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Front Cover: A montage of motor vehicles made in Norfolk

Back Cover: Panorama of former Nineteenth-Century Letheringsett Brewery and Maltings shortly before conversion to housing. The Site was used in the 1920s as a Transport Depot.

# A History of Norfolk's Motor Industry.

By Tim Simpson

## Contents:

- **Introduction**
- **Early development with steam**
- **The internal combustion engine**
- **A growing national motor industry**
- **High performance engineering design**
- **Summary table of businesses**

- Assembly of components
- Making and fitting of bodies to chassis (coach building)
- Sales distribution, maintenance and repair

## Preface

The aim of this paper is to describe contributions made by a selection of Norfolk based businesses and individuals as part of the county's motor industry history.

The source material for this paper is based on an archive provided by Peter Wells to NIAS which Peter has gathered over a number of years. The collection is in the form of press and journal cuttings, book articles and material from direct contact with some of the more recent companies. I have then added some further information which I have collected. Technical details have been minimised in order to save space and maintain relevance.

## Introduction

Unlike counties in the Midlands, North East, South Wales and Home Counties area, Norfolk is not a county one would immediately associate with the motor industry and its development. Large car plants are associated with locations of significant industrial activity and existing infrastructure as well as a large, skilled workforce. However, Norfolk, as a rural county, has made a contribution to the motor industry's development with notable examples of ingenuity and entrepreneurship from people working within the county.

This paper focusses on selected Norfolk based companies as the UK motor industry developed over time. It is about activity within the county and does not cover the contribution of Norfolk born people who may have moved away and developed the industry from outside the county.

The scope of the motor industry for this purpose covers the activities below for all types of motorised road vehicle:

- Manufacture of main components such as engines, chassis, brakes, wheels, transmissions as well as interiors

The history of the motor industry indicates the importance of making the necessary technical advances at the right time, not too early or late. With a competitive market any changes in technology or in government regulation provides both a potential opportunity and threat to an existing business. With the need to maintain an appealing product or service, some businesses will benefit while others decline. The timing of a new development or ending of an existing activity is important whether by foresight and design or by happy chance or misfortune. Another valuable benefit can be gained from collaboration with others, for example, by sharing expertise and solving problems jointly or by combining productive capacity. Last but not least is a dependency the business has on the drive and imagination of the entrepreneur or owner.

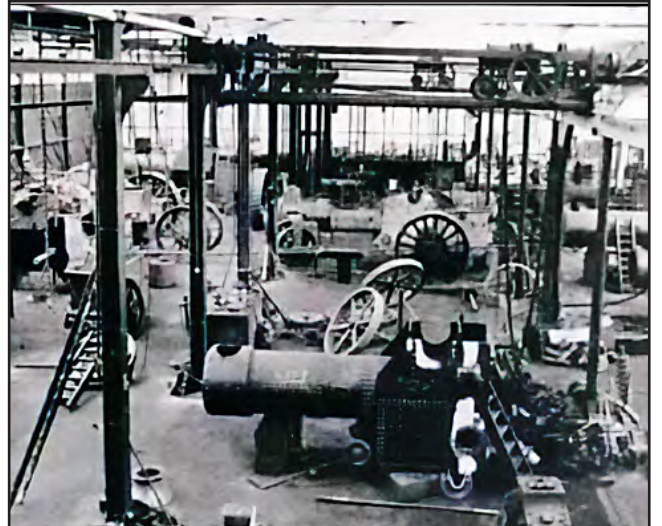
## Early development with steam

Before the development of the internal combustion engine and mass production, steam powered vehicles were the earliest form of mechanically propelled transport. These were usually custom hand-built, produced locally in small numbers. These early vehicles; "horseless carriages", looked much like their horse-drawn predecessors.

The first passenger-carrying vehicle was produced by 30 year old Richard Trevithick. The 'puffing devil' made its debut in Cornwall in 1801 and was essentially a boiler on wheels using a single piston with connecting rods, powered by high pressure steam. The vehicle moved at up to 9 mph.

From the 1800-1850s steady progress was made in steam vehicle design but then held back by new legislation which limited or prohibited the use of steam powered vehicles on roads. A powerful railways lobby, plus those with interests in traditional horse-drawn transport, added to general public concern about the risks of having steam engines on roads.

