

# Bulletin

Vol. 25, No. 20

May 20, 1970

## AIR CANADA REPORT 1969

Canada's publicly-owned airline, Air Canada, recorded in 1969 a profit of \$1,548,000 and a return on investment of 4.8 per cent, compared to \$8,184,000 and 6.3 per cent in 1968. These figures are contained in the company's annual report tabled recently in the House of Commons by Transport Minister Donald Jamieson.

The marginal profit was the result of a strike by the International Association of Machinists and Aerospace Workers, Chairman and Chief Executive Officer Yves Pratte stated in the report.

Among other factors contributing to a disappointing financial year were deep penetration into the Atlantic market by non-scheduled carriers, rising costs and a slowing-down of the Canadian economy,

Operating revenues rose a modest 4 per cent to \$404,652,000, while operating expenses increased by 7 per cent to \$386,188,000. The IAM and AW strike, which grounded all aircraft for a month, cost the company about \$40 million, and financial impact was not limited to the period of the strike. Following resumption of operations, it became apparent that a substantial volume of summer traffic had been lost to other carriers.

A three-day work stoppage in the autumn by airport electrical technicians and threat of strike action in December by air-traffic controllers (all employees of the Department of Transport) also had a serious impact.

Passenger revenues, which account for four-fifths of total, increased by only 1 per cent during the year. The average return a passenger-mile fell from 5.84 cents to 5.80 cents, owing largely to a wider use of youth and senior-citizen standby fares, which depressed the North American revenue yield; Southern and Atlantic yields were higher.

The report points out that passenger fares within Canada remained unchanged during 1969, although domestic airline fares in the United States increased by about 10 per cent.

Revenues from charter operations increased by 73 per cent to \$8,837,000 over those of the previous year. Freight revenues were up 19 per cent and mail revenues up 10 per cent, with the rate a ton-mile of mail on North American services dropping from 50 cents to 48 cents. Express revenues showed no advance.

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### EXPENDITURES

Salaries and wages, the largest single expenditure, accounting for 42 per cent of the total increase in operating costs, rose by 8 per cent. At the end of 1969, Air Canada employed 17,138 persons, an average increase of 3 per cent for the year, compared to 6 per cent in 1968.

Federal, provincial and municipal taxes, excluding the provision for deferred income taxes, totalled \$16.3 million, an increase of 9 per cent over 1968 taxes.

Capital expenditures for property and equipment totalled \$131.2 million, of which almost 90 per cent related to the acquisition of aircraft. This outlay was financed partly by internally generated funds, with the remaining \$75 million borrowed from the Government at an average interest rate of 7.8 per cent.

The company carried 6.4 million passengers on scheduled services, a marginal increase of 1 per cent.

On the North Atlantic, the strike and charter competition caused Air Canada's scheduled passenger traffic to decline 7 per cent, compared to a 13 per cent increase in 1968.

Traffic rose by only 8 per cent on Southern services, owing to greater competition from both scheduled and non-scheduled carriers. This sector grew by 43 per cent the previous year. North American passenger traffic increased a modest 4 per cent.

#### NEW FARE STRUCTURE

The company is convinced that a simplified and adjusted fare structure is necessary on the North Atlantic if the airline industry is to realize its potential for growth.

To that end, and to meet the problem of non-scheduled competition, the airline proposed in October, non-affinity "mini-fares" for groups of 50, 100 and 150 on scheduled services. Though unsuccessful in introducing a non-affinity fare through the International Air Transport Association, Air Canada was instrumental in the establishment of the lower fare structure that was eventually adopted.

#### IMPROVED SERVICES

Air Canada resumed service to Brussels during 1969, the tenth city in Europe served by the airline and its sixty-second overseas terminal. Service to Prague will begin this spring and the company hopes to be operating a number of additional routes to the U.S., next year, following bilateral negotiations between the Canadian and the United States Governments.

Important improvements were made in the quality of customer services during the year. "Connoisseur" meals were provided on additional long-haul Canadian routes, up-to-the-minute sales offices and facilities were opened in Edmonton, Calgary and new uniforms were introduced for stewardesses, passenger agents and ground hostesses.

The number of flights within North America was increased, as well as the number of flights to Europe and the Caribbean. Jet aircraft and more non-stop flights were introduced to a number of new destinations.

