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Joint Study

Soviet Capabilities to Reinforce in Central Europe

Equipment Levels in Soviet Combat-Ready Divisions

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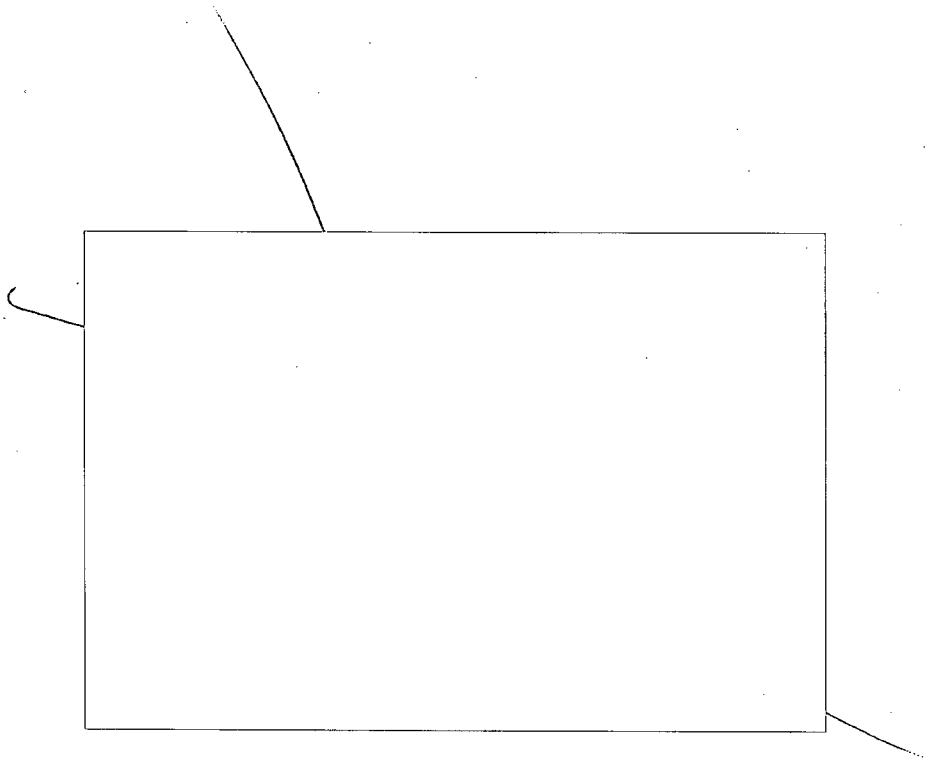

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CENTRAL INTELLIGENCE AGENCY
DEFENSE INTELLIGENCE AGENCY
August 1968

JOINT STUDY

SOVIET CAPABILITIES TO REINFORCE IN CENTRAL EUROPE

Equipment Levels in Soviet Combat-Ready Divisions

Summary

From intensive analysis of repetitive low-level photography, it has been determined that two typical Soviet combat-ready divisions in East Germany have fewer cargo and auxiliary vehicles than previously believed. At the level of equipment strength now estimated, these divisions would require outside logistic help for any extended action.

The analysis concentrated on a Soviet tank division and a motorized rifle division in East Germany which are accessible for low-level aerial photography. Because these two divisions are probably as close to full strength as any divisions in the Soviet army, the results of the analysis are believed to provide a refined basis for estimating the typical equipment levels of Soviet combat-ready divisions. This in turn provides a highly quantified measure against which to compare the equipment levels of Soviet divisions elsewhere in assessing their degree of combat readiness.

The findings support the view derived from other analyses that Soviet divisions are designed for high-intensity, short-duration combat, with the "administrative tail" reduced to a minimum.

Note: This report was produced by CIA. It was prepared by the Office of Strategic Research, CIA, and coordinated with the Directorate of Intelligence Production, DIA. It is published as part of a joint CIA-DIA study on Soviet reinforcement capabilities.

