

Top Secret



NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



basic imagery interpretation report

Activity at Makat and Terekty ASM Impact Areas, [redacted]



1800
25X1
25X1

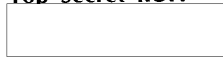
MISSILE RANGES: AIR LAUNCHED FACILITIES
BE: Various
USSR

Top Secret

[redacted] 25X1
RCA-16/0001/85
JULY 1985
Copy 43

Page Denied

Top Secret RUFF



25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Makat ASM Impact Area Terekty ASM Impact Area					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	48-06-00N 053-44-00E 48-17-30N 048-33-30E				
MAP REFERENCE					
DMAAC. US Air Target Chart, Series 200, Sheets 0236-21, 0236-22, and 0235-24, scale 1:200,000					
LATEST IMAGERY USED			NEGATION DATE (If required)		
			N/A		

25X1

25X1

ACTIVITY AT MAKAT AND TEREKTY ASM IMPACT AREAS



25X1

ABSTRACT

1. This report updates NPIC basic reports on Makat ASM Impact Area and Terekty ASM Impact Area in the USSR and satisfies the basic reporting requirement for these targets. The report describes air-to-surface missile (ASM) activity (as measured by impact craters) at the target sites and support facilities from [redacted]

25X1

25X1

2. Makat and Terekty ASM Impact Areas are used for live-fire training of air launch crews and for testing of ASMs. BAR LOCK early warning radars and corner reflector panels arrayed on a north-to-south axis continued to be the primary targets. TUB BRICK, FLAP WHEEL, and KING PIN electronic countermeasure (ECM) radars were also used. During the reporting period, at least 64 new ASM impact craters were discerned in the two impact areas. Twenty-four resulted from antiradiation missiles at radar targets and 37 resulted from other ASM variants at corner reflector target sites. In addition, at least three new craters were observed on long strips of graded earth that probably serve as target-recognition patterns. (TSR)

3. Two THIN SKIN A-type radar vans have remained at target radar sites A and B of Terekty Radar Area D. The presence of impact craters near one of the associated support vans suggests that the support van may be used to generate decoy radar signals that divert incoming missiles from the THIN SKIN target. At Terekty Radar Area A, two possible telemetry- or electronics-associated vans were identified at target radar site C, and a new corner reflector target site was also identified south of Terekty corner reflector target site B. Terekty Radar Area C was active after a long period of inactivity. (TSR)

4. Two maps, six annotated photographs, and four tables are included in this report. Table 4 is new to this report. The crater numbering sequence in Tables 1, 2, and 3 continues the sequence used in the two previous NPIC reports in this series—[redacted]

25X1

BASIC DESCRIPTION

Makat ASM Impact Area

5. Makat ASM Impact Area is approximately 475 kilometers (km) east of Akhtubinsk/Vladimir-ovka Airfield [redacted] which is a staging area for some of the ASM aircraft, and approximately 60 km northeast of Makat. The impact area (Figure 1) contains Makat Target Area A (BE [redacted]) Makat Target Area B (BE [redacted]) and two active corner reflector target sites.¹ (TSR)

25X1

Makat Target Area A

6. At Makat Target Area A, no new missile impact craters were observed at target radar site A, the only remaining active site in this target area. The BAR LOCK radar remained on an earthen mound, and no changes to the radar or the inline parking configuration of the radar power and support equipment were observed. The continued absence of new impact craters at this site, its proximity to a support area, and the abandonment of

target radar sites B and C in October 1981 and November 1982, respectively, suggest that target radar site A may provide aircraft tracking information for the Makat ASM Impact Area. (TSR)

Makat Target Area B

7. At Makat Target Area B, BAR LOCK radars with power and support equipment, arranged in an unusual inline configuration, remained at target radar sites A, C, and D. Between [redacted] seven new impact craters were observed at target radar site A (Figure 2). The close proximity of the impact craters to the target radars and the presence of three to six replacement BAR LOCK radar vans in the support area during this period suggest that several of these craters resulted from direct hits or near misses. [redacted]

25X1

25X1

25X1

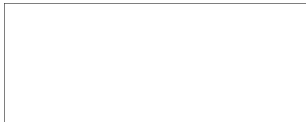
25X1

25X1

25X1

One FLAP WHEEL and one KING PIN radar were nearby and probably connected by cable to the BAR LOCK

