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# ECONOMIC INTELLIGENCE REPORT

# THE ROLE OF TRANSPORTATION IN THE ECONOMY OF COMMUNIST CHINA 1950-62

50X1


CIA/RR 117-S-1
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## CENTRAL INTELLIGENCE AGENCY

OFFICE OF RESEARCH AND REPORTS

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ECONOMIC INTELLIGENCE REPORT

# THE ROLE OF TRANSPORTATION IN THE ECONOMY OF COMMUNIST CHINA, 1950-62

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CIA/RR 117-S-1

(ORR Project 43.2033)

CENTRAL INTELLIGENCE AGENCY

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## FOREWORD

This report presents an analysis of recent developments in the transportation sector of the Chinese Communist economy. [redacted] 50X1

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The report is devoted exclusively to highway transportation, inland waterways and coastal shipping, and various forms of primitive or native transportation. [redacted] 50X1

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# THE ROLE OF TRANSPORTATION IN THE ECONOMY OF COMMUNIST CHINA, 1950-62*

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## Summary

Investment in water transportation in Communist China during the First Five Year Plan (1953-57) was considerably less than that in land transportation. Investment was devoted primarily to building up the fleet. The smaller portion was allocated to increased use of navigation aids, construction of new ports, and rehabilitation of existing ports. During the Second Five Year Plan (1958-62) the total volume of investment in water transportation is expected to be higher than in the First Five Year Plan, but the general pattern of investment probably will remain about the same.

At the end of 1956, Communist China possessed approximately 80,000 civilian trucks, and a nearly equal number are owned and operated by the military. Although China shortly will have the production capacity to triple the civilian truck inventory by 1963, current and anticipated shortages of motor fuel make this occurrence unlikely. If the availability of petroleum products for truck transportation does not increase rapidly, the development of truck transportation will be seriously retarded. Because of mounting production of trucks, the Chinese may soon find it desirable to export trucks to underdeveloped areas as an economic matter as well as a propaganda gesture.

The importance to the economy of the primitive or native means of transportation in Communist China has often been underestimated, not only by foreign observers but also by the Communist leaders as well. Since mid-1956, however, there has been a steady flow of directives urging fuller utilization of this great reservoir of transportation capacity. Chinese Communist announcements indicate that in 1956 native transportation originated 298 million metric tons** of freight, 21 percent more than the railroads and 277 percent more than modern motor

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 April 1958.
** Unless otherwise indicated, tonnages are given in metric tons throughout this report.

carriers. The military experiences of Korea and Indochina with native transportation warrant respect for the capabilities of these means of transportation. They are an integral part of the Chinese transportation system, and their use is essential to the maintenance of the economy and to its growth.

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## I. Inland Waterways and Coastal Shipping.

### A. Investment.

During the First Five Year Plan, investment in water transportation in Communist China was considerably less than that in land transportation. It is reported that in 1950 Communist China decided to stress the development of railroads over highways and water transportation. 1/* This assertion is supported by the fact that during the first 3 years of the First Five Year Plan railroads accounted for two-thirds and highways for 19.3 percent of the total investment in construction in the realm of communications and transportation. 2/ The proportions of the remaining 14 percent (approximately 600 million to 700 million yuan) devoted to waterways, civil air transportation, and posts and telecommunications are not known. The division between coastal and inland shipping of the share of investment for water transportation also cannot be determined from available information. The most concrete information on this subject is the vague statement in the First Five Year Plan that "within the 5-year period, the major obligation in the realm of waterway transportation will be to develop inland river transportation, with emphasis on the Yangtze River, and at the same time to appropriately develop ocean transportation." 3/

Of all funds invested in shipping on the Yangtze River in 1950-56, construction of ships accounted for about 67 percent; construction of harbors and docks, about 12 percent; construction of shipyards and of navigation markers, about 3 percent each; and construction of waterways, about 2 percent. The remaining funds were invested in living quarters, telegraph lines, health and welfare of employees, cultural studies, and all other activities. 4/ Lack of information precludes a comparable breakdown of investment in other inland shipping or in coastal shipping, but the few scraps of information available indicate that it is probably not significantly different from the Yangtze program.

