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NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

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302291

61-75
(15)

basic imagery interpretation report

Rybinsk Aircraft Engine Plant 36, USSR (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES

USSR

25X1

Secret
WNINTEL

Z-12077/83
RCA-09/0012/83
AUGUST 1983
Copy 61

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Rybinsk Aircraft Engine Plant 36					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	58-03-06N 038-48-51E				

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MAP REFERENCE

DMAAC. USATC, Series 200, Sheet 154-13, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
	NA

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ABSTRACT

1. This report, superseding NPIC reports discusses construction and production activity at Rybinsk Aircraft Engine Plant 36, USSR, from August 1968 through February 1983. Construction since 1968 has added 230,738 square meters of floorspace to the plant, increasing the overall floorspace total to 552,803 square meters. Of this amount, 50,454 square meters are used for consumer products production, 37,343 square meters are used for a design bureau, and 465,006 square meters are used for engine production. A total of approximately 24,400 square meters of additional floorspace was observed under construction in the consumer products production area during this reporting period. (S/WN)

2. This report includes a location map, 15 annotated photographs, 14 tables of mensural data, one line drawing, and one chart. (S/WN)

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BASIC DESCRIPTION

3. Rybinsk Aircraft Engine Plant 36 is in the central section of the city of Rybinsk, 1 nautical mile (nm) south of the Volga River (Figure 1). As of Plant 36 (Figure 2) contained 92 major

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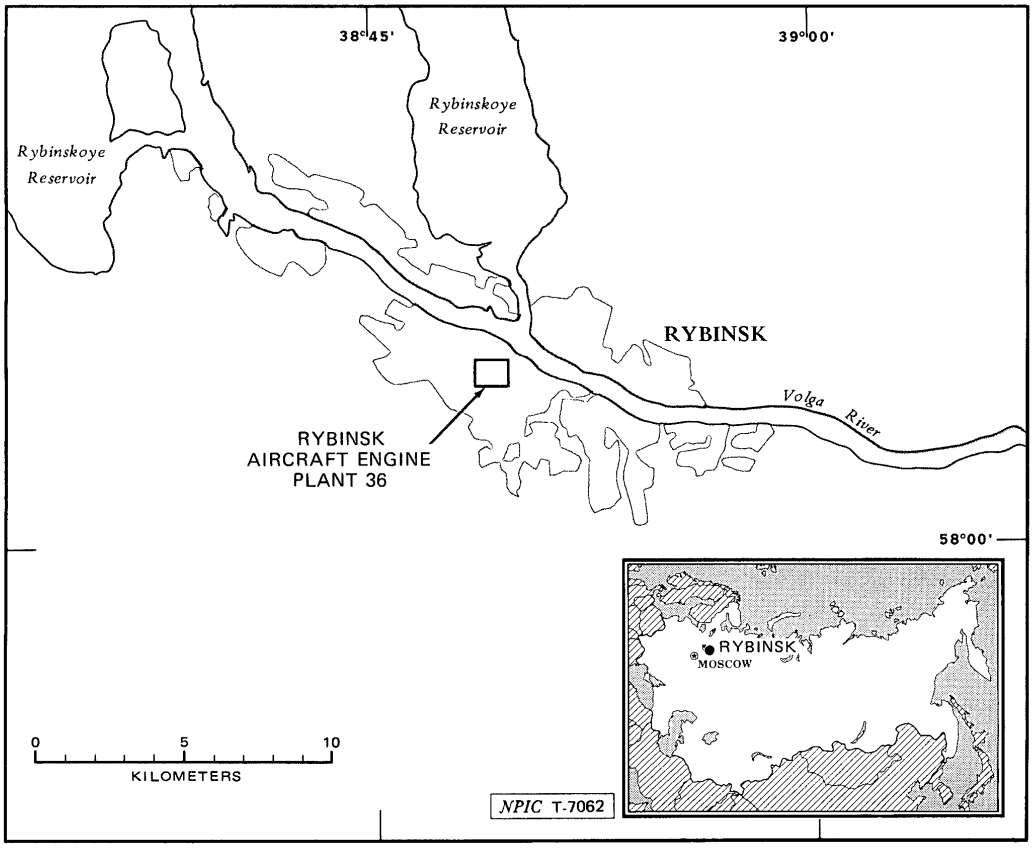

