

LEGISLATIVE ASSEMBLY OF THE
NORTHWEST TERRITORIES
7TH COUNCIL, 53RD SESSION

TABLED DOCUMENT NO. 3-53

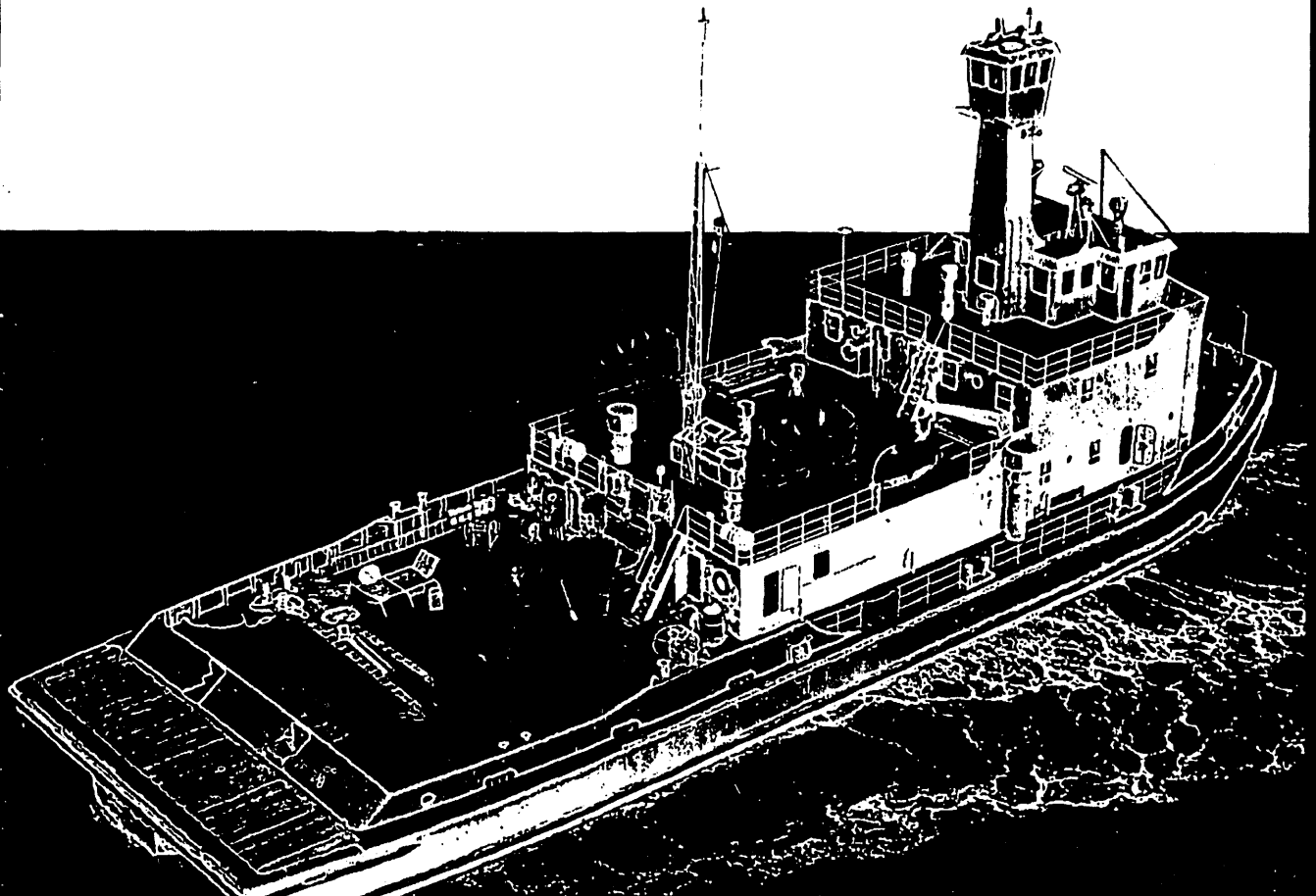
TABLED ON JUNE 17, 1974

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Tableted on June 17, 1974



Northern Transportation Company Limited

1973 ANNUAL REPORT



Dramatic New Chapter in Canadian Maritime History

In an undertaking unprecedented in the annals of Canadian seafaring, a large flotilla of tugs and barges made a 3,800-mile voyage in the Summer of 1973 from Vancouver, B.C., to the Arctic Base of Northern Transportation Company Limited at Tuktoyaktuk, near the mouth of the Mackenzie River.

Other ships had made similar journeys in the past, but this was the first Canadian operation of such magnitude.

Included in the convoy were four mainliner 4,500hp tugs, 20 all-steel barges of 1,500-ton capacity, the yarding tug *Kakisa* and four thruster-barges.

Together they represented the largest addition ever made to the NTCL fleet, which now has 28 tugs, three deep-sea vessels, and 169 barges, an aggregate gross registered tonnage of 97,723 tons.

The new units were built in record time in 1973 in British Columbia shipyards, at a cost of \$25,000,000.

Continued on Page 15

The Pictures . . .

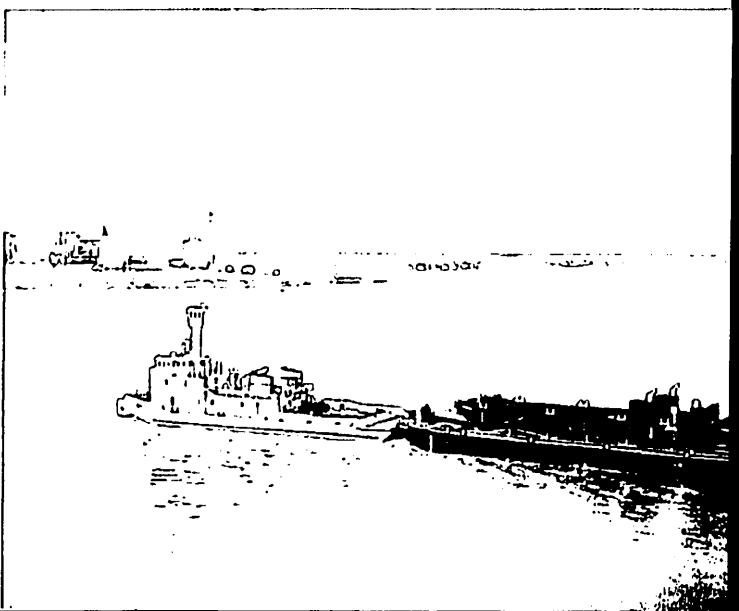
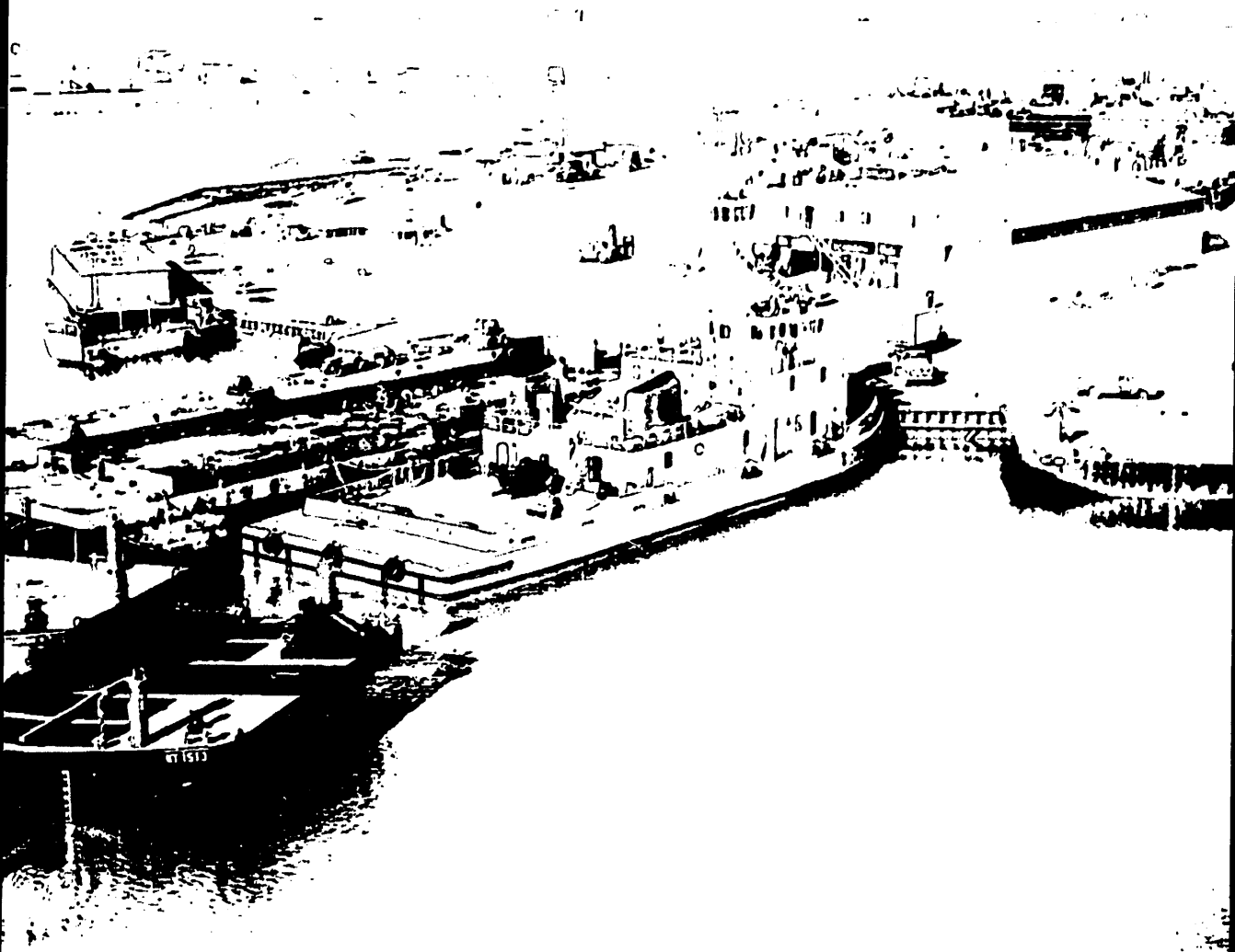
ON THIS PAGE:

Against the Vancouver skyline and passing beneath Lion's Gate Bridge is the "*Jock McGiven*," one of four 4500hp tugs in the northbound flotilla. Note the distinctive conning tower. (Centre) NTCL President W.M. Gilchrist (with Executive Vice-President L.R. Montpetit at right) speaking at send-off ceremonies July 10. (Lower) Three 250-foot barges stacked one above the other for the northward voyage. Another barge in tow carries tug "*Kakisa*" on deck.

ON THE FACING PAGE:

Only 23 days after departure from Vancouver, the convoy arrived at NTCL's Arctic Base at Tuktoyaktuk. (Lower Right) Tug "*Johnny Hope*" with 1500-ton barge carrying two thruster-barges. Dew Line site in background. Helicopter of Eldorado Aviation Ltd. served as escort for the flotilla.







NORTHERN TRANSPORTATION COMPANY LIMITED

HEAD OFFICE

Suite 800, 151 Slater St., Ottawa, Canada, K1P 5H3

OPERATIONS OFFICE

9945 - 108th Street, Edmonton, Alta. T5K 2G9

DIRECTORS

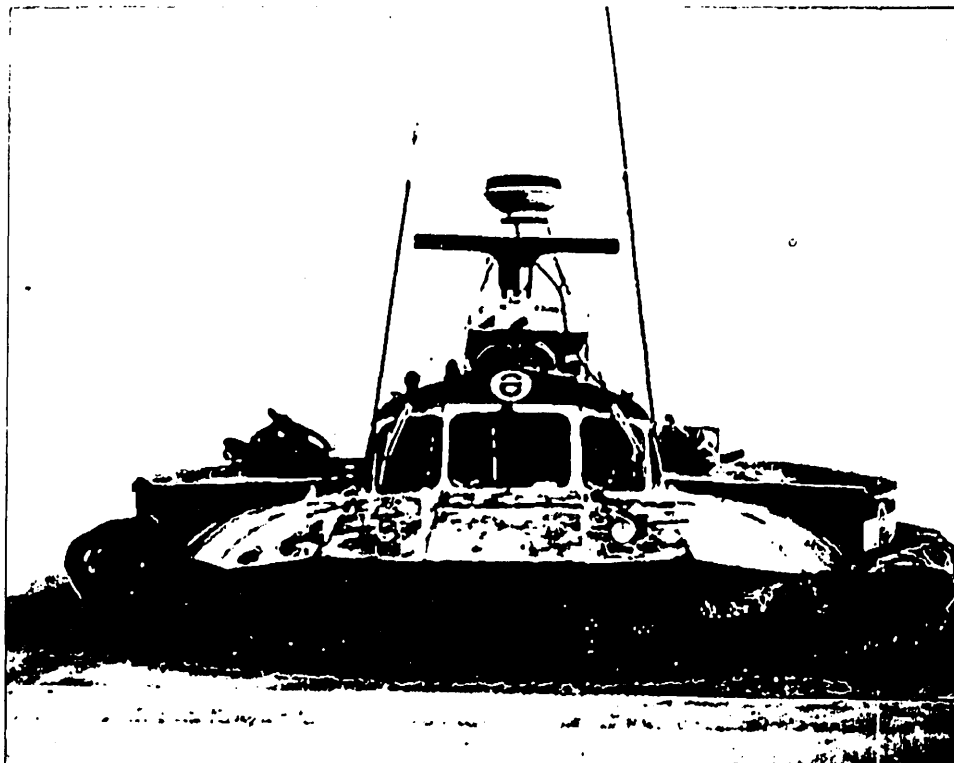
A. B. Caywood
W. M. Gilchrist
W. B. Hunter
P. L. P. Macdonnell
L. R. Montpetit
J. C. Orr
J. H. Parker
H. Basil Robinson
Murray Watts

OFFICERS

President: W. M. Gilchrist
Executive Vice-President: L. R. Montpetit
Vice-President Operations: W. B. Hunter
Secretary: R. C. Powell
Treasurer: J. C. Orr

Air-cushion Vehicle Proving Its Worth in the Far North

Extensive testing in 1973 proved air-cushion vehicles to be highly adaptable to a variety of applications in the Far North. They skim easily over water, ice and rugged terrain with payloads up to 25 tons. NTCL owns two SR-N 6 Hovercraft, one of which has been in service since Aug. 1973 and has been used most successfully for transport of personnel, re-supply, and safety standby duty during offshore oil-drilling operations in the Beaufort Sea and Mackenzie Delta. Wider use of such vehicles seems probable because of their versatility. Picture shows Hovercraft about to land on an artificial island.



Annual Report 1973

Northern Transportation Company Limited

PRESIDENT'S REPORT

The Honourable Jean Marchand,
Minister of Transport,
OTTAWA, Canada

Sir:

On behalf of the Board of Directors and in accordance with Section 75(3) of the Financial Administration Act, I have the honour to submit the Annual Report of Northern Transportation Company Limited for the year ended December 31, 1973.

The year under review has been a very disappointing one in terms of financial results. In my 1972 report, I was in the gratifying position of reporting a turn-around to a profit position from the losses of the two previous years and in that report, I forecast an increase in marine traffic of at least 25 per cent in 1973, with another profitable year. However, rather than the increase predicted, traffic in 1973 was almost 18 per cent less than in the previous year. This dramatic shift can be attributed very largely to a marked reduction in freighting requirements for oil and gas exploration in the Mackenzie Delta and to a total lack of freight for the Alaska North Slope.

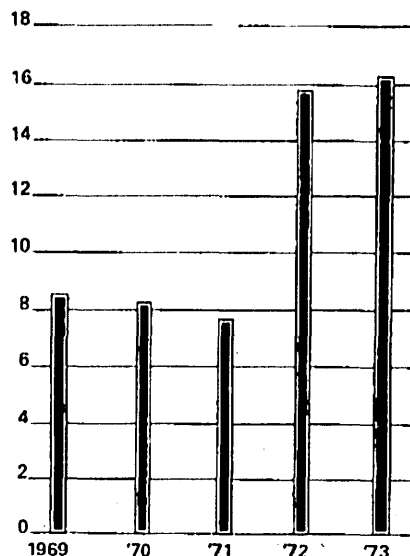
Although the consolidated operating revenue for the year reflects an increase of \$349,000, this increase is attributable solely to the inclusion for the first time of revenues of Grimshaw Trucking and Distributing Ltd., which was acquired during the year and is discussed in more detail later in my report. On the basis of the marine operation only, revenues were down by some 18 per cent, or \$2,800,000.

