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PHOTOGRAPHIC
INTERPRETATION
REPORT

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BACAU AIRFRAME PLANT
ROMANIA (S)

Top Secret

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BACAU AIRFRAME PLANT, ROMANIA (S)

ABSTRACT

1. (TSR) This is the initial NPIC report on Bacau Airframe Plant, the largest airframe plant in Romania. The plant comprises 73 buildings and structures, of which 66 are considered significant, and contains 101,525 square meters of floorspace. A location map, three annotated photographs, and a table of descriptive and mensural data are also included in this report.

INTRODUCTION

2. (TSR) Bacau Airframe Plant is situated on level terrain 1 nautical mile (nm) south of Bacau on the northeast edge of Luizi Calugara Airfield (at 46-31-20N 26-55-10E (Figure 1). Luizi Calugara Airfield serves as the test and flyaway field for the plant. A limited amount of plant expansion is possible, primarily to the north and east.

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BASIC DESCRIPTION

Facilities

3. (TSR) Bacau Airframe Plant (Figure 2) occupies an area of approximately 34.2 hectares and consists of two functional areas—an administration/engineering area and a production/repair area.

4. (TSR) The administration/engineering area (Figure 2 and Table 1) occupies an area of approximately 3.2 hectares and is secured by a 3-meter-high wall. Access to this area is restricted to two vehicle entrances and one pedestrian entrance, all on the southern boundary. This area consists of 11 buildings with a total floorspace of 13,072 square meters. It contains two four-story administration buildings (items 6 and 7), four engineering buildings (items 5, 8, 9, and 11), a shop building (item 4), a quarters building (item 2), a security building (item 10), and two storage buildings (items 1 and 3).

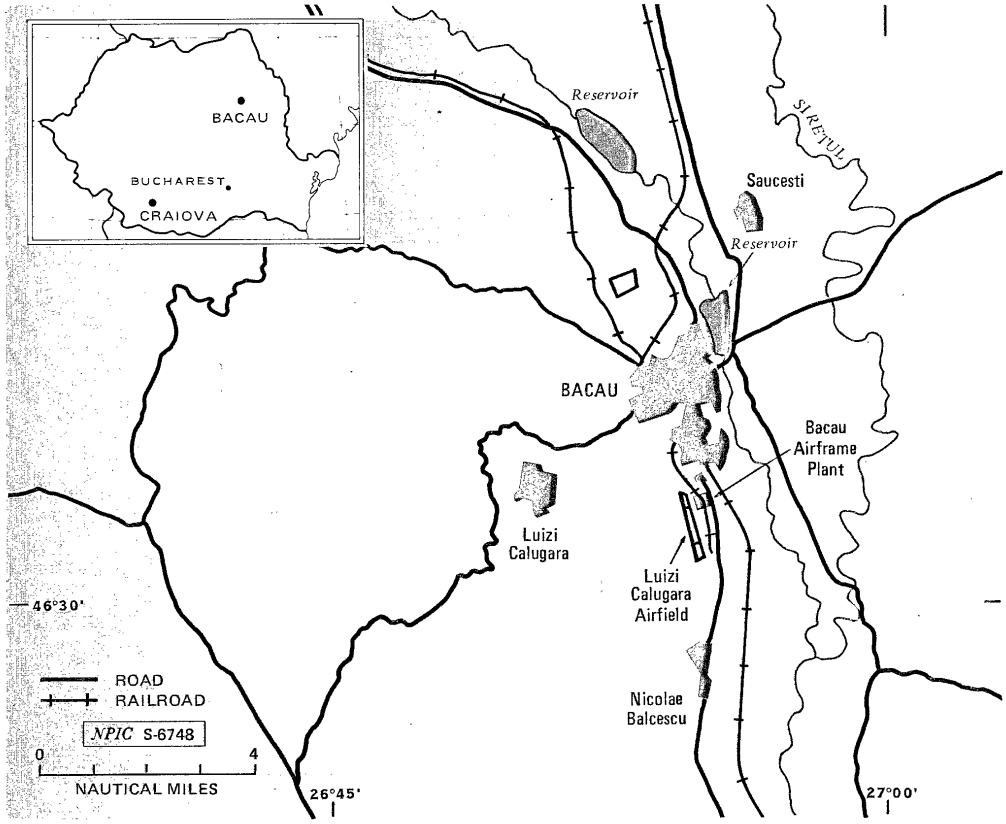

FIGURE 1. LOCATION OF BACAU AIRFRAME PLANT, ROMANIA

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Table 1
Buildings and/or Structures at Bacau Airframe Plant, Romania
(Items Keyed to Figure 2)

