

Frontier Defense Resources

Here is a summary of resources of the Niagara Frontier for the National Defense Program:

Electric Power

The Niagara Frontier has a rated output capacity of 1,031,025 kilowatts, making it one of the foremost centers in electric power availability.

Optical Instruments

Facilities for producing a wide variety of instruments, from field glasses and telescopes to range finders and fire control instruments.

Machine Shops

Makes of revolutionary production tools for speeding output in aircraft and other industries.

Radio

At least two big factories can be converted into the manufacture of Army and Navy communication equipment.

Automotive

An auto and parts industry with \$100,-000,000 annual output, which could be converted partly to defense production.

Waterfront

Miles of harbor shoreline ideally situated for shipbuilding plants.

Labor

A vast pool of experienced, plus forward-looking employe training facilities.

Transportation

One of the nation's most extensive highway, marine and rail networks.

Diversification

Scores of plants suited to make multi-fold items of defense—brass cartridge parts, cartridge clips, bombs, crystallizers and flakers for the manufacture of powder and explosives, machine gun parts, marine

engines, propulsion mechanisms for Navy vessels, Army cots, coats, uniforms.

Steel

Forty-three open hearth furnaces, able to make 4,000,000 tons a year—the equivalent of 130 battleships or 500 super-tanks.

Iron

Thirteen blast furnaces, with an annual capacity of 2,971,000 net tons. Facilities are being expanded.

Aircraft

Early in 1941, Buffalo airplane plants will have more than 2,000,000 square feet of factory producing space, including the new Curtiss buildings near the airport. Production of 150 planes weekly due in 1941 or 1942.

Phenol

The world's largest phenol plant, in North Tonawanda, can produce 15,000,000 pounds a year. Phenol could be used in making explosives.

Toluol

By-product of Buffalo's 552 coke ovens, used in making TNT, could be produced at the rate of 1,000,000 pounds annually. Coke oven facilities are being expanded.

Parachutes

One of the world's principal plants, able to produce 300 chutes weekly.

Synthetics

Phenolic resin plastic molding compounds, alkyd resins, phthalic anhydrides and other important substances going into synthetic materials are produced in large quantities by the chemical industry here.

Shells and Ordnance

Foundries, steel bar mills and car manufacturing plants producing shells and shell rounds. Machine gun plants under construction.

DEFENSE ORDERS KEEP FRONTIER BUSY

Orders for approximately \$220,000,000 worth of national defense materials and armaments for the U. S. Army and Navy, and Canadian and British Governments are being filled by Buffalo and Niagara Frontier industries. Of this amount about \$147,-000,000 represents direct orders from the Army and Navy, of which aircraft and plane parts total \$133,000,000.

At least 72 companies either have booked Government orders or are sub-contractors for defense work. In the construction field the John W. Cowper Company has orders for \$23,000,000 worth of work for the Army and industry including \$15,-000,000 for the Great Bend cantonment near Carthage, N. Y.

While official figures of the National Defense Advisory Commission place Buffalo 18th on the list of United States cities from the viewpoint of direct defense orders, actually the Niagara Frontier area occupies a far more important position because so many industries are working on sub-contracts. Buffalo's giant steel mills, for instance, have few, if any, direct orders, yet a large part of their output is used to feed industries engaged in defense work.

All alphabetical tabulation of Buffalo and Western New York industries engaged in either full or part-time production of defense materials for the United States or war supplies for Britain follows (in many cases details to size and quantity of orders is secret):

ALLEGHENY-LUDLUM STEEL, Tonawanda—Electric furnace capacity will be enlarged to expand output of alloys for hardening steel used in armament.

AMERICAN AGRICULTURAL CHEMICAL, 129 Lewis st.—An \$108,000 contract for approximately 6000 tons of phosphate for delivery to the Government from October, 1940, to August, 1941.

AMERICAN BRASS, 70 Sayre st.—Orders for copper and brass shell blanks for the U. S. Army have lifted employment from 1000 workers a year ago to 1700 at the

end of December. The plant is operating with two shifts in many departments. The company is a major source of parts for the shells being fabricated in Government arsenals.

AMERICAN CAR & FOUNDRY, 370 Babcock st.—Idle for years, this plant was reopened last Fall and is employing approximately 1100 workers producing shells for the British. The orders total approximately \$15,000,000, of which about \$10,000,000 is for the 9.2-inch shells and \$4,000,000 to \$5,000,000 for 30,000 12-inch shells and other ammunition components. Deliveries started early in December.

