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1st Lt Inf  
Ass't Cu



# Anti Aircraft Artillery Notes

Number 16  
7 February 1945

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HEADQUARTERS  
EUROPEAN THEATER of OPERATIONS

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EUROPEAN THEATRE OF OPERATIONS  
UNITED STATES ARMY

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ANTI-AIRCRAFT ARTILLERY NOTES)  
NUMBER.....16)

AP0 887  
7 February 1945

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I. INTELLIGENCE.

1. Subject: Summary of Action for Week ending 1 February 1945 (SECRET).  
a. Source: AA Section, Headquarters Twelfth Army Group.

	No of Raids	No of Planes	<u>Claims</u>		<u>Confirmed Claims</u>	
			Cat I	Cat II	Cat I	Cat II
<u>First Army</u>						
250600 Jan - 010600 Feb	1	1				
Previous Totals	1,730	4,233				
Cumulative Totals	1,731	4,234			589½	311
<u>Third Army</u>						
250600 Jan - 010600 Feb	1	1				
Previous Totals (Corrected)	2,362	5,291				
Cumulative Totals	2,363	5,292			420	132
<u>Ninth Army</u>						
250600 Jan - 010600 Feb	8	8				
Previous Totals	840	1,511				
Cumulative Totals	848	1,519			139	120
<u>Totals for Week</u>	10	10	0	0		
<u>Cumulative Totals, Twelfth Army Group</u>	4,942	11,045			1,148½	563

Note: First Army totals from D-Day. Third Army totals from 1 August 1944. Ninth Army totals from 5 September 1944.

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b. Source: Headquarters, Seventh Army

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	<u>Raids</u>	<u>Planes</u>	<u>Cat I</u>	<u>Cat II</u>	<u>Cat I</u>	<u>Cat II</u>
250600 Jan to 010559 Feb	2	5	1	3	1	3
Previous Totals	243	917			58	48
Cumulative Total	245	922			59	51

c. Source: Headquarters, IX Air Defense Command.

(1) Action against Enemy Aircraft

<u>Unit</u>	<u>Number &amp; Type aircraft</u>	<u>Area of Attack</u>	<u>Claims</u>	
			<u>Cat I</u>	<u>Cat II</u>
31st AAA Brigade	1 Unknown	Marseille	0	0
167th & 112th AAA Gun Bn				
50th AAA Brigade	1 Unknown	Camp Brasschaet	0	0
136th AAA Gun Bn				
<u>TOTALS FOR WEEK</u>			0	0

(2) Action against Pilotless Aircraft in Antwerp Area.

<u>Unit</u>	<u>Date</u>	<u>Number Targets plotted both within &amp; out of range of AAA</u>	<u>Number of targets engaged</u>	<u>Average speed in MPH</u>	<u>Confirmed Claims</u>	
					<u>Cat A</u>	<u>Cat B</u>
50th & 56th AAA Brigades	JAN					
	25-26	34	23	353	3	6
	26-27	19	16	370	4	7
	27-28	45	33	350	7	8
	28-29	35	17	350	0	5
	29-30	50	24	350	4	13
	30-31	45	21	340	3	12
	31-Feb 1	92	33	350	9	12
<u>TOTALS FOR WEEK</u>		320	167		30	63
<u>PREVIOUS TOTALS</u>		1569	1223		148	621
<u>TOTALS FROM BEGINNING OF OPERATIONS TO DATE</u>		1889	1390		178	684

2. Subject: Resume of activity for period 25 January to 1 February 1945

Source: AA Section, Headquarters Twelfth Army Group. (SECRET)

a. The scale of enemy effort over our area continued to decrease as only ten enemy aircraft are reported during the week ending 010600 February. The appearance of the enemy aircraft was entirely for reconnaissance purposes, only one lone attack is reported and that by a single plane strafing near Weisweiler. The enemy showed his concern regarding our interest in the Cologne area because eight of ten aircraft operated over Ninth Army area fronting on the critical zone. One plane was over First Army area east of Liege; one plane was over Third Army area vicinity Bastogne. The week's activity supports the belief that the enemy must conserve strictly in fuel and equipment on this Front while diverting all possible resources to the threat at the Eastern Front; AAA units were able to engage fleeting targets only briefly and no claims were made.

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b. With one exception, all enemy aircraft occurred during hours of darkness at varying times from 1925 until 0520 hours. The one strafing attack was carried out at 0209 hours. The one daylight sortie was at 1643 hours in the vicinity of Eschweiler. This aircraft immediately took cover behind clouds when engaged by AAA fire.

c. Six aircraft were recognized as follows: four Ju 88's, and one each FW 190 and Me 410. A jet-propelled plane was sighted, type not specified.

d. All aircraft operated singly. Heights reported vary from strafing levels up to one plane at 15,000 feet over Maastricht IAZ. Low cloud ceilings enabled the enemy to take advantage of cloud cover.

e. The defensive attitude adopted by the enemy on this Front is reflected by the conservative action of the enemy air force. Aside from the effort to provide air reconnaissance, the enemy air force may be expected to turn its main attention to the Eastern Front and await developments on this Front.

3. a. Subject: Resume of Activity for period 18 January - 25 January 1945 (SECRET).

Source : AA Section, Headquarters, Seventh US Army.

Enemy air effort was again held to a minimum of activity on Seventh Army Front largely due to the weather. From the number of sorties which operated during periods of only fair visibility, it would seem that the enemy intended to participate at least as strongly as during December when some 300 sorties were flown against Seventh Army. Again as last week approximately half of the aircraft identified were ME 262's with ME 109's accompanying them on many missions presumably to engage in diversionary attacks. The enemy also used P-47's, this time in an area in XV Corps which had been relatively quiet for the previous two weeks. These aircraft strafed only, causing some casualties. Noses and tails were painted red, and black crosses were seen on the wings.

b. Subject: Resume of Activity for period 6 January - 25 January 1945  
: on VI Corps Front (SECRET)  
Source : 35th AAA Brigade, Seventh US Army.

(1) The most noticeable occurrence during the period under review was the frequent employment by the enemy of Jet-Propelled aircraft. Out of the 35 alerts where AA engaged, Jet-Propelled planes were used in 23. To further show the use of this Jet-Propelled Me-262 A/C by the enemy a total of 124 planes were engaged of which 70 were "Jets;" however, eight "Jets" were the most in any flight. Another notable incident was the appearance for the first time in this sector of an Me-163, heretofore, all "Jets" had been identified as Me-262's.

(2) Tactics used by the Jet-Propelled aircraft were a noiseless glide in to target. On engagement they climbed almost vertically and at great speed.

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(3) Three Jet-Propelled Me-262s were shot down during the period and three were probably destroyed. On January 14 at 1109A, on January 14 at 1142A, and on January 23 at 1515A the 463rd AAA Bn, the 398th AAA AW Bn (SP) and the 572nd AAA AW Bn (SP), respectively, shot down an Me-262 and all were witnessed by individuals and forward observers to crash over front lines in enemy territory.

(4) Due to the numerous engagements, an individual synopsis of each raid would be impracticable; however, listed below are the actions with date and time where results were obtained and indications of units attaining results:

- (a) 101554A: 1 probably destroyed (1 Cat II) - credited to 398th AAA AW Bn (SP).
- (b) 131609A: 1 destroyed (1 Cat I) - credited to 463rd AAA AW Bn.
- (c) 141142A: 1 destroyed (1 Cat I) - credited to 398th AAA AW Bn (SP)  
1 probably destroyed (1 Cat II) - credited to 431st AAA AW Bn.
- (d) 231143A: 1 probably destroyed (1 Cat II) - credited to 398th AAA AW Bn (SP)  
1 probably destroyed (1 Cat II) - credited to 572nd AAA AW Bn (SP)
- (e) 231424A: 1 probably destroyed (1 Cat II) - credit shared by 572nd AAA AW Bn (SP) and 398th AAA AW Bn (SP)
- (f) 231515A: 1 destroyed (1 Cat I) - credited to 572nd AAA AW Bn (SP)

## II. OPERATIONS.

4. Subject: Action of the 217th AAA Gun Bn (M) at Bastogne (SECRET)  
Source: AA Section, Headquarters, Twelfth Army Group.

a. At 0030 hours on the morning of 30 Dec 1944, the 217th AAA Gun Bn (M), then providing AAA defense for Toul, France, under the command of Lt Col C. H. Armstrong, received orders to proceed to Arlon, Belgium, on an undisclosed mission. The battalion commander, together with his four battery commanders immediately proceeded to Arlon. Upon arrival, the battalion commander was given the mission of providing the AAA defense of Bastogne. At this time the 101st Airborne Division in Bastogne was doggedly defending the city against determined enemy attacks. The situation around Bastogne was very fluid, and of the three possible routes leading into the town the battalion commander could not be told which one his battalion could use. Lt Col Armstrong left instructions at Arlon for the battalion, and proceeded, with his four battery commanders and battalion S-3, to Bastogne to make a reconnaissance for positions.

b. The road march from Toul to Bastogne via Neufchateau (the route the battalion was directed to follow) was over one hundred and fifty-five miles of ice-covered roads. The battalion left Toul at 0930 hours on the morning of the 30th Dec; the first battery arrived in Bastogne at 2200 hours and the last battery arrived at 0030 hours on the morning of 31 Dec. In addition to the hazard of the ice-laden roads, the battalion was forced to cover a large portion of the distance in strict blackout, and the route of approach at

[REDACTED]

one point near Bastogne was less than 1500 yards from the nearest German positions. (See Figure 1). The battalion arrived in Bastogne in excellent condition, the only mishaps being the temporary loss of two M-4 tractors and one 90 mm gun due to the icy roads. This equipment was recovered in good shape the following day. Three batteries were ready for action at 2400 hours on the night 30 Dec and the fourth battery at 0200 hours, 31 Dec.

c. The 32nd AAA Group of the III Corps procured two bull-dozers for use by the battalion in digging in their equipment, and the balance of the night was spent preparing positions. The battalion was enthusiastically greeted by the 101st Airborne Division which had been subjected to damaging nightly attacks by the German Air Force.

d. Bastogne was still an unrestricted area on the night of 31 Dec, though enemy aircraft were quite active. Friendly planes were in the area, but a number of flights not showing IFF indicated hostile activity. However, only one hostile act was committed. Battery A was tracking an incoming formation dropping window and showing no IFF. Permission to fire was requested, but not granted because of friendly flights in the area. Shortly after permission to fire was refused, a bomb, believed to be a 200 pounder, fell near the battery area, jarring the radar off target, and thereby preventing engagement.

e. The night of 1-2 Jan saw intense enemy aerial activity and resulted in heavy losses to the GAF. Fortunately, the area had been declared an IAZ which permitted complete freedom of action by the AAA battalion. Hostile raids began at 1844 hours and lasted until 0145 hours the next morning. The planes came in at an average altitude of 1500 yards, but some were engaged as low as 300 yards. There were fifty-one separate engagements by the 90mm guns during this period, and twelve enemy planes were definitely destroyed. At 0817 hours the next morning, .50 caliber machine guns of the battalion engaged six more hostile planes, of which two were definitely destroyed. During the period 1844 to 0817 hours a total of fifty-seven enemy aircraft were engaged, of which fourteen were definitely destroyed. 800 rounds of 90mm ammunition M43A3, and 32 rounds of POZIT ammunition was expended by the 90mm guns. The .50 caliber machine guns expended 450 rounds of ammunition in knocking down their two planes. The 90mm engagements were not favorable for the use of POZIT ammunition because of the extremely low angle of approach.

f. During the action two gun sites were strafed and hit by AP bombs, but suffered no damage or casualties. In one battery the M-7 director went out of action and was replaced by the battalion spare M-7. The replacement was completed at 0029 hours and at 0030 hours the battery was engaging another German plane. Two separate ammunition convoys were dispatched for additional ammunition. The radars of the battalion performed exceptionally well and were able to make pick ups at 300 yards altitude with no difficulty. Throughout the action the AAA batteries were under intense German artillery fire. Wire communication was impossible to maintain because of the hostile shell fire, but communication with the batteries was maintained with the SCR-543.

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g. After this single night's action, not another German plane appeared over the town of Bastogne. The Luftwaffe had evidently decided against any more efforts that would extract such a toll of attrition.

h. Although the night of 1-2 Jan saw the end of hostile aerial activity, it marked the beginning of a period of intense shelling of the town by the Germans. From the 2nd to 15th Jan the battalion was subjected to severe enemy fire. The battalion headquarters and batteries A and B were forced to move to alternate positions because of the hostile artillery fire. Maintenance of wire communication was impossible. One shell demolished the building housing the headquarters battery personnel but no casualties were suffered as all personnel were away from the building at the time. Another shell landed on a machine gun position, and completely destroyed the gun. One crew member was evacuated and the other slightly wounded. A 155mm FA battery set up near one of the AAA batteries and began to draw considerable counter-battery fire, a goodly portion of which landed in the AAA battery's area. One shell scored a direct hit on an SCR-584, completely destroying it. Three men were inside the radar at the time; one was wounded, the other two escaped unhurt. Data transmission cables received extensive damage.

i. The following casualties were the final result of the German artillery fire:

1 Battery Commander, 1 Warrant Officer and 5 EM were evacuated. (The battery commander has since returned.)

A number of personnel suffered minor shell fragment wounds that were treated by the battalion surgeon.

