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ECONOMIC POTENTIAL FOR WAR--ARGENTINA

18 April 1947.

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NO GENERAL DISCUSSION

THE INDUSTRIAL COLLEGE OF THE ARMED FORCES

WASHINGTON, D. C.

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THE INDUSTRIAL COLLEGE OF THE ARMED FORCES

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ECONOMIC POTENTIAL FOR WAR--ARGENTINA

18 April 1947.

CAPTAIN WORTHINGTON: The speaker this morning is Mr. Eugene A. Gilmore. Mr. Gilmore is an economist in the Division of River Platte Affairs, Department of State. He received his education in the University of Wisconsin and the Harvard Business School. He taught in the University of Wisconsin, the University of Southern California, and Nebraska University. From 1941 to 1944 he was Senior Analyst in the American Embassy, Montevideo. He has been with the Division of River Platte Affairs since that time. This morning his subject is "Economic Potential for War--Argentina."

I take pleasure in introducing Mr. Eugene A. Gilmore.

MR. GILMORE: Captain Worthington, gentlemen, I am very happy indeed to have this opportunity to address you on this subject. I think that the economic developments in Argentina in the past four years have been particularly interesting because I believe it can fairly be said that there is no country in South America today that is making a more aggressive effort than is Argentina to capitalize on the economic gains which they made during the war in the form of large accumulations of foreign exchange, resulting from very heavy exports of a wide variety of products, and in general, to make an adequate response to the popular demand for higher living standards which has been a logical result of war-induced prosperity.

This effort undoubtedly is in part motivated also by military considerations. President Peron, while he was still Minister of War in the Farrell government, gave clear expression in a speech on 7 May 1944 at La Plata University to the idea, which is, of course, by no means novel, that a modern state, in order to be adequately organized for defense, must have a plan of organizing its entire economic resources.

President Peron was inaugurated in June 1946, and his economic policies since his inauguration seem to be geared into the idea that he expressed at La Plata two years earlier, although it must be said at the same time that undoubtedly there are other motivations as well.

I understand my assignment this morning is to present a rapid survey of Argentina's economic potential for war, covering the main factors of natural resources, population, geography and industrial production, with an effort to make some comparisons with this country and with neighboring countries in order to give as concrete a presentation as possible of the extent to which Argentina is likely to be able to make itself a strong power from the standpoint of national defense.

I do not intend to dwell in this lecture--as I think is customary--very much on political or military strategy. Rather I want to confine myself to the topic set forth, "Economic Potential for War--Argentina," per se.

Argentina has an area of 1,079,965 square miles. It is about one-third the size of the continental United States and is the second largest South American country. It extends roughly from 22nd to 55th parallel, from north to south, about 2,000 miles, and east to west at Buenos Aires from 57th to 70th meridians, about 700 miles.

Main geographic areas.--Pampa is an area of about 250,000 square miles extending from about the 39th parallel to 29th parallel and inland about 400 miles. It comprises a rich alluvial and loess soil reaching a depth of over 900 feet at Buenos Aires and constitutes the chief agricultural area of the country.

The Mesopotamia comprises an area of about 76,000 square miles between the Parana and Uruguay Rivers. It includes the provinces of Entre Rios and Corrientes and the Territory of Misiones. The southern portion of Entre Rios is well-drained, rolling country, but to the northward the land slopes off into an extensive swamp area of about 10,000 square miles. Northern Misiones is part of the Parana Plateau and is a region of dense forests, deep river canyons, and falls.

The Chaco which is located west and north of the Mesopotamia comprises about 450,000 square miles. It is the northwestern extention of the Argentine great plain. The terrain is low and level, inclines gently to the East, and during the rainy season large areas are constantly under water.

The Andean Zone comprises about one-third of Argentine territory and includes not only the Cordillera but the arid plains East. Its salient feature is the mountain range which is one of the major mountain barriers in the world. Among its peaks is Aconcagua (elevation 22,850 feet) which is the highest mountain in the Western Hemisphere. To the North the Andes split into two chains, enclosing the plateau of Atacama (elevation 12,000 feet). To the South the altitude of the range gradually diminishes. There are eleven principal passes. Uspallata (13,000 feet), in the vicinity of Mendoza is the route of the only Trans-Andine railway. Pino Hachada in Neuquen territory to the South, and Paso de San Francisco (elevation 14,000 feet) in the North are the projected routes of two additional railway crossings. The plains to the eastward receive inadequate rainfall, population density is less than two per square mile, and the only settlements of importance are the alluvial oases at Mendoza, Tucuman, and San Juan.

