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**Top Secret**

[Redacted] 25X1

(115)

basic imagery interpretation report

# Ghimbav Aircraft Plant ICA (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES

[Redacted]

ROMANIA

25X1

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APRIL 1981

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INSTALLATION OR ACTIVITY NAME		COUNTRY
Ghimbav Aircraft Plant ICA		RO

UTM COORDINATES	GEOGRAPHIC COORDINATES	
NA	45-40-35N 025-30-23E	

25X1

MAP REFERENCE  
SAC. USATC, 200 Series, Sheet 0251-15, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)

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**ABSTRACT**

1. (S/D) This is the initial NPIC basic report on Ghimbav Aircraft Plant Interprinderea de Constructii Aeronautica (ICA), Romania, and satisfies the basic reporting requirement for this target. As of the date of the latest imagery used in this report, Ghimbav Aircraft Plant ICA consisted of 46 significant buildings and structures with a total floorspace of 80,809 square meters. Usable floorspace at the collocated Brasov/Ghimabav Airfield () the test and flyaway field for the plant, is included in the plant total.

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2. (S/D) This report includes a description of Ghimbav Aircraft Plant ICA, a chronology of construction, a discussion of aircraft production and assembly activity at the plant, a location map, four annotated photographs, two tables, and three graphs illustrating aircraft observations and production rates.

**INTRODUCTION**

3. (S/D) Ghimbav Aircraft Plant ICA (Figure 1) is 2.5 nautical miles (nm) northwest of Brasov and 2 nm north-northeast of Ghimbav. It is on gently rolling terrain and occupies an area of 17.9 hectares. Unlimited future expansion is possible to the east, south, and southwest.

4. (S/D) Ghimbav Aircraft Plant ICA (Figure 2) consists of two production-related areas and three support areas. The production-related areas are the fabrication area (Ghimabav Aircraft Plant ICA proper) and the test and flyaway field (Brasov/Ghimabav Airfield). The support areas are an electrical substation and water storage facility, a water pumping station, and a meteorological station. An associated construction support camp is outside the southeast corner of the plant but is not included as part of the plant in this report.

5. (S/D) Ghimbav Aircraft Plant ICA (Figure 3) is secured by a combination of walls and fences. Access to the plant is restricted to three vehicle/pedestrian gates on the southwest side of the plant and one aircraft (taxiway) entrance on the northeast side.



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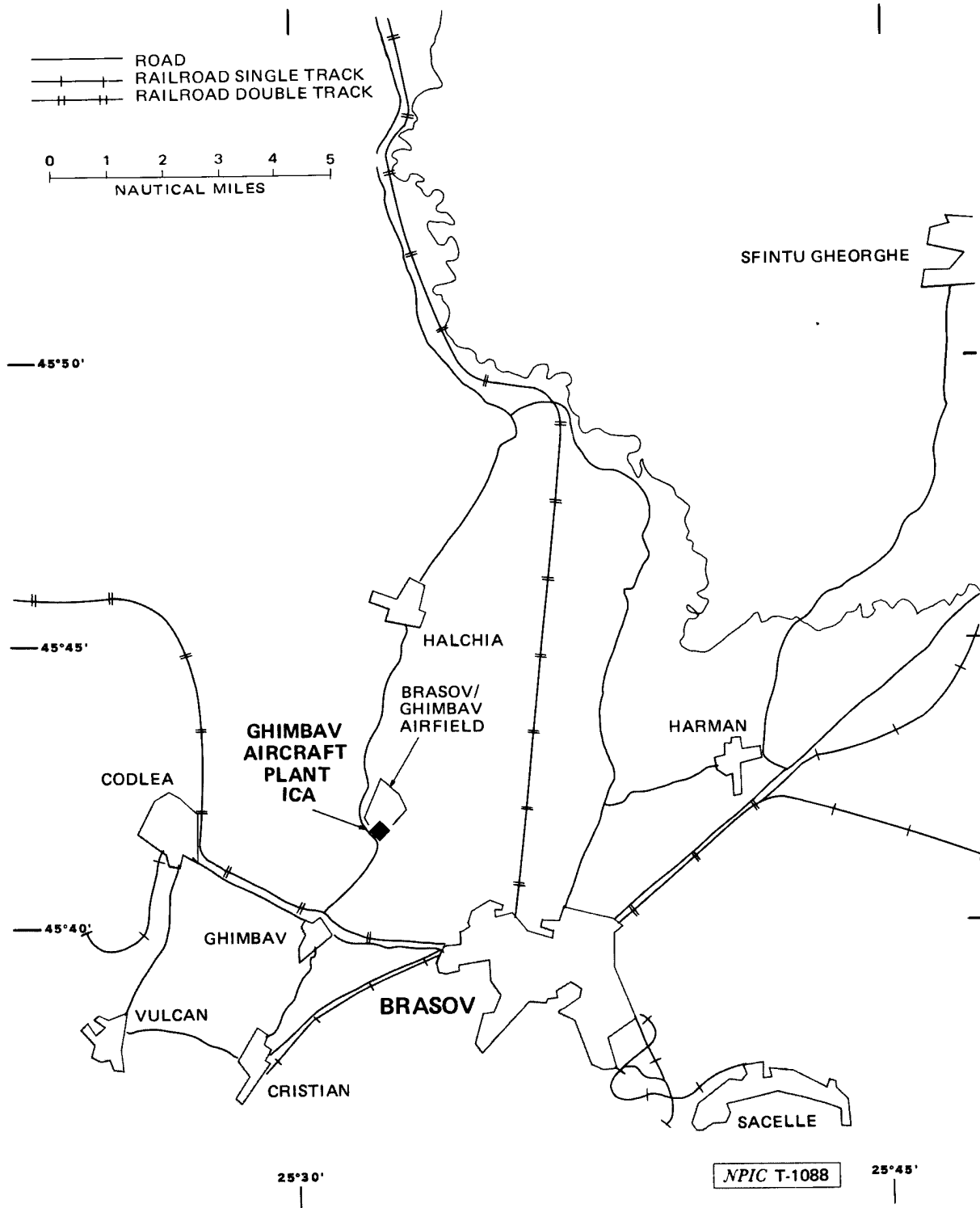