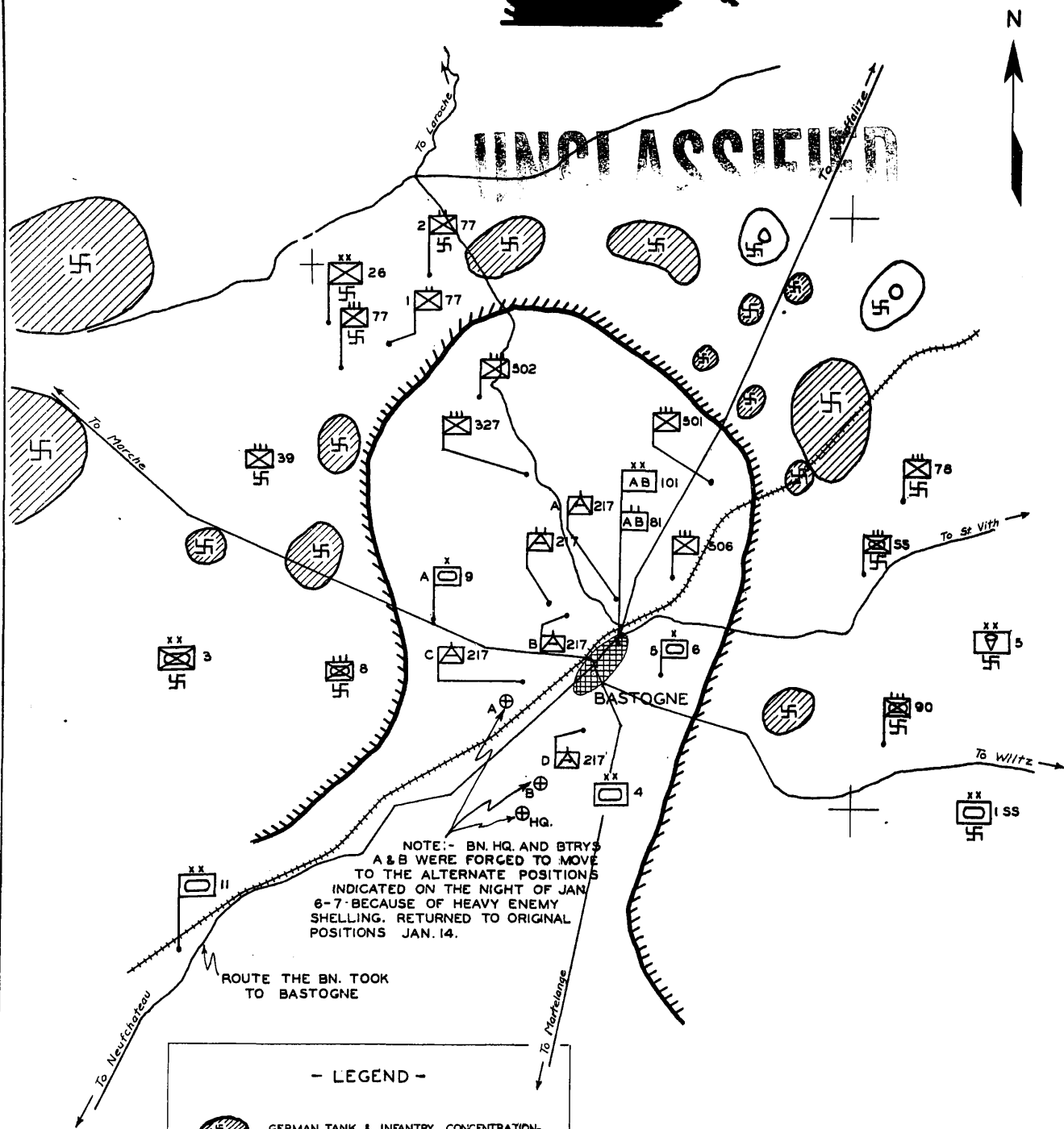
j. The 217th AAA Gun Bn (M) performed its mission of providing AAA defense of Bastogne in a highly creditable manner. Their feat in moving up and occupying positions under the most adverse conditions, discouraging the Luftwaffe from further activity after a single night's action, and maintaining a readiness to fire while under sever shelling, reflect the highest state of training and morale.

k. As a result of the experience gained in the above related actions, Lt Col Armstrong presents the following conclusions and recommendations:

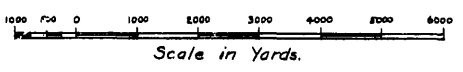
(1) Access to a bull-dozer is essential for a gun battalion emplacing under shell fire.

(2) It is imperative for a unit when moving into a new area to locate the nearest ammunition supply point and to verify that the type of ammunition desired is on hand.

(3) Application of basic training principles was the greatest contribution toward the successful accomplishment of the mission.



**THE BASTOGNE BULGE**  
**31 DECEMBER 1944**  
 (TAKEN FROM G-2 REPORT 101<sup>st</sup> AB DIV.)



**FIG. 1**



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5. Subject: Action of the 462nd AAA AW Bn (M) with the 2nd Infantry Division (SECRET)  
Source : AA Section, Headquarters Twelfth Army Group.

a. At the time that the German counteroffensive took place in December, the 2nd Infantry Division found itself in the path of a German attempt to breakthrough to Liege. Although this attempt gained some success initially, it was blunted, and from then on the division held the northern shoulder of the "Bulge." In this hot corner, the 462nd AAA AW Bn(M), attached to the 2nd Division, played a noteworthy part.

b. In the early stages of the drive, units of the 462nd participated in a number of ground actions. One of the most outstanding of these was an engagement of enemy armor by a half-track of Battery B.

c. Word was received on the morning of 17 Dec 44 that there were thirty German tanks in Bullingen, and the battery commander of B Battery was ordered to send four M-16 half-tracks to the division CP in Wirtzfeld (see Figure 2). These were immediately dispatched with instructions to report to the division TD officer. As soon as the first half-track arrived in Wirtzfeld, it was given its disposition. The TD officer explained that the Germans were expected from three directions: east, south, and possibly west.

d. The town of Wirtzfeld is located on a high hill overlooking a valley to the south. The half-track was emplaced so that it commanded a clear field of fire for 1500 yards. The half-track commander, Corporal Taylor, soon noticed an M-10 tank destroyer, emplaced some 800 yards south of his position, firing in an easterly direction. He then saw a German light tank about 1200 yards to the southeast firing on the M-10. Opening fire on the tank, he observed the tracers burn into it for a few seconds and then saw it burst into flames. A TD captain ran over to the half-track's position, took a look at the tank through his binoculars, and observed: "Damn good shooting."

e. A short time later, a German Mark VI tank, followed by an armored personnel carrier with 15 Nazi grenadiers approached the burning light tank. The TD captain instructed Corporal Taylor to fire a few bursts at the Mark VI in order to button it up, and then engage the personnel carrier while the tank destroyer polished off the Mark VI. The burst from the half-track produced a ricocheting spray of tracers from the Tiger tank. The fire of the half-track was then shifted to the personnel carrier which immediately burst into flames. While this was going on, the M-10 banged six rounds into the Mark VI Tiger Royal, destroying it. Corporal Taylor was officially credited with knocking out the German light tank and personnel carrier, all of the action taking place before the arrival of the other three half-tracks.

f. In the meantime, the 2nd Division found some of its units in a badly disorganized state as a result of the breakthrough by German armor. By the morning of the 18th of December, stragglers from scattered units had begun to

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stream to the rear. The division rear echelon was formed into two task forces, one of which was commanded by Major Claude G. Turner, executive officer of the 462nd. The mission of task force Turner was to establish a secondary line of defense for the infantry to fall back to if it became necessary. With 105 personnel clerks, four half-tracks, four watercooled MG's, four bazooka teams, and the 23rd Infantry Anti-Tank and Cannon Companies, Major Turner organized the defensive positions of a north-south ridge east of Elsenborn (See Figure 2). The addition of three assault guns and three mobile 81mm mortars from the 741st Tank Battalion made the task force complete.

g. The breakthrough elements failed to penetrate towards Elsenborn further north than Wirtzfeld, and the task force's main mission became that of handling stragglers. The task force CP at the eastern edge of Elsenborn became an information center serving as a meeting point for the 2nd and 99th Division officers coordinating the flank elements of the two divisions. The task force aided in the reorganization of the 3rd Battalion, 23rd Infantry, and when on 23 December, enough elements of that Battalion had returned to take over the secondary line of defense, task force Turner was officially disbanded.

6. Subject: Half-Tracks in Support of Infantry. (SECRET)  
Source: AA Section, Headquarters Twelfth Army Group.

a. The 390th AAA AW Bn (SP), commanded by Lt Colonel Roy A. Tate, attached to the 26th Infantry Division, recently conducted an interesting ground support mission.

b. On 2 January 1945, 2nd Platoon Baker Battery was called upon to fire a ground mission into a wooded area, bounded by two roads, that contained a strong German troop concentration. The area was heavily wooded, making it difficult to obtain a good field of fire and necessitating the half-tracks being placed at a very close range to the objective. A personal foot reconnaissance was made by the Platoon Commander, Lt Hultkrantz, who selected the positions less than eight hundred yards from the objective. (See Fig 3)

c. Lt Hultkrantz decided to back his weapons into position and fire them one at a time, with each succeeding weapon covering the firing unit, so that continuous fire could be delivered. As each weapon completed firing it was to move back out of the area. The mission was fired as planned, using four half-tracks, and expending 2050 rounds of .50 caliber and 20 rounds of 37 mm ammunition.

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d. On the following day the Platoon was called upon to fire into the same area, but it was decided to fire from the other road. (See Figure 3). Again Lt Hultkrantz made a personal foot reconnaissance into the area and decided to use the same tactics. The mission was fired as planned. During this engagement the reconnaissance party and the half-tracks were fired upon by the enemy with small arms at very close range. One cannoneer was killed by rifle fire while servicing an M-16 during firing. Much of the German small arms fire was stopped by the half-track armor. Immediately after firing, the area

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## DISPOSITION OF HALF-TRACKS OF 462 AAA AW BN.(M) IN ANTI-TANK ROLE AND DISPOSITION OF ELEMENTS COMPRISING TASK FORCE TURNER