Patagonia comprises about 300,000 square miles of territory to the south of the Colorado River. The area consists of a longitudinal series of terraced plateaus formed by ancient lava flows which rise gradually

to an altitude of 5,000 feet. To the west of these plateaus is the deep sub-Andean trough. The territory is semiarid except in the extreme south and supports a population of less than one per square mile.

Rivers.--Argentina controls the second largest river system on the continent. This comprises the Rio de la Plata and its tributaries, the Parana, the Uruguay, and the Paraguay Rivers with their affluents. All these rivers are navigable for long distances into the interior and make Buenos Aires the natural entrepot for the foreign commerce of Paraguay, northern Argentina and parts of western Brazil.

Other rivers of much lesser importance, navigable only in certain seasons by shallow draft vessels are the Rio Negro, the Gallegos, the Santa Cruz, the Pilcomayo and Bermejo in the Chaco, and the Limay and Neuquen in Patagonia.

Many other northern streams of the Andean region fail to reach the sea, and terminate in very extensive salt flats.

Climate.--At Buenos Aires the average temperature range is from 74° F in January to 49° F in July. Annual mean temperature is 61° F.

In the Chaco temperatures run much higher during the summer months and occasional frosts occur in the southern part of the region in winter.

Patagonia temperatures are not extreme even in the lowest latitudes. Annual average in southern Patagonia is 43° F.

Rainfall.--Parts of Misiones in the extreme northeast have more than 65 inches annually. The bulk of the Pampas have 30 to 40 inches. Some places along the eastern slope of the Andes receive less than two inches annually, and the average range for this region is from 5 to 10 inches.

Coastline.--The Argentine coastline is 1,656 miles in length. The coast from Buenos Aires south to the mouth of the Rio Negro is low, sand bluffs about 100 feet being the maximum elevation. Farther south there are long stretches of low rock cliffs interspersed with lowlands, and in the far south sheer cliffs of considerable altitude rise directly from the sea. There are few good natural harbors. Buenos Aires, Rosario and Sante Fe, the three chief ports are in effect river ports, and are accessible to ocean going only through constant dredging. Bahia Blanca, Nicochéa, and Comodoro Rivadavia along the Atlantic seaboard are relatively less important as regards foreign trade, though the coastwise traffic is substantial. The harbor at Bahia Blanca also requires constant dredging.

Population.

General.--There has been no general census in Argentina since 1914 at which time the population was reported to be about 7.8 million. Official estimates based upon birth, death and migration data place the present

population at about 14.3 million. The number of males in the 18 to 45 age group is estimated as about 2.7 million.

Present service personnel is approximately:

Regular Army	120,000
Trained reserves	350,000
Air Force	1,300
Navy	18,000
Federal and other Police	25,000
	514,300

Racial composition.--The Argentine population is probably the most homogeneous of South America; about 77 percent are native-born persons of European extraction; 20 percent are Europeans by birth; and 3 percent are native-born with Indian or non-Caucasian blood. The principal national origins are Spain and Italy. There is also an influential admixture of English, descendants of immigrants early in last century. Other nationalities represented are Germans (about two to three million), southeastern Europeans, Poles, Scandinavians and French.

Geographic distribution.--There is a marked concentration of population in the Pampa. Buenos Aires has more than three million inhabitants, and the Provinces of Buenos Aires, Santa Fe and Cordoba account for more than two-thirds of the total. The population density of Patagonia and large sections of the Andean region is less than 2 per square mile.

Immigration.--The Argentine population is small relative to its resources, and the Government is actively encouraging selective immigration. As in this country the heaviest period of immigration was from 1889-1914 when the net annual figure averaged 91,000. In the next 25 years the inflow fell to 39,000 annually, and almost ceased toward the end of the period. The Five-Year Plan provides for 50,000 immigrants annually, and a commission has recently concluded arrangements with the Italian Government for the first contingents.

Rate of increase.--The Argentine birth rate is considerably higher than that in the U. S., but has declined from 33.5 per thousand in 1907 to 23.3 in 1942 (U. S. rate 1941-18.9 per thousand). The death rate has similarly declined (33.6 to 12.2 in 1942) and the apparent rate of increase is 12.1 percent. It is probable that a further decline will occur in the birth rate and that in view of the age composition there will also be a decline in the vegetative rate of increase. Dr. Alejandro Bunge, Argentine Economist, has calculated the future population at 17 million in 1968. It is probable, however, that immigration will upset these calculations, and that the increase will be greater.

