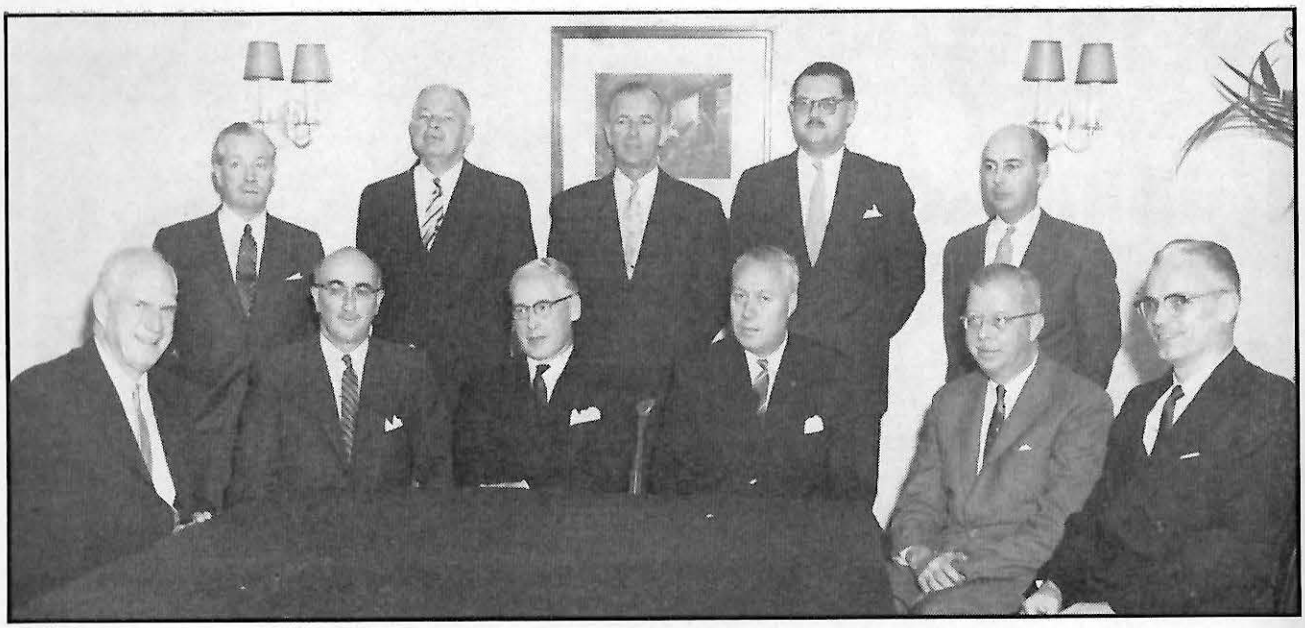

AITA directorate for 1957-58 appears above, L to R are: (rear) Bristol Aero's A/V/M A. L. James; DHC's P. C. Garratt; Aviation Electric's A. Bandi, Rolls-Royce's R. M. Kendall; MCA's Carl Burke. (Seated) Canadair's J. G. Notman; Avro's J. A. Morley, VP, industrial; CPA's R. W. Ryan, president; Laurentide Aviation's Jack Scholefield, VP, transport; Austin Airways' J. A. M. Austin, hon. treas.; Imperial Oil's W. G. Bracken, hon. secy.

HEARD AND SEEN AT

The AITA Convention

THE 23RD ANNUAL general meeting of the Air Industries & Transport Association, November 4-6, was noteworthy for the prevailing mood of optimism which seemed to indicate the key men in aviation in Canada are confident that whatever the future holds, it will be good for the aviation industry.

This mood was put into words by retiring Association President J. G. Notman when he said: "I find it difficult to conceive of Canada going forward to take her major place in the second half of the twentieth century without strong air power, both in being and with a healthy manufacturing and transport industry."

New Executive: Delegates to the meeting, held again this year in Quebec City's Chateau Frontenac, took time to elect four new directors, one of whom — R. W. Ryan of CPA — was named president of the Association for 1957-58. Mr. Ryan succeeds J. G. Notman of Canadair Ltd., who remains on the board as immediate past president and a director.

