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basic imagery interpretation report

Kiyev Airframe Plant 473 and Gostomel Airfield (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES
BE: Various
USSR

~~Secret~~

WNINTEL

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DECEMBER 1983
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INSTALLATION OR ACTIVITY NAME					COUNTRY
Kiyev Airframe Plant 473					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	50-27-52N 030-23-29E				

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MAP REFERENCE

DMAAC, US Air Target Chart, Series 200, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
	NA

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Gostomel Airfield					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	50-36-01N 030-11-43E				

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MAP REFERENCE

DMAAC, US Air Target Chart, Series 200, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
	NA

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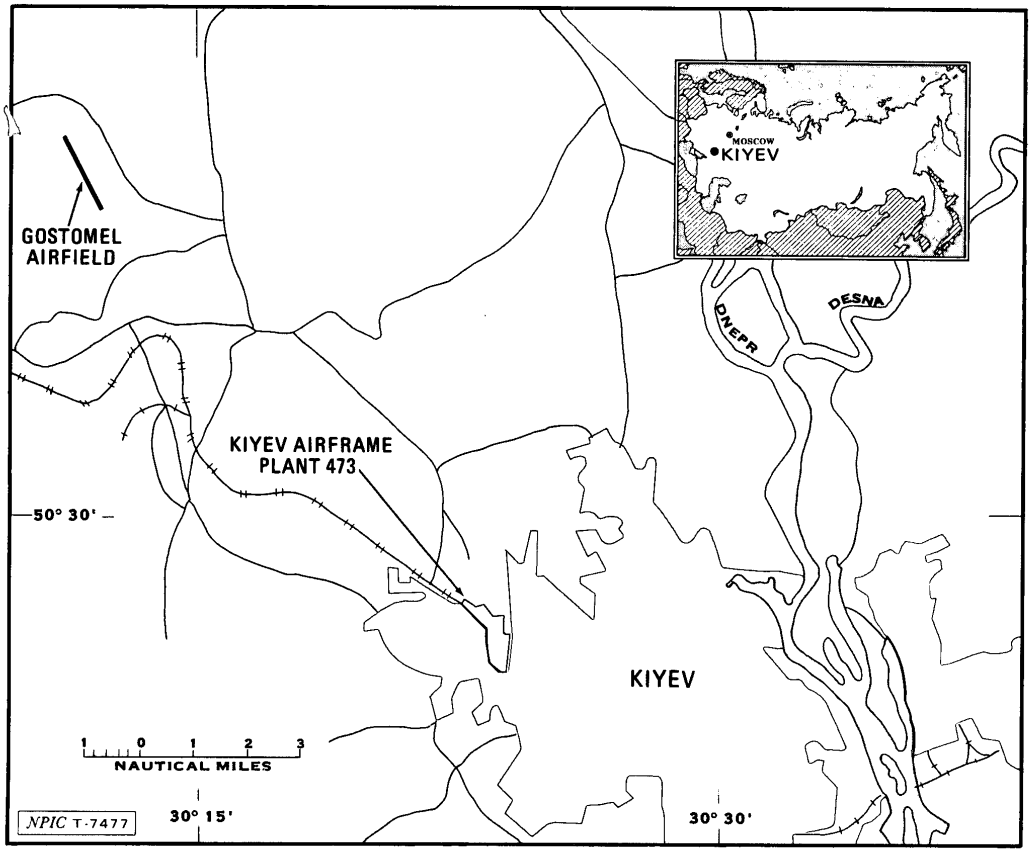

FIGURE 1. LOCATIONS OF KIYEV AIRFRAME PLANT AND GOSTOMEL AIRFIELD, USSR

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ABSTRACT

1. This report, which is based on photography from [redacted] describes the construction at Kiyev Airframe Plant 473 and Gostomel Airfield and discusses the aircraft research, development, and production programs underway at these facilities during this reporting period. It updates two previous reports on these subjects: [redacted] (the airframe plant), and [redacted] (the airfield). Construction continues at both these facilities. More than 98,000 square meters of new assembly, shop, and engineering/administrative floor space have been added to the factory since August 1978. Among the additions at the airfield is the paved runway, under construction since 1973, that will be 3,000 meters long when finished (it is already operational with 2,500 meters complete). This report contains a location map, 35 annotated photographs, and three tables of mensural data and aircraft sightings. (S/WN)

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INTRODUCTION

2. Kiyev Airframe Plant 473 (Figures 1, 2 and 3) is on the western edge of Kiyev. The plant is collocated with Kiyev/Svyatoshino Airfield [redacted], which serves as the flyaway field for the plant. The design and fabrication facilities of the Antonov Experimental Design Bureau (OKB) are also located at Kiyev 473. Gostomel Airfield (Figures 1, 4, and 5), approximately 12 nm northwest of Kiyev Airframe Plant 473, serves as the primary flight test facility of the Antonov OKB.[1] (S/WN)

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3. The Antonov OKB is responsible for the development of several light, medium, and heavy transport aircraft. Aircraft of the Antonov OKB have been produced both for Soviet internal use and for export. (S/WN)

BASIC DESCRIPTION

Plant Construction and Airfield Improvements

Kiyev Airframe Plant 473

4. Total floorspace for Kiyev 473 as of [redacted] (the information cutoff date of the previous NPIC report)[2] was 398,349 square meters. By June 1983 this figure had reached 513,999 square meters with the addition of 115,650 square meters of new floorspace. However, most of the new floorspace is directly related to the expansion of the Antonov OKB's prototype production facilities and not to the series production facilities of Kiyev 473.[3] Paragraphs 5 through 8 present a summary of construction and parking facility improvements at Kiyev 473 since August 1978. The numbering system used for Kiyev in this report (Figure 3 and Table 1) is a continuation of that used in the previous NPIC report.[1] (S/WN)

