Reporting on the Red

An exploration of key aspects of Civil Defence in Norwich in the Second World War

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Declaration

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Janice Rees



Image 1 – Norwich Guildhall in September 1939.

Source – Newsquest

Abstract

During the Second World War air bombing campaigns by conventional aircraft, V1 flying bombs and V2 rockets killed over 60,000 people in the United Kingdom. Active defence of a target such as anti–aircraft artillery and barrage balloons was provided by the military. Passive defence consisting of measures to warn and protect the public and deal with the consequences of attack was delivered and led by civilians. Initially referred to as Air Raid Precautions (ARP) they became known as Civil Defence (CD) later in the war.

Air bombing campaigns against Britain during the Second World War have been well documented. CD or ARP, though vital for the safety of the public, has received less attention. This thesis investigates passive CD arrangements in one provincial city, Norwich, tracing its development and assessing the effectiveness of some key services, prior to and over the course of the war, including performance in the heavier, Baedeker, raids of 1942. These services, not previously scrutinised in depth, are warning systems, command and control, shelters and rescue services and the thesis helps to address a gap in our knowledge of these vital safeguards.

Norwich made a slow start to the provision of CD but by the first Baedeker raid of April 1942 had built a CD system that was adequate for the scale of raids experienced up to that point albeit some elements were stronger than others. While generally CD services and individuals performed well in these raids, several shortcomings and some failures are evident, and the thesis provides a challenge to some of the statements made by CD officials which have become part of the received wisdom about these raids.

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Source: George Swain Image courtesy of Norfolk County Council Library and Information Service. www.picture.norfolk.gov.uk/

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List of abbreviations

- AFS Auxiliary Fire Service
- ARP Air Raid Precautions
- ARW Air Raid Warning
- CARP Committee on Air Raid Precautions
- CD Civil Defence
- DLO Direct Labour Organisation of Norwich City Council
- EC Emergency Committee
- GDA Gun Defended Area
- HO Home Office
- LNER London and Northern Railway
- MAGNA Mutual Aid Good Neighbour Association
- Min HS Ministry of Home Security
- MO Mass Observation
- NRO Norfolk Record Office
- NFS National Fire Service
- OCA Observer Corps Alert/Alarm
- **OPW** Observation Post Warning
- RAF Royal Air Force
- RC Report Centre
- SMA Scheme Making Authority
- TB Tuberculosis
- TNA The National Archives
- V1/V2 Luftwaffe Flying Bombs, Rockets
- WVS Women's Voluntary Service

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Introduction

The advent of aviation brought a new dimension to warfare in the twentieth century, aerial bombing. By the Second World War this was seen as a decisive weapon exposing civilians to dangers they would previously only have experienced in the face of civil war or invasion. The consequences of bombing raids on Britain in the First World War led to the employment of measures to deter bombing and to mitigate its effects on the population and fabric of towns under attack. In the inter war period these were developed into plans under the banner of Air Raid Precautions (ARP).

By 1939 defence of a potential bombing target in Britain had evolved into two main aspects known as Active and Passive defence. Active defence was essentially a military task intended to stop bombing or reduce its accuracy. It included identification of raids using radar, deployment of fighter aircraft, anti–aircraft guns, barrage balloons, decoy fire sites but also electronic jamming or interference with enemy guidance systems.

Passive defence was essentially civilian led and consisted of measures to warn and protect the public and deal with the immediate consequences of attack. This included prior evacuation, warning systems, command and control centres, air raid shelters, gas protection and front line services such as wardens, rescue squads, casualty services and firefighting. In the hours after an air raid various welfare and recovery services came into action such as rest centres and billeting of displaced persons, demolition and clearance of debris and restoration of utilities. Medium term responses such as emergency repairs to homes fell to councils or individual householders while securing food supplies and assisting affected businesses were frequently the subject of public / private sector partnerships, such as Town Reconstruction Committees.

Aerial bombing campaigns against Britain during the Second World War have been well documented with historians focusing on bombing strategy and tactics, documenting events, assessing damage and casualties, defensive military response and the effect on civilian morale. Much of the work deals with the high profile and heaviest raids of 1940–41 particularly in London and Coventry.

ARP, later known as Civil Defence (CD), though vital for the safety of the public, has tended to receive less scholarly attention. This thesis aims to investigate passive CD arrangements in one provincial city, Norwich, tracing its development and assessing the effectiveness of some key services, over the course of the war. These services, not previously scrutinised in depth, are warning systems, command and control, shelters and rescue services. It will assess aspects of performance in the heavier raids experienced in 1942 and provide challenge to some of the received wisdom about them, but will not cover miltary defence measures or broader welfare issues except in passing where they affect the operation of passive CD services.

Chapter 1– Sources and historical context

Bombing

The Second World War saw extensive bombing campaigns on military and civilian targets across the world including the Luftwaffe's campaign on Britain which lasted on and off for most of the war. This campaign fell into several phases; light attacks during the early months of the war, attacks on shipping and airfields in the Summer of 1940 followed by major attacks on London and other cities and ports during the autumn and winter of 1940–41. Raids continued but lessened somewhat following the Axis invasion of the Soviet Union in May 1941.

The threat of raids was thought to be decreasing when, in early 1942, the Luftwaffe launched a series of raids against historic cities in April as revenge for RAF attacks on historic towns in Germany. These became known as the Baedeker Raids, Norwich was one of the cities targeted along with Bath, Exeter, Canterbury and York. While attacks on Britain continued throughout the remainder of the war the final phases proved to be further attacks on London in 1944 followed by V1(flying bomb) and V2 (rocket) attacks in mid–1944 to early 1945 targeting London, East Anglia and southeast England.

Air bombing campaigns on Britain have been the subject of significant analysis since 1945. These range from a detailed chronology of the various phases¹ to a comparison of the bombing of the UK with that on other countries particularly Germany covering strategy, tactics and effectiveness.² Over 60,000 civilians were reported to have been killed by enemy action during the war.³

Much of the literature focuses on specific cities, especially London, during the period of greatest activity, from September 1940 to the late Spring of 1941 prior to the German invasion of the Soviet Union. These generally concentrate on the scale of the raid and its direct impact on people, buildings and infrastructure supplemented by the experience of local people.⁴

Social effects, and morale among civilians have received some study varying considerably over the last fifty years in their assessment of whether 'Britain could take it' and ranging from morale was sustained⁵ to indications of widespread fear and panic⁶ and more

¹ TH O'Brien, <u>History of the Second World War, Civil Defence</u> (London, 1955)

² Richard Overy, <u>The Bombing War, Europe 1939–1945</u> (London, 2013)

³ E Webb and J Duncan, <u>Blitz over Britain</u> (Tunbridge Wells,1990) p189

⁴ John Ray, <u>The Night Blitz 1940–1</u> (London 1996); MJ Gaskin, <u>Blitz</u> (Chatham, 2005); Karen Farrington, <u>The Blitzed City, the destruction of Coventry</u> (London, 2015)

⁵ RM Titmuss, <u>Problems of Social Policy</u> (London, 1950)

⁶ A Calder, <u>The People's War, Britain 1939–45</u> (London, 1969); A Calder, <u>The Myth of the Blitz</u> (London, 1991)

recently an acceptance that while 'negative features' such as panic occurred, they were of relatively small scale and did not last for long.⁷ One feature that was to manifest itself in many towns and cities was trekking, voluntary self–removal from an area during the night returning in the morning, having a deleterious effect on ARP services. Trekking could go on for many months in raided cities and in Coventry started in August 1940 continuing until October 1941.⁸

The heaviest raids on Norwich occurred as part of the Baedeker raids of April to June 1942. The literature on this part of the campaign is less developed, appearing to merit less discussion in the larger context of the bombing war, Overy refers to them as one of two 'final flurries' of conventional bombing.⁹ Rothnie produced an overview of the Baedeker raids detailing the background and nature of the attacks on the five cities involved using Home Office files, local Council records, newspapers and personal testimony. While describing the main events and damage he focuses on one aspect in each city, for Norwich this is civilian morale.¹⁰ Gore provides one of the latest publications looking at each of the five cities in turn and concentrating on personal testimony and secondary sources to give an insight into individual experiences.¹¹ Price explores the Baedeker raid on York focusing on the impact of perceived failures in Government policy on casualty numbers.¹²

Civil Defence/ Air Raid Precautions

The literature covering ARP or CD, is also less developed, tending to appear as an adjunct to more detailed descriptions of the nature of raids, the damage and casualties caused and the experiences of individuals or groups as civilians or in carrying out ARP work.¹³

Opposition to the government's CD plans came from several sources before the war. Some political, pacifist and religious groups essentially viewed any precautions as supportive of war, but others were to take issue with specific aspects of CD concentrating on gas attack and the need for deep air raid shelters. A group of Cambridge scientists argued that the Government's advice on gas protection was flawed.¹⁴ The noted scientist, JBS Haldane, believed gas attack unlikely as it would prove ineffective.¹⁵ He also advocated deeper and more bomb proof shelters, based on his experiences in the Spanish Civil War and

⁷ R MacKay, <u>Half the Battle, Civilian Morale in Britain during the Second World War (Manchester, 2002)</u>

⁸ Norman Longmate, <u>The Bombing of Coventry 1940</u> (London, 1976)

⁹ Overy, <u>The Bombing War</u> p117

¹⁰ Niall Rothnie, The Baedeker Blitz (Surrey, 1992) pp74–90

¹¹ Jan Gore, <u>The Terror Raids of 1942</u> (Barnsley, 2020)

¹² C Price, 'The political genesis of Air Raid Precautions and the York Raid of 1942', <u>Northern History</u> (2000) ,36, 2, pp 299-317.

¹³ The terms ARP and CD are used interchangeably throughout the war, though by its end CD was the generally accepted term.

¹⁴ Cambridge Scientists Anti War group, <u>The protection of the Public from Aerial Attack</u> (London, 1937)

¹⁵ JBS Haldane, <u>ARP</u> (London, 1938) p23

disagreed with principles of dispersion of the population arguing 'almost every bomb will find a human target'.¹⁶

Contemporaneous publications on CD include a government publication 'Front Line' which introduced the concept of the citizen warrior and is uncritical propaganda of the CD respone to the air raids of 1940/41.¹⁷ Numerous official circulars and public booklets were issued by the Government on different aspects of CD before and during the war giving advice of varying effectiveness.

Several factual accounts of the overall structure and organisation and chronology of CD in Britain exist, they include operational detail and personal testimony but tend not to focus on detailed scrutiny of its effectiveness.¹⁸

The most comprehensive account is O'Brien's 'Civil Defence', an official government history of CD in the Second World War.¹⁹ It is recognised by several historians as the seminal account of the issue with Meisal stating that many works have followed its contents even if not citing it and Price referring to it as the sole major study of the issue at that point.²⁰ O'Brien gives a chronological account of various aspects of CD starting in the early 1920s up to mid 1945. It is centred on the Whitehall view and is strong on central organisation, legislation and circulars and civil service (and to a lesser extent political) thinking and approach. It is, by the author's own admission less strong on the role played by councils in implementing CD.

Despite its relatively early date, 1955, O'Brien's analysis benefits from hindsight and while some criticism is directed at local organisations the criticism of central departments is usually implied rather than clearly stated. However, his work exposes the relatively low priority of CD in national government and some of the delays, indecision and lack of understanding that would lead to poor policy decisions which would impact directly on public safety, for example, through inadequate shelter specifications and reluctance to sound public air raid warnings for small air raids. He concludes that CD in the war was generally effective but the restrictions in his research, he talked to only a few local councils, means he largely ignores a local operational perspective.

More recent historians have tended to be more critical of central government and its CD policies. Price in his study of the Baedeker raid on York in 1942 covers much of the same

¹⁶ ibid., p125

^{17 &}lt;u>Front Line 1940–1 (London, 1942)</u>

¹⁸ Mike Brown, <u>Put that light out</u> (Stroud,1999); Robin Woolven, in T Essex–Lopresti, ed, <u>A brief history of</u> <u>Civil Defence</u> (Matlock, 2005)

¹⁹ TH O'Brien, <u>History of the Second World War, Civil Defence</u> (London, 1955)

²⁰ Joseph F Meisel, 'Air Raid Policy and its Critics before the Second World War', <u>Twentieth Century British</u> <u>History</u>,(1994) 5,3, pp 300–319; C Price, 'The political genesis of Air Raid Precautions and the York Raid of 1942' p 303

ground as O'Brien but comes to very different conclusions calling the Government's prewar attitude to CD and rearmament 'at once supercilious and half hearted' with an essentially 'parsimonious attitude'. He takes issue with policies on publicity and advice to the public, gas masks, shelters particularly dispersal and the lack of deep shelters asserting that these weaknesses were 'rooted in an authoritarian official attitude' and led to unnecessary casualties in York during 1942.²¹

More recently historians have examined the concept of citizenship and gender in war and broadened the traditional view of CD by examining the contribution of specific groups such as housewives and conscientious objectors. Rose concludes that ARP led to the 'domestication of war' helping to transform understanding of how the state and home needed to work together in a total war.²²

The expansion of government powers and its increased ability to interfere in the lives of individual citizens under the banner of CD has been explored. Greenhalgh uses the example of blackout regulations to emphasise the increased ability of officials to gain access to people's homes and the mixed reaction of members of the public to such an intrusion.²³

The perspective of the local authority responsible for implementing CD is rarely considered in depth. An exception is Wareham's examination of the work of Cardiff Borough Council during the Second World War. While presenting an overarching account of the working of the Borough over this period it includes significant detail about aspects of CD such as the Fire Guard and relief efforts.²⁴

Specific aspects of CD have been explored in depth; some are of relevance to key aspects explored in this thesis, for example, Air Raid Warning systems. Their development throughout the war with devolution from central Fighter Command control to more effective local Observer Corps operation is documented in the official history of the Royal Observer Corps.²⁵

The development of shelter policy before the war and the effect of political and social views on it have been examined exposing differences between left and right-wing

²¹ C Price, 'The political genesis of Air Raid Precautions and the York Raid of 1942' p302

²² Jessica Hammett, <u>Creating the people's war: Creating Civil defence communities in Second World War</u> <u>Britain</u> (Oxford, 2022); Susan R Grayzel, <u>At home and under fire</u> (Cambridge, 2012); Sonia O Rose, <u>Which People's War?</u> (Oxford, 2003): Lucy Noakes, 'Serve to Save, Gender, Citizenship and Civil Defence in Britain 1937-41', <u>Journal of Contemporay History</u>, (2012) 47, 4, pp734-753'

²³ James Greenhalgh, 'The Threshold of the State, Civil Defence, the Blackout and the Home in Second World War Britain', <u>Twentieth Century British History</u>, (2017) 28, 2, pp186-208

²⁴ EE Wareham, <u>'Serving the City, Cardiff County Borough in the Second World War</u>, 2020, PhD thesis, Cardiff University

²⁵ Royal Observer Corps, an official history (London 2017)

thinkers, discussed in Chapter 6.²⁶ A comprehensive study of shelters was completed by Dobinson including specifications of different shelters and assessments of their respective strengths and weaknesses providing a critique of their relative adequacy. However, he admits to difficulties in assessing the numbers of shelters due to lack of information.²⁷

Practical aspects of CD work are detailed in contemporaneous training manuals covering, for example, Rescue Parties. McNab gives a modern perspective of the CD work of various services before, during and after raids with informative but essentially factual detail about the roles and techniques used.²⁸

The development of CD at a national level up to and over the course of the war is thus relatively well known with some aspects being questioned prior to, during and after 1945. Information on CD in provincial cities in England tends to focus on specific events such as the largest raids on the town and their consequences. This thesis presents a study of the development of ARP in a provincial city, Norwich, across the war with a view to examining the effectiveness of some key services called on during an alert.

Raids on Norwich

There were 44 enemy air raids on Norwich during the war along with at least one accidental raid by an RAF aeroplane. The first raid occurred on 9 July 1940 and the last on 6 November 1943, V weapons were targeted at the city in 1944–5. Several of the early raids on the city were not subject to an audible alert causing considerable consternation and contributing to fatalities , discussed further in Chapter 4. There were 340 deaths and 1092 people injured in air raids, with over 70% of the fatalities occurring in the Baedeker raids of April, May and June 1942. Over 80% of the houses in the city sustained some bomb damage with between 5% and 6% destroyed or seriously damaged.²⁹ For further details see Appendix 1.

Much of the historical literature concerning Norwich follows a similar pattern to the rest of the country concentrating on the results of bombing in terms of damage and casualties especially for the Baedeker raids of 1942 and some focusing on photographic evidence.³⁰ Less emphasis has been placed on CD.

²⁶ Joseph F Meisel, 'Air Raid Policy and its Critics before the Second World War'

²⁷ CS Dobinson, <u>Civil Defence in WW2</u>, <u>Protecting England's Civil Population</u> (2000)

^{28 &}lt;u>Civil Defence Rescue Training</u> (London, October,1941); Chris McNab, <u>The Blitz Operations Manual</u> (Yeovil, 2020)

Joan Banger, <u>Norwich at War</u> (Norwich, 1974,1989) p 76–77

³⁰ Martin Bowman, Images of War, Norwich Blitz (Barnsley, 2012)

Banger provides the most comprehensive account of the air raids on Norwich. By detailing all 44 raids on the city during the war including alert times, locations of many incidents, casualties and personal stories she presents a vivid picture of the raids and their effects.³¹

Literature on the tactical aspects of bombing such as numbers and types of aircraft of the major raids have been investigated.³² A more recent perspective is given by Gregory who using a three–dimensional approach to airspace showed it was possible to determine the flightpath of individual aircraft over Norwich.³³ The Norwich Bomb Map³⁴ provides a pictorial record of bomb incidents but as is pointed out by Gregory it appears that some of the attachment indicators may have been lost over time.³⁵

Bridges has undertaken a comprehensive study of the use of V1 and V2 weapons on Norfolk and Suffolk in 1944-45. The impact of these weapons on Norwich was minimal, only one caused damage to the city.³⁶

Civil Defence in Norwich

National responsibility for CD lay with the Home Office with some responsibility delegated to offices at a regional level. Locally, Norwich City Council was the designated body, known as the Scheme Making Authority (SMA), responsible for planning and operation of ARP in the city. Its Town Clerk, Bernard Storey, was appointed as ARP Controller in March 1939. He was in overall charge of ARP matters, reporting to the Regional Commissioner (Eastern) in Cambridge. He was supported by two Council Committees, the Special Committee on Air Raid Precautions (CARP) which first reported in 1936 and an Emergency Committee (EC) of Alderman in September 1939. Storey was responsible for the planning and operation of a wide range of ARP services including distribution of warnings, command and control centres, shelters, front line services such as wardens, rescue and casualty, fire (until the creation of the National Fire Service in 1941) and post raid actions such as rest facilities, billeting of displaced people and clearance. He was assisted in this by key colleagues such as the City Engineer, Medical Officer of Health, Chief Constable and Chief Warden.

As with other cities, studies of CD in Norwich have lagged behind those of the raids themselves. 'Norwich Under Fire, the official account of the air raids on Norwich' was commissioned by the Council in June 1944. It gives the Council's view on how CD

³¹ Banger, Norwich at War

³² RJ Collis, <u>The Story of the 1942 Baedeker Raids against East Anglia</u> (Flixton, 1993)

³³ Derwin Gregory, 'A Baby GDA: Norwich's Airspace during the Second World War', <u>landscapes</u>, (2018)19, 2, pp150–168

³⁴ NRO ACC2007/195

³⁵ Gregory, <u>'A Baby GDA</u>' p156

³⁶ John Bridges, <u>Doodlebugs and rockets, Norfolk and Suffolk 1944–45</u> (Gloucester, 2023)

performed particularly during the heavier raids and as will be seen, underplays some of the weaknesses in the system.³⁷ Other contemporaneous work includes pamphlets on the 1942 raids concentrating on photographic evidence of the damage.³⁸

Several authors and local historians have written about some aspects of CD in Norwich. Neil R Storey presents a concise account of life in Norwich across the war touching on some aspects of CD and including a list of those killed in air raids.³⁹ Banger provides listings of specific CD infrastructure such as wardens posts, auxiliary fire service stations and rest centres, these are not dated but many appear to refer to the early part of the war before the creation of the National Fire Service in 1941.⁴⁰

In June 1942 ARP Controller, Bernard Storey, submitted a memo to the Regional Commissioner on the first four Baedeker Raids on Norwich and the performance of the CD services during and after the raids.⁴¹ Storey's memo has become part of the received wisdom about the raids and aspects such as response times to incidents will be tested further as part of this thesis. Problems with certain aspects of Norwich's CD during the Baedeker raids have been highlighted by other authors particularly fire guarding and billeting.⁴²

The chief sources relating to CD in Norwich are the records of the City Council, now deposited in the Norfolk Record Office (NRO). Information from The National Archives (TNA) has also been used comprising mostly Home Office (HO) material on specific issues concerning Norwich including air raid damage, shelter performance and effects on utilities, employment and movement of people.

For the purposes of this thesis the minutes of two committees the Special Committee on Air Raid Precautions (CARP)⁴³ and the Emergency Committee (EC)⁴⁴ have been scrutinised from 1938 to 1945. They contain not only the decisions taken but also some truncated accounts of the discussion preceding the resolutions and some of the supporting reports which informed them. They provide a basis for assessing where the committees and hence the council stood on CD at a particular time as they grappled with the preparations, development, routine operation of ARP and dealt with the consequences of heavier raids. However, it is not always possible to ascertain what actions were taken as a result as

³⁷ RH Mottram, Norwich Under Fire (Norwich, 1944)

³⁸ EC Le Grice, <u>Norwich, the Ordeal of 1942</u> (Norwich, 1942); George Swain, <u>Norwich Under Fire</u> (Norwich, 1942)

³⁹ Neil R Storey, Norwich in the Second World War (Cheltenham, 2022)

⁴⁰ Banger, Norwich at War p 82–87

⁴¹ NRO N/EN1/38, memo to the Regional Commissioner 3 June 1942

⁴² Steve Snelling, <u>Norwich a shattered city</u>, (Somerset, 2012); Rothnie, <u>The Baedeker Blitz</u> pp 83–84; Overy, <u>The bombing war</u> p189

⁴³ NRO N/TC 28/37

⁴⁴ NRO N/TC 28/29 to 30

these are not always documented. These documents illustrate a considerable growth in the Committees' understanding of key CD issues as the war progressed, highlight the problems and decisions they faced and their frustration with delays and dissatisfaction with national dictats usually centred around finance.

The City Engineer's files at the NRO provided considerable information. The Deputy Controller's file contains the documents, both official and personal notes, that he took when on duty at the Control and Command (Report) Centre and used during a raid.⁴⁵ Other files contain information about the general organisation of ARP, firewatching and details, plans and maps of shelters and other ARP infrastructure such as report centres and static water tanks. Some information is available concerning the operation of services under the City Engineer's control, particularly the rescue squads, demolition team and road repair squads. This has been used to construct the assessment of the development of the rescue team organisation.⁴⁶

The logbooks for the various command and control (Report) centres yielded information about their running particularly routine staffing and operation.⁴⁷ Once again it is possible to see how they developed over time, but some logbooks are missing from the NRO including the one covering the heaviest raids in Spring 1942. Proxy information including the incident sheets of the rescue teams and the Norfolk County Council Control centre diary has been used to give a partial picture of the report centre and rescue squad performance during the first two Baedeker raids.⁴⁸ Warden's records have given information regarding the numbers of warnings, bombs falling and a different perspective on aspects of CD performance for example billeting.⁴⁹

Home Intelligence reports for 1940 demonstrate the unease in Norwich at the number of early unsignalled raids⁵⁰ and HO files show the efforts of the Council and business leaders to emphasise the potential effect of this on the public and productivity.⁵¹ The Baedeker Raids generated considerable interest from central government with Air Raid assessment reports looking at CD response to incidents as well as damage to, and casualties in, shelters, factories and fires.⁵² A limited comparison is made between the raids on the various cities⁵³ and short–range social effects in Norwich are investigated

⁴⁵ NRO N/EN 1/178

⁴⁶ NRO N/EN 1 to EN/4

⁴⁷ NRO N/CD 1/1 to CD 1/5

⁴⁸ NRO N/EN 2/18 to 19; NRO N/EN 1/81; NRO C/ARP 2/23 to 25

⁴⁹ NRO MS21495; NRO MS3133/1

⁵⁰ Addison and Crang, Listening to Britain (London, 2010)

⁵¹ TNA HO 199/98; TNA HO 199/63; TNA HO192/1653

⁵² TNA HO192/200; TNA HO192/209

⁵³ TNA HO192/1652

primarily through a major survey by the Ministry of Home Security.⁵⁴ The effect of the major raids on utilities and business productivity is also assessed.⁵⁵

Individual members of the public in Norwich submitted diaries and reports to the Mass Observation organisation. Several observers have been included in this thesis giving a frank assessment of their fellow citizens reaction to the bombing of the city.⁵⁶

Cumulatively the primary sources assist in painting a picture of the development of Norwich's CD services as understanding of the key issues and their experience grew. They allow for increased clarity on the rationale behind decisions and detail unexpected problems and how they were addressed. They also highlight the opinions of external observers as to the efficacy of services which sometimes conflict with those held locally.

This thesis looks at the development, operation and effectiveness of CD in Norwich from 1937–1945. It focuses on key themes of warning, control, rescue services and shelters up to the Baedeker raids of 1942 and then examines the response of CD during and after these raids. Other authors have detailed problems with two aspects of CD response fire guarding and billeting, while some information on these aspects and their impact are provided in this document they are not the focus.⁵⁷ This thesis investigates some aspects not previously scrutinised in detail, particularly rescue services. It also challenges aspects of the ARP Controller's statement in relation to CD effectiveness during the early Baedeker raids and as such some of the received wisdom about them.

⁵⁴ TNA HO192/1647

⁵⁵ TNA HO 192/201; TNA HO 199/100

⁵⁶ https://www.massobs.org.uk, MO Diarist 5047; MO File report 1285; MO File report 1321

⁵⁷ Snelling, Norwich a shattered city pp 81–84, 97–99; Rothnie, The Baedeker Blitz pp 83–84

Chapter 2 – Background

Civil defence in the UK

Much of the discussion of Norwich's experience below concerns the relationship between central and local government so it is important to explain briefly national policy on CD. Work on ARP started in 1924 at government level when the Committee for Imperial Defence formed a Sub Committee on ARP but it resulted in very little action as it was not seen as a priority. Indeed ARP was politically sensitive. The 1920s had seen a number of international initiatives designed to resolve disputes without armed conflict such as the League of Nations or to limit the size of military forces such as the Washington Naval Treaty of 1922. By the early 1930s these initiatives had been seen to be ineffective in stopping the growth of aggressive nationalism. In Britain government attention started to focus on the threat of aerial bombing of civilians though even its first steps towards ARP were to meet with opposition from some political, pacifist and religious groups on the grounds they constitued preparing for war.

In 1935 the First Circular on ARP was issued which invited councils, businesses and the public to create a local ARP organisation and arrangements, for which the Council would, essentially, pay.⁵⁸ The ARP Act of 1937 turned what had been an invitation into a duty for certain councils, SMAs, to draw up schemes covering among others the provision of wardens, rescue, first aid, air raid warnings and gas detection.⁵⁹ War time fire prevention schemes were required to be drawn up in 1937 ⁶⁰ and the Fire Brigades Act 1938 imposed a duty on many councils to provide efficient fire brigades, previously only London had such a duty.⁶¹ The Civil Defence Act 1939 expanded the SMA's powers and imposed a duty on larger businesses (50 employees or more) regarding CD, for example, the provision of shelters.

Responsibility at Government level fell to the Home Office (HO) and in April 1935 an ARP department was formed within it.⁶² Fire Services were controlled by another HO department. Regional Offices were set up to vet ARP schemes and advise local authorities and twelve Regional Commissioners were appointed essentially to act as a bridge between Whitehall and local councils, their powers expanded during wartime so that in the event of the national government falling they would become the effective governors of their area.⁶³ A Minister of Home Security (Lord Privy Seal) was appointed

⁵⁸ O'Brien, <u>Civil defence</u>, p56

⁵⁹ ibid., pp107–110

⁶⁰ ibid., p108

⁶¹ ibid., p146

⁶² ibid., p 56

⁶³ ibid., pp155–186

after the Munich crisis in September 1938 and a Ministry of Home Security, incorporating the ARP Department, on the outbreak of war with the Home Secretary succeeding the Lord Privy Seal as Minister.⁶⁴

Control of local CD services fell to an ARP Controller, initially the Government secretly designated Chief Constables for this role,⁶⁵ but after Munich SMAs were allowed to choose their own, most chose the Town Clerk or their equivalent perhaps because of the breadth of services needed, the use of volunteers and the range of political and public relations skills required. The Controller would be supported by a small Emergency Committee of senior local politicians but in the event of an air raid would report directly to the Regional Commissioner.⁶⁶

The Government's work on CD between the wars was affected negatively by several factors. An obsession with secrecy and avoiding public panic led to friction with councils and also meant that some CD work was not tested, for example, resulting in delayed and inadequate specifications for air raid shelters.⁶⁷ Over centralisation of control and low prioritisation of CD work in Whitehall led to delays in approving local ARP schemes⁶⁸. While some of these issues were resolved at least in part similar problems would continue into the war particularly disputes about finance and delays.