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The small amount allocated by the Yangtze investment program to facilities for handling traffic compared with the amount allocated to building up the fleet indicates that it has been the expansion of the fleet, not of port facilities, which has permitted the accomplishment of traffic goals. Also, the stress on expansion of the fleet without concurrent improvement of port facilities led to the crowding in ports which had become a severe limitation on the use of ship capacity by 1956. The Chinese Communists recognized their error, and in 1957 investment in construction of ships was reduced to about 55 percent and investment in harbor and dock work was boosted to about 22 percent of total investment in Yangtze River shipping. 5/

During the Second Five Year Plan the total volume of investment in water transportation is expected to be higher than that during the First Five Year Plan, but the general pattern of investment probably will remain about the same. Expansion of the fleet is expected to retain high priority, but the emphasis is expected to shift somewhat from the inland waterway fleet to the seagoing fleet. Investment in equipment is expected to be higher in order to increase the capacities of the ports for handling traffic, particularly the capacities of inland ports.

B. Fleet Inventory.

Between 1950 and the end of 1956, with salvage efforts, foreign purchases, and new construction, the modern Chinese Communist water transportation fleet increased from about 79 vessels totaling 175,000 gross register tons (GRT) to about 117 vessels totaling 285,000 GRT (each vessel of 1,000 GRT or more). Of this total, the modern coastal fleet at the end of 1956 is estimated to have accounted for about 72 vessels totaling 171,000 GRT and the inland fleet for about 27 vessels totaling 61,000 GRT. The remainder were miscellaneous vessels such as dredges which are a part of the fleet but not directly concerned with transportation. The total tonnage of the modern inland waterway fleet* is unknown but is estimated to be 400,000 to 500,000 deadweight tons (DWT). There were at least 90,000 DWT of inland waterway vessels in 1950, 6/ and during the 1953-56 period vessels totaling 230,620 DWT were added to the Yangtze fleet alone; and 32,600 DWT in addition were scheduled for 1957. 7/ During the First Five Year Plan a total of 289,000 DWT was to be added to the inland fleet (and 111,000 DWT to the coastal fleet). 8/ If 263,220 DWT have gone to the Yangtze fleet, it is evident that the fleets of other inland waterways have experienced very little growth.

The modern water transportation fleet in Communist China (inland and coastal combined) was increased in 1956 by approximately

* Including vessels of all sizes.

100,000 DWT, 9/ and the total tonnage added during the first 4 years of the First Five Year Plan was 310,000 DWT. 10/ It is estimated that the First Five Year Plan goal of an increase of 400,000 DWT was exceeded because an increase of about 110,000 DWT, representing the largest increase in tonnage ever achieved in a single year, was scheduled for 1957. 11/ No production figures for junks have been announced, but it is estimated that Communist China is capable of constructing up to 150,000 DWT per year, of which some 25,000 DWT could be motorized. 12/ Although it is known that the Chinese Communists have retired some vessels from the water transportation fleet, the attrition rate is unknown. It is expected, however, to be low.

The modern inland and coastal fleets are augmented by a large number of junks and other native craft. Although the Chinese Communists refer to junks with some derision as "old fashioned," they are aware of the tremendous service junks provide for the economy, particularly in inland water transportation. In a speech to the 8th Party Congress on the Second Five Year Plan, Chou En-lai indicated Chinese thinking on the future place of junks in the transportation system when he said 13/:

> During the Second Five Year Plan period it is still not possible for us to make large investments in building up modern transportation and in regulation of the waterways. Therefore, full utilization of the existing sail boats should be taken as the guiding principle of every navigation department and every navigation worker. Sail boats are an indispensable means of transport not only to the navigation over rivers and tributaries, but to the harbors and rivers used by modern means of transport.

Goals for shipbuilding during the Second Five Year Plan have not been announced, although the few available data point to emphasis on production of coastal vessels. During this period it is anticipated that additional shipbuilding capacity will be added and that greater use will be made of sectional construction which will be reflected in increased production. The tonnage produced will also be influenced by the production of larger vessels (which seem to be required) because of the reduction in assembly time per ton compared with smaller vessels. It is estimated that the Chinese Communist modern water transportation fleet may be increased by approximately 1 million DWT during the Second Five Year Plan, of which about 400,000 DWT may be seagoing vessels.

