These Men are for the Birds
Know what a flying biologist does? Well, yes, he's a biologist who flies—but there's more to him than meets the eye.

A Review writer met two of these men on their regular run along the Mackenzie River. They are typical of the six flying biologists in North America. Both Bob Smith and Norvin Jensen graduated in biology from U.S. universities, then got their pilot's license. Both married, they spend their lives in six-month chunks—six working their way up waterfowl courses between Mexico and Alaska on an integrated conservation plan involving Mexican, U.S. and Canadian Fish and Wildlife services, and six at home with their families.

What the flying biologists do is fly an amphibious Grumman G-110 (appropriately enough), sometimes for six hours at a stretch, rapidly counting and tape recording statistics on 10 species of duck and three species of geese. It's a little like putting your stomach and rubbing your head at the same time—possible, but it takes practice. Smith and Jensen know their birds' markings from beak to tail feathers, and can even tell from water bubbles if the bird that dived was a loon or a duck. And all this while flying a plane 100 feet above the birds.

Safety (League) First
To us, one of the most intriguing efforts of the Ontario Safety League is its information service for editors. From these OSL bulletins you can learn just about everything there is to know—theory or statistics—on traffic safety.

Most of us who take a particular interest in safety know that motoring on expressways has been proven safer than on other types of roads. But it takes the OSL to tell you that one in every five drivers is apprehensive of expressways while only one in six fears the more dangerous three-lane roads.

You probably consider yourself a good driver (doesn't everybody?). But if you drove the Canadian average of 10,000 miles last year, you made about 25,000 driving errors in the process. So says the Safety League. It also reports that U.S. streets and highways are safer than ours. In a recent year Canadian vehicles killed 42 percent more people, proportionately, than their U.S. counterparts.

The OSL even has a sense of history. It recently reported that drunk driving was a problem long before there were cars. An 1872 British law provided that 'every person . . . who is drunk while in charge on any highways . . . of any carriage, horse, cattle or steam engine . . . shall be liable to a penalty not exceeding forty shillings . . .'

What's Happening in the Oil Patch

As the year ends, it appears that 1964 will go down as one of the liveliest, in terms of oil exploration, since the late Fifties. Late in the year, drilling footage seemed likely to exceed the 1956 record of 15,462,518 feet. Exploratory drilling has speeded up in Saskatchewan. Rigs are busy in northern and in southwestern Alberta. The Sylvan-Houda-Mtitles discovery in the Lesser Slave Lake area, in which Imperial is involved, has stimulated the oil hunt north of Edmonton.

The northern search has intensified. Last summer Imperial sent a geological party down the Mackenzie River and around Akaitcho (see page 2) and a wildcat drill rig into the Fort MacPherson area (see page 17). Eastern Canada isn't forgotten. Imperial seismic crews spent the last two summers on Anticosti Island in the Gulf of St. Lawrence.

Even without the enormous reserves of the Athabasca tar sands, Canada now has enough proven oil for 20 years and enough gas reserves to last about 58 years at the current rate of production. Why, then, does the search continue so vigorously? The answer is that even an estimated 20-year supply is a scant safety margin. For one thing, it's difficult to really estimate how much oil and gas the country will need in the next two decades, and beyond. Ten years ago, few would have predicted that Canada's energy consumption would rise 45 percent by 1964. Yet it happened, and oil and natural gas provided the bulk of the increased requirements and some of this was imported.

Furthermore, our population is growing; by 1975 it is expected to be over 25 million. If our standard of living and rate of industrialization are to increase—indeed if this country is to prosper—we will need ample supplies of low cost energy. Petroleum will be our main source of that energy throughout the foreseeable future. And if our present proven reserves of 5.6 billion barrels seem enough to last forever, consider Canada's present appetite. Since you began reading this page, the country has used up about 51,000 gallons of oil products.
A Long Way from Home

BY ROBERT COLLINS

Five thirty a.m. Up on the silt-packed bank of the Mackenzie River a Huskie howled conversationally. Eric Stedman, the Imperial Oil cook, climbed heavily from his lower bunk, crawled yawningly into his clothes and stepped out to sample the new day.

An Eskimo slipped past in an outboard motor boat, leaving a small wake that gently rocked the geological camp under Stedman’s feet. ‘Camp’ was five aluminum trailers crammed cheek-by-jowl on a barge docked at Akavik, high in the Northwest Territories.

The northeast sky was already aflame with sun. Here, the sun scarcely bothers to go to bed even in mid-August. To the southeast the blue bulk of the Richardson Mountains stood sharp and clear. The skies were cloudless; the temperature a pleasant 45 degrees. It was going to be a good day for flying.

Stedman combed his hair with his fingers and clumped down the narrow passageway to the kitchen trailer. He lit the propane gas stove and made coffee, hot cereal, bacon and eggs and flapjacks. Camp assistant Bernie Richler, a bushy-haired young German who plans to be a geologist, laid out cups, plates, custardy, jam, tinned butter, bread and fruit juice in the dining trailer. At seven o’clock he hammered a breakfast call on a propane gas steel bottle. And Imperial Surface Party One rolled out for another working day on the fringe of the Arctic Ocean.

1,300 winding miles from Fort Nelson, B.C., in a land-and-air assault that covered thousands of square miles of the Territories.

It happened that way because Imperial’s geophysicists needed a winter seismic camp at Fort McPherson, 50 miles south of Aklavik, and the geological department needed a well-site geologist’s trailer in the same area for a winter drilling operation (see page 17). All of this equipment had to go down river by barge.

It gave Party One a traveling base camp from which the crew could check some 30 natural oil seeps along the Mackenzie, and later do their seismic’s work around Aklavik.

