

The Portsmouth Water Company

# WAR AND WATER

A Record of Events prior to and during  
the European War of 1939 – 1945

26 & 28 Commercial Road,  
Portsmouth  
1945

Original text from a Portsmouth Water Company publication titled "War and Water" published 1945  
and illustrated with photos and associated material from our archives



## Foreword by Bob Taylor

As we commemorate the 75th anniversary of the D-Day landings, the interest in the history of the Second World War (or the European War as described at the time) and the sacrifices and achievements made by so many of our people at that time has never been stronger. When we looked back through our own archives recently we came across a somewhat unusual publication entitled “War and Water” produced in 1945.

The publication details events involving Portsmouth Water in the years leading up to and during the Second World War including the preparations for “D-Day” and how we planned to ensure that water supply would be plentiful for the massing troops preparing to invade France.

It describes how preparations were being made nearly 5 years before the outbreak of war to ensure that the strategically important city of Portsmouth was able to deal with the aftermath of the intensive air raid attacks and prepare for possible enemy invasion.

Just reading the publication fills you with a sense of the enormity of gratitude we owe to so many people. Whilst most publications quite rightly deal with the actions and sacrifices of those in active military service, this publication reminds us of the great efforts made by those who stayed at home; from a Portsmouth Water perspective it illustrates how our employees put their lives in danger by ensuring water was supplied throughout the conflict often whilst bombs were still falling.

We have deliberately chosen not to change any of the original wording but just to add photographs from our library to support the text.

I hope you will find this chronicle of second world war events through the eyes of Portsmouth Water of interest. If nothing else the document serves as a reminder of the scale of sacrifice by so many people which enables us to peacefully enjoy the city of Portsmouth today.

I would like to take this opportunity to thank my colleague Ian Limb for his hard work in pulling this document together. Thank you, Ian.

**Bob Taylor, CEO, Portsmouth Water**  
2019



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Top right: *Farlington Filtration Works.*  
Middle left: *Bedhampton Works.*  
Bottom right: *Commercial Road Head Office.*  
Inset: *PWC works vehicles.*

# THE PORTSMOUTH WATER COMPANY

## **Directors:**

SIR HAROLD PINK, J.P. (Chairman)  
A MEARNs FRASER M.D. (Edin), D.P.H.(Camb), (Deputy Chairman)  
REGINALD LAPTHORNE BLAKE, F.S.I.  
PHILIP HUGH CHILDS, J.P.  
LEONARD FOSTER GLANVILLE  
REGINALD P. PAGE, F.I.C.

## **Engineer:**

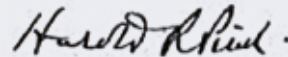
D HALTON THOMSON, O.B.E., M.Inst.C.E., M.Inst.W.E.

## **Secretary:**

HERBERT OWENS STAFFORD COOKE, F.C.I.S

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Now that the need for secrecy no longer exists in connection with the activities and experiences of the Portsmouth Water Company in the period leading up to and during hostilities, the Directors believe that a description of these operations and the various measures taken for the maintenance of the public water supply under emergency conditions, will be of general interest to the public. They are therefore issuing in the following pages a summary of the reports of the Company's Engineer (Mr. D. Halton Thomson O.B.E., M.Inst.C.E., M.Inst.W.E.), made from time to time during the period.



*Chairman*



Top: Total devastation caused by indiscriminate bombing. Above: Winston Churchill (Prime Minister at the time) visiting Portsmouth after one of the 67 German air raids the city endured. Left: Families emerging from the cities air raid shelters after the "all clear" signal.