C. Performance.

Early in February 1958 the Chinese Communists announced that their 1957 transportation plans for inland waterways and coastal shipping

had been overfulfilled. The ton-kilometer performance of inland waterways increased in 1957 by 21.4 percent, and that of coastal shipping increased by 29.2 percent compared with 1956. 14/ The announcement did not contain performance figures for tons originated. Tables 1* and 2** contain revised estimates of inland water transportation and coastal shipping ton-kilometer and tons originated performance for the years 1957 through 1962.

## II. Highways.

### A. Highway Network.

Communist China has been busily constructing and repairing roads throughout the country, but for several reasons it is impossible to provide precise figures on the aggregate length of all types of motorable roads. This difficulty arises not so much from the reticence of the Peking authorities as from the imprecise and contradictory nature of figures released. Although the Chinese place motor roads in six classes for administrative purposes, they do not define in their published statistics what they are talking about and do not even consistently distinguish between new building and the repair of existing roads. Under the word translated as "highways" they sometimes include cart trails, which are not negotiable by motor vehicles.

The most recent figures released by the Chinese indicate that the total length of usable highways was raised from 75,000 kilometers (km) in 1949 to 250,000 km at the end of 1957. 15/ The latter figure is 30,000 km higher than the end-of-1956 figure. 16/ In either case it is impossible to tell to what extent the figure has been increased by including as highways those truck routes across the deserts and plateaus where construction has amounted to nothing more than marking the course and improving the approaches to crossings of gullies and fords. A good example of this is the 1,300-km road in Tibet from Nagchuka (Hei-ho) to Gartok (Katako). After nearly a month a survey of the road was completed by a team which had to build its own roads so its vehicles could cross impassable stretches. 17/ On 1 June 1956, just 68 days later, it was announced that the new Nagchuka-Gartok highway was open to traffic and that the first truck convoy had made the run carrying 10 tons of goods to Gartok. 18/ In February 1957, Peking announced that Inner Mongolia had 13,500 km of highways, of which 11,000 had been built since the Communists took over. 19/ Undoubtedly a large part of these 11,000 km consists of little more than tracks across the firm ground and grasslands of the area.***

* Table 1 follows on p. 6.
** Table 2 follows on p. 7.
*** Continued on p. 8.

Table 1

Communist China: Estimated Performance of Inland Water Transportation a/ 1957-62

| Year | Amount (Billion Ton-Kilometers) | Volume (Million Metric Tons Originated) b/ | Average Length of Haul (Kilometers) c/ |
|---|---|---|---|
| 1957 | 15.7 d/ | 40.6 | 387 |
| 1958 | 17.7 e/ | 45.7 | 387 |
| 1959 | 19.7 e/ | 50.9 | 387 |
| 1960 | 21.7 e/ | 56.0 | 388 |
| 1961 | 23.7 e/ | 61.2 | 387 |
| 1962 | 25.7 e/ | 66.3 | 388 |

a. Modern transportation, excluding wooden sailing vessels and junks.
b. Straight-line projection, based on the average of the absolute increases between 1950 and 1956. 20/
c. Calculated by dividing ton-kilometers by tons originated.
d. Announced 21.4-percent increase above 1956. 21/
e. Straight-line projection, based on the average of the absolute increases between 1950 and 1957. 22/

Table 2

Communist China: Estimated Performance of Coastal Shipping a/
1957-62

| Year | Amount (Billion Ton-Kilometers) | Volume (Million Metric Tons Originated) b/ | Average Length of Haul (Kilometers) c/ |
|---|---|---|---|
| 1957 | 11.1 d/ | 13.9 | 800 |
| 1958 | 12.6 e/ | 15.8 | 800 |
| 1959 | 14.0 e/ | 17.5 | 800 |
| 1960 | 15.5 e/ | 19.4 | 800 |
| 1961 | 17.0 e/ | 21.2 | 800 |
| 1962 | 18.4 e/ | 23.0 | 800 |

a. Modern transportation, excluding wooden sailing vessels and junks.
b. Calculated by dividing ton-kilometers by average length of haul.
c. The years 1953-56 reveal a tendency for the average length of haul to level off at about 800 kilometers. In the absence of additional information, it is assumed that this pattern will prevail until the situation in the Taiwan Strait region is settled. 23/
d. Announced 29.2-percent increase above 1956. 24/
e. Straight-line projection, based on the average of the absolute increases between 1950 and 1957. 25/