Cargo services were expanded. Three all-freighter DC-8s operated all year, and in the last quarter three additional DC-8s were converted to a mixed configuration of seven cargo pallets and 69 economy seats. A \$3.5-million cargo terminal was opened in Winnipeg in February and a \$1.7-million terminal at London, England in September.

In 1969, Air Canada took delivery of six DC-8-63s and two DC-9s. One DC-8-61 and 11 *Vanguards* were sold, while a *Viscount* was donated to the National Museum of Science and Technology in Ottawa and another destroyed by fire at Sept-Îles. At year end, the fleet consisted of 112 aircraft: 20 standard DC-8s, 12 long-body DC-8s, 33 DC-9s, 12 *Vanguards* and 35 *Viscounts*. Jet aircraft accounted for 85 per cent

of total seat-miles, compared to 75 per cent in 1968.

The airline will add seven long-bodied DC-8-63s and three DC-9s to its fleet in 1970 at a cost of \$96 million. By 1972, the company will have taken delivery of three 365-seat Boeing 747s and six of ten 270-seat Lockheed *TriStars* at a cost of \$176 million.

#### NEW CONSULATES IN U.S.

The Department of External Affairs and the Department of Industry, Trade and Commerce, recently made the joint announcement of the openings of consulates in Buffalo, New York and Minneapolis, Minnesota.

Mr. Mitchell Sharp, Minister of External Affairs and Mr. Jean-Luc Pepin, Minister of Industry, Trade and Commerce, said that the new posts would be primarily oriented toward export trade promotion and industrial promotion. They will also perform normal consular functions.

Mr. Pepin said that the consulate in Minneapolis would be of particular assistance to manufacturers in the three Prairie Provinces, while the post in Buffalo would be of particular assistance to manufacturers in Central Canada.

The territory of the Minneapolis office would consist of Minnesota, North Dakota, South Dakota, upper Wisconsin, upper Michigan and Eastern Montana. The territory of the post in Buffalo will be upper New York.

John H. Bailey, formerly Commercial Counsellor in Caracas, Venezuela, will be Consul and Trade Commissioner in Buffalo, and G.E. Woolam, formerly Commercial Counsellor (Agriculture) in London, England, will be Consul and Trade Commissioner in Minneapolis.

#### WHEAT SALE TO SYRIA

The sale of 200,000 metric tons (7.4 million bushels) of wheat to Syria was announced recently by Mr. Otto E. Lang, Minister responsible for the Canadian Wheat Board. The appropriate value of the contract is \$15 million.

This sale was negotiated by Northern Sales (1963) Limited of Winnipeg, agents of the Canadian Wheat Board selling grain abroad. The first shipment was loaded at Sorel, Quebec and shipping will continue until January 1971.

Mr. Lang said that the sale was made possible only through the Government's revised and expanded credit program, which originated in the Prime Minister's undertaking in June 1968 that the Government would review and amend credit facilities available for wheat sales in order to improve the competitive position of Canadian wheat in world markets.

"This is the first substantial sale of Western wheat ever made to Syria, and is an indication of the far-ranging efforts of the Wheat Board and its accredited agents," Mr. Lang said.

### CANADA-U.S. FISHING AGREEMENT

Canada and the United States concluded an agreement on April 24, concerning reciprocal fishing privileges between the two countries. The instrument was signed for Canada by Dr. A.W.H. Needler, Deputy Minister, Department of Fisheries and Forestry, and for the United States by Ambassador Donald L. McKernan, Special Assistant for Fisheries and Wildlife, Department of State. Ambassador McKernan was in Ottawa for the annual meeting of the Inter-American Tropical Tuna Commission, which is chaired by Dr. Needler.

The agreement will allow the fishermen of either country to continue, on a reciprocal basis, the commercial fishing they have carried out to a distance of three miles from the coasts of the other country up to the present and prior to the first establishment of exclusive fishing-zones by Canada in 1964 and the U.S. in 1966. The agreement formalizes the informal reciprocal fishing-rights arrangements that have existed between Canada and the U.S. since the establishment of their respective fishing-zones. Advisers from provincial, state and federal governments and representatives of the fishing industry from both coasts of both countries took part in the negotiations leading to the agreement.