Marine tonnage handled was 328,000 compared with 399,000 tons in 1972, and in contrast

to a projected 500,000 tons for 1973. Most significantly, the reduction was accounted for in long-haul freight for oil and gas exploration, where tonnage dropped by 63 per cent from 170,000 tons in 1972 to 73,000 tons in 1973. Re-supply traffic for the communities also decreased slightly.

Because of the short seasonal nature of the company's business, it is almost impossible to reverse in a few weeks the effect on operating costs of pre-season decisions taken on the basis of a forecast which fails to materialize. Operating costs in 1973 were also adversely affected by the rail strike which imposed additional costs by extending the employment

REVENUE
Millions of Dollars.



period of terminal and marine personnel, thus aggravating an already low production and utilization factor. The impact of these circumstances, together with upward pressures on wages and fringe benefits, the cost of training additional crews for new equipment, and a constantly escalating cost of supplies, was dramatic, with net income from operations declining by \$6,649,000. Combined with substantially higher debt servicing charges, the result was a net loss for the year of \$1,987,000, compared with a net profit of \$1,955,000 in 1972.

Projection for 1974

On the basis of information available at this date, there is nothing to suggest any substantial increase in freight revenues or improvement in financial results in 1974. Depreciation charges

The main storage and loading terminal for northbound traffic of NTCL at Hay River, N.W.T., is well equipped to handle cargo of almost any bulk, size, weight, shape, with powerful mobile crane, fork-lifts to shift heavy containers, and other modern devices.

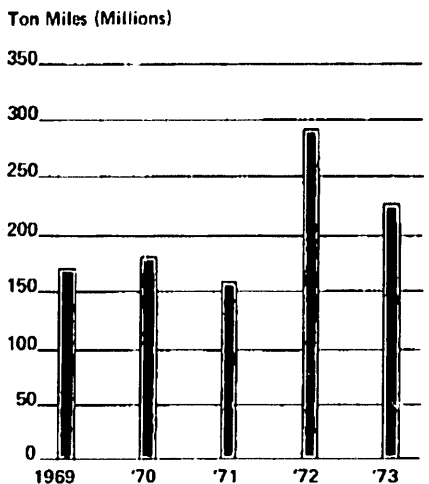
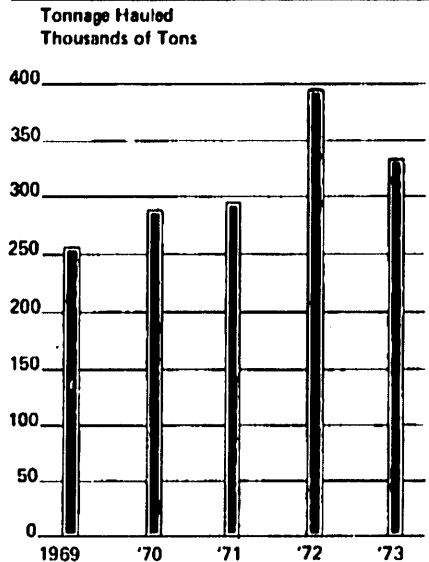


and debt servicing will continue to impose a heavy burden, and increasing wages and supply costs will probably offset any reduction in costs which may result from even the most careful planning for equipment utilization.

1973 Equipment Expansion Program

Reference was made in last year's report to plans for expanding the fleet and enlarging and improving shore-based facilities and equipment, in anticipation of an increase in traffic within the

FREIGHT HANDLED – BARGING OPERATIONS



PRESIDENT'S REPORT

Continued from Page 4

areas served by the Company. Some \$30,700,000 was expended to this end in the year under review. Among the larger items included in this program were four 4500 H.P. tugs, a yarding tug, twenty all-steel barges of 1500-ton capacity, four thruster barges, five hundred containers with ancillary lifting equipment, and a new marine maintenance building at Hay River, equipped to handle the Company's largest floating units.

The marine equipment was built in Vancouver, B.C., and in a departure from the practice of former years, when such equipment was broken down for re-assembly at Hay River, the equipment was moved to the Mackenzie River via the West Coast of Canada, the Gulf of Alaska, and around Point Barrow through the Beaufort Sea to Tuktoyaktuk. This 3,800-mile trip, lasting 23 days, was accomplished without incident. The fleet expansion brings the Company's equipment to twenty-eight tugs, three deep sea vessels for use in the Arctic, and one hundred and sixty-nine barges. Depending upon the type of freight offered, and water-level conditions, the Company now has sufficient marine equipment available to move up to 560,000 tons of freight in the short navigation season.

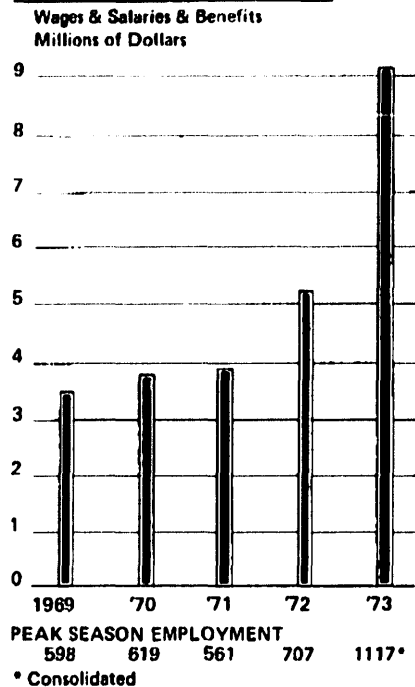
Tariff Increase Required

Despite the Company's enhanced productivity potential, the continuing escalation in costs of labour and supplies makes it imperative that the Company seek a general increase in its marine freight tariffs for 1974, in common with most companies in the transportation business. Nevertheless, it is a matter of considerable satisfaction that in the Company's 43-year history, this will be only the second time that a general increase in rates has been effected, while rates were in fact reduced three times within that period.

Air Cushion Vehicles

During the year, the "Voyageur" air-cushion vehicle evaluation program undertaken by the Company for the Ministry of Transport, as mentioned in last year's report, was carried through all programmed phases, including a river transit from Tuktoyaktuk to Fort Simpson over the ice. The program was completed in September and the craft returned to the Ministry.

TOTAL EMPLOYMENT COSTS AND NUMBER OF EMPLOYEES



In early 1973, the Company acquired two used SR-N6 air-cushion vehicles, built by British Hovercraft Corporation in the United Kingdom, together with an inventory of spares and parts. The refit and updating program was carried out by the sister company, Eldorado Aviation Limited, and the first machine was placed in operation under contract for work in the Mackenzie Delta and Beaufort Sea in mid-August. It was used successfully for personnel transport, resupply and safety standby services during drilling operations on an offshore site.

A second SR-N6 under modification is expected to be ready for tests by April 1, 1974, and will be of the flat deck configuration, giving it a greater degree of flexibility in respect to bulky and low density cargo. This machine will have a "Lift-on/Lift-off" passenger module making it readily available for a variety of cargo and passenger uses.

It is anticipated that both craft will be employed in the 1974 season, for servicing of drilling sites and seismic work.

Continued on Page 13

NORTHERN TRANSPORTATION COMPANY LIMITED

and subsidiary companies

Consolidated Statement of Income and Expense

for the year ended December 31, 1973

(with comparative figures for the year ended December 31, 1972)

	1973	1972
Operating revenue	<u>\$ 16,398,662</u>	<u>\$ 15,849,267</u>
Expense:		
Freight haulage	6,876,390	4,340,504
Terminal operations	3,841,013	2,035,551
Maintenance and repairs	2,246,316	1,470,040
Administration and marketing	1,482,616	857,642
Depreciation	3,890,963	2,506,779
	<u>18,337,298</u>	<u>11,210,516</u>
Net loss from operations	1,938,636	(4,638,751)
Other income and expense:		
Interest income	69,008	85,717
Gain on disposal of fixed assets	20,176	4,810
	<u>89,184</u>	<u>90,527</u>
Less: Interest on debt	2,254,207	1,123,158
Net other expense	2,165,023	1,032,631
Net loss before income tax	4,103,659	(3,606,120)
Less: Deferred income tax (Note 7)	2,116,534	—
Provision for income tax	—	1,650,897
Net loss	<u>\$ 1,987,125</u>	<u>\$ (1,955,223)</u>

The accompanying notes are an integral part of the financial statements.