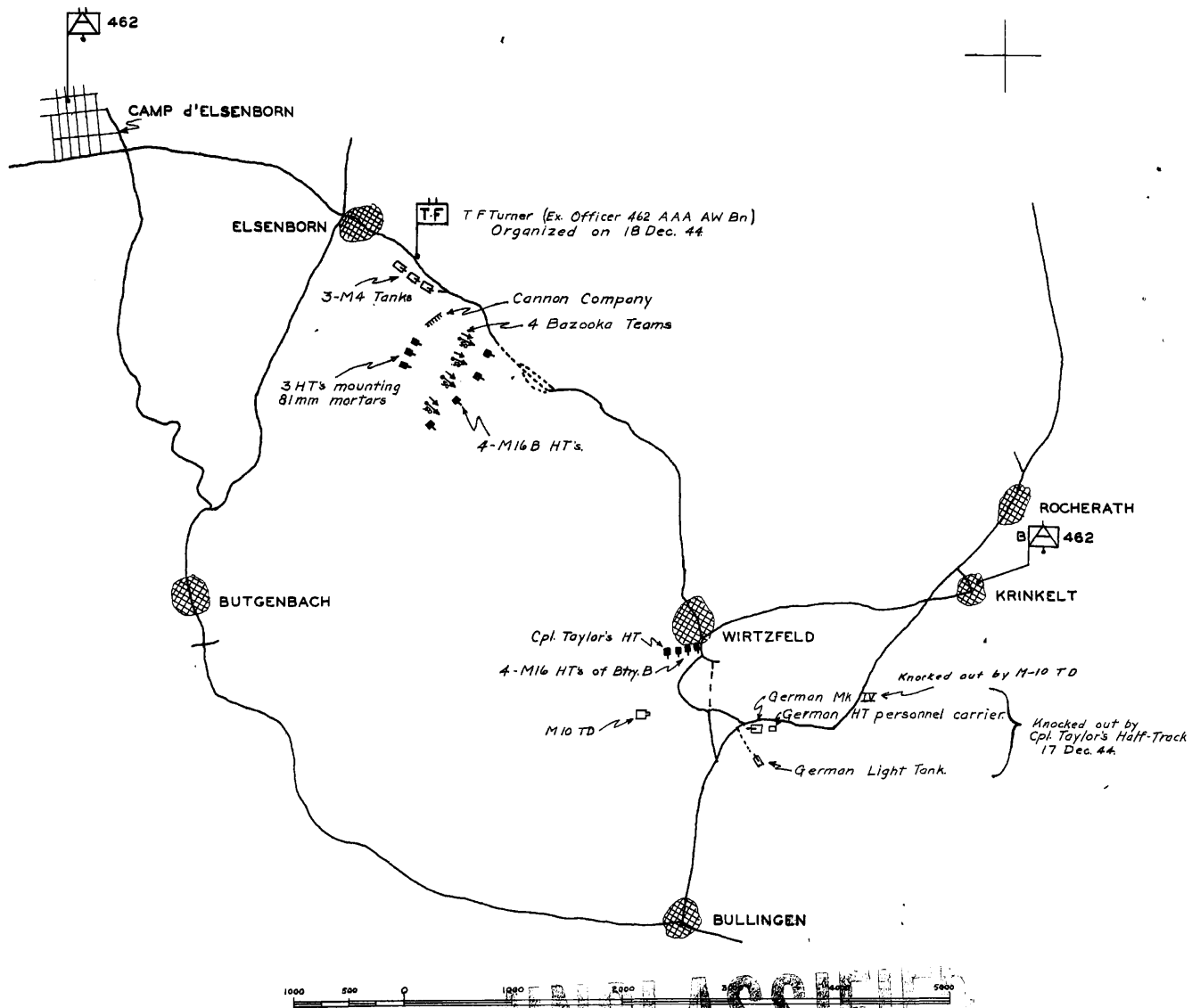
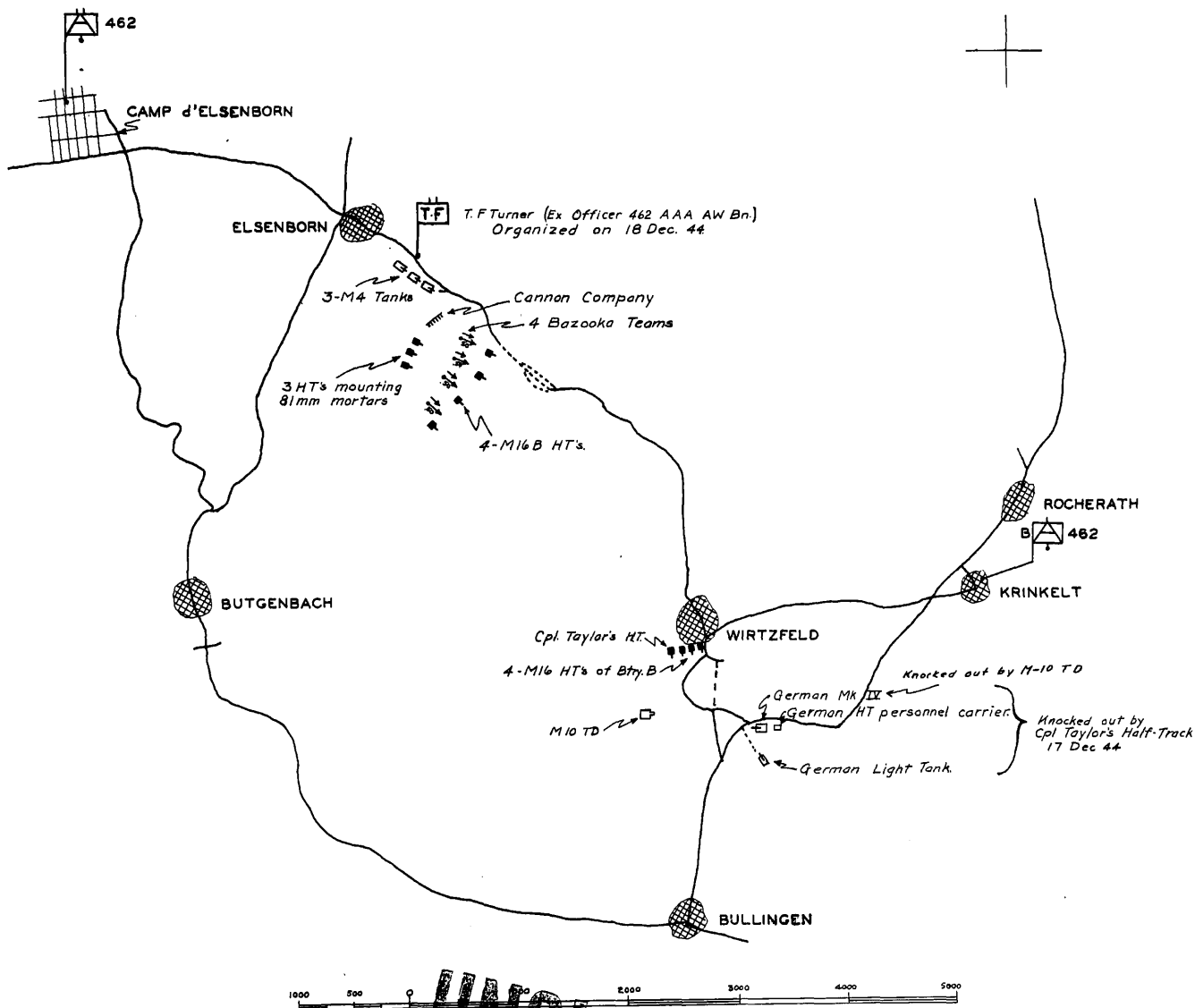


FIG. 2

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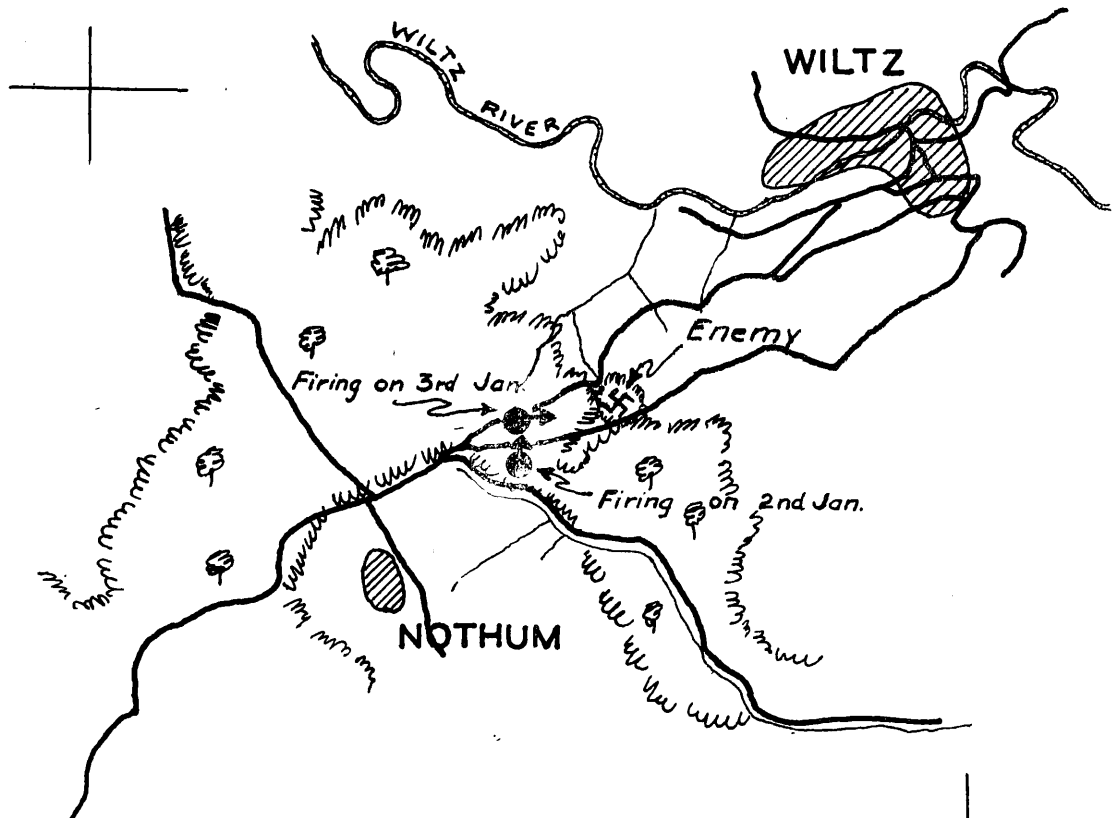
DISPOSITION OF HALF-TRACKS OF 462 AAA AW BN.(M) IN ANTI-TANK  
ROLE AND DISPOSITION OF ELEMENTS COMPRISING TASK FORCE TURNER



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POSITIONS OCCUPIED BY 2ND PLATOON B-BTRY.  
390 AAA AW BN. (SP) ON 2ND AND 3RD JAN. 1945.



- LEGEND -

- AAA Half-track.
- Main Roads.
- Stream.
- Wooded Area

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1000 500 0 1000 2000 3000 4000

Scale in Yards.

**FIG. 3**

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at the road intersection and road leading into it was placed under heavy enemy mortar and artillery fire. The half-tracks were evacuated, however, and damage was caused by the enemy artillery. During the action, 3990 rounds .50 caliber and 38 rounds 37mm were expended.

e. The infantry, after taking the position, reported that 30 Germans were killed and 16 wounded. (Most of the casualties believed to be the result of 37mm tree bursts and the .50 caliber fire). Twenty prisoners were also taken in the area.

f. The following comment is made by Lt Colonel Tate as a result of the action: "A study of the map indicated that firing into this area could not be done from a distance as it is entirely surrounded by woods. It is not recommended that half-tracks should normally be used for ground missions which require taking vehicles into enemy held territory where no cover is available; however, in this instance, since a foot reconnaissance was made and there was no indication of enemy tanks or TD weapons present, it is felt that the firing was justified, and the results satisfactory."

7. Subject: AAA with Task Force Hogan. (SECRET).  
Source: AA Section, Headquarters Twelfth Army Group.

a. When the German Ardennes breakthrough came, and during the ensuing push which almost reached the Meuse, a number of American units were surrounded. Some were liquidated, others managed to make their way back to our lines. Task Force Hogan was one of the latter.

b. Task Force Hogan, commanded by Lt Colonel Samuel Hogan of Pharr, Texas, was encircled in the vicinity of La Roche, Belgium. This task force consisted of approximately 400 men and officers and 60 vehicles, ranging from medium tanks to jeeps. Although counterattacking desperately, they found themselves completely surrounded and isolated. After beating off numerous German attacks and refusing demands to surrender, Lt Colonel Hogan evolved an escape plan which was so successful that all but 20 men of the 400 safely returned to the American lines. The plan, based on thorough ground reconnaissance, necessitated the destruction of all materiel except personal equipment.

c. Providing antiaircraft protection for Task Force Hogan were two half-tracks from the 2nd Platoon of Battery B, 486th AAA AW Bn (SP) under the command of 1st Lt Robert A. Weatherford. The following is Lt Weatherford's narrative report of his experiences:

"When the 54th Armored Field Artillery Battalion was split up into units of one battery with each Task Force, I attached one M15A1 and one M16 to each battery. I had planned to shift from one force to another as the action progressed and I started out with Battery 'C' of this battalion. We moved south on the back roads to LAROCHE (P-4678) where we ran into heavy resistance on the east side of the town. At this time one of my halftracks was second in the column and the other was about eighth. We moved back into the town of LAROCHE and spent the night of the 19th December there. The next morning we received word that we were cut off and moved over to Marcouray (P-4381) to await developments. My vehicles were deployed in support of the other vehicles

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of the Task Force and though we saw German fighter planes on a couple of occasions, we didn't fire on them for fear of disclosing our position. I didn't use the M15A1 or the M16 much for local defense, as most of the action could be handled with small arms. We did clean out some hedgerows during the first day, firing about 400 rounds of cal .50. My men shot a number of Germans with small arms - I know of at least ten.

"On the night of 23 December we heard that help was on the way and again on Christmas Eve, but nothing ever came. The supplies that were supposed to be dropped from the air landed several miles north of us. We lived on the food that we had picked up from an abandoned dump in LAROCHE. These supplies lasted until the morning of the 25th.

"In the afternoon of the 25th December we received orders to destroy all equipment except small arms and prepare to move out on foot. We took the crystals out of the radios and smashed them. The transmitters and receiver were given the same treatment. Since we were in a position where fire and noise were not practical, we had to use other methods in destroying the vehicles. We chopped the tires and tracks with an axe, drained the oil out of the transmissions and the anti-freeze from the radiator and filled both with water, smashed the distributor, and tore out all of the wiring. About all we could do to the 37mm tube and cal .50 barrels was to damage the threads. All of the remaining gasoline was poured out on the ground. The ammunition was buried in an old well in the village.

"We left the town on the night of the 25th December in small patrols of about twenty-three men and one officer. I had all of my men, which were fifteen, plus six men from the 54th Armored FA Battalion. All of us got through except one of my sergeants, who I believe was wounded by artillery fire shortly after we left town. This man, Sgt Sawtelle, however, reported back to this unit three days later and was not wounded. My platoon sergeant was slightly wounded but managed to make the trip with some assistance. One of the men carried that two hundred and twenty-five pound sergeant a good deal of the way. We walked for fourteen hours and covered about twenty-three miles in the darkness, encountering friendly troops at SOX (P-4290) at daylight. We went right through a German artillery battery - we could hear the battery executive giving firing orders. The march was about as tough as some we took back in the States while training.

"The worst part of the whole thing was the mental strain of watching and waiting. The men stood up excellently, physically, but were very tired before reaching our lines. Morale was very high during the entire period and discipline was superior all the time.

"We lost one M15A1, one M16, one  $\frac{1}{4}$ -ton truck, and all equipment on them."

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~~TOP SECRET~~

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8. Subject: Letters of Appreciation Received by 231st Searchlight Battalion. (CONFIDENTIAL)  
Source: Headquarters, IX Air Defense Command; 47th AAA Brigade.

a. It is a distinct pleasure for me to extend the thanks of all the combat personnel of this Group for the cooperation that we have received from your platoon stationed on our field. At this time, when we must have night flying, not only the cooperation, but also the sincere effort and the immediate steps you take in giving us the full benefit of your light, is a matter of deep concern to us and appreciated by us. The cone that you place over the field at our disposal on request is a welcome beacon for our aircraft to return to. The fact that we know that within two seconds we may have a beam down our runway upon request or a cone over our field is a comfort that is unexplainable.