FIGURE 1. LOCATION OF RYBINSK AIRCRAFT ENGINE PLANT 36, USSR

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structures and numerous small support buildings, sheds, and covered storage areas. Overall, the Rybinsk plant contained a total of 552,803 square meters of completed floorspace, and an additional total of approximately 24,400 square meters of floorspace was under construction. (S/WN)

4. Rybinsk was first observed on photography in 1942. The installation was damaged extensively during World War II, and no photography of the plant was obtained between 1943 and 1962. When imaged in 1962, the plant had been rebuilt, and floorspace had increased by sixty-five percent since 1942.[1] Because the plant is in an urban area, any expansion would require the razing of existing buildings, which did, in fact, occur for the expansion undertaken in February 1983 (Figure 3). (S/WN)

5. The plant can be divided into 14 major functional areas: A through N. (S/WN)

Area A

Consumer Products—Fabrication/Assembly Area

6. The fabrication/assembly area, in the southeast corner of the plant, is road served and consists of five major buildings (Figure 3). One of the fabrication/assembly buildings (item 4, Figure 3 and Table 1) is connected by an overhead walkway to the warehouse/transshipment building (item 11, Figure 4 and Table 2) in Area B. Area A is reportedly involved in producing consumer goods, specifically tractor engine parts.[2] (S/WN/NOFORN)

Area B

Storage Area

7. The storage area, in the southwest corner of the plant, serves as the major storage facility for raw materials and contains a large, open coal storage area. In addition, Area B contains 15 major buildings and numerous other support structures (Figure 4 and Table 2). Two large warehouses there (items 7 and 11, Figure 2 and Table 2) contain a total of 24,249 square meters of storage space. The area is served by an extensive rail network and is well lighted by numerous tall light towers (Figure 4). (S/WN)

Area C

Foundry Area

8. The foundry area, on the east side of the plant, is road and rail served and consists of nine major buildings, including two foundries, and numerous other support structures. Early in 1979, an ore-processing building (item 21, Figure 5) was under construction adjacent to the large foundry (item 18). Construction on this building was complete by May 1982. (S/WN)

Area D

Support/Storage Area

9. Area D, in the east-central portion of the plant and adjacent to Area B, is road served and contains eight major buildings (Figure 6). (S/WN)

Area E

Support Area A

10. This road-served support area, near the center of the plant and just north of Area B, consists of 11 major buildings and two large cooling ponds (Figure 7). Most of the floorspace in this area was constructed between 1980 and 1982 (items 4, 5, and 9; Figure 7). (S/WN)

Area F

Electrical Substation and Sewage Treatment Area

11. The electrical substation and sewage treatment area, on the west-central side of the main plant area and just north of Area B, contains 13 major buildings and other support structures (Figure 8). Two major transformer yards and a small sewage treatment plant are also in this area. The electrical substation is wall secured, and an interior fence surrounds the transformer yards. (S/WN)

(Continued p. 6)