The other three newly-elected directors are A. Bandi of Aviation Electric Ltd., J. A. Morley of Avro Aircraft Ltd., and R. M. Kendall of Rolls-Royce of Canada Ltd. The four newcomers to the board—some of whom have served previously as directors—succeed retiring directors F. T. Wood of TCA, E. H. Moncrieff of Standard Aero Engine Ltd., J. W. R. Drummond of Canadian Pratt & Whitney Aircraft Co. Ltd., and P. Y. Davoud of Orenda Engines Ltd. Mr. Wood was AITA vice-president, transport, and Mr. Davoud was vice-president, industrial.

Defence Minister George Pearkes is shown awarding the McKee Trophy to Squadron Leader Robert T. Heaslip.

Composition of the complete 1957-58 directorate is as follows: R. W. Ryan, president; J. A. Morley, vice-president, industrial; Jack Scholefield of Laurentide Aviation Ltd., vice-president, transport; J.A.M. Austin of Austin Airways Ltd., hon. treasurer; W. Gordon Bracken of Imperial Oil Ltd., hon. secretary; J. G. Notman, past-president: Directors are: Air Vice Marshall A. L. James, of Bristol Aero Engines Ltd.; P. C. Garratt of The de Havilland Aircraft of Canada Ltd.; A. Bandi; R. M. Kendall; C. F. Burke of Maritime Central Airways.

THE OUTLOOK for aviation was dealt with by the retiring president, J. G. Notman, at the conclusion of his annual report. Mr. Notman noted that the aircraft industry had always been faced with a variety of problems of a military, political and economic nature. "This coming year will be no exception."

Referring to the Russian achieve-

5810

What Mr. Pearkes Had to Say

The following is an abridgment of the speech given by Defence Minister George Pearkes at the recent annual banquet of the AITA.

All of us are aware that the concept of war does not remain static, that it changes as science and technology give rise to weapons that are increasingly effective and destructive. We know that the concept of war has been altered radically by the advent of nuclear weapons and long-range jet bombers, and by the imminence of [the] ICBM.

The concept of war is rapidly becoming so terrifying and awful that we must do our utmost to deter aggression and prevent war. From 1945 to 1949, the atomic striking power of the U.S. Strategic Air Command served to maintain the general peace, though it did not stop Russian aggression in Europe and other parts of the world.

Realizing the precariousness of their position, 12 nations, including Canada and the U.S., formed the NATO alliance and agreed to pool their military resources to provide a deterrent of sufficient size to prevent Russian aggression.

That NATO is an obstacle to Russian ambition, there can be little doubt. Russia has made every attempt — short of aggression — to destroy the unity of NATO. Canada's primary aim is the same as NATO's — to prevent war. This aim has been largely responsible for our defence policy, which embraces not only the defence of Canada and the joint defence of Canada and the U.S., but also support of the UN and NATO.

Achievement of our aim is unalterably linked to the strength of the NATO alliance.

To be effective — that is, to discourage unfriendly nations from trying to destroy NATO's retaliatory power — our forces must be streamlined and armed with the latest weapons. Timing is, therefore, significant. Ideally, the composition and posture of the defensive forces must outrun the threat; at the worst, they must keep pace with it.

The air defence frontiers of NATO extend from Alaska to Norway and from Norway to Turkey, a perimeter distance of some 7,800 miles. The North American air defence system is a part of this overall air defence system.

A defence system comprises aircraft and missiles, the ground environment of radar, the communications links, the automatic reporting machines, the command posts, the airfields and missile bases. It also includes the command structure which controls and exercises the judgment to fight the battle.

In a joint enterprise with the U.S., the RCAF has built an elaborate warning and control system. To back it up, we are keeping nine squadrons of CF-100 aircraft on the alert 24 hours a day. But the time is near at hand when we must augment our air defences.

We are looking ahead to the threat for the period 1961-65 and are determining what equipment the RCAF must add to be truly effective. Some people suggest that we put our faith in missiles for this period . . . I do not consider that ground-to-air missiles and manned aircraft have yet reached the point where they should be considered competitive. They will become complementary.

The Russian claims for ICBM have made us look to the period beyond 1965. We now must plan to meet our requirements for defence in two time periods: that in which the main threat is posed by manned bombers, and that in which the ICBM will be fully operational and will probably be used to supplement the manned bomber.

We believe that for the next few years the manned bomber will constitute the main threat. But we are not overlooking the probability that long-range missiles will be used in conjunction with airplanes. While the West proceeds with the development of guided missiles that can be used in a defence against manned bombers and missiles, we must be prepared to meet the threat with manned interceptors.