The building of what Peking calls simple highways (usually nonmotorable) or local roads, even when involving substantially greater improvements than in the two examples just cited, calls for little more than organized local manpower and local materials. What this process can amount to is shown in a Chinese Communist publication of April 1956 which states 26/:

> In the development of local transportation, the principles of economy, usefulness, utilization of local resources and adaptation to local conditions must be observed ... . The local labor force should be organized. Voluntary contributions should be encouraged ... . According to estimates, 150 million among the Chinese rural population may be able to render free services in road construction. If each of them will spend one day a year in road construction, and if in the construction of one kilometer of temporary highways, 7,000 fang* of earth is required, more than 40,000 kilometers of such highways could be constructed in a year. This shows the tremendous capacities of local volunteer labor.

The quotation also shows something about standards of construction for local roads.

B. Motor Truck Inventory.

The civilian authorities of Communist China possessed approximately 80,000 trucks at the end of 1956. 28/ A nearly equal number are owned and operated by the military. The civilian truck inventory is composed of many different makes and models from at least nine different countries, which seriously complicates maintenance and the obtaining of spare parts. Since 1949, nearly all of the additions to the truck park have come from the USSR and the European Satellites, especially Czechoslovakia. Of the total inventory, "heavy motor trucks with a total capacity of more than 40,000 tons" have been imported "during the past few years" according to the Chinese. 29/ Thus the number of trucks imported must have been approximately 10,000 to 15,000.** Although relaxation of Western trade controls will make trucks from Western Europe available in the future, it is possible that this new source will not be heavily tapped, because domestic production may soon catch up with effective demand.

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* The term fang used in excavations, masonry, and so forth equals 3.66 cubic meters. 27/

** An earlier announcement indicated that 40,000 trucks had been imported in the past several years. 30/ This figure apparently was an error which was not detected until after the original announcement was made.

In 1956, domestic production of modified ZIS-150 4-ton trucks began at the newly opened First Automobile Plant at Ch'ang-ch'un. Production may have amounted to as many as 1,654* trucks in that year 34/ and more than 7,000 in 1957. 35/ The goal for 1958 is 18,000 4-ton trucks of various types. 36/ This figure is well ahead of the original plan and indicates a capability of reaching the factory's designed capacity of 30,000 trucks a year considerably before the predicted date of 1960. 37/ Thus there is the projected capability for more than tripling the civilian truck inventory by the end of 1963.**

During 1958 the Chinese Communists plan to produce 11,000 4-ton Liberation trucks of the modified ZIS-150 type, 2,000 4-ton gas generator trucks, several hundred 4-ton cross-country trucks, and a number of dump trucks at the First Automobile Plant. Plants manufacturing motor-vehicle parts in Nanking and Shanghai will produce 2-1/2-ton trucks, 2-1/2-ton gas generator trucks, and 500 1-ton trucks with 3 wheels. In addition, trial production of 5-ton gasoline-burning trucks, 5-ton coal-gas trucks, 5-passenger automobiles, 1-1/2-ton trucks, and 2-ton cross-country trucks may take place. 38/

During the Second Five Year Plan the Chinese Communist motor vehicle industry will attempt to supply most of the demands of the country for motor vehicles both as to quantity and type. Plans call for the design and production of 5-ton, 7-ton, and 10-ton trucks, and various types of automobiles and buses. If necessary, the industry will design and produce dump trucks with a loading capacity up to 25 tons. Another important goal will be the design and production of various types of vehicles suitable for rural and rural-to-urban transport using solid or gaseous fuels which are abundant in many parts of the country. 39/ According to a plan drawn up by the Number 1 Industrial Bureau in Mukden, Liaoning Province, for example, bureau-operated factories will produce 10,000 coal-burning trucks by the end of 1962 in support of agricultural mechanization in the province during the Second Five Year Plan period. 40/

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* Although the figure of 1,654 has appeared in the official Communiqué on Fulfillment of the National Economic Plan in 1956, 31/ a conflicting figure of 1,238 trucks produced in 1956 was also announced. 32/ Analysis of the rate of production between October 1956 and June 1957 [redacted] indicates that the figure of 1,238 is probably the correct one. 50X1 50X1

** At a rate of 7,000 for 1957, 15,000 for 1958, and 30,000 for the ensuing years, the total production through 1963 would be 172,000 trucks. By adding this amount to the 80,000 civilian truck park for 1956, the total becomes about 250,000, which is more than 3 times the 1956 park.