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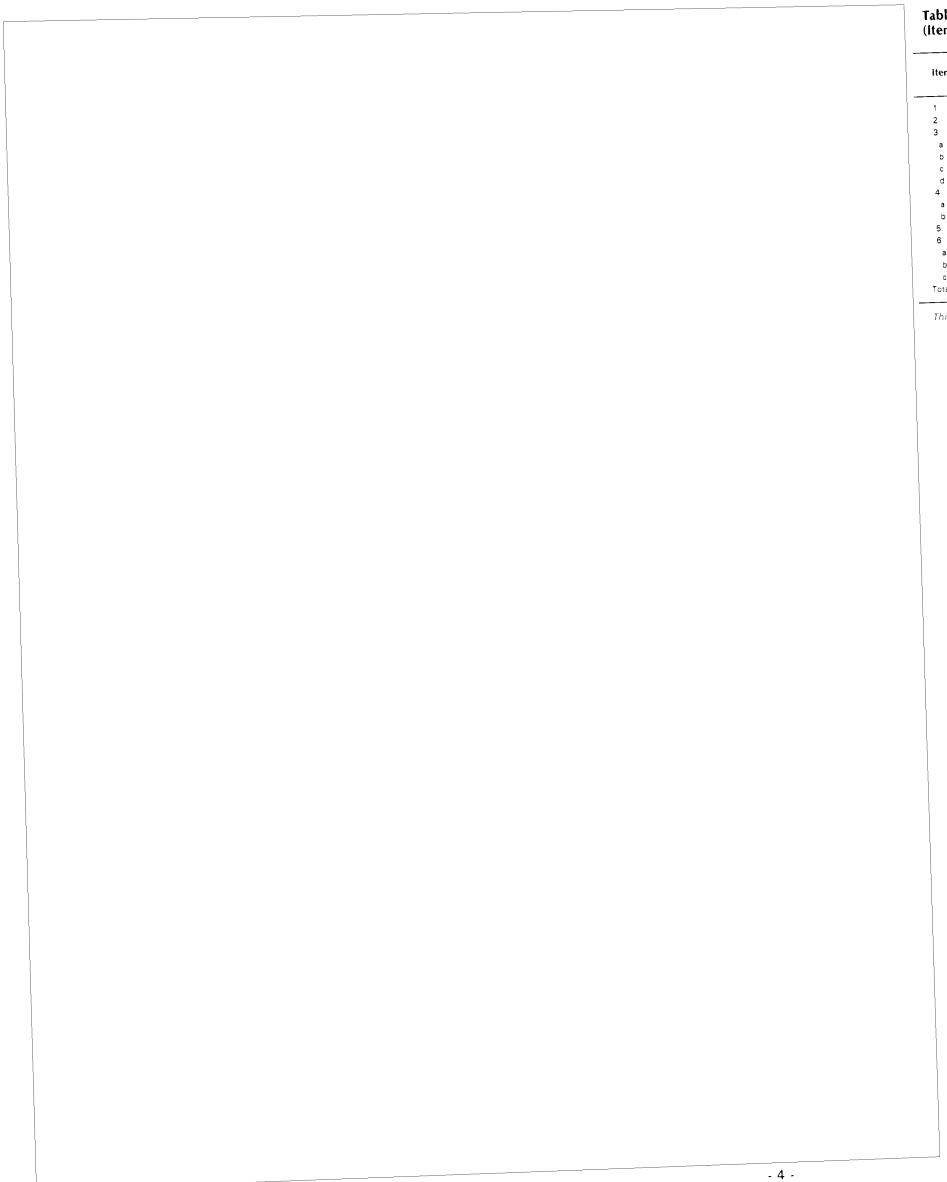

Table 1.
(Items keyed to Figure 3)

Item		L	W (m)	H	Floor Space (sq m)	First Obs Ucon[1]	Date Complete	Remarks
1	Admin/eng bldg						5-82	3 stories
2	Fabrication/assem bldg						5-82	
3	Storage bldg							
a	Stor sect						3-81	
b	Stor sect						3-81	
c	Stor sect						5-82	3 stories
d	Admin sect							
4	Fabrication/assem sect						8-68	2 stories
a	Admin/eng sect						8-68	
b	Fab/admin sect							395,800 liters
5	Tank							
6	Assem bldg						8-68	
a	Assem sect						8-68	
b	Assem sect						8-68	
c	Admin/eng sect							
Total								

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Table 2.
(Items keyed to Figure 4)