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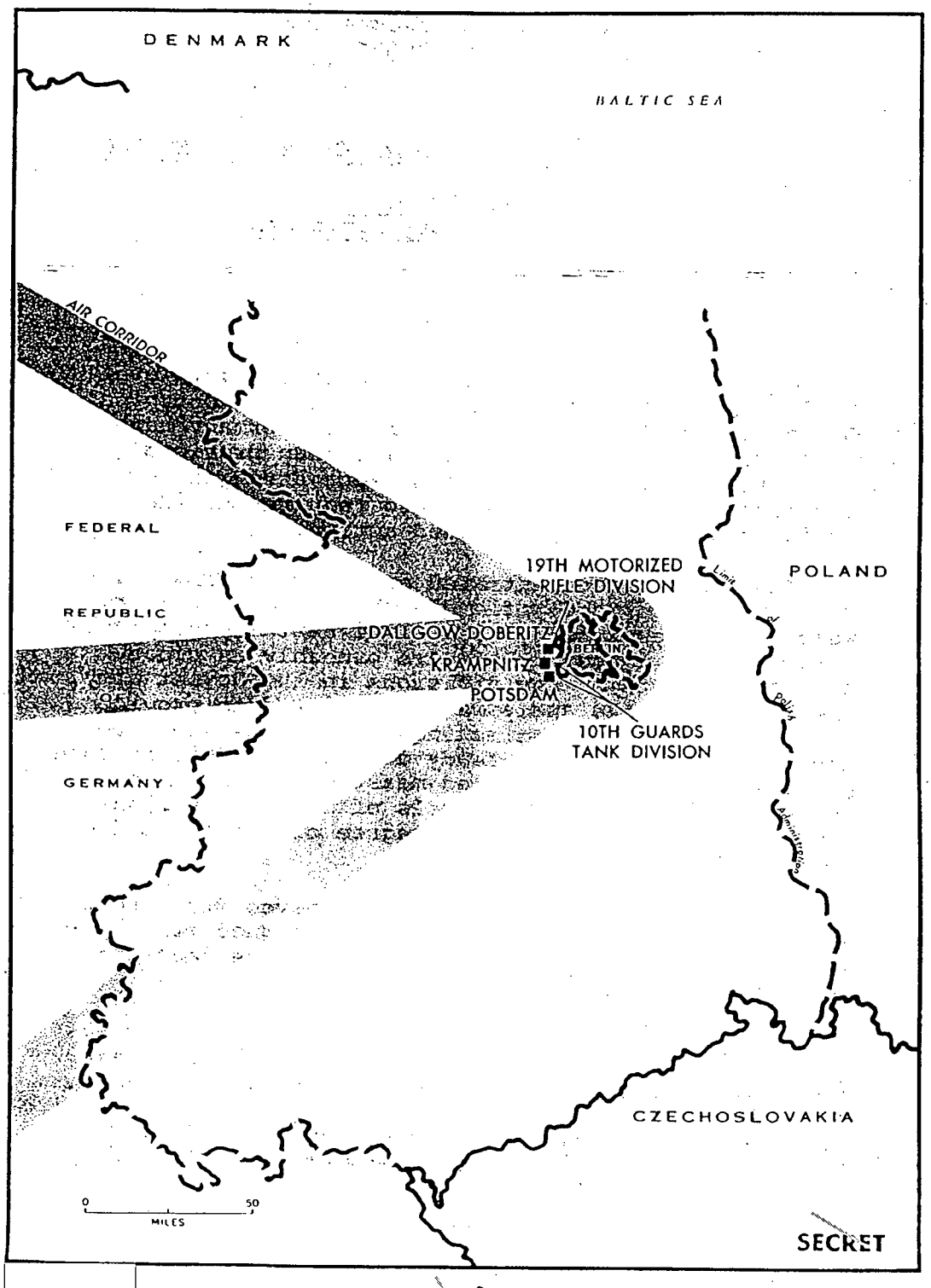
EAST GERMANY

Figure 1

Location of the 10th Guards Tank Division and the 19th Motorized Rifle Division of the GSFG



Analytical Method

1. In an effort to obtain an accurate assessment of the equipment levels in Soviet combat-ready divisions, an intensive study was made of two divisions in East Germany which are accessible for frequent low-level aerial photography: the 10th Guards Tank Division and the 19th Motorized Rifle Division, both located under the air corridor west of Berlin. (See map, opposite page.) They are believed to be similar in organization and equipment to other Soviet divisions in Germany and probably are as close to full strength as any divisions in the Soviet army. Thus, the results of the study can serve as a reliable standard against which equipment levels of Soviet divisions elsewhere may be compared in assessing their degree of combat readiness.

