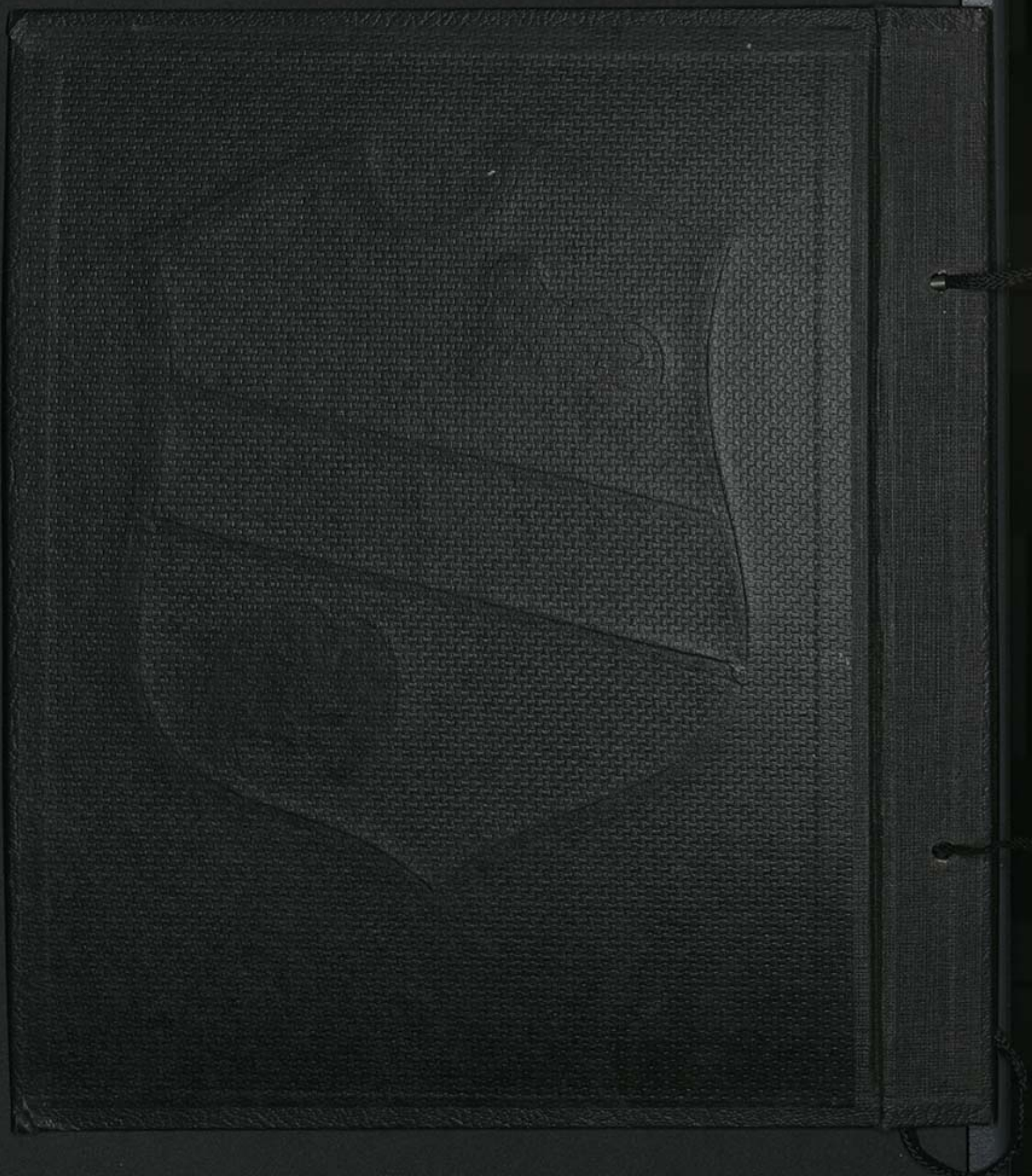


ScrapBook





CANADA at WAR

Being ALLIANCE COATER No.

64

ALLIANCE PAPER MILLS LIMITED





PER ARDUA AD ASTRA

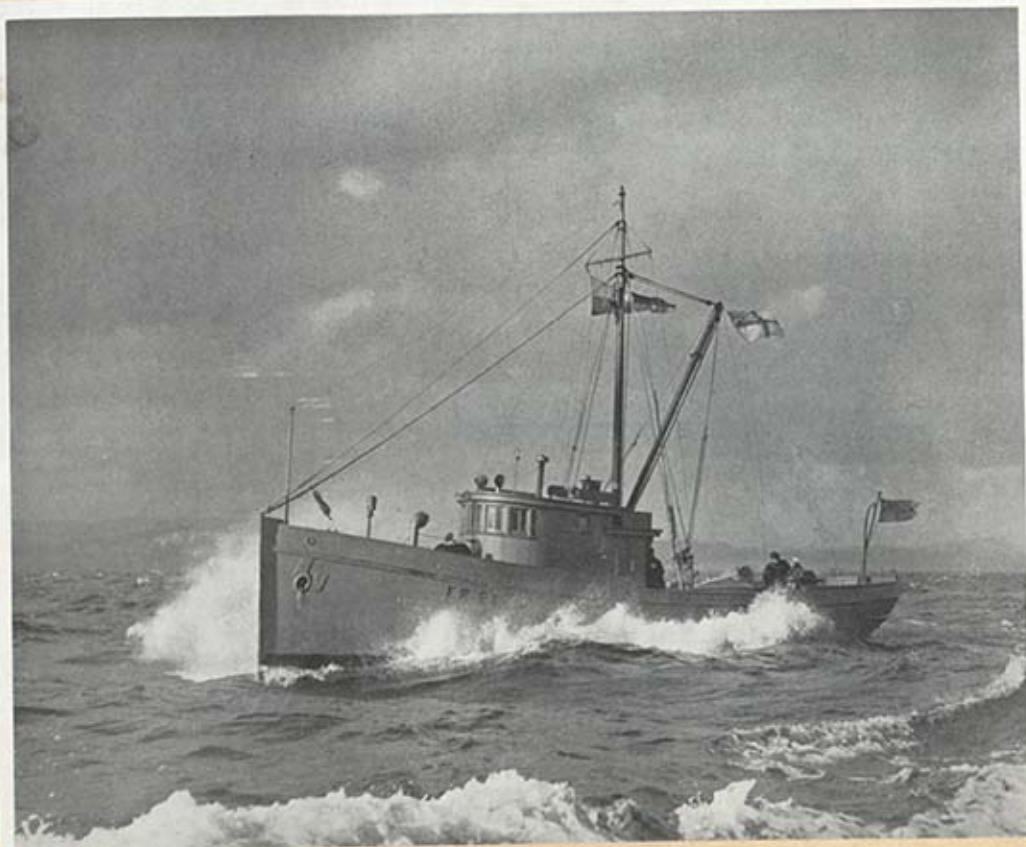




W.R.N. 385—Flying the white ensign of the Navy the "Fishermen's Patrol" steams out to sea.



W.R.N. 394—The "Fisherman's Reserve" plays an important role in the Navy's war job of protecting our Coasts.





W.R.M. 549—Where skill and experience count. A layer of pure aluminum covers the metal alloy of this nose cowling, and a scratch through this protective covering would necessitate scrapping it.



W.R.C. 584—Every piece of shipping that passes in and out of Canada's east coast harbours must move under the menacing muzzles of such big guns as the one shown in this photograph.

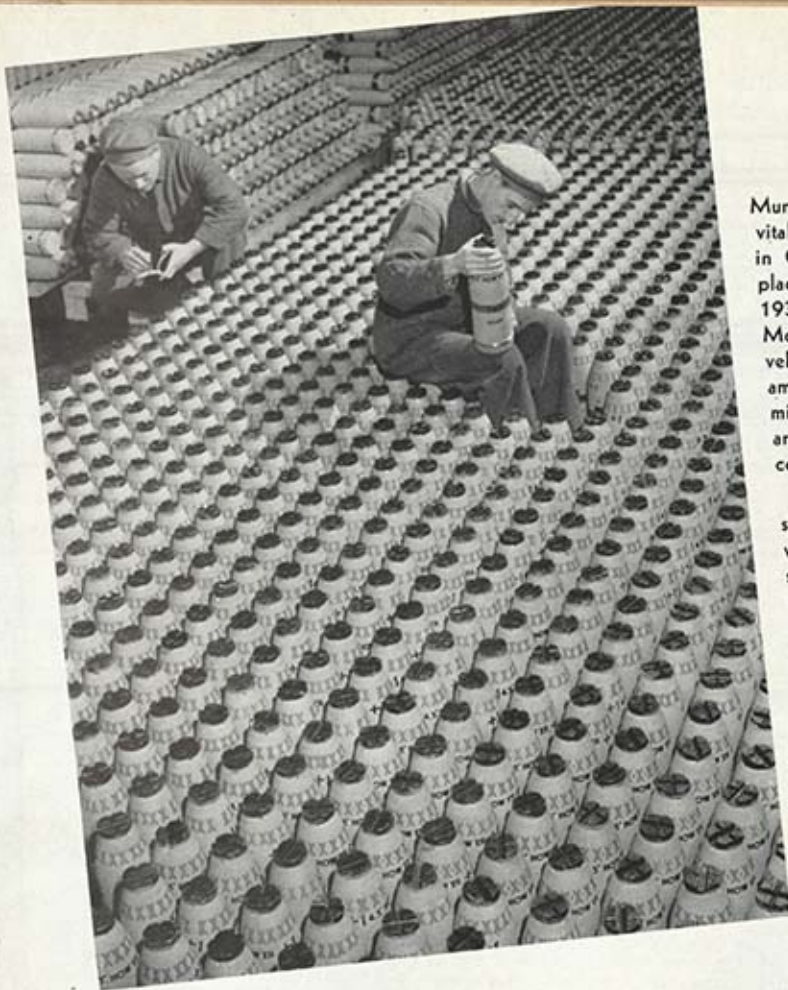


W.R.C. 562—Big guns like these, threatening muzzles pointing out to sea, and the men who man them, eager for action, guard Canada's coasts. Here a gun crew of the Eastern seaboard is shown loading one of the "Big Berthas."

"The Man Behind the Gun" is even more important than ever in this war. After it's all over perhaps our greatest contribution towards winning it will have been made in our mines, forests, and factories. The ever increasing torrent of war supplies pouring forth from our industries will add enormous weight to our side, and every man-hour here will be a headache for Hitler later. These pictures show a few of the great number of things we are making now, and readers across Canada will appreciate being enlightened on the great strides we are making.



W.R.M. 458—Scrap iron is turned into molten metal in one of Canada's largest armament plants.



W.R.M. 916—Shells ready for "inter-plant forwarding" only requiring the fuses.



W.R.M. 883—BOMBS FOR BRITAIN. Here we see rough-form bombs awaiting process in a Canadian plant.

Munitions and Supply may be said to be the most vital part of any country's war effort. That this is so in Canada may be judged by the total of orders placed on British and Canadian account since July, 1939, which amount to over \$1,500,000,000. More than 100,000 army mechanical transport vehicles have been delivered; nine types of gun ammunition are being turned out at the rate of millions of rounds a year, and fourteen kinds of land and naval guns are now being made or are about to come into production.

Ten of Canada's nineteen chemicals and explosives projects have begun to produce and four more will be in production in a month or so. Aircraft, ships, guns, explosives, ammunition, army vehicles, tanks and a hundred and one items of war equipment are being produced by practically every Canadian factory that can manufacture for war purposes.



W.R.F. 673—Great care has to be taken in identifying employees in Canadian munitions plants, and elaborate anti-sabotage precautions are taken.



W.R.M. 543—Cutting metal in Canadian aircraft plant.



W.R.M. 606—Hundreds of women are today employed as war industrial workers. Here girls piece together the spars of a Bolingbroke bomber.



W.R.C. 811—Canadian troops practising throwing hand grenades at Camp Borden.



W.R.M. 919—This girl is helping bring down German bombers with Britain's anti-aircraft gunners. She's making composite parts for ack-ack shells.



W.R.M. 912—Mountains of scrap metal outside the furnace room doors are handled by magnetic cranes.



W.R.M. 924—Guards, headed by a former member of the R.C.M.P., keep vigil over an explosives plant.

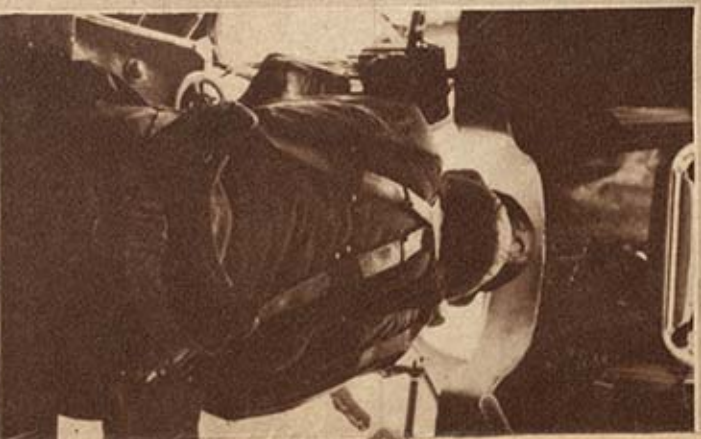


W.R.M. 922—Another photograph of shells ready for "inter-plant forwarding."

BRITISH BLAST KEY GERMAN INDUSTRIES

One night in September, 1940, 500 German planes roared over London, plastering England's capital with bombs. The German felt confident. He also felt snug and safe, for Goering had promised him that no German city would ever feel the blast of British bombs. Then Rostock, deep in German territory was turned into a blazing, battered inferno. Lubeck, Hamburg and Kiel came next. Then Cologne, Essen and Bremen were smashed, not by 500 planes, but more than a thousand. 3,000 tons of bombs rained on each city. Only junk marked the site of the industries, railway junctions, public buildings. So terrific were the bombings that the citizens fled to the hills afraid to go back to their burning cities.

Nazi philosopher Alfred Rosenberg, rationalized the raids in Archiv fur Rassen und Gesellschaftsbiologie, "thickly populated areas in towns and cities are found to suffer the most inhibited by people who are usually poor, who are unlikely to improve their lot and who are no great asset to the community. On the other hand, the continuous explosions of heavy bombs are bound to unning mentally those whose nervous system is not as strong as it should be. Aerial bombing should, therefore enable us to discover a number of incipient neurotics who in the interest of race selection . . . should not be permitted to reproduce their kind. After committing them to institutions, their offspring should be sterilized."



THE BOMB-ALMER in the Stirling's nose begins his job when the navigator gets the giant plane over objective.



THE NAVIGATOR in a Stirling guides the ship to objective. These planes played a major part in recent raids.



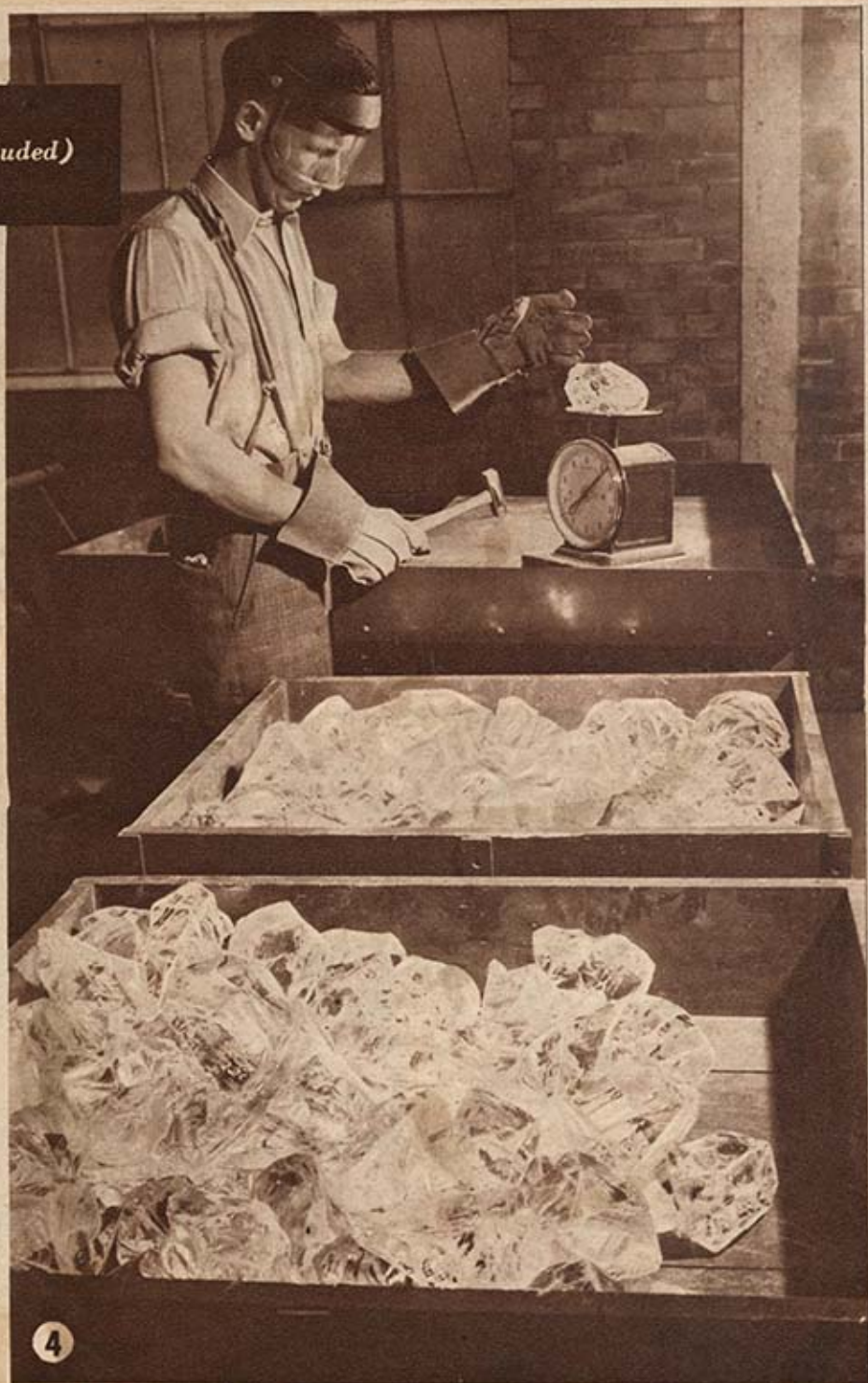
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PHOTO NEWS

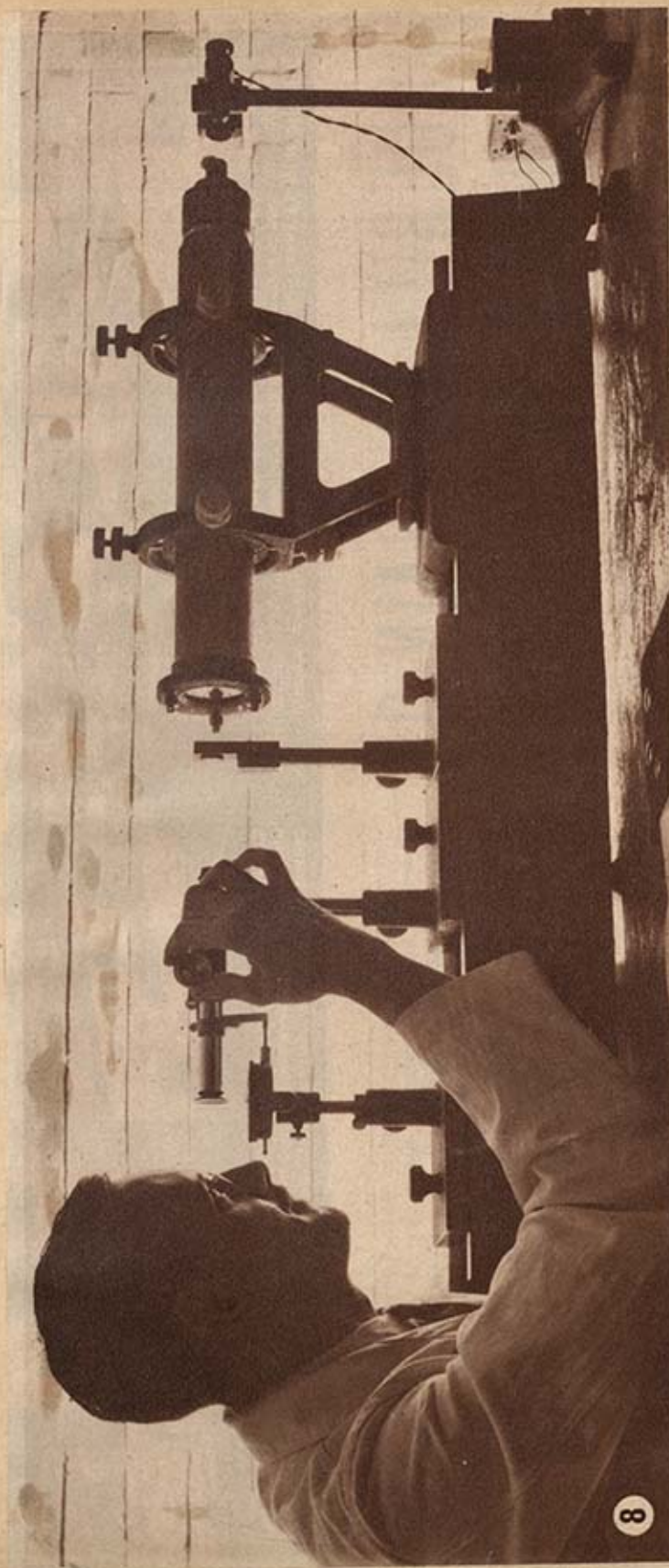
Specials 44¢

10 CENTS

cluded)



4
AFTER BREAKING UP THE POT, the rough lumps are classified by weight for pressing by Jim Morgan. From here they go to be moulded into rectangular slabs. Furnacemen wear wooden-soled shoes, heavy flannel shirts as protection against heat.



8

THIS INSTRUMENT, a collimator, produces a tube of light rays all perfectly parallel. When they strike the lens they converge to a single point. Distance of this point from the lens is the focal length which Al Brown is measuring.

here. These photos deal entirely with the glass parts of optical instruments, but almost as exacting is the manufacture of the metal parts of which there are often many hundreds in a single periscope, rangefinder or gun sight.



FINAL STAGE is where the machined metal and the glass parts meet for assembly. Jack Butcher uses a watchmaker's glass to see as he cleans a prism with acid before installing it. At right is a finished tank periscope.