NORTHERN TRANSPORTATION COMPANY LIMITED

and subsidiary companies

Consolidated Statement of Retained Earnings

for the year ended December 31, 1973
(with comparative figures for the year ended December 31, 1972)

	1973	1972
Balance at January 1	\$ 7,050,231	\$ 5,395,008
Net loss for the year	1,987,125	(1,955,223)
	5,063,106	7,350,231
Transfer from reserve for insurance	1,000,000	(300,000)
Balance at December 31	\$ 6,063,106	\$ 7,050,231

The accompanying notes are an integral part of the financial statements.

Consolidated Statement of Source and Application of Funds

for the year ended December 31, 1973
(with comparative figures for the year ended December 31, 1972)

	1973	1972
Source of Funds:		
Loans from Canada	\$ 31,500,000	\$ 2,000,000
Insurance investment fund	1,000,000	(300,000)
Mortgage on assets of subsidiary	190,000	—
Sale of capital assets	34,906	—
Other	—	32,700
	32,724,906	1,732,700
Application of Funds:		
Net loss	1,987,125	(1,955,223)
Items included in operations not requiring an outlay of funds	(1,759,099)	(4,291,913)
	228,026	(6,247,136)
Capital assets	30,680,701	4,622,150
Repayment of loans from Canada	4,000,000	3,000,000
Assets acquired on purchase of subsidiary	1,048,409	—
Mortgage repayments	4,649	—
	35,961,785	1,375,014
Decrease in Working Capital	3,236,879	(357,686)
Working Capital deficiency at beginning of year	1,095,126	1,452,812
Working Capital deficiency at end of year	\$ 4,332,005	\$ 1,095,126

The accompanying notes are an integral part of the financial statements.

NORTHERN TRANSPORTATION

and subsidiaries

(Incorporated under the laws of the Province of Ontario)

Consolidated

as at December 31, 1973

(with comparative figures for 1972)

ASSETS

	1973	1972
Current Assets:		
Cash	\$ 62,217	\$ 147,319
Short-term deposits	385,000	1,200,000
Accounts receivable	2,355,541	1,659,488
Operating and general supplies (Note 2)	1,013,831	695,469
Prepaid expense	46,637	17,839
	<u>3,863,226</u>	<u>3,720,115</u>
 Insurance Investment Fund:		
Short-term deposits	—	1,000,000
 Capital Assets:		
Property, plant and equipment (Note 3)	82,309,696	48,015,201
Less: Accumulated depreciation	30,312,944	25,004,006
	<u>51,996,752</u>	<u>23,011,195</u>
 Advances to contractors	—	1,343,028
	<u>51,996,752</u>	<u>24,354,223</u>
 Extra-provincial Trucking Authorities (Note 4)	<u>132,442</u>	<u>—</u>
	<u>\$ 55,992,420</u>	<u>\$ 29,074,338</u>

The accompanying notes are an integral part of the financial statements.

Approved on behalf of the Board
W. M. GILCHRIST, *Director*
S. BASIL ROBINSON, *Director*

ATION COMPANY LIMITED

ry companies

Canada Corporations Act)

Balance Sheet

ber 31, 1973

as at December 31, 1972)

LIABILITIES

	1973	1972
Current Liabilities:		
Bank indebtedness (Note 5)	\$ 336,485	\$ —
Accounts payable and accrued liabilities	3,635,481	1,738,773
Due to affiliated companies	214,265	76,468
Current portion of long-term debt	4,009,000	3,000,000
	<u>8,195,231</u>	<u>4,815,241</u>
Long-term Debt (Note 6)	<u>40,285,352</u>	<u>12,600,000</u>
Deferred Income Tax (Note 7)	<u>260,545</u>	<u>2,420,680</u>
Equity:		
Capital Stock:		
Authorized — 50,000 common shares of no par value		
Issued — 1,520 shares, fully paid	152,000	152,000
Contributed surplus	1,036,186	1,036,186
Retained earnings	6,063,106	7,050,231
Reserve for insurance	—	1,000,000
	<u>7,251,292</u>	<u>9,238,417</u>
	<u>\$ 55,992,420</u>	<u>\$ 29,074,338</u>

I have examined the above consolidated balance sheet and the related consolidated statements of income and expense, retained earnings and source and application of funds and have reported thereon under date of March 7, 1974 to the Minister of Transport.

J. J. MACDONELL
Auditor General of Canada

NORTHERN TRANSPORTATION COMPANY LIMITED

and subsidiary companies

Notes to Consolidated Financial Statements

1. PRINCIPLES OF CONSOLIDATION

The consolidated financial statements were prepared in accordance with generally accepted accounting principles and include the financial results of Northern Transportation Company Limited and Grimshaw Trucking and Distributing Ltd.

Yellowknife Transportation Company Limited has been dormant since 1966 at which time the assets and liabilities of that company were transferred to Northern Transportation Company Limited.

The 1972 comparative figures do not include the financial results of Grimshaw Trucking and Distributing Ltd. as all of its issued and outstanding shares were acquired effective January 1, 1973.

2. INVENTORY VALUATION

Materials and supplies in inventory are valued at the lower of cost or estimated net realizable value.

3. LAND APPRAISAL

All of the land owned by Grimshaw Trucking and Distributing Ltd. was appraised at market value as of January 1, 1973 by General Appraisal of Canada Limited. The recorded value of the land has been adjusted to reflect this appraisal. Plant, equipment and other property are recorded at cost.

4. EXTRA-PROVINCIAL TRUCKING AUTHORITIES

The amount of \$132,442 represents the value of the general merchandise operating authorities between the Province of Alberta and the Northwest Territories, being the excess of cost over underlying equity of assets taken over at the date of acquisition of Grimshaw Trucking and Distributing Ltd.

5. BANK INDEBTEDNESS

The accounts receivable of Grimshaw Trucking and Distributing Ltd. are assigned as collateral security for bank indebtedness.

6. LONG-TERM DEBT

The Company during the current and prior periods has borrowed various amounts from Canada subject to the terms and conditions prescribed by the Governor in Council. At December 31, 1973 outstanding principal amounted to \$44,100,000 of which \$4,000,000 is due within one year and the balance of \$40,100,000 is repayable by October 15, 1978.

A mortgage, secured by a charge against the Edmonton property of a subsidiary, is repayable in monthly instalments through April 1983. The balance owing is \$194,352 of which \$9,000 is due within one year.

7. DEFERRED INCOME TAX

It is the policy of the Company to claim for tax purposes, capital cost allowance in amounts differing from the depreciation charged against operations.

No capital cost allowance will be claimed for tax purposes in 1973. Accordingly, deferred income tax has been adjusted to reflect, at current tax rates, the reduction in future tax payable arising from the depreciation charged to operations of the year.

8. SUPPLEMENTARY INFORMATION

The Company has nine directors and five officers; four officers are also directors. Remuneration of directors as directors was \$2,000 and remuneration of officers as officers was \$85,000.

AUDITOR GENERAL OF CANADA

Ottawa, March 7, 1974.

The Honourable Jean Marchand,
Minister of Transport,
Ottawa.