FIGURE 1. LOCATION OF GHIMBAV AIRCRAFT PLANT ICA, ROMANIA



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**Table 1.**  
**Dimensions and Construction Chronology at Ghimbav**  
**Aircraft Plant ICA**  
**(Items keyed to Figure 3)**

*This table in its entirety is classified TOP SECRET RUFF*

Item	Description	Dimensions*			Total Floorspace (sq m)	Date First Observed Ucon	Date Considered Complete	Remark						
		L	W	H										
<b>Fabrication Area</b>														
1	Checkout/paint hangar							25X1						
a	Hangar sect													
b	Plant stor sect													
c	Spt sect													
d	Control tower													
2	Stor bldg													Height could not be deter
3	Prob explosives stor bldg													Separately fence secured
4	Admin bldg													2 stories
5	Final assem/ assem bldg													
a	Assem sect													Connected by compressed air line to item 7 & 2 stories
b	Final assem sect													3 stories
c	Engr sect													2 stories
d	Engr sect						2 stories							
e	Engr sect						2 stories							
6	Admin/security bldg						4 stories							
7	Engr bldg						Supports main plant entrances							
8	Security bldg													
9	Compressor/air conditioning bldg													
a	Compressor sect						5 stacks on west side							
b	Air conditioning sect													
c	Engr/shop sect													
d	Lab sect													
10	Assem/subassem bldg													
a	Subassem sect						5 stories							
b	Shop sect						4 stories							
c	Engr sect													
d	Admin/engr sect						2 stories							
e	Shop sect						2 stories							
f	Assem sect													
g	Engr sect													
h	Spt sect													
i	Spt sect						Max height, <input type="text"/>							
11	Cooling tower						Induced draft: <input type="text"/>							
							fans							
12	Stor bldg													

\*Mensural accuracy is  $\pm$   of measured distance) for vertical

\*\*Not observed until completed.



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**Table 1.**

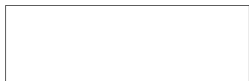
Item	Description	Dimensions* (m)			Total Floorspace (sq m)	Date First Observed Ucon	Date Considered Complete	Remark
		L	W	H				
13	Air regulator bldg							Regulates flow of compressed air from item 9
14	Water treatment/ cooling bldg							
a	Treatment sect							
b	Cooling sect							
c	Spt sect							
15	POL tank							Revetted
16	Water tank							
17	Assem/sub- assem bldg							
a	Assem sect							Dimens over- all, floorspace includes 2 annexes
b	Subassem sect							
c	Shop sect							
d	Shop sect							
18	Subassem bldg							
a	Subassem sect							
b	Shop sect							
c	Shop sect							Large square exhaust vent on roof suggests extensive heat processing in this sect
d	Spt sect							
e	Stor sect							
f	Subassem sect							
g	Shop sect							
h	Stor sect							
i	Woodworking sect							
j	Spt sect							
19	Heating plant							Dimens overall floorspace includes 2 annexes
20	Stor bldg							
21	Stor bldg							
a	Stor sect							
b	Stor sect							
22	Water pumping sta							
23	Assem bldg							
a	Assem sect							
b	Engr sect						3 stories	
c	Shop sect							
24	Checkout bldg							
25	Checkout bldg							
26	Stor bldg							
27	Stor bldg						Supports POL stor fac immed west	
28	Veh stor/maint bldg							
29	Stor bldg						Height could not be deter	

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\*Mensural accuracy is [redacted] measured distance) for vertical

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\*\*Not observed until completed.



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Table 1.