25X1



Top Secret RUFF

25X1

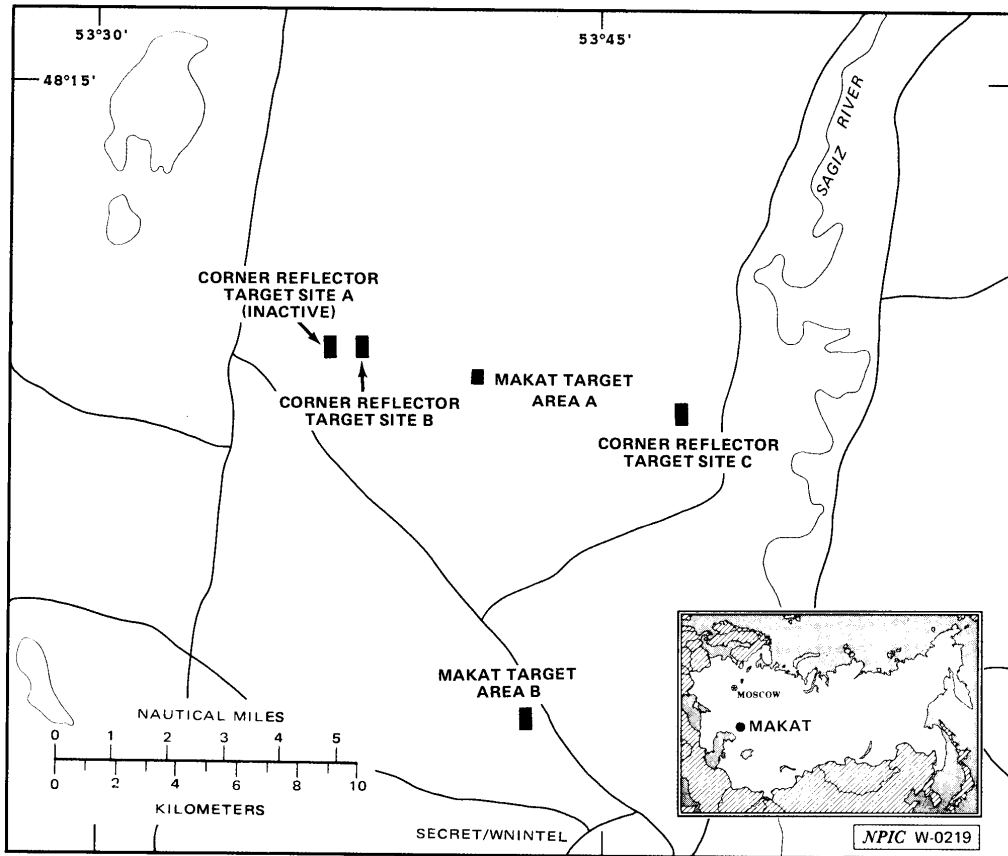


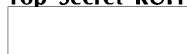
FIGURE 1. MAKAT ASM IMPACT AREA, USSR

25X1

Top Secret RUFF

25X1

Top Secret RUFF



25X1

radar support equipment at site A between [redacted] [redacted] The FLAP WHEEL and KING PIN were removed from the site by [redacted] No impact craters were observed near the ECM radar (Figure 3). (TSR)

vehicle revetment, and one of its antennas was on the ground. Ground scars indicated that this van had been towed from the crater to the revetment. No craters were observed at target radar site D during this period, and target radar site B has been abandoned since mid-1979. Crater diameters, azimuths, and distances from the target radars at sites A and C are given in Table 1. (TSR)

25X1
25X1

25X1

8. One impact crater, a probable direct hit, was observed at target radar site C on [redacted] [redacted] A BAR LOCK radar van was in a nearby

25X1
25X1



25X1



25X1

Top Secret RUFF



25X1

Table 1.

