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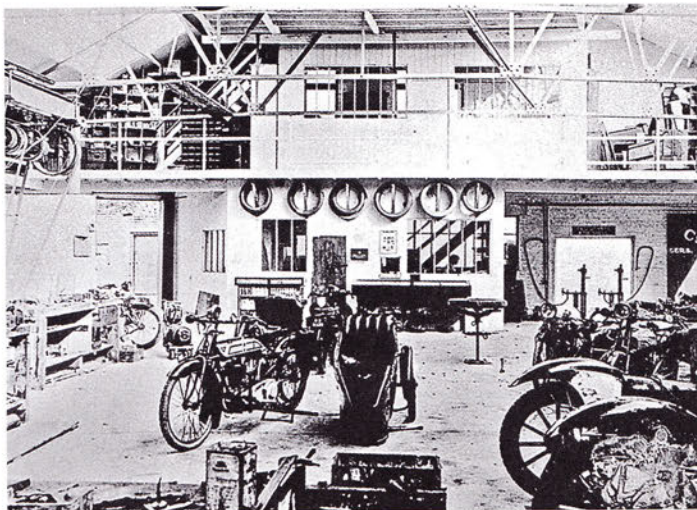
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Beamish and the **DENE MACHINES**

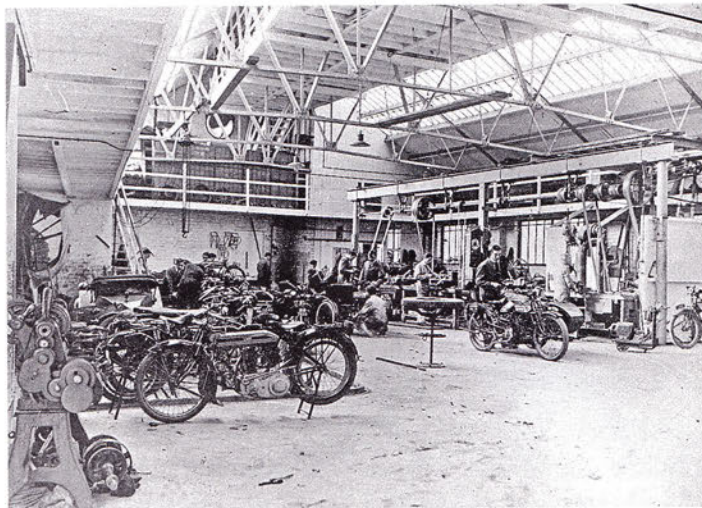
Beamish Museum recently commemorated the centenary of a local long-lost motorcycle manufacturer, the Dene Motor Co of Newcastle, discovers **Alan Barnes**



The two Dene motorcycles at Beamish following their re-commissioning. COLIN SLATER



Above left: The Dene workshop at Sandyford Lane circa 1923. In the centre of the works is a 1913 chain cum belt 3 1/2hp single cylinder Dene which is either having a sidecar fitted or removed.



Above right: The Dene workshop at Sandyford Lane in the early 1920s. On the right of the picture is a V-twin Dene which dates the picture either 1923 or 1924.

Among the fascinating collection of vehicles and machinery at Beamish Museum are some excellent examples of early motorcycles. To mark the centenary year of one of these machines, efforts were made to return the collection's 1912 Dene single cylinder bike to running condition.

This motorcycle is one of the few known surviving examples of the machines produced at the Dene Motor Co workshops in Newcastle between 1903 and 1924. It is thought that at the present time there are only three working examples; two of these machines are at Beamish while a third is in America.

