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CONSTRUCTION AND INDUSTRIAL ACTIVITY
IN WU-HAN, CHINA, [REDACTED]

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CIA/RR EP 63-28

May 1963

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FOREWORD

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Extensive aerial reconnaissance [REDACTED] over about three-quarters of the industry of mainland China has resulted in the amassing of a large body of new data. This publication represents an exploratory effort to assess the feasibility of using such aerial photography to establish the aggregative level of activity at construction projects and at all types of industry throughout the mainland. For the pilot study, Wu-han, a major industrial city of Central China, was chosen because it appeared to represent a typical case.

S-E-C-R-E-T

S-E-C-R-E-T

CONTENTS

	<u>Page</u>
Summary and Conclusions	1
I. Introduction	3
II. City of Wu-han	4
A. General	4
B. Construction Activity	5
C. Industrial Activity	6

25X1D

Appendixes

Appendix A. Status of Selected Construction Projects in Wu-han [REDACTED]	11	
Appendix B. Status of Production at Selected Industrial Plants in Wu-han [REDACTED]	15	25X1D
Appendix C. Indicators of Plant Types and Activity	19	

S-E-C-R-E-T

S-E-C-R-E-T

CONSTRUCTION AND INDUSTRIAL ACTIVITY
IN WU-HAN, CHINA, [REDACTED]

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Summary and Conclusions

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The amount of construction activity in Wu-han [REDACTED] was negligible compared with [REDACTED] when many major industrial projects were underway throughout the city. Aerial photography of construction projects revealed no change in their status [REDACTED]. An analysis of the quantity of construction completed between the overflights in [REDACTED] indicates that the bulk of construction activity in Wu-han came to a halt during the period February-June [REDACTED].

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The level of industrial activity in Wu-han in [REDACTED] was much lower than in [REDACTED] industrial capacity, generally, was being utilized at a rate no higher than and probably below one-third of the available capacity. The volume of capital investment tied up in construction projects and idle capacity exceeded 1 billion yuan** [REDACTED].

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* The estimates and conclusions in this publication represent the best judgment of this Office as of 1 April 1963.

** Yuan values in this publication are given in current yuan and may be converted to US dollars at a rate of exchange of 2.46 yuan to US \$1. This rate, however, does not necessarily reflect the value of the yuan in terms of the dollar.

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I. Introduction

Knowledge of Communist China's strengths and vulnerabilities continues to be a priority target. Since the demise of the "leap forward" in 1960, however, the assessment of China's productive capabilities has become increasingly difficult. Publication of meaningful information on output and the pace of construction virtually ceased after 1959. Projections based on 1959 and earlier data are tenuous in the extreme, largely as a result of the chaotic situation in Chinese industry. Indications are that the data problem will continue, perhaps for some years. For these reasons and because a significant quantity of new, high-quality aerial photography covering about three-quarters of Chinese industry became available in [REDACTED] it was felt that a trial approach to new estimates of the level of activity in industry and construction was warranted.

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Although a considerable amount of photography had been taken in [REDACTED] before the slump in the economy, the coverage and quality were inferior to that taken in [REDACTED]. However, the existence of "before" and "after" photography did offer, in theory at least, the possibility of establishing some measure of the decline in activity. By utilizing the photography in conjunction with all other sources, but particularly with recent reports of refugees, it was hoped that a reasonably objective analysis might be made.

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It was decided that an exploratory project on a single important industrial center for which [REDACTED] photography existed should be made. Wu-han in Central China was selected. Ideally the project on Wu-han would prove the feasibility of and provide a methodology for an effort expanded to embrace the balance of Chinese industry. The levels of confidence that could be placed on further research of this nature were to be determined.

Four photographic reconnaissance missions have been flown over Wu-han. These were flown on [REDACTED]. Because of extended cloud cover over Wu-han, the flight of [REDACTED] was not used. Careful examination was made of the remaining photography, and approximately 100 potential indicators of construction and industrial activity, including railroad yards, were initially catalogued. Research was undertaken in an attempt to identify each of these facilities and to correlate ground data with aerial observations. As a result of this exercise, 47 of the more significant facilities were tabulated and subjected to a plant-by-plant evaluation in an effort to estimate the scale of construction and industrial activity in Wu-han.