The components of passive civil defence

A series of government planning assumptions influenced CD policy up to and including the early part of the war. A knockout blow would be attempted by the Luftwaffe, attacks would be in daylight, with the main target being London, gas would be used. Military defences would be unlikely to influence casualties which would be high, 50 per ton dropped, with about one third fatalities.⁶⁹ In the event several of these were incorrect, though still being put forward as policy in April 1940. ⁷⁰ Many attacks were at night, gas was never used and fatalities less than 5% of prewar predictions, however these would only become obvious once raids had commenced and the various components of CD were adapted as the situation developed.

Air raid warnings were initiated by a national system through Fighter Command later decentralised to local Observer Corps Centres. The mechanisms for local control and co-ordination were Report and Control Centres staffed by the ARP Controller and the

⁶⁴ ibid., p167

⁶⁵ ibid., p155

⁶⁶ ibid., pp 175–176

⁶⁷ ibid., pp 157–8,164–5

⁶⁸ ibid., p 131

⁶⁹ ibid., pp 143–144

⁷⁰ NRO N/TC 28/37,15/4/40

heads of key services. After any CD incident the local warden would send a report to the Report Centre from where assistance would be despatched to the site. In case of fire, the warden would first contact the Fire Service.

CD services were conceived as volunteer services, organised by local councils to serve local communities. They would have a core of full–time paid staff, some part time paid staff with the majority unpaid. These principles were gradually eroded during the war, for example, by preventing staff from leaving, the introduction of compulsory service and regionally controlled reserves.⁷¹ Recruitment was slow at first but picked up in 1938 and 1939 as the crisis in Europe developed and the effect of aerial bombing in the Spanish Civil War became apparent.

During the war many public, private and voluntary organisations contributed to CD work. The main services operating during a raid are listed in Table 1

| Wardens Service | Formed in 1937, wardens undertook many tasks including respirator fitting, public training and blackout work. They issued the first report of a bomb incident. |
|--------------------------------|--|
| Auxiliary Fire Service | Nationalised in 1941 to form the National Fire Service. |
| Police | Enforcement duties, lead officer at any incident site. |
| Rescue Services | Extracted people out of wrecked buildings, usually men from the building and construction industry. |
| Casualty Services | Included first aid parties (first aiders sent to individual incidents), ambulances, first aid points/posts and hospitals, mortuaries. |
| Messenger Service | Young men and women who transferred messages by bicycle or on foot. Motorcycle despatch riders were also used. |
| Decontamination services | Including Gas Detection Officers (scientists) and Decontamination Squads, frequently from council cleansing departments. |
| Military | Particularly Bomb Disposal, Home Guard and clearance work. |
| Demolition and repair services | Demolished unsafe structures, cleared debris, repaired roads. |
| Fire watchers/ Fire Guard | Spotted and extinguished incendiaries and notified the Fire Services. |
| Emergency repair of utilities | Gas, water, electricity, telephones |
| Voluntary services | For example, Women's Voluntary Service, providing mobile cateens and other relief work. |

Table 1 Main Civil Defence Services operating in a raid.

⁷¹ O'Brien, Civil Defence pp 548-9

Each service was led by its own officer for example the Chief Warden or the Borough Engineer. Police, Fire Services and the Military remained under their usual command structure working in liaison with the ARP Controller, the other CD services were sometimes referred to collectively as ARP (General) services. Depots, stores and work bases were dispersed throughout the area to aid response and minimise risk.

Dealing with displaced people was a post raid function. The first line of assistance was the rest centre, opening just after the raid had finished in perhaps a school or parish hall. People who could not return to their homes would be directed to a rest centre where they would be able to get refreshment and some sleep, many of the people operating the centres were volunteers. It was good practice to clear rest centres of people by the next night to avoid the possibility of large scale casualties from one bomb in any further raid. People could either make their own arrangements or wait to be billeted by the Council, failure to clear rest centres potentially put people's lives at risk.

There was an uncoordinated and inadequate governmental response to the Munich crisis with authority to dig trenches given to councils with only a few days notice. This led to key materials shortages and trenches of dubious stability. Whitehall also failed to publish detailed evacuation plans leading to an improvised approach by councils. Gas masks were available in large quantities, though not for small children, but were not distributed early in the crisis due to fear of panic. Wardens, councils, businesses and volunteers worked together to largely overcome short distribution targets.⁷² Churchill described a realisation that the UK was 'lamentably unprepared'.⁷³

The response to Munich led to a stepping up of efforts and a major initiative regarding shelters. The Government's initial approach had been an Englishman's home is his castle and it was up to him to strengthen it, an architectural journal referring to this attitude as bombing being 'a purely private affair between himself and the enemy.'⁷⁴ Public shelters were only to be provided for 10% of the population, those caught in the streets. The principles followed were those of dispersion, not more than 50 people in a shelter and moderate protection for blast, splinters but not a direct hit.⁷⁵ Arguments put forward in favour of deep bomb proof shelters in the mid and late 1930s, frequently by left of centre proponents, had been rejected by the government on the grounds of cost, safety of ingress and egress, preventing their potential use when raids were not occurring and that they did not have time to build them.⁷⁶

⁷² O'Brien, Civil Defence p140

⁷³ ibid., p165

⁷⁴ Dobinson, Civil Defence in World War 2 3.1

⁷⁵ ibid.,4.1

⁷⁶ Office of the Lord Privy Seal, <u>Air raid shelters: Report of the Lord Privy Seal's Conference</u> (London 1939)

The Government authorised the production of Anderson shelters, a domestic steel shelter free to those households with an income of £250, increased to £350 in 1941. In May 1939 small brick and concrete shelters were authorised for those without garden. Further brick and concrete shelters for general public use were authorised in August 1939 and shelters for use by multiple households in March 1940 but the delays in authorisation were to have serious consequences for these shelters.⁷⁷

The position at the start of the war was that some of the CD personnel needed were in place although untested and with variable training. However, aspects of CD infrastructure were seriously deficient, for example, shelters where authorisation to build brick and concrete shelters for the general public had only been given at the end of August.⁷⁸ Two weeks into the war and in light of the lack of mass air raids, the Government decided to cut CD personnel numbers due to accusations of overprovision. Numbers were to fluctuate nationally over the war as workers were lost to, for example, the Home Guard or war work and steps were taken to boost recruitment through reservation or varying age limits to widen the recruitment base.⁷⁹

From a very slow start CD services developed and improved during the war, systems were tested under fire and adaptions occurred. The two most significant changes were the formation of the National Fire Service in 1941 and a mobile Civil Defence Reserve to assist with mutual aid to areas under attack. Policy and decision making became less bureaucratic with more delegated to the regional offices and air raid warnings to the local observer corps centres. The legislative framework for CD is shown in Appendix 2, it was supplemented by many regulations, orders and circulars across the war.

Over 1.8m people served in the Fire, Police and ARP General Services, with millions more in voluntary bodies and serving as fire watchers, 2379 were killed, most services stood down in May/June 1945.⁸⁰

⁷⁷ Dobinson, Civil Defence in World War 2 1.1

⁷⁸ O'Brien, <u>Civil Defence</u> p 197

⁷⁹ ibid., p549

⁸⁰ R Woolven '1945 stand down' in T Essex–Lopresti, ed, <u>A brief history of Civil Defence</u>' (Matlock 2005), pp33–34

Chapter 3 – Civil Defence activity in Norwich before September 1939

Norwich in the 1930s was a historic cathedral city of some 126,000 people, the population increased during the day with commuters and shoppers from the surrounding areas. Major employers included food producers, an extensive boot and shoe industry, service industries and number of manufacturers such as Boulton and Paul, Laurence Scott Electromotors and Barnards which could provide war material.

Local government was provided by its City Council, which delivered all the services which in other areas would be undertaken by Rural or Urban District Councils and County Councils ranging from refuse collection to education and planning. Police and Fire Services were also within its remit. The Police delivered both the Fire Service and a part of the local Ambulance service. The Council also provided much of the utilities such as electricity, water and sewage disposal. Gas supply was provided by a private company.⁸¹

The Council consisted of a Lord Mayor, Sherriff, Aldermen and elected Councillors. Individual, often subject specific, committees reported to overall Council which made the final decision on key issues. While there were several political parties represented the Council had essentially been Labour for some years. Many of its policies had been centred around job creation and the building of social housing.

Norwich's response to the First Circular of 1935 was to set up a committee, the Special Committee on Air Raid Precautions (CARP), meeting first in March 1936, submitting a preliminary report in July 1936 and having its scheme approved by the Home Office in April 1937.⁸² However, actual delivery of ARP was slow possibly due to a lack of enthusiasm on the part of some decision makers who might have been aware of the ambivalent and sometimes hostile attitude of sections of the public to any preparations for war. It was not helped by the attitude of the government on a range of issues particularly finance and in 1937 the Council, along with others, refused to undertake certain works unless an agreement was reached on grant and recompense.⁸³

The ARP Act 1937 came into force on 1 January 1938 clarifying the position on finance though it was to continue being a contentious issue throughout the war. The Council had been designated an SMA with a duty to make an ARP plan. Work on this progressed through 1938 led by a newly appointed ARP Officer. His report of September 1938

⁸¹ The Council is referred to by various names in contemporary documents this thesis will use the term Norwich City Council or the Council

⁸² NRO N/EN 1/31,27/2/37

⁸³ ibid.,13/5/37

highlights some of the problems he felt the city faced, 'Organisation of ARP in a city like Norwich is bound to be slow... Many people are antagonistic in other cases merely apathetic.'⁸⁴ The Council was also trying to deal with the scale of the enterprise, at this point some 260 warden's posts were required, later reduced to 79, and a consideable range of services needed.⁸⁵

The recruitment situation at the Munich crisis was inadequate with the future Chief Warden declaring CARP as 'the Cinderella of the Council' referring not only to the under enthusiasm of some of its members but also possibly to a lack of spending power.⁸⁶ Following Munich CD publicity and recruitment picked up, services began to develop, and training increased but physical infrastructure was still underdeveloped. In March 1939 the Town Clerk, Bernard Storey, was recommended as ARP Controller for Norwich. An EC consisting of Aldermen was to be set up at the outbreak of war to support him and CARP's spending power on the ARP scheme was increased.⁸⁷ Storey also reported to the Regional Commissioner, Sir Will Spens, on ARP matters as shown in Figure 1. Sir Will operated from Cambridge and appeared to have had a constructive relationship with the Council across the war.

By May 1939 CARP met weekly and the City Engineer asked that the Council slow down its normal business to allow his staff to concentrate on CD work.⁸⁸ In the six months prior to the outbreak of war, CD activity increased, for example, training exercises were held, the sirens tested, a practice blackout tested by the RAF and the principles of co– operation and mutual aid between councils in Norfolk were discussed.⁸⁹ Auxiliary Fire Stations and equipment were established in buildings across the city and the command and control centre was set up.

By 3 September recruitment had picked up considerably but there were still personnel shortages in several services such as the wardens and a lack of reserves in others such as rescue services. The command–and–control system was operational as was the air raid warning system. Tenders had been awarded for a range of physical infrastructure such as first aid posts, wardens posts, both overground and underground and ARP depots but there were still shortfalls, for example, 34 of the designated 79 wardens' posts had not been started.⁹⁰ The most critical issue was the lack and inadequacy of shelters. The EC met on the 1 September and then 'almost daily' for the first three months of the war.⁹¹

⁸⁴ NRO N/TC 28/37, 8/9/38

⁸⁵ ibid., 8/9/38

⁸⁶ Snelling, Norwich a shattered city p11

⁸⁷ NRO N/TC 28/37, 27/3/39

⁸⁸ ibid., 8/5/39

⁸⁹ ibid., 21/8/39

⁹⁰ ibid., 4/9/39

⁹¹ Mottram, Assault upon Norwich p6



Figure 1 – Reporting lines for ARP Controller during the Second World War (simplified)

Norwich's CD services and infrastructure continued to develop over the course of the war, fluctuating in numbers and emphasis in line with national trends and the state of hostilities. The main service areas are shown in Figure 2. The largest CD activity in the city was fire watching later known as fire guarding. Initially under the Chief Warden's remit it became a separate service later in the war. At the start of the Baedeker raids there were some 15,000 fire guards in Norwich essentially engaged in fire prevention either dealing with incendiaries before they ignited or with small scale fires after ignition and were vital to stopping the spread of fire.⁹²



Figure 2 – Main ARP services operating in Norwich during and immediately after an air raid.

The next chapters will focus on several critical aspects of CD, air raid warning systems, local command and control, rescue services and shelters tracing their development and performance up to the point of the Baedeker raids in 1942. Succeeding chapters will investigate aspects of CD performance during the Baedeker raids and actions taken to improve and develop the services in the remainder of the war.

Chapter 4 – Air Raid Warning systems in Norwich

Early warning of a raid was an essential component of CD, giving time for people to take shelter or get to a place of greater safety, although it was only in mid–1938 that the government finally decided to give public warnings, see Appendices 3 and 4 for a national timeline, description of individual warnings and conditions of delivery. It was imperative both for public safety and morale that systems were reliable, accurate and trusted. Warnings were initiated by Fighter Command early in the war, later devolved to the Observer Corps and consisted of a series of alerts: Yellow (initial warning to selected recipients, later changed to a Purple warning), Red (public sirens sounded), Green (raiders passed, public sirens sounded), White (cancel). At the beginning of the war warnings were only initiated for 'mass' attacks and not for the approach of smal numbers of alircraft.⁹³

This chapter investigates Norwich's experience and shows how early problems potentially led to fatalities but also contributed subsequently to large numbers of false alarms possibly influencing public response to the heavy air raid of 27 April 1942.

Infrastructure and systems for primary air raid warnings (ARW)

The Council had been building the ARW network since the Munich crisis. Initially sirens at factories were used, these were steam powered factory hooters. Delays in implementing the network arose due to HO decisions, for example, failing to communicate the type of siren plant to be installed.⁹⁴ The 'wailers' the HO eventually decided on would not work with the steam sirens at some factory sites and the Council first experimented with and then moved to electric sirens.⁹⁵ The last of the factory sirens was discontinued in December 1939.⁹⁶

The system was tested several times in August 1939 and was used in earnest on 3 September, eleven sites were in operation, spread throughout the city. Later that month all sirens were operated remotely from the main police switch board, individual sirens having previously been 'manned'. The EC were unhappy thinking that no more than four sirens should be operated from one point due to vulnerability but the single point of operation remained.⁹⁷

⁹³ O'Brien, Civil Defence pp136-7

⁹⁴ NRO N/TC 28/37,1/2/39

⁹⁵ ibid., 3/5/39

⁹⁶ ibid.,18/12/39

⁹⁷ NRO N/TC 28/29,12/9/39

The Council worked constructively with local businesses, approving the transmission of ARW across the local wireless relay system to its subscribers⁹⁸, giving permission for an observer on City Hall tower to initiate a factory warning system and connecting several Council buildings to it.⁹⁹ As 1940 wore on slight defects in the system became apparent and a monthly inspection and testing regime was initiated. Protecting the sirens from the weather and corrosion proved a problem and sirens were repainted, and heaters fitted.¹⁰⁰ The infrastructure of the primary ARW system remained essentially the same for the remainder of the war with damaged sirens being replaced as necessary. See Appendix 5 for a list of ARW sites.

Problems with the first raids

"The sirens are never sounded when there are bombs about"101

The first sign of problems came in late May 1940 when bombs were dropped near Norwich without warning.¹⁰² These were to be followed by several unsignalled raids caused by a combination of issues with the early operation of the national system and the government's policy of not issuing warnings for attacks with small number of aircraft. Many parts of the country experienced problems but Norwich was particularly vulnerable to small 'hit and run' attacks due to its location.

On Tuesday 9 July 1940 Norwich suffered its first actual air raid. A small number of aircraft came in just after 17.00 and dropped bombs on housing, several major factories and the London and North Eastern (LNER) locomotive sheds, 27 people were killed. In this case the yellow warning reached the ARP Controller after the bombs had fallen and no public alarm had been sounded.¹⁰³

The shock of the raid and outrage at the lack of warning led to a public outcry and letters from employers being sent to the ARP Controller and the Regional Commissioner, Sir Will Spence. There was a constructive responsive, Spence recognised the depth of feeling and, stating that the issue was of more than regional interest, quickly arranged a meeting with Sir Hugh Elles, Chief of Operational Civil Defence Staff, in Cambridge on 13 July. The Norwich delegation consisted of the Lord Mayor, an Emergency Committee member Alderman Jex, the ARP Controller and senior or board level representation from several major employers.¹⁰⁴

⁹⁸ NRO N/TC 28/37, 22/4/40,

⁹⁹ NRO N/TC 28/29, 28/10/40

¹⁰⁰ ibid., 23/12/40

¹⁰¹ Anonymous letter to Daily Express re Norwich 3/8/40

¹⁰² NRO N/TC 28/37, 3/6/40

¹⁰³ TNA HO 199/59, Report by ARP Controller

¹⁰⁴ TNA HO 199/63,13/7/40

Frank discussions took place. The employers described the concern of the workers and stressed the level of production loss that had been caused and was likely to occur in the future if warnings were not given. At Boulton and Paul, 200 workers threatened not to start work. Many Barnards employees walked out after more loud explosions were heard without warning the following day due to some nearby demolition work.¹⁰⁵

Both the employers and their workers believed that if warning had been given casualties would have been lighter with no lives lost. Reckitt and Colman and Laurence Scott and Electromotors had internal factory warning systems operated by spotters on the roof. Intended to function when bombs started to fall, it was overtaken by events in this case. It was stressed by the employers that it could take up to five minutes for workers to reach the shelters in their factories. The Lord Mayor and Alderman Jex expressed the view that the public were being disregarded and that internal factory warnings would not protect them. The ARP Controller put the case for some decentralisation of warnings and confessed he was unclear on the basis on which warnings were currently issued.¹⁰⁶

Sir Hugh sympathised but emphasised warnings had been restricted because of loss of production and people had to be educated to expect loss of life in air raids. The response from the delegation was that people understood lives would be lost but not that they were to be lost unnecessarily. The meeting resulted in an agreement to stagger mealtimes and shift changes at factories and the acceptance by the HO of the need for internal warning systems in factories, after the first bombs had dropped.¹⁰⁷

Internal HO correspondence arising from this meeting emphasised that warnings would continue to be sent only for mass attacks and that the public did not appreciate the need for the policy and needed education on this. The Regional Press Officer described it as a lively controversy. It became livelier when four further unsignalled raids on Norwich occurred over the next month.¹⁰⁸

Home Intelligence reports for the months of July and August 1940 include references to the adverse reaction of the people of Norwich to the lack of ARW before actual raids.¹⁰⁹ This also coincided with the advent of a national policy of 'production first' with factories advised to keep working after the red warning. By 2 August, Home Intelligence reports stated the need for a declaration of a clear policy about sirens in Norwich.¹¹⁰

¹⁰⁵ TNA HO 199/59, 11/7/40

¹⁰⁶ TNA HO 199/63,13/7/40

¹⁰⁷ Ibid.

¹⁰⁸ TNA HO 199/59, note, 11/7/40

¹⁰⁹ Addison and Crang, Listening to Britain p222

¹¹⁰ ibid., p293

Many members of the public did not understand that the Council had no power to initiate ARW and blamed it for the casualties being suffered. A deputation from the Trades and Labour Council met with EC expressing dissatisfaction with the Council and demanding better protection for their 20,000 members. When the situation was explained to them, they changed tack and suggested the public should be informed about the Council's efforts.¹¹¹

The Council continued to press the HO for action sending a deputation to the Ministry of Home Security.¹¹² Their efforts met with some success as Norwich was put onto the Government's 'sensitive list' meaning that more ARW were sounded to the public when small numbers of planes were approaching.¹¹³

The Secondary Warning System (Observer Corps Alarm)

Following the earlier, unsignalled, raids the ARP Controller outlined a scheme in October 1940 whereby Alarm Officers at the local Observer Corps Room would warn factories that hostile aircraft were within fifteen miles of Norwich. Information was sent to factories to gauge opinion and the Council decided to connect some of its buildings to the system.¹¹⁴

Plans for a secondary system continued to progress with the Council pressing Regional Office for an expansion to warn the public as well as businesses. On 20 December 1940 the Regional Office indicated they would not object to the public issue of the Observer Corps Alarm (OCA) between the hours of 06.00 – 22.00. The OCA was triggered when enemy aircraft were spotted by the Observer Corps, approximately three to four minutes away and was sounded whether or not a primary alert had been triggered by the national system. The EC accepted full responsibility for the arrangement with the alarm given by steam whistles to distinguish it from the primary alert.¹¹⁵ Factories were keen to co-operate, preliminary arrangements were agreed with several firms and six steam whistle sites were quickly approved. ¹¹⁶ The system went live in March 1941.¹¹⁷

Over the course of the next months the system was tested, it was found that the whistles did not reach some parts of the city and additional locations were added.¹¹⁸ Technical improvements were made including additional or more powerful whistles at existing sites. The Ministry of Home Security approved the use of an adaptor which would enable the

¹¹¹ NRO N/TC 28/29, 30/7/40

¹¹² NRO N/TC 28/37, 6/8/40

¹¹³ NRO N/TC 1/77,17/9/40

¹¹⁴ NRO N/TC 28/29, 25/10/40

¹¹⁵ ibid., 4/1/41

¹¹⁶ ibid., 13/2/41

¹¹⁷ NRO N/EN 1/34, poster

¹¹⁸ NRO N/TC 28/29, 9/4/41

OCA to be sounded on primary sirens. By mid–April the Council felt confident enough in the system to ask to be taken off the sensitive list.¹¹⁹

The infrastructure of the secondary system varied with time, individual whistle locations were added, taken out and sometimes added back again. Several whistles were lost during raids and replaced. Equipment had to be upgraded and there was a problem with steam generation when factories were not operating, the most common solution being to pay firms to keep up an appropriate level of steam.¹²⁰ The system was tested regularly, faults were found and generally ironed out with new whistles still being added in late 1943.¹²¹ The raid of 5 September 1942 was the only instance where an actual raid was picked up by the OCA but not the primary system.¹²²

Having accepted the initial conditions under which the OCA had been granted, the Council set about trying to expand the hours in which it was sounded. An extension of one hour, up to 23.00 was provisionally agreed with the Regional Commissioner on 9 January 1942.¹²³ The campaign for 24 hour use was to gain additional impetus following the Baedeker raids.

Following the problems with unsignalled raids the Council, in partnership with local businesses, had taken what action they could to improve the effectiveness of the warning systems for Norwich though this led to large numbers of false alarms being generated.

Private sector initiatives.

Early in the war several factories in Norwich set up their own 'spotting' systems. These usually involved employees being placed on the roof of the factory to watch for enemy aircraft and triggering an internal alarm system on their approach. The unsignalled raid of 9 July 1940 prompted some businesses to work together to give warning of approaching danger.

A joint approach to spoting was agreed by Boulton and Paul, Laurence Scott and Electromotors and Reckitt and Colman. A scaffold was rigged on top of Carrow House at the Reckitt and Colman site and the internal warning systems for the factories connected. The spotting post was staffed by employees of all three firms. The scheme was later joined by Reads Flourmills and the LNER works at Thorpe. The first Observation Post Warning (OPW) proper was given on the 30 July 1940.¹²⁴

¹¹⁹ ibid., 9/4/41

¹²⁰ ibid., 20/7/42

¹²¹ NRO N/TC 28/37, 13/12/43

¹²² Banger, <u>Norwich at war</u> p 68

¹²³ NRO N/TC 28/29, 9/1/42

¹²⁴ TNA ZLIB10/40, Report on joint spotting arrangements pp 2-3

An observation platform was built on higher ground at 15 Bracondale, overlooking the approach to the factories, it opened on 26 October 1940 and gave its first warning the next day, three minutes before the public warning. Confidence in this system grew as spotters became more proficient although identification at night was more difficult. Warnings were given on the approach of suspected enemy aircraft and not just when bombs were falling. The tower was linked with the local Observer Corps Centre first by bell (November 1940) and then by phone (June 1941). This link was to prove valuable during the raid of the 29–30 April 1942 when communication between Observer Corps posts and their Control Centre were out of action, but the tower's communications were still working and the spotters relayed information to the centre.¹²⁵ The post operated until 8 May 1945 when the spotters stood down, apparently annoyed that they were not allowed to signal a final 'all clear.'¹²⁶

According to post records 1417 OPW were issued between July 1940 and May 1945. The largest number sounded in 1941 with 969 OPW, March 1941 being the peak month with 145 OPW. The effect of the scheme on production is discussed below.

Numbers and duration of warnings

In 1944 an analysis undertaken by the HO showed that Norwich experienced a far higher number of primary alerts than other Baedeker cities across the first three years of the war. Almost 1,000 more than Exeter and about 1,300 more than Bath and York, as shown in Table .¹²⁷ Potential reasons for this are discussed below.

| | Numbers of primary alerts 3/9/39 to 29/2/44 |
|---------|---|
| Norwich | 1435 |
| Exeter | 446 |
| Bath | 155 |
| York | 136 |

Table 2 – Total number of primary alerts in four Baedeker cities (Source: TNA, HO 199/98)

Records kept by the Warden's Service in Norwich allow tracking of the number and duration of ARW across the duration of the war with clear patterns emerging. The total number of sirens (primary and secondary) sounded between 1939 and the end of December 1944 was 1605.¹²⁸

¹²⁵ ibid., p9

¹²⁶ ibid., p15

¹²⁷ TNA HO 199/98

¹²⁸ Banger, Norwich at war p75
The primary ARW sirens sounded 1502 times between 1939 and the end of the war. Peak numbers occurred in 1941 with the highest number in March at 143 alerts, as shown in Figure 3. Approximately 63% of the alerts were in the day and 37% at night.¹²⁹



Figure 3 – Primary air raid alerts in Norwich 1939 – 44 (Source Banger <u>Norwich at War</u> p75)

Between 1941 and the end of 1944 total of 117 secondary OCA were sounded. Peak numbers occured in 1942 with 45. see Figure 4. 76% of these were in the day and 24% at night and approximately a third occured without any primary system warning being sounded.¹³⁰



Figure 4 – Secondary (OCA) alerts in Norwich 1941 – 44 (Source Banger, Norwich at War, p75)

Between 1939 and the end of December 1944, the cumulative duration Norwich spent under the primary siren was estimated at 1888 hours or about 11 weeks. The peak

¹²⁹ ibid., p75

¹³⁰ ibid., p75

occurred at 971.5 hours in 1941 with the highest monthly figure occurring in February 1941 at 175 hours, see Figure 5.¹³¹ The secondary (OCA) warnings sounded in isolation of the primary alarm were of short duration lasting just over 7 hours in total.¹³²



Figure 5 – Hours under primary alert in Norwich 1939 – 44 (Source Banger <u>Norwich at Wa</u>r, p75)

The effect of the factory partnership, discussed above, on workforce hours under the siren was considerable. In its first full year of operation, 1941, the Observation Post report estimates some 886 hours of additional production when compared with hours under the primary alert and a total saving of 1629 hours or 85% between 1940 and 1945.¹³³ See Figure 6. National figures suggest gains of 60% to 70% or eleven million working hours saved across the country by industrial spotting schemes.¹³⁴



Figure 6 – Total duration of public alerts and observation post warnings 1940 – 45 (Source TNA ZLIB 10/40 Report on joint spotting arrangements)

¹³¹ ibid., p75

¹³² ibid., p75

¹³³ TNA ZLIB10/40, Report on joint spotting arrangements

¹³⁴ O'Brien, Civil Defence

There were 44 Luftwaffe air raids on Norwich during the war with over 1500 primary ARW, resulting in over 97% false alarms. The unsignalled raids of 1940 resulted in the installation of the secondary system and additional warnings. After initial problems both primary and secondary ARW performed adequately in relation to notification of actual raids for the remainder of the war with the secondary system picking up a missed raid in September 1942, albeit with short notice.

There are several potential reasons for the high number of primary alerts. Norwich's geographical location meant it would be on or near the flightpaths of Luftwaffe aircraft particularly coming in from the east or returning from attacks further west. It was close to Great Yarmouth and Lowestoft, two of the towns suffering the most attacks in the country. (Great Yarmouth, 97 attacks, the third highest after London and Dover, Lowestoft seventh highest,74 attacks).¹³⁵ An additional ARW district was added in October 1941, running from ten miles north of Great Yarmouth to Dunwich at a depth of ten miles. This was intended to cut down the number of false alarms for Norwich as aircraft thought to be headed for Great Yarmouth would not now automatically be signalled to Norwich.¹³⁶

False alarms could be triggered by misidentification of allied aircraft and East Anglia had a high concentration of air bases. Norwich spent months on the sensitive list experiencing ARW when single or small numbers of aircraft approached. The numbers of ARW reached their peak in the spring and early summer of 1941 falling away considerably by the first quarter of 1942. There was no raid on Norwich between 8 August 1941 and 26 April 1942, however there were over 100 primary warnings lasting about 150 hours with OCA warnings in addition.

The number of air raid casualties experienced by Norwich was inflated because of Government policies on ARW. This is certainly true for a number of people killed and injured in the early unsignalled raids, but these missed sirens and the consequent number of false alarms may also have had an impact in the first of the Baedeker raids almost two years later as people may have ignored the sirens.