AMERICAN LUBRICANTS, 1575 Clinton st.—Lubricants and other oils have been ordered by the Navy.

AMERICAN MAGNESIUM, 1880 Elmwood ave.—Magnesium castings for the aircraft industry are being produced in increasing quantities. Manufacturing capacity has been increased in the last six months, with a corresponding rise in employment.

ATLAS STEEL CASTING, 1963 Elmwood ave.—Steel castings for a wide variety of industries engaged in defense production are being manufactured. Output has been expanded in the last year and employment increased.

BARCALO MANUFACTURING, 225 Louisiana st.—Metal cots for the expanding Army are being made. Employment has been stabilized during off-season periods. One of these contracts was for \$13,505.

BEACON DEVICES, 78 Oliver st., North Tonawanda—The Philadelphia Navy Yard has ordered steel cylinders valued at \$19,500.

BELL AIRCRAFT, 2050 Elmwood ave.—With a backlog of \$65,000,000, the company is employing approximately 4300 workers against 700 a year ago. It is building a new plant costing upwards of \$1,050,000 adjoining the Niagara Falls Airport which will employ another 3500 workers. The company is confining its production to the Airacobra, a fast pursuit plane, heavily armed and equipped with a cannon.

BETHLEHEM STEEL, Lackawanna—Major expansions involving the expenditure of millions of dollars have either been completed or authorized to provide increased production facilities for steel, a major defense necessity. The company supplies a long list of manufacturers of defense supplies. The plant is operating at capacity and employment has been increased more than 20 per cent in the last year to approximately 13,000.

BIRK MANUFACTURING, 76 Forest ave.—The company filled an order for 20,000 tents for the Army involving approximately \$24,000. Material was supplied by the Government, the company receiving \$1.20 each for cutting and sewing.

BLISS & LAUGHLIN, 110 Hopkins st.—A defense contract has been received for \$33,200 in steel rods. The company also supplies steel in various shapes and alloys for others engaged in producing national defense orders.

BROWN KNITTING MILLS, Warsaw—War Department order for 200,000 undershirts worth \$31,040 has been booked.

BUFFALO AWNING & TENT, 384 Broadway—Khaki Army tents valued at \$48,000 were produced. The order called for 40,000 tents at \$1.20 each. The Army supplied the fabric. Employment was given to additional workers and regular employes were employed during an off-season.

BUFFALO BLUE PRINT, Court and Pearl sts.—The U. S. Procurement Division has ordered sensitized cloth.

BUFFALO BOLT, North Tonawanda—An \$18,485 War Department order for bolts was filled and the company is supplying materials for other industries filling defense contracts.

BUFFALO FORGE, 490 Broadway—An order for \$21,627 in ventilating equipment for the Navy Department plus numerous other contracts for various branches of the military service has stepped up production and employment in the last six months. Another defense contract was for \$125,070.

BUFFALO FOUNDRY & MACHINE, 1543 Fillmore ave.—While a few small direct contracts from the Government have been received, a large part of current production is for equipment for industries engaged in defense work. Backlog of unfilled orders is the largest in years.

BUFFALO LAMP WORKS, of General Electric Company, 1495 Fillmore ave.—Miniature lamps for use in the headlights of Army trucks and other motorized equipment are being supplied to manufacturers filling Army contracts.

BUFFALO POTTERY, 1456 Seneca st.—Almost 50 per cent of total production is confined to orders from the Army and Navy. Dishes for Army camps, the expanding Navy and other departments of the Government are being produced under a series of contracts, one of which was for \$89,503, another for \$30,000, a third for \$23,657 and the latest for \$50,390. Employment is around 300 and operations are near capacity. A dearth of skilled workers is delaying deliveries.

BUFFALO PUMPS, North Tonawanda—Several orders for pumps for the Navy Department have been received. One was for \$36,540; another for \$9310 and a third for \$6690.

BUFFALO WIRE WORKS, 320 The Terrace—Wire guard fencing for protecting industries engaged in defense work has been in such active demand that the company is operating on a capacity production schedule for the first time in many years. Fencing for Curtiss and Bell airplane plants, E. I. du Pont de Nemours & Co. and other large industries can be electrically charged for added protection.

CARBORUNDUM COMPANY, Niagara Falls—Abrasives for use in United States arsenals producing munitions, guns and other war materials are being supplied. One contract was for \$1,160,000 and there have been several smaller orders.

CENTURY-ELLIOTT, 916 Main st.—Two large orders for Army tents will mean capacity operations for the next three to four months. One order was for 25,000 tents and the second order for larger tents involves the use of about 3½ miles

of cotton duck fabric. About 80 workers are being employed in what usually is a dull season.