Item		L	W (m)	H	Floor Space (sq m)	First Obs Ucon[1]	Date Complete	Remarks
1	Stor bldg					2-75	—	
2	Warehouse					5-73	12-73	
a	Spt sect					5-73	12-73	
b	Warehouse sect					—	8-68	
3	Security bldg					—	6-73	
4	Spt bldg					—	12-72	
5	Spt bldg					6-80	5-82	
6	Spt bldg							
7	Warehouse					4-75	3-78	
a	Warehouse sect					12-80	2-83	
b	Admin sect (ucon)					8-68	12-72	
c	Warehouse sect					12-80	3-81	
8	Warehouse					6-80	2-83	
9	Und bldg (ucon)					—	6-68	
10	Conveyor spt bldg							
11	Warehouse transshipment bldg					—	12-72	
a	Transshipment sect					—	8-68	
b	Warehouse sect					—	8-68	
c	Admin eng sect					2-75	9-75	
12	Stor bldg					—	8-68	
13	Stor bldg					8-80	3-81	
14	Stor shed					—	8-68	154,600 liters
15	Tank					—	8-68	Connects to bldg 4 Area A *height of top of walkway aboveground
16	Covered walkway conveyor							
17	Conveyor spt bldg					—	8-68	
a	Spt sect					—	8-68	
b	Spt sect					—	8-68	
18	On/off loading shelter					3-81	3-81	
19	Stor shed					—	8-68	
20	Stor bldg					—	8-68	
21	Spt bldg					—	8-68	
22	Stor shed					—	8-68	
23	Stor bldg					3-81	2-83	
24	Spt bldg (ucon)					8-77	6-79	
25	Spt bldg					—	12-72	
26	Warehouse					—	8-68	
27	Warehouse					8-77	6-79	
28	Spt bldg							
29	Spt bldg					8-77	6-79	
a	Spt sect					2-80	12-80	
b	Spt sect					—	8-68	
c	Spt sect					4-79	6-79	
30	Spt bldg					—	6-73	
31	Spt bldg					12-12	5-73	
32	Spt bldg							
Total								

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Area G

Container Production Area

12. Area G (Figure 9) is just outside the western main plant boundary and across the railroad tracks from Area F. A wall surrounds both a concrete products plant and the container production area. In addition to aircraft engine containers (inset, Figure 9), wood products, possibly used as forms for concrete products, are probably produced in the area. Engine container production was moved to this area between July 1973 and January 1974, when construction began on a new fabrication/assembly building in Area K. (S/WN)

Area H

Assembly Area A

13. The road-served assembly area, in the northeast corner of the plant and just north of Area C, contains four major buildings (Figure 10). The floorspace total for Area H has not changed since 1968. (S/WN)

Area I

Steamplant Area

14. This road- and rail-served steamplant area (Figure 11) is in the center of the main plant area and just west of Area C. The steamplant (item 15, Figure 11) is the major building in the area and uses coal and oil to produce steam. An oil-fired boiler was added to the steamplant in 1974. (S/WN)

Area J

Support Area B

15. Area J (Figure 12), in the center of the main plant area and just west of Area I, is road and rail served and contains seven major buildings and other support structures. The area probably provides support for general maintenance activities at the plant. (S/WN)

Area K

Assembly Area B

16. This assembly area (Figure 13), in the northwestern corner of the main plant area and just north of Area F, contains two major fabrication/subassembly buildings (items 1 and 2, Figure 13). The larger building was complete by July 1972, and the smaller building was complete by September 1976. (S/WN)

Area L

Engine Test Area

17. The engine test area (Figure 14 and Table 12), near the center of the plant and just north of Area J, contains one major building—the engine test building (item 1 and Table 12). The important portions of this building are the 28-engine test cells. (Two previously identified test cells[1] located in an area between cells 16 and 17 are now assessed as not being test cells.) Fourteen test cells—with secondary air inlets—are large, two—with secondary air inlets—are small, and 12—with no secondary air inlets—are U-shaped. No observable changes have been observed to 13 of these test cells since August 1968. Modifications to the other 15 test cells have included the reconstruction/modification of new exhaust diffusers, the installation of new secondary air inlets, the reconstruction/modification of new environmental covers, and, in some cases, a complete refurbishment of the whole test cell. (Figure 15 provides a line drawing of the engine test building and a chronology of modifications to the cells.) Thirteen of the 14 large test cells have movable environmental covers over the primary air inlets. These covers must be open for the test cells to operate. An analysis of the positions of these environmental covers from 1968 to the date of this report is presented in Chart 1. (S/WN)