¹³⁵ O'Brien, <u>Civil Defence</u> p 684

¹³⁶ NRO N/TC 28/29, 29/10/41

Chapter 5 – Report and Control Centres in Norwich

Report and Control Centres – national guidance

Early warning was key to alerting the public and CD services to potential danger, but those services then needed to be mobilised and despatched to incidents. Control Centres and Report Centres (RC) were the communications and dispersal hubs for a range of services. During and immediately after air raids their role was, essentially, to receive reports of bombs which had fallen (occurrences), distinguish those that required an immediate CD response (incidents) and despatch rescue and casualty services to the incident. Police and Fire Fighters were despatched through different communication and dispersal systems as these services had to be available continuously as part of their existing operations.

Report Centres covered a population of about 100,000 and acted as the immediate tactical response. In larger cities they reported to Control Centres (covering a unit of 500,000 people) which took a more strategic role to the deployment of resources within the city. Towns and cities with populations of about 100,000 could opt for a combined Report and Control Centre. All areas were expected to have a secondary centre in case the primary centre was inoperable. The requirements, design and operations of Report and Control Centres were specified nationally and are outlined below.¹³⁷

The expected mode of operation during and immediately after an air raid was that information on incidents would come into the centre via telephone or by hand, these reports would come from ARP Wardens, the Police or other trusted sources, the telephone numbers were not widely known to avoid multiple reports of incidents. Hand delivered messages were frequently delivered by the young men (16–18 years) of the cyclist messenger services. The reporting of fires was made directly to the Auxiliary Fire Service (AFS) or its successor the National Fire Service (NFS) and was undertaken before any report to the RC was made.

At the RC the incident would be noted on a duplicate sheet, plotted on a map, recorded and allocated an incident number before passing to Senior Officials who would decide what services to send. This might involve rescue parties to free trapped people, ambulances, first aid parties and possibly demolition squads to render the area safe. This decision would be phoned through to the relevant depots so that services could be despatched. This process was planned to take only a few minutes.

¹³⁷ HO ARP memo no 6, 1939, London

The RC was under the control of the ARP Controller or their representative who would make the final decision if there were any disagreements between senior officers, keep the Regional Commissioner informed of the situation and deal with many other issues that might arise during the raid. One of their key decisions would be when to ask for assistance either from neighbouring areas with whom they might have mutual assistance agreements or from the Regional Commissioner who could authorise teams from all over the region to converge on the area.

The centre would have a skeleton staff over 24 hours, the officer in charge <u>might</u> be given the powers to despatch CD parties. Other staff on call for operating the Centre were expected to get there as soon as possible after they were notified or when the siren sounded. When in full operation the centre would have a range of staff, mostly from the local authority, some full time and some unpaid including telephonists, administrative staff, messengers, a record clerk who was responsible for keeping a complete record of all reports, Tally Board operators to keep track of resource deployment and Plotting Officers. Should the RC be put out of action the Record Clerk would transfer the latest information to an alternative venue.

In addition to mapping the locations of incidents the Plotting Officer had to record information such as the time it occurred and the number, weight and types of ordnance used. Returns were submitted to the government where it would be utilised to investigate, for example, bombing patterns, changes in tactics and developments in weaponry.

The control room would house the ARP Controller, and Heads of Service who authorised the main rescue and casualty services. It might also have representatives from the AFS or the later NFS, Police, and utilities. A military officer might be present especially when there was a fear of invasion and incursion by parachutists.

Training and exercises were expected to be held to test and improve the performance of the centres and these continued throughout the course of the war. Lessons were learned from the heavy raids in 1940 and 1941 perhaps the most significant being the need to ask for mutual aid as early as possible.

Report and Control Centres in Norwich 1938 – April 1942

Norwich opted for a combined Report and Control Centre, referred to locally as the Report Centre (RC). It operated from four different locations between the Autumn of 1938 and the end of the war in May 1945, as shown in Figure 7.



Figure 7 – Locations of Norwich report centres: Key: CH – City Hall, M – Market Place, H – Heigham Grove, I – Ipswich Road

During the Munich crisis of September 1938 facilities were set up in five rooms in the basement of City Hall. There is little information on its operation or layout other than the fact that it was gas proofed and had thirteen telephone lines.¹³⁸ Over the next year plans were made to utilise the southern part of the stores on the Market Place as the RC. Initially rejected by the Regional Office as too small and further questioned in relation to the strength of its roof, which carried part of the Memorial Gardens, approval was finally given on 31 July 1939 and a four room facility operated at the start of hostilities.¹³⁹ The requirement to have a second RC caused some debate. Earlham Hall was considered in September 1939 and initially rejected, the proposal was revisited in March 1941 and although some work was done to the building, it is unclear whether it saw action.¹⁴⁰

¹³⁸ NRO N/TC 28/37, 6/10/38

¹³⁹ ibid., 31/7/39,

¹⁴⁰ NRO N/EN 1/7

Plans for a purpose built brick and concrete RC at Heigham Grove were approved.¹⁴¹ It became operational in April 1940 operating 09.00–18.00 for some months while the Market Place RC covered the period 18.00 – 09.00.¹⁴² The Heigham Grove RC went into 24 hour operation on 24 June 1940, with the Market Place RC becoming the secondary facility. In practice the Heigham Grove RC was found to be too small and in July 1942 tenders were accepted to build a new facility on the Technical College site on Ipswich Road.¹⁴³ The building also provided rooms for the Police although both facilities would operate independently. The Ipswich Road RC went into operation 11 March 1943, Heigham Grove RC became the secondary facility. Ipswich Road RC shut on 1 April 1945 after which the Police Control Room at Bethel Street operated as the RC until the end of the war.

Staffing the Report Centre

During the Munich Crisis, the Chief Constable was the ARP Controller, appointed by order of the Home Office, little information is currently available about the running of the RC at this period.

From March 1939 the ARP Controller, the Town Clerk, Bernard Storey, or his representative, was in overall controlof the RC. He was responsible for liaison with other authorities, the military and the Regional Controller in Cambridge, especially in respect of further assistance. Only he could authorise the cessation of rescue work and would do this only if there was no hope of recovery. His reporting lines during a raid are shown in Figure 8.

The City Engineer, JG Bullough, later HC Rowley, or his representative controlled the rescue squads, demolition gangs, road repair gangs, decontamination squads and other building/engineering services.

The Medical Officer of Health, Dr.VF Soothill or his representative controlled ambulances, first aid parties, first aid posts including mobile first aid vans, sitting up cars (ordinary cars used for transporting walking wounded) and other casualty services.

Two other roles were vital to the effective running of the Norwich RC during a raid. The City Architect or his representative acted as the Plotting Officer, responsible for plotting the bombs on a map and making returns on the bombing. The Report Clerk, a role undertaken by experienced administrators undertook the accurate recording of incidents and kept a real time record of the situation as it evolved.

¹⁴¹ NRO N/TC 28/29, 28/9/39

¹⁴² NRO N/TC 28/37,14/4/40

¹⁴³ ibid.,13/7/42

These five roles were referred to by ARP staff as the 'City Hall officials' and worked together, for example, to provide cover during night shifts. Later in the war the operational running of the RC and its staff, including its messengers, became the responsibility of the City Treasurer who was appointed as Operations Officer.

The Council was responsible for the supply of electricity and water / sewerage in the city and in an air raid the City Engineer liaised with the relevant specialist engineers usually by telephone. A messenger from the private gas company and the Post Office would frequently attend at the RC on the sounding of the air raid warning, although their attendance dropped off as the war went on, due to false alarms.¹⁴⁴

Other people operating at or from the RC included telephonists, message supervisors, clerks, a Tally Board operator, motorcycle despatch riders, cyclist messengers and indoor messengers. These were a mixture of full–time paid staff and unpaid volunteers. In January 1940 the ARP Controller reported to CARP that the Regional Office had approved seventeen full time posts for the RC. This meant some volunteers were needed to staff the RC around the clock. Most of the full–time staff were telephonists along with two or three clerks.¹⁴⁵



Figure 8 – Communication and reinforcement lines for main ARP (General) services during a raid. Police and National Fire service contacted directly from incident

¹⁴⁴ NRO N/CD 1/1 to 5

¹⁴⁵ NRO N/TC 28/37,1/1/40

The ARP Controller in his forward to 'Assault on Norwich' lists the people in the RC during a major air raid. In addition to the five 'City Hall officials' he includes the ARP Officer for the city, representatives of the Post Office, Gas and Electricity undertakings, the Gas Identification Officer, liaison officers from the Police and Fire Service, a representative of the Warden's Service, a Rest Centre Officer and when invasion threatened a military officer.¹⁴⁶ The RC logbooks for the heaviest raids on Norwich April–June 1942 are not available so this statement cannot be verified but the information available shows that routinely and for lighter raids far smaller numbers were at the RC.

The development of operations

From the outbreak of war the RC was staffed by a skeleton staff at all times, two or three people consisting of telephonists, clerks and sometimes the Plotting Officer, with others on call. The systems for ensuring sufficient staff were available in an emergency changed over the course of the war as the understanding of what was needed grew.

Some of the decisions made over the first year of the war rendered the on call system inadequate in terms of a quick response. One example was that Heads of Service could wait until an air raid was over to arrive at the RC unless they could get there within five minutes of the siren being sounded.¹⁴⁷ This was prompted by Councillors' concern about the safety of their staff but was also influenced by the national expectation that bombing raids would take place in the day and be of short duration, advice still being given in the spring of 1940. However, it shows a lack of understanding of the potential nature of an air raid and the need for swift response.

Although the main work of the RC was to deal with air raid warnings and the consequences of an actual attack most of the work done during the day was routine.¹⁴⁸ This included providing twice daily situation reports to the Regional Office at Cambridge, testing key phone links, dealing with engiries from the Regional Office, acting on situation reports from Norfolk County, providing information for the ARP Controller and adapting systems to keep up with the latest governmental requirements.

Training exercises were undertaken by staff. These ranged from large scale joint exercises with the military and other partners to internal tests to sharpen RC procedures. The ARP Controller kept a close eye on the running of the RC, for example, visiting the RC at least once or twice a week. He clearly wished to be seen to be leading from the front and

¹⁴⁶ Mottram, Assault on Norwich p 8

¹⁴⁷ NRO N/TC 28/37, 4/9/39

¹⁴⁸ NRO N /CD 1/4

ensured that he took his fair share of overnight and weekend duties often in the company of the City Engineer.¹⁴⁹

The Market Place Report Centre

The Market Place Report Centre was operational from the first day of the war. Operated by a skeleton staff, others were called out from City Hall on the receipt of an alert. This would initiate a cascade of phone calls followed by a migration of on call telephonists, clerks and City Hall officials to the RC which would be made fully operational within a few minutes of call out, being less than 100 yards from the main doors of City Hall. This system operated during daytime in the working week when City Hall was staffed.¹⁵⁰

At night the RC was again operated by a skeleton staff. The personnel for much of the daytime and nighttime skeleton staff were usually provided by the full time staff. Other personnel were on call nearby, volunteer telephonists in a hostel on Theatre Street and the 'City Hall officials' in the Coslany committee room in City Hall which at night was turned into a bedroom. Other staff such as messengers and despatch riders were expected to turn up when the air raid warning sounded, known as 'reporting on the red'.¹⁵¹

At weekends, when City Hall was closed the RC was staffed by a succession of shifts of telephonists, clerks and 'City Hall officials' until 09.00 on Monday when the weekday rota began. These weekend day shifts consisted of more staff than the normal skeleton arrangements with increased use of volunteer telephonists, nighttime arrangements were similar to that in the week.¹⁵²

Heigham Grove Report Centre

The Heigham Grove RC was less than a mile from City Hall, on foot about a ten minute journey, longer if it was in the blackout and bombs were falling. For two months until 24 June 1940 it operated from 09.00–18.00 with the Market Place RC taking over at night. During this period the Heigham Grove RC was manned by a skeleton team which frequently included the ARP Officer for the city, Mr Phillippo. It is not clear what delegated authority he had to despatch services should a raid occur.¹⁵³ A proposed plan for the RC is shown in Figure 9, it followed national guidelines but it is unclear whether this was the final design.

Once in full operation the Heigham Grove RC operated on a similar basis to its predecessor but with the potential problems of a delayed response to a raid due to the time lag in the

¹⁴⁹ NRO N /CD 1/2 ,9/8/41

¹⁵⁰ NRO N/CD 1/1

¹⁵¹ ibid.

¹⁵² ibid.

¹⁵³ ibid.



Figure 9 – Proposed plan of Heigham Grove Report Centre (Autumn 1939) Source NRO N/EN4/136

arrival of staff. Several of the 'City Hall officials' offered their cars as transport to the RC and four spaces on City Hall car park were allocated for this purpose during working hours. However, there was a break in this service between 13.00 and 14.30 each day as, presumably, the Luftwaffe would not be likely to attack during lunch.¹⁵⁴ A van was eventually used for transportation.¹⁵⁵

In June 1940 the Council took over a house close to the RC, 7 Chester Place, as a hostel for the telephonists, mostly volunteers, who would be on call for night duty, often referred to as the 'Sleepers'.¹⁵⁶ Facilities were also provided for male staff, specifically the 'City Hall officials'. The system for calling out these staff was a telephone call to the Town Clerk's representative on receipt of an alert.¹⁵⁷ Weekend arrangements were similar to those in place at the Market Place RC with larger shifts, for example, up to five shifts of telephonists and two shifts of City Hall officials covering each day up to 09.00 on Monday morning.

¹⁵⁴ NRO N/EN 1/178 part 2

¹⁵⁵ NRO N/TC 28/37, 6/8/40

¹⁵⁶ NRO N/TC 28/29, 8/6/40

¹⁵⁷ NRO N/EN 1/178 part 2

Operation during the initial air raids on Norwich (22 April 1940 to 28 August 1940)

The RC's logbook for this period allows for some evaluation of its effectiveness and illustrates some of the difficulties experienced by the systems when under fire. There were six air raids in this period which resulted in bombs being dropped on Norwich. In five of these raids either no preliminary (Yellow, later Purple) warning or action (Red) warning was given, or the warning arrived at the same time as the fall of bombs. ¹⁵⁸

Norwich's initial system for fully staffing the Heigham Grove RC relied on a call out on receipt of a preliminary, yellow, warning and there being sufficient time for key staff to get there before bombs fell. Given the distance between City Hall and the RC this would usually have been tight but with no warnings any delays caused were potentially critical. In the first raid on the 9 July two key officials took 26 minutes to arrive at the RC.¹⁵⁹ Delays in key staff arriving were a feature of its early operation, on some occasions delays of between 20 and 50 minutes were recorded from the receipt of a yellow alarm.

The number of yellow and red alarms being received had not been anticipated, on 19 August 1940 seven red warnings were received, two without a preliminary warning.¹⁶⁰ There were also significant numbers of yellow alarms which were not followed by a red warning. The larger number of warnings was a consequence of several factors, as discussed in Chapter 4. These numbers would be dwarfed later in the war but were a complication for the early working of the RC. The reaction from key staff was a reduction in the response to yellow warnings and an approach that was generally 'report on the red'. The response time improved over this period coming down to between five and ten minutes after a red warning, during the evening and night. Weekday responses also improved but remained longer than the others.

There were to be a further nineteen air raids on Norwich over the next nine months, however, the logbooks covering this period are missing, and the detail of operations start again in May 1941.

Consolidation (23 May 1941 to 7 December 1941)

By the middle of 1941 more was understood about the nature and extent of the Luftwaffe's raids. Most heavy raids took place during the hours of darkness, attacks could come in waves lasting several hours and once a civilian target had been attacked there was

¹⁵⁸ NRO N/CD 1/1

¹⁵⁹ ibid., 9/7/40

¹⁶⁰ ibid.,19/8/40

every possibility of further attacks occurring within the next few days. The national air raid warning systems had improved to give more accurate forecasts of the likelihood of attack.

The essence of Norwich's RC systems remained the same with skeleton staff covering the workday during the week, increased staffing at weekends and on call arrangements for 'reporting on the red'. However, there was a change to the nighttime staffing prioir to 23 May. Two or three of the 'City Hall officials' were stationed in the RC for the night while the remainder of their team slept at Chester Place as before.¹⁶¹ Although red warnings still occurred at any time of the day there was a tendency for them to be sounded during the late evening and last for many hours, perhaps until dawn. Stationing key resource allocators onsite allowed for a swifter response to both primary and secondary (OCW) alerts.

Towards the end of 1941 the number of volunteers reduced as the perceived likelihood of raids decreased.¹⁶² During this period there were three raids on Norwich, one by the RAF who mistakenly dropped small experimental parachute bombs. The number of ARW dropped off and the RC moved into a period of routine which would be interrupted at the end of April 1942.

The organisation and operation of the RC in Norwich developed over the course of the war and improved from what was a somewhat unrealistic start. The RC in operation at the time of the Baedeker raids was Heigham Grove, its performance during these raids and its further development are discussed in Chapters 8 and 9.

¹⁶¹ NRO N/CD 1/2, 23/5 to 8/12/41 162 ibid.

Chapter 6 – Air raid shelters in Norwich 1938 – 1942

A third key element of CD following warning and effective command and control relied on the ability and willingness of people to seek places of greater protection during an air raid, namely the provision and use of air raid shelters.

On the afternoon of 3 September 1939, the Deputy City Engineer and colleagues attended a meeting in which they drew up and costed plans for brick and concrete public shelters. This might seem a little late considering air raids were expected imminently but in mitigation the authorisation for such shelters had only existed for a week.¹⁶³ This was redolent of the Government's approach to air raid shelters prior to the war where policy changes, arguments about financing and late starts on research and development led to delays in construction of shelters and were to contribute to materials shortage and inadequate specifications such as the use of weak lime mortar later in the war. A timeline of key national developments regarding shelters and descriptions of the different types are shown in Appendices 6 and 7. This chapter explores the development of air raid shelters in Norwich between 1938 and 1942.

Prewar activity in Norwich

The Council undertook little work on shelters before autumn of 1938. A survey of cellars and basement was discussed as was the digging of a specimen trench.¹⁶⁴ These intentions were overtaken by the Munich crisis and government instructions to dig trenches for 10% of the population within the next few days. Digging started on 26 September at eleven sites around the city as shown in Figure 10. On 30 September the government ordered digging to stop at the end of the crisis. The government's previous refusal to allow trenches to be built in peacetime resulted in a national scramble for resources with a lack of skilled labour and shortages in key materials leading to trenches of dubious stability.¹⁶⁵ In Norwich the Council decided a week later to make good the trenches to try and stop them collapsing.¹⁶⁶

In March 1939, following the announcement of the mass provision of Anderson shelters, it was decided that four of the eleven trenches were to be made permanent, the remainder were filled in.¹⁶⁷ Problems continued to beset the construction of these trenches in Chapelfield Gardens, Wensum and Sewell Parks and Gildencroft mainly due to the delayed delivery of the precast concrete linings needed to fill the 1350 yards of dugout. A

¹⁶³ NRO N/EN 1/199, Norwich and ARP, Rowley, March 1940

¹⁶⁴ NRO N/TC 28/37, 8/9/38

¹⁶⁵ Dobinson, 3.1

¹⁶⁶ NRO N/TC 28/37, 6/10/38

¹⁶⁷ ibid., 3/3/39

further four sets of trenches in the city centre were approved in August 1939, these were at City Hall, Pottergate, St Benedicts Street along with the huge Cattle Market complex of trenches which was to have a planned capacity of about 3,000.¹⁶⁸



Figure 10 – Approximate positions of public trenches in Norwich Source NRO N/TC28/37, 3/3/39, 28/8/39.

The basement survey was not completed until May 1939, 70 of the 600 structures surveyed were assessed as potential public shelters with a capacity of 5,000.¹⁶⁹ It was not until late August 1939 that notices were served regarding the requisitioning of basements. Between 40 and 50 locations were chosen including pubs, shops and department stores.¹⁷⁰

Censuses and surveys across the spring and summer of 1939 provided some of the information needed to guide shelter provision. This included estimating the number of Anderson shelters needed and footfall and vehicular traffic at key points in the city. The Anderson surveys were still being undertaken at the end of July with the delivery of

¹⁶⁸ ibid., 28/8/39

¹⁶⁹ ibid., 26/6/39

¹⁷⁰ ibid., 28/8/39

Andersons to Norwich starting in August.¹⁷¹ The Council offered to put up the shelters free of charge for households without an able–bodied man and offered advice and checking on completion to those households able to do it themselves.¹⁷²

Attempts to form any strategic plan regarding shelters were affected by rapidly changing situations and demands from central government. In February 1939 it was estimated that 114,000 people in the city had no specific protection, of these 60,000 were in high density housing areas, with 10,000 people affected by high water tables which would impact on their shelter needs.¹⁷³ The Council decided to concentrate on trenches, basements and family shelters for individual households including Andersons.¹⁷⁴ Trenches would be provided for schools. The Council assumed the Civil Defence Act would cover shelter requirement for larger (more than 50 employees) businesses. In June it was recognised that there were gaps in the plan specifically people with incomes over £250 and smaller businesses not required by law to provide shelters. As a result the planned number of public shelter places was increased. Hospitals, maternity homes, children and industry were to be moved out of the city.

The debate on the provision of deeper bomb proof shelters occurred in Norwich as in other places. In March 1939 the City Engineer produced a rebuttal of the deep shelter argument. Norwich would need thirteen deep shelters each with a capacity of thousands to accommodate 60,000 residents and 30,000 workers or shoppers and sited at a depth of 60 feet to resist a 1000 kg bomb. Apart from the safety problems of getting thousands of people into the shelters quickly and the significant resources needed, the water table in most of the city was simply too high to allow this. A 45 feet deep shelter would be feasible on the Cattle Market but this would cost £54,000. There was press interest in a letter from the local Architects Association proposing a shelter under the Castle Mound with the possible inclusion of an underground car park. This proposal was rejected on the grounds that it would be too shallow, a 10 foot high car park reducing the effective height of the mound to 30 feet. The cost of the proposal was between £200,000 and £245,000 depending on whether the shelter was deepened to 60 feet. The estimated costs of deep shelters was over £2.5m with £1.2m of this associated with tunnelling in waterlogged ground.¹⁷⁵ Central Government was unlikely to provide any financial support for such deep shelters and none were built in Norwich.

¹⁷¹ ibid., 21/8/39

¹⁷² ibid., 5/6/39; 10/7/39

¹⁷³ ibid., 1/2/39

¹⁷⁴ ibid., 1/3/39

¹⁷⁵ ibid., 1/3/39, City Engineers Report

While there was undoubtedly a lot of later effort, the City's initial response was slow. Delays in completing basement surveys and censuses can be laid at the Council's door and this almost certainly impacted negatively on the amount of shelter space available on the outbreak of war. Four sets of trenches were open for use on September 1 1939, provided the occupants did not mind standing in the dark as the lighting and seating was not completed.¹⁷⁶ Failure to fully utilise the Council's internal resources contributed towards this and other problems, with the Town Clerk publicly instructing his chief officers to work together to expedite the erection of Anderson shelters.¹⁷⁷ It remains unclear whether sufficient use was also made of the private sector in this period.

The ARP Controller stated in 1944 that 17,000 Norwich citizens could take refuge underground at the outbreak of war.¹⁷⁸ This assertion is contradicted by a report in December 1939 which states 13,470 spaces in basements, trenches and 'surface trenches' at that point.¹⁷⁹ Andersons had only started being delivered a month before the outbreak of war and authorisation for public surface shelters had not been available until August. While the position had improved since Munich, shelters were not available for the majority of Norwich citizens but the groundwork had been laid for significant progress over the next year.

Shelters during the war years

Shelter activity was at its peak during the first two years of the war. They represented a large–scale construction project presenting a series of logistical, legal and financial challenges. However, there was at least public acceptance for their need. After this point, although some new shelters were built, efforts were concentrated on repair and maintenance, especially after the heavy raids of 1942 and in strengthening existing shelters.

Types of shelter

Norwich utilised the govenrnment approved range of shelters being used by the rest of the country. The exact type was dependent on the nature of the housing stock and the city also followed the national pattern of uptake, shown in Appendices 6 and 7. This included trenches at the time of the 1938 Munich crisis with basements, Andersons, brick and concrete public shelters (open to all) and household shelters (individual families) starting in 1939. Brick and concrete communal domestic shelters (shelters designated

¹⁷⁶ NRO N/TC 28/29, 1/9/39

¹⁷⁷ ibid., 1/9/39

¹⁷⁸ Storey, 'Civil Defence Organisation' in Mottram, <u>Assault on Norwich</u>, 1944

¹⁷⁹ NRO N/TC 28/37, 6/12/39

for several households usually in terraced streets) were started in 1940¹⁸⁰, and Morrisons (indoor shelter) in 1941.¹⁸¹ Norwich classified its bick and concrete shelters using a simple alphabetical scale A–K. Shelters designated A–D were single compartment and E–K were four compartment shelters, shelters B-K are shown in Figure 11. Costs in mid 1940 varied between £160 and £170 for type C and D to £80 to £109 for types E to K.¹⁸²



Source NRO N/EN1

¹⁸⁰ Dobinson, 1.1

¹⁸¹ ibid., 5.2

¹⁸² NRO N/TC 28/29, 1/5/40; 14/6/40

The trenches constructed or developed after Munich were usually lined using precast concrete although some of the trenches built for schools were lined with brick. Anderson shelters provided protection for several thousand people in municipal flats, a shelter frequently being shared by two small households.¹⁸³ In January 1940 the Council considered building shelters in the alleyways or passages between terraced houses, with the intent of accommodating 7,000 people across the city, none were built.¹⁸⁴

Processes

The process for building a new shelter could be lengthy. Approval for shelter plans including siting, design, cost and grant eligibility had to be obtained from the Regional Office. Council plans were sometimes turned down for example, plans for further shelters in the outer area of Norwich were rejected,¹⁸⁵ sites for individual shelters were blocked and there were frequent discussions with the Regional Office about features such as toilets, the number of entrances, handrails and lighting.¹⁸⁶

Once approved the Council had to give at least fourteen days' notice and the site requisitioned preferably by coming to a voluntary legal agreement with the owners and/ or occupiers. The legal agreements, handled by the Town Clerk's Office, covered many issues including compensation and how the site was to be made good. Some of the sites required extensive work for example, the demolition of a house.¹⁸⁷

Many sites were offered voluntarily by businesses such as Norwich Union and Barnards, by smaller concerns and also individual citizens.¹⁸⁸ Some were offered free or at a nominal rent, others at an agreed fair return, a few offers were rejected by the Council because of excessive financial demands for compensation. Where possible shelters were built on council land, allotments were exempted.

While many businesses stepped forward to help some concerns were more reluctant. London and North Eastern Railway refused to build or even allow public shelters at Thorpe Station and there was no legal power to force LNER to comply.¹⁸⁹ The situation was only resolved in October 1941 when the ARP Controller wrote to the LNER Board/ Head Office. It was agreed that LNER would build two shelters for their staff and the Council three to accommodate 150 members of the public.¹⁹⁰

- 186 NRO N/TC 28/37, 15/1/40
- 187 ibid., 15/1/40
- 188 ibid., 22/4/40

190 ibid., 29/10/41

¹⁸³ NRO N/TC 28/37, 19/2/40
184 ibid.,15/1/40
185 NRO N/TC 28/29, 23/8/40

¹⁸⁹ NRO N/TC 28/29, 16/7/40



Figure 12 – Public shelters in the City Centre 1940 – 42 Source NRO NIEN4, POST 01



Figure 13 – Communal domestic shelters in terraced streets 1940 – 42

Source NRO N/EN4–POST F2



Figure 14 – School shelters and trenches at Norman School 1940 – 42

Source NRO N/EN4–POST K4

The remainder of 1939 saw the completion of much of the trench and basement network, the start of surface public shelter building and the delivery of 7800 Andersons to the city.¹⁹¹ The large Cattle Market complex was completed in January 1940 and public and communal domestic shelter building took off. In April 1940 the Council was erecting 85 Andersons a week when it was announced by the Goverment that their production would stop, although the shelters continued to be delivered in large numbers for some time.¹⁹² Wardens and the Police were instructed to report any household where Andersons had been delivered but not erected or were not properly covered with earth. The Council later offered to deliver earth to the household to aid safer coverage.¹⁹³

Several significant problems affected the building of surface shelters, including changes of specifications and design, these are set out in more detail below. The first raids on Norwich in July 1940 increased the urgency and shelter building increased. A limited programme of shelter camouflage was initiated in the Autumn of 1940 running into 1941.¹⁹⁴

At this time there were signs that different parts of the ARP organisation were not functioning to best effect. In October 1940 the Chief Warden wrote to the City Engineer asking for better co–operation regarding the siting of shelters. The City Engineer was prepared to give the Chief Warden a list of proposed shelter sites and also to show him the site plans to but was not prepared to do the same for the wardens for the locations involved. Local knowledge was not maximised and the wardens had to deal with queries from citizens if mistakes were made.¹⁹⁵

Shelter building followed a similar pattern in 1941 albeit with improved specification and design for communal domestic shelters. By January 1941 the number of shelters was such that the Chief Warden pleaded for the expedited use of a sequential numbering system to help with identifying shelters and allocating people to them. Examples of various shelter locations are shown in Figures 12 to 14.