CHISHOLM-MOORE HOIST, Tonawanda—Chain hoists for use in Army arsenals have been purchased at a cost of \$14,718. The company also is producing similar equipment for the tool industry and other defense manufacturers.

COLONIAL RADIO, 254 Rano st.—An order for \$400,000 worth of short wave radio receiving sets for use in military aircraft will be filled during the first four or five months of 1941. The company is a sub-contractor. Another assembly line will be created for this work. Employment was near capacity most of the year with around 1700 employed.

COLUMBUS M'KINNON CHAIN, Tonawanda—Tow chains valued at \$25,586 have been bought by the War Department.

JOHN W. COWPER COMPANY, Sidway Building—Orders for \$22,765,000 worth of construction work have been booked, including \$15,000,000 for the Great Bend Army cantonment near Carthage; \$7,500,000 for new Curtiss plant at the Buffalo Airport, and \$265,000 for an addition to the Mansfield (O.) plant of Westinghouse Electric & Manufacturing Company. Employment has been increased to 7000 from a normal force of 400.

CROSBY COMPANY, 183 Pratt st.—A contract for \$1,175,600 in cartridge cases has been booked from the War Department in addition to two orders for reels, the description of which has not been revealed. One is for \$55,682 and another for \$51,024. Production and employment have been increased.

CURTISS AEROPLANE DIVISION of Curtiss-Wright, Vulcan Street and Kenmore Avenue—An \$8,000,000 plant adjoining the Airport, which will employ approximately 12,000 workers, will be opened next Summer. The company now is employing 9000 on three shifts, compared with 6500 a year ago. Its backlog of Army and Navy plane orders exceeds \$100,000,000. All current output is being shipped to Britain.

DIARSENOL, 72 Kingsley st.—Drugs for infectious diseases are being supplied to the Army. One contract was for \$8004.

DONNER-HANNA COKE, Abby and Mystic Streets—Produces 1,000,000 tons of coke a year, an essential raw material for steel making, also benzol and toluol, which may become crucial items for defense. Plant has been operating at 100 per cent capacity for a year, employing nearly 200.

DUPONT, Buffalo and Niagara Falls—Various chemicals and finished products have been ordered by the Army and Navy. One specific contract was for \$16,887 to be filled at the Niagara Falls plant. This industry is one of the major sources of supplies for materials used in explosives.

EASTMAN MACHINE, 779 Washington st.—Electric cloth cutting machines are being made for the Army. The company also has orders from clothing manufacturers working on Army and Navy uniforms.

ELECTRO REFRACTORIES & ALLOYS,

Willet Road, Lackawanna—A Navy order for crucibles worth \$12,368 has been received.

FARNHAM MANUFACTURING, 1646 Seneca st.—Tools for speeding aircraft production by eliminating many hand operations are being produced 22 hours a day by two shifts of workers. The company is producing from four to five times the number of machines it did a year ago and there has been a sharp upturn in employment. One of the milling machines made by the company accomplishes in 45 minutes what formerly required from 60 to 100 man-hours in airplane plants.

FARREL-BIRMINGHAM, 344 Vulcan st.—Gear generators for the Navy valued at \$34,633, plus two later contracts, one for \$15,580 and another for \$10,530, are being filled. Production has been increased and employment raised as a result of other orders from defense contractors and sub-contractors.

FAULTLESS PANTS, 133 South Division st.—A contract for olive drab woolen trousers for the Army has been filled.

FEDDERS RADIATOR, 57 Tonawanda st.—An order for millions of dollars worth of links for machine gun belts for the British is being filled.

GENERAL CABLE, 56 Clyde st.—A \$236,950 Navy order for insulated cable, plus a number of small orders for copper wire for the Army and Navy, has been received in the last few months. The backlog of unfilled orders is sufficient to assure capacity production schedules for some months. Employment has been increased.

GENERAL DROP FORGE, 1738 Elmwood ave.—A \$10,801 Navy Department order for alloy steel castings has been received and the company is operating at capacity with a backlog of unfilled orders from other defense industries.

GEORGE LAUB SONS, 1051 Clinton st.—Leather for use in Army shoes is being supplied in increasing quantities. Production has increased substantially.

GLOBE WOVEN BELTING, 1396 Clinton st.—Several large orders for woven belting for the Army, including one for 2,000,000 feet, have been booked. Production of woven belting, some of which is being used for parachute harnesses, has been stepped up and there has been a substantial increase in employment in the last year.