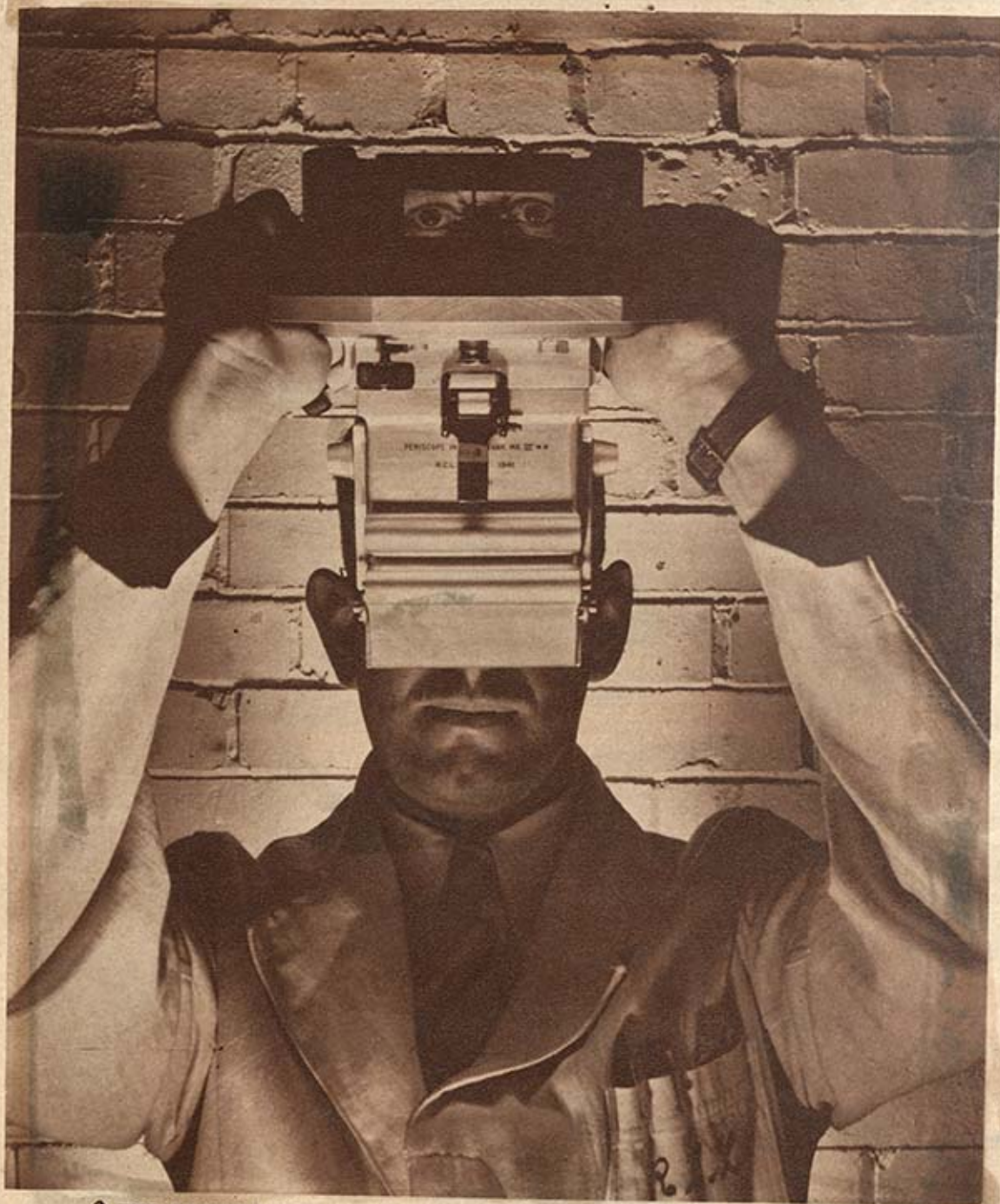
CURVATURE is tested by Gordon Small. If two surfaces do not match perfectly light reflected back by lower surface will not return along the same path. will show up in the lens as a series of bright concentric rings.



6 **AFTER REMOVING** imperfect areas from rectangular slabs what remains is re-moulded to lens or prism shape. Here Alma Bieriovith rechecks the lenses for streaks or bubbles by means of light reflected from a mirror.

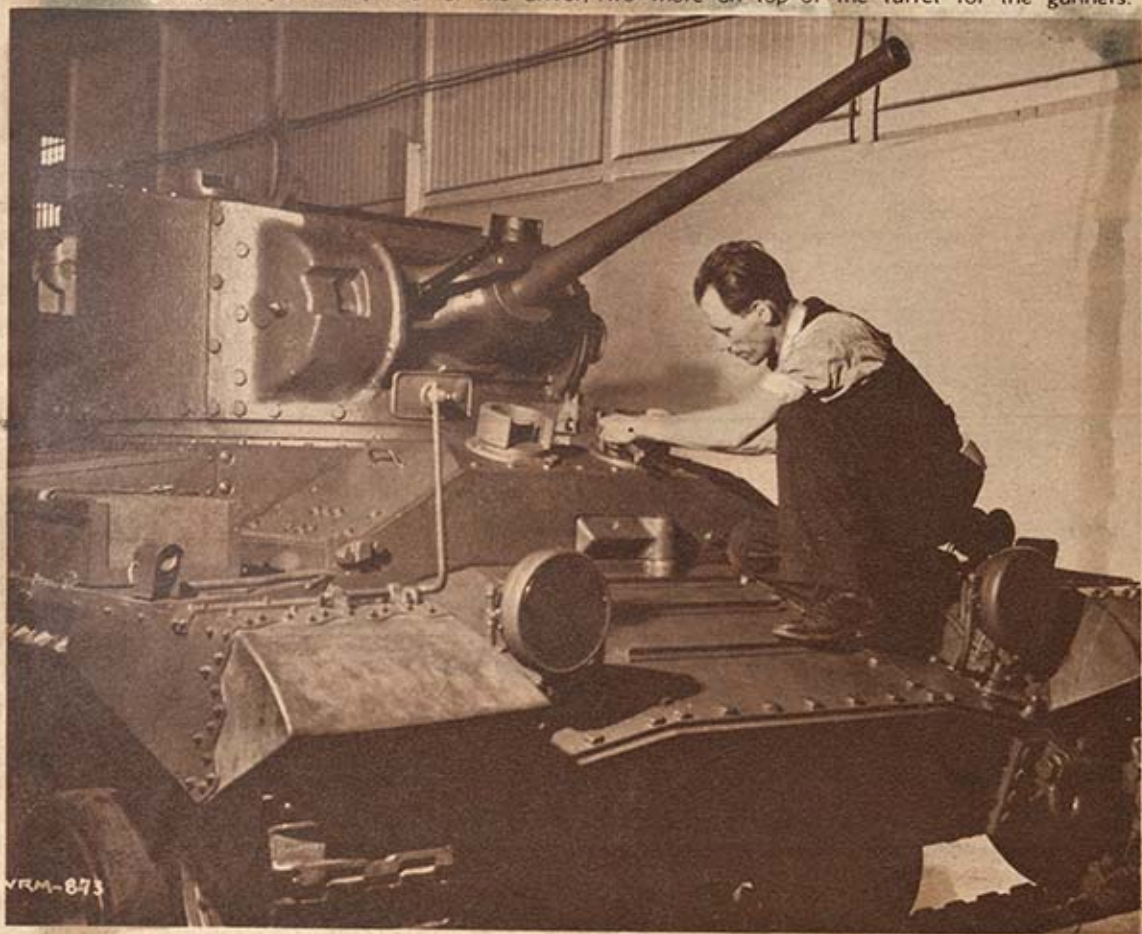


5 **AFTER MOULDING**, slab is inspected for flaws. A high-power mercury arc emits a beam of brilliant light through a small hole, which shows up streaks or bubbles against the white background. Violet Blay marks imperfect parts to be sawn off.



↑ **THE FINISHED JOB**—a tank periscope—is getting its final inspection before delivery to the Army. Al Brown looks through just as the gunner inside of a tank will aim at Nazis.

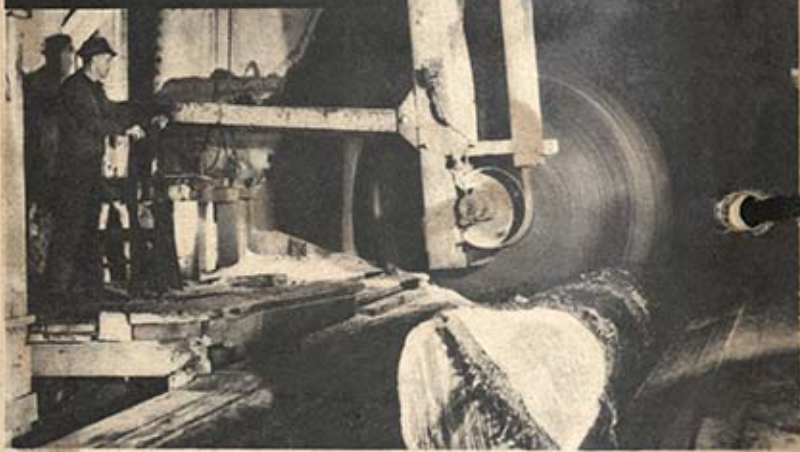
↓ **INSTALLING THE PERISCOPE** on a sixteen-ton Valentine tank. These little fellows have four periscopes each, two for the driver, two more on top of the turret for the gunners.



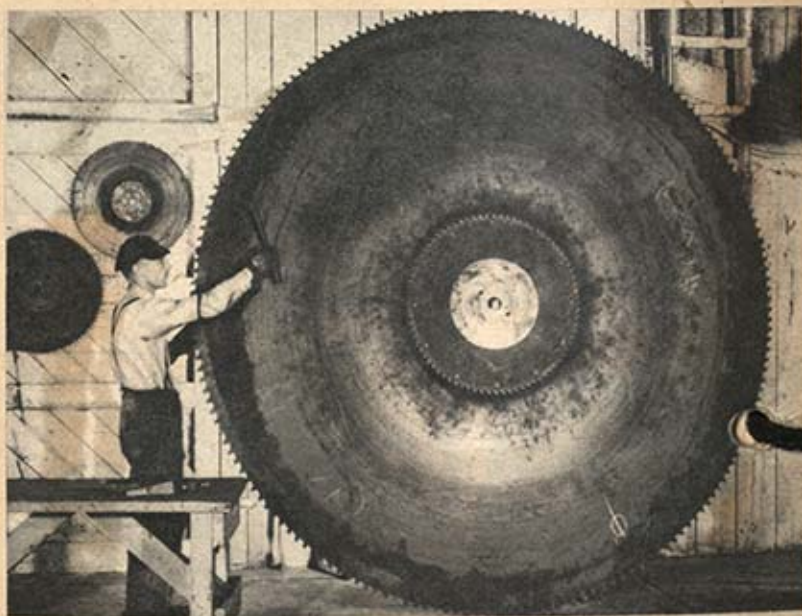


RISKIEST JOB in a hazardous occupation is done by "high-riggers" like Edwin Hokkanen, shown "topping" a giant. Seconds later it swung like a reed. Tree will then be used in further logging operations, now in a fever of wartime production. Nervy, woods-wise men like Hokkanen compose B.C.'s coast defence guerrillas.

B.C. AXES VERSUS AXIS



WHERE GROW THE BIGGEST TREES in the Empire, there you expect to find the Empire's biggest saw. Here it is, a nine-foot circular giant on Canada's Pacific coast chewing up a B.C. log. The men and mountains are big, too.

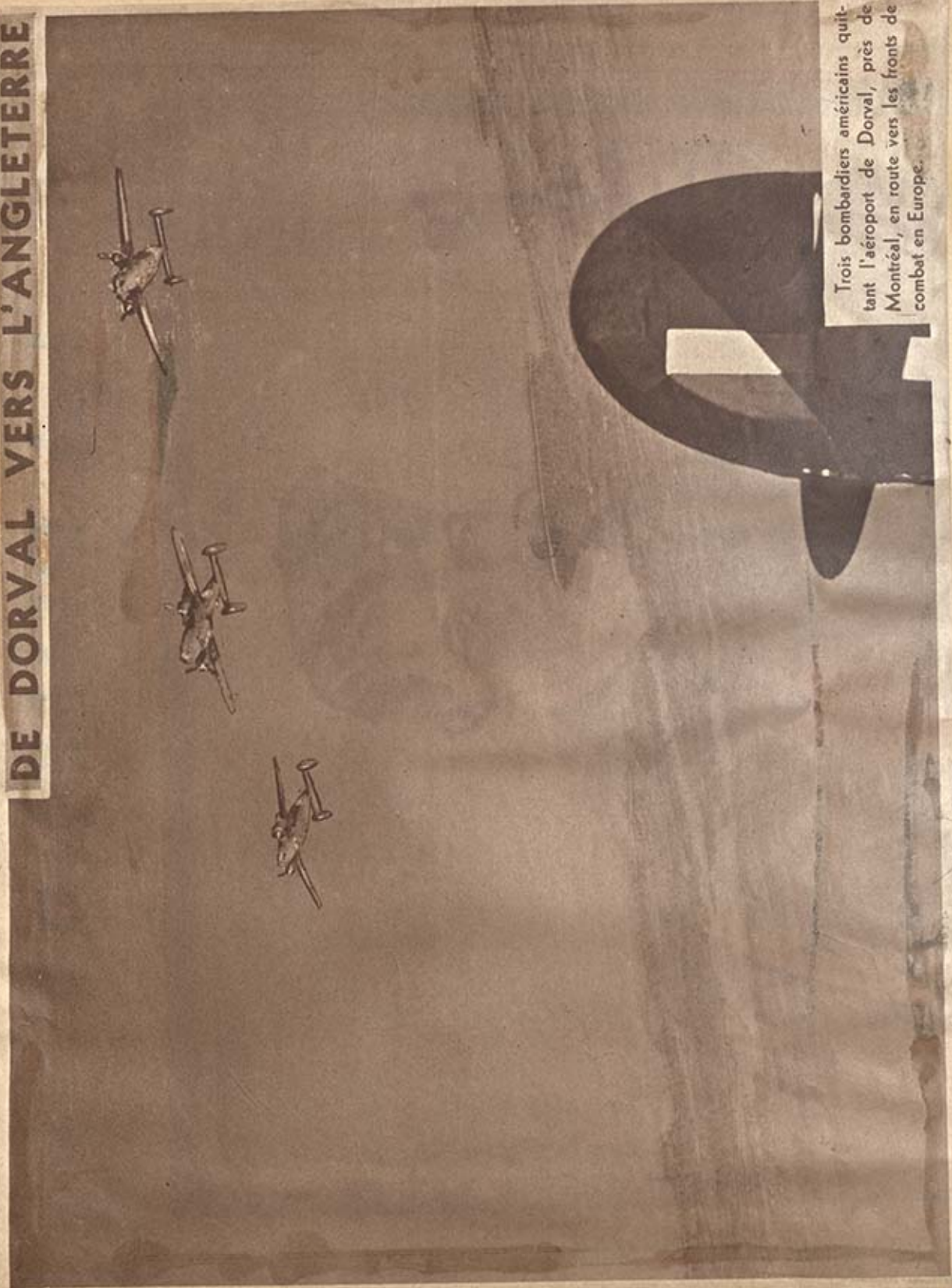


B.C.'S BIG LOGGERS dislike little men who get big ideas about their trees and mountains and have organized the "Pacific Coast Militia Rangers." Here one of B.C.'s "teeth" thoughtfully sharpens the big saw's 192 teeth



Groupe d'appareils américains attendant de franchir d'un seul bond les espaces qui séparent Montréal des théâtres de la guerre.

DE DORVAL VERS L'ANGLETERRE



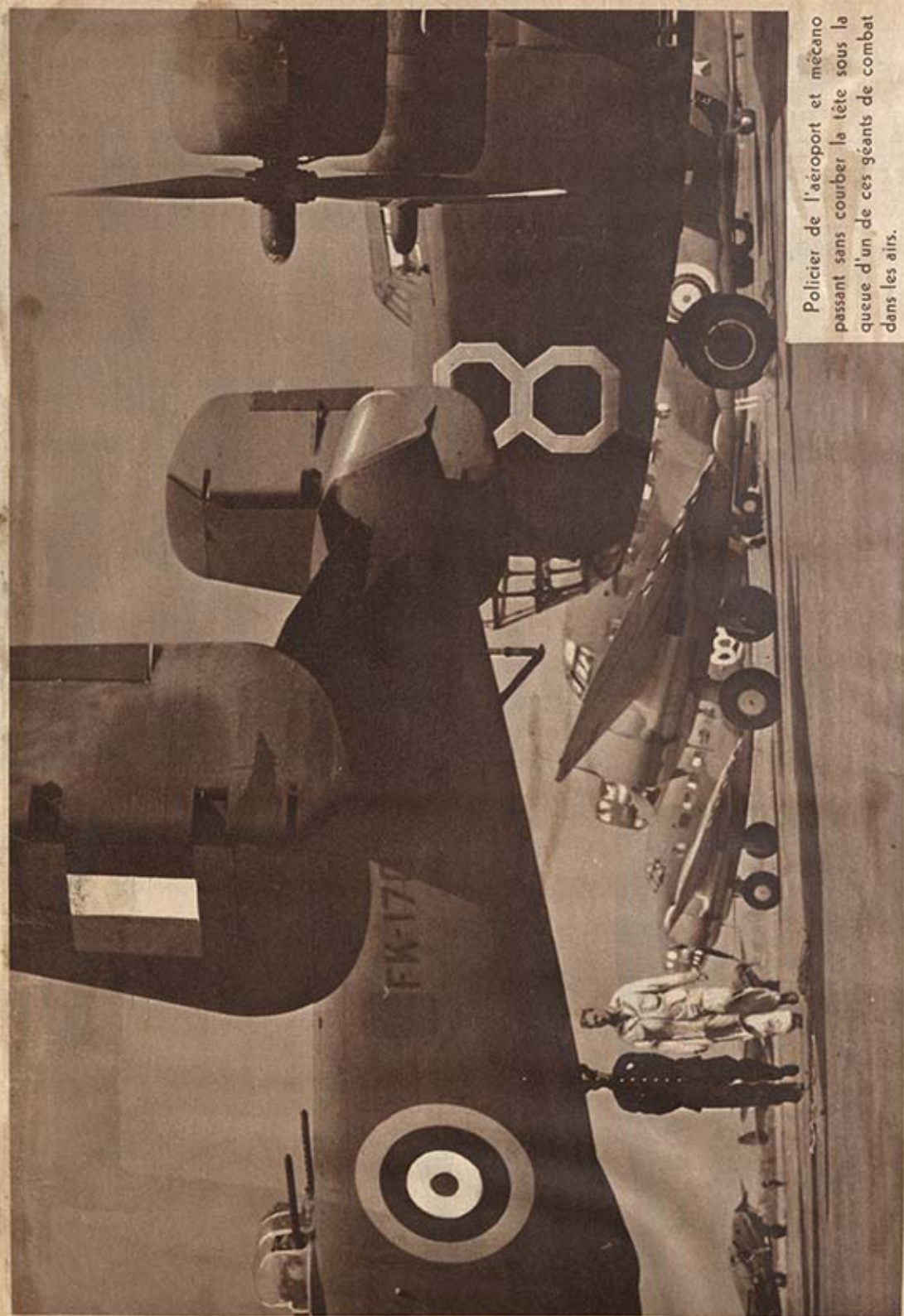
Trois bombardiers américains quittant l'aéroport de Dorval, près de Montréal, en route vers les fronts de combat en Europe.

LA PRESSE, 27 JUIN 1942

BOMBARDIERS AMÉRICAINS

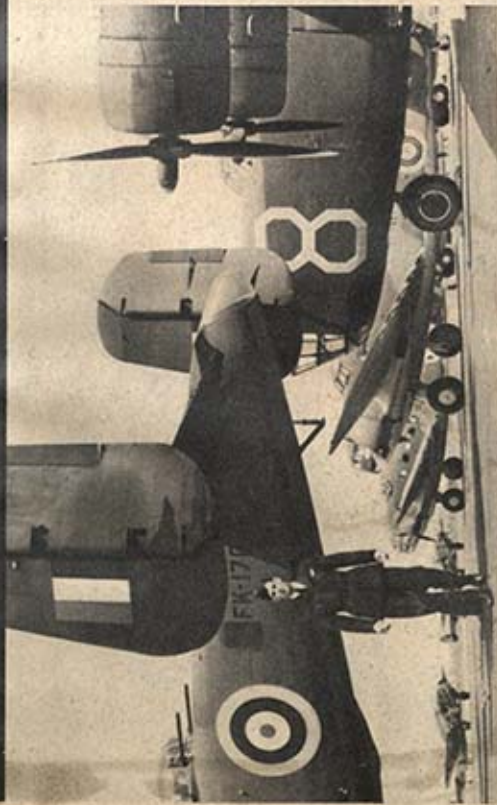


Agent de police en uniforme montrant la garde à l'aéroport de Dorval auprès de bombardiers de fabrication américaine.



Policier de l'aéroport et mécanicien sans courber la tête sous la queue d'un de ces géants de combat dans les airs.

BOMBERS STREAM FROM CANADA TO BATTLEFRONTS



AN AIR FORCE NAVIGATOR picks his way across a tarmac dotted with big bombers being made ready for the transatlantic flight from Dorval airport, near Montreal, to England. He plots a course across miles of sky.



A VETERAN of many ocean flights, Flying Officer R. A. Jackson, of the R.A.F. Ferry Command, checks a map before taking off again with a new bomber for Britain.