The Locomotive Acts 1861, 1865 and 1878 imposed very low speed limits and other restrictions on the use of "locomotives" and motorcars on UK



*Top: The St. Nicholas Works of Burrell's recorded by NIAS in 1994.*

*Above: Interior of the Burrell Museum with a road roller.*

*Above right: The former paint shop which now houses the Burrell Museum.*

*Right: Interior of the erecting shop, St Nicholas Works Thetford, date unknown.*

*Bellow: A Burrell steam wagon made c.1924 shown as a timber jig in 1928.*



Under Royal Patronage.

# FRANK MORRISS,

THE DAIMLER SPECIALIST,  
"SANDRINGHAM" MOTOR WORKS, KING'S LYNN.

---

**Daimler, Panhard, and M.M.C. Renewal Parts, Repairs, &c.**

👉 SEND FOR LISTS. IT WILL PAY YOU 👈

**OLD TYPE CARS BROUGHT ABSOLUTELY UP TO DATE.**

---

**SPECIALITY:**

New CYLINDERS and PISTONS for increasing power of old 6-H.P. DAIMLER TYPE CARS to 9 H.P. can be bolted to existing base chambers.

LARGE INDUCTION AND EXHAUST VALVES, SOLID HEAD, &c.

**SEND FOR PARTICULARS.**

THIRD SPEEDS FITTED TO DAIMLER & PANHARD GEAR SLEEVES.


**RADIATORS, TANKS, ELECTRIC FITTINGS, VALVES, &c., &c.**

*Customer Advertisements  
Graces Guide Im1902Civ1-Morriss*

One of cars that Morriss had modified, an 1898 Daimler eight seater Wagonette, was featured in 'The London to Brighton veteran car run sale of Veteran Motor Cars and Related Automobilia', Friday 31 October 2014, by Bonhams Auctioneers. The article refers to an earlier review made by the 'The Motor Magazine' in the 5th April 1944 which lists some of the adaptations that Morriss had applied to the car. It said that the "specification seemed to diverge somewhat from standard. It turned out it had been 'modernised' and super-tuned in 1902 by Frank Morriss of King's Lynn. Morriss was a specialist in bringing 19th century Daimlers up to

20th century standards by fitting higher compression engines and other 'mods'. He must be the earliest 'hotter upper' in the trade".

The 2014 Bonhams article continued describing how, more recently and perhaps sadly, the specification had been brought back to the original, "The Daimler has been completely dismantled and reconstructed to its 1898 condition with contemporary parts. Morriss's wheel steering, side gear lever, radiator and bonnet have now been replaced by tiller steering, tram type gear controls on the dash, and an original Daimler bonnet without radiator". The article concludes by saying that "The car is now presented to original specification in all major respects although it has been converted from hot tube to electric ignition, probably by 'hotter upper' Morriss of King's Lynn in 1902".

BY ROYAL WARRANT  TO H.M. THE KING.

SPECIFICATION AND PARTICULARS OF

## 10 h.p. 'Sandringham' Autocars

MANUFACTURED BY

# Frank Morriss,

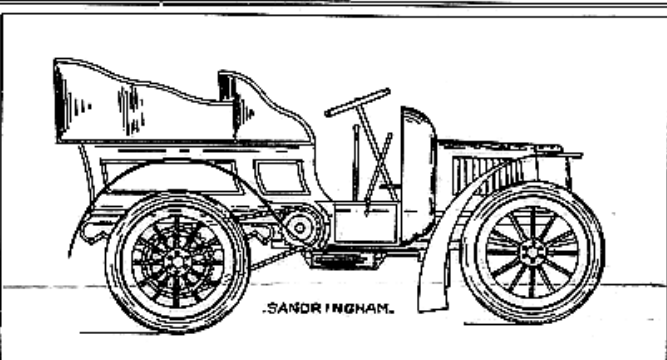
*Motor Engineer to His Majesty the King,*  
**Sandringham Motor Works,**  
... King's Lynn.

Head Office and Works:  
SANDRINGHAM BUILDINGS,  
LONDON ROAD,  
KING'S LYNN.

Repair Works and Garage:  
28, LONDON ROAD,  
KING'S LYNN.

Telegraphic Address:  
"SANDRINGHAM, KING'S LYNN."

National Telephone:  
HEAD OFFICE AND WORKS,  
No. 24.  
REPAIR WORKS AND GARAGE,  
No. 28a.



SANDRINGHAM.

to H.P. "Sandringham" four-seater carriage as illustrated. Curved aluminium gun carriage type dash with side cupboards, luxuriously upholstered in real hido leather, spring cushions, painted and polished to choice in first-class style, leather wings, complete with two front Bleriot lamps fitted to double spring bracket, two side lamps, one tail lamp, extended trumpet, and liberal supply of tools and spare parts in cloth lined compartment drawers.