Health and sanitation.--Except in the subtropical areas of the north the conditions of health and sanitation in Argentina are perbably better than anywhere on the continent. However, they cannot be said to be satisfactory, particularly in the rural areas. Nutritional standards among working-class families are low, because of low wages and particularly in the northwest malnutrition is one of the primary causes for rejection of men for military service. In 1942,45 percent of those called up throughout the entire country were rejected, 19 percent because of nutritional deficiencies. Substandard housing is also a serious problem even in the Federal Capital, and an extensive program of low-cost dwellings is under way.

Major causes of death are tuberculosis, cancer and heart disease. In Buenos Aires the tuberculosis rate is almost three times the average for the United States, but is nevertheless the lowest for any of Latin America's leading cities. The incidence of cancer is somewhat higher and of heart disease somewhat lower than the corresponding rates in the U. S. Diphtheria and venereal disease are general, and malaria, intestinal parasites, plague and trachoma are serious in certain areas.

There is a well-trained medical profession, but approximately one-half confine their practice to the Federal Capital. Hospital facilities are more generally available and are reported to be the best in Latin America.

Water supply and sewerage disposal systems are inadequate outside of the larger cities. The government has planned extensive improvements in this regard for the next five years.

Literacy and education.--The Argentine school system is relatively advanced in comparison with other South American countries. The illiteracy rate is about 12 percent which is the lowest on the continent, with the possible exception of Uruguay.

The education system overemphasizes preparation for the learned professions, however, with the result the vocational training has been neglected. The recruiting of skilled workers is a major problem. It is reported that in 1943 there were about 5,000 technical engineers in a total working population of about 5.6 million, a ratio of 1 to 1,000. The similar ratio in the U. S., is 1 to 188.

Occupational distribution.--The proportion of the total population gainfully employed is about 40 percent which is roughly comparable to the U. S. The breakdown is approximately as follows: Industry 2.3 million; Agriculture and Livestock, 1.1 million; Commerce, one million; Transportation, 160,000; Miscellaneous, 550,000.

Mineral Reserves.--Although much of the Andean region remains to be systematically surveyed for minerals and it is generally believed that substantial undiscovered reserves may exist, the known metallic and nonmetallic mineral reserves are notably deficient.

Iron ore.--Small amounts of magnetite are found in the sand dunes of southern Buenos Aires Province, but the principal known ore body is located in Palpala in Jujuy Province. This consists of hensatite, said to contain 55 percent iron and 14 percent silicon. The government announced in January that reserves have been proven amounting to 100 million metric tons, and that considerable areas of potentially rich land remain to be surveyed. The deposit is being worked by the government military factories. Pig iron output data have not been released, but are believed to be small. The absence of coal in the vicinity makes the operation high-cost and it is understood that the government intends to maintain the facilities as a stand-by and utilize chiefly imported ores in its steel plant.

Other metals.--The only important production of other metals in Argentina occurs in the case of lead and zinc, beryl and tungsten. Lead production is principally in the hands of a subsidiary of the St. Joseph Lead Company, producing about 20,000 tons of lead annually, the bulk of which is locally consumed, in addition to 60,000 tons of zinc concentrates which are shipped abroad for smelting. In 1941 Argentina was a leading producer of beryl ores and tungsten concentrates, but production has recently declined. Small amounts of tin and copper are also produced, but Argentina is heavily dependent upon its neighbors for its requirements of these metals.

Nonmetallic Minerals.--Argentina's most important nonmetallic minerals are: Common salt, sulphur, barium sulphate, borates and mica. There is also a small production of talc, sodium sulphate, and magnesium sulphate, and still smaller production of various other minerals. Of the foregoing, sulphur and barium sulphate are war-born industries, the requirements of the former being in excess of 12,000 metric tons and of the latter about 6,000 metric tons. It is estimated that the country will become self-sufficient as regards sulphur within five years.

Fuel Resources.--Mineral fuel is one of Argentina's main deficiencies:

Coal.--Argentina has no extensive deposits of suitable coal. The principal solid mineral fuel of local production is asphaltite, output of which increased sharply in response to imported fuel shortages from 1620 tons in 1939 to 105,625 tons in 1943. It has recently been announced that coal of good quality has been found in the Rio Turbio region of Santa Cruz, but output figures are not yet available. Certain quantities of lignite also are found in this area. Argentina normally imported about three million tons of coal before the war and is making vigorous efforts to decrease its dependence on foreign sources.

