

Fire Behaviour Training Centre., Exeter Airport, Devon

NGR SY 00313 94148

Results of historic building recording

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On behalf of:
Devon & Somerset Fire and Rescue Service

Document No: ACD363/2/0

Date: June 2012



archaeology

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Summary

Historic building recording of two Second World War fighter pens at the former RAF Exeter (now Exeter International Airport), Devon was undertaken by AC archaeology in March 2012, prior to their demolition, and the rebuilding and upgrading of a Fire Behaviour Training Centre. The pens are two of a group of three and would have housed four of the six fighter planes in a 'flight'. The pens are of the same design (11070/40), the original type B design with two bays divided by a central spine wall that contains, at its front, a pre-cast concrete Stanton shelter. At the end of Pen 145 is a defended wall, orientated to defend against an attack from parachutists landing within the airfield.

1. INTRODUCTION (Fig. 1)

- 1.1 A record of two Second World War aircraft fighter pens at Exeter International Airport, (formerly RAF Exeter), Devon (centred on NGR SY 00313 94148; Fig. 1) was prepared by AC archaeology in March 2012. The fighter pens are to be removed as part of the expansion and upgrading of the adjacent Fire Behaviour Training Centre. The recording was commissioned by the Devon & Somerset Fire and Rescue Service and was required under condition 8 of the grant of planning permission (East Devon District Council planning reference 11/0989/MFUL) for the extended centre.
- 1.2 The site is located on flat ground on the north side of the airfield, to the western side of a dispersal loop. The pens, no. 145 located at SX00313 94104 and no. 144 located at SY 00370 94174, were two of six around the loop; there were further hardstandings and a hangar on the inside of the loop (Francis 1999, map 10).
- 1.3 The site lies on the edge of the airfield, and is partly currently used by the Devon & Somerset Fire and Rescue Service for their Fire Behaviour Training Centre and by the airport fire crews for fire training. The bays of the pens have been infilled with, in places over 1m of, dumped material, including soil, rubble, concrete, asbestos and other debris. The concrete include modern drainage channels, as well as possible earlier material including a probable light base, building foundations, and reinforced concrete covers for below-ground ducts. Pen 145 had been cleared prior to survey but Pen 144 had not, and at the time of the survey tailings from the daily sweeping of the airfield was being dumped on the site.

2. AIMS

- 2.1 The principal aim of the investigation was to prepare a record of the two fighter pens before they are demolished.

3. METHODOLOGY

- 3.1 The work was undertaken in accordance with a written scheme of investigation prepared by AC archaeology (Passmore 2011).
- 3.2 No new documentary research was carried out. However, reference has been made to Paul Francis' published report on the airfield (Francis 1999), and his book *Airfield Defences* (Francis 2010), as well as modern Ordnance Survey mapping that depicts the Second World War layout of RAF Exeter.

3.3 The pens were recorded to Level 3 as set out in English Heritage's 2006 document *Understanding Historic Buildings: a guide to good recording practice*. The following methodology was employed:

- A detailed written description of the pens;
- A photographic record of the pens, using a high-quality digital camera, showing the overall character and setting, as well as more detailed shots of significant details.
- Drawings of one pen at 1:50 and 1:100, comprising an earthwork survey with plans and elevations/profiles of the associated air raid shelter and defended wall.

4. HISTORICAL BACKGROUND

4.1 Exeter Airport opened as a civil airfield in 1937, and in 1939 was taken over by the Air Ministry, operating between 1939 and 1946 as RAF Exeter. In the post-war period civil flying resumed and the airport operates today as Exeter International Airport. During the late summer of 1940 considerable construction work took place as the airfield was expanded to meet RAF requirements. Four groups of three single-engined fighter aircraft dispersal pens were constructed on the north and west sides of the airfield – each fighter pen housed two aircraft, with each group of three pens being allocated to a flight (Francis 1999). A further two pens were also constructed on the west side of the airfield to accommodate non-combat fighter planes flown by the Gunnery Research Unit (Francis 2010, 75).

4.2 The present development site is located within part of the airfield that housed 'AK' and 'BK' flights, and in addition to the fighter pens, there were associated buildings including flight offices, latrines and a drying room, and night sleeping shelters. Most of these buildings survive, in varying states of repair (*ibid.*, 97-105).