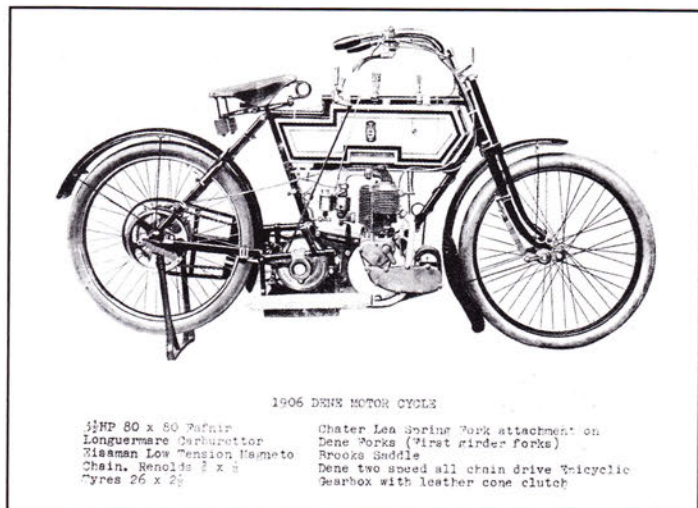
The origins of the business can be traced to the 1890s when James Moore established the Jesmond Cycle Co in 1893. By the late 1890s Moore was experimenting with various motorcycle designs but it was not until 1901 that the company exhibited the first of its machines at the Olympia Show. These were

powered by Fafnir engines and by the following year the machines were being offered for sale. Moore continued to work on various design improvements and these included special frames and also the Ball race headstock for which he apparently held the original patent. The unique frame design was certainly interesting in that it looped around the engine and held it in a vertical position.

In 1902 Moore had closed down Jesmond and set up a new venture – the Dene Motor Co in the Haymarket, Newcastle, where the design and production of motorcycles continued. The early designs were single cylinder four-stroke machines fitted with a 3.5hp Fafnir engine and incorporated Chater-Lea spring forks, as had been fitted to some of the earlier Jesmonds and a direct belt drive. The Dene motorcycles proved themselves to be rugged machines and quickly built up a reputation for reliability achieving some notable success as a trials machine. ▶



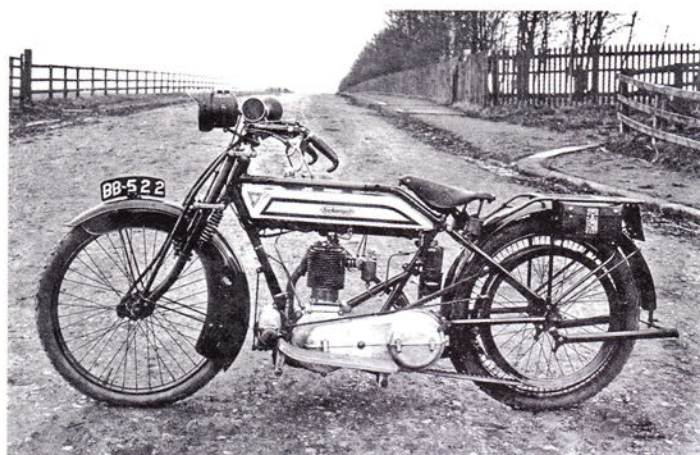
The first Dene shop in the Haymarket, Newcastle. This was located where the Tatler cinema was subsequently built. This too has been demolished and the site developed. There is a round tank BSA in the picture – a machine which was launched in 1924 and the photograph was probably taken that year.



1906 DENE MOTOR CYCLE

3HP 80 x 60 Refrain
Longuemare Carburettor
Miaman Low Tension Magneto
Chain, Renolds 2 x 2
Tyres 26 x 2 1/2
Chatter Lea Spring Fork attachment on
Dene Forks (First Rider Forks)
Brooks Saddle
Dene two speed all chain drive Tricyclic
Gearbox with leather cone clutch

Brochure illustration of a 1906 Dene 3 1/2hp single cylinder machine.



BB 522 – a 1913 3 1/2hp Dene fitted with a countershaft gearbox which opinion suggests is a Sturmey Archer. This is one of the very earliest machines in production anywhere to have this arrangement.

Moore continued to develop his designs and by 1906 the direct belt drive had given way to a chain drive with a two speed counter-shaft gear of his own design working on the epicyclic principle and fitted with a clutch. The all chain drive was a notable achievement but the company appeared to then take a backward step and revert to the use of belt drive and hub gears, the convention of that era. It may well be that the chain drive did not prove to be a success and the lack of adequate shock absorption and exposed chains would not have resulted in an entirely reliable transmission. Perhaps this is why they reverted to the conceived best practice of the time.