Item	Description	Dimensions* (m)			Total Floorspace (sq m)	Date First Observed Ucon	Date Considered Complete	Remark
		L	W	H				
30	Shop bldg							
31	Veh stor bldg							
32	Subassem bldg							
33	Security bldg							
<b>Electrical Substation and Water S</b>								
34	Control bldg							Supports electrical substation
a	Sect							
b	Sect							Height could not be deter
35	Pumphouse							Supports water stor fac
36	Pumphouse							Supports water stor fac
37	Water stor fac							
a	Control sect							Buried with UG entrance
b	Buried tank							
c	Buried tank							
<b>Meteorological Station</b>								
38	Spt bldg							Supports meteorological station
39	Spt bldg							Supports meteorological station
<b>Brasov/Ghimrav Airfield</b>								
40	Checkout apron							
41	Checkout apron							
42	Compass rose							
43	Repair hangar							
44	Operations bldg/ passenger terminal							
a	Terminal sect							2 stories; prob contains office space
b	Ops sect							
c	Control tower							4 stories; lower 3 stories are prob ops associated
d	Admin sect							
e	Admin sect							
45	Stor bldg							Supports main airfield entrance
46	Security bldg							
Total floorspace on			<input type="text"/>					

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\*Mensural accuracy is  of measured distance) for vertical dimensions, both within

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\*\*Not observed until completed.



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**Top Secret RUFF****BASIC DESCRIPTION****General Description**

6. (S/D) Ghimbav Aircraft Plant ICA (Figure 3 and Table 1) occupies an area of 17.9 hectares and consists of 46 significant buildings and structures with a total floorspace of 80,809 square meters.

7. (S/D) The fabrication area, Ghimbav Aircraft Plant ICA proper, is at the southeast corner of Brasov/Ghimbav Airfield and contains 32 significant buildings and structures. These structures consist of an administration building (item 4, Figure 3), an administration/security building (item 6), an engineering building (item 7), a final assembly/assembly building (item 5), an assembly building (item 23), two assembly/subassembly buildings (items 10 and 17), two subassembly buildings (items 18 and 32), a checkout/paint hangar (item 1), two checkout buildings (items 24 and 25), a shop building (item 30), a heating plant (item 19), a compressor/air conditioning building (item 9), and 17 other major buildings of varying functions. A small POL storage facility is at the extreme north corner of the fabrication area.

8. (S/D) Brasov/Ghimbav Airfield (Figure 3), the test and flyaway field for the plant, consists of a 1,067- by 762-meter, serviceable, sod landing area; a six-position anti-aircraft (AA) site; a repair hangar (item 43); an operations building/passenger terminal (item 44); two checkout aprons (items 40 and 41); a compass rose (item 42); a security building (item 46); and a storage building (item 45). A small POL storage facility is adjacent to the fabrication area.

9. (S/D) The electrical substation and water storage facility (Figure 3) is 100 meters south of the fabrication area. It is separately wall secured and consists of a large substation, a control building (item 34), a water storage facility (item 37), and two pumphouses (items 35 and 36).

10. (S/D) The water pumping station (item 22) is 50 meters south of the fabrication area. It is separately fenced secured and consists of an electrical pump/wellhead. This station supplies water for the plant.

11. (S/D) The meteorological station is 100 meters west of the southwest corner of the fabrication area. It consists of two separately secured instrumentation sites (one wall secured, one fenced secured) and two support buildings (items 38 and 39).

12. (S/D) The following table lists the use of plant floorspace as of  the date of the latest imagery used in this report.

<b>Function</b>	<b>Floorspace (sq m)</b>	<b>Percentage of Total Floorspace</b>
Administration/engineering	24,398	30.2
Production/checkout	46,878	58.0
Production support	4,490	5.6
General support	5,043	6.2
	<u>80,809</u>	<u>100.0</u>

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**Construction Chronology**

13. (S/D) On imagery of [redacted] the site presently occupied by Ghimbav Aircraft Plant ICA was being used as farmland. The next usable coverage of the area was on [redacted] 1969. At that time two buildings, an assembly/subassembly building (item 10) and a subassembly building (item 18), had been completed and were operational. An additional five support buildings, which were later razed, were also present. Thus, at this early stage in the history of the plant, limited production/assembly of aircraft was possible. The total usable floospace on [redacted] 1969 was 6,686 square meters of which 4,412 square meters remain in use today. The water pumping station (item 22) was also present on [redacted]

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14. (S/D) Construction observed between [redacted] resulted in the addition of 57,305 square meters of floospace and the loss, through razing, of 2,274 square meters, bringing the plant total to 61,717 square meters. Two buildings were enlarged, 33 new buildings were constructed, and five buildings were razed.

15. (S/D) Enlargement of the two previously existing buildings resulted in the addition of a support section (item 10h) to the assembly/subassembly building and the addition of a storage section (item 18h) and a support section (item 18j) to the subassembly building.

16. (S/D) New buildings constructed during this period consisted of an administration/security building (item 6), a final assembly/assembly building (item 5), an assembly building (item 23), a checkout/paint hangar (item 1), two checkout buildings (items 24 and 25), a shop building (item 30), a subassembly building (item 32), a repair hangar (item 43), a heating plant (item 19), a cooling tower (item 11), an air regulator building (item 13), a water treatment/cooling building (item 14), a compressor/air conditioning building (item 9), a POL tank (item 15), a water tank (item 16), an operations building/passenger terminal (item 44), a water storage facility (item 37), two associated pumphouses (items 35 and 36), an electrical substation with an associated control building (item 34), a vehicle storage/maintenance building (item 28), a vehicle storage building (item 31), a probable explosives storage building (item 3), three security buildings (items 8, 33, and 46), five storage buildings (items 12, 20, 21, 27, and 29), and two support buildings (items 38 and 39). Other construction during this period consisted of the POL storage areas at the airfield and in the fabrication area, and the addition of the entire security wall/fence system.