Although these do not seem to you to be directly aiding the war effort, you are indeed doing an excellent job for us and aiding us to carry the war to the enemy. You are giving us your direct support and it is warmly appreciated. The work that you men have done on this field has been of the highest caliber. It is particularly reassuring to know that we have your lights at our disposal in the event that the enemy should decide to pay us a night visit - which is not improbable now that jet-propulsion has reached its day.

Your willing and eager assistance given us is sincerely appreciated by this Group.

/s/ John S. Samuel  
JOHN S. SAMUEL  
Colonel, Air Corps  
Commanding  
322nd Bomb Group

b. It is with a great deal of pleasure and sincerity that I write this letter of appreciation to you, and through you, to the men that you command.

Your men who occupy the remote corners of our airfield in position for defense against enemy attacks are too often forgotten in the course of our everyday operations. This is even more true since the bombing raids of the Luftwaffe have become memories.

Just a short while back, however, we had occasion to be reminded of their presence when your searchlights came to the aid of some of our aircraft. Fourteen Havocs from another Group, returning from a mission, were caught in a furious rainstorm. They called our field for an emergency landing. Our field lights were completely blanketed from view by the heavy rainclouds. Only the beams of your lights were able to cut through to guide the aircraft stranded overhead. They were an invaluable help in saving the aircraft and the lives of the men in them.



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This is just one example among many where you have come to the aid of our aircraft. The men in my Command join me in expressing most sincere appreciation for the fine work you have done.

/s/ Theodore R. Aylesworth  
THEODORE R. AYLESWORTH  
Colonel, Air Corps  
Commanding  
Station A-55

c. The platoon of your organization stationed at this airfield have rendered this group invaluable assistance in our operations. On several occasions aircraft returning from combat missions have been directed to this field by the searchlights of this platoon. They have at all times exhibited a maximum of cooperation with us in carrying out our combat operations as well as night flying training. Such cooperation is indeed commendable. It is such cooperation on the part of all units that will bring the war to a speedy finish.

It is desired that this letter be brought to the attention of all personnel of this platoon so that they may be aware of my appreciation as well as that of every combat crew man of this organization for the assistance they have rendered to us, enabling us to complete our mission.

/s/ Thomas G. Corbin.  
THOMAS G. CORBIN  
Colonel, Air Corps  
Commanding  
386th Bomb Group

9. Subject: Antiaircraft Weapons in Ground Support Roles. (CONFIDENTIAL)  
Source: 35th AAA Brigade; 5th AAA Group; of Seventh US Army.

a. For the drive of the VI Corps from the Riviera to the Mozelle River, LAA protection was provided entirely by the three (3) self-propelled battalions operating in direct support of the three (3) American Divisions. These battalions, the 106th AAA AW Bn (SP), commanded by Lt Colonel Henry H. Arnold, Jr, with the 45th Inf Division; the 441st AAA AW Bn (SP), commanded by Lt Colonel Thomas H. Leary, with the 3rd Inf Division; the 443rd AAA AW Bn (SP), commanded by Lt Colonel Werner L. Larson, with the 36th Inf Division were under the operational control of the 5th AAA Group, commanded by Colonel John C. Henagan.

b. Early in the drive considerable thought and experimentation was encouraged and undertaken to evolve a sound policy for the use of these AA weapons in a ground support role without jeopardizing the normal AA mission. Factors influencing this decision were (1) weakness of the enemy air effort, (2) the mobility of the front, (3) the mobility and the fire power of the half tracks, (4) the scarcity of artillery ammunition and (5) as one Division Commander put it, "Every gun that isn't moving should be shooting."

[REDACTED]

[REDACTED]

c. As early as D plus 1, M-16's of the 10th AAA AW Bn (SP) were moving with and reinforcing mobile patrols and road blocks. Out of this early experimentation grew a conviction that in certain planned operations the weapons can perform superior service, but there are also limitations, such as vulnerability to all types of fire, high silhouette which is not easily concealed, the need for level or properly sloping ground from which to fire, the large turning radius necessary for the half-tracks, the inability to fire forward due to mask of the cab, and the fact that the mount is easily demobilized in mud - if a position cannot be vacated quickly it is not tenable.

d. One of the most effective missions has been in effect "very close artillery support" with fire controlled by the Infantry Commander. When the 45th Inf Division made the initial crossing of the Moselle River at Epinal, the half tracks of the 106th AAA AW Bn (SP) were emplaced adjacent to the river and sprayed the enemy positions across the river while the assault troops were crossing and very effectively neutralized enemy small arms fire. These same tactics were employed by the 441st Bn in support of the 3rd Division's crossing of the Meurthe River at St Die. Numerous missions of this type have been fired by each of the battalions with very good effect.

e. Flank coverage during an attack has been widely used throughout the Corps Sector. The 441st AAA AW Bn (SP) and the 443rd AAA AW Bn (SP) have each gone as far as to deploy three (3) complete sections with each RCT at times. Usually one section moves with each Infantry Battalion and is immediately available for use. It is necessary in this case to place an AA Officer in command of each section, which depletes the officer personnel for the remainder of the battery. If the tempo of the enemy air activity increases appreciably this commitment should be re-examined. In all cases observed fire is used to the extent that a target area, such as a wood, building or strong point is designated within the tracer limits of the ammunition, but actual results are generally unobserved.

f. The key to successful operation has been careful planning and close coordination. These battalions have developed coordination with other arms to the extent that they have been able to participate successfully in TOT (Time on Target) shoots on occasion.

10. Subject: Changes affecting the use of FT90-C-3 (UNCLASSIFIED)  
Source : Office of Theater AA Officer, Hq European T of Opns, US Army.

a. It has been noted that Firing Tables FT90-C-3 for Gun, 90mm, AA, M1 firing shell, HE, M71, Projectile, APC, M82, and Shot, AP, M77, are in the hands of certain AAA units in this theater.

b. It is pointed out in Change #3, dated October 1944, to FT90-C-3, that for the M-1 Gun on Gun Mounts M1, M1A1, and M2, FT-90-B-3 should be used instead of the data contained in FT90-C-3.

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[REDACTED]

[REDACTED]

**UNCLASSIFIED**

III. EQUIPMENT

11. Subject: AAA Ammunition Expenditures for January (SECRET)  
Source: AA Section, Headquarters Twelfth Army Group.

With the decline of enemy air activity during January following the all-out effort on the 1st of the month, ammunition expenditures by AAA units of Twelfth Army Group dropped to the lowest point since September 1944.

In AAA roles, 90% of the 40mm, 37mm, and .50 caliber ammunition was expended on New Year's Day. Apart from this, the only notable fact was the large 90mm expenditure by Ninth US Army in field artillery missions, most of which were performed by the 135th and 141st AAA Gun Battalions (M).

Expenditures are summarized in the following table:

<u>First Army</u>	<u>90mm</u>	<u>40mm</u>	<u>37mm</u>	<u>.50 cal</u>
AAA role	818	7,784	1,360	183,773
Other than AAA	539	0	0	125,760
Total expenditure	1,357	7,784	1,360	309,533
Average daily expenditure	44	251	44	9,985
Rounds per gun per day	0.3	0.4	0.2	2.6

<u>Third Army</u>				
AAA role	4,888	8,011	3,570	239,578
Other than AAA	96	2	1,060	97,640
Total expenditure	4,984	8,013	4,630	337,218
Average daily expenditure	161	258	149	10,878
Rounds per gun per day	1.3	0.4	0.5	2.5

<u>Ninth Army</u>				
AAA role	540	8,362	1,577	260,815
Other than AAA	9,533	0	0	6,900
Total expenditure	10,073	8,362	1,577	267,715
Average daily expenditure	325	270	51	8,636
Rounds per gun per day	3.1	0.7	0.8	4.3

<u>Totals for Twelfth Army Group</u>				
AAA role	6,246	24,157	6,507	684,166
Other than AAA	10,168	2	1,060	230,300
Total expenditure	16,414	24,159	7,567	914,466
Average daily expenditure	530	779	244	29,499
Rounds per gun per day	1.4	0.5	0.4	2.9

**UNCLASSIFIED**

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12. Subject: Water Heater (Unclassified).  
Source: Headquarters, IX Air Defense Command; 51st AAA Brigade.

- a. Almost impossible to overemphasize is the desirability of a good supply of hot water for men living in the field, and more often than not, this supply is left up to the individual. This is especially true of small units such as AW crews. The accompanying sketch illustrates how men of F/U No 7, Btry D, 391st AAA AW Bn solved the hot water problem in a simple, effective manner by building a combination stove and water heater for field use.
- b. In this instance, basic materials required were an oil drum, a five-gallon can, three feet of pipe w/union and elbow, and about five feet of hose, none of which would normally prove difficult to find.
- c. Construction is quite simple. As is shown in the sketch that follows, only one water-tight metal-to-metal connection is necessary, this being the joint at the base of the reservoir. As it is not exposed to flame, solder may be used. Better, of course, would be a conventional connection made with a nipple, nuts, and washers, if these fittings are available. The union between the reservoir and fire box affords a quick, easy way to disassemble the unit for movement.
- d. The heater may be as elaborate as materials will allow, however its efficiency depends almost entirely upon how well the "circulation principle" is applied, that is, maximum heating surface and minimum lift, as no pressure is applied. The natural rise of the heated water within the pipe is great enough to force itself through the return hose to the reservoir. The unit pictured proved adequate for the entire section of fourteen (14) men. The fact that the fire is not exposed and that no pressure is present makes it completely safe for use inside a tent.

\* \* \* \* \*

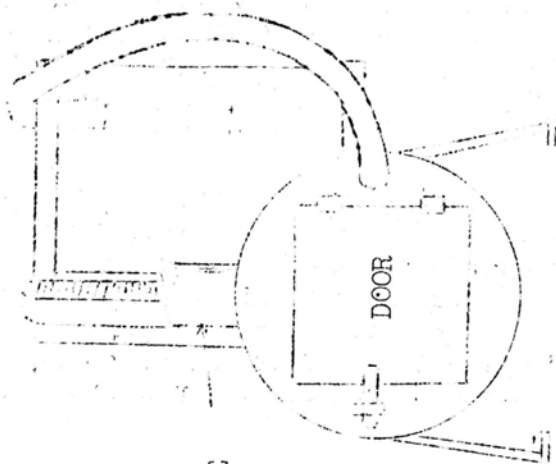
By command of General EISENHOWER:

*R. B. Lovett*  
R. B. LOVETT,  
Brigadier General, USA,  
Adjutant General.

[REDACTED]

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WATER HEATER



FLUE

5 GAL  
CAN  
RESERVOIR

TENT POLE

PLAN

UNION

HOSE OR PIPE

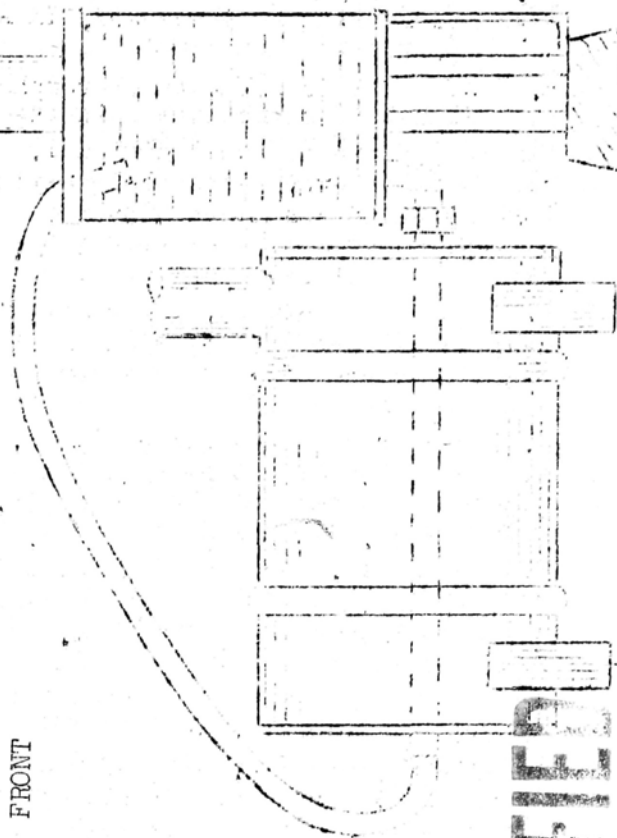
3/4 WATER RETURN

FRONT

15 GAL DRUM

FIRE BOX

PIPE



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JUN 22 1945

on changed to

Authority of S, G-2, WDGS

*Ray M. Stroupe*  
RAY M. STROUPE  
1st Lt inf  
Ass't Custodian



# Anti Aircraft Artillery Notes

Number 17  
14 February 1945

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HEADQUARTERS  
EUROPEAN THEATER of OPERATIONS

HEADQUARTERS  
EUROPEAN THEATER OF OPERATIONS  
UNITED STATES ARMY

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By Authority of:  
CG, European T  
of Opns 70/15  
Inits:.....  
Date :.....

ANTI-AIRCRAFT ARTILLERY NOTES)

NUMBER .....17)

APD 887  
14 February 1945

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I. INTELLIGENCE.