New Impact Craters, Makat Target Area B,

25X1

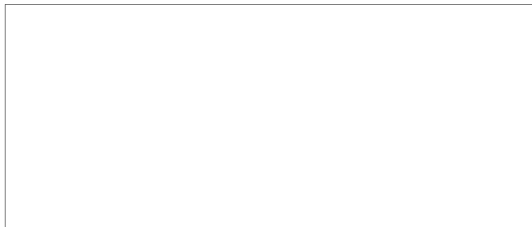
Crater	Negation Date	First Observed	Diam (m)	Dist/Az fm Target (m/deg)	Remarks	
Target Radar Site A (48-02-56N 053-43-20E)* Target: BAR LOCK						
A24					FLAP WHEEL and KING PIN present since	25X1
A25						25X1
A26					FLAP WHEEL and KING PIN gone (removed by	25X1
A27						
A28						
A29						
A30						
Target Radar Site C (48-02-52N 053-42-56E)* Target: BAR LOCK						
C7				N/A	Prob direct hit; BAR LOCK towed away	25X1

*Keyed to Figure 2

This table is classified TOP SECRET RUFF.

Makat Corner Reflector Target Sites A, B and C

Terekty ASM Impact Area



10. Terekty ASM Impact Area, approximately 165 km east of Akhtubinsk/Vladimirovka Airfield and 60 km northeast of Terekty, contains two target radar areas—Terekty ASM Radar Area A and Terekty ASM Radar Area D —and three corner reflector target sites (Figure 4).² Terekty ASM Radar Area C , a probable tracking facility, is also within the impact area. (TSR)

25X1

25X1

25X1

25X1

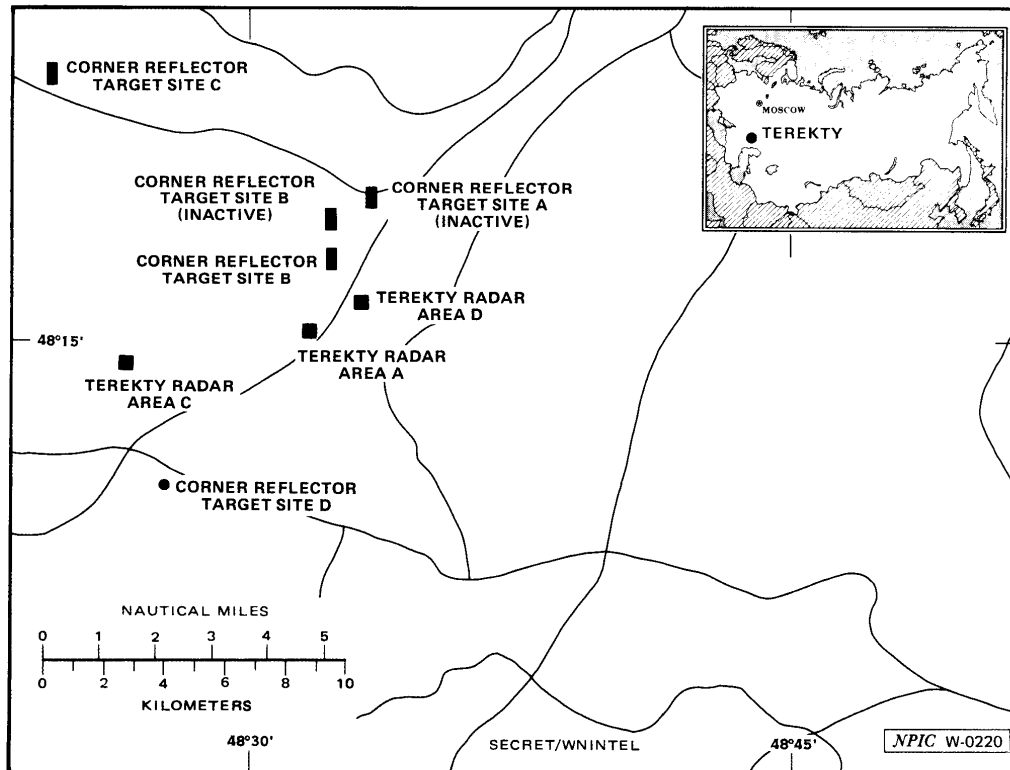


FIGURE 4. TEREKTY ASM IMPACT AREA, USSR

Top Secret RUFF



25X1

Top Secret RUFF

Terekty ASM Radar Area A

[redacted]

seen. Only two new antiradiation missile impact craters were confirmed, due to limited imagery received during this reporting period. One impact crater, a direct hit, was observed at target radar site B on imagery of [redacted]. At target radar site C, an impact crater was observed on imagery of [redacted] and the BAR LOCK radar appeared undamaged. Target radar site F was abandoned between [redacted].

