



PART OF THE USAF ATOM-BOMBER FORCE, chief deterrent to Red attack.

# ARE WE LOSING 1

By Ross Willmot

A STUBBY, cigar-shaped jet streaks through the sky of the Libyan Desert just 130 feet above a camel track where a caravan slowly winds its way in single file. By the time the Supermarine Swift fighter turns and whooshes over the same three kilometer course a second, third and fourth time to conform with international regulations and set a new world's aerial speed record, the ships of the desert have scattered in all directions.

This record-breaking flight last year by Mike Lithgow at 737.3 mph not only incidentally proved how much faster ships of the air are than ships of the desert but decisively re-established Britain's place in the international race for air supremacy. Only a couple of weeks previous S/L Neville Duke had returned to Britain the world's aerial speed crown, which the U. S. A. had held since 1946, by flying over the south of England in his Hawker Hunter at 727.6 mph.

Then came the successful American bid shortly afterward. Lt. Cmdr. James B. Verdin took up the Douglas Skyray over California and established a record speed of 753.4 mph. This was the first carrier-borne plane to hold the record. In a couple of days Lt. Col. F. K. (Pete) Everest established a mark

of 754.98 mph in the North American Super Sabre.

This unusual series of speed runs dramatizes the rivalry not only among friendly companies and countries but also the more deadly struggle between the East and the West. Symbolic of Canada's prime position as an air power were the flights by Jacqueline Cochrane in a RCAF Sabre-powered by the Canadian-designed Orenda engine when she established four world speed records and an altitude record.

The background of these last flights is effectively told in the new book by Jacqueline Cochrane, "The Stars at Noon" (Little, Brown & Company, Toronto. Price \$5).

Such speed trials have been well named "the air race of the century" for the final stakes are nothing less than political domination of the globe through air power, now recognized to be the key factor in successful warfare. Though not a direct contestant as yet in such trials, Soviet Russia is undoubtedly taking a keen interest in the results, measuring her aircraft against those of the allies. Through cracks in the Iron Curtain there are extremely disturbing indications that Russia could provide stiff competition.

Frank Jarecki, Polish pilot who recently served with the Red Air Force, believes he exceeded the official speed record in his Russian

MIG-15 fighter when he burst through this same Iron Curtain to bring the aircraft to the West. In many ways the MIG-15 can outperform the American F86, General Hoyt Vandenberg, late chief of the USAF, admits.

Such comparisons between Russian aircraft and their Allied equivalents seems to indicate we are not far ahead of our potential enemies quality-wise. American Sabre pilots who fought the MIG-15's in Korea sent a delegation to the White House to ask for better combat aircraft. It is generally admitted the reason the Sabre had the advantage over the MIG-15 in combat was more probably due to the better training of the American pilots and to advanced electronic devices on the Sabre rather than because this Sabre is a better aircraft. While the Orenda-powered Sabres of the RCAF would undoubtedly be a better match for the MIG's, we can confidently assume that the Russians have made many improvements in the fighters which they used in Korea. The MIG-17, for example, can fly much faster and higher than its forerunner.

Quantity-wise, as well, our position is admittedly not good. According to reliable reports, the USSR and her satellites have an air force of over 20,000 planes, among which are about 1,000 bombers of the TU-4



# G THE AIR RACE?

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types. These are an improved version of the B-29 and crudely comparable to our B-50 bomber. They are said to have a 6,000-mile range which could be extended by aerial refuelling—enough to reach Canada and return to bases in Russian territory. New weapons in the Soviet air arsenal already in production which should give cause for thought are the TUG-75 or Tupolev-200 intercontinental turboprop bomber which is reported to have a speed between 550 and 650 mph and a radius of action more than sufficient to reach the industrial heart of this continent. Opposing NATO air forces in Europe of some 5,000 aircraft, some considered obsolete, is an estimated front-line Soviet air strength of 8,000 to 10,000 modern combat planes of an equal or better quality than ours. The Russians are said to have many more airfields as well.

The bright spot in this rather depressing picture is the productive capacity of the West's aviation industry which though far behind the Fascist air forces at the beginning of the last war was able to supply the quantity and quality of aircraft which was the chief factor in bringing the Axis to its knees.

