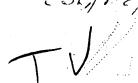
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DEPARTMENT OF DEFENSE INTELLIGENCE INFORMATION REPORT PG1130					
NATIONAL SECURITY INFORMATION This report contains unprocessed infor-					
Unauthorized Disclosure Subject to	CONFIDENTIAL	mation. Plans and/or policies should not			
Criminal Sanctions	Classification/Control Markings	be evolved or modified solely on basis of this report.			
1. COUNTRY: USSR (UR);	GDR (GC) 2. REPORT NUMBER: 2 21	5 2664 77			
3. TITLE: Training Docume to 122mm Howitz	ent Pertaining 4. PROJECT NUMBER: 91	0800 (A)			
5. DATE OF INFORMATION: 19	75-1976 6. DATE OF REPORT: 770	0907			
7. DATE & PLACE OF ACQUISITIO	timated) 8. REFERENCES: T-1B4-49 N: 770216, U-GER-F0 W (PD 7248), GDR (GC)	9248; U-GER-49545; OCUS			
9. ASSESSMENT: SOURCE F,		PO NY 09742			
11. REQUEST EVALUATION, C	THE PARTING OFFICER	13. APPROVING AUTHORITY:			
14. SOURCE: SANDDUNE, OPF	ORINT- STUART FEHR	ED DON O. STOVALL			
	SSG, Translator	COL, CUSMLM			
15. SPECIAL INSTRUCTIONS: (C)	Nature and condition of Enclosure 1 pr				
stamping with appropria	te classification markings.	reclude D YES D			
ments contained in paragraph 12a(5) and (6), ICR T-1B4-49248 and in paragraph 12a(2)(d), CIR U-GER-49545 (FOGUS). Report contains information acquired by a USMLM tour in the vicinity of HAGENOW (PD 7248) on 16 FEB 77. Information includes a 14-page handwritten document containing basic technical concepts, tactical employment doctrine, sight and instrument calibration, fire commands, gun laying, and performance norms for crews of the 122mm Howitzer, D-30. Significance: provides insight into contemporary Soviet technical and tactical training standards and weapons employment doctrine for the crew of a 122mm Howitzer, D-30. REQUEST EXCL(S) FIGURES A					
	REC'D DS-4B 7 OCT '77	(S) FIGUR RDS-3M			
18. DISTRIBUTION BY ORIGINATOR:	19. DOWNGRADING AND DECLASSIFICATION DATA:	NOT REPRODUCED 2 500			
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Encl 2 -DIA DIR-1A w/ley Encl 2	Schedule of Executive Order 11652	122mm Howitzer, D-30 (C)			
S-V Corps AETVGB-O w/lcy	Declassification Date: 31 Dec 07	1 cy, 1+ P6.5.			
Encl 2 -VII Corps AETSAB-O w/1		2. Locally Reproduced Copy of Enclosure 1 (C)			
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1. (C) PURPOSE: To forward a 14-page handwritten document pertaining to the basic technical concepts, tactical employment doctrine, sight and instrument calibration, fire commands, gun-laying characteristics, and performance norms for crews of the 122mm Howitzer, D-30. This document was acquired through SANDDUNE.

2. (C) SOVIET OBSERVATIONS: HAGENOW (PD 7248), 160500Z FEB 77. A 14-page handwritten notebook, probably used to support gun crew training for the 122mm Howitzer D-30, is forwarded as Enclosure 1. Page numbers have been added to the original document in pencil by the translator to facilitate referencing and identification of contents. A complete translation of this notebook is provided below (translator's comments are enclosed in brackets):

Page 1:

Mount the sight on the howitzer.

Stretch the strings along the notches.

Sighting through the aperture and cross-wires, lay the barrel on the aiming point.