Area M

Administration/Support Area

18. This road-served area (Figure 16), along the northern perimeter of the main plant, contains nine major buildings and other support structures. The area provides administration support, dining, and motor pool facilities for the plant. (S/WN)

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Area N

Design Bureau Area

19. The probable location of the Kolesov Design Bureau (Figure 17) is just outside the main plant boundary at the northwest corner of the plant and across the rail line from Area K. The area is heavily secured with a wall as the outer perimeter; a fence is just inside the wall. Lights are around the entire perimeter. Three gates provide access to this area: one gate to the primary city street, a second gate to a rail spur, and a heavily used third gate directly to Rybinsk plant. The area is road and rail served and contains five major buildings, three of which are assembly type buildings. A large, probable design/engineering building (item 11, Figure 18),[3] containing 12,924 square meters of floorspace, is near the center of the area, on the primary city street (no direct access to the city street has been observed). (S/WN/NOFORN)

Essential Services

20. The entire plant is road and rail served. The roads are hard surfaced, have an all-weather capability, and are well lighted. Rail spurs enter the plant at the southwest corner and branch into other rail spurs serving the plant. (S/WN)

21. Heat and steam are provided by the large steamplant near the center of the plant. Six POL tanks, on the eastern border of the plant, may be used for fuel in the foundry area. (S/WN)

22. Electric power is supplied by the substation on the western edge of the complex. A sewage treatment plant is adjacent to the substation. Water is provided by the city of Rybinsk, and a possible well is along the southern border of the plant. (S/WN)

Security

23. The major plant area is secured by a wall and a fence, which is just inside the wall. All entrances to the Rybinsk plant have security buildings. The open storage area in the southwestern corner of the plant has numerous light towers, and all roads and many walkways are well lighted. (S/WN)

Miscellaneous

24. An overhead conveyor, observed extending from the storage area to the sintering building, is used to provide a constant flow of materials for the sintering process. (S/WN)

IMAGERY ANALYST'S COMMENTS

25. [redacted] six aircraft engines have been associated with the Rybinsk plant since 1962. These engines are the AL-7F, the R15-300, the RD-3M, the R27-F2M-300 Variant, the D-30K, and an unnumbered CHARGER engine (associated with the Kolesov Design Bureau only). The AL-7F engine is used by FITTER, FISHPOT, and FIDDLER aircraft; the R15-300 engine is used by FOXBAT aircraft; the RD-3M engine is used by BADGER, BISON, and CAMEL aircraft; the R27-F2M-300 variant is used by FORGER aircraft; and the D-30K engine is used by CANDID, CLASSIC, and CARELESS aircraft.[4,5,6] (S/WN) 25X1

26. The D-30K is being produced at the Rybinsk plant. D-30K containers have been present there since April 1975. An engine container (probably for the CHARGER) was present in June 1979.[5] (S/WN)

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REFERENCES

IMAGERY

All pertinent satellite imagery acquired from August 1968 through [redacted] was used in the preparation of this report. (S/WN) 25X1

MAPS OR CHARTS

DMAAC. USATC, Series 200, Sheet 0154-13, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

1. NPIC. [redacted] RCA-09/0048/70, *Rybinsk Aircraft Engine Plant 36,* Apr 70 (TOP SECRET CODEWORDS*) 25X1
2. CIA. [redacted] *Rybinsk Aviation Technology Institute and RPOM Industrial Association Rybinsk, RSFSR,* 8 Aug 80 (CONFIDENTIAL/WNINTEL/NOFORN) 25X1
3. CIA. II K-323/00813-81, *Design Bureau at the Rybinsk Aircraft Engine Plant,* 19 Feb 81 (CONFIDENTIAL/WNINTEL/NOFORN)
4. FTD. DST-1351H-343-76, *Transport Handbook—Eurasian Communist Countries (U),* 22 Oct 76 (SECRET)
5. FTD. DST-1310H-320-75, *Bomber Aircraft Handbook—Eurasian Communist Countries (U),* 21 May 76 (SECRET/WNINTEL/NOFORN*)
6. FTD. DST-1320H-321-82, *Fighter Aircraft Handbook—Eurasian Communist Countries (U),* 30 Sep 82 (SECRET/WNINTEL/NOFORN*)
7. FTD. PAR 75-529, *Rybinsk Aircraft Engine Plant 36 (U),* 18 Aug 75 (TOP SECRET CODEWORD*)