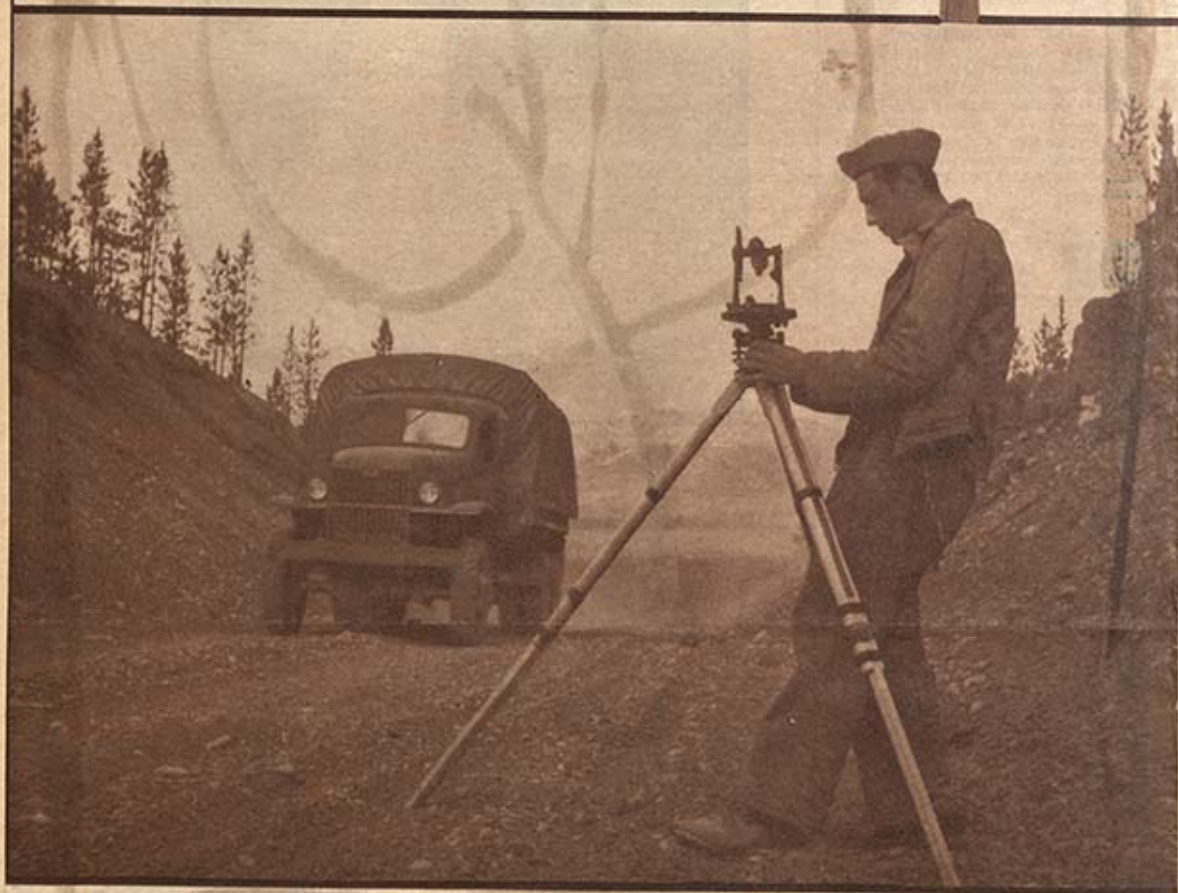
FRESH FROM THE PRODUCTION lines of a U.S. factory, a giant bomber wings out to sea, headed for Great Britain. From the Ferry Command station near Montreal, these aircraft flow across the ocean in a steady stream.

THE "ALCAN WAY"

TO DEFEND THE CONTINENT, Canada and the United States must work together. Till now all supplies went to Alaska by boat and plane. United States Army Engineer troops are working at top speed from the Canadian railhead at Dawson Creek to complete the Alcan Highway which will link a chain of modern, well-equipped airports between Edmonton and Whitehorse built last year by the Canadian Government. It will also be the first land communication system between Canada, the United States and Alaska. Right now the only thing that counts is speed. With the Jap in the Aleutians, lonely Alaska has become the first line of defence against them. Soon the finished road may rumble with tanks, trucks and mobile guns as they speed northward to the outposts of the Orient.

DAWSON TRAIL

LOS ANGELES
CITY LIMITS



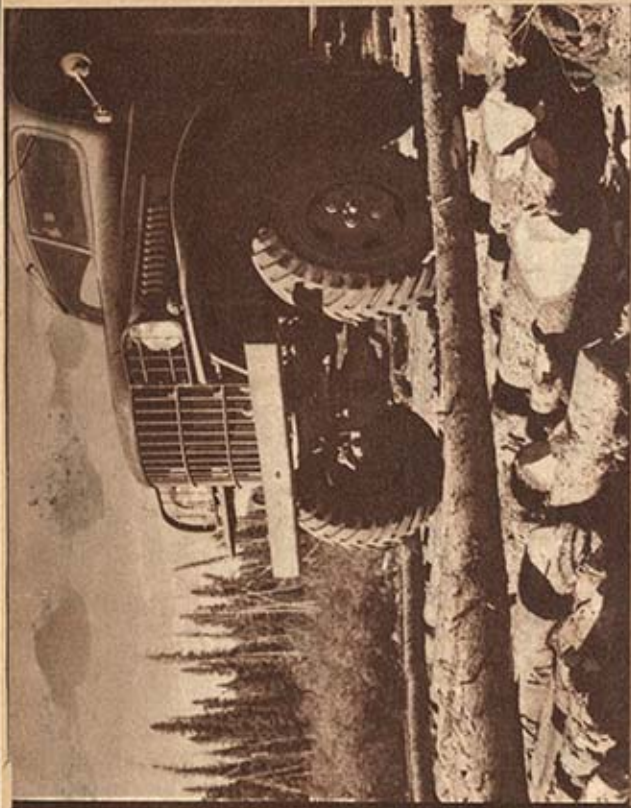
AS AN ARMY SUPPLY TRUCK looms over the crest of a hill a surveyor works in the foreground.



RINGED ROUND by towering snow-capped mountains are the tiny tents of United States Army Engineers working on the highway to Alaska. Road will cost an estimated \$30,000,000.



NO EASY JOB is it to how a highway through rugged mountainous terrain. Here "carryalls" have lugged earth and stone to level off awkward gully.



WHEN THE GOING gets tough, engineers build a corduroy strip of road from rough logs, which makes an all-weather base over soft muskeg.



TO FORD mountain rivers engineers build a truck-carrying ferry which uses the speed of the current to force its way across on the end of a cable.



NEXT, PILE DRIVER hammers stout logs into the river bed for a wooden bridge. Men who work in water must brave intense cold of icy streams.

MORE PICTURES ON NEXT PAGE



A YOUNG HUSKY shares rations from P.F.C. Dick Lewis's messkit. Lewis hails from Oskaloosa, Iowa.



THE CAMP MAIL BOX, made from a powdered milk tin, is nailed next to the camp bulletin board.

ENGINEERS TAKE OVER a cabin in the Yukon and pin pretty girl pictures on the wall. Writing home is Private Tom Coliyan of Philadelphia, while Clare Hayden of San Diego, reads in mosquito-netted bunk.





"ALCAN WAY"
(concluded)

A SKILLED SIGN PAINTER is First Class Private Roosevelt Hite of Myersville, Miss., who makes highway markers and direction signals for the highway that will not only serve as an important link between the United States, Canada and Alaska but will connect a chain of airports built last year by the Canadian Government.



THE THREE RESIDENTS of a small habitation formerly hardly ever visited by white men were surprised when an Army Engineers band staged an impromptu concert.



IN SWIFT MOUNTAIN STREAMS, engineers find fishing fine sport and an easy way to relax from the tough road-building job. In some localities, glacial ice formations thousands of years old are hidden under the muck and moss of Arctic muskeg.

IN THE MOONLIGHT, two troopers build a campfire. Soldier at left checks his Garand rifle while the billy can boils. Evenings are chilly, days hot.



PUBLIC INFORMATION PHOTOS
BY NICK MORANT



A NATURAL CAMPSITE is this burned out hollow cedar and every Ranger knows when to capitalize on natural advantages. A brew of tea on the trail is always welcome to Prospector Dunc Powell and Ballistics Expert "Pop" McKelvie. Rangers must keep fires from smoking or showing flame in order not to attract attention.

WEST COAST RANGERS

A BAND OF TRAINED VOLUNTEERS GUARDS CANADA'S WEST COAST



MORE PICTURES ON NEXT PAGE

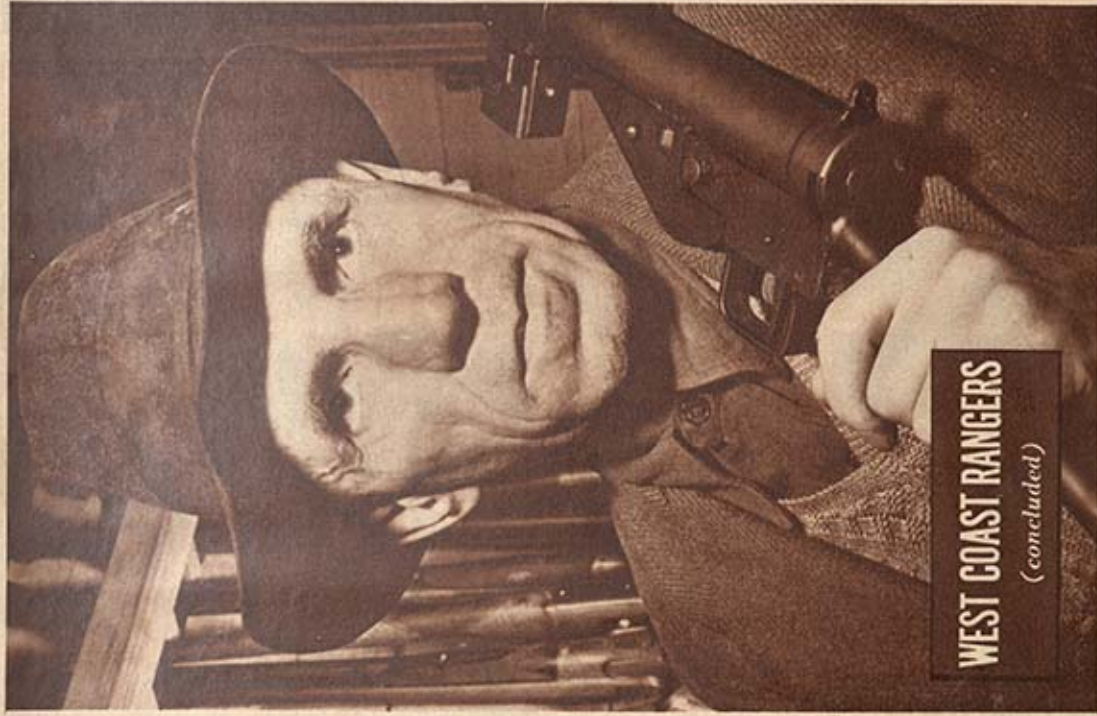
HIT AND RUN ATTACKS may call for quick escape, thus Rangers must be able to climb mountains quickly and quietly and also find their way through the woods. Men are armed with Sten guns and carbines—many of the hunting variety.



PARADING AS A TREE is this Ranger. Unlike recruits in the active army, Rangers are enlisted to serve in their own localities, as most of the men know territory like a book, and can best serve in a section they are most familiar with.



HUNTER KEN VIDAL works for the Hudson Bay Company. Rangers serve without pay until such time when they may be called out on active service. Local conditions determine type and extent of training.



WEST COAST RANGERS

(concluded)

TYPICAL RANGER is Dunc Powell, a prospector, who knows the country like a book. Many volunteers spend long hours mastering woodcraft, signalling, rifle drill, grenade throwing, camouflage and map-reading.



N. F. B. PHOTO

BESIDE A WATERFALL in the mountains north of Vancouver, two Rangers consult a map while another stands on guard. These men may spend three or four days on the trail without blankets or equipment. At night they

sleep in improvised shelters. They patrol and scour areas inaccessible to formally organized military units. Rangers know the rugged coastline and are at home in the mountainous wooded coastal forest belt.

• PORTRAIT OF A SHIP

Men of the Merchant Navy Brave War and Weather To Keep United Nations Supply Lines Open



Photos and Story By NICHOLAS MORANT

LIFE ON A MERCHANT SHIP is guaranteed to breed respect for the men of the sea in even the most indifferent land-lubber. Assigned to one of these ships to make a series of pictures I soon found that the stories of hardships and privation that have been written about the men of the Merchant Marine are only too true.

The ship I sailed on was a Canadian merchantman built in the yards at Levis, Quebec. She carried a cargo of "mixed dynamite" as one sailor put it, of carbide, TNT and vital

parts for mechanised war equipment.

I worked day and night making pictures. All the engine room and stokehold series were made between 1 and 4 a.m. and a great many of the others were done at outlandish times because, to catch the various characters at work and play, I had to play the game their way—i.e. put in appearance during the various watches. Keeping various watches meant very little rest but then I just wonder how much real rest these men get—except the doubtful benefits of the sleep of utter exhaustion.

Did you ever go to bed—leaving a blue light burning so that you see your boots, life-belt and coat ready to jump into if you're hit? You sleep with your clothes on and, as you lie there and listen to a North Atlantic gale whistle through the rigging outside the door, you wonder to yourself—"should I go to sleep? What if we're hit? Will it hit under me? If it hits aft or for'd of me then where did they stow away the TNT cargo, and if they hit the carbide cargo would half of us be gassed to death when the sea hits the powder?" Let

me tell you, for the amateur it's no fun. You wouldn't last 5 minutes in the water. They lost a man overboard the trip before I came aboard. They threw him a lifebelt which landed less than fifteen feet from him—he hadn't the strength to swim that far.

For the most of the trip it was terribly cold. It was 25 below once during the early morning hours before we sailed. We were held up because the steering gear was frozen. The ropes were like Indian Rope Tricks gone wrong—frozen hard as rocks and almost im-

possible to handle. This is the reason why the ship doesn't appear in the picture as neat and clean as Canadian ships usually do.

When I was at sea I slept in the hospital. The toilet there was frozen solid. All the water pipes were frozen aboard—we had nothing to drink but distilled water from the sea, via the engine room. The 2 ton anchor was held solid when we went to moor and had to be chopped away.

I slept with 8 blankets over me in my cabin—partly because I was scared, I guess!

Amazing thing was that I wasn't sick at all though many of the crew were. I could hardly believe my good luck.

"The backbone of the engineroom on many a merchantman," said one sea captain, "are the Arabian oilers and tenders." Ali Vergut, a British Arab, worked in the engineroom of our ship. A survivor of two torpedoings, he is fanatically anti-Nazi. Although he has been at sea for 25 years, he has a wife and two children at Aden. Other crew members are from all across Canada, and England. The

Captain, L. H. Johnson, was formerly with the Empress boats to the Orient out of Vancouver.

Pat McHenery, from Greenock, Scotland, is the ship's story teller. He has been torpedoed once and fought with the Loyalists in Spain, running blockades with the submarine postal service.

Chief Engineer T. Atkinson of London, England, survived the sinking of the Empress of Britain. Chief Officer Walter Oliver of New Westminster, B.C., is a survivor of the sinking of the Empress of Asia.



IN THE CHARTROOM, Skipper Johnson checks his course out of the harbor before the ship sails with the convoy. "The Old Man's Cabin" is for'd and directly below the bridge.



TYPICAL of the hardy lads from the black gang where you've got one chance in a hundred if the ship is torpedoed is Harold Ferguson.



SECOND STEWARD Gerald Leclerc, 32, hails from Montreal. He left a war plant job in Welland, Ontario, to join Merchant Marine.



SHIP'S SKIPPER, Captain L. H. Johnson, has little rest once the ship leaves port. On the last trip he didn't leave the bridge for 7 days.



THE VERY PICTURE of an old salt is John McLeish, 53, a veteran of full rigged sailing ship days. He has seen service in two wars.



THE BOS'UN has been torpedoed twice. He feeds "Fanny" and makes sure she doesn't leave the ship. The last one was torpedoed.



CHIEF RADIO OPERATOR, Pat McHenry, from Greenock, Scotland is ship's story teller. He ran blockades for the Loyalists in Spain.



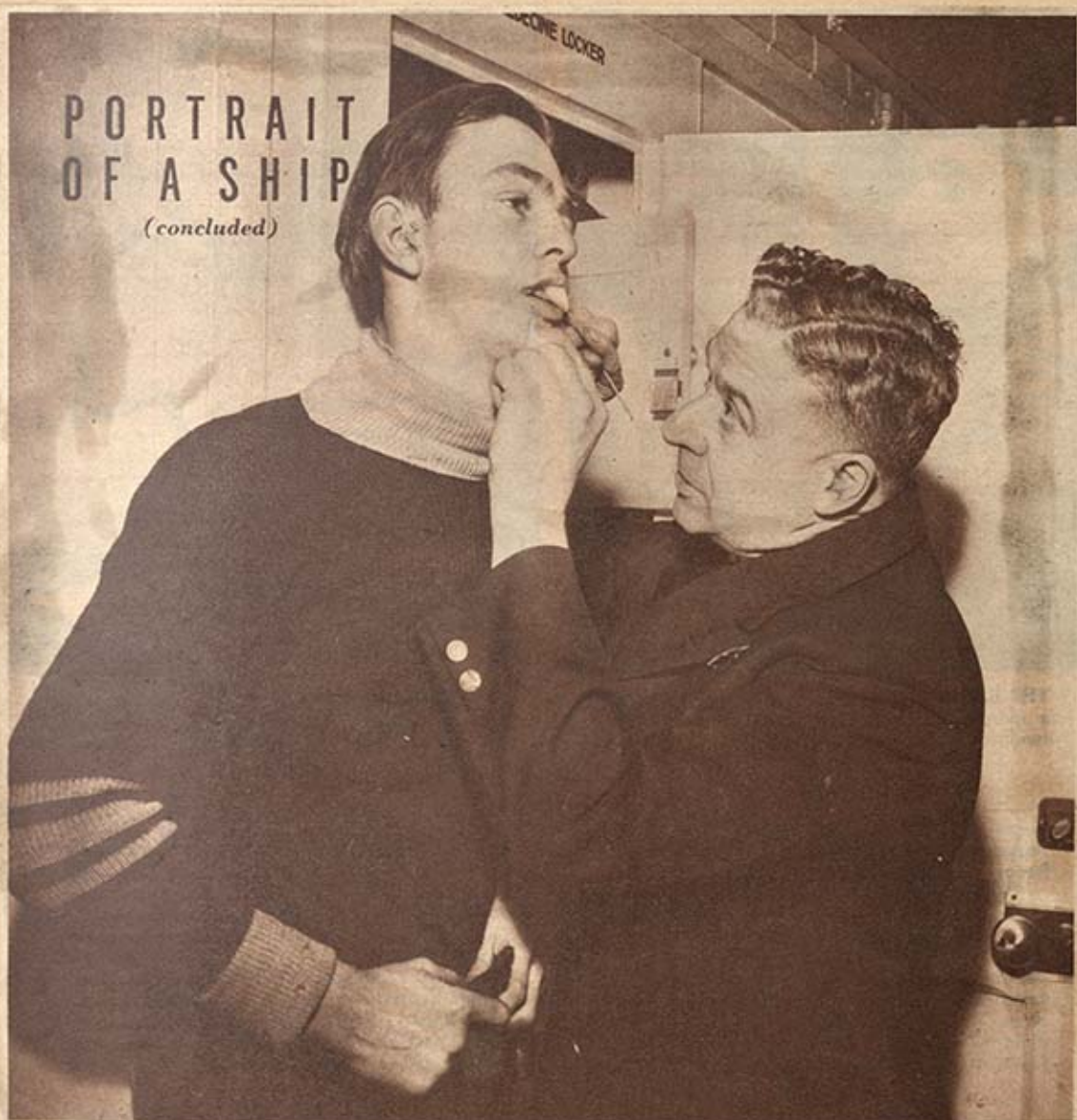
POPULAR CHIEF OFFICER Oliver checks a compass. Seafaring men call him "The Mate." The Captain is known as the "Old Man."



THIRD ENGINEER is Alex Unthank of London, England. He has seen plenty of action in the war and has been torpedoed twice

PORTRAIT OF A SHIP

(concluded)



CHIEF STEWARD D. W. Webber, 53, from Victoria, gives Cadet G. Toyer first aid for an injured lip. Well versed in all the tricks of his trade, Webber has served meals to the King and Queen, President Roosevelt and many other famous people. He joined the Merchant Marine in 1903 and has been in and out of it ever since. Notice incorrect spelling on medicine sign over locker.



HAMMOCKS ARE SLUNG to the ceiling in the sleeping and messing quarters. Men prefer hammocks because they can rest comfortably when the sea is running heavy instead of trying to hold themselves in a

bunk against the rolling ship. Food for the crew is rustled up by Cook Joe McKinley. They use 100 pounds of potatoes, 110 eggs, 60 pounds of beef and 14 pounds of fruit every twenty-four hours at sea.



THE BOS'UN takes his turn on a winch. In cold weather winches are left turning over slowly to avoid being frozen stiff. On this voyage the mercury dropped to twenty below.



NATIONAL FILM BOARD PHOTOS

ON THE WHEELHOUSE DECK, the skipper watches the convoy through his glasses, peering through mere slits of concrete which now protects wheelhouses and chartrooms. The helmsman serves a four hour watch while the second officer checks to see that the helmsman keeps the ship on its course. Shot was probably taken in port as ship's engines are at "finish" position.



SEWING A BOTTLE OF RUM into his lifebelt is Second Officer Devereaux from Vancouver. Rum often saves lives after a torpedoing.



SHIP'S CARPENTER. Morley Sanford, 59, oils a winch break. Another veteran of sailing ship days, he has survived 12 shipwrecks.



THE BACKBONE of the engineroom on many a merchantman are the Arabian oilers and tenders. This is Ali Vergut, a British Arab.



