

# Chapter 7

## Counter Battery

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Ground Support in Assault on Boulogne  
(extract from Report No. 16)

Effect of Counter Battery Fire in Operation VERITABLE  
(Report No. 29)

Artillery in the Counter Flak Programme in Operation VARSITY  
(extract from Joint Report No. 4)



# The Assault on Boulogne

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## IV. ARTILLERY

### 1. General

1. Taking part in the Operation were the artillery of 3 Cdn and 51 (Highland) Divisions, 2 (Cdn) AGRA, and 9 AGRA, and 2 HAA Regiments, making a total of:

5 Field Regiments	120 guns
8 Medium Regiments	128 guns
3 Heavy Regiments	48 guns
2 HAA Regiments	48 guns
Total	344 guns

2. After a timed programme on enemy FDLs, lasting for about 1<sup>o</sup> hours, and expending some 20,000 rounds, regiments were sub-allotted to Artillery Group Commanders at each Brigade, except that the Heavy and HAA Regiments, and from time to time others, were at the disposal of the CBO.

3. It became clear at an early stage that the most important aspect of the battle was the destruction and neutralisation of hostile batteries and we have studied this in as much detail as circumstances permitted. There was, however, much firing at Hostile batteries by the Artillery allotted to Brigades, of which no records were kept, as well as by the CBO, so that an exact analysis of what fell where has not been attempted.

### 2. CB Programme

1. The details of the CB programme, which were modified several times both before and during the attack are of no special concern. There was a pre-arranged programme up till half an hour after the end of the bombing on Target Area 1, when harassing fire was started, controlled by Air OPs. There were five of these, each netted to a Regiment, and covering a zone of the defences. On the first day of the attack, which was fine, they were very effective in locating enemy batteries and bringing fire to bear on them.

2. It had been hoped that the Heavy Bombing of Targets 2, 3, 4 and 5, west of the river, would render hostile batteries in this area inactive. In fact, however, Air OPs spotted batteries active even during the bombing (although presumably not in the actual target areas) and CB was therefore carried

out in this area actually during the bombing.

3. The Hostile battery list contained 48 fixed positions; 19 of these were not examined. Of the remaining 29:

Genuine battery positions	9
Odd guns	6
Dummy positions	3
No guns present	11
Total	29

In addition to this, 4 further battery positions were discovered on the ground, and 8 further positions were indicated by the Infantry as causing trouble as the attack progressed, or were mentioned by PW but were not examined. Details of all the battery positions, located and unlocated, false and genuine, are given in Map 2. It is thought that altogether there were about 90 enemy guns of 75 mm calibre or greater in BOULOGNE.

4. There were certain discrepancies between the Hostile battery list and the Defence Overprint. Neither appear to have incorporated certain battery lists issued by G-2 SHAEF although these may have been issued in some other form. The best possible collation of the information then available would have given 15 batteries completely correct, and substantially fewer false positions. The lesson to be drawn is that Intelligence, APIS, and CB information must be closely co-ordinated to produce the best possible Hostile battery list.

5. The incompleteness of the Hostile Battery list depended as well on the normal limitations of air photographs in detecting genuine battery positions, which in the case of BOULOGNE were enhanced by the careful preparation and camouflage of the defences. Good quality 1/8000 scale verticals supplemented where possible with 1/4000 compensated verticals of pinpoints will show all there is to be seen from verticals. Low obliques are the only means of detecting positions screened by overhead cover such as casemated guns or batteries on the edges of woods. Photographs of all these types are desirable but their availability must depend on the operational conditions existing during the planning period.

6. There is no doubt also that the enemy pursued a careful and comprehensive policy of sound ranging deception. In such a case as BOULOGNE, sound ranging before the assault cannot be regarded as giving more than an indication of where to search for guns on air photographs.

7. The great importance of co-ordination of all sorts of information about Hostile batteries needs no emphasis. Without a substantially correct HB list, much air and artillery effort is inevitably wasted.

## 8. Enemy activity, and effects of our CB

### (a) PW Information

1. A Captain, commander of the Army artillery of the garrison, captured on the second day, claimed that he had not lost any of his guns through CB (3 Btys 4 X 10.5 cm gun hows, 1 Bty 4 X 10.5 cm guns), and that we appeared not to have pinpointed his positions accurately. His return fire was limited by lack of ammunition and lack of working OPs. His line communications, though not his wireless, had been put out by bombing and the large amount of artillery fire made his OPs disinclined to get out in the open.

2. Three OR PW from the 88 mm Flak battery at HONRIVILLE, captured at the end of the third day, claimed that they were frequently shelled heavily for periods of about 15 minutes. Personnel took cover only on the order of the Battery Commander, and then only during the actual shelling, and each gun fired many hundred rounds. Our counter fire did not appear to follow activity on their part. Line communication within the battery was working all the time, as the cables were buried two metres deep.

3. 4 OR PW from a 155 mm Bty south of NOCQUET, captured on the 5th day, said that bombing had destroyed one gun and cut telephone communication with the OP. Artillery fire caused no damage or casualties, and mostly fell a considerable distance short of the battery (the position had not been located before the battle). They had fired all their available ammunitions (30 rds per gun).

(b) Information of own troops

1. The whole attack was heavily influenced by enemy shelling, which caused the greater part of the 600 casualties. From Appendix A, the narrative of the battle, it will be seen how frequently forward movement and the mopping up of defences was delayed by shelling.

2. In spite of the concentrations and 'stonks' at the immediate disposal of the Infantry, no less than 17 batteries were reported back to Division as being particularly troublesome, with requests for air or other action.

3. Discussions with Infantry and Artillery personnel served to confirm once more two well known difficulties; firstly that while an accurate concentration on a well located battery invariably silenced it for the duration of the concentration, the effect seldom lasted for any length of time afterwards; secondly, that in many cases, the battery doing the shelling could only be located approximately, if at all, so that although concentrations were laid on the most likely positions, they were by no means always effective.