2. The analysis was based on repeated corridor aerial photography, including coverage from 75 very-low-level missions flown in 1967. This permitted positive identification of all vehicle storage sheds and a count and identification of a substantial portion of the equipment therein. (See appended foldouts.)

3. The success of the analysis depended upon accurate identification of the divisions' units and their respective equipment parks. This identification was accomplished in two steps.

4. This procedure resulted in the location and identification of all the subordinate units of the 10th Guards Tank Division and 19th Motorized Rifle Division, with the minor exceptions noted in Table 1, page 6 .

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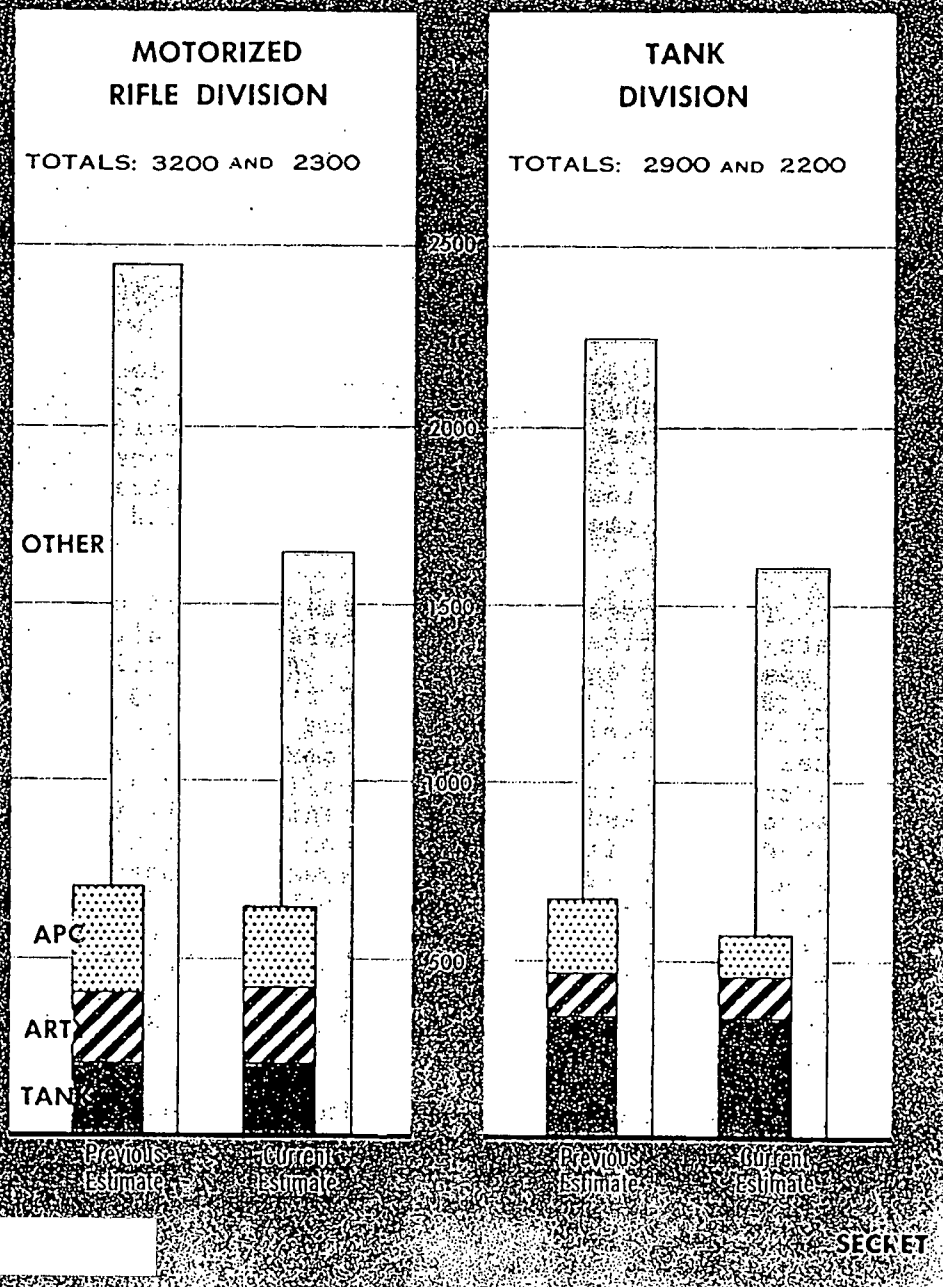
Figure 2