Sound procurement policies learned the hard way during the last war and improved upon during a

series of cold war crises are now the backbone of any new mobilization. The technique of the long pull is now in force. Immediately after Korea the RCAF, like other western air forces, faced up to the danger and started a huge expansion program which now is well in hand. We are now reasonably well prepared. The industry supporting the RCAF, much of it quickly placed in sparkling new quarters equipped with sparkling new machine tools, is now in a very healthy position.

Last month, for example, we learned at the Air Industries and Transport Association meeting in Quebec City that our aviation business for the first time has topped the half-billion-dollar mark. The gross selling value of products in the Canadian aircraft and parts industry last year approached \$400,000,000, while the operating revenues of the carriers exceeded \$100,000,000. In fact, aviation is now the third largest employer in Canada, in terms both of numbers employed and in salaries and wages paid.

The statistical summaries included give more detailed information. It is particularly interesting to note the tremendous increase over the last three years in the total goods carried by nonscheduled carriers (about 575%) as compared with a corresponding increase for the scheduled carriers of only 58%. A healthy

air transport system, it is recognized, is just as important to defense as a healthy industry.

Re-elected, AITA President Tommy Fox in his annual report summed it up this way:

"Our commercial operators have again scaled new heights in gross revenue in 1953, now being in the one-hundred-million-dollar class for the first time. On the other side, our manufacturers at the end of 1953 had topped all previous post-war production with the gross sales value of their products nearing the four-hundred-million-dollar mark. In the ranks of Canadian business a one-half-billion-dollar industry such as was Canadian aviation at the end of 1953 need not keep its voice muted.

"As is to be expected with new gross revenue highs in air transportation, without a rise in rates or fares, nearly all categories of traffic increased. Total flying hours passed the half-million mark. Revenue passenger movements totaled over two million and these achievements were reflected in increased employment and bigger payrolls.

"In spite of this real achievement of our operating members, there is one disturbing element. Costs continue to climb more rapidly than revenue and the net operating revenues for 1953 dropped back from

(Continued on page 89)



ment repair. When modifications or repair work cannot be done on the site by unit personnel, or by mobile parties from contractors or Repair Depots, it is evacuated. Overhaul involves dismantling the assemblies—that is, looking for repair work. Salvage involves the recovery of those serviceable or repairable components which are worth the cost of dismantling the assembly. Disposal of surplus material is the sale, by the Crown Assets Disposal Corporation, of items “in the whole state” or as scrap material.

## THE AIR RACE

(Continued from page 39)

three and three-quarter million dollars in 1952 to one and one-third million dollars. Furthermore, in the first six months of 1954 the non-scheduled segment of the commercial operators has shown a 29% drop in revenue compared to the same period last year with costs dropping only 26%.

“This does not mean that there is cause for panic. We undoubtedly have passed from the boom stimulated by the Korean War and are perhaps in more stable peacetime conditions, but it does mean that we will have to watch our costs more closely, perhaps dig a little harder for business and look for excess fat that may have swollen our costs in the past. It is true that increased costs are a part of the general pattern of the Canadian economy in 1954 and so are higher prices. We should perhaps remind the public that while the general consumer index of prices now stands in the neighborhood of 117 relative to 1949, the index of commercial air services has shown no rise. In fact, in some categories of service, such as trans-continental tourist, air cargo and helicopter charter, prices have been reduced.

“We may have to look to our pricing again and if the trend continues, adjustment upward may have to be made. We would like to hold the line and we think our government can assist us on two fronts. Aircraft, parts and components of types and sizes not manufactured in Canada should continue to be imported duty free and, in addition, serious consideration and early action should be taken for the removal of sales tax on aircraft, engines and their component parts, as urged for some time by this Association. These steps would take some of the pressure off rising costs and speed the introduc-