This table in its entirety is classified TOP SECRET RUFF

Item	Description	Dimensions* (m) L	W	H	Total Floorspace (sq m)	Remarks
	Administration/ Engineering Area (Items 1 through 11)					
1	Stor bldg				55	
2	Quarters				41	Peaked roof
3	Stor bldg				61	
4	Shop bldg				197	
5	Engr bldg				1,553	2 stories
6	Admin bldg				2,277	4 stories; building face elevator on south side
7	Admin bldg				2,277	4 stories; building face elevator on south side
8	Engr bldg				1,359	Maximum height
9	Engr bldg				4,010	3 stories
10	Security bldg				51	
11	Engr bldg				1,191	2 stories; south section is single story
	Production/ Repair Area (Items 1 through 55)					
1	Stor bldg				150	Minimum height
2	Stor bldg				394	
3	Compressor bldg				173	Maximum height [redacted] pressure bottle immediately north; elevated pipeline serves item 9
4	Shop bldg				576	11 gas bottles on east side
5	Spt bldg				69	Height at eaves
6	Spt bldg				108	Minimum height
7	Admin/commo bldg				892	Mast-mounted R-400 antenna and mobile control van positioned immediately northeast of the north edge of the building; north wing is communications related
8	Spt bldg				73	
9	Shop bldg				701	Height at eaves; floorspace includes two small annexes, each approximately 6 x 3 m
10	Compressor bldg				498	Gas bottles immediately west; 3-bay cooling tower immediately southeast; incinerator immediately east
11	Spt bldg				50	
12	Vehicle stor/maint bldg				384	Vehicle apron on west side marked with parking lanes
13	Shop bldg					
a	Engr sec				335	
b	Shop sec				1,111	
c	Shop sec				668	
d	Shop sec				686	
14	Warehouse					
a	Warehouse sec				3,234	Average height
b	Spt sec				44	
c	Spt sec				55	
15	Foundry					
a	Spt sec				375	
b	Foundry sec				1,281	
16	Shop bldg					
a	Shop sec				414	
b	Engr sec				250	
c	Spt sec				78	
17	Stor bldg				373	
18	Commo bldg				34	In separately walled compound; guyed mast adjacent to bldg
19	Security bldg				26	
20	Admin bldg				396	Maximum height
21	Subassembly bldg					
a	Subassembly sec				3,820	
b	Engr sec				310	
c	Shop sec				436	
d	Spt sec				43	
22	Spt bldg				154	
23	Engine test bldg				1,352	2 U-type, sea-level test cells
24	Pumphouse				14	Within separately fenced POL storage facility containing 20 buried tanks
25	Stor bldg				47	
26	Admin bldg					
a	Admin sec				2,192	4 stories; building face elevator on north side; 5-m-diam parabolic dish antenna on roof
b	Admin sec				125	3 stories
c	Admin sec				631	3 stories
27	Water treatment bldg					
a	Treatment sec				377	Water tower with [redacted] diam tank is immediately northeast
b	Spt sec				37	
28	Stor bldg				73	
29	Maint/spt bldg				1,303	Sawtooth roof
30	Shop bldg					
a	Shop sec				1,535	4 stacks on roof
b	Spt sec				160	
31	Steamplant				176	2 associated POL tanks immediately north
32	Maintenance bldg				1,680	Monitor roof
33	Stor bldg				569	Height at eaves
34	Engr/shop bldg					
a	Shop sec				2,705	13 vent stacks on west side
b	Engr sec				1,094	3 stories
c	Spt sec				450	
35	Shop bldg					
a	Shop sec				176	Partially underground
b	Admin sec				83	2 stories
36	Compressor bldg				55	2-bay cooling tower immediately north; new water tank ucon immediately south
37	Bldg ucon				—	[redacted] overall; midstage of construction
38	Stor bldg				194	
39	Stor bldg				148	Height at eaves
40	Engine test cell				777	L-type with sheltered exhaust
41	Engine test cell				1,136	L-type with sheltered exhaust and a secondary air intake