Reassessment of Equipment Holdings of Combat-Ready Soviet Divisions

(Major Items of Equipment)



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Results

6. Previous estimates of combat vehicle strength (tanks, artillery, and rocket launchers) were confirmed by the analysis, but the number of armored personnel carriers was found to be about 30 percent lower than previously believed. General-purpose cargo trucks and auxiliary vehicles such as the UAZ-69 jeep were also down about 30 percent. The total amount of equipment in the divisions was found to be 25 percent lower than previously held. (See chart, opposite page.)

7. On the basis of the assessed equipment holdings of these two divisions, it appears that a combat-ready Soviet tank division has about 2,200 vehicles and major equipment items* and a motorized rifle division about 2,300. The figures for subordinate units of the divisions are given in Table 1, page 6.

8. These figures are best estimates derived from the consistent but slightly varying results obtained by analysis. In the case of artillery instrumental reconnaissance batteries and chemical defense companies, more weight was given to the results obtained for the tank division, since the tank division data contained fewer ambiguities for these units, and there is no

* *The totals include all self-propelled vehicles except motorcycles and all large towed vehicles such as artillery pieces and two-axle trailers.*

Table 1

Equipment Holdings of
Soviet Combat-Ready Tank and Motorized Rifle Divisions

Division Units	Major Equipment Items	
	Tank Division	Motorized Rifle Division
Headquarters	30	Not identifiable
Motorized Rifle Regiment	290	3 regiments: 290 each
Tank Regiment	3 regiments: 250 each	250
FROG Battalion	30	30
Artillery Regiment	190 to 215	190 to 215 a/
Multiple Rocket Launcher Battalion b/	120	80
Antiaircraft Artillery	110 to 135	110 to 135
Antitank Artillery Battalion	Not applicable	Not identifiable
Maintenance Battalion	45 to 60	Not identifiable
Artillery Instrumental Reconnaissance Battery	10 to 15	10 to 15
Engineer Battalion	95	100 to 130
Reconnaissance Company	45	45
Chemical Defense Company	35	35
Motor Transport Battalion (Ammunition)	100	75
Motor Transport Battalion (POL)	210	125 to 215
Signal Battalion c/	20	20
Residual d/	20 to 40	150 to 195
Total	2,100 to 2,190	2,090 to 2,310

Note: Data are rounded to the nearest 5.

a. There is some evidence that the artillery regiment of the motorized rifle division has 12 more guns than the tank division. If so, it should have 25 to 30 more vehicles. However, they could not be identified in this study.
b. The multiple rocket launcher battalion of the 10th Guards Tank Division is re-equipped with the new 40-round launcher, and consequently has more ammunition trucks than the 19th Motorized Rifle Division, which is still equipped with the older 16-round launcher.
c. Some additional signal equipment may be attached to other divisional units to provide signal support in garrison.
d. The residual includes those units which could not be identified by type but which are considered to belong to the division. Data for the medical units of both divisions are dispersed among the units listed.

reason to believe these particular units would be different in a motorized rifle division. (See Annex B for a summary of the analysis of 10th Guards Tank Division and Annex C for a summary of 19th Motorized Rifle Division.)

