

DOGDYKE PUMPING STATION PRESERVATION TRUST

The following document contains the text for a 7 part booklet which was available to visitors in 1977 and initially describes the history and purpose of the site, additional parts contain further information about the various elements associated with the site.

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DOGDYKE PUMPING STATION PRESERVATION TRUST

PRESS HANDOUT 1

History and Purpose:

Drainage of Fens and Marshes liable to flooding was begun by the Romans, with the statutory principles of "avoiding danger or deriving benefit" introduced by Henry VIII, and later developed mainly by C17 Dutch Engineers. The beginnings of Dogdyke as a land drainage station came with the Inclosure Act which made awards within the Parish of Tatershall in 1796. A previous Act of 1762 had started drainage of the lowland area between the Rivers Bain and Witham, but the imbanking of the River Witham and its improvement for Navigation was not sufficient and in 1796 an "Engine" was erected. This was a wind engine with a 16 foot scoopwheel, and consisted of a sail 36 feet in length and carried a cloth 5 foot 3 inches wide.

The engine was replaced in 1855 by the steam drive engine you see today, and from 2000 to 3000 acres of land were being drained by it at an annual cost of £123! The coal was brought by barge along the Witham and local pubs were scoured for casual help to off-load it with either barrows or in skeps on a very springing plank! The average year's consumption was in the region of 150 tons, quite a few barrowloads!

Up until 1941 the boiler house had a brick chimney, which stood on a square base and tapered in the round to 100ft; a few of the original bricks can still be seen near the site. In 1922 it was struck by lightning, which also killed 3 horses and 2 cows on nearby farms. As a result in the repair, it was shortened and strapped with iron bands and given a lightning conductor. Unfortunately for conservation, in 1941 the chimney was demolished by a team of steeplejacks from Leeds because of its danger as a landmark for enemy aircraft.

The steam engine lay redundant from 1940 when a Ruston diesel engine with Gwynnes pump was installed adjacent; it too, is shortly to be made redundant as the Witham Third I.D.B. has plans to build and electrically operated pumping station further downstream. This we will have not only a unique beam engine in steam, but a site with four successive types of power for land drainage.

By 1969/70 the steam station had become so derelict the engine was deteriorating; also it was under threat of demolition by the Ministry of Defence as being in their Noise Area, and so £50 was quickly spent by our Chairman and Secretary, Messrs. Burton and Porter, who made the building secure again to protect the contents from the elements and trespass. A W.E.A. class under Dr. M.J.T. Lewis of Hull University, together with the Industrial Archaeology Group of the Local History Society, came many times to record the engine and, under most inclement conditions, painstakingly measured every part and prepared an excellent "reverse" blueprint. In November 1973 the Preservation Trust was formed.

A Local History Supplement is available, please ask for paper 1(a).

DOGDYKE PUMPING STATION PRESERVATION TRUST

PRESS HANDOUT 1(a)

Local History Supplement:

Dogdyke Pumping Station is unique in that artificial "engine" (See copy Inclosure Award on display), replaced in 1855 by the steam engine and scoop wheel, then supplanted in 1940 with the diesel pump, itself soon to be emulated by twin automatic electric pumps, unfortunately for conservation continuity to be sited a quarter of a mile away, outside the aircraft noise hazard area. Thus, a succession of four kinds of power for the same purpose, all but the last on the same site.

The 1909 Foster Horizontal Boiler cost £187.16.9d, included in total expenses for the year of £336.9.9d, installation £17.11.0d, by W. Jackson. Floated down the river under the supervision of Harry Bell, father of Billy Bell more recent ex-mayor of the City of Lincoln.

Brick Chimney had a square base to about 15' height (see the four large stones now forming the plinth of the panoramic viewing platform) then upwards round taper ropped with the grooved stone coping (parts to be seen). Struck by lightning August 5th 1922 when 3 horses and 2 cows also killed locally: repaired, straightened and strapped with iron bands. (See also the painting by W.B. Thomas) Coals came by barge, of course, and would be wheeled off in barrows or carried in "skeps" (basket skips) over springy planks: "go with the bounce, boy". The steam engine having worked continuously as required from 1855 to 1940, when it must have been fairly well "put to bed". In 1941, following the bombing by a lone enemy raider one Sunday lunchtime of what is known as Chapel Hill Pumping Station (actually in the Parish of Dogdyke) about a mile away, killing five members of the Richardson family, other redundant brick chimneys were taken down for security reasons, and this one was cleverly felled like a tree by some Leeds steeplejacks neatly within the only small (7°) sector available without falling either on the building or in the drain.