Daimlers. These included installing wheel steering in place of tiller steering and a more efficient honeycomb radiator to replace the gilled tubed form. Morriss also provided power upgrades to the Daimler engines and gave the model name "Sandringham" to the cars he "finished". The Sandringham Works were extended in 1903 and, at its peak, employed 100 workers. Most of the vehicles completed were hotel buses, wagonettes and taxicabs.

In 1905, the enterprising Frank Morriss moved to London where, with his brother, H.E. Morriss, where he built a small number of steam cars. The Sandringham Motor Works continued to trade as Daimler and Benz agents and eventually the works became the property of Sillet & Co Ltd until the site was demolished in the late 1980s to be replaced by Anmer Terrace, a complex of flats that stand there today.



1948 Proctor lightweight 5/6-ton truck, following restoration. This is the only remaining preserved example.



A 1940s Proctor Diesel P6 Village Bus

### **Proctor Springwood Limited, Mousehold, Norwich (1944-1952),**

In 1934, brothers Jack and Harry Taubman started a haulage business and in 1939, just before the outbreak of war, designed a 5-6 ton lorry to improve their fleet's performance. The war prevented production but in 1944 they formed Springwood Motors Ltd, based in London. At this time, there was an acute shortage of commercial vehicles for civilian purposes and large producers needed time to convert back to peacetime

production. The Taubmans saw a temporary opportunity to build medium-sized lorries and joined up with Frank Proctor. The design offered improved fuel economy and also better performance. In 1946, they setup Proctor Springwood Ltd and used the earlier Taubman design to build and test a prototype in London.

A new site for manufacturing was required and was provided for Proctor Springwood on the former Mousehold Airfield, where, just a few years earlier, Boulton & Paul had built the Defiant fighter. Another reason for the Norwich location may have been the availability of local skilled labour already working in the building of bodies for coaches, lorries and buses.

The Mark 1 Proctor Diesel was a lightweight dropside design, using a light alloy chassis and cutaway cross members. It included a Moss gearbox and rear axle and a Perkins P6 diesel engine, designed in 1937 by Charles Chapman, (Perkins' original technical director) to be compact and lightweight. It was advertised as "The world's lightest diesel engine" and with a 6 ton payload and under 3 tons unladen weight, the Mark 1 was allowed by law to travel at the, then relatively high speed of 30mph. The model was aimed at long distance transport and was successfully road tested by "The Commercial Motor" magazine from August 1947. The road test, using a payload of 5.6 tons, included a return journey between Norwich and Aylsham which achieved a top speed of 40 mph and an average of 25 mph. The test also included a 300 yard hill climb up Gas Hill from a standing start, achieving a good 6.7 mph average speed.

It is believed that around 200 Proctor Diesels were sold before the Norfolk factory closed down in 1949. Proctor's agent, Prails of Hereford, bought up all remaining parts and also built more lorries until production stopped in 1952.

organised tours. Being neither a single nor double decker bus but something in-between (termed a “half-decker”) it could go under some low railway bridges that a double-decker could not. To make this possible the seats were vertically staggered in order to reduce the height of the vehicle. The central aisle had, alternately, a step up to a 4 seater open compartment and one step down to a lower 4 seater compartment.

Extract below from ME sales brochure:

“... the accommodation of the “Crellin-Duplex”, the new half-decker coach that combines high carrying capacity with a compact body of modern and stylish design. Up to 50 passengers can be carried comfortably with a very generous allowance of luggage. Seats are arranged in groups of four pairs facing. Visibility is excellent, particularly from the upper seats which have a commanding view of the countryside. Low overall height allows most low bridges to be safely negotiated. The half-deck coach is particularly suitable for organised parties, airlines and long distance tours. Stoutly built and handsomely fitted by Mann Egerton, it can be adapted to any make of chassis”.

Mann Egerton planned to build the coach bodies using the Crellin-Duplex design under license. These would be fitted to a Foden chassis containing a Foden six cylinder two stroke diesel engine. However, the design of the seating arrangement was not popular and sales were poor.