GOULD COUPLER, Depew—Rough castings for bombs for the British Government are being produced.

HARD MANUFACTURING, 117 Tonawanda st.—Two Navy orders for metal beds have been received. One was for \$76,820 and the second for \$47,960. The company also is manufacturing metal cots for the Army. The company has added a second shift of workers whose activities are confined exclusively to Army and Navy work. About 100 employes have been added.

HARRIS SOAP, 18 Stetson st.—A special soap compound for spraying paint booths in the U. S. arsenals and many industries working on defense contracts is being

applied to reduce the time for removing the surplus paint from booths.

W. F. HENDRICH CO. INC., Sidway Building—War Department contract for \$179,000 for temporary housing at Ft. Niagara.

HEWITT RUBBER, 240 Kensington ave.—Several orders for oil and water hose for the Government have been received. One was for \$10,528 and another for \$21,390. In addition the company has supplied fire hose to Britain. Production is reported to be on a capacity basis, with an increase in employment for a year ago.

HOUDE ENGINEERING, 537 East Delavan ave.—Three shifts are being operated to keep pace with defense contracts. About 2000 workers are employed, a substantial increase from a year ago. The company is expanding its East Delavan Avenue plant and is planning a new plant in Cheektowaga next year. The company is a sub-contractor for making aircraft undercarriages and it is understood the new plant will produce machine guns.

IRVING AIRCHUTE, 1670 Jefferson ave.—The company enters the new year with a backlog of approximately \$3,000,000 worth of parachutes and parts for the Army and Navy and for Britain and Canada. About 50 per cent of this is confined to the Buffalo plant, which soon will be producing chutes at the rate of 300 weekly, against 50 a year ago. Employment has been increased about 50 per cent in the last year.

KEYSTONE MANUFACTURING, 51 Chandler st.—Steel sockets valued at \$6684 have been produced for the Army.

LAKE ERIE ENGINEERING, Riverview and Woodward Avenues, Kenmore.—Presses for molding the wings, fuselages and other parts of military aircraft are being produced at capacity. The company has contracts for supplying tools to the new Curtiss and Bell aircraft plants and is building presses for all major U. S. aircraft companies. Employment has been substantially increased.

NATIONAL GYPSUM, 190 Delaware ave.—Wallboard for Army cantonments is being supplied. One order was for \$180,000. The company is on a capacity basis and works 24 hours a day, 7 days a week, and employment has been raised to around 650.

NIAGARA FALLS SMELTING & REFINING, 2208 Elmwood ave.—Alloys used in hardening and tempering steels used in the production of Army tanks, Navy submarines and other defense equipment are being produced. Output is reported to be at a new all-time high.

NIAGARA MACHINE & TOOL, 683 Northland ave.—Presses, squaring shears and other equipment for United States arsenals and similar equipment for widely diversified defense industries are being supplied. The current backlog is sufficient to assure capacity operations throughout most of 1941.

OTIS ELEVATOR, 162 Grider st.—Several contracts for freight elevators and steel castings have been received from the War Department. One was for \$15,-

670; another for \$11,247. A third for elevator equipment for the Panama Canal was for \$36,530.

PERRY KNITTING COMPANY, Perry—A \$20,220 order for 120,000 undershirts has been received from the War Department.

PRATT & LAMBERT, 73 Tonawanda st.—Washable oil paint for use in camouflaging aircraft has been supplied for experiment. The paint permits quick color change-over of airplanes to conform to weather conditions and the terrain over which the planes are to fly. The company also has bid on large quantities of cream and green paint for use on Army cantonments.

REMINGTON RAND, 465 Washington st.—Portable field kitchens for the Army have been supplied in addition to countless printed forms and office equipment for the expanding executive offices of the defense bureaus. Production has been stepped up and employment has been raised to around 1800.

REPUBLIC STEEL, 1175 South Park ave.—Forging companies in New York, Pennsylvania and New England working on defense contracts are taking a major part of the steel output of the mill, which is working at capacity 24 hours a day. The company is producing special alloy and carbon steels for tanks, armament and other war equipment. About 3100 men are employed on three shifts of eight hours each an increase of approximately 500 from a year ago.

RUSLANDER & SONS, 214 The Terrace—Kitchen equipment for Army camps has been supplied.

SPENCER LENS, 19 Doat st.—An addition to the Cheektowaga plant costing \$1,250,000 is under construction to provide increased facilities for manufacturing precision optical instruments for the Army and Navy. Several large contracts have been received by the company, including one for \$116,200, another for \$77,000 and others, but the total awards are expected to run into the millions. Employment has been substantially increased in the last six months and with the opening of the new addition the force will be expanded greatly.