17. (S/D) Construction observed between [redacted] resulted in the addition of 19,092 square meters of floospace, bringing the plant total to the current 80,809 square meters.

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18. (S/D) The enlargement of five existing buildings resulted in the addition of a support section (item 1c) to the checkout/paint hangar, the addition of a subassembly section (item 10a), a shop section (item 10b), an engineering section (item 10c), and an administration/engineering section (item 10d) to the assembly/subassembly building, the addition of a support section (item 14c) to the water treatment/cooling building, the addition of an administration section (item 44e) to the operations building/passenger terminal, and the addition of a new storage section (item 21b) to a storage building.

19. (S/D) New buildings constructed during this period consisted of an assembly/subassembly building (item 17), an engineering building (item 7), an administration building (item 4), and three storage buildings (items 2, 26, and 45). Also construction during this period included two aircraft checkout aprons (items 40 and 41), a compass rose (item 42), and a taxiway connecting these to the checkout/paint hangar.



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**Plant Activity**

20. (S/D) Prior to the occupation of Axis-aligned Romania by Soviet troops in 1943, the most active aircraft industry plant in Romania was in Brasov.<sup>1</sup> Between 1943 and 1967, this plant produced a variety of utility aircraft. However, in 1967 the plant was converted to the production of light-wheeled vehicles and ball bearings. During this time, Romania began a policy of separation from the USSR. One manifestation of this new policy was the construction of Ghimbav Aircraft Plant ICA (Interprinderea de Constructii Aeronautica),<sup>2</sup> northwest of the old Brasov factory.<sup>3</sup> Since the inception of production activity at Ghimbav in 1969, the plant has been involved in the production of eight aircraft and the licensed assembly of two others (Table 2). These programs are discussed in the following paragraphs.

**Aircraft Production and Assembly Programs**

21. (S/D) **IAR-818.** The IAR-818 is a high-wing single-engine monoplane equipped with a 210-horsepower, Walter Minor M-337, six-cylinder air-cooled engine. A pod-and-boom fuselage structure was incorporated in this aircraft for easy rear loading of bulky freight items. The fuselage of the IAR-818 is tubular steel while the wings are plywood over two steel spars.<sup>4</sup> Production of the IAR-818 began in 1961 at Bucuresti Airframe Plant Baneasa IAR [redacted] and continued until 1967 at which time Bucuresti began tooling for production of the BN-2A ISLANDER.<sup>4</sup> At this time, production of the IAR-818 was transferred to Ghimbav. Production at Ghimbav continued until at least December 1973. Observations of IAR-818 at Ghimbav (Table 2) varied widely throughout this period with a high count of 22 seen on [redacted] Although the exact number of IAR-818 produced at Ghimbav cannot conclusively be determined from imagery, it is likely that at least 75 were produced.

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22. (S/D) **IAR-822.** The IAR-822 is a low-wing agricultural monoplane featuring a rear-placed cockpit for pilot protection, a chemical hopper with a 1,332-pound capacity, wing-internal fuel tanks, and reinforced landing gear.<sup>1</sup> This aircraft entered series production in 1971 (Table 2) at Ghimbav, and, although the production run was small, this aircraft was very significant since it incorporated extensive western equipment and design features. The IAR-822 was a direct follow-on of the IAR-821, and both aircraft were designed by Radu Manicatide, who felt the IAR-821 could not be competitive in the western market because of its numerous Soviet parts and frequent need for overhaul. Thus, the IAR-822 was equipped with a 290-horsepower, Lycoming IO-540, six-cylinder engine rather than the Soviet Ivchenko AI-14MF which powered the IAR-821. A variant of the IAR-822, produced in very limited numbers, was the IAR-822B, a two-place trainer aircraft.<sup>1</sup> Two IAR-822 were observed at Ghimbav on [redacted] (Table 2), and it is likely that these were the two prototypes which achieved flight qualification in 1971.<sup>1</sup> Production of the IAR-822 began in 1971 and ended in late 1973 with an estimated production run of 40 to 60 aircraft.