The commercial vehicle business continued coachbuilding of lorries, buses and refrigeration vehicles with operations taking place from the large Cromer Road premises in Hellesdon. This site also hosted the woodworking business. The coachbuilding business was sold in the 1960s to Bonallack Coachbuilders while the motor sales business, while its large sales franchises continued for several years. As well Bentley/Rolls Royce, these franchises included Austin/Morris (BMC/British Leyland) and Ford (under the name Nunns whose garage was in Surrey Street). In 1964, the electrical business was sold to the Westinghouse Brake and Signal Company while Mann Egerton itself was acquired by Inchcape plc in 1973. Mann Egerton’s woodworking business, which made school furniture, continued until 1986 when it was subject to a management buy-out. At its heyday, Mann Egerton employed more than 5,000 people across the country.

### **Bush & Twiddy Ltd, Croft Coach Works, Sussex Street, Norwich.**

Around the first half of the last century there were several other builders of coach bodies in Norfolk, such as Bush & Twiddy. The company ran coach services and also built bodies for its own use including 32 seater coaches based on an AEC Regal chassis and some 14 seaters on a Chevrolet chassis. Bush & Twiddy sold their East Anglian Highways fleet to Eastern Counties Omnibus Co Ltd in 1932 while their coach building business continued in to



*Built by B&T in 1929 and now restored, this 14 seater coach with canvas roof is based on a Chevrolet chassis. Later, of course, General Motors introduced the “Bedford” marque to commercial vehicles made in the UK.*

*Photo: Bonhams*

# The Pressures Facing Maltsters, Brewers and Cornmillers in Late-Eighteenth-Century Norfolk

by Margaret Bird

## Introduction

As industrial archaeologists we engage with the past usually through the standing structures still around us today. For fifty years we have recorded the vestiges of industrial buildings. This article takes a slightly different approach. It explores the economic and other pressures facing Norfolk's bold entrepreneurs of the late eighteenth century. It describes how the impressive maltings, breweries and cornmills for which the county was then known were often built against a hostile backdrop, making

the achievements of the manufacturers all the more remarkable.

These were perilous wartime years, Britain being locked in combat with France, Spain and often the Netherlands for most of the period 1777–1815. Blockades and privateers hampered movement of the vital imports and exports which helped to sustain the enterprises: all coal came by sea. At a time of inflation and increasing illiquidity, and when the concept of limited liability was yet unknown, debt and bankruptcy haunted families and brought