Vertical Boiler was transported ready loaded free on Mr. Van Smirren's personal boat trailer, by kindness of Mr. Clifford Harness, later towed up on to the bank by courtesy of Mr. Graham Means, and finally put into position by generosity of Roger Windlet Ltd telescopic crane crew. The wooden footbridge by an almost buried brick arch may require some explanation: until 1963 when the River Witham was widened to accommodate water from above Lincoln, and the bank set back about 40', there was a watercourse under the footbridge leading through the brick arch, called the gravitational outfall, and which entered the River Bain mouth by means of a sluice. Should the relative levels be favourable it was sometimes possible to run off a small amount from Mill Drain into the river, so as to save the trouble of raising steam for pumping.

Extracts from entries in the account book for year ended 6th April 1876

171 tons 6 cwts coal for £169.18.3

1875 Nov 15 Men Cradging the Old Bain Bank on Sunday and some of the night.

Swinton 6/0 and is boy for fetching men 1/6 7s6d. 2 Youths 5/0 George Appleyard

6/0 John Newton 6/0 Mr. Eley's 2 men 6/6 Will Smith 6/0 John Burt 6/0 Will Almond 6/0 George Lamyman 3/6 Tho^S Taylor 3/6 Edward Cook 5/0 Mr. Beecham Bread Cheese and Ale 1.0.0 Do John Hetch and others. Coal account 6.0.

For cradging and watching the Old Lock Bank and the same flood John Mastin 2 days and 2 night 12.0. George Mastin do. So. 12.0 Tho^S Newton 2 days 2 nights 12.0 Samuel Tyler part of Sunday 2.0. George Obson Sunday 4.0.

Dec. 20. Rich^d Palmer Boating 23t. 7cwt Coals. 3 trucks and came at twice.

Extracts from entries in the account book for year ended 6th day of April 1877:

Show that a total of 190 tons of coal was purchased at prices barying from 16s o 19s per ton. Plus £1.17.6d. payable from Witham Dues from Dogdyke. Dues to whom?

John Mastin and Men working and watching the Old Lock Bank per Bill £4.4.0.

Dec. 14 1876 Rich'd Palmer 9 nights one day helping Engine £1.10.0

There follows a number of payments for night work, and for refreshment.....

For the year ended 6th April 1878, 55 tons of coal appears to have been sufficient.

Dec 28 1877 Paid for raising the Old Bain Bank, Richard Newton and others 10 chain 60 links at 12/0 per chain £6.7.6. John Coney, Will Burt,? Fant, also with various lengths.

J. Butter for Measuring and Labour £1.0.0,

Planks and barrows etc fetching and taking back some to Brickyard many to Billingham Engine Rich^d Newton and Men 8 days £1.12.0.

Annual account and rate statement signed by Chairman Jas Martin

12lb tallow (best Russian) 5.6d.

DOGDYKE PUMPING STATION PRESERVATION TRUST

PRESS HANDOUT 2

Witham Third District Internal Drainage Board:

This Pumping Station Site is the property of the Third District Internal Drainage Board, to whom we are indebted for permission to preserve and restore the Beam Engine and Scoop Wheel, for facilities afforded, and also for various matters of encouragement, co-operation and assistance, especially the demonstration of the diesel engine. The Chairman of the Board is Alderman J. Smithson of Kirkstead and the Clerk of the Board is N.J. Carter Esq., whose office is a 2 Lindum Road, Lincoln.

The rateable area of the Board is some 30,000 acres with a rateable value (for drainage rate purposes) of over £100,000 although the area is only one-seventh of the total catchment area. The Board has bigger diesel engines at Stixwold and Fiskerton, and automatic electric pumps at Bardney, Stainfield and Southery, Stixwold, Woodhall Spa, Kirkstead, Tattershall Thorpe and Coningsby Ings plus 120 miles of drains to be maintained, all under the day to day control of the Board's Works Supervisor, Mr. Fred Bell of Horsington.

DOGDYKE PUMPING STATION PRESERVATION TRUST

PRESS HANDOUT 3

Technical:

This is the only known land drainage beam engine with scoop wheel in its original setting still for the same purpose to be worked in steam.

Horizontal Boiler:

official inspection 1975 declared it to be beyond economic repair. 16' 16" x 6' approx. 15 psi. Maker Wm. Foster & Co. Ltd. Lincoln (inventors of the Tank) no. 12373 Lancashire type, 1909.

Vertical Boiler:

in-use. Maker Clayton Ltd. 1952 cross-tube. Purchased second-hand from Messrs. J. Van Smirren, fish canners, Boston; 7' 6" shell, internal diameter 4' 2", working pressure up to 120 psi, normal here 70 psi.

Pressure Reducer:

Wm. Auld & Sons, Glasgow. Principle of Boyle's Law in practice: e.g. one measure of steam at 75lbs increases to five measures at 15lbs.