The areas covered by the agreement include the east and west coasts of Canada and the U.S. and the species covered include all those involving the commercial fisheries of both countries.

This agreement will have no effect on the territorial or jurisdictional claims of either country. Article 6 of the agreement provides that: "Nothing in this agreement shall prejudice the claims or views of either of the parties concerning internal waters, territorial waters, or jurisdiction over fisheries or the resources of the continental shelf; further, nothing in this agreement shall affect either bilateral or multilateral agreements to which either Government is a party."

The pact is for a period of two years and applies only to commercial fisheries and to the areas referred to in the agreement.

#### TYPE OF FISHING

Fisheries of the two countries will continue much as before in the areas designated as reciprocal fishing areas in the agreement:

(a) Salmon-trolling by Canadians will continue to be permitted in a three- to twelve-mile area off the coast of Washington State. U.S. salmon-trollers will be permitted to continue only off Vancouver Island.

(b) Pacific halibut fishing will continue in each country's reciprocal fishing area.

(c) Such trawl fisheries as have been conducted in each country's reciprocal fishing area by vessels of the other country will continue.

(d) The long-standing practice of transferring herring on the east coasts of the U.S. and Canada will continue, but neither country will fish for herring in the other country's reciprocal fishing area.

(e) Fishing for any species of clam, scallop, crab, shrimp or lobster will not be permitted in the other country's reciprocal fishing area.

(f) The initiation of any new fisheries by vessels of one country within the reciprocal fishing areas of the other country will require consultation and agreement between the two countries.

Fishing regulations in the reciprocal fishing areas of each country are to apply equally to the fishermen of both countries.

At a signing ceremony in the Commonwealth Room of the House of Commons, speakers from both countries emphasized that this agreement reflected the friendly co-operation that had long existed between the fishermen of both countries and affirmed the good relations between Canada and the United States of America.

#### TRADE MISSION FROM E. EUROPE

Nine senior technical and buying officials from four Eastern European countries visited Canada for a two-week tour of logging, sawmilling and woodworking installations. The purpose of the mission, sponsored by the Department of Industry, Trade and Commerce, was to acquaint the visitors with Canadian equipment capabilities in the forest industry.

Canadian manufacturers and designers of this equipment - from log-haulers to sawmills - want to increase sales beyond the domestic market. All the countries represented on the mission - Hungary, Bulgaria, Yugoslavia and Romania - have major development plans for their forestry industries. They met senior executives in the Canadian industry and saw logging operations and processing plants.

#### QUEBEC ELECTION RESULTS

	1970	1966
Liberal .....	72	50
Union Nationale .....	17	56
Creditiste .....	12	-
Parti Quebecois .....	7	-
Independent .....	-	2
Total	108	108

## STUDY OF PARALYSED LOWER LIMBS

Joan Bryan, a 21-year-old secretary at the National Research Council, is one of several volunteers in a gait-characteristics study being conducted by bioengineers Dr. Morris Milner and A.O. Quanbury. The study is part of a larger research project on the feasibility of restoring locomotion to persons with totally paralysed lower limbs through the application of programmed electrical stimuli directly to muscles or to the motor nerves of the afflicted limbs.

The two NRC bioengineers believe there is an important need for an instrument that will allow a clinician to observe readily and to record the actual joint trajectories from a walking patient. Such an instrument, they say, should be useful in determining gait abnormalities or gait changes in patients recovering from an affliction or in those fitted with prosthetic devices.

### NATURE OF TESTS

Miss Bryan's task in the experiments is to try to walk under various conditions created by Dr. Milner and Mr. Quanbury in their efforts to develop a system