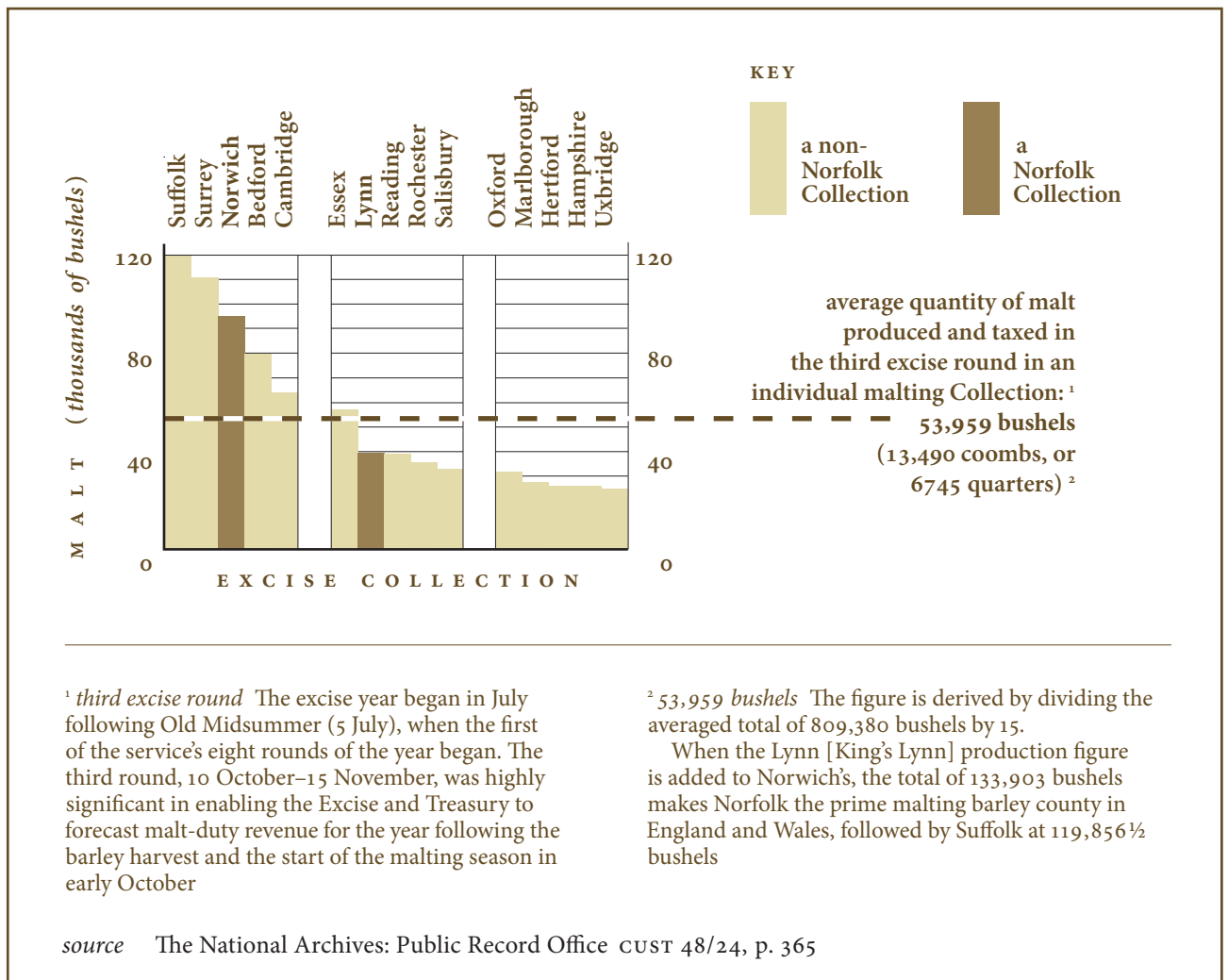


Figure 1: The principal malting areas of England, showing Norfolk as the prime malting county: average production in 15 Excise Collections, October–November 1788, October–November 1789 (thousands of bushels)

© Margaret Bird 2020.

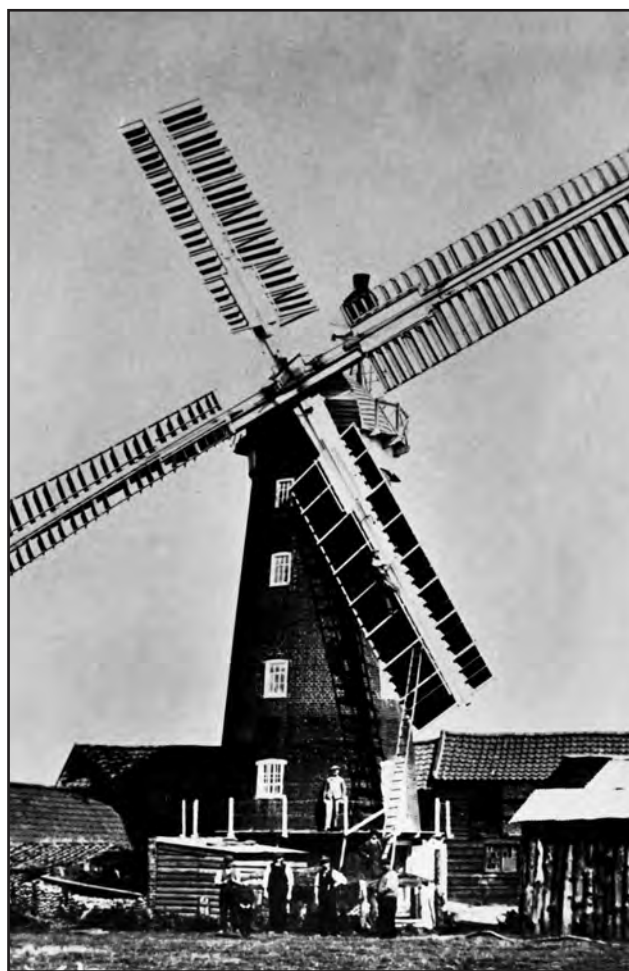
dotted with windmills, as also with watermills powered by the Upper Bure and the Glaven. Within 3½ miles of Letheringsett lay six water cornmills (two lying in the village itself) and five windmills, with a sixth four miles away at Blakeney. Cley Mill was shortly to be built. One of the watermills, Burgh-next-Aylsham on the Aylsham navigation, is shown at Figure 14.

