, cosmic ray protection, plus a host of psychological adjustments, and it is little wonder some ask: "Why man at all?"

**A Place for Man**

According to responsible military opinion, man has certain attributes which, to date, have not been synthesized electronically. His ability to make a correct decision, his unpredictability to foil an enemy, and his ability to differentiate between a friend or foe—these are listed among man's unique assets. By pointing out further shortcomings of electronics, authorities have concluded that, in essence, technology can produce a synthetic pinch-hitter for most parts of man — except his brain. This is still the critical link in the system.

Man is not obsolete. "Nowhere else," the saying goes, "can you find a self-maintaining computer with built-in judgment, and which can be mass-produced by unskilled labour!"


"La Scarabee"

SHARP-EYED READER

Reynoldsburg, Ohio.

An item in your recent issue, Fall-Winter 1957-58, comes to my attention as being erroneous.

On page 15, Bleriot's cross-channel flight was in 1909, not 1910; and the airplane shown, while a Bleriot, was a later one than the cross-channel plane. The airplane making this flight had a three-cylinder, "fan" type Anzani engine, whereas the one you show has a rotary, probably a Gnome.

May I say that I admire very highly Mr. Stanley Green's energy and ambition in producing this Bleriot replica.

I trust that this will be of interest.

GEORGE A. PAGE, Jr.

CORRECTING THE RECORD

West Vancouver, B.C.

I think you may be glad to have me point out a mistake which crept into the story, "Pioneer, Western Style".

If you compare the published details with my information you will quickly see where the mistake crept in. The picture on page 15 is not one of Louis Bleriot's original machine, nor was "La Scarabee" the first to be flown across the English Channel. The plane shown in your page 15 photograph was "La Scarabee", a Bleriot monoplane owned by the famous French airman, Count Jacques de Lesseps. It was in this plane that the Count became the second pilot to fly across the Strait of Dover, May 23, 1910. The Calgary-built Bleriot is almost identical with this de Lesseps craft.

Of course the mistake as published will not change the face of air history, but I do wish to draw it to your attention, because the sharp eyes of readers may well detect the error.

De Lesseps flew the Channel in 1910 before shipping his Bleriot across the Atlantic for the Montreal and Toronto Air Meets. He later shipped it back to Europe and accomplished some splendid flying with it during 1911 and 1912, and a little in 1913. It was then again shipped to Canada and went to Toronto, but it was never flown again after it reached this country. The fellow who eventually bought it never completed its reconditioning, and what eventually did become of it remains a mystery to this day.

FRANK H. ELLIS.

ONCE OWNED "LA SCARABEE"

Weston, Ont.

In the fall and winter issue of "Horizons" is an article which very much interests me. I refer to "Pioneer, Western Style", by Frank Ellis.

Back in 1909 I built a Bleriot monoplane and won a prize for it! I have it here in Weston. The plane was built at Selsey in England and was the first in that place.

In 1913 in Toronto my partner and I bought the now famous "La Scarabee" from the MacKenzie family (related by marriage to the Count de Lesseps), and were rebuilding it when war broke out in 1914.

We were also building a new Bleriot at the same time, but it was never completed as I enlisted to go overseas with the first contingent of the Canadian Expeditionary Force.

I had the complete blueprints and had ordered various materials from different places, but much of it did not arrive in time for me to use it before leaving for Valcartier.

When I came back from overseas nothing could be found of the Bleriot, everything had been destroyed.

I traced the planes to a vacant lot and that was the end.

Practically all details of the Bleriot are still fresh in my mind, although it is nearly 50 years ago since I built the one at Selsey.

I wonder if Stanley N. Green had the same trouble rigging the fuselage as we did. The original plane was fitted with "U" bolts which were inserted in slots in the struts and through the fuselage and used as turnbuckles.

Also, the first planes used one-eighth diameter piano wire for top bracing, but this was found to be under-strength when the plane came in for a landing, so flat wire, which later became streamlined, was used.

TOM FOGDEN.

NOW BUILDING SOPWITH "PUP"

Calgary, Alta.

It was very generous of you to give so much space in your recent issue of "Horizons" to our Bleriot monoplane project here at the Institute. We have received a number of gratifying comments as a result.

Your readers may be interested to learn that we are now at work on a replica of the famous Sopwith "Pup", a single-seater, fighter biplane of World War I vintage. We are building this according to plans made available by Sir Sydney Camm of Hawker Aircraft Ltd. in England.

By a tremendous stroke of luck, Tom Sigsworth of Calgary Municipal Airport has located a brand new 80 horsepower Le Rhone rotary engine on a farm near Calmar, Alberta. The farmer had purchased it when it was put on sale as war surplus many years ago, intending to use it in a snowmobile, which he never got around to building. It happens to be the identical make and horsepower with which the wartime Sopwith "Pup" was equipped!

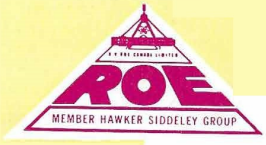
As with the Bleriot, construction difficulties do crop up on occasion; but our students are making good headway and we may get our "Pup" into the air before the end of 1958.

STANLEY N. GREEN,
Prov. Inst. of Technology and Art.

P.S.—By the way, did you know that the Bleriot we built has recently been purchased by Warner Brothers and brought back across the Atlantic from France for use in the picture "Lafayette Escadrille"?

## *IT TAKES AN IROQUOIS TO SHOOT AN ARROW*

*This is the supersonic power plant that has been designed and developed in Canada to put the thrust into the Avro Arrow. Just released, this photograph dramatically reveals the size of a single Iroquois, dwarfing two Orenda Engines Limited technicians. Two of these giant jets go into the 32-ton Arrow interceptor. The Iroquois and the Arrow both offer proof of the wisdom in the Roe Group policy of encouraging ambitious Canadian talent.*




COMMUTER'S DREAM — a line-up of nine city buses, waiting with open doors and empty seats, and no scrambling rush-hour horde. All this, plus a breathtaking backdrop of Rocky Mountain scenery!

These are three-quarters of the Can-Car caravan that completed 24,000 bus miles from their Fort William birthplace to their Vancouver workplace in six adventuresome days.

Max Braithwaite describes the spectacular driveaway in this issue of *Horizons*.