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5. In August 1978 the total amount of assembly/shop floorspace for Kiyev 473 was 230,395 square meters, which was expanded to 306,267 square meters by June 1983 with the addition of 75,872 square meters of new assembly/shop floorspace. The most significant buildings, which account for over 80 percent of the new assembly/shop floorspace, are the large final assembly hall (item 136) and the adjacent fitting-out/test hangar (item 135). Both of these structures were built to accommodate the development and assembly of the large CONDOR A prototypes.[3] (S/WN)

6. In August 1978 there were 112,755 square meters of administration/engineering floorspace at Kiyev 473. Approximately 22,698 square meters of additional floorspace were completed by June 1983, bringing the total of administration/engineering floorspace to 135,453 square meters. Much of this floorspace is also associated with the Antonov OKB. (S/WN)

7. The total storage/support floorspace at Kiyev 473 in August 1978 was 55,199 square meters. The total for June 1983 was 72,279 square meters, an increase of 17,080 square meters. A major portion of this increase is for the receiving and storage of construction materials for the new Antonov OKB facilities. (S/WN)

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8. Major improvements to the aircraft parking/support facilities were completed at Kiyev 473 to accommodate the development of the CONDOR A. The most significant improvements included the large hangar apron at the northwest end of the new final assembly hall, the construction of a 96-meter-diameter compass rose, which is linked to the hangar apron by a concrete taxiway, and the new parking apron southeast of the final assembly hall. (S/WN)

Gostomel Airfield

9. Major improvements have been accomplished at Gostomel Airfield since [redacted] (the information cutoff date for the previous NPIC report).[4] Most of the new construction at Gostomel is also related to the development of the CONDOR A. None of the floorspace at Gostomel is designed to support aircraft production but is rather intended to support the flight test programs of aircraft designed by the Antonov OKB and produced at Kiyev 473. The total floorspace at Gostomel in June 1983 was 26,626 square meters. The identification of Gostomel Army Barracks AL 1 [redacted] formerly included as part of the airfield support facilities, and the construction of Gostomel Airfield Electromagnetic Pulse Facility [redacted] within the existing support/maintenance area, required a renumbering of the buildings associated with Gostomel Airfield (Figure 5 and Table 2). (S/WN)

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10. The most significant improvement at Gostomel is the large north-northwest/south-southeast concrete runway (Figures 4 and 5). Much

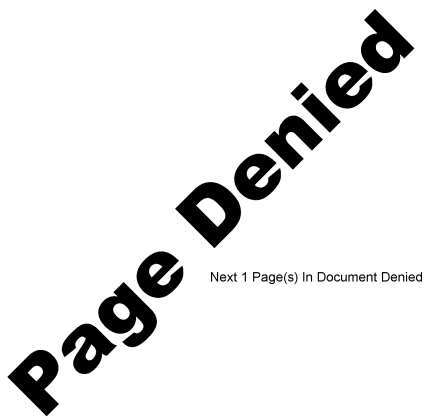

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Table 1.
Construction at Kiyev Airframe Plant 473
(Keyed to Figure 3)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Date Observed Complete	Remarks
38	Prototype assem bldg						
b	assem/test sect				1,033	Ucon	
g	engineering sect				4,301	Jun 79	6 stories
h	assem spt sect				629	Feb 81	2 stories
i	subassem sect				2,265	Feb 81	
j	subassem/shop sect				1,599	Jan 82	
k	assem spt sect				2,180	Feb 81	3 stories
44	Shop bldg						
b	spt sect				146	Jan 82	
48	Prototype shop/assem bldg						
f	engineering sect				4,210	Jan 82	5 stories
90	Warehouse						
b	stor addition				911	Nov 82	
96	Warehouse						
c	stor addition				739	Jun 79	
103	Shop bldg						
b	spt sect				969	Apr 82	
108	Shop bldg						
a	engineering sect				1,425	Jun 79	3 stories
b	shop sect				2,930	Jun 79	2 stories
c	support sect				681	Jun 79	2 stories
109							
b					302	Apr 81	3 stories
110	Warehouse						
d	support sect				183	Apr 82	
113							
a					881	Jan 83	2 stories
b					1,372	Jan 83	2 stories
c					836	Jan 83	2 stories
115	Vehicle maint bldg						
a	maintenance sect				1,372	Nov 82	11 vehicle bays
b	maintenance sect				1,372	Nov 82	11 vehicle bays
c	support sect				657	Ucon	2 stories
116	Administration bldg				1,369	Aug 79	3 stories
117	Vehicle main bldg				306	Nov 82	Drive-thru
118	Shop bldg				932	Ucon	2 stories
119	Vehicle stor bldg				249	Ucon	4 vehicle bays
120	Stor shed				116	Apr 82	
121	Warehouse						
b	storage sect				338	Apr 80	
122	Shop bldg						
a	shop sect				186	Nov 82	
b	engineering/support sect				906	Nov 82	
123	Greenhouse				—	Jan 83	
124	Support bldg				136	Jan 82	
125	Stor bldg						
a	stor sect				662	Sep 80	
b	stor sect				662	Sep 80	
126	Support bldg				346	Jun 83	(Steamplant)
127	Pumphouse						(Steamplant)
a	control sect				249	Jan 82	
b	support sect				150	Jan 82	
128	Support bldg				201	Jan 83	(Steamplant)
129	Steamplant						
a	boiler house				1,631	Jan 82	
b	support sect				1,162	Jan 82	
130	Stor/support bldg				104	Sept 80	
131	Transshipment bldg				224	Jun 83	
132	Stor/support bldg				89	Nov 82	
133	Support bldg				76	Ucon	
134	Support bldg				524	Ucon	2 stories
135	Fitting-out/test hangar						
a	hangar sect				12,672	Ucon	
b	engineering sect				829	Ucon	3 stories
c	support sect				1,490	Ucon	
136	Final assem bldg						
a	final assem hall				22,360	Dec 82	
b	assem sect				12,918	Dec 82	4 stories
c	engineering sect				1,860	Nov 82	3 stories
d	assem support sect				620	Dec 82	
e	assem support sect				572	Dec 82	
f	assem support sect				1,207	Dec 82	
g	assem support sect				150	Dec 82	
137	Stor bldg				450	Jan 82	Quonset type
138	Stor bldg				361	Jan 82	Quonset type
139	Stor bldg				405	Sep 80	Quonset type
140	Stor shed				213	Sep 80	
141	Shop bldg				1,131	May 82	
142	Support bldg				124	Sep 80	
143	Shop/subassem bldg						
a	engineering sect				901	Apr 81	3 stories
b	engineering sect				2,652	Apr 82	3 stories
c	engineering sect				1,000	Ucon	3 stories
d	shop/subassem sect				3,018	Sep 80	
e	shop/subassem sect				3,066	Apr 82	
f	shop/subassem sect				3,799	Ucon	
144	Transshipment bldg				1,592	Sep 80	
145	Stor shed				158	Jan 83	
146	Vehicle/maint bldg				156	May 82	
147	Prob shop bldg				—	Ucon	
148	Stor shed				175	Mar 82	
149	Admin bldg				156	Ucon	2 stories
	Total floorspace as of Aug 1978				= 398,349 sq m		
	Total new floorspace since Aug 1978				= 115,650 sq m		
	Total floorspace as of Jun 1983				= 513,999 sq m		