Although the effect of the increased production capacity on civil trucking actually will be reduced by the diversion of an unpredictable number of new trucks to the military forces, the effect on the available supply of gasoline will not be substantially lessened. Because the rate at which domestic production can increase the truck inventory may exceed the limits of the fuel supply, it is conceivable that production of trucks may be deliberately retarded if production of petroleum continues to lag. It is also possible that the First Automobile Plant will begin producing a larger proportion of trucks adapted to the use of nonliquid fuels than indicated above.

C. Operating Efficiency.

On 1 July 1957, Vice Premier Po I-po, concurrently Chairman of the State Economic Commission of Communist China, in his speech to the National Peoples Congress, announced 41/:

> Because of the backwardness of petroleum production in China and insufficient supply of liquid fuels, there is no possibility of developing truck transportation on a large scale for some time to come.

A more recent discussion in the periodical Planned Economy indicates that motor fuel was in acute short supply during 1957. 42/ The seriousness of the situation is further pointed up by the State Council directive on gasoline economy issued on 1 February 1956 which stated that "during the past few years, although China has quickly increased its gasoline production, it is still unable to meet daily expanding needs because of its weak base. It is estimated that for a long time to come, large quantities of petroleum will still have to be imported." 43/ The directive set forth various rules for limiting gasoline consumption; it instructed various localities, in accordance with their own fuel supplies, to give attention to vehicles which use charcoal, wood, anthracite, alcohol, and natural gas; and it indicated that the import of nonproductive vehicles must be greatly reduced. 44/ References to the savings of fuel resulting from the use of non-gasoline-burning vehicles were numerous during 1957. In May it was reported that although the use of coal as a substitute fuel for motor trucks had been regarded as unsatisfactory in the past, the need to save gasoline had led to tests of trucks fitted with stoves on which a number of improvements had been made. In view of the success of these tests, the Szechwan Provincial Transportation Bureau decided to convert 100 trucks for operation with coal gas during 1957. It was estimated that the resulting savings in gasoline would amount to approximately 400 tons. 45/ The Highway Transportation Bureau of Anhwei Province also decided to convert 120 trucks to the use of coal gas as fuel with estimated savings of 430 tons of gasoline

during 1957. 46/ During actual tests on the roads in Szechwan it was found that by using soft coal gas, heavily loaded trucks could travel 20 to 30 km per hour on any grade of less than 13 percent. Coal-burning trucks thus could be used on all but a few of the roads where the grades are too steep, such as the Szechwan-Tibet highway. 47/ In addition to the use of coal-burning trucks, the Chinese have assigned trucks from their limited inventory of diesel-powered trucks for driving long distances in the high mountains of the Northwest. 48/

It is estimated that in 1957 Communist China may have had available approximately 400,000 tons of gasoline for its civilian motor vehicle park. The quota set by the central government for consumption of gasoline in 1956 was 17.75 kilograms per 100 km. 49/ If the entire supply of gasoline available in 1957 had been used by motor trucks at this rate, then approximately 2.3 billion truck-kilometers* would have been produced. Although some transportation groups consumed gasoline at rates below the norm in 1956, 50/ others exceeded it by as much as 100 percent, 51/ so it seems probable that considerably less than 2.3 billion truck-kilometers were produced in 1957 by trucks using gasoline for fuel.

On the other hand, with a truck park of 80,000 vehicles operating an average of 200 km per day 300 days of the year, 52/ the Chinese could have produced 4.8 billion truck-kilometers. Only a small portion of this total would have been produced by non-gasoline-burning vehicles. Thus, although these figures are all subject to wide margins of error, it seems quite evident that the Chinese are experiencing a severe shortage of gasoline, which will make it difficult for them to utilize efficiently a truck park of 80,000 vehicles for some time to come.