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23. (S/D) **IAR-316 Alouette III Helicopter.** The desire to separate the Romanian aviation industry from Soviet influence received a large boost in 1971 when Romania reached an agreement with the French firm Aerospatiale to assemble an initial run of 50 SA-316B Alouette III.<sup>5</sup> Limited-scale assembly of the Alouette III (Figure 4), designated IAR-316, was seen at the plant on [redacted] [redacted] (Table 2). Additional contracts have since been signed,<sup>6</sup> IAR-316 production has continued, and, since 1976, assembly rates have increased significantly. A high count of 14 IAR-316 was observed at the plant on [redacted] Figure 5 illustrates the probable assembly cycle of the IAR-316 at Ghimbav. Limited-scale assembly occurred from late 1971 until mid-1975. At that time tooling for the IAR-823

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Table 2.  
Aircraft Sightings at Ghimbav Aircraft  
Plant ICA

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Date of Coverage	Production Aircraft						IS-28M1 Powered Glider	IS-28B2 Glider	Assembly Aircraft				Repair and/or Training Aircraft			Miscellaneous Sightings	
	IAR-818	IAR-822	IAR-283 Military	IAR-283 Civilian	IAR-824	IAR-826			IAR-827	IAR-316 Alouette III Military	IAR-316 Alouette III Civilian	IAR-330 PUMA Military	IAR-330 PUMA Civilian	AN-2 COLT	Z-326 Trenner Master		IAR-817
6	2																IAR-814, 3 IFIL- REGHIN RG-6
16	2												1	1			1 IAR-813
22	2									1	1		1	1	3		1 IAR-814
4	4												2	1	3		
9	4							2			2		1	3	2		
11	1		1										1	3	2		4
6																	
7	5												1	4	2		
9																	
1			1								1				1	2	
2															1		
2							1										
5		1	17			1	1	1		5	2		3	6	1		1 HIP C
1						8		2					2	4			
						7							2				1 HOODLUM
1				3	3	3	7	1	7	1			3	3	2		
1			1	5	3	3	3				2		1	5			
1		3	3	2	3	3	3		2	3	1		3	2	1		
3				1			2	1	3	4	3		6	1	1		
1		3	2	1		4	2	4	7*	7	2	1	2	6			
2		4	2	1		2	4	2	4	5	2	2	2	6	1		
1			1			3	5		3	3	2	4	4	5	1		
1		1	1			1	2	1	3		2	3	3	3			
		2	4	1		1	3	2		6	2	2	4	4	1		1 PZL-104 WILGA
				2									5				
		4				3	1		5	2	1		5	4			
		5	2	2		1	3	3	1	2	4	1	1	2	1		1 HIP C
		5		1		3	3	3	3	1	2			1	1		
		5	7	2		1	6	2	1	3			2	2	1		
		2		1		3	2	2	1	2	3		1	2	1		

\* Two with rocket pods.

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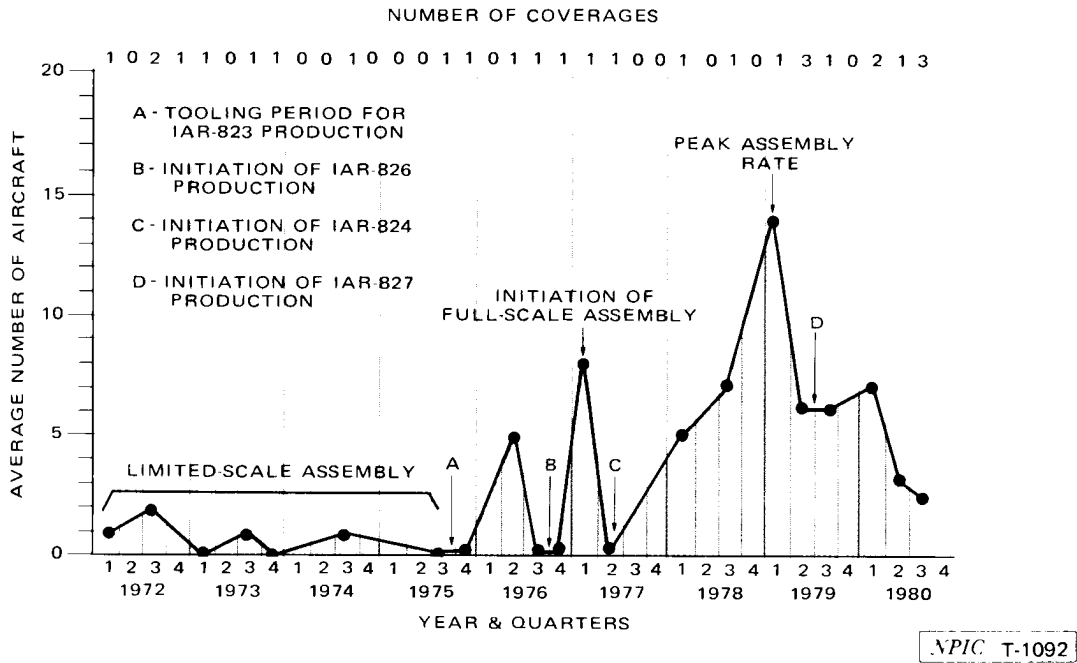