Petroleum.--Argentina remains among the first ten world crude oil producers and Argentine per capita consumption of petroleum products was among the first five before the war. Approximately one-third of its

normal domestic needs are imported. Production reached a peak of 25 million barrels of crude oil in 1943, but subsequently declined somewhat because of the impossibility of obtaining drilling equipment. There are four main fields which in order of production are: Comodoro Rivadavia in the territory of Chubut; Mendoza in Mendoza Province; Plaza Huincul in the territory of Neuquen, and the Jujuy Salta field. Two-thirds of the domestic crude oil production is in the hands of the state-owned petroleum corporation, the YPF. British-American and locally owned Argentine private companies are, however, important factors in the refining and distribution of imported crude. In 1941 total consumption of petroleum refineries are located for the most part in the vicinity of Buenos Aires. The crude output of the Comodoro Rivadavia field must be transported by tankers to the consuming areas. The government has recently let contracts for the construction of a pipe line.

Vegetable fuels.--The war shortages of imported petroleum and coal led Argentina to consume large quantities of wood, grain and vegetable oils as fuel. These resources would be utilized again in an emergency, but such heavy inroads were made in forest reserves during World War II that it is doubtful that they will be even as effective in the future as they were in the past.

Agriculture.--Although industry and commerce have increased greatly in recent years the Argentine economy is still essentially agrarian, since its major industries are devoted to processing farm products and its exports are primarily agricultural raw materials.

The main agricultural and pastoral regions are: the corn belt, the wheat belt, the cotton belt (Chaco and Corrientes), the sugar cane belt (Tucuman, 61 percent of all cultivated land devoted to cane) the vineyard belt (Mendoza), the fruit belt (Neuquen and Rio Negro area), the cattle belt, the sheep belt (Patagonia).

Food.--Argentina is completely self-sufficient in all essential foods, and is one of the world's chief exporters of food products. The principal exports in thousands of short tons are (1946 figures): wheat 1,273; corn, 1,639; oats, 256; barley, 542; rye, 133; chilled and frozen meat, 303; canned meat, 63; fresh fruit, 57. Sugar production is normally sufficient for domestic needs plus a small export surplus. Coffee must be imported but it is not as important in national consumption as yerba mate, of which there is substantial domestic production.

Industrial raw materials.--The principal industrial raw materials produced by Argentine agricultural and pastoral industries are wool, cotton, linseed and other vegetable oils, casein, and hides and other packing house by-products. All of the foregoing products, except cotton, are normally exported in substantial quantities. The figures for the main items are: wool, 170; hides and skins, 68; casein, 26; linseed, 41; vegetable oil cake

and meal, 319.

The main deficiencies are rubber and jute. Prewar consumption of rubber was about 12,000 tons. Jute fiber is needed in the bagging industry for the rope-soled shoes industry which has an important market.

Forests.—Argentina's forests cover some 300,000 square miles. The main forested areas are: the tropical scrub forest of northern Argentina, including quebracho forests of Chaco, the rain forest of northwestern Argentina, principal source of lumber, the Misiones timber belt, and the rain forests of the southern Cordillera.

The local stands of timber are mostly indigenous hardwoods, with small quantities of Parana and Brazilian pine in the Misiones sector. The algarrobo is one of the most important commercial hardwoods.

Total resources are insufficient for domestic consumption, so substantial quantities of timber are imported, principally from Brazil. The cutting of timber for fuel during the war has seriously depleted existing reserves and the present government is endeavoring to improve its conservation administration and to control the utilization of its remaining reserves.

The principal forest product entering into international trade is quebracho. Large stands are found in the Chaco and in other areas of northern Argentina. Exports of quebracho extract in 1946 amounted to 162,000 short tons. Argentina has no significant stands of rubber. Experiments are being conducted with guayule as being better suited to Argentine soil and climatic conditions.

Fisheries.—Argentine waters abound in fish but, because of the abundance of other foods and the dietary habits of the bulk of the population, the industry is not highly developed. An interesting war-induced development has been the production of Vitamin A from sharks' livers. In line with its general program of strengthening and developing the economy the present government has a project of law subjecting the fishing industry to close supervision.

Waterpower.—The installed hydroelectric generating capacity amounts to only 46,000 kilowatts, or 4 percent of total electric power capacity, 1.2 million kilowatts. The present hydroelectric plants are located in Cordoba, Mendoza and Tucuman in the order mentioned. Annual output is about 125 million kilowatt hours, as compared to total power production of some three billion kilowatt hours.

The potential waterpower resources are estimated at 5.4 million horsepower 7.45 million kilowatts. The Argentine Government is laying great stress upon the hydroelectric power development and has projected

45 new plants with capacity of about 1.1 million kilowatts for the next five years. The projects are grouped in three main zones, the Colorado and Rio Negro Rivers, the Andean foothills of Mendoza, the provinces of Tucuman, Salta and Jujuy.