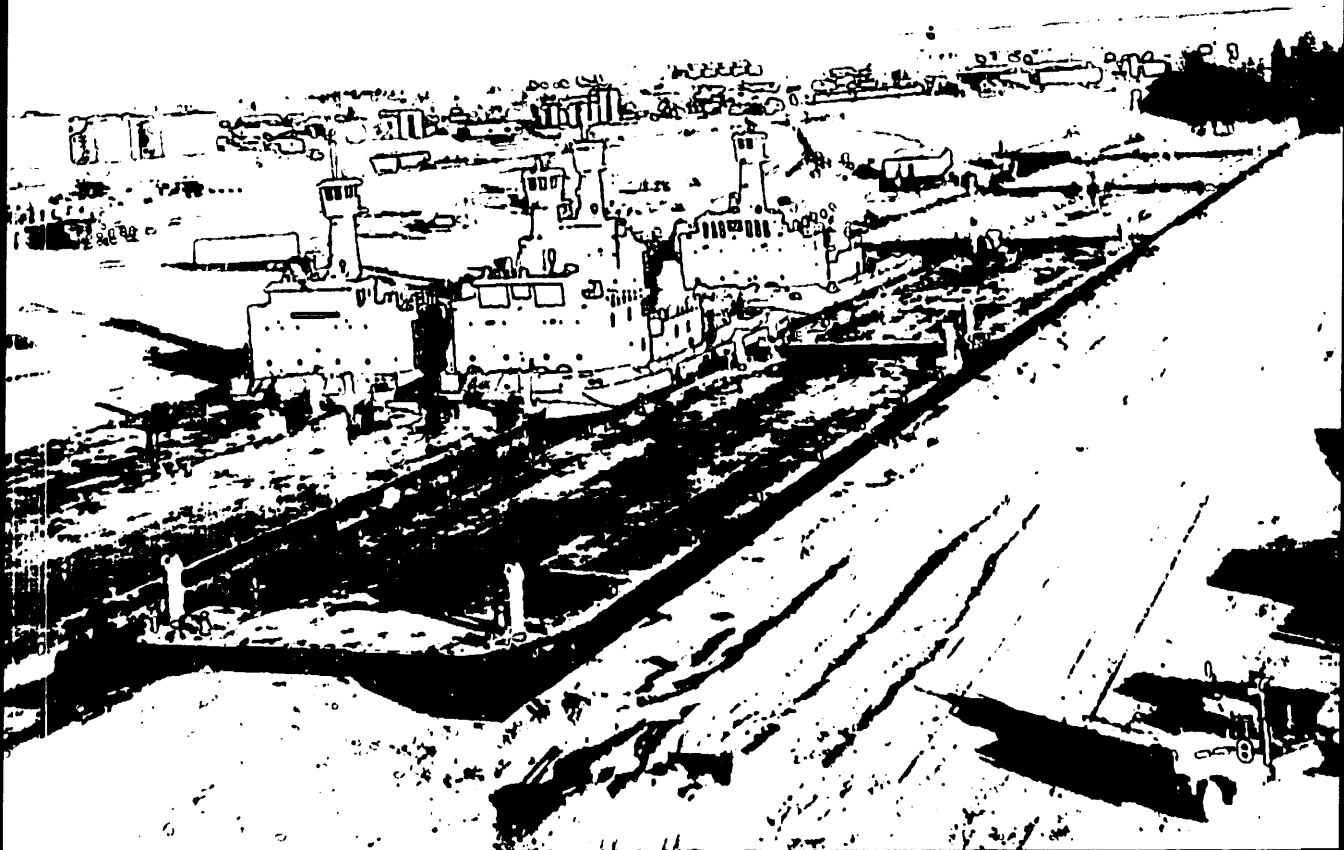
Sir,

I have examined the consolidated balance sheet of Northern Transportation Company Limited and subsidiary companies as at December 31, 1973 and the consolidated statements of income and expense, retained earnings and source and application of funds for the year then ended. My examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as I considered necessary in the circumstances.

In my opinion these financial statements give a true and fair view of the financial position of the Corporation and its subsidiary companies as at December 31, 1973 and the results of their operations and the source and application of their funds for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

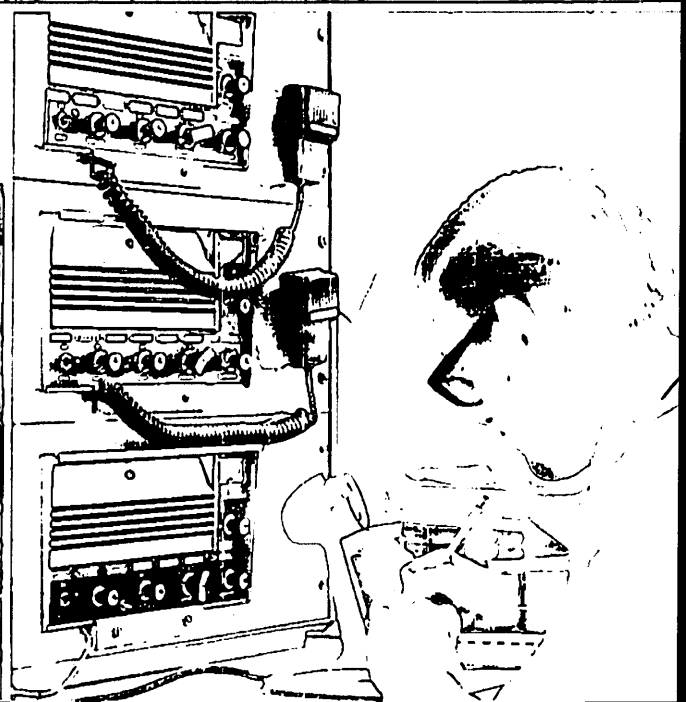
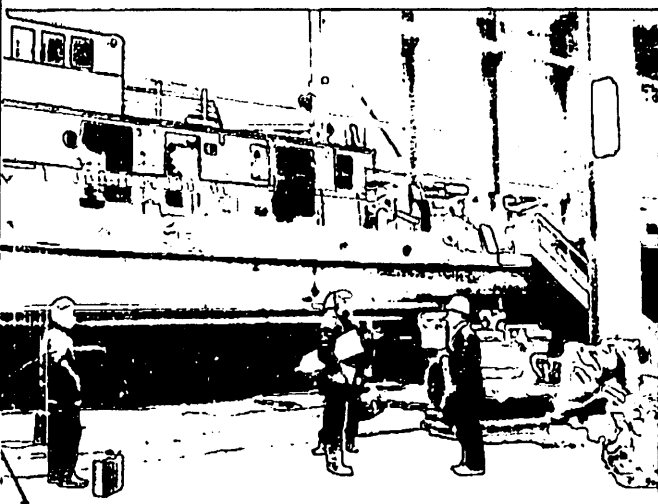
I further report that, in my opinion, proper books of account have been kept by the Corporation and its subsidiary companies, the financial statements are in agreement therewith and the transactions that have come under my notice have been within their statutory powers.

Yours faithfully,
J. J. MACDONELL,
Auditor General of Canada



NTCL Operations at Hay River

The Company's main terminal for handling the heavy volume of northbound traffic has been enlarged and modernized in recent years, including extensive facilities for repair and maintenance. ABOVE: Four new mainliner tugs and many barges in Winter storage. BELOW: The new marine maintenance shop, alongside the Syncrollit, big enough for indoor work on most fleet units. LOWER RIGHT: Two-way radio is the core of a communications network covering the entire NTCL system.



PRESIDENT'S REPORT

Continued from Page 5

Trucking Company Acquired

As forecast in the prior year's report, the Company acquired in 1973, the ownership of Grimshaw Trucking and Distributing Ltd., whose operations are now being phased into the Company's intermodal services, making interlining possible between rail or truck and water transportation, at Fort McMurray and Hay River.

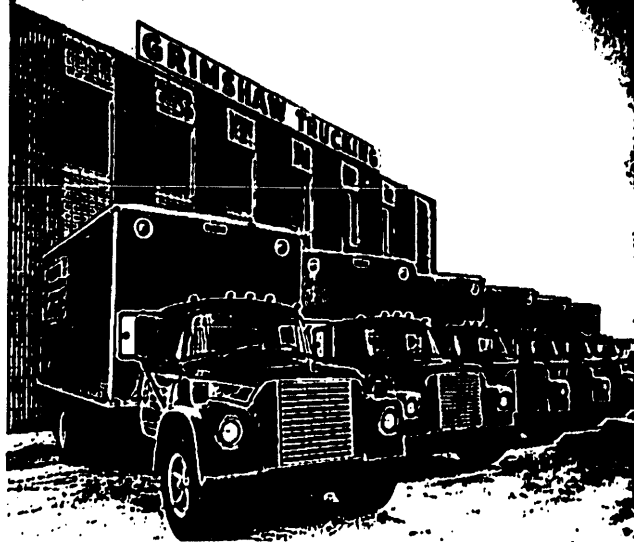
In addition to serving these points, the Company also serves Grande Prairie, Peace River, Grimshaw and High Level, in Alberta, and Yellowknife and Fort Smith in the Northwest Territories, from its major terminals in Edmonton and Calgary. Permanent facilities are maintained at all these locations.

Substantial growth within the trucking company was experienced during the year and it is expected that this trend will continue during 1974.

New Service for Hudson Bay

As a result of a decision of the Government of Canada, the Company was designated early in 1974 as the agency to provide a resupply service to six Keewatin communities on the west side of Hudson Bay, from a base at Churchill, Manitoba, beginning in 1975. Contracts have been let for construction of a triple screw tug and four barges to arrive at Churchill by the fall of 1974.

This unique trimaran vessel has been designed as a standby unit to assist in the clean-up of any oil spill that may occur. Safeguarding the environment is always a primary consideration in NTCL's operations.