# THE PORTSMOUTH WATER COMPANY

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## WAR and WATER

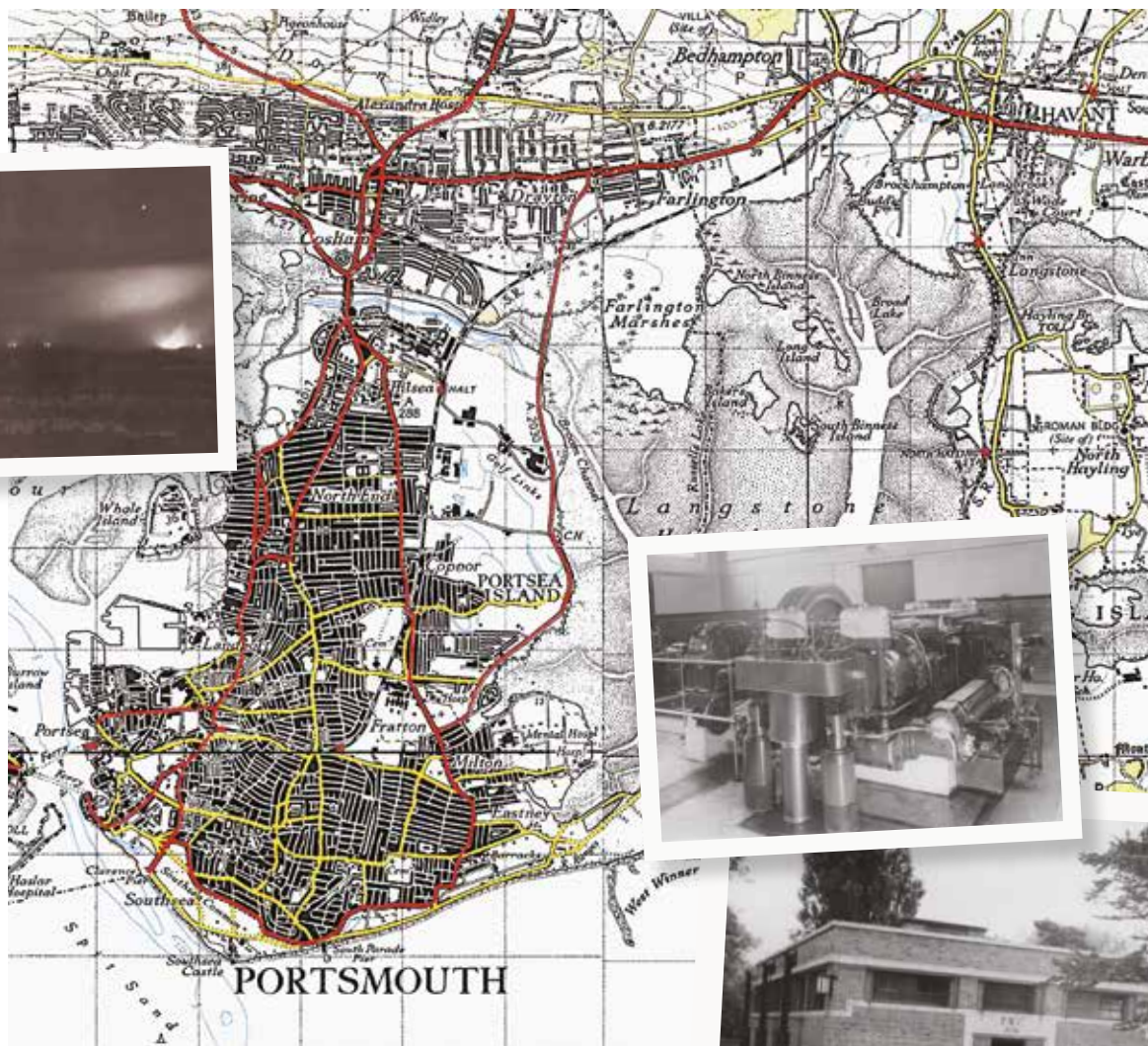
### A Record of Events prior to and during the European War of 1939 – 1945

**Brief description of Undertaking.** The Company supplies the City of Portsmouth on the coast and a large inland area – about 74sq. miles in all. Most of the City, including H.M. Dockyard and other important Service establishments, are situated on Portsea Island, which is separated from the mainland by Hilsea Creek. The sources of supply are Chalk Springs at Havant and Bedhampton on the mainland, about six miles north-east from the centre of the City. From these the supply is pumped to the Farlington Filtration Works and Main Reservoirs on Portsdown in the northern outskirts of the City, from which about 90% is afforded by gravitation, the remainder being re-pumped at Farlington for the outlying High Level Districts. The pre-War population was about 300,000 and the average daily supply 12 million gallons.

The first inkling of the need for war precautions was given locally at a confidential conference convened by the then Lord Mayor of Portsmouth (Sir Harold R Pink) on 3rd July 1934, about a year before public warnings first appeared and more than five years before war eventually broke out. This was attended by the principal executive officials of the Portsmouth Corporation and HM Dockyard, together with those of the local public utilities, when Home Office representatives made a preliminary statement as to the need for precautions (then known as “Passive Air Defence”) to meet possible future contingencies, in particular air attacks by high-explosive, incendiary and gas bombs. As a consequence of this and subsequent conferences the Directors authorised various works to be carried out for the protection of the public water supply, all of which were completed, or nearly so, during the pre-war period.