FIGURE 5. AVERAGE NUMBER OF IAR-316 ALOUETTE III PER COVERAGE AT GHIMBAV AIRCRAFT PLANT ICA

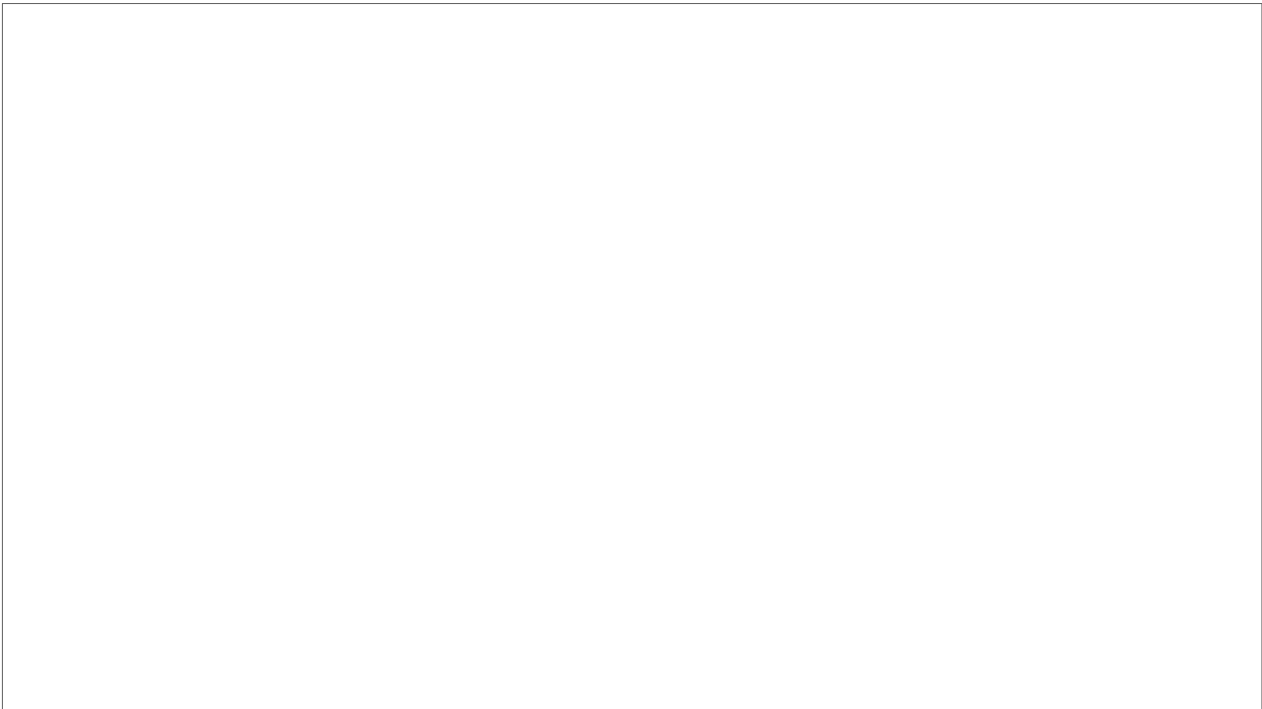
was underway and IAR-316 assembly halted temporarily. Initiation of full-scale assembly began in late-1975 and continued until mid-1980 with short slowdowns for initial production of two other aircraft. As of mid-1980, it is likely that a minimum of 135 IAR-316 had been produced.<sup>7</sup> The IAR-316 Alouette III, currently being assembled at a rate of approximately two per month, is a light, multirole helicopter powered by a 870 shaft-horsepower Turbomeca Artouste engine. The aircraft can be equipped for numerous utility roles including agriculture, cargo, communications, forestry, fire-fighting, and rescue. Significantly, however, the Romanians began arming the IAR-316 in mid-1972 with machine guns and rocket pods.<sup>8</sup> While the machinegun modification was not identifiable on overhead imagery, two IAR-316 with rocket pods were observed at the plant on [redacted] (Figure 6), and camouflage-painted IAR-316 have been observed at the plant in a high proportion to civil models since [redacted] (Table 2). It is likely that most, or possibly all, of the camouflage-painted IAR-316 at Ghimbav are at least machinegun equipped.<sup>8</sup>

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24 (S/D) **IAR-823.** The IAR-823 is a low-wing single-engine multirole monoplane powered by a 290-horsepower, Lycoming IO-540-G1D5, six-cylinder horizontally opposed, air-cooled engine. Prototype construction began in 1971,<sup>9</sup> and the first prototype was observed at Ghimbav on [redacted] (Table 2). Full-scale production began in late 1975 (Figure 7) and continued at a moderate rate through mid-1980 with slowdowns the initial production of three versions (Figure 4). In the civil configuration, the IAR-823 is a five-seater with variable equipment options for such roles as air taxi, executive or freight transport, ambulance, liaison, or photo reconnaissance.<sup>9</sup> The military version (Figure 4) exhibits slight airframe modifications in the form of a reduced wingtip chord, slightly rounded wingtips, and narrower rear fuselage. In the military configuration, the IAR-823 is equipped with a fuselage-mounted machinegun and four wing-mounted rocket pods, two on each wing.<sup>8</sup> Additionally, all military IAR-823 which have been observed at the plant to date have been camouflage painted (Figure 4 and Table 2). While no production rate for the IAR-823 has yet been confirmed, photographic observations suggest a rate of three to five per month.