9. The analysis has provided new insight into some aspects of the logistical capabilities of Soviet divisions. The mobile ammunition and POL supplies of the combat units and in the division trains were readily identified and counted. The ammunition carriers, and probably the POL carriers, are kept loaded at all times. This practice is consistent with other evidence which indicates that Soviet divisions in Germany are required to be capable of being assembled and moved out to combat within two hours from an alert.

10. This study also supported earlier evidence indicating that the Soviets follow a flexible practice in the allocation of pontons to divisions--at least in the case of tank divisions. During 1967, the number of pontons in the 10th Guards Tank Division area increased from 24 to 72, suggesting that at least 48 pontons may have been allocated to the division for some special purpose. It appears that, rather than being permanently assigned in fixed numbers, pontons may be allocated to divisions in numbers consistent with their intended missions. We have therefore estimated that only 24 pontons are organic to each of the two divisions and have excluded the rest.

Validity

11. The methodology used for this study and the quality and quantity of the photograpy permit a high degree of confidence in the findings. The equipment storage areas were photographed repetitively over a long period, and the photography has sufficient resolution for positive identification of equipment. The obliquity of the photography allowed observation of equipment inside the buildings.

12. There was a high degree of internal consistency, since the analysis of all units of similar type yielded analogous results. This consistency

is further supported by the results obtained in the study of six additional Soviet units in Germany, subsequent to the analysis described herein. These include four motorized rifle regiments [redacted] whose equipment holdings were found to range between 280 and 300. Additionally a reconnaissance company was found to have about 40 vehicles and an antiaircraft artillery battalion, 115 to 130.

13. The evidence indicates that, in the two divisions studied, the Soviets made optimum use of all available storage space. Wherever sufficient observation was possible to determine the pattern of utilization precisely, it was found that all usable space in vehicle sheds was occupied by vehicles. The only exceptions noted were in areas of construction and renovation, and in buildings where physical restraints or practicality prevented maximum usage. In only one instance was an apparently usable storage shed found to be unoccupied (see Annex A). This finding indicates strongly that the actual equipment holdings approach the high side of our estimate of probable holdings. We have followed this reasoning in estimating the equipment levels of combat-ready divisions and subordinate units.

14. The intelligence cut-off date for study of the two divisions was 1 January 1968. However, military units are normally dynamic organizations and are constantly changing in some degree. For example, a scan of information received since 1 January indicates that the tank division now has a set of the newer, more quickly assembled PMP pontons in addition to the three sets of the older TPP pontons observed in its area in 1967, and a new unit of self-propelled, radar-directed quadruple 23mm antiaircraft guns. The proportion of T-62 tanks to older models has also increased substantially. The divisions' facilities are being rebuilt, and this work may have caused some minor changes in the delineation of unit areas and utilization of buildings.

Tactical and Logistical Implications

15. The findings of this study are consistent with Soviet writings on the evolution of their ground forces. In both open and classified journals of the early 1960's, Soviet military authorities claimed that dramatic reductions in the "administrative tail" of the Soviet division had been made while firepower was maintained and even improved. In 1962, Minister of Defense Malinovskiy claimed that even greater reductions were planned. Others, such as General Malykhin, now deputy chief of the rear services, complained that the cuts had already dangerously reduced the levels of mobile stocks at division and army level. Malykhin indicated that a division should have at least three to four days of mobile stocks, with two more days in mobile army depots.

16. Our current analysis suggests that organic supplies of POL will not permit sustained periods of intensive combat beyond about three days without resupply and support from outside the division. Thus, the Soviets have kept mobile supplies near the minimum level and are relying primarily on front-level rear services to begin delivery of supplies to the combat units within a few days after initiation of hostilities.

17. Judging from the two divisions analyzed, the combat-ready Soviet division is smaller and more austerely equipped than previously believed. The Soviets have attempted to maximize direct firepower and mobility with a minimum level of combat and service support in the division. They have probably been successful in this design but have sacrificed staying power and flexibility to achieve it.