4.3 Following trials in 1938, which concluded that aircraft were susceptible to damage from nearby blasts, arrangements were made for the dispersal of aircraft around airfields. Design 11070/40 became the standard layout for dispersal pens, and most examples at RAF Exeter were of this type. The original type B of this design has angled outer arms to surround the aircraft, with two bays divided by a spine wall. At the end of the central spine is a brick-built structure containing a nine-bay 25-man pre-cast concrete Stanton shelter. The shelters can be entered from either bay (Francis 2010, 15, 75-76). Pen 145 has an attached defended wall – an enclosed defended position – at the end of its south-west arm.

5. PEN 145 (Fig. 2; Plates 1-6)

5.1 Each bay is roughly triangular, has a tarmac surface, and measures up to 22m long by 22m wide. The spine wall and outer arms comprise earth banks or traverses supported by brick retaining walls (Plates 1 and 2). The latter are not present on the side of the outer arms away from the bays. The walls are constructed of frogged standard red bricks laid in English Bond, 1½ bricks thick in a technique known as to the military as permanent brick construction. The eastern bay and spine wall are 1.50m high, whilst the pen of the western bay is 1.10m high. During recent clearance of dumped material around the pen some of the rear traverse has been removed. This was originally up to 6m wide, and seemingly was never much higher than the top of the retaining walls. This is contrast to the pen design FCW 4513 (the second generation type B), which had dwarf retaining walls and taller earth traverses. The two pens at the airport associated with the Gunnery Research unit are of this design,

and other examples in Devon exist (and have been archaeologically recorded) at Harrowbeer, and Winkleigh.

- 5.2** Attached to the end of the western outer arm is a 'defended wall' that also acts as a retaining wall for the end of the traverse. It is constructed of red brick laid in English Bond, giving a thickness of 0.60m. It measures 3m by 2.2m internally, with angled corners on its southeast side. The three elevations facing the inside of the airfield contain a total of five small embrasures. These are splayed with narrow central openings, and have concrete lintels (Plate 3). Internally, there were originally concrete shelves or rifle steps below the windows to support weapons (Plate 4). These have been broken off, but three rows of projecting brick supports survive. The building was designed without a roof, and stands to a height of 2.2m from the present ground level. The upper course of masonry comprises bricks laid upright on end.
- 5.3** At the end of the spine wall is an air raid shelter designed to accommodate ground crews working in the adjacent bays. It is housed within a triangular end to the spine traverse that measures 8.4m by 12.8m. The retaining wall on its south side is 1.8m high. The area between the wall and the shelter has been filled with local sand, whilst the top of the shelter is covered with a mixture of topsoil and sand. The shelter is entered from either bay by entrances constructed of brick walls with flat concrete roofs (Plate 5). The shelter itself is a 25-man Stanton shelter constructed from pre-cast concrete blocks, with nine bays, each comprising two sections (Plate 6). The sections are built onto a concrete footing/floor, and are connected together with nuts and bolts. The shelter contains few fittings, the most significant being a cast-iron vent through the ceiling of the eastern entrance. There are two further unidentified iron fittings in the east entrance.

6. PEN 144 (Plates 7-8)

- 6.1** This pen is essentially the same design as pen 145, although at the time of the survey was largely obscured by soil, rubble and vegetation. The main difference between the two pens is that it is not provided with a defended wall. Despite its condition, several interesting features were visible. As noted in the description of Pen 145 it is clear that the earth traverse was not much higher than the retaining walls of the bays. Although some erosion has occurred, the traverse is generally around 0.30m higher than the retaining walls. This observation is confirmed by the design of the end elevations of the bay retaining walls. Here masonry is stepped, with each block of masonry comprising four rows of bricks (Plate 7).
- 6.2** The other interesting features of this pen are the remains of sandbags (Plate 8). These have rotted away but their decaying concrete infill can be seen either *in situ* or on the surface below. They had been placed on top of the spine wall in front of the shelter.