1. Subject: Summary of Action for Week ending 8 February 1945 (SECRET)  
Source : Office of the Theater AA Officer, Headquarters European T of Opns.

a. Due to the light scale of enemy activity during the week ending 8 February 1945, the customary tabular summary is omitted this week. The following list shows the number of raids and number of planes involved:

	No of Raids	No of Planes		No of Raids	No of Planes
<u>First Army</u>			<u>Ninth Army</u>		
010600 - 080600 Feb	7	18	010600 - 080600 Feb	20	26
<u>Third Army</u>			<u>Seventh Army</u>		
010600 - 080600 Feb	4	4	010559A - 080600A Feb	9	18

b. (1) There was no action during the week ending 8 February 1945, against enemy aircraft by AAA units of the IX Air Defense Command. In the Antwerp area units of the 50th and 56th AAA Brigades plotted a total of 406 flying bombs, of which 300 were engaged. Claims during this period total 56 Cat A's and 114 Cat B's.

(2) Confirmed claims for aircraft destroyed and probably destroyed by AAA units attached to IX Air Defense Command total 48 5/6 Cat I's and 30 Cat II's.

2. Subject: Resume of Activity for period 1 February to 8 February 1945  
(SECRET)

Source : AA Section, Headquarters Twelfth Army Group.

a. Enemy air activity over Twelfth Army Group area for the week ending 080600 Feb, as reported through AAA sources, was on an increased scale over that of the previous two weeks, though still at a comparatively light scale. The total effort of 48 aircraft was mainly concentrated in the Ninth Army area and immediately adjacent to the south in V Corps of First Army. Third Army had only 4 enemy sorties during the week and these were scattered, being divided between

the Bastogne area, Luxembourg, and Metz. It appears that the enemy covered Ninth Army area thoroughly by air reconnaissance, indicating his anxiety over our intentions at the entrance to the vital Cologne Plain. Enemy aircraft operated on every day of the period with most of the flights being single planes or pairs. Scattered strafing and bombing attacks occurred, mainly by single planes. AAA claims for the week: one aircraft destroyed, and two probably destroyed.

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b. 20 aircraft operated during hours of daylight and 28 during hours of darkness. Appearances during daylight were divided roughly into three periods -- 0800-0900 hours, around noon, and afternoon from 1430 hours to 1700. Aircraft operating during darkness appeared mostly from midnight on to 0500 hours.

c. Enemy aircraft recognized were; 12 Me 109s, 3 Ju 88s, and 2 He 111s. In addition, it is believed a few Ju 87s participated in ground attack missions against objectives in V Corps during the night of 3 - 4 February.

d. Enemy missions were predominantly reconnaissance. The attacks occurring during the week were mainly by single planes at scattered times and places. All attacks except one occurred during hours of darkness, and only one night attack included flares. The usual report was one of strafing and bombing in forward areas. First Army reports that one enemy aircraft strafed a highway near Thaux at 040105 Feb, killing 4 EM and destroying 2 jeeps. Evidence indicates the aircraft attacked with rockets; craters in cobblestones were  $1\frac{1}{2}$  feet wide by 6 inches deep, while those in hard packed dirt were  $2\frac{1}{2}$  feet wide and 1 foot deep.

e. Enemy aircraft operated at strafing levels up to 8,000 feet. Over forward areas, heights were generally low and within range of AW fire units, while over IAZs farther to the rear, heights averaged about 5,000 - 6,000 feet.

f. There were no indications of unusual enemy tactics. The usual report of evasive action by the individual planes to avoid AAA fire occurred frequently. One enemy aircraft dropped flares over a front line infantry division area and then circled over the area without further hostile acts. Another plane dropped red and white flares (not the proper colors for the period) when engaged; this tactic has been tried on numerous occasions by the enemy.

g. General. GHQ AA Troops, 21 Army Group, reports that Me 262s carried out bombing attacks on the port of Antwerp at 0828 hours on 20 January and again at 0819 and 0843 hours on 24 January. Though Me 262s have previously appeared over Antwerp on reconnaissance missions, these instances were the first attempts to bomb the port. Briefly, the first attempt was by two Me 262s coming in silently from the N and NE; first warning was given by AW fire units engaging the targets. Heights varied rapidly from 700 feet up to 6,000 feet as the aircraft took evasive action all the time. Four bombs were dropped in the dock area and caused casualties and damage. The aircraft split up, one circling and recrossing various parts of the area before disappearing to the east, while the other was lost for some minutes until it was seen and engaged over the Schelde and Flushing areas as it was making for home. The second bombing attack was made by two single Me 262s. In each case the aircraft approached in a glide, with the first losing altitude from 12,000 feet down to 1,500 feet and the second from 8,000 feet down to 1,000 feet. Tactics and speeds were much the same as in the

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first bombing attacks. The Me 262 has been in operations over the British sector more frequently than over our sector, and this activity included many more hostile acts. Comments by GHQ AA Troops on the tactics of the Me 262 are presented herewith:

- (1) "ME 262 TACTICS. There is no guarantee that the Me 262 will continue to operate in the future as it has in the past, since past operations appear to have been largely experimental. But certain types of behaviour by these aircraft which have from time to time been observed, may recur."
- (2) "Types of Attack. At dusk in poor visibility aircraft sometimes came in at 1000 feet and dived to 500.

"During daylight aircraft came in at about 25,000 feet on approximately a 15 degree glide, and dived to 18,000 feet.

"At night aircraft sometimes approached at 12,000 and attacked after diving to 8,000 feet.

"Attacks have been made by two aircraft with a half hour interval in between. Gliding attacks are normal and have been made from 15,000 down to 8,000 or 10,000 down to 3,000 feet. But it must be remembered that any combination of tactics and height is possible, which makes the maximum possible use of the speed of the aircraft and its ability to change speed and height continuously and rapidly."

- (3) "Methods of Deception. Sometimes one Me 262 has come in at 8,000 feet, followed by another at a slightly lower height and about 4,000 yards behind.

"Aircraft have operated in pairs with one showing navigation lights. Alternatively the first has operated at medium height on full power followed by a second much lower and in a silent glide."

\* \* \* \* \*

## II. OPERATIONS.

3. Subject: New Year's AAA Action in XIX Corps (SECRET)  
Source : AA Section, Headquarters Twelfth Army Group.

a. Of the numerous AAA units which were afforded "good hunting" on New Year's Day 1945, when the Luftwaffe made an all out effort against airfields and front line installations few, if any, enjoyed greater success than the XIX Corps AAA units operating in Ninth US Army. After the smoke of battle had cleared and the score tallied, results showed that 32 enemy planes had been destroyed and 11 probably destroyed in the XIX Corps area.

- b. (1) On 1 January 1945 the following AAA units were operating in XIX Corps (see Figure 1).

12th AAA Group

132nd AAA Gun Bn (M)

430th AAA AW Bn (M)

459th AAA AW Bn (M)

571st AAA AW Bn (SP)

2nd Plat, Btry B, 226th AAA S/L Bn

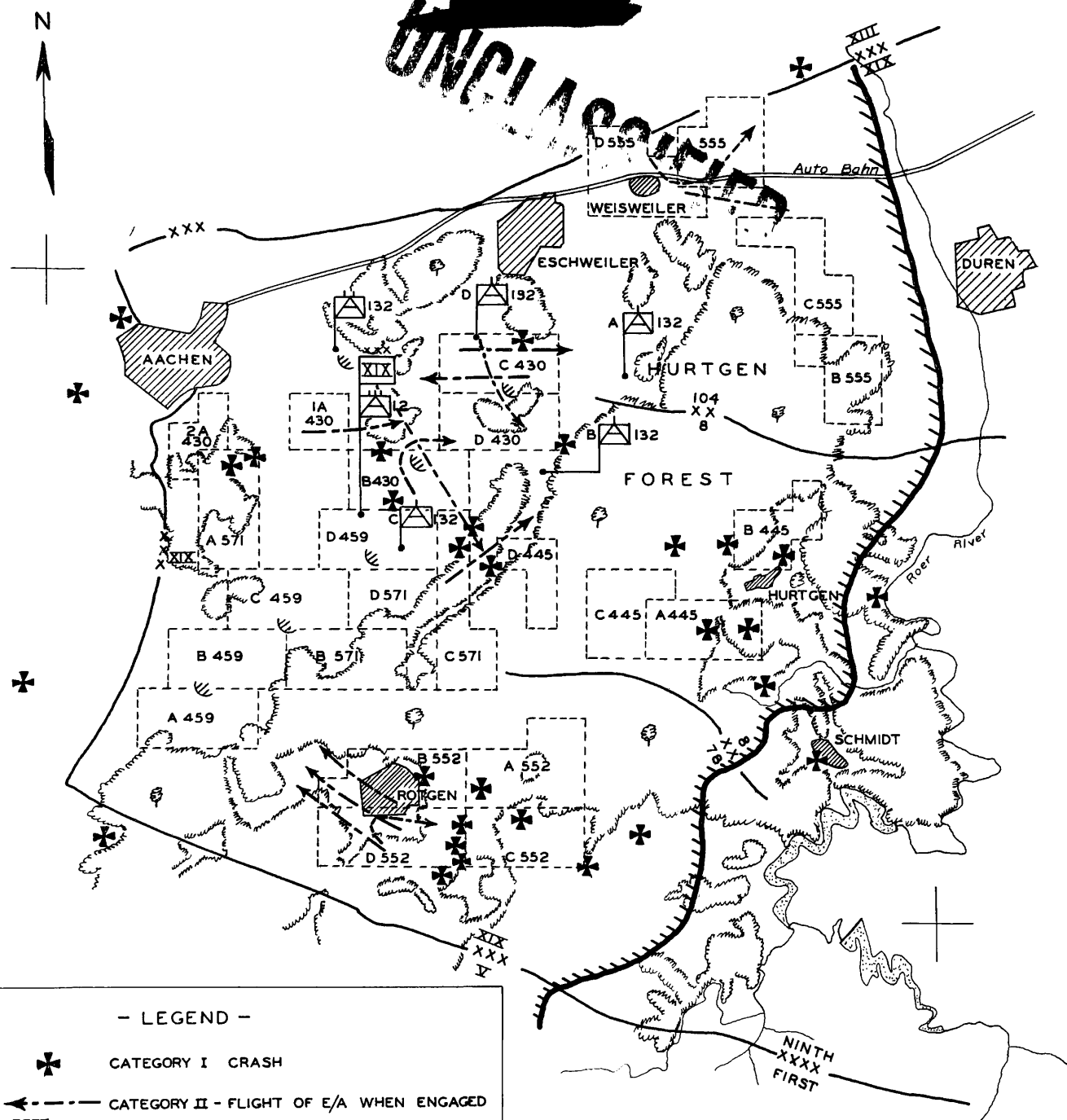
552nd AAA AW Bn (M) (78th Inf Div)

445th AAA AW Bn (M) (8th Inf Div)

555th AAA AW Bn (M) (104th Inf Div)

- (2) All AAA units within the Corps were participating in an area defense (see ETOUSA AAA Notes No 3 for the AAA Area Defense Plan employed by XIX Corps).

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# AAA ACTION XIX CORPS 1 JANUARY 1945

CONFIRMED CLAIMS  
32 - CAT. I's; 13 - CAT. II's



FIG. 1

c. The New Year's action commenced early, when shortly after midnight of New Year's Eve several of the searchlights employed in an AAA illumination role picked up a He 111. The 90mm guns of the 132nd AAA Gun Bn engaged it and brought it down in flames. New Year's Day dawned bright, clear and cold. Shortly after 0900, hostile planes commenced to appear over the Corps area at altitudes varying from 200 feet to 2000 feet. The attacking planes consisted primarily of "long-nosed" FW 190 D-9s and Me 109s which strafed and bombed ground installations within the area. During the ensuing 30 minutes practically every AAA automatic weapon in the Corps went into action, causing the attacking planes to take violent evasive action. Planes were crashing left and right, and at one time, from a high point near the Corps CP five columns of smoke, indicating crashed planes, were observed in the vicinity of Hurtgen Forest. The majority of the day's action occurred during this intense half-hour, though action against smaller numbers of aircraft continued throughout the afternoon. Perhaps the most phenomenal piece of shooting was achieved by a 40mm gun of the 445th AAA AW Bn. This gun, located in a small clearing of the Hurtgen Forest, was only able to fire one round at a FW 190 because of tree masks; the round burst squarely under the fuselage, setting the plane on fire, and causing it to crash in flames less than a mile away.

d. A strip map, taken from the pilot of a crash-landed FW 190, showed the courses which the German planes were to have taken to American and British airports in Belgium. The map indicated that the German planes which came over the Corps zone were well off course, resulting in disaster to a majority of the attackers.

e. After filtering and careful examination of claims by the 12th AAA Group and Ninth Army AAA Section, AAA units of XIX Corps have been officially credited with definitely destroying 32 of the 64 planes over the area on New Year's Day, and probably destroying an additional 13 planes. Except for seven crashes which fell in the Hurtgen Forest or across the enemy lines, every crash was visited and identified on the ground by officers from the AAA Group headquarters; it was impossible to reach the scene of these seven crashes due to the extensive minefields of the dense forest or proximity to the front line, though numerous witnesses testified to the pillars of black smoke from the crash sites. Confirmed claims by battalions are as follows:

<u>Unit</u>	<u>Cat I</u>	<u>Cat II</u>	<u>Type Fire Control</u>
132 (90mm & M-51 MGs)	1½	1	
430	5	6	Stiffkey Stick
459	5	0	Stiffkey Stick
571 (SP)	2½	1	FAS
445	7	0	Stiffkey Stick
552	10	3	Stiffkey Stick
555	1	2	Weiss Sights
Totals	32	13	

f. Col Donald J. Bailey, commanding the 12th AAA Group, attributes the success of his units on New Year's Day to the following factors:

(1) A great element of luck and good fortune in having so many planes over the area during daylight at a low altitude.