[redacted] Target radar sites D and E were abandoned in mid-1977 and December 1980, respectively. Crater diameters, azimuths, and distances from the target radars at sites B and C are given in Table 2. (TSR)

12. Two possible telemetry- or electronics-associated vans have been observed north and west of target radar sites A, B, and C since [redacted].

[redacted] (Figure 5). Imagery evidence indicates that the vans may be associated with target radar site C. Vehicle tracks between the vans and the support area indicate that these vans are frequently used, which suggests that the vans may monitor ASM activity. (TSR)

Terekty ASM Radar Area D

13. At Terekty ASM Radar Area D (Figure 6), all five target radar sites were occupied during the reporting period. However, target radar site D was abandoned between [redacted].

[redacted] when the probable FLAP WHEEL radar and support equipment previously present were removed; only two probable derelict vehicles remained. Fourteen new impact craters—three of which were on probable target-recognition patterns formed by graded earth—were observed. Crater diameters, azimuths, and distances from the target radars at target radar sites A, C, and E are given in Table 3. (TSR)

14. Since mid-1978, THIN SKIN A-type radar vans have been observed at target radar sites A (where one support van has been observed) and B (where three to five support vans have been observed). Each THIN SKIN A-type van supports an elliptical antenna, approximately 1 meter wide, mounted horizontally on two support masts. The height of the antenna cannot be determined from the imagery. At site A, the support van, with an unidentified object at one end, remained associated with the THIN SKIN A-type radar van (Figure 6A). The support van is connected by cable to the THIN SKIN A-type van, which is probably also connected by cable to an adjacent earth-covered bunker. During this reporting period, four new impact craters (Figures 6 and 6A) were observed near the support van at site A, which suggests that the support van probably generated decoy signals to divert incoming antiradiation missiles from the THIN SKIN A-type radar target. At site B, the THIN SKIN A-type radar van and the support vans remained parked together during the reporting period. No craters have ever been observed at site B. (TSR)

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

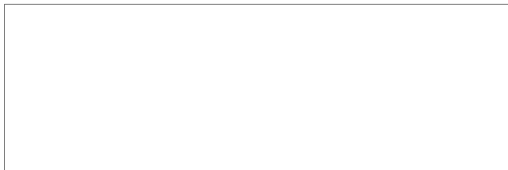
Page Denied

Top Secret RUFF



25X1

15. FLAP WHEEL and KING PIN radars also were observed at target radar site A during the reporting period. On [redacted] an impact crater (A6) was next to a FLAP WHEEL radar, indicating a near miss. On [redacted] another impact crater (A7) was at the location previously occupied by the FLAP WHEEL, indicating a direct hit, and the damaged FLAP WHEEL chassis was adjacent to the impact crater (Figure 6A). (TSR)



25X1

25X1

25X1

17. The support area near site A has contained varying amounts of ECM, TUB BRICK, AND KING PIN radars as well as operational instrumentation and meteorological equipment. (TSR)

25X1

Table 2.
New Impact Craters, Terekty ASM Radar Area A, [redacted]

25X1

Crater	Negation Date	First Observed	Diam (m)	Dist/Az fm Target (m/deg)	Remarks
Target Radar Site B (48-15-00N 048-31-28E)* Target: BAR LOCK					
B9	[redacted]			N/A	Direct hit; BAR LOCK towed away
Target Radar Site C (48-14-53N 048-31-18E)* Target: BAR LOCK					
C10	[redacted]				2 Pos telemetry/electronic vans present

25X1

25X1

*Keyed to Figure 5
This table is classified TOP SECRET RUFF.

Table 3.
New Impact Craters, Terekty ASM Radar Area D, [redacted]

25X1

Crater	Negation Date	First Observed	Diam (m)	Dist/Az fm Target (m/deg)	Remarks
Target Radar Site A (48-14-58N 048-32-58E)* Target: THIN SKIN A-Type**					
A3	[redacted]				FLAP WHEEL and KING PIN radars present.
A4	[redacted]				Near miss.** Prob direct hit; damaged FLAP WHEEL chassis, KING PIN present.**
A5	[redacted]				
A6	[redacted]				
A7	[redacted]				
A8	[redacted]				Intended target undetermined
A9	[redacted]				
Target Radar Site C (48-15-03N 048-32-54E)* Target: TUB BRICK					
C9	[redacted]			N/A	2 TUB BRICKS, generator van present; distance from target not determined due to TUB BRICK position changes
Target Radar Site E (48-15-07N 048-33-00E)* Target: BAR LOCK					
E1	[redacted]				Direct hit
E2	[redacted]				
E3	[redacted]				

25X1

25X1

25X1

*Keyed to Figure 6
**Craters A6 and A7 resulted from ASMs targeted on the FLAP WHEEL.
This table is classified TOP SECRET RUFF.