During the next few years further

improvements were introduced, in 1908 a two speed hub gear was patented and by 1910 the Precision engines had been adopted as standard and sprung forks were also fitted. In or around 1914 a two-stroke machine had apparently been built but information about this model is sparse and it may have existed only as a design drawing.

By 1915 production ceased following the outbreak of the First World War but then resumed after the war and these included motorcycles powered by JAP V-twin engines with a chain drive and a Sturmey-Archer gearbox, and like their predecessors these machines were also highly regarded.

James Moore died in 1924 and his son

Norman then took over the business and decided on a change of direction for the firm which would no longer produce its own machines. Production of the Dene ended in 1924 and the business continued to operate in Newcastle as a general motorcycle dealership. Robert Smith took over as manager of the business in 1960 and ran the shop until the business closed on October 31, 1970.

Jonathan Hill is currently undertaking research on the company with a view to publishing a book on the marque of which some information is published here. He is also the VMCC Dene marque specialist and was involved in the recent recommissioning of the two Dene motorcycles at Beamish.

Dene BB 2698 outside the Haymarket shop circa 1924.
COURTESY JONATHAN HILL





Jimmy Moore in 1906 outside the main Post Office in Edinburgh at the completion of a long distance trial. The machine is an all chain drive 1906 Dene which is of great technical interest. It has the epicyclic gearbox which he designed and manufactured himself.



Ossie Byers on the Beamish V-twin Dene during a Beamish Trophy Trial in 1984.

As Jonathan told me: "Beamish Museum owns a 1912 Dene solo motorcycle, registration SV 7712, powered by a Frank E Baker Precision engine with a nominal RAC fiscal rating of 4½hp. The cylinder capacity is 597cc with a bore and stroke of 89mm x 96mm. The engine is a handsome unit with square finning pre-dating Velocette's adoption of such cooling on its Mk.VIII racing machines by nearly 40 years!

"The machine follows conventional practice of the period, driving the back wheel by belt with gearing being provided by a Sturmey Archer three-speed unit within the rear hub. This model appeared at the time to be a retrograde step for the Dene Motor Cycle Co, as six years previously it had marketed an all chain drive machine with gearbox mounted behind the engine. Quite why the company returned to the conceived norm is open to conjecture. The frame design is unique in that an additional tube connects the rear of the engine plates to a point roughly midway down the seat tube. In addition the frame forward of the chain stays is a complex duplex fabrication that has its origins as the adjustable mounting point for the earlier gearbox on the chain drive motorcycle. The sprung forks are of Druid manufacture and all this add up to a motorcycle of sound but conventional specification."



Jonathan Hill on the 1912 Dene SV7712 with Ian Reavley after the recommissioning work at Beamish.

When the Dene (Newcastle) Motor Co Ltd ceased trading at the end of 1970, two Dene machines were 'released' out of family ownership. Both were 980cc JAP engined V-twin machines which had been built shortly before the death of the company's founder Jimmy Moore in 1924. Manufacture of the marque had stopped at this time when the business was taken over by his son Norman and the focus of the business was as a dealer for other makes. One of these machines, registration BB 95, was bought by Jonathan's father, Dr Nicholas Hill, in 1971 and even then Jonathan says he had to fight off the vultures eager to snap up the machine for its registration mark!

The other machine, registered BB 9726, was given to the fledgling North of England Open Air Museum at Beamish along with artefacts from the Haymarket shop premises including the Lamson cash ball machine, which is now in the Co-operative store at the museum.

"Sadly by this time both machines were in a rather sorry state and were somewhat incomplete. Luckily between the two machines most of the parts were either recoverable or could be copied from one to another to ensure the completeness of both," says Jonathan.