(c) Examination of enemy battery positions

1. An examination of a number of batteries was made, and the results are summarised in the table below. Details of the examination are shown in Appendix C (which is to be found in Part I Chapter 1 where this report is reprinted in toto). All guns were in open concrete pits except where specifically stated.

Map Ref.	No. & Type of Guns (excl. light flak)	No. & Type put out of action by Arty	Rounds fired by battery	Est. rounds put on enemy battery (in 300 yd diameter circle)
682554	5 x 88 mm	1 x 88 mm	1200	3600
677566	2 x 210 mm	Nil	-	?
	4 x 105 mm	1 x 105 mm	300	
	2 x 76.2 mm	Nil	-	
663532	6 x 88 mm	2 x 88 mm	2000	5700
654524	4 x 138 mm	1 x 138 mm	1500	?
	1 x 76.2 mm	Nil	-	
660515	6 x 88 mm	1 x 88 mm	2000	?
700518	5 x 88 mm	1 x 88 mm	200	?

In most cases shell craters were obscured by spoil from bomb craters, but if the two cases that could be counted are typical, the number of rounds put on the batteries was very considerable. In spite of this they were far from silenced.

## 9. Discussion

1. The Artillery assembled for the Operation (about 350 guns) was less successful than might have been expected in neutralising Hostile batteries, on which some 80,000 shells were expended.

2. The location of enemy guns during a battle has always presented a problem. The Infantry who are being shelled cannot easily make careful observations, and are usually out of view of the guns firing on them. Artillery OPs, FOOs, Counter Mortar Personnel, and Air OPs are the only ones in a position to deal with the problem and greater interchange of information between them should be attempted.

3. The neutralisation of a Hostile battery once it is located also needs proper thought and ingenuity. The sudden and very heavy concentrations of 10-15 minutes used in this Operation were not entirely satisfactory.

4. It is urgently recommended that opportunities be made to study in detail the reactions of some hostile batteries to Counter Battery fire of different types so as to find out with more certainty what methods show most promise.

# **Effect of Counter-Battery Fire in Operation VERITABLE**

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## **Object**

1. An attempt is made to assess the effect of our counter battery fire on the German artillery formations between the RHINE and the MAAS which were supporting 84 Div and 180 Div.

## **Method**

2. Full details of the initial counter battery tasks were obtained from CBO 30 Corps. Information about the enemy order of battle was obtained from intelligence reports, and artillery PW were interrogated. A ground check was made of a number of battery positions. Considerable use has been made of 2 Canadian Corps Counter Battery Intelligence Report No. 7 dated 22nd February, 1945, which gives details of further ground checks.

## **Enemy Order of Battle**

3. The enemy artillery in the area examined consisted of the following:

184 Artillery Regiment	6 Troops
1512 Heavy Fortress Battalion	5 Troops
1152 Army Artillery Battalion	3 Troops
1307 Fortress Artillery Battalion	up to 27 guns

As a result of the ground examination 20 troop positions were found, which either had been, or most probably had been, occupied at the opening of the operations. These 20 accounted for all 14 troops of the first three of the above formations, but the remaining 6 positions accounted for 11 out of a possible 27 guns of 1307 Fortress Artillery Battalion. In addition a further five positions were discovered consisting of infantry guns etc. In our endeavour to cover all HBs which might have been active, it is possible that some positions of 1307 Battalion and some infantry guns may have been overlooked.

4. The relationship between the enemy order of battle and hostile battery positions in the area is shown at Appendix B.

## Application of Counter Battery Fire

5. 45 Hostile Battery positions were engaged in the initial fire plan. 27 were in an area overrun sufficiently quickly to be available for examination with little risk of confusion. As a result of this examination and interrogation of PW it appears that 14 of them had been occupied and 13 unoccupied. Also in the same area a further 11 positions, which were not engaged, were found to have been occupied.

6. Details of the 11 Hostile Batteries that were not engaged are given in Table 1.

<b>Table I</b>		
<b>Hostile Battery</b>	<b>Whether included in 2 Cdn Corps or Veritable HB Lists</b>	<b>State of occupation deduced before Veritable</b>
7951 DR	Correctly located	Known to be occupied but found out too late for inclusion in fire plan
8052 DL	Correctly located	Considered unoccupied
8353 DH	Correctly located	No information - presumably considered unoccupied
8556	Not listed	Defence Overprint shows a weapon pit
8150 FV 6250 KM 8151 ID	Correctly located	Positions were considered unoccupied. Guns moved in on night 7/8 February
8555 VS	Correctly located	Considered unoccupied
8352	Not listed	Defence Overprint shows a dugout
8243	Not listed	Several unoccupied gunpits shown in this area on Defence Overprint
8449 IJ	Correctly located	No information but presumably considered unoccupied. This was actually occupied by Airborne recoilless guns. It is possible that these guns occupied the position only about 8/9 Feb. 45

It may be seen that only three of the batteries had not been listed and that a further three were not occupied until the eve of the operation.

7. It seems clear that the difficulty in Operation VERITABLE did not lie in locating the battery positions but in deciding which were most likely to be occupied.

### Material Effects

8. Details of the physical effects of the bombardment on HB positions are given in Appendix C. This shows that out of a total of 28 guns that were in positions engaged by CB, 5 were probably hit and 7



withdrawn. Out of 27 guns in positions that were not engaged 15 were withdrawn. It would appear that the results of the counter battery fire in respect of actual material damage was satisfactory. There is also prima facie evidence that guns are less likely to be withdrawn from positions that are engaged than from those that are not. However too much reliance cannot be placed on this as the availability of transport is not known and may well have been an overriding factor.

9. In addition four infantry gun positions were engaged by CB fire and two guns knocked out. These positions are not included in Appendix C owing to the uncertainty of the fate of other possible infantry guns.

## Neutralisation

10. At Appendix D is summarised the available evidence of the degree of neutralisation that was achieved. Results of PW interrogation are summarised at Appendix E. It would appear that the most important factor was the condition of the enemy troops. Thus 1307 Bn showed very little fight while 184 Regt and 1152 Bn both fought quite hard. The different effects of the various weights of fire put down were masked by the inherent differences in morale of opposing artillery regiments.