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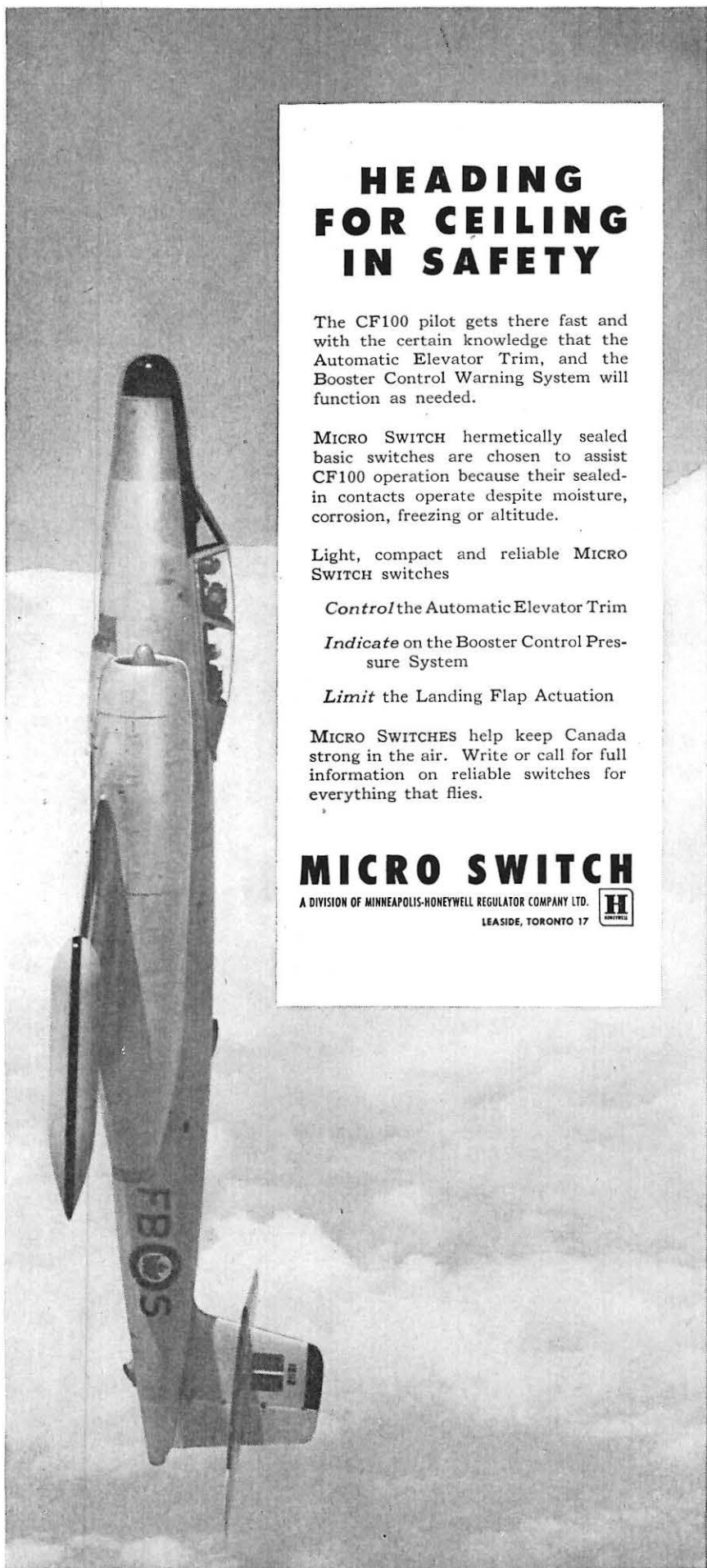
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"Secondly, the Government should review its aviation policy in the light of today's situation and the aims to be achieved. We will all agree that to give an expanding service, Canadian aviation must be on a sound economic basis, and therefore a measure of economic protection may be needed. However, to gain economic stability, aviation management needs some room for flexibility and initiative which, in turn, requires an aggressive government aviation policy that will recognize these elements and, consistent with the orderly development of Canadian aviation, will act as a stimulant to the growth of our industry. Quite properly in the last decade a brake has sometimes been needed, but it is likely in the next decade that a freer hand for enterprise will be required. This review of our policy will be a challenge to all concerned and it is important that it not be swayed by our own selfish interests or negative attitudes which may have had their place in the past but are no longer appropriate today.

