

# THE SECOND WORLD WAR ROCKET BATTERY AT TYNINGS GATE, CHEDDAR, AND THE USE OF ROCKET BATTERIES TO IMPROVE DECEPTION AT BOMBING DECOYS

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## SUMMARY

*In a previous paper about the Second World War remains on Black Down, mention was made of the presence of the remains of an anti-aircraft rocket battery (Schofield et al. 1998, 278). The remains have now been severely damaged but are described in detail together with an account of the recent attempts to protect them. Research has also uncovered the reason for the presence of the battery and hinted that the site may have been used for experimental purposes.*

## BOMBING DECOYS

The system of decoys established to divert enemy bombing raids away from cities and other targets has been described by Dobinson (2000), and the site (C82) to the north of Cheddar by Schofield *et al.* (1998). These decoys comprised sites known as QL which mimicked the small light sources that could not be hidden by blackout precautions, and QF sites which represented an already burning town to attract later waves of bombers away from the real targets. There was a further elaboration of the QF sites known as Starfish (Special Fire) which were a response to the firestorms unleashed on cities like Coventry which the QF sites could not match.

The Tynings Gate site formed one of a category of Starfish sites that were introduced from June 1941, known as Strategic Starfish. These tended to be larger than the earlier ones but the key difference was in who controlled when they were lit. Most decoys were instructed by a local controller, who was usually the officer commanding the nearest barrage balloon squadron. In the case of the decoys to the south of Bristol this would have been 951 Squadron (later to become 927, and later again 927/935 Squadron). This local control allowed for the careful timing that was an important part of the deception; QL lights had to appear to be dimmed as enemy aircraft approached and QF fires lit after the raid started. It was particularly important that

the fires were not observed being lit, as this had allowed RAF pilots to identify German decoys.

The Strategic Starfish, in contrast, were designed to simulate an air-raid on a non-specific target and were controlled centrally by RAF 80 Wing based in Radlett, Herts (Dobinson 2000, 134). This system of control, although the reason was known to only a very few at the time, allowed the incorporation of information on impending raids obtained by the code-breakers at Bletchley Park. The German bombers relied on electronic navigation systems which the British were able to intercept ('beam-bending', see Dawson *et al.* 2011, 69-72) and which could be used to direct the raiders to the Strategic Starfish locations. There is a slight mention of this: "The orders to light these [Starfish] decoys are given by a special Air Ministry establishment to a local controller. This establishment is in possession of intelligence information which enables it to decide which STARFISH to light and when to do it." (TNA AIR 2/4767: AA Command Standing Operation Instruction No 45, 16/9/1941).

The Tynings Gate site had joined the existing series of Starfish (SF1) around Bristol as SF1(e) by September 1941 (Dobinson 2000, 135), and can be closely dated to the end of the previous month as on 20 August a road closure notice was sent to the County Surveyor by the Air Ministry, Colonel Turner's Department, Lands Branch (SRO C/S/5/9). This department, known only by the name of its commander for security reasons, was that responsible for the decoy programme. The letter was accompanied by a copy of a plan, originally traced from the Ordnance Survey six-inch map, that showed the location for a 'night shelter' on the road to Shipham (see Fig. 1). The road south from Tynings Gate is labelled 'access' and a field for the Starfish site indicated by thick dashed lines. On the copy, the words 'night shelter' have been crossed through in blue/black ink, and a new location indicated with an inked block and the letters 'N.S.'. This is the location of the surviving bunker. There are further additions in pencil: the end