11. Where there was positive evidence that batteries did or did not fire, it was found that out of 10 engaged in the initial CB programme only 3 fired, but out of 9 not so engaged 6 fired. However the 9 not engaged by CB were not left entirely unmolested, as 8 of them had concs or stonks fired into their neighbourhood. There is therefore an indication that the weights of CB fire were about adequate, whereas that produced incidentally through other bombardments was insufficient.

12. The Corps Operations Log showed only five reports of enemy shelling for 8th February over the whole Corps front. This together with very favourable opinions expressed by our own troops suggests that enemy artillery fire was not a source of trouble on that day.

13. At Appendix A is a series of illustrations showing the number of shells fired at an enemy battery with the times of day at which they were fired. There were indications that neutralisation was achieved but that there was firing during lulls. It would seem therefore that an improvement in neutralisation could be achieved by spreading the counter battery fire over as long a period of time as possible. Examination of the illustrations in Appendix A suggests that it might be practicable to provide for a counter battery program more evenly spread over a period of time. Provided the numbers of shells fired was kept unaltered there would not be any material alteration in the chance of destruction.

## Communications

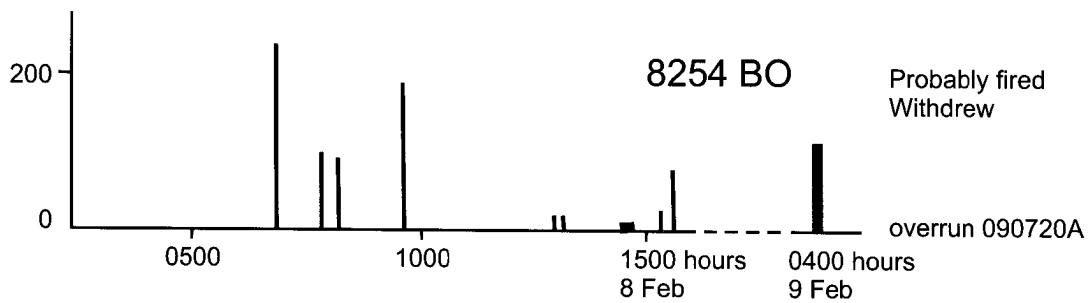
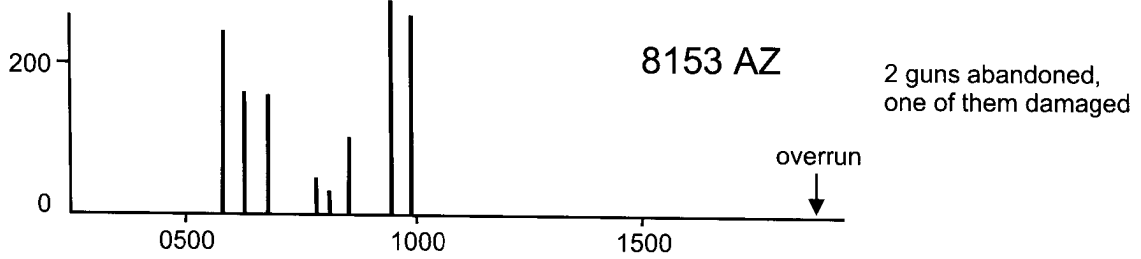
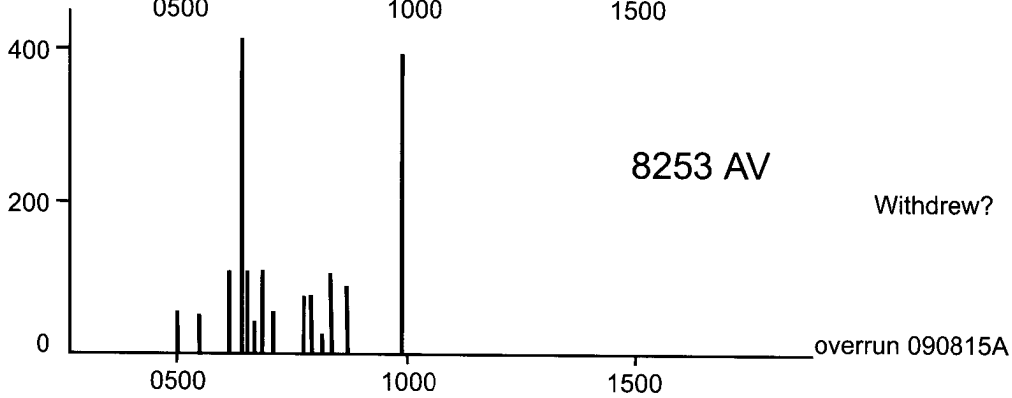
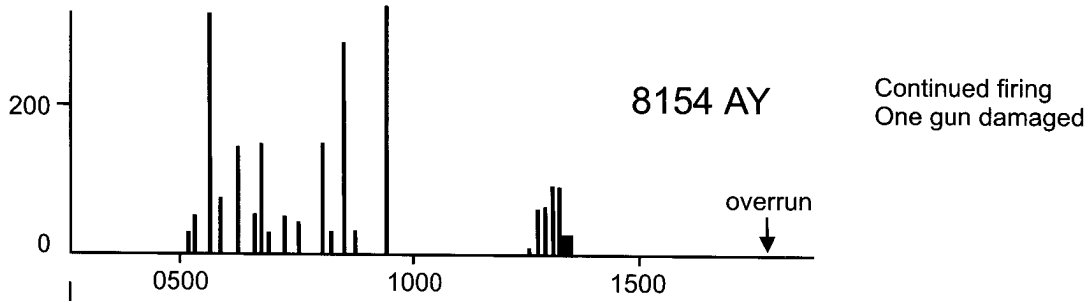
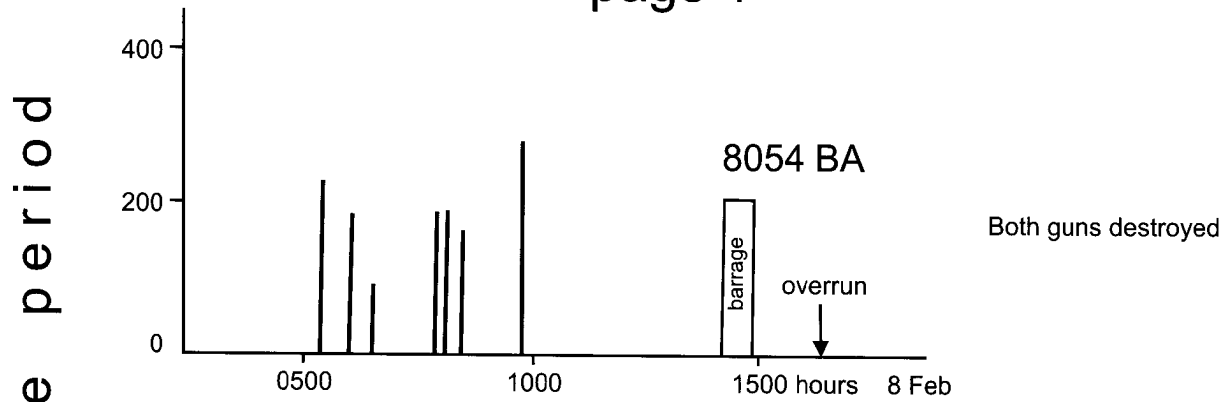
14. Cutting of communications was also a factor in restricting the amount of enemy artillery fire. It is probable that it caused the enemy to resort to predicted fire (although only one such case has been recorded) where normally his OP could have conducted an observed shoot. Table II below summarises the available evidence obtained by questioning PW.