"A year ago there was tempered optimism on the industrial side of our association's membership as contracts for the Korean period had been met and future defense policies had not been stated. However, the Government, which is the principal customer of our manufacturing membership, has assured at least an eight-year program of keeping our manufacturing and overhaul resources in production, and already plans for new production have been announced. I believe that the members represented by our Industrial Council can justly point to the record with satisfaction. On the basis of preliminary 1953 figures, they have shown increased volume and greater efficiency. In 1953 production per employee was over \$10,000 as against \$7,300 in 1952."

Mr. Fox saw "a continuing vein of optimism and forward planning" when he looked at the industry as follows:

"De Havilland, now located in its

beautiful Downsview facility, has continued its vigorous, world-wide sales program for its famous Beaver and Otter machines which are now serving in 32 countries. De Havilland is a prime contractor for the Grumman S2F for the Royal Canadian Navy, but much of the work is being handled by subcontractors throughout the growing aircraft component industry around Toronto. Canadair, beginning preliminary work on its contract for 50 Britannias for the RCAF, is adding an additional 175,000 square feet of production space, while continuing work on the Orenda-powered Sabre V and participation in guided missile development. A. V. Roe, in production on the rocket-firing CF100 Mark IV, continues supply of the Orendas for the Sabre V and is developing a successor to both these projects. One of our older Canadian aircraft companies, MacDonald Brothers of Winnipeg, has been taken over by the expanding Bristol Aeroplane Company. Canadian Pratt & Whitney is participating in the Grumman program, producing engines to go in the Toronto-built air frames. Fleet has entered the helicopter field with the Doman LZ5, and Canadian Aviation Electronics has opened its new three-million-dollar plant in Montreal to expand production on items ranging from flight simulators to subassemblies for guided missiles; and so the story goes on, of expansion, confidence in the future, and dynamic progress.

"In the commercial air service field, Trans-Canada Air Lines is poised for a very full program of transition to new aircraft. The Super Constellations have already gone into service over the Atlantic and you who have come to this meeting from the west coast via the new Mercury service have found yourselves with two hours in hand over the previous flight time. Canadian Pacific Air Lines has extended operations down to Mexico and into South America, and on the Pacific has stepped up its service to Honolulu and Hong Kong. Breaking further new ground, CPA has made

application to the Government to carry the Canadian ensign over the North Pole to Amsterdam.

"In broad outline it would appear that this last year has been one of stabilizing operations for this segment of the industry. Plans are pending for expansion but this year has not been marked with much change so far. Charter service is still the backbone of the commercial air service in Canada, other than those provided by Trans-Canada Air Lines and Canadian Pacific Air Lines, and in fact the trend since 1950 has been to a smaller portion of revenues each year being earned from unit toll services, until in 1953 only 39% of the four major regional carriers' revenues was acquired from unit toll service."

Back in 1947 President Truman's Air Policy Commission declared that the target date by which the U. S. A. should have an air arm in being capable of dealing with a possible atomic attack on North America was January 1, 1953. Although time is running out and the Democrats did not and could not provide the U. S. A. with a sure defensive air arm, the present American administration has cut what would seem to be irreducible provisions made to give the U. S. A. mastery of the air and the power to retaliate against aggression. USAF estimates have been slashed \$5,000,000,000 by the Republicans.

The air forces of the West, including that of the U. S. A., which were chiefly responsible for winning the last war, were wrecked in overnight demobilization. What was equally serious was that the industry which in the U. S. A. alone had proved itself capable of producing at a rate about double that of enemies and allies alike, was also torn apart. Backlogs of aircraft orders were wiped out, factories dismantled, irreplaceable engineering and labor teams scattered. The U. S. industry's production measured in airframe weight was cut from 540 million pounds in 1945 to less than 13 million pounds in 1946.

The present-day USAF, which has the preponderance of western air power, is composed of over 100 wings with a total of about 8,000 aircraft. Only 98 wings, a force of 7,000 aircraft, are said to be combat-ready. Alongside this figure may be placed the comparable Russian Air Force strength, more than three times as large.

The USAF have now set their goal at 136 wings by 1956, the original and ultimate goal being 143



wings. (A wing varies in strength from 30 bombers to 75 fighters.) Since the Korean war broke out the USAF has almost doubled in size with over 100 wings and a million men. Yet in the first 30 months of the Korean war the USAF lost around 2,700 aircraft, the equivalent of nearly the entire 1950 output of their industry. The Russians are said to have about two and a half times the combat aircraft the Americans have.