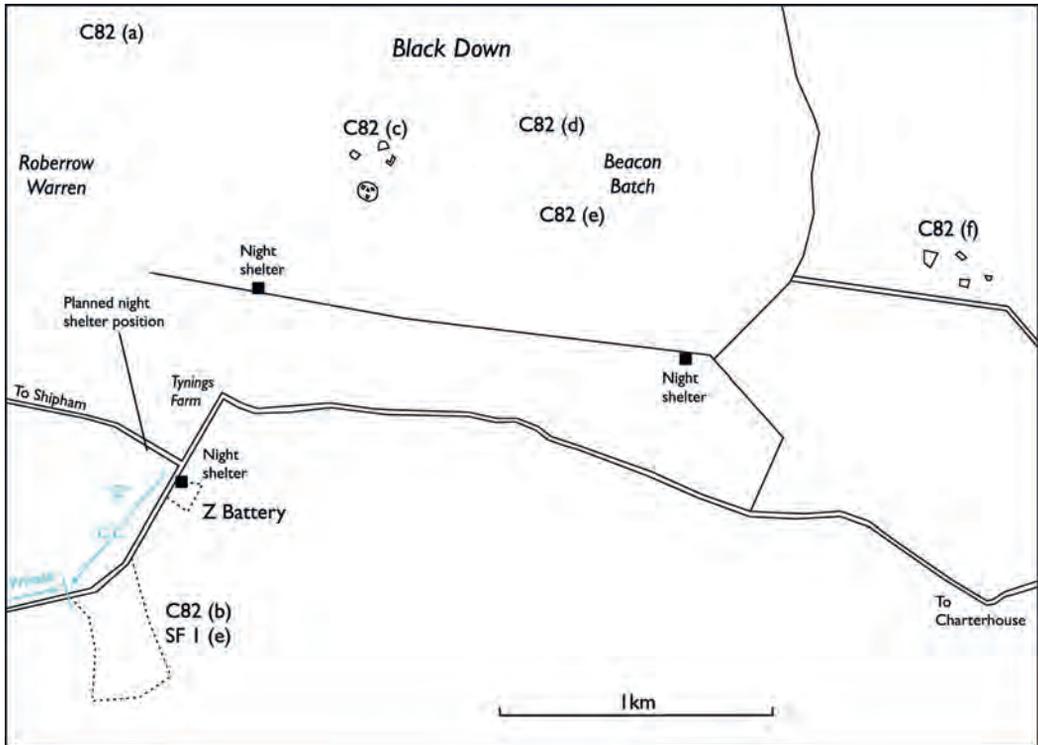


Fig. 1 Location map showing the components of the C82 civil decoy and SF1(e) Starfish. Pencil annotations from the road closure notice are in blue.

of the public road is indicated, annotated with 'Private' and 'C.C.' with arrows to either side. In the field above 'C.C.' is written 'Z' (inverted commas in original). It is not clear what this 'Z' means as the proposals for Z batteries were not made until the following year (see below). The field for the starfish has been coloured red and the road block marked with a red line and 'B'.

#### ROCKETS AT BOMBING DECOY SITES

Dobinson (2000, 133–4) describes problems in 1941 when it was realised that anti-aircraft fire around the true target was showing the decoy for what it was. Initially this was addressed by decoy flashes on the ground to simulate the firing of anti-aircraft guns, but with the development of flashless propellants another solution was sought. An arrangement was made between Anti-Aircraft Command and the Air Ministry that anti-aircraft fire would be directed over the decoy sites so that the exploding shells would increase the decoy's realism. There was a problem in that bombers, in fact, tended to avoid concentrations of anti-aircraft fire and dropped their bombs in surrounding areas, sometimes the very areas that the decoy was trying

to draw them away from. Despite this, the idea was deemed successful and each of the large Starfish sites was assessed to see how easily existing gun positions could fire over the decoy sites when required. These existing anti-aircraft guns were concentrated into Gun Defended Areas (GDAs) around potential targets to enable fighter aircraft to operate, safe from 'friendly fire', in the areas between them. The assessment revealed that there was a small number of Starfish that lay so far outside a GDA that they could not be covered from existing gun positions.

It would have been expensive and a waste of manpower to provide anti-aircraft batteries for no real purpose except to enhance the decoys, but an alternative was available: the anti-aircraft rocket. Development of these had begun before the war and by mid-July 1940 the first of the so-called 'unrotated projectiles' (UPs) was almost ready for production. A month later 8,000 of these three-inch weapons were ordered in both a single and twin-barrel configuration (so-called, although the weapon did not have a barrel being fired from a mounting known as a projector). These were intended to supplement the conventional light anti-aircraft (LAA) guns which were being produced at a worryingly slow

rate (Dobinson 2001, 222-3).

The weapons were deployed in units of 64 projectors known as ZAA batteries (the Z having, apparently, no significance) comprising four troops of sixteen weapons each. By November 1941, single-barrel projectors were being issued to searchlight sites and they were also being used at 78 sites where Bofors LAA guns were awaited (Dobinson 2001, 346). Rocket batteries were also added to the gun-defended areas; Bristol, for instance, eventually having four sites.