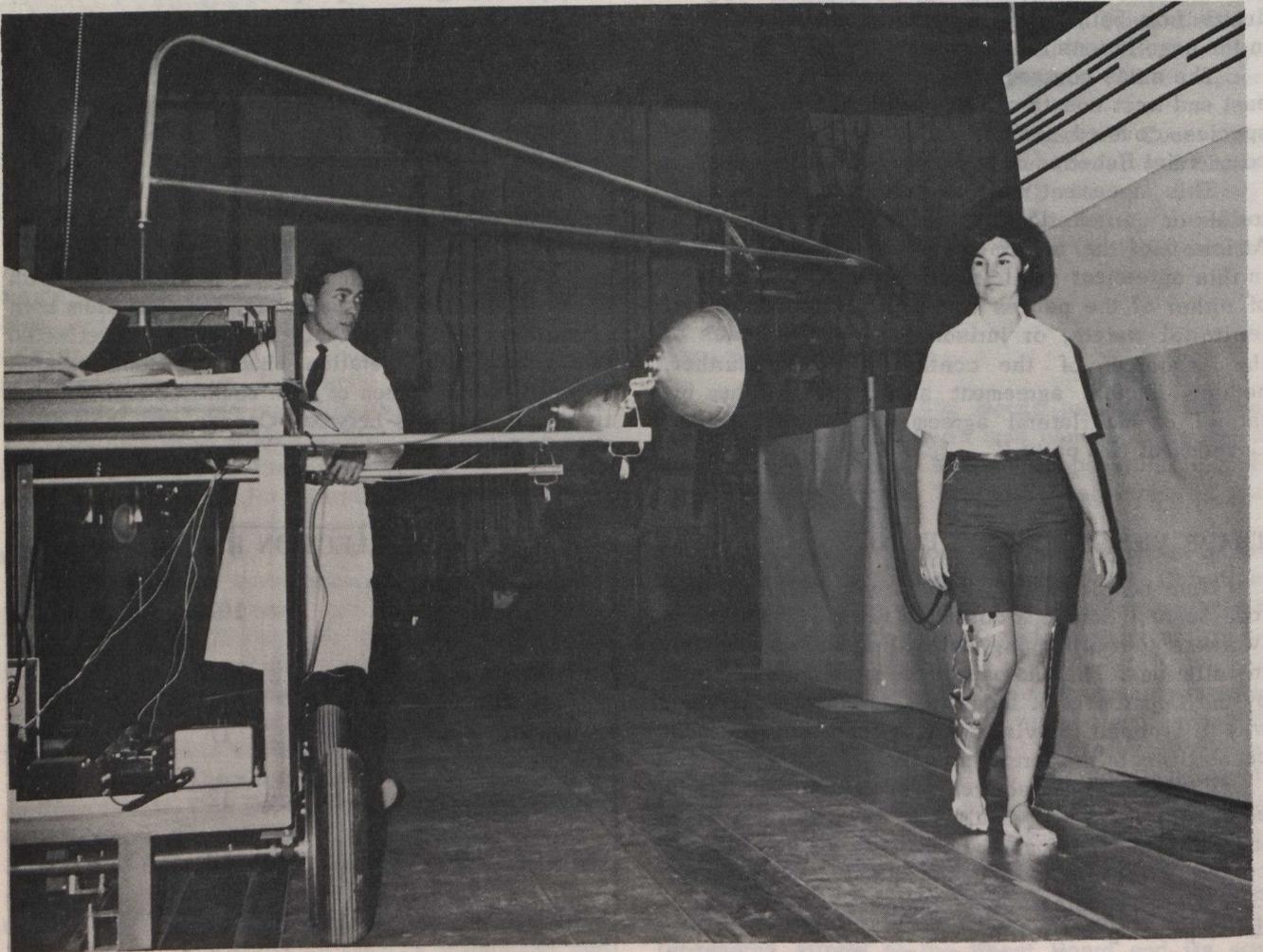
for the computerized analysis of human locomotion.

In bandaged bare feet, she marches back and forth atop a 20-foot metallic strip, which is a portion of a 60-foot walk-way, to the measured cadence of an electronic beep that, together with a moving cart with which she must keep abreast, sets her predetermined pace. Through metal pads attached to her heels and toes, signals are transmitted along wires on her legs and pass through a junction box carried at her waist. Electrical signals generated by selected muscles are picked up with special electrodes whose connectors also pass through the box. A digital computer will facilitate automation of the analysis of all these data. The box is linked to equipment on the cart running alongside the walk-way. From here, 16 millimeter film records her limb movements against a coded background.

Each frame of the photographed action will be analysed by a computer program.