5. (TSR) The production/repair area (Figure 2 and Table 1) occupies an area of approximately 31 hectares and is secured by a combination of walls and fences. Access to this area is restricted to two rail entrances and five vehicle/pedestrian entrances. The area contains 88,453 square meters of floorspace comprising 62 buildings and structures, of which 55 are considered significant. These buildings are grouped in four functional categories. Administration/engineering facilities consist of four administration buildings (items 20, 26, 42, and 48) and an administration/communications building (item 7). Production/repair facilities consist of a final assembly building (item 52), a repair/assembly building (item 50), and a subassembly building (item 21). Production support facilities consist of an engine test building with two U-type, static, sea-level test cells (item 23); two L-type engine test cells (items 40 and 41); an electrical shop (item 44); a paint hangar (item 54); 11 shop buildings (items 4, 9, 13, 16, 30, 35, 43, 45, 46, 49, and 51); an engineering/shop building (item 34); a foundry (item 15); and three compressor buildings (items 3, 10, and 36). General support facilities include a steamplant (item 31); a water treatment building (item 27); a maintenance building (item 32); a maintenance/support building (item 29); a pumphouse with 20 associated buried POL tanks (item 24); a vehicle storage/maintenance building (item 12); a communications building (item 18); a security building (item 19); two warehouses (items 14 and 53); nine storage buildings (items 1, 2, 17, 25, 28, 33, 38, 39, and 47); and five support buildings (items 5, 6, 8, 11, and 22). Two buildings are under construction (items 37 and 55).

6. (TSR) Other structures and/or facilities in the production/repair area, not reflected in the floorspace totals (Table 1), include: a new water tower which supplies the water treatment building (item 27), an old water tower which reportedly is no longer used,[1] a partially underground (PUG) water storage tank, two cooling towers, an incinerator, a traveling crane, and an aircraft parking apron.

7. (TSR) A complete breakdown of plant floorspace by function and area is presented below.

Function	Floorspace (sq m)		Total
	Administration/ Engineering Area	Production/ Repair Area	
Administration/engineering	12,759	15,741	28,500
Production/repair	0	29,984	29,984
Production support	197	33,118	33,315
General support	116	9,610	9,726
Total	13,072	88,453	101,525

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Table 1 (continued)

Item	Description	Dimensions* (m) L	W	H	Total Floorspace (sq m)	Remarks
42	Admin bldg				237	
43	Shop bldg				374	
44	Electrical shop				1,885	
45	Shop bldg					
a	Shop sec				1,230	Sawtooth roof
b	Maint sec				75	
c	Stor sec				97	
46	Shop bldg					
a	Shop sec				192	
b	Spt sec				100	
c	Maint sec				116	
47	Stor bldg				343	Separately fence secured; roof has been removed, building may be abandoned
48	Admin bldg				153	Height at eaves
49	Shop bldg				2,061	6 exhaust vents on north side; 2 pressure bottles at southeast corner
50	Repair/assembly bldg					
a	Fuselage repair sec				5,799	Hangar type
b	Shop sec				777	
c	Assembly sec				2,585	
d	Engr sec				811	
e	Assembly sec				2,585	
f	Shop sec				777	
51	Shop bldg					
a	Shop sec				8,996	
b	Engr sec				992	2 stories
c	Shop sec				2,084	
52	Final assembly bldg					
a	Final assembly hall				12,832	6 bays
b	Engr sec				3,915	3 stories
53	Warehouse				1,644	Fence-secured open storage area on south side
54	Paint hangar				2,363	East section is high
55	Bldg ucon				—	overall; early stages of construction
	Unnumbered bldgs (7)	Various	Various	Various	150	Floorspace is approx
	Total floorspace, Production/Repair Area				88,453	
	Total floorspace, Administration/Engineering Area				13,072	
	Total plant floorspace				101,525	

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* Mensural accuracy is confidence interval.