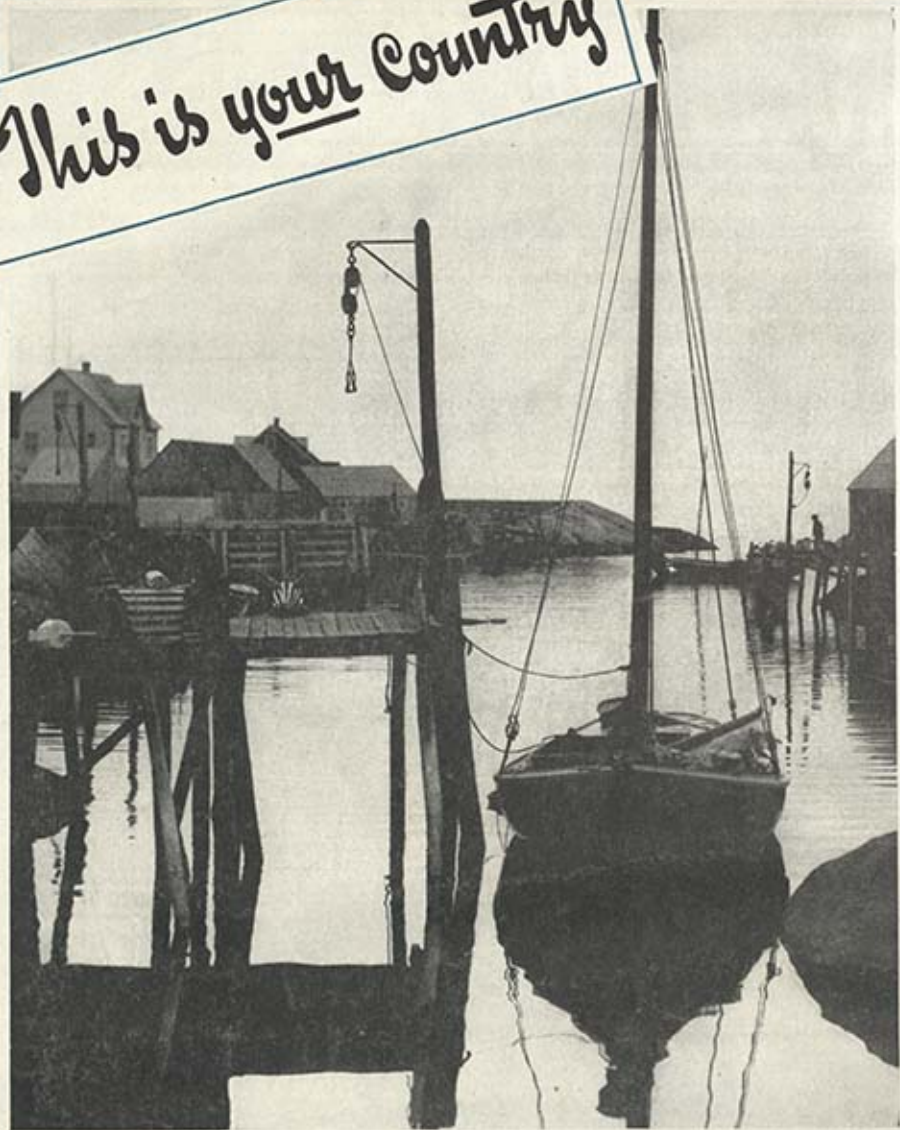
"MUG UP TIME" finds a welcome respite for Chief Engineer Atkinson, Assistant Radio Operator N. McLachlan, Toronto and Chief Officer Walter Oliver of New Westminster, B.C. Engineer Atkinson survived one sinking while Chief Officer Oliver survived the sinking of the Empress of Asia.

THE BRITISH
COMMONWEALTH
AIR TRAINING PLAN



I. NORMAN SMITH

This is your Country



The homes and the wharves that serve our Atlantic fishermen, Peggy's Cove, Nova Scotia. A Canadian Pacific photograph.

● This is Canada. Still prosperous, still peaceful, still free. No other country of the United Nations remains as untouched by the war. Sure, your taxes are up. But how important are those dollars when you set against them the freedom you have, the future you have, the future that is here in Canada for your kids?

Your sons . . . brothers . . . sweethearts have gone off to the wars. Off to fight to keep Canada the way it is. You have your part to do. Work for victory. Save for victory. There is no better way to save than by lending your money to the government. Buy War Savings Stamps and Certificates as often as you can. Keep Canada yours!

A Bracing Vacation in EASTERN CANADA



ALGONQUIN HOTEL

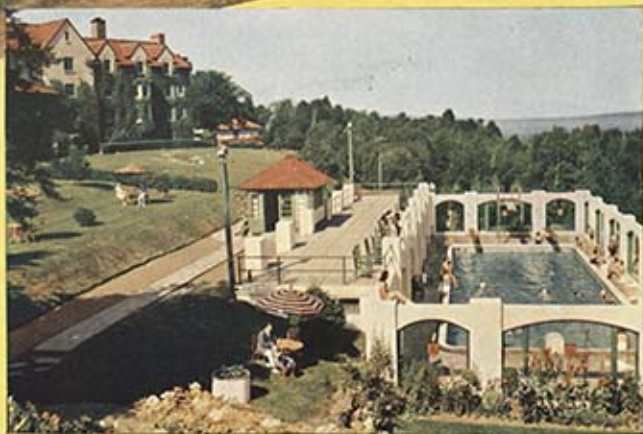
St. Andrews-by-the-Sea,
New Brunswick
(OPEN SUMMER MONTHS)

A Holiday Colony . . .
only 15 minutes from
the border of Maine.
An ideal vacation resort
for all summer. Two
golf courses . . . deep-sea
fishing . . . sun-warmed
swimming . . . tennis
courts. Casino for
entertainment, dancing,
talkies.

DIGBY PINES HOTEL

Digby, Nova Scotia
(OPEN SUMMER MONTHS)

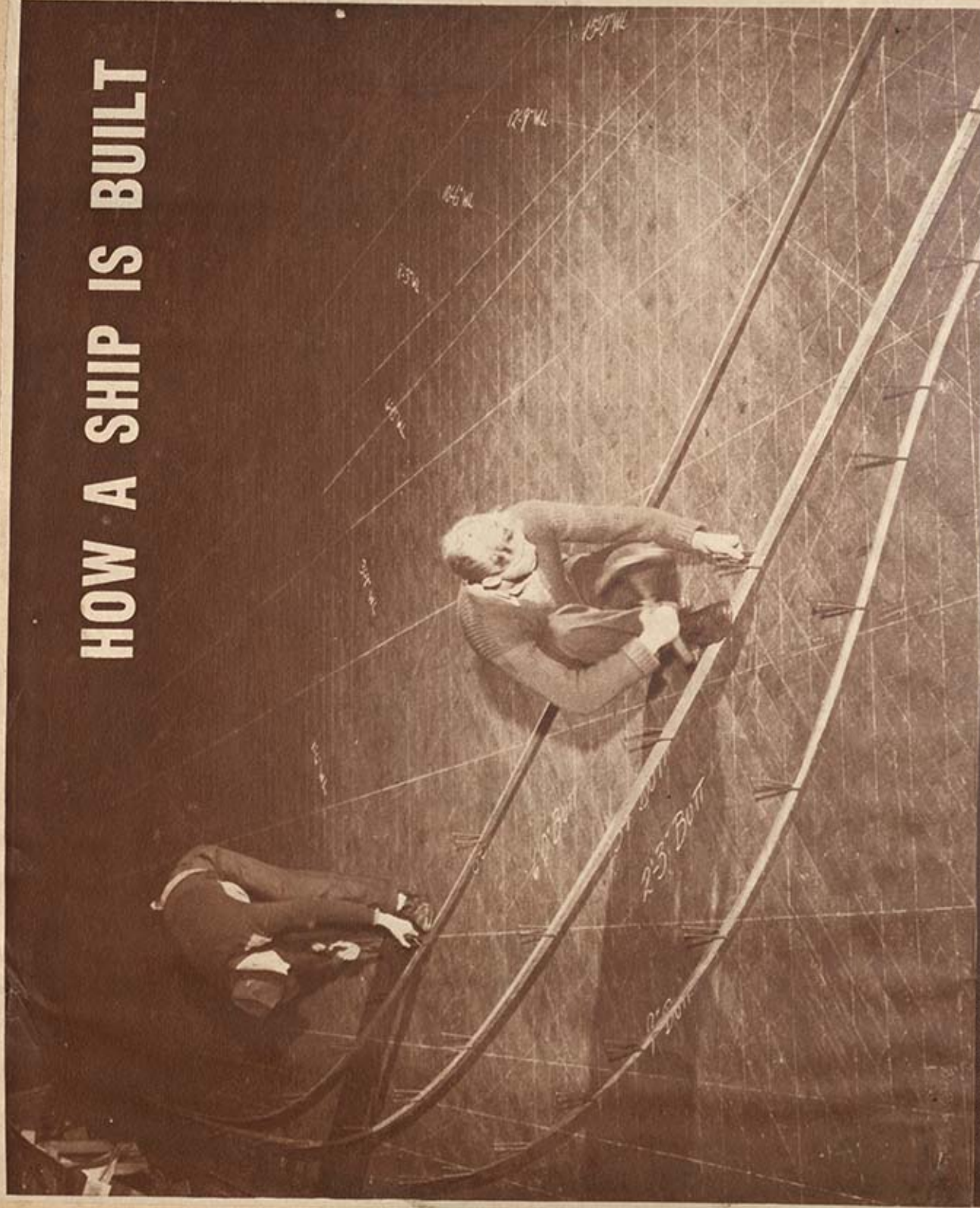
Nova Scotia's leading resort-
hotel, surrounded by 234 acres
of lawns, pine groves, seashore
. . . outdoor swimming pool . . .
championship golf course . . .
tennis courts . . . deep-sea fishing.
Also visit the Cornwallis Inn,
Kentville, open the year-round.



For attractive literature and reservations, communicate with
hotel managers or your nearest Canadian Pacific agent.

Canadian Pacific Hotels

HOW A SHIP IS BUILT



HERE'S ONE of the first steps in the complex construction of a cargo vessel. Following blueprints the plan of the ship is laid out in wood. To speed construction, Canada has standardized merchant craft to two types — 10,000 tonners and 4,700 tonners.



PLATES are first designed and reproduced in wooden pattern forms.



PLATES once marked from wooden patterns, next move to punching press.



AUTOMATIC machine reams punch-holes so rivets will "seat" neatly.



GOGGLED CRAFTSMAN cuts a hull plate with special oxygen torch.

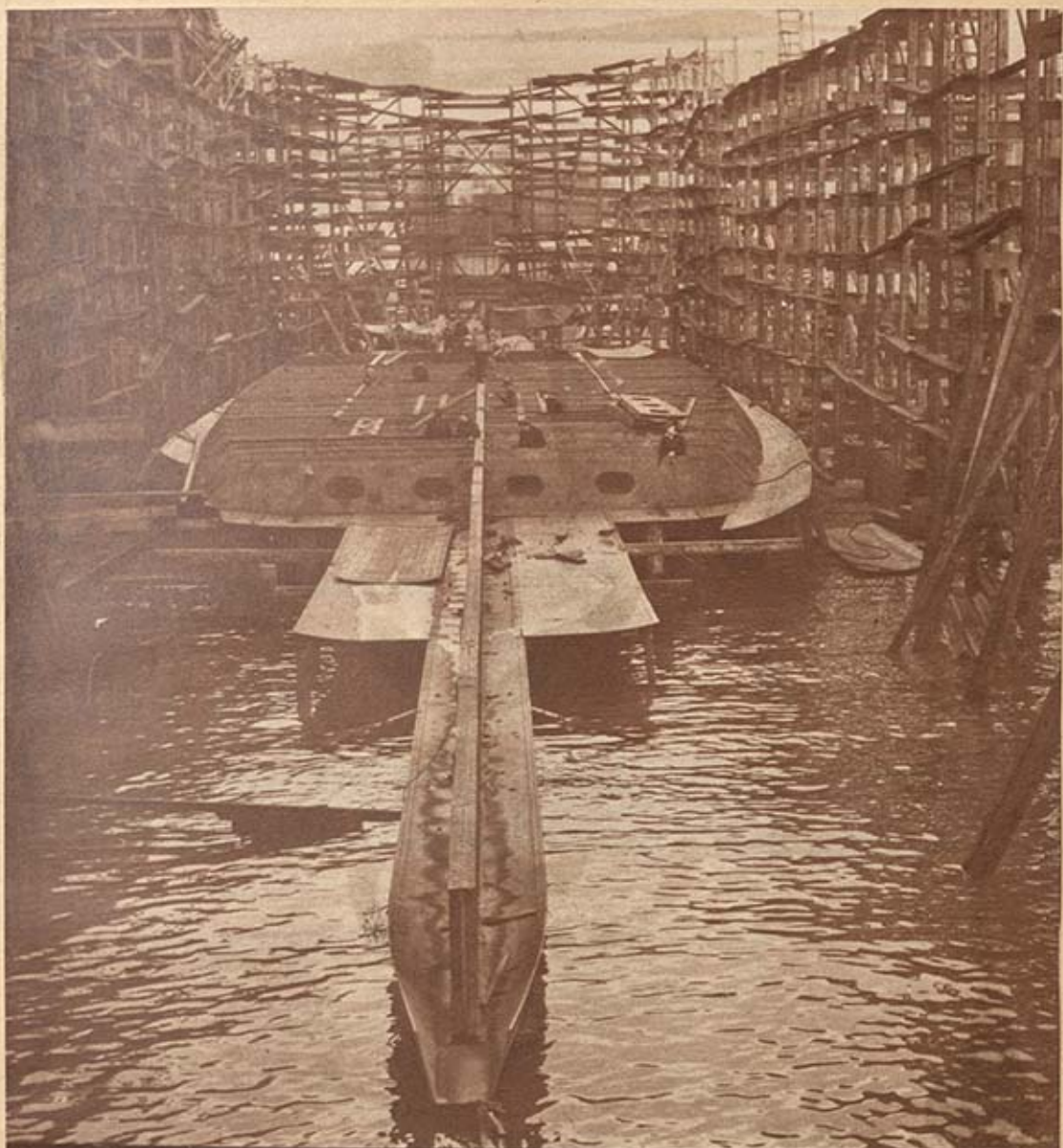
THE STANDARD, MONTREAL



WORKERS PUT final finishing touches to the ship after she is launched.



AIDED BY FLOODLIGHTS, rivetting crew works on bottom plates. Welding will be used extensively when more men are trained in this method. With more trained men, welding will replace rivets.



SURROUNDED by wooden scaffold, craftsmen work on keel assembly. Canada started its vast shipbuilding program with remnants of yards of last war, now makes cargo vessels in 13 places.



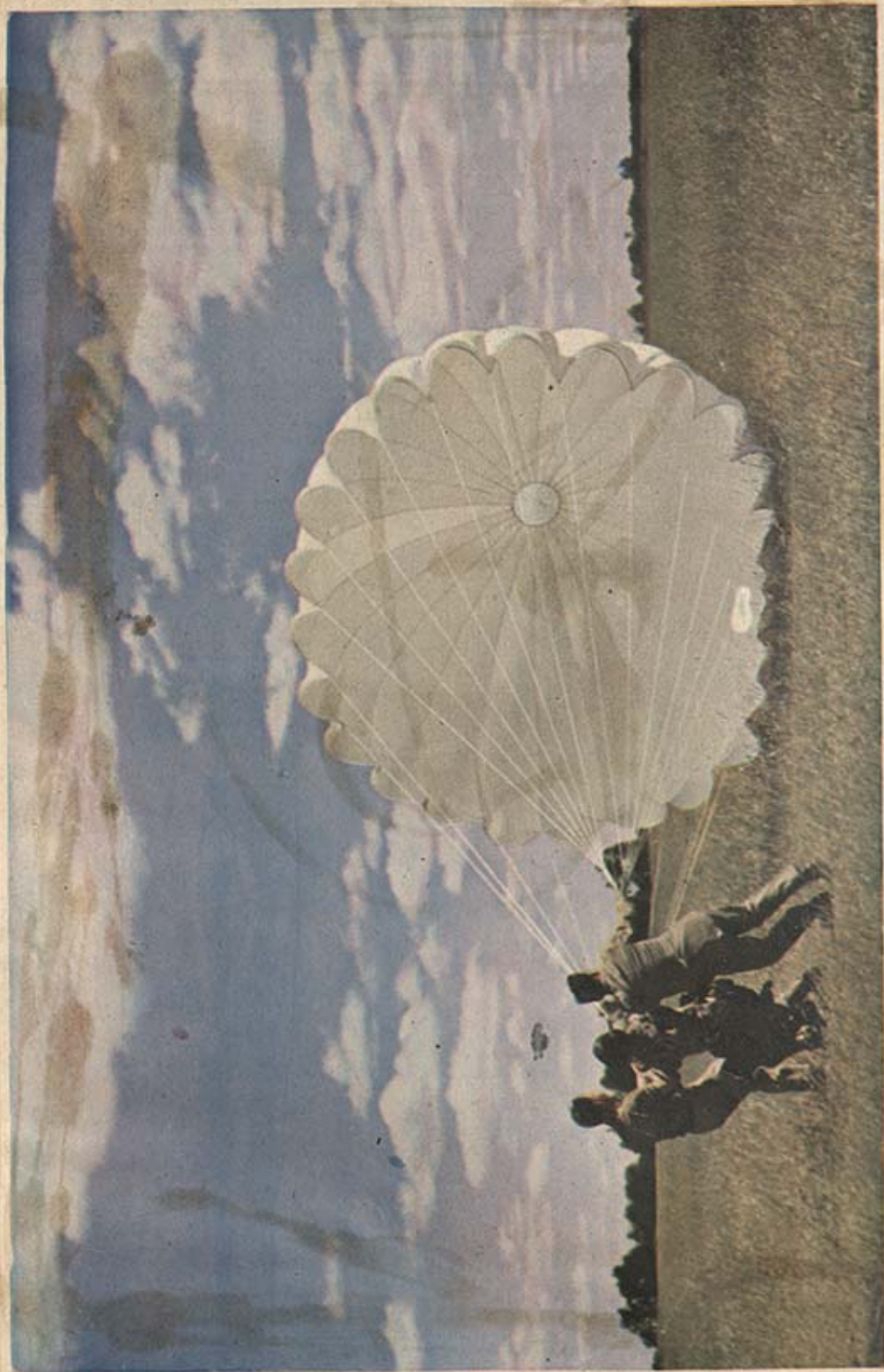
THE STEEL FRAME of a sister ship rises beside a nearly completed cargo vessel. She will carry on one trip to Britain enough to feed 225,000 persons for a week, two complete bombers, motorized equipment to outfit a full infantry battalion and enough aluminum to build 640 fighter planes.

Montréal

LA PRESSE

14 mars 1942





Les deux photographies en couleurs de la page frontispice d'aujourd'hui réunissent un pilote et un parachutiste de la R.C.A.F. Ces jeunes gens à l'entraînement quelque part au Canada ont choisi pour servir leur pays l'aviation qui leur offre plus d'aventure et de gloire possible, à leur avis, que dans les armées de terre ou de mer (Courtoisie du Bureau fédéral de l'information).

CANADA MAKES PLANE PROPELLERS

The Star Weekly, Toronto, October 11, 1941

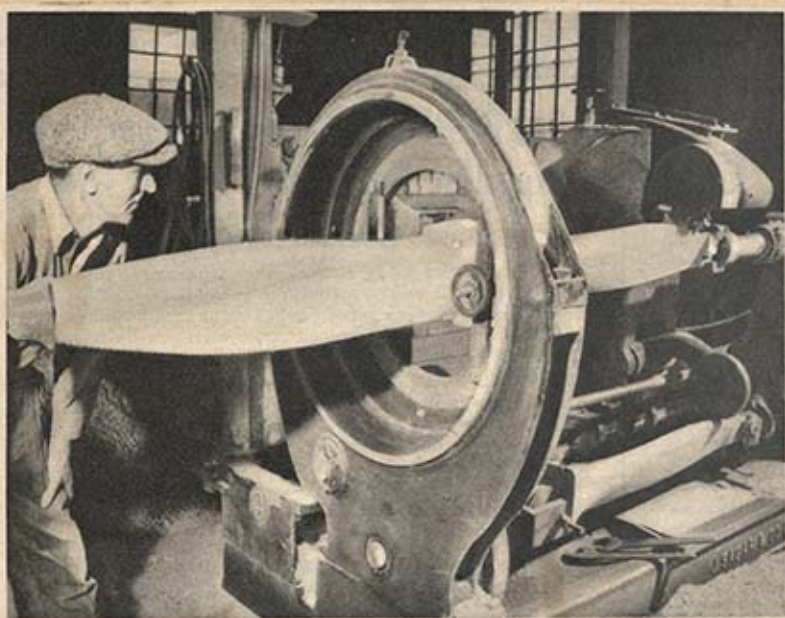


THE FACTORY at Winnipeg which has now turned its full-time effort to the manufacture of wooden "props," has many efficient women workers on its payroll like other plants. This is pretty Leonora Short holding two of the finished propellers, with others in the background, towering above her.



THIS WORKMAN at the Winnipeg propeller plant is operating an electrical device which measures moisture content of the wood that is used in making a propeller.

CANADA IS NOW preparing to meet the demand for airplane propellers that wartime flying within her borders has created, and a factory in Winnipeg, that used to make propeller-driven snowmobiles, is now busy with mass production of laminated wooden propellers or air-screws. "A year from now," says Ralph Bell, director-general of aircraft production, Ottawa, "Canada will be fulfilling her own requirements and exporting substantial quantities to Britain." Contrary to general opinion, wooden props are used quite widely and have many advantages. They are lighter, and cost less than metal air-screws. They are particularly well suited to student craft, for when a mishap occurs, the propeller will break and will not damage the shaft of the engine, as is more likely to be the case with propellers of metal.



INSERTED INTO this profiling lathe, the rough blanks of wood are quickly changed into a shape resembling a propeller. The cutting edge copies the pattern of the model blade, lower right, on to the rough wooden lamination, doing in 30 minutes what took an experienced worker six hours in the past.



THE PITCH of both propeller blades must be identical, since any variation would alter the balance, and might prove disastrous. Errors of one-eighth of an inch would render the propeller practically useless. Here a workman is shown checking the angle of a blade. Note the distinct layers of wood, which, when firmly cemented together, form a light, strong and cheap propeller for light planes.



SAMPLES of each piece of wood going into a propeller are impact tested. Here a piece has just broken under the force of a falling weight. Almost all of the wood comes from eastern Canada, and is carefully selected.

BOMBS BLOOM IN FORMER QUEBEC BLUEBERRY PATCH



FINISHED PRODUCTS in one of the world's largest aerial bomb factories are these bombs which are being stencilled. Their weight of 500 pounds is being indicated. Now being turned out in

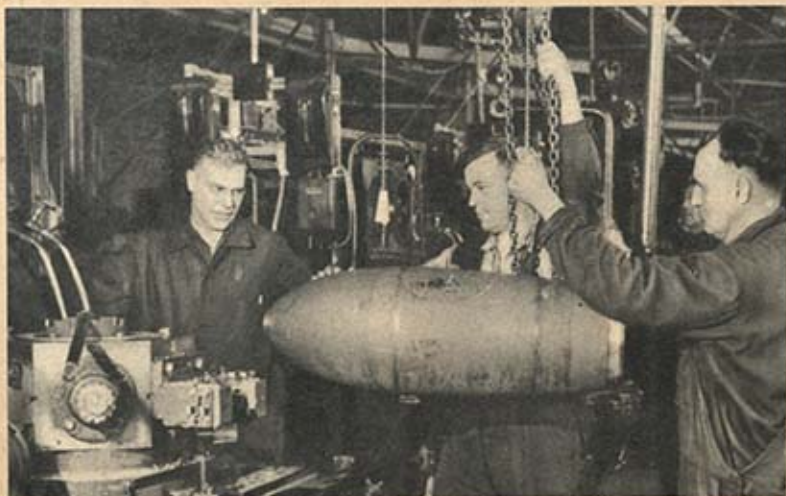
a plant in an out-of-the-way spot in Quebec, the shell weighs 300 pounds and 200 pounds of high explosive are placed in it. When they drop in on their final call they will be more than heard from.