One advantage of the rocket projector over a gun was the lack of recoil, which meant that the weapon required much less substantial mountings or could be mobile. It did, however, require a substantial distance between projectors because of the blast, and this meant sites were extensive but with few, if any, structures. The emplacement used for these early projectors was simply an eight-foot square of concrete with projecting bolts to anchor the projector. No standard plan was used but the requirement to keep the projectors a set distance apart (33 yards in this case) meant that a grid pattern was often arrived at (Dobinson 2001, 299).

As part of efforts to reduce the numbers of projectors and personnel required, multiple launchers were introduced: the U9P with nine rockets intended for a battery of 12 and the U20P (also known as No. 6) with six projectors per battery. Layout plans survive for the U20P showing a grid of six octagonal concrete bases surrounded by ammunition and personnel shelters known as ‘trench shelters’, from the original purpose of the curved corrugated iron used to construct them. Each battery’s personnel was intended to be 54 women of the ATS (Auxiliary Territorial Service) and 83 men of the Home Guard. Development continued until by the end of 1943 there were four types of three-inch UP projector, the vast majority (97%) being the twin-barrelled No. 2.

As more anti-aircraft guns became available some of the rocket projectors became surplus, particularly the early models, and it was decided that they could be used as a quick and cheap method of producing the explosions of anti-aircraft fire over the decoys that were sited too far out from the GDA:

“2. [...] A.A. [Anti-Aircraft] Command suggest, however, that additional bursts in the sky could be arranged by utilising Z projectors. There are large quantities of the single type projectors now surplus and they could be employed for this purpose.

3. Normally two men man each projector, which is fired by an electric button on each gun. These guns project a 25-lb shell up to about 17,000 ft. At 7,000 to 8,000 ft. they have a range of approximately 6 miles. This single type projector is an inaccurate weapon but would suit our purpose. The A.A. Command would be perfectly willing, to put aside several hundred

projectors for S.F. use, if required. Ammunition is available.

4. The question of manning and siting these projectors was discussed and it was suggested that they might be sited on the S.F. sites so as to cover adjoining sites. The A.A. are willing to set up the projectors at the sites required and fix them on the correct bearing and elevation to give bursts where required. A series of projectors, say 12 on a site, could be kept in position and could be wired for firing from the shelter. The A.A. are also prepared to train any men that we require in the maintenance and operation of these projectors, which is very simple, and it is understood that two days’ training would be ample.
5. If this proposal is approved, it is suggested that this scheme might be tried out on the Bristol decoys, in particular the extensive lighting and fire decoys on the Cheddar site which is an important decoy and one which lies right outside any A.A. and may on that account be detected by enemy pilots. A battery of 12 projectors on each of the three under-mentioned sites would probably be the most suitable.

Projectors at	Giving flashes over
Cheddar	Surrounding Cheddar site alternatively Downside
Downside	Cheddar Chew Magna Kenn Moor
Kenn Moor	Yeomouth Downside

The four sites – Downside, Cheddar, Kenn Moor and Yeomouth are all outside existing A.A. range. Chew Magna has a very limited possibility for A.A. Co-operation.

6. A battery of 12 projectors at each of the three sites would enable the site to put up three series of four bursts which would correspond to bursts from a half battery of 4 guns. If the site which is firing the projectors is not itself in operation there is no reason why the projectors cannot be reloaded (this takes less than 2 minutes) and bursts could be continued over the site in operation for as long as required.
  7. The existing communications between sites, local Controller and G.O.R., would cover all requirements.
- [...]
9. There is no doubt that this scheme would provide bursts of A.A. in the area over the decoys concerned and would greatly add to the realism in that enemy pilots would be led to believe that they had already reached the defended area.”