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- (2) Excellent gunnery on the part of gun crews, most of whom have had considerable battle experience.
- (3) Area defense disposition - except in the confined clearances of Hurtgen Forest where it was necessary for some units to "bunch" to obtain maximum fields of fire, uniform AAA coverage was provided throughout the Corps area. The uniform volume of fire brought to bear on all the enemy aircraft, regardless of the evasive action taken, proved the value of area defense.

4. Subject: Narrative Report of Enemy Action against Airfield Y-29 on 1 January 1945 (SECRET)

Source : Headquarters IX Air Defense Command; 52nd AAA Brigade.

a. On the morning of 1 January 1945 the GAF attacked IX TAC airfield Y-29 with fifty (50) plus FW 190s and Me 109s. The practically perfect coordination demonstrated by the air force units of the field and the AAA units defending the field resulted in only nine (9) of the attacking enemy aircraft observed escaping destruction.

b. AAA protection is provided Y-29 by B and D Batteries of the 784th AAA AW Bn under the local command of Major Marks Cox, the S-3 of the 784th AAA AW Bn. An AAOR (Antiaircraft Operations Room) is located on the field. This AAOR coordinates and provides early warning to all AAA and Air Force units on the field. On at least one previous occasion a flight of planes from the field had been "scrambled" on the warning provided by the AAOR to the Airfield Commander to intercept hostile aircraft approaching the field. Early warning is received by the AAOR from the XXIX TAC FCC. This early warning is used because of the excellent coverage of the Y-29 area provided by XXIX TAC FCC warning broadcast.

c. At 0900 on 1 January 1945 a warning was received by radio in the AAOR from XXIX TAC FCC broadcast that a large group of enemy aircraft was heading in the direction of the area in which Y-29 is located. From the "plot" it was seen that the hostiles were approximately five (5) minutes flying time from the field. The duty officer at the AAOR (Lt Henderson) immediately notified the airfield commander of the approaching hostiles.

d. The next warning flashed was by the AA OP's situated in a ring around the field from three to five miles from the field. An OP reported a single Ju 88 approaching field from the northeast with a large number of FW 190s and Me 109s some distance behind the Ju 88. This warning reached the AAOR and down to the gun sections two (2) minutes before the enemy planes came over the field.

e. At this particular time the airfield had two of its squadrons airborne in the area returning from missions. These flights were notified of the hostiles and were directed to intercept. The field commander then directed that the planes on the ground be scrambled as soon as possible. Some additional aircraft were warmed up and succeeded in taking off shortly after the hostiles reached the field.

f. The friendly flights of planes before mentioned attacked the approaching enemy formations several miles from the field and succeeded in breaking up the enemy flight formations. Some of the enemy aircraft turned north to Y-32 while the bulk of the enemy formation proceeded in groups of two and three to come

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down to 100-200 feet altitude from the 2000 feet altitude of the approach. The enemy aircraft came over the field very low and fast (estimated 300 mph) and strafed AAA positions on the first "pass." From this time on for the next thirty minutes no more concerted attacks on the field were made by the enemy aircraft as every attempt to bunch up by the enemy was immediately broken up by our fighters.

g. Most of the "dog fighting" took place away from over the field proper so the air above the field was clear most of the time of large groups of aircraft. Enemy aircraft breaking away from our fighters and making a strafing attempt at the field were engaged and driven off by the waiting AAA. At least four enemy aircraft were destroyed attempting the above maneuvers.

h. As the action continued our fighters began to run out of ammunition and gasoline and had to land to rearm and refuel. It was during these times that the best example of AAA coordination occurred. On at least three occasions when our fighters were landing to rearm or refuel, as our planes came in for the landing, several enemy aircraft would dive down to strafe the landing aircraft. The AAA Guns would engage the enemy aircraft directly behind the landing "friendly" and either drive off or shoot down the enemy aircraft. One of our pilots (Capt Smith 366th Ftr Gp) landing safely after having a FW 190 driven off his planes tail by AA fire, came over to the gun responsible and personally thanked the section chief.

i. In some cases, AA fire was able to break up formations of enemy fighters attacking our planes while in other cases the tracers of AA pointed out low flying enemy aircraft so that our fighters could pick them out.

j. When the action was over and all the enemy aircraft that could still fly had left the area, an inventory of damage inflicted by the enemy on us and damage by us to the enemy, was taken. Damage to the airfield was one (1) C-47 strafed on the ground and seriously damaged and one (1) P-47 hit twice in the motor while parked in a dispersal bay.

k. No damage was reported by our AAA units as a result of the strafing attempts of the enemy. Several gun revetments were struck by 13mm and 20mm projectiles from strafing FW 190s and Me 109s, but no damage was caused.

l. The GAF, however, suffered the loss of a good part of his attacking force. The Air Force units of the field claim 35 destroyed, 2 probably destroyed, and seven damaged and our AAA units claim seven (7) Cat Is and four (4) Cat IIs.

m. A careful investigation revealed that in no case did our AAA engage a friendly fighter during the period of attack. In several cases AA fire was stopped by section chiefs at guns because of friendly fighters approaching the hostile being engaged by AA fire. No fire control or direction was attempted from the AAOR during the attack. At no time did the Air Force Commander order a "hold fire." After the action the Air Force Commander of Y-29 (Lt Col Clare B. Smith, 366 Fighter Group) was asked if he considered that a "hold fire" would have given greater freedom to his planes. Lt Col Smith replied that a "hold fire" was not necessary as he had complete faith in the ability and skill of the AAA defending his field, so that his planes would not be mistakenly fired

on by our AAA. He further stated that the AAA defending Y-29 in conjunction with his air force units was responsible for the successful defense of the field and that the policy of attaching AAA to the air force would continue in force.

n. It has always been the policy of this Brigade to associate an AAA battery with a Fighter Group and to continue this attachment during any movement of the Fighter Group. This policy has resulted in better understanding and teamwork between AAA and the air force units protected. The case of B Btry 784th AAA AW Bn and the 366th Fighter Group on Y-29 should prove the soundness of this policy. The CO of the 366th Fighter Group feels that AAA is an important and integral part of his "team" and has stated this to his "attached" AAA battery. To cite an excellent example of the type of cooperation existing between the Air Force and AAA units on Y-29: when AAA machine guns are in action against enemy aircraft attacking the airfield, selected air force ordnance personnel go to designated AAA machine gun sites on the field, and augment the AA crews by acting as ammunition men. The mutual understanding of each others problems from the above attachment was a large factor in the efficient defense of the airfield.

o. Of the many known strafing attacks carried out by the enemy against allied airfields, this attack was the most successful from the allied point of view in that a large proportion of enemy aircraft was shot down and the damage inflicted by the enemy aircraft was insignificant. The presence of our fighters in force in the vicinity of the field at the time of the attack was unique and very important in the successful driving off of the enemy.

p. It is believed that the following conclusions can be drawn from this action:

- (1) The use of friendly fighters in conjunction with AAA to provide AA defense of airfields is essential if our losses are to be kept to a minimum.
- (2) The coordination of friendly fighters in the air with AAA on the ground is more effective when mutual confidence and respect exists between the two agencies. This emphasizes the importance of keeping AAA units attached to the same air force Group in order to promote the necessary confidence and mutual respect.

5. Subject: Entrance of AAA into Paris (CONFIDENTIAL)  
Source: AA Section, Headquarters Twelfth Army Group.

a. Battery B, 462nd AAA AW Bn (M), claims the distinction of being the first US AAA unit to enter Paris when the city was liberated during August 1944. Battery B had the mission of providing AAA protection for the 196th FA Bn, V Corps artillery, which was in direct support of the 2nd French Armored Division at that time. The 2nd French Armored Division had been assigned the mission of occupying the city of Paris to prevent reoccupation by German Forces on termination of the truce previously signed.

b. Battery B left Mortree, France, at 230900 August 1944, in column with the 196th Field Artillery, which was following immediately behind armored elements of the 2nd French Armored Division. As resistance was met up ahead and the

armor was forced to deploy, the AAA fire units went into hasty positions off the side of the road. As soon as resistance was cleared, the column took to the road again. By twilight on 23 August, the column had reached Chevreuse, just southwest of Paris, and a bivouac was made that night near crossroads approximately six miles northeast of Chevreuse (see Figure 2).

c. Going into position, moving up a little, going into position, became the order of the day for 24 August. In places where the road was blocked, the column took to the open fields. The column received direct .88mm fire while crossing one field which was under enemy observation, and the 196th Field Artillery lost two vehicles and two men killed from direct hits. On another occasion the Field Artillery and AAA columns passed by a unit of French tanks engaged in a fight with German tanks in a woods. Despite numerous light shellings and participation in the above incidents, Battery B sustained no casualties.

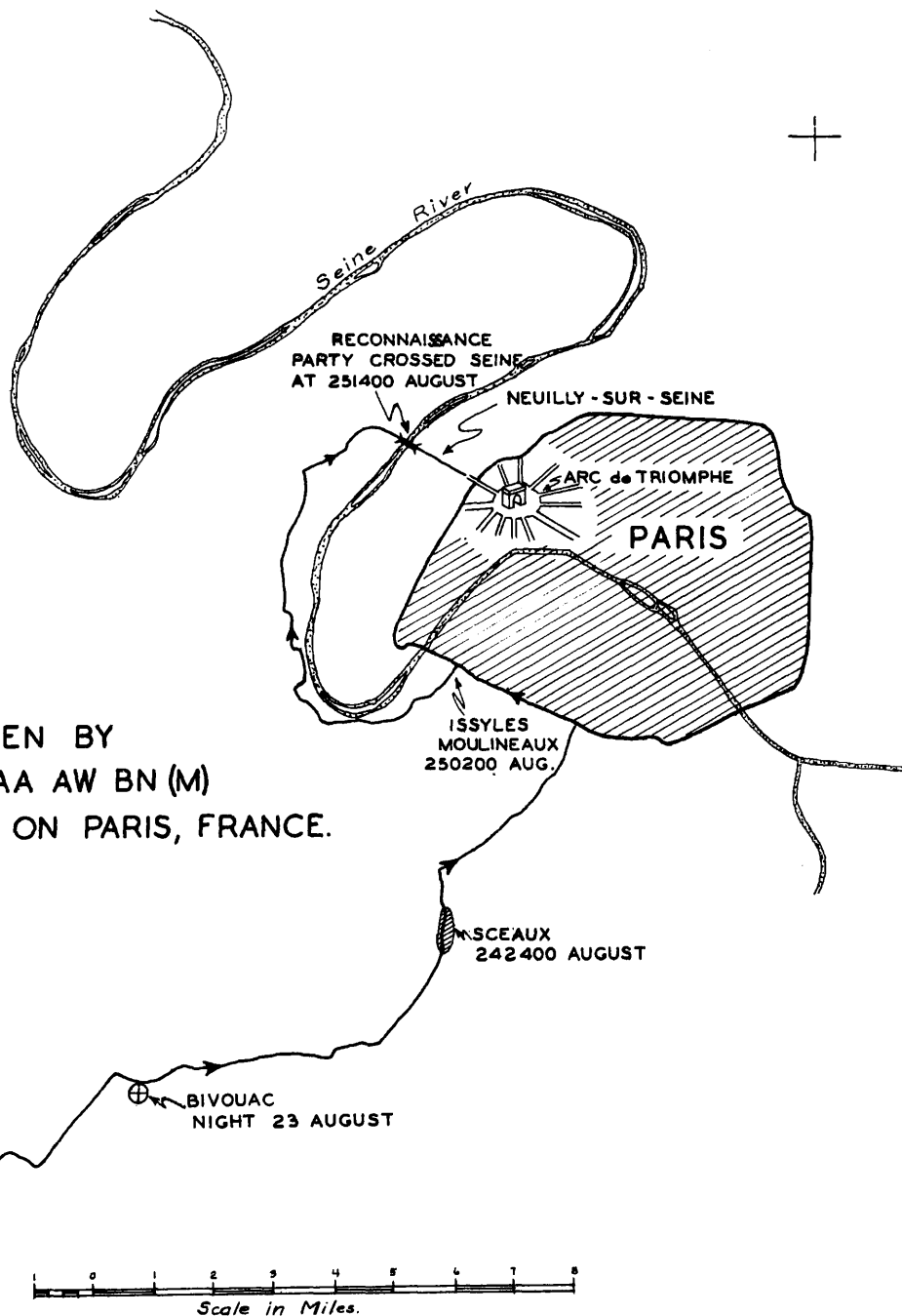
d. Sceaux, in the southwest of Paris, was entered by 2400 hours. The column moved on in the night and reached Issy-les-Moulineux, just outside of Old Paris at 0200 hours. The men slept on the sidewalks of the town for the remainder of the night.

e. The columns moved slowly around to the west side of Paris during the morning of 25 August. A reconnaissance party consisting of Capt Ralph E. Deems, B Battery Commander, with 1st Sergeant Lewis B. Meyers, and the two platoon leaders, 1st Lt Paul H. Gesener and 1st Lt James H. Jones, crossed the Seine at 1400 hours. Numerous Parisians signed statements greeting them as the first American officers in the liberated city. The fire units entered the city in column in the vicinity of Neuilly Sur Seine at approximately 1500 hours. The French tanks had been completely stopped ahead of them by throngs of enthusiastic Parisians. Many of them had champagne, wine, and kisses to bestow upon the liberators. As the Battery reached the Arc de Triomphe, shots rang out from German snipers firing from the Arc itself, and from trees and buildings in the vicinity. The French tanks fired on the buildings with guns and machine guns. Battery B opened fire with the quadruple turret-mounted .50 cal. machine guns, spraying the trees and buildings. Section B-4, commanded by Sgt Ralph E. Kaufman, spotted a machine gun firing on the crowd from a window, fired two rounds of armor piercing 40mm ammunition from the wheels, silencing the German gun. In the melee of firing the French throng flattened out, taking cover behind tanks, trucks, and street curbs. A number of chips were knocked from the Arc de Triomphe, and these were taken as souvenirs by men of the Battery. In this action 2 rounds of 40mm (AP), 6,127 rounds .50 cal., 855 rounds .30 cal. M1, 100 rounds .30 cal. carbine, and 285 rounds .45 cal. ammunition were expended.

f. During 26 and 27 August, Battery B set up a security guard around the Field Artillery, which bivouaced on Avenue de la Grande Armee. Much interest was shown by the Parisians in every act of the Americans, shaving included. Many looked over such equipment as the 20 men gasoline cookers, pup tents, truck and guns with great curiosity. The climax came, however, when several Paris women, watching one section peel potatoes, volunteered their services as KPs until the meal was cooked.



