

Tahleel Consultancy Presents

# A Compendium of MOT Tests in 2022

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Section 1

# Introduction

# Introduction

We deep-dived into the recently-released dataset by the Department of Transport on MOT tests conducted in 2022 to see if it could answer some of our petrol-fuelled questions. In this report, we present to you the methods we employed and the answers we found.

The MOT test (or simply MOT) is an annual test of vehicle safety, roadworthiness aspects and exhaust emissions required in the United Kingdom for most vehicles over three years old. In Northern Ireland, the equivalent requirement applies after four years.

## History

The MOT test was first introduced in 1960 as a few basic tests of a vehicle. Now it covers twenty different parts and systems on or in the vehicle. The name derives from the Ministry of Transport, a defunct government department which was one of several ancestors of the current Department for Transport.

Section 2

# References

# Vehicle Test Classes

To serve as a reference, we've listed the Driver and Vehicle Licencing Agency's (DVLA) grouping of vehicles.

## Class 1

- ❖ Motor bicycles (with or without sidecars) up to 200 cubic centimetres (cc).

## Class 2

- ❖ All motor bicycles (including Class 1) (with or without sidecars).

## Class 3

- ❖ 3 wheeled vehicles not more than 450 kg unladen weight (excluding motor bicycles with side cars).

## Class 4

- ❖ Cars, passenger vehicles, motor caravans, private hire vehicles, motor tricycles, quadricycles and dual-purpose vehicles in all cases with up to eight passenger seats.
- ❖ Goods vehicles not exceeding 3,000 kg Design Gross Weight (DGW).
- ❖ Taxis and ambulances in either case with up to eight passenger seats.

# Vehicle Test Classes

## Class 4 (continued)

- ❖ Passenger vehicles, ambulances, motor caravans and dual-purpose vehicles in all cases with nine to twelve passenger seats that:
  - ❖ are fitted with no more seat belts than the minimum required because of their construction; or
  - ❖ are identified as having been fitted with a type approved seat belt installation when built; or
  - ❖ have been tested as class 4A, 5A or 6A (PSV) with at least the same number of seat belts as are currently fitted.

## Class 4A

- ❖ The class 4A test is the normal class 4 test with the addition of a check on the installation of certain seat belts. Passenger vehicles, ambulances, motor caravans and dual-purpose vehicles in all cases with nine to twelve passenger seats that:
  - ❖ are fitted with no more seat belts than the minimum required because of their construction; or
  - ❖ are identified as having been fitted with a type approved seat belt installation when built; or
  - ❖ have been tested as class 4A, 5A or 6A (PSV) with at least the same number of seat belts as are currently fitted.

# Vehicle Test Classes

## Class 5

- ❖ Private passenger vehicles, ambulances, motor caravans and dual-purpose vehicles in all cases with thirteen or more passenger seats (including community and play buses, etc.) that:
  - ❖ are fitted with no more seat belts than the minimum required because of their construction; or
  - ❖ are identified as having been fitted with a type approved seat belt installation when built; or
  - ❖ have been tested as class 4A, 5A or 6A (PSV) with at least the same number of seat belts as are currently fitted.

## Class 5A

- ❖ The class 5A test is the normal class 5 test with the addition of a check on the installation of certain seat belts. Passenger vehicles, ambulances, motor caravans and dual-purpose vehicles in all cases with thirteen passenger seats (including community buses, etc) that:
  - ❖ are fitted with no more seat belts than the minimum required because of their construction; or
  - ❖ are identified as having been fitted with a type approved seat belt installation when built; or
  - ❖ have been tested as class 4A, 5A or 6A (PSV) with at least the same number of seat belts as are currently fitted.

# Vehicle Test Classes

## Class 6 & 6A

- ❖ Public service vehicles (PSVs). Tested by DVSA at DVSA Testing Stations, or other designated premises.

## Class 7

- ❖ Goods Vehicles over 3,000 kg up to and including 3,500 kg Dry Gross Weight (DGW).

# Glossary of Terms

To serve as a reference, we've listed a list of terms, initialisms and abbreviations used in this report.

## **Ministry of Transport (MOT)**

A non-operational government department which was one of several ancestors of the current Department for Transport but is still officially used. As an initialism, MOT refers to the MOT test and the two are used interchangeably.

## **Driver and Vehicle Standards Agency (DVSA)**

The Driver and Vehicle Standards Agency (DVSA) is an executive agency of the UK Department for Transport (DfT). It is a separate organisation from the similarly named Driver and Vehicle Licensing Agency (DVLA).

## **Vehicle Test Station (VTS)**

An approved MOT test centre that is authorised to test vehicles. Only centres showing the blue sign with 3 white triangles can carry out an MOT test.

# Test Outcomes

To serve as a reference, we've listed the possible outcomes for an MOT test.

## **Pass (P)**

The vehicle has passed its MOT test and is legally driveable.

## **Failed (F)**

The vehicle has not passed its MOT test and is not legally driveable. Any identified faults must be rectified, and the vehicle retested before it may be legally driveable.

## **Pass with Rectification at station (PRS)**

The process where defects may be rectified within one hour after the test, but before recording the result on the VTS Device.

## **Abandoned (ABA)**

The term used when a test cannot be completed because the NT considers it unsafe to continue or determines certain items cannot be satisfactorily inspected.

## **Aborted (AB)**

The term used when a test cannot be completed because of a problem with the testing equipment or the NT.

# Test Types

To serve as a reference, we've listed the MOT test types.

## **Normal Test**

Full initial test of a vehicle.

## **Statutory Appeal**

A test for which the outcome has been appealed.

## **Partial Retest Left VTS**

Chargeable (half standard fee) partial MOT retest when vehicle has left VTS for repair of any items and returned by close of next working day.

## **Partial Retest Repaired at VTS**

Free partial MOT retest where vehicle has remained at VTS for repair.

## **Re-test**

Full retest of vehicle. Derived by system, not selected by NT.

# Vehicle Sections

To serve as a reference, we've listed the four sections of a vehicle.

## **Nearside Front (N/S/F)**

The front passenger side of a right-hand-drive vehicle that is closest to the kerb on a UK road.

## **Nearside Rear (N/S/R)**

The rear passenger side of a right-hand-drive vehicle that is closest to the kerb on a UK road.

## **Offside Front (O/S/F)**

The front driver side of a right-hand-drive vehicle on a UK road.

## **Offside Rear (O/S/R)**

The rear driver side of a right-hand-drive vehicle on a UK road.

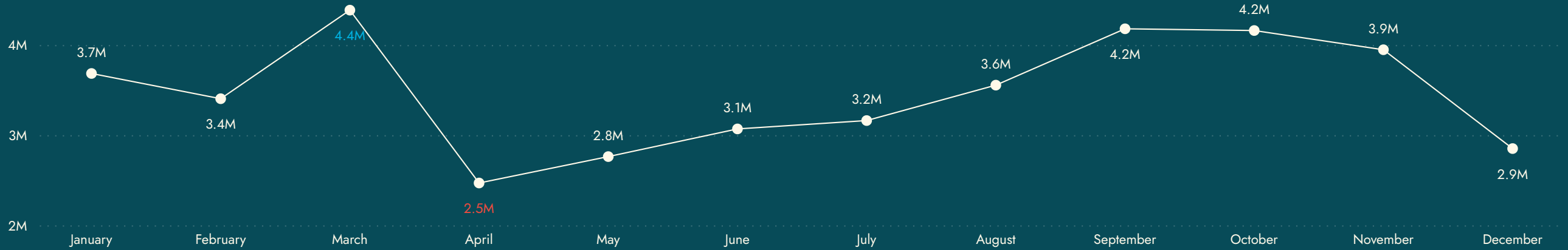


# Overview

<b>41.6M</b> Tests Conducted	<b>31.6M</b> Tests Passed	<b>7.7M</b> Tests Failed	<b>75.9%</b> Pass Rate	<b>18.5%</b> Fail Rate	<b>5.0%</b> PRS Rate
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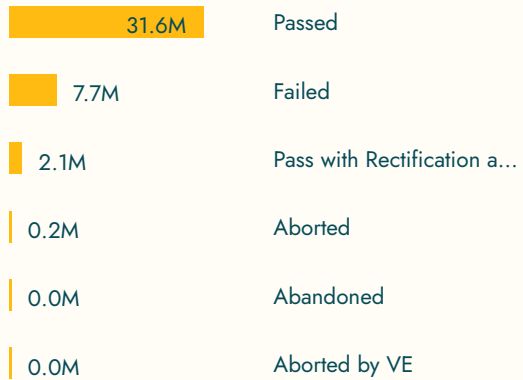
## Tests by Month

January 2022 - December 2022



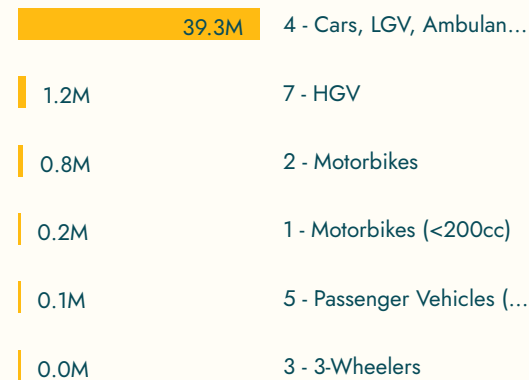
### Tests by Result

(Millions)



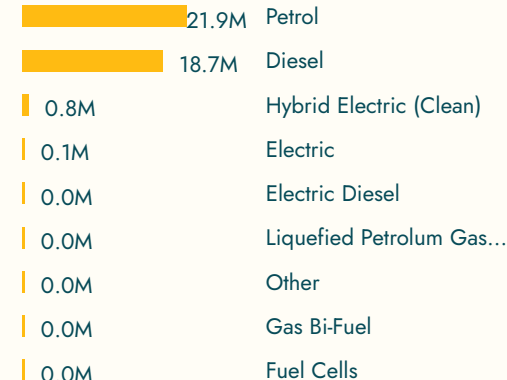
### Tests by Vehicle Class

(Millions)



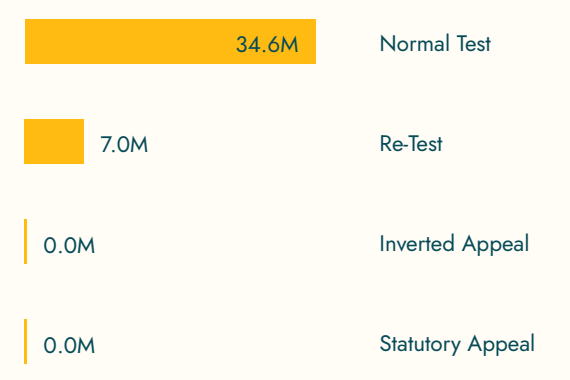
### Tests by Fuel Type

(Millions)



### Tests by Test Type

(Millions)



# Defects

86.4M  
Rejections

55.7M  
Advisory Rejections

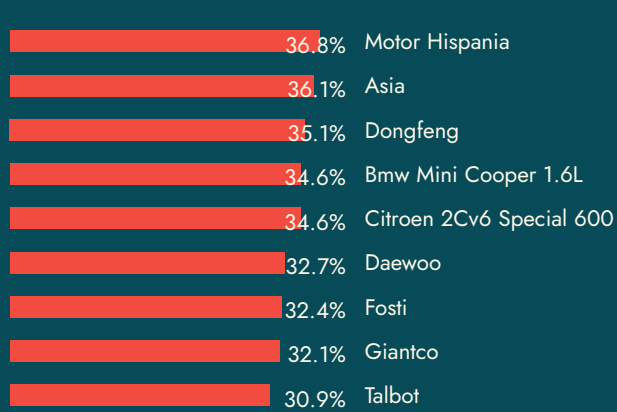
21.2M  
Fail Rejections

6.2M  
Minor Defect Rejections

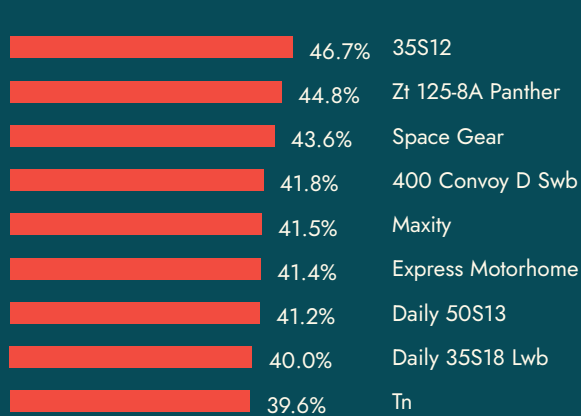
3.2M  
PRS Rejections

41.6M  
Tests Conducted

Failure Rate by Vehicle Make  
(Percentage)



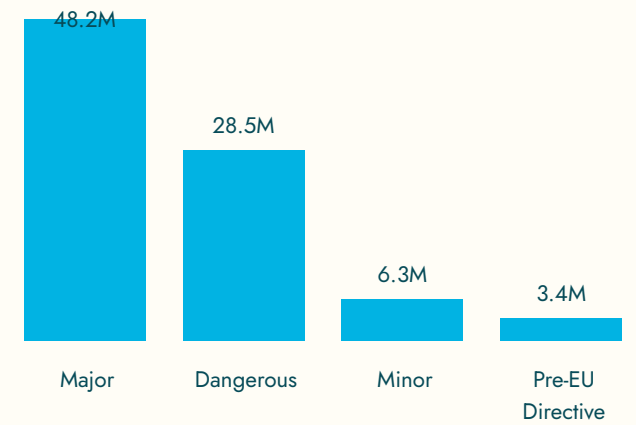
Failure Rate by Vehicle Model  
(Percentage)