25X1

Top Secret RUFF



25X1

18. Seven additional impact craters were observed at Terekty Radar Area D during this reporting period. One was at target radar site C, which contained two to three TUB BRICK radars during the reporting period. This crater was observed on imagery of [redacted] Another crater, at target radar site E, resulted from a probable direct hit on a BAR LOCK radar, which was subsequently replaced with another BAR LOCK. This crater was first observed on [redacted]

[redacted] in diameter; they also ranged from [redacted] from the centerpoint of an array of 12 reflector panels, arranged in a single row on a north-south axis. By [redacted] four of the central panels appeared damaged or displaced (Figure 7). Crater diameters, azimuths, and distances from the centerpoint of the array at site B are given in Table 4. (TSR)

25X1
25X1

25X1
25X1

25X1
25X1

Terekty Corner Reflector Target Site C

Terekty ASM Radar Area C

19. Terekty ASM Radar Area C was unoccupied from [redacted] when three groups of vehicles were observed. On [redacted] a probable ONE EYE airport surveillance radar was identified. This radar was still present on [redacted]

21. Two impact craters, both [redacted] in diameter, were observed on limited imagery of corner reflector target site C. By [redacted] the corner reflector had been placed at a new location (48-13-28N, 048-24-31E), adjacent to the heavily cratered site. The array consisted of a row of panels, with four widely spaced panels at opposite ends of the array and five closely spaced inner panels. The first crater, observed on imagery of [redacted] south-west of the center of the array. No changes were observed on [redacted]

25X1

25X1

25X1

25X1

25X1

25X1

25X1

[redacted] Two BACK NET radars present at ASM Radar Area C (48-14-45N, 048-26-30E) prior to [redacted] have been in storage in the support area at ASM Radar Area A (Figure 5). (TSR)

Terekty Corner Reflector Target Site D

22. At least three impact craters were observed at corner reflector target site D (48-19-28N, 048-27-53E) on imagery of [redacted] The craters, which measured [redacted] in diameter, were located [redacted]

25X1

25X1

25X1

25X1

25X1

25X1

Terekty Corner Reflector Target Site B

20. Eight ASM impact craters were observed at corner reflector target site B (48-17-06N, 048-32-08E), a new target site first identified on [redacted] This site replaced a heavily damaged site, which was also designated corner reflector target site B, to the north. The craters ranged from [redacted]

**Table 4.
New Impact Craters, Terekty Corner Reflector Target Site B,**



25X1

Crater	Negation Date	First Observed	Diam (m)	Dist/Az fm Target (m/deg)	Remarks
Corner Reflector Target Site B (48-17-06N 048-32-08E)*					
Target: Corner Reflector Target Panel Array					
BB1					Corner reflector panels damaged and displaced.
BB2					
BB3					
BB4					
BB5					
BB6					
BB7					
BB8					

25X1

*Keyed to Figure 7

This table is classified TOP SECRET RUFF.

Top Secret RUFF



25X1

Top Secret RUFF



25X1



25X1

REFERENCES

IMAGERY

All relevant imagery acquired from [redacted] was used in the preparation of this report. (S/WN) 25X1

DOCUMENTS

- 1. NPIC, [redacted] RCA-16/0002/83, *Makat ASM Impact Area (S)*, May 83 (TOP SECRET [redacted]) 25X1
- 2. NPIC, [redacted] RCA-16/0003/83, *Terekty ASM Impact Area (S)*, May 83 TOP SECRET [redacted] 25X1

REQUIREMENT

COMIREX Q16
Project 545041Q

Comments and queries regarding this report are welcome. They may be directed to [redacted] Strategic/Soviet Naval Aviation Branch, Soviet Air, Navy, Nuclear Division, Imagery Exploitation Group, NPIC, [redacted] 25X1



25X1

Top Secret



Top Secret