**Table II  
Communications**

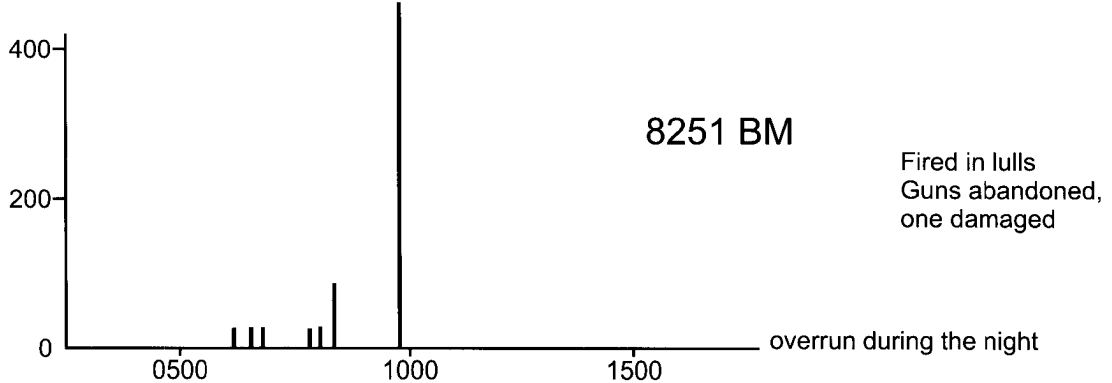
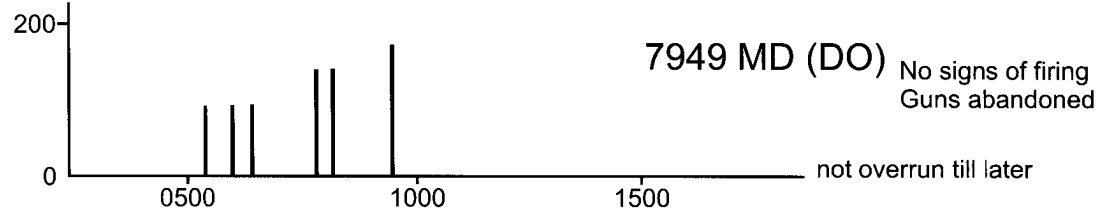
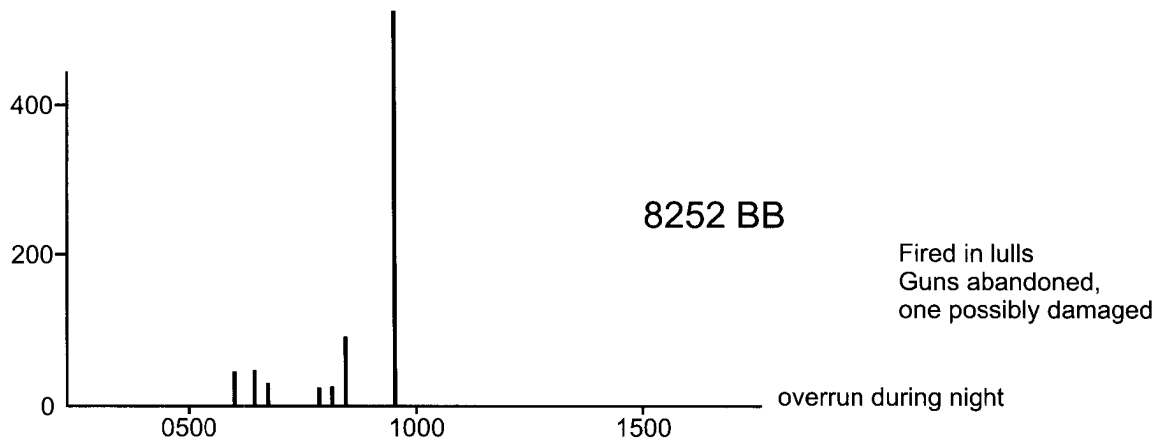
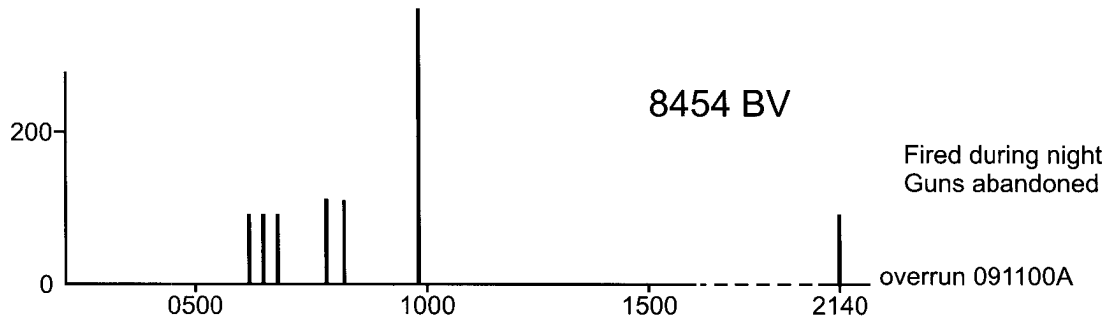
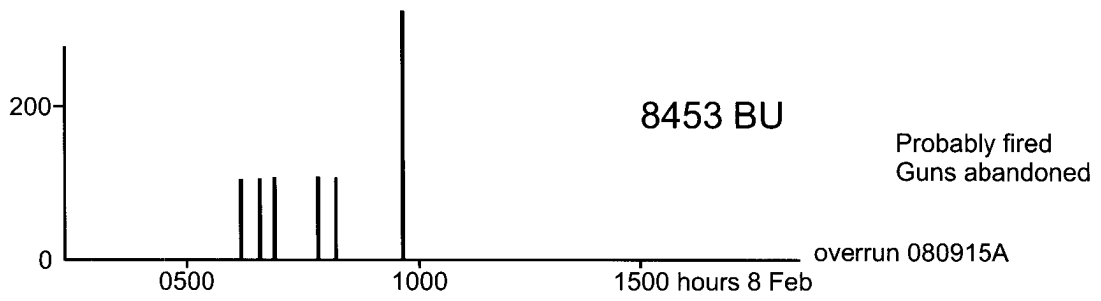
Unit	Communication		Hostile Bty reference	Line Communication	Estimated length of line	Radio Communication
	From	To				
1152 Bn	OP	Guns	One of KM, FV or ID	Failed after 0900 hours	5000 yds	Failed
	Unit HQ	Guns	One of KM, FV or ID	Functioned	Unknown	-
I/184	no record					
IV/184	Unit HQ	Guns	VS	Failed at 0800 hours	1500 yards	Functioned
	Unit HQ	Guns	DH	Failed at 0830 hours	1500 yards	Functioned
	Unit HQ	Guns		Failed at 0930 hours	1500 yards	Functioned
	Unit HQ	Superior HQ	-	Probably failed at times	unknown	Functioned
1307 Bn	No record					
1512 Bn	OP	Unit HQ	-	Failed after 0900 hours	5000 yards	No record
	Unit HQ	Guns	BM	Failed but restored	1000 yards	No record
	Unit HQ	Guns	BB	Failed but restored	1200 yards	No record
	Unit HQ	Guns	BV	Failed	4000 yards	Failed
	Local OP	Guns	BV	Functioned in afternoon	500 yards	No record