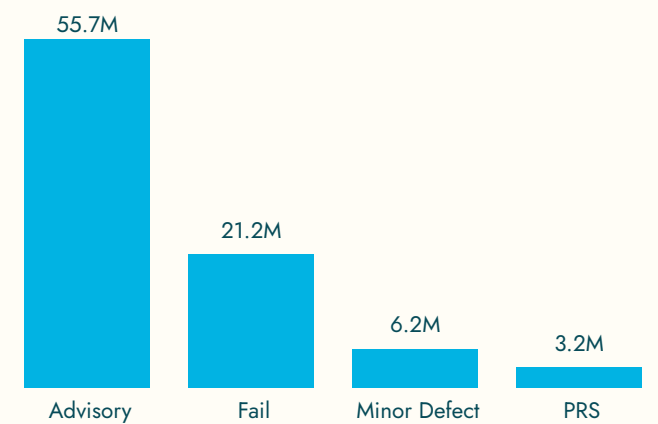
Rejections by Reason  
(Millions)



Rejections by EU Category  
(Millions)



Rejections by Rejection Category  
(Millions)



# Characteristics

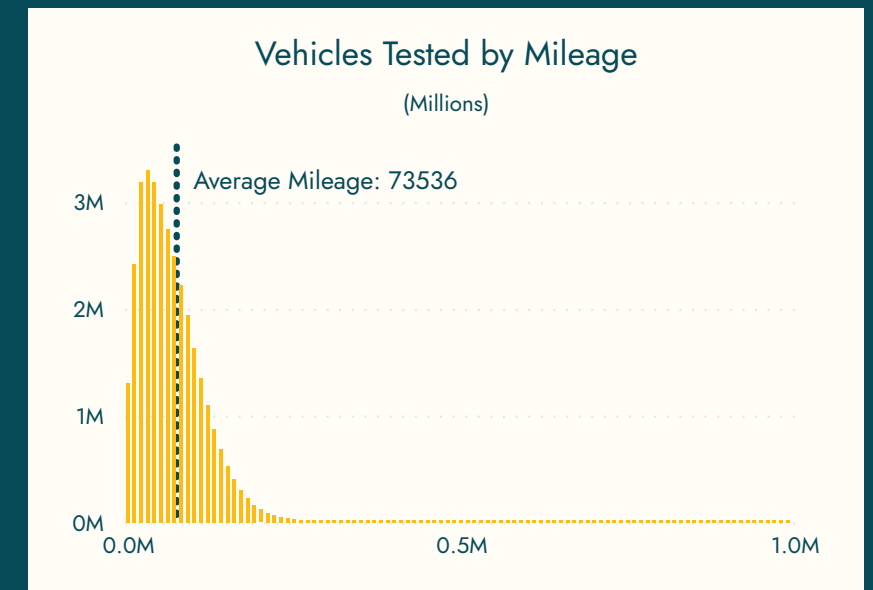
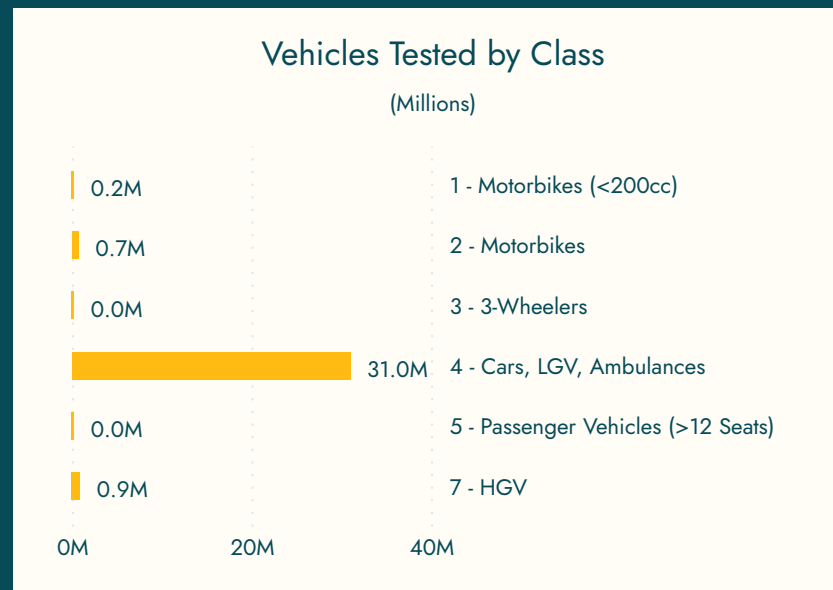
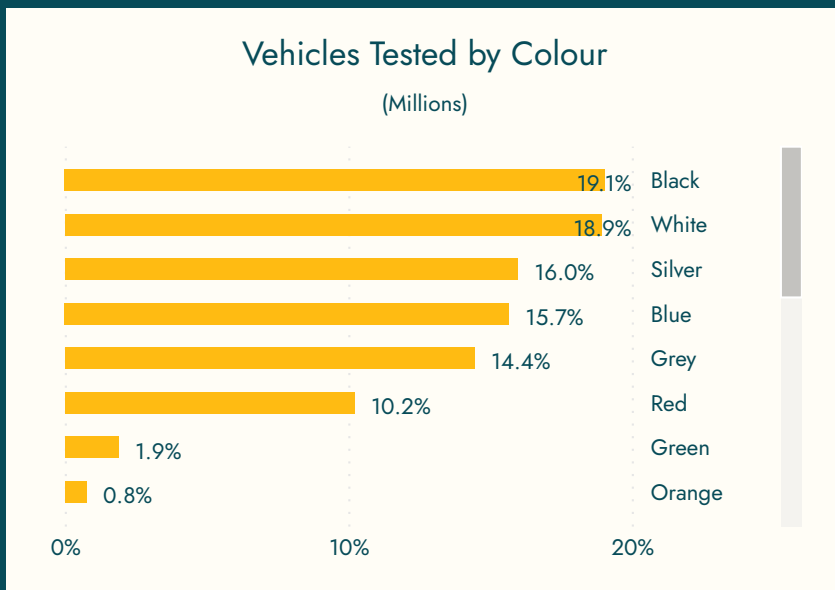
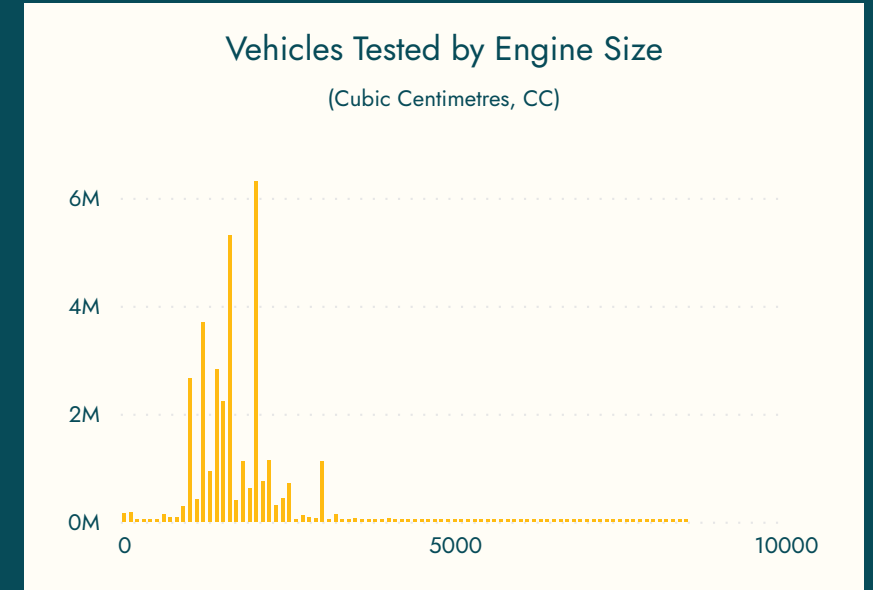
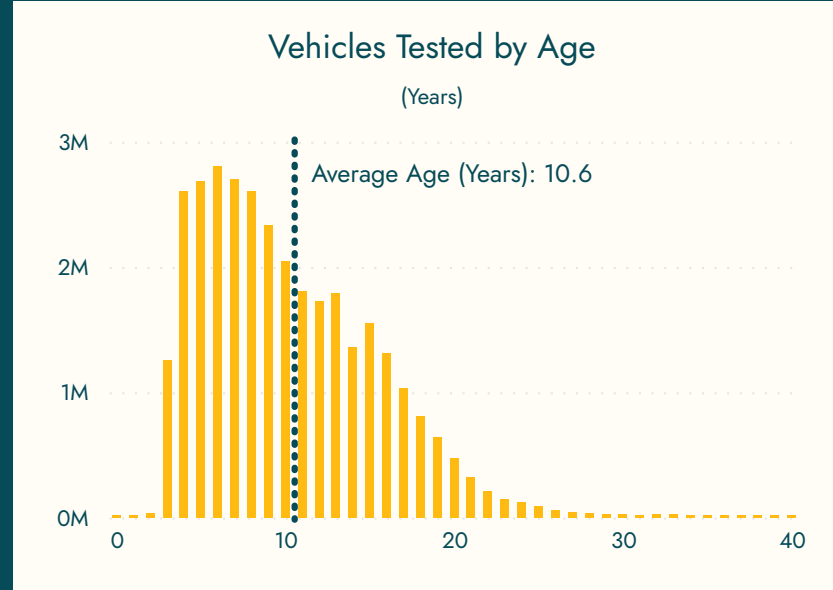
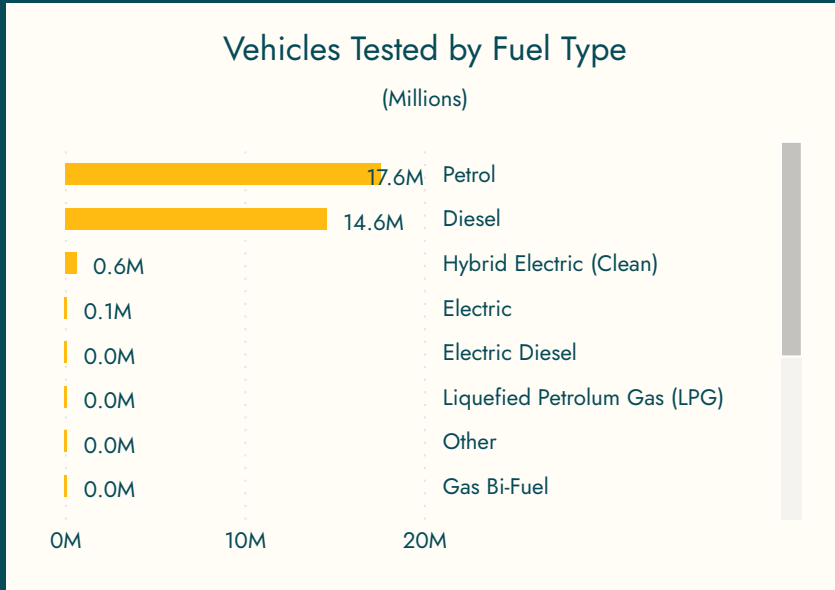
**32.9M**  
Vehicles Tested

**73.5K**  
Average Mileage

**10.6**  
Average Age (Years)

**105.6K**  
Vehicles Tested Per Day

**4.3**  
Avg. Rejections Per Vehicle



# Makes

<b>41.6M</b>	<b>31.6M</b>	<b>7.7M</b>	<b>75.9%</b>	<b>18.5%</b>	<b>5.0%</b>
Tests Conducted	Tests Passed	Tests Failed	Pass Rate	Fail Rate	PRS Rate

## Characteristics by Vehicle Make

Displaying makes with 25 tested vehicles or more

Make	Vehicles	Petrol	Diesel	Hybrid	Avg. Age (Years)	Avg. Mileage	Avg. Tested Per Day
Ford	4,638,248	2,463,771	2,170,859	2,095	10.44	77,308	14,978
Vauxhall	3,092,531	2,018,817	1,071,799	1,001	10.51	75,617	10,046
Volkswagen	2,939,333	1,303,858	1,617,964	11,467	11.01	84,531	9,403
Bmw	1,788,516	658,338	1,078,387	43,158	10.14	77,441	5,663
Mercedes-Benz	1,733,618	513,438	1,197,101	14,434	9.73	82,710	5,603
Audi	1,559,242	672,520	881,988	3,186	9.75	79,529	4,892
Nissan	1,552,197	907,440	611,094	199	10.13	67,410	5,000
Toyota	1,485,313	867,438	275,240	335,652	11.41	78,669	4,786
Peugeot	1,461,972	707,646	751,640	206	10.55	71,474	4,761
Honda	1,133,342	918,074	195,164	13,292	12.84	69,998	3,520
Citroen	1,059,418	453,529	604,598	23	10.46	74,403	3,478
Renault	1,057,305	510,084	535,083	11	10.80	76,656	3,553
Land Rover	869,315	53,589	808,988	4,926	11.60	85,880	2,810
Hyundai	800,561	551,883	223,754	21,128	8.93	55,649	2,507
Kia	797,094	432,728	337,899	22,691	8.54	56,744	2,525
Fiat	785,118	543,744	241,278	1	10.59	58,799	2,571
Mini	738,260	584,719	146,822	6,635	10.33	61,249	2,341
Skoda	702,025	392,670	309,015	241	9.16	71,974	2,179
Volvo	526,149	138,488	378,562	8,041	10.68	87,707	1,685
<b>Total</b>	<b>31,034,474</b>	<b>16,200,525</b>	<b>14,185,648</b>	<b>538,248</b>	<b>10.46</b>	<b>74,567</b>	<b>99,604</b>

# Makes

41.6M Tests Conducted    31.6M Tests Passed    7.7M Tests Failed    75.9% Pass Rate    18.5% Fail Rate    5.0% PRS Rate