"I remember being involved in the reconstruction of the exhaust system of BB 95 in about 1974 when the restoration of the



Dr Nick Hill on BB 95, which is now owned by Eric Smith in America. The tax disc reads 1994 so this may be either a Northumbrian Gathering VMCC rally or an event such as the VMCC Cheltenham National. It does not appear to be a Beamish event as the rally numbers have been provided by *The Classic Motorcycle*.



The recommissioned SV 7712 outside the garage shop at Beamish.

machine by my father was progressing well. In 1975 I left home when I got married and the frequency of my involvement with the rebuild reduced. I always recall that my father was eager to find a suitable sidecar for his Dene as these big V-twins were made for this function as were most of the big twins built in the 1920s. My first ride on the Dene was at a VMCC Northumbrian Gathering in Alnwick in 1980 and my abiding memories were of the grunt from the powerful engine and the dubious steering resulting from the long wheelbase, which was obviously more suitable for sidecar work.

V-TWIN RESTORED

"In the early 1980s, Beamish Museum's Ossie Byers restored the Beamish V-twin with the help of VMCC member Tom Murray. My father provided much help and in particular was able to help with the casting of missing chain case parts. The Beamish V-twin has remained a favourite with museum visitors and competed in the Beamish Trophy Trial, a re-enactment of a 1920s motorcycle trial.

"In time my father finally managed to buy a Mills and Fulford sidecar from Doug Capes of the Northumbria Section of the VMCC and this must have been around 1982. Incidentally the Dene Motor Co was an agent for this make of sidecar. ▶

I remember it being perched on the roof of my father's Ford Granada Estate outside my Cramlington home when he was en-route to the Midlands.

"Upon his death in 2001, the BB 95 was sold by Nick's second wife Janet, to Eric Smith in the USA and he continues to cherish and use the machine, which had become well known throughout the UK having been extensively used in VMCC events.

DENE SURVIVORS

Jonathan says that his father's research led to the knowledge of two other Dene motorcycles in the UK. These had been dismantled and there is no record of them ever having been re-assembled. However, intrigue abounded about the likely existence of a fifth machine – the 'missing Dene'. In the 1970s and 80s rumours spread of a mysterious bike, age or model unknown in a Yorkshire garage repair business.

"The business was owned by Jonas Butterfield, who had been involved in the motor trade from the 1920s," reveals Jonathan. "He had come across such a machine at this time, when a rider called on a single cylinder Dene with a damaged three-speed Armstrong hub gear. The bike was beyond repair and he bought another bike from Jonas and the Dene would appear to have been subsequently scrapped. In the late 1960s Jonas was searching for a frame with a three-speed hub gear for a 2¼hp Premier engine. He was given an incomplete machine of unknown manufacture

by Oliver Langton of TT trials and speedway fame. The motorcycle was more or less complete less engine and engine plates. However, the machine, with a 1in belt and heavy construction, was obviously too big for the lower powered Premier. Oliver put it to one side, but was intrigued by the distinctive frame with its extra tube from the seat tube to the rear of the engine. Where had he seen such a frame before?

"It was not until the late 1980s that the machine was pulled out from under a bench and the grease and mud wiped off the large aluminium footboards. Letters were revealed, cast on to the upper surface, and almost worn off but clearly visible as 'DENE'. Indeed the machine was of the type that Oliver had seen all those years ago. Oliver located a Baker Precision engine and engine plates were cut to suit. He had also been in contact with Beamish, erroneously thinking that its machine was of the same type. He also sought help from my father in his role as VMCC marque specialist for Dene Motorcycles.

"The years went by, as they often do when restoring old bikes and Oliver wasn't getting any younger and subsequently in 1996 my father bought the Precision Dene. The major problem was with the magneto drive and the Dene was unusual in having the magneto to the rear of the engine. There was plenty of space, where the frame had been designed to accommodate a gearbox in the 1906 machine. Why locate a magneto at the front and subject it to water and muck thrown up by the front

wheel, when you had protected space behind the engine? The Precision engine drove the magneto from the forward exhaust camshaft running at half engine speed. The timing chest and magneto covers were made for this more common arrangement and new moulds had to be made to cast new components to facilitate the drive to be taken from the inlet camshaft to the rear of the engine. The inlet camshaft had to be extended to provide attachment of a magneto drive sprocket. To finish the adaptation 'DENE' was cast into the magneto



1912 Dene SV 7712
at Beamish.



The garage interior, recreated at Beamish, includes artefacts rescued from the Haymarket shop premises.



drive cover as per the Dene original.