Turning the knobs, bring the top of the reticle's aiming marker in line with the aiming point. If at this time the horizontal string is not brought into line with the zero graduations of the range dials, and the vertical string is not brought into line with the zero graduations of the lateral adjustment correction dials and the cross component target speed, then it is necessary to make an [the following] adjustment:

Loosen the screws two turns, and open the covers of the adjustment mechanisms. Turn the nuts of the adjustment mechanisms, bring the vertical string of the cross-wires into line with the zero graduation of the lateral adjustment correction dial, and bring the horizontal string into line with the zero graduations of the range dials.

Close the covers, and tighten the screws all the way.

Checking of the zero line along the panel is performed in the same manner as along a remote point.

Page 2:

DETERMINING FREE PLAY OF SIGHT MECHANISMS D726 AND PANORAMA PG-1M

To determine the free play of angle-of-elevation mechanisms D726-45, the following is necessary:

--turning the knob in one direction, center the bubble and take a reading on the sight scales.

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--turning the knob in the opposite direction, again center the bubble and take a reading on the scales.

--turning the knob in one direction, change the sight scale setting by $0-40 \div 0-50$.

The difference between the readings will be the amount of free play, which is not allowed to be more than 0-01.

Determining the free play, which is allowed in the angle-of-elevation mechanism:

- --with a turn of the knob in one direction, center the bubble and take a reading on the scales.
- --turning the knob in the same direction, change the scale settings by $0-40 \div 0-50$.
 - --turning the knob in the opposite direction, again center the bubble.

The difference between the readings will be the amount of free play, which is not allowed to be more than 0-01.

DETERMINING THE FREE PLAY OF THE PG-1M FIRING ANGLE:

- --secure the panorama in the housing.
- --turning the firing angle knob in one direction, lay the cross-wires on the fixed point, and read the firing angle setting.

Page 3:

- --turning the knob in the same direction, change the setting by $0-40 \div 0-50$
- --turning the knob in the opposite direction, again bring the cross-wires into line with the aiming point.
- -- the difference between the two settings will be the amount of free play, which is not allowed to be more than 0-02.

FREE PLAY OF THE PANORAMA REFLECTOR:

is determined like the firing angle free play, only it is aimed on the point with the reflector knob, and readings are taken on the reflector dials. Free play of the reflector is no more than 0-02.

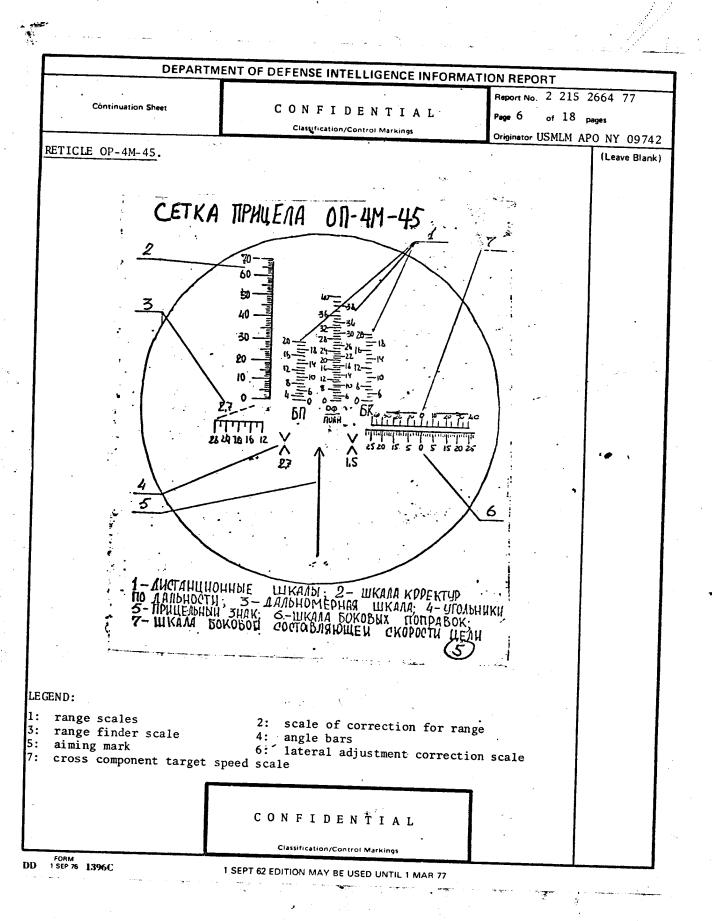
If the free play of the reflector and firing angle is more than 0-02, the panorama is in need of repair.

