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SELBY NATIONAL TRENCH WARFARE FACTORY

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SELBY NATIONAL TRENCH WARFARE FACTORY

SUMMARY

On 23 June 1915, the Trench Warfare Supply Department (TWSD) within the Ministry of Munitions was formulated to increase output, control and oversee the development of weapons and ammunition for use in the trenches of the Allied campaign in France.

During WW1 there were six National Trench Warfare Factories in use as chemical filling stations. Selby, originally managed (but later nationalised) by a edible oil manufacturer known as Ardol Ltd, was established to produce phosgene (the most effective of the WW1 lethal gases used in chemical warfare) and to charge this chemical into Russian shell.

PRIMARY SOURCES AND INTRODUCTION

Primary sources on the chemical filling station at Selby are preserved in very small numbers within public records found at the Public Records Office, Kew. These are in the form of scattered fragments within a much larger collection of documents (MUN 5) relating to the history of the Trench Warfare Supply Department. Out of a possible 98 known files belonging to the TWSD (but not including files relating to grenades), 37 were read, of these only three had references to Selby.

The references to the other five National Trench Warfare Filling Factories (at Denaby, Erith, Fulham, Watford No.1 and No.2) are in the form of detailed histories and include information on building construction, buildings, production methods, output, costs, accidents and manpower. All of these sites were either managed by companies who in peacetime already had experience with the manufacture of high explosives or as in the case of the two sites at Watford, were managed by existing nationalised explosive factories. The expertise of Ardol at Selby lay in the manufacture of hydrogenated oils presumably for the food industry (edible oils was also a product the Ministry of Munitions was interested in) and not in manufacturing lethal chemicals and charging shell.

As references to Selby within MUN 5 are short and scattered, I have outlined the details under its primary source file number.

PUBLIC RECORDS OFFICE FILES

MUN 5/382/1600/9

Trench Warfare Filling Factories were normally established in the immediate neighbourhood of the site of chemical manufacture. Selby combined the manufacture of the chemical substance with the filling operations.

Buildings were light temporary structures consisting of stores for receipt and dispatch and magazines for explosives. Buildings were placed at some distance from each other and were properly heated and ventilated.

MUN 5/386/1650/16

During the winter of 1915/1916, the TWSD of the Ministry of Munitions made arrangements with Ardol Ltd of Selby to utilise a considerable supply of 92% pure carbon monoxide for the manufacture of Phosgene. The company had expected to produce carbon monoxide as a by-product from their new fat-hardening plant that they were installing for their normal production of edible oil and fats. Ardol agreed to erect (at the ministry's expense) and operate on a separate site, plant for the output of 15 tons of phosgene per week. For reasons unknown, the company were unable to complete their fat-hardening plant with the result that insufficient supplies of carbon monoxide were available and the agreed output was never reached.

A shell filling plant for 500,000, 3in Russian shell was also installed at the factory. As the company was not able to provide sufficient quantities of Phosgene another supply from outside the company was made available which was mixed with the Selby produced chemical. Subsequently in the early autumn of 1917, and in view of the unsatisfactory output, Ardol's Phosgene factory was nationalised under the Defence of the Realm Act (DORA) and taken over by the TWSD. Eventually the plant was transferred elsewhere (it is not known exactly when this happened, it may have been after the 500,000 shell had been charged and dispatched).

MUN 5/385/1650/1-8

At the expense of the Ministry of Munitions, a Phosgene factory and a chemical shell-filling station was built in the winter of 1915/16 when Ardol received two contracts, one for chemical manufacture and the other for shell-filling.

The factory was nationalised in June 1916* in order to secure a sufficient output to meet TWSD requirements.

Average employment during 1917 was 234 personnel.

* This date is different to that published in MUN 5/386/1650/16

CONCLUSION

There are still a small number of records that may contain additional information relating to the NTWFF at Selby.

Whether successful or not as a centre for the production of chemical weapons for the Trench Warfare Supply Department, it is clear from the records that Ardol had been manufacturing Phosgene and charging it into shell. This was either in a limited form or enough of the substance was produced for charging a maximum of 500,000 shell.

It is unclear exactly which site was built during the winter of 1915/16, this could mean the factory located between Magazine Road and the Barlby Road or the magazine complex itself. The fact that the magazine complex is present on the 1908 OS map while the factory is absent, rather suggests that the Ministry of Munitions funded the construction of the factory and not the magazine complex. If this is the case then what was a WD magazine site doing so close to Selby in 1908?