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II. City of Wu-han

A. General

The complex urban area of Wu-han, with a population probably in excess of 2 million people, is the administrative center of Hupei Province. The Yangtze and Han Rivers divide metropolitan Wu-han into three parts -- the tricities of Hankow, Han-yang, and Wu-ch'ang. Wu-han is a key rail junction on the Peiping-Canton railroad as well as a major port. The Yangtze River rail and road bridge opened in 1957 is the only crossing of the Yangtze between Chungking and the sea.

Although some industry had been located in Wu-han for years before the Communist takeover in 1949, it had been of importance only locally and in Hupei Province. During the First and Second Five Year Plans the Chinese initiated plans to make Wu-han the principal industrial center of Central China and one of the five or six most important industrial cities on the mainland.

In planning projects for Wu-han the designers envisaged a vertically integrated industrial complex of sufficient capacity to supply a significant share of the machinery and equipment requirements of much of Central and South China. Plans centered on the erection of a 3-million-metric-ton iron and steel center supplied by local iron ore and limestone. Gas from the steel plant would be used as a feed material for one of the largest fertilizer plants planned in China as well as for fuel in new refractory, cement, and other facilities. Rolled steel products would be shipped less than 10 miles to what was planned to be the largest heavy machine tool plant in China, to the second largest Chinese automobile factory, to one of the two most important naval shipyards in China, and to many other important machine building and light industrial projects.

The majority of the new industrial plants are on the Wu-ch'ang side of the Yangtze, and it is here that the major effort of creating a new industrial complex is being effected.* Wu-ch'ang also is the provincial administrative center and contains Wu-han University and many new scientific and industrial institutes. In Hankow, the largest of the tricities, are located a new light industrial area, many older plants of only moderate importance, POL storage, and a whole host of amalgamated cooperatives. Hankow is the principal commercial center and contains a number of military headquarters. Han-yang is a center for production of construction materials and has an important new industrial port area.

* Some new plants are located in the suburbs beyond Hankow, Han-yang, and Wu-ch'ang proper but for purposes of this publication are assigned to the nearest major subdivision of Wu-han.

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B. Construction Activity 25X1D

25X1D [redacted] numerous sites in Wu-han were actively under construction. In contrast, photography taken in [redacted] re-
25X1D vealed construction activity to be virtually nonexistent. Photography
25X1D thus positively indicates that the pace of construction slowed markedly
25X1D between [redacted] and, by interpretation of the evidence, it is
probable that most construction activity ceased between [redacted]
[redacted]

25X1D By [redacted] a number of installations, some of which were Soviet aid projects, had been recently finished or were nearing completion in Wu-han. Among these were the Heavy Machine Tool Plant, the Wu-han Boiler Plant, the Railroad Car Manufacturing Plant, the Ching Shan Cement Plant, and a meat-processing factory. At the Wu-han Iron and Steel Plant, some units, such as two coke batteries and the first blast furnace, already had been completed. In addition, ground had been broken and foundations laid for many more plants that together with those completed would form the base of the new industrial complex in the Wu-ch'ang part of Wu-han. These included among others the Forging Equipment Plant, the Electrical Equipment Plant, the Bearing Plant, a new textile mill, and the Automobile Plant.*

25X1D From analysis of the comparative photography, it is clear
25X1D that a considerable volume of construction was completed after [redacted]
25X1D [redacted] but this volume is far less than would be expected if the level
25X1D of activity [redacted] had continued through until [redacted]. On the assumption
25X1D that, in general, the level of construction in [redacted] continued
25X1D up until the time of the near cessation of construction, it is estimated that work proceeded for a period of from 9 months to 1 year. Thus it is believed that, except for a few projects, construction activity in Wu-han dropped very sharply between [redacted]
25X1D [redacted]

25X1D Some activity probably continued at the Wu-han Iron and Steel Plant and the Machine Building Plant (Installation 15, Appendix A). The city-wide drop in construction activity apparently preceded the departure of Soviet technicians from China later in the summer of [redacted]

25X1D It was not possible to ascertain whether such slackened
25X1D activity occurred at Soviet aid projects in Wu-han as early as the period [redacted]

25X1D As might be expected, evidence suggests that priorities were assigned to various construction projects. The Forging Equipment Plant and Factory B (Installation 4, Appendix A) apparently were at the same stage of construction in [redacted] the

25X1D * For the status of these and other projects in [redacted] as well as in [redacted] see Appendix A.

