



# Flying Scotsman Steam Locomotive



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# 1 History

## 1.1 Origin

Flying Scotsman, designed by Sir Nigel Gresley, was completed at Doncaster Works for the London and North Eastern Railway (LNER), initially built as an A1 and carrying the number 1472.

During the British Empire Exhibition at Wembley in 1924 and 1925 the Flying Scotsman was used as a figurehead for the LNER and it was renumbered to 4472, which, although it has carried several numbers in its lifetime became synonymous with the locomotive from then on.

In 1928 an improved Pacific type, classed as A3, appeared and the older A1s were modified to conform to this new improved standard. Flying Scotsman's turn came after WW2 and emerged once again from Doncaster Works on 4<sup>th</sup> January 1948 as an A3 sporting a long "banjo" dome type boiler which it still sports today and the number 103. In 1948, on the nationalisation of the railways this number was changed to 60103.

Further modifications to Flying Scotsman include fitting a double Kylchap chimney which helped improve economy and performance; however the extra steam tended to obscure the driver's vision so from 1961 German-style smoke deflectors were fitted.

## 1.2 In Service

4472 was one of five Gresley Pacifics to haul the ground-breaking non-stop Flying Scotsman train service from London to Edinburgh and headed the inaugural train on the 1<sup>st</sup> May 1928. This was a daily non-stop service which covered the 392 miles in eight hours and avoiding the need to stop for refuelling by having a large eight-wheel tender with a capacity for 9 tons of coal. This tender had a corridor connection giving access to the cab from the train which allowed a change of drivers without the need to stop. Water was replenished using scoops from water troughs along the track.

On the 30<sup>th</sup> November 1934, 4472 became the first locomotive in the UK to be officially recorded travelling at 100mph, earning a place in the record books and much publicity for LNER.

Between June 1950 and November 1953, under British Railways (BR) control, Flying Scotsman was allocated to Leicester Central shed and between August 1954 and April 1957 was shedded at Grantham.

Flying Scotsman finished service with BR in January 1963 and was sold into preservation to Alan Pegler.

### 1.3 Preservation and World Travels

Alan Pegler had Flying Scotsman restored at Darlington Works to be as close as possible to its LNER condition including being renumbered back to 4472, returning the double chimney back to a single chimney thus removing the need for smoke deflectors.

In 1966 a second corridor tender was added and fitted out as an auxiliary water tank; this was needed as the watering infrastructure on the rail networks was fast disappearing.

Flying Scotsman was run on many specials around the country but following an overhaul in the winter of 1968-69, Alan Pegler set his sights further afield and embarked on a promotional tour of America where 4472 was fitted with a bell, high intensity headlamp and other modifications.

The tour started well but Pegler's financial backers withdrew their support leaving Pegler to go it alone. Losing money, the tour was bankrupt by 1972 and the future of Flying Scotsman was uncertain with the very real possibility of being unable to return to the UK. Thankfully, in January 1973, William McAlpine stepped in and 4472 was repatriated.

In October 1988 Flying Scotsman travelled to Australia to take part in their bicentenary celebrations. In the next year, Flying Scotsman travelled more than 28,000 miles over Australian rails. Another record was set on 8<sup>th</sup> August 1989 by travelling 442 miles from Parkes to Broken Hill non-stop, which was the longest non-stop run ever by a steam locomotive.

Upon returning to England just before Christmas 1989, Flying Scotsman resumed special train services and also visits to heritage lines, which were becoming more common, for passenger train and "driver experience" duties.

In 1995 on the Llangollen Railway, Flying Scotsman suffered a derailment at low speed and an overhaul was needed and again faced an uncertain future due to the high costs of preservation. Dr Tony Marchington bought and restored 4472 to running condition; however, running the locomotive proved cripplingly expensive so in 2004 was up for sale again and bought by the National Railway Museum in York after a high profile campaign where it currently resides.

Over its career, Flying Scotsman has travelled over 2 million miles.