Edmonton Freight Terminal of NTCL's new trucking subsidiary, Grimshaw Trucking and Distributing Ltd., acquired in 1973. The subsidiary makes possible inter-lining between rail or truck and water transportation, at Fort McMurray and Hay River. It also serves many communities in Alberta and Northwest Territories from its Edmonton and Calgary terminals.

Personnel

In the 1973 operating season, the work force reached a maximum of 1,127 persons, of whom 196 were permanent residents of the northern areas in which the Company operates. Wages and salaries paid amounted to \$8,467,000, and the Company contributed \$673,000 to pension plans, group life insurance, wage-loss insurance and medical programs, and Workmen's Compensation and Unemployment Insurance.

Early in the year, Mr. C.S. Cosulich resigned from the Board of Directors; and Mr. A. B. Caywood and Mr. J.C. Orr joined the Board.

It is a pleasure to once again record the appreciation of the Board of the work accomplished by the Company's employees during the year.

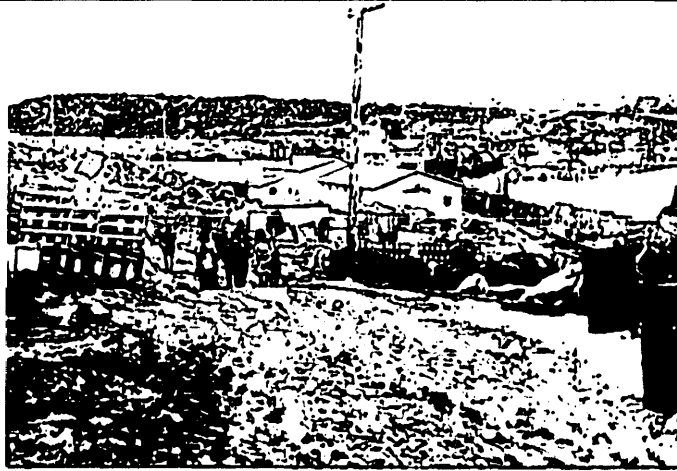
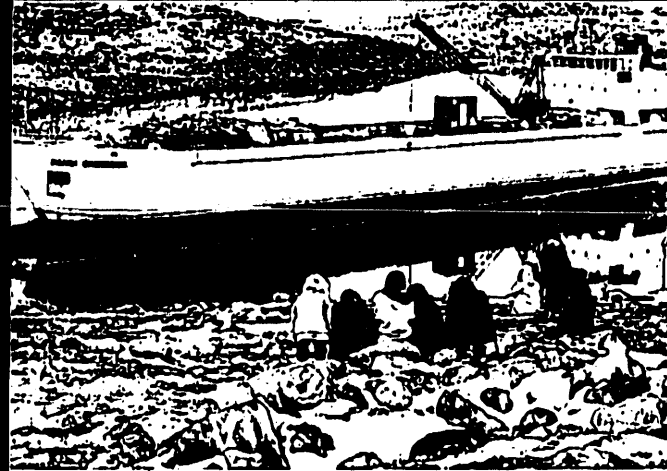
For the Directors,

B. M. Galbraith

March 7, 1974
Ottawa, Canada

President





A Memorably Happy Day in Remote Spence Bay

The tiny community of Spence Bay is on the Isthmus of the Boothia Peninsula, most northerly point of the North American continent. There could be no better illustration of the "lifeline" role of Northern Transportation Co. Ltd., in supplying this and other remote settlements of the Far North than the following story. It is reprinted from the Yellowknife newspaper "News of the North" by permission of the author, Jim Green, a resident of Spence Bay. The photographs were taken by J.J. Oates, Director of the Dept. of Information, Gov't. of the Northwest Territories. Arrival of the annual sea lift with a year's supplies is a great event for many isolated settlements. Jim Green vividly relates the touch-and-go drama at Spence Bay when NTCL's "Frank Broderick" made port in 1972.

By Jim Green

Rumors for days, weeks - the ship is not coming this year; it's stuck in the ice off Jenny Lind, it's turning back, it's still coming. Messages firing back and forth by radio. Ice reconnaissance planes buzzing over the frozen sea. The odds mounted against any chance of the yearly supply ship, the Frank Broderick, making it to Spence Bay.

The Broderick, a heavily-laden barge, and landing craft in tow, had been following the icebreaker, the Charles Camsell, through ice-bound Arctic water for weeks. The normally short Arctic summer didn't happen at all. Cold temperatures and over cast skies had left ice on the Rae Strait, St. Roch Basin, and Spence Bay right through July, August and on into September. It didn't look good.

Then at 10 a.m. on Sept. 11, a message from the Ministry of Transport, relayed through Canadian National telecommunications to Spence, crackled over the radio reporting the two vessels to be 40 miles from the settlement. They were stopped in heavy ice. A chopper from the Camsell was looking for navigable leads.

Sept. 12, 1 p.m., a Northward Aviation plane arrived in Spence after sighting the ships just west of Dundas Island; 20 miles away. At 5 p.m., a further report placed them entering the mouth of the bay; 16 miles away.

In the settlement excitement was building. Kids swarmed up on the low hill overlooking the bay to gaze out over the sea of ice. People watched from houses with binoculars and rifle scopes. Snowmobiles buzzed around on the fresh snow.

At 7 p.m. the Camsell was seen, then the Broderick, pushing around the corner of Cape Isabella. The ships stopped, lights winked on and the engines were cut for the night. They were in sight; eight miles away.

Sept. 13, 8 a.m., a cool clear morning; no wind. The ships were still sitting out there. Then the Camsell moved ahead, then the Broderick, and so on all morning. The chopper from the Camsell flitted out over the ice seeking leads. Few kids were in school. The teachers made the best of it and called a field trip. Everyone

trooped up to the hill to watch the ships.

Noon saw the ships only one mile out, moving in. The engines went 'tuntuntuntum' as the Camsell nosed through the last ice pan to the calm water of the cove. With the path cut through, the Broderick moved ahead toward the free water.

It was like watching a colossal sea epic. The Camsell turned and headed back out, its rotating radio scanner flashing in the sun. The clouds opened and sun warmed the bay for the first time in days. The Broderick moved in close; the kids cheered. The climax of the movie, you expected to hear the triumphant clash of cymbals and surge of music to a soaring crescendo. The Broderick nudged up on the beach below the Hudson's Bay hill.

Everyone swarmed over the hill. Kids played near the water, older people were seated on the rocks, men shouted from ship to shore. Ropes were anchored to gigantic rocks. The ship's engines were cut. The ship had made it.

Then the day got busy. Just as the ship's gaping front doors were being opened the weekly mail plane roared in. Unloading was about to begin when a CNT chartered Cessna zoomed over and landed at the strip. A chopper from the Camsell - whap, whap, whap, whap - set down on the beach. A lifeboat from the Camsell landed some gas drums over by the RCMP dock. A wild day for a little town.

From the yawning doors of the ships came a forklift with the first load of supplies - two pallets of Lucky Elephant popcorn. Their two forklifts were working. It had begun.

As the day wore on to the sound of shifting gears and roaring engines a mountain of supplies was off-loaded and piled on the beach, the hill, and roads. Crate after crate of engine oil for the power plant - scores of cases of pilot biscuits - hundreds of drums of fuel for Northward Aviation - a tower and telephone exchange for CNT - three new NWT government staff houses and a portable classroom - furnaces, stoves, and office equipment of the Housing Association - road culverts ordered by the settlement council - crates and pallets piled everywhere - and more coming off the ship by the minute.

Tons and tons were stacked up on the Hudson's Bay hill by the warehouses - canned goods, tinned pop, dry goods, hardware. Five new canoes, 16 snowmobiles and the first chocolate bars in months.

The next day Captain D.V. Thomas of the Broderick opened the ship to the school kids who quickly swamped all decks. Most of the cargo had been disgorged by nightfall and the pumping of fuel oil began. Fuel oil, 200,000 gallons, to run the power plant and heat homes and buildings for a year, was pumped into the huge storage tanks above the settlement.

The Broderick left the day after. Men were busy storing supplies in warehouses, sheds, and under giant brown canvas tarps. Supplies to last another year had been delivered despite the ice.

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Dramatic New Chapter in Canadian Maritime History

Continued from Inside Front Cover

In former years vessels built for NTCL on the West Coast were shipped by rail and truck, in unassembled form, to Hay River, N.W.T. Here they were completed and launched at the Company's own shipyard. The procedure was costly and time-consuming.