ANNEX A

This annex illustrates the procedures used in the study by describing the analysis of one tank regiment of the 10th Guards Tank Division, located in Potsdam Installation 288 (see Photo 1, appended foldouts).

The regiment's equipment is contained in nine of the ten vehicle storage sheds in Subarea Bb, which is separated from other divisional elements by a fence. One of the sheds--Shed 10--is used jointly by the tank regiment and the adjoining anti-aircraft artillery battalion, as indicated by the security fence which separates the two units and divides the building.

Shed 1 was identified as housing the regimental ammunition train and is separately secured from the rest of the regimental area. The estimated 25 trucks and 25 trailers located in Shed 1 were observed to be continuously loaded with ammunition and in a ready condition.

Sheds 2 through 5 contained the regiment's major combat equipment including tanks, reconnaissance vehicles, and self-propelled antiaircraft weapons. Some support equipment--mainly recovery and maintenance vehicles--was also noted in these sheds.

Sheds 6 and 9 were observed to contain only construction materials and no vehicles throughout the year 1967. Sheds 7 and 8 were razed in early 1967.

Sheds 10 through 13 were observed to contain most of the general-support and maintenance vehicles of the regiment.

Shed 14 was identified as a vehicle storage shed with a capacity for 20 vehicles but repeated observations indicated that it was not used for the permanent storage of any vehicles during the year 1967. This was the only instance noted in either division where an apparently usable storage shed was not used for permanent storage.

Subarea Li is the regimental tank miniature firing range. The structure at the range head was not used for permanent storage of any unit vehicle.

For illustrative purposes, Shed 4 is examined in detail. Table 2, page 12, shows the equipment observed in the shed on all usable photographic coverage during 1967.

A total of 27 vehicles regularly stored in Shed 4 were observed and identified. In four of the five sections at least one, and usually two, tanks appeared in each bay on several coverages. In all cases where only one tank was observed in a bay, it was impossible to determine whether a second tank was also present in the bay. However, enough observations of two tanks per bay were obtained to support an estimate that all 14 tank bays were so used, making a total of 28 tanks probably stored in Sections 2 to 5. This judgment was further supported by the observation that optimum use was generally made of storage capacity throughout the units of the division. In Section 1, each bay was observed to hold at least one vehicle. It could not be determined whether more than one vehicle was stored in any of the four bays, although each bay could hold two. Therefore, Section 1 was estimated to hold four to eight vehicles. Totaling the results for all five sections yields a probable holding for Shed 4 of 32 to 36 vehicles.

The results of similar analyses for each shed of the tank regiment in Subarea Bb are summarized in Table 3. It will be noted that, for Sheds 10 through 13, "associated equipment" was considered, in addition to equipment observed inside the sheds, in estimating the probable holdings of those sheds. The "associated equipment" figures were derived by totaling the highest numbers of each type of vehicle observed outside and subtracting from those totals all vehicles of the same type which had been observed to be stored inside.