It was an ideal arrangement. Each day party chief Doug Waylett and his assistants, Ed Zdemirovsky and Doug page, met as many as 19 seepers, each in one of the two Hillie three-seaters chartered from Okanagan Helicopters at a cost of $12,000 a month each for the search. They checked reports of a particular fossil bed, a sign of oil shales, some exposed Cretaceous sand similar to the Athabasca oil sands, an oil seep, a natural gas seep. While they worked, the camp—just barge, living quarters barge and the tugboat ‘New Era’—chugged on to a prearranged meeting rendezvous. By July 16 they’d reached Aklavik, ready for the main summer job of exploring the northern Richardson Mountains and the Arctic coast.

This was the Arctic? It sounded more like Carnegie Hall. For all-breakfast music, Doug Waylett had Rachmaninoff’s Concerto No. 2 pouring from the two-speaker stereo hi-fi in the office trailer. Waylett, a tall, intense young bachelor with unruly fair hair, kept a shelf full of recordings: classics, Gilbert and Sullivan, folk music. For music in the mountains he had a portable tape recorder and a transistor radio (which
picked up country-western music and CBC programs from CHAK, Inuvik.

But now Rachmaninoff took a back seat to geology. It was time to contact Party One’s two mobile or ‘fly’ camps, temporarily stationed in the mountains. Waylett switched off the hi-fi and leaned over the two-way radio: ‘PR1 calling Mobile 2, PR1 calling Mobile 2. Do you read, do you read? Over.’ Geologist Vic Mrozczak acknowledged the call through a blur of static. ‘Roger, Roger,’ said Waylett. ‘We’ll be out to see you this morning, we’ll be out to see you this morning.’

Outside on the river bank ex-RCAF bomber pilot Howard Hughes moved one helicopter and Zederayoq off to the nearest fly camp, 35 miles southwest.

Waylett and I climbed into the second machine. Pilot Will Pinner revved the motor and lifted us up in a storm of dust; up over the little handful of Loucheaux Indian and Eakimo children that never tired of watching the chopper, up over the dreary houses of Aklavik, the town that refuses to die; up and across the Mackenzie Delta which from the air looks precisely like an unfinished jigsaw puzzle with water in the ‘missing’ spaces.

Pinner, who flew Spifflers for the RAF in World War II, sat between us with the relaxed alertness of the very good pilot. Waylett read a book. Beneath us through the plastic bubble, the Delta disappeared and the Arctic unraveled its summer broadloom of green-brown moss.

Fly camps like this were the follow-up phase of the summer’s work here in the Richardson. Typically, Waylett and Zederayoq reconnoitered each new area, locating the outcrops or sections to be measured, photographing them for the records, then sending in two-man camping parties for detailed studies of a week or two. This section of the Arctic is part of a sedimentary basin’ that weaves diagonally through the heart of North America. Here, millions of years ago, oceans rose and fell; billions of marine creatures lived, died and were buried under successive layers of silt and sand; mountains ranged rose and disappeared; plants quite unlike the sparse foliage of the modern Arctic, grew dank and green. Here, in a way still not thoroughly understood by man, the bodies of some of the marine creatures were turned into oil. But the presence of a sedimentary basin does not automatically mean oil is there; only that it might be. Hence the chores of Party One.

The helicopter plunged on steadily to the northwest at 70 mph. To our right the blue haze of the Arctic Ocean fanned out into infinity. Suddenly Waylett pointed below to a stream, winding like a raveled yarn between steep banks. Pinner cased down over the water and followed its twisting course as deftly as a racing driver at Le Mans. Then two waving figures were below us. Beyond, their tent was a startling white splash against the bland landscape. Pinner put the Hiller down gently on a gravel bar.

Mrozczak, a graduate geologist with an eight-day beard, and his assistant, young Paul Zakus, an undergraduate from the University of Manitoba, put down the papers they had from the University of Manitoba, put down the papers they had just written and ran to meet us.

‘Any mail?’

‘Sorry,’ Waylett said, ‘but the post office at Inuvik didn’t have it sorted last night.’

Mrozczak shrugged philosophically and shook his back pack, already heavy with rock samples. Still in hip waders, he followed Waylett to the helicopter to fly to an area downstream.

Will Pinner and Doug Waylett listen to rock music by white a cheer young and Ed Zederayoq gets to check a natural gas step

 Outsiders habitually think of the Arctic as a deadly year-around deep freeze. It is not, of course. In summer it is full of life and subtle color. During July and August Party One spotted 50 kinds of flowers, from fireweed and Arctic cotton to wild roses, rose on the shores of the ocean. Their helicopters started goats, sheep, caribou, grizzly and moose. Eagles, ravens, gulls, geese and swans soared around them.

Still, there is no denying its emptiness or remoteness. Aklavik is 1,300 miles from Edmonton and 2,500 miles from Toronto on a very strong wind would fly it. And when you’re camped 75 miles beyond Aklavik you are far from home indeed.

When the sound of the helicopter died away the Arctic was ghostly still. Only the whisper of wind through the scrub willow and the murmur of cold pure mountain water over the gravel. The wind had blown down the tent a few nights ago, Zakus said. ‘And the ground squirrels got into our bread. And, well, we saw a couple of moose. That’s about
all that's happened."

The helicopter returned. Moosecek and I changed places.

"We'll fly you out on Thursday if the weather's okay," Waylett said.

"Thursday for sure?" Moosecek prodded hopefully.

"If the weather's good," Waylett grinned.

We left them, padding downstream with our packs and hammocks, two dots against the Arctic.

So it had been a good summer. Collect rock samples, looking for fossils that would indicate the age of the rock. Measure rock formations for thickness and lateral changes in the rock type (a thick section of rock in the mountains often tends to pitch out toward the plains; somewhere in between may be a 'pinchout' which could be a trap containing oil.)

Make notes, bag the samples, send them back to the barge for further study by Waylett, Zederayko and maybe a visiting palaeontologist from Calgary. Finally send the specimens to the Calgary laboratory for detailed analysis.