TRENCH WARFARE SUPPLY DEPARTMENT: SOURCES AT PRO

MUN 5/195/1600/1	Report on work of Trench Warfare Supplies Department: November 1915.
MUN 5/195/1600/2	Report on output of TWSD: December 1916.
MUN 5/195/1600/3	Report on work of TWSD.
MUN 5/195/1600/4	Replies of TWSD to Reconstruction Committee Questionnaire May 1917-July 1917.
MUN 5/195/1600/5	Report on work of TWSD from December 1916.
MUN 5/195/1600/6	Copy minutes of February to April 1917 on drawings of grenades and bombs.
MUN 5/195/1600/7	Copy minutes of June to July 1915 on increase of supply of hand grenades and trench howitzer ammunition.
MUN 5/195/1600/8	Copy minutes of June-July 1915 on procedure for supply of trench warfare stores to the Western Front.
MUN 5/195/1600/10	Copy minutes and report of November 1915 on work of TWSD since its formation for increasing output of munitions.
MUN 5/195/1600/11	Charts showing deliveries of trench mortars and ammunition from 1915-1917.
MUN 5/195/1600/13	Memorandum on position of small engineering firms in manufacturing trench warfare supplies.
MUN 5/195/1600/14	Memorandum on central inspection bonds as applied to TWSD
MUN 5/195/1600/15	Copy minutes of July 1915 on position of trench warfare supplies.
MUN 5/196/1600/16	Correspondence and minutes on supply of stores for the Dardanelles: July 1915.
MUN 5/196/1600/17	Memorandum on chemical shell and grenades.
MUN 5/196/1600/19	Draft memorandum on various trench warfare gases: June 1915.
MUN 5/196/1600/20	Notes on experimental grounds at Wembley and Clapham training school.
MUN 5/196/1600/21	Minute on use of experimental grounds by TWSD: October 1916.
MUN 5/196/1600/23	Orders for tractors and organisation of "stamping" trade: August 1916.

MUN 5/196/1610/1	Minute on nomenclature of trench mortars: August 1917
MUN 5/196/1610/2	Papers on manufacture of Stokes mortars and ammunition: 1917.
MUN 5/196/1610/3	List of approved stores for trench howitzer and ammunition: 1917
MUN 5/196/1610/4	Copy minutes of December 1914 to April 1915 on supply of small trench warfare howitzer and ammunition.
MUN 5/196/1610/5	Copy minutes of March 1915 on design and supply of mortar bombs by Vickers Ltd.
MUN 5/196/1610/6	Copy minutes of May-July 1915 on assistance from Trinity House on bomb manufacture.
MUN 5/196/1610/7	Copy minutes of August to September 1915 on dispatch of Stokes guns and ammunition.
MUN 5/196/1610/8	Copy minutes of October to December 1915 on supply of Stokes guns and ammunition.
MUN 5/196/1610/9	Copy minutes of January 1916 on new trials of guns and ammunition.
MUN 5/196/1610/10	Copy minutes of November 1915 on trench warfare mortar and ammunition needs.
MUN 5/196/1610/11	Minute on supply of trench mortars for Italy.
MUN 5/196/1610/12	Extracts from diary of Lieutenant F.A Sutton on early history of Stokes gun: 1918.
MUN 5/196/1610/13	Report of Munitions Sub-Council, Sub-Committee on machines for producing an extra 50,000, 6in howitzer shell per week: 1917.
MUN 5/196/1610/14	Copy paper of August to September 1915 - supply of Stokes guns and 2in trench mortars.
MUN 5/196/1610/16	Notes on correspondence of September 1915 on supply of Stokes guns.
MUN 5/196/1610/17	Letter authorising royalties to Societe de Construction de Batignolles patents for manufacture of trench mortars: December 1915.
MUN 5/196/1610/18	Memorandum on the diversity of types of trench howitzers.
MUN 5/196/1610/19	Memorandum on beds for 2in trench mortars: 1915.
MUN 5/196/1610/20	Papers on trials of a round bed for 4in trench howitzer: 1915.