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Map © The Francis Frith Collection

Main: Map of Portsmouth circa 1945. Inset Top: View from Portsdown Hill during a "blitz" raid. Inset right: Bedhampton No. 2 Pumping Station Built in 1939 strengthened to withstand war-time risks.



**Pre-War Preparations.** The largest single item was a 36in gravitation main about 2½ miles long, from the Farlington Mains Reservoirs to Hilsea. Prior to the laying of this main the whole of the supply from these reservoirs to Portsea Island was afforded by six trunk mains laid side by side along the Havant Road and High Street, Cosham, crossing Hilsea Creek at, or close to, Portsbridge.

It was evident that these mains constituted the weakest link in the chain of supply, because a single bomb at any point along this route (about two miles) might completely cut off the supply to the main part of the City and HM Dockyard for a long period. For this reason an entirely different route via Drayton Marshes was chosen, crossing Hilsea Creek well away from any bridges, which were themselves likely targets. The main included a difficult crossing at the Creek, involving some unusual engineering methods, which were described by Mr RW Hall, the Company's Assistant Engineer, in a Paper published (anonymously for security reasons then in force) in the *Transactions of the Institution of Water Engineers*, Vol. XLVII (1942). As part of the scheme, additional connections were provided at the Farlington end to give an alternative exit from the Reservoirs should the original outlet be damaged. The capacity of the new main was made sufficient to maintain the full normal supply to Portsea Island and it proved of great value during the "blitz" period in affording the extra water then required.

Next in importance was the erection of an additional (third) main pumping station, known as "Bedhampton No. 2". Prior to the war the whole of the supply from the Havant and Bedhampton Springs was afforded by two main Stations, the newer one at Havant, which normally works throughout the 24 hours and the older Bedhampton No. 1 Station which acts as "standby". The machinery at the older Station, however, some of which is more than 50 years old and had done heavy duty during the war of 1914-18, was regarded as unreliable for prolonged service if the more modern Station were seriously damaged. The new Station was therefore designed to be of sufficient capacity to afford a full alternative supply. The building is heavily constructed to withstand war-time risks and contains three pumping units with a total capacity of 18 million gallons per 24 hours, power being supplied by three 270hp oil engines. The important advantage of this type of plant is that, unlike steam engines, it can be started up at very short notice.

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The new Station proved its value in helping to keep water in the main reservoirs after the more severe air raids, when but for its availability, these reservoirs would probably have been completely emptied. A description of the Station was published in a technical journal, *The Oil Engine*, dated June 1945.

Another precaution was the erection of a small emergency pumping station at Farlington to supplement the existing Station for the maintenance of the supply to the High Level Districts. This Station was equipped with two petrol-driven pumping units, by which an emergency supply was maintained to the outlying areas when electricity at the main Station failed for three days after the heavy raid of January 1941.

As a general precaution, cross-connecting mains with a total length of about 3,300 yards were laid on Portsea Island, together with a large number of supplementary cross-connections on both the pumping and distribution systems, by means of which water could be diverted round damaged localities. Provision was also made for mutual assistance between the Company and the neighbouring water authorities, namely, an agreement with Chichester Rural District Council for two emergency inter-connections at Emsworth and similarly, agreement with Fareham Urban District Council for an inter-connection at Portchester. In addition, extensive protective works were carried out at all of the pumping stations and works; also at the Head Offices and adjoining Portsmouth Yard, including air-raid shelters for the Company's employees, where required.

During the pre-war period and the early months of the war the Company's employees, in co-operation with the Portsmouth City Police, received training in anti-gas measures and methods of dealing with incendiary bombs; they also took part in local civil defence exercises. The Portsmouth Yard was organised as a Report Centre with a stand-by gang always available and in communication by telephone with the Company's principal works and 'turncocks' houses and with the Civil Defence and Fire Service Main Controls.

The greater part of the engineering staff was exempted from military service under the "Schedule of Reserved Occupations", having regard to the importance of their civil duties, although many of the younger men either volunteered or were called up for active service at a later date. Shortly after the outbreak of war (September 3rd 1939) the Company's Works were declared "Protected Places", those at Havant and Bedhampton and Farlington being placed under military guard, primarily against possible sabotage.