S-E-C-R-E-T

S-E-C-R-E-T

much larger Forging Equipment Plant had progressed considerably further. Both of these facilities had a higher priority than the Wu-ch'ang Railroad Station, Factory A (Installation 3, function unknown), and the important Industrial Railroad Spur (Installation 16), where no progress was noted between 1959 and 1962. Although no clear pattern of priorities was readily recognizable from the sample given in Appendix A, it appears that factories with medium to heavy machine building characteristics were favored.

25X1D The only construction progress noted at all in the period
25X1D [redacted] was at the Forging Equipment Plant. As noted above,
25X1D this period of relative inactivity is believed to have extended back
through [redacted]

25X1D Examination of construction materials enterprises in Wu-han
confirms the low level of activity in the construction effort in [redacted].
Of 15 brick plants observed, only 2 appeared to be operative, the
precast concrete plant looked inactive, and the new cement plant in
Wu-ch'ang was not in operation. The Railroad Tie Treating Plant in
25X1D Han-yang, a Soviet aid project and the largest tie-treating facility
in China, afforded the best "before" and "after" comparison of any
25X1D installation in Wu-han. [redacted] an extensive supply of untreated
ties awaiting processing was visible, with relatively few treated
25X1D ties in evidence. This situation contrasts sharply with the photo-
25X1D graphy of [redacted] in which there are no untreated ties
but extensive stores of treated ties, pointing to a high level of
25X1D railroad maintenance and construction in [redacted] and an extremely low
level in [redacted]

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C. Industrial Activity

25X1D The level of industrial activity in the city of Wu-han in
25X1D [redacted] was much lower than in [redacted]. Generally, installed capacity
25X1D was being utilized at a rate no higher than and probably below one-
third of the available capacity. [redacted] a volume of capital invest-
ment exceeding 1 billion yuan was tied up in idle capacity and con-
struction projects in the Wu-han area. This situation apparently
has existed for about 2 years.

25X1D Two major problems confronted the attempt to assess the level
of industrial activity in Wu-han. In varying degrees these same
obstacles would be encountered in studies of other Chinese industrial
centers for which photography is available. First and foremost was
the problem of estimating activity at machine building plants from

* For the level of industrial activity in [redacted], see
Appendix B.

S-E-C-R-E-T

S-E-C-R-E-T

aerial photography in the absence of ground data. The second problem was one of correlating aerial observations with ground information received from refugees and Chinese Communist news media.

The problem of estimating the level of production from aerial observations of machine building plants was considerably more difficult than in the processing industries, where visible stocks of raw materials and other outdoor operations sometimes provided clues to the degree of activity. Industry in Wu-han is, with some exceptions, primarily of a machine building character. In the absence of any information other

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[REDACTED]

Given a "one-time" observation, none of these indicators is very reliable.*

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When information other than aerial photography was available, even though generally quite poor, it was helpful. However, the attempt to correlate the two often culminated in the following impasse. Where the aerial photography clearly revealed the presence and location of an installation, the ground data were too meager or not recent enough to identify the facility or name its products. Conversely, where Chinese news media spoke of a certain plant producing a particular product, it was not possible to locate the factory and determine whether it was one of the installations unidentified in the aerial photography.

The inability to correlate all available air and ground information resulted in a list of plants visible from the air and, therefore, located, but with function unknown, and another list of producing plants whose product was known but whose location was not. All plants or installations in Wu-han viewed from the air and judged to be important, whether the name or function of the facility was known or not, are shown in Appendix B. The residue, or list of producing plants generated from ground data that could not be correlated with installations in Appendix B, is as follows: Asbestos Plant, Cast Iron Pipe Plant, Crane Plant, Electric Battery Works, Electrolytic Aluminum Plant, Glass Works, Insecticide Plant, Powder Metallurgy Works, and Synthetic Ammonia Plant. Although larger than cooperatives, which have been excluded as far as is known, none of these plants is believed to be a major production facility.

The degree of production activity in Wu-han in [REDACTED] was difficult to assess from aerial photography, except in a few instances, because of the poorer quality of the film and some cloud cover over the city. The photography does show considerable activity at the Railroad Tie Treating Plant, the Military Motor Vehicle Repair Facility,

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* For a discussion of problems of indicators and the degree of confidence that can be placed on them, see Appendix C.