In March 1941, Andersons were still being delivered at the rate of 200 a week and had proved so popular that people who moved house had to be forbidden to take their Andersons with them.¹⁹⁶ Morrison Shelters started to be delivered later in the year and by November 1941 it was announced that almost every person who wanted one had received a delivery.¹⁹⁷

197 NRO N/TC 28/37, 14/7/41

¹⁹¹ NRO N/TC 28/37, 6/12/39

¹⁹² ibid., 8/4/40

¹⁹³ ibid., 22/4/40

¹⁹⁴ NRO N/EN 1/67, part1

¹⁹⁵ NRO N/EN 1/70, letter 19/11/40

¹⁹⁶ NRO N/TC 28/29, 19/8/40

The following year saw a set of different problems with a succession of heavy raids causing destruction and serious damage to shelters. The consequences of this and the situation in the last years of the war are discussed below.

Shelter numbers and capacity

Sufficient numbers of shelters were key to shielding the population, however, the number available at any point during the war is difficult to assess. Information even in reports to committee is sketchy, missing or inconsistent making it difficult to establish trends. Shelters were damaged or destroyed by raids, shut temporarily or permanently due to problems with weak lime mortar or were shut for other reasons, for example, the risk of flooding from supplementary water tanks. A number were replaced by the Council though this practice slowed later in the war. At least thirty five shelters were simply cancelled for reasons unknown, although appearing on reports as shelters.¹⁹⁸

The programme of public trenches and basement shelters was completed early in 1940 and their numbers remained virtually constant in the next three years. The number of public surface shelters increased by about 85% over the same period, see Table 3. The biggest growth was in the number of Communal Domestic shelters which went from zero to over 600 in this time reflecting their use in terraced streets of houses with small gardens where Andersons could not be utilised.¹⁹⁹

| Shelter numbers logged | Public surface | Basement | Public trenches | Communal domestic |
|------------------------|----------------|----------|-----------------|-------------------|
| Jan 1940 | 63 | 53 | 15 | 0 |
| May 1940 | 78 | 53 | 16 | 107 |
| July 1940 | 94 | 53 | 16 | 173 |
| Dec 1940 | 94 | 54 | 16 | 198 |
| May 1941 | 107 | 54 | 16 | 412 |
| Jan 1943 | 117 | 55 | 16 | 635 |

Table 3 – Number of shelters reported in Norwich 1940 – 43 Source NRO N/EN1/67 – 71

However, these reported figures do not reflect the number of shelters which were destroyed, closed or cancelled for various reasons. Table 4 shows the best assessment of the numbers of shelters available in January 1943.

The tables exclude shelters for industry, schools, Morrisons, household shelters for individual families, household basements and shelters built by private individuals for their own use. The number of Andersons was estimated at 15,000 in May 1940 ,the Council had ordered 18,000.

¹⁹⁸ NRO N/EN1/67 to 71

¹⁹⁹ ibid.,

| Shelters live at Jan 1943 | Public surface | Basement | Public trenches | Communal domestic |
|---------------------------|----------------|----------|-----------------|-------------------|
| | 117 | 50 | 16 minus 1 bay | 574 |

| Table 4 – Number of shelters available in January 1943 (estimated) |
|--|
| Source NRO N/EN 1/67 to 71 |

The capacity of individual shelters varied significantly. Communal domestic shelters capacity varied between 37 and 50. Public surface, basement and trenches might contain hundreds of people supposedly split into 50 person units for example, four trenches on the Cattle Market had a capacity of over 2,800 people. Even an Anderson could have an official capacity of between four and six people. Table 5 is based on figures reported by the Council in January 1943 and excludes industrial, private shelters and Morrisons.

| | Estimated Shelter Capacity at January 1943 |
|-------------------|--|
| Public surface | 5,850 |
| Basement | 6,000 |
| Public trenches | 8,000 - 8,500 |
| Communal Domestic | 28,500 - 30,000 |
| Andersons | 54,000 - 60,000 |
| School shelters | 12,000 children 10,000–11,000 adults |
| Municipal flats | 2,500 |
| Total | 114,000 – 124,000 |

Table 5 – Estimated capacity of shelters in Norwich January 43 Source NRO N/EN1/71

The ARP Controller for Norwich stated in his forward to the official account of the Air Raids on the city that by April 1942 there was room in shelters for 122,000 people, more than Norwich's war time population.²⁰⁰ This does appear to be plausible. However, while shelter capacity was adequate there were other problems with the shelter network: arising from design, specification and workmanship, delays and issues arising from the use or abuse of shelters.

Design, specification and workmanship

The main causes of problems were inadequate or frequently changing national specifications and designs coupled with the speed of erection especially of the brick and concrete shelters. The most serious issues occurred in 1940 when Norwich, as the rest of the country, found itself having to deal with the consequences of reduced building specifications requiring or implying the use of lime mortar which was inherently weaker

than cement mortar, the prohibition of reinforcement rods especially in the roof and design changes which included the roof not overhanging the walls.²⁰¹ These changes made the shelters less able to resist blast and increased problems with dampness.

74 lime mortar shelters were built in Norwich, about 13% of the communal domestic shelters. A strengthening programme began in 1941 but progress was slow. The strengthening works were extensive requiring an additional brick skin in Portland cement mortar tied to the existing walls and reinforcement rods keyed into the internal walls, roof and floor and tied in such a way to form an internal structural cage.²⁰² The delay was contributed to by labour and materials shortages. It was also due to reluctance on the part of the City Engineer because he was not convinced of the adequacy of the remedial measures proposed.²⁰³ The Council pressed for demolition and rebuilding of these shelters but were generally refused permission by the Regional Office as the shelters might be needed.²⁰⁴

Dampness was a persistent problem in trenches, mainly through the roof and also in Anderson shelters, through the floor, roof and sides especially if not properly constructed. Brick and Concrete shelters, both Public and Communal Domestic, also suffered badly from rising and penetrating dampness and leaks. In 1940 the design and specifications did not allow for a damp proof course in the walls, there was no overhang, gutter or drip so water flowed down the walls, roofs were mostly flat with no fall to disperse water and without any damp proofing on the roof. Changes in design and specifications in January 1941 remedied some of these problems in new builds but shelters built earlier needed frequent repair to keep them usable.²⁰⁵

In autumn 1940, building on the experience of London, councils were ordered to lengthen shelters to allow for the inclusion of bunks. This caused problems for shelters built on the highway and those with corbelled and pitched roofs. Extensions were also required for belated decisions to allow toilets and heating in some shelters.²⁰⁶

The constantly changing specifications strained relations with contractors and suppliers as illustrated by a letter from the City Engineer to a supplier who had a contract to supply roofing slabs. 'I am sorry you have been left with 600 roofing units. I could have taken them but the Ministry of Home Security have now banned this type of roof.' ²⁰⁷

²⁰¹ Dobinson, 5.1

²⁰² NRO N/EN 1/68, handwritten specification

²⁰³ NRO N/TC 28/29, 20/6/41

²⁰⁴ NRO N/EN 1/71, note 30/11/42

²⁰⁵ Dobinson 5.1; 5.2

²⁰⁶ NRO N/EN 1/70, letter 22/1/41

²⁰⁷ NRO N/EN 1/70, 14/1/41

Delays and timeliness

The building and maintenance of Air Raid Shelters suffered from delays. Some of these were due to the Council's own actions and decisions but the majority fell into three different categories: shortages of labour, materials and decisions by higher authorities. The system for approval of air raid shelters involved submissions to the Regional Office and sometimes the Ministry of Home Security. Tenders could then be awarded to build contractors and licences sought for materials which then had to be supplied and issued. Delays occurred at all phases of this process due in part to bottlenecks where regional and national officials were deluged with queries from councils and businesses.

As early as December 1939 the Council complained to the Regional Office that delays in constructing public shelters were due to the attitude of government departments. Examples of the problems encountered in Norwich included; previously awarded tenders for surface shelters being cancelled because of design issues, arguments about how many entrances and emergency exits certain shelters should have and whether grant was obtainable for locks and keys.²⁰⁸

Central to many of these delays was the issue of finance. Would a shelter proposal be grant aided, how much would be awarded and when would the money be received? Councillors started to make decisions to build without Regional Office approval and risk the consequences, most notably in May 1940 when fifty unapproved Communal Domestic shelters were given the go ahead.²⁰⁹

Delays due to the supply of materials were essentially caused by shortages, the government's concentration on military uses and the late start made on shelter building. Norwich was not a high government priority when it came to resource allocation. Shortages were most acute in 1940 and contractors complained about their inability to get cement, timber and Fletton bricks.²¹⁰ The shortages led to many compromises in Norwich, such as seats down only one side of some shelters and doorways of communal shelters left void because there was no timber to make doors.²¹¹

Labour shortages contributed to the delays, especially skilled tradesmen and this problem was to continue throughout the war. However, it was also evident that prior to and during the early stages of the war insufficient use was made of private sector builders and that the resources of the Council were not used to best effect with considerable silo working in operation.

²⁰⁸ NRO N/TC 28/29, 7/10/39; 23/5/41

²⁰⁹ ibid., 28/5/40

²¹⁰ NRO N/EN 1/70, letter 19/8/40

²¹¹ NRO N/TC 28/29, 29/10/41

This situation changed quickly with private sector builders awarded build contracts, some were told to drop their prices while others offered to work effectively at cost to keep their men occupied. The system of local authority tendering still applied but evolved into a system of selecting, for example, the four lowest tenders of acceptable quality, asking how many they could build in a specific timescale and then allocating the contracts accordingly. Any unallocated shelters were then awarded to the next cheapest tenderer.²¹² This approach seems to have worked adequately, although it is not clear how many inspections took place to verify the work quality, only a few contracts were cancelled for performance reasons. The main problem faced by the private sector builders was shortages of materials alongside bad weather.

The Town Clerk took on the problem of silo working publicly instructing departments who had works or maintenance staff to work together to best utilise resources, for example, employees of the Electricity Department assisted with basement strengthening. The situation was to improve greatly over the war, with better co-operation and more flexibility in the use of internal council resources, private contractors and with various CD organisations, for example, wardens undertaking repairs to shelters.

The Council's own Direct Labour Organisation (DLO) came under scrutiny to ensure value for money. Test builds were set for the DLO with an analysis of cost, labour, materials, quantities and productivity with no further work given to the DLO unless results were satisfactory.²¹³

Other steps were taken to try to speed up shelter building. In August 1939, 28 council employees were erecting Anderson shelters, over 1,400 had been erected by December 1939, with a further ten staff assigned to give advice to those householders able to do it themselves. However, the full Anderson programme was not completed until the Autumn of 1941.²¹⁴ More suppliers and contractors were engaged, some supplier contracts being cancelled due to lack of performance. Materials were provided to responsible citizens to build their own trenches. Council employees building shelters and who also had ARP duty were ordered to stay at the building site unless bombs were falling.²¹⁵

Progress was slow in the first months of the war with repeated admonitions by Councillors to 'get on with it'.²¹⁶ Progress reports were demanded by the EC every fortnight. In September 1939 the Town Clerk stated publicly that a great deal had started but little had been finished and the City Engineer was told to go personally to Cambridge to get

²¹² ibid., 8/11/39

²¹³ ibid., 3/10/39

²¹⁴ ibid., 3/10/41

²¹⁵ ibid., 28/10/40

²¹⁶ ibid., 26/9/39

approval from the Regional Office and to employ more contractors.²¹⁷ After a slow start school shelters were prioritised above those for the public with 90 men from private contractors being brought in to bolster manpower in September ²¹⁸ although progress was still being complained about in November.²¹⁹

Shortages of labour for shelter building continued to persist through 1940 and 1941. These shortages were amplified after the start of the Baedeker raids when clearing, demolition for safety and home repair were prioritised.

Abuse of shelters

While some damage to shelters occurred purely as the result of normal use there was a significant problem with vandalism. Similarly, while most people behaved in a respectful and co–operative manner with care for others, some did not. There were reports of shelters being used for immoral purposes and more instances where shelters were used as a toilet. The most common problem was vandalism, this started early in the war, the City Engineer reporting in February 1940 that a further 70 shelters had been damaged, indicating the problem had started earlier than this. Vandalism continued even after the first raids on Norwich, though perhaps to a lesser extent and persisted throughout the war.²²⁰

The most common items attacked were light fittings, other common actions were to kick out emergency exits consisting of bricks laid in sand or weak mortar, damage seats, bunks and gas curtains, and interfere with pails and chemical closets. The problems were thought to be perpetrated in the main by teenage boys and the Chief Constable was urged to caution any caught.²²¹ Legal action was undertaken against a small number of adults and rewards offered for information on perpretrators but for the most part the vandalism went unpunished, being usually committed out of sight of witnesses.²²²

The debate on whether to lock the shelters became controversial. CARP supported locking and the EC was strongly opposed.²²³ In April 1940 the Regional Office authorised the locking of shelters provided there were adequate arrangements to open them on an alert. Attempts to leave a key outside in a glass panel met with limited success as people still broke in by smashing the glass. Keys were given to responsible people such as trench or shelter wardens but unlike London where the 1940/41 raids followed a pattern of nightly bombing, there was no indication when the air raid warning would be sounded

²¹⁷ ibid., 21/9/39 218 ibid., 11/9/ 39 219 ibid., 8/11/39 220 NRO N/TC 28/37, 19/2/40 221 ibid.,14/10/40 222 NRO N/TC 28/29, 28/10/40

²²³ ibid., 30/10/39

so it became difficult to maintain an adequate response. Local solutions were sought and sometimes found, for example, giving keys to local residents, but the problem was never fully resolved, complaints about locked shelters were still occurring in September 1942. Communal domestic shelters proved less of a problem as keys could be given to each household allocated to the shelter.

Most people were happy to share shelters provided the other occupants also behaved reasonably and some householders with private shelters offered places in their shelters to others. A few people behaved less reasonably including one family who installed curtains, carpets, a wireless, set up a garden and allegedly refused to let in other people entitled to use the Communal Domestic shelter. ²²⁴ The Town Clerk was asked to write to people who were otherwise restricting access because of their sleeping arrangements.²²⁵ In 1942 there was a problem with overcrowding when people with Andersons and Morrisons decided they preferred surface shelters on safety grounds and the Chief Air Raid warden had to intervene. Overall, instances of poor behaviour appear to have been few.

The Council made considerable efforts to provide people with shelter. They repeatedly contacted people who had refused Andersons to try to persuade them to take up what was for many people, a free shelter. Morrisons were less popular, and the City Engineer had to reject an intended delivery of 2,000 because of lack of demand about ten weeks before the Baedeker raids started.²²⁶ The Council usually tried to accomodate requests from the public for additional shelters although not always able to deliver them.

Conditions in the shelters

Finding the way to a shelter in a raid was not always straightforward but Public Shelters were signposted, including illuminated signs. Communal domestic shelters were close to people's homes, typically sited in terraced streets and occupants notified in writing which one they should use. Household shelters were usually on the occupier's property.

Access was not always easy or safe in the dark and there were several accidents involving people falling downstairs, into holes and in one case though the emergency exit of a trench. The Council fought several battles with the Regional Office trying to get handrails, railings, pilot lights and other safety equipment installed.²²⁷

Lighting within public and communal domestic shelters was variable and frequently inadequate. Secondary lighting was provided by hurricane lamps, miner's lamps and torches. Timber restrictions resulted in a shortage of seats in many shelters. Heating the

²²⁴ NRO N/EN 1/67 part 1, 24/7/40

²²⁵ NRO N/TC 28/29, 19/8/40

²²⁶ ibid., 3/2/42

²²⁷ NRO N/EN 1/69, letter 9/1/40

shelters safely was a problem. The Council began the installation of some 300 CURA (coal fired) stoves when safety concerns had been addressed, fatalities had occurred elsewhere in the country through inadequate ventilation.²²⁸

Toilets, usually chemical closets or pails with a seat, were mandated only in public shelters. Communal domestic shelters were not to be provided with toilets despite a nominal capacity of 37 to 50 occupants. The EC were not prepared to accept this and ordered toilet accommodation in all shelters under construction.²²⁹ In September 1940 the Council was forced to back down by the Regional Office and agree that the next 150 communal domestic shelters would not have toilets.²³⁰ Additional ventilation pipes and bricks were added, shelter occupants had taken to leaving external doors open to relieve the atmosphere.²³¹

Prior to the start of the war little thought was given either nationally or local as to how the shelters were to be regulated when in use. A system of shelter wardens was set up to keep order in the premises but had few powers of their own and the orderly use of the shelter depended on the co–operation of the occupants and an acceptance and adherence to shelter rules. People with infectious diseases were not excluded from shelters although special provision was made for council tenants in flats whose families included a person with TB, where a specific Anderson was allocated to them for their sole use.²³² Later in the war some arrangements for food and drink were allowed, for example, the provision of a power point to allow a kettle or urn for hot drinks.

Grant issues

The struggle for grant approval went on constantly during the first years of the war. The Regional Office had to interpret and enforce Ministry decisions such as why first aid kits, handrails and more than one entrance and exit for shelters holding up to 50 people did not rank for government grant.²³³ Failure to get grant could mean an increase in the local council rate. However the Council was to build shelters without permission and in defiance of the government on more than one occasion. Delays in paying grant to councils were another problem, this would not have helped local relationships with contractors and suppliers.

Two government actions were to cause particular annoyance to the Council. The first occurred in November 1939 when the Home Office declared that certain shelters

- 230 ibid., 3/9/40
- 231 NRO N/TC 28/37, 14/7/41

²²⁸ NRO N/TC 28/29, 3/10/41

²²⁹ ibid., 27/11/39

²³² NRO N/TC 28/29, 19/8/40

²³³ NRO N/EN 1/66, letter 1/1/40

previously grant aided as 50 person shelters would now be downgraded to allow for grant for 37 or 43 people. This reduced grant eligibility by a significant amount. The ARP Controller stated 'not quite fair that there should now be this pernickety attitude towards grant²³⁴.

This issue was eclipsed in the Autumn of 1940 when a government circular announced that more grant would be paid for shelters built after the circular date than had been paid before with no backdating.²³⁵ This meant that councils that had moved quickly to build shelters would be financially penalised compared with the later starters. The Association of Municipal Councils took up the case and the ARP Controller arranged a meeting with local MPs to take a deputation to the HO. There is no indication that the protests had any effect.

In short, Norwich's policy on shelters was determined by government policy. There was little scope for deep shelters so the policy of dispersal and moderate protection held sway. Of the 60 people killed in Norwich during 1940 at least 47 died in raids where no warning was given and were either caught in the open or were unable to reach a shelter. The performance of the shelters during the heavier raids of 1942 is discussed in Chapter 8.

The dispersal and moderate protection policy worked reasonably well; surface shelters stood up to the bombing as well as could have been expected given their limited brief. It is difficult to estimate the effect of inadequate specifications on the trust that people had in shelters and the sight of shelters being strengthened may have worked to encourage or discourage their use. Some deep shelters in the city centre may have been useful after the first heavy raid when people would have anticipated further raids in the immediate future and could have taken steps to get inside early.

Shelters temporarily changed the topography of the city in terms of their presence in parks, gardens, existing buildings and on pavements and highways with the number a constant reminder of potential danger. They would be tested to their greatest extent during the Baedeker raids of 1942.

²³⁴ NRO N/EN 1/70, 18/11/39

²³⁵ HS circular: 249/40



Image 3 – Construction of Chapelfield Gardens trench shelters 1938 Source: George Swain Image courtesy of Norfolk County Council Library and Information Service. www.picture.norfolk.gov.uk/



Image 4 – Interior of Chapelfield Gardens trench shelters 1938 Source: George Swain Image courtesy of Norfolk County Council Library and Information Service. www.picture.norfolk.gov.uk/



Image 5 – Chapelfield Gardens Trench after Rescue Services operation 1942 Source: TNA HO 192/200

Chapter 7 – Rescue parties in Norwich from 1935 to April 1942

The national picture

Rescue parties were an essential part of the ARP chain, homes and shelters were not designed to stand up to a direct or close hit and many people potentially needed rescuing before they could receive appropriate medical treatment. Rescue parties were one of the services referred to in the First Circular on ARP in 1935, later becoming a part of the requirements under the ARP Act 1937. Teams were despatched from depots at the instruction of the Report/Control Centre. Their primary role was to locate people trapped in bombed buildings and to remove them, alive or dead, for treatment or identification and burial. Frequently referred to as Rescue and Demolition parties, their role involved moving debris, lifting heavy weights and shoring up or demolishing only those unstable structures which might cause a danger to the immediate rescue attempt.²³⁶

Progress up to the Autumn of 1938 was slow and only scratch teams were available to provide rescue services at the time of the Munich crisis in September 1938, the ARP Department of the Home Office having wrongly assumed that it would be easy to recruit and train volunteers. Disputes about the amount of government grant available slowed local authority efforts where councils were held to be responsible for the cost of recruitment and training of rescue workers until after the ARP Act came into force in 1938. In addition, ARP Department discussions with representatives of construction and building trades regarding payments remained unsettled into 1938.²³⁷

Make up of rescue parties

The required size and makeup of the rescue teams varied considerably both before and during the war resulting from experience and sometimes short-term reactions to the perceived war situation. These frequent changes were to cause problems for local authorities in recruitment, retention and training of team members.

Rescue Parties were originally classified into two types. Heavy parties (Class A) – eight men plus a driver, capable of handling major excavation work with more substantial equipment and Light Parties (Class B) – ten men plus a driver attending smaller scale incidents with lighter equipment. Four men in each party were to be skilled including the foreman with four of the unskilled men trained in first aid.²³⁸

²³⁶ McNab, The Blitz Operations Manual, pp112 –122

²³⁷ O'Brien, Civil defence p127

²³⁸ McNab, The Blitz Operations Manual p112

The tasks involved required a team with knowledge of the use of ropes, lifting equipment, shoring, strutting and the use of ladders. The rescuers had to be fit, strong with plenty of stamina, used to manual labour and the government expected most would come from building and construction trades. A minimum age of 25 was set for rescue workers and women were excluded.²³⁹

Rescue team members could be full time paid, part time paid or unpaid. Private sector employees were to be trained by their firms with the local authority reimbursing them. Local authorities would train their own staff. Key equipment would be centrally purchased.²⁴⁰

The rescue team leader was the key to a successful operation. He needed to assess the situation on the ground and decide on the best method of freeing people quickly and safely, while reducing the risk to his men to acceptable levels.²⁴¹ This could take some time perhaps to the annoyance of some onlookers who might not understand why rescue was not being attempted immediately. Rescues could involve lifting or clearing debris or tunnelling in, shoring up the tunnel and dealing with other hazards on the way. A training manual from 1941 advises the men to 'steel their nerves' for they would be in for some 'gruesome sights'.²⁴²

When major air raids did not occur on the outbreak of war the requirements for staffing rescue services were reduced in mid–September. Paid staff were halved and private sector employees needed for urgent work released. Shortages resulted and in January 1940 rescue workers under the age of 30 were deferred from recruitment into the armed forces, staff already working in rescue parties prevented from leaving and men above 35 were reserved in July 1940.²⁴³ In April 1940 the distinction between heavy and light parties was abolished, all parties were now to have eleven men with seven standing by, this meant that four members of the team were not at the rescue depot ready to respond immediately.

The raids of Autumn 1940 led to the realisation that casualties were lighter than feared but the amount of damage was greater resulting in more people than expected being trapped.²⁴⁴ Rescue services were short of manpower with parties almost continuously at work. Rescue methods were developed by trial and error, equipment was found to be unsuitable or in short supply, with large amounts of debris having to be removed, and teams working in darkness.

242 <u>Civil Defence Rescue Training Manual</u> ed October 1941

²³⁹ ibid., p112

²⁴⁰ ibid., p113

²⁴¹ Brown, Put that light out p77

²⁴³ O'Brien, Civil defence p549

²⁴⁴ ibid., p572

Certain actions were taken to improve the situation, the importance of early requests for mutual aid was highlighted, equipment improved, sometimes developed by the men themselves, the military were designated to assist with clearance work and other volunteers used to assist provided they were properly supervised.

Training was improved including the setting up of regional and later national rescue schools. Rescue, first aid and decontamination parties were given the opportunity to train in each other's skills, compulsory from May 1941. A drop off in air raids led to a proposal for major reductions in rescue services, less than a month before the Baedeker raids started.²⁴⁵

Initial governmental discussions about amalgamating rescue and first aid parties started in May 1942 although local authorities were not informed until 1943. There were allegedly some misgivings in Whitehall about the merger because of a perception of the different social background of the two groups. First aiders were seemingly regarded as clerical and rescue teams as manual workers and it was thought there might be friction. However, the new service appeared to work well.²⁴⁶ Existing first aiders who were women were transferred to other CD services.²⁴⁷ Rescue services were cut again in September 1944 everywhere but London and the southeast, which were in range of vengeance weapons. The service was gradually phased down to a skeleton staff as the end of the war approached.²⁴⁸

Developments in Norwich

1935 to 1938

The development of rescue parties in Norwich up to the Munich crisis of autumn 1938 reflected the national situation. Arguments between central and local government over funding slowed progress and the initial sparsity of clear national guidance meant that Norwich along with other similar authorities essentially improvised.

Discussions in Norwich started in October 1935, following the publication of the First Circular on ARP. Initial intentions were to base a minimum of six rescue parties at first aid posts in schools. The City Engineer, Bullough, would be in overall charge of the Rescue Service.²⁴⁹ Over the next year various proposals were made including rescue party members consisting only of Council employees, that they should be sworn in as special

²⁴⁵ Ibid., pp 577-8

²⁴⁶ ibid., pp 573-4

²⁴⁷ Brown Put that light out p77

²⁴⁸ O.Brien, <u>Civil Defence</u> p585

²⁴⁹ NRO N/EN 1/31, 25/10/35

constables and the number of rescue parties increased to fourteen. Nothing concrete had been done by October 1936.²⁵⁰

In March 1937 Council approved a CARP report, subject to satisfactory finance, which included 23 first aid posts, mostly at parish halls, which only two months later were reduced to twelve, each with a rescue party attached. To drum up volunteers, political party leaders and the Lord Mayor held a mass meeting with the City Engineer's staff in April. However, on 13 May CARP resolved it was not going to carry out any more work which incurred costs until the Home Office agreed a fair financial settlement and work essentially stopped for some months.²⁵¹

The passing of the ARP Act 1937 and a settlement with the government regarding grant allocation brought more local activity though not much more clarity. A confidential report to CARP in February 1938 shows a proposal for six teams of seven men with two further reserve parties, a reduction from previous proposals.²⁵²

Local politicians and officials were still trying to grasp the implications of air raids and the practical steps that needed to be taken to protect people and property. An example occurred in February 1938 when the City Engineer presented a confidential report to CARP aimed at reducing the number of casualties and hence the number of first aid posts and potentially rescue depots. The City Engineer had for some time been seeking to prevent schools being used as first aid posts as he felt they were unsuitable and wished to construct purpose–built facilities.²⁵³

His plan to reduce casualties and first aid posts was to encourage as many people as possible to evacuate to the city boundary when the sirens sounded, put on their gas masks and keep still, as the Luftwaffe were unlikely to intentionally bomb the city boundary. This was based on at least 20 minutes warning of a raid. The proposal did not find favour.

Rescue, decontamination and road repair services tended to be grouped together for logistical purposes as the team members all formed part of the City Engineer's remit, although they were separate services. By February 1938 there were problems with volunteers for these services, over a quarter of the 236 volunteers were over 50 and there were specific skills shortages,for example, 28 drivers were needed and only six had volunteered.²⁵⁴ The Council's Works Committee pointed out an example of 'silo thinking' in the organisation. Employees from departments other than the City Engineer's had not

²⁵⁰ ibid.,27/10/36

²⁵¹ ibid., 13/5/37

²⁵² NRO N/EN 1/32,10/2/38

²⁵³ ibid., City Engineers report Feb 1938

²⁵⁴ ibid., 10/2/38
been invited to the mass meeting the previous April despite employees from, for example, Parks who undertook similar work wishing to volunteer.²⁵⁵

By early September 1938 reports show that either eight or ten rescue parties were needed containing six to eight men, equating to 90 volunteers. The exact situation during the height of the Munich crisis is not clear but had bombing occurred at this time it appears that only a small number of scratch teams with little training would have been available.²⁵⁶

Munich to September 1939

Efforts intensified after Munich both nationally with further guidance on rescue work being published by the ARP department of the Home Office. The Government's estimated staffing requirements for rescue, decontamination and road repair services in Norwich, known as its War Establishment, was 298 at this point.²⁵⁷ The Council decided to site rescue parties and decontamination squads at depots away from first aid posts. In April 1939 three rescue depots were chosen, Westwick Street the Council's main depot, and sites at Silver Road and Surrey Street. Fifteen light and three heavy parties were to operate from these depots.²⁵⁸ The location of these and four other later rescue depots are shown in Figure 15.