The largest single project, which it is not planned, however, to initiate before 1951, is on the Uruguay River 231 miles north of Buenos Aires at Salto Grande. An international agreement for the utilization of this site was recently signed with Uruguay. A dam 6,000 feet in length would be required. The fall is about 60 feet, and capacity is variously estimated between 380,000 and 875,000 kilowatts. This power would have to be divided in some ratio with Uruguay. It is the closest source to the large consuming market in Buenos Aires.

The Metallurgical Industries.

Steel.--Argentina does not possess a primary steel industry sufficient for its normal civilian requirements. It is one of the largest importing markets for iron and steel manufacturers and before the war imported about 550,000 tons of rolling mill products annually. Postwar requirements are difficult to estimate but may be taken roughly at one million tons. There are no official data on domestic output, but trade sources estimate 1946 production, mostly from scrap, at 120,000 tons. The latest available estimate of existing capacity (1943) is about 200,000 tons annually, consisting mostly of open-hearth furnaces, of 15 to 40 ton capacity and a few small electric furnaces. The total number is about 33 to 34. Major producers are La Cantabrica, Grefin (Thyssen subsidiary), Tamet and Fabrica Militar de Acero (government).

A major development during the past year has been the approval by the congress of a mixed company to establish a new plant with capacity of 315,000 tons annually and the corresponding rolling mill facilities. This plant will be largely owned by the government and will be capitalized at 100 million pesos ($25,000,000). It is anticipated that its output will have to be subsidized to meet the competition of imported steel and the industry will be required to use domestic ore to the extent of 10 percent of its requirements. A tinplate mill with capacity of 70,000 tons is also a feature of the plan.

Copper and bronze.--As indicated the primary production of copper is negligible. However, working with imported materials, the Argentine copper and bronze industry is capable of meeting normal civilian requirements, except for a few products. Principal producers are: SEMA, a dependency of the Argentine Military Factories, and Guillermo Decker. Imports of raw copper average about 12,000 tons annually of which the bulk is received from Chile.

Other metals.--A subsidiary of the St. Joseph Lead Company produces about 1,500 tons of electrolytic zinc annually. Normal requirements are about 10,000 tons.

The National Lead Company operates a lead smelter with annual capacity of 18,000 metric tons, capable of handling about 90 percent of primary lead output. There are also various other smelters and the country is on an export basis as regards lead.

Small quantities of tin, antimony, bismuth, silver, gold, and nickel steel are also produced.

There is no production of aluminum, all secondary processing being on the basis of imported metal.

Metal Working Industry.

Secondary processing of metals, while hardly comparable to that in the United States, is probably more highly developed than in any other country in South America. The industrial census of 1941 lists 3,652 principal establishments (employing five or more workers each), manufacturing metal products, machinery and vehicles. About 136,000 workers are employed; value of output was 785 million pesos (234 million dollars).

Machine tools.--There was no production prior to 1939, but the cutting off of imports during the war stimulated production. At present small lathes, drill presses, shapers and planers are produced. These are reported to be of fair quality, but not equal to American or European tools. Argentine Government purchasing missions have been very active in recent months in the U. S., in acquiring specialized machine tools for the production of armaments.

Automotive.--There are about ten automobile assembly plants and body works, of which the General Motors and Ford plants are the most important. Prior to the war these plants assembled annually 27,000 automobiles and trucks, 8,000 bodies, and 2,162 truck cabs. Shortage of imported parts has retarded the revival of this industry but the recent removal of our export controls should lead to a rapid restoration of production. One additional American manufacturer is reported to have an interest in establishing an assembly plant.

Aviation.--There are three plants directly engaged in the production of aviation equipment. The principal one is located at Cordoba, and is one of the Argentine Military Factories. It is reported to be presently engaged in the production of 500 modified British mosquito bombers and 50 advanced trainers copied from our AT-6. The plant also has developed the DL-22

which is of wooden construction powered by a domestically produced 450 hp engine. Formerly 120 Focke-Wulf primary trainers and 20 Curtiss-Wright Hawk --75 single seaters were produced.

A second plant is IMPA (Industria Metalica Plastica Argentina) located at Quilives near Buenos Aires. It is also one of the Government Military Factories and is currently producing a modified Piper Cub (TV-SA No.0) with imported 4-cylinder engine. It also produces gliders and has plans for a more powerful TV-SA No. 0 plane.

The third plant is Hispano Argentina Fabrica de Automoviles, which has an arrangement with Armstrong-Siddeley, a British firm, for the production rights of the "Cheetah" 475 hp engine. It is understood that 500 are to be produced.