S-E-C-R-E-T

S-E-C-R-E-T

25X1D three Han-yang Brick Plants, and the Chiang-an Railroad Repair Shops. Ground information in 1959 was relatively good compared with that in 1962 and indicated a very high level of production activity generally. Construction activity and operations in the construction materials industry also were at high levels in [REDACTED]

25X1D In ascertaining the level of industrial production in Wu-han in [REDACTED] a detailed examination was made of each installation of significance. A summary of the determination made for each plant is set forth in Appendix B. Only rarely was it possible to state with any assurance that a facility had a certain capacity and that such capacity was being used at a particular rate. In many cases, however, it was possible to state that a certain plant was or was not operative, was only slightly active, or was very active. As the sample of installations grew, the reliability of the over-all evaluation of the level of industrial activity rose commensurately.

25X1D A look at Appendix B clearly suggests a relatively low rate of production in [REDACTED]. While signs of some activity were seen at the Wu-han Iron and Steel Plant, the Heavy Machine Tool Plant, the Ching Shan Power Station, the Wu-chang Shipyard, the Railroad Car Manufacturing Plant, and Chiang-an Railroad Repair Shops, no evidence of production was noted at the Ching Shan Cement Plant, the Wu-han Boiler Plant, the Electrical Equipment Plant, the Bearing Plant, the Automobile Plant, the Steel Fabricating Shop, the Railroad Tie Treating Plant, the Tun-kou Paper Mill, and the Thermal Electric Powerplant at Hankow. Because most estimates of the level of activity at each plant were qualitative, however, it was not possible to evolve a methodology yielding a definite answer in terms of percentage of capacity operated. Moreover, ground information revealed that some factories, in an effort to maintain their staffs, were producing items other than those originally intended. The problem was further compounded by having a number of projects in the construction stage and capable of only partial production. Instead of a quantitative estimate, an intuitive appraisal was made, which placed the level of industrial activity at a rate no higher than and probably somewhat below one-third of the industrial capacity installed in Wu-han in 1962.

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* See B, p. 5, above.

S-E-C-R-E-T

S-E-C-R-E-T

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marked contrast to that in China. In Wu-han, in one count of 84 smoke-stacks only 4 were found emitting smoke (for the reliability of smoke as an indicator, see Appendix C) and this was in [REDACTED] when many plants generating steam for heat alone should still have been active.

A further indication of the level of activity in the Wu-han area was given by the status of the two principal electric power stations there (Installations 12 and 31 in Appendix B). In [REDACTED] the 32-megawatt (mw) station in Hankow was shut down, and the 162-mw unit near the steel plant was estimated to be operating at a daily, 24-hour rate equivalent to 53 percent of capacity.* On the basis of known additions to generating capacity and the data above, an estimate of power consumed by industry in [REDACTED] was made. The analysis showed that, excluding iron and steel plant operations, industry in the Wu-han area in [REDACTED] utilized less than 40 percent of the power consumed by industry in [REDACTED]

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An examination of the photography taken in [REDACTED] showed little if any change in the level of activity observed in [REDACTED]

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* See CIA/RR EM 63-3, Level of Activity in the Electric Power Industry of Communist China in 1962, March 1963, S/NO FOREIGN DISSEM.

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APPENDIX A

STATUS OF SELECTED CONSTRUCTION PROJECTS IN WU-HAN

Installation	25X1D	25X1D	25X1D	
1. (Probable) Textile Mill, Wu-ch'ang	Ground cleared with some footings in place	Production building complete; office unfinished; two ancillary buildings	No change from	25X1D
2. Railroad Car Manufacturing Plant, Wu-ch'ang	No. 1 Shop, partly roofed; No. 2 Shop, columns and trusses in place; No. 3 Shop, roofed; No. 4 Shop, some girders and trusses in place, remainder on ground; plant has many smaller buildings	No. 1 Shop, finished; No. 2 Shop, no change from; No. 3 Shop, finished; No. 4 Shop, 80 percent roofed, girders still lying on the ground for the last two bays	No change from	
3. Factory A (purpose unknown), Wu-ch'ang	Two completed buildings; third and largest building has columns in place with girders and trusses lying on the ground	No change from; girders and trusses for third building still in identical position	No change from	
4. Factory B (purpose unknown), Wu-ch'ang	Clearing and grading in progress	Building with six bays under construction; two bays under roof	No change from	25X1D
5. (Probable) Forging Equipment Plant, Wu-ch'ang	Clearing and grading in progress	Main production building nearly complete with one bay possibly still under construction; nine ancillary buildings visible, of which seven are roofed	Since the eighth ancillary building has had a roof added	25X1D
6. Heavy Machine Tool Plant, Wu-ch'ang	Twelve major buildings under roof	One new building added; trusses and girders lying on ground for another major addition. Some smaller buildings have been torn down and new ones erected since	No change from work on the additional new building had been halted for some time before	25X1D