That afternoon Waylett and Zederayko flew out separately on reconnaissance. In the office trailer Jim Craig, a palaeontologist from Calgary, studied fossils: here the remains of a 90-million-year-old marine creature, there a piece of 300 million-year-old coral. Sandy Veinson, the helicopter engineer, sunbathed on a trailer (it was 70 above and the mosquitoes weren't at bloodthirsty as usual) and worried about his wife in Surrey, B.C., who was expecting a baby momentarily. Steadman pulled steaks from the deepfreeze. Photographer Harry Rowed and I walked uphill to Aklavik.

Aklavik. The very name smacks of 'north' and 'romance'. But there is nothing romantic about the place. Superficially, it is a shell: a small Hudson's Bay store, a Department of Northern Affairs office, a three-man RCMP detachment, a nursing station, a school, two churches and a cluster of indifferent houses for some 400 Eskimos and Indians. Garbage smearers in old herd drum outside shacks. The streets, occasionally paved with boardwalk, are by turns veiled in dust and gumming with mud.

Flood-prone Aklavik was supposed to be replaced years ago by the new instant town, Inuvik, 16 miles east. Inuvik now stands, an orderly frame-house commu-

nity of about 1,400, well stocked with government personnel, created by govern-
ment millions, the rainbow hues of its buildings contrasting incongruously against the monochromes of the Arctic.

But the 400 Eskimos and Indians chose to live in Aklavik, center of their trapping and fishing grounds. When you ask if they plan to leave Aklavik they smile gently and say, in good English, "Well, no," as though the idea is and always was ludicrous.

There's little doubt that Aklavik will survive. To hundreds of people it is still home.

While Rowed and I were away a messenger from the Hudson's Bay store brought news to the barge: Sandy Veinson's third son was born. That night boxes of cigars were strung along the dining table. After the three kinds of steak (rare, medium and well-done) and the blueberry pie, everybody sat back in a suffocating smoke screen and said the tribe, friendly and sometimes unprintable things one always says to a new father. 'Two more and you've got a basketball team, Sandy,' said Zederayko. 'Next time, twins,' prophesied Barney Streepor, the tugboat captain, an immense old man with shirt open to his navel. 'Another boy,' Veinson said in mock despair. 'Now I got to buy three cars when they get to be teenagers.'

Then some of the crew went up to see a movie in the rear of the closed-down Aklavik Hotel. It was the six-month-old film of the Lisbon-Clay fight. Waylett played some Chopin and Befalooste on his hi-fi. Zederayko, who has a wife and child in Dawson Creek, looked wistfully at the calendar. Two more weeks and then home. But next year they'd probably be back in the Arctic.

By midnight Eric Steadman was moaning steadily, persistently, like an outboard motor. The northwestern sky was still stained with sunset. On the hill the Mounties' 16 Siberian Huskies set up an unearthly howl and an offkey chair of Indian dogs replied. I thought of something Imperial's Bob Hewitt (who was serving as dispatcher of supplies for the various company operations in the area) had said in Inuvik the day before. Hewitt and I had last met 10 years before, at Steen River just inside the Territories border. Imperial was exploring for oil there, too.

'And we thought that was the north!' said Hewitt.
OTTER COUNTRY

Plot Cliff Labey and I jokingly made a pact eight years ago, when we began flying Imperial's single-engine Otter bushplane out of Dawson Creek, B.C.

'You get us lost,' I kidded him, 'and you've got to allow me one clear swing at your nose.'

'You're the engineer,' he shot back. 'If the engine fails I get one clear swing at your nose.'

I'm still keeping my fingers crossed, but neither of us has had any excuse for nose-bloodying. That's an achievement when you consider most of our work is shuffling Imperial's oil exploration crews and equipment all over Canada's northwest.

Our 'bet' doesn't mean that we take our job lightly. Bush flying is serious business. It's true that it is no longer as hazardous as most laymen think. Imperial has an intricate laid-down procedure to make sure an aircraft is found quickly if it has to put down in the bush. And there's good air-to-ground communication between us and our drilling and exploration camps. But still, bush flying is no soft touch.

You don't have the commercial airliners' array of automatic devices, nor big fat landing strips to plump down on, nor gentlemen in control towers to tell you how to do it without scuffling your paint. Bush flying—especially in the Peace River country of northern B.C. and Alberta where hilly, sparsely populated farmland soon dissolves into bleak mountain ranges, thick muskeg forests and innumerable lakes and rivers—can be still unpredictable. Maybe that's what I like about it. Here, more than in most other kinds of flying, a pilot has to rely on experience, as well as training and good equipment. On our beat, mostly within a 400-mile radius of our Dawson Creek headquarters, hard by the B.C.-Alberta border about 400 miles northwest of Edmonton, there is still room for trial-blazing.

This is the kind of country where we hope to find oil. It's also the kind of country where we've had to buzz a bush landing strip to chase off the wolves. It's no country for any pilot who doesn't like to wrinkle his tailored uniform.

For the Otter, it's ideal country. The Otter, built in Toronto by De Havilland Aircraft of Canada, isn't exactly the picture of grace and beauty. It's a $100,000 workhorse, a panel truck with wings, made ruggedly to handle country like this where, because of mountains, temperatures on our beat can range 100 degrees in a day's flight. In a way, because I was there a dozen years ago when it first rolled onto the runway at De Havilland—the sixth Otter off the assembly line—I feel almost as much a daddy to it as I do to my three youngsters.

I've nursed that ugly duckling through close to 2,500 flying hours, more hours in the air—according to De Havilland records, which don't include all purchasers—than any other of the world's 400 Oters. And though I know I shouldn't, I still get mad when a roughneck kicks the mud off his boots on the floor of my plane.