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Table 2
Gostomel Airfield Support/Maintenance Area
(Keyed to Figure 5)

Item	Description	Dimensions (meters) L	W	H	Floorspace (sq meters)	Date Observed Complete	Remarks
1	Stor bldg				81	Apr 79	
2	Stor/support bldg				250	Apr 79	
3	Stor/support bldg				263	Jul 76	
4	Stor/support bldg				326	Aug 78	
5	Stor bldg				242	Aug 69	
6	Stor bldg				333	Aug 69	
7	Barracks bldg				487	Sep 72	
8	Barracks bldg				487	Sep 72	
9	Barracks bldg				413	Jul 71	
10	Support bldg				109	Nov 82	
11	Support bldg				—	Ucon	
12	Maintenance/modification hangar						
a	hangar sect				3,706	Jul 71	
b	engineering/flight operations sect				4,768	Jul 71	5 stories
13	Support bldg				124	Sep 82	
14	Maintenance shop					Ucon	
15	Engineering bldg				2,513	Ucon	3 stories
16	Shop/support bldg				381	May 74	
17	Stor/support bldg						
a	stor/support sect				109	Feb 77	
b	stor/support sect				121	Sep 80	
18	Shop bldg				338	Jul 71	
19	Forced-draft cooling tower				—	Jul 71	2 cooling fans
20	Support bldg				104	Sep 72	
21	Shop/maint bldg				383	Jul 71	
22	Shop bldg						
a	shop sect				627	Jul 79	2 stories
b	support sect				29	Jul 79	
23	Shop bldg				389	Apr 75	
24	Shop/support bldg				787	Ucon	
25	Shop/support bldg						
a	engineering sect				587	Feb 77	3 stories
b	shop sect				624	Feb 77	
c	support sect				81	Feb 77	
d	support sect				185	Feb 77	
26	Stor/support bldg				218	Mar 73	
27	Shop bldg				1,287	Aug 69	
28	Vehicle shed				149	Jul 79	4 vehicle bays
29	Shop bldg				1,551	Nov 67	
30	Stor bldg				126	Jul 71	
31	Stor bldg				358	Apr 75	
32	Stor bldg				358	Apr 79	
33	Stor bldg				366	Aug 69	
34	Stor bldg				358	Sep 80	
35	Stor bldg				—	Ucon	
36	Support bldg				524	Aug 69	
37	Stor bldg				465	Sep 62	
38	Stor/support bldg				185	Aug 69	
39	Stor bldg				185	Sep 62	
40	Support bldg				157	Jul 71	
41	Vehicle maint bldg				1,657	Aug 69	
42	Barracks bldg				209	Sep 62	
43	Barracks bldg				376	Sep 62	
44	Messhall				250	Sep 62	

Total floorspace = 26,626 sq m

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of the Antonov OKB flight testing in the past involved the takeoff/landing capabilities of transport aircraft on unimproved fields, and Gostomel was served only by a sod runway. This new runway, begun in 1973, was still under construction in June 1983. It is operational now with approximately 2,500 meters complete: it will be 3,000 meters long when finished. A large turnaround at the southwest end of the runway has been joined to the airfield support/maintenance area by a concrete taxiway. Within the support/maintenance area a large, irregular concrete parking apron, intended primarily for the CONDOR A, has been constructed. The maximum dimensions of the apron are 187 meters in length and 109 meters in width. A large jet-blast deflector has been erected on the northeast side of the apron. (S/WN)

11. An unidentified facility (Figure 6), probably constructed to support the CONDOR, is connected to the new parking apron by a concrete taxiway. This facility consists of a large concrete apron 90 meters long and 78 meters wide. Three rectangular indentations, which are probably positions intended for the CONDOR landing gear, are in the center of the apron. Traversing this apron, perpendicular to the CONDOR's supposed centerline, are two overhead gantry cranes that can travel the entire span of each wing of a CONDOR parked in the center of the apron. The exact purpose of this facility is still undetermined. (S/WN)