Many of these were large in terms of capacity. Horstead Watermill, rebuilt and enlarged in or just before 1797, could mill 300 quarters of wheat a week (Figure 15). Buxton had been enlarged a few years earlier, an advertisement of 1782 asserting it was “capable of performing more work than any in this kingdom”. By 1821 it could produce a very large 400 quarters a week.<sup>11</sup>

While this may have been reassuring for the authorities, in reality the situation was not as hopeful as they made out. Shortages repeatedly stalked the land, and the notion that tens of thousands of troops guarding the coast could be fed using local supplies alone seems recklessly optimistic.<sup>12</sup> The great expansion of milling plant and buildings was not in pursuit of economies of scale, as brewing expansion often was, but in response to intermittently high wheat prices. The poor, driven to threshing straw, felt a strong sense of grievance, their anger erupting into violence and social unrest. In the months following bad wheat harvests mills were often enlarged with almost ostentatious display. Zebulon Rouse’s flour had been seized by the poor in December 1795, only for them to see him erecting his massive four-storey brick-and-tile watermill straddling the Glaven which still mills wheat by water power to this day; the mill was new built in 1798, and not in 1802 as is sometimes claimed. Another costly brick-and-tile watermill was built at Aylsham by Robert Parmeter junior that same year; weatherboarding, as at Burgh, Buxton and Horstead, was cheaper. A new windmill was built on Holt’s fairstead in 1786 (Figure 16) and Itteringham Watermill was expanded in 1789—both after poor wheat harvests. The story of flour production has much more social history associated with it than have malting and brewing.

## Debt and bankruptcy

As industrial archaeologists we are in danger of missing the human drama behind the buildings and structures we investigate. The contrast behind the massive, imposing mills still surviving from this period and the misery endured by the poor who were reliant on flour produced in those same mills



*Figure 16: Holt Windmill, seen here in 1916, dominated the fairstead on the east side of what became New Street. It succeeded one of 1786 which burned down only eight years after it had been built. The sails were taken down by 1925 and the mill finally demolished in 1974. Norfolk Record Office: MC 2043/9, 909x6, Checkley Collection.*

1783–1803 and beyond could not be more stark. Yet misery awaited the manufacturers themselves, and their families. Debt brought down not only the trader but his immediate family and all those to whom he owed money.

Millers at Letheringsett Watermill three times found themselves over-extended in the 45-year period 1756–1801. John Priest, Solomon Colls and the new mill’s builder Zebulon Rouse all found themselves bankrupt. Robert Colls, tenant of Worstead’s 100-quarter watermill at Briggate and the 80-quarter windmill across the road, was bankrupted in 1793; he was elder brother to John Colls, the Horstead miller.<sup>13</sup> Both had been brought up at Itteringham Watermill, the Colls family forming a milling dynasty; their uncle William Colls had run Letheringsett Watermill 1757–1770 (Figure