What makes the Otter so good for the north country is its phenomenally short take-off and landing capabilities. Like the Beaver, its smaller predecessor, the Otter is fitted with full span, double-slotted flaps on the wings which give it the lift it needs to get out of the rough and into the air quickly.

In country where your landing strips are frozen rivers, snow-caked lakes and runways bowing hastily from dense jackpine, poplar and tamarack forests, short landing and take-off is a godsend. Empty and on floats, the 4,620-pound Otter can take off the water in 300 feet. On wheels, the fully-loaded, 8,000-pound Otter likes a strip about 150 feet wide and 2,500 feet long so it can clear those 40 to 50-foot-high trees at the end of the runway. By contrast, a Douglas DC-8 jetliner needs a runway 200 feet wide and more than 11,000 feet long.

Not that we ever get what we like. A drilling crew, after they've trucked in their equipment over hardened ground during the winter, will chase a landing strip for us with their bulldozer. They'll get as close as possible to the size we like. The ground should be reasonably level, and built northwest to southeast so most of the time we can land into the wind. But the terrain isn't always compatible. Some run uphill, some downhill, some at right angles to every little breeze. On those unsurfaced runways, I worry about wheels looking in cold weather, mud swamping us in warm weather, half-hidden tree roots or moose antlers that might have escaped the bush camp's bulldozer.

Most of all, I worry about forgetting the mailbag. A roughneck on a drilling rig is stuck in the bush three weeks at a time. We bring him out for a week off in every four. The Otter is his only rapid contact with the outside, his wife and children. Forget his mail—as we've done occasionally in the bustle of packing food, supplies and equipment—and you may as well crawl into the nearest wolf's den. The only thing blacker than their stashes is the cup of coffee the cook thrusts into your hands.

You'll understand now why I had to have an ulcer removed three years ago. I do enough worrying for both Cliff and myself. Like many bush pilots, Cliff is the easy-going type. That's what makes them good bush pilots. They're natural, unruffled, easily adaptable to any situation. They leave the mechanical worrying to the engineers.

I take good care of our Otter, because when I'm 4,000 to 7,000 feet above the ground, I like to hear the purr of that
Mail, food, supplies and equipment are regularly carried by the CF-100. But it has held core samples, asthmus patients, drilling mud—and a coffin.

If you're a bush pilot, you adapt quickly to the fact that you're lucky even to have a landing strip. We service small geological and seismic exploration parties for whom it doesn't pay to lay out a landing strip whenever they camp a few days or more. So they try to camp by a lake or river, where pilots have a chance of landing. During the winter, we're almost always on skis attached to the plane's undercarriage. In the summer, when most unsurfaced strips arc med or mokey, we land on lakes on aluminum floats.

In winter, on rare occasions, you may be caught in a white-out. After a snowfall, the whole lake is covered with snow stretching across a flat surface without one object of any color other than white. The sky also is white. It's much the same as flying without a light at night. You have no point of perspective to gauge how close you are to the lake you want to land on. Once I tossed out a seat cushion or two to help Cliff judge our distance to the ground. (I picked up the cushions later. Waste not, want not.) But the best thing to do in a white-out is fly out of it as fast as possible.

Landing on water presents its own peculiar problems. We need at least three feet of water to land without scraping our pontoons. But to the unpractised eye, the waters of northern lakes and rivers, and the sand bars which are always shifting, can be deceptive. Here again experience counts.

A bush pilot uses that experience all the time. Take the geological party stranded along the Nelson River a few years ago. They needed supplies, we had them, but I couldn't see how we could land safely along that crooked stretch of river banked thick with tall spruce. There didn't seem to be enough straight landing room.

But Cliff judged the flow of the river, guessed how much straight river he'd need to land safely against one small section of gently sloping bank with enough clearance for our wings so we could tie up at the shoreline. It took fine, extraneous figuring—but we landed triumphantly with the geological party that night.

The only thing worse than forgetting the mailbag is not to land at all. Crews don't forgive you for denying their rare contact with the outside. The least we can do is drop the supplies from the back hatch, if for example a strip's too muddy. It's not very neat. I'll always recall my last night of a rig landing strip near Fort Nelson. I'd shoved the rations out the hatch when Cliff swooped in low. As we curved back to Dawson Creek, I glanced down. Leaves of bread and cans of provisions were strewn along the runway sinking rapidly from sight. And in the center of this confusion stood the cook, his arms stretched helplessly to the sky, gripping a muddy streak between the thumbs and index finger of each hand.

There's a close camaraderie among bush pilots and engineers of competing companies. A pilot with another oil company will often tell us where he's headed that day, so we'll know where to look if he's not back on time.

Looking over others' activities is all part of the oil exploration game. We'll often circle over another company's rig at about 200 feet while our scout assesses the success of their operation. Usually, the rig crew waves (or shakes their fists). One roughneck even playfully shot at us with his rifle. He looked disappointed when he missed.

Naturally, we'll help each other out occasionally. Once, when another oil company's own Otter was grounded, we flew supplies to their seismic crew east of Fort Nelson. It was too muddy to land, so I just dumped the stuff out of the back hatch. But I couldn't resist bragging about our Otter by attaching across the top of their mailbag an Enso advertising sticker: 'Always look to Imperial for the best'.

The camaraderie of the bush extends to anyone living in the wilderness, away from good roads, railways and modern facilities. We've ferried several seriously ill local people into Edmonton for operations that couldn't be performed in Dawson Creek. Our other Otter, stationed in Edmonton, helped evacuate Hay River's 1,800 residents in the spring of 1963, when the flooding river required a massive airlift of the population. These mercy flights are usually routine—unless you're carrying asthmatics. We once flew two asthmatic boys,
four and five years old, from Fort McPherson in the Arctic Circle to the nearest large hospital in Inuvik, N.W.T. That’s ordinarily a routine half-hour’s flight. But not when you have to fly as low as possible, picking your way between two MacKenzie River mountain ranges, because height bothers your asthmatic passengers.