Table 2

Analysis of Equipment Storage in Soviet Subarea Bb,

Potsdam [redacted] East Germany

Shed 4

Section	Bay	1	2	3	4	5	6	7	8	9	10	11	12	Observed In Bays
1	1	ARV	ARV	NS	NS	E	ARV	NS	NS	ARV	ARV	NS	NS	ARV
	2	ARV	E	NS	NS	E	NS	NS	NS	ARV	ARV	NS	NS	ARV
	3	E	TRK U/I	NS	NS	E	NS	NS	NS	E U/I	TRK U/I	NS	NS	TRK
	4	E	TRK	NS	NS	E	NS	NS	NS	TRK	TRK	NS	AMB	AMB
2	1	E	MV*	NS	T	T	T	NS	NS	T	T	NS	T	T
	2	E	T	NS	T	T	NS	NS	NS	T	T	T	NS	T
	3	E	T	NS	NS	T	NS	T	NS	T	T	2 T's	NS	2 T's
	4	T	T	NS	NS	E	T	T	T	T	T	2 T's	NS	2 T's
3	1	T U/I	T	NS	NS	E	T	2 T's	T U/I	[redacted]	[redacted]	2 T's	NS	2 T's
	2	TRACK	2 T's	NS	T	E	NS	E	TRACK U/I			2 T's	NS	2 T's
	3	TRACK	2 T's	NS	T	E	NS	T	TRACK			T	NS	2 T's
4	1	U/I TRACK	2 T's	T	T	NS	NS	T	U/I TRACK	[redacted]	NS	T	NS	2 T's
	2	U/I TRACK	2 T's	T	T	NS	NS	T	U/I TRACK		NS	2 T's	NS	2 T's
	3	U/I TRACK	T	T	T	NS	NS	T	U/I TRACK		NS	2 T's	NS	2 T's
5	1	U/I TRACK	2 T's	T	T	NS	NS	T	U/I TRACK	U/I TRACK	NS	[redacted]	NS	2 T's
	2	T	T	T	T	NS	NS	E	T	U/I TRACK	NS	MV*	NS	T
	3	U/I TRACK	T	T	T	NS	NS	T	U/I TRACK	U/I TRACK	NS	[redacted]	NS	T
	4	U/I TRACK	T	T	T	NS	NS	T	U/I TRACK	U/I TRACK	NS	T	NS	T

Abbreviations:

AMB - Ambulance
ARV - Armored Recovery Vehicle
E - Empty
MV - Maintenance Van
NS - Not Seen
[redacted]
T - Tank
TRACK - Tracked Vehicle
TRK - Truck
U/I - Unidentified

Maintenance van temporarily present to service tank in bay.

Table 3

Analysis of Equipment Storage in Soviet Subarea Bb, Potsdam 288, East Germany

	Storage		Equipment		
Shed	Identified Bays	Total Capacity	Observed in Bays	Associated Equipment	Probable Holdings
1	25	50	26	0	50
2	18	36	27	0	31-36
3	17	34	26	0	31-34
4	18	36	27	0	32-36
5	21	42	22	0	30-42
10 a/	9	9	4	4	9
11	16	16	1	15	16
12	3	6	0	1	0-6
13	17	17	3	14	17
14	10	20	0	0	0
Total	154	266	136	34	216-246

a. Excluding the portion occupied by an antiaircraft artillery battalion.

ANNEX B

Summary of Analysis of Equipment Storage of Soviet 10th Guards Tank Division, East Germany

Unit and Location	Sheds		Equipment			
	Number Of Bays	Total Capacity	Observed In Bays	Associated Equipment	Outside Storage	Probable Holdings
Krampnitz 261 (see Photo 2)	678	1,129	620	167	33	971-1,086
Headquarters (Subarea Ba)	7	14	2	22 a/	3	17
Chemical Defense Co and Signal Bn (Subarea Bb)	44	52	25	27	0	52
Frog Bn (Subarea Bc)	11	22	1	24	2	27
Tank Regt (Subarea Bd)	141	259	121	31	9	202-259 b/
Multiple Rocket Launcher Bn (Subarea Be)	61	122	103	3	0	122
Artillery Instrumental Reconnaissance Btry and Engineer Bn (Subarea Bg)	76	145	82	0	12	104 c/
Motor Vehicle Workshop (Subarea Bh, Bi)	41	76	16	33	0	49-68
Motor Transport--POL (Subarea Bj)	44	88	88	0	0	88
Reconnaissance Co (Subarea Bk)	20	40	12	23	0	40
Motorized Rifle Regt (Subarea Bl)	221	287	170	4	7	261-294
Tank Workshop (Subarea Bm)	9	18	0	0	0	9
Unidentified (Subarea Bf)	3	6	0	0	0	0-6
Krampnitz 567						
Motor Transport--Ammo	54	108	74	0	0	90-100
Potsdam 287	312	477	181	17	0	305-390
Tank Regt (Subarea Ba)	210	339	120	0	0	223-292 d/
Motor Transport--POL (Subareas Bc, Be)	70	100	60	1	0	60 e/
Unidentified (Subareas Bb, Ab)	32	38	1	16	0	22-38
Potsdam 288	409	726	353	80	0	558-658
Artillery Regt (Subarea Ba)	142	264	148	0	0	191-216
Tank Regt (Subarea Bb)	154	266	136	33	0	216-246
AAA Bn (Subarea Bc)	71	136	27	32	0	91-136
Motor Transport--POL (Subarea Bd)	42	60	42	15	0	60
Division Total	1,453	2,440	1,228	264	33	1,924-2,234