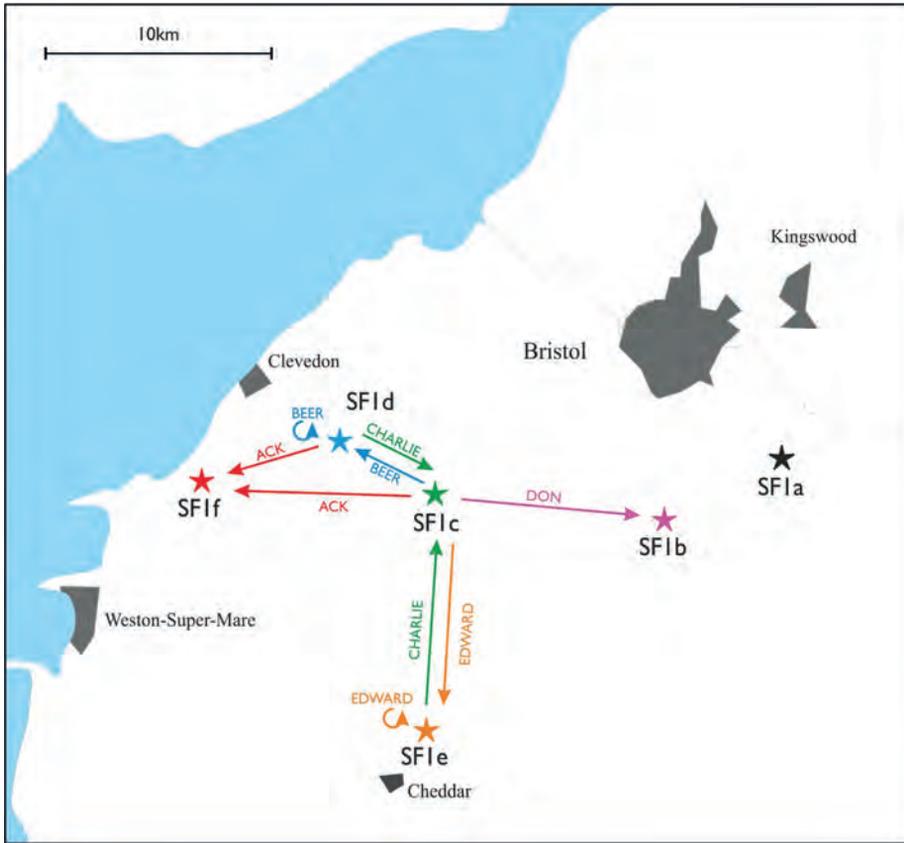


Fig. 2 Diagrammatic representation of the five schemes of rocket firing over the Bristol Starfish

(TNA AIR 2/4767. Co-operation with A.A. Z projectors (3 inch rocket) on Starfish sites. 1/5/1942)

One complication was the danger to fighter aircraft. These operated in the airspace outside the Gun Defended Areas so as not to be at risk from anti-aircraft fire but the whole purpose of the new batteries at decoys was to provide fire outside the GDA. This appears to have been resolved as “The introduction of Z projectors on Starfish Sites was finally approved by Fighter Command in July 1942. We have now 144 projectors set up (three sites Southampton, four sites Bristol, two sites Liverpool, three sites Middlesbrough). There are twelve Projectors on each site with 48 rounds of ammunition. The control and firing procedures have been agreed with the local A.A.D.C.’s and appear in every way satisfactory.” (TNA AIR 2/4768 Dummy Flashes. 2/12/1942). This preparedness is contradicted later in the same document which states “420 additional Z Projectors have been delivered to this department and are held in store. The equipping of

TABLE 1 THE FIVE SCHEMES FOR FIRING THE Z BATTERIES AT THE BRISTOL STARFISH (TNA WO 166/7403).

Codename	Fire Over	Fire From	Bearing
ACK	Yeomouth SF1(f)	Downside SF1(c)	277
		Kenn Moor SF1(d)	256
BEER	Kenn Moor SF1(d)	Downside SF1(c)	302
		Kenn Moor SF1(d)	160
CHARLIE	Downside SF1(c)	Kenn Moor SF1(d)	122
		Cheddar SF1(e)	7
DON	Chew SF1 (b)	Downside SF1(c)	97
EDWARD	Cheddar SF1(e)	Downside SF1(c)	187
		Cheddar SF1(e)	24

additional sites has been deferred pending the completion at Southampton, Bristol, Liverpool, and Middlesbrough.” The same document also makes it clear that the projectors were not intended to shoot down enemy aircraft as “The chance of an enemy being hit by decoy projectors is remote, but there can be no doubt that the bursts in the air will add to the realism of the main decoy and will not

make the enemy pilot’s passage any more comfortable, i.e. it increases the chances of his being misled.”