"The rest of the restoration was fairly typical with wheels being rebuilt, forks re-bushed, nickel plating and re-painting being performed. The Sturmey-Archer gear was overhauled by hub gear specialist Kevin Hellowell. My father performed all the leather work on the Brooks saddle. Restoration was completed in 1998 and although forays out on the machine were brief at this stage, all appeared to be going well with this rare machine.

"Nick Hill was a keen rallygoer and wanted to use his motorcycles as much as possible. He had entered events on the continent with his 1927 AJS and Graisley sidecar outfit and saw the opportunity to enter the 1999 Anglo-Dutch Trial in Holland. This is an event run for pre-1915 motorcycles and the Dene was an ideal machine with which to compete.

NO PRIZES

"Unfortunately all did not go very well for my father. A big end failure before the start saw frantic activity among the British team with some sporting support from the Dutch contingent. In the August heat the engine was removed and with further heat and judicious levering the crankcase was split. The flywheels received the attention of Dutch Veteran Motorcycle Club members, the De Boers, and a new big end bush was manufactured and fitted. Reassembly resulted in the Dene being brought back into action but not before the magneto, too, had received vital attention. The machine was then able to complete the event, but no prizes were won on this occasion.

"The Dene was used in the VMCC's Millennium Tour of Scotland, but my father, having endured two hip replacements, found riding a veteran machine quite difficult. He had by then become used to later machinery to enjoy his love of old motorcycles but nevertheless both bike and rider successfully completed the week-long rally."

Jonathan says Nick had thought seriously about selling the machine to a suitable home

and it seemed obvious that Beamish was by far the best home for a Newcastle machine. The North East cannot compete with the Midlands when it comes to motor manufacturing in the terms of pure volume but the efforts of the pioneering Jimmy Moore and the Dene Motor Co were of great technical interest. Innovation abounded in the firm and it is important that the two products from a regional company are displayed appropriately. In 2001 the Dene was bought by Jim Rees on behalf of Beamish and has become one of the star exhibits.

"Both Denes are usually on display in the town garage at the museum, but in 2012 I was asked by Transport Curator Paul Jarman to bring both machines back into use," says Jonathan. "Together with long time enthusiast and personal friend Ian Reavley, re-commissioning was undertaken. The Dene Precision had been perfectly preserved in the garage and the work involved was fairly simple. Tappets and ignition setting were checked, the spark plug was cleaned and gapped and the cables and all links were oiled and fresh petrol put in the tank. The tyres were inflated and all should have been ready. But there was a small glitch, the carburettor jet was missing. Fortunately Friends of Beamish

stalwart, Colin Slater, knew of its location in the office and it was soon reunited.

"The jet was duly screwed in place, petrol turned on and the carburettor tickled. Two shots of fresh oil were pumped into the crankcase and the machine was turned over several times to administer fuel into the cylinder after setting the air and throttle levers. The first kick produced a 'phut' and the second brought the Dene back to life after nearly 11 years. I was overjoyed. The engine sounded fit and healthy so the bike was wheeled out into the museum main street. Both Ian and I rode the Dene around the site and all was well. Everything was perfect and I felt enormously proud to have been given the opportunity to continue the work of my father, who had restored the machine all those years ago.

"The V-twin Dene was also re-commissioned a few weeks later and it too were star exhibits at the Great North Steam Fair at Beamish in April 2012."

My thanks to Beamish for allowing the use of photographs with additional photographs kindly provided by Jonathan Hill. If anyone has any details, pictures or other information concerning the Dene Motor Co, Jonathan would be pleased to hear from them. ■



BB 9726 on display at Beamish. COURTESY TERRY PINNEGAR



Eric Smith, the current owner of BB 95. COURTESY ERIC SMITH