Aircraft Development and Production Programs

Turboprop COLT (AN-3)

12. The AN-3 (Figure 7), a turboprop-powered derivative of the AN-2 COLT, has been undergoing flight testing since at least 1979. Intended for agricultural use, the AN-3 has a tapered, elongated nose that houses a TVD-10B turboprop engine. The initial prototype AN-3 was reportedly modified from a standard AN-2.[5] The first observation of an AN-3 on overhead imagery was at Gostomel on [redacted] was confirmed in June 1979. Testing of the AN-3 continued into 1983 (Figure 8). (S/WN)

13. The AN-3 is apparently being developed to meet Soviet demand for agricultural aircraft. In 1981, the Soviet Board for the Utilization of Air Transport in the National Economy stated that the Polish-built WSK M-15 agricultural aircraft had proven unsatisfactory, and other designs for a new agricultural aircraft would be examined. State trials of the AN-3, most likely related to the board's 1981 announcement, began in 1982.[6] If the AN-3 is approved for production, it will most likely be built at Mielec Airframe Plant WSK [redacted] Poland, which is the sole producer of the AN-2 COLT. (S/WN)

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CASH A (AN-28)

14. The CASH A (Figure 9) is a twin-turboprop-powered light transport derived from the piston-engined CLOD. Like the CLOD, it features a high-mounted wing, twin vertical stabilizers, and a fixed tricycle landing gear. The CASH is intended to replace the AN-2 COLT on Soviet short-haul internal routes.[3] (S/WN)

15. The CASH began flight testing in 1969 but has yet to enter series production. Flight testing continued during this reporting period with two CASH usually present, either within the Antonov OKB test area at Kiyev or in the aircraft parking/maintenance area of Gostomel. Tests involving a TVD-10B engine test stand and an outdoor wind generator were also conducted during 1979 and 1982 at the Antonov outdoor test facility (Figure 10). (S/WN)

16. Plant 473 was reportedly preparing for series production of the CASH until 1978, when an agreement between the Soviet Union and Poland indicated that Poland would be the sole producer of the aircraft. Subsequent to this agreement, Mielec Airframe Plant began production preparations for CASH. Series production is expected to begin in 1984 with approximately 1,200 CASH aircraft to be built for the Soviet Union by 1990.[8] (S/WN)

COKE (AN-24)

17. The COKE (Figure 11) is a twin-engined, light transport that had been in production at Kiyev for almost two decades. Powered by two AI-24A turboprop engines, most variants of the aircraft were produced in mixed passenger/freight configurations. Later models of the COKE (AN-24RV and AN-24RT) were fitted with a single RU 19-300 auxiliary turbojet, at the end of the starboard nacelle, to provide power for engine starting and to improve take-off and level flight performance.[7] The original COKE prototype flew in 1960, and the aircraft remained in full series production until it was phased out in late 1979 or early 1980. More than 1,300 COKEs were produced, many for export.[8] (S/WN)

CURL (AN-26)

18. The CURL (Figure 11) is a variant of the COKE with a reconfigured fuselage containing a large rear-loading door. Designed primarily as a

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cargo transport, the CURL also has an airdrop capability. The aircraft is equipped with two AI-24T turboprops and the RU 19-300 auxiliary turbojet.[7] The first CURL flew in 1968, and production through 1981 totaled nearly 1,200 aircraft. The estimated production rate for CURL in 1981 was 13 aircraft per month,[8] which included production of the Special Purpose (SP) CURL (Figure 12). This aircraft is equipped with four dorsal-mounted blade antennas and probably serves a command post/communications function.[9] (S/WN)

19. An unusually high number of CURL aircraft was at the plant during 1980. It is likely that this represented a backlog in aircraft deliveries and not an increase in the CURL production rate. Since mid-1982 an unusually low number of CURL has been at Kiyev. The reason for this decline in the number of CURL at the plant is not known, but it is possible that the start of CLINE preseries production, which likely involves the same subassembly and final assembly facilities as CURL, has interfered with the CURL production rate. The average numbers of CURL observed at the plant since mid-1978 are listed in Table 3. (S/WN)

Table 3
CURL Aircraft Observed at Kiyev 473

Period	Average Number of CURL
1978	21
1979	20
1980	36
1981	21
1982 (lst half)	23
1982 (2nd half)	14
1983 (lst half)	14 (S/WN)

20. Production of the CURL is expected to continue through the mid-1980s. If full series production of the CLINE is initiated, a major reduction in CURL production can be expected. The CURL may eventually be phased out of production and replaced by the COALER.[5,10] (S/WN)

CLANK (AN-30)

21. The CLANK is a variant of the COKE and is designed specifically for aerial photographic survey missions (Figures 13 and 14). It is equipped with a large glazed or greenhouse nose, a raised flight deck, and a ventral fuselage fairing that houses the survey camera apertures. The CLANK is powered by two AI-24VT turboprops and the RU 19-300 auxiliary turbojet.[7] Production of the CLANK began in 1973, and more than 100 were produced by the end of 1980.[8] (S/WN)

22. The current status of CLANK production is not clear. Prior to 1981, one or two CLANKs were normally present in the plant fitting-out area. Since 1981, however, CLANKs with Soviet military markings have been observed only occasionally at Kiyev, most recently in April 1983. It is possible that series production of CLANK ended in 1980 and that aircraft are now produced only as needed to fill Soviet military requests. (S/WN)

CLINE A Modified (AN-32)