Unless steps are taken, through imports or improvement of the petroleum base, to satisfy requirements of fuel for motor transportation, the domestic shortage of petroleum will prevent the development of truck transportation on a significantly larger scale in the immediate future. The Chinese may in such circumstances find it feasible and desirable to export sizable numbers of their newly produced trucks to underdeveloped areas in 1958 and beyond as an economic matter as well as a propaganda gesture. At the close of the second Chinese

* The highway traffic performance of Communist China in 1957 is estimated to have been 3.79 billion ton-kilometers (tkm). If the average load per loaded truck is assumed to be 3 tons, the ton-kilometer figure reduces to 1.26 billion truck-kilometers. Increasing this figure by 50 percent to account for the empty haul results in a figure of 1.9 billion truck-kilometers performed in 1957. This figure would seem to indicate that the figure of 2.3 billion derived from the consumption of gasoline is of the proper order of magnitude.

export fair, for example, it was announced that for the first time 4-ton Liberation trucks will be exported to Jordan, Egypt, Burma, and Cambodia. 53/

Nearly half of the civilian trucks in Communist China are owned and operated by various government enterprises such as factories, mines, schools, and state farms. 54/ Slightly over half are owned and operated by the various transportation organs of the state. 55/ The latter perform services comparable to those of common carriers in the US. Some of the long hauls are performed by military trucks, particularly in dissidence-ridden Tibet where Peoples Liberation Army transportation units reportedly transported about 2.6 million tons of building materials for the Tibetan people in 1956. 56/ A major reason for using military trucks on this run is their suitability to operation in convoys by which they are protected from the Tibetan people.

During 1956 it was found that the trucks belonging to the state transportation organizations attained a utilization rate of 75 percent, 57/ whereas those of the individual enterprises had a utilization rate of only 43 percent. 58/ In order to overcome this discrepancy, the enterprises were told that during periods of idleness their trucks should be rented to the state transportation organs. 59/ In 1956, some nontransportation enterprises experimented with this policy. As a result, 9.6 million tons of freight reportedly were hauled in rented trucks which would otherwise have been idle. 60/

On good roads the speed limit in Communist China generally ranges from 10 to 20 km per hour (6 to 12 miles per hour) in towns and from 40 to 50 km per hour (25 to 31 miles per hour) in the country, 61/ although speeds up to 80 km per hour (50 miles per hour) have been reported. 62/ Regulations forbid loading trucks with more than their rated capacity, but this rule reportedly is not strictly applied when US-manufactured Dodge and General Motors trucks are being loaded. 63/

D. Performance.

A Chinese Communist announcement of October 1957 indicated that the volume of highway freight traffic (probably tons originated) in 1957 was expected to be 503.2 percent of 1952, or 154.5 percent of the original First Five Year Plan goal. These figures represent an average annual increase of 38.2 percent between 1952 and 1957. 64/ In absolute terms the Chinese apparently planned to originate approximately 104.3 million tons of highway freight traffic in 1957, a 32-percent increase above the 1956 figure of 79.1 million tons. Speaking at the National Peoples Congress in early February 1958, Po I-po

indicated that the highway transportation plan for 1957 had been overfulfilled. 65/ His statement also implied that the ton-kilometer performance of highway transportation had increased by 8.4 percent in 1957. 66/ Thus it appears that highway ton-kilometer performance in 1957 was about 3.79 billion tkm and that tons originated performance was at least 105 million tons. Average length of haul decreased by 18 percent, from 44 km in 1956 to 36 km in 1957. Whether this is a reflection of the gasoline shortage, combined with an improvement in truck utilization, or whether it is due to the improved service to remote areas supplied by the new railroad lines is difficult to say at this time. Between 1950 and 1956 the annual increase in highway ton-kilometers was never less than 35 percent and in 1953 it reached 74 percent. In 1955, an unusual year in many respects, average length of haul was 50 km, considerably above the 1957 figure. If the figure of 50 km is eliminated, however, the trend of average length of haul was upward between 1952 and 1956. At this time it is difficult to foresee whether average length of haul will increase or decrease in the future. It hardly seems likely, however, that much of an increase will take place, in view of current and anticipated shortages of motor fuel. For purposes of estimating future performance, average length of haul has been held constant at 40 km, which is slightly less than the average for the years 1950 through 1957. Table 3* contains revised estimates of performance in terms of ton-kilometers and tons originated for the years 1957 through 1962.