# Appendix A

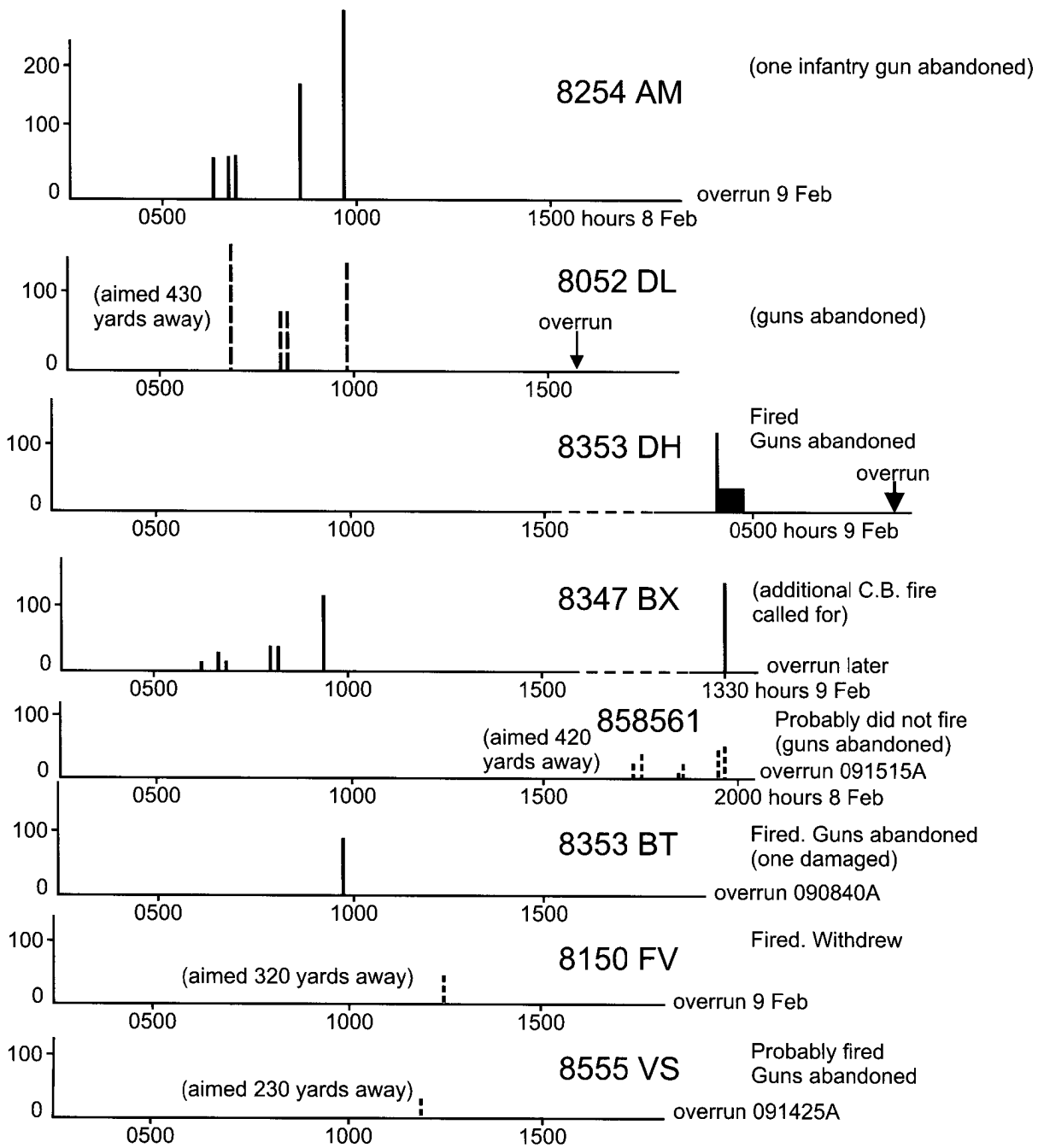
page 1



Number of Shells per 5 minute period



Number of Shells per 5 minute period



NOT ILLUSTRATED

- 7951 DR (360 shells aimed 260 yards away) . . . . . withdrew?
- 8151 ID no shelling recorded within 500 yards. . . . . withdrew?
- 83895290 no shelling recorded within 500 yards. . . . . guns abandoned
- 8243 area no shelling recorded within 500 yards. . . . . never fired

NOTE: In these figures no attempt has been made to make the thickness of the vertical line correspond to the duration of the shelling except when this lasted over 5 mins. Fractions of 5 mins have been taken as 5 mins throughout.

## Appendix B

<b>Relationship between Enemy Artillery Order of Battle and the Hostile Battery Positions considered to have been occupied on 8th February 1945</b>				
<b>184 Artillery Regiment</b>			<b>1512 Heavy Fortress Battalion</b>	
I	1	8254 BO	1	8454 BV
	2	8154 AY	2	8251 BM
	3	8453 BU	3	8252 BB
IV	10	8353 DH	4	8253 AV
	11	8352 -	5	8243
	12	8555 VS		
<b>1152 Army Artillery Battalion</b>			<b>1307 Fortress Battalion</b>	
1	8150 FV		8153 AZ	7951 DR
2	8151 ID		8353 BT	8052 DL
3	8250 KM		7949 MD	8556 -

<b>Relationship between Enemy Artillery Order of Battle and the Hostile Battery Positions considered to have been occupied on 8th February 1945</b>	
Five other hostile battery positions were found as follows:	
8054 BA	Infantry gun position. 2 x 15 cms found (1051 Infantry Regiment).