23. The CLINE A Modified (Figure 15), a derivative of the CURL, has been under development at Kiyev for several years. Equipped with two AI-20M turboprop engines mounted above the wing, the CLINE is designed to operate in high-temperature and high-altitude environments.[5] (S/WN)

24. The initial CLINE A prototype, reportedly a modified CURL,[8] was first identified at Gostomel on [redacted] In its original configuration the CLINE was designed to take advantage of the Coanda effect, in which additional lift is created by directing engine exhaust gases over the upper surface of the wing.[10,11] The trailing edge of each nacelle ended at the wing midchord point, allowing the exhaust to flow over the after wing surfaces. This CLINE was tested through at least [redacted] and was displayed at the Paris Air Show in 1977. (S/WN) 25X1 25X1 25X1

25. By [redacted] the CLINE A prototype was modified with reconfigured engine nacelles and redesignated the CLINE A Modified. The nacelles were lengthened to vent the engine exhaust behind the wing trailing edge (Figures 15 and 16). The nacelles extend [redacted] forward of the wing leading edge and [redacted] aft of the trailing edge (overall length of the nacelles, including the propeller hub, is [redacted] The maximum diameter of the nacelles is [redacted] Since 1979 the prototype CLINE A Modified has been tested extensively at Kiyev and Gostomel and has been observed at several other Soviet airfields. (S/WN) 25X1 25X1 25X1 25X1 25X1

[redacted] 25X1

26. At the 1979 Paris Air Show Mr. Oleg K. Antonov, head of the Antonov OKB, said that this aircraft would go into production if sufficient orders were received from foreign customers.[5] Recent reports indicate that India had placed orders for as many as 100 CLINE with deliveries beginning possibly as early as 1983.[8] (S)

27. Imagery of Kiyev and Gostomel in 1983 indicates that preseries production of the aircraft may have begun. Two newly produced CLINE A Modified were identified, the first at Gostomel in January and the second at Kiyev in February. Further refinement of the engine nacelles was evidently accomplished (Figures 16 and 17): the new nacelles are [redacted] long overall (including the propeller hub) and extend [redacted] forward of the wing leading edge but only [redacted] aft of the trailing edge. The maximum diameter of the nacelles is [redacted] The forward section of the nacelles incorporates a collar [redacted] in diameter from which the propeller hub protrudes. (S/WN)

28. These two aircraft and the original CLINE A Modified aircraft were all undergoing tests at Gostomel during the spring of 1983. If no major problems are encountered during the current phase of flight testing, it is likely that full series production of the CLINE will begin in late 1983 or early 1984. (S/WN)

COALER A (AN-72)

29. The COALER A (Figure 18) is a twin-turbofan, light, short takeoff and landing (STOL) transport that has been undergoing flight testing since 1977. Designed as a replacement for the CURL, the COALER is equipped with two D-36 turbofan engines mounted above the tapered-straight wings. The design is intended to take advantage of the Coanda effect to improve lift, with the engine exhaust blowing across the upper surface of the wing and with double-slotted flaps inboard and triple-slotted flaps outboard. Many of the STOL-related design features incorporated in the COALER were previously tested and proven in the United States Boeing YC-14.[5,10] (S/WN)

30. The first photographs of the COALER prototype were released by TASS, the Soviet news agency, in December 1977. The first overhead imagery of this aircraft was at Gostomel on [redacted] 25X1 25X1 The original COALER prototype featured aft-mounted ventral fins and a rounded tailcone formed by two airbrakes. The COALER displayed at the Paris Air Show in 1979, however, had a significantly modified aft fuselage. The aircraft did not have ventral fins and had a pointed tail without airbrakes. It could not be determined if this aircraft was a second COALER prototype or the original prototype extensively modified. Confirmation of a second COALER prototype was not obtained on overhead imagery until March 1980. Three COALERs were subsequently identified in July 1980. Testing of these aircraft has been extensive, and they have been observed at several airfields in the Soviet Union. During May 1981, one of the COALERs was partially disassembled at Gostomel and was subsequently removed from view. The disposition of this aircraft remains unknown. (S/WN)

31. A photograph released in a 1982 issue of Soviet Life (Figure 19) shows a COALER in the CURL final assembly line at Kiyev.[12] It is likely that this was the aircraft observed in the plant fitting-out area in March 1982. This COALER was marked [redacted] and was probably the 25X1 fourth COALER produced [redacted] 25X1 Although newly built, this aircraft was never observed at Gostomel, where full flight testing of Antonov prototypes is conducted. In late March, it was moved to the maintenance/modification apron within the Antonov OKB test area at Kiyev and remained there through November 1982 (Figure 20). By December, the wing and horizontal stabilizer had been removed, and the fuselage was presumably moved indoors (Figure 21). The reason this aircraft never entered full flight testing and was subsequently disassembled is unknown. It is possible that some problem with the wing was discovered during the fitting-out process. In March 1983, a COALER was again observed at the Antonov OKB test area. The aircraft appeared new and showed no sign of wear from flight testing. It is not known whether this was the fifth COALER produced or was, instead, the fourth aircraft fitted with a new wing and horizontal stabilizer. (S/WN)