7. COMMENT

- 7.1** The two pens form part of a group of six fighter pens and associated crew buildings that were located around the outside of a dispersal loop on the north side of the airfield. The two pens were used by 'AK' flight. The pens conform to design 11070/40 that became the standard layout for dispersal pens, and are of the original type B design, with two bays divided by a spine wall. The end of the spine wall contains a pre-cast concrete Stanton shelter. This original type B design was used for all operational fighter plane pens at Exeter Airport, although is less common at other, later airfields in the Southwest. The second generation type B (FCW 4513)

is the most common type and differs from the earlier design by having low dwarf retaining walls with tall earth traverses. The air raid shelters, although still of the Stanton type, were moved to the rear of the central spine and now incorporated emergency exits to the rear. This type of pen can, for example, be found at Winkleigh, Harrowbeer, Perranporth and Culmhead; at the latter two sites a mixture of both original and second generation type B pens were constructed.

- 7.2** Pen 145 has an attached feature known as a defended wall at the end of its south-west arm – in this case an enclosed but open to the sky defended position. Defended walls of varying designs were attached to a number, but not all, of the fighter pens at RAF Exeter. Those on the north side of the airfield face inwards towards the airfield, whilst those on the western pens face west overlooking the former A30. In the southwest, defended walls are a feature of airfields classified in 1940 as Class 1. These were airfields located within 20 miles of a port that could be used by German parachutists to seize the landing ground for use by troop-carrying aircraft, who could then advance and capture the nearby port (Francis 2010, 51). Defended walls as such were not included within the recommendations for Class 1 airfields, but may have been used locally instead of, or in addition to, pillboxes. Other examples in the Southwest are known at Culmhead (*ibid.*, 101-112), again sited to defend from inside and outside the airfield.

8. OASIS ENTRY AND ARCHIVE

- 8.1** An entry to the OASIS (Online AccesS to the Index of Archaeological investigationS) database has been completed, and has the identifying code 127600.
- 8.2** The paper and digital archive and finds are currently held at the offices of AC archaeology Ltd, in Unit 4 Halthaies Workshops, Bradninch, nr Exeter, Devon, EX5 4LQ, and will be deposited under the relevant accession number at the Royal Albert Memorial Museum, Exeter, at the earliest in 2013 when the current museum non-acceptance policy will be reviewed. The temporary reference number from the museum is 11/47.

9. ACKNOWLEDGEMENTS

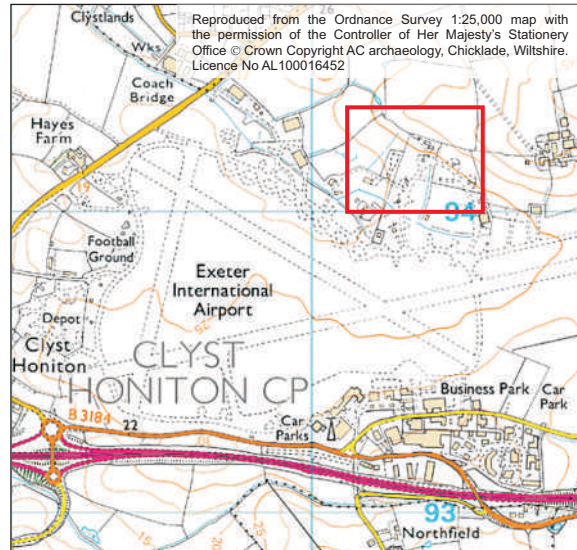
- 9.1** The project was commissioned by the Devon and Somerset Fire & Rescue Service, and managed for them by Mark Tribble and for AC archaeology by Andrew Passmore. The site visit was undertaken and the report prepared by Andrew Passmore, with the report illustrations drawn by Sarnia Blackmore. Thanks are due to Mark Tribble for his assistance during the field survey.

10. SOURCES CONSULTED

Francis, P., 1999, *Exeter Airport: Historic airport survey for Devon County Council & East Devon District Council*