At the present time the B-36 bomber is the backbone of the U. S. strategic bombing or retaliation program. With a range of 10,000 miles, it can carry the atom bomb to Russian targets and return. This ability is generally considered to be a major deterrent to the U.S.S.R. to commit aggression. Production of the B-52, the B-36's replacement, is being rushed. This has less range, but it can fly at 650 mph at an altitude of 50,000 or 60,000 feet. On the fighter side, such aircraft as the new supersonic F-100 Super Sabre are being rushed ahead of previous schedules. For the benefit of NATO the U. S. A. is buying 1,700 planes from the U. K. and Europe. These include the crack French fighter, Mystère, and new British fighters being built under license in Italy and Holland.

The concentration by the U. K. on jet engine design and development, particularly in the jet transport field where she now leads the world, has put her in a good qualitative position in the air world although her military production is reported just beginning. Her Comets (which first flew only a fortnight ahead of the Canadian Jetliner) and her three new V-bombers, the Vulcan, Victor and Valiant, all of which have interesting civil versions, her Britannia and Viscount turbo-props (the first of which will be produced as a maritime reconnaissance aircraft for the RCAF and the second of which will soon go into service on TCA routes) have no rivals anywhere. With these jet transports, Britain has captured the leadership of the commercial air world quality-wise and because of her excellent chances to sell these transports around the world quantity-wise as well. Since 1927 that leadership had belonged to the U. S. A. Now authorities say that because of these jet transports Britain is at least five years ahead of the U. S. A. By one jump with the Comet, Britain has increased the speed of air transportation two thirds what the industry of the whole world accomplished in a quarter century. Her Comets and

Viscounts in service are also setting new marks in comfort, safety and economy.

Britain's aviation growth is spurred by powerful incentives. She is relying greatly on her civil production to help her make a comeback economically after a war which almost ruined her. Her former dependence on the sea lanes, over which she had mastery, to connect the far-flung Commonwealth, has been changed to a plan wherein the air lanes will perform a similar role. Her island geographic position is no longer a protection in this air age. Being vulnerable to attack by air, she necessarily is putting prime emphasis on aerial defenses and counter aerial offensive measures.

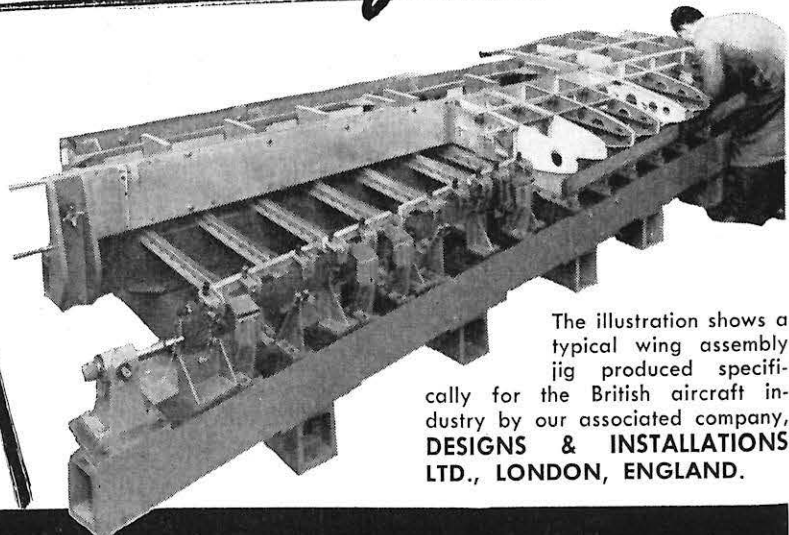
Britain is putting her chief hope for survival on her sonic atom bombers now being produced. At the moment her only bomber force is several hundred English Electric Canberras, the aircraft which holds the Atlantic speed and world's altitude records. Her fighter forces are weak, as well, because of her emphasis these last few years on design and development rather than production. RCAF Sabre fighters today are Britain's chief fighter strength behind the Rhine, which

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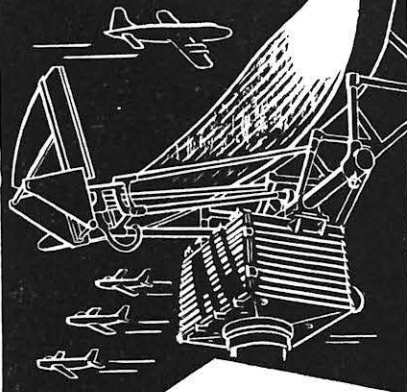
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replaces the English Channel as Britain's first line of defense. However superpriority production of Hunters and Swifts was putting these fighters in squadron service this summer, along with her new bomber forces.