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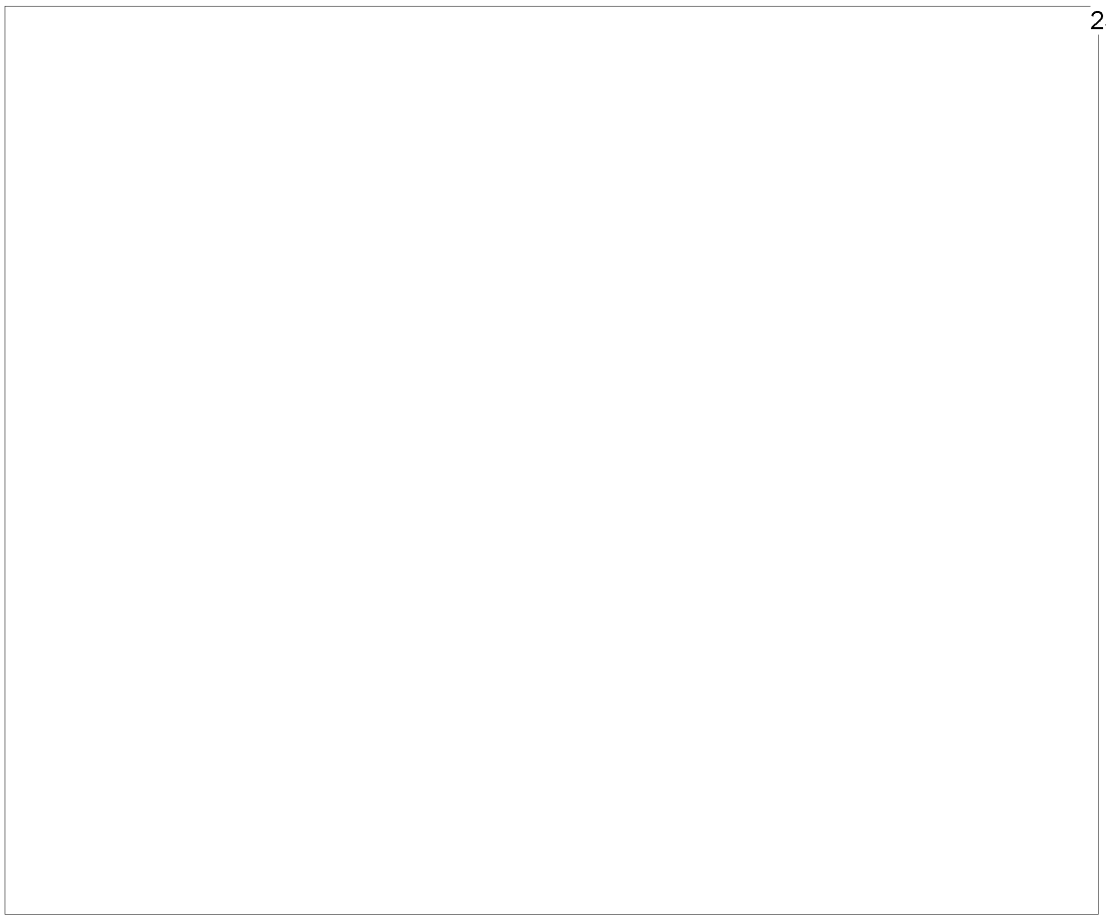
32. Testing of the COALER design has included the use of two uniquely configured test stands and a large outdoor wind generator at the Antonov OKB Outdoor Test Facility (Figure 10). The stands consist of a D-36 engine nacelle mounted above a COALER inboard wing panel.



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On several occasions these stands have been placed in front of the wind generator. Blast marks behind the test stands confirm that the nacelles contain working D-36 engines. (S/WN)

33. Although extensive testing of the COALER has been underway for more than five years, there is still no evidence that series production of the aircraft will begin soon. Additionally, with at least limited production of the CLINE seemingly imminent, it is unlikely that full-scale production of the COALER will begin before 1985. (S/WN)

CONDOR A

34. The CONDOR A (Figure 22), probably designated AN-400 by the Antonov OKB, is a new long-range, heavy-lift transport comparable in size to the United States' Lockheed C-5A GALAXY. The aircraft is powered by four large probable high-by-pass-ratio turbofan engines of a new design.[13] (S/WN)

35. The CONDOR, first identified at Kiyev on imagery of [ ] is the largest aircraft ever produced in the Soviet Union. The fuselage is [ ] long (excluding a [ ] long flight test probe mounted in the nose), with a maximum diameter of [ ] and depth of [ ] The flight deck is positioned well forward of the wings. Personnel access doors high on the fuselage, one pair immediately aft of the flight deck and another pair just forward of the horizontal stabilizer, indicate that the CONDOR has an upper deck. The CONDOR is believed to have a large rear-loading cargo door. It is not known if the aircraft has a drive-through loading capability, a prominent feature of the C-5A. Unlike the COCK heavy lift transport, the CONDOR does not appear to have large landing-gear housings. The CONDOR is configured with high-mounted wings with a [ ] span, a wing root chord of [ ] 25X1
meters, a wing tip chord of [ ] and a 25X1
leading edge sweep of [ ] The horizontal 25X1
stabilizers are not in the T-tail configuration of the C-5A but are low-mounted on the fuselage, similar to the Boeing 747. The stabilizers have a span of [ ] a tip chord of [ ] and a 25X1
leading edge sweep of [ ] The probable 25X1
high-bypass-ratio turbofan engines (two under each wing on pylons) have an inlet diameter of [ ] 25X1
meters and a maximum fan cowl diameter of [ ] 25X1
meters: the length of the cowl is [ ] 25X1
However, the overall length of the engines and the exact configuration of the exhaust has not yet been determined. This CONDOR is painted in standard Aeroflot livery and carries the [ ] 25X1
[ ] Developments in the CONDOR pro- 25X1
gram are more extensively described in the following paragraphs. (S/WN)

25X1

[redacted]

25X1

37. **Hydrostatic Test Basin.** The first firm imagery-derived evidence indicating that Antonov was developing a very large aircraft was obtained in November 1981 when preparations to extend the hydrostatic test basin were observed (Figure 23). This basin, a component of the Antonov OKB's hydrostatic test facility, was originally constructed in 1968 for the structural testing of a COCK fuselage (Figure 24). (S/WN)