You never know what you’ll be carrying. We’ve made flights for a small cow sample you could hardly hold by hand, and we’ve packed the cabin with bags of specially formulated mud used on drilling sites to cool drilling bits and carry rock cuttings to the surface. Once we even carried a coffin to Edmonton that wouldn’t fit through the doors of the regularly scheduled DC-3.

You often feel like you’re running a taxi service. Pilot Don Fraser, who flies Imperial’s other Otter out of Edmonton, told me of the time a few years ago he was flagged down by a trapper 40 miles west of Uranium City, N.W.T. It could have been serious. Isolated souls are always bustling their legs or something, and dying because there’s no one around to take care of them. So Don landed.
The trapper sided alongside. ‘If you’re going’ toward Edmonton’

EVERYWHERE IS OTTER COUNTRY

Though Otters were tailor-made for the Canadian northland, they’ve been used in about 30 countries around the world. The Royal Canadian Air Force uses them for Arctic search and rescue operations. The U.S. Army and Navy fly them from their bases all over the world. Private businesses use the Otter from Norway to India, to Colombia, to the Philippines. Few large oil exploration companies are without an Otter. In fact, before De Havilland’s assembly lines started turning out Otters in 1952, the aircraft company gathered many of its design features from a questionnaire it circulated among oil companies and other potential customers. Thus the short take-off and landing characteristics, and seats for 10 besides the pilot and engineer, seats that can be taken down to make room for large cargoes.

Besides its two Otters, Imperial owns two Douglas DC-3s, a Lockheed Lodestar, a Piper Aztec and a Grumman Gulfstream to shuttle its personnel and equipment around the country. A dozen years ago, private aircraft were considered an irreconcilable luxury. Now more than 3,700 private aircraft use the airways in Canada, about half of them for direct business reasons. Imperial was one of the first in Canada to use aircraft for company business. By 1951, it bought two Grumman G-21s, built 175-horsepower, single-engine Junkers to get company men to the then newly discovered wells near Fort Norman, N.W.T., before the spring ice break-up. Imperial now has the largest privately owned fleet of planes in Canada. In 1960, with its 12 pilots flew more than 5,400 hours last year, when probably make over 6,000 this year. But even though it carried more than 15,000 passengers and 700,000 pounds of freight last year, Imperial still uses commercial airlines for some regularly scheduled long trips, it’s faster and more economical to fly the regular airlines.

We were two Army nurses, we were in Venice and we were young. The war was over, and, gliding in a gondola over an old lagoon, we daydreamed about where we’d like to live. ‘Talisdi,’ said one. ‘Valki,’ said the other. ‘No matter,’ we agreed idly, ‘as long as there are trees.’ Before the war was over, Li was married and settled in the treelined plains of southern Saskatchewan. I landed myself an oilman husband, 7,000 miles away in the Persian desert. Years later I moved to 80th Street. It was 90 above with a scaring wind the day Li phoned from Shaanavon, 220 miles southwest of Regina where her husband is the owner-editor of the weekly Shaunavon Standard. ‘Pack your dad’s suit,’ she said after a quick welcome to Saskatchewan. ‘And let’s head for the Hills. I’ll meet you at Gull Lake . . . ’ ‘Hills?’ I said. ‘In Saskatchewan? Where?’ ‘The Cypress Hills. They rise smock out of the prairies about 40 miles west of Regina. You’ll love the place. It’s the creamiest. Horned toads, horned beasts, horned . . . ’ Right off, I knew she had heat exhaustion. I was always good at spotting that. Fortunately, I said, ‘You’ve had a bit too much sun. Take six salt tablets, two glasses of water and go to bed with an icebag on your head.’

‘You easterners are all the same,’ said Li. ‘You haven’t a clue about anything west of Toronto. The Cypress Hills have a provincial park with cabins, a heated swimming pool and trees, lots of trees. Remember Venice?’

Two days later we drove into ‘Maple Creek, the old Cowboy City’; 350 miles west of Regina. Pointing to the auction ring with its hundreds of corrals behind the railway station, Li said, ‘That sets the scene for the Cypress Hills.’ In 1963 some 20,000 head of cattle were sold here for over $2,500,000.

Maple Creek, founded in 1883 with the coming of the CPR, has always been a ranchers’ town and looks it. In most of its buildings you rarely see a man in a Stetson; here you rarely see a man without one. Everywhere are posters showing white faced Herefords and announcing live-stock auction sales. A sizeable number of the elderly men on the property are ex-ranchers who once ran cattle by being a big cherry man with a private museum on his ranch 15 miles south of Maple Creek, has fossilized pigs, walnut leaves and ammonites, extinct cousins of the nautilus. (cont’d on page 10)
Canada’s Geological Joke

Geologists believe that the Cypress Hills, covering 100 east-to-west miles across the Alberta-Saskatchewan border, were formed when a mighty river thundered down from the Rockies during the Oligocene Age 40 million years ago. They believe the resulting sediment of cobbles and gravel remained when the river dried up, and thus the bones of animals buried in it escaped erosion through the following ages. The Hills hold the only Oligocene fauna in Canada; the bones of three-toed horses, primitive pigs, turtles and the big horned Titanotheria have been found there. Only a few hundred years ago grizzly bear, buffalos and plains Indians inhabited the Cypress Hills. They were a reliable source of lodge poles, and their very name in an English mispronunciation of ’cybyle’, the French name given by the Meriam fur traders to the native lodge pole pine. And only 90 years ago, when the Hills were a hideout for horse thieves, fur traders and American whisky peddlers, a party of drunken wolf hunters from Montana massacred a band of friendly, peaceful Assiniboines.