Steam driven water feed pump:

maker Weir G. & J. Ltd., Glasgow, veteran model capable of injecting water to make up level in boiler (at slightly higher pressure than boiler itself).

Engine:

Absolutely original cast iron, unaltered in any way. Made by Bradley & Craven of Wakefield 1855/6 low pressure single-acting separate condenser beam engine: 24" cylinder with 48" piston stroke; beam 12' 3" centres, 14' flywheel, 28 rpm, crank throw 1' 10" giving approx. 25 horse power, capable of lifting per the scoop wheel about 25 tons of water per minute at reasonable levels.

Scoop Wheel:

Cast iron gearing reducing rpm to approx 7 revs. 24' diameter with 36 wooden floats each 5' 5" x 1' 3½" wide, set at a raked angle as shown in sketch on door, forcing water through the weight-loaded oaken mitre gates, made to self-close against the flood waters of the River Witham. The brick arch tunnel through the bank has been filled in, but foundations may be seen at low water. W.H. Wheeler estimated the weight of the wheel, shaft and gearing at 7 tons.

1940 Ruston Diesel Engine and Gwynnes centrifugal pump:

single cylinder horizontal made in Lincoln. 7X Class HR no. 194833, cc 23800, HP 40, rpm normal running 300, piston speed 925 ft/min., bore 10", stroke 18½".

Consumption of fuel .40 lbs/bhp on full load

.42 lbs/bhp on ¾ load

.45 lbs/bhp on ½ load

Compression pressure 470 lb/sq ins.

Firing pressure 600 lb/sq ins.

Gwynnes Vaccume Pump 22 inch 40 tons/min @ 10ft head

Diesel pumping station operated and cared for by the Drainage Board's part-time attendant Mr. Harry Holmes.

DOGDYKE PUMPING STATION PRESERVATION TRUST

PRESS HANDOUT 4

Preservation Trust:

Following the private "mothballing" and the recording by blueprint, enthusiasm from the Museum and IAG, a letter from Mr. Ronald Clark in Lincolnshire Life, which called for a reply; then a phone call from Mr. Frank Cheffins which led to a visit by the Lincs. Steam Society, the next step was the convening of interested persons at Mr. Guy Burton's home. A Steering Committee of 7 prepared the way for a public meeting (which packed out the Fortescue Arms) in November 1973 at which the Preservation Trust was formed.

The Trust has negotiated a 30 year lease of the steam engine building and cartilage from the Drainage Board, and this and the Constitution have been approved in principle by the Charity Commission. Formalities only await completion, and the Trust is currently dealing with a draft access licence with the owners and occupiers of the farm road, to include part of a paddock for car parking.

There is now a membership of approx. 120; the management is dealt with by an Executive Committee of 16, very hard-working (and –worked) all considerably helped by the goodwill and generosity of many individuals and private firms. New members always welcome.

Personalities amongst the Committee and membership, some already engaged in the world of steam, of preservation, and of industrial archaeology include:-

- | | |
|--------------------------------|--|
| Harry Benton, | with sound long reliable experience of traction engines and steam; driver of Ruston-Proctor, faithful colleague of... |
| Frank Cheffins, | in charge of the steam engine, and where the work is. Served apprenticeship with Marshalls Gainsborough. Former Agric. Contractor, in 1974 awarded special recognition by the National Traction Engine Club. Dairy farmer, comes 30 miles between milkings. |
| Mrs. Cheffins, | refreshments, home-made dolls, competitions for prizes etc. |
| Guy A.J. Burton,
(Chairman) | retired electrical and generating engineer. Model engineering, former Mayor Horncastle. Vice-Chairman of Drainage Board. Amongst many other jobs carefully overhauled and lovingly reconditioned pressure reducer and feed pumps on long winter evenings in his home workshop (more like a mini-factory cum laboratory). Admits with others to a touch of madness otherwise Dogdyke restoration would never have come about. |
| H.G.C Bouchier, | and family all the way every Open Day from Sheffield: professional help with boiler and water quality, undertake any job going. |
| Eric Clipson, | Life Member No. 2, retired Chief Engineer Foster-Gwynnes former foundry manager. Keen ornithologist. |