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of £300 approximately, subject to an amount  
cent. Government grant being forthcoming, and  
this was approved.

#### Fire Guards and Fire Prevention.

Reported the inspection of the  
Company's arrangements in this matter by a  
representative of the Ministry of Health,  
Southern Region, on the 12th instant, who  
appeared to be satisfied therewith; but  
that final approval had not yet been  
received.

#### Anti-Gas Course.

Reported letter in this matter,  
dated 24th October last, from the Southern  
Regional Commissioners, but, after discussion,  
It was Resolved that no action be taken.

#### Emergency Head Offices.

It was recommended that, if possible,  
arrangements should be made with the  
Portsmouth & Gosport Gas Company  
emergency accommodation in the  
Head Office, in the event of  
Company's premises being severely  
affected by enemy action and it



Above: Minutes of Board meeting in November 1941, outlining action taken during the war including Fire Guards and Fire Prevention and Anti-gas courses. Right: School children of local residents being shown how to put on their gas masks in case of a gas attack.



Left: German Aerial Reconnaissance photo on August 4 1940 showing Dockyard and targets. Right and below left: The aftermath of a raid on August 12 1940 showing damage to buildings and water supplies. Bottom right: Old Portsmouth Pipe Store.



**Air-Raid Damage.** The first bomb fell in Portsmouth on July 11th 1940 and the first water-supply incident (broken mains) occurred on the following August 12th. The early raids took place in the daytime, but towards the end of the year and subsequently they occurred either at dusk or during the night hours. The period of intense enemy activity was confined to the first four months of 1941, when most of the extensive damage was experienced.

In their general effect on the water supply, by far the most serious of the raids occurred on January 10th-11th 1941 when 63 mains were broken in Southern Portsmouth. During the period prior to this raid the average daily supply was about 13 million gallons, the maximum quantity ever previously supplied in any one day being 15 million gallons; but owing to the extensive loss of water through broken mains and service pipes and to the heavy demand by the Fire Service, the quantity supplied during each of the two following days rose to above 23 million gallons. On and after the third day the demand gradually fell off as broken mains and services were dealt with.

For a time the supply was actually in excess of the yield of the springs normally in use, the extra water being provided partly out of the Farlington Reservoirs, which were more than half emptied and partly by bringing into temporary use for the first time the Havant Mill Springs for which collecting conduits had previously been laid.

A fortunate aspect of an otherwise grave situation was that owing to the previous wet autumn the yield of the Havant and Bedhampton Springs was much above the average, so that all available pumping plant could be utilised. If the crisis had occurred during the autumn or during the dry winters of subsequent war years, the yield would have been comparatively low and much of the extra water required would not have been available to pump.

During the critical period the capacity of the Farlington Filtration Works was exceeded and they became a “bottleneck” on the system. To meet this situation, by-pass valves were opened through which a large proportion of the water was pumped directly from Havant into the City without filtration and without passing through the reservoirs and as a safeguard the normal chlorine dose to the supply was temporarily increased by 50%.

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*..most serious of the raids occurred on January 10th-11th 1941 when 63 mains were broken in Southern Portsmouth.*

Owing to the large number of important mains having been damaged, considerable areas in the City were temporarily without a piped water supply, namely, Portsea, Old Portsmouth and the greater part of Southsea, but the supply was gradually restored during the five following days. In these localities emergency supplies were afforded by means of water carts, some of these being provided by the military authorities, or where sufficient pressure was available, by means of stand pipes on the hydrants.

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...a narrow escape from serious trouble, when two large delayed-action bombs fell into the ground between two of the trunk water mains ... both bombs were subsequently removed by the military authorities without an explosion.

The numerous emergency cross-connections proved most useful in maintaining supplies to many localities, without which the interruption would have been still more serious. The most striking case occurred in connection with HM Dockyard. Prior to the war the whole of this important supply entered through one main and as precaution two additional widely spaced points of entry had been provided. On this particular night, two of these means of supply were put out of action, but the full Dockyard demand was met through the third connection.

Consequent upon serious damage at the Corporation Generating Station, Old Portsmouth, early in the raid, the electricity supply failed, so that no current was available for about three days at the Company's re-pumping stations at Portsbridge, Farlington, Cowplain and Anthill Common. The water supply, however, was maintained during this period by stand-by plant. On this night also most of the neighbouring buildings to the north of the Head Offices and Portsmouth Yard were destroyed by fire and showers of sparks drifted over the buildings for several hours, but fortunately without harm.