Because of this violent act the formation of the Royal Northwest Mounted Police was speeded up. In 1874 the Mounties settled at Fort MacLeod in what is now Alberta. In 1875 they built Fort Walsh in the Hills, where their tradition of loyalty, integrity and heroism was begun. When Sitting Bull and his band sought shelter in Canada after they massacred General Custer and his U.S. cavalry, the Mounties kept the restless Sioux under control.

Today the Hills have a consenting bustle about them during the day, when prosperous farms are being operated by modern methods, and fat cattle browse the lush grassland. During the night there is a hushed quiet that would be strange to urban and even many rural residents of Canada.

The Hills remain a place apart from the rest of the prairie.

Big-horned Titanotheria, king of beasts in Oligocene times, roamed the Cypress Hills some 40 million years ago.

Scorpions, kangaroo rats and horned toads (lizards), normally found in hotter, dryer climates, flourish in Hills.

Horseless Indians chased buffalo on foot into rivers or lakes and cut their throats while they floundered in the water.

Prospective braves in the Sun Dance must test themselves free from rashly embroiled in chest muscles and tied to pole.

‘Wafflers’, unprincipled bounty hunters, often killed hundreds of wolves with poisoned bait.

In 1870s the Royal Northwest Mounted Police began building their tradition of bravery and integrity.

Cowboys working in the Cypress Hills must go through the yearly ritual of branding cowvals to protect the ranchers’ property.
Marjory and The River Rat

by Jim Rennie

In the early Arctic night light one Monday last summer, the engineman Y.T.–Tee Marjory and three flat decked barges waited impatiently at Imperial’s docks at Norman Wells, N.W.T., while by the north winds whipped up whitecaps in the Mackenzie River.

The barges rode low in the current, pressed down by 2,400 tons of drilling rig, water, cement, mud additions in weather-proofed bags, Jury-aired trailers and gasoline and diesel fuel stacked high in a thousand drums, some black, some red. The fuel had come aboard from Imperial’s refinery at Norman Wells.

The cargo was for Imperial’s new Arctic base camp at Fort McPherson, high in the Territories. The load was handed together in what all northerners know as a ‘tow’. It was one of several moved for Imperial during the short ice-free summer months, 100,000 tons in all made similar journeys, after months of planning by the company’s logistics experts, a surveying of possible campsites in the north and the stocking of equipment and supplies in infinite variety at Hay River, the jump-off point 1,000 miles south of McPherson.

The biggest single move of the summer was this trip of the Marjory with the drill rig. Writer Jim Rennie covered the last 600 miles of that trip, watching occasional hours of sleep sitting up on deck in a chair (no spare beds available) and keeping this river rat’s log

Midnight Monday July 30:

Boarded the Marjory five hours ago and still windbound at the dock.

Skipper Mike Nychyporuk moans he is 36 hours behind schedule.

Suddenly he shouts ‘Okay I think we can make it!’ and a hail dozen young crewmen in blue jeans leap into action. Before room reverts to wheelhouse signal. Marjory slowly goes into reverse. Crew winches her nose tight against one end of the heaviest barge, which is eased alongside second barge at dockside.

The two are snugged together. Out to mid-stream where third barge is lashed to the other side. The tow is complete. Then, another hour before Marjory’s 1,000 horsepower bucks the still strong and bone-chilling wind and the river’s current. We scrape river bottom and grayish silt swirls around us on the whole lock swings free and moving downstream. We’re on our way. Skipper heads for bed. Jerry Landsby, Indian pilot and a 10-year veteran on the river, takes over.

(Mike and Jerry share the wheel six hours on, six hours off.)

Neon Tuesday. Learned much of the river during Jerry’s six hour hitch. To make slow turn, 1,200-ton load, must anticipate move three miles ahead. Channel in Mackenzie changes constantly. Shore markers are installed by Department of Transport. Jerry notes changes on map and continually relays latest information by two-way radio to other river boats. Strip map marked to show prominent sandbanks, islands, cattails and other landmarks. Throughout night (can’t get over...
that daylight) numerous cups of coffee in galley. Huge pot always on stove; help yourself. Cribbage games with Bill Van Beest, second engineer, now living in Shrewsbury, and Derek Godwin, Victoria, strapping crewcut youngster, saving his money to get back to Australia. Skipped on freighter to Orient and 'down under' last year. Liked the Aussies, plane return.

Back in wheelhouse when door opens. 'Hi, Sandbar!' It's Peter Coulthar, third year economics student from University of British Columbia. Dave Pyntes, young man from Hatnburg, Alta., is with him—both on summer jobs. They kid Jerry Landry, the pilot, constantly; nickname Sandbar is part of the kidding. Jerry just smiles. 'How do you get to be a pilot, Jerry?' The reply is soft-voiced. 'Takes a long time, maybe 30 years; got to learn to read the water.' Glibly Peter shots: 'Wuts, you just get into the wheelhouse and follow the barges!' Jerry's eyes remain on the river.

Midnight Tuesday: Breathtaking river and sky from wheelhouse. Marjory heading right into blare of color from pole picks to screaming souther with broken; overcast reflected in river so calm it appears like lake. We sit silent in wheelhouse for next hour. Even draw-works and diesels strangely beautiful in three-quarters-day, one-quarter-night light.

Over coffee vileable cook confesses his addiction to professional wrestling. Proceeds with hilarious reenactment of forehead-dumping, floor-alopping performance by villainous behemoth he saw in Edmonton prior to coming north.

Breakfast at 5:45 a.m. Jerry Rose, round, impish character, from Edmonton, is cook. His white chef's hat jaunty angle; slaps down platter size of manhole cover loaded with flapjacks, fried eggs, bacon. No problem wiping it clean.

Mid-morning and Marjory enters The Ramparts, one of river's most spectacular scenery offerings. Whole mighty waterway compressed between cliffs and narrowed to streams of ordinary proportions.

Marjory's chief engineer, lanky, bearded Bill Brown, rooms over loaded barge, intrigued by big dieselis which will drive drilling rig this coming winter. With rapping brogue right out of Glasgow he mumbles, 'More horsepower riding these barges than pushing them.'