ROUTE TAKEN BY  
BTRY. 'B' 462 AAA AW BN (M)  
DURING ADVANCE ON PARIS, FRANCE.



**FIG. 2**



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6. Subject: Experiences of 11th AAA Group during the German Breakthrough in the Ardennes (SECRET)

Source : AA Section, Headquarters Twelfth Army Group.

a. In AAA Notes No 11, 3 January 1945, a general picture of the action of First US Army AAA units during the Battle of the Bulge was presented. Since then specific actions of individual AAA units, chiefly AAA battalions, have been given. The 11th AAA Group, commanded by Col H.P. Newton, played an important role in the coordination and the dispositions of AAA units immediately following the German breakthrough on the 16th December. The Group operated under the 49th AAA Brigade, and later, under the XVIII A/B Corps of the First US Army, during the period covered by this report.

b. The following is Col Newton's narrative report of his activities:

(1) "On 16 December 1944 the 11th AAA Group, with the 134th AAA Gun Bn (M), 413th AAA Gun Bn (M), 440th AAA AW Bn (M), and the 639th AAA AW Bn (M), attached was located at Bullingen, Belgium, with the primary mission of shooting down flying bombs in a DIVER belt IAZ. (See Figure 3.) This area, it will be noted, extended into the enemy's lines so that AAA guns could shoot down flying bombs over enemy territory. Guns and automatic weapons were disposed as close to the enemy lines as practicable."

(2) "Our closest AAA units, who were about 2,000 yards behind the front lines set up special local ground security defenses coordinating these with the infantry and divisional units holding the line. These units likewise established very close liaison with adjoining divisional units so that we would have sufficient early warning of an attack that would enable us to evacuate our fire control equipment and prepare to use all our AAA armament in a ground role."

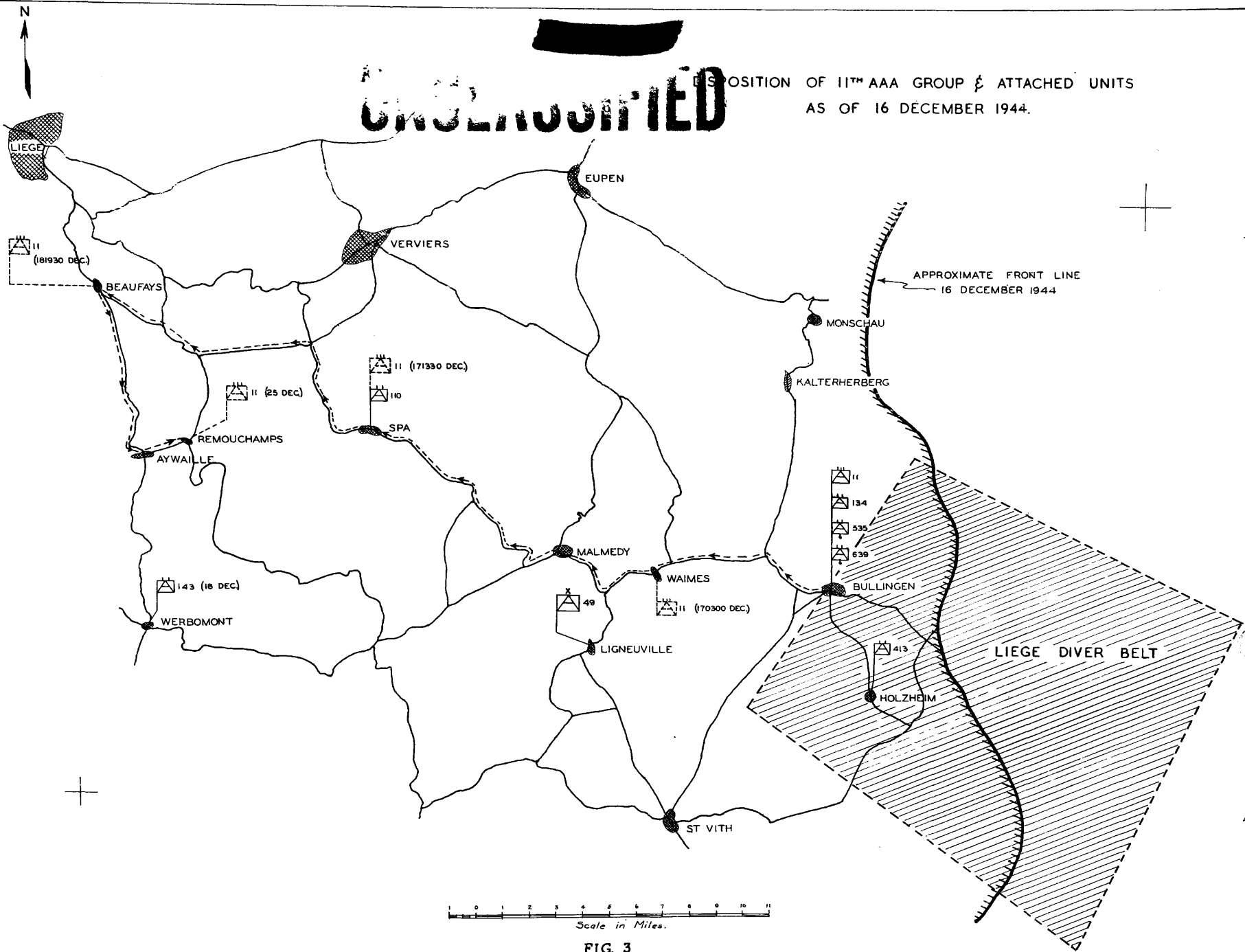
(3) "The 413th AAA Gun Bn and the 440th AAA AW Bn had some equipment in the VIII Corps sector and the 106th Inf Div area when the German attack started. The 134th AAA Gun Bn and the 639th AAA AW Bn were located in the 99th Inf Div sector of the V Corps." (See Figure 3.)

(4) "The first indication of an enemy attack came at 0540 hours on the morning of 16 December when the 413th AAA Gun Bn area was subjected to heavy shelling. It was during this shelling that Lt Col MacGrain and one of his battery commanders were injured by shell fragments. Lt Col MacGrain received first aid, but against the advice of his battalion surgeon, he would not allow himself to be evacuated until later in the day. By 0600 hours all AAA units were being shelled, including the Group Headquarters."

(5) "All units were put on a full alert status at 0600 hours. The first report of an enemy advance came at 0830 hours, on the 639th AAA AW Bn front, who reported German patrols in the vicinity. At 0910 hours the 49th AAA Brigade authorized the 413th AAA Gun Bn to support elements of the 106th Division by assuming a FA role and at 0940 hours the Brigade placed Pozit ammunition on a first priority for our evacuation plan."

(6) "The evacuation of the 413th fire control equipment began at 1105 hours, 16 December. This equipment was first brought to Bullingen, assembled in the large motor park of the 134th and then evacuated to an assembly area west of Bullingen."

(7) "At 1305 hours that day a combat team of the 99th Inf Div reported a PW as saying that this was an all out attack, not just a minor engagement. He remarked that this was a 'now or never' attack. This information was forwarded through AAA channels."



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(8) "Between 1330 and 1800 hours that day enemy attacks and penetrations were felt along our sector of the line and particularly in the 413th AAA Gun Bn and 440th AAA AW Bn sector where these units were employing their batteries in a ground role. The 413th AAA Gun Bn never had the opportunity, at this time, to fire in a FA role as the situation demanded that they assume an AT role - and quickly."

(9) "Batteries B and D of the 440th AAA AW Bn had to withdraw with the infantry and the 40th Cavalry Squadron to other defense positions because of enemy pressure. At this time the 440th AAA AW Bn was on a dual AAA and ground role."

(10) "The 134th AAA Gun Bn front was not as menacing as the front to the South but at 2000 hours they were ordered to evacuate Pozit ammunition and fire control equipment. At 2140 hours the First Army Headquarters ordered the 11th AAA Group Headquarters and the 413th Gun Bn and the 134th Gun Bn to evacuate all personnel and equipment to the vicinity of Steinbach. At the same time the 440th AAA AW Bn was attached to the 106th Infantry Division and the 639th AAA AW Bn was attached to the 99th Infantry Division. (The 535th AAA AW Bn (M) was already attached to the 99th Infantry Division and the 634th AAA AW Bn (M) to the 106th Infantry Division. See AAA Notes No 11, 3 January 1945, for the account of the experiences of the 634th AAA AW Bn (M).)"

(11) "The Group Headquarters and Headquarters Battery left Bullingen at 0200 hours on the morning of 17 December and arrived at Waimes at 0300 hours where it stayed for the remainder of the night. The 134th Gun Bn and 413th Gun Bn also arrived in the vicinity about 0400 hours that morning. Communications were maintained by a telephone line which the 49th AAA Brigade had laid to us before our arrival."

(12) "During this evacuation, some units of our battalions had to fight rear guard actions and some equipment and personnel were lost to the enemy, but no major engagements were fought."

(13) "At 1000 hours 17 December orders were relayed through the 49th AAA Brigade attaching the 413th Gun Bn and the 134th Gun Bn to V Corps for use in an AT role. The fire control equipment of both battalions was ordered evacuated to the 110th AAA Gun Bn at Spa (See Fig 3). At the same time the Group Headquarters was ordered to proceed to Spa to the vicinity of the 110th AAA Gun Bn and await further disposition. The Group Headquarters left Waimes at 1200 hours and arrived at Spa at 1330 hours."

(14) "At 1145 hours, 18 December the Group was ordered to establish anti-mechanized positions around and south of Aywaille with the guns of the 143rd AAA Gun Bn and D Battery of the 563rd AAA AW Bn. (The 143rd AAA Gun Bn (M) is a IX ADC unit that was attached to First US Army. Prior to the attachment, the battalion was deployed in the AAA gun defenses of Liege, Belgium. The 563rd AAA AW Bn (M) is a First US Army unit that was employed in the AAA defenses of ASPs, road defiles, etc., near Verviers, Belgium.) A small command group of officers from the Group Headquarters left at 1230 hours for Aywaille and set up a temporary headquarters with the Headquarters of the 563rd AAA AW Bn at Aywaille. Because of the uncertainty of the situation, the Group Headquarters Battery was ordered to Beaufay, pending the establishment of a Group Headquarters at Aywaille. The Battery moved at 1730 hours that night and was completely billeted in Beaufay at 1930 hours."

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(15) "Six guns of the 110th AAA Gun Bn were dispatched to the Aywaille sector for AT defense until the 143rd AAA Gun Bn could get into position. All guns of the 143rd were in position at 2400 hours, 18 December. The AAA guns in the Aywaille sector were to supplement the 82nd A/B Division defenses in this area and prevent enemy armor from making a penetration north on route N-15 toward Liege."

(16) "At about 0730 hours, 19 December, Battery C, 143rd, engaged enemy tanks in the vicinity of Stoumont destroying six (6) M-6s and two (2) M-5s. "(See AAA Notes No 14, 24 January 1945, for complete account of the action of the 143rd AAA Gun Bn.) "The M-6s were destroyed by 90mm fire and the two (2) M-5s by bazookas. This battery eventually lost one (1) 90mm gun to enemy shell fire, one by a traffic accident and one by demolition when the enemy drove the crew from the gun by small arms and machine gun fire. Casualties amounted to one (1) EM killed and two (2) EM wounded."

(17) "At 2310 hours, 20 December, the 11th AAA Group, 143rd AAA Gun Bn, 110th AAA Gun Bn, 563rd AAA AW Bn, less Battery B, and Battery D, and 639th AAA AW Bn were attached to the XVIII Corps. The 143rd AAA Gun Bn, the 110th AAA Gun Bn and Battery D of the 639th were relieved of their AT mission in the Aywaille sector at 0330 hours on 21 December and attached directly to the 30th Infantry Division in an AT role. The Group S-3 with the Battalions' S-3s were immediately dispatched to this division to work with their AT and TD officers to coordinate and plan this defense." (See AAA Notes No 15, 30 January 1945, "Report of 30th Infantry Division.") "The first gun was in position at 0900 hours and the defense was built up in depth during the day, the last gun getting in position at 2000 hours. The 40mm guns and the M-51s of Battery D of the 639th were divided up among the 90mm guns for additional AAA and ground protection. Until 24 December the Group maintained a coordinating staff at the 30th Infantry Division CP to assist in the employment of the AAA armament in the AT role. The TD battalion with the division cooperated with us and helped us to the fullest extent. They helped us reconnoiter positions, drew sandbags and AT mines for us and inspected our positions and made helpful suggestions about them as guns went into position."