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**FIGURE 6. SA-316 ALOUETTE III WITH ROCKET PODS AT GHIMBAV AIRCRAFT PLANT ICA**

25. (S/D) **IAR-330 PUMA.** With the signing of another agreement with Aerospatiale in 1975, this time to assemble the SA-330 PUMA helicopter, Romania took yet another step forward in its attempt to free its aviation industry from Soviet influence. Limited-scale assembly of the PUMA, designated IAR-330 in Romania, began in early 1976, and the first two aircraft were observed at Ghimbav on [redacted] (Table 2). Full-scale production began in early 1977 and a gradual upward trend in production rates (Figure 8) has since been observed, culminating in an estimated June 1980 rate of one and one half to two aircraft per month. The IAR-330 PUMA is a twin-engine medium-weight, multirole, transport helicopter powered by two 1,175-shaft-horse-power, Turbomeca Turmo IVC turboshaft engines. Like the IAR-316 and IAR-823, the IAR-330 PUMA is produced in two versions (Figure 4). In the civil configuration, the IAR-330 is a highly versatile, all-weather transport with numerous equipment options. As a military aircraft, the IAR-330 serves as a tactical, all-weather troop transport<sup>10</sup> and gunship. Also like the IAR-316 and IAR-823, the IAR-330 can be equipped with machineguns.<sup>8</sup> While the rocket pod option has not been observed on imagery, it remains likely that the IAR-330 is so equipped.<sup>8</sup>

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26. (S/D) **IAR-824.** The IAR-824 (Figure 4) is a single-engine high-wing monoplane powered by a 290-horsepower, Lycoming IO-540-C1D5 flat-six engine, and serves as a six-seat utility/liaison aircraft.<sup>10</sup> Prototype construction of the IAR-820, designed by Iosif Silimon, began at Ghimbav in late 1969, and the aircraft received certification in May 1972.<sup>10</sup> Necessary design changes delayed initial production until early 1977, however. Limited-scale production began in early 1977 (Table 2) and has continued through mid-1980. The estimated production rate, based solely on imagery, is four to six aircraft annually.



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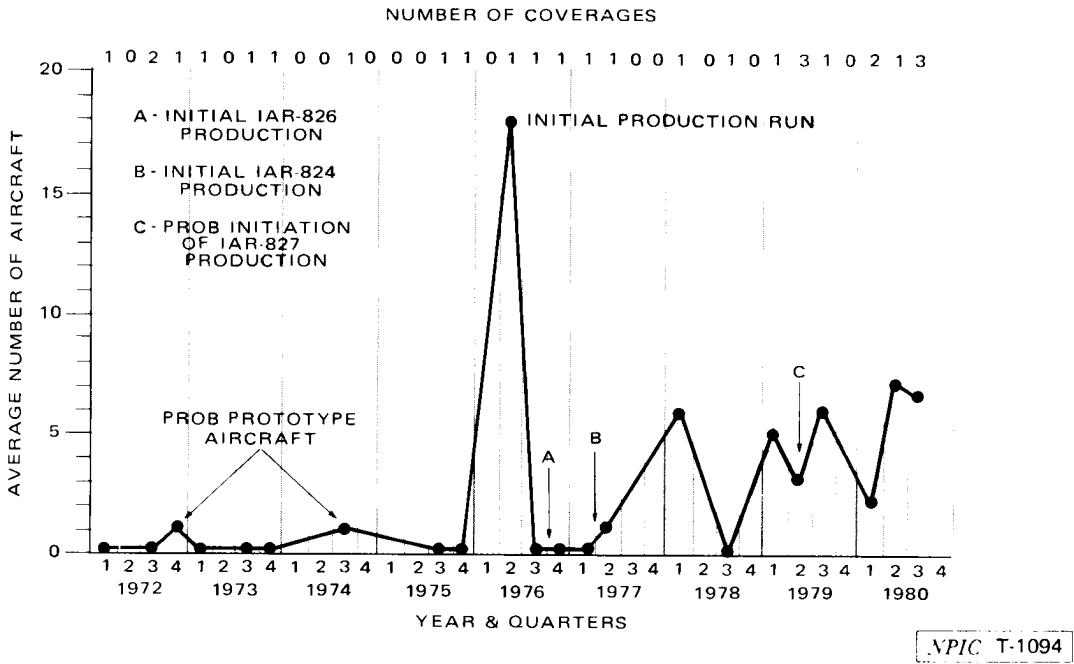