38. The COCK fuselage remained in the 56-by-10 meter basin through April 1981. By November 1981, the COCK fuselage had been removed (Figure 25), and expansion of the basin, to accommodate a larger fuselage, had begun. When completed, in March 1982, the basin had been extended to an overall length of 70 meters. (S/WN)

39. A CONDOR fuselage was first observed in the test basin on it remained there through (Figure 26). The Antonov OKB conducts initial hydrostatic testing of aircraft fuselages, normally for three to four months, to isolate structural weaknesses.[17] This testing was undoubtedly accomplished with the CONDOR fuselage during the latter half of 1982. (S/WN)

40. The use of an outdoor basin for structural testing is limited to the frost-free months of the year. In 1983, the hydrostatic test basin was apparently moved indoors to facilitate year-round testing. By the CONDOR fuselage had been removed from the test basin and had probably been moved indoors. The test basin was subsequently disassembled and removed from the hydrostatic test facility. The center section of the basin was on the large apron outside the new final assembly hall on (Figure 27). When Kiyev was next imaged, on the center section of the test basin was gone. This section was probably not moved into the final assembly hall, since the snow in front of the assembly hall door remained undisturbed. The pattern of snow removal led from the section's previous location outside of the assembly hall, toward the new large hangar under construction to the southwest. If, as it appears, the basin was placed in the new hangar, then it is likely that the hangar was built to facilitate year-round structural testing of the CONDOR. It is also likely that a fully assembled aircraft, including wings and stabilizers, will be used in this testing. The technique of structurally testing an aircraft using a hydrostatic test basin for the fuselage and hydraulic actuators for the attached wings and stabilizers has previously been employed by the Antonov OKB in other transport programs and was used by Lockheed during the C-5A program.[17] (S/WN)

41. **Two COCKs Modified for Aircraft Component Transport.** Two COCKs, previously used by the Antonov OKB as developmental aircraft, were modified during 1981 and 1982 to transport large CONDOR wing-associated components from Tashkent Airframe Plant B Chkalov 84 to Kiyev (Figure 28). The modifications to the COCKs include: two raised hardpoints/blisters atop the fuselage immediately aft of the wing box and a removable centerline-mounted third vertical stabilizer. A removable, dorsally-mounted support structure has also been observed on these aircraft (Figure 29). The modified COCKs were observed transporting large CONDOR wing sections (Figure 30) and probable CONDOR wing boxes (Figure 31) during 1982 and 1983. For transporting the wing sections, both the third vertical stabilizer and the dorsally-mounted support structure are installed on the COCK. Neither is installed when a CONDOR wing box is transported. (S/WN)

42. The first use, observed on imagery, of a modified COCK as an aircraft component transporter occurred between when a large CONDOR wing section was transferred from Tashkent to Kiyev. This activity confirmed that Tashkent, which had previously produced the COCK, is building large components for the CONDOR. Subsequent component transfers included the shipment of another wing section in March 1983 and the delivery of probable CONDOR wing boxes in May 1982, January 1983, and April 1983. (S/WN)

43. **CANDID A Large Turbofan Engine Testbed.** On a modified CANDID A was identified at Ramenskoye Flight Test Center The modification consisted of a large probable high bypass-ratio turbofan engine mounted on the port-side inboard pylon (Figure 32). This larger engine replaced the standard D-30 that had occupied the pylon. The removal of the D-30 engine and initial work on the port-side inboard wing section and pylon was done at Tashkent Airframe Plant from October 1982 through . On a CANDID A without an engine on the port-side inboard pylon was on the transient apron at Ramenskoye. During March this aircraft was in a hangar in the old Ilyushin area, where the large turbofan engine was installed. (S/WN)

44. The large engine mounted on CANDID A appears identical to those found on the CONDOR and is similar to several Western-designed high-by-pass-ratio turbofan engines. It seems certain that CANDID A was modified to serve as a testbed for the large engine. The General Electric TF-39 engine, which powers the C-5A, was initially flight tested on the starboard inboard pylon of a modified B-52E.[7] (S/WN)

45. **CONDOR Flight Test Prototype.** The CONDOR A first observed at Kiyev on (Figure 33), was parked on the eastern side of the parking apron within the Antonov OKB test area and adjacent to the large assembly hall that was constructed to facilitate CONDOR final assembly. The aircraft was in front of a newly constructed jet-blast deflector off the east end of the apron. A fence had been erected enclosing the entire eastern half of the apron, and several vehicles and pieces of support equipment were within the fenced area. Also, on an L-39 jet trainer was first identified at Gostomel Airfield. This aircraft was subsequently identified as the primary escort/chase aircraft for the CONDOR and is normally observed near the large Antonov transport (Figure 22). The CONDOR was last observed at Kiyev on The L-39 was also present at Kiyev on that date. (S/WN)

46. The CONDOR was first observed at Gostomel Airfield on [redacted] A concrete apron, taxiway, runway, and other facilities were being constructed there to support the aircraft's flight test program. The L-39 had also been transferred to Gostomel. The CONDOR was at Gostomel throughout the remainder of January and February (Figure 34). On [redacted] the aircraft was not seen at either Gostomel or Kiyev and was probably undergoing a flight test. The CONDOR was again observed at Gostomel on [redacted] From [redacted] the CONDOR was not observed at either Gostomel or Kiyev. However, during this period the L-39 was at Kiyev, and it appears likely that the CONDOR had been returned to the new final assembly hall for further fitting-out/modification. On [redacted] the CONDOR and the L-39 were again at Gostomel (Figure 22), indicating that flight testing had resumed. (S/WN)