The other Bristol sites that were equipped with rocket batteries were ‘normal’ Starfish and it would appear from surviving documentation that the Tynings Gate rocket battery was operated as part of that system. The War Diary of 46 Anti-Aircraft Brigade (TNA WO 166/7403) includes details of how the system would work in *Draft 46 AA Bde SOI No: [blank] Operational Control of Z Decoy Sites*. The preamble gives the rationale for the scheme as “a) to give added realism to decoy sites, b) to increase the apparent extent of the GDA”. The intention was to give rocket fire over five of the six Bristol Starfish sites using rocket batteries sited at the decoys. The procedures given in the instruction state that the GCO (Gun Commanding Officer) at the Bristol Gun Control Room (GCR) was to decide on the firing of the rocket batteries when enemy aircraft were recorded as crossing a certain grid line on the plots that were supplied to him. He would inform Bristol Balloon HQ by telephone: “Balloons, connect for scheme XXX” (where XXX was one of the codenames applied to different firing schemes, see Table 1). Bristol balloon HQ would then telephone the rocket batteries required for a particular scheme and connect the GCO directly to them so that exactly two minutes later he could issue the order to fire. During this two minutes the crew of the battery had to set the twelve rocket projectors to the bearings already allocated for that scheme. On receipt of the order to fire the ‘Z decoy NCO’ was to fire the rockets in three salvos of four rockets at ten second intervals, reload the projectors (about ten minutes) and report back to Bristol when available to fire again. These numbers clearly indicate that the sites were occupied by single-barrelled projectors.

The site of SF1(a), known as Stockwood in most documentation but as Queen Charlton in the draft SOI, is omitted from the schemes and SF1(b) also appears anomalous. It will be seen from Table 1 and Fig. 2 that

TABLE 2 THE TEN STARFISH SITES LISTED AS NEEDING Z BATTERIES TO PROVIDE ANTI-AIRCRAFT FIRE IN AIR 2/4768 (12/2/1943) WITH NATIONAL GRID REFERENCES CONVERTED BY DOBINSON (2000, APPENDIX I, TABLE I.4)

Number	Protecting	Site Name	Grid Ref
SF1(b)	Bristol	Chew Magna	ST 573 649
SF1(c)	Bristol	Downside	ST 478 659
SF1(d)	Bristol	Kenn Moor	ST 434 686
SF1(e)	Bristol	Cheddar	ST 466 557
SF10(f)	Middlesbrough	Newton Bewley	NZ 475 260
SF11(j)	Liverpool	Llanasa	SJ 096 821
SF11(m)	Liverpool	Burton Marsh	SJ 286 749
SF17(c)	Southampton	Lee	SU 354 172
SF17(d)	Southampton	Nutbom	SU 392 213
SF17(e)	Southampton	Chilworth	SU 395 177

it, uniquely, was only covered by one Z battery in scheme ‘DON’ but Table 2 shows that it also had a rocket battery of its own which is not mentioned at all. Logically, scheme ‘DON’ should have included firing from SF1(b), in the same way as schemes ‘BEER’ and ‘EDWARD’ included firing from the target site itself. It is not possible to explain this anomaly but several solutions are possible such as a failure to establish the battery at SF1(b) by the date of the instruction (which, it must also be remembered, was only a draft; no subsequent version has been found).

RECENT HISTORY OF THE TYNINGS GATE SITE

The Tynings Gate site was brought to the writer’s attention in 1998 by Don Brown, then of the Mendip Hills AONB ranger service. The site had been known to the ranger service for some time as the owner, then Peter Thorne, had suggested it had some historical importance. Previous rangers had believed the site to be for searchlights and had told Thorne that the site was not legally protected in any way. Brown’s work on Mendip during the last war had put him in touch with ex-servicemen who reported that the site was, in fact, a rocket battery (Brown 1999). The full importance of the site was still not realised at that time, nor was the site believed to be under any threat as the owner was clear in his belief of its importance as part of the wartime story.

In 2001, however, part of the site was damaged when Peter Thorne built a barn, and in 2002 work to construct a hard standing resulted in further damage. Vince Russett of North Somerset Council who knew Thorne, spoke to him about this and learned that he planned to construct more barns. Thorne had abandoned his attempts to interest the authorities in the importance of the site as they had done nothing. Russett carried out a photographic survey of the site with a sketch plan in May which was submitted to English Heritage (now Historic England) with a proposal that they Schedule the site to prevent further damage. By the time of a visit by the Monuments Protection Programme in August another barn had been built but the site was finally scheduled on 1st April 2003. In July 2003, the author carried out a measured survey of the surviving remains to provide baseline data for their future management. There were also plans for Somerset County Council to purchase the site for its long-term preservation but Thorne would only sell if the council would guarantee that he would get planning permission for replacement barns and a house elsewhere on his land. This was something that the council was legally unable to do.