SPRIESCH TOOL, 10 Howard st.—Specialized machine tools for defense industries and also for the Army are being produced under a contract for \$335,920.

STERLING ENGINE, 1270 Niagara st.—1200 horsepower engine, known as the Admiral, has been developed for use in the Navy's motor torpedo fleet. Production has been started on a Navy contract for \$652,800 and additional orders are assured. The company is stepping up production to a capacity basis.

STRONG STEEL FOUNDRY COMPANY, 33 Norris ave.—A \$4038 Army contract for castings has been filled and the company has orders for steel castings from many defense industries.

VAN RAALTE, North Tonawanda—Two orders from the War Department for mosquito netting, one for \$35,842 and another for \$47,800, have been received. The

plant normally manufactures women's gloves. The mosquito netting will go to southern Army camps.

VULCAN STEAM FORGING, 247 Rano st.—Drop forgings for defense industries, including the Curtiss and Bell airplane plants, are being made.

M. WILE & CO., 77 Goodell st.—Woolen overcoats for the Army were manufactured under a \$65,000 contract. The Government supplied the material. The garments were made during an otherwise off-season and helped provide extra employment.

J. H. WILLIAMS, 400 Vulcan st.—Rough forgings for the aircraft and machine tool industries are being produced on a 24-

hour basis, employing 1200 workers on three shifts. Production is the largest in ten years.

K. R. WILSON, Arcade — Bombs for the British produced in the Depew plant of Symington-Gould are being machined in Wilson's Arcade plant. Another large plant has been bought in Seneca Falls to increase production of war materials.

WORTHINGTON PUMP & MACHINERY, Clinton and Roberts Streets—Compressors for use in submarines, torpedo boats, destroyers and other naval warcraft are taking an increasing share of current production. Employment is about 1400, near the all-time high. The record would be exceeded if the company could get the skilled men it needs.

LAKE BOATS BUSY

Quick to feel the business upsurge resulting from war overseas, rearmament in the U. S. and an emergency industrial demand for vital raw materials, a mighty fleet of freighters paraded up and down the Great Lakes in 1940—a record year.

Practically all of the 600 U. S.-registered lake boats went into service in 1940—a rare thing in itself—and most of them plied the great inland waters continuously until ice and bad weather called a halt.

The 142,866,876 tons of freight carried on the lakes was an all-time high, surpassing the previous record in 1929 by 4,292,435 tons.

An estimated 20,000 sailors found jobs on lake boats this year. The earnings of many vessel companies are expected to reach new highs. Water-borne commerce handled in the Port of Buffalo ran about 25 per cent ahead of 1939.

Old-fashioned sea drama was plentiful in 1940 lake sailing, too. In the worst storm on the Great Lakes since 1913, two ships went down with all hands aboard on Armistice Day and scores of others were crippled, badly damaged or tossed around like match sticks.

In a year that was essentially one of defense preparations, ore to feed busy steel mills was the big cargo on the lakes. Nothing else could touch it. When the navigation season was all over, 63,712,982 tons of the red mineral had been transported down the lakes, the third biggest ore-carrying season in lake history.

Buffalo docks took 5,349,268 tons of the ore brought down the lakes, 62,373 tons less than in 1929 and 502,008 tons shy of the 1937 mark.

Experts already are beginning to estimate that next year will be a 73,000,000-ton ore season.

Shipments of 13,297,604 tons of limestone were the third largest on record.

The grain trade on the lakes, raised to record proportions in late 1939 by European demand for wheat after the start of war abroad, did an about-face in 1940 and suffered increasingly as war cut into more and more of the export markets. Lake grain shipments totaled 335,860,757 bushels, about 48,000,000 less than in 1939.

This year, lake vessels arrived in Buffalo with 128,593,888 bushels of grain, far better than the average in recent years but short of the ten-year record set in 1939. Elevators were filled to capacity.

Coal-carrying boats made a brilliant showing in 1940 and carried 47,500,000 tons away from Lake Erie ports, an all-time high. Boland & Cornelius of Buffalo, which had a record year, carried 12 per cent of the coal transported on the lakes. In Buffalo, 1,341,931 tons of anthracite and bituminous coal were loaded into lake boats, less than in 1936 and 1937.

Automobile-carrying vessels brought close to 180,000 new cars to Buffalo from Detroit, most of them in a last-of-the-season rush.