## Test Outcomes by Vehicle Make

Displaying makes with 25 tested vehicles or more

Make	Vehicles	Tests	Passed	Failed	PRS	Incomplete					
Ford	4,638,248	5,961,524	15.16%	4,380,457	73.5%	1,206,673	20.2%	336,921	5.7%	37,471	0.6%
Vauxhall	3,092,531	4,042,457	10.28%	2,920,754	72.3%	871,326	21.6%	228,340	5.6%	22,035	0.5%
Volkswagen	2,939,333	3,714,942	9.45%	2,828,147	76.1%	698,574	18.8%	167,545	4.5%	20,673	0.6%
Bmw	1,788,516	2,180,009	5.54%	1,766,144	81.0%	324,004	14.9%	77,839	3.6%	12,021	0.6%
Mercedes-Benz	1,733,618	2,170,454	5.52%	1,715,046	79.0%	360,867	16.6%	80,120	3.7%	14,420	0.7%
Audi	1,559,242	1,901,589	4.84%	1,536,831	80.8%	292,004	15.4%	63,260	3.3%	9,494	0.5%
Nissan	1,552,197	1,990,776	5.06%	1,481,728	74.4%	395,670	19.9%	103,128	5.2%	10,250	0.5%
Toyota	1,485,313	1,876,561	4.77%	1,442,448	76.9%	303,985	16.2%	119,934	6.4%	10,193	0.5%
Peugeot	1,461,972	1,895,129	4.82%	1,371,674	72.4%	394,862	20.8%	117,909	6.2%	10,684	0.6%
Honda	1,133,342	1,374,366	3.49%	1,068,442	77.7%	221,073	16.1%	78,118	5.7%	6,729	0.5%
Citroen	1,059,418	1,395,666	3.55%	985,656	70.6%	310,145	22.2%	92,172	6.6%	7,692	0.6%
Renault	1,057,305	1,434,215	3.65%	999,484	69.7%	352,320	24.6%	74,637	5.2%	7,773	0.5%
Land Rover	869,315	1,078,439	2.74%	849,718	78.8%	180,512	16.7%	41,394	3.8%	6,815	0.6%
Hyundai	800,561	994,119	2.53%	770,052	77.5%	168,159	16.9%	51,578	5.2%	4,330	0.4%
Kia	797,094	995,751	2.53%	774,313	77.8%	171,824	17.3%	45,216	4.5%	4,398	0.4%
Fiat	785,118	1,016,474	2.58%	750,129	73.8%	210,438	20.7%	50,186	4.9%	5,720	0.6%
Mini	738,260	910,449	2.32%	715,178	78.6%	145,566	16.0%	44,459	4.9%	5,246	0.6%
Skoda	702,025	857,646	2.18%	685,873	80.0%	131,843	15.4%	36,360	4.2%	3,570	0.4%
Volvo	526,149	664,611	1.69%	509,647	76.7%	124,891	18.8%	26,796	4.0%	3,277	0.5%
<b>Total</b>	<b>31,034,474</b>	<b>39,326,089</b>	<b>100.00%</b>	<b>29,776,715</b>	<b>75.7%</b>	<b>7,358,019</b>	<b>18.7%</b>	<b>1,973,693</b>	<b>5.0%</b>	<b>217,643</b>	<b>0.6%</b>

# Country of Origin

41.6M  
Tests Conducted

31.6M  
Tests Passed

7.7M  
Tests Failed

75.9%  
Pass Rate

18.5%  
Fail Rate

5.0%  
PRS Rate

## Outcomes by Country of Origin

January 2022 - December 2022

Origin	Vehicles	Tests	Passed	Failed	PRS	Incomplete					
Germany	8,186,715	10,161,049	29.21%	8,011,982	78.8%	1,697,464	16.7%	393,714	3.9%	57,884	0.6%
Japan	5,738,477	7,177,523	20.64%	5,489,308	76.5%	1,254,070	17.5%	396,631	5.5%	37,508	0.5%
America	4,825,361	6,206,347	17.84%	4,557,456	73.4%	1,260,728	20.3%	348,891	5.6%	39,270	0.6%
France	3,578,772	4,725,092	13.59%	3,356,892	71.0%	1,057,328	22.4%	284,718	6.0%	26,152	0.6%
England	2,063,987	2,543,708	7.31%	2,013,493	79.2%	410,856	16.2%	103,688	4.1%	15,671	0.6%
South Korea	1,621,875	2,021,604	5.81%	1,567,170	77.5%	346,993	17.2%	98,530	4.9%	8,911	0.4%
Italy	908,340	1,171,357	3.37%	870,778	74.3%	238,494	20.4%	55,405	4.7%	6,679	0.6%
Sweden	589,884	749,923	2.16%	569,114	75.9%	146,311	19.5%	30,677	4.1%	3,820	0.5%
China	13,433	19,018	0.05%	12,075	63.5%	5,630	29.6%	1,018	5.4%	295	1.6%
Malaysia	3,321	4,623	0.01%	2,937	63.5%	1,386	30.0%	269	5.8%	31	0.7%
Australia	184	217	0.00%	174	80.2%	34	15.7%	8	3.7%	1	0.5%
<b>Total</b>	<b>27,530,349</b>	<b>34,780,461</b>	<b>100.00%</b>	<b>26,451,379</b>	<b>76.1%</b>	<b>6,419,294</b>	<b>18.5%</b>	<b>1,713,549</b>	<b>4.9%</b>	<b>196,222</b>	<b>0.6%</b>

# Locations

41.6M Tests Conducted      31.6M Tests Passed      7.7M Tests Failed      75.9% Pass Rate      18.5% Fail Rate      5.0% PRS Rate

## Test Outcomes by Location

January 2022 - December 2022

Area	Tests		Vehicles	Passed		Failed		PRS		Incomplete		Avg. Age (Years)	Avg. Mileage	Avg. Rejections
London	1,499,343	3.60%	1,248,863	1,177,437	78.5%	195,341	13.0%	115,309	7.7%	11,255	0.8%	10.42	69,529	3.55
Birmingham	1,208,536	2.90%	1,000,858	930,520	77.0%	190,493	15.8%	78,461	6.5%	9,062	0.7%	10.64	77,971	3.97
Sheffield	915,052	2.20%	750,394	712,968	77.9%	153,520	16.8%	43,788	4.8%	4,776	0.5%	10.52	74,890	3.81
Nottingham	799,057	1.92%	631,310	600,559	75.2%	161,898	20.3%	32,475	4.1%	4,125	0.5%	10.63	74,448	4.48
Bristol	772,377	1.86%	599,825	562,510	72.8%	167,473	21.7%	38,280	5.0%	4,114	0.5%	11.05	75,433	4.80
Peterborough	760,242	1.83%	616,177	576,586	75.8%	137,743	18.1%	41,728	5.5%	4,184	0.6%	10.95	80,479	4.15
Leicester	716,876	1.72%	587,739	551,330	76.9%	122,969	17.2%	38,221	5.3%	4,356	0.6%	10.82	76,666	3.89
Cardiff	687,899	1.65%	536,037	507,784	73.8%	144,022	20.9%	31,966	4.6%	4,127	0.6%	10.24	74,796	4.43
Newcastle	687,587	1.65%	551,801	525,231	76.4%	126,978	18.5%	31,916	4.6%	3,461	0.5%	9.79	68,703	4.54
Glasgow	670,544	1.61%	530,298	510,117	76.1%	133,192	19.9%	23,061	3.4%	4,174	0.6%	8.80	61,716	4.29
Portsmouth	625,206	1.50%	489,710	461,835	73.9%	131,509	21.0%	29,234	4.7%	2,628	0.4%	11.60	75,352	4.84
Reading	623,865	1.50%	513,174	482,724	77.4%	105,154	16.9%	32,332	5.2%	3,655	0.6%	10.73	72,999	4.14
Coventry	593,911	1.43%	488,061	459,746	77.4%	100,501	16.9%	30,602	5.2%	3,062	0.5%	10.64	75,264	4.03
Manchester	592,064	1.42%	481,359	445,508	75.2%	106,446	18.0%	35,609	6.0%	4,501	0.8%	10.72	76,134	3.98
Norwich	583,152	1.40%	463,453	441,183	75.7%	114,778	19.7%	24,847	4.3%	2,344	0.4%	11.42	78,271	4.48
Guilford	558,957	1.34%	453,514	424,667	76.0%	102,363	18.3%	28,832	5.2%	3,095	0.6%	10.90	71,254	4.32
Tonbridge	558,799	1.34%	452,877	424,926	76.0%	102,158	18.3%	28,489	5.1%	3,226	0.6%	11.33	73,123	4.25
Northampton	556,083	1.34%	441,202	415,852	74.8%	109,559	19.7%	27,792	5.0%	2,880	0.5%	10.52	77,933	4.28
Derby	555,954	1.34%	454,521	430,925	77.5%	97,210	17.5%	25,162	4.5%	2,657	0.5%	10.53	73,697	4.17
<b>Total</b>	<b>41,629,334</b>	<b>100.00%</b>	<b>32,937,295</b>	<b>31,602,622</b>	<b>75.9%</b>	<b>7,710,0...</b>	<b>18.5%</b>	<b>2,084,570</b>	<b>5.0%</b>	<b>232,113</b>	<b>0.6%</b>	<b>10.62</b>	<b>73,538</b>	<b>4.33</b>

# Time Intelligence

<b>41.6M</b>	<b>31.6M</b>	<b>7.7M</b>	<b>75.9%</b>	<b>18.5%</b>	<b>5.0%</b>
Tests Conducted	Tests Passed	Tests Failed	Pass Rate	Fail Rate	PRS Rate

## Test Outcomes by Month

January 2022 - December 2022

Season	Month	Tests		Passed		Failed		PRS		Incomplete	
Winter	January	3,684,130	8.85%	2,735,090	74.2%	738,602	20.0%	190,178	5.2%	20,257	0.5%
Winter	February	3,404,291	8.18%	2,565,343	75.4%	649,097	19.1%	170,496	5.0%	19,352	0.6%
Spring	March	4,386,364	10.54%	3,366,232	76.7%	782,178	17.8%	214,379	4.9%	23,575	0.5%
Spring	April	2,469,670	5.93%	1,882,952	76.2%	445,052	18.0%	127,235	5.2%	14,428	0.6%
Spring	May	2,762,523	6.64%	2,112,042	76.5%	494,306	17.9%	140,684	5.1%	15,491	0.6%
Summer	June	3,069,382	7.37%	2,354,159	76.7%	544,770	17.7%	153,953	5.0%	16,499	0.5%
Summer	July	3,162,145	7.60%	2,410,074	76.2%	576,823	18.2%	157,702	5.0%	17,544	0.6%
Summer	August	3,554,778	8.54%	2,704,154	76.1%	655,715	18.4%	175,406	4.9%	19,503	0.5%
Autumn	September	4,179,602	10.04%	3,210,295	76.8%	744,577	17.8%	202,576	4.8%	22,150	0.5%
Autumn	October	4,160,459	9.99%	3,131,580	75.3%	798,615	19.2%	206,956	5.0%	23,307	0.6%
Autumn	November	3,947,411	9.48%	2,962,693	75.1%	763,332	19.3%	198,635	5.0%	22,748	0.6%
Winter	December	2,851,475	6.85%	2,170,355	76.1%	517,290	18.1%	146,559	5.1%	17,271	0.6%
<b>Total</b>		<b>41,632,230</b>	<b>100.00%</b>	<b>31,604,969</b>	<b>75.9%</b>	<b>7,710,357</b>	<b>18.5%</b>	<b>2,084,759</b>	<b>5.0%</b>	<b>232,125</b>	<b>0.6%</b>

# Month on Month

41.6M  
Tests Conducted

31.6M  
Tests Passed

7.7M  
Tests Failed

75.9%  
Pass Rate

18.5%  
Fail Rate

5.0%  
PRS Rate

## Month on Month Comparison of Test Outcomes

January 2022 - December 2022

Season	Month	Tests	MoM	Passed	MoM	Failed	MoM	PRS	MoM	Incomplete	MoM
Winter	January	3,684,130		2,735,090		738,602		190,178		20,257	
Winter	February	3,404,291	-279,839	2,565,343	-169,747	649,097	-89,505	170,496	-19,682	19,352	-905
Spring	March	4,386,364	982,073	3,366,232	800,889	782,178	133,081	214,379	43,883	23,575	4,223
Spring	April	2,469,670	-1,916,694	1,882,952	-1,483,280	445,052	-337,126	127,235	-87,144	14,428	-9,147
Spring	May	2,762,523	292,853	2,112,042	229,090	494,306	49,254	140,684	13,449	15,491	1,063
Summer	June	3,069,382	306,859	2,354,159	242,117	544,770	50,464	153,953	13,269	16,499	1,008
Summer	July	3,162,145	92,763	2,410,074	55,915	576,823	32,053	157,702	3,749	17,544	1,045
Summer	August	3,554,778	392,633	2,704,154	294,080	655,715	78,892	175,406	17,704	19,503	1,959
Autumn	September	4,179,602	624,824	3,210,295	506,141	744,577	88,862	202,576	27,170	22,150	2,647
Autumn	October	4,160,459	-19,143	3,131,580	-78,715	798,615	54,038	206,956	4,380	23,307	1,157
Autumn	November	3,947,411	-213,048	2,962,693	-168,887	763,332	-35,283	198,635	-8,321	22,748	-559
Winter	December	2,851,475	-1,095,936	2,170,355	-792,338	517,290	-246,042	146,559	-52,076	17,271	-5,477
<b>Total</b>		<b>41,632,230</b>	<b>2,851,475</b>	<b>31,604,969</b>	<b>2,170,355</b>	<b>7,710,357</b>	<b>517,290</b>	<b>2,084,759</b>	<b>146,559</b>	<b>232,125</b>	<b>17,271</b>

7.4%

7.4%

7.2%

7.6%

8.0%

# Key Figures

We begin by looking at the data for all vehicles classes in this section.

In **2022**, **41,628,859** tests had been carried out on **32,883,078** vehicles. That's approximately **105,600** vehicles tested per day, an average of **4,400** vehicles tested per hour.