Over the next months the Council was engaged in almost continuous discussions with the ARP department about the number of men needed to run rescue, decontamination and road repair services for whom grant could be claimed. By 1 July 1939 the Council's original proposals of 546 men plus reserves had been knocked down to 315, the Home Office refusing to equip more. This translated into eighteen rescue parties (141 men) including four heavy parties plus one reserve party working eight hour shifts and with six rescue parties on duty at any one time. Two messengers were assigned to each shift.²⁵⁹ This proposal lasted about two weeks when an ARP circular increased the requirements for light parties which meant another 60 to 70 men were needed.²⁶⁰

Recruitment was sluggish at first. On 8 May 1939 a report to CARP noted only 176 men had volunteered for the rescue, decontamination and road repair squads, the estimated requirement at the time being 407 plus reserves. It was proposed that an Area Union Officer be asked to come and speak to employees to encourage participation. By 5 July 200 men were reported as having had training for rescue parties though the nature and depth of this training is unspecified, they were formed into skeleton squads.²⁶¹

²⁵⁵ ibid., 20/4/38 256 ibid., 7/9/38 257 NRO N/EN 1/34 258 NRO N/EN 1/35,8/4/39 259 ibid.

²⁶⁰ HS Circ:142/1939

²⁶¹ NRO N/EN 1/35,5/7/39

Recruitment picked up as the summer progressed and by the end of August 350 men had volunteered and been assigned to rescue, decontamination and road repair squads. This meant that on 2 September these services would be operating without sufficient reserves. Arrangements had been made for 20 'boy scout' messengers to assist with mobilisation of rescue and other teams. Each man received a postcard on 2 September instructing him to report to a depot at 10.00 the next day for an eight hour shift and informing them if they were already on shift to expect to work sixteen hours.²⁶²

The 'Phoney war'– September 1939 to April 1940

When air raids had not materialised by mid–September the Government ordered a reduction of 50% in rescue parties. In Norwich standby rescue units were reduced until, in early November, only one unit was on standby at each depot at any time, previously there had been two at night.²⁶³

Norwich had some local industrial problems resulting in a dispute concerning pay and the work required to occupy standby teams. The amount of money paid to a worker for CD duties was less than the amount some skilled men would have received had they been undertaking their usual duties. This could be a cut of up to 25%, conversely, some unskilled men were actually paid about 10% more than their normal wage. The second area of dispute occurred when men on CD standby duty at the depots refused to dig trenches during their watch, this would mean they would not able to respond to bombing immediately. The instruction came at a period of activity regarding shelter building when the Council was trying to maximise the use of its labour albeit by potentially reducing the speed of response of vital CD services.²⁶⁴ The dispute continued through September and October. The EC initially expressed understanding and then hardened its line. The dispute subsided but was a forerunner of further strained relations with these services.²⁶⁵

Further changes were proposed to working arrangements by managers and in December a three–shift system was replaced by a two–shift system. Full timers would take the main shifts six days a week with part time workers putting in one shift a week. The City Engineer estimated this would reduce staffing levels across the rescue, decontamination and road repair services by 154.²⁶⁶ This led to a further reduction in cover for the rescue services, during the night there would be parties on standby at the depots but none on standby during the day. Under these arrangements if a raid occurred the initial response of the rescue teams would be quicker during the night than in the day.

- 262 ibid.
- 263 ibid.
- 264 NRO N/TC 28/37, 4/10/39
- 265 NRO N/TC 28/29, Sept and October 39

²⁶⁶ NRO N/TC 28/37, 1/11/39



Figure 15 – Location of rescue party depot in Norwich 1939 – 45

Disagreements occurred between the Regional Office and the Council over the response of rescue and other teams during a raid. In September the EC decided to ignore an instruction from the Regional Office and deferred, until an emergency arose, any decision on when rescue parties, first aid parties and ambulance drivers should either leave from or proceed to their depots during a raid taking the view that only the AFS should be outside.²⁶⁷ In December the Regional Office insisted that ARP staff must proceed to incidents immediately. The EC while understandably concerned for the safety of their staff had either not fathomed or had ignored the implications of their decision, essentially, delays in reaching trapped and injured people, especially during a raid of some length.²⁶⁸

Further discussions about finance occurred in 1940. A War Establishment of 44 full time rescue staff was designated by Government, about four rescue teams and the ARP Controller took up the argument about funding with the Regional Office. This included a

²⁶⁷ NRO N/TC 28/29,18/9/39

²⁶⁸ NRO N/TC 28/37, 11/12/39

proposal to merge rescue and decontamination squads to give greater flexibility, nothing appeared to come of this.²⁶⁹

Attempts were made to improve on call mobilisation times of the Rescue Service. Team members were required to live in the city or within 400 yards of its boundary and on call parties were required to proceed to their station 'with all possible speed'.²⁷⁰ The depots were not designed with overnight staffing in mind and following complaints from staff were improved slightly with some beds being provided to allow night staff to rest, facilities for making drinks and providing Fish and Chip suppers.²⁷¹

April to July 1940

The ARP Controller, Storey and the City Engineer attended national training courses and returned in early 1940 with ideas how to improve rescue and other services. In April the ARP Controller reported to CARP that he had serious concerns about the efficiency of the rescue party organisation pointing out that while numbers of men were 'fairly satisfactory,' only a few men short in their nineteen parties, there were no reserves and further shortages would occur as men left or were called up.²⁷²

He further reported that some men were unsuited to the work and needed to be removed or reassigned for reasons of age, infirmity, laziness, or unwillingness to take an order. Some of the team leaders had no confidence in the scheme and team personnel were constantly changing making teamwork difficult. Mobilisation during the day was 'completely hopeless', men were required to cross the city on siren without transport. The lack of standby gangs at the depots meant that 200 men had to drop their tools, run or cycle to their rescue depots, get into protective clothing and then go out and rescue people as needed. Night arrangements meant that parties had to get to their depots in the dark.

The Government had 'stoutly refused' to meet the whole cost of standby parties during the day. Announcements by the Ministry about grants for rescue 'did not go very far' and were difficult to understand but 'as far as he could make out' would allow for the reimbursement of some standby parties at night.

Storey proposed a minimum of one rescue party at each depot during the day and that their time should be spent training. The composition of parties needed review and once done should remain constant to aid teamwork. He absolved the City Engineer of any criticism because he had been keeping him informed of the difficulties. He finished by

²⁶⁹ NRO N/EN 1/35; NRO N/TC 28/37, 29/1/40

²⁷⁰ NRO N/TC 28/37, 29/1/40.

²⁷¹ NRO N/TC 28/29, 4/3/40

²⁷² NRO N/TC 28/37, 22/4/40, ARP Controller report

stating that he regarded CD as something of the Council's normal work and if employed by the Council one should carry out the work 'I realise this is a controversial matter.'²⁷³

After Storey had spoken CARP resolved that one rescue party would standby at each depot during the daytime, that work in connection with ARP was part of the Corporation's normal work and every employee must carry out duties assigned. It is unusual that a Council official should deliver such a damning indictment of services under his control but it points to his frustration with both national and local decisions and their impact on the quality of the service. The fact that he and the City Engineer remained in post after this suggests he knew he had key support among the Councillors and Aldermen.

The authorised strength of rescue services in April 1940 was fifteen light parties and four heavy parties with 50% reserves. The makeup of the rescue workforce (189) included 85 from building maintenance, 51 from highways, nine from housing and three from sewerage.²⁷⁴

Training for rescue parties was stepped up. Team leaders were sent on courses at a regional training school and the City Engineer drew up a programme for training, both theoretical and practical and allowing regular practice sessions. On the 2 May a mobilisation drill was held with air raid sirens tested at 12.00 after which men were to get to their depots. Out of 93 men participating 62 took more than ten minutes and thirteen more than twenty minutes. One driver took 21 minutes meaning that one team would not have been able to leave until his arrival.²⁷⁵ Storey queried why it had taken so long and the men were asked to account for their performance. The letters they supplied show that the delays were essentially due to the distance the men had to travel. There appears to have been a co–ordinated response, many of the letters follow a similar format even down to listing the number of traffic lights which held up cyclists. Storey accepted their reasons and asked whether something could be done about work allocation for those on call but it remains unclear what, if anything, was done.²⁷⁶

By mid–May three rescue teams were on standby at depots during the day consisting of seven men with four on call as per government instructions. The EC queried whether this was adequate and were told that they followed recommendations from the Regional Office.²⁷⁷ However, in a further diminution of cover, the daytime standby men were instructed by managers to go out and undertake demolition work during their shift taking a lorry which would bring them back to the depot if the siren sounded. A possible

²⁷³ NRO N/TC 28/37, 22/4/40,

²⁷⁴ NRO N/TC 28/37, 22/4/40

²⁷⁵ NRO N/EN 1/36, mobilisation drill, 2/5/40

²⁷⁶ NRO N/EN 1/36, letters from staff

²⁷⁷ NRO N/TC 28/29,17/5/40

explanation for this was that the Council was trying to justify keeping men on higher rates of pay than allowed for CD work. Some men refused to do this but were told it was an order and they must carry it out.²⁷⁸

Mobilisation instructions to rescue and other CD staff were constantly changing, between May 2 and June 10 they changed five times as shown in Appendix 8. These various arrangements were found to be wanting when on 10 June an air raid siren sounded at 00.17. Three rescue parties were on standby, 37 additional men had turned up within 30 minutes, 80 after an hour and 95 took more than two hours. Delays in mobilisation were to continue as an issue up to and including the Baedeker raids.²⁷⁹

After the distinction between light and heavy parties had been removed nineteen parties of ten men were left. The authorised War Establishment for Rescue Services in Norwich was to remain at 190 men for much of the rest of the war.²⁸⁰ There were still some shortages, however, and it was made a condition of service that all men in the City Engineer's department between the ages of 36 and 55 who were suitable should volunteer for ARP duty in effect making it almost compulsory if the individual wished to stay employed. ²⁸¹ Three men who refused to take on any CD duties were given notice.²⁸² This shows a hardening of attitude by the Council regarding its CD duties compared with earlier concerns about ordering their men out in a raid.

To expand rescue services private sector construction companies were approached to see if they would provide rescue and other squads. At the end of May two of the largest construction companies in the city agreed to organise ten squads to assist with rescue and demolition work. In the middle of June an official from one of the companies voiced the opinion that the Council's rescue men were not experienced in demolition and should receive training from his men. The EC agreed to such a programme and the Deputy City Engineer, Rowley, who was now in charge of the rescue teams worked with the contractor on training and other issues.²⁸³

A joint scheme was proposed where 27 rescue parties (council and private sector) would either be on standby or on call. This would require 27 vehicles and the contractor outlined a proposal whereby he would supply enough trucks, trailers and drivers to allow such a call out. Vehicle shortages were a constant problem for the Council who had insufficient vehicles for all the rescue teams.²⁸⁴

²⁷⁸ NRO N/EN 1/36,17/5/40

²⁷⁹ ibid.,10/6/40

²⁸⁰ ibid.,1/5/40

²⁸¹ NRO N/TC 28/29, 27/6/40

²⁸² ibid., 25/6/40

²⁸³ ibid., 14/6/40; 21/6/40

²⁸⁴ ibid., 8/6/40, 21/6/40

Industrial problems in the Rescue Service continued and Storey went out to meet with the teams at their depots during an air raid warning in the early hours. Some of the issues resolved were very basic, such as supplying tea and milk and taking home steel helmets so they could be worn when coming into the depot on call. A concession was made that if a team member had been at the depot until after 02.00 he could start work the next day two hours late. Storey also agreed that he would contact the Regional Office to try to persuade them to allow three rescue parties on standby at each depot at night, thus reducing the need for men to be on call unless there was a heavy raid.²⁸⁵

Issues also emerged when Storey and the Deputy City Engineer met with the ARP Workers Committee on 3 July. The Committee felt that the demolition training was unnecessary. Expectations of older men or people from other trades were unreasonable, 'can't expect a road man to climb like a bricklayer'.²⁸⁶ Team leaders knew their jobs and their teams and could tackle any emergency. The strength of feeling was such that the demolition training provided by the contractor was immediately suspended and team leaders who had undertaken the regional training course delivered any further training and instruction.

The raids begin – July 1940

In early July the Regional Office confirmed an increase in the number of standby teams with two standing by each night at each depot and one during the day. Five private contractor parties were also available though it is not clear whether these were on standby or on call. Overall, there was an increase in standby coverage, however, on call mobilisation continued to be an issue, coming into sharp focus when air raids started on 9 July. The first raid occurred between 17.00 –18.00 but the lack of a siren meant that unless the men were in a position to hear the bombs they had no idea they should report to their depots.²⁸⁷

These problems were mirrored in the next raid on 19 July. It occurred at 06.00 but only 38 out of 90 men on call had turned up by 08.30. Fortunately, the raids that followed were of a scale which enabled standby teams to cope with the initial response, leaving the depots promptly on receipt of message and with quicker mobilisation of on call staff on the raid of 30 July. However, the City Engineer remained concerned about the daytime arrangements with only three standby teams deeming them insufficient for even the scale of raids experienced.²⁸⁸

²⁸⁵ ibid., 25/6/40

²⁸⁶ ibid., 3/7/40

²⁸⁷ NRO N/EN 1/144, 9/7/40

²⁸⁸ NRO N/EN 1/145; ,19/7/40; N/EN 1/146,30/7/40

On call mobilisation response times continued to fluctuate throughout the summer, by mid–August there was still acknowledged staff confusion about the mobilisation arrangements with the City Engineer stating that it took at least 45 minutes for teams to assemble. One effect of this was that composite teams were sent out to incidents and if drivers did not arrive potentially the team was not sent out at all.²⁸⁹

To improve performance training exercises were stepped up. The City Engineer observed the exercises and recorded problems such as slow and clumsy use of ladders, arguing with the team leader who, in turn, had to give too many detailed instructions to people who were not acquainted enough with rescue methods and team members 'lounging around'.²⁹⁰

On call mobilisation arrangements changed several times between September and the end of October. In November the EC, in response to financial restrictions, decided to reduce the size of standby teams from ten to seven men with the remaining three men reporting to the depots when bombs fell. At this point there were nineteen parties of ten men, with six teams stationed at each of the three depots and one in reserve which would report to the Westwick depot after bombs had fallen.²⁹¹

The arrangements do not appear to have worked particularly well. In an air raid on 2 December which occurred at 17.45 only three dayshift parties of seven men were available at the depots. Six additional parties should have been covering the 17.00 - 19.30 changeover period but were not present at the depots.²⁹²

By mid–December both private sector contractors had withdrawn their offers of providing rescue parties, but agreed to offer what other assistance they could. It is unclear why this offer was withdrawn. Arrangements were made with a third contractor to provide acetylene cutters, operators and plant as necessary for rescue work.²⁹³ In February 1941 agreements were made for private contractors and the military to help with clearance work.²⁹⁴

Consolidation and evolution –1941

Storey, unhappy with the situation decided to take further action to upgrade rescue services and wrote to the Regional Office.²⁹⁵ His proposal included increasing the number of depots to five at locations more widely dispersed throughout the city thus providing

²⁸⁹ NRO N/EN1/36,14/8/40

²⁹⁰ ibid., training exercise report

²⁹¹ NRO N/TC 28/29, 5/11/40

²⁹² NRO N/EN 1/36,2/12/40

²⁹³ ibid.; 5/12/40; NRO N/TC 28/29, 14/12/40

²⁹⁴ NRO N/EN 1/37,13/2/41

²⁹⁵ NRO N/EN 1/36

better geographical coverage in a raid and increasing the speed of mobilisation as the men would have a shorter distance to travel to get to their posts on bomb fall.²⁹⁶ The decision to approve the relocation was made quickly by the Regional Office and in January 1941 the EC discussed sites for five rescue depots. Two were existing sites, at Silver Road and Surrey Street with three new sites at Waterloo and Eaton Parks and the Eagle Baths.²⁹⁷

Both the City Engineer and ARP Controller made efforts to learn from other cities' experiences. The City Engineer journeyed to Coventry a few weeks after the heavy raid of November 1940. He spoke with his counterpart who he reported seemed a little reluctant to talk. However, key points emerged, a shortage of rescue teams, exhausted men, mobilisation problems, the need for urgent mutual assistance, a shortage of water for firefighting, and transportation difficulties because of blocked roads.²⁹⁸

In January the City Engineer renewed his campaign to increase the number of standby parties at each depot to three at night and two during the day pointing out that it now took at least an hour for 60% of the men to arrive at depots because of the distance they had to travel. No action was seemingly taken.²⁹⁹ At the same time an assessment of the rescue teams in exercises showed a marked improvement in performance from a few months previously. However, some teams were still arguing with their leaders who in turn were doing too much of the work themselves and not taking enough time at the start of the rescue to critically assess the best option for the incident.³⁰⁰

The City Engineer also monitored the time taken for standby parties to leave the depots after an incident was noified to them, setting a target of three minutes. He asked for explanations for departures taking nine and twelve minutes, essentially due to lorries in for repair or not starting, highlighting an ongoing problem with shortages of appropriate transport. Despite these problems the rescue teams were generally working with increasing effectiveness.³⁰¹

In February ten standby rescue parties were approved by the Regional Office one at each of the five proposed depots covering day shift and the other the night shift.³⁰² This increased the standby coverage during the day by two parties. However it decreased the coverage at night by one party, there previously being two parties sited at each of the three rescue depots. This was despite recent raids indicating a raid was more likely at

300 ibid., 13/1/41

²⁹⁶ NRO N/EN 1/87,3/12/40

²⁹⁷ NRO N/TC 28/29, 3/1/41

²⁹⁸ NRO N/EN1/87,11/12/40

²⁹⁹ NRO N/EN1/37, 5/1/41

³⁰¹ NRO N/EN 1/160, 4/2/41

³⁰² NRO N /TC 28/37, 10/2/41.

night. In March, however, there were further effective cuts to standby cover when standby parties were reduced to six men at the depot with four to report on bomb fall. It was also decided that rescue party lorries would only report to depots on the dropping of bombs and not on the siren thus risking potential delays in dispersal of on call teams. In May the City Engineer was still reporting difficulties with poor turnout of on call staff on bomb fall.³⁰³

In common with other cities Norwich's rescue teams occasionally found themselves criticised for delays or perceived inaction. The Chief Constable wrote to his officers warning them not to criticise rescue services and emphasising that the Team Leaders needed time to assess the site to allow for the safest extraction of the trapped people.³⁰⁴ In contrast, the Deputy City Engineer commented in May about an example of where the military had rushed in to help with a rescue in such a manner that they would have caused harm to the trapped person had he not already been dead.³⁰⁵

In July 1941 the five depots came on stream, with six–man standby teams, the other four men coming to join then if bombs dropped, along with ten other full teams. Training exercises including 'turning out' of rescue parties were stepped up and training continued at a higher level of intensity for some months.³⁰⁶ First aid party members began to be trained in rescue party work and in August were allowed to assist the rescue party on site, which carried extra equipment for the purpose.³⁰⁷

Industrial problems continued to occur into September with one union objecting to men on standby duty being asked to build brick walls, though they had no objection to the men taking down sandbags. The EC resolved that walls would continue to be built and a compromise on pay reached. Standby men continued to be used to build walls, remove sandbags and measure iron railings into 1942, which meant they were not always at their depots.³⁰⁸

In the autumn the City Engineer, Bullough was replaced by his deputy, Rowley, who expressed concern about the lack of messengers at the depots. The messengers might consist of full time employed staff sometimes on motorcycles, the part time young men of the cycle messenger service and members of the Home Guard. Their presence was essential in case of the phone lines being cut as they provided the only reliable means of communication between the depots and the Report Centre.³⁰⁹

³⁰³ NRO N/EN 1/37, 6/5/41

³⁰⁴ NRO N/EN 1/37 part 2,13/5/41 letter

³⁰⁵ ibid.,19/5/41 file note

³⁰⁶ NRO N/EN 1/168,8/5/41

³⁰⁷ NRO N/EN 1/87; NRO N/TC 28/29, 28/7/41

³⁰⁸ NRO N/TC 28/29, 12/9/41; NRO N/EN 2/12

³⁰⁹ NRO N/EN1/37, 28/10/41

By November standby coverage both and night was one party of six men at each of the five depots. A survey by Great Yarmouth at this time showed that standby numbers for Norwich were roughly in line with other towns and cities for example, Coventry had seven, Ipswich three although Newcastle reported 30 on standby at night.³¹⁰ In Norwich additional six–man parties were to be made up after bomb fall which theoretically increased the number of parties to 20 although there were not always enough lorries available to transport this number of teams. This was the situation when the heavier raids started in Norwich on 27 April 1942.³¹¹

The development of the Rescue Party service in Norwich was influenced largely by decisions taken in Whitehall with frequent changes of instruction and sometimes a lack of clarity. Norwich was not alone in facing these difficulties especially regarding finance but it also had its own problems both in grasping the implications and delivering the practicalities of an effective rescue service. Between September 1939 and April 1942, the numbers of rescue parties staffed by Council employees varied between eighteen and twenty. In the second half of 1940 private sector rescue squads were included, these had all been withdrawn by December 1940.

After the distinction between heavy and light parties was abolished in spring 1940 the size of the parties varied between ten and eleven men. However, the size of the team that went out to an incident was less, perhaps six or seven men since a rescue party standing by at a depot would have several members on call causing a delay in response if they were waited for.

By April 1942 Norwich had navigated its way around government imposed financial arguments and restrictions, industrial relations difficulties, grown from a very low base an understanding of what it meant to operate a rescue service and trained its teams so they could operate competently in the relatively small–scale raids they had experienced.

Significant problems remained in relation to the number of messengers, the small number of standby teams, although several fruitless attempts had been made to increase the number, and the on call mobilisation arrangements in the event of a larger raid. These had been recognised as issues but had not yet been fully addressed by the first Baedeker raid.

³¹⁰ NRO N EN1/37 pt 2, survey Nov 41

³¹¹ NRO N/EN 1/87,20/11/41

Chapter 8 – Civil Defence during the Baedeker raids

By April 1942 the CD systems in Norwich had been operating for over two and a half years. Many of the initial problems had been ironed out and key elements such as command and control were operating competently, air raid warnings were functioning albeit with large numbers of false alarms, the number of shelter places was adequate and front–line services functioned at the level of raids experienced over the previous year although with known problems of standby cover and mobilisation in potentially larger raids for some services, notably rescue. Routine had settled in when on the night of 27 April Norwich faced its biggest test to date and which would expose both known issues and those which had not yet been considered.

The Baedeker raids on Norwich were a series of five raids occurring on 27/28 April, 29/30 April, 1 May, 9 May and 27 June 1942. The first two and the last were the most destructive in terms of casualties and damage to property and infrastructure. The raid of 1 May resulted in one aircraft dropping incendiaries while the raid of 9 May resulted mainly in the bombing of the parishes south of the city. The first raid resulted in 162 fatalities in Norwich, the second 69, with sixteen in the raid of 27 June. Two people died outside Norwich on 9 May raid.³¹²

Storey's Memorandum

Storey prepared a memo to the Regional Commissioner, dated 3 June 1942, on the effectiveness of Norwich's CD response to the first four Baedeker raids. This report has become part of the received wisdom about these raids and its influence can been seen in the work of some commentators and official reports.³¹³ This chapter does not attempt a full analysis of all aspects of Norwich's response detailed in Storey's report but focuses on those key areas whose background has already been discussed in previous chapters and which have not been generally covered by others. It also includes some discussion of other services such as fire guarding and billeting which were recognised at the time as having caused problems however these have been investigated more fully by other authors including Snelling and Rothnie and are included here because of their influence on overall CD response.³¹⁴

Storey's main points relevant to this thesis are detailed below.

³¹² Gore, The Terror Raids of 1942 p188

³¹³ NRO N/EN 1/38, Storey, memo to Regional Commissioner, 3/6/42

³¹⁴ Snelling, Norwich, a shattered city p99; Rothnie The Baedeker Blitz p87

Air raid alerts were sounded before the raids. Shelters stood up to the raid 'in a remarkable way', while trench shelters were not extensively tested. Higher casualties in the first raid were due to the public not going to shelters

The Report Centre performed satisfactorily handling calls without difficulty and with few delays, but problems were caused by supplementary reports from wardens. The Report Centre was too small for the number of people operating in a large raid. Messengers worked well but more were needed at posts/depots.

Generally, systems worked extremely well, a number of defects were observed but 'the public were not greatly inconvenienced by them', although in some respects, 'we did not reach the standard we set ourselves'.³¹⁵

Rescue services worked well with 75% staff reporting for duty. At no time was Norwich in serious difficulty due to lack of resources but the greatest need was always rescue parties. On call staff reported satisfactorily in the first raid but tended to wait until the raid was over in succeeding raids. On call systems were likely to break down in prolonged raiding and posts and depots needed to be improved to encourage people to sleep there.

Fireguard work was patchy, large numbers did not tackle fires while bombs were falling. Volunteers did not turn out for billeting, full time staff were needed but he did not believe it was possible to clear rest centres by the night following a large raid.

Air raid warnings

The main reason given for the relatively high numbers of casualties in the raid of 27-28 April was that the public were taken by surprise and did not go to the shelters in time, a view followed by historians ever since. This does appear to have been an accurate assessment and can be explained at least in part by two factors, the time gap since the last actual air raid in August 1941 and the large number of sirens which turned out to be false alarms.

Casualties in the raid of the 29-30 were lighter. A further raid was anticipated and it was shorter, with a higher proportion of incendiaries and fewer high explosive bombs which were more destructive to life and property. After the first raid large numbers of people left the city before nightfall hence there were fewer people in danger although less to protect the city's fabric and its remaining inhabitants. The first raid also had a greater impact on residential areas than the second which would also have influenced the number of casualties.

³¹⁵ NRO N/EN 1/38, Storey memo, 3/6/42 p2

Up to 27 April 1942 there had been 27 raids on Norwich. The last of these had been on 8 August 1941 although there had been an instance of friendly fire on 16 September 1941. It was almost nine months since German bombs had hit the city.³¹⁶ As has been seen the number of air raid warnings experienced by Norwich was greater than those of other Baedeker cities.³¹⁷ The number of ARW had dropped off considerably from its peak in early 1941 however between 8 August 1941 and 26 April 1942, there were still over 100 primary alerts lasting about 150 hours as shown in Table 6.

| Month | Number of primary | Month | Number of primary |
|------------|-------------------|--------------|-------------------|
| | alerts | | alerts |
| March 1941 | 143 | October | 16 |
| April | 107 | November | 7 |
| Мау | 48 | December | 5 |
| June | 35 | January 1942 | 2 |
| July | 31 | February | 7 |
| August | 37 | March | 3 |
| September | 31 | April | 8 |

Table 6 – Number of primary air raid warnings in Norwich March 1941 to April 26 1942Source NRO MC 3133/1; Banger, Norwich at war p 75

A growing public complacency was noted by a Mass Observation Diarist, a member of the Norwich Special Constabulary, as early as August 1941. His entry for 3 August 1941 includes a warning, 'Those in the city who have had a taste of bombs pay great heed to the ordinary alert but there are a great many people walking the streets in the crashes, one day they may get caught. We hope not......' ³¹⁸

An air raid warning was sounded at 23.20 on 27 April 1942 giving about 20 minutes for people to reach shelters, and so here the system had worked as intended. However, the gap since the last raid and the number of false alarms may have contributed to people ignoring the alert. Unless individuals had been paying attention to events in Bath and Exeter there was no particular reason for the people of Norwich to expect a heavy raid.

Scale of the raids

Storey's memo does not over emphasise the scale of the raid on immediate ARP operations other than to give an opinion that in the event of prolonged raiding the on–call system would break down. Indeed, he goes as far to state that 'at no time was Norwich in serious difficulties due to lack of resources. The greatest need is always for rescue parties'. ³¹⁹ This version of events is discussed below.

³¹⁶ Banger, Norwich at war p32

³¹⁷ TNA HO 199/98

³¹⁸ Mass observation diarist, MO 5047

³¹⁹ NRO N/EN 1/38, Storey memo, 3/6/42 p2

The scale of the raids on 27 April and 29 April and the ensuing damage was far greater than experienced by Norwich previously and put much greater pressure on the CD response especially the rescue teams. Secondary sources vary slightly on the scale of the raid, Collis records 188 and Banger 185 high explosive bombs on 27 April and 103 and 112 respectively on 29 April.³²⁰ The raid on 29 April also contained a larger proportion of incendiaries compared with the raid on 27 April. The final raid on 27 June consisted of 33 high explosive bombs and 15,000 to 20,000 incendiaries.³²¹

An illustration of the difference in scale can be seen in the number of occurences noted in the Warden's records.³²² Occurences are essentially the wardens' estimate of how many bombs might have fallen, including those which caused no obvious damage. They provide an interesting comparison of the scale of the raids with those that went before. Of the raids the wardens recorded prior to the 27 April 1942, 26 had ten or fewer and only two more than 20, one of these being the friendly fire raid of September 1941. In contrast the raid of 27 April is recorded as having 103 occurences, which seems low given that over 180 bombs were dropped, the raid of 29 April 153, and the raid of June 27 175 occurrences respectively.