Note: Total capacity is derived mathematically and does not reflect practical vehicle storage restraints. These restraints include working areas in maintenance buildings, access aisles in some tandem sheds, and in certain cases, unit integrity.

a. Includes transient vehicles not assigned to Headquarters.
b. Excludes 12 nonstandard tracked vehicles probably used only for driver training.
c. Excludes 48 ponton carriers and their storage area probably not permanently assigned to the division.
d. High side of range probably inflated by as much as 50 because of less than optimum occupancy while subarea was under reconstruction during 1967. Unoccupied bays could not be identified through observation.
e. Excludes 10 to 40 spaces which were probably abandoned in 1967 in conjunction with reconstruction of Subarea Be.

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ANNEX C

Summary of Analysis of Equipment Storage of Soviet 19th Motorized Rifle Division, East Germany

Unit and Location	Sheds: Number Of Bays	Sheds: Total Capacity	Equipment: Observed In Bays	Equipment: Associated Equipment	Equipment: Outside Storage	Equipment: Probable Holdings
Dallgow-Doeberitz 261/262 a/ [redacted] 3)	451	519	156	68	0	462-504
Reconnaissance Company (Subarea Bc)	35	45	24	4	0	42-45
Motor Transport--POL (Subareas Bb, Da)	136	185	54	41	0	140-170
Chemical Defense Co (Subarea Be_1)	35	35	22	2	0	35
Signal Bn (Subarea Bd Blg 3)	9	18	0	17	0	18 b/
Multiple Rocket Launcher Bn (Subareas Be_3, Be_2)	132	132	10	4	0	132 c/
Unidentified (Subareas Bg, Aa, Bd)	104	104	46	0	0	95-104
Dallgow-Doeberitz 263 a/ [redacted] 4)	390	632	306	16	3	413-613
Tank Regt (Subarea Ba_1)	205	311	187	3	2	211-305
Motorized Rifle Regt (Subareas Ba_2, D, Ea)	179	295	119	9	1	176-282
Frog Bn (Subarea Bb_1)	6	26	0	4	0	26
Dallgow-Doeberitz 264-275 [redacted] 5)	709	1,008	278	55	1	700-1,008
Motorized Rifle Regt (Subareas Ba, Bg)	173	278	70	3	0	173-278
Motorized Rifle Regt (Subareas Bb, Bf)	198	266	87	4	1	199-267
Artillery Regt (Subareas Ba, Be)	147	213	57	9	0	147-213
Engineer Bn (Subarea Bd)	111	135	46	24	0	101-134
Motor Transport--POL (Subarea Ej)	24	24	15	0	0	24
Unidentified (Subareas Aa, Ad, Bh, Bc)	56	92	3	15	0	56-92
Dallgow-Doeberitz 268 a/ [redacted] 6)						
AAA Bn (Subarea Ba)	84	162	20	45	0	84-162
Dallgow-Doeberitz 578						
Motor Transport--Ammo	0	0	0	0	75	75
Division Total	1,634	2,321	760	184	79	1,734-2,362

a. Omitted from the analysis are the following locations not subordinate to the 19th Motorized Rifle Division: Subareas Ba and Bf [redacted] Bb [redacted] Bb and Bc [redacted]
b. Additional Signal Battalion vehicles were probably dispersed throughout the division area, but could not be identified.
c. Includes 53 vehicles in Subarea Be_2, probably associated with the Multiple Rocket Launcher Battalion.

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