Overall **Pass** rate was **75.9%**, accounted for by 31,551,107 tests. A further 2,081,562 tests **Passed with Rectification at Station** (PRS) - they made up **5%**.

Overall **Fail** rate was **18.5%**, consisting of 7,701,453 tests. Of the remaining tests, **0.5%** were **Aborted** (208,230), **0.06%** were **Abandoned** (23,896), and **0%** were **Aborted** (20).

**January** had the highest fail rate at **20%**. Meanwhile, **September** enjoyed the highest pass rate at **76.8%**. **Winter** had the highest fail rate at **19.2%**. Cold temperatures are tough on vehicles; fluids become thick, rubber parts become hard or brittle (wiper blades), batteries are less efficient, and engines have a harder time starting up.

**German** manufacturers dominated, with **8.2 million** motors visiting a test station. **Japanese-origin** vehicles were second most common, with **5.7 million** tested.

**London** conducted the most tests on the most vehicles, **1.5 million** tests on **1.2 million** vehicles. **Birmingham** was next, with **1.2 million** tests on **1 million** vehicles.

Populous **Scottish** cities like **Glasgow**, **Falkirk**, **Aberdeen**, **Paisley**, **Aberdeen**, **Dundee**, **Edinburgh** and **Inverness** had the lowest average age of vehicle, circling the **9 year** mark, while also having the lowest average mileage nationally.

# Time Analysis

At **4,386,364**, **March** had the highest number of tests, **77.61%** higher than **April**, which had the lowest number of tests at **2,469,670**. To explain the number of tests carried out in March, we need to explain the vehicle registration system in the UK and the age at which a vehicle is required to undergo its first MOT.

Manufacturers release new vehicles throughout the year. However, new vehicles are registered in only one of two months, **March** or **September**. A vehicle must be tested by either:

- ❖ The third anniversary of its registration
- ❖ The anniversary of its last MOT, if it's over 3 years old

If a family car was registered in March 2019, its first MOT will be due in March 2022. Some vehicles need to be tested by their first anniversary. These are primarily ambulances, taxis, and passenger vehicles with more than 8 seats.

**Class 4** vehicles make up over **94%** (39.3 million) of all tests. The large number of tests in **March**, **September** and **October** are attributed to these Class 4 vehicles coming up to their registration anniversary.

There was a steady increase in the number of tests from an all-year low in **April** to the second highest month of **September**. A possible explanation is that many owners may choose to have the test carried out earlier than the required date. The DVSA permits a vehicle to be tested one month (minus one day) earlier than the mandatory date while keeping the same anniversary date. This flexibility is a possible explanation for **February** and **August's** figures.

# Failure Analysis

86,352,508 rejections (defects) were recorded in 2022:

- ❖ 21,246,488 Fails (24.6%)
- ❖ 6,222,623 Minor Defects (7.2%)
- ❖ 55,683,672 Advisories (64.5%)
- ❖ 3,199,725 Rectifications at Station (3.7%)

We've listed the most common reason in each category along with a probable cause on the next page.

During the test, the tester may optionally record the location of a defect on the vehicle; laterally, longitudinally and vertically.

The split between defects recorded on the **Nearside (50.2%)** and defects recorded on the **Offside (49.9%)** was near enough right down the middle, with **Nearside** taking the lead slightly. We suspect the reduced visibility and distance from the driver may explain the small difference between the two halves.

The split between defects recorded on the **Front (57.5%)** and defects recorded on the **Rear (42.3%)** was more deliberate. The most common defect recorded across vehicle classes and defect categories revolves around **tyres** not being up to scratch. Combining this with the most common drive-train on the road, **front-wheel drive**, we can get a good idea of why the front sees considerably more defects.

# Failure Analysis

## Fail

**A suspension pin, bush or joint excessively worn (7.6%, 1.6 million fails)**

Suspension bushes are the rubber parts between suspension joints responsible for making the ride smooth, preventing metal-to-metal contact and controlling the amount of roll. Inevitably, these wear down over time. This is an expensive repair amongst the common wear-and-tear repairs.

## Minor Defect

**A rear registration plate lamp light is missing or defective (19.4%, 1.2 million defects)**

If your vehicle's rear registration plate was not fully illuminated at night, your vehicle may have contributed to this number. A common reason for registration lamps to become inoperative is a blown fuse.

## Advisory

**Tyre tread depth not in accordance with requirements (19.4%, 10.8 million advisories)**

Ice, snow, grit, debris, rough surfaces and hazardous weather all take a toll on exposed components. Typically, tyres are the only parts of a vehicle in contact with the surface while in motion, making them most exposed to the elements. If there are other parts of your vehicle in contact with the surface, you've got bigger problems than tyre tread depths.

## Passed with Rectification at Station

**The aim of a headlamp is not within limits (23.4%, 0.7 million recorded)**

Headlights aimed too low can impair visibility just as headlights aimed too high. This rejection can and is usually fixed after the MOT by a garage in a few minutes.

# Characteristics Analysis

**32,939,753** vehicles were tested in 2022. **94.2%** were **Class 4**, **2.7%** were **Class 7** and **2.3%** were **Class 2**. A refresher on vehicle classes is found in Section 2.

The most popular propellant was **Petrol** with **53.4%** (17,578,886) of vehicles followed by **Diesel** with **44.2%** (14,570,908) vehicles. In third place was **Hybrids** with **2%** (646,493) of vehicles while **Electric** powertrains had a **0.3%** (113,524) share.

The average age was **10.5 years**, with stations seeing **6-year-old** vehicles the most. The average mileage was **73,536**. These numbers indicate a preference of ownership over leasing or hiring a vehicle.

**Black** was the most popular shade with **19.1%** of vehicles sporting this hue followed by **White**, found on **18.9%** of vehicles.

The most popular engine size was **2 Litres** (2000cc) found in **19.1%** (6,314,681) vehicles. The second most popular was **1.6 Litres** (1600cc), found in **16.1%** (5,300,214) motors.

Notably, vehicles with **2 Litre** engines had almost double the average mileage at **81,055**, compared with their **1 Litre** counterparts who sat at an average of **43,512** miles. It's known vehicles with smaller capacity engines are sought after for their economy, ripe for nipping about locally, while larger capacity engines are more suited for eating up those endless highway miles.

# Make Analysis

We filtered the list of makes to show the top 25 based on the number of vehicles tested.

The make with the highest pass rate was **BMW**, at **81%**. The make with the highest fail rate was **Renault** at **24.6%**. **German** and **Japanese** manufacturers have noticeably higher pass rates than manufacturers from other origins.

**Ford** had the greatest number of vehicles tested, an astonishing **4.6 million**. That's an average of **15,000** Fords tested per day. **Vauxhall** had the second most number of vehicles with **3.1 million**.

**Honda** had the oldest average age at **12.9 years**. **Volvo** had the highest average mileage at **87,547**, followed by **Land Rover** with **85,676 miles**.

**Toyota** dominated the list of **Hybrids** with **335,649** vehicles. The **Yaris** line-up was the most common model for **Toyota** but the **Prius** range (see what we did there) is sought after for its efficiency, making them popular with taxi drivers across the nation. This is because the Prius employs multiple forms of motive power, electric and combustion.

**Nissan** took charge of makes with the most **Electric** vehicles tested, **33,289**, thanks in large part to their **Leaf** range.

Looking at all makes with more than 25 vehicles tested, the oldest average age was **Lagonda**, now owned by Aston Martin. **29** motors were tested, averaging an age of **72.3 years**.

We were expecting Class 7 makes to have the highest average mileage but that award went to a **Class 4** make, **Metrocab**, with an average mileage of **325,258**.

# Location Analysis

**Enfield, Middlesex** had the highest pass rate at **80.6%**. In contrast, **Kirkcaldy, Fife**, had the highest fail rate at **26%** and the highest number of average rejections at **5.3** per vehicle.

**Dorchester, Dorset** had the oldest average age of vehicles tested and the highest average mileage. The average age of vehicles tested was **12.5 years**, 2 years older than the national average of **10.5 years**. The average mileage was **83,423**, a full 10,000 miles over the national average of **73,538**. We suspect the distance to the beautiful coastlines of Dorset has something to do with this.

Interestingly, the top 7 locations with the highest fail rates (**Kirkcaldy, Dundee, Truro, Plymouth, Aberdeen, Torquay** and **Exeter**) are all located on the coast. When analysing the rejections in these areas, corrosion caused by salty seas did indeed cause MOT tests to fail.

Salt acts as a corrosion agent, deteriorating metal parts, paint, and finishes. The **United Kingdom** is surrounded by salty seas. The **Galvanizers Association** released a map that measures coastal distance and metal corrosion. In the map, the effects of corrosion are manifest anywhere between **30 to 50 miles** inland.

Additionally, of those 7, the **English** cities and towns were amongst the locations with highest average mileages.

# In a few nutshell

Now that we've analysed data inclusive of all vehicle classes, we can draw a few obvious and not-so-obvious conclusions.

The most common vehicles are those that are under **10 years old**, have an engine capacity between **1 Litre** and **2 Litres**, are **black** or **white** in colour, are **petrol** or **diesel** powered, and have between **20,000** and **50,000** miles on the clock.

A dependable motor is one that is looked after, especially in the harsher climates and environments. But that is only as good as the build quality of the vehicle itself. The adage of buying **German** or **Japanese** holds some weight.

A quick inspection of your vehicle before setting off for the MOT station would be wise. A brief checklist:

- ❖ Fluids are at optimal levels (windscreen washer, brake and clutch, engine oil, coolant)
- ❖ Headlights and rear-lights operate as expected
- ❖ Dashboard is clear of any warning lights (especially the red ones)
- ❖ Tyre tread depth meets legal requirement

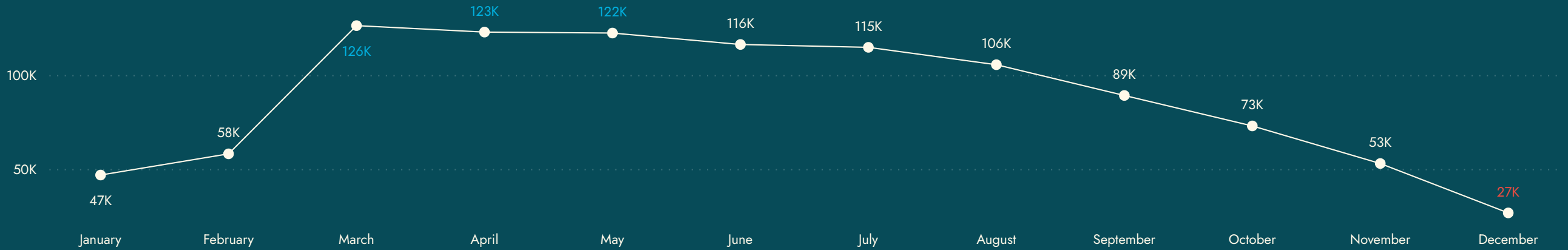


# Overview

<b>1.1M</b> Tests Conducted	<b>900.9K</b> Tests Passed	<b>88.4K</b> Tests Failed	<b>85.4%</b> Pass Rate	<b>8.4%</b> Fail Rate	<b>5.8%</b> PRS Rate
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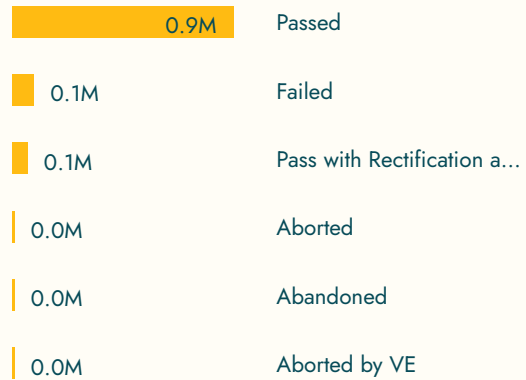
## Tests by Month

January 2022 - December 2022



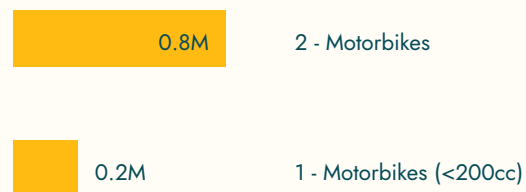
### Tests by Result

(Millions)



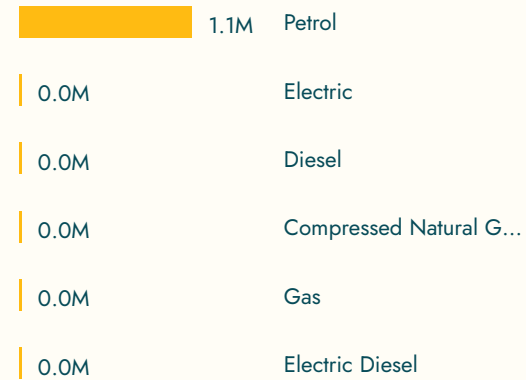
### Tests by Vehicle Class

(Millions)



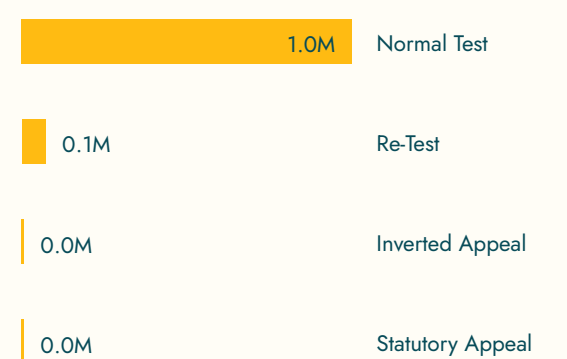
### Tests by Fuel Type

(Millions)



### Tests by Test Type

(Millions)