## 1.4 Restoration at the National Railway Museum

Since the National Railway Museum acquired Flying Scotsman the locomotive has undergone a huge amount of work to make her fit to run on the main line again. The current major overhaul started in January 2006 and work is taking place at specialist engineers across the UK, as well as in the Workshop at the National Railway Museum.

At the heart of the restoration process has been the overhaul of the boiler, which has presented more than one challenge to the dedicated engineers bringing No.4472 back into main line steam. Visit [www.flyingscotsman.org.uk](http://www.flyingscotsman.org.uk) for more information.

## 1.5 Wartime Black

While LNER passenger locomotives were always painted in Apple Green, during the Second World War the locomotive was repainted in to wartime black in common with all railway stock at the time.

The numbering of the locomotive changed a number of times. Initially it was numbered as 4472, which most people will recognise. During Edward Thompsons renumbering scheme it became No. 502 in January 1946 and then in May of the same year under an amendment to that plan it became No. 103. Following nationalisation of the railways in 1948 most LNER locomotive numbers were increased by 60000 giving Flying Scotsman the later number of No. 60103 in December 1948.

When the NRM restored the locomotive and repainted it in Wartime Black, they placed No. 103 on one side, and No. 502 on the other.

## A3 4472 Flying Scotsman Specifications:

Designer	Sir Nigel Gresley
Builder	Doncaster Works
Class	A3
Numbers	1472, 4472, 103, 60103, 4472
Build Date	1923
Wheel Arrangement	4-6-2
Length	70 feet (21.6m)
Maximum Height	13 feet (4.0m)
Maximum Width	9' 2 7/8"
Weight	96.25 tons (97.54 tonnes)

## 2 Rolling Stock

The following rolling stock is available in this Add On.

### 2.1 103 Wartime Black

In the browser list this locomotive and tender are displayed as “A3 Engine Wartime Black 103” and “A3 Tender Wartime Black”.



This version of Flying Scotsman has the number 103 on the buffer beam and both sides. It does not feature the flying Scotsman headboard and does not have the additional warning stickers along the boiler. It has the double chimney and smoke deflectors and a single tender.

## 2.2 502 Wartime Black

In the browser list this locomotive and tender are displayed as “A3 Engine Wartime Black 103” and “A3 Tender Wartime Black”.



This version of Flying Scotsman has the number 502 on the buffer beam and both sides. It does not feature the flying Scotsman headboard and does not have the additional warning stickers along the boiler. It has the double chimney and smoke deflectors and a single tender.

### 2.3 502/103 Double Numbered Wartime Black

In the browser list this locomotive and tender are displayed as “A3 Engine Wartime Black” and “A3 Tender Wartime Black”.



This version of Flying Scotsman has the number 502 on the buffer beam and has 103 on one side, and 502 on the other (as painted by the National Railway Museum). It features the Flying Scotsman headboard and has additional warning stickers along the boiler. It has the double chimney and smoke deflectors and a single tender.



## 2.4 Mk1 Coach Set

There are a set of BR Maroon liveried first (FK), second (SK), brake second (BSK) and brake guard (BG) coaches supplied in this add-on. In the browser list they are listed as "FSW Mk1 First BR Maroon", "FSW Mk1 Second BR Maroon", "FSW Mk1 Brake Second BR Maroon" and "FSW Mk1 Guard BR Maroon".



## 3 Scenarios

### 3.1 Black Ice

Drive the Christmas Tour from London Victoria to Brighton, but watch out for the weather...

- **Rating** Hard
- **Start Time** 09:00
- **Duration** 70 minutes
- **Season** Winter
- **Start Location** London Victoria
- **Type** Standard and Career

### 3.2 Seaside Tour

Drive the Flying Scotsman rail tour from Brighton to London Victoria.

- **Rating** Medium
- **Duration** 70 Minutes
- **Start Time** 17:00
- **Season** Summer
- **Start Location** Brighton
- **Type** Standard

### 3.3 The Black Flying Scotsman

Learn to drive the Flying Scotsman in this introductory scenario.

- **Rating** Easy
- **Duration** 15 Minutes
- **Start Time** 07:00
- **Season** Spring
- **Start Location** Redhill
- **Type** Standard

## 4 Acknowledgements

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