8254 AM	Infantry position. 1 x 7.62 cm found.
7948 ME	This may or may not have been occupied. Perhaps a roving gun.
8347 BX	Possibly an infantry position in this locality - 7.62 cm found in neighbourhood.
8949 IJ	Airborne recoilless gun positions.

<b>Equipment</b>	
I/184 Artillery Regiment	10.5 cm howitzers.
IV/184 Artillery Regiment	15 cm howitzers.
1512 Battalion	Three troops 12.2 cm howitzers.
	One troop 15.2 cm howitzer.
	One troop 10.5 cm howitzer.
1152 Battalion	15 cm howitzers.
1307 Battalion	Krupp 75s made early this century.

## Appendix C

Hostile Battery	Guns found by ground check	Guns thought to have been there from PW reports, etc.	Guns probably hit by counter battery fire	Guns destroyed by other means	Guns withdrawn	Unit
8154 AY	3	3	1	2	-	2 Tp, I/184
8253 AV	0	3	-	0	3	4 Tp, 1512 Bn
8153 AZ	2	2	1	1	-	1307 Bn
8254 BO	0	3	-	-	3	1 Tp, I/184
7951 DR	0	1	-	-	1	1307 Bn
8453 BU	2	3	-	2	1	3 Tp, I/184
8454 BV	3	3	-	3	-	1 Tp, 1512 Bn
8252 BB	4	4	1	3	-	3 Tp, 1512 Bn
7949 MD	2	2	-	2	-	1307 Bn
8251 BM	3	3	1	2	-	2 Tp, 1512 Bn
8052 DL	2	2	-	2	-	1307 Bn
8250 KM	0	3	-	-	3	Tp of 1152 Bn
8353 DH	3	3	-	3	-	10 Tp, IV/184
8556 -	2	2	-	2	-	1307 Bn
8353 BT	2	2	1	1	-	1307 Bn
8555 VS	2	3	-	2	1	12 Tp, IV/184
8150 FV	0	3	-	-	3	Tp of 1152 Bn
8151 ID	0	3	-	-	3	Tp of 1152 Bn
8352 -	3	3	-	3	-	11 Tp, IV/184
8243 -	0	4	-	-	4	5 Tp, 1512 Bn
<b>Total</b>	33	55	5	28	22	-
<b>Engaged in opening fire plan</b>	21	28	5	16	7	-
<b>Not engaged in opening fire plan</b>	12	27	0	12	15	-