# Defects

785.5K  
Rejections

482.0K  
Advisory Rejections

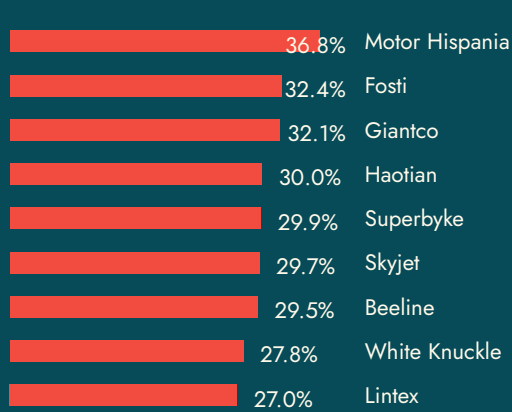
204.6K  
Fail Rejections

21.0K  
Minor Defect Rejections

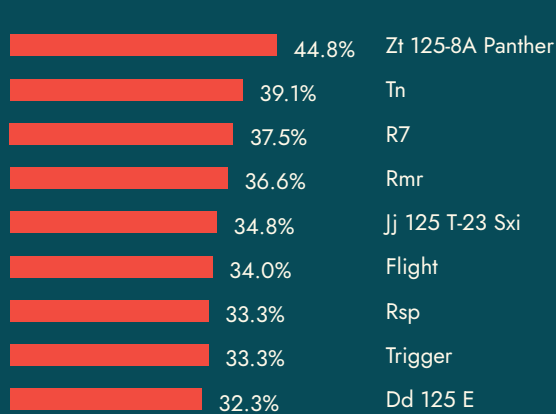
77.8K  
PRS Rejections

1.1M  
Tests Conducted

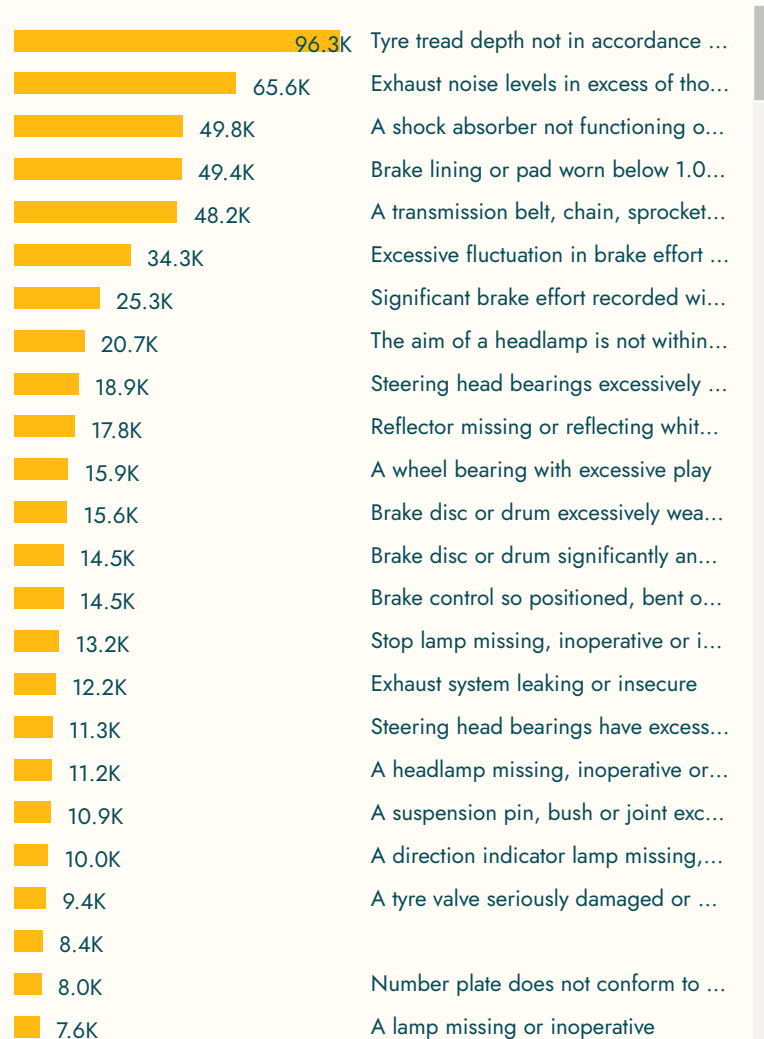
Failure Rate by Vehicle Make  
(Percentage)



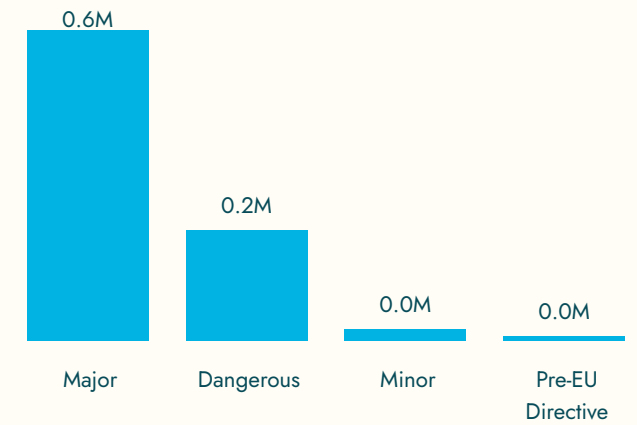
Failure Rate by Vehicle Model  
(Percentage)



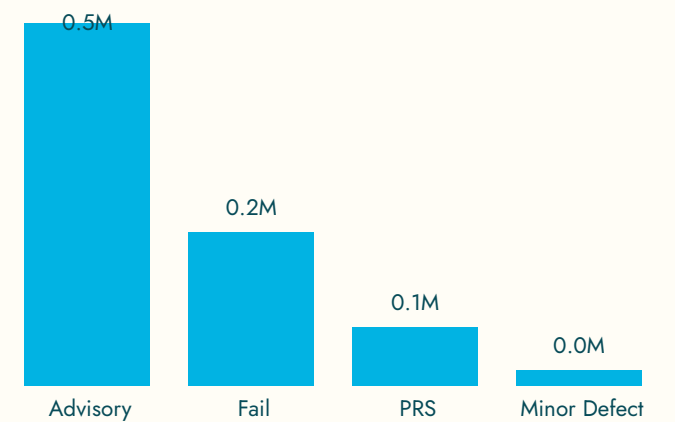
Rejections by Reason  
(Millions)



Rejections by EU Category  
(Millions)



Rejections by Rejection Category  
(Millions)



# Characteristics

952.9K

Vehicles Tested

18.4K

Average Mileage

13.5

Average Age (Years)

2,824

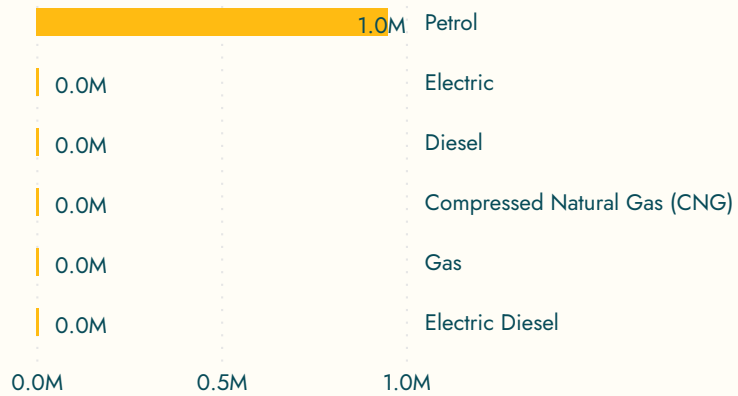
Vehicles Tested Per Day

2.3

Avg. Rejections Per Vehicle

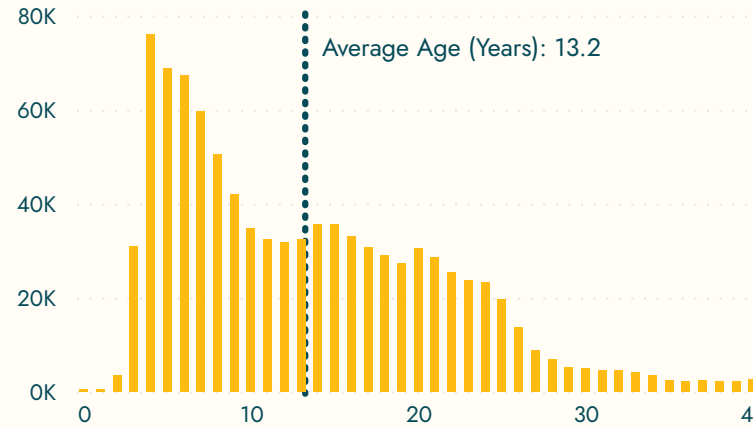
Vehicles Tested by Fuel Type

(Millions)



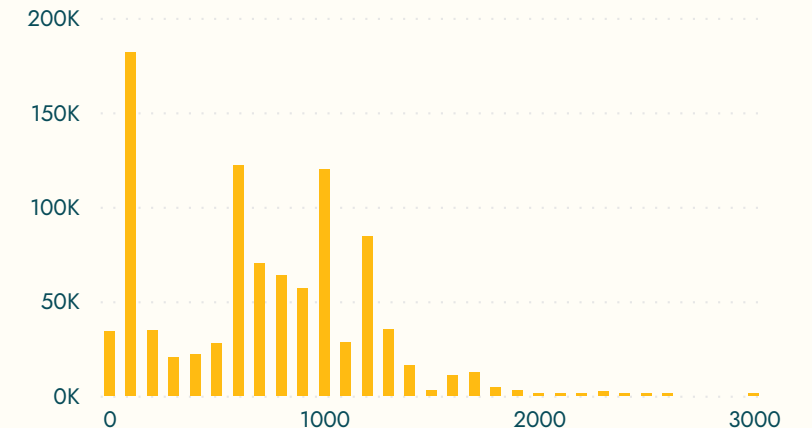
Vehicles Tested by Age

(Years)



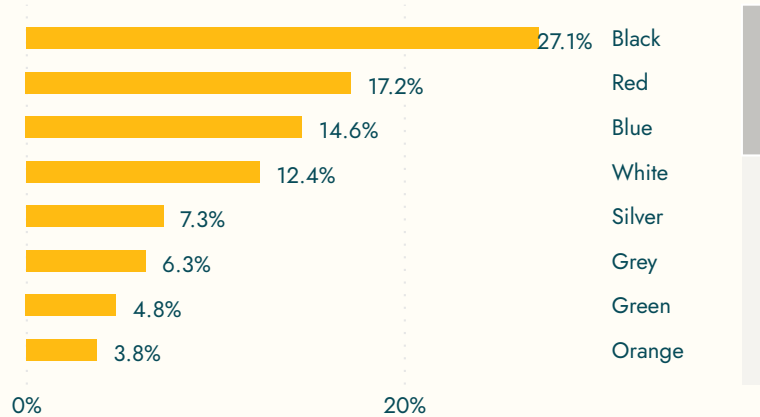
Vehicles Tested by Engine Size

(Cubic Centimetres, CC)



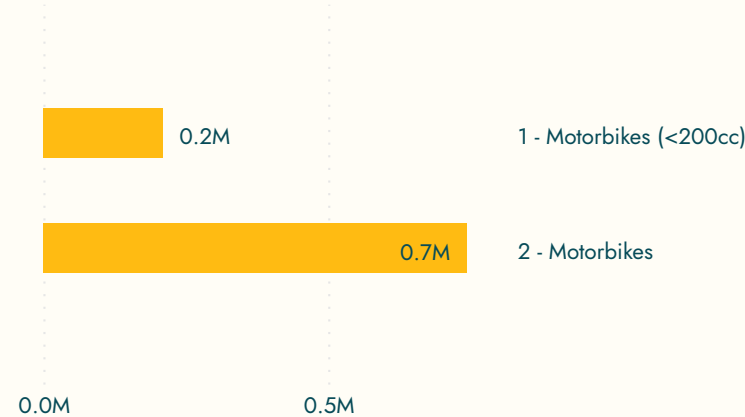
Vehicles Tested by Colour

(Millions)



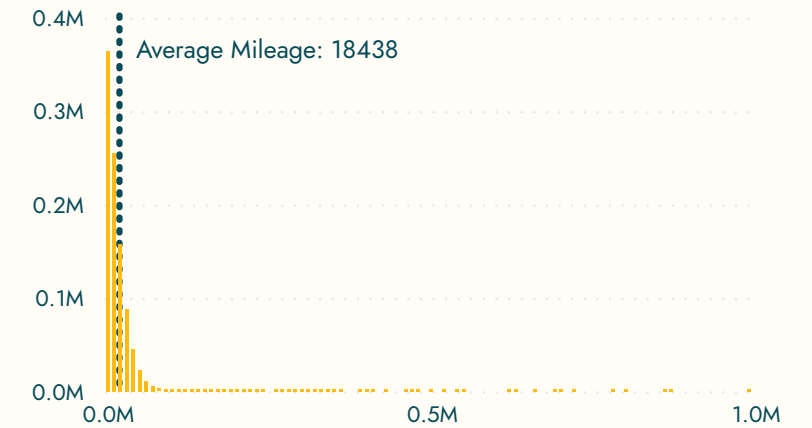
Vehicles Tested by Class

(Millions)



Vehicles Tested by Mileage

(Millions)



# Makes

1.1M	900.9K	88.4K	85.4%	8.4%	5.8%
Tests Conducted	Tests Passed	Tests Failed	Pass Rate	Fail Rate	PRS Rate