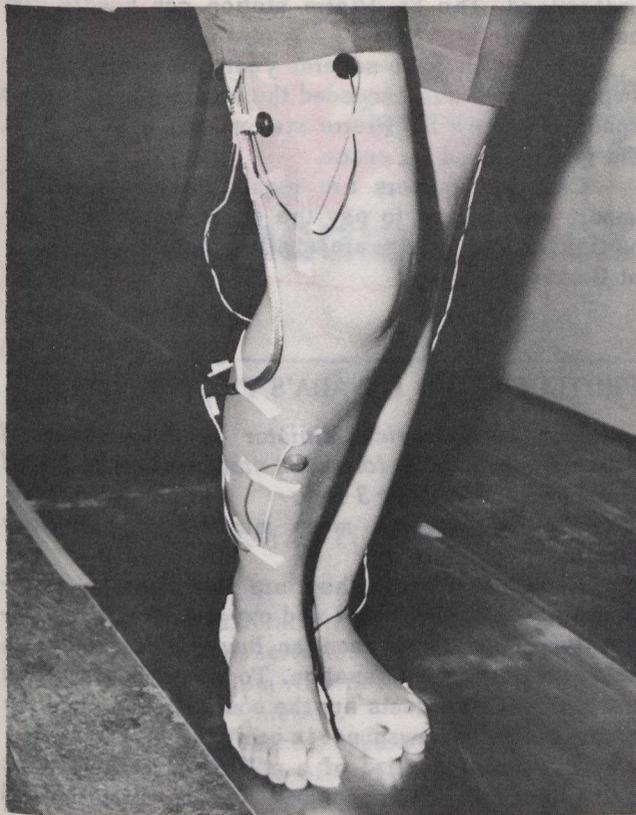
### RESULTS HOPED FOR

Extensions to this computer program are expected to produce the following information: planar position of



Joan Bryan walks metallic strip, while a camera on locomotion study cart records her movements against coded

background (extreme upper right). Linking cable transmits signals from electrodes on her legs to equipment on cart.



various joints with the passage of time; the individual co-ordinates of the points of movement in the plane with time; and the time variations of angles between the lines constructed from each joint to the joints at the opposite extremes of the limbs or members of immediate concern.

In earlier work, Dr. Milner and Mr. Quanbury, with Dr. John V. Basmajian of Queen's University's Department of Anatomy, undertook a study of the electrical stimulation of leg muscles. In one series of experiments, the subject was lifted onto his toes as if he were leaning forward five to 10 degrees. In the most successful cases it was possible to lift the subject off his heels and on to his toes while standing vertically. A tentative conclusion was that it was reasonable to expect that surface electrical stimulation can maximally and usefully evoke about 40 per cent of the maximum volitional force.

"The value of our work," says Dr. Milner, "will depend on the ability to relate joint trajectories to specific abnormalities and deficiencies as well as to extract pertinent programming data for electro-stimulation of useful muscles. We hope eventually to gain a full understanding of the detailed, complex process of human locomotion."

← *Footswitch electrodes and electromyographic electrodes taped on leg of test subject.*

## STUDENT DRUG-USERS

A comparative study of the use of drugs in high schools in three cities of Eastern Canada has shown that a large percentage of the students who smoke marijuana use other drugs as well, amphetamines and LSD being the most popular. The study was a joint effort of Dr. Paul C. Whitehead, Dalhousie University in Halifax, Dr. Reginald Smart, Addiction Research Foundation in Toronto, and Mr. Lucien Laforest, OPTAT (Office de la Prevention et du Traitement de l'Alcoolisme et des Autres Toxicomanies) in Quebec. The questionnaire and the research techniques used in the three-city studies were developed by Dr. Smart.

The Toronto portion of the combined study was conducted in 1968. Both the Montreal and Halifax portions were done in 1969.

The data in the study were obtained from 927 students (of a total of 12,562 who filed questionnaires) who admitted having used marijuana at least once in the past six months.

### RESULTS OF STUDY

The results of the combined studies showed that 6.6 per cent of all Halifax students, 6.9 per cent of those in Toronto, and 8.6 per cent of those in Montreal smoked "pot".

As for the use of other drugs among students who had tried marijuana, over 40 per cent in Halifax and Toronto, and 30 per cent in Montreal had used stimulants. Relatively low rates of glue-sniffing among

marijuana users were found in Halifax (13 per cent) and Montreal (12 per cent), but the Toronto rate was 26 per cent. Barbiturates had been used by 16 per cent of Toronto smokers and by 30 per cent of Halifax smokers.