The Royal Air Force is said to be today in about the same position with respect to a possible war as it was in 1938. Hurricanes and Spitfires were then beginning to go into squadron service and heavy piston engine prototype or preproduction bombers were flying. Britain is planning to triple its bomber strength with special emphasis on the long-range type and is building toward a goal of 1,000 defensive fighters. It is estimated that the RAF could now put several thousand combat aircraft into action in Western Europe in a few days if necessary.

The British are proposing that the Western Allies rely chiefly on air power for defense, whereas the U. S. A. would seem to continue to insist on a ground-force containment of the U. S. S. R. in Europe with atom bombers on a standby basis ready to retaliate against any aggression. Obviously the U. S. A. finds it difficult to send troops to Europe and in this regard would like to depend upon her Allies. Also she finds it difficult to contribute more air power to Europe as already one third of all the tax money collected by the U. S. A. is spent on military aviation.

After the last war the Russian aviation industry, instead of being cut down as ours was, continuously expanded its production rate until a build-up annual production is reported of some 12,000 planes a year. This build-up has been going on for several years, with the bulk of production concentrated on such jet types as the MIG-15. Last year, according to reliable reports, the Russian aircraft industry turned out more than 18,000 military aircraft, including 10 heavy intercontinental bombers of the Tupolev-200 type, which in size and range is said to compare with our B-36 bomber. It is powered with six turbo-prop engines. An output of 400 of these formidable atom-bombers, capable of carrying the hydrogen bomb to targets in North America, is said to be planned next year. Roughly corresponding to our B-52 is the Soviet Ilyushin-38, whose four turbo-props could be replaced by turbo-jets.

One of the most staggering features of the current air race is that Russia is now one of the foremost aircraft designers in the world. Her

postwar planes have advanced far past the most advanced ideas of the German aviation industry taken over by Russia after the war. Aircraft manufacturing standards are by no means inferior to those in the West. Both the Tupolev-200 and Ilyushin-38 are said to be equipped with radar bombsights, a very complicated mechanism. Russia's aviation research facilities supported by the Red Government are said to be among the largest and most comprehensive in existence. Instrumentation and radio equipment is of high quality. Such weapons as air-to-air guided missiles have been developed. Raw materials, however, particularly aluminum, are in short supply and this shortage from a long-term point of view is in our favor.

Air power has been recognized by NATO as "the dominant factor in war today." In the words of General Dwight D. Eisenhower, when he was Supreme Commander of the Allied Powers in Europe: "It cannot win a war alone, but without it, no war can be won. Our goal is to create air strength capable of answering immediately the onslaught of an aggressor and covering, at the same time, the mobilization of reserve forces. Since we cannot predict when an attack might be launched, air forces must be operationally ready at all times."

Our leaders seem to recognize the danger, although in Canada, for political reasons, they do not speak much in public about it. General Nathan Twining, the USAF Chief of Staff, says: "It is apparent the Russians have outstripped us, particularly in the field of jet aircraft in the last five or six years. Even in the field of heavy strategic bombers where we have concentrated our efforts to make sure we have an atomic offensive ready, they have outstripped us in numbers and they are getting better qualitatively."

The unexpected production by the U. S. S. R. as early as September of 1949 of the atom bomb along with her mounting aircraft, particularly long-range bombers, has made this continent seriously vulnerable to foreign attack for the first time in more than a century. One Soviet bomber delivering one atomic bomb to its target could create more havoc than a thousand-plane raid of the last war. As former USAF Secretary Thomas Finletter pointed out: "Today a few airplanes manned by a few men can drop an explosive charge equal to that of all the bombs dropped on Germany during the war."