A failure of truck transportation performance to increase at least as fast as the transportation demands of the expanding general economy would become a serious problem for the Communist planners. Recognition of the price of inadequate truck transportation has been frankly outlined as follows 67/:

> Despite [the great increase in performance], the 1956 highway transport work was far from being able to meet the objective needs. A state of tension presented itself in varying degrees in all parts of the country, particularly in the Southwest and Northwest regions where communication facilities were poor. Tension in transport was more strikingly felt in some major cities where capital construction tasks were heavy in some newly developed areas. The tension has not once eased since the second quarter of 1956, in Tsinghai, Sinkiang, Inner Mongolia, Szechwan, Yunnan, and Kweichow.

* Table 3 follows on p. 14.

Table 3

Communist China: Estimated Performance of Highway Transportation a/ 1957-62

| Year | Amount (Billion Ton-Kilometers) | Volume (Million Metric Tons Originated) | Average Length of Haul (Kilometers) |
|---|---|---|---|
| 1957 | 3.79 b/ | 105 c/ | 36 d/ |
| 1958 | 5.24 e/ | 131 f/ | 40 g/ |
| 1959 | 6.44 e/ | 161 h/ | 40 g/ |
| 1960 | 7.72 e/ | 193 i/ | 40 g/ |
| 1961 | 9.12 e/ | 228 j/ | 40 g/ |
| 1962 | 10.5 e/ | 262 k/ | 40 g/ |

a. Modern transportation excluding all forms of native transportation.
b. Announced 8.4-percent increase above 1956. 68/
c. 69/
d. Ton-kilometers divided by tons originated.
e. Tons originated multiplied by average length of haul.
f. Estimated increase of 25 percent above 1957.
g. Estimated.
h. Estimated increase of 23 percent above 1958.
i. Estimated increase of 20 percent above 1959.
j. Estimated increase of 18 percent above 1960.
k. Estimated increase of 15 percent above 1961.

> ... An undesirable effect was produced on the progress of production and capital construction and on the supply of consumer goods for the people. Some capital construction projects in T'ai-yuan, for instance, had to be suspended waiting for materials which could not be brought to the spot on time. The coke produced by the Hsining Coke Plant in Shansi could not be shipped out, thus hindering operation of the metallurgical plants. Commodities ran out of stock in Sining /Hsining/ of Tsinghai at a time when quantity of supplies was tied up in Hokow, 200 kilometers away ... . In the Tsaidam and Karamai areas, supplies required for geological prospecting and workers' livelihood were in short supply because transport capacity could not meet the needs.
>
> Shortage of highway transport capacity also caused blocking up of railway stations. The main railway

stations like Peking, Tientsin /T'ien-ching/, Taiyuan /T'ai-yuan/, Lanchow /Lan-chou/, Paotow /Pao-t'ou/, Shenyang /Shen-yang -- Mukden/, Harbin /Ha-erh-pin/, Hantan /Han-tan/, Tsinan /Chi-nan/, and Chengchow /Cheng-hsien/, were for a time blocked in 1956. Supplies were tied up at the stations, impeding the movement of rolling stocks.

... According to a rough estimate, a shortage of transport capacity to the extent of 17,000 trucks was felt by the provinces during 1956.

III. Native Transportation.

A. Network.

The various forms of native land transportation in Communist China -- wagons, carts, pack animals, and coolie porters -- use the same roads and highways as do the trucks and also the thousands of miles of cart roads which are impassable to trucks. In addition, pack animals and porters can use trails, which form the only means of communication in many rugged areas of country.