In terms of the scale of damage to buildings the weight of individual bombs dropped on cities during the Baedeker campaign was held to have been greater than in the earlier raids on Britain.³²³ The scale of damage in Norwich was thought by a ministry official to be partially due to the lighter construction of many of terraced and other houses in the city. Local Norwich bricks were relatively soft, fixed with lime mortar and the pantiles used required less robust roof construction than many roof coverings. Terraced attics were sometimes through lofts and party walls where they existed were sometimes 4.5" and did not necessarily go through the roof thus providing a less effective fire barrier.³²⁴

A final influence on the damage caused in the raid was the relative accuracy of the bombing. Counter measures devised by Dr RV Jones and 80 Wing to disrupt the Luftwaffe's new electronic direction finding and targeting system, Taub, had not been activated due to a error in detecting Taub's use.³²⁵ Jones estimated that the average bombing accuracy across towns in the first Baedeker raids was over 50% while other sources report that in the first two raids on Norwich 96% and 92% of the high explosive bombs dropped fell on the city.³²⁶ This would only have increased the amount of damage and the potential test

³²⁰ Collis, The story of the Baedeker raids p2; Banger, Norwich at war p32

³²¹ Collis, The story of the Baedeker raids p8

³²² NRO MC 3133/1

³²³ TNA HO 192/1647, Appendizx 3; TNA HO 199/98, (IW/902,721/19/30); TNA HO192/201

³²⁴ TNA HO 192/1652, file note Norwich and Exeter

³²⁵ RV Jones, Most Secret War pp 252-253

³²⁶ Collis, The Story of the Baedeker raids pp 2–3

for CD services. Jones estimated that about 400 people could have been saved across the cities in the early Baedeker raids had the counter measures been activated earlier than 4th May after which bombing accuracy dropped from 50% to 13%.

Shelters

Storey reports that surface shelters, Andersons and Morrisons stood up to the raid in a 'most remarkable way' a view echoed by the wardens' assessment. Some 26 public or communal domestic shelters were destroyed or suffered serious damage during the first two raids and there were some reports that shelters had been locked in the first raid but all opened in the second.³²⁷ Casualties and deaths occured in a number of shelters usually because of a direct or very close hit. These included the trench shelter in Chapel Field Park where four people were killed, surface shelters in Ethel Road and Raynham Street and several Anderson Shelters.³²⁸

Ministry investigations into certain incidents in Norwich revealed that many of the surface shelters protected their occupants even a few feet outside the bomb crater rim, for example, there were no fatalities in a shelter in Lothian Street where several bombs fell at distances between 20 and 120' feet.³²⁹ The strengthening measures taken regarding lime mortar shelters had a positive effect in one documented case in Nicholas Street. A 500 kg bomb dropped 34 feet from a shelter strengthened by a brick skin, cement mortar and reinforcing bars. The blast was so great that bricks were reported to be granulated and the lime mortar in its internal walls disintegrated but the occupants survived thanks to the remedial measures.³³⁰ Norwich had made a late start to upgrading, mainly because the City Engineer thought the lime mortar shelters should be demolished but there is no information, at present, to suggest that anyone was killed in a lime mortar shelter which had not been upgraded.

The Ministry of Home Security investigated each instance where a Morrison shelter had been involved in a rescue or recovery. It repeatedly tried to discover why a person had died in one on Trafford Road getting no further explanation than 'killed by debris'. There were also rumours that a person had been burned alive in a Morrison but investigations showed there was no such shelter on the property.³³¹

Generally, Storey's assessment of shelters is a fair one. Shelter numbers were adequate and were not meant to be bomb proof. By January 1942 even the proponent of deep shelters, Haldane, had recognised that dispersal and properly constructed shelters could

327 TNA HA192/200; NRO MS21495

³²⁸ TNA HO 192/200, damage report 27/28, 29/30/4/42

³²⁹ ibid.

³³⁰ ibid.

³³¹ TNA HO 192/201,22/9/42

provide a reasonable defence.³³² The problem for Norwich was that in the first Baedeker raid they were not used quickly enough. The problem for individuals who did use them was that their lives also depended on factors outside their control such as the size of the bomb, how far away it fell and sometimes just good fortune.

Issues arising from the raid of 27-28 April 1942

Warning, command and control

The Report Centre (RC) in operation at the time of the Baedeker raids was Heigham Grove, the logbooks covering this period are missing from the records at the NRO. To some extent information in the missing logbook can be reconstructed from an analysis of individual incident report sheets completed by staff at the RC and the job sheets of the Rescue Team Leaders, giving contemporaneous information about the situation at the RC and on the ground. ³³³ A detailed analysis is shown in Appendix 9.

ARP Controller Storey was not present in the RC during the first raid because he was recuperating from an operation and had been ordered to take leave by the Regional Commissioner. The person in charge was his deputy, Mr Nicholls, Storey was back by the next day.

Storey's report states that the Report Centre (RC) worked satisfactorily across the first raid, dealing with 103 incidents aided by their experiences in a previous exercise In December 1941, 'Scorch' where they had been tested at a rate of 150 an hour.³³⁴ He records few phone delays with the main problems being that the RC was too small for the number of people operating in a larger raid and the wardens sending in supplementary reports about incidents that had already been notified causing problems with resource decisions.³³⁵

The exact staffing level at the RC cannot be assessed in the absence of the logbook so the question of whether there was an adequate number of staff available within a few minutes of the alarm remains open. The red alert was sounded at 23.20 so the early evening shift would have gone home, the RC would have been left with its nighttime skeleton staff and the 'Sleepers' at Chester Place. Sleeper numbers had been dwindling, down to three or four telephonists in December 1941, with a few clerks and the City Hall officials.³³⁶ On call messengers and despatch riders would have reported on the siren

³³² NRO N/EN 1/34, ARP News 23/1/42

³³³ NRO N/EN 2/18

³³⁴ NRO N/EN 2/15, 6/12/41

³³⁵ NRO N/EN 1/38, Storey memo 3/6/42 p1

³³⁶ NRO N/CD 1/2 , 8/12/41

with more staff and officials from other services reporting when they became aware of the scale of the raid.

The target time for dealing with a message from the point it entered the RC to the point of informing the depots of the action needed had been set earlier in the war at five minutes, in line with the national expectations. This target was not met on the night of the 27-28 and resource restrictions meant it was unrealistic in a large raid. The shock of dealing with such a large raid especially after a long fallow period would have played a part in delays, other contributory factors are discussed below.³³⁷

There were delays in getting the notifications from wardens and the police through to the RC especially during the two hours of the raid, with bombs falling for about one and a half hours. Where recorded the data shows almost 75% of messages took more than half an hour to arrive at the RC.³³⁸ Telephone lines were down in parts of the city, but it does not appear that the lines to the RC were out. Messengers based at the wardens' posts and other sites were commended for their work and several gallantry awards were made to individuals for their courage and resilience under extreme conditions. However, a post raid review by the wardens concluded that there were simply not enough for the workload generated by a large raid which would have included initial notifications, visits to depots and repeated visits taking messages to and from the scene of incidents.³³⁹ Storey recognised the shortage of messengers in his report of 3 June particularly at depots and casualty premises.

Communications between the RC and the depots experienced some problems. The telephone lines to the Eaton Park Depot were cut during the raid and a file note from the depot stated that teams worked on their own initiative all night. One despatch message took about three hours to reach the depot.³⁴⁰ The system for phoning instructions through to depots came under strain with the Waterloo Park depot asked to phone the RC every 20 minutes to be informed of any action they needed to take, and that there were no spare messengers at the RC at that point in the raid.³⁴¹ This contrasts with Storey's assertion in the report that there were few delays with the message procedures although he does acknowledge the fact that Eaton Park was cut off.³⁴²

There were also delays in the time the City Engineer took to make the decision to allocate resources and notify the depots. The sheer number of incidents being reported may have

³³⁷ NRO N/EN 2/18, Rescue service incident sheets

³³⁸ ibid.

³³⁹ NRO MS 21495

³⁴⁰ NRO N/EN 2/14, incident 10

³⁴¹ NRO N/EN 1/81, 28/4/42

³⁴² NRO N/EN 2/18, 28/4/42

caused queues in the reporting system and one person was making all the decisions about rescue teams. However, the City Engineer not only had to decide whether to send a rescue team, but which depot would supply it. On the night of 27 April the depots had been following the usual practice and the City Engineer only had five teams available at the start of the raid. He had to wait for other teams to arrive before they could be deployed. Most of the decisions to deploy which took more than 30 minutes refer to later incident numbers (51 to 68). These coincide with a later time of arrival of the warden's message, around 02.00 or after and a period before mutual aid reinforcements arrived. As such, some incidents suffered both a delay in getting the message through and from a lack of resources after notification reached the RC. ³⁴³

Rescue squads

Once the message reached the rescue depot teams usually left within a few minutes, there were delays when teams were not available, contradicting Storey's assertion that at no time was Norwich in serious difficulties due to lack of resources. One incident highlights a problem with inflexibility of roles within the squads. Rescue parties consisted of six men, a lorry and a trailer containing equipment. The lorry was driven by a trained driver who alone could drive the truck, on this night the driver was late resulting in a delay of about 30 minutes in the team setting off.³⁴⁴

The effect of these delays meant that the are several instances of wardens ringing in or sending a second messenger complaining that the requested help had not arrived. An incident was reported at 00.25 stating that people were trapped, no help had arrived by 01.20.³⁴⁵ In this case the message had been sent to the Eaton Park Depot taking 27 minutes to get there where the delayed driver mentioned above had added another 30 minutes to the wait. The Rescue Party arrived at the site and remained until 04.08 rescuing two people.³⁴⁶

A further complaint was made at 02.41, a rescue party had been requested at 01.05 to rescue a man who was trapped.³⁴⁷ The City Engineer is recorded as dealing with this at 03.07 with the rescue team leaving at 03.14. They remained on site until 05.57 rescuing three people and recovering one body. In this case the warden's message is recorded by the RC as being received at 02.05, however, it still took an hour to send the message

³⁴³ ibid.

³⁴⁴ ibid., incident 8

³⁴⁵ NRO N/EN 1/81

³⁴⁶ NRO N/EN 2/18, incident 8347 NRO N/EN 1/81, incident 55

to the depot. Unless there was an oversight the most plausible reason is that there were simply no spare teams to send.³⁴⁸

The rescue teams appear to have arrived promptly at the incidents once despatched considering the conditions they had to travel in. Nineteen out of the 23 incident records available show they arrived within fifteen minutes. The worksheets of some of the team leaders describe the convoluted routes they were forced to take due to blocked, closed or cratered roads.³⁴⁹

With the shortage of Rescue Teams causing problems in response times and the personnel involved becoming exhausted through a combination of hard physical work, danger, stress and the horror of dealing with mangled bodies the need for relief and reinforcement would have arisen quite quickly. A second red warning was received at 02.35 however this was a false alarm.³⁵⁰

Two possible routes of ARP reinforcement were available, to activate mutual support agreements previously made with Great Yarmouth and Norfolk County Councils and to request support from the Regional Commissioner who could authorise support from the rest of East Anglia. Both these routes were activated, seemingly in a timely manner, the County Council war diary showing a request had been received by 00.45 on 28 April and teams from Aylsham were on their way just after 01.06 with more being sent at 02.25 and 02.55.³⁵¹ A party from North Walsham were at an incident by about 04.20 and a party from Ipswich, who would have been activated by the Regional Commissioner, on site by 05.00.³⁵² The military arrived to assist about 08.00. The mutual aid arrangements worked well with Rescue, First Aid, Ambulance teams and Sitting Up Cars coming and going from all over the Eastern region over the next few days, see Appendix 10.

Problems with on call mobilisation came to the fore. Mobilisation times are available for two depots, Eaton Park and Silver Road, as shown in Table 7. These show that one hour after bombs had first been dropped on 27-28 April only three additional rescue workers had reached Eaton Park and six more at Silver Road. This meant at best only one additional team between these two depots and that dependent on whether a team leader or deputy and a driver had turned up.³⁵³

Storey's memo reports that 140 men were on call and approximately 75% reported for duty however he does not make it clear *when* they reported. The attack on Norwich that night

³⁴⁸ NRO N/EN 2/18, incident 55

³⁴⁹ NRO N/EN 2/18

³⁵⁰ NRO N/CD 2/2, Bedford Street Firewatchers, 28/4/42

³⁵¹ NRO C/ARP 2/23, 28/4/42

³⁵² NRO N/EN 2/1, incident 88

³⁵³ NRO N/EN 2/14, 28/4/42

| Depot | Initial number of men | Additional men 1 hour after bomb fall | 1 mii | hour ns | 30 | 2 hours | Total number eventually reporting |
|-------------|--------------------------|--|----------|------------|----|---------|---|
| Eaton Park | 6 | 3 | 4 | | | 11 | 24 |
| Silver Road | 6 | 6 | 11 | | | 13 | 17 |

Table 7– Mobilisation times for two rescue depots 27/28 April 1942 Source NRO N/EN 2/14

consisted of several waves of bombers attacking with small time intervals between the waves. Planes attacked at low level strafing the city, discouraging people from venturing out. Anyone reaching the depot within one and a half hours had made the whole journey under the fall of bombs and some of those arriving within two hours are also likely to have made some of the journey under bombs.

The raid of 29/30 April

The red alert was signalled between 23.10 and 23.15 with the first bombs bombs falling about 23.25.³⁵⁴ The raid differed from that of 27-28 in that it was of shorter duration, about 1 hour 15 minutes with bombs falling for about 40-45 minutes. Fewer high explosive bombs were dropped with a greater proportion of incendiaries. CD reinforcements in the form of rescue parties, first aid parties, ambulances and others had been arriving since about 02.00 on 28 April. Although some had left there were still considerable numbers of teams stationed at depots or other points in or around the city, boosting the resources available, though many had already worked several long shifts. Mutual aid was called for by 00.43, around the time of the raiders passed signal.³⁵⁵

The RC dealt with 148 incidents on 29-30 April. Based on the limited data available messages got through to the RC more quickly than on the previous raid. Several factors may have contributed to this including the shorter duration of the raid and fewer high explosive bombs meaning people would thus have been able to move about in relatively greater safety more quickly than the previous raid. The different pattern of bombing with fewer HE bombs possibly damaged fewer telephone lines leaving communications better placed. Active defences were also in the process of being improved.

A second raid was anticipated and the experience of the first meant people knew what to expect and how better to cope with the situation. The RC should have been fully staffed in anticipation which in turn would have made it easier to deal with telephone calls. Efforts had been made to increase the number of messengers especially from organisations such as the Scouts, but it is not clear how much effect this had in the 48 hours between 354 NRO N/CD 2/2, 29/4/42

³⁵⁵ NRO C/ARP 2/23, 30/4/42

the raids. Still, three messages took over one hour to get through, the longest being 1 hour and 37 minutes. There is no specific explanation for these delays.³⁵⁶

The time recorded for the City Engineer to make a decision does not seem to show any significant improvement which is surprising since on the night of the 29-30 April he had at least 25 mutual aid rescue parties at his disposal in addition to the Norwich allocation of 20. Some of these would have stood down for a while after numerous shifts but would surely have been reactivated after a further heavy raid. For example, at Eaton Park seventeen rescue team members reported between 02.15 and 02.30, some three hours after bombs fell, presumably a prearranged time should another raid occur.³⁵⁷

One incident appears to show a delay of almost five hours, but this is an outlier and is perhaps due to the incorrect recording of a second or third team being sent out to the same incident. The other significant delays of an hour or more all occur at what seems to have been the height of activity and potentially before reinforcements had arrived.³⁵⁸

Once the depots were notified there were few delays in despatch of parties. This should be expected in view of the increased resources available. The data also suggests that the wardens may have short circuited the system on occasion by contacting the depots directly rather than going through the RC.³⁵⁹ The time taken between the warden's message reaching the RC and the despatch of rescue teams had improved from the previous raid with more being quicker than fifteen minutes and none taking over 90. However, five still took over an hour, once again these were incidents with a higher incident number, between 50 and 118, coinciding with higher demand and before further reinforcements arrived. The time from occurrence to despatch also shows some improvement.³⁶⁰ In several incidents for both the first two Baedeker raids the rescue teams arrived to find the trapped people had been released by the wardens, other members of the ARP services or the public. Frequently these coincided with delays in the teams arriving.

As previously noted, Storey stated that there were some respects in which 'we did not reach the standards we set ourselves'. He is probably referring to two aspects, the Fire Guard and billeting of displaced people although a serious lack of static water reserves was also a significant problem. His comments significantly downplay the problems experienced.³⁶¹

³⁵⁶ NRO N/EN 2/18, incident 72

³⁵⁷ NRO N/EN 2/14, 30/4/42

³⁵⁸ NRO N/EN 2/18

³⁵⁹ ibid.

³⁶⁰ ibid.

³⁶¹ NRO N/EN 1/38, Storey, memo 3/6/42 p1

Fire Guard

There were about 15,000 fire guards in Norwich at the time of the Baedeker raids.³⁶² Business properties were covered by block schemes of more than 120 parties. 12,000 residential fire guards were allocated as parties to each wardens' post, patrolling the streets and dealing with incendiaries locally. Training for such large numbers was variable especially for new recruits.³⁶³

The Fire Guard proved to be a problem. While teams in the business units generally performed well, with good attendance, many residential fire guards were absent or took cover especially in the second raid of 29-30 April. An estimated 50% were absent from duty in areas of the city hit badly in the first raid. The problem continued for succeeding raids with large numbers of absences sometimes due to the fire guards taking cover until the raid had passed but also due to them moving within or leaving the city through trekking or evacuation. Set against this is the fact that fire guarding was dangerous, nine fire guards were killed in the first two raids on Norwich.³⁶⁴

Storey described the Fire Guard response as 'patchy'. It appears to have worked reasonably well in the first raid and all but collapsed in some residential areas of the city in the second raid. Storey acknowledged that as a result the damage was greater than it need have been. However, he refused to attribute any failures to the Chief Warden or local Fire Guard organisers who had made 'the most strenuous efforts to build a satisfactory system on the imperfect foundations and with the somewhat inadequate materials at their disposal.'³⁶⁵

This view was not necessarily shared by the Ministry who laid at least part of the responsibility for underperformance on poor leadership and discipline.³⁶⁶ The Senior Staff Fire Guard went out into the first raid to check on teams. In one residential area he found a team of three or four tackling a fire when there should have been fifteen. In another he found flats ablaze while the Fire Guard sheltered, he persuaded the men out and they went to tackle the blaze 'when they had lost their temporary fear.³⁶⁷

A further problem was a tendency for fire guards to deal with bombs that were easier to extinguish, even if unlikely to cause much damage indicating perhaps a lack of training and teamwork.³⁶⁸ Even so there were many instances of fire guard teams and individual fire guards operating effectively and courageously dealing with incendiaries and their

³⁶² TNA HO 192/200

³⁶³ Rothnie, The Baedeker Blitz p83

³⁶⁴ ibid., p84

³⁶⁵ NRO N/EN 1/38, Storey, memo 3/6/42 p2

³⁶⁶ Snelling, Norwich, a shattered city p99

³⁶⁷ Rothnie, The Baedeker Blitz p83

³⁶⁸ ibid., p84

consequences although sometimes they were simply overwhelmed by the number of bombs or their inaccessible location.

Billeting

The billeting system for rehousing displaced people broke down. Designed to initially operate from the 13 rest centres, it relied on volunteers of whom only a handful turned up on the morning of 28 April to carry out their duties. Storey maintained that lists of potential accommodation had been prepared but other sources claimed that some or all this information had been lost. ³⁶⁹ Storey also attributed some of the delays to the state of mind of people in the rest centres and that large numbers did not wish to be billeted in Norwich.³⁷⁰

The situation on 28 April was relieved to some extent by displaced people finding their own arrangements, although this may have been further prompted by the Billeting Officer's statement that no billeting would be done until those able to find their own accommodation had left the rest centres. The Council resorted to blind billeting where a bus of displaced people was taken around the city led by a team of wardens who simply knocked on people's doors and then allocated a family to each premises.³⁷¹ The billeting system was strongly criticised by Ministry of Health officials as unsatisfactory, without up–to–date records and inadequate numbers of staff. ³⁷² The billeting system improved after the first Baedeker raids with increased staffing, better information and a more robust approach to billeting.

As an emergency measure 600 to 800 people were transported to the County's rest centres some of which remained open for several weeks. Demand for places was such that although hot food was available for the first three nights, rations were reduced to hot drinks and biscuits thereafter. Numbers peaked on 1 May with 1808 people in county rest centres while 4510 attendances were recorded between 30 April and 2 May.³⁷³

Storey stated that he did not think it would be possible to billet all persons by the evening after a heavy raid even with an efficient system. The problem with the situation in Norwich on the night of 28 April was that two city rest centres had not been cleared, this put their occupants at significant risk should there have been a second raid on the 28/29.³⁷⁴ Rothnie states that 870 people had to sleep in rest centres on 28 April which conflicts with Storey's contention that only two were not cleared. It took until 1 May for them to

³⁶⁹ Mass Observation, File Report 1285

³⁷⁰ NRO N/EN 1/38, Storey, memo 3/6/42 p6

³⁷¹ Rothnie, The Baedeker Blitz p87

³⁷² NRO N/TC 28/29, 29/4/42; TNA HO 192/200 , damage report

³⁷³ TNA HO 199/98, 21/5/42

³⁷⁴ NRO N/EN 1/38, Storey, memo 3/6/42 p6

be cleared, by this time 6000 people had been billeted within the city and 2,000 in the county.³⁷⁵

The city rest centres which otherwise appear to have functioned adequately, though somewhat understaffed by volunteers, were schools with little additional protection. They opened just after the cessation of a raid, but their vulnerability is illustrated by the fact that six of the thirteen centres were unusable after the first two raids due to bomb dmage. If not cleared the risk of multiple casualties was greatly increased. The unusable rest centres were replaced by second line centres the day after the raids.

Water for firefighting

One of the main problems during the Baedeker raids was a shortage of water or low water pressure during and just after the raids. This resulted in the NFS and the fire services of individual businesses being virtually helpless to save some buildings because they had run out of water or there was no water pressure to start with.

An instruction from the Regional Commissioner in August 1941 had stated that static water supplies had priority over all other CD construction including shelters.³⁷⁶ Emergency pumps and pipelines were available to direct water from the river but the arrangements were insufficient for raids of the scale of the first two Baedeker raids. The Ministry criticised the shortage of supplementary static water supplies.³⁷⁷

Overview of Storey's assessment

Storey's memo stated that on the raid of 27-28 April on call CD personnel reported very satisfactorily but on the second raid there was a 'marked tendency to report after the raid was over'. The instruction had been that members of the CD services should not take unreasonable risks in reporting for duty to prevent them from becoming casualties it being thought better there should be a slight delay in attending calls than there should be no resources to attend to them.³⁷⁸ This was effectively an acceptance of some delay in response.

He acknowledged the fact that prolonged raiding would result in the on call system breaking down and that more people should be on standby at posts and depots. However, the problems with the on call system for rescue services and others had been known for two years and virtually nothing had been done to alleviate them. He attributed no blame to those who did not show up promptly recognising that individuals may have been injured,

³⁷⁵ Rothnie, The Baedeker Blitz p88

³⁷⁶ NRO N/TC 57/43-44 file 3

³⁷⁷ TNA HO 192/200, damage report

³⁷⁸ NRO N/EN 1/38, Storey, memo 3/6/42 p2

suffered loss, had their home destroyed or had to take cover on the way to their posts. He praised the operations within the Report Centre which may indeed have handled the processes well but if there were no resources to send out to the incident then this point became moot.³⁷⁹

Storey reported the Rescue Service did well in the two larger raids with 84 trapped people extracted alive and 63 bodies recovered in the first raid and 28 extracted and 31 bodies recovered in the second. Overall, Storey's assessment of the Rescue Services is a fair one and once on site the rescue teams did a good job in exceptionally difficult circumstances. In all they attended 42 rescue incidents in the first raid and 45 in the second.³⁸⁰ However, the small number of teams on standby at the depots, combined with slow mobilisation, the wait for reinforcements and other foreseeable delays , for example, the lack of messengers undoubtedly meant that some people who had been trapped had to wait longer than they might have for rescue especially in the first raid. Storey recognised that more standby teams were needed at the depots and that better facilities were needed to encourage this for example washing facilities, and canteens. However, little seemed to change, there was still only one rescue party on standby at the Eagle Baths on the raid of 27 June 1942.³⁸¹

Storey's overall assessment while appropriate in several aspects, particularly recognising the efforts and courage of many individuals, downplays several difficulties and some failures. While he recognised problems with the fire guard and billeting systems, he refused to allocate blame to the leadership of those services a view not shared by Ministry officials.³⁸² His statement that the public were not greatly inconvenienced by defects in the system is disingenuous at best.³⁸³ It is unlikely that an injured person trapped in the remains of their house would agree had he needed to wait an additional hour or longer for a rescue squad to turn up because already recognised issues had not been addressed. The failure to clear rest centres quickly, the poor response of the residential fire guards in some areas and the lack of static water supplies all put lives and property at greater risk than perhaps they should have been at this stage of the war.

The raid of 27 June 1942

The main CD problems associated with this raid were related to fire and the destruction or damage to key medical and CD infrastructure. The local NFS Fire Force 13 was overwhelmed by the number of fires and had to call for reinforcements. The Norfolk and

³⁷⁹ ibid., p1

³⁸⁰ ibid., p3

³⁸¹ NRO N/EN 2/14, 27/6/42

³⁸² NRO N/TC 28/29, 29/4/42

³⁸³ NRO N/EN1/38- Storey memo 3/6/42 p1

Norwich Hospital suffered major damage and lost about half its bed spaces and an operating theatre. The patients were successfully evacuated to other facilities thanks to the efforts of the hospital staff and CD workers.³⁸⁴

The Surrey Street Rescue Depot and the Thorpe Hamlet Ambulance Station and First Aid Post were destroyed by enemy bombing. The Surrey Street Rescue Depot had been set on fire by incendiaries, despite this the team kept the phone line open and manned until the last possible minute and went into burning buildings to get out equipment in case they would be needed for a rescue. Later the ARP Controller asked the City Engineer whether these men should receive some commendation from the Council for the additional risks they had taken that night. He was told no; a general letter of thanks had been issued to all rescue team members and that was enough.³⁸⁵

Trekking out of Norwich during the Baedeker raids of 1942 and its effect on ARP

Trekking was a term used for the voluntary self–removal of individuals from areas they considered to be at high risk from bombing. It occurred in many bombed cities such as Coventry and Hull from 1940 and was distinguished from evacuation in that trekkers left the town in late afternoon or early evening and returned the next morning whereas those evacuating stayed away for longer. Mass trekking took place in Norwich during April – August 1942. Norwich's experience with trekking followed a similar pattern to that experienced by other cities. A post raid assessment of four Baedeker towns including Norwich by the Ministry of Home Security concluded that the amount of trekking and evacuation was correlated to the number of buildings destroyed.³⁸⁶

Large scale trekking from Norwich occurred after the first of the Baedeker raids on 27/28 April 1942. People left the city by train, bus and private transport but also on foot sometimes pushing handcarts, prams or wheelbarrows containing bedding, provisions and other supplies for camping in the open air. Their destinations included friends' or relatives' houses, rest centres and fields outside the city, some slept under bridges in the Mile Cross area and others utilised buses stored temporarily on Ipswich Road.³⁸⁷

Trekking peaked after the raid on 29/30 April and continued in decreasing numbers well into August 1942. Two surveys of population movement were undertaken by the HO, one three weeks after the raids and then in August 1942. The surveys asked people where

³⁸⁴ NRO NTC 28/29, 27/6/42

³⁸⁵ NRO N/EN 1/173, July 1943

³⁸⁶ TNA HO 199/456

³⁸⁷ Banger, <u>Norwich at War p35</u>; Bowman, <u>Images of War, Norwich Blitz p13</u>; Neil R Storey, <u>Norwich in the</u> <u>Second World War</u> p88

they had slept on a particular night and classified the results as trekking, evacuation or moved elsewhere within Norwich. The variation between the results of the two surveys was small. The survey assumed a population of 107,844 and 35,475 dwellings.³⁸⁸

Tables 8 and 9 show an estimation of population movement based on the survey results. It indicates 35,000–37,000 people were on the move in Norwich in the period of the three initial raids, an estimated 9,000–10,000 trekking. Trekking numbers dropped to about 3,000 by 21 May and fluctuated between 2,000 and 2,500 for the rest of the summer, fluctuations coinciding with further raids. The remainder of the population moving were either evacuating or had moved from their previous residence to somewhere else within Norwich.

| Numbers moving at 30 April 1942 | Overall movement | Trekking | Evacuation | Changed address |
|---------------------------------------|---------------------|----------|------------|--------------------|
| Workers | 15,200 | 5,100 | 4,100 | 6,000 |
| Non workers | 21,600 | 4,300 | 10,500 | 6,800 |

Table 8 – Estimated numbers of people moving in Norwich on April 30 1942Source TNA HO 192/1647 Table A

| | Overall movement | Trekking | Evacuation | Changed |
|-------------|---------------------|-----------|-------------|-------------|
| Workors | | | | auuress |
| WOIKEIS | | | | |
| 21 May | 8,800 | 1,900 | 2,300 | 4,600 |
| June, July, | 6,500–7,900 | 900–1,400 | 1,400–1,900 | 4,600–5,100 |
| August | | | | |
| Non workers | | | | |
| 21 May | 15,400 | 1,200 | 9,200 | 4,900 |
| June, July, | 14,800 | 1,200 | 7,400–8,600 | 4,300–4,900 |
| August | | | | |

Table 9 – Estimated movement of people mid May to August 1942Source TNA HO 192/1647 Table A

Non workers moved earlier and were more likely to evacuate. Workers were more likely to trek, generally moving after the second raid. Overall, more people evacuated than trekked.