FIGURE 7. AVERAGE NUMBER OF IAR-823 SIGHTINGS PER COVERAGE AT GHIMBAV AIRCRAFT PLANT ICA

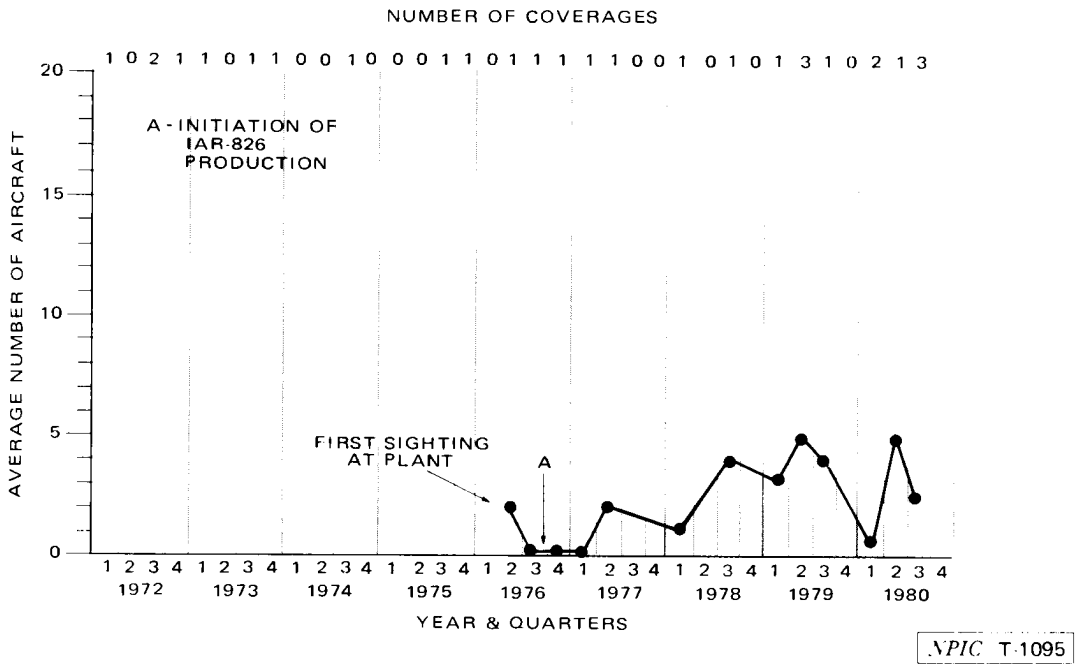


FIGURE 8. AVERAGE NUMBER OF IAR-8330 PUMA SIGHTINGS PER COVERAGE AT GHIMBAV AIRCRAFT PLANT ICA





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27. (S/D) **IAR-826.** A limited production run of the IAR-826, an all metal version of the earlier IAR-822, began in early 1976 and ended by early 1978. The total production run was approximately 25 to 35 aircraft. Characteristics previously discussed for the IAR-822 can be applied to the IAR-826.<sup>10</sup>

28. (S/D) **IAR-827.** Design of the IAR-827, a developed version of the all metal IAR-826, began in 1973 and flight testing began in 1976. The IAR-827 (Figure 4) is a single/two-seat, low-wing agricultural monoplane with greatly increased payload capabilities over the IAR-822 and IAR-826. It is powered by a single 600-horsepower, Polish PZL-3s, seven-cylinder, radial, air-cooled engine. This engine also powers the Polish PZL-106 KRUK.<sup>10</sup> Series production of the IAR-827 began in early 1979 and continued at a slow rate through mid-1980 (Table 2).

29. (S/D) **Gliders.** Ghimbav has been engaged in the production of gliders since 1972, and two distinct models have been observed at the plant (Figure 4). Production of the IS-28B2 began in early 1972 and continued through mid-1980. The IS-28B2 is a single-seat, high-wing towed glider. Production of the IS-28M1 began in late 1975, and this glider has since become the more frequently observed of the two models. The IS-28M1 is a two-seat, low-wing, powered glider.<sup>6</sup> An IS-29 series glider has been reported<sup>6,9</sup> but has not been confirmed at the plant.

### **Aircraft Repair Activity**

30. (S/D) Repair of aircraft produced at Ghimbav, as well as older Romanian-produced aircraft and some foreign-produced aircraft, takes place at Ghimbav on a continuing basis. Most of this activity occurs in the repair hangar at the airfield. Aircraft known to be repaired at Ghimbav include the Romania IAR-817, IAR-822, IAR-818, IAR-316 Alouette III, the Soviet AN-2 COLT, the Czech Z-326 Trener Master, and the Polish PZL-104 Wilga.<sup>11</sup> Continued observations of these aircraft (Table 2) confirm a long-term commitment to a repair program.

### **Other Production Activity**

31. (S/D) Numerous other items are produced at Ghimbav, most notably wings, stabilizers, flaps, and other miscellaneous parts for the BN-2A ISLANDER, produced in Bucuresti.<sup>12</sup> Ghimbav also reportedly produces unspecified parts for the CIAR/IAR-93 JUROM.<sup>8</sup>

### **Training Activity**

32. (S/D) The continued movement of aircraft around the airfield, observations of in-flight aircraft over or in the environs of the airfield, and occasional observations of parachutes and drop-zone markers indicate that some training activity may occur at the plant. Whether this activity is being carried out by the military, a sports club, or plant personnel is not known.

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REFERENCES

IMAGERY

(S/D) All imagery acquired between [redacted] was used in the preparation of this report.

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MAPS OR CHARTS

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REQUIREMENT

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

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