## Appendix D

Hostile Battery	Whether directly engaged in initial CB Task Table or not	Prisoner of War Statements	Evidence from Ground Check	Deduction	Unit	Weight in Tons	No. of Rounds	Guns Hit
8054 BA	Engaged	-	No evidence of firing in this position	Did not fire	1051 IR	56.6	2876	2
8154 AY	Engaged	One gun was damaged by our shelling. The NCO of a second gun was scared by the shelling and that gun did not fire. A third gun however fired in spite of our shelling. Also fired after our shelling stopped.	Empty cartridge cases found in one pit.	2 out of 3 guns silenced during our counter battery fire.	I/184 AR	51.8	2276	1
8153 AZ	Engaged	-	One gun damaged. Plenty of unused ammunition left.	Did not fire	1307 Bn	28.6	1292	1
8254 BD	Engaged	-	Empty cartridge cases found	Fired	I/184 AR	35	1064	-
8453 BU	Engaged	-	Empty cartridge cases found	Fired	I/184 AR	21.9	890	-
8454 BV	Engaged	These guns fired little if at all during the day after our CB programme started. In the evening of 8-9 Feb however they did fire.	Empty cartridge cases found	Did not fire during our CB fire	1512 Bn	25.6	970	-
8252 BB	Engaged	These guns fired in the pauses in our shelling - alternating with 8251 BM	One gun damaged. Empty cartridge cases found.	Did not fire during our CB fire	1512 Bn	28.4	816	1
7949 MD	Engaged	-	Unused ammunition found. No signs of firing.	Did not fire	1307 Bn	12.5	736	-
8251 BM	Engaged	These guns fired in the pauses in our shelling - alternating with 8252 BB	One gun damaged. Empty cartridge cases found.	Did not fire	1512 Bn	26.3	720	1
8052 DL	Concentrations at point 430 yards distant	-	Unused ammunition found	Did not fire	1307 Bn	7.8	552	-
8353 DH	Not engaged by CB but target No.8039 was centre of HB	Heavily shelled and they did not fire	-	Fired	IV/184 AR	13.8	307	-
8556 -	Concentrations at point 420 yards distant	Our shelling stated to have been very heavy. They were scared and did not fire.	-	Did not fire	1307 Bn	6.3	196	-



## Appendix D - continued

Hostile Battery	Whether directly engaged in initial CB Task Table or not	Prisoner of War Statements	Evidence from Ground Check	Deduction	Unit	Weight in Tons	No. of Rounds	Guns Hit
8353 BT	Engaged	One gun stated to have been damaged. Did some firing during morning and afternoon of 8 Feb.	Empty cartridge cases found. Guns appeared undamaged	Fired - probably after completion of CB programme	1307 Bn	2.1	96	1?
8150 FV	Concentrations at point 320 yards distant	See 8250 KM	Considered recently occupied. Much ammunition left.	Fired	1152 Bn	0.5	48	-
8555 VS	Concentrations at point 230 yards distant.	It was stated that communications were in order for 4 1/2 hours after our fire plan started.	Much ammunition left.	Probably fired	IV/184 AR	3.5	40	-
8250 KM	Concentrations at point 590 yards distant	These guns together with those of 8150 FV and 8151 ID are ascribed to 1152 Arty Bn. They came into position during the night of 7/8 Feb. They all appear to have done some firing although they suffered casualties.	Thought to have been occupied recently.	Fired	1152 Bn	4.1	512	-
8151 ID	Concentrations at point 800 yards distant	See 8250 KM	Empty cartridge cases found	Fired	1152 Bn	6.1	136	-
8352 -	Concentrations at point 800 yards distant	Shelling was stated to be so strong that they did little firing.	-	Did not fire	IV/184 AR	15.9	403	-
8243 -	Not fired at	Did not fire 8 Feb, but did fire on 9 & 10 Feb. First fired at on 10 Feb.	Not checked by a visit	Did not fire	1512 Bn	0	0	0

## Appendix E

### Information Obtained by Questioning Prisoners of War

Hostile Battery	Unit	PW Statement
8154 AY	2. I/184 AR	From accounts by PW from this Unit it appears that No.3 gun was damaged by our shelling. The NCO i/c No.1 gun was scared and they did little firing. No.2 gun however fired extensively from 0800 hours when it first was ordered to fire, in spite of our shelling which was aimed accurately at them and included airbursts. After midday, possibly 1500 hours, our shelling stopped, and they later engaged our infantry over open sights. Tanks came on to the position from a flank while they were being held down by mortar fire. After this they observed that Nos.1 and 2 guns had been knocked out.
8454 BV	1. 1512 Bn	From accounts of PW of this Unit it appears that they fired up to 50-60 rounds per gun during the night of 8/9 Feb. They fired little, if at all, by day after the CB programme started. No guns were damaged, but there was about one casualty. They realised the position had been spotted and disliked tree bursts particularly. Their communications with Abteilung (5000 yards away) whence fire orders usually came, had been cut: if they did shoot it was observed from an OP about 800 yards away on the hill in front of the position. When the position was overrun they ran off through the woods: the guns were to be blown up.
8252 BB	3. 1512 Bn	PW said there were 3 guns here and a fourth gun per troop in reserve. One of their guns had been pulled out because of damage. They fired in the pauses in our shelling, alternating with 8251 BM. They were overrun by tanks, abandoned their guns and were used as infantry. They had no transport. PW from Bn HQ said lines to troops were cut in the morning but restored in the afternoon. They fired on information from neighbouring units as their OPs were not functioning.
8250 KM 8150 FV 8151 ID	1152 Bn	A PW from 1 troop said they came into position night 7/8 Feb and did quite a lot of firing, and were not counter-battered though they had a certain amount of shelling. They lost 1 killed, 1 wounded and withdrew during the night. From accounts of PW from 3 troop it appears that they also came into position the night before the attack and were not specifically engaged but odd shots came into the position. After about 0900 hours line and wireless to the OP failed. The guns did some firing. PW could not specify positions but any of the three 8250 KM, 8150 FV, 8151 ID would be consistent with their stories.
8353 DH	10. IV/184	A PW from 10 tp said they were fired at from 5 a.m. to 5 p.m. It was destructive fire but generally fell short and was heaviest in the evening. They did fire. PW from Stab/IV/184 said the line to 10 troop lasted about three hours after our fire plan started; it was then cut and had to be repaired twice - they were in touch by RT.
858561	1. 1307 Bn	PW said that the position they occupied may have been here; or it was described by one as 1000 yards SE. Their story may be typical of the battalion. Our shelling was very heavy on the position though not actually directed at them. They were scared. Nearly all stated they did not fire a round.
8353 BT	1. 1307 Bn	PW said one gun was damaged by shelling, the other did some shooting during the morning and early afternoon of 8 Feb.
8555 VS	12. IV/184	PW from Stab/IV/184 said the line to 12 troop failed about 4 1/2 hours after our fireplan started. They were in touch by RT.
8389 5290	11. IV/184	PW from 11 troop IV/184 AR, who may have been here, said shelling was so strong they did little firing. The gun, for which he was an ammo number, fired 4 rounds. PW from Stab/IV/184 AR said line failed 3½ hours after our fire plan started but they were in touch by RT.