## Characteristics by Vehicle Make

Displaying makes with 25 tested vehicles or more

Make	Vehicles	Petrol	Diesel	Hybrid	Avg. Age (Years)	Avg. Mileage	Avg. Tested Per Day
Honda	210,723	210,694	19		14.42	23,109	633
Yamaha	138,585	138,548	8		14.45	20,149	416
Suzuki	105,914	105,904	9		16.48	21,372	320
Triumph	88,993	88,981	11		11.74	16,545	267
Kawasaki	79,555	79,540	12		15.07	19,809	240
Bmw	70,356	70,255	8		11.92	24,410	214
Piaggio	35,070	35,030	4		13.03	12,157	111
Harley-Davidson	27,838	27,830	8		13.15	14,896	88
Ducati	27,730	27,727	3		11.62	12,199	86
Ktm	26,334	26,304	6		8.62	9,233	83
Harley Davidson	23,844	23,841	2		13.66	15,943	75
Aprilia	14,417	14,415	1		13.98	14,721	48
Lexmoto	11,434	11,434			5.65	7,321	42
Peugeot	7,304	7,304			10.05	10,431	27
Royal Enfield	6,960	6,943	17		8.75	6,639	23
Moto Guzzi	5,286	5,286			16.01	19,318	18
Sym	5,264	5,262	2		8.30	11,046	19
Husqvarna	3,513	3,513			7.61	4,002	12
Ajs	2,981	2,981			7.47	6,150	11
<b>Total</b>	<b>905,943</b>	<b>905,627</b>	<b>114</b>		<b>13.58</b>	<b>18,992</b>	<b>2,680</b>

# Makes

1.1M Tests Conducted    900.9K Tests Passed    88.4K Tests Failed    85.4% Pass Rate    8.4% Fail Rate    5.8% PRS Rate

## Test Outcomes by Vehicle Make

Displaying makes with 25 tested vehicles or more

Make	Vehicles	Tests		Passed		Failed		PRS		Incomplete	
		Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Honda	210,723	233,876	23.38%	199,678	85.4%	20,154	8.6%	13,259	5.7%	784	0.3%
Yamaha	138,585	154,727	15.47%	129,924	84.0%	14,289	9.2%	10,022	6.5%	492	0.3%
Suzuki	105,914	117,205	11.71%	99,624	85.0%	10,079	8.6%	7,154	6.1%	347	0.3%
Triumph	88,993	96,240	9.62%	85,733	89.1%	5,345	5.6%	4,913	5.1%	249	0.3%
Kawasaki	79,555	87,355	8.73%	75,134	86.0%	6,552	7.5%	5,439	6.2%	230	0.3%
Bmw	70,356	75,441	7.54%	69,173	91.7%	3,293	4.4%	2,756	3.7%	219	0.3%
Piaggio	35,070	38,918	3.89%	32,920	84.6%	3,652	9.4%	2,186	5.6%	160	0.4%
Harley-Davidson	27,838	29,801	2.98%	26,696	89.6%	1,429	4.8%	1,604	5.4%	72	0.2%
Ducati	27,730	29,899	2.99%	26,641	89.1%	1,570	5.3%	1,586	5.3%	102	0.3%
Ktm	26,334	29,096	2.91%	24,511	84.2%	2,358	8.1%	2,117	7.3%	110	0.4%
Harley Davidson	23,844	25,514	2.55%	22,739	89.1%	1,284	5.0%	1,423	5.6%	68	0.3%
Aprilia	14,417	16,224	1.62%	13,520	83.3%	1,655	10.2%	977	6.0%	72	0.4%
Lexmoto	11,434	14,622	1.46%	10,007	68.4%	3,323	22.7%	1,206	8.2%	86	0.6%
Peugeot	7,304	8,660	0.87%	6,748	77.9%	1,366	15.8%	498	5.8%	48	0.6%
Royal Enfield	6,960	7,404	0.74%	6,615	89.3%	337	4.6%	426	5.8%	26	0.4%
Moto Guzzi	5,286	5,645	0.56%	5,045	89.4%	286	5.1%	296	5.2%	18	0.3%
Sym	5,264	6,192	0.62%	4,869	78.6%	914	14.8%	381	6.2%	28	0.5%
Husqvarna	3,513	3,887	0.39%	3,229	83.1%	349	9.0%	292	7.5%	17	0.4%
Ajs	2,981	3,561	0.36%	2,658	74.6%	602	16.9%	281	7.9%	20	0.6%
<b>Total</b>	<b>905,943</b>	<b>1,000,471</b>	<b>100.00%</b>	<b>858,196</b>	<b>85.8%</b>	<b>81,199</b>	<b>8.1%</b>	<b>57,833</b>	<b>5.8%</b>	<b>3,241</b>	<b>0.3%</b>

# Country of Origin

1.1M	900.9K	88.4K	85.4%	8.4%	5.8%
Tests Conducted	Tests Passed	Tests Failed	Pass Rate	Fail Rate	PRS Rate

## Outcomes by Country of Origin

January 2022 - December 2022

Origin	Vehicles	Tests		Passed		Failed		PRS		Incomplete	
		Count	Pass Rate	Count	Pass Rate	Count	Fail Rate	Count	Fail Rate	Count	Fail Rate
Japan	316,637	351,081	80.67%	299,302	85.3%	30,233	8.6%	20,413	5.8%	1,131	0.3%
Germany	70,357	75,442	17.34%	69,174	91.7%	3,293	4.4%	2,756	3.7%	219	0.3%
France	7,305	8,661	1.99%	6,749	77.9%	1,366	15.8%	498	5.7%	48	0.6%
Italy	3	3	0.00%	3	100.0%						
England	2	2	0.00%	2	100.0%						
South Korea	2	2	0.00%	2	100.0%						
<b>Total</b>	<b>394,306</b>	<b>435,191</b>	<b>100.00%</b>	<b>375,232</b>	<b>86.2%</b>	<b>34,892</b>	<b>8.0%</b>	<b>23,667</b>	<b>5.4%</b>	<b>1,398</b>	<b>0.3%</b>

# Locations

1.1M Tests Conducted    900.9K Tests Passed    88.4K Tests Failed    85.4% Pass Rate    8.4% Fail Rate    5.8% PRS Rate

## Test Outcomes by Location

January 2022 - December 2022

Area	Tests		Vehicles	Passed		Failed		PRS		Incomplete		Avg. Age (Years)	Avg. Mileage	Avg. Rejections
London	58,791	5.58%	53,956	50,342	85.6%	4,193	7.1%	3,987	6.8%	269	0.5%	9.45	23,998	2.08
Sheffield	23,060	2.19%	21,727	20,005	86.8%	1,188	5.2%	1,799	7.8%	68	0.3%	14.07	17,565	2.11
Nottingham	22,908	2.17%	20,843	19,745	86.2%	1,964	8.6%	1,121	4.9%	78	0.3%	13.78	17,532	2.35
Peterborough	21,699	2.06%	19,642	18,240	84.1%	2,010	9.3%	1,396	6.4%	53	0.2%	14.20	18,793	2.43
Portsmouth	20,700	1.96%	18,680	17,450	84.3%	1,982	9.6%	1,210	5.8%	58	0.3%	14.36	18,707	2.35
Bristol	19,557	1.86%	17,011	15,509	79.3%	2,469	12.6%	1,514	7.7%	65	0.3%	12.86	17,883	2.88
Norwich	19,271	1.83%	17,376	16,481	85.5%	1,925	10.0%	814	4.2%	51	0.3%	14.27	18,232	2.61
Leicester	18,220	1.73%	16,777	16,036	88.0%	1,317	7.2%	821	4.5%	46	0.3%	14.04	17,107	2.29
Birmingham	17,884	1.70%	16,333	15,165	84.8%	1,451	8.1%	1,208	6.8%	60	0.3%	13.67	17,965	2.03
Gloucester	16,968	1.61%	15,223	14,392	84.8%	1,637	9.6%	897	5.3%	42	0.2%	13.74	17,574	2.59
Tonbridge	16,175	1.53%	14,892	13,860	85.7%	1,242	7.7%	1,019	6.3%	54	0.3%	14.06	18,838	2.16
Guilford	16,163	1.53%	14,634	13,606	84.2%	1,489	9.2%	1,019	6.3%	49	0.3%	12.57	17,417	2.34
Plymouth	16,068	1.52%	14,480	13,364	83.2%	1,526	9.5%	1,117	7.0%	61	0.4%	13.79	18,486	2.54
Derby	15,927	1.51%	14,496	13,849	87.0%	1,378	8.7%	652	4.1%	48	0.3%	13.51	16,572	2.09
Ipswich	15,912	1.51%	14,361	13,585	85.4%	1,522	9.6%	767	4.8%	38	0.2%	14.31	17,678	2.46
Doncaster	15,762	1.50%	14,430	13,465	85.4%	1,281	8.1%	969	6.1%	47	0.3%	14.29	17,966	2.18
York	15,494	1.47%	14,175	13,559	87.5%	1,204	7.8%	661	4.3%	70	0.5%	13.89	17,652	2.10
Exeter	15,396	1.46%	13,465	12,421	80.7%	1,841	12.0%	1,070	6.9%	64	0.4%	14.20	18,105	2.55
Newcastle	15,320	1.45%	14,315	13,300	86.8%	916	6.0%	1,068	7.0%	36	0.2%	13.70	17,658	2.04
<b>Total</b>	<b>1,054,095</b>	<b>100.00%</b>	<b>952,511</b>	<b>900,553</b>	<b>85.4%</b>	<b>88,364</b>	<b>8.4%</b>	<b>61,649</b>	<b>5.8%</b>	<b>3,527</b>	<b>0.3%</b>	<b>13.51</b>	<b>18,439</b>	<b>2.32</b>

# Time Intelligence

1.1M	900.9K	88.4K	85.4%	8.4%	5.8%
Tests Conducted	Tests Passed	Tests Failed	Pass Rate	Fail Rate	PRS Rate

## Test Outcomes by Month

January 2022 - December 2022

Season	Month	Tests	Passed	Failed	PRS	Incomplete
Winter	January	46,785	38,840	4,708	3,072	165
Winter	February	58,067	48,869	5,264	3,740	194
Spring	March	126,308	108,641	9,876	7,389	402
Spring	April	122,871	105,460	9,834	7,199	377
Spring	May	122,362	104,896	9,861	7,180	425
Summer	June	116,273	99,864	9,346	6,683	380
Summer	July	114,750	98,390	9,514	6,464	381
Summer	August	105,505	90,535	8,862	5,775	333
Autumn	September	89,135	76,456	7,359	5,032	288
Autumn	October	72,923	61,982	6,498	4,154	289
Autumn	November	52,913	44,477	4,970	3,279	187
Winter	December	26,628	22,511	2,317	1,692	108
<b>Total</b>		<b>1,054,520</b>	<b>900,921</b>	<b>88,409</b>	<b>61,659</b>	<b>3,529</b>

# Month on Month

1.1M  
Tests Conducted

900.9K  
Tests Passed

88.4K  
Tests Failed

85.4%  
Pass Rate

8.4%  
Fail Rate

5.8%  
PRS Rate

## Month on Month Comparison of Test Outcomes

January 2022 - December 2022

Season	Month	Tests	MoM	Passed	MoM	Failed	MoM	PRS	MoM	Incomplete	MoM					
Winter	January	46,785		38,840		4,708		3,072		165						
Winter	February	58,067	11,282	48,869	10,029	5,264	556	3,740	668	194	29					
Spring	March	126,308	68,241	108,641	59,772	9,876	4,612	7,389	3,649	402	208					
Spring	April	122,871	-3,437	105,460	-3,181	9,834	-42	7,199	-190	377	-25					
Spring	May	122,362	-509	104,896	-564	9,861	27	7,180	-19	425	48					
Summer	June	116,273	-6,089	99,864	-5,032	9,346	-515	6,683	-497	380	-45					
Summer	July	114,750	-1,523	98,390	-1,474	9,514	168	6,464	-219	381	1					
Summer	August	105,505	-9,245	90,535	-7,855	8,862	-652	5,775	-689	333	-48					
Autumn	September	89,135	-16,370	76,456	-14,079	7,359	-1,503	5,032	-743	288	-45					
Autumn	October	72,923	-16,212	61,982	-14,474	6,498	-861	4,154	-878	289	1					
Autumn	November	52,913	-20,010	44,477	-17,505	4,970	-1,528	3,279	-875	187	-102					
Winter	December	26,628	-26,285	22,511	-21,966	2,317	-2,653	1,692	-1,587	108	-79					
<b>Total</b>		<b>1,054,520</b>	<b>26,628</b>	<b>2.6%</b>	<b>900,921</b>	<b>22,511</b>	<b>2.6%</b>	<b>88,409</b>	<b>2,317</b>	<b>2.7%</b>	<b>61,659</b>	<b>1,692</b>	<b>2.8%</b>	<b>3,529</b>	<b>108</b>	<b>3.2%</b>

# Key Figures

We'll now switch gears and look at the data for motorbikes. We've grouped together **Class 1** and **Class 2** vehicles for brevity's sake. We certainly don't want you falling asleep at the wheel (or the handlebar).

A total of **1,054,520** tests were carried out on **952,880** of our two-and-three wheeled road companions in **2022**, an average of **2,645** bikes tested per day. **85.4%** passed while **8.4%** failed.

**Honda** was the most popular make, with **22.1%** (210,723) of bikes tested wearing their badge. **Yamaha** was next in line, with **14.5%** (138,585) of bikes sporting their insignia. **Suzuki** came in third taking up **11.1%** (105,914) of bikes.

**Triumph Bonneville** topped the charts as the most popular bike model, with **17,191** bikes.

**Black** was the most popular colour, found on **27.1%** (258,345) bikes, followed by **Red** with **17.2%** (164,009) bikes.

At **19.1%** (181,737 bikes), **100cc** took the lead as the most popular engine. **600cc** followed with a **12.8%** share (121,839 bikes), with **1000cc** close behind at **12.6%** of bikes (119,713).

The average mileage sat at **18,438** while the average age for a bike was **13.5** years.

# Make & Characteristic Analysis

**Honda** was the most popular brand, across every location, every engine size and even every colour, remaining at the top of lists without exception.

However, it was **BMW** that took the crown for having the highest pass rate at **91.7%**. **Lexmoto**, a brand specialising in smaller bikes (50cc – 150cc), had the highest fail rate at **22.7%** but also had the second lowest average age, **5.7 years**.