In 2009, English Heritage was contacted by David Thorne, the nephew of Peter Thorne who reported that his uncle had died and that, after a long legal battle he had inherited the land. His uncle had leased the land before his death, the lease had now expired and it appeared that a large

TABLE 3 DETAILS OF COMPONENTS AND THEIR CONDITION. IP = IRON PROTRACTOR, CP = CONCRETE PROTRACTOR, GC = GOOD CONDITION (OF SURVIVING PARTS). 1946–81 REPORTS ARE FROM AERIAL PHOTOGRAPHS: RAF 3G/TUD/UK/15/25 5332 (14/1/1946), ORDNANCE SURVEY 71/282 230 (1966), HSL/UK/71/220/47 2019 (1971) AND CARTOGRAPHICAL SERVICES 4746 (2/8/1981). ALL HELD AT THE SOMERSET HERITAGE CENTRE.

	1946	1966	1971	1981	2002 survey	2003 survey	2009 survey
1	Yes	Yes	Yes	Yes	Part buried but GC	CP(?), GC	Removed
2		Yes	Yes	Yes	IP, part buried, GC apart from recent scrape	Under dungheap	Present, some damage
3	Yes	Yes	Yes	Yes	CP, buried	GC	Under dungheap
4	Yes	Yes	Yes		IP, CG	Mostly buried	Removed
5		Yes			CP, ramp missing, cattle trough	GC	GC
6	Yes	Yes			IP, part buried, GC	GC	GC
7	Yes	Yes	Yes	Yes	Buried	GC	Part buried, GC
8	Yes	Yes	Yes	Yes	Buried	GC	GC
9	Yes	Yes	Yes		IP (recent breaks), ramp crushed	Mostly buried	IP missing, ramp and apron missing
10		Yes		Yes	CP, other ironwork, GC	GC	Buried, probably destroyed
11		Yes	Yes	Yes	CP, GC	GC	Removed
12	Yes	Yes	Yes	Yes	IP, part buried, GC	Removed	
13	Yes	Yes	Yes		CP, part buried, GC	Removed	
(14)					Moved, damage to IP		
15		Yes	Yes	Yes	CP, mostly buried	Removed	
16	Yes	Yes	Yes	Yes	Moved, damage to IP		
17	Yes	Yes	Yes	Yes	Moved, damage to IP		
18		Yes	Yes	Yes	CP, buried	South half removed, GC	GC
19		Yes	Yes	Yes	Buried	GC, extra ironwork	Part buried, GC
20	Yes	Yes	Yes				
21	Yes	Yes	Yes	Yes		Removed	
22		Yes	Yes	Yes		Not seen	
(23)	Yes	Yes	Yes	Yes		Not seen	
24	Yes	Yes		Yes			
25	Yes		Yes	Yes			
26	Yes	Yes					
S1	Yes	Yes					
S2	Yes	Yes				South wall missing, GC	GC
S3						No walls, base in GC	GC

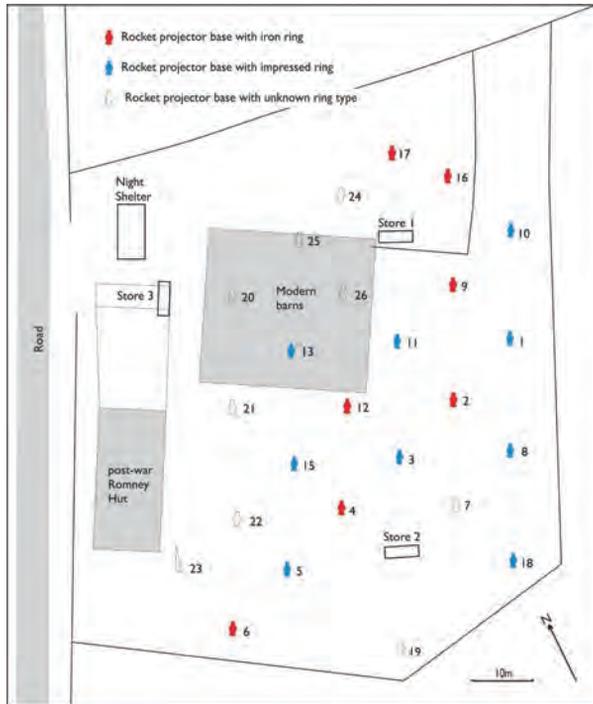


Fig. 3 Plan of the ZAA site at Tynings Gate, showing locations of features plotted on the ground and from aerial photographic evidence