# The Bridges at Carrow 1810-1923

by Mary Fewster

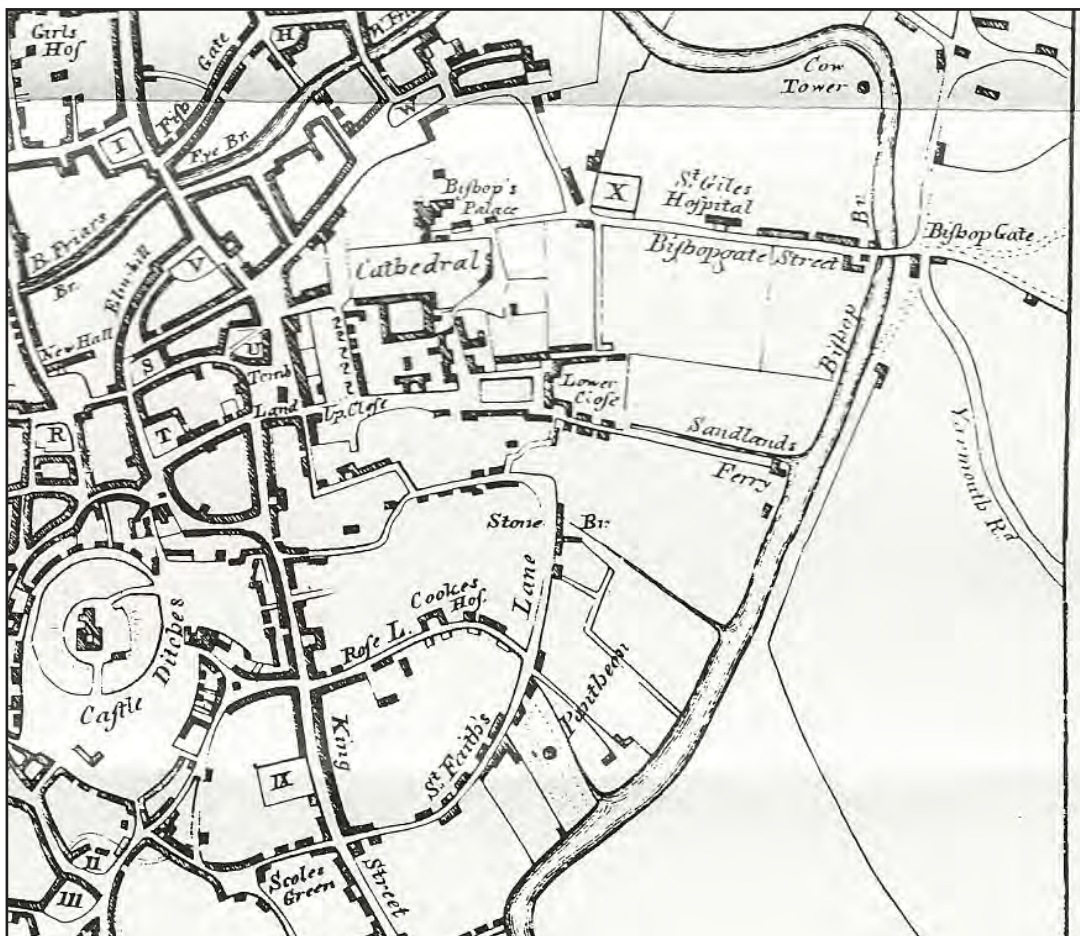
## A New River Crossing

Chase's Directory of 1783 included a section entitled 'Hints for Public Improvements', among which was an extensive complaint about the state of the bridges in the city as 'narrow and decayed', and arguing that new bridges, both the rebuilding of the ancient structures as well as new bridging points, 'would be rendering the trade of this city, by land and water carriage, an effectual service.' The writer ended with the statement '... at no place is a bridge more wanted than at King's-street Gate; by which the time and trouble of going round by Bishopsgate Bridge would be saved to many.'<sup>1</sup>

Much of Norwich's trade was via Yarmouth, and the turnpike road to Yarmouth was one of the earliest in the county, having been set up in 1768-9, and running from Bishop's Gate, Norwich via Blofield, Burlingham, Acle and Filby.<sup>2</sup> The road from Bishopgate Bridge went via what is now Rosary Road

to Thorpe, and this is marked as 'Yarmouth Road' on the map in Chase's Directory. The proposed bridge at King Street or Conesford Gate would remove large numbers of animals and farm produce from a tortuous route through the city although, as can be seen from the map, the bridge on its own would not provide the necessary access to the Thorpe road, as the area opposite King Street was merely open meadow land. Road building would be required.

The recommendation in the Directory was not a new idea; on 29th November 1776 the Corporation agreed to pay £100 a piece towards an Act of Parliament for a bridge 'at or near to Conesford Gates'.<sup>3</sup> Although it was clearly a matter of importance, it would seem that the plan was not pursued at that time; perhaps Chase's recommendation was an attempt to revive interest in the scheme. In February 1791 Samuel Blogg, probably the owner of Blogg and Son, Lime-burners



Map from Chase's Directory showing the road from Norwich to Yarmouth via Bishop Bridge, the only route east of the city before 1810, from the facsimile edition by Michael Winton

## Replacement of Carrow Bridge on a New Alignment

In the background of the photograph of the 1905 swing bridge, on the left (Norwich) side, can be seen the southernmost buildings of Colman's Carrow Works. The full extent of this large industrial complex by the beginning of the twentieth century is shown in a riverside panorama included in the N.U.T. Conference publication of 1901, which was reproduced in the last N.I.A.S. Journal.<sup>31</sup>