In the meantime we have decided to go ahead with the program to develop the Arrow. . . . We believe that it will give us the added height and speed we will need to cope with the latest versions of Russian bombers. Of course, as aircraft fly higher, additional radar coverage is called for; and as they increase their speed, faster processing of information is required.

The improvement of our radar coverage and of our automatic reporting processes is a problem we have to solve. In keeping with long-range planning, it is desirable that improvements to our radar coverage make provision for the control of surface-to-air missiles, which may be introduced as needed to bolster our air defence system.

At the same time, forward planning requires us to accommodate anti-ICBM measures in our air defence system, as soon as they are available.

All of this is expensive. The rising costs of complex equipment, of engineering services, of testing and development — all combine to increase the price we must pay for defence.

In an effort to provide the best defence-in-being, we are searching out areas of duplication and doubtful value and reducing them to a minimum, so that we may apply savings against ever-rising costs. There is one fundamental principle which we must observe: we must meet the costs of air defence within a budget that will not strain the nation's economy.

ments in successfully launching earth satellites, Mr. Notman said: "It certainly presents a challenge to our technology, but perhaps more than that, it is a challenge to our complacency, and should shatter completely the notion that technological superiority in the Cold War is necessarily the private preserve of the West.

"Nor am I a partisan of the school which suddenly declares obsolete all other defence plans and preparations that have been made till now, including our programs for manned aircraft and our radar warning systems.

"What has happened is that the task of air defence has now become more differentiated, not necessarily superseding previous programs but requiring new and supplementary solutions to new problems. The new threat of the guided missiles must be met. A variety of missiles now exist for a variety of specialized tasks, but this does not supersede the manned air force and our own radar warning systems, whose specific defence tasks will continue to play a key role in our strategy for many years to come."

Important Decisions: The government would have to take some important decisions in the next year both in regard to the general economic issues facing Canada, Mr. Notman said, as well as the role in defence which Canadians would assume. He called attention to the policy set forth in the Speech from the Throne to the effect that the government would "maintain modern defence forces in being which, together with those of our allies, will continue to act as a deterrent to attack upon any part of that alliance."

Commenting on this statement, Mr. Notman continued: "In this regard we would like to make certain general observations which we hope will serve to guide the formation of policy.

"Firstly, from a strategic point of view, it should be realized that an industry as dynamic as the aircraft industry cannot mark time or stand still. Advanced teams of engineering and technical personnel are soon disbanded if no work is forthcoming, and later, as we have found out, these personnel can only be replaced at great additional expense over a long period of time. There is the loss as well, of the long-term benefits of the learning

(Continued on page 78)

5811

icing chemicals, lowers the freezing point of water, thus causing the ice to thaw. The pellets dissolve on melting ice, each boring a hole or forming a tiny crater. Once the ice layer has been perforated, the solution spreads out beneath the entire layer, loosening the bond so ice can be easily broken and removed.

Since it is free-flowing and non-hygroscopic, Sno-Gon is said to be easy to spread by hand or machine. It is colorless, odorless, non-toxic, non-flammable, and non-hazardous in storage, handling and use.

Montreal Terminal

The contract for completing the interior of the Montreal Airport (Dorval) terminal building has been awarded to the Foundation Company of Canada Ltd. The successful tender of $8,508,079 was the lowest submitted. Completion date has been set for Sept. 20, 1959.

According to Transport Minister George Hees, an additional contract covering construction of the passageways from the building to the aircraft loading gates is still to be let. This work will be done concurrently and within the building completion date. The building is presently being temporarily closed in and heated to permit work to proceed throughout the winter.

AITA

(Continued from page 40)

curve on which this industry operates. A strategic policy therefore, of what the government has called 'modern defence forces in being' requires an active aircraft industry as an essential component."

Economic Effects: Mr. Notman stressed that the abiding reason for defence expenditures was, and had to remain, defence. "However we cannot deny that in the complex society in which we live, changes and adjustments in defence spending will necessarily have economic effects: effects on business activity and employment, effects on tax returns which the government will subsequently receive, effects on the development of secondary industry in this country and other economic effects. Therefore, although I am by no means suggesting that defence expenditures can be justified on economic grounds, these economic effects cannot be dissociated from the strategic decisions, and therefore should be clearly and specifically appreciated by the government when the defence budget is drawn up.