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Page 4:		•		(Leave Blank)
SIGHT D726 CONSISTS OF: ANGL	E OF FIRMATION		-	
and the second s	E-OF-ELEVATION MECHANISM			
worm		.		
worm wheel with base panoramic telescope sear	· ·	•		
knob, ring with mil scal	t le	•		
cylindrical gears		-		
elevation drum with indi	icator			
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ANORAMA PG-1M CONSISTS OF:			l	
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IGHT OP-4M-45 [see diagram on	page 6 CONSISTS OF:		`	
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IS FORBIDDEN TO FIRE THE GUN	•	•		1
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DEPARTMENT OF DEFENSE INTELLIGENCE INFORMATION REPORT Report No. 2 215 2664 77 Continuation Sheet CONFIDENTIAL Page 7 of 18 pages Classification/Control Markings Originator USMLM APO NY 09742 --when the block system isn't operating; (Leave Blank) --when the barrel is rusty, dirty, cracks are detected, the counter-recoil mechanisms aren't in order; --when the muzzle brake isn't secured; --when the semi-automatic mechanism isn't in working order. [IT IS FORBIDDEN] TO TAKE A SHOT --when the bolt handle is not set on the latch lock; --when the wedge is not checked; --when the cover is on the muzzle brake; --when located behind the gun in line with the barrel; --when located not less than 200 meters in front of the gun. CREW AND GUN NUMBER STANDARDS NAME OF TRAINEE GRADE **STANDARD** EXCELLENT **CATE GORY** SATISFACTORY 17" 1 Insert 19" 1 YR SERV 25" 27" and Secure 29" Panoramas 13" 15" 2 YR SERV 2311 25" 27" 17" 2 Removal of 1 YR SERV 20" 21" 21" 23" (Sight) 25" Panorama 17" 2 YR SERV 19" and Plac-21" 2311 ing in Box 1'20" 3 Setting 1'30" 1'40" 1 YR SERV 1'40" 1'50" the Gun 2'00" Collimator 1'00" 1'10" 1'20" 2 YR SERV 1'20" 1'30" 1'50" 30" 35" 40" Mounting 1 YR SERV 45" 50" 1'00" and Stow-