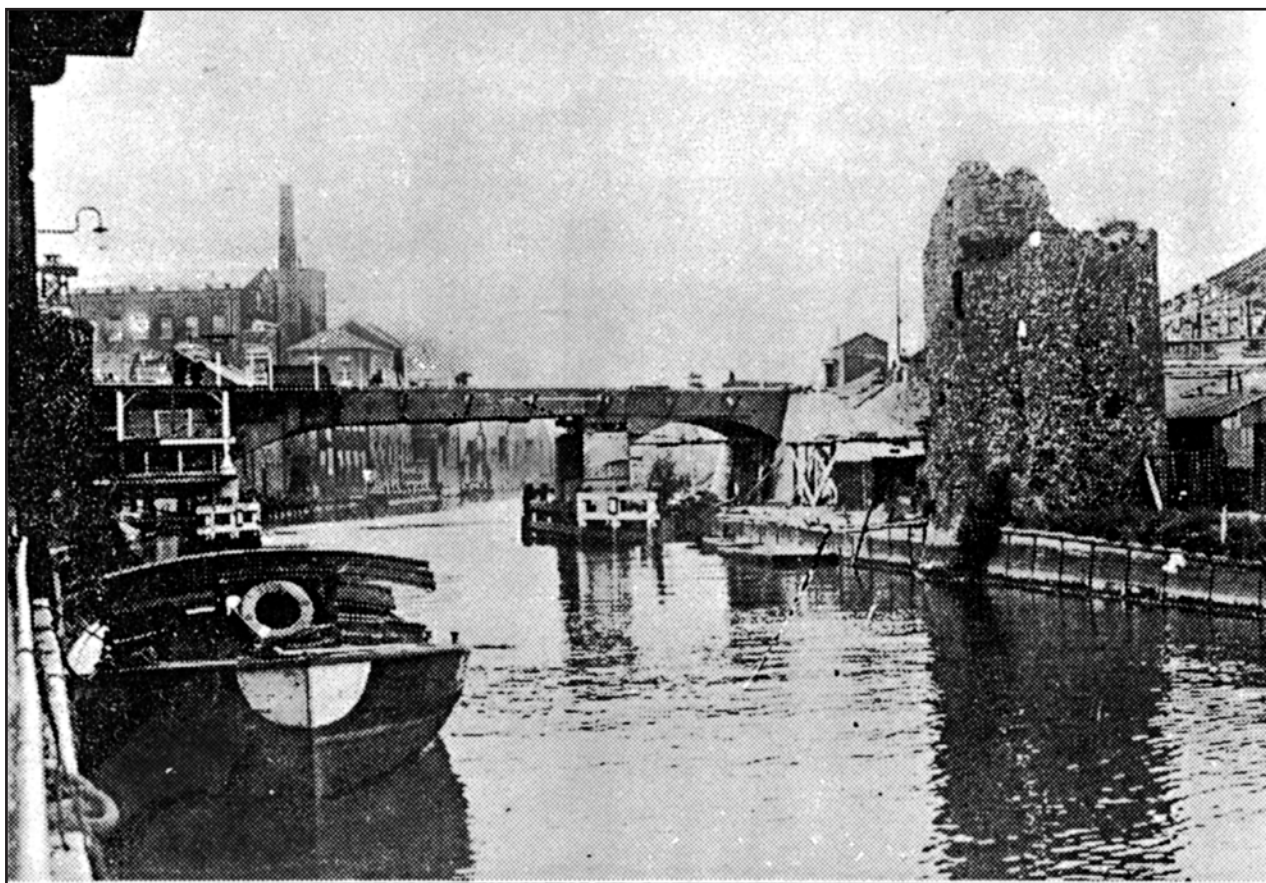
The fact that by the beginning of the twentieth century the Carrow Works had extensive developments to the north of the bridge meant that by the end of the First World War the company was pressing the Corporation for the removal of Carrow Road Bridge to a site further north, using the site of a malthouse complex just within the city walls.

The Corporation was authorised to build the new bridge and works by the Norwich Corporation Act of 1920, and construction began on 3rd November that year as Unemployment Relief Work.<sup>32</sup> The bridge was designed by A. E. Collins, the City Engineer, and the construction and installation of

this steel structure were by John Butler and Co. of Stanningly Iron Works, Leeds. The total cost was £42,000 and both Colmans and Boulton and Paul contributed to it; Boulton and Paul had moved their operations from the Rose Lane site to the open land on the east of the river after the First World War, and the new bridge would abut on the southern boundary of their works and form an important link across the river to Bracondale and the roads west and south.

The bridge was opened by the Prince of Wales during his visit on 27th June, 1923, and the souvenir booklet for the occasion included an advertising article by John Butler and Co., which gave detailed comparisons between the specifications of the old and new bridges, although according to the introduction to their article Butlers were under the impression that the bridge which they were replacing was the 1810 structure, rather than that of 1833.<sup>33</sup>

The article goes on to give interesting detail of the bridge and the construction process:



THE NEW CARROW BRIDGE (showing Boom Tower in foreground.)

*The New Bridge looking upstream with Read's Mill behind.*