Early in March there was a narrow escape from serious trouble, when two large delayed-action bombs fell close to Portsbridge. One of these entered deep into the ground between two of the trunk water mains (20in and 24in) which were only four feet apart, but without doing damage to either of them. All traffic was diverted for several days along the neighbouring emergency causeway across the Creek and both bombs were subsequently removed by the military authorities without an explosion.

During two successive intensive raids on March 9th-10th and 10th-11th the water supply was much less affected than in the previous January, although approximately the same number of mains were broken, namely 58. The reason was that nearly all were of small size, so that only limited areas were temporarily without water. On the following day the demand rose to about 19 million gallons but was practically normal after three days.

*Rescue workers among the rubble in Chelsea Road, Southsea in August 1940. Inset below left: Incendiary bombs meant demand for water was always high. Inset below right: Mobile water tankers were often used while mains were being repaired.*



On the second night a cluster of about a dozen incendiary bombs fell on the Head Offices and Portsmouth Yard, all but one of which were promptly smothered by the Company's fire guard. The odd one, which penetrated through the roof into the main Block, was at first unnoticed, and but for the attention called to it by the "Southdown" fire guard opposite, the Head Offices would have been severely damaged and possibly destroyed.

Two sharp raids occurred on April 17th-18th and 27th-28th, neither of which, however, were of the intensity previously experienced. On the latter occasion a large land mine near the Head Offices and Portsmouth Yard caused considerable damage by "blast". None, however, was structural and all the buildings remained in use after temporary repairs.

These frequent air raids with their widespread damage brought about an extensive evacuation, partly voluntarily and partly organised, of the population on Portsea Island. Although large numbers migrated to other parts of the country, probably the greater proportion moved their residences to the Company's outlying area of supply on the mainland or went there nightly for greater safety. The effect of the supply was a greatly increased demand for water in the High Level Districts, which is pumped in two lifts and in some parts, in three lifts. This increase amounted on an average to 50% above the pre-war supply to these Districts and remained at this high rate for the remainder of the war. It was possible to meet this unexpected extra demand without restrictions.

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...the greater proportion of people moved to the Company's outlying area of supply on the mainland or went there nightly for greater safety - despite this increasing demand to 50% above the pre-war supply to these Districts, this extra unexpected demand was met without restrictions.

During the remainder of the war, raids occurred only spasmodically and on a small scale. The only incident that might have had serious consequences took place in the evening of August 20th 1942, when four bombs were dropped on and near the Havant and Bedhampton Works and the principal (36in) pumping main was broken in two places, putting the main Havant Pumping Station temporarily out of use. By the operation of valves it was possible to divert the supply through other mains, so that pumping at this Station recommenced within about an hour, supplemented by Bedhampton Station No. 2. The main was repaired and put back into use after about five days. One of these bombs also wrecked the Works Superintendent's house, but without loss of life or serious injury.



Inset right: *Prince's Theatre, Lake Road* took a direct hit but with only a few casualties. Inset below left: *Extensive damage* meant lots of buildings had to be eventually demolished. Below right: *Minutes of a Board meeting in August 1942*, after bombs damaged *Bedhampton Works* noting the swift repairs.



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to pay the amount, which  
reasonable. After discussion  
to authorise the payments  
named, subject to the  
being approved.

Air Raid Damage, Bedhampton Works.

With reference to the Board Minutes of the last Meeting as to air raid damage to the 36-inch pumping main, reported that essential repairs had been completed within five days of the damage, and that normal pumping through the main had been forthwith resumed.



Above right: *Filling emergency static water tanks from mobile tanker. Above left and bottom: Devastation in Conway Street, Landport after huge explosion tore through several streets. Left: Major damage to the mains in roadway between the post office and the railway station.*



The last occasion on which mains were broken was on May 15th 1944. The few flying bombs that fell in the Portsmouth District during the summer of 1944 did no damage to Company's property.