The present regime, having belatedly come to appreciate the value of its native transportation force, has set about building and improving cart roads and trails. No national figures are available, but it has been announced that 2,000 km of horse-cart roads and 800 km of "footpaths and draft animal ways" have been built in Shensi Province 70/ and that 1,700 km of "simple highways" (usually nonmotorable) and 1,000 km of "big cart roads and animal roads" have been built in Shansi Province. 71/ Thus in spite of the public emphasis on heavy industry and modernization of facilities, the native forms of transportation probably are carrying a heavier load than ever before and are a great force whose potential in war or other emergencies cannot be ignored.

B. Inventory of Native Means of Transportation.

Statistics on the inventory of animal-drawn and man-drawn carts, pack animals, and porters are few and conflicting, but it is agreed that the numbers are very large.* It is possible that there are 5 million

* 1953 Chinese Communist statistics (original source unspecified) give 1.1 million animal-drawn carts and 200,000 pack animals. 72/ A 1956 Chinese estimate lowered the animal-drawn carts to 344,719 in 1956, a 21-percent decrease from 1955. 73/ An official of the Highway Department speaking to the National Committee /footnote continued on p. 16/

animal-drawn carts, 200,000 pack animals, 10 million man-drawn vehicles of widely varied types, and several hundred thousand professional porters. All that can be said for certain is that the native transportation force is so vast that it is almost beyond the comprehension of Westerners. According to incomplete figures, Yunnan Province alone has 41,458 pack horses and 1,326 pack bullocks. 76/ Kiangsu Province reports that the carts already organized in October 1956 by the transportation department have a capacity of 26,157 tons, 77/ and in Fukien Province the Chin-chiang district alone boasts 13,300 "nonmechanized vehicles." 78/ The experiences of Korea and Indochina have taught Western observers to respect the capabilities of the primitive means of transportation. Because they are an integral part of the Chinese transportation system, their use is essential to the maintenance of the economy and to its growth.

C. Operating Efficiency.

The importance to the Chinese economy of the native means of transportation has often been underestimated not only by foreign observers but also by the machine-minded Communist leaders as well. One of the major causes of the transportation jams in 1956 was the shrinkage of native transportation resulting from the rapid collectivization of agriculture in late 1955 and early 1956. In Shansi Province, for example, a great many farmers who were also cartmen had to give up their occupations as carters to carry on full-time agricultural pursuits. 79/

The Communist leaders began to awaken to the importance of native transportation in mid-1956, 80/ and since that time there has been a steady flow of directives urging fuller utilization of this great reservoir of transportation capacity. In addition, the planners have been taking steps to increase the efficiency of native transportation. The carters and porters are being organized into cooperatives, operations are being "rationalized" so as to get the most service out of available equipment, and vehicles are being modernized. Increased use of native transportation has been urged in order to funnel goods to railroads and ports, 81/ several thousand kilometers of trails have been improved into cart roads, and many cart roads have been improved and shortened. 82/

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of the Peoples Political Consultative Council said that in 1956 there were 5 million animal-drawn carts and 11 million man-drawn carts. 74/ At a conference held by the Ministry of Communications on 31 August 1957, Wang Shou-tao, Director of the Sixth Office of the State Council, indicated that Communist China now possesses more than 140,000 special animal-drawn vehicles and more than 300,000 special man-powered vehicles in addition to nearly 5 million animal-drawn vehicles and more than 10 million man-powered vehicles of various types in rural areas. 75/

D. Performance.

Until recently, the Chinese Communists have published no national performance figures for transportation by native means. The fragmentary statements indicate that in 1956 native transportation may have achieved a total of 1.8 billion tkm* while originating 298 million tons** of freight. If this figure is of the proper order of magnitude, native transportation originated 21 percent more freight than the railroads and 277 percent more than modern motor carriers in 1956.

* Based on the statement that 34 percent of total highway ton-kilometers (modern transportation and native transportation) were performed by native transportation in 1956. 83/ Applying this figure to the announced 3.5 billion tkm achieved by modern motor carriers results in a figure of 1.8 billion tkm for native transportation.

** Based on the statement that native transportation originated 79 percent of total highway tonnage (modern transportation and native transportation) in 1956. 84/ Applying this figure to the announced 79.1 million tons originated by modern motor carriers results in a figure of 298 million tons originated by native transportation. Wang Shou-tao also stated that in 1956 animal-drawn vehicles alone transported over short distances a total of 298 million tons of goods in the country. 85/

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