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History

8. (C/) The plant was constructed in late 1953 with Soviet technical and financial assistance. At that time it was known as Bacau Military Aircraft Repair and Assembly Plant (Uzubade Reparatii Avioane). It was constructed primarily to handle assembly of MiG aircraft and to perform periodic maintenance on jet fighter aircraft of the Romanian Aviation Forces (ROAF).[2] The name of the plant was later changed to Bacau Aircraft Repair Plant (I.R.Av.— Intreprindere De Reparat Avioane), since the plant never was used for the assembly of aircraft as originally planned. In 1974, when the primary function of the plant became aircraft production, the name Bacau Airframe Plant was adopted; however, I.R.Av. remains at the plant as the agency responsible for the repair of ROAF aircraft.[1]

Research & Development/Production Activity

9. (C/) The first two prototypes of the joint Romanian-Yugoslavian aircraft JUROM, a light, multipurpose combat aircraft known in Romania as the IAR-93, were produced at Bacau in 1974.[4] JUROM were seen at Luizi Calugara Airfield on (Figure 3). After the second test flight, responsibility for the production of the JUROM was transferred to Craiova Airframe Plant Romania.[4] Although no additional JUROM airframes have been produced at Bacau, the plant has remained actively engaged in the production of at least six different JUROM components. It is likely that enough of these components will be produced for the entire projected production run of 200 aircraft.[4]

10. (TSR) Since late 1973, Bacau Airframe Plant has been engaged in the production of the Grindina (Hailshower) rocket launcher, a 21-tube, 122mm, indigenous version of the Soviet BM-21[4] (Figure 4). Approximately 200 Grindina are produced each year, some of which are exported to Egypt.[4] Photographic evidence suggests that this weapon is produced in the northern assembly section of the repair/assembly building (item 50c, Figure 2).

11. (TSR) As part of a Soviet-Romanian venture a light, two-seat trainer version of the Soviet YAK-50 aerobatic aircraft will be produced at Bacau.[4] This aircraft, probably designated the YAK-52 by the Soviets, is a low-wing monoplane with a single reciprocating engine.[4] The first prototype of the YAK-52 (also referred to as the YAK-56 and YAK-58) arrived at Bacau in May 1977.[3] Approximately 2,000 YAK-52 aircraft will have been constructed at Bacau by the end of 1982.[5] The engines for this aircraft will also be produced in Romania, at Bucharesti Aircraft Engine Plant ( ).[4] Photographic evidence confirms reports [3,4] that a new final assembly building (item 52, Figure 2) was constructed at Bacau in 1977, presumably to support the YAK-52 program.

Aircraft Repair Activity

12. (TSR) Bacau Airframe Plant, specifically I.R.Av., has been involved in the repair of ROAF aircraft since its completion in 1953.[1] Since reports concerning the number and types of aircraft repaired vary, [1,4] the following summary of repair activity is an approximation which is based on both photographic sightings (Figure 4) and the collateral reports.

MiG-15 (FAGOT)	1 per month
MiG-17 (FRESCO)	3-6 per month
MiG-19 (FARMER)	Less than 1 per year
MiG-21 (FISHBED)	3-4 per month
UMiG-21 (MONGOL)	2-3 per month
L-29 Delphin (MAYA)	3-6 per month
IL-28 (BEAGLE)	1-2 per year

13. (C/) I.R.Av. also occasionally performs maintenance on passenger aircraft, including IL-14 (CRATE) and AN-26 (CURL), belonging to TAROM, the state-owned airline.[4]

REFERENCES

IMAGERY

(TSR) [redacted] which provided the best coverage of the installation, was used as the primary mission for this report. Other selected imagery was also reviewed. 25X1

MAPS OR CHARTS

SAC. US Air Target Chart, Series 200, Sheet 0251-10, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

1. DOD. IIR 1-521-0260-78, *Locations of Military and Industrial Installations in Bacau (C)*, 3 Apr 78 (CONFIDENTIAL/[redacted] 25X1

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3. DOD. IIR 1-521-0285-78, *Repair and Overhaul of Military Aircraft at Aircraft Repair Plant in Bacau (C)*, 6 Apr 78 (CONFIDENTIAL[redacted] 25X1
4. DOD. IIR 1-521-0261-78, *General Data on Production of Aircraft Repair Plant in Bacau (C)*, 3 Apr 78 (CONFIDENTIAL/[redacted] 25X1
5. DOD. IIR 1-521-0291-78, *Bacau Airframe Plant—Production of Yak-58 Aircraft for the USSR (C)*, 6 Apr 78 (CONFIDENTIAL)
6. DIA. [redacted] *DDB-1923-2-78-SAO, Foreign Aircraft Production Communist World (U)*, May 78 (TOP SECRET [redacted] pp 61-62 (SECRET/ [redacted] 25X1 25X1 25X1

*Extracted material is not in COMINT channels.

REQUIREMENT

Project 130046NE

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

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