The following is a summary of the number of mains broken (212) during the period of hostilities, mainly in Central and Southern Portsmouth:-

Period	Small 3in to 8in	Medium & Large 9in to 36in	Total
August 1940 to March 1941	149	17	166
Year ended March 1942	25	4	29
Year ended March 1943	1	2	3
Year ended March 1944	3	-	3
April and May 1944	10	1	11
<b>Total</b>	<b>188</b>	<b>24</b>	<b>212</b>

Out of a total of 67 raids in the Portsmouth District, one or more mains were broken on 39 occasions and altogether 9,730 supplies were subsequently cut off owing to the destruction of, or serious damage to, houses and other buildings. The Pumping Stations, Filter Beds and Reservoirs received only slight damage, although a few bombs were dropped in or near the principal Works at Havant, Bedhampton and Farlington.

Throughout all the critical periods close touch was maintained with the Portsmouth Medical Officer of Health (Dr AB Williamson), who arranged for many water samples to be taken and tested. Altogether about 170 samples were examined. In any doubtful case the repaired mains were sterilised before being put back into supply and public warnings were given through the Press and by police broadcasting vans. There is no evidence of any illness having been caused through the contamination of the supply, although signs of local pollution were found in several cases.



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Owing to the widespread damage to water mains and the risk of sewage and other contamination in bomb craters, the Portsmouth Medical Officer and Naval Health Officer, Portsmouth Command, urgently requested that further precautions should be taken to minimise this danger. After consultation with the late Dr EV Suckling of the Counties Public Health Laboratories, London, the Board authorised on his recommendation the installation of an additional treatment of the supply known as “chloramination”.

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...‘chloramination’ consists of the introduction of both chlorine and ammonia into the distribution system. It came into operation on June 12th 1941 and proved wholly successful.

This consists of the introduction of both chlorine and ammonia into the distribution system, so that both these gases (in minute quantities) are continuously circulating through the mains. The chlorine acts as the bactericide and the function of the ammonia is to “fix” the chlorine in the water, so that it remains in an active condition for long periods. As a supplement to the then existing simple chlorination at the main Pumping Stations, the new treatment was installed at the Farlington Works. It came into operation on June 12th 1941 and proved wholly successful.

In compliance with the Fire Guard Orders, the Company’s employees took their share in the local precautions. The roster of fire-guards (as a supplement to the stand-by gangs, who had hitherto acted in this capacity) commenced their duties on February 17th 1941 and later received the requisite training. Owing to the shortage of manpower, difficulties arose having regard to the simultaneous need for both fire-guards and stand-by gangs, but these were in due course smoothed out.

**Invasion Precautions.** After the fall of France in the summer of 1940, it became evident that the risk of invasion had to be taken seriously and numerous consultations took place with the military and civil authorities, including the Regional Commissioner.

It was anticipated that the enemy might land troops both by sea and air in the surrounding districts, so that from the water supply standpoint the most serious contingency was an attack on and the possible enemy occupation of the main sources of supply at Havant and Bedhampton. As a preliminary step the Garrison Commander prepared local defences, namely concrete strong-points and barbed wire entanglements and reinforced the existing military guard. The Company’s stock of large pipes was also drawn upon to provide temporary road-blocks.

If the normal sources of supply became unavailable, it was apparent that reliance would have to be placed on the meagre water resources within the City. To this end the “Local Wells Scheme” was prepared. A survey was made of the local wells and borings on private premises in Portsea Island and elsewhere and in co-operation with the Portsmouth Medical Officer and the Public Analyst numerous bacteriological and other tests were carried out. Altogether 47 sources in the City were examined, many of which proved to be of doubtful quality and small in quantity. Ultimately it was decided to make available 21 of them, and in every case the owners gave willing consent and co-operation.

At the four largest of them – namely Messrs Brickwoods Brewery, Portsea, the Portsmouth and Brighton United Brewery, King Street, Southsea, Long’s Old Brewery, Southsea and the Portsea Island Co-operative Society’s Dairy, Copnor – connections were made to the Company’s mains, so that water could be supplied to parts of the City by means of standpipes on hydrants. At other sources pumping plant and storage tanks were installed, from which water could be carted to static drinking water tanks erected in areas where hydrant supplies would not be available. It was estimated that, in extremity, a daily ration of about two gallons per head could be provided.

In all cases of polluted sources chlorine-dosing tanks were installed and the Company’s staff were instructed as to their use. Also in conjunction with the Portsmouth Medical Officer, pamphlets were prepared for issue to householders, giving instructions how to purify water of doubtful quality.

In the outside districts surveys of private wells were made by the local authorities and drinking water tanks erected by the Company where required. At Horndean, arrangements were made to pump from the well at Messrs George Gale’s Brewery to Cowplain Reservoir.