**Lambretta** bikes were kept around the longest, with an average of **25.4 years**, while the make that saw the most tarmac was **BMW**, averaging **24,410** miles.

**100cc** bikes had the highest fail rate of all engines at **14.4%**. Smaller bikes are on shelves with a lower-price point than larger bikes, meaning the components used in the build may not be as durable or undergo the extensive testing that larger bikes may. Additionally, the cheaper price tag of these bikes make them more disposable and thus, less looked after. For comparison, **9 out of 10** engines with the highest pass rates (**90%** or more) had capacities larger than **1000cc**.

**100cc** bikes are popular because they are more accessible by virtue of being more economically viable. However, the number of 100cc bikes tested considerably dropped once the vehicle age passed **8 years**. This suggests that ownership of these bikes is a matter of utility over a means of leisure.

On the other hand, **600cc** bikes that were old (between 14 and 24 years old) peaked in popularity. These categories tend to attract those with a passion for two-wheeled (or one-wheeled) fun. Expectedly, economy doesn't play as influential a factor so long-term ownership is more common. Indeed, this is attested to by the average mileage sitting at **21,490**.

# Failure Analysis

The most common reason for a motorbike to fail its MOT was down to the **shock absorbers not functioning or leaking severely**. This accounted for **7.3%** of test items in the **Fail** category. A faulty shock absorber wouldn't absorb sharp imperfections in the road as well, making for a very painful backside (or two if riding pillion). The recommendation is to service the suspension components every three years, though five years with standard driving etiquette should be adequate.

Other common reasons in the **Fail** category include **tyre tread depth not in accordance with legal requirements (6.4%)**, **brake lining or pads worn below minimum limits (4.1%)**, **stop lamp or light inoperative or missing (4%)** and **headlamp missing (3.7%)**.

Who doesn't love a good exhaust note on an inline four-cylinder engine? Unfortunately, the MOT requirements don't. **Exhaust noise exceeding permitted levels** was the most common **Major** reason, making up for **11.8%** of rejection items recorded in this category.

**Indicators not flashing between 60 and 120 times a minute** was the most common **Minor** reason, accounting for **22.3%** items in this category.

# Location Analysis

**Bolton** had the highest pass rate of **92.1%** while over in **Bristol**, the fail rate was the highest at **12.6%**. **London** tested the most bikes - **5.7%** of them (53,956). In second place was **Sheffield** with 21,727 bikes (**2.3%**) and in third was **Nottingham** with 20,843 bikes (**2.2%**).

**Greater London** areas also topped the charts of the highest average mileage by location. **London** had the highest with **23,998** miles, followed by **Ilford** (22,929 miles), **Harrow** (22,812 miles), **Croydon** (21,445 miles), **Enfield** (20,636 miles) and **Romford** (20,464 miles).

In **London**, congestion is a very real issue. Therefore, in **February 2003**, the congestion charge was reduced to improve traffic flow and reduce pollution. Motorbikes are exempt from this charge because there is evidence that two-wheeled vehicles don't cause congestion. Thus, denizens turned to bikes for a speedy and economical way to get around.

Moreover, the average age of bikes tested in **London** and surrounding areas was **9.8 years**. Ultra Low Emissions Zone (ULEZ) charge would not apply to these bikes because they'd have been registered far later than July 2007 - the manufacturing date threshold for the charge to apply. This explains the popularity and high average mileage of bikes in Greater London.

# Time Analysis

**March** had the highest pass rate at **86%** and conducted the most tests, 126,308 (**12%**) of them. **January** had the highest fail rate at **10.1%** from 46,785 tests (**4.4%**). **December** had the tests, 26,628 (**2.5%**), a fifth of the number of tests in March.

**Spring** and **Summer** months all enjoyed a pass rate of **85.7%** or higher while the **Autumn** and **Winter** months never saw a fail rate lower than **8.3%**.

**Autumn** and **Winter** weather make for a perilous and uncomfortable ride; road surfaces are slippery, grit from gritters corrode exposed parts (brake calipers especially), high-speed winds affect stability and wind chill is a real nuisance in those frosty mornings. This is the primary reason bikers hibernate their bikes during cold seasons and come back out to play when the Spring shoots show up.

Combining the registration months of **March** and **September**, approximately **36,000** bikes hit their **3rd birthday**, undergoing their first legally-required MOT. The average mileage for these bikes sat at around **8000**.

# Nutshells

Here's what we've learned from analysing data for motorbikes.

Motorbikes have fewer moving parts and see less miles on the road than vehicles of other classes. Therefore, the number of failure points are less than the number of failure points on vehicles of other classes.

If there were around **953,000** bikes tested in 2022, we estimate there to be at least a million bikes in the UK. Many bikes don't require an MOT due to their age or their intended use, some bikes are ridden illegally, and some are sitting in garages.

**March** is the busiest time for stations to test bikes. March brings about the salubrious season of Spring, invoking riders to enjoy endless ground on two wheels.

Check the following before you take your bike in for a test:

- ❖ Tyre tread depths meet legal requirement
- ❖ Headlights, rear lights and indicators are present, reflecting correctly and operating as required
- ❖ No play present in the wheel bearings
- ❖ Shock absorbers are not leaking or damaged
- ❖ Braking power and components are up to scratch
- ❖ Transmission chain and sprockets are not damaged



# Overview

**39.3M**  
Tests Conducted

**29.8M**  
Tests Passed

**7.3M**  
Tests Failed

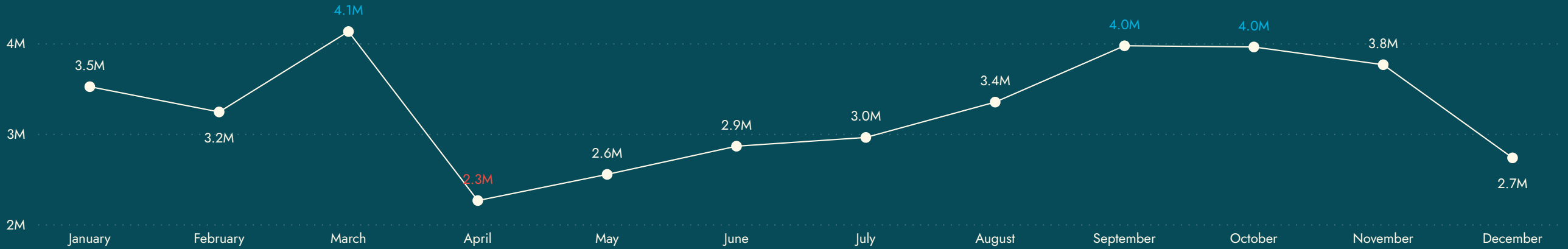
**75.8%**  
Pass Rate

**18.6%**  
Fail Rate

**5.0%**  
PRS Rate

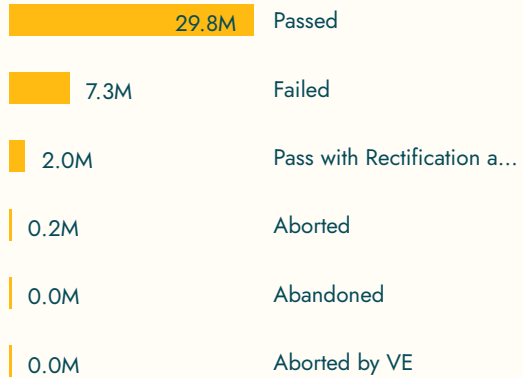
## Tests by Month

January 2022 - December 2022



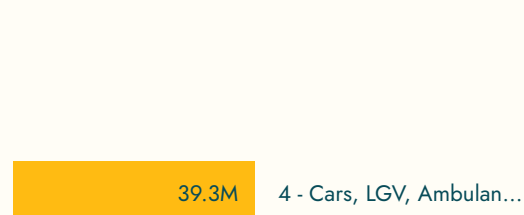
### Tests by Result

(Millions)



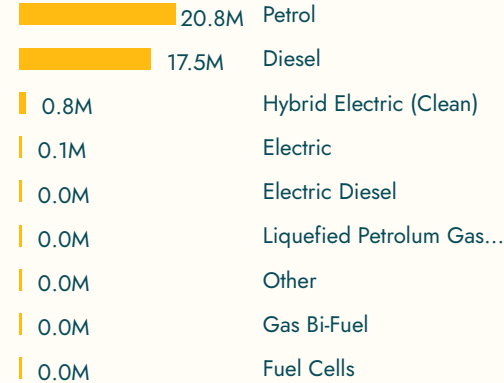
### Tests by Vehicle Class

(Millions)



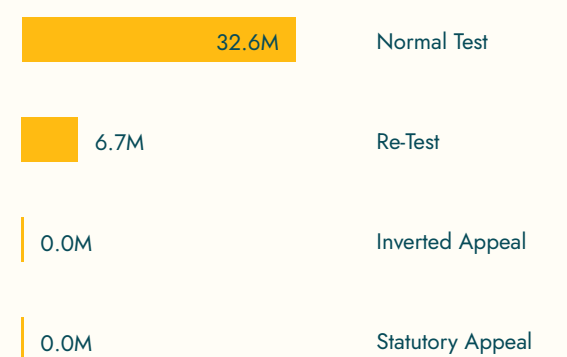
### Tests by Fuel Type

(Millions)



### Tests by Test Type

(Millions)



# Defects

81.9M  
Rejections

53.2M  
Advisory Rejections

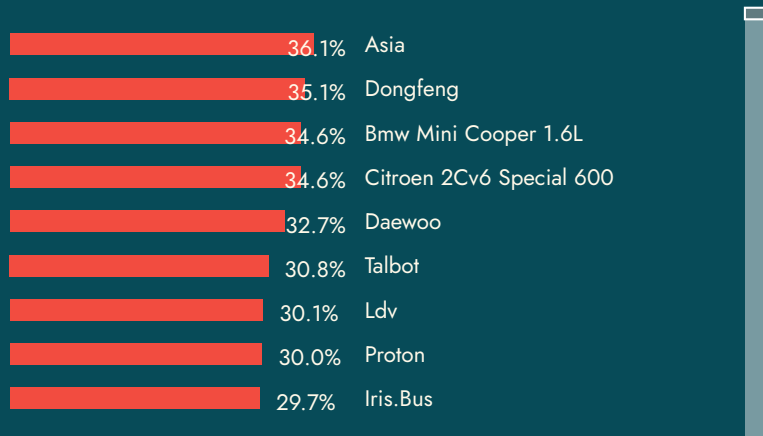
19.9M  
Fail Rejections

5.8M  
Minor Defect Rejections

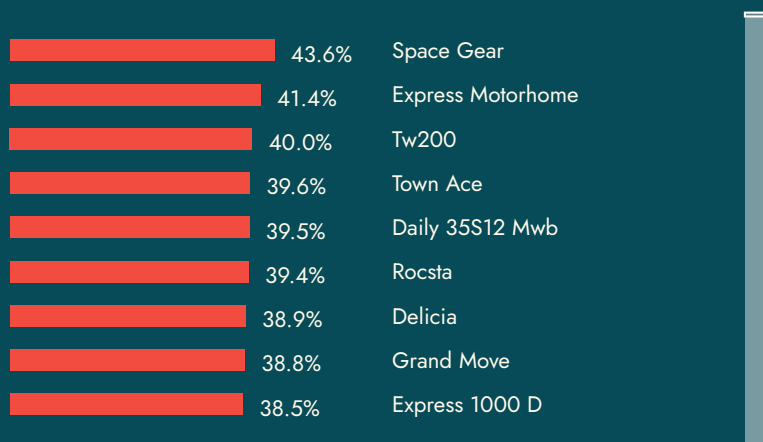
3.0M  
PRS Rejections

39.3M  
Tests Conducted

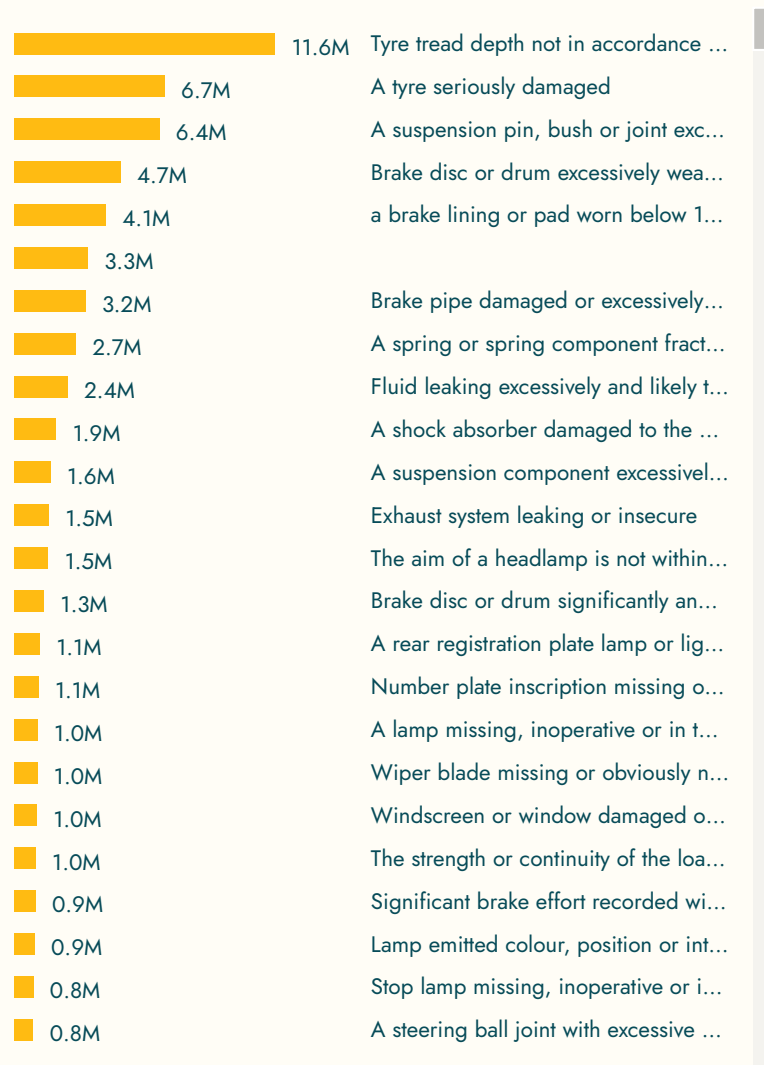
Failure Rate by Vehicle Make  
(Percentage)