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Installation				
7. Factory C (purpose unknown), Wu-ch'ang	Construction apparently not started	Small rail-served industrial complex completed	No change from [REDACTED]	25X1D
8. Railroad Yard, Wu-ch'ang	Work not started	Partially complete	No change from [REDACTED]	25X1D
9. Railroad Station, Wu-ch'ang	Tracks and platforms operational; walls of station in place	No change from [REDACTED]	No change from [REDACTED]	25X1D
10. Wu-han Iron and Steel Plant, Wu-ch'ang	The coal preparation plant, two coke batteries, one blast furnace, and part of the refractory plant complete; foundations and steelwork were in place for much of the open-hearth shop and some rolling mills	Two more coke batteries, two blast furnaces, the sinter plant, five open-hearth furnaces, soaking pits, and two or three rolling mills completed since [REDACTED]	No change noted from [REDACTED] but ground information indicates that some slight progress may have been made	25X1D 25X1D
11. (Probable) Electrical Equipment Plant, Wu-ch'ang	Two main production buildings complete; a third has unfinished roof; footings visible for major addition to one production unit; three ancillary buildings under construction	Three main units complete; footings for addition in same status as in [REDACTED] three ancillary units complete	No change from [REDACTED]	25X1D
12. (Possible) Bearing Plant, Wu-ch'ang	Three production units roofed; fourth partly roofed; several ancillary units under construction	Plant apparently complete	No change from [REDACTED]	25X1D
13. Factory D (purpose unknown), Wu-ch'ang	Three major buildings complete; two of three bays roofed on fourth unit; three smaller buildings in foundation stage	Plant apparently complete	No change from [REDACTED]	25X1D
14. Factory E (purpose unknown), Wu-ch'ang	Two large and four small units complete; one large building under construction	Plant apparently complete	No change from [REDACTED]	25X1D
15. Machine Building Plant (product unknown), Wu-ch'ang	"Green field" site; no clearing started	Four large and four small production buildings complete; heat plant complete; office walls only	No change from [REDACTED]	25X1D

S-E-C-R-E-T

Installation	25X1D	25X1D	25X1D	25X1D	25X1D
16. Industrial Railroad Spur, Wu-ch'ang		Grading for long rail spur off mainline to serve Installations 11-15, largely complete; possibly some track laid		No change from [redacted] spur remains unfinished	No change from [redacted]
17. Automobile Plant, Wu-ch'ang		First production buildings in foundation stage (from ground data)		Several main production buildings under roof but probably not complete; other major units have columns up with trusses lying on ground	No change from [redacted]
18. (Possible) Internal Combustion Engine Factory, Wu-ch'ang		Not observable		Status of construction parallels that of Automobile Plant	No change from [redacted]
19. Wu-ch'ang Shipyard, Wu-ch'ang		Yard basically complete in [redacted]		Modest expansion of fabricating shops and slips at east end of yard	No change from [redacted]
20. Ching-shan Shipyard, Wu-ch'ang		Not observable		Shipways apparently complete; some columns in place for several possible fabricating shops	No change from [redacted]
21. (Probable) Steel Fabricating Shop, Han-yang		In foundation stage with girders lying on ground; rail spur under construction		Completed	No change from [redacted]
22. New Port Area, Han-yang		Long rail spur under construction; construction of new buildings at port not started; foundation of one wing of unusual, large, raw materials storage building visible		Immediate port area complete and rail-served; one wing of raw materials storage building complete and an estimated 15 percent of other wing complete	No change from [redacted]
23. Ferrous or Nonferrous Processing Plant, Han-yang		Work not started		Main production facilities essentially complete; services still being expanded	No change from [redacted]
24. Railroad Yard, Hankow		About one-half to two-thirds complete		Completed	No change from [redacted]

Installation	25X1D	25X1D	25X1D
25. Machine Building Plant A (product unknown), Hankow	Not observable	Heavy precast concrete construction; heavy craneways visible; some buildings complete, others still under construction	No change from [REDACTED]
26. Factory F (purpose unknown), Hankow	Not observable	Walls only	No change from [REDACTED]
27. Warehouse and Storage Area, Hankow	Construction in progress; degree of completion indeterminate	Essentially complete	No change from [REDACTED]
28. Machine Building Plant B (product unknown), Hankow	Foundation, end wall, and four bays under construction	Main building and rail spur essenti- ally complete	No change from [REDACTED]