The Local Wells Scheme is described in more detail by Mr AN Burgess, the Company’s Engineering Assistant, in a Paper published in the Transactions of the Institution of Water Engineers Vol. XLIX (1944).

Another possibility was that, if the enemy forced an entry into the Main Works at Havant and Bedhampton, they would wreck the Main Pumping Station before being eventually turned out. They could not, however, prevent the springs from yielding water. To meet this contingency the “Bedhampton Emergency Pumping Scheme” was evolved.

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...in conjunction with the Portsmouth Medical Officer, pamphlets were prepared for issue to householders, giving instructions how to purify water of doubtful quality.”

Four semi-portable oil-driven pumping units, each with a daily capacity of 2 million gallons, were acquired and stored at separate distant points and at the Bedhampton Works concrete foundations and connections were prepared for rapid installation in emergency. In addition, arrangements were made with the National Fire Service for the supply of up to six heavy-duty fire engines, each with a daily capacity of about 1 million gallons, together with necessary manpower. For their use, twenty four fire hose connections were made to the principal pumping main, all of which were hidden underground, but could be quickly uncovered when required. Some exercises were carried out, which showed that the scheme was fully practicable.

The emergency, if it had arisen, would have been prolonged and the proposed programme was that the Company's semi-portable plant would take the continuous duty and that the fire engines would be available at all times, except when called elsewhere for fire-fighting.

At the Farlington Filter Beds and Main Reservoirs extensive engineering precautions were not required, because in the last resort, these works could be by-passed by means of existing mains, through which water could be pumped direct from Havant and Bedhampton to the City.

A Home Guard platoon was formed from the Havant employees, on the understanding that they would be utilised primarily for the defence of the Main Pumping Stations. Exemption from such duties was obtained for the Portsmouth employees having regard to their essential civilian duties as repair gangs etc, and in providing manpower for the Local Wells Scheme, but to give them authority in case of need about 70 men were sworn in as Special Constables. Emergency rations were also obtained for feeding Company's employees engaged on urgent work or in other special circumstances.

As the area of the "Portsmouth Fortress", formed for the defence of the district, extended into those of the neighbouring local government and water authorities, the Company's Engineer was appointed as Co-Ordinating Officer and an agreed scheme was drawn up for mutual assistance between the four local water authorities – namely, Portsmouth Water Company, the Gosport Waterworks Company, the Fareham Urban District Council and the Havant and Waterloo Urban District Council. Arrangements were also made with water authorities at greater distances for the mutual supply of emergency labour and materials.

... A Home Guard platoon was formed from the Havant employees, on the understanding that they would be utilised primarily for the defence of the Main Pumping Stations.



Left: A Home Guard Platoon was formed made up of Company employees primarily for the defence of the Main Pumping Station. Below: Men were also sworn in as Special Constables to help out in the emergency. Below right: The risk of invasion was ever present.



In addition meetings were called of the private well owners, the local Civil Defence officials and the principal water consumers, when the Company's emergency water scheme was explained and discussed.

In the course of time the risk of invasion passed, although until nearly the end the chance remained that damage might be done by enemy parachute troops.

**Invasion of France.** As the risk of invasion "inwards" receded, so the preparations for invasion "outwards" gradually developed. It was fully expected that "D-Day" for the invasion of France, when it came, would provoke a violent enemy reaction. Most of the precautions taken to meet the air-raid contingencies were therefore kept in being and the Company's employees took part in local exercises organised by the Garrison Commander, primarily to ensure uninterrupted troop movements. A large number of military transit camps were set up in the woods and copses in the outlying districts for which temporary water supplies were installed; numerous roadside water points were also provided.

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The Service authorities estimated that during the critical period extra water would be required ranging up to nearly 1 million gallons per day and an assurance was required that this quantity would be available. The situation was one of some anxiety, because owing to the exceptionally low winter rainfall of 1943-44 the prospects were that during the following summer the yield of the springs would be much below normal and would approach the low yield experienced during the great drought of 1933-34, which was the worst drought for nearly a century in this part of the Country. Moreover, the consumption of water in the district was much above normal, partly on account of the high demand of HM Dockyard and other Service establishments and partly on account of the high demand from the lack of labour to repair defective pipes and fittings. The reserve surplus yield of the springs to meet any extra demand was therefore much less than in normal years.