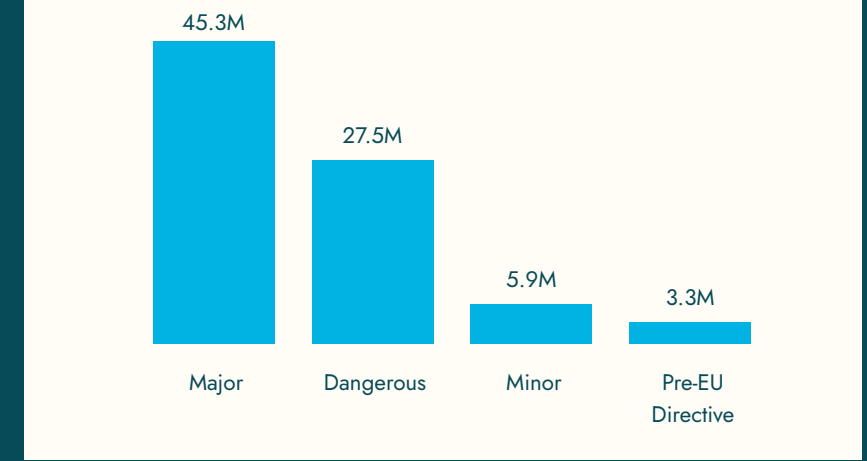
Failure Rate by Vehicle Model  
(Percentage)



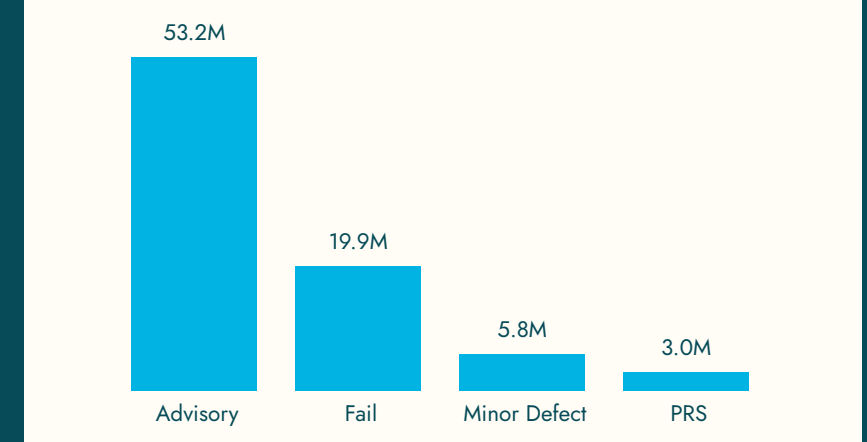
Rejections by Reason  
(Millions)



Rejections by EU Category  
(Millions)



Rejections by Rejection Category  
(Millions)



# Characteristics

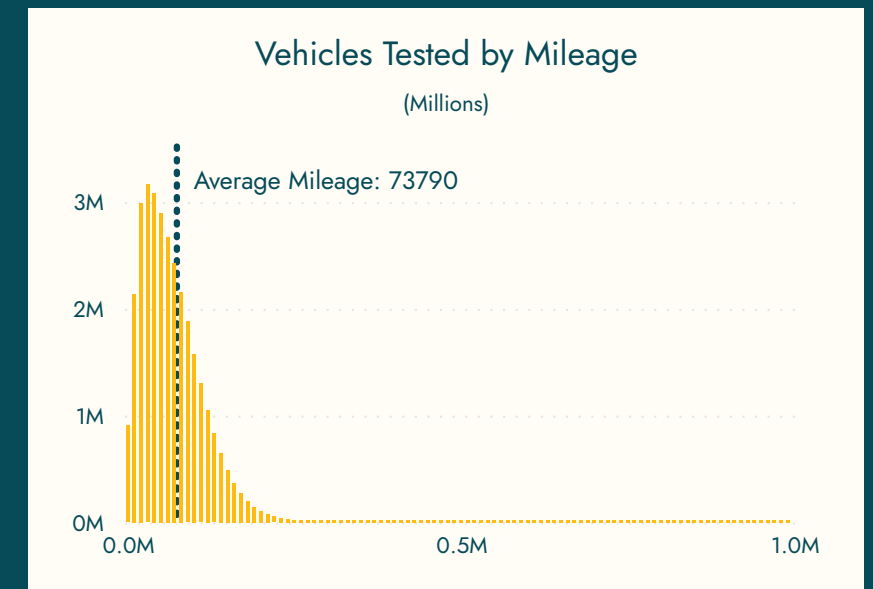
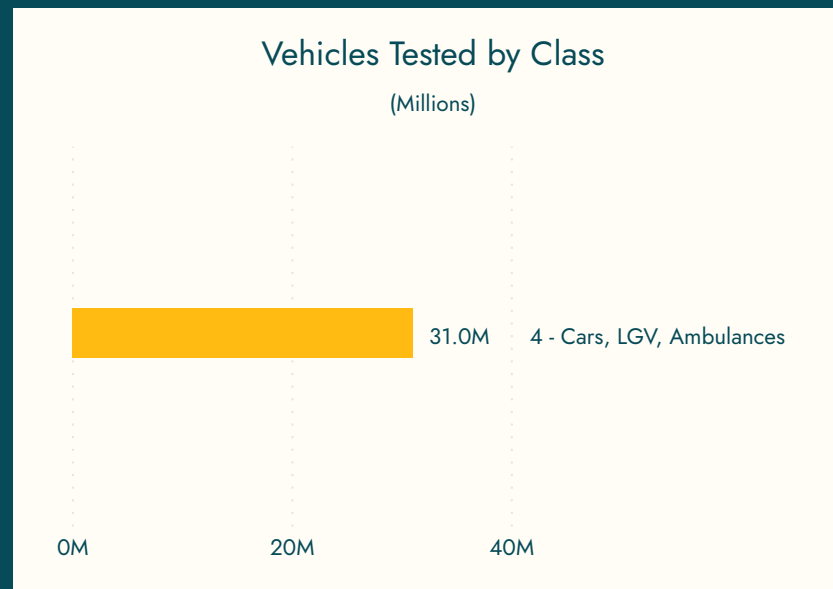
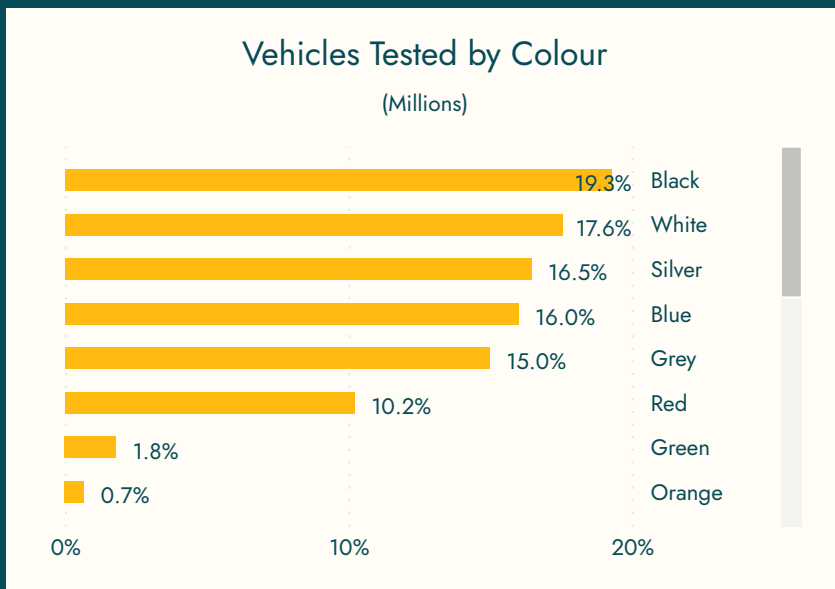
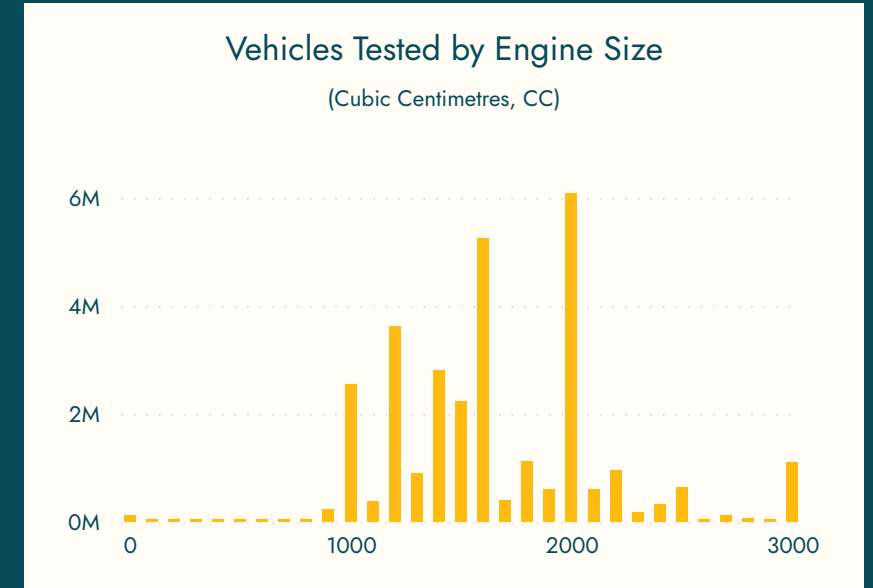
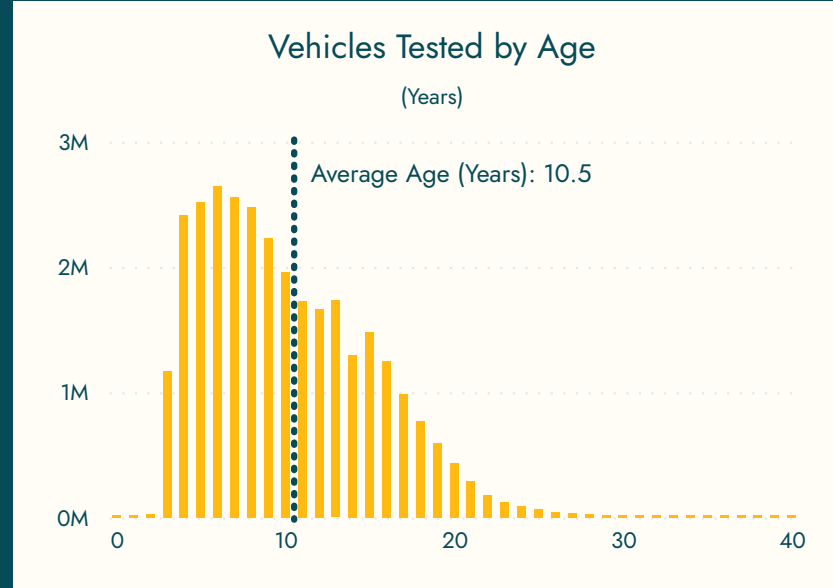
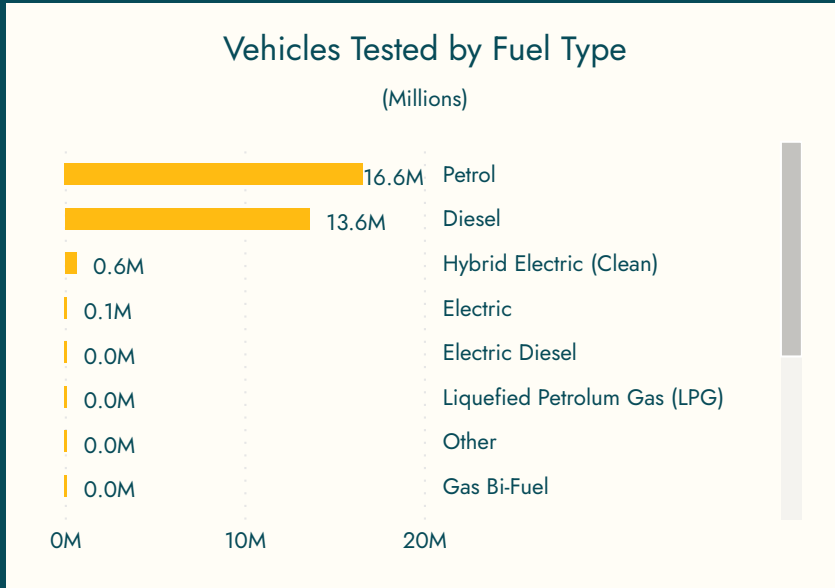
**31.0M**  
Vehicles Tested

**73.8K**  
Average Mileage

**10.6**  
Average Age (Years)

**99.6K**  
Vehicles Tested Per Day

**4.3**  
Avg. Rejections Per Vehicle



# Makes

<b>39.3M</b>	<b>29.8M</b>	<b>7.3M</b>	<b>75.8%</b>	<b>18.6%</b>	<b>5.0%</b>
Tests Conducted	Tests Passed	Tests Failed	Pass Rate	Fail Rate	PRS Rate

## Characteristics by Vehicle Make

Displaying makes with 25 tested vehicles or more

Make	Vehicles	Petrol	Diesel	Hybrid	Avg. Age (Years)	Avg. Mileage	Avg. Tested Per Day
Ford	4,308,068	2,463,016	1,841,694	2,091	10.49	74,991	13,830
Vauxhall	3,013,284	2,018,797	992,575	1,000	10.57	75,