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DCI Interagency Balkan Task Force
16 April 1994

Bosnian Serb Air Defense Threat in Gorazde Area

The primary threat to NATO aircraft operating near Gorazde is posed by small caliber AAA and man-portable SAMs. the Serbs may have transferred an unknown number of SA-6 batteries to the Gorazde area. Although the Bosnian Serb Army (BSA) also has SA-2 and SA-9 SAMs in its inventory, we have not detected the movement of these systems into the Gorazde area. Current BSA SA-2 deployments are too far from the Gorazde enclave to pose a threat to NATO aircraft. The poor weather has also hampered our ability to detect any BSA SA-9 units near Gorazde.

There are two additional factors which increase the threat to NATO aircraft operating near Gorazde:

Weather. Extensive cloud coverage in the Gorazde area has significantly limited our ability to monitor known AAA and SAM sites or find new deployments Repositioning of AAA or SAM systems under the cover of the poor weather could allow BSA gunners to attempt to ambush NATO aircraft. The low cloud ceiling during the recent NATO air strikes also forced the attacking aircraft down to very low altitudes -- approximately 500 meters above ground level. At that altitude, the time available to a pilot to observe and react to air defense threats is significantly reduced. In addition, flight at low altitude in mountainous terrain require great concentration, limiting the ability of wingmen to carry out SAM or AAA "lookout" duties for attacking aircraft.

Flight Profiles. During both of the CAS strikes, the NATO aircraft flew repeated dry/dummy passes over their targets in attempts to stop BSA heavy weapons fire before dropping ordnance. This tactic could provide BSA gunners time to prepare and determine aircraft ingress and egress routes.

Air Defense Weapons

AAA. A review of AAA assets available to BSA units at Gorazde indicates they may have up to 72 20mm AAA and up to six self-propelled AAA guns; however, detected one M-53/59 and one probable ZSU-57-2 AAA system near Gorazde. The extremely small size of the BSA towed AAA makes detection or NATO aircraft pilots extremely difficult

The threat posed by BSA AAA to NATO aircraft operating at low altitude at night is significantly reduced, but not eliminated entirely. The Serbs have Swedish BOFI L/70 40mm AAA guns and Czech

M-53/59 30mm self-propelled AAA guns that are equipped with image intensifiers, allowing engagement of aircraft at night. Some of the larger caliber BSA AAA weapons can be radar-controlled; however, we cannot confirm deployment of any of these weapons around Gorazde.

We believe the BSA doctrine for engaging NATO aircraft will be via massed, optically sighted, small caliber AAA fire. Barrage fire of this type would be immune to Western countermeasures.

SAMs. The primary SAM threat to NATO aircraft will remain the man-portable SA-7, SA-14, and SA-16 SAMs--due to their prevalence on the Balkan battlefield--and the SA-18 MANPAD due to its sophistication. Of these, the SA-18--with its flare-rejection circuitry--poses the greatest threat to NATO aircraft. The SA-7, SA-14, and SA-16 SAMs do not have flare-rejection circuitry and can be decoyed by US flares.

on 16 April 1994 that the BSA has transferred an unknown number of SA-6 batteries to the Gorazde area. The SA-6 batteries reportedly were drawn from Kragujevac, Federal Republic of Yugoslavia, and from BSA headquarters at Banja Luka. If the report is true, the SA-6 would allow the BSA to engage NATO aircraft operating at higher altitudes, above the lethal range of current BSA AAA and shoulder-fired SAMs.

current BSA SA-2 SAMs remain in their deployment areas, which are too far from the Gorazde enclave to pose a threat to NATO aircraft.

The BSA is also known to have mobile infrared-guided SA-9 systems; however, they have not been seen in the Gorazde area.

Command and Control. We believe that BSA air defense units around Gorazde are linked with the Serb air defense command and control (C2) network, and would have advance warning of any NATO aircraft flying toward Gorazde. the NATO aircraft conducting the CAS strikes on 10 and 11 April were tracked by the Serb C2 network.

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Details of Selected BSA Air Defense Weapons

Antiaircraft Artillery

Designator	Caliber (mm)	Range (km)	Barrels	Max Firing Rate (per minute per barrel)
M75	20	1.2	1	800
M55	20	1.5	3	800
BOV-3	20	1.5	3	800
M-53/59	30	3.0	2	450
M1939	37	2.5	1	180
M1, L/60,L/70	40	4.0	1	300*
S-60	57	4.0	1	100
ZSU-57-2	57	4.0	2	100
KS-12	85	10.2	1	20
M1	90	9.0	1	22
Mk 3	94	9.8	1	10

*Small numbers of the Bofors L/70 guns are equipped with image intensifiers, allowing engagement of targets at night.

Surface-to-Air Missiles

Designator	Min/Max Range (km)	Min/Max Altitude (km)	Guidance Mode
SA-2b/f	11/35	0.3/27	Command
SA-2d/e	5.5/50	0.1/30	Command
SA-6	3.7/24	0.03/14	Semiactive radar
SA-7	0.6/5.0	0.01/4.5	Infrared
SA-9	0.7/5.6	0.03/5.6	Infrared
SA-14	0.6/5.3	0.01/4.7	Infrared
SA-16	0.6/6.9	0.01/6.5	Infrared
SA-18	0.5/6.9	0.01/6.9	Infrared

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