Fig. 4 Base 1 in 2003 showing octagonal base without iron protractor ring and with 'apron' to front and 'ramp' at rear. Somerset HER image 45370

amount of damage, both to the agricultural holding and the scheduled monument, had occurred. When visited, the site was indeed badly damaged by scraping of slurry from the barns, which had removed their floor surfaces, moved some of the concrete bases, and covered others with dung heaps. A further rapid condition survey was undertaken by the author and plans made for the restitution of the site under archaeological supervision. Funding became available for this from English Heritage in February 2013 but the very wet spring prevented the work taking place. Subsequently, David Thorne has not been willing to discuss matters further and the site remains in its disturbed condition.

#### DESCRIPTION OF THE TYNINGS GATE SITE

The only measured survey of the site was undertaken by the author in 2003 and has been used in conjunction with earlier aerial photographs and later descriptions. Vince Russett's work in 2002 provided photographs of the survivals at that date and a detailed description of individual features (Russett 2002).

The most obvious feature of the site are the bases for the rocket projectors of which twelve survived in 2003 (see Figs 3 and 4; Table 3). These comprise an octagonal concrete base with a rectangular 'ramp' on one side and an angled 'apron' on the other (these terms were used by Russett (2002) on which this description is based; it is not suggested that these are the correct wartime expressions). The bases are reinforced concrete, 8 feet 8 inches (2.65m) from corner to corner and some feature a cast-iron ring marked in degrees, 5 inches (125mm) wide and 7 feet 6 inches (2.28m) outside diameter. The protractor rings are formed from eight sections each covering 45° with a pierced flange on the lower outer edge to enable them to be bolted together (Fig. 5). They are hollow, strengthened by cast cross struts and 0.5 inches (12.5mm) thick. Cast into the iron in addition to the degree marks, numbered every 10° is a mark: PD232-1 with the letters SF in a diamond shape below and the date 1941. A possible maker's mark T&C (or T&G) was also seen by Russett together with a painted BI on one section of the protractor of Base 16. These protractors are believed to be a standard item, being certainly known from coast artillery batteries in Orkney where they are 'a feature on many of the Orkney bty's [batteries] which allowed the gun to be laid on pre-determined bearings' (Dorman 1996, 45). An example at Castle Battery, Shapinsay, is illustrated by Dorman which is clearly identical to those at Tynings Gate but, despite his statement above, no others are mentioned in his survey of the batteries.

The evidence suggests that there were not sufficient iron protractor rings, as alternate bases are without this feature. Instead, an iron ring has been impressed into the surface of the wet concrete to leave a reversed image.



*Fig. 5 Detail of the iron protractor ring on Base 16 in 1998. Somerset HER image 652.*

Disturbed bases could be seen by Russett to have had steel pipework to conduit electric cables for firing and some bases have additional features, described below.

In addition to the projector bases, there were at least three rocket stores (3.25m x 1.85m). These, as described in the historical sources (above), were formed from trench shelters: pieces of curved corrugated iron that produced a structure like a small Nissen hut with vertical sides. The corrugated iron was supported on two low concrete walls with a concrete floor between. The ends appear to have been open, probably protected by a tarpaulin or similar, and each has a shallow gully cast into the concrete to prevent water flowing inside. Of the three, the base of one (Fig. 3, no. 3) survives incorporated into the concrete hard standing of the animal pens, one (1) has been destroyed and the other (2) has had one wall knocked over. Base 23 (Fig. 3), only known from aerial photographs, was probably a fourth.

At the north-west corner of the site is a control bunker ('night shelter') for the decoys, which included the lights of Bristol C82b as well as the Starfish, and

would also have been used to control the battery. Its earth covering and the wing walls of the entranceway have been removed, but it appears to be identical to those on the main (C82) decoy site (Schofield *et al.* 1998, fig. 3). RAF aerial photographs (RAF 3/G/TUD/UK/15/21 5332 of 14th January 1946 in Somerset Heritage Centre) show an additional structure, a rectangle about 7.5m x 8m, over the site of Base 11. Its shadow suggests a pointed roof and it may be a large tent, perhaps being used while decommissioning the site.