(18) "The 563rd AAA AW Bn reverted to an AAA role on 21 December defending the bridges at Aywaille and Remouchamps and Corps installations."

(19) "On the night of the 22-23 December one (1) 90mm gun of Battery B, 143rd was moved under cover of darkness to a position covering the town of La Gleize, where that day several enemy tanks had been surrounded. It was expected that at daybreak the 90mm gun could destroy several tanks and then pull out before counter fires could be effective. The plan worked, and at least three (3) M-6s of the enemy were destroyed." (See AAA Notes No 14, 24 January 1945. Actually three (3) Mark VIs and one (1) German operated Sherman tank were destroyed.)

(20) "On 23 December at 2310 hours, the Headquarters and Batteries A and D of 143rd were ordered to Aywaille for AAA protection of the bridges at Aywaille and Remouchamps. The 110th AAA Gun Bn with Batteries A and D of the 143rd and Battery D of the 639th AAA AW Bn attached, remained with the 30th Infantry Division in an AT role."

(21) "After 23 December, AAA units under this Group have had no ground action with the enemy - their action having been all enemy aircraft. On 25 December the Group Headquarters moved its CP to Remouchamps and to date is operating as the XVIII Corps AAA Group at that location."

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7. Subject: Top Twenty AAA Units - Enemy Aircraft Destroyed (CONFIDENTIAL)  
Source : AA Section, Headquarters Twelfth Army Group.

a. The list of top twenty AAA units who lead in confirmed claims of enemy aircraft destroyed within Twelfth Army Group area is published periodically. Tabulated herewith is the standing to include claims processed to 6 February 1945; for previously published standings, refer to AAA Notes No 7, Twelfth Army Group, and to AAA Notes Nos 2, 7, and 12, Headquarters European T of Opns, US Army.

b. The number of aircraft definitely destroyed (Category I) is taken as the basis for the relative standing. For the units listed, the number of aircraft probably destroyed (Category II) is also shown.

c. It should be noted that the number of planes shot down does not necessarily indicate the relative efficiency of units, since some units are fortunate to engage many more targets than others.

d. There is a tie for the twentieth place on this list and both units are listed.

e. Relative standings to include claims processed up to 6 February 1945:

Unit	Present Assignment	Total Days Operational	Confirmed Claims Cat I	Cat II
116 AAA Gun Bn (M)	First Army	245	67	13
*411 AAA Gun Bn (M)	Third Army	241	46	11
**445th AAA AW Bn (M)	First Army	206	43	12
474 AAA AW Bn (SP)	First Army	246	38	31
103 AAA AW Bn (M)	First Army	240	35	8
#453 AAA AW Bn (M)	Ninth Army	234	31½	5
*456 AAA AW Bn (M)	Third Army	220	30½	15
535 AAA AW Bn (M)	First Army	246	30	6
460 AAA AW Bn (M)	First Army	238	30	5
*463 AAA AW Bn (M)	Seventh Army 87 (under 12 AG)	30	30	5
455 AAA AW Bn (M)	Third Army	210	26½	15
*217 AAA Gun Bn (M)	Third Army	224	26½	9
*489 AAA AW Bn (SP)	Third Army	206	26½	1
486 AAA AW Bn (SP)	First Army	229	26	13
376 AAA AW Bn (M)	First Army	240	25	14
*115 AAA Gun Bn (M)	Third Army	238	25	11
*120 AAA Gun Bn (M)	Third Army	235	25	8
**473 AAA AW Bn (SP)	Ninth Army	208	24	17
110 AAA Gun Bn (M)	First Army	245	23	29
##531 AAA AW Bn (M)	Ninth Army	236	21½	19
461 AAA AW Bn (M)	First Army	237	21½	9

Claims acquired in Army to which now assigned except as indicated below:

- \* Claims acquired in First and Third Armies;
  - \*\* Claims acquired in First, Third, and Ninth Armies;
  - # Claims acquired in First Army;
  - ## Claims acquired in First and Ninth Armies.
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8. Subject: "Batting Averages of Antiaircraft Units firing at Flying Bombs  
(SECRET)  
Source : Headquarters IX Air Defense Command, 56th AAA Brigade.

- a. As a matter of interest, Headquarters 56th AAA Brigade computes and publishes each week the DIVER batting average for the various gun batteries. As in professional baseball, the averages will be based upon "hits per time at bat," that is, the number of allowed claims per authorized engagement.
- b. The analogy will be consistent. Allowed claims are the hits, whether they be fluky scratch hits or home runs, (Claims Cat A or Cat B). The allowed claims are taken from the S-2 DIVER Report. Claims are not allowed on flankers, that is, those DIVERS not headed for the VA (the circle 7,500 yds in radius). Also, the claims based on unauthorized engagements (out of engagement sector) are not used in computing the batting averages. The authorized engagements are the number of times at bat; a DIVER that passes by unengaged but still over the plate (in the engagement sector) is a called strike-out. No times at bat is considered for authorized preventive maintenance (base on balls), or legitimate emergencies (hit by pitched ball).
- c. As in baseball, the umpire's decision is final. Decisions must be made on close plays and the umpire will call the play as he sees it. As the enemy will not cooperate to the extent of holding up his DIVER attack, the game can neither be delayed, postponed, nor "called off" because of alleged poor judgment on close plays. In extreme cases, the Protest Rule can be invoked and decision reconsidered.
- d. The batting averages are not considered an index of efficiency, for, as in baseball, luck is very important. The possibility of a slump is recognized. Of course, hitting streaks are preferred.
- e. The past week has fattened the batting average of most clubs. Apparently a lot of "sucker-pitches" came over and our batting eyes have improved. A few "dusters" also came over. "D" of 405th Bn reported two very close ones. "D" of 494th leads the pack for the second week with a healthy .538 average, 100 points better than last week. "B" of 184th again leads in total hits with 38. "A" and "B" of 136th Bn are dark horses. They have been moved into the clean-up position and we understand that they are now going to bat from both sides of the plate (pitches from North and NE). Some new material has come up from the minors recently and we expect them to break into the lineup soon. The enemy is reported to have a new find—a pitcher with an unusual side arm delivery (from the north).
- f. The averages for the period 200600 January to 030600 February 1945 are listed below:

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UNIT		AUTHORIZED ENGAGEMENTS	ALLOWED CLAIMS	BATTING AVERAGES	LAST WEEK'S	
Bn	Btry	(Times at Bat)	(Hits)	TO DATE	STANDINGS	
494	D	52	28	.538	1	.438
494	A	46	23	.500	9	.333
605	C	60	28	.467	5	.368
495	C	53	24	.455	8	.348
184	B	71	32	.452	8	.348
494	B	46	20	.435	17	.154
495	D	53	23	.434	2	.438
605	A	60	26	.433	11	.280
184	B	93	38	.408	4	.376
184	C	89	36	.405	9	.333
136	A	50	20	.400	3	.400
184	A	83	33	.398	10	.308
494	C	45	17	.378	15	.200
495	B	56	20	.357	12	.263
136	C	37	13	.352	6	.357
605	D	60	20	.333	12	.263
136	B	49	16	.327	15	.200
495	A	51	16	.314	7	.353
136	D	36	11	.306	17	.154
605	B	63	19	.302	14	.218
740	D	31	9	.290	3	.400
405	A	57	15	.264	9	.333
740	A	32	8	.250	9	.333
405	B	60	14	.234	9	.333
405	D	52	11	.212	18	.077
405	C	52	9	.173	16	.167
740	C	25	4	.160	9	.333
740	B	32	5	.1E7	13	.222

9. Subject: Backsighting Technique (UNCLASSIFIED)

Source : Office of Theater AA Officer, Headquarters European T of Opns.

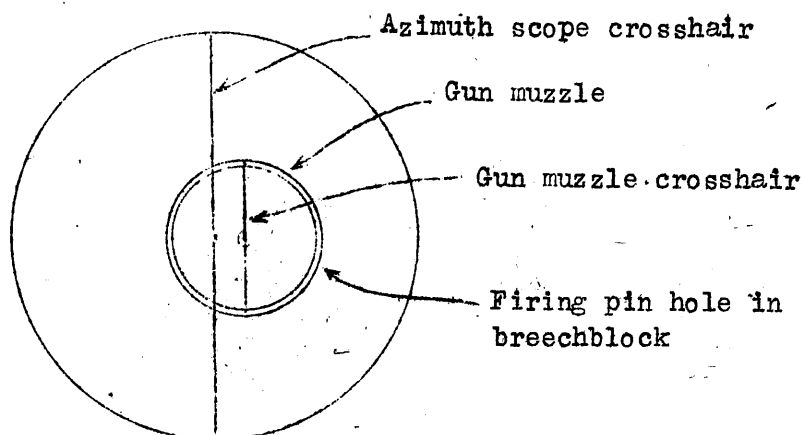
a. Backsighting a gun on a director can be easily, quickly, and accurately accomplished as shown below. First be sure, however, that the gun is level. As the gun level vials may be out of adjustment, check for level with a gunner's quadrant. The following are the steps in backsighting:

- (1) With breech block open, roughly boresight gun on director or tracking head azimuth telescope.
- (2) Traverse director or tracking head until the approximate center of the open breech of the gun can be seen through the azimuth telescope.
- (3) Close breech block, remove firing mechanism, and affix vertical cross hair to gun muzzle.
- (4) From the director have the gun traversed until this vertical cross hair appears superimposed over the firing pin hold in the breech block when looking through the director or tracker telescope (a light or white background behind the breech may be necessary). If the azimuth telescope cross hair is kept a few m to one side of the gun muzzle cross hair during this step, the two cross hairs will not be confused. See diagram on next page.

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View thru  
azimuth scope  
after step #4.



(5) Traverse director until azimuth telescope cross hair appears to coincide with gun muzzle cross hair.

(6) Read present azimuth dial of director or tracking head. Set this reading,  $\pm$  3200 mils,  $\pm$  calibration correction, on gun azimuth indicator regulator.

b. It is assumed that the director or tracking head is itself oriented proper. No error will be introduced due to the offset of the azimuth telescope from the center of the director or tracking head. This is a common misconception. The error introduced by moving the director as described in step No 5 will be negligible.

c. This also forms a very convenient method for a battery officer to check the orientation of all the guns in his battery with a minimum dependence on other personnel.

\* \* \* \* \*

### III. EQUIPMENT.

10. Subject: Preventive Maintenance on Transfer Valve Assembly, 90mm Gun (UNCLASSIFIED)

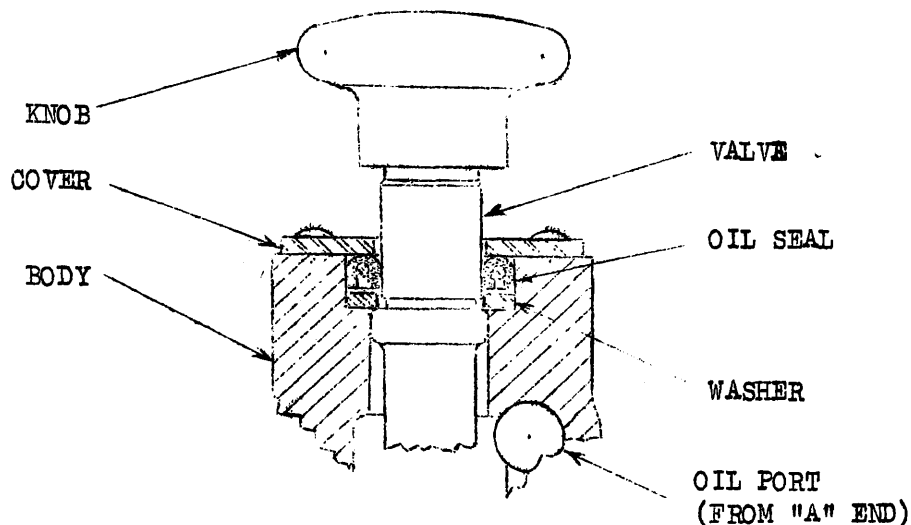
Source : Office of Theater AA Officer, Headquarters European T of Opns.

a. Oil seals in the transfer valve assemblies (Remote Control System M2) often leak when there is pressure in the hydraulic system.

b. Scratches in oil seals or packing will result in oil leaks. The scratches are mostly caused by careless installation or removal in that sharp edges and grit on the shaft chamfer break or scratch the seal, thereby reducing its effectiveness. (quoted from App. II, page 108, Ordnance School Text, OS 9-51, Nov 1942.)



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TRANSFER VALVE ASSEMBLY  
(UPPER END, SECTIONAL VIEW)

c. Scratches in the oil seal can also be caused by depressing the transfer valve when the exposed part directly under the valve is scratched or dirty. This part of the transfer valve should be kept free from dirt, grit, burrs, and rust. Oil seal leakage can be forestalled by proper preventive maintenance.

\* \* \* \* \*

By command of General EISENHOWER:

*R. B. Lovett*

R. B. LOVETT,  
Brigadier General, US Army,  
Adjutant General.

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