Make 500 Pound Bombs From Old Metal Scrap



INSERTING a steel exploder container. Two separate explosions occur before the bomb itself actually explodes. Delayed action in explosion of the bomb is brought about by use of chemicals. Complex chemical actions are employed to prevent immediate explosion until a building is penetrated.

IN THE HEART of a blueberry patch amid an area of underbrush in an undesignated spot in Quebec, one of the largest factories in the world producing but a single product is now increasing its production of 500-pound aerial bombs. Construction of the plant began on Aug. 15, 1940, and the first metal was poured on Jan. 5 last. First trial bombs were moulded on March 7, less than seven months after the first sod was turned. Mass production is now under way. Production starts from two points, the sand tower and the scrap heap. At one end of the plant stand miniature mountains of scrap steel. Old auto engine blocks, bedsteads, old farm implements and railway steel, bales of old wire and other scrap make up a weird assortment of junk of junk collected from every part of Canada. The metal is picked up by a giant magnetic crane. It is loaded in great buckets, carried to furnaces. The normal output will be well over 100,000 bombs a year.



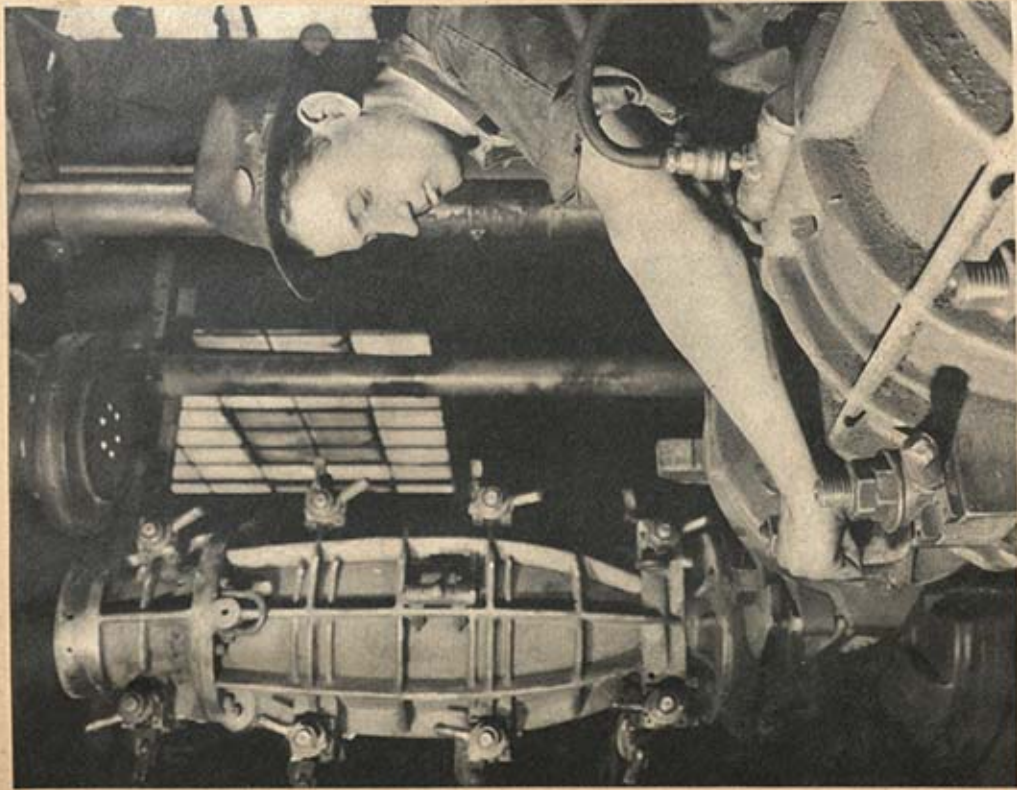
MASSIVE LATHES of intricate and special design turn the ends of the bombs to specifications. Machining operations require a high degree of skill and perfection and operators of the monster lathes are experts in that line of work. One set of machines cuts, drills and taps the bomb so the tail assembly and exploders will fit perfectly. Another line of machines handles the component base plugs. In a final operation a suspension lug is attached to fasten the bomb to a Germany-bound plane.



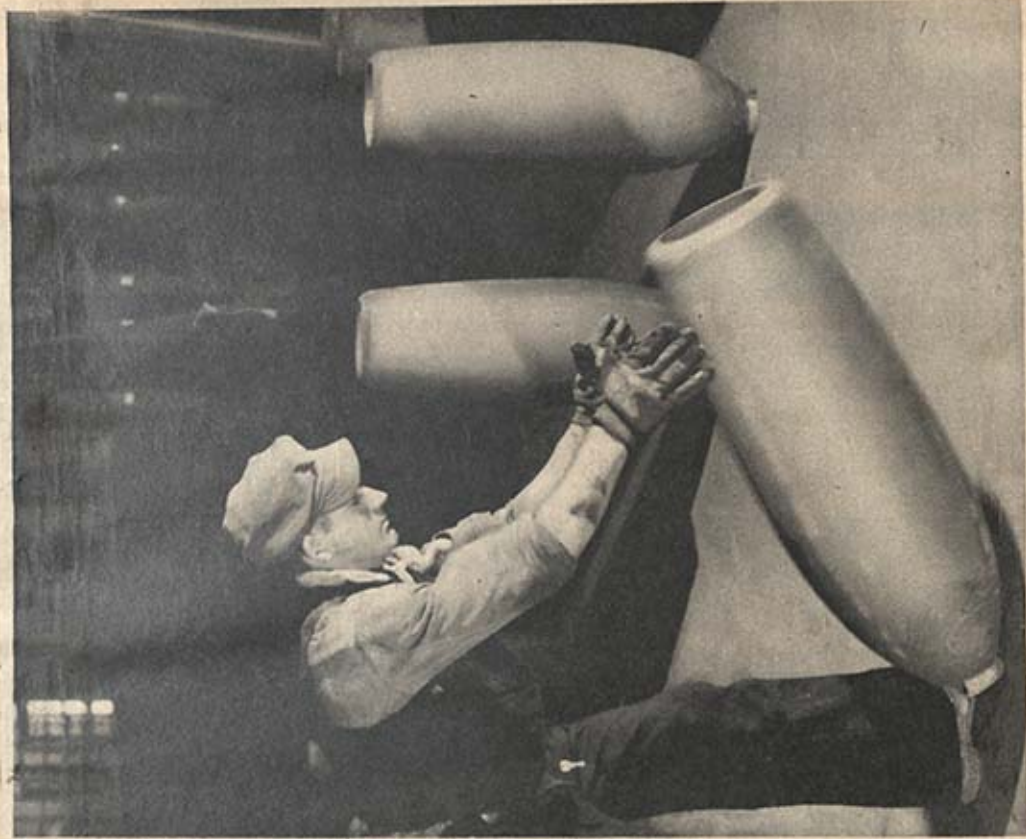
PUDDLING is the name of the work this man is engaged in. It is his job to see that the "special recipe" sets properly and that no air bubbles or bells form. This bomb has been through the "de-greaser" where it is bathed with chemicals which remove all oil, grit, bits of steel and other foreign matter. The interior is then given a coat of special varnish which leaves it smooth and gleaming.



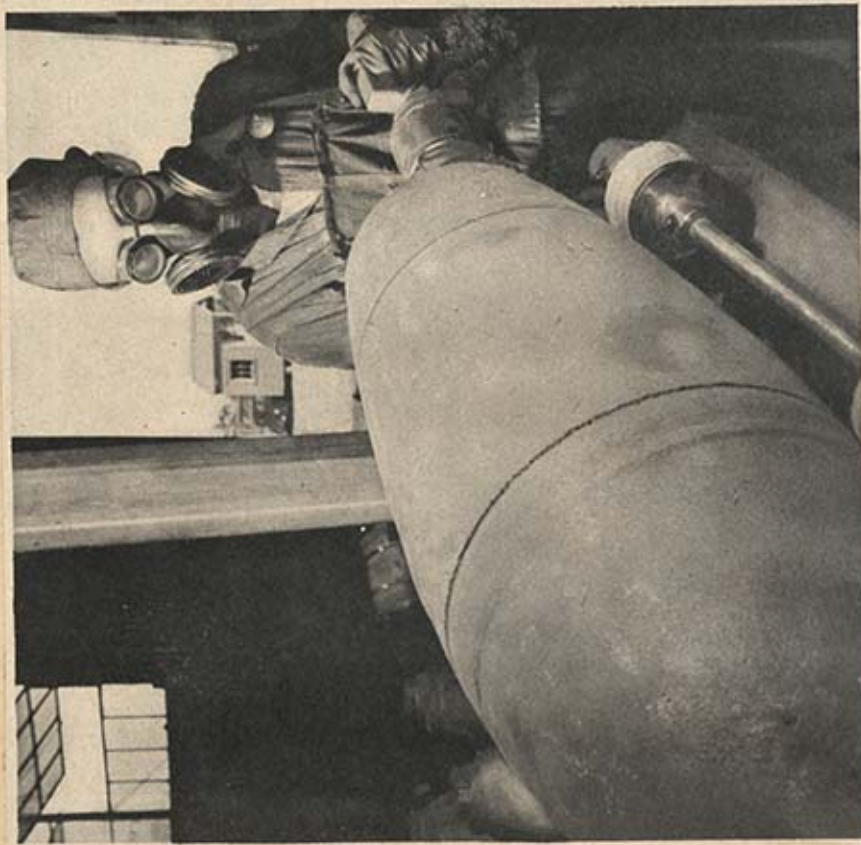
IN CASTING PROCESS four bombs are joined together by a criss-cross of metal. But they are separated by acetylene torches. A protruding neck of steel on each bomb, known as the "riser," is sheared off by a special saw. Bombs being placed here are seen after these trimming operations. The bomb is still rough but not for long. With portable grinding wheels workmen will finish off the edges.



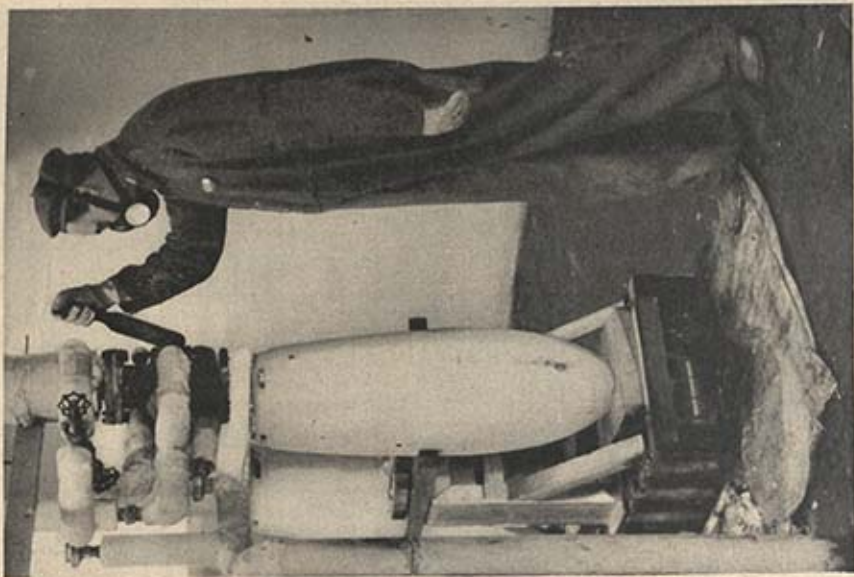
THESE ARE THE FORMS for the bombs. They look something like the rocket ships of Buck Rogers. Sand is forced into these forms at a pressure of 140 pounds to the square inch. In another part of the factory casting boxes are made to shape the outside of the bomb. Moulders' sand is brought all the way from Illinois and is stacked in a sand tower at the starting point of production. It is fed into various machines to form these cores and to make the moulds before the pouring of the metal.



WATCH YOUR TOES is good advice to this man tossing an empty bomb across the floor. Workers throw them end over end to various parts of the plant. They become adept at placing a bomb nose up or nose down in any specified spot.



ITS RUGGED EXTERIOR considerably smoothed, work of a similar nature has to be done on the interior. This worker wears goggles and breathing mask as he uses specially devised grinding wheels. Girth of the bomb is evident here.



WORKMEN ARE SEEN with the big bombs in the filling plant where they are filled with TNT. A coat of white primer paint has been put on outside.



HERE WE SEE the completed 500-pound bomb. An attractive plant worker stands beside it to give you an idea of the size of this missile of death.

—Photos—Public Information

In the Editor's Confidence

●The only reason we mention the foregoing is that it will explain to many production workers why certain phases of the particular story in which they are interested have been omitted.

But so far as general effect is concerned, we do feel that in the following pages we have succeeded in giving a pretty good bird's-eye view of our Industrial Front, and a broad, easily grasped idea of its many and colorful ramifications.

Most of the photographs which illustrate the various articles were taken by Nicholas Morant of the Bureau of Public Information, who, often under lighting conditions which would have daunted a less resourceful photographer, achieved striking results. His colleague,

Harry Rowed, is also represented, and Ronny Jaques who illustrated Edna Jaques' article, "We Are the Workers," on page seven. The two Jaques are not related. Edna, the western writer, who, through her Briercrest sketches and her verse and lectures, is known to many thousands of people throughout the Dominion, moved to Toronto a year or two ago. Filled with an urge to do something physical in the war effort, she went to work in the munitions factory she describes. In her spare time she studied for a civil service examination, took it, passed, and is now working in Ottawa.



Skilled workers and strange devices test chemicals produced for wartime tasks — explosives, flare signals, smoke screen.



Modern Vulcan. Tapping slag from steelworks' giant furnace.



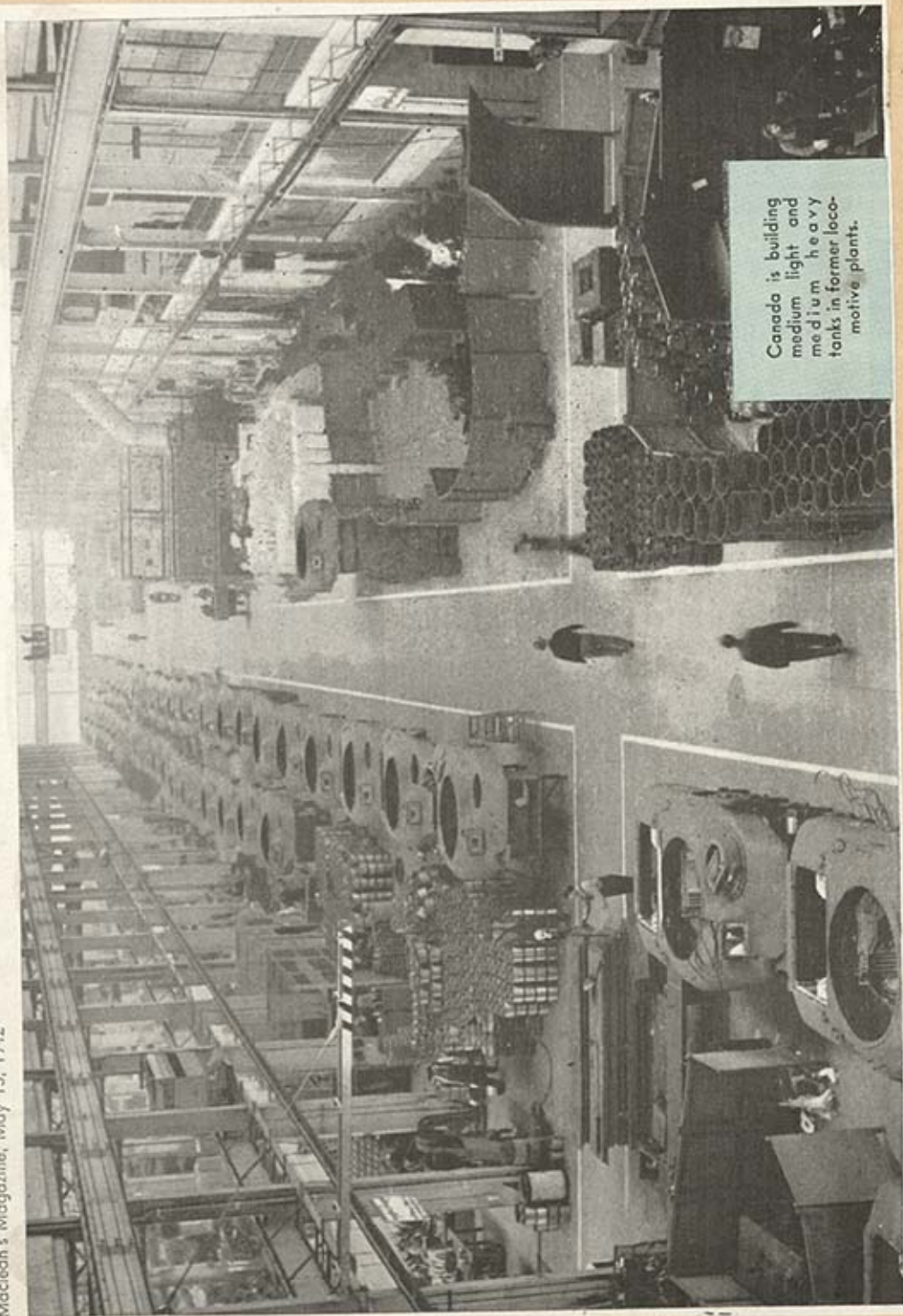
Tilly Aboud, born in Arabia, commands a squad of 15 girl riveters in a Montreal plant.



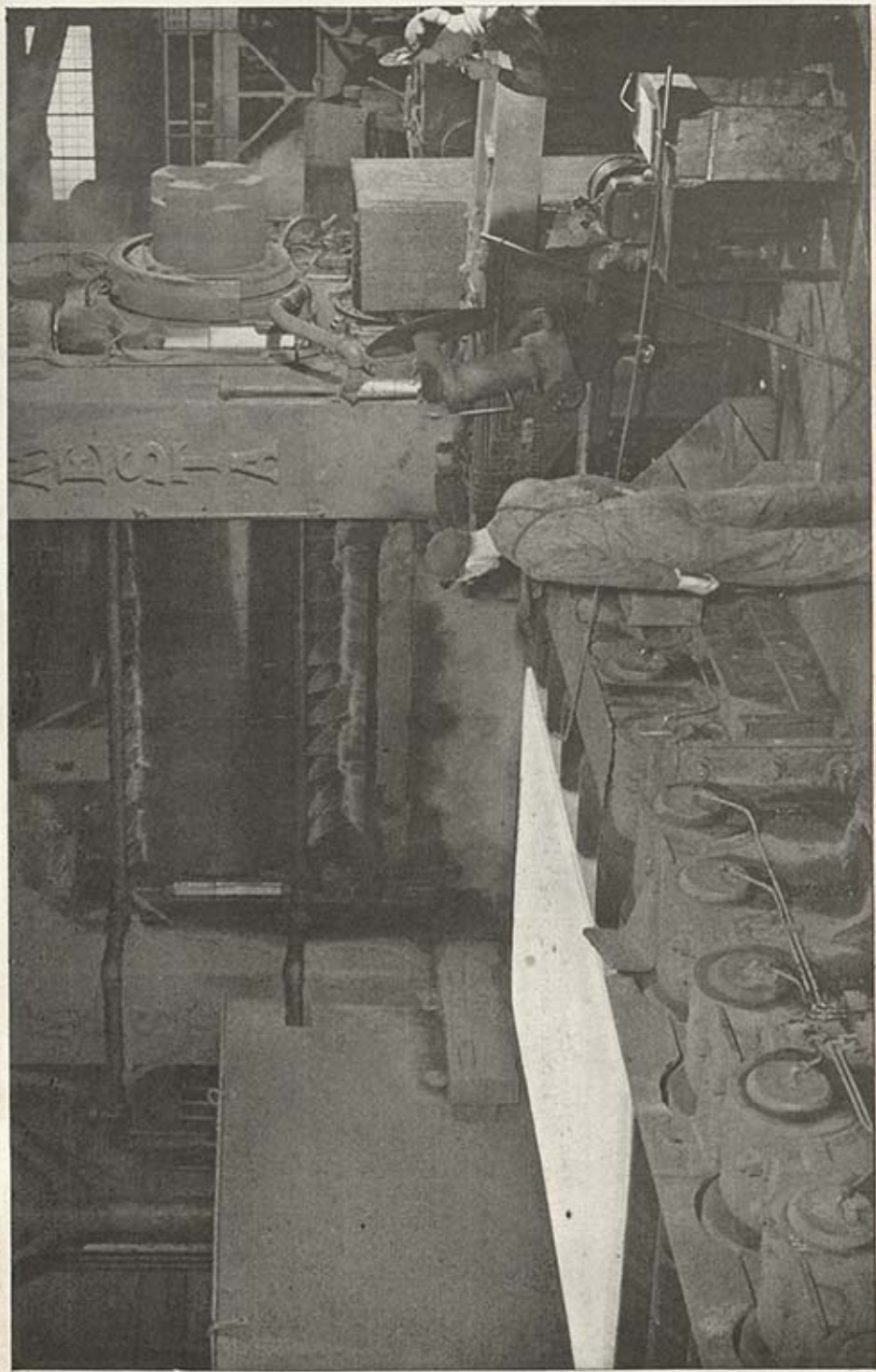
● Wings for the North American Harvard, single-engined advance trainer. Woman worker, lower right, is one of 4,500 who have learned new trades to help build planes.