In all three communities, levels of LSD use were uniform at about 30 per cent. Halifax and Toronto had higher rates of opiate use (22 per cent and 20 per cent respectively) than Montreal, which had 14 per cent.

In their combined paper, presented in February to the National Research Council Committee on Problems of Drug Dependence in Washington, and later revised for publication in Canada, the researchers stress that the most obvious finding is that the rate of users of other drugs, of those who have used marijuana, is much higher than the rate of users who have not used marijuana.

They show that the rates of tobacco-and-alcohol use are two to three times higher among marijuana-users than among non-users. Furthermore, three times as many smokers, compared to non-smokers, have used tranquilizers, six times as many have used glue, nine times as many have used stimulants, and 11 times as many have taken barbiturates.

The ratios for LSD, other hallucinogens and opiates are even more striking. The researchers add that 24 times as many marijuana-smokers as non-smokers have used hallucinogenic drugs other than

LSD, and 29 times as many have used opiates. The rate of LSD use is 62 times greater among marijuana-smokers than among those who have not tried marijuana.

One note of caution has been sounded by the researchers about their findings to date - that their figures cannot be taken as representative for all marijuana users (such as those from slum centres in large U.S. cities) but they do represent a "fair cross section of adolescent students from grades 7 to 14 in the larger cities of Eastern Canada, and generally are "normal", not "deviant" populations.

### ESKIMO LANGUAGE FOR DEGREE CREDIT

The first course in the Eskimo language that can be counted as credit towards a degree is being offered by the University of Saskatchewan.

The university's Institute for Northern Studies opened an Arctic Research and Training Centre at Rankin Inlet last autumn. The Centre is a base for research and infield training related to problems of the North and is the first institution to offer a degree credit course in the Eskimo language.

### ST. PIERRE QUARANTINE STATION

A new maximum-security livestock quarantine station was jointly opened recently by representatives of the French Ministry of Agriculture and the Canada Department of Agriculture on the French island of St. Pierre at the mouth of Fortune Bay, Newfoundland, in the Gulf of St. Lawrence.

The station was built and is being maintained by France; the Canada Department of Agriculture will be in charge of its health aspects, including quarantine regulations and tests.

Quarantine regulations at St. Pierre are identical to those in effect at the CDA's station at Grosse Ile, about 40 miles east of Quebec City in the St. Lawrence River. The Grosse Ile station, which is used to capacity, handles 240 cattle. The last Grosse Ile importation was released on April 1. There were 156 Charolais, 15 Limousin, seven Maine-Anjou and 14 Pie Rouge from France, as well as 44 Simmental from

Switzerland. The St. Pierre station can handle 200 cattle.

During the past several years, the demand for import permits has exceeded the available quarantine space. The new St. Pierre station will help to meet the growing need for space.

Canadian farmers are required to obtain CDA import permits and to pay the costs involved in importing cattle. Terms are similar to those in effect at Grosse Ile.

### PROTECTION OF CANADA'S FORESTS

*Mr. Jack Davis, Minister of Fisheries and Forestry, issued the following statement for National Forest Week from May 3 to 9:*

Canada's forests mean many things to many people.

Ecologists know they are important in maintaining supplies of water and oxygen. To many city-dwellers they are a vacation haven where one can enjoy solitude and relaxation. To many people in the world Canada's forests are the source of the paper on which the daily newspaper is printed.

To almost a third of a million Canadians they mean jobs and livelihood, and all Canadians should be aware that our forests are a major factor in our economic and social well-being.

I'm asking you to take a little time to think about what you can do to preserve and protect our forests, because none of us can afford to take our forests for granted - in National Forest Week or in any other week. Three out of every four forest fires are caused by human carelessness, and last year these fires ravaged 1,800,000 acres of Canadian woodlands. In the value of uncut timber alone, that means a loss of considerably more than \$10 million.

The season is with us again when the risk of forest fires can be very high, and I urge you to help us in keeping needless waste to a minimum - waste of timber, waste of wildlife and recreational opportunities, waste to our environment. As you travel through our forests this summer please put out campfires with water, don't throw away cigarettes; please be careful.