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TAB "A"

SUPPLEMENTAL G-2 CONTRIBUTION TO NIE-34

SPAIN'S POTENTIALITIES IN WESTERN DEFENSE

II. WHAT INTERNAL POLITICAL, ECONOMIC, AND MILITARY FACTORS WILL AFFECT SPAIN'S ABILITY TO REALIZE THESE POTENTIALITIES?

C. Military - Ground Forces

7. Short of a collapse of Spanish national spirit, of which there is no evidence, Spain is capable of opposing any attempted invasion with a stubborn resistance despite the current deficiences of her armed forces.

The Spaniards' will to defend their territory is high; there is no talk of appeasement or of neutrality. Spanish troops are familiar with their heterogenious weapons and equipment and can be depended upon to obtain maximum results with them in defense, particularly of the Pyrenees region with its inherent terrain advantages.

Types of fortifications in the Pyrenees include concrete emplacements, pillboxes, crude field fortifications, and obstacles. Three defensive lines and supplemental field fortifications have been constructed, as well as wire entanglements and road blocks.

Instead of continous fortified lines, primarily the terrain features which permit coverage of the avenues of approach from France have been fortified. Lateral routes, most of which are parallel to the frontier, are also covered by defensive works. The principle of mutually supporting battalion centers of resistance appears to be used.

Strong concrete fortifications have been built on the eastern flank of the Pyrenees. This series, all well constructed and camouflaged, will be a serious obstacle to any attack from the French side. These defense lines are fortified in depth and consist of mutually supporting pillboxes, machine gun positions and a few antiaircraft batteries.

SECRET

The center section of the Pyrenees has some field fortifications of a temporary type. This sector, however, probably would be utilized by an attacker only for light diversionary operations because the highly channelized gorges, which would impede deployment of the attacker's forces and would restrict his use of armor, are highly favorable to the defender.

From the standpoint of terrain, the most important corridor is on the western flank. This area is well protected by field fortifications. The road between Pamplona and Irun can be blocked by the prepared emplacements between Vera and Irun where the road parallels the west bank of the Bidasoa River, a good water barrier which protects the entire northeastern entrance to the corridor. In addition the corridor is flanked on the northwest by a low range, overlooking most of its length, and on the southeast by the foothills of the Pyrenees.

Field fortifications and dugouts on both sides of the main road between Irun and San Sebastian have been constructed so that the roads leading from Irun and the frontier are covered. Numerous emplacements for artillery and antitank weapons are located in the vicinity of Fuenterrabia to cover an attack through that corridor.

a. Major logistic factors affecting the defense of the Pyrenees:

Logistic factors are complicated by the limited road and rail nets in this area. In addition, the radial pattern of both the rail and road systems would impede lateral communications. As stated previously, Spanish railroads and equipment are in poor condition and the highways, without substantial maintenance, would not stand prolonged military traffic. Nevertheless, supplies could be moved through the ports of Barcelona and Bilbao to the eastern and western flanks, respectively.

b. Number of Spanish troops required for the defense of the Pyrenees:

The number of Spanish troops required to defend the Pyrenees would depend upon the type and strength of the attacking force. In the event of the necessity to defend the peninsula or the Pyrenees, all of Spain's ground forces would be available for the defense.

Spain's ability to improve the quality of the training of her armed forces without United States assistance is best illustrated by noting Spanish adaptability for learning the use of modern military equipment. This was amply demonstrated during the Spanish Civil War when the Spaniards on both sides received modern foreign materiel and were making effective use of it in combat within 30 - 60 days. In short, there is no reason for believing that the Spaniards are less adaptable to learning the use of such materiel than are the nationals of other countries receiving military assistance under NATO and other international aid agreements. This capacity together with the Spaniards' eagerness to prepare for a possible war would greatly facilitate the training of the Spanish Army.

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It is estimated that when T/E's are augmented by the necessary U.S. materiel, the Spanish Army could provide 10 combat-ready infantry divisions by D / 90 and one combat-ready armored division by D / 180 for use in common defense outside of Spain. The morale of the troops thus employed would rise in direct proportion to the military assistance given to Spain.