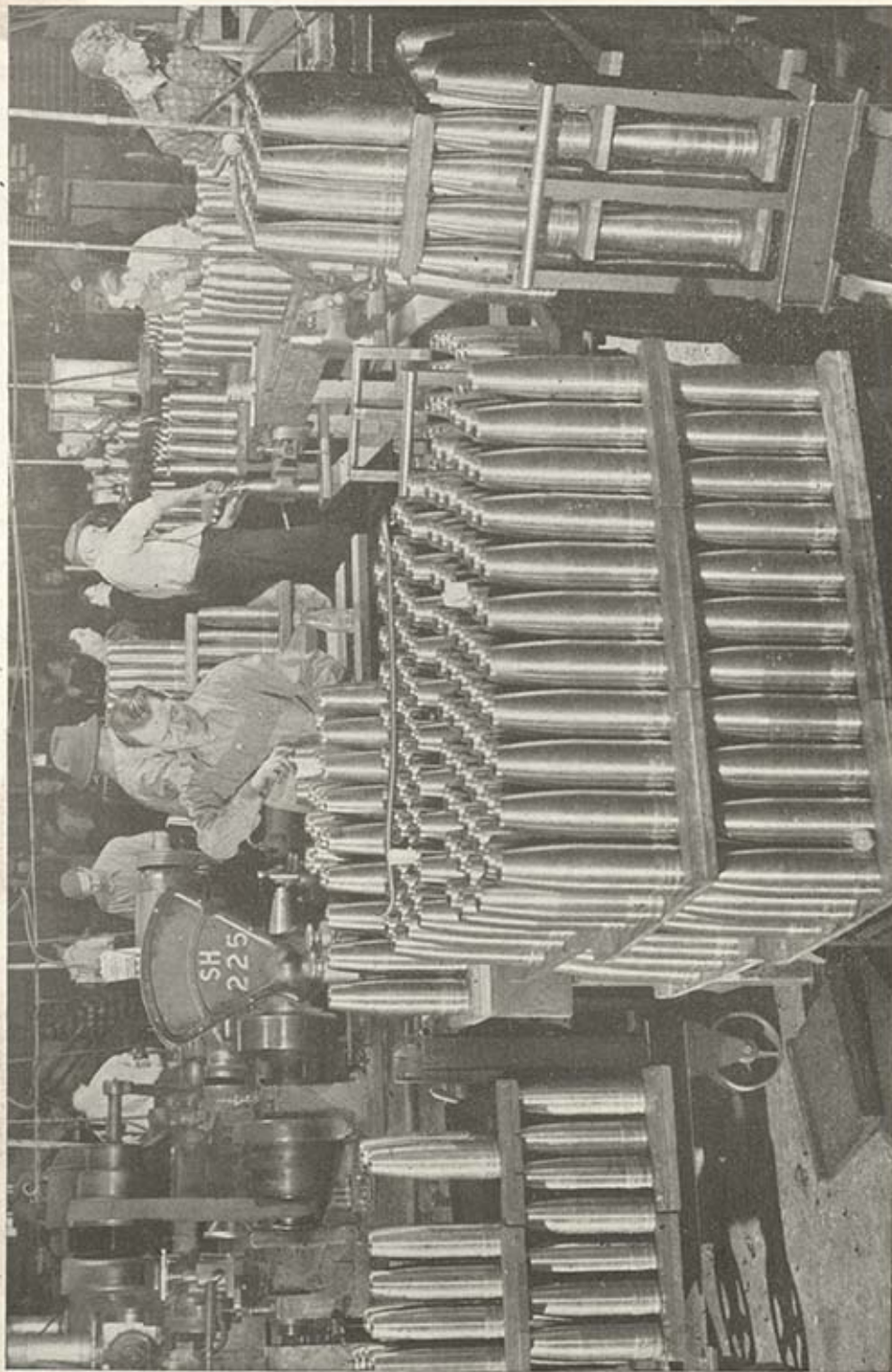
Final assembly line.
More than 18 firms
contribute parts.



Canada is building medium light and heavy tanks in former locomotive plants.

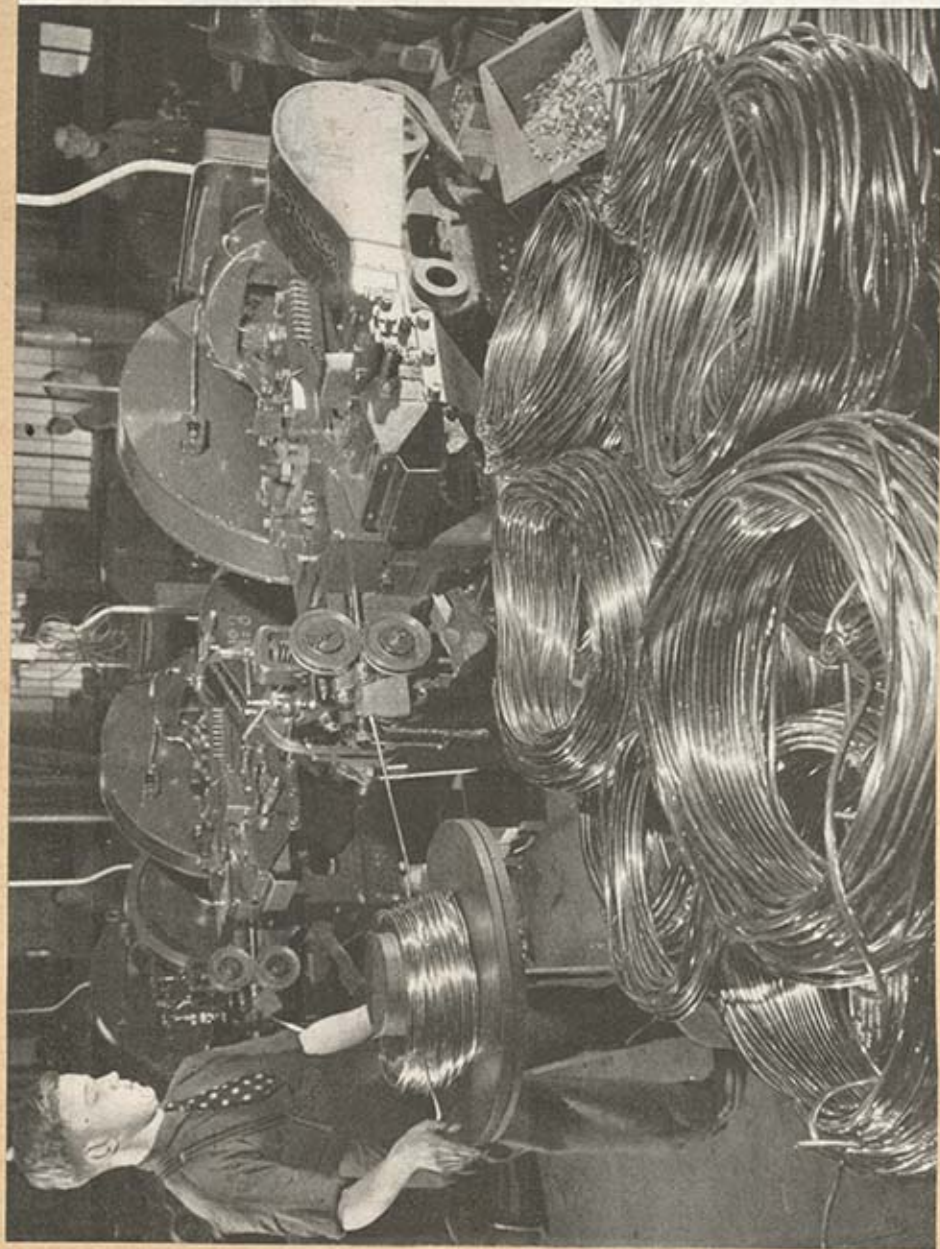


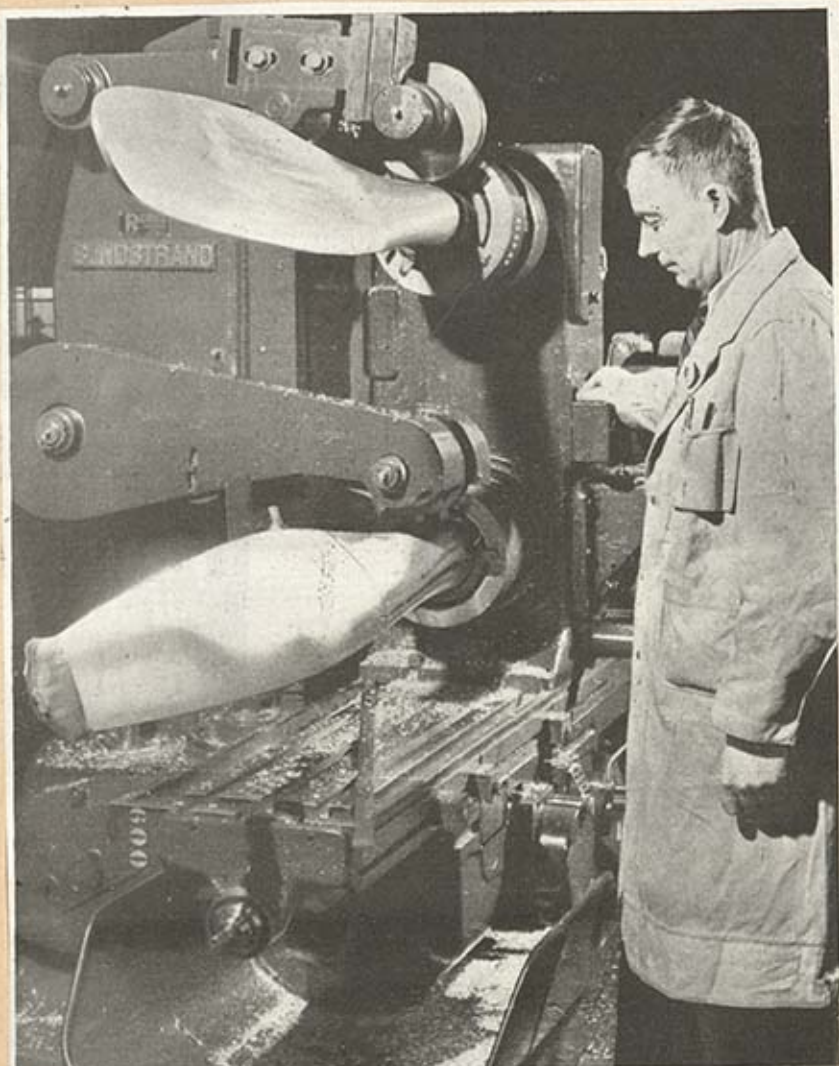
Steel for ships for the battle of the seas — squeezed white-hot from a giant rolling mill.



Shells by the million come from this bustling plant. These are 3.7 anti-aircraft shells in the finishing stage.

Bullets by the
mile. Feeding
coils of lead al-
loy to machine
that cuts slugs
for .303 bullets.



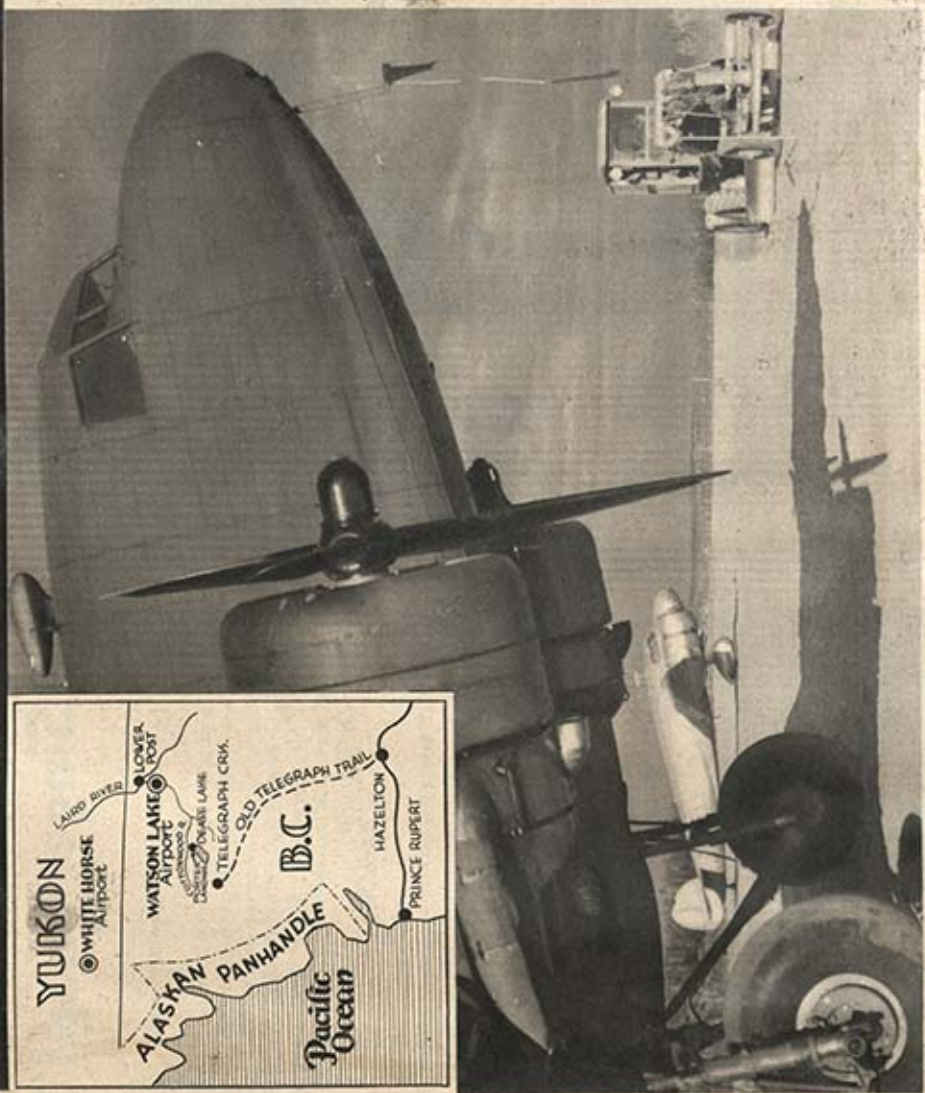


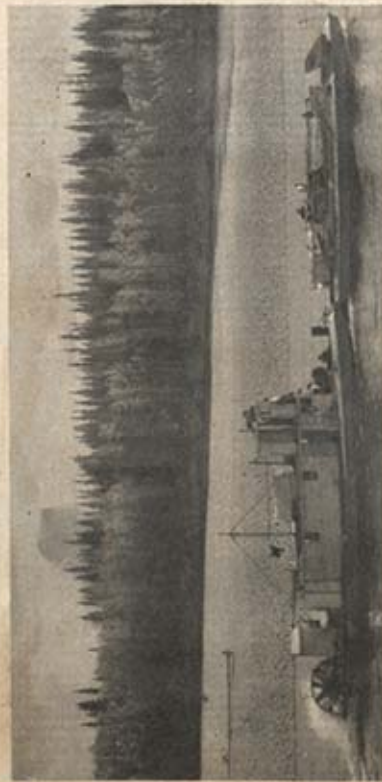
● Propeller takes shape on profiling lathe whose guiding arm (above) follows master pattern. Canada makes thousands a month for U. S.

KLONDYKE'S TRAIL OF '41 IS AN AIR ROUTE



RAPID PROGRESS is being made on the Canadian government's new air route to the Yukon which will cover in hours almost impossible trails it took veterans of the gold rush days or weeks to navigate. The work of bringing up supplies to the airport being built at Watson Lake on the road to White Horse has been highly dramatic. Heavy articles like generators for radio stations and tractors to handle planes at airports are brought down the Dease river from Telegraph Creek by Tahltan Indians in boats of one foot draught.





A SHALLOW-DRAUGHT stern-wheeler is pushing a barge load of airport supplies up the swift Liard river, one of the mountain-fed tributaries of the Mackenzie. The Indian pilot has to be just as expert as any Mississippi pilot. From Lower Post, trucks will take the load 30 miles to the air-base.



MEET DORIS BARKER, "the Dease Lake hasher," as she is called by boatmen who bring airport supplies from the Pacific coast side of the mountains by way of Telegraph Creek and Dease River. She's unmarried but, it is said, can control a dozen rough rivermen as easily as those coffee mugs.



LIKE MOST JOBS from the pyramids on, men get dirty and unshaven in the doing of it. So here, on the airway to Alaska, is the Watson Lake outdoor barbershop and one-man hand laundry at work. Doing the barbering is one Bob Goulet, well-known as an old-time barn dance orchestra leader from Winnipeg. Another worker washes shirts, while water heats in an oil tin. In the cold, Arctic winter, drying clothes will freeze as stiff as boards.



—Photos—Public Information

JEFF WILLIAMSON, who is assistant radio technician in the department of transport's radio aviation division, is as daring as a B.C. timber topper when he pauses to wave a greeting on his way up this 125-foot range tower. It will guide planes on the beam to the White Horse airport. Later these draughty radio towers will have lattice covering.



NO TILED BATHROOMS are handy and most of the men find it simpler to let beards flourish. Looking somewhat like Henry VIII in a play suit, this carpenter strips to the waist in air warmed by the Pacific's Japan current. He is finishing the administration building.



THIS SUB-ARCTIC MUSICAL in one of the big tents at Watson Lake airdrome in northern B.C., on the new air route to the Yukon, has to compete with the howl of the wolves in the nearby hills. When one is far away from home in the picturesque

wilds of this little travelled country music is an almost necessary and enjoyable interlude. These chaps are very lucky in having a talented guitarist and "fiddler" in their number. Whatever the tune the boys are playing it is obviously greatly enjoyed.

SIGNALMEN CONTROL NERVES IN THE MODERN ARMY

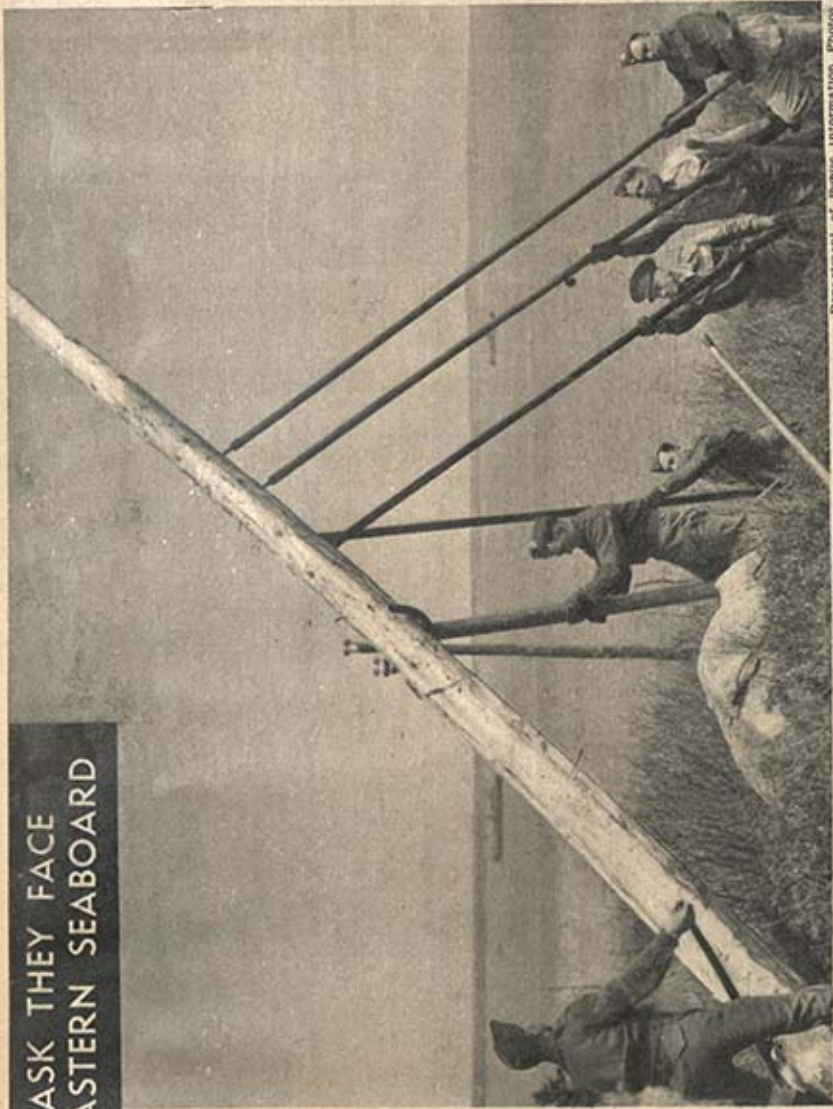


HERE ARE TWO MEN of the Royal Canadian Corps of Signals busy splicing a submarine cable. Signalmen, as distinct from signallers, are fully trained experts, competent in every branch of

signalling and in the installation of all necessary equipment—signallers are members of an infantry or artillery unit, who operate the less complicated equipment needed for contact work.

HERE IS THE TASK THEY FACE ON CANADA'S EASTERN SEABOARD

BEHIND the intricate set of defences that stand ready to repel an invader along Canada's east coast lies the vast network of communications that is in the capable hands of the Royal Canadian Corps of Signals. Without an efficient signal corps a modern army would be crippled as badly as if its artillery ran out of ammunition. This is particularly true of the army on guard in the maritimes, for Major-General W. H. P. Elkins' Atlantic command is unique in being a vast sprawl of territory with much isolated coastline. The Signals' job is therefore a difficult one—in addition, they must effect the co-ordination of navy and air force as well as army. But they are equal to it—behind each man are many months of intensive and highly specialized training, as well as, in many cases, years of experience in civilian life. They deserve their high reputation.



—Department of Public Information Photo

A SIGNALS' WORK PARTY raises a pole in rough country as part of a new telephone line. While these men often work "behind the scenes," maintenance of telephone and other lines in battle areas sometimes brings them under enemy fire. The old flag system has lost much of its importance.



THE UNIQUE tactical problems in the Atlantic command give the signalman's skill many exacting tests. Here is a khaki-clad lineman engaged on maintenance work. He probably learned to climb on a dummy pole.



LINESMEN IN THE SIGNALS are reported to be the busiest men in the corps. In one area alone, there is a telephone system extensive enough for a town of 5,000 people. It enables the commander to be linked by wire to anyone at any instant with every gun, anti-aircraft battery and infantry post in the area.



IN THE MONTHS of rigorous training which a signalman undergoes before he is ready for active service, he learns to lay and repair communication lines, operate both a field telephone and a field switchboard, operate a signal lamp, utilize the Morse code, connect intricate circuits, strip down, repair and reassemble any piece of equipment. In short, he must know the whole theory and practice of telephonic, wireless, radio and visual signals. And he must have a working knowledge of dispatch riding. This man is checking the filament of a 1,000-watt transmitting tube.



A FORMER RADIO BUG, this signalman found himself right at home when they put him to testing radio equipment. An instance of the importance of communications is, the great central control room of the eastern command of the R.C.A.F., where weather, service and reconnaissance reports go in and out every day. Its location, of course, is a matter of the strictest secrecy. It enables officers of the command to know where every plane of the R.C.A.F. is every moment.

WARTIME WOOL RAISED IN B.C.



THERE'S WOOL in them thar hills and wool is a vital necessity during wartime in the making of warm clothing for civilians as well as the nation's defenders. Here are some of the sheep from Bob Heron's ranch south of Kamloops, British Columbia. It's evening as the lengthening shadows show. These are ewes which are being herded from grazing lands toward large pens in which they will be bedded down and carefully guarded at night.



AUSTRALIAN - BORN Harry Day fills in his report at Toronto's De Havilland plant.



Canada Must Borrow FOR VICTORY

This Book Will Show You Why



Canada Must Have Patrol-Boats

Scores of these boats keep constant vigil along our thousands of miles of coastline.



Canada Must Have Anti-Aircraft Ears

These, too, are essential to the detection of an approaching enemy.