"Nor, in the light of our sales last year to Germany and Belgium, should the export possibilities before us be underestimated nor their possible contribution to our balance of payments problem.

"In this connection, I am pleased to report that last December I sent a letter to the prime contractors of the Association, emphasizing the utilization of existing production facilities of the smaller manufacturers in this country, instead of importing comparable items. I was gratified to learn that at a recent meeting of the Associate Manufacturer and Associate Members Committee it was unanimously resolved by the 22 companies represented that their business with the prime contractors had increased and a better climate of business relationship established."

U.S. - CANADA

(Continued from page 42)

which were my responsibility during my Air Force career, to wit, ground based and airborne electronics, guided missiles and armament. I am sure that what I have written above is also true for many other items, including aircraft.

Let us now take a quick look at the reasons, in the past, for the small part that Canada has been given in research, development and production, and I am talking about equipment for use by U.S. at home, in Canada and overseas. for Canadian forces and by other NATO countries. There are many reasons for the existing situation, perhaps the more important are security, knowledge and faith, and greed. Security is perhaps a hangover from the United States isolationism which existed for so many years. This, coupled with a very strong nationalism and the absence of horse trading information, has created some amazing situations—even ludicrous. The operational personnel on both sides of the border have made an all out effort to produce an integrated system but U.S. security policy has been extremely effective in preventing these efforts from being successful. Similar security moves have prevented research, development and in some cases production of equipment.

Research, development and production are carried out only as a result of stated requirements of the armed forces, generally based on intelligence and exercises. If these requirements, in complete detail, are not available, due to security policies, then no work can be carried out. Many times through logical thinking and perhaps a bit of legitimate snooping, Canadians have discovered requirements and have had bright ideas to cope with these needs, but the U.S. would refuse to hold any discussions on the grounds of security.

Unknown Country: Under the title of knowledge and faith, little needs to be said by me. The average United States citizen. even some of the top brass, know little of Canada and its capabilities. Perhaps 90% do not know that the newspaper they read is printed on Canadian paper—they do not know, or pretend, that Canadian money is no better than Confederate. Have you ever bought anything in the U.S. that was stamped "Made in Canada"? There is little real knowledge or faith in Canadian R & D or manufacturing establishments. I have mentioned greed as one item preventing a greater contribution by Canada. Greed is an ugly word, but I use it from knowledge. I know of many millions of dollars worth of "made in U.S." equipment that is being used in Canada by U.S. and Canadian forces that could have been produced here at home. This equipment was deliberately prevented from being made in Canada by a conspiracy of forces in the Pentagon, other U.S. armed forces establishments and U.S. industry.

In a way one cannot put too much blame on these people—charity begins at home—but in the case of equipment and work for the defence of North America, and particularly for that to be used in Canada, I submit that greed should not be permitted, and in fact is dangerous to our defence effort.

The U.S., U.K. and Canadian governments have announced that there is to be greater co-operation in scientific effort. This will not be fully realized until a completely new approach is made by *all* the citizens of the United States, from brass to grass. The defence of the whole of North America and in fact of many other countries is a matter of life and death

to all North Americans—Canadian, or U.S. variety. Matters of security should be a common problem—greed should not exist, faith should be taken for granted and an intense program should be undertaken by U.S. authorities to further their knowledge and understanding of Canadian potential.

We on our part should also do a little more by blowing our horn a bit louder, writing articles for U.S. scientific and industrial publications, even if we have to make them available free of charge, and stirring up our government trade representatives in the U.S. I would like to make a suggestion to the U.S. Secretary of Defence—just open up a bit, trust us and try us—we can really contribute to the defence of North America.

We can carry out projects of research and development in the fields of aerodynamics, electronics, mechanics, chemistry, space, atomic energy; we can manufacture aircraft, weapons, guided missiles, radar, communications equipment, radiation devices, vehicles and many other items. There is vacant space and partially employed manpower all over the country. We, which includes all NATO countries, cannot afford to waste this defence potential.

FROBISHER

(Continued from page 35)

a stop-over between the New and the Old Worlds, the DoT has begun an ambitious program of expansion of the airport facilities. The runway is being lengthened, and a 6,000-foot taxi strip is nearing completion. An office building destined to house some 60 transport department officials is almost finished. A new hangar is being constructed, and plans have been made for a new power station, a 20-bed hospital, a new school and houses for permanent personnel.