The conditions were rendered still more uncertain because for security reasons the actual date of "D-Day" was strictly secret and moreover no information could be given as to how long the critical period would last, once it had commenced.



From the water-supply standpoint the reserve surplus would be adequate during the early months of the year, but this quantity would diminish steadily throughout the following summer and autumn; the critical date was therefore of prime importance. In this connection the Company's long records of local hydrological information (yield of springs and well levels) proved invaluable and it was ultimately possible to report that the required extra quantities would be available, provided that no undue amount was lost owing to damage by enemy action. To ease the position, the Service authorities issued strict orders for water economy and arrangements were made to restrict temporarily the civil consumption, if necessary, during the critical period. Also, on the anticipated approach of "D-Day", meetings were again called of local officials and the principal water consumers, at which the reasons for a possible need for these restrictions were given.

Notwithstanding these apprehensions, however, when "D-Day" (June 6th 1944) eventually arrived the anticipated extra demand for water proved much smaller than was forecast and much to the general astonishment enemy air raids were completely absent, apart from a few flying bombs.

**Final Stages.** The last flying bomb fell in Portsmouth on July 15th 1944 and after the campaign in Normandy had proved to be successful, war precautions began to be relaxed. On September 12th the Havant fire-guard and stand-by gangs ceased duty and on October 9th the military guard was withdrawn. The Portsmouth fire-guard and stand-by gangs mustered for the last time on November 2nd and on December 3rd the Home Guard were "stood down". The unconditional surrender of Germany followed on May 9th 1945 – to be known in history as "VE Day".

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...On September 12th the Havant fire-guard and stand-by gangs ceased duty and on October 9th the military guard was withdrawn.

**War Expenditure.** The total expenditure on war precautions was £113,467, of which £32,379 (30%) was charged to Capital, £48,893 (43%) to Revenue and £30,195 (27%) was received in the form of Government Grants. This last figure includes £10,000 contributed by the Admiralty towards the cost of the 36in gravitation main, the remainder of the Grants being obtained through the Ministry of Health.

**War Damage Claims.** The Company has entered claims through the Ministry of Health for Government compensation in respect of war damage, etc amounting to £17,772 (subject to final revision). These claims are not payable under the general War Damage Acts, but under special legislation in respect of public utilities, which has been foreshadowed but not yet enacted.

*...two men lost their lives owing to the explosion of a delayed action bomb, and one more was obliged to leave on account of mental trouble...*

**Personnel, etc.** In conclusion, the work of the Company's engineering staff and workmen during the many exceptional emergencies must be wholeheartedly commended. They carried out their duties with readiness and interest, although often at considerable personal risk. This applies especially to the turncocks, who in effect were the air-raid wardens of the water services and whose duties in conserving water often required them to carry on alone in the open whilst bombs were still falling. Two men lost their lives owing to the explosion of a delayed action bomb, and one more was obliged to leave on account of mental trouble; it is fortunate that the casualties were not more severe. In particular, it is desired to record the special services of the Company's Assistant Engineer, MR RW Hall, whose initiative was of the utmost value and on whom fell the main responsibility for the details of the various emergency schemes.

Throughout the war period close co-operation and the best of relations were maintained with the chief Civil Defence Officers of the Portsmouth Corporation and those of the neighbouring local authorities and of the Fighting Services. The practical advice and help received from the engineering officers of the Ministry of Health, Southern Region and from the Regional Commissioner and his staff must also be acknowledged. The Engineer is also grateful for the unswerving support he received from the Board of Directors, notwithstanding the many unprecedented proposals it was his duty to put forward. In short, the emergency produced an example of long sustained "combined operations" worthy of a great and common cause.

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*Above: Homes and businesses destroyed by high explosive bombs. Right: Emergency services were ever present - whatever the situation.*



# WAR and WATER

It was on 3rd July 1934, 5 years before the start of World War 2, that a confidential conference was convened by the Lord Mayor of Portsmouth talking about the need for war precautions. As a result much preparation was completed by Portsmouth Water to ensure that in case of any conflict the public water supply was protected.

This publication details events involving Portsmouth Water in the years leading up to and during the Second World War including the preparations for “D-Day” and how we planned to ensure that water supply would be plentiful for the massing troops getting ready to invade France.

It describes how preparations, nearly 5 years before the outbreak of war, were being made to ensure we had contingency plans so water could be supplied through the city in case of air raid attacks and possible enemy invasion.