He'll fall into his own store doing that, some day.

Godwin spots pair of students paddling vigorously in tandem kayaks as Marjory goes by. Scans them through binoculars. 'Those are the guys we saw in Hay River two weeks ago,' he announces with some wonderment. Seems students are from U.S. on vacation with Alaska as target. 'They're nuts,' young Coulthar decides. 'Cousinbear figures they're crazy to holiday where there are no girls.' (By late summer, press reports indicated paddlers reached destination).

All hands standing by at 11:00 a.m. Wednesday when tow reaches Arctic Red River, tiny port and Indian village on lovely hillside, afloat with fireweed, where Arctic Red flows into Mackenzie.

Noon Wednesday: Forklifts setting like busy beetles at 600 or so fuel drums unloaded and stockpiled for future seasonal work. Entire Indian village, men, women, children and dogs, line bank for an afternoon's entertainment to watch unloading.

hilltop, rock upon rock of fish drying in sun like so much unbleached laundry.

Stroll up dirt path to Hudson's Bay Co. store. Shades of civilization: store closed half days on Wednesdays! Encounter pleasant fellow with knotted white bandana/hat on head to protect against thinning top from hot sun. Think he's local resident until he requests Imperial Oil Review sent to his Toronto address. It's Harry Mitchell, retired high school teacher, enjoying vacation on own sweet time, wandering around Arctic. "Wife wouldn't come," he says. "Visiting grandchildren in Montreal."

H.B.C. man accepts orders from members as they continue working. Store still closed but he offers order anyway. Returns with shopping bag during 'coffee break' in galley. Great hassle over one shopping bag coming to $34.10. Merchandise dumped on deck and counted: four pairs of gloves, one highly tinted work shirt, new socks, numerous packages of cigarettes, one 40¢ package of cigars, etc.

Midnight Wednesdays: Tower reassembles and moves into wide sweep of river under high sloping banks. 'Last high banks you'll see,' Jerry says. Within hour whole world seems to flatten out and river looks like lake. Sun setting like ball of fire on a distant island, yet light is about equivalent to mid-evening on prairies. It's now 4:00 a.m.

'Here we go, the pilot almost whispers. Wheel takes all his strength to haul hand-overs to port.

The Mackenzie current is beaten finally and the tow enters the Peel. Contrast startling. Banks seem almost to touch each side of the three-barge tow. 'I'll never get through,' I offer. 'Hu!,' says Jerry.

Engine room cute speed as requested. Pilot now has full-time (oh) just keeping tow away from goony black banks. Outside corner of barges twice eases into mud, once on tight port turn, once on even tighter starboard turn. River winding so sharply even canoe trip would be interesting. It's fantastic in our weird 'craft', almost river's width. Mud banks like straight two-foot high walls. Pilot explains that tremendous ice (can slice them like gigantic knives in spring) ferry cool as he jockeys out around corners, now half-speed, now without power at all. 'Let the river work a little,' he explains.

By 6:00 a.m., when Mike reinstates wheel, worst of sharp turns made. River straightens out for 10 mile run to Imperial campsite. Brilliant sunshine. Sanding on deck, could be in Florida only with palm trees or bikinis. Just mud banks, scrubby Arctic growth and distant mountain range with fresh snow on highest peak.

Serenity broken with outburst from skipper: 'The dirty, no-good, rotten blanket-ry-bank.' Taw at full stop, stuck on bottom. Quick signals to engine room. First port engine hailed and restarted, then starboard. Taw rocks gently sideways. Full power quickly and black mud churns all around. Marjory has routed load free once more. Mike makes quick decision. 'Been doing only half mile an hour for some time,' he muses. Crew loosen ties of port barge. Barge made fast to shore and 60-foot Marjory Mackenzie pushes as she proceeds to destination with two-thirds of former burden.
Friday Afternoon: Work with just 30-minute lunch break since 6:00 a.m. Boat crew and Imperial group go up like smooth team. Perfect weather helps until late afternoon. Cloud burst for one hour makes hillside road slick and barge deck like skating rink. But constant daylight also helpful and drying starts within hour. Late Friday unloading second barge started. Marjory meantime has retrieved barge dropped downstream yesterday.
Activity equally hectic on him. Peptide. Some crews cutting logs and placing timbers on top to become drill pipe racks. Smaller logs laid in pairs, like railroad tracks city block long, to hold pallets of sacked mud and crates of cement. Another crew on scow hauling erecting storage tanks to be filled with fuel. Helicopter coming and going with survey group headed by Tom Watsmore, from Imperial's Dawson Creek office.
Al Fleet, Edmonton producing warehouse, supervising log cutting. Helped by two university students, Mill Pohl, University of Alberta, Edmonton, and Doug Lemon, Dufflehouse, Hailfax. AI and Doug working stripped to waist in bright sunshine. Must have asbestos hides. Others well covered against black clouds of mosquitoes. Many wearing face and head protective netting. Cans of insect repellent everywhere.

Camp ingeniously put together. Big trailer for cookhouse, refrigerated storage, messhall. Another for washroom with showers and electric washing machine. Large sacks of sawdust laid out to make clean, dry walks over ugly morass of mud and water and just plain muck. Why build camp on this bog? I ask Fyle. Because it's best bog we looked at in these parts, he explains patiently.
Outhouse is gem of engineering. Unable to dig holes in solid ice of permafrost, so this necessary edifice is some 12 feet in air on huge circular structure of muskeg chunks. Filled sawdust sacks make graceful stairway to building. Finest view in North West Territories from there, I'm told.

Twelve days after tow left Hay River, Marjory mades last of her three barges into shore. Whole unloading, loading routine repeated for more hours. Word arrives that next tow has entered Peel River and just few hours downstream. Marjory starts assembling now empty barges for return trip. Imperial crew ashore prepares for next arrival of equipment and grabs a little rest between tows.