47. **Analyst's Comments.** The extensive CONDOR-related facilities constructed at Kiyev and Gostomel indicates that the Antonov OKB will continue to build and test the CONDOR prototypes for some time. By June 1983, components for at least three CONDORs had been observed. One of these is probably the aircraft already in flight test. One of the other two CONDORs is probably intended as a second flight-test prototype, and the third is likely a structural test aircraft. However, insufficient subassembly floorspace at Kiyev and the fact that Tashkent is producing CONDOR components suggests that this aircraft will not be series-produced at Plant 473. Tashkent, where the COCK was previously produced and where a major plant expansion is underway, is considered a more likely facility for full series production of the aircraft.[18] (S/WN)

Miscellaneous Aircraft Programs

25X1

Probable Electronics-Modified COCK

48. A COCK aircraft, used as a developmental aircraft by the Antonov OKB, was modified during this reporting period. This modification consists of a cylindrical nose protrusion [redacted] 25X1
long and [redacted] in diameter with a blunt 25X1
forward end (Figure 35). The modification probably took place in 1981 when this aircraft was at 25X1
Kiyev undergoing extensive overhaul/maintenance. 25X1
This aircraft had previously been identified with extended landing-gear housings. Since the protrusion was identified, this aircraft has been observed at Gostomel and Tashkent. Although the function of the protrusion cannot be confirmed, it is thought to be electronics related. (S/WN) 25X1

COKE Prepared for Testing

49. During 1983, a COKE aircraft was apparently prepared for undetermined testing at Kiyev. The aircraft was first observed on the aircraft maintenance apron at the Antonov OKB Test Area in January 1983. During January, the vertical stabilizer was removed (Figure 21). By [redacted] the 25X1
horizontal stabilizers and the outer wing panels had been removed, and the COKE had been moved into the Antonov OKB Outdoor Test Facility (Figure 36). In June, the inner wing panels and the engine nacelles were removed, and the aircraft was in the northeast corner of the test facility. The Antonov OKB Outdoor Test Facility has traditionally been associated with aerodynamic and propulsion-related ground testing. The nature of the testing intended for the COKE remains unclear. (S/WN)

25X1

[redacted]

REFERENCES

IMAGERY

All applicable satellite imagery acquired from [redacted] was used in the preparation of this report. 25X1

MAPS OR CHARTS

DMAAC US Air Target chart, Series 200, Scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

1. CIA. [redacted] *Potential Future Designs by Antonov Design Bureau (OKB) (U),* 19 Jul 73 (SECRET/WNINTEL/NOFORN*) 25X1
2. NPIC. [redacted] RCA-09/0048/78, *Kiyev Airframe Plant 473 (S),* Feb 79 [redacted] 25X1 25X1
3. CIA. K-311/00631-82, *The Organization, Facilities and Activities of the Kiev Aircraft Plant of the Kiev Aircraft Association, Kiev, Ukrainian SSR (C),* 21 JUN 82 (CONFIDENTIAL/WNINTEL)
4. NPIC. [redacted] RCA-09/0035/74, *Gostomel Airfield (U),* Feb 74 [redacted] 25X1 25X1
5. *Jane's All the World's Aircraft,* 1981-1982, pgs. 186-191 (UNCLASSIFIED)
6. [redacted] 25X1
7. *Jane's All the World's Aircraft,* 1979-1980, pgs. 180-181 (UNCLASSIFIED)
8. DIA. [redacted] 82, DDB-1923-2-82-SAO, *Foreign Aircraft Production Communist World (U),* June 1982 (TOP SECRET CODEWORDS/NOFORN/NOCONTRACT). Information in paragraphs 17, 18, 21, and 26 is SECRET/ [redacted] information in paragraph 24 is SECRET/WNINTEL. 25X1 25X1
9. NPIC. [redacted] PIR-036/78, *Special-Purpose Aircraft at Soviet Aviation Airfields in the USSR, East Europe, and Mongolia (S),* Aug 78 [redacted] 25X1 25X1
10. AFIS. AFRP 200-1, No. 82-5, *Soviet Press, Military Technology - A New Air Transport,* May 82 (UNCLASSIFIED)
11. *Jane's Aerospace Dictionary,* 1980, pg. 89 (UNCLASSIFIED)
12. *Soviet Life, Aircraft Designer, pgs. 18-19,* May 82 (UNCLASSIFIED)
13. DIA/FTD. DST-135OE-018-83, *CONDOR A: Preliminary Analysis (U),* 13 May 83 (SECRET/WNINTEL)
14. DOD. 1 521 0179 76 (5609-00), *Fragmentary Information on AN-400 and Preceding Antonov Aircraft Projects (C),* 14 Apr 76 (CONFIDENTIAL)
15. CIA. [redacted] *Kiev Aviation Plant No. 473 (U),* 14 Jan 82 (CONFIDENTIAL/WNINTEL/NOFORN**) 25X1
16. CIA. [redacted] *Status of Izdeliye-400 Aircraft at Antonov Design Plant (C),* 10 May 82 (CONFIDENTIAL/WNINTEL/NOFORN**) 25X1
17. DOD. 1 521 0153 76 (5609-00), *Hydrostatic Testing at Antonov Design Bureau, Kiyev Airframe Plant 473 (C),* 23 May 76 (CONFIDENTIAL)
18. CIA. IS MR 82-003, *Imagery Analysis Monthly Review,* pgs. 4-5, Apr 1982, [redacted] 25X1 25X1

*Extracted information is classified [redacted] 25X1

**Extracted information is classified [redacted] 25X1

***Extracted information is classified [redacted] 25X1

REQUIREMENT

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