George T. Crow,	always available for that particularly difficult, dangerous, dirty or unpopular job, usually in wet cold windy conditions. Lifetime of building and land drainage affairs.
H. Ray Goose, (Hon. Treasurer)	retired master butcher, used to money, therefore obvious choice Man of many parts and skills. Hobbies include tractor-driving. Occupations include fly-fishing.
H. Nicholas Hawley,	Architectural and technical photographer.
Rowland H. Hill, (Vice-Chairman)	in charge of scoop wheel etc., tower of strength. Home-grown timber merchant (grows his own matches, they say, and certainly used them!) Brings..
Derek Cross,	who has repaired and renewed rotted timbers ("starters and lecker") of scoop wheel, and also made guard rails, raised plank walk, safety guards to comply with Royal Insurance requirements, and are now renovating the flood doors. The art, design and development of scoop wheels from Roman times is a subject in itself, e.g. the drainage scoop wheel is effective only up to one-fifth of its diameter.
Ray E. Hooley,	Historian and newly appointed safety officer, Dogdyke: Information Officer Ruston Paxman Diesels.
Mrs. Peta Hope, Basil T. Hunt,	newly joined to take care of publicity: practical conservationist. Crofton Society Boilers, Kennet & Avon Canal Trust.
Arthur N. Means,	a true fenman, takes care of all those irksome mending and repair jobs, brings bits and parts and pieces for other working parties, and finds help when wanted from well-equipped family farm business nearby. If only everyone was so loyal and conscientious.....
"Paddy",	Co-opted and coerced to help Hon. Treasurer who expertly repaired brick arch to inlet tunnel, and later assisted Mr. R. Carr to shovel out mud and contractors debris from under scoop wheel, a job previously done by Jack Head, Steve and gang. Richard Carr called into cut away stone under bearing baseplate (whilst all <u>incl.</u> flywheel raised 18"!) to make crankshaft level. General dogsbody.
C. Anmtony Parker, R.I.B.A	i/c site and building works: on National Traction Engine Club Committee, owner-driver (with Mrs. Parker) traction and road roller, and now proud owner King Haakon VII locomotive on Great Central Line.
Jack Quincey,	garage proprietor, another well-off chap; owner-driver traction engine, etc.
John H. Rundly,	Ironfounder and well-known engineer in steam world etc. Stepped into breach caused by Mr. R.G. Macdonald's illness, and with family firm quickly fitted up vertical boiler, pressure reduce, feed pump etc. to original steam pipes and got the engine going in steam. A great character.

- David A. Skinns, Agricultural Engineer, has helped many times with the awkward, difficult jobs or special parts to be adapted, made and even invented. One of a four-generation family on both sides.
- Arthur C. Smith, precision engineer and keen model engineering member, just makes, brings and fits those particular items.
- U. Gordon Spratt, J.P. past president A.M.T.D.A.
- Alan B. Stone, licenced Bluebell Line driver, owner 5" miniature steam tracks.
- Dr. Peter Swinbank, Head of Department of History of Science, University of Glasgow
- C. Ed. Taylor, of Cornercroft Ltd., another engineer giving invaluable help on request.
- Jack & Mrs. Taylor, Lince. Steam Society, owners of traction engine, and expert organisers of annual Grand Raffle for Dogdyke.
- T.W. & Mrs. Waterhouse, Nottingham University: Model Beam Engine maker.
W.R. Wharff, driver of Black Sluice Pumping Station 5 big diesels, counts horsepower in hundreds.
- Mrs. Catherine M. Wilson, A.M.A. Curator, Museum of Lincolnshire Life, ever-enthusiastic and an inspiration to others. A moving light throughout.

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PRESS HANDOUT 5

Open Days Arrangements:

The first Open Day for the public with the engine in steam will be Sunday, 17th July, and thereafter each first Sunday in the month up to and including October 1977 (viz. Sunday 17th July, 7th August, 4th September, 2nd October), time 1.30 to 5.30 p.m.

Admission: 50p per person or £1 per car.
(including
car park)

Senior Citizens & Children Under 16 Half Price

Refreshments available:

Party visits by prior arrangement with the Hon. Secretary. In steam only in mornings of Open Day. Other times static.

Access to the site is by private farm road from the A153 Sleaford-Skegness road, 1 mile west of Tattershall Castle, and is signposted on Open Days. Closed at all other times.

Aircraft Noise Area, Working Machinery and Deep Water. Entry at your own risk. No liability is accepted for injury or damage however caused.

DOGDYKE PUMPING STATION PRESERVATION TRUST

PRESS HANDOUT 6

Building Restoration:

For a couple of years or so, volunteers, particularly Messrs. George Crow and Tom, plus the Chairman, Mr. Means and others, managed to deal with essential items (windows & glazing) and minor repairs. In 1976 a contract scheme of repairs and restoration to the building has been carried out with the aid of grants from the Historic Buildings Branch of the Department of the Environment to this scheduled Ancient Monument, together with smaller grants from Lincolnshire County and East Lindsey District Councils, the balance being met by donations from the Heritage Panel of Lincs. And Humberside Arts Association and the Lincs. Steam Society. Architects: Messrs. Parker Fairburn and Manton, Lincoln. Certain work not regarded as within the scope of contractors, Arthur Wood & Sons Ltd. Of Alford, has been done by members and volunteers.