Despite the rugged winter temperatures encountered, weather conditions at Frobisher are generally excellent. Studies made over a 14 year period show an average of only 74 hours per year of conditions below a 200-foot ceiling. This figure is much better than any other airfield in the Canadian north or Greenland. The DoT expects that with the installation of an ILS system which is now under consideration, Frobisher will be operational 99.85% of the time.

Lots of Problems: The Running of a modern airport at such a remote spot as Frobisher Bay is acompanied by a lot of problems. The huge supplies of fuel, building materials and food-stuffs necessary are the main headache, of course. The bulk of the supplies is brought in by ship during the three-month ice-free shipping season. Freighters anchor off-shore and transship their cargoes to wartime landing craft which in turn anchor on the beaches. When the tide goes out, trucks and mobile cranes drive alongside to unload the freight.

Shell Oil Co. of Canada solved the gasoline problem by constructing a 3,360,000-gallon storage tank. Due to the problems encountered in shipping materials and equipment, the tank cost some $320,000. This was almost four times the usual cost of such an installation. Gasoline is pumped from ocean-going tankers through underwater lines to the tank which is located about a mile from the field. Fuel tenders deliver it from there to the flight line.

COMING EVENTS

January 22-26—International Air Show & Exposition, Master Field, Miami, Florida.

January 27-28 — Annual Meeting, Royal Canadian Flying Clubs Assoc., Chateau Laurier, Ottawa.

February 3-4—Symposium on Flight Control and Panel Integration, sponsored by Flight Control Lab., Wright Air Development Center, Biltmore Hotel, Dayton, Ohio.

February 12-13 — Annual Meeting, Air Cadet League of Canada, Seigniory Club, Montebello, P.Q.

February 27-28—CAI Mid-Season Meeting, Hotel Vancouver, Vancouver, B.C.

March 15—Annual Meeting, Soaring Association of Canada, Sheraton-Mt. Royal Hotel, Montreal.

April 21-22—AITA Semi-Annual Meeting, Empress Hotel, Victoria, B.C.

May 26-27—CAI Annual General Meeting, King Edward Hotel, Toronto.

JET PROVOST

(Continued from page 20)

main spar is at 35% chord, with a subsidiary spar at 77% chord taking flap and aileron loads and a false leading-edge spar, consisting of inter-rib diaphragms, at 5% chord. There are seven ribs located at the tip, at, and between, the two aileron hinges, one boxing the outer end of the tank bay, another carrying the main legs and separating inner and outer fuel cells, and the root rib. Additionally, there are tank bay formers, the closely-spaced leading-edge riblets and a number of spanwise skin stiffeners. The parts are of the conventional light-alloy sheet, with folded flanges and extrusions used for the spar booms and some stiffening members. The 20 swg light-alloy skin is flush riveted all over. Forged lugs bolted to the main spar root carry the loads from upper and lower booms to female fittings on the fuselage. A single fitting at the rear auxiliary spar completes the attachment. A high-tensile steel attachment bolt is used in each of the three fittings, fore-and-aft on the upper main boom and the auxiliary spar, vertically on the lower boom fitting.

The fuselage is of semi-monocoque form, with continuous Z-section stiffeners and notched channel-section frames. Somewhat unusually in these days there are four relatively substantial longerons. The upper pair of these form stress paths round the cockpit and engine bay openings and carry canopy and cowling rails. Extended aft to the tail they line up with the tailplane cut-out. The rather lighter lower longerons carry the cockpit and engine bay floor loads along the line of the upper main spar fitting. Main fuselage frames and bulkheads are located in front of the cockpit to take the nosewheel loads, behind the cockpit, at the wing spar stations and for the rudder post and tailplane spars.

The little Viper is extracted upward, after removal of the fore-and-aft central strut upon which the engine-bay access doors are hinged. The air intake ducts and their fairing panels are separate from the fuselage.

The tail unit consists of a one-piece tailplane and a fin bolted to the top of the fuselage with a dorsal extension comprising a forward section integral with the fuselage and a detachable intermediate fillet. The tail plane has two folded-sheet spars and flanged-blank ribs, the 24 swg light-alloy skin having top-hat section stiffeners. The fin construction is similar, but the front spar, raked in line with the leading-edge, is much lighter than the rear one on which the upper rudder hinge is mounted—the lower hinge is in the fuselage. The tail components are simply bolted to lug fittings on the