MUN 5/196/1610/21	Memorandum on French trench mortars: 1915.
MUN 5/196/1610/22	Notes on various types of mortars and bombs.
MUN 5/196/1610/23	Extracts from Lieutenant F.A Sutton's diaries
MUN 5/196/1610/24	Tables showing issues of mortar ammunition overseas.
MUN 5/196/1610/25	Memorandum on stocks of trench warfare ammunition.
MUN 5/196/1611/1	Notes on supply of 3in Stokes guns and shell.
MUN 5/196/1611/2*	Minute on estimate of output of 3in Stokes mortars and shell: 1915
MUN 5/196/1611/3*	Papers on trials of Sin Stokes, howitzers, shell and holders: 1915.
MUN 5/196/1611/4	Notes on defects of line fuzes for Sin HE shell: 1916.
MUN 5/196/1611/5	Papers on 4in Stokes guns and shell: 1916.
MUN 5/196/1611/6	Design of Stokes gun and shell: August 1916.
MUN 5/196/1611/7	Minute on Stokes miss-fires: 1916.
MUN 5/196/1611/8	Memorandum on mounting for Sin and 4in guns: 1916
MUN 5/196/1611/9	Correspondence with Ransomes and Rapier Ltd and Anglo-French Supplies Ltd, on manufacture of Stokes guns and ammunition.
MUN 5/197/1612/1	Note on numbers of bombs filled in week ending 20 May 1916.
MUN 5/197/1650/1	Notes on development of chemical warfare from July 1915-August 1915.
MUN 5/197/1650/2	Munitions Council paper on inter-Allied programme for chemical warfare: September 1917.
MUN 5/197/1650/4*	Munitions Council paper on construction of plant for manufacture of mustard gas.
MUN 5/197/1650/7	Notes on various lethal and Lachrymatory substances: 1916.
MUN 5/197/1650/9*	Minutes on supply of chemical shell and bombs: September 1916.
MUN 5/197/1650/10*	Correspondence on supply requirements of chemical shell: March 1917.
MUN 5/197/1650/11*	Minutes of meeting of Chemical Supply Committee of TWSD: 1917.

MUN 5/197/1650/12* Reports on visits to gas and chemical manufacturers.

MUN 5/198/1650/13* Papers on manufacture and supply of gas and chemical warfare: 1915

MUN 5/198/1650/14* Papers on gas manufacture and supply: 1915.

MUN 5/198/1650/17* Notes on gas and gas bombs.

MUN 5/198/1650/18* Notes on gas manufacture.

MUN 5/198/1650/20* Conference minutes on policy of chemical filling: 1917

MUN 5/198/1650/21 Memorandum on cloud gases

MUN 5/198/1650/22* Memorandum on position of gas supplies: 1915.

MUN 5/198/1650/24* Papers on gas warfare supplies.

MUN 5/382/1600/1* Record of history and work of the Ministry of Munitions TWSD Liaison Officer and the Inspection Department: March 1916-December 1916.

MUN 5/382/1600/2* Personal notes on the work of the TWSD Drawing Office June 1915 to February 1917.

MUN 5/382/1600/3* Record of history and work of the Ministry of Munitions TWSD by the Department-General 22 October 1917.

MUN 5/382/1600/4* Work of TWSD on "P" bombs, Stokes shell and flares: February 1917.

MUN 5/382/1600/5 Work of Liaison Officer between TWSD, Royal Arsenal, Woolwich and Buxton Testing Range: June 1917.

MUN 5/382/1600/6* History of TWSD: March 1918-April 1918.

MUN 5/382/1600/7* Report on work of the TWSD from June 1915 to September 1917 by Deputy Director-General Mr. E.V Haigh.

MUN 5/382/1600/8* History of TWSD Research from August 1914-May 1915.

MUN 5/382/1600/9* Work of TWSD National Factories from August 1915-December 1917.

MUN 5/382/1600/10* Production of trench warfare stores by the trade from July 1915-December 1917.

MUN 5/382/1600/11 Work of Outside Engineering Branch of TWSD: July 1917.

MUN 5/383/1600/12* Trench warfare supplies: October 1919-November 1919.

MUN 5/383/1600/13 *	Production of trench warfare stores under War Office working.
MUN 5/383/1600/14	Development of weapons used in trench warfare: December 1918-December 1919.
MUN 5/384/1610.1/1	Tables on issues and deliveries of trench mortar ammunition for 1915 and 1916.
MUN 5/384/1630/1	Work of Trench Warfare Section 3(F) on supply of fuzes, cordite charges etc: September 1916.
MUN 5/385/1650/1 *	History of TWSD: June 1915-March 1918.
MUN 5/385/1650/2 *	Photos of Leven's Projector and Knapsack Sprayer.
MUN 5/385/1650/4 *	History of TWSD chemical supply from April 1915 to July 1917.
MUN 5/385/1650/5 *	History of firework production to July 1916.
MUN 5/385/1650/6 *	History of flame projectors: June 1915-March 1918.
MUN 5/385/1650/7 *	Memo on the history of Ethyl Iodoacetate 1914-February 1918.
MUN 5/385/1650/8 *	Organisation for chemical wartime research: December 1914-November 1918.
MUN 5/385/1650/9 *	Offensive chemical research to date of formation of Chemical Advisory Committee in February 1916.
MUN 5/385/1650/10 *	Chemical supplies for offensive purposes from April 1915-April 1918.
MUN 5/386/1650/11	Nottingham Anti-gas factories.
MUN 5/386/1650/16 *	History of chemical supplies during the Great War.
MUN 5/387/1670/1 *	Work of TWSD Section 4 on construction of filling stations, stores etc: January 1918-August 1918.
MUN 5/387/1670/2 *	Work of TWSD Section 10 on filling stations June 1917.

* denotes file read