*Extracted information is classified [redacted] 25X1

RELATED DOCUMENT

NPIC. [redacted] BCA-22124/73, *Rybinsk Aircraft Engine Plant 36,* Aug 73 (TOP SECRET CODEWORDS) 25X1

REQUIREMENT

COMIREX J02
Project 543033J

Comments and queries regarding this report are welcome. They may be directed to [redacted] Warsaw Pact Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1 25X1

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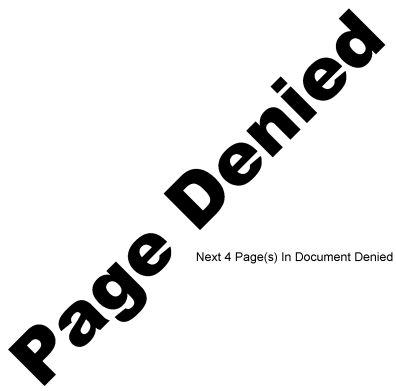

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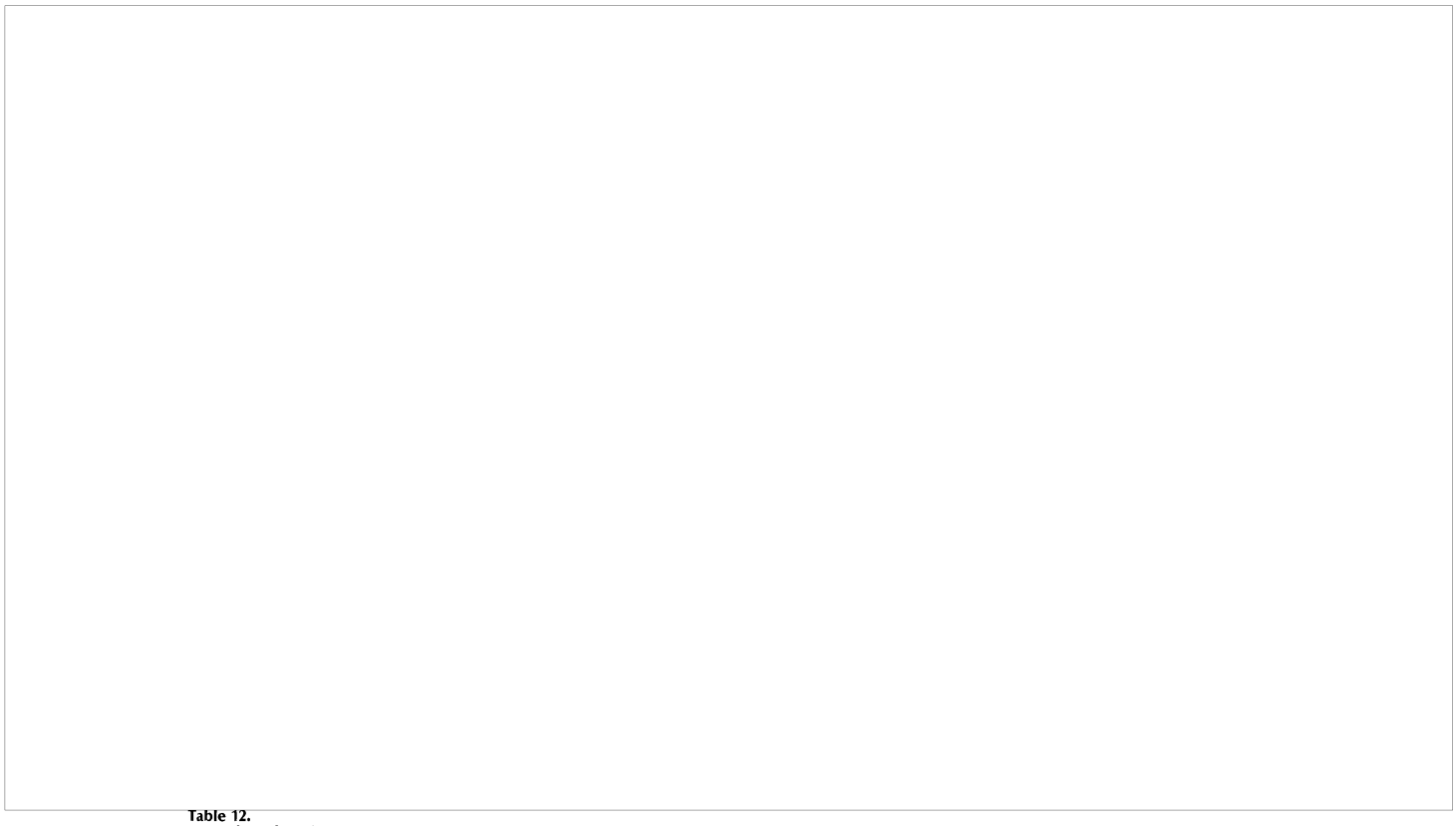