An estimated 12,000-13,000 relocated elsewhere in the city either being billeted by the Council or making their own arrangements. This figure remained at approximately 9,000 for the rest of the summer. This figure is indicative of the large scale damage and destruction of people's homes, preliminary estimates for the first four Baedeker raids were that over 15,000 houses were damaged,10% of which were demolished or damaged beyond repair.³⁸⁹

Large numbers of people were absent from work immediately after the first two Baedeker raids, estimates range from 17% to 33% however people returned quickly to work and by 4 May this had dropped to 9%. Individual workplaces encountered a variation in days lost especially where the fabric of their buildings or equipment had been damaged.³⁹⁰

Impact on ARP services

A range of sources including personal testimony, mass observation diaries, HO reports, air warfare analysis reports and Council committee minutes refer to large numbers of fire guards leaving the city after the first raid on 27 April. The Inspector General's report of 14 May notes a patchy response by fire guards, while some worked effectively others took shelter or left the city. ³⁹¹ There is no direct evidence that lives were lost because of this but it led to a significantly enhanced fire risk in the second and succeeding raids.

Fire guards were not the only CD staff to leave Norwich although evidence for this is limited to personal testimony. A warden describes several of her fellow wardens 'deserting' and questions what should happen to them.³⁹²

The Inspector General reported that the ARP Controller was concerned that the EC, the Lord Mayor and Sherriff left the city, thus senior civic leaders in respect of CD were absent. He had reported the matter to the Regional Commissioner as he felt unable to tackle the EC about this, all but one of the civic leaders concerned returned sometime in May.³⁹³

The Council's approach to the trekkers was one of empathy, at least in public. The official history of the Baedeker raids in Norwich, refers to a 'melancholy spectacle'³⁹⁴ and in another contemporary publication one of the Aldermen stated 'Those who saw it can never forget the trek out of the city.'³⁹⁵ The ARP Controller told the Inspector General in May 1942 that he was not concerned that women and children were trekking, the problem was able bodied men trekking.³⁹⁶

³⁸⁹ ibid., p3

³⁹⁰ ibid., table B

³⁹¹ HO 199/98, 14/5/42

³⁹² Mass Observation File Report 1285

³⁹³ TNA HO 199/98; Snelling, Norwich a shattered city p103–105

³⁹⁴ Mottram, <u>Assault upon Norwich</u> p33

³⁹⁵ Le Grice, <u>Norwich the Ordeal of 1942</u> p3

³⁹⁶ TNA HO 199/98, 14/5/42

While the official history was sympathetic behind closed doors the attitude was somewhat different, the absence of so many men had depleted the Fire Guard and was a matter of considerable concern. However, there was understanding regarding those men whose homes had been destroyed or seriously damaged and needed to resettle their families elsewhere.

Overall, the authorities appear not to have attempted to hide the fact that trekking was taking place, indeed it would have been virtually impossible to do so. However, while taking steps to encourage defaulting CD workers they were careful to try and avoid damage to public morale and Norwich's reputation. The most tangible short-term steps taken to help potential trekkers were improvements to the billeting system, the reception and shelter offered by the county rest centres and a major effort to deliver basic repairs to damaged houses to encourage people to return, though these were followed by threats of prosecutions for defaulting fire guards and commandeering of vacant properties.³⁹⁷

³⁹⁷ NRO N/TC 28/37, 13/7/42

Chapter 9 – Response to the Baedeker raids and further developments 1942–1945

Smaller scale raids continued at the rate of one or two a month for the remainder of 1942 with a further five raids taking place during 1943 the final one being in November. These were the last of the conventional raids and there were no further attacks until the summer of 1944 when V1 flying bombs and later V2 rockets began to land in Norfolk, the last of these landing on 7 March 1945. ³⁹⁸

Post raid impact

The day after the larger raids the Regional Commissioner held meetings in Norwich with the ARP Controller and representatives from various CD services, Police, Casualty, Fire, utilities and others including representatives from the various ministries to assess the situation and take appropriate action.³⁹⁹ City Hall became an Administrative Centre for dealing with public queries such as billeting, national assistance, emergency food cards, notification of damaged properties and furniture salvage. Ministry officials criticised the Council's communications and information supplied to the public about the arrangements in the event of a heavy raid and the Council responded by producing a detailed leaflet in June 1942 with key information on post-raid assistance.⁴⁰⁰

Electricity and gas supplies were significantly damaged in the first two raids, most but not all consumers had their supplies restored by 30 April, although gas pressure was low in areas. The most serious damage was to the water supply, standpipes were erected in the streets and appeals made to the public to both boil and be sparing with water.⁴⁰¹

The most long–lasting impact on infrastructure was the damage and destruction of buildings, particularly homes and workplaces, for example, Caley's factory, a major employer, was completely burned out. Many businesses were affected by absenteeism in the immediate aftermath of the raids. However, absenteeism from work did not last very long, many of the shoe industry factories were back running at good strength quickly. This industry lost about three to six days production in the three weeks after the first raids. An estimated 2.2 to 4.4 days were lost across city buinesses in general.⁴⁰²

³⁹⁸ Bridges, Doodlebugs and Rockets pp124–139

³⁹⁹ NRO N/TC 28/29, 28/4/42

⁴⁰⁰ TNA HO 192/200, damage report

⁴⁰¹ NRO N/TC 28/29, 29/4/42

⁴⁰² TNA HO 192/201, social survey

Damage to homes and ARP infrastructure and effects on ARP staffing

Over 40% of city homes were destroyed or damaged. Further damage continued as more raids occurred albeit on a smaller scale. Councils were permitted to carry out basic, 'first aid repairs' on buildings that were not their own property, essentially to make them safe and protected against the weather. The scale of the damage after the Baedeker raids was so great that reinforcements were drafted in from the military and construction workers from all over the country. Over 2,000 people were employed on first aid repairs, up to 400 of them being Council employees.⁴⁰³

Dealing with damaged buildings was to prove a long-term drain on CD resources. Many members of the organisation had to deal with their own domestic situation before resuming duties while others were diverted from CD work to assist in repair and rebuilding. Between July 1942 and September 1943 rescue party personnel who were tradesmen were released to work on the repair of homes and sometimes diverted from day shifts at their rescue depots to repair work causing changes to rotas and work allocation.⁴⁰⁴

Temporary arrangements were set up at the Stuart School and Colman Road to house the CD teams whose depots had been destroyed on 27 June. Decisions were made by October 1942 to replace these facilities with extensive new buildings at Hall Road for a Rescue and Ambulance depot and a new First Aid post and Ambulance Depot at Wolfe Road. It was stipulated that these buildings should be constructed with a view to their future use after the war and the Hall Road facility remained in CD use into the Cold War.⁴⁰⁵

After the Baedeker raids

Warning, control and communication

The OCA had been extended from 22.00 to 23.00 but there was agitation from public as to why there was not 24 hour cover.⁴⁰⁶ The Council entered a long debate with Regional Office about this. While permission was at first denied, a memo from Storey in August 1943 implied that the OCA would be sounded for 24 hours and later that month concern is voiced that it was not being heard in certain areas.⁴⁰⁷ Several of the OCA steam whistles were lost in the raids and replaced by sirens. Banger records the raid of 5 September 1942 as the only instance where an actual raid was picked up by the OCA but not the primary system.⁴⁰⁸

⁴⁰³ NRO N/TC 28/29, 11/5/42

⁴⁰⁴ NRO NTC 28/37, 13/9/43

⁴⁰⁵ ibid.,12/10/42

⁴⁰⁶ ibid., 4/9/42

⁴⁰⁷ NRO N/EN 1/178 part 1, 28/8/43

⁴⁰⁸ Banger, Norwich at War p68

The messenger service had shortages prior to the Baedeker raids and was some way short of its 299 establishment.⁴⁰⁹ In July 1942 twelve more full time messengers were appointed, four as motorcyclists, an increase of about 25% in full timers. The number of messengers was increased and by March 1943 had risen to 251 cyclists with eighteen despatch riders allocated across the CD network, 24 girls were used to undertake 'outdoor work' previously having been confined to indoors.⁴¹⁰

The RC at Heigham Grove continued to operate until 11 March 1943 with slightly increased numbers of City Hall officials and telephonists at night.⁴¹¹ It was replaced by a larger purpose built facility on Ipswich Road which allowed for dormitory usage for staff.⁴¹² The duty log for 26 July 1943 shows seven City Hall Officials, thirteen telephonists, six messengers and two despatch riders signing in for the late shift starting at 22.00 hours. This appears to be a response to the lessons learned in the raids of April–June 1942. The Heigham Grove RC remained as a reserve centre in operation on a red warning until April 1945.⁴¹³

The numbers of staff at the RC gradually declined as 1944 progressed. By mid–September 1944 it appears that it was more difficult to get volunteers for all shifts, in November the number of telephonist sleepers had dropped to four and the number of 'City Hall officials' also decreased.⁴¹⁴

There were four air raids on Norwich during the operation of the Ipswich Road RC, the final raid being on 6 November 1943. On 1 April 1945 the Ipswich Road RC closed with its duties being transferred to the Bethel Street Police Station who were authorised to order out services, immediately informing the ARP Controller and Heads of Service of the action taken. A system was set in place to reopen the RC, if necessary, with the Police then transferring responsibility back to the officers at the RC.⁴¹⁵

Shelters

A number of shelters were either damaged or destroyed during the Baedeker raids, 26 in the first two raids,⁴¹⁶ these were either demolished or repaired but it took until August 1942 for the Ministry of Works to allocate Norwich 50 men for seven weeks specifically for shelter repair.⁴¹⁷ Many more had suffered slight damage which had either not been

⁴⁰⁹ Snelling, Norwich a shattered city p66

⁴¹⁰ NRO N/EN 1/178 part1, 31/3/43

⁴¹¹ NRO N/CD 1/3, 11/3/43

⁴¹² NRO N/CD 1/4, 26/7/43

⁴¹³ NRO N/CD 1/5

⁴¹⁴ ibid., November 44

⁴¹⁵ NRO N/EN 1/178, 1/4/45

⁴¹⁶ HO 192/200, damage report

⁴¹⁷ NRO N/TC 28/29, 31/8/42

apparent or became more noticeable over time. There was no labour to make these repairs and wardens formed a repair squad, continuing to operate until October 1943 when they admitted their skills were insufficient for the remainder of the work.⁴¹⁸ Unsafe shelters were usually boarded up though some were demolished. Further work to reinforce surface shelters was undertaken, 34 shelters had been strengthened by October 1942 some eighteen months after lime mortar had been prohibited with fourteen demolished or closed. The programme was not completed until March 1943.⁴¹⁹

Fewer than 20 new shelters were built after the Baedeker raids, some without prior approval from Regional Office.⁴²⁰ At times there was no labour available to build new approved shelters.⁴²¹ Communal domestic shelters were sometimes redesignated as public shelters to ease the demand. Problems were reported with overcrowding in communal or public shelters through their use by people who had Andersons or Morrison shelters. The Council turned down applications from people who had been given Morrisons to replace them with Andersons. In October 1942 a ticketing system was proposed for some public shelters although it is unclear this was implemented.⁴²² Problems with vandalism continued and although most shelters were unlocked it was reported that some in the city centre had been found locked during the raid of 5 September 1942.⁴²³

Timber shortages meant that shelters were built without seating or existing shelters were unable to have additional or replacement seats, however, they were allowed to have bunks. In March 1943 improvements to safety in basement shelters such as handrails, lighting and safer access for which the Council had been fighting for several years became available because of the Bethnal Green tube station disaster in which over 170 people died in a crush in a stairwell.⁴²⁴

Rescue

The weaknesses in respect of the number of Rescue Teams on standby and the delays in call out response were recognised by Storey in his 3 June report where he called for more people to be able to sleep at the depots overnight. However, once the mutual aid reinforcements had left there is no evidence to suggest that anything was done to address this problem. Indeed, the City Engineer recorded that there were still problems with the call out procedure during the raid of 5 September 1942.⁴²⁵

- 422 NRO N/TC 28/37, 12/10/42
- 423 NRO N/TC 28/29, 14/9/42.

⁴¹⁸ NRO N/EN 1/71, 13/10/43

⁴¹⁹ ibid., letter 5/10/42

⁴²⁰ NRO N/EN 1/71,13/5/43

⁴²¹ NRO N/TC 28/37, 11/1/43

⁴²⁴ NRO N/TC 28/29, 15/3/43

⁴²⁵ NRO N/EN 1/38, 5/9/42

Rescue and First Aid Parties were amalgamated on 1 January 1944 to form the Civil Defence Rescue Service, following a national initiative and after the construction of a new depot at Hall Road.⁴²⁶ After amalgamation a total of 38 combined parties became available consisting of seven men, five former Rescue Service and two former First Aiders. Fourteen full time and 24 part time squads operated across five depots, each with its own vehicle and reserve drivers. The number of standby parties at night was increased to ten thus doubling the amount of coverage, illustrating that some lessons had been learned.⁴²⁷ Either the City Engineer or Medical Officer of Health allocated these teams depending on the nature of the incident.⁴²⁸ The new arrangements would rarely be called on to operate in Norwich although rescue staff were to supply training to army units prior to the Normandy landings and assist Norfolk colleagues in dealing with crashed aircraft.⁴²⁹

Fire Guard

The Council responded to ongoing problems with fire guards by surveying attendance on the 5 May and by sending out loudspeaker vans on 6 May to remind people of their duties and placing notices in the press. The situation started to ease but was still a matter of concern in mid–May ⁴³⁰ and the Council sent out notices stating that empty homes would be commandeered and used to house the homeless. This was held by one MO correspondent to be particularly effective in encouraging people to return.⁴³¹

New Fire Guard arrangements were proposed by managers⁴³² but were not in place in time for the raid of 27 June. However, fire guards were to perform far more effectively than in previous raids being credited, along with the wardens, with extinguishing 250 incendiaries and small fires.⁴³³ The Council stepped up its efforts in terms of firewatching at their own premises with more robust monitoring and warning procedure for absentees. It prosecuted several of its own fireguards for not undertaking firewatching duty at Council premises.⁴³⁴

Norwich's problems with the Fire Guard were not unique, authorities all over the country were finding difficulties in staffing and experiencing significant absences during raids. The activity was dangerous, sometimes solitary work and could be boring. New circulars in

⁴²⁶ HS Circular, 16/43

⁴²⁷ NRO N/EN 2/8, 20/1/44

⁴²⁸ NRO N/EN 1/38, February 44

⁴²⁹ ibid., 6/6/44

⁴³⁰ NRO N/TC 28/29, 11/5/42

⁴³¹ NRO N/EN 1/76; Mass Observation File Reports 1285; 1321

⁴³² NRO N/TC 28/37, 13/7/42

⁴³³ NRO MS 21495 , 27/6/42

⁴³⁴ NRO N/EN 1/76, Eastern Daily Press cutting 23/10/42.

1942 extended the range of people who could be compelled to join the fireguard (women aged 20–45 and men aged 18–63), although it was easy to get an exemption.⁴³⁵

The requirements in relation to the compulsion of women to act as fire guards raised some controversy in Norwich, one councillor attended an EC meeting to object to women being compelled to firewatch at business premises. The EC made no comment.⁴³⁶ The Regional Office made attempts to encourage women to come forward by detailing incidents where women had saved buildings by their efforts.⁴³⁷ However, a meeting of fire guard team leaders informed the Council that 'lady members of the fire watching team at City Hall would not be appreciated on nighttime shifts'.⁴³⁸ An offer of Sunday daytime duty was discussed but it is not known whether any women took it up. There was a consistent shortfall in fire guards for council premises, in October 1943 numbers for City Hall had dropped below that for efficient working and returns for June 1944 show that of the 33 women in City Hall who were eligible for duty none were so employed.⁴³⁹

In 1943 there was a national proposal that the Fire Guard service be separated from the Wardens. Norwich successfully petitioned the Regional Commissioner for the Chief Warden to remain the Head of the Fire Guard, although it is not clear why this was done.⁴⁴⁰ New organisational arrangements were approved by September 1943. The Chief Warden resigned from his post as Fire Guard Officer in October 1943 on the grounds that he felt it required a full–time commitment.⁴⁴¹ The now salaried post was filled by a retired police office, Superintendent Ball who set about producing a new Fire Guard Plan for the city.

The plan encompassed the latest regulations and circular with the intention of making a close working relationship with the NFS.⁴⁴² The Fire Guard would have responsibility for reporting fires at night, fighting smaller fires with their own equipment, and guiding the NFS to and assisting at fires. An estimated 20,000 people would fall under Fire Guard organisation in Norwich. Training started in September and ran at 700 people a week by mid December 1943. The Fire Guard Officer stated that it 'would have undoubtedly meant a great saving of property destroyed by enemy action' if it had been brought into action earlier.⁴⁴³ The new organisation was never tested to the full and began to be reduced in September 1944.

⁴³⁵ Min HS Circular, 157/1942

⁴³⁶ NRO N/TC 28/29, 28/9/42

⁴³⁷ Eastern regional circular, 64/1943

⁴³⁸ NRO N/EN 1/76, 14/9/42

⁴³⁹ ibid., 26/7/44

⁴⁴⁰ NRO N/TC 28/30, 22/2/43

⁴⁴¹ NRO N/TC 28/37, 19/10/43

⁴⁴² HS 29/1943, Defence (Fire Guard) Regs 1943

⁴⁴³ NRO N/TC 28/37, 13/12/43
Billeting

A HO report estimated that about 32,000 people in Norwich were rendered temporarily homeless after the first week of Baedeker raids.⁴⁴⁴ The Ministry of Health became involved with billeting and additional full time council staff were put into the rest centres to deal with the situation. The Regional Commissioner gave permission for billeting to take place just outside the city boundary and stressed the need for compulsory billeting and legal action to be used, a step which the Council appears to have been reluctant to take.⁴⁴⁵ The billeting system had improved by 27 June but it did not have to deal with such large numbers of homeless people as in the first two raids.

Billeting systems were not tested to the same extent again until the summer of 1944 when evacuees from London were sent to Norwich to escape the V1s and V2s. Once again difficulties arose; a lack of permanent billeting staff, problems with requisitioning of large houses and billeting larger families. An analysis of billeting by house type is shown in Appendix 11. Storey was asked to put notices in the press appealing to people to co-operate and stating if not enough volunteers compulsory billeting would be used. The warden's records have an account of one warden's experience of trying to find billets in an area of 'larger' houses. Here he met with a number of occupiers who could not take people in and whose houses had seemingly shrunk overnight, suddenly acquired many more occupants or who might be interested in young girls who could work as servants.⁴⁴⁶

Water supplies

After the Baedeker raids work started to improve the water shortage in respect of firefighting. The scale of the need is illustrated in the recorded water usage for the period of these raids. Water usage in Norwich was normally between 4.5m and 5m gallons a day however on 28 April it leapt to 6.22m with 6.38m on 30 April and 7.56m on 1 May.⁴⁴⁷

Over the next eighteen months static water tanks were constructed across the city ranging in volume from 5,000 gallons to 270,000 gallons, for example in December 1942 approval was given for five tanks each of 100,000 gallon capacity.⁴⁴⁸ These tanks could be steel or concrete and in one case included the conversion of the bombed–out basement of a department store in the centre of the city. It is not clear how many tanks were available at the start of the Baedeker raids but in October 1944 the Fire Guard Officer was responsible for 140.⁴⁴⁹ The tanks and associated pipelines proved a tripping hazard and many were lit

⁴⁴⁴ TNA HO 192/200, damage report

⁴⁴⁵ NRO N/TC 28/29, 30/4/42

⁴⁴⁶ NRO MS 21495

⁴⁴⁷ TNA HO 192/201, social effects

⁴⁴⁸ NRO N/TC 28/29, 28/12/42

⁴⁴⁹ NRO N/TC 28/37, 30/10/44

or painted white to alleviate the risk.⁴⁵⁰ Some basement shelters were closed due to their proximity to large static water tanks.

New developments and rundown

Several managerial changes occurred in the ARP organisation between 1943–45 the most significant were the appointment of Mr HC Rowley, City Engineer, as Deputy ARP Controller in May 1943 and that of Mr HW Ball as Fire Guard Officer in October 1943.

In August 1942 the Norwich area was declared a defended area in the event of invasion. This meant that certain parishes in Norfolk had to be included in the joint ARP arrangements for Norwich in the event of an attack. This built on previous work done in August 1941 and was accomplished but was not tested before the Joint Invasion Committee stood down in the Autumn of 1944.⁴⁵¹

Problems started to occur in relation to CD staff failing to attend mandatory training, this was to continue to a limited extent as the end of hostilities became closer and motivation decreased. As the war moved closer to its end various CD activities decreased, for example, from December 1943 although wardens' posts in the city centre were to remain staffed throughout the night, only one post in each residential area would be staffed continuously.⁴⁵²

The Council's various disputes with national government continued with governmental refusal to reimburse the wages of Rescue Team Leaders who worked more than the designated 72 hours a week, Norwich team leaders worked an 84–hour week.⁴⁵³ Other disputes involved refusal to pay rescue party personnel undertaking first aid repair or demolition work at trade union rates and that work to increase water pipelines and static water supplies ranked only for grant and not full reimbursement. Perhaps the dispute which carried most significance was the fact that the government was of the view that it should not pay all the expense of replacing CD equipment damaged during the air raids. Storey was ordered to contact other councils to see if they would support Norwich to change the government's attitude.⁴⁵⁴

The advent of V1 and V2 attacks from the summer of 1944 meant that some CD resources especially rescue and first aid had to be maintained. In September 1944 the Regional Commissioner stated that a raid of thirty planes was still possible but that the Luftwaffe were not capable of sustained raiding. He thought the V1 raids were nearly over and the

⁴⁵⁰ NRO N/TC 28/37, 13/9/43

⁴⁵¹ NRO N/EN 1/37 part 2

⁴⁵² NRO N/TC 28/37, 13/12/43

⁴⁵³ NRO N/TC 28/29, 20/7/42

⁴⁵⁴ NRO N/TC 28/37, 12/10/42

risk to Norwich from the V2 was not felt to be great.⁴⁵⁵ Of the thirteen V1s and 29 V2s which landed in Norfolk, only one had a significant impact on Norwich. This occurred on 3 October 1944 when a V2 disintegrated over Mile Cross causing damage to 298 houses, one person was slightly injured. Most of the V weapons fired at Norfolk landed in the country causing damage to buildings, slight injuries to 50 people with two people seriously injured.⁴⁵⁶

As early as October 1944 the Council received enquiries from companies who wished to acquire certain CD sites. The Council wished to look favourably on these as there was concern that grants, compensation or inducements from other towns and cities might lead to employers moving elsewhere. The shoe industry in Norwich had suffered significant damage and the Council approached the Norwich Boot and Shoe Manufacture's Association about a site at Sussex Street. The sale of the site to WH Clarke and Co. was reported in May 1945 at the asking price of £20,000. The same meeting reported the release of four of the five Rescue Depots essentially retaining only the newest depot at Hall Road.⁴⁵⁷

While certain individual changes and reductions to CD staff had already occured, a formal report in December 1944 set out the plan for further reductions.⁴⁵⁸ By this point the Home Guard had stood down and wardens reported for duty only on the siren, significant reductions had also occurred in the Fire Guard. The CD organisation was formally disbanded on 2 May 1945 when part time personnel were released and full timers given notice to terminate on 30 June, a few staff were kept on for two to three months to wind down the organisation.⁴⁵⁹

⁴⁵⁵ NRO N/TC 28/30,19/9/44

⁴⁵⁶ Bridges, Doodlebugs and rockets p114

⁴⁵⁷ NRO N/TC 28/37, 28/5/45

⁴⁵⁸ ibid.,11/12/44

⁴⁵⁹ ibid., 29/5/45

Chapter 10 – Conclusions

This thesis has looked at ARP in a provincial city during the Second World War. It has focused on specific aspects not previously examined in detail for the city of Norwich, warnings, command and control, shelters and rescue services highlighting various problems in understanding and operation and how they were developed over time.

The demands of CD were constantly changing across the conflict and had to be coped with by civilians and civilian authorities perhaps unused to such rapid change. CD required effective services with a flexible approach, acceptance of real physical risk to those providing them and strong discipline, things those organisations and individuals charged with delivering those services might also be unused to. National Government's role grew from stressing individual responsibility in the mid–1930s to increasing central control and interference in individual's lives by the end of the conflict. This resulted in disagreements with local councils especially about finance and where decisions based on local needs were refused or overturned. Regional Officers often played the arbiter in these cases.

Norwich made a slow start to the provision of various CD. Although establishing a committee to take responsibility for ARP it took until the start of 1938 when the ARP Act came into force for any significant progress to be made. Norwich was not unique in this, a combination of questionable or belated national government policies including its reluctance to effectively compensate councils for certain CD works contributed to the slow progress. In 1937, Norwich refused to continue certain CD works until the financial position improved. However, some of the delays can be attributed to the Council and a potential lack of enthusiasm for the undertaking, including a late start to surveying basements and cellars for shelters and narrow thinking in terms of recruitment to posts in the Rescue Service. An attack at the time of the Munich crisis might have been very damaging with insufficient shelters, inadequate trenches and skeleton and undertrained front–line services.

The situation improved after Munich, with recruitment to CD services picking up through 1939 as the position in Europe became more precarious. At the outbreak of the war CD services in Norwich were probably just functional in terms of staff numbers, but untested in quality and with a shortage in some services especially reserves. Shelter provision was a weakness in September 1939, consisting of some trenches, basement and cellar accommodation and Andersons which had only started being delivered. Authorisation to build the brick and concrete public shelters had only just been given. The ARP Controller's later assertion that 17,000 places were available underground seems unlikely.

The building of infrastructure such as shelters increased in 1939-40 but was initially hampered by the Council not maximising the resources available both within its own organisation and the private sector. The situation regarding silo thinking or lack of co-operation between Council departments or CD functions improved considerably during the war and systems and resource use became more flexible.

Early decisions show a lack of appreciation by Councillors as to what an air raid would be like, for example, not wishing rescue and other workers to go out until bombs had stopped falling. It probably took the first air raids in July 1940 for the potential consequences of air raids to become apparent. Balancing concern for the safety of their employees against their role as ARP workers would continue to prove a quandary for Councillors and managers up to the Baedeker raids, as expressed by Storey in his memo of 3 June 1942. However, the Council were prepared to press their employees into ARP work, effectively making it a condition of service and giving notice to some who refused.

The two Council committees charged with overseeing ARP work appear to have worked constructively together. CARP dealing with prewar activities and the more routine work during the war and the EC operating from the start of the war and being involved in more critical and urgent decisions. The Council's relationship with the Regional Commissioner and his officers were positive, where disagreements occurred, they were frequently due to national government policies particularly financial issues. The Council disputed a number of financial decisions taken by the government, considering them to be unfair. These included cuts in grants for shelters, refusal to backdate grant increases and refusal to fully repay costs of equipment lost in raids. Norwich joined with other similarly affected SMAs to try to remedy the situation but met with only limited success.

The Council stood up against government policies where it felt it was right to do so. In 1940 it worked with employers after the unsignalled raids to increase the number of air raid warnings sounded. This may have had unforeseen consequences in 1942 because of the number of false alarms generated. It also undertook a long campaign to extend the times within which the OCA could be sounded and defied the government on issues such as building toilets in shelters although eventually forced to concede on this particular matter.

The ARP Controller, Storey, handled his role diligently and with concern for the people of Norwich and his staff and was complemented on his approach by the Regional Commissioner.⁴⁶⁰ He found himself in a difficult situation, as Town Clerk he reported ultimately to the Council but as ARP Controller he reported to the Regional Commissioner

⁴⁶⁰ Mottram, Assault upon Norwich, Forward

especially during and after a raid thus creating a dual reporting role. The situation was further complicated by the fact that one of his key CD managers was a councillor, the Chief Warden, a subordinate was also his employer. His difficulties are particularly visible when, during the Baedeker raids, the EC vacated Norwich and he was unsure how to deal with this.

Storey was not afraid to knock heads together in public over resource flexibility and his withering assessment of the state of rescue services in the Spring of 1940 is astonishing. He must have laid some careful groundwork before launching his attack. He led by example in several areas paying frequent visits to the RC, taking charge of nighttime shifts and visiting rescue workers during an alert. However, his assessment of CD performance in the early Baedeker raids while fair in several areas underplayed some serious failings and is sometimes contradictory. His statements that people were not seriously inconvenienced or that Norwich was not short of resources has been shown to be questionable by this thesis.

By April 1942 Norwich had built a CD system that was generally adequate for the scale of raids experienced up to that point albeit some elements were stronger than others. Some services performed well under the heavier raids, others less so and some aspects effectively collapsed in whole or in part. Some weaknesses were already known but had not been addressed such as the lack of standby rescue teams and messengers. Other weaknesses such as billeting after a raid depending on potentially unreliable volunteers and the consequences of a lack of static water tanks should have been known by this point in the war. The extent of the collapse of the residential fire guard seems to have come as a shock. Storey refused to criticise his immediate subordinates over billeting and the Fire Guard as he had previously refused to criticise the City Engineer over the rescue service in 1940. However, the Ministry had no such reluctance criticising the leadership and operation of billeting and fire guarding in April-May 1942.