# Artillery in the Counter-Flak Programme in Operation Varsity

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(Note: Joint Report No.4 appears in its entirety in Part I Chapter 4.)

The number of enemy AA guns of all calibres deployed throughout the "Varsity" area was considerable. The Second Army Hostile Battery List, amended up to 2359 hrs 23rd March, 1945, contained 357 positions in two lists. List A, consisting of targets in the Artillery Zone (roughly between the Autobahn and the Rhine, see map at Appendix A), gave 106 positions which were shown as having 231 LAA and 108 HAA guns in all. List B, batteries beyond the Artillery Zone, had 251 flak positions containing possibly 668 LAA and 78 HAA guns. Subsequent examination of the ground and interrogation of local civilians showed that about half of these positions were unoccupied on the day of the operation.

Over 150 prisoners from these flak positions were interrogated and documents found on the sites were scrutinised; as a result it has been possible to form a clear picture of the Order of Battle of Flak formations in the "Varsity" area (See Appendix B). This shows that, had all units been at full strength, there would have been 562 AA guns in the area, 78 heavy and 484 light. As many of the LAA guns were trillinge or vierlinge and as it is known that a number of mobile 2 cm vierlinge were also operating in the area at the time, it appears that the number of barrels that could be fired at the airborne armada was not far short of a thousand. (Trillinge are triple and Vierlinge are quadruple LAA guns.)

Some of the flak units had been brought into the area as late as D-1 and prisoners stated that the airborne landing was expected at the time and place at which it did occur. The discovery of a marked German map suggests that some leakage of information had taken place. In spite of the reinforcements which were probably brought in as a result of such leakage, the number of guns in the area was still very much less than that shown on the Hostile Battery Lists. There were very few real gun positions which did not figure in these lists, although the counter-battery intelligence work was very difficult owing to bad weather and the fact that the Germans refused to disclose their positions by firing before D-Day.

## Artillery

The counter-battery fire of the night D-1/D was not specifically directed against flak positions as such, but several of them were engaged and where damage was done this has been included in the part played by the Artillery in reducing the fire power available to the enemy during the airborne operation. Full details will be found at Appendix D.

Between 0930 and 0952 hrs on 24th March, 1945, some 24,000 rounds (440 tons) were fired at flak positions in the "Varsity" area. 12 Corps fireplan "Carpet" was the engagement of 79 points, each by a single battery for 25 minutes, and the 30 Corps programme "Rapier" was the engagement, scale 2 or 3, time on target, of 22 points. Where the points were very close together or coincident they have been grouped together and the total number of targets thus arrived at is 95. The amount of fire with which the targets were to be engaged varied from 16 to 1,000 rounds with an average of 242 rounds per target. (Corresponding average figures in other operations were "Switchback" 427 and "Veritable" 1117 rounds per target).

All but three of the 95 positions engaged by 12 and 30 Corps were visited a few days after the operation and those cases where signs of damage were discovered are fully described in Appendix D. 39 of the positions were probably unoccupied on the day in question and 24 of these had been engaged in the fire plan. A further 23 with no evidence whatsoever of any occupation were also engaged.

As was the case with the medium bombing, the physical damage inflicted by the artillery was very small but it is considered that there was some temporary lowering of morale. Prisoners from flak positions in the Artillery Zone stated that several 2 cm guns were jammed by the dust which the shelling raised. The diagram at Appendix E shows that the effectiveness of the opposition met by the first squadrons of troop-carrying planes was very much less than that encountered by later arrivals; this would seem to suggest that gunners, who had gone to ground during the artillery programme and the medium bombing, did not return to their guns immediately the airborne armada was sighted.

## Appendix D - Artillery Targets

95 targets were engaged in the counter-flak programme.

92 of them were visited by the ground investigators.

11 of these showed signs of damage or casualties that might be attributed to artillery, though not necessarily the Counter-flak programme.

CB Number	Map Ref	Weight of Bombardment	Findings of Investigators
191	16655217	133 rds Med (4.8 tons)	One of three 2 cm Vierlinge still in position but destroyed by Germans. Position heavily shelled, probably mostly by observed fire.
258	25654467	133 rds Med (4.8 tons)	Three 2 cm guns. No damage. 1 dead German. PW said that communications were out but this did not stop them from firing.
228	21184521	600 rds 25 lb Airburst and 400 rds 25 lb HE shells	Four pits with dummy guns but signs of recent occupation. One German grave dated 24th March. No craters found but airburst splinters in all 4 pits.
205	26374496	133 rds Med (4.5 tons)	Several craters near gun pits. Guns moved 500 yds on 24th March because of shelling, said PW. Burnt out 3/4-track ammn carrier found on site. Arty cut comms but did not stop firing.
230	242480	100 rds Med (4.3 tons)	8 German graves dated 24th March 1945. PW said both cluster bombs and arty killed men but guns continued to fire.
338	240483	100 rds Med (4.3 tons)	One German grave dated 24th March.
256	28704303	133 rds Med (4.8 tons)	Undated German graves. No signs of recent occupation.
1031	232474	400 rds 25 lb HE shells (4.5 tons)	One German grave dated 24th March, 1945. No signs of damage.
1016	25603911	1200 rds 25 lb airburst	Many craters found including craters in 2 gun pits.
221	21824955	200 rds Med (8.5 tons)	One gun pit probably hit by Arty. 4 dead Germans on site.
MM	21935007	100 rds Med and 40 rds in CB programme (5.8 tons)	Two gun pits received Arty hits. Guns destroyed by Germans. Two dead Germans found on site.