Electrical.--The Argentine electrical industry is not capable of producing large-size generating and similar equipment. However, the range of locally manufactured products is rather extensive, and includes small motors up to 700 hp, household and commercial refrigerators, electrical household appliances, radios, storage and dry cell batteries, wire, signs, transformers, switchboards, most types of automatic telephonic equipment, street lighting equipment, and incandescent bulbs. Some of these industries consist essentially of the assembly of imported parts. The military communications equipment factory, which is government operated, supplies the normal army needs for radio sets and field telephone equipment. Some electronic equipment is being currently purchased in the U. S.

Heavy machinery.--A rather wide variety of heavy machinery is locally produced in small quantities. The list includes freight cars, locomotives and Diesel motors assembled from imported parts, small vessels, most kinds of farm equipment, elevator equipment, textile machinery, pumps, hydraulic presses, road building equipment, printing presses, sewing machines.

Military production.--The government is directly in the manufacture of armaments. A group of eleven government owned and operated factories produce steel, military explosives, 35-ton tanks, small ammunition, artillery shells, fuses, electronic equipment, aircraft, small arms, and aerial bombs. The naval arsenal at Darsena Sur is reported to be reasonably well equipped; and is probably capable of producing small quantities of medium-sized naval ordnance. It should be noted, however, that none of these factories could meet the needs of the Argentine armed forces in the event of war, and that the military authorities are at present extremely concerned about their relative deficiency in most modern arms. In addition to the foregoing there is a group of seven private companies which operate largely on military contracts.

Light manufacturing.--In the field of light manufacturing Argentine industry is capable of taking care of the needs of the economy fairly well.

It is true that there is considerable importation of light manufactures but in practically every line domestic plants cover a part of the requirements and in an emergency could cover more. Among the industries in this category are furniture, stoves, clothing, most household appliances, medical equipment, processed foods, pharmaceuticals, hand tools, and so on.

The woolen textile industry and leather and shoes are on the export basis Coarser grades of cotton are also exported, though the market absorbs large amounts of imported cottons of the finer wants. Rayon production is expanding and meets domestic needs except in fabrics bought because of the style factor.

The main deficiencies in this category are rubber and paper, particularly newsprint. Given raw material the industry can meet requirements, but certain types of industrial and mechanical goods must be imported. There is some local production of newsprint, but the bulk is imported. The manufacture of other types of paper more nearly meets the demand, but large amounts are imported.

Chemicals.—Argentina has made strenuous efforts to develop its chemical industry. That these efforts have been partially successful is shown by the fact that between 1935 and 1941 the value of output (90 million dollars in 1941) more than doubled and employment increased by 73 percent. Particular emphasis has been laid on industrial chemicals, and the output of these products increased 600 percent in the period in question. Despite those achievements it probably must be concluded that chemicals are one of the deficiencies of the Argentine economy.

Imports have always been heavy and in 1946 exceeded 30 million dollars. The industry has, however, met some of the basic needs. Among the products locally produced in quantities sufficient substantially to reduce dependence upon imports are: the industrial acids, ammonia, various alcohols, sodium phosphate, borates, sodium sulfide, barium chloride, barium and aluminum sulphate, and phenol. The plastic industry is well developed but dependent on imported materials. Though there is some local production of caustic soda, and soda ash must be imported in substantial quantities. Other important imports are: coal tar solvents, thermal-setting resins, and aniline dyes.

One bottleneck in the development of the industry has been the lack of technicians. While more effective integration of the industry is no doubt possible, another adverse factor has been that the size of the Argentine market does not permit the economic utilization of certain of the by-products. Foreign capital and technical assistance is of considerable importance. Duperial, jointly owned by the Dupont interests and the Imperial Chemical Company, is one of the major concerns. The Monsanto Chemical Company has recently concluded an arrangement with Atanor, a mixed company. In the drug and pharmaceutical field the German companies were formerly dominant. They are now in the process of being nationalized.

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Construction materials.--Argentina is largely dependent upon imports for two important building materials, lumber and reinforcing bar. However, the local cement industry is adequate, and most other materials are in adequate supply.

Some general characteristics.--In concluding this survey of Argentine industry I would like to call attention to some over-all characteristics as follows;

It is highly concentrated in the Buenos Aires area. This factor gives its government concern and plans exist for promoting a greater dispersion.

In general it depends to a considerable extent on imported materials. In 1941 the over-all ratio of imported raw materials to total materials consumed was 24 percent. In the metal and machinery trades, printing and the rubber industry this ratio rises above 60 percent. In the chemical, paper and petroleum industry it is in the neighborhood of 30 to 35 percent. As would be expected the food industries and leather industries show the lowest ratio, from 1 to 5 percent.