In 1973, after careful study of routes, logistics and risks entailed, the Company decided to have the new fleet units completed and readied for service at the B.C. yards, and then moved by sea to Tuktoyaktuk and down the Mackenzie River to the main terminal at Hay River, a total distance of almost 5,000 miles.

Departure from Vancouver July 10

Several weeks of preparation were necessary before sailing day. Crews had to be brought together and stores put aboard. There was need for some trial runs. A helicopter of Eldorado Aviation Limited, sister Company of NTCL, was taken from Edmonton to Vancouver to accompany the flotilla on escort and ice-scouting duty. Three ocean-type tugs of Seaspan International Limited were chartered to assist in the towing.

On July 10 the impressive convoy had been assembled at Vancouver. There were ship christenings and send-off ceremonies. Harbor fireboats and ships in port presented salutes as the unique procession of vessels moved out into Howe Sound in late afternoon.

The first leg of the long voyage was northward along the British Columbia coast, then across the Bay of Alaska and the Bering Sea, and through the Aleutian Islands and Bering Strait, where the flotilla crossed the Arctic Circle.

Safely Through the Polar Ice

Once through the Strait, the convoy would be in Arctic waters until it reached its destination, passing through the Chukchi and Beaufort Seas. The entire voyage was fraught not only with a great number of normal perils of the sea, but the hazards of ice floes and treacherous weather. The greatest danger, potentially, lay in the passage between Point Barrow, the northern tip of Alaska, and the vast and unpredictable permanent Polar ice fields. If conditions were unfavorable, they would present a stern challenge to the seamanship and experience of all personnel.

120 Years of NTCL Experience

More than 120 years of experience in Mackenzie System and Arctic freighting are represented by (left to right) Henry Christofferson, retired Supt. of Mechanical Operations; W. Bruce Hunter, Vice-President, Operations, and Capt. W.S. "Kelly" Hall, former Supt. of Operations. They, like many other NTCL veterans, toasted the success of the new fleet units on July 10.



THE N.T.C.L. FLEET IN 1974

UNITS	GROSS TONS	CAPACITIES (TONS)	
		at Max Draft	at Min Draft
28 Tugs	8,371		
3 Deep-sea Vessels	5,427		
169 Barges	83,925	161,319	54,763

Happily, and by rare chance, neither the weather nor the ice proved difficult. The flotilla made port at Tuktoyaktuk only 23 days after departure from Vancouver. The advance estimate had been that it would take from 28 to 32 days. Almost immediately, most of the new units moved on down-river to Hay River and went into regular service.

Design Based on Long Experience

All of the new tugs and barges were especially designed and incorporate the accumulated lore of more than 40 years of freighting experience on the rivers and lakes of the Mackenzie Basin, as well as the expertise of their architects and the builders.

The vessels must be tough and dependable. The draft must be shallow because of the seasonal variations in water levels and for negotiation of narrow channels and rapids. Load capacities must be ample because the shipping season is about four months, June-September, on the Mackenzie, and 60 days or less, in the Western Arctic. Turn-around time for a typical Hay River/Tuktoyaktuk/Hay River round-trip can be between 14 and 21 days, depending on relays and stop-offs. Plenty of equipment and good cargo capacity are vital to successful NTCL operations in the abbreviated season.

Northern Transportation Company's Fleet

NTCL has transported as much as 400,000 tons in a season. The present fleet is capable of moving 560,000 tons in a season, probably more under ideal water and weather conditions. The main thrust of the Company's operations is the re-supply of the many communities in the area, but cargo required for resource development in the North is, and is likely to be, a fast-growing factor.

About 55 per cent of traffic handled at present is in the form of

bulk products such as aircraft fuels, heating and diesel oils, bunkers, etc. Consequently, all NTCL barges are dual purpose, fitted for carrying bulk petroleum products below deck and dry cargo, mainly in large containers, on deck.

The four new mainliner tugs are improved versions of those already in service. They are 4,500hp diesels with quadruple screw; 155 feet long, 52 feet wide, with a moulded depth of 9 1/2 feet. The maximum operational draft is 3 feet 9 inches.

Tugs With Conning Towers

In general usage a tug of this type is the pusher of a train of six barges in box formation, with a thruster-barge as the lead. Such a train may be as much as 750 feet in length and not infrequently barges may carry up to 96 containers, 20 by 10 by 10 feet in size, double-stacked.

To permit easy sighting above the barges, each of the new tugs has a "conning tower" rising 45 feet above the waterline. From this vantage point the pilot may control not only the tug itself but, electronically, the lead thruster barge. This barge, 102 feet long and 35 feet wide, has powerful jet drive units and will serve as an invaluable aid in steering and manoeuvring the barge train around bends, into docks, or when adverse wind or current conditions are encountered. The barge also can be operated by its own wheelman. The tug can be controlled from the conning tower, the main wheelhouse, and in an emergency, the engine room.

The size of a barge train varies. On occasion Company tugs

When the flotilla reached Tuktoyaktuk in August, one of the first tasks was to dismount the triple-stacked, 1500-ton barges in the ARD floating drydock. By alternate sinking and pumping-out, the barges were separated and floated in a matter of hours. The drydock is a vital repair and maintenance facility of NTCL's Arctic Base.



have taken as many as 18 empty barges upstream in one tow. Conversely, with adverse currents, low water or other conditions, only a few barges can be pushed.

Novel Stacking of Barges

The 20 new 1,500-series all-steel barges are each 250 feet long and 56 feet wide. They are fitted with fasteners for carrying up to 48 20-foot ISO containers on deck and, by double stacking, up to 96, depending on draft. In addition to deck cargo, each barge has a bulk oil capacity of some 750,000 gallons at 9-foot draft, or 370,000 at 5 feet 5 inch draft.

A novel technique was employed for the movement of the new barges to Tuktoyaktuk. Some were triple-decked. By the use of a Syncrolift, the cargo hold of one barge was flooded with about a million gallons of water, sinking it. A second barge was moved above the first and also sunk. A third barge was floated above the other two. By pumping out the holds of the middle barge, then the bottom one, the three were floated as a stack. The process was reversed at Tuktoyaktuk in the ARD floating drydock. Enroute north, two tugs towed two stacks of triple-decked barges and one towed a triple-decker plus a single barge carrying on its deck the yarding tug *Kakisa* and a small fishing boat.

Tug Doubles as a Fireboat

The *Kakisa* takes its name from a scenic river flowing into the Mackenzie River from Lady Evelyn Fls, some 30 miles downstream from the entrance to the Mackenzie. She is a shallow-draft pusher tug, like the 155-footers, but measures only 81 by 36 feet, with a depth of 9 feet 6 inches. Her maximum draft is 3 feet 6 inches. The *Kakisa* is specifically designed for marshalling barges, but is also fitted for emergency service as a fireboat. She will be based at NTCL's main terminal for storage and loading of northbound traffic, at Hay River, a community on Great Slave Lake, 1,122 river miles south of Tuktoyaktuk. She will have a crew of three; normal complement of the 155-footers is 14.