## DISCUSSION

Rocket batteries were an extremely common feature of the Second World War defences of Britain but very little evidence for them has survived. This is principally because of their impermanence; they were mobile weapons and most did not have much associated infrastructure. Where concrete bases were provided, they were easily removed after the war to return land to productive use. The most extensive survival is at Golta on Flotta in Orkney (HY 394 171) where there are large numbers of concrete bases and protected rocket stores on open moorland. None of the bases have protractor rings but they do show the locations where the projectors' legs were seated. A contemporary photograph of the twin-barrelled projector (in Napier 1946) shows the projector with adjustable dish-shaped feet, which would suit the settings on the concrete bases, and also a protractor ring sitting above the feet.

There are some remains nearer to Tynings Gate at Kenn Moor (ST 434 680) on the north side of Mendip: the site of Starfish SF1(d), which was involved in the firing schemes described above. There, a shelter of different form (apparently that for a 'Drem Q' airfield lighting decoy, see Dobinson 2000, fig. 36) is accompanied by two rocket stores and four low mounds that might have raised projectors above the wet moor. The stores are identical to those at Tynings Gate but there is no sign of concrete projector bases. No remains of rocket batteries have been found at the other Bristol sites and none appear to survive at those protecting the other cities.

The structures at Tynings Gate appears overly complex for a system that was expected to fire on predetermined bearings, where a simple marker could be used to indicate the bearing, but the explanation may be hinted at in TNA AIR 2/4767 (quoted above) where it says that the Mendip decoys might be used for evaluating the use of the rocket batteries. The Tynings Gate site may have had an experimental origin as bearings and elevations were assessed. The fixed protractors and level bases may have been needed to ensure consistency between the different trials. Further support for this may lie in the number of bases which is clearly larger than the twelve recorded in the documents. Tynings Gate is an important survival of

the Second World War, and moreover, may have held a key role in the development of decoys. This makes the severe damage to this legally protected site to be regretted all the more, and it is to be hoped that the site will one day be restored.

## ACKNOWLEDGEMENTS

I am grateful to Don Brown for bringing this site to my attention and to Vince Russett for both the 2002 survey and for details of the Kenn Moor site from the North Somerset HER. Matt Nicholas cheerfully assisted with the 2003 survey under unpleasant conditions. David Hunt provided much useful discussion and information that he has accumulated from The National Archives but any mistakes of fact or interpretation are my own.

## PRIMARY RECORDS

### In The National Archives

**AIR 2/4767** Camouflage (Code B, 18): Decoy sites: operational co-operation with Anti-Aircraft Command. 1941–42.

**AIR 2/4768** Camouflage (Code B, 18): Decoy sites: operational co-operation with Anti-Aircraft Command. 1942–43.

**WO 166/7403** War Diary of HQ 16 AA Brigade, Jan 1942 – December 1942.

### In the Somerset Record Office

**C/S/5/9** Closing of roads by War Office

## REFERENCES

- Brown, D., 1999. *Somerset v Hitler: Secret Operations in the Mendips 1939–1945*, Newbury: Countryside Books.
- Dawson, D., Hunt, D. and Webster C. J., 2011. *Somerset and the Defence of the Bristol Channel in the Second World War*, Taunton: SANHS.
- Dobinson, C., 2000. *Fields of Deception: Britain's Bombing Decoys of World War II*, London: Methuen.
- Dobinson, C., 2001. *AA Command: Britain's Anti-Aircraft Defences of World War II*, London: Methuen.
- Dorman, J. E., 1996. *Orkney Coast Batteries 1914–56*, Privately published.
- Napier, A. F. S., 1946. 'British rockets in the world war', *Journal of the Royal Artillery* 73:1, 11–20.
- Russett, V., 2002. *The Z Battery Site, Tynings Farm, Cheddar*, unpub typescript in Somerset Historic Environment Record (HER 12835).
- Schofield, A. J., Webster, C. J. and Anderton, M. J., 1998. 'Second World War remains on Black Down: a reinterpretation', *SANH* 142, 271–86.