Many of the weaknesses observed in the 1942 raids were addressed in whole or in part during the remainder of the war although the services were never again tested to the same extent. The scale of undertaking needed to provide CD in Norwich across the war was huge in terms of systems, infrastructure, finance and personnel. Despite all the difficulties Norwich generally coped with all but the heaviest attacks, learning from mistakes and improving the CD response. In the end lives would be saved by the courage, skill, sense of duty and selflessness of ordinary people who protected by a tin hat and armband risked their lives to save others and their city.

The principles of ARP laid the foundations for future CD systems, in Norwich the Hall Road facility was to continue in use into the Cold War. However, the scale and nature of the new threat would require different precautions although individuals would still volunteer to help protect the community under the banner of Civil Defence as others had done during the Second World War.



Image 6 – Re–purposing of the emergency water tank constructed in the bombed our basement of Curls Department Store. Scouts Week, 1946

Source: Private collection.

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Source Image courtesy of Norfolk County Council Library and Information Service. www.picture.norfolk.gov.uk/

Appendix 1 Air Raids on Norwich 1940 – 1943, key statistics

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| | Total between 1940 - 1943 | Source |
|--------------------------------------|--------------------------------|--|
| Number of conventional air raids | 44 (9/7/1940 to (6/11/1943) | Banger |
| Friendly fire raid by RAF | 1 (16 September 1941) | Banger pp 30–31 |
| Estimated no HE bombs dropped | 680 | Neil R Storey p 107 |
| Estimated no incendiaries dropped | 25,000 | Neil R Storey p 107 |
| Deaths resulting from raids | 346(Storey), 340 (Banger) | Neil R Storey pp115- 141, Banger p 76 |
| Injuries resulting from raids | 1,092 Banger p76 | |
| Damage to housing | | |
| Houses destroyed | 2,082 | Banger p 77 |
| Houses seriously damaged | 2,651 | Banger p 77 |
| Moderate or slight damage | 25,621 | Banger p 77 |
| Total no. houses in city 1939 | 35,354 | Banger p 77 |

Heaviest raids: 27/28 April, 29/30 April 1942

| | 27/28 April 1942 | 29/30 April 1942 | Source |
|-------------------------------|-------------------------------|-----------------------------|------------------------------|
| No. HE bombs | 188 | 103 | Collis pp 2–3 |
| Weight HE, tonnes | 41 | 39 | Collis pp 2–3 |
| Deaths | 162 | 69 | Banger p 32 |
| Deaths reported as at 3/6/42 | 158 | 67 | B.J Storey memo of 3/6/42 |
| Injured | 600 | 89 | Banger p 32 |
| Injured reported as at 3/6/42 | 264 (serious) 253 (slight) | 86 (serious)109 (slight) | B.J.Storey |

Appendix 2 – Main legislative framework for ARP

Source: O'Brien, T.M, History of the Second World War - Civil Defence

First Circular on ARP (1935) – the first comprehensive statement on Civil Defence by the Government invited councils, businesses and the public to help create the machinery of ARP and volunteer for these duties. Responsibility was placed on councils to provide and pay for most of these local services and to prepare a plan covering the main aspects of ARP for submission to the Home Office.

ARP Act 1937 – came into force on 1 January 1938 and represented a change in approach. Councils now had a duty to protect people and property from air attack and to draw up Air Raid General Precautions Schemes, covering the ARP General Services of Wardens, Decontamination, Rescue and First Aid and everything from air raid warnings to gas detection. 230 County Councils, County Boroughs and Scottish Burghs became Scheme Making Authorities, (SMA). Mutual assistance became a duty. Councils were empowered to spend money on ARP services with some grants being offered by the Government. Fire prevention schemes were to be prepared by Boroughs and District Councils.

Civil Defence Act 1939 – employers now had a legal duty to organise ARP services (over 30 employees) and to provide shelters for employees (over 50 employees). Grants and tax relief were available. Councils were giver wider powers eg requisitioning vehicles and entry to buildings in regard of public shelters

Defence Regulation 29A – allowed Regional Commissioners to direct and control Civil Defence activity in their regions, councils retained responsibility for local control.

National Service Act 1941 – nationalised part of the Civil Defence Services, making people servants of the crown and mobile as to where they served.

Civil Defence Duties (Compulsory Enrolment) Order 1941 – compelled people to take on part time ARP duties.

First Circular on Fire Schemes (February 1937) – required Fire Brigade Authorities (FBA) to draw up fire prevention schemes.

Fire Brigades Act 1938 – defined which councils were FBAs with a duty to provide efficient services and mutual assistance. Services were to be inspected and training centres provided.

Fire Service (Emergency Provisions) Act 1941– the Home Secretary could unify and nationalise fire brigades with, or without, their agreement, detailed regulations followed a few months later.

Appendix 3 – National timeline for Air Raid Warning (ARW) systems

Source: O'Brien, TM, <u>History of the Second World War – Civil Defence</u>

| Date | |
|---------------------------------------|---|
| 1916 | ARW introduced in Britain – initially to war industries and factories |
| July 1917 | ARW for public introduced following public outcry and threatened strikes. Daytime warnings by police verbally or firing of maroons |
| December 1917 | Nighttime warnings introduced |
| 1925 | Work on national air raid warning systems start. |
| 1925–1935 | Debate on scale of attack – view that only mass attacks should be signalled. ARW for public to be at discretion of local authorities – national policy to discourage them |
| 1935 | Government accepts responsibility for ARW as part of first circular – extent of warning to public still debated |
| 1936 | Government sends confidential memos to Chief Constable and later local authorities outlining a proposed system and asking for potential recipients of an ARW. Warning district based on GPO phone districts– proposed to give 7–10 minutes warning of attack inland. |
| 1937 | Public ARW suggested for all urban areas (not rural). GPO lines and systems tested and approved for transmission. |
| 1938 | ARP Act operational in January, Home Office issues detailed ARW guidance in May. Still holding to a policy of only warning for mass raids, otherwise recommends over insurance regarding areas alerted and length of alert. Munich crisis, ARW supposedly in working order, many warning reception lists not ready, not enough sirens so police instructed to use factory hooters. |
| August 1939 | ARW systems in operation ten days before war starts. Sirens under police control. Factory hooters still being used, requiring manning and sometimes steam generation, some hooters interfere with sound locators on Anti Aircraft guns. |
| September 1939 – September 1940 | Many problems with ARW such as false alarms, delays in sounding, air attacks with no ARW. Combination of technical and human error and policy regarding no warnings for small raids and rural areas. Public concern from many places. A sensitive list is developed to warn of small raids but only to certain towns. |
| June 1940 | Remote control signals operated from one point becomes mandatory |
| July 1940 | Disruption to industrial production causes change from safety first to production first. Workers to keep working after red alert unless an attack was happening locally. 25 July – purple warnings start to be issued– factories keep working but extinguish external lights. Factory spotter schemes start to be set up and are formally approved in September. |
| July 1941 | Power to initiate warnings decentralised to fighter Group HQ all over the country |
| 1942 | Alarm Controllers sited in Observer Corps Centres relay information to central control or directly to factories |
| 1943 | Observer Corps centres linked directly to phone exchanges and Alarm Controllers permitted to issue red warnings |
| Mid 1944 | All warnings coming from 36 Observer Corps Centres, Home Office takes over responsibility for issuing ARW from RAF |
| 1943–1944 | Special warning systems proposed for vengeance weapons. Existing systems eventually used with alerts sounded for groups of V1s. No warnings for V2s, less than a minute's grace from detection. |
| 2 May 1945 | National ARW systems cease operation. |

Appendix 4 – National Air Raid Warnings 1939–1945

Source O'Brien, TM, History of the Second World War - Civil Defence

| Warning type | | | |
|----------------------|----------------------------------|---------------------------|--|
| Yellow (preliminary) | Sent to key recipients including | Planes 22 minutes away | |
| | ARP, some factories | (initial intention 1939) | |
| | | | |
| Red (action) | Sirens to be sounded (wailing | Planes 12 minutes away | |
| | sound) and shelter sought | (initial intention 1939) | |
| Green (Raiders | Planes out of district – sound | | |
| passed) | sirens (continuous sound) | | |
| White (Cancel | | All warnings initiated by | |
| caution) | | Fighter Command, later | |
| | | decentralised to Fighter | |
| | | Group HQs and then to | |
| | | Observer Corps Centres | |
| Purple warning | Sent to factories – extinguish | From July 1940 | |
| | external lights but keep working | eventually replaced | |
| | | the Yellow warning | |
| Gas warning | Sounded by warden's rattle | | |
| | and cancelled by whistle | | |

Appendix 5 – List of air raid warning sirens in Norwich

Sites of electrically controlled ARW sirens in 1941 (Source NRO N/CD 1/2)

City Hall/ Police Station, Bethel Street The tower at the waterworks on Quebec Road City of Norwich School Co–op premises at Earlham Fiveways The Lido, Aylsham Road Odeon, Botolph Street Girls Model School Dereham Road Co–op Bakery, Queens Road Jas. Southall Ltd, Crome Road.

Sites of steam powered whistles in 1941 (Source NRO N/CD 1/2)

AJ Caley Factory – Chapelfield Reckitt and Colman – Carrow British Gas Light Company (St Martin at Palace Plain) Bally and Haldenstein Factory – Queen Street Bolton and Paul Barnards– Mousehold Laurence Scott Electromotors Heigham Pumping Station Mousehold Reservoir Lakenham Reservoir Electricity Department – Duke Street

Other OCW sites mentioned in 1941

Harmers factory Public Institution, Bowthorpe Road Swan laundry Harford Bridges Gas Hill

Additional OCW whistles / sirens as at 28 August 1943 (Source N/EN1 /178)

City Hall Co–op premises at Earlham Fiveways Hinde and Hardy – Cromer Road Thorpe Power Station Upton Road Blyth Secondary School Junction Dereham Rd and Northumberland Street

Appendix 6 – National timeline for main developments regarding air raid shelters 1935 – 45

Sources

O'Brien, T.M, History of the Second World War - Civil Defence

Dobinson, C.S, Civil defence in WWII, Protecting England's Civil Population

| Year | |
|------|---|
| 1935 | First Circular on ARP issued to Councils, government refuses to fund a national programme of shelters, councils pressed to adopt blast and splinter protection at minimal cost. |
| 1936 | February – Committee on Structural Precautions against Air Attack (CSP) formed. Aim is to provide a technical handbook on structural defence during air raids including shelters. |
| | November – ARP Dept issues handbook to businesses and factories on ARP including some technical advice on the construction of shelters and trenches (blast, splinter and gas proof). Action voluntary |
| 1937 | CSP issues an interim report containing little detail. ARP Act 1937 passed and became law 1 January 1938. |
| 1938 | ARP Act places a legal obligation on councils to provide shelters for the public but only those caught on the streets during a raid. Government issues a model scheme for shelters to Councils. |
| | March – April Scheme Making Authorities (SMA) encouraged to survey their areas for likely sites for shelters through adaption of existing buildings or possible trench systems. |
| | Private sector professionals and businesses start to fill the technical and design gaps left by the lack of official advice. J S Haldane makes the case nationally against dispersion and in favour of deep shelters. |
| | March – Booklet issued to the public, 'The protection of your home against air raids' |
| | September – the Munich Crisis. Government orders councils to dig trenches for 10% of its population in three days, intended only for those caught in the streets, though population does not know this. Pamphlet on household garden trenches rushed out to the public. Buildings strengthened in a hurry. Lack of shelter provision exposed. |
| | November – Some trench shelters to be made permanent – others filled in. Councils granted authority to strengthen basements for use as public shelters. |
| | 21 December – Anderson shelter announced – to be issued free to lower income (£250pa) households. First Andersons appear in Feb 39. Basement strutting kits to be offered under the same terms. |

| 1939 | May – household brick and concrete shelters announced in lieu of Andersons. |
|------|--|
| | June – CSP technical handbook published, makes no mention of Andersons or household brick and concrete shelters. |
| | July – Civil Defence Act enacted – statutory duty on employer to provide shelters if more than 50 employees and with codes setting standards of protection. Further powers of entry granted to councils to assess buildings for suitability as shelters. |
| | August. Deep shelter controversy – Hailey Committee set up to investigate feasibility reports. Rejects deep shelters because of impracticality, public safety and cost. |
| | Some manmade and natural features are authorised for use as shelters. |
| | August– brick and concrete public shelters authorised – seating up to 50 people. |
| 1940 | March – Communal domestic shelters introduced aimed at specific households who cannot utilise an Anderson. Single or four compartment shelters shared by up to 50 people. Serious design / specification flaws become apparent. |
| | April – ambiguous wording in shelter construction specifications leads to use of ungauged lime mortar or lime and sand causing an inherent weakness in stability. |
| | July – new instructions issued |
| | October – lime mortar formally prohibited in in relation to winter construction December – repointing or demolition is recommended. Thousands of shelters need rebuilding. |
| | Further changes introduced to communal domestic shelters include the prohibition of steel reinforcing rods in the roof and that the concrete roof was not to overhang the walls. |
| | April – Production of Andersons is slowed, the size of the unit reduced and production stops completely in April. Production of basement fittings also stops. |
| | September onwards – Contrary to Government instructions tube stations are used as dormitory shelters. Government starts to provide amenities and explore tube extensions to provide more places. Commission appointed in London to investigate conditions in public shelters. |
| | December – revised specification for communal domestic and public shelters – including reintroduction of steel reinforcement, provision of damp proof courses and concrete roof overhang. |
| 1941 | March – Morrison shelter introduced, income limit for free shelter raised to $\pounds350$. |
| | Requirement to seal or demolish lime mortar shelters following protests from scientists/ engineers, later changed to allow for strengthening to individual Borough Engineer's satisfaction |
| | April – lime mortar prohibited indefinitely |
| | June – new booklet, Shelter at Home issued – recognising trend for this type of sheltering |

| 1942 | Some tube extensions opened, otherwise general decrease in activity – many shelters are locked. |
|------|--|
| | June – Government pulls national labour force from ARP work. |
| | August – Morrison production ceases. |
| 1943 | March – Bethnal Green Tube Station disaster – 173 people killed in a crush during an air raid warning. Safety work undertaken in other large shelters |
| | October – Plans start to be made regarding V weapons – stockpiles of Morrisons moved to south–east, existing shelters strengthened. |
| 1944 | Further distribution of Morrisons and Andersons to the SE and London. 'Little Blitz' in London in early 1944 sees people sleeping in public shelters again. Extended tube stations opened as shelters. |
| 1945 | Following the end of the war surface shelters given away or demolished, people allowed to buy their Andersons and Morrison shelters. |

Appendix 7 – Types of air raid shelter utilised in Second World War Britain¹

Source: Dobinson, C.S, Civil defence in WWII, Protecting England's Civil Population

| | Date | Description |
|------------------------------|---|--|
| Individual Households | | |
| Refuge Rooms | From 1935 | Household basement or ground floor room. Householder to strengthen ceilings and floors to protect against blast, splinters, house collapse using props, RSJ, additional piers or brickwork or new concrete floors. Protection against gas and incendiaries also required. In 1939 free basement strengthening kits were available for household with incomes of less than £250 pa. |
| Household trenches | From 1935 | Needed to be sited at least 20 feet from the house. At least six feet deep, lined to prevent collapse and with a roof of corrugated iron, asbestos or planks covered in at least six inches of earth. Concrete bunkers partly sunk into the ground were another option. |
| Anderson shelters | December 1938 Ceased production April 1940 | External shelter consisting of eight hundredweight of prefabricated galvanised steel sheets. Sited at least six feet from the house and preferably sunk partly into the ground with spoil used to give extra protection to sides and roof. Originally designed to seat six people a shortage of steel led to its length and capacity being reduced. Distributed free to households with incomes less than £250. Main problem was dampness, both from ground, penetration and condensation. |
| Domestic surface shelters | May 1939 | Structures with a concrete floor, brick or concrete block walls and flat reinforced concrete roof. Sited at least six feet away from the house but if more than fifteen feet needed a traverse wall at the entrance to increase blast protection. Could be built across house boundaries so that protection was given to up to four families each with their own entrance and discrete space inside. Distributed free on the same basis as Andersons |
| Morrison shelters | March 1941 Ceased production August 1942 | An internal shelter for use on the ground floor of a house it was essentially an armoured bed designed to protect the occupants from debris caused by house collapse. A defensible space was created using a steel framework topped by a steel plate with a steel mattress as a base and sides of wire mesh intended to keep out larger pieces of debris. Distributed free initially on same basis as Andersons, increased to £350 in September 1941 |

¹ level of standard protection from blast and splinters only

| | Date | Description | |
|---|----------------|--|--|
| Communal domestic surface shelters | March 1940 | Intended for houses without enough garden for an Anderson or small household shelter. A brick and concrete surface or semi sunken shelter sited in the street or on nearby land, often compartmentalised into four areas with a theoretical capacity of 48 persons. Individual households were assigned to a specific shelter. Beset by design and specification problems due to materials shortages which compromised their ability to withstand blast and caused dampness, many were closed, demolished or strengthened, though specifications improved from March 1941. | |
| Public shelters | | | |
| Trenches | September 1938 | Essentially ditches at least four foot deep in open land. Main means of shelter at the Munich crisis, many were makeshift affairs due to shortages of labour, detailed specifications and lining materials as councils given only a few days to construct them. Some later upgraded but many simply filled in as unfit for purpose. Specifications were replaced in January 1939 with trenches to be laid out in a block system. Main problem was supplying effective lining materials such as steel arches or precast concrete linings, timber and corrugated iron also used. In November 1939 regional officers refused to authorise the government's preferred precast concrete linings because of poor performance. Duckboards, seating and toilets only authorised in August 1939. Trenches started to fall out of favour in 1940 because of dampness and increasing cost. | |
| Basement shelters | From 1935 | In March 1938 councils were asked to survey basements and cellars for potential public shelters. Councils given power to enter and do work under Civil Defence Act 1939. A range of buildings were potentially suitable but many needed strengthening in a similar way to refuge rooms. Problems included public access outside working hours and the need for additional emergency exits, basements in steel framed buildings were found to be the most effective. | |
| Brick and concrete surface shelters | August 1939 | Authority to build brick and concrete public shelters was given less than a week before war declared. Similar in construction to household shelters they held 50 people, perhaps with some compartmentalisation or blast traverses and incorporating gas locks and chemical toilets. While some suffered from the same problems as communal domestic shelters many were built before the materials shortage became acute in mid–1940 and were as such more robust. | |

| | Date | Description | |
|--------------------------|--------------------------|---|--|
| Deep/natural shelters | From 1939 | The government was not in favour of the principle of deep shelters and tried to discourage for example the use of the Underground system in London, overcome by what was effectively a campaign of civil disobedience by Londoners. The government recognised their use and improved facilities such as toilets, provided bunks and built a series of tube extensions for use as shelters. Other deep shelters were approved, fifteen in 1942 including caves, railway tunnels and a colliery drift. | |
| | | | |
| Industrial shelters | Requirement from 1939 | The Civil Defence Act 1939 required employers with more than 50 employees to provide shelters, with adequate dispersal (usually no more than 50 people) and to the same moderate standard as public and other shelters. A range of internal and external solutions were used, trenches, tunnels, brick and concrete shelters, steel shelters, basements. In mid–1940 the decision to make people work through a red warning required employers to come up with other solutions as people might not have time to get to existing shelters. These included blast walls and tunnels below the shop floor but many workers would simply take refuge under their machines or work benches. | |

Appendix 8 – Norwich Rescue Parties– arrangements 1936–1942

Source NRO N/EN 1/ 31 to 32; 34 to 37

| Date | Total number parties | Size of parties/ men | Standby parties day - staff at rescue depot | Standby parties night- staff at rescue depot | On call instructions- staff at home / at workplace | Other comments |
|---------------------|-------------------------------|----------------------------------|--|---|---|---|
| Oct 35 | 6 | 7 | | | | Proposal |
| May 37 | 12 | | | | | Proposal |
| Feb 38 | 6 +2 reserves | 7 | | | | Proposal |
| Sept 38 | 8 to 10 | 6 – 8 | | | | Possible not confirmed |
| April 39 | 18 | | | | | 3 depots chosen |
| July 39 | 18 (4 heavy, 1 reserve) | 10 light 8 heavy + drivers | | | | |
| Prior to Sept 39 | | | 3 | 6 | | |
| Mid Sept 39 | | | 3 | 3 | | EC defers decision on when parties should proceed to depots |
| Dec 39 | | | 0 | 3 | 3 parties on call in day, 2 at night Leave immediately on raid | |
| April 40 | 19 (15 light, 4 heavy) | | 3 | 3 | | Mobilisation 'hopeless'– Storey |
| Mid May 40 | 19 | 11 (7 on standby) | 3 | 3 | | |
| 2 May 40 | | | 3 | 3 | Report immediately on siren | |
| 18 May 40 | | | 3 | 3 | If siren does not sound take cover and report after raid | |
| 22 May 40 | | | 3 | 3 | All staff including standby to take cover on siren and proceed to depot after raid | |

| Date | Total number parties | Size of parties/ men | Standby parties day - staff at rescue depot | Standby parties night- staff at rescue depot | On call instructions- staff at home / at workplace | Other comments |
|-------------------|--|-------------------------------|--|---|--|---|
| 31 May 40 | | | 3 | 3 | All ARP staff to attend posts asap after an attack or immediately after a siren without apparent risk to themselves. | |
| mid June 40 | 19 27* | 10 | 3 | 3 | Half to report on siren and half on bomb fall | *Proposal to include private sector contractors |
| July 40 | | | 3 | 6 | | |
| Mid August 40 | | | 3 | 6 | Staff on call to report on siren others on bomb fall | |
| Late August 40 | | | 3 | 6 | 50% report on siren 50% on bomb fall | |
| 16 Sept 40 | | | 3 | 6 | On call parties report on bomb fall | |
| Mid Oct 40 | | | 3 | 6 | Day – on call report on siren Night – report on bomb fall | |
| 30 Oct 40 | | | 3 | 6 | Day – if on call staff building shelters only proceed to depots on bomb fall | |
| Nov 40 | 19 Council, 5–7 private contractor | 10 (7 standby at depot) | 3 | 6 | Day – 6 parties to report on siren with 4 more if bombs drop. Night–10 parties to come in at bomb fall | Standby teams – 7 men at depot with 3 to come in at bomb fall |
| Dec 40 | 19 | 10 | | | | Private sector teams withdrawn by December |

| Date | Total number parties | Size of parties/ men | Standby parties day - staff at rescue depot | Standby parties night- staff at rescue depot | On call instructions- staff at home / at workplace | Other comments |
|----------|----------------------------|----------------------------|--|---|---|--|
| Jan 41 | 19 | | 3 | 6 | | Five depots agreed, City Eng renews efforts to get 9 standby teams at night and 6 in day |
| Feb 41 | | | 3 | 6 | | Regional Office agrees 1 standby day and night in each of 5 depots |
| March 41 | 19 | | 3 | 6 | | Standby teams reduced to 6 men at depot, 4 to come in. Lorries only to return to depot at bomb fall. |
| July 41 | 19 | 10 (6 on standby) | 3 | 5 | | New depots on line but Silver Road and Eaton only staffed at night |
| Nov 41 | 20 | | 5 | 5 | On call after bomb fall | Rescue party is now 6 men |

Appendix 9 – Analysis of Rescue Leader's Reports and Report Centre incident sheets.

Sources: NRO N/EN 2/18

NRO N/EN 2/19 – Rescue party reports April 1942,

NRO N/EN 1/81 - Miscellaneous reports from Report Centre - April 1942,

NRO N/EN 2/12 – Leaders' diary sheets

The information below is an analysis of individual incident report sheets completed by staff at the RC and the job sheets of the Rescue Team Leaders, giving contemporaneous information about the situation at the RC and on the ground. This is supplemented by a summarised version of activities compiled sometime after. These were intended to record times certain decisions or actions were taken. The discipline in completing these sheets waned under the pressure of the situation and there are gaps in the records. Record keeping deteriorated further in the raid of 29-30 April. The sheets from one of the five rescue depots are also missing and it is not always possible to distinguish when a team is the first on the scene or has been sent in relief.

The raid of 27/28 April 1942

Time taken for warden's message to reach RC

| Time/minutes | <15 | 16 – 31 | 31-60 | 61–90 | >90 |
|--------------|-----|---------|-------|-------|-----|
| Number | 2 | 4 | 5 | 4 | 5 |

Data size 20 entries. The longest time recorded was 2 hours and 34 minutes no other information available about this incident.

Time between RC receiving message and City Engineer making a decision

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61–90 | >90 |
|--------------|-----|---------|---------|-------|-----|
| Number | 15 | 3 | 2 | 3 | 2 |

Data size 25 entries. The two longest times recorded were 4hours and 54 minutes and 2 hours it is possible that these entries reflect the second or further decisions made by the City Engineer with regard to larger incidents.

Time between City Engineers decision and notifying depot

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 11 | 3 | 2 | 1 | 3 |

Data size 20 entries. The entries of over 90 minutes are 3 hours and 1 minute, 2 hours 30mins and 2 hours and 9 minutes and are caused by the need to send messengers to the depots.

Time between message reaching depot and despatch of rescue party

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 26 | 1 | 1 | | |

Data size 28 entries. Most of the teams were despatched within 5 minutes.

Time between warden's message reaching RC and despatch of Rescue Party

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 3 | 4 | 5 | 2 | 6 |

Data size 20 entries. The longest delay, over 4 hours, is probably due to Rescue Teams being sent as additional or relief party to an incident already being attended. The other delays of more than 90 minutes are due to communication difficulties with the depots or resource shortages.

Time from incident occuring to despatch of Rescue Party

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 1 | | 2 | 2 | 8 |

Data size 13. The entries lasting more than 90 minutes range from 1 hour and 45 minutes to over 5 hours. There are a variety of contributing factors including the time for the message to reach the RC and the communication difficulties with the depots. The longest time recorded was 5 hours and 40 minutes but this probably refers to a team sent in relief.

Raid of 29 /30 April 1942

Time taken from occurrence for warden's message to reach RC

| Time/ minutes | <15 | 16 – 31 | 31 – 60 | 61 – 0 | >90 |
|------------------|-----|---------|---------|--------|-----|
| Number | 8 | 5 | 1 | 2 | 1 |

Data size 17 entries.

Time between RC receiving message and City Engineer making a decision

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 9 | 5 | 6 | 4 | 1 |

Data size 25 entries.

Time between City Engineers decision and notifying depot

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 11 | | | | |

Data size 11 entries.

Time between message reaching depot and despatch of rescue party

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 16 | 1 | | | |

Data size 17 entries. Most 5 minutes or less

Time between warden's message reaching RC and despatch of Rescue Party

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 7 | 3 | 8 | 5 | |

Data size 23 entries.

Time from incident occurring to despatch of Rescue Party

| Time/minutes | <15 | 16 – 31 | 31 – 60 | 61 – 90 | >90 |
|--------------|-----|---------|---------|---------|-----|
| Number | 2 | 1 | 4 | 2 | 3 |

Data size 12 entries.

Appendix 10 – Mutual Aid delivered in respect of Baedeker raids of 27/28 and 29/30 April 1942

Sources:

NRO N/ EN1/38 - Storey memo to Regional Commissioner 3/6/1942;

NRO MS 3133/1 – Wardens records;

Banger, Norwich at war pp 54–57

Numbers and types of aid – NRO N/EN1/38 – Storey memo

| Type of aid provided | 27/28 April 1942 | 29/30 April 1942 |
|--|------------------|------------------|
| Mutual assistance pact - Norfolk and | | |
| Great Yarmouth | | |
| Rescue Parties | 6 | 7 |
| Ambulances | 13 | 17 |
| Sitting up case cars | 8 | 9 |
| First Aid Parties | 12 | 14 |
| | | |
| Regional assistance – through Regional | | |
| Commissioner | | |
| Rescue Parties | 23 | 38 |
| Ambulances | 11 | 3 |
| Sitting up case cars | 6 | |
| First Aid Parties | 6 | 13 |

Mutual assistance received from the following areas/ organisations NRO MS 3133/1

| Acle | Cambridge | Hoveton | Stanway |
|--------------------|-------------------|---------------|----------------|
| American Ambulance | Cambridge- Flying | Hoddeston | Suffolk – East |
| | squad | | |
| Aylsham | Chelmsford | Ipswich | Suffolk –West |
| Attleborough | Colchester | Letchworth | Thorpe |
| Bedford | Coltishall | Luton | Watford |
| Birmingham | Costessey | North Walsham | Witham |
| Bishop's Stortford | Dereham | RAF | |
| Blofield | Dunstable | Reepham | |
| Braintree | Friends Ambulance | Rickmanswoth | |
| | Unit– London | | |
| Brentwood | Great Yarmouth | Southend | |
| Brightlingsea | Hertfordshire | Sprowston | |
| Bury St Edmunds | Hickling | St Albans | |

Other parties recorded as sent include Burlingham, Letchwood , Banger, Norwich at war

Appendix 11 – Numbers and distribution of people billeted in Norwich during 1944

Sources

Banger, <u>Norwich at war</u> p78; NRO N/ EN1/108

| Type of House | No. adults billeted | No. of children billeted | |
|------------------------------|---------------------|--------------------------|--|
| Council houses | 428 | 715 | |
| Cottages | 145 | 183 | |
| Terraced house working class | 574 | 833 | |
| Medium sized houses | 109 | 140 | |
| Large residential houses | 37 | 43 | |
| Totals | 1,293 | 1,914 | |

Plus 350 billeted in requisitioned houses and Nissen huts.