Economic

1. Munitions:

Spain has substantial capacity for artillery and small arms production, but is completely lacking in capacity for manufacturing armored vehicles. Spanish arms production, especially in light artillery, is dependent on the acquisition of the special alloys such as nickel, molybdenum, etc., which Spain must obtain from abroad. The problem of steel is not dependent on ore, which Spain has, but on coal and especially on the quality of the coal. England, Spain's normal source of this commodity, is now unable to supply it. The production of explosives is dependent upon the supply of such materials as toluene, dimethyaniline, centralite, sodium nitrade, and cotton of good quality, which are not available in Spain. Another factor which might limit production is the lack of a constant and adequate supply of power and water. A lack of barium perioxide, barium nitrate, magnesium, strontium salts, and red and white phosphorous has limited the manufacture of pyrotechnics. The machinery in most of Spain's plants is a mixture of American, German, English, and Spanish manufacture; roughly 15 per cent is relatively new, and the remainder varies in age from 15 to 40 years. Government-owned arsenals and civilian plants are now engaged in standardization and modernization of of weapons, but lack of materials, power, and other resources has retarded progress.

Plants engaged in manufacture of artillery equipment, small arms, and ammunitions are listed on Table I, hereof.

2. Explosives

Spain possesses an ample source of sulfuric acid in her pyrites production, which is the largest in the world, and which is backed by the world's largest reserves. There is also a small production of ammonia by fixation from the air and from by-product coke ovens, but Spain is dependent on imports for most of here requirements of nitrogen. The ingredients for most high explosives have to be imported.

Spain contains the world's largest reserves of mercury, and produces about one-third of the world output.

3. Weapons and Ammunition

Spain's situation in regard to steel and tungsten has been treated elsewhere. Spain produces considerable quantities of copper and zinc, the two other most important metals in the manufacture of munitions.

4. Power

Although Spain has coal reserves estimated to last 200 to 300 years, the country suffers from a chronic shortage of power. The quality of the coal is poor. Eighty-five percent of the country's installed electric generating capacity is hydraulic, but variable rainfall makes the output fluctuate considerably. The only solution for the country's need for more power would be expansion of the coal mining capacity, and generating plants equipped to burn low-grade coal.

5. Recent Developments

During the last 15 years, Spain's munitions industry has been stimulated by civil war, domestic requirements, and German purchases during World War II. In spite of that stimulation, however, the capacity of the industry is limited almost entirely to weapons of prewar design. Arms and ammunition plants are now operating far below capacity, which is a partial result of shortages of power and raw materials. The Spanish army, heretofore equipped mainly with miscellanious weapons of foreign manufacture or design, is now engaged in a program of standardization and modernization which in 1947 was expected to occupy all plants for three years or more, but which in 1950 appeared to be a long way from the goal.

The efficiency and standards of the various plants vary widely, but are generally far below United States levels. While the machinery in many of the plants is of reliable British, German, Swiss, or U.S. design, much of it is antiquated, and a large portion of hand work is required. Capacity probably would be larger than needed to meet domestic requirements, if ample power and materials were available.

6. Rail and Port Facilities

The Spanish railways are not in a position to handle a heavy increase in traffic.

Shortage of rolling stock, average locomotives and poor tracks contribute to a daily unfulfilled demand for freight cars under normal conditions.

Of the 2681 steam locomotives, of which 562 are out of operation, 1135 are more than 45 years old (1949 report).

The annual carloading for 1949 was just over 3,000,000.

Assuming a daily carloading of 8,000 cars and an average net load of 8 tons, about 64,000 tons of freight move per day. The turn around of cars would seem to be five to seven days.

The railways have to rely largely on imports for manufactured material and ties. The annual requirement for ties for replacement purposes is two to three million. These cannot be supplied from the country's resources.

The attached map gives the estimated military port, rail and highway capacities, without taking into account civil requirements.

7. Iron and Steel

The development of the Spanish metallurgical industry has never been commensurate with the considerable production and variety of native minerals. The bulk of mined ores are exported.

In the record year of 1929, 375,000 metric tons of pig iron and 1 millon tons of steel were produced. Steel ingot production in 1950 was 825,000 metric tons.

Iron ore is ample and well located for the manufacturing of steel, with production in 1950 amounting to about 3,000,000 metric tons, 1,664,800 metric tons being exported. Production in 1950 exceeded that of any year since 1930.

Coal exists in moderate supply and production in 1950 was 11,000,000 metric tons. Coal imports in 1950 amounted to 581,535 metric tons, principally coking and bunkering coal.

In the last few years steel producers have examined the many factors limiting Spanish steel production to approximately 825,000 metric tons. They point out that attempts in the past at self-sufficiency have hampered the industry.

There exists the problem of scrap iron, of which Spain has not, in recent years, had anywhere near the needed amount due to the severe lack of foreign exchange. The shortage of foreign exchange has retarded normal replacement and development in the industry and has served to keep the steel industry at its present low level of production. The industry is also hampered by various government controls.

Spain has ample iron ore and a moderate supply of coal necessary for an expanded steel industry. Spain is short of coking coal and would have to import large amounts if the steel industry is to grow larger. In any expansion of steel production there is also the need for external aid in the form of machinery and foreign exchange credit, special alloys and steel shapes.

It is reported that the steel industry has made extensive plans for the establishment of anew 600,000 ton a year steel plant.

8. Textiles

The textile industry which is concentrated at Catalonia, depends on the rest of the world for raw materials, cotton principally. Wool is also of importance along with rayon and silk. Domestic production of raw cotton and raw wool is supplemented by imports. Inability to procure credits to import American cotton, and the shortage of electricity have greatly hampered textile production for several years.

The 2,570 cotton textile mills consume about 100,000 metric tons of raw cotton annually and contain over 2,000,000 spindles. Cotton yarn output is estimated at 50,000 to 65,000 metric tons annually.

The woolen industry is second in importance only to cotton. Production of worsted and woolen textiles during 1950 amounted to 20,000,000 kilograms. Exports of woolen textiles during 1950 amounted to only about 565 metric tons.

There are four factories producing rayon yarn, with 1950 production at about 9766 metric tons. Staple fiber production in 1950 amounted to 14,547 metric tons. Silk production averages between 30000 and 35,000 kilograms annually.

In January 1951, representatives of the Spanish textile industry offered to produce for the United States Army, large quantities of cotton goods such as canvas (either gray, waterproof or camoflaged); sheeting and textiles for pillow cases; cloth for underwear; ready-made underwear; cotton textiles, dyed or undyed, for uniforms; handkerchiefs, towels, bags, etc. In a short delivery period, 4,000 metric tons of cotton goods could be manufactured to United States specification.

Woolen goods have also been offered: blankets, cloth for coats and uniforms, etc. During the single month of November, 1943, Spanish textile mills provided the United States Forces with over one million military towels.

Provided with the raw materials and more consistent or adequate electric power; Spanish textile production could be increased.

9. Iron Pyrites

Spain possesses the world's largest known deposits of iron pyrites. The proven Spanish reserves are 265,000,000 metric tons, half of the world's reserves. Production has decreased since the end of World War II and is well below the 1938 production rate of 2,500,000 metric tons. In 1950 - 1, 1,306,859 metric tons were produced, which amounted to a gain of 14.8 per cent over the 1949 production.

Several factors impede the restoration of the old rate of production. There is a deficiency in adequate railroad transportation, a lack of new equipment and replacement parts, and a lack of skilled labor, especially laborers for the mines. In addition to providing for the 500000 metric tons required domestically the Spanish Government hopes to export 1,500,000 metric tons of pyrites by the middle of 1952.

10. Tungsten

The decrease in Spanish tungsten production since World War II resulted mainly from the world-wide contraction of the tungsten market. Except for several large mines, tungsten ore is mined in Spain by small producers whose operations are extremely sensitive to price changes. Since the beginning of 1951 Spanish prices for tungsten ore have been more in line with United States prices, thus creating the possibility for increased production. Officials of the Spanish Control Council of Minerals of Military Interest (COMEIM) estimate maximum production capacity at 3,000 -3,500 metric tons per year. Private producers, however, estimate maximum output at about 2,000 metric tons. Spain's requirements are approximately 200 - 250 metric tons per year, and the remainder of her output is available for export. The Spanish Government is currently attempting to use its tungsten surplus to obtain raw materials in short supply in Spain.

11. Mercury

The increase in Spanish mercury production during 1950 resulted primarily from the unprecedented demand for mercury subsequent to the Korean crisis, and the breakup of the international mercury cartel, "Consorzio Mercurio-Europeo," at the beginning of 1950. With the drop in the Spanish export price of mercury following the dissolution of the cartel, Spanish exports amounted to 51,499 flasks during the first quarter of the year, and totalled 99,400 flasks by the end of the year, compared with exports of 27,620 flasks in 1949.

Current plans call for plant expansion and renovation, including the installation of a new distillery at the mercury smelter near Almaden del Azogue. The Almaden mine is considered the most important mercury deposit in the worldk with reserves estimated at one million flasks. Because of the richness of the ore, it is possible for Spanish mercury to be sold at a price considerably lower than that at which the Italian mines can be profitably operated. If planned improvements of the smelter are carreid out, Spanish mercury production should be sufficent to meet the requirements of the Western nations.

SECRET

TABLE I

Plant	Approximate Annual Production @ Latest Rate	Estimated Annual Capacity
1. Fabrica Nactional		
1. Fabrica Nacional de Armas de OVIEDO	3,720 guns	7,440 guns
2. Sociedad Anonima de las Armas - PLASENCIA	144 guns	288 guns
3. Sociedad Anonima de Armas - ANDOAIN Plant	108,000 rds.ammo. 144 mounts	120,000 rds. -
4. Fabrica Nacional de PLAENCIA	139,500,000 rds.ammo.	310,000,000 rds.
5. Sociedad Anonima de Construccion Naval - REINOSA: -		
152.4/50 C. (VICKERS) Model	18	-
105/26 H (Spanish) Model 1943	8	48
Ammo. for 152.4/50	77,500 rds.	-
Ammo. for 105/26	465,000 rds.	-
Steel Production	36,000 tons	-
6. Star Bonifacio Echevarria S.A. - EIBAR:		
Submachine Guns	3,600	-
Other small arms	36,000	-
7. Fabrica Nacional de Artilleria de TRUBIA		
88/55 AA/A Tk	52	104
149.1/55 G (German)	4	24
8. Fabrica Nacional de Armas de LA CORUNA:		
7.92 mm Mosqueton	46,500	93,000
9. Plasticos Cramis, S.L. - San SEBASTION:	Irregular;	
Hand Grenades	dependent on orders	500,000
10. TOLEDO National Arms Factory:		
Small Arms Ammunition	100,000,000 rds.	155,000,000 rds.
Model "A" Artillery fuses	77,500	775,000
20 mm Artillery fuzes	232,000	620,000
11. National Powder & Explosives Factory - GRANADA:		
Nitrocellulose	310,000 kg.	496,000 kg.
TNT	620,000 kg.	930,000 kg.
Tetryl	155,000 kg.	248,000 kg.
12. Factory of MILANOS of the Spanish Explosive Union: Dynamite	2,325,000 kg.	4,650,000 kg.
13. Spanish Society of Naval Construction of SAN CARLOS:	oo	
Naval Cannons (medium and/or heavy)	9 guns	25 guns
Army Field Artillery (light & med)	- -	60 guns
Artillery fuze (one type)	36,000	50,000
Projectiles (one caliber)	-	100,000
Submarine torpedoes	-	300 to 500

SECRET

Plant	Approximate Annual Production @ Latest Rate	Estimated Annual Capacity
14. National Artillery Factory of SEVILLE:		
Artillery pieces of 75/22 up to 105 mm	48 guns	100 guns
Artillery projectiles up to 105 mm	124,000 rds.	250,000 rds.
Hand Grenades	-	500,000
Ammunition Boxes	6,000	10,000
15. Military Pyrotechnics Factory of SEVILLA:		
7 mm Mauser Rifle Cartridges	12,400,000 rds.	-
7.92 mm Mauser Rifle Cartridges	12,400,000 rds.	-
120 mm Vickers (Navy) shell cases	124,000	248,000
9 mm Pistol ammunition	-	18,600,000
Artillery Fuzes (one type)	-	496,000
Rifle Ammunition (one caliber)	-	74,400,000
Primers	-	1,240,000
20 mm AA Cartridges	-	2,480,000 rds.
16. Esperzanza y Cia at MARQUINA:		
120 mm Mortars	-	360
81 mm Mortars	-	1,200
50 mm Mortars	-	1,200
ammo. for 120 mm Mortar	-	31,000
ammo. for 81 mm "	-	248,000
ammo. for 50 mm "	-	372,000