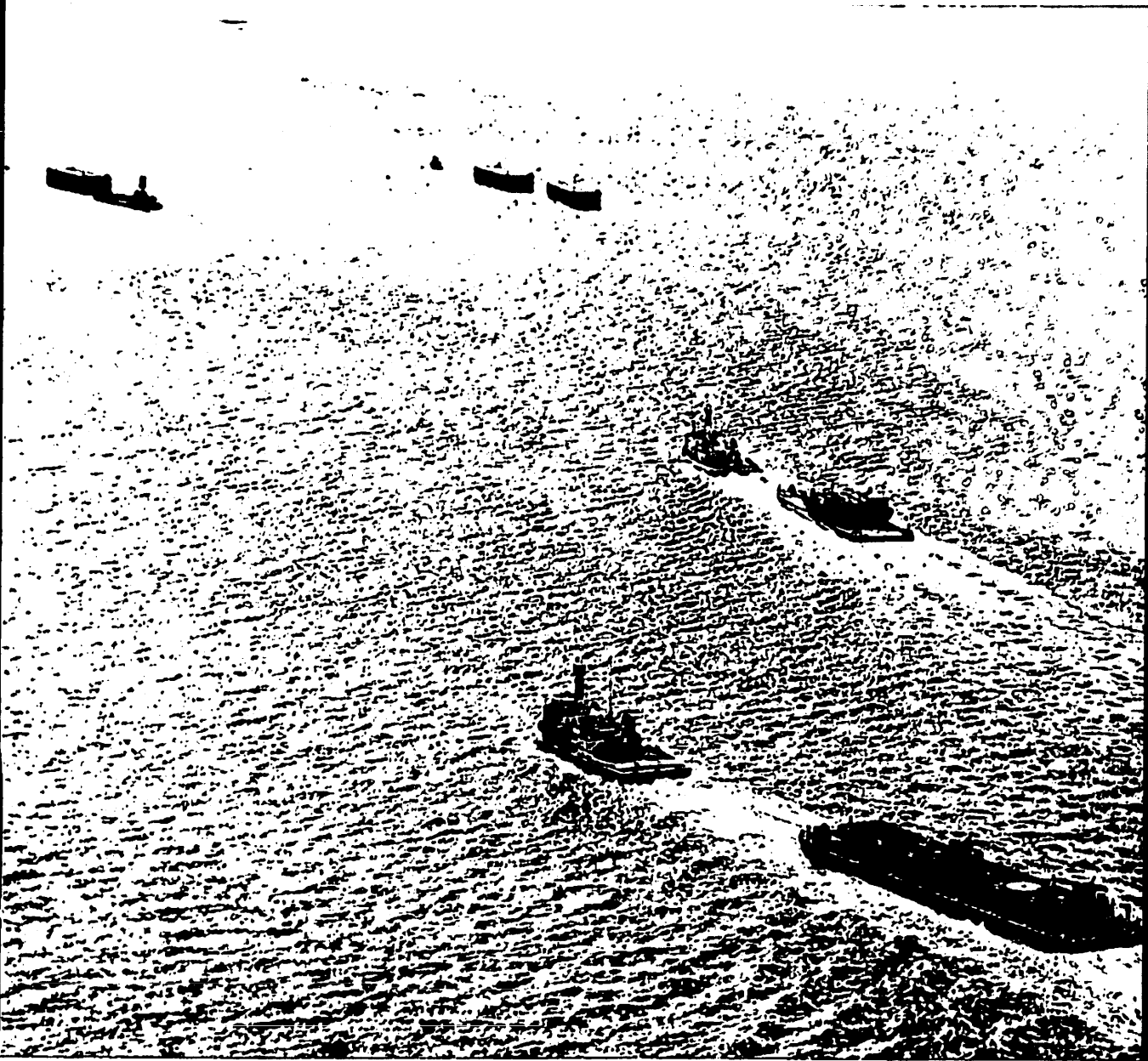
All four new mainliner tugs are named after individuals who had been involved with the progress of Northern Transportation over the years: the *Henry Christofferson*, honoring the engineer superintendent retired after 40 years of service; the *Johnny Hope*, the *Jock McNiven*, and the *Matt Berry*.

In 1974 Northern Transportation marks its 30th anniversary as a Crown Corporation, but its direct antecedents go back to 1931. Its familiar flag will be seen in a new area of the North in 1975, when a triple-screw tug and three barges will begin supply of six Keewatin communities on the west side of Hudson Bay. The Company will continue, as it has throughout its long history, to meet the needs and challenges of the vast northern territories of Canada.

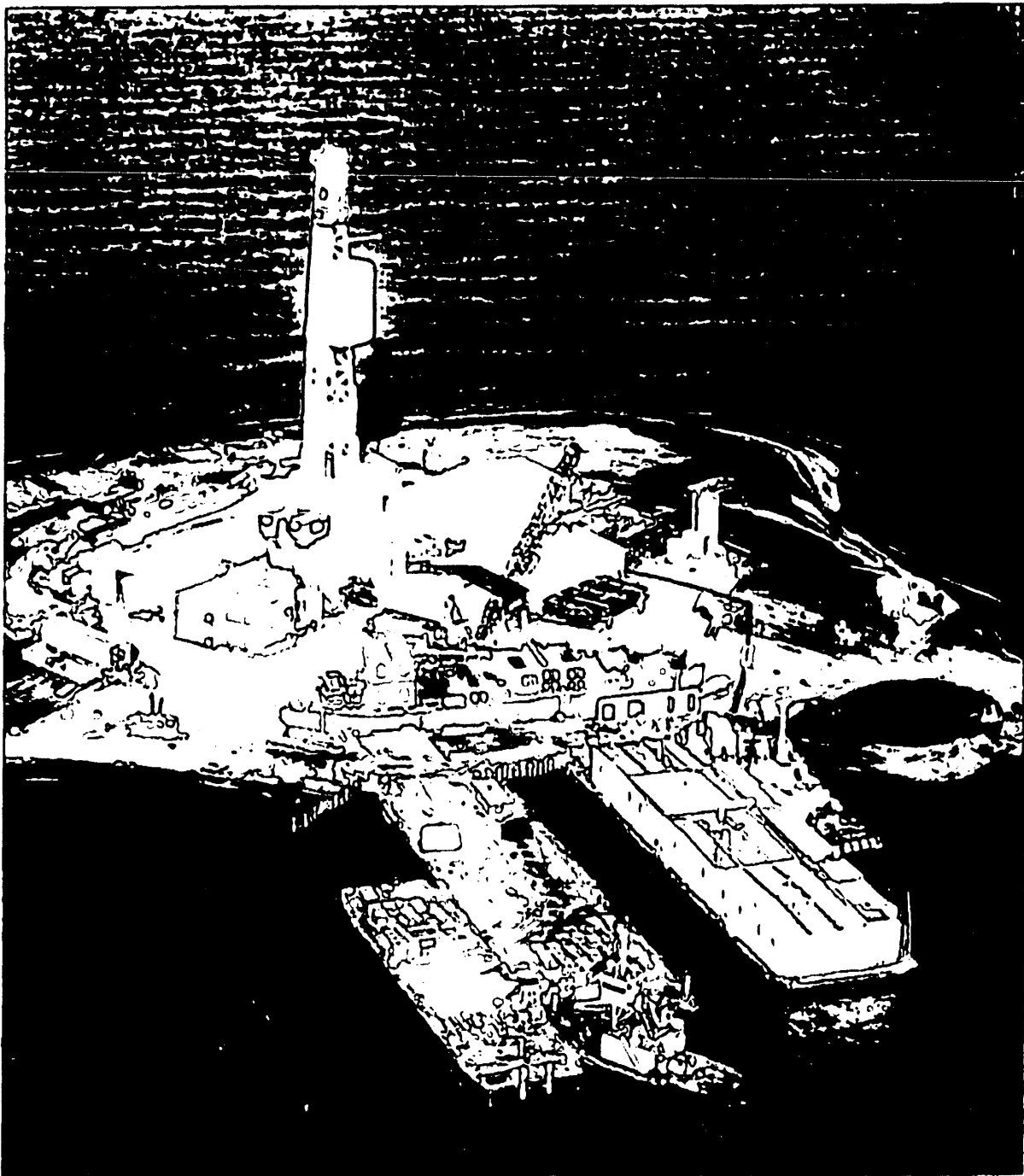
Happy Day in Spence Bay

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The ship churned out to meet the waiting *Camsell*. Together, they started off on the long journey back to Tuktoyaktuk. They still had another trip to make back from Tuk to Cambridge Bay before freeze-up. Up by the flag pole on the Bay there was a crumpled pile of stew cans, twisted pop tins, and crushed popcorn boxes, victims of forklift tires; but they got here. The ship made it.



Moving steadily northward from Vancouver, the impressive procession of tugs and barges headed for the Arctic Base of Northern Transportation Company Limited presented a serene picture in the sunset, from the vantage point of the aerial photographer.



Man-made Islands Permit Year-round Drilling for Oil in the Arctic

Artificial islands, built up from gravel and sediment from the bottom of the relatively shallow off-shore waters of the Beaufort Sea or the Mackenzie Delta, provide nearly ideal platforms for year-round drilling for oil. Imperial Oil Limited reported recently the discovery of oil in a well drilled to a depth of 10,523

feet on such an island. Off-shore platforms cost up to \$10,000,000. In addition to providing water-borne supply services, NTCL leases a Hovercraft to the operators for safety stand-by duty and other needs. The Hovercraft can carry up to 36 persons, as well as deck cargo, skimming over water, ice or land.

Photograph by Courtesy of Imperial Oil Review.