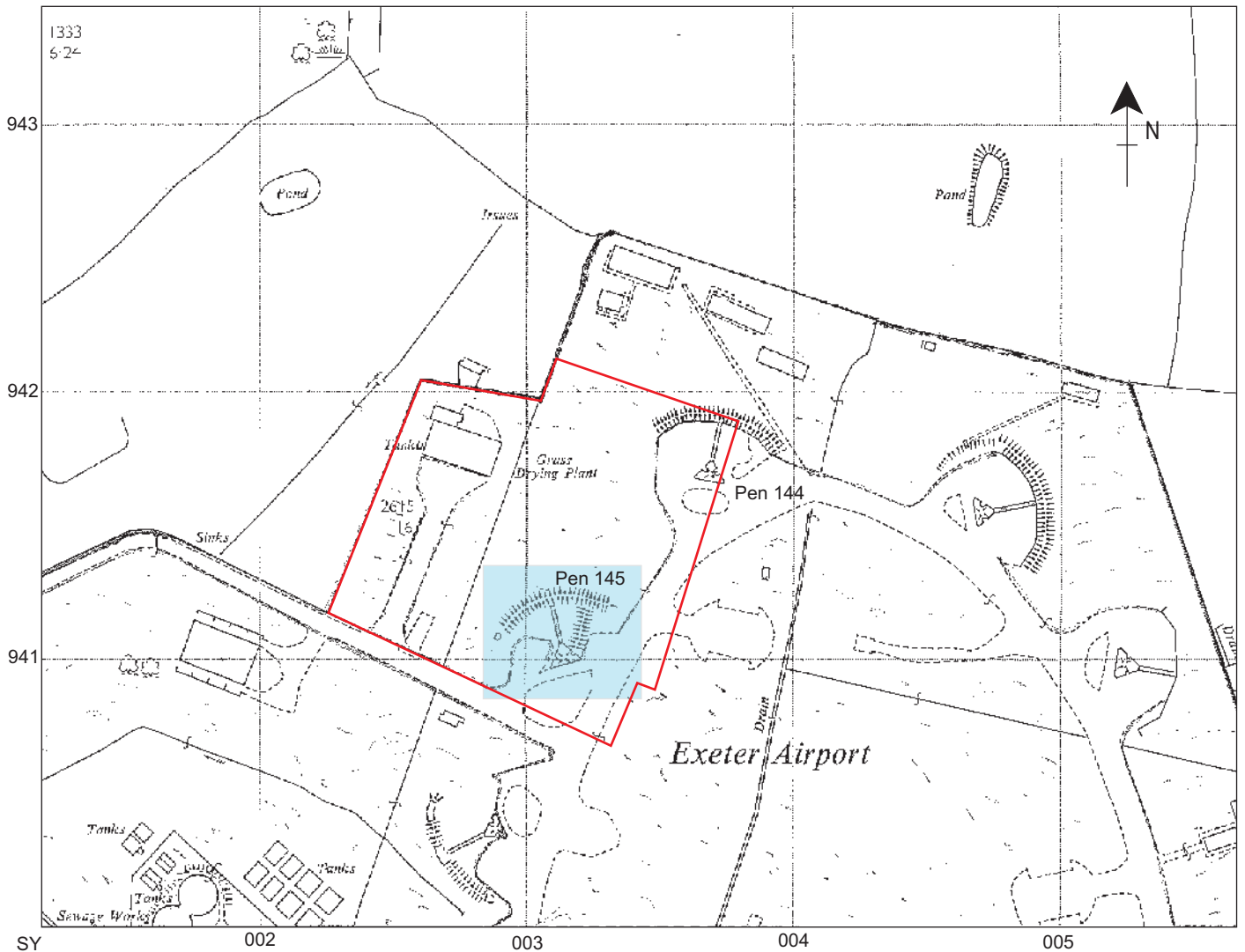
Francis, P., 2010, *20th Century Military Archaeology Issue 1: airfield defences*

Passmore, A., 2011, Fire Behaviour Training Centre, Exeter Airport, Devon, NGR SY 00313 94148, Written Scheme of Investigation for historic building recording, AC archaeology document no. 363/1/1