Canada Must Train Young Technicians

All over the Dominion, technical schools are now in operation for the training of young men and women for producing war equipment.



Canada Must Have Anti-Aircraft Guns

They are vital to our national defence.



Canada Must Have Lumber

By billions of feet. Canada's and the United Kingdom's requirements are keeping the lumber mills operating to full capacity from coast to coast.



Finishing Touches

The comparison of man and tank tread gives a good idea of the rugged strength of the vehicle.

ON PEARL HARBOR

'BELOW'. THEY ARE 71 FEET LONG, 2 FEET WIDE, HAVE A TURNING RANGE OF ABOUT 400 YARDS, CARRY TWO TORPEDOES AND 300 LBS. OF EXPLOSIVE ASTERN WHICH CAN BE USED, IF NECESSARY, AS A MINE.

TINY TWO-MAN Jap submarine near Diamond Head after attack on Pearl Harbor. Although only 41 feet long it carries two torpedoes.



3 JAN. 1942

PHOTO NEWS

The Standard

10 CENTS

VANCOUVER ON ALERT

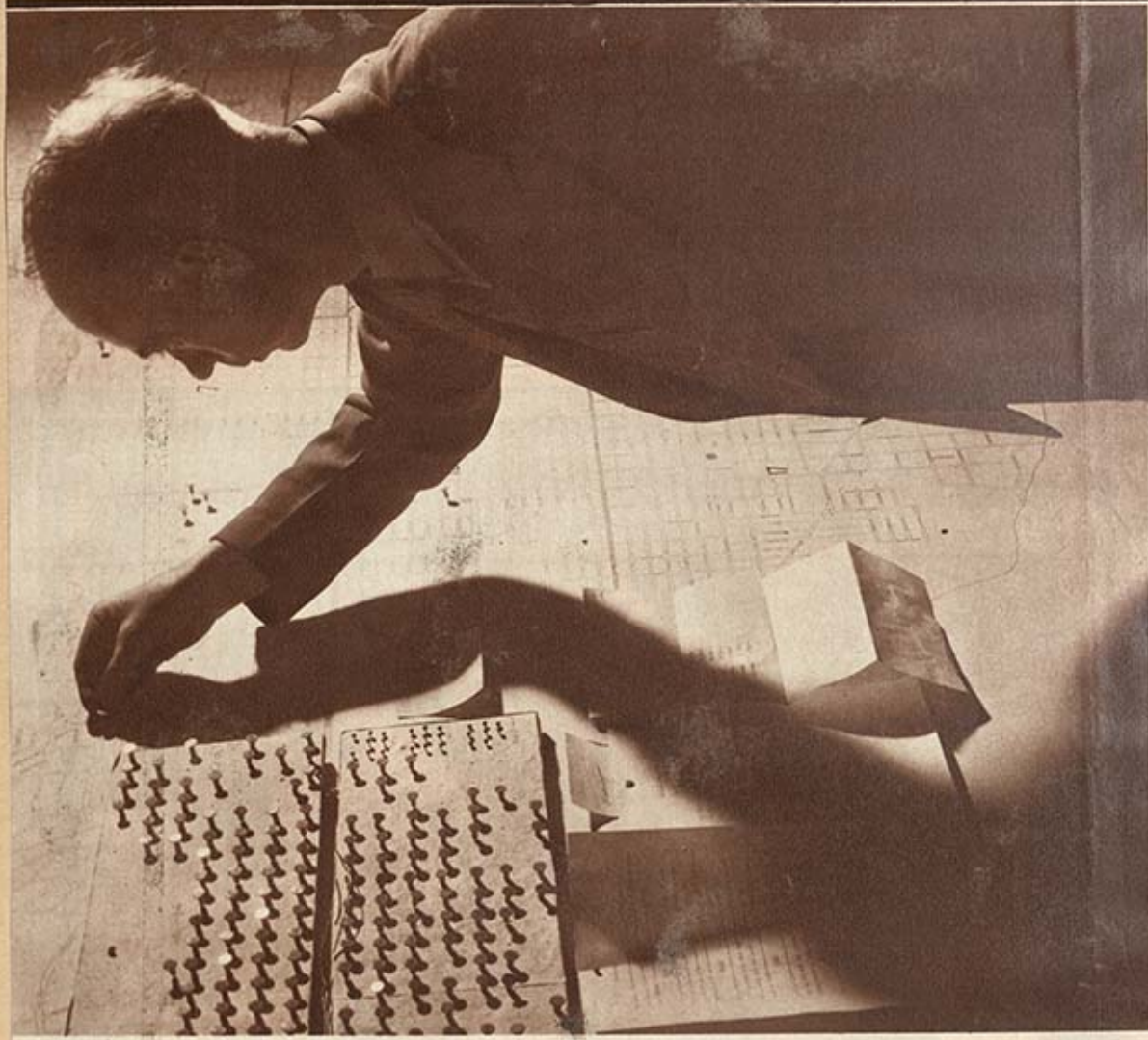
By GERALD CLARK

Special to The Standard

BEST INDICATION that Vancouverites are taking the war in the Pacific seriously is the fact that a few weeks ago there were 2,000 ARP workers in this city and today there are more than 10,000. That number is mounting daily as citizens sign up as volunteer workers.

For two years the ARP people here got scant attention from the public. The war seemed far away. Then came the swift Japanese attack and the wail of air raid sirens. Vancouverites admit now that early blackouts would have been total failures if it hadn't been for that trained two thousand. On hand as soon as the first warning sounded they knew exactly what to do. They guided civilians who stumbled in the darkness, patrolled the streets looking for chinks of light. They had to bang on many a door to remind careless householders, whose ground floor rooms were black, that light mounts a staircase, will shine from upstairs windows unless those are covered too.

But there is more to ARP work than just keeping a city dark. Tin-helmeted volunteers are on the alert 24 hours a day ready to douse incendiaries, fight gas, give first aid, care for the homeless and calm an excited population. For this training they gather in schools and public buildings to hear talks by army officers and other authorities on civilian defence. If bombs fall Vancouver will be ready.



CONTROL OFFICER A. T. Morrison of Vancouver's ARP places different colored markers on map of city to show the type of aid needed. Co-ordinator of the entire system including air raid wardens, auxiliary firemen, first aid squads and police is Lieut. Colonel Guy Kirkpatrick, D.S.O.



VANCOUVER WOMEN. members of the Canadian Women's Training Corps in the ARP control room. Reports from wardens flood in over these phones, are relayed to service directors who order the required aid. Bells would be inaudible amid sirens and bombs so phones signal with lights.



PUBLIC INFORMATION OFFICE

NERVE CENTRE of the ARP is the control room in Vancouver's city hall. Volunteer workers under Control Officer A. T. Morrison, left, watch markers on map indicating type of aid and where needed. Each has direct line to own department: decontamination, police, fire force, ambulance force.



AUTO'S HEADLIGHTS are painted wrong way—slit should be cut horizontal to keep light down. Street car light is also covered.



THOUGH FIRST RUSH to buy blackout material is over Vancouver housewives still are laying in stocks for future. Here black oilcloth is changing hands.



ONE HALF HOUR, after the 5.30 blackout. Burrard Street in Vancouver is deserted.



VANCOUVER GIRLS are replacing boys as telegraph messengers. Emma Gable and Pearl Milne check a bike. They earn \$10 per week.

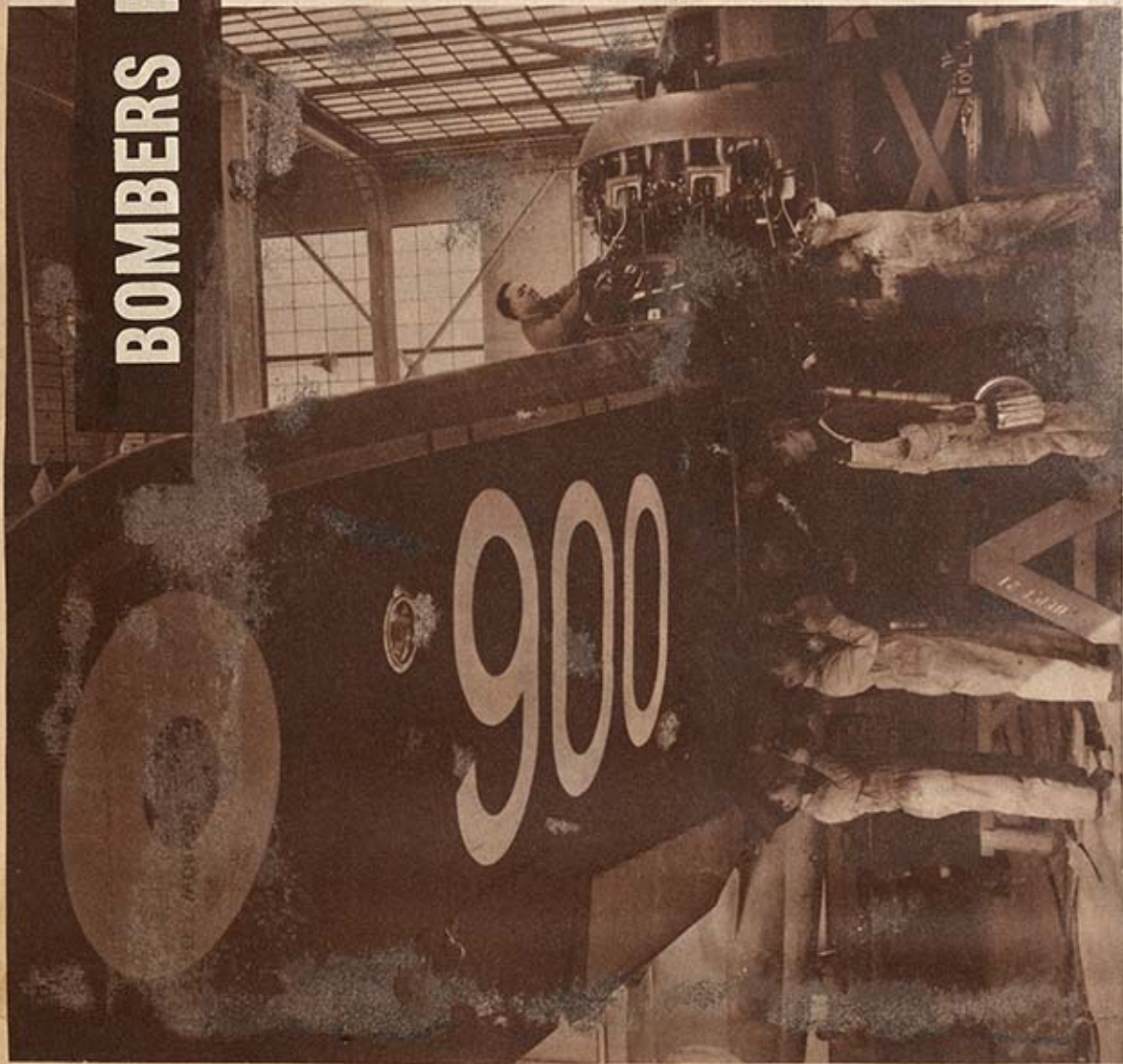


ALL GAS MAINS must be turned off when the air raid siren sounds. Here a Vancouver woman is making sure the tap doesn't stick when the time comes.



AFTER three nights of darkness Vancouver moviegoers found this a welcome sign.

BOMBERS FOR CANADA



MORE THAN 80,000 separate pieces, apart from bolts and rivets, go into a Bolingbroke Sub assemblies are carried out in fifty departments at Fairchild Aircraft. Here, after expert workmanship, a plane nears completion. Soon it will be moved into the "flight shed."

CAMOUFLAGED, sleek and formidable, Bristol Bolingbroke bomber-fighters are coming from assembly lines of the Fairchild Aircraft plant near Montreal, ready to take their place in Canada's air defence forces. Increasingly in the news, the all-metal craft have proved their high value through their counterparts, the English-made "long nosed" Blenheim which now are ranging over German-held territory, smashing at invasion ports.

Carrying a crew of four, the Bolingbroke is a twin-engine, mid-wing monoplane which costs about \$100,000. It is protected by three machine guns—one fixed to fire forward and two on a power-operated turret.

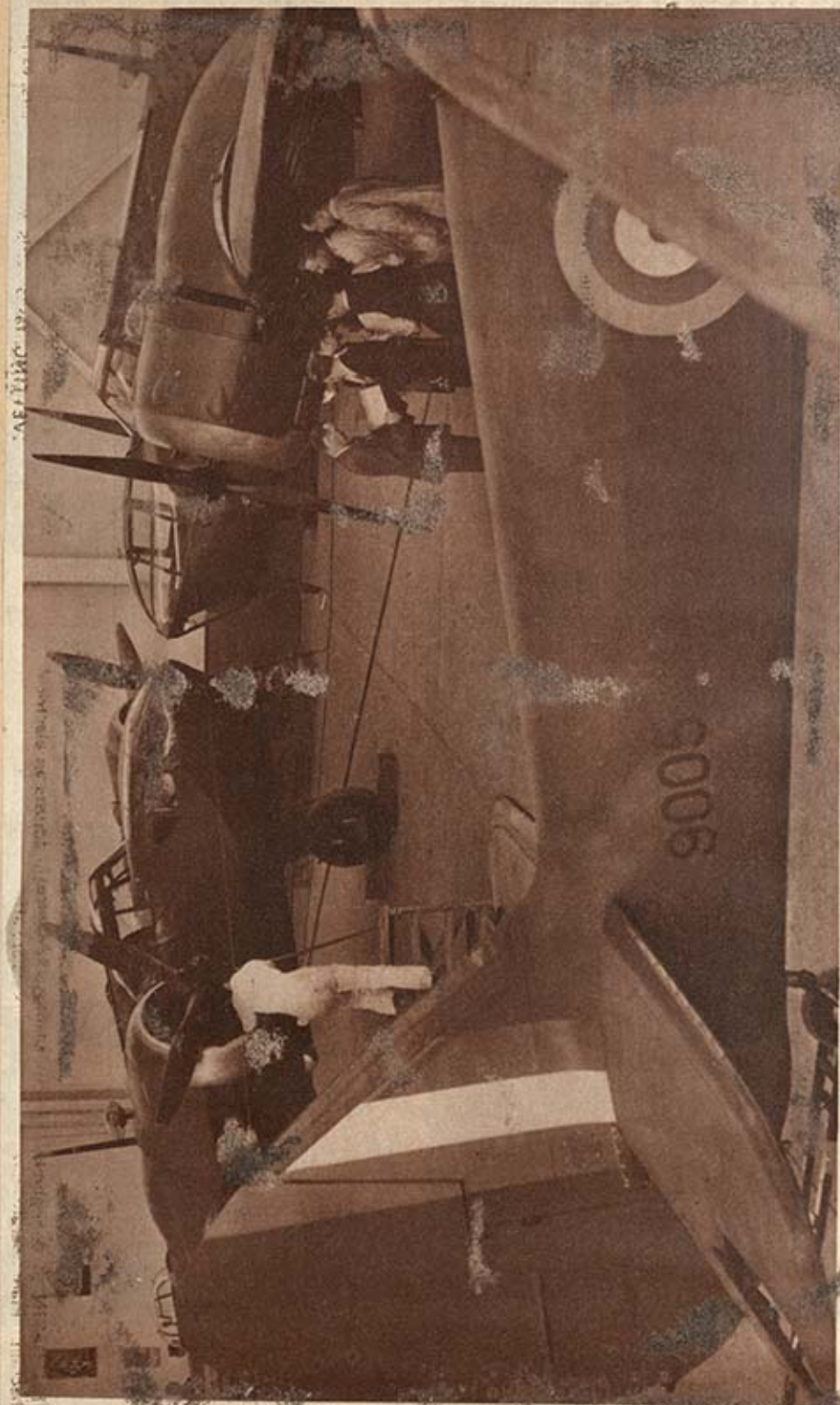
Compared with the British-built Hurricane and the American-built Hellcat, the Bolingbroke's bomb load of 2,000 pounds and range of 2,000 miles are small. But because of its speed of 295 m.p.h., and its extreme manoeuvrability, the ship is considered in the fighter class. It serves for day and night bombing, escort fighting, reconnaissance and patrol duty.

To meet war demands the Fairchild plant has expanded steadily. Today it employs fifteen times the personnel of two years ago. Shortage of skilled labor, one of the main problems, was partly overcome by the establishment of a training school for girls. Now, though greatly outnumbered by the men about them, they are able to match them in skill and speed.

More Pictures on Next Page.



EXPERT WORKERS McWilliams and Williams put finishing touches to non-shatterable upper half of cockpit. Of plastic, it is more transparent than glass. Note photo-badge each employee wears.



READY FOR TEST runs the twin-motored craft await examination in the "flight" shed. Company and Government inspectors maintain a careful check at all stages. Sleepers in speed and styling put this plane through a bomber into the fighter class. Production is being stepped up fast.



INSIDE CABIN of Boeingbroke. Marcel Mailloux of Montreal adjusts an electrical connection. Plant operates day and night. Workers are affiliated with the A. F. of L.



ON SUB ASSEMBLY line. Winnifred West, 18, and Rose Maher, 20, place together metal spars of tail plane as craftsman Frederick Martin looks on.



ON RIVETTING tasks, girls work in pairs, as Jane Lamarche, 25, and Haroldyne Brereton, 24, show.



ONE OF MANY women engaged in war aircraft work, 18-year-old Audrey Graham has task of separating bolts and rivets by size and length. Fairchild Aircraft train its own women workers. On a sixty-hour week, they start at about twenty-five dollars a week, get increased pay according to type of skilled labor they progress to.

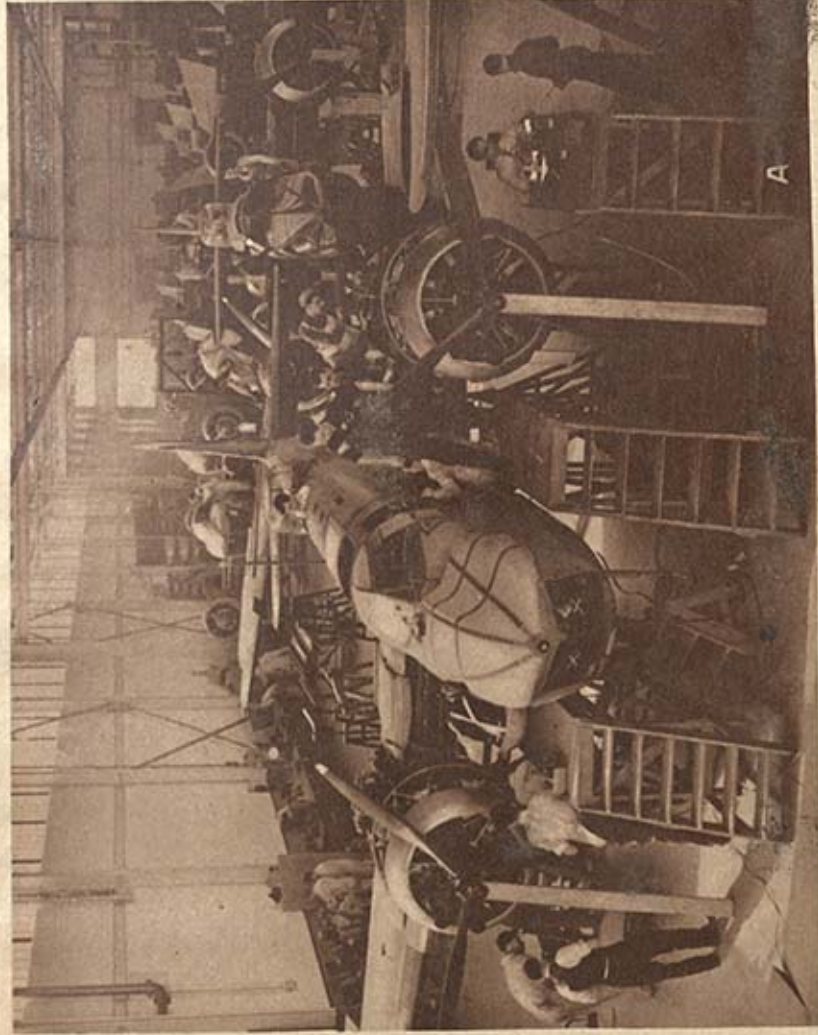
RECENT news photo, apparently issued with the approbation of the Dominion Government, depicts a young woman contributing to Canada's "war effort"—at 25 bucks a week—by separating the "different sizes of nuts and bolts" from a pile in front of her. Windsorites who work in machine shops should get a bit of a giggle out of that. Or, maybe, a shiver.

IN what machine shop do nuts and bolts arrive with sizes all mixed up? Who mixes the nuts and bolts so that it's necessary to pay out good money to unmix 'em? Legitimate questions, in view of the fact that the Canadian taxpayers and war loan contributors are evidently footing the bill.