Elongated canoe-load of Indians arrives from McPherson to form barge-to-shore chain, unloading hundreds upon hundreds sacks of sawdust. Soon sacks piled like small mountain away from unloading area. As heavy equipment removed, barge lightens and rises in water. Bulldozers gouge material from hillside pushing great mounds toward water to keep road same height as barge deck.
Process repeated many times as barge floats higher.

Midnight Thursday: Unloading, loading, hauling uphill goes on steadily. George Fyle, Imperial toolpusher who supervised establishment of campsite, decides everyone will work better with a little sleep. No one needs coaxing.
press themselves through such media as
art, basketwork and pottery.

In 1961 she went to Prague where her
husband was participating in a scientific
seminar. She visited a TV studio, asked
to see how Czech children spend their
leisure time, was taken to a camp for
young 'pioneers'. They rewarded her
with an impromptu track and field ex-
hibition, then crowded around to talk.
As usual, Betty Nickerson was frustrated
because she couldn't communicate.
Talking to the young Czechs through
an interpreter wasn't good enough. She
produced some children's drawings
from the Winnipeg 'Boy Fingers' show.
'I hadn't shown more than three of
them before I realized this is the way to
communicate', she says. 'This is a uni-
versal language.' She and the children
babbled on together in their respective
languages but with perfect under-

standing for nearly an hour. There was
only one temporary stumbling block:
the Czechs had never seen a skunk. A
bit of nose-holding pantomime sorted
that out. 'Civet!' they cried. And ci-vet
had was close enough.

For the rest of her European trip
Betty Nickerson asked people at every
step to send her samples of children's
art. It began to arrive in Winnipeg
from all over the world—in envelopes,
wooden crates, cloth bags daubed with
sealing wax. A package from Ghana
was nine months in transit, traveling
by tramp steamer around Africa, across
the Indian Ocean and the Pacific,
through the Panama Canal and into
Montreal. Through all this the mailman
developed a stoic patience.

'It got another package for you,' he
said once. 'I don't know where it's
from but the writing looks like music.'

It was from Iran.

Thus grew the collection that is still
growing, and overflowing a basement
room in the University of Manitoba
library. It has taken its owner on lec-
ture tours throughout most of Canada
and part of the U.S. It was the subject
of a 25-week series on Winnipeg TV
and a half-hour special last summer on
the national network. It has inspired a
book, now with a publisher, and has
involved Betty Nickerson in correspond-
ence with people in 40 countries.

And still she hopes to do more with it;
produce a film, perhaps, or establish
an international center for children's
art. Somehow, she is determined to
make others aware, as she is now aware,
of this tremendous urge to share, to
explain, to say: 'This is my land. I am
trying hard to be a useful human being,
a human being with dignity'.
In this outdoor Tanganyika schoolroom, where the single ballpoint pen is passed from student to student, the teacher said 'It's a fine place to teach—until it rains.' Artist age 11
DOES YOUR CAR NEED A NEW CRUTCH?

You may soon be able to fit your spare tire into your glove compartment. A U.S. tire firm is experimenting with a folding tire, called "the crutch" by its designers. It has a thin, smooth tread and a highly flexible carcass. The tire's intended to run about 500 miles and is only for emergency use.

MIDNIGHT SNACKS OF WAX

Oil researchers are working on a process to obtain proteins from petroleum. In the process, microorganisms feed on the waxy portion of the oil, breaking it down. New proteins and oil can be produced from the remaining wax fraction. One ton of wax could be turned into one ton of protein. To start, the protein could be a food supplement for animals, but could eventually help overcome the protein deficiencies in humans in undeveloped countries.

TIRES GAINING WEIGHT

Even automobile tires follow fashion trends. And, to go along with today's cars designed with lower lines, fashion has decreed the fatter, squatter line this coming year. The new low profile shape grips the road better than its thinner predecessor because of its wider spread of about one-quarter inch.

NO FOGGY DAYS FOR LONDON TOWNS?

Liquid propane, a crude oil product, may soon banish that mysterious fog of traveling, fogged-in airports. Researchers recently released propane into a fog on a foggy day near Paris, France. The propane expanded into a gas and condensed water droplets in the fog. The droplets sank to the ground. One foggy morning, visibility was reportedly increased from 100 to 1,000 yards to allow normal take-offs and landings.

ASIA NO LONGER MINOR

The world doubles its production of crude oil every decade. Between 1955 and last year, for example, the amount of crude oil pumped from the earth increased from 13 to 26 million barrels daily and 10 years from now, studies indicate, we'll probably be producing more than 53 million barrels daily. And, though the U.S. is the world's biggest oil producer with 7.7 million barrels daily this year, the Middle East countries loom as its biggest challenger. The Middle East produces 7.5 million daily barrels, and if the long trend continues the U.S. will lose first position.

WHAT'S GOING ON ROADS

Some road research projects are being carried out or have been completed in the past five years in Canada, says the Canadian Good Roads Association, an alliance of businesses and government agencies promoting better roads and highways to serve Canadians. Projects range from straightforward inquiries into highway finance to more esoteric investigations, like evaluation of electric snow-melting installations and electronic computers to simulate traffic patterns.

THE BEST OF THE NIGHT TIME SPENDERS

Teen-age motorists spend an average of $3.50 weekly on gas and oil. 52 percent more than the national average for all drivers, according to a recent survey in B.C. One hundred young people interviewed said they spend an average of $18 weekly on their cars. Besides the $3.50 for gas and oil, they spend $1.50 for parts, $1 for accessories and $2 for repairs.

THE OLD AND THE NEW

Last year Canadian junked 230,000 old cars and bought more than 557,000 new ones. The old cars are a large source of core parts used by dealers, and replacement parts used in body repair shops.