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Table 12.
(Items keyed to Figure 14)

Item		L	W (m)	H	Floor Space (sq m)	First Obs Ucon[7]	Date Complete	Remarks
1	Engine test bldg							
a	Admin/eng sect					8/68	—	3 stories
b	Admin/eng sect					8/68	—	3 stories
c	Spt sect					8/68	—	
d	Spt sect					8/68	—	
e	Spt sect					8/68	—	
f	Spt sect					8/68	—	
g	Spt sect					8/68	—	
h	Spt sect					8/68	—	
i	Spt sect					8/68	—	
j	Spt sect					8/68	—	
k	Assem sect					8/68	—	
l	Spt sect					8/68	—	
m	Assem sect					8/68	—	
n	Assem sect					8/68	—	
o	Assem sect					8/68	—	
p	Spt sect					8/68	—	
q	Spt sect					8/68	—	
r	Spt sect					8/68	—	
s	Spt sect					8/68	—	
t	Test cell sect					8/68	—	Test cells imbedded
u	Assem sect					8/68	—	
v	Spt sect					8/68	—	2 stories
w	Test cell					8/68	—	Test cells imbedded
x	Test cell					8/68	—	Test cells imbedded
y	Test cell					8/68	—	Test cells imbedded
z	Spt sect					8/68	—	
aa	Spt sect					8/68	—	
bb	Test cell					8/68	—	Test cells imbedded
2	Fuel-blending bldg							
a	Fuel-blending sect							
b	Spt sect					8/68	—	
3	Spt bldg					8/68	—	
4	Spt bldg							
a	Spt sect					8/68	—	
b	Spt sect					8/68	—	
5	Spt bldg					8/68	—	
Total								

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FIGURE 14. AREA L, ENGINE TEST AREA

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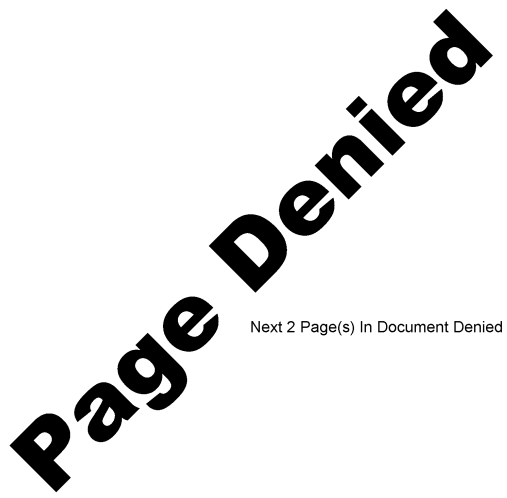

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