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APPENDIX B

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STATUS OF PRODUCTION AT SELECTED INDUSTRIAL PLANTS IN WU-HAN

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Installation	Production	Observations
1. (Probable) Textile Mill, Wu-ch'ang	Probably none	Production building complete; not known whether all equipment is installed, but doubtful
2. Railroad Car Manufacturing Plant, Wu-ch'ang	Plant is active and probably engaged in repair and maintenance work; little if any production of new equipment	Before current expansion, plant produced 700 and possibly more freight cars per year; expansion nearly complete; status of equipment in new buildings unknown
3. (Probable) Forging Equipment Plant, Wu-ch'ang	No evidence of production	Has one stack, no smoke; absence of rail spur into plant area makes it doubtful that capacity would be in use as designed; plant has received priority in construction and is 90 percent completed
4. Heavy Machine Tool Plant, Wu-ch'ang	Some modest activity probable; at most, output would be only one-third to one-half that in [REDACTED]	Has 8 to 10 stacks including foundry, no smoke; although plant was visited in [REDACTED], accounts of the scale of output are very poor other than the report that the plant is being operated well below capacity
5. Chen-huan Cotton Textile Mill, Wu-ch'ang	Not in production	A large, sprawling, obsolete mill whose facilities are now used for training purposes
6. Powerplant, Wu-ch'ang	In operation	A small power station of less than 5-megawatt (mw) capacity; one stack with heavy smoke
7. Hu-pei No. 1 Cotton Mill, Wu-ch'ang	Probably in operation but producing very little cotton cloth	Three stacks including powerhouse, no smoke; excellent report states that in [REDACTED] all textile plants in Wu-han were shut down owing to the lack of raw materials; probable dye works connected with plant
8. Military Motor Vehicle Repair Facility, Wu-ch'ang	Very active	Many trucks in the courtyards of this one-time arsenal; change in disposition of trucks between March and [REDACTED]
9. Factory C (purpose unknown), Wu-ch'ang	Some activity possible of unknown type	One stack; no smoke, probably never has smoked; piles of material along rail spur do not appear to have changed during [REDACTED]

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Installation	Production	Observations	
10. Ching Shan Shipyard, Wu-ch'ang	Several barges and perhaps one ship on ways, probably undergoing repairs	Yard still under construction	
11. Ching Shan Cement Plant, Wu-ch'ang	Not in operation	This 300,000-metric-ton plant has operated in the past	
12. Ching Shan Power Station, Wu-ch'ang	Estimated to be operating at a daily rate equivalent to about 53 percent of capacity	162-mw thermal electric power station; Soviet aid project which went into partial operation in [REDACTED]	25X1D
13. Wu-han Iron and Steel Plant, Wu-ch'ang	Some coke and pig iron being produced and possibly a little crude steel; no rolled products believed to be produced	Planned capacity, 3 million tons of crude steel; of six open hearths, never more than two have operated, and in [REDACTED] none appeared to be operative; capacity completed thus far has never been used at a rate in excess of 30 percent	25X1D
14. Wu-han Boiler Plant, Wu-ch'ang	Probably produces limited quantities of agricultural or chemical equipment; repairs boilers but probably does not produce them, although it has done so in the past	Five large stacks, no smoke; no railroad cars in plant area; started limited production in 4th quarter of [REDACTED] was turned over to the state on [REDACTED]	25X1D 25X1D
15. (Probable) Electrical Equipment Plant, Wu-ch'ang	Repairs steam turbines, generators, alternating current motors, transformers, and other equipment; although plant has produced new equipment, it probably does not now do so	Three stacks, no smoke; continued failure to complete the rail spur precludes the use of this facility for production of heavy turbines, generators, and transformers as designed	
16. (Possible) Bearing Plant, Wu-ch'ang	Some production possible	Several trucks only evidence of activity; some bearings were produced in the fall of [REDACTED] when the capacity of the plant was stated to be 30,000 bearings a month	25X1D
17. Factory D (purpose unknown), Wu-ch'ang	No evidence of production	Two stacks, no smoke; no vehicles in area; rail spur to factory incomplete	
18. Factory E (purpose unknown), Wu-ch'ang	Only slightest evidence of production	Three stacks, no smoke; materials storage indicates possibility of production; no vehicles	
19. Machine Building Plant (product unknown), Wu-ch'ang	Possibly some production	Two stacks, no smoke; rail spur incomplete; construction of all but one building complete	
20. Automobile Plant, Wu-ch'ang	Not producing trucks in [REDACTED]	Six stacks, no smoke, although at least one stack has been used in past; design capacity of completed plant to be 50,000 vehicles; produced 25 trucks in [REDACTED] but not known to have produced since	25X1D