L'AVIONNERIE FAIRCHILD

L'ACTIVITE la plus fébrile bourdonne à l'avionnerie Fairchild, près de Montréal. On y fabrique des avions de bombardement "Bolingbroke" qui sont ensuite expédiés en Angleterre. (photo A)

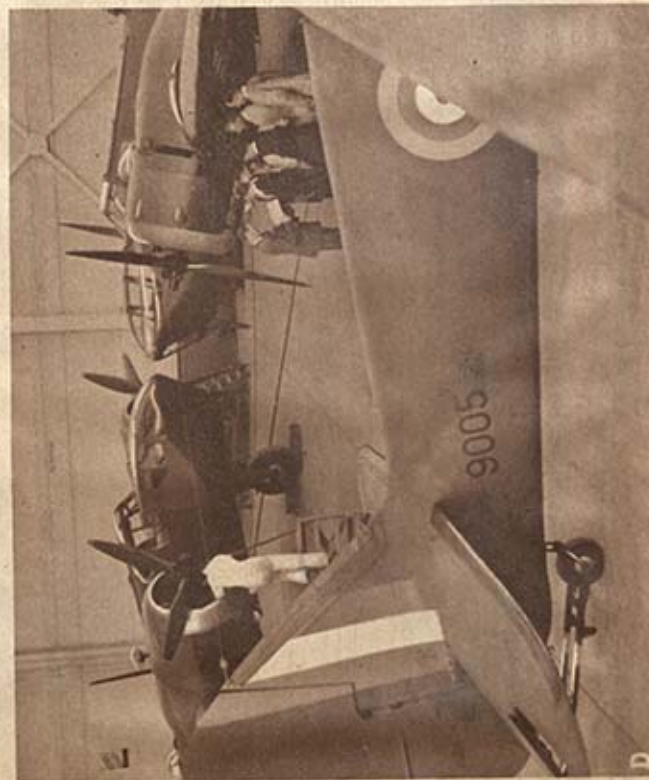
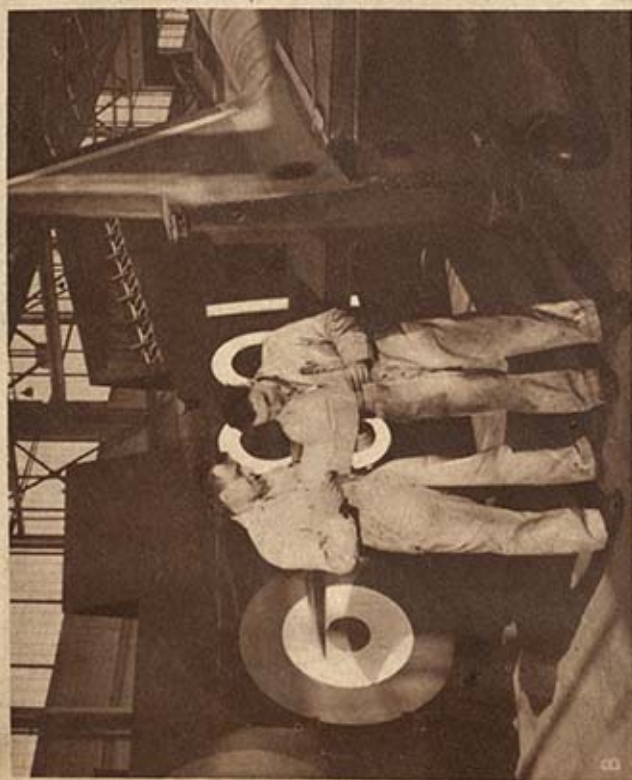
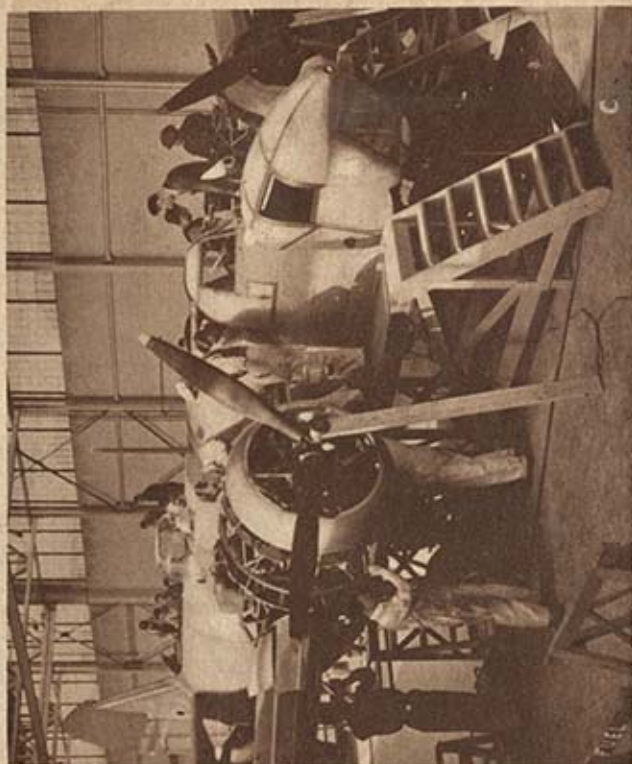
Les plans et devis d'un bombardier Bolingbroke sont le résultat de calculs compliqués et très précis. On voit ici deux ouvriers des usines Fairchild en train de consulter un bleu avant d'adapter une pièce au gouvernail d'un bombardier. (photo B)



L'E Canada est à la tête d'une œuvre d'aviationnerie, par suite des exigences de la guerre. (photo C)

Bombardiers finis, qui seront expédiés outre-Atlantique après des envolées d'essai. (photo D)

Atelier de montage où l'on fabrique des bombardiers Bolingbroke, la réplique canadienne des bombardiers Blenheim fabriqués en Angleterre. (photo E)



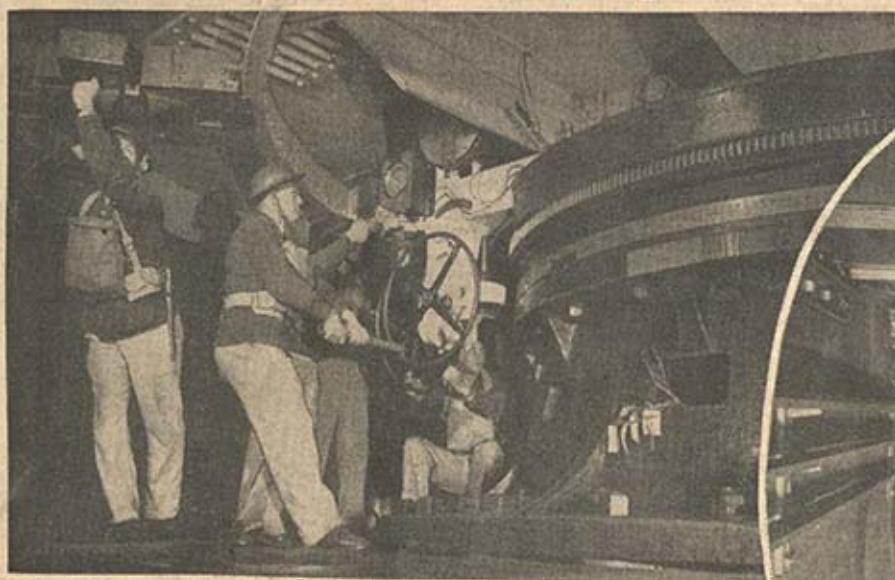


GERMAN PRISONERS of war arriving from Great Britain, among them members of Goering's vaunted Luftwaffe brought down in combat over England, are searched by guards preparing to entrain.



SHARP EYES watch Nazi prisoners. Guard armed with rifle and revolver keeps a sharp lookout as German prisoners of war disembark from a prison ship at a Canadian port, bound for internment camps.

West Coast Guardians Ready!



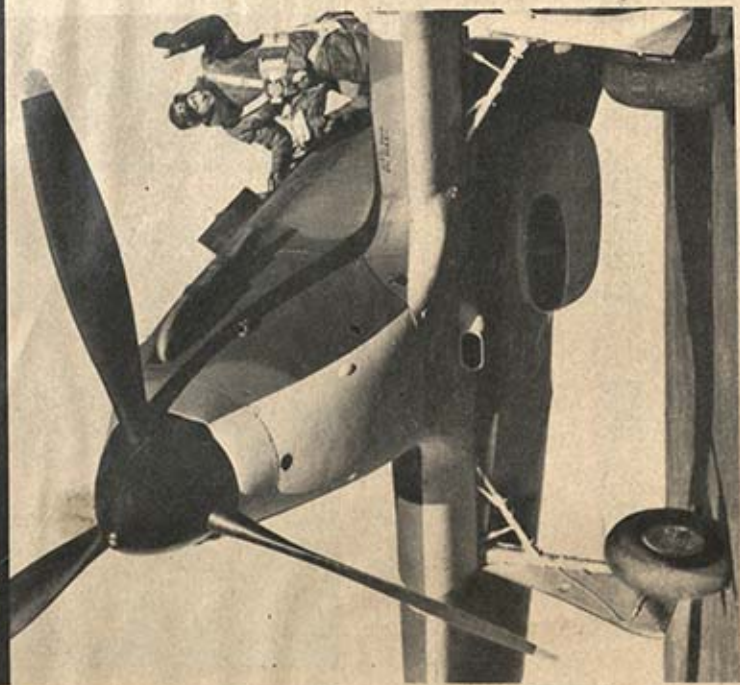
Canadian artillerymen at a big gun post, top left. At right part of the defences hewn from solid rock.



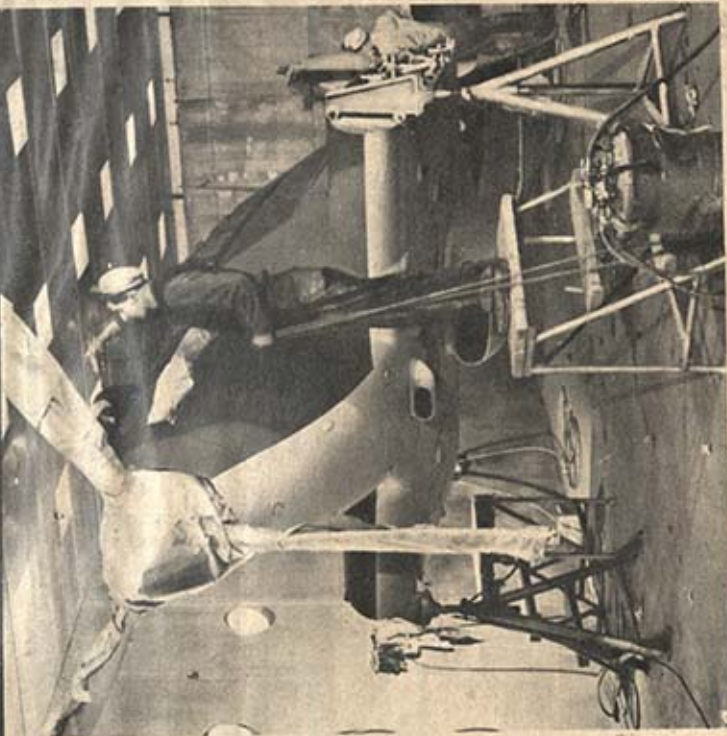
Big shells stored far underground are held ready to serve the monster below looking across the Pacific.



BRITAIN WELCOMES CANADIAN-BUILT HURRICANES



TEST PILOT at the Hurricane plant is H. V. "Shorty" Hatton, shown here climbing into a machine that is just fresh off the production line. After the test, it goes to England



A NEW HURRICANE receives its camouflage in the paint shop of the plant at Fort William. Official specifications call for a coat of "duck egg, greenish-blue" paint on the under-surface of the plane

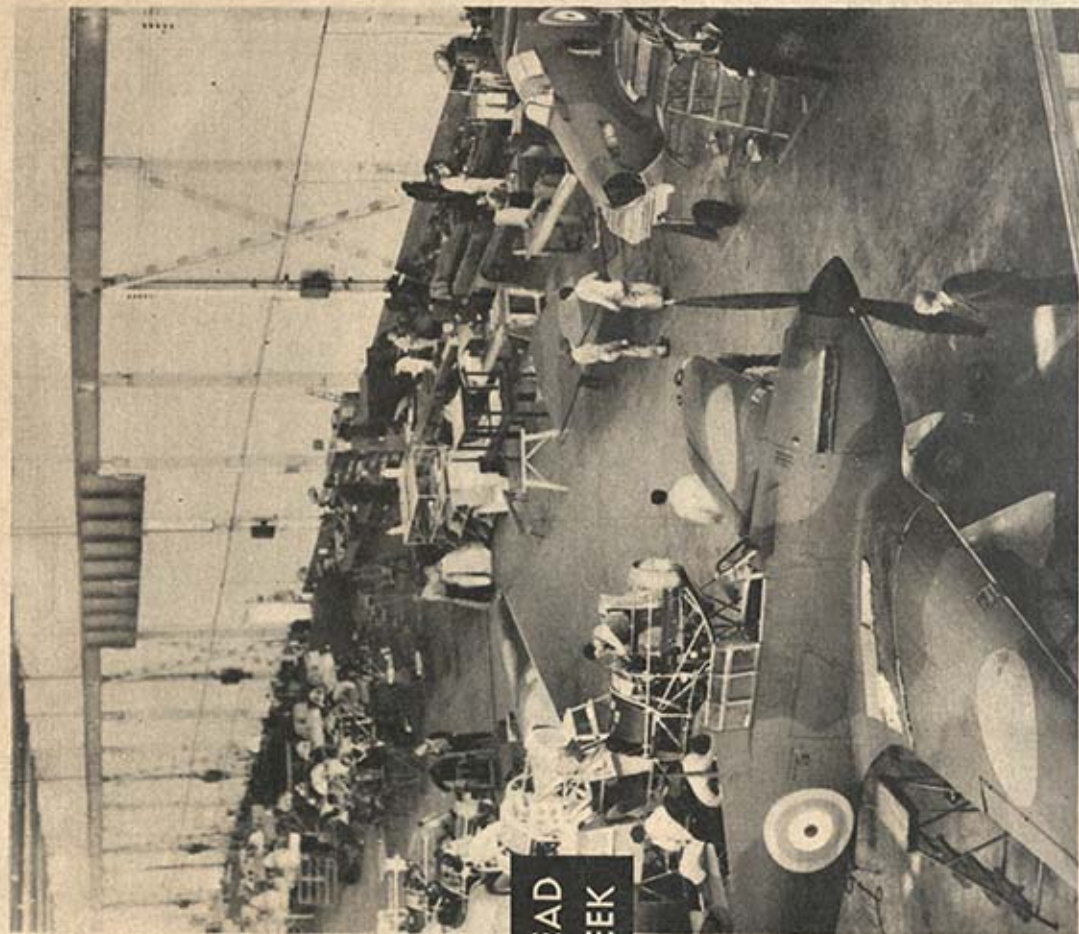


PILOT HATTON records the machine's action

VAST FACTORY AT LAKEHEAD TO TURN OUT 25 EACH WEEK

THE ROAD MAY BE LONG, but victory rests at its end," stated Hon. C. D. Howe, Canada's minister of munitions and supply, in a recent review of the extent to which the dominion's factories are turning out munitions. An important factor in this effort is the production of Hurricane fighter planes—the great little machines that are the weapons of Britain's aerial shock troops. A huge factory at Fort William is now turning out 15 Hurricanes a week, and by midsummer the number will be 25 a week, when production of this type of plane is expected to be completed. The plant at Fort William, according to the minister, is the largest airplane factory in Canada. He also said that Canada is now turning out 45 aircraft of all types each week. The Hurricane's full title is the Hawker Hurricane Mark I. It is a single-seater monoplane fighter, with top speed about 355 m.p.h. It was originally fitted with eight Browning machine-guns, four in each wing, but later models have 12. Pilot is protected by front and back armor

—Photos from Department of Public Information



HERE IS PART of the assembly line in the Hurricane plant. When completed, each machine is equipped with a special test flight engine, which is removed before it is finally shipped to England. There a new engine will be supplied from a British factory



THIS IS WORK in progress on the final assembly of tail planes at the Hurricane plant, Fort William and Port Arthur technical schools trained hundreds of students in special war classes to take care of this one factory



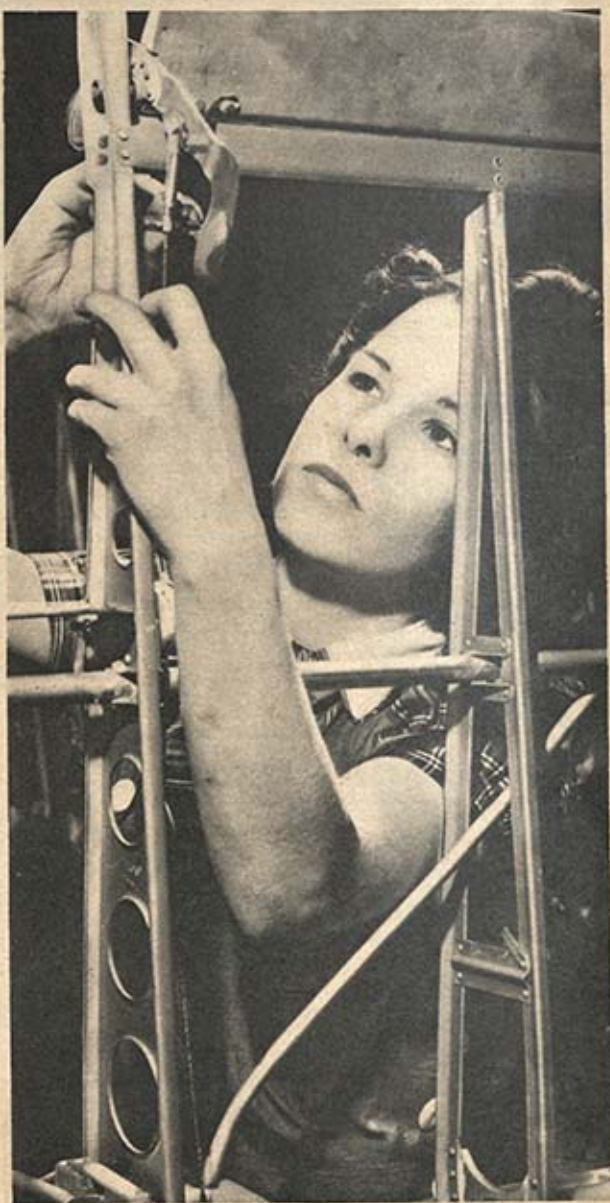
FOR OIL LINES and other equipment yards of different tubings are used. The workman at the right is listening as a roller bearing goes through a section of tubing. If the bearing sticks, the piece of tubing is rejected



THE NEW PUNCTURE-PROOF gasoline tanks that are installed in Canadian Hurricanes are specially covered with layers of rubber brought to Canada from British Malaya. Here are two workmen busy installing one of the layers



AS IN MANY other aircraft plants in Canada, women are taking an increasingly important place in the workers' line. This happy miss is working as a welder at the Fort William Hurricane plant, and is concentrating here on a gasoline tank. On certain jobs women are reported better than men



THE HURRICANE PLANT, it is reported, employs one-third of the aircraft industry employees in the Dominion. Here is a young woman worker busy assembling a rudder section

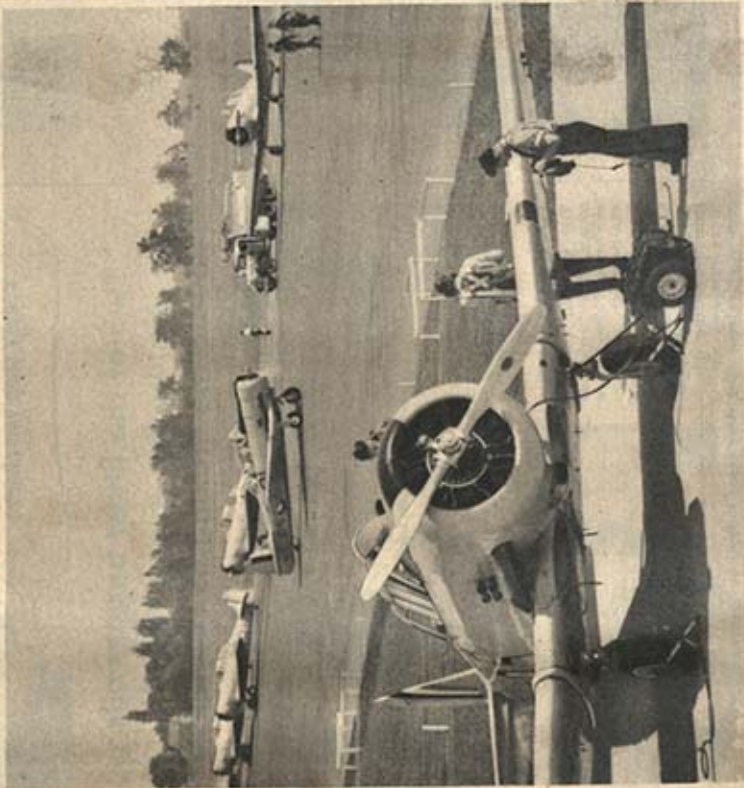


SOME IDEA of the hand-work required in the manufacture of a modern fighting plane may be gained from this general view of the sheet metal workers' benches in the Hurricane plant at the head

of the lakes. Both of the fighter squadrons of the R.C.A.F. now in action in Britain are equipped with Canadian-made Hurricanes. They have an edge over the Nazi fighters in speed and flexibility

UPLANDS TRAINS FIGHTER PILOTS

A S BUSTLING AS A BEE'S HIVE is Uplands, near Ottawa, one of the large R.C.A.F. advanced service training schools, where student pilots get the final flying instruction before going overseas. Planes wing in and out almost continuously just like bees swarming, and the school's landings and take-offs total over a thousand every day. Fledglings in an advanced school such as this spend seven weeks with an intermediate training squadron and five weeks in an advanced squadron, flying actual service types of aircraft. Then they're ready for the great overseas adventure—that is, all but for a final two weeks at a bombing and gunnery school to learn the science of aiming a bomb squarely for the time when they are over a German railway station; and also how to develop a deadly aim with the machine-guns mounted in the wings. Then they'll be ready to spit death into the vitals of a Messerschmitt or Dornier or Junkers plane.





MOST SQUADRONS have an identifying design, usually geometrical, painted on the wheels of its aircraft.

The Star Weekly, Toronto, October 4, 1941



YOUNG BRITISHER personifies Hitler, but he is quickly put in his place by another R.A.F. member at Uplands.



THROUGH THEIR PACES, at the hands of skilled instructors, go young airmen. Here, Flight Lieut. G. C. Draper, in charge of Uplands ground school training, and class examine a deviascope, used in navigational studies. Strung above are models of British and enemy aircraft, for identification.



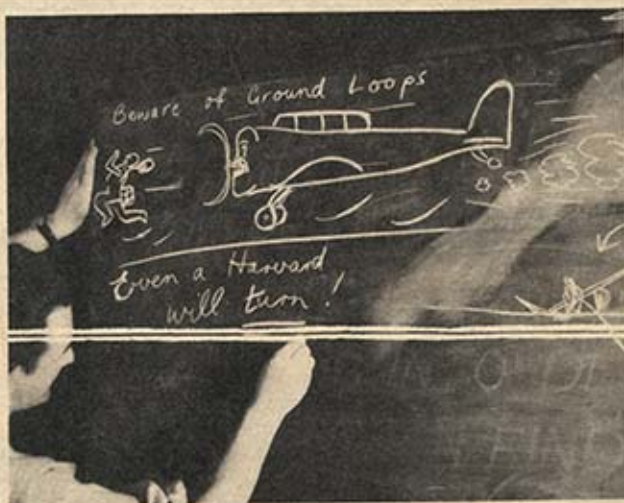
BACK TO SCHOOL, but a different kind, is the step hundreds of recruits are taking now in the R.C.A.F. Training school at Uplands, learning to become fighter pilots and navigators. Learning to fly in tight formation must be mastered. More than 1,000 take-offs and landings are made daily.



HOW IS YOUR I.Q.? There's a test going on here, but it's probably not the sort suggested by the plane's initials. Carrying books and instruments, the recruits march daily to classrooms while formations of speeding Harvard training craft roar overhead in the final stages of the flying course.



DAILY hundreds of recruits in the Uplands training school march off to class, books under their arms, while trainers fly overhead.



REMINISCENT of earlier days in the lives of the budding airmen are these cartoons on the classroom blackboard, that cleverly combine humor with stern warnings.