As compared with the U. S. the Argentine industry is not highly mechanized. Based on 1939 figures the installed horsepower per worker was only 2.23 as compared with 6.42 for the U. S. The disparity in specific industry is very marked, for example: metals and metal products, 1.38 as compared with 10.70; chemicals and pharmaceuticals, 3.72 and 13.19; petroleum, 8.29 and 23.31; textiles 1.15 and 3.39.

Utilities.--There are over 1,000 electric plants in Argentina. Most are under independent management. The larger cities, however, are usually served by foreign power trusts, CADE, in Buenos Aires, SOFINA, an international syndicate with Belgian and Spanish capital, the CIA. Italo-Argentina de Electricidad, the branches of the American and Foreign Power Company and the Intercontinents Power Company. In 1942 the per capita consumption was about one-seventh of that in the U. S.

Energy output has been expanding and now amounts to some 3 billion kilowatts annually. About 60 percent is produced in Buenos Aires by the CADE and SOFINA plants. It is the announced policy of the government to assume the ownership and operation of utilities, but they are moving rather slowly in that direction.

Other.--Water, gas and sewerage disposal are adequately supplied only in the larger centers. However, the government has an ambitious program of public works to make these facilities more generally available.

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Transportation.

Railways.--Argentina has the largest railroad system in South America. In 1944 total mileage was 26,700 or 43 percent of the continent. Freight carried exceeds 40 million tons and the capital investment is over one billion dollars. About one-third of the mileage is in Buenos Aires Province, but the system has international links with Santiago, La Paz and Asuncion. The railroads were largely developed by British and French capital.

Last fall the government acquired the British roads for about 600 million dollars and the French roads for 46 million dollars. Neither group has been adequately maintained for years, and the shortage of equipment during World War II caused a further serious decline in their condition. The government will spend 125 million dollars on rehabilitation. Much of the equipment is to be purchased in the U. S. Operation is complicated by the existence of three gauges which hampers car interchange. Most of the mileage is broad gauges.

Highways.--The highway program is of recent origin, most of the hard-surfaced roads having been constructed since 1932. In 1940 there were 13,360 miles of all-weather roads and 23,600 miles of dirt roads. Fifty-six roads cross the frontiers to neighboring countries, 23 to Chile, 3 to Bolivia, 12 to Paraguay, 13 to Brazil, and 5 to Uruguay. Argentina has about 217,000 passenger cars, 75,000 to 80,000 trucks, and 10,000 buses. As a part of the Five-Year Plan there will be further extensive highway improvements.

Inland waterways.--As indicated earlier the Parana River system is an important artery of commerce. The government is planning to invest large sums in river, port and channel improvements and has recently signed contracts here for the purchase of river barges and tugs for a state barge line.

Pipe lines.--Argentina has no pipe lines, but bids were recently called for for the construction of a natural gas line from Buenos Aires to the Comodoro Rivadavia field.

Airways.--Argentina has taken vigorous steps to expand its domestic aviation facilities. A government entity with private capital participation known as FAMA has been created to direct all domestic airline operations and to operate directly the international services of the country. Domestic operations have been reserved to three subsidiaries of FAMA. These are: Aeroposta (southern zone); Alfa, (northeastern), and ZONDA (northwestern). In addition to the old military airline LADE is still maintaining a limited service. Most of the lines are using DC-3's and British Yorks for internal operations. A considerable number of surplus C-54's and 5 Sunderland flying boats are used on international services. FAMA is understood to have purchased six DC-6's, which have not yet been delivered. FAMA is currently operating to Europe, Chile, Peru and Uruguay, with occasional non-scheduled flights to the U. S. We are currently attempting to conclude a bilateral

air transport agreement with Argentina based on the principles of the Bermuda agreements.

Economic Production.

Comparison with U. S. figures.—The foregoing completes my survey of the Argentine economic potential. I understand that in your studies of the economic potential of various countries three main measures have been taken for purposes of comparison with the United States. These measures are national income, total energy consumption, and steel production. In the case of Argentina these comparisons obviously will indicate a very low relative potential. The aggregate national income in 1937 was roughly 9.3 billion pesos (about 2.3 billion dollars) as compared with 71 billion dollars for the United States in the same year. This is a ratio of 3.3 percent Both figures have risen sharply in monetary terms and probably also in real terms during the past decade.

Figures for 1945 indicate the Argentine income at about 3.8 billion dollars. Taking the U. S. income at about 175 billion dollars the ratio fell to 2.1 percent. It may be interesting to note also in passing that the occupational distribution of income in Argentina underwent a substantial shift in the period in question. In 1937, 32 percent was derived from agriculture and stock raising and 21 percent from industry and construction. In 1945 the corresponding percentages were 24 farming and 25 for industry. This is a measure of increased Argentine industrialization.