25X1D

S-E-C-R-E-T

Installation	Production	Observations	
21. (Possible) Internal Combustion Engine Factory, Wu-ch'ang	Possibly some production of spare parts	Production facilities still under construction	
22. Wu-ch'ang Shipyard, Wu-ch'ang	Shipyard is active but operating well below its potential	Yard has built W-class submarines; submarine in the river in identical position in [REDACTED]	25X1D
23. Storage and Warehouse Area, Wu-ch'ang	Light activity	Rail-served area has 22 warehouses, each about 45 x 180 feet; some change in outdoor storage piles noted between [REDACTED]	25X1D
24. Railroad Tie Treating Plant, Han-yang	Not in operation	In contrast to [REDACTED] when many untreated ties lay about awaiting treatment, no untreated material was visible in either [REDACTED]; no smoke from tie-treating plant	25X1D 25X1D
25. (Probable) Steel Fabricating Shop, Han-yang	Inactive	Two stacks, no smoke; rail-served	25X1D
26. New Port Area, Han-yang	Port active	Railroad cars were seen in different positions in [REDACTED] and [REDACTED] the whole New Port Area was constructed and brought into operation between [REDACTED]	25X1D 25X1D 25X1D
27. Tun-kou Paper Mill, Han-yang	Probably inactive	One large stack, no smoke; mill was finished in [REDACTED] and has produced newsprint and "straw" paper	25X1D
28. Brick Plants, Han-yang	Two of the 14 brick plants in Han-yang and its suburbs appear to be active	Of 14 or more stacks, 2 possibly were smoked; large storage areas of finished brick visible with no changes noted between [REDACTED]	25X1D
29. Ferrous or Nonferrous Processing Plant, Han-yang	Some activity	Four large stacks, one smoking; plant still being expanded by filling in lake; the purpose of this installation not clear	
30. Wu-han No. 1 Cotton Mill, Han-yang	Indeterminate	No photography or ground evidence to suggest the level of operation of this mill; it was producing in [REDACTED]	25X1D
31. Thermal Electric Powerplant, Hankow	Not in operation	A 32-mw thermal electric station with two large stacks, no smoke, coal storage low; no evidence of cooling water being returned to the Han River	

25X1D

25X1D 25X1D 25X1D

Installation	Production	Observations
32. Shen-hsien Textile Plant, Hankow	Significantly less than in [REDACTED]	[REDACTED] the plant was forced to give one of two large mill buildings to neighboring plant; thus production would be much less than in [REDACTED]
33. Automobile Parts Manufacturing Plant, Hankow	Indeterminate	Took over portion of the neighboring Shen-hsien Textile Mill in [REDACTED] function was to be transferred to the Automobile Plant in [REDACTED] no evidence exists as to whether transfer was made
34. Wu-han Chemical Materials Factory, Hankow	Probably in normal production status	This factory, which primarily produces alcohol, had a line of small white trucks or wagons at its doors in both [REDACTED]
35. Factory F (purpose unknown), Hankow	Some activity	Two stacks, one smoking; 12 large and many smaller buildings of mixed type
36. Light Industrial Area, Hankow	Little if any production except at pharmaceutical plant	This area contains a pharmaceutical plant, a dye works, a paint-manufacturing plant, a glass bottle producer, and several others; some units appear to be complete, others are still under construction. Area contains at least seven stacks, no smoke
37. Chiang-an Railroad Repair Shops, Hankow	Producing freight car components, including wheels for the Wu-ch'ang Railroad Car Plant	Many railroad cars in and around shops
38. Factory G (purpose unknown), Hankow	Not believed to be in operation	At the end of the new rail spur; the heavy type of construction indicates machine building operations
39. Precast Concrete Plant, Hankow	Appears to be inactive	

25X1D

25X1D

25X1B

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Next 1 Page(s) In Document Exempt

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