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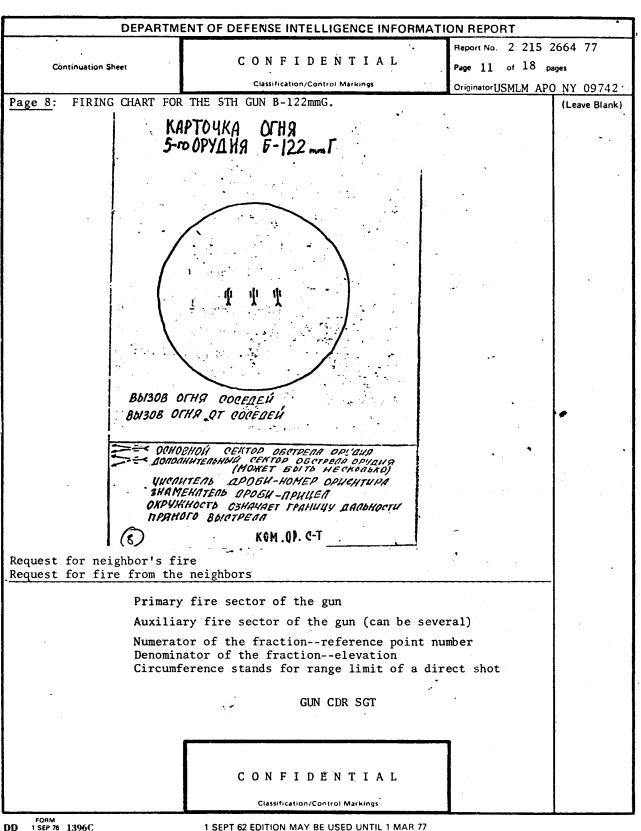
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5	Making the Multi-	1 YR SERV	10"+2" 12"+3"	15"+2" 17"+3"	20"+2" 22"+3"	(Leave Blank)
	section (reducible) charge	2 YR SERV	711+211	$\frac{10^{11}+2^{11}}{14^{11}+3^{11}}$	15"+2" 20"+3"	
6	Loading the Gun	1 YR SERV	1'30"	1'20"	1'40" 2'10"	
	Zero [Base] Line (by aiming circle)	2 YR SERV	40" 1 10"	113011	1'20" 1'50"	
7	Change of Range	1 YR SERV	35" 1°	50" 1'20"	1' 1'40"	. ,
	and Di- rection of Fire	2 YR SERV	30" 40"	11	50" 1'20"	
8	Aiming Point	1 YR SERV	20" 40"	25" 50"	30"	
	(Aiming Circle) Reference	2 YR SERV	•• 15" 30"	20'' 40''	25" 50"	*•
9	"TO THE BATTLE"	CREW	1'30"	1'40'' 2'10''	2' 2'40"	
0	"RETREAT"	CREW	1'50" 2'30"	214011	2°20" 3°	
1	Deter- mining	1 YR SERV	2'15"	2145"	3'15"	
4	Minimum Ranges	2 YR SERV	2'	2130"	3 10"	
2	Change of Range and Direction of Fire (with	CREW	2'30" 3'30"	3' 4' 30"	3 ' 30'' 5 ' 30''	
	trail ro- tation)				•	
3	Zeroing- in of Sighting Equipment	CREW	7'	9'	11'	
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14	Laying out paral- lel lines "SHEAF" with aim- ing circle	BATTERY	1'30" 2' 1'30" 2'30"	1'40" 2'30" 1'50" 2'40"	1'50" 3' 2'10" 3'10"	(Leave Blank)
15	Occupation of the PO [fire position]	CREW	5 ' 30'' 7 ' 30''	6'30" 8'30"	7 ' 30''. 9 ' 30''	
16	Leaving the PO [fire po- sition]	CREW	31	- 3'30" 4'30"	41 51	
17	Occupation of PO {fire position for repulse of tank at- tack	CREW	2'30"	2'50" 3'40"	3'10" 4'10"	
18	Deployment of battery into combat formation from the march	FIRING PLATOONS	14'	17'	20'	•
19	Surveying the PO [fire po- sition]	BATTERY	10' 15'	12' 18'	15' 22'	
more ORIC cate	e than 0-02 a	and in rang MENTS: A. $\frac{15''}{25''}$ indic	e not more than Chart indicate ates from 15 to This chart of re applied to for	es minimum and ma	ximum times in e	ach