Total energy consumption in 1937 has been estimated at an equivalent of about 20.4 billion kilowatt hours. The corresponding figure of the United States was approximately 911 billion and the ratio is 2 percent.

Primary steel production was negligible in 1937 as compared with 51.4 million metric tons in the U. S.

I indicated earlier that present output is estimated at about 120,000 tons. I do not have a figure for current U. S. steel output, but assuming that it exceeds 70 million tons at present, it is obvious that Argentina's relative potential in this regard is insignificant. Certain other comparisons with the corresponding percentages are shown on the sheet which was handed to you.

It is worth noting at this point, however, that Argentina's potential, while insignificant in relation to our own, is by no means insignificant in relation to other countries in South America. Per capita income is the highest of any country except Venezuela and aggregate income is exceeded only by Brazil which has more than three times the population. While other countries have more of the essential resources, Argentina's over-all potential, because of relatively advanced industry and manpower is comparatively very considerable. In the event that another major war engages the resources

of the great powers, this factor may have an important bearing on the stability of the continent.

Estimate of Economic Production Trends.— As to the probable future trends of production in Argentina, there is little doubt that the upward trend of the past 25 years will continue. It is one of the great under-populated countries of the world. There will be substantial but controlled immigration from Europe. Industrialization will probably be pushed to the limits that the resources permit and, unless there is a change in current policy, beyond economically justified limits.

Agriculture is likely to become more intensive with greater attention to specialized grades and products. Argentine off-season fruit is an example of the type of development which is likely to expand. I have mentioned at various points the Five-Year Plan of the present administration. This plan has many totalitarian aspects. On its strictly economic side, however, it contains a program (rather general it should be noted) to expand production 43 percent by 1951. It hoped also to increase motive power 50 percent and to raise employment 34 percent. These goals do not appear extravagant under present world conditions, but obviously the prospects would be materially altered by a general world economic collapse.

Economic Deficiencies.—I will now turn to a recapitulation of the major deficiencies which are present in the Argentine economy. To list only the most important, domestic production amounts to less than 10 percent of requirements in the following commodities: Iron and steel, coal and coke, aluminum, copper, tin, soda ash, sulphur, rubber, aircraft, automotive vehicles, machine tools, and mining machinery. Since all of the commodities in this list are among those most essential in any major war effort, the inherent weakness of the Argentine economy is apparent.

In the case of some commodities, however, assuming friendly relations, Argentina can supply its deficiencies from contiguous countries. Copper, coal (the latter of inferior quality) and iron ore are available in Chile, though overland hauls would severly tax existing transportation facilities, if sea-borne imports are ruled out. Tin is available from Bolivia though present refining capacity is insufficient to handle the lower grade concentrates. Small quantities of rubber were obtained from Bolivia during World War II under an exception insisted upon by Bolivia in its contract with Rubber Reserve, and Argentina is currently offering to finance rubber developments in the Bolivian Chaco. Bolivian petroleum is also an important strategic reserve. On the assumption that Brazil were an ally, deficiencies in rubber and iron ore would be further relieved.

The foregoing are the main possibilities of drawing aid from neighboring countries. It would be incorrect to assume, however, that a sea blockade would bring about a prompt collapse of an Argentine war effort. During the past war the Argentine economy was severely squeezed by war shortages.

Fuel except for packing plant operations and minimum amounts for transportation was practically cut off, and other imports were drastically reduced. However, the Argentine economy did not collapse.

Substitute fuel carried the railroads and power plants through the crisis and Argentine industry showed itself sufficiently adaptable to fill many of th gaps. It can, I think, be taken for granted that in the future Argentina will accumulate stock piles of strategic materials as an insurance against a recurrence of the shortages of the past war.

Argentina does not now possess a stock of modern arms and cannot now manufacture them in sufficient quantities. However, as this review indicates, industrial trends, if successfully carried through, point to the probability within a few years, given access to imported materials, Argentina will be able to manufacture limited quantities of essential arms. If this occurs, the general structure of the Argentine economy is such that even though all ocean commerce were suspended it is probable that Argentina could sustain defensive, and possibly offensive operations for many months, unless confronted by a major power. The inherent weakness of its situation would, however, bring about an eventual collapse.

Although the economy is inherently weak, as what I have tried to bring out indicates, there are some latent resources there that are worth keeping in mind.

That is all, I believe that I have to say. I do not know whether any points I have raised will suggest any questions. If there are any, I will be very glad to attempt to answer them. Thank you.

CAPTAIN WORTHINGTON: Open for questions.

(No questions)

CAPTAIN WORTHINGTON: Thank you very much, Mr. Gilmore.

(19 June 1947--450)S