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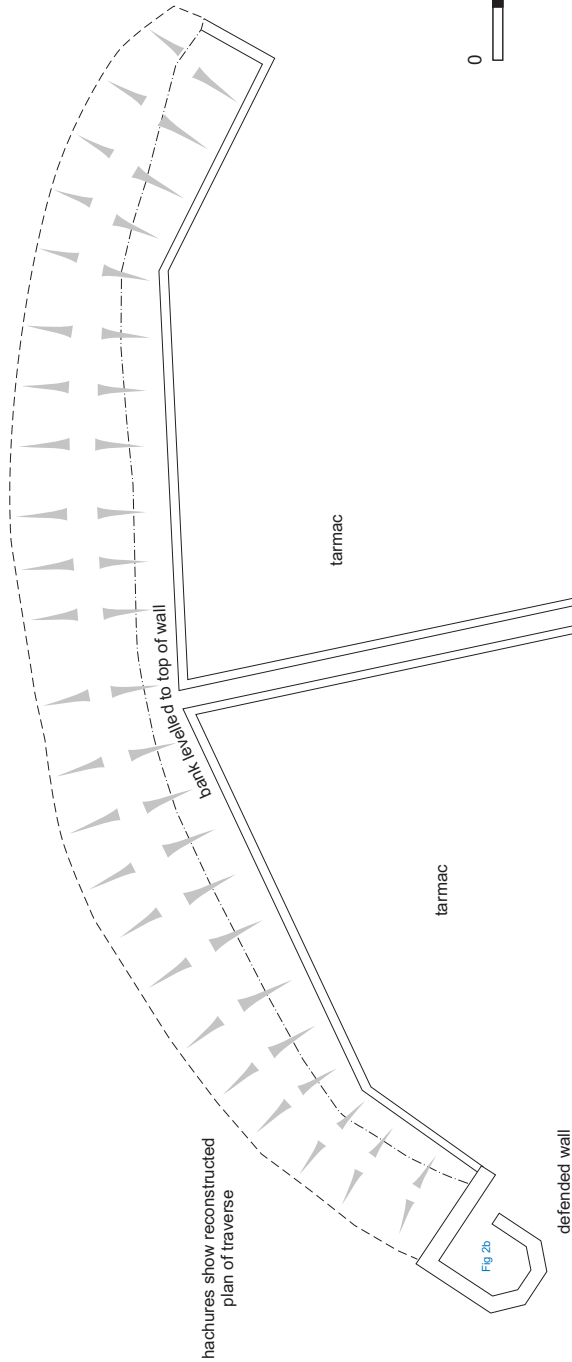
PROJECT

Fire Behaviour Training Centre, Exeter Airport

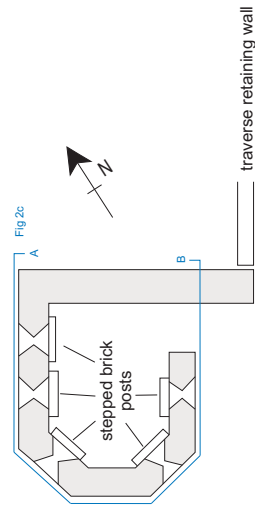
TITLE

Fig. 1: Location of site

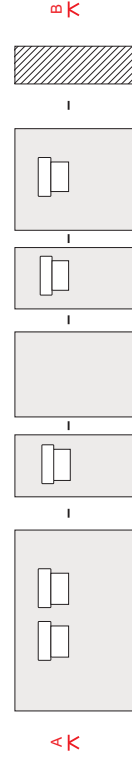
a) Plan of dispersal pen 145



b) Plan of defended wall



c) Elevations of defended wall



d) Profile of shelter

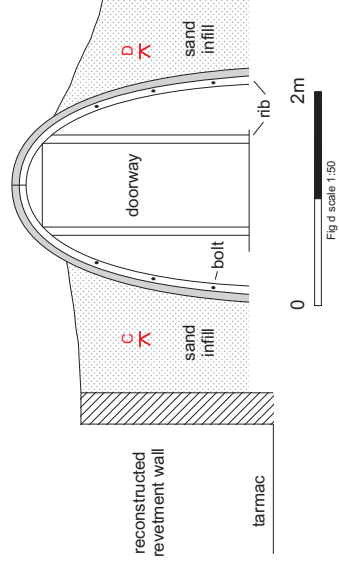




Plate 1: Pen 145, general view of east bay. View to east. 1m scale.



Plate 2: Pen 145, general view of west bay showing difference in heights of retaining walls. View to east. 1m scale.



Plate 3: Pen 145, defended wall, west elevations. View to east. 1m scale.



Plate 4: Pen 145, defended wall, interior view showing rifle step. View to northwest.



Plate 5: Pen 145, west entrance to air raid shelter. View to southeast. 1m scale.

Plate 6: Pen 145, interior of air raid shelter showing pre-cast concrete construction and pipe in entranceway. View to west. 1m scale.





Plate 7: Pen 144, end of retaining wall showing stepped brick masonry. View to north. 1m scale.



Plate 8: Pen 144, end of spine wall showing concrete filling of sandbags. View to west. 1m scale.

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