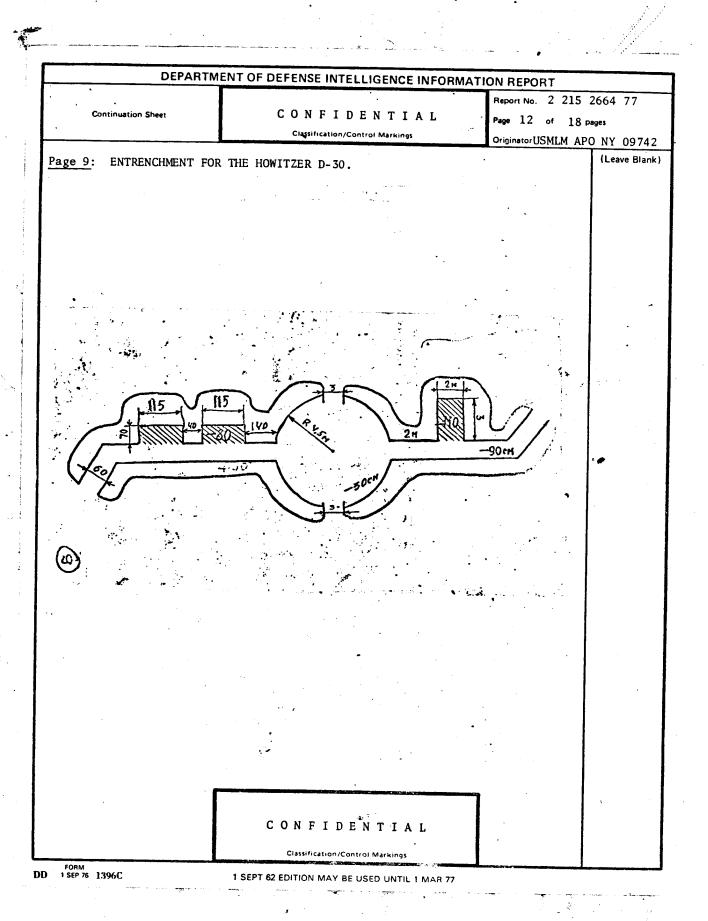
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Page 10:

DIRECT FIRE UPON STATIONARY TARGETS

Firing upon a stationary target at ranges not exceeding 1000 meters is conducted for howitzers with single shots. The first shot is taken with a sight setting corresponding to the computed target range, at which time the guns are aimed at the intended point of the target (in the middle or a vulnerable place). Not having received a range indication with the first round, owing to lateral deviation, the burst is moved to the line of observation, for which a shift toward the target in the amount of the measured deviation is commanded.

Having determined the deviation burst from the target in meters after the first round or in the course of firing (while capturing the target in the forks or fork halves), enter the correction into the sight equal to the amount of the received deviation, and increase the aiming by one half of the target figure (for calculation of half of the destroyed target space).

During the presence of lateral deviation, [I] simultaneously command a shift toward the target with the change of the sight setting. Page 246 of "PSNA-65."

Having received only the range indication, a range bound of 200 meters is made. If, after the first range bound, the range deviation isn't determined and the same indication is received, the range bound is repeated.

Having captured the target in the forks (after having received the opposite indication), it is halved until receiving a fork 100 meters wide, in the middle of which firing for the destruction of the target is continued, and if necessary aiming point correction changes are entered, on altitude by one half of the target figure. Page 247.

At ranges exceeding 1000 meters, firing is conducted for howitzers according to Article 246 and 247 until entering the correction equal to 50 meters, after which 2 shells are allocated. Having received both sightings of one sensing, a correction of 50 meters is entered or the aiming point is changed. (In the remaining cases, the correction is not entered.) Subsequently, firing is done in groups of four shells. Upon receipt on one sight of all sightings of one sensing, or the correlation of sensings greater than 3 to 1, a correction of 50 meters is entered, or the aiming point is changed; during the correlation of sensings 3 to 1 and less, a correction is not entered.

When two identical sensings are obtained in a group, the correction may be entered before the end of the command. Page 248.

When a target hit is obtained on a target which requires several hits for

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demolition or destruction, firing is continued on the same settings, changing if necessary the aiming point; a target hit is [taken for] a round short of

the target or a round beyond the target. Page 249.

On targets located within dangerous proximity of our own troops, the initial elevation is increased by 200 meters. When the round is beyond the target, the burst is brought nearer to the target by a burst (craters) reference or successive range bounds of 100 meters.

<u>Page 11:</u>

Having captured the target in the 100 meter bracket, firing is continued according to the general rules. Page 252.

[FIRE] UPON MOVING TARGETS

Movement of the target depending on the approach angle (the angle between the direction of target movement and the direction to the weapon) can be:

Frontal--at angle of approach of 0-30 degrees and 150-180 degrees Flanking--at angle of approach of 0-30 degrees and 60-120 degrees Oblique--at angle of approach of 30-60 degrees and 120-150 degrees

For allowance of travel, for the flight time of the shell, lateral lead is entered by means of aiming toward the target movement.

		
Direction of Target Movement	Frontal and Oblique	Flanking
Target Range		•
From Direct Shot Range to One-Half of Direct Shot	Aim at	1/2 figure
Range	the front face	Lead one-half of the figure
From One-Half of Direct Shot Range to 200 Meters	Aim at the center	Aim at the front face
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NOTE: When the target is moving directly toward the gun, the lead is not taken, and the gun is aimed at the center of the target. During oblique and frontal target movement at a speed of more than 20 kilometers per hour, the size of the lead is half the figure.

Fire is opened at an elevation, responding to the target range. Page 255.

For destruction of the target, firing is conducted at the greatest speed, and direction and range are corrected after each round. Upon deviation of the fall of the shells (routes), the direction deviation is measured from the target center or a vulnerable place. Page 256.

Having received the lateral deviation, the correction is entered with the help of the lateral adjustment correction scale (panorama firing angle) while not changing the aiming point, or the aiming point is changed by the amount of the obtained deviation in the opposite direction. Page 257.

The range is corrected with the change of the altitude aiming point (when firing from all guns) or the change of the elevation setting (with OP-4M-45).

When correcting the range with the change of the elevation setting, the position of the aiming point is not changed, and the size of the elevation correction for howitzers equals 200 meters.

At firing ranges less than half the range of a direct shot, a correction is made only with the change of the altitude aiming point with the calculation of obtaining a direct hit in a vulnerable spot of the target.

DIRECT FIRE IN CONDITIONS OF BAD VISIBILITY UPON STATIONARY, UNILLUMINATED TARGETS

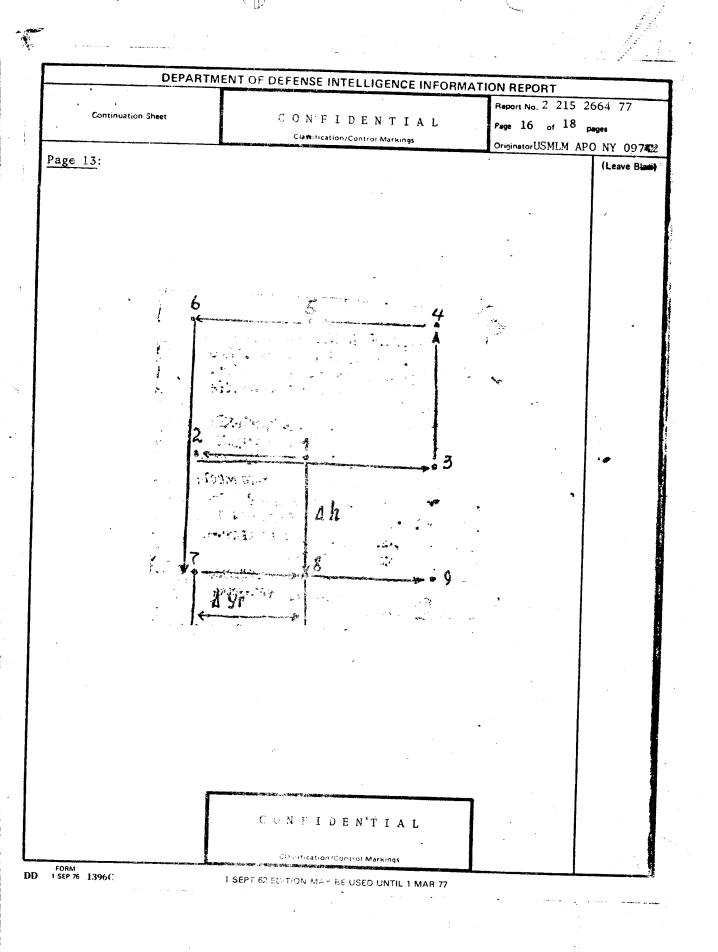
In the course of fire, laying for direction is re-established by the gun collimator (the point of aim), elevation [is re-established] by the clinometer. The range bound is 50 meters, and the firing angle bound is 0-01, when firing is conducted up to 1000 meters; at a range of more than a 1000 meters, the range bound is 100 meters, and the firing angle bound is 0-02.

DUG-size of the firing angle bound; DH-size of the range bound (Point 1-corresponds to the computed target settings).

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RULES FOR GIVING COMMANDS OF TARGET DESIGNATION:

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The target is indicated briefly and clearly: "LEFT EDGE OF THE GROVE, GUN NEAR THE DARK BUSH"; "REFERENCE POINT 3, TO THE RIGHT (LEFT) 40, HIGHER (LOWER) 5, LOG EMPLACEMENT."

FOR OPENING OF FIRE THE FOLLOWING IS COMMANDED:

- 1. "UPON SUCH AND SUCH A TARGET."
- 2. "WITH CUMULATIVE (FRAGMENTATION."
- 3. "SUCH AND SUCH A FUSE."
- 4. "SUCH AND SUCH A CHARGE."
- 5. "WITH SUCH AND SUCH A SCALE."
- 6. "ELEVATION 0-00."
- 7. "AIM SOMEWHERE."
- 8. "LEAD IS HALF A FIGURE (FIGURE)" -- during firing upon moving targets.
- 9. "ONE SHELL."
- 10. "FIRE!"

DURING FIRING WITH A PANORAMIC-TYPE SIGHT, THE FOLLOWING IS COMMANDED (AFTER THE COMMAND):

- 1. "DEFLECTOR 0-00."
- 2. "LEVEL 0-00."
- 3. "FIRING ANGLE--30-00."

Page 14:

BRINGING THE BATTERY FROM CONSTANT TO INCREASED COMBAT READINESS. PREPARATION OF EQUIPMENT.

Inspect the guns, check the operation of the elevating, traversing, and balancing mechanisms. Adjust the sighting equipment (zero sight settings, barrel angle of elevation). Verify the adjustments for the introduction of the line of correction.

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Check the counter-recoil mechanisms (absence of leakage, presence of seals, pressure in the recoil pressure gauge). Remove the [illegible] from the ammunition carried on the gun. Check the fuel in the vehicles and prime movers. Perform an inspection of the equipment, and get it ready for the march. Check the working order, and adjust the optical equipment and fire director. Check the means of communication and the charging of the batteries. Check the condition and operation of the instrument illumination. Prepare the guns for the march. Obtain three [issues?] of dry rations.

BRINGING THE BATTERY INTO COMPLETE COMBAT READINESS FROM INCREASED COMBAT READINESS. PREPARATION OF EQUIPMENT.

(On leaving for the reserve area)

Remove dust and dirt from the parts and mechanisms of the guns.

Wipe the bore dry. Check the operation of the elevating, traversing, and balancing mechanisms. Dismantle the breech-block, check all the parts, lubricate with a thin layer of grease, assemble and check the operation of its mechanisms, check the protrusion. Check the correctness and reliability of the muzzle brake mounting and the rods and cylinders of the counter-recoil mechanisms. Check the counter-recoil mechanisms (absence of fluid leakage and the presence of seals). Inspect the sight, check the zero settings and zero sighting lines. Inspect the geodetic survey equipment, reconnaissance equipment, the fire director, and the means of communication.

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