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~~(S)~~ INTRODUCTION

This study is an analysis of the major transportation facilities of South China and includes estimated tonnages that could be moved by military forces in a resupply operation.

South China, with a land area of about 942,000 square miles, is approximately the size of the United States east of the Mississippi River. The population is estimated to be 394 million (Jan. 1966), giving an overall density of 418 persons per square mile. Kiangsu Province, which includes most of the Yangtze delta, is the most densely populated with 1,196 persons per square mile, and in the Canton delta area the density of the rural population nearly equals that of some cities in the U.S. The total labor force of South China is 210.8 million.

More than two-thirds of South China consists of hills and mountains which extend from the coast to the western boundary of the region. The elevation of most of the hills and mountains is between 1,200 and 1,800 meters, but peaks of over 5,000 meters occur in the far west. The remaining one-third of South China consists of numerous valley and lowland plains that range from small isolated pockets in the interior and along the coast to broad expanses along large rivers in the northeast and south. These predominantly flat lowlands are intensively cultivated, chiefly in wetland rice. Most of the plains areas are drained by an intricate network of streams, canals, and irrigation ditches, but widespread flooding is common along major streams.

The climate is divided into a short summer season (June through August) with southerly winds and a long winter season (November through March) with northerly winds. Summers are wet, cloudy, and humid with temperatures varying according to elevation and latitude. Monthly precipitation amounts vary between 13 and 51 centimeters (5 to 20 inches) depending on location; coastal areas and southern slopes of rising terrain receive the greater amounts. Winters are normally dry, fairly clear and cool, and sometimes cold, but change to moist, cloudy, misty, and cool weather over the eastern highlands and lowlands in January. Monthly precipitation is usually less than 1 inch (2.54 centimeters) in the western highlands but increases to about 5 centimeters (2 inches) in the eastern highlands and lowlands during the latter half of the winter season. Spring and autumn are seasons of change toward the conditions of approaching major seasons. Temperatures are generally moderate. The highest temperatures, in the lowlands and coastal areas, are usually in the low 90's but have been as hot as 102°F. Freezing weather occurs only in the highland areas where winter temperatures are 20° to 30°F.; temperatures well below 0°F. can occur on the higher mountain peaks.

Ports play an important role in the economy. Shanghai is the most important commercial, shipping, financial, and manufacturing center of Communist China; Nanking, Wu-hu, Chiu-chiang, and Wu-han, all on the Yangtze River, are important transportation, agricultural, and commercial centers. Amoy is the major collection and distribution center serving the central section of the LOC area, and Canton is the most important economic and agricultural center in the southern part of the area. Fort Bayard, on the eastern side of Liuchou Peninsula, is an important distribution center for agricultural and mineral products of the hinterland.

With about 5,300 kilometers of coastline, South China has few beaches favorable for logistical over-the-shore operations because of flat nearshore bottom slopes, lack of manmade exits, and difficult cross-country movement. Moreover, sea approaches contain such dangers as scattered islets, islands, rocks, shoals, and fish stakes and traps; large tidal ranges, strong tidal currents, and high surf are also detrimental to operations. The coast consists predominantly of mountains and hills which rise abruptly from the sea; however, parts consist of narrow plains and lowlands. Although highway Route 27 is generally within 30 kilometers of the coast, access to it is restricted to the limited number of manmade routes because of numerous obstructions to cross-country movement.

The air facilities consist of 96 airfields with runways over 610 meters in length; of these, 72 are capable of supporting operational USAF transport aircraft of C-123 type or larger. All of the 16 airfields selected for this study will support C-141's.

Railroads are the most important mode of transport. The networks, totaling 11,300 kilometers or almost one-third of the Communist Chinese Railroads, is standard gage (1.435 m. or 4'8 1/2") and single track except for 365 kilometers of double track and 862 kilometers of single track, narrow-gage lines. The railroads are the principal means of long-distance freight and passenger transport and provide the only relatively high-capacity north-south routes through the region.

The highways of South China are used for short-haul movement and to provide feeder services to the railroads and inland waterways. Most of the traffic is still non-motorized farm-to-market transport. Because of the many poorly-built and poorly-maintained roads and the numerous narrow, low-capacity bridges, the highway system is inadequate to support sustained military traffic. Most of the selected routes are of gravel or soil-aggregate and only one lane wide. In several critical areas, such as along the southern border and opposite Taiwan, the highways have been improved to support limited military traffic, but in most of South China, especially inland, road improvements are negligible.

Inland waterways play a significant role in South China's transport system. Countrywide, waterways rank second to rail in ton-kilometers of cargo carried, and in some southern provinces, such as Hunan and Kuangtung, waterways constitute the principal mode of transport. The Yangtze is the most heavily trafficked waterway in all of China and serves as a major logistical route for over 2,500 kilometers from its mouth, near Shanghai, to Chungking. The Grand Canal, providing north-south routes from the Yangtze, parallels the coast in the vicinity of Shanghai. The Chu Chiang system, radiating from the Canton area, provides a major east-west logistical route through the southern provinces of Kwangsi and Kwangtung. The fleets are composed largely of junks and sampans which carry about two-thirds of waterway tonnage, but the use of modern steamers, motorships, and barge trains is increasing. With few exceptions, inland waterway port facilities are primitive; reliance is on manpower rather than mechanical handling.

Telecommunication (telecom) facilities in South China are second in density to those serving the industrialized northeastern regions. Key urban areas are linked by a network of low capacity open-wire or cable lines, a few radio relay links, and numerous high-frequency radiocommunication stations. Special purpose facilities are operated by most government agencies for their unique requirements. International radio services to most world centers are available from Shanghai and Canton; wire services are more limited.

There are no petroleum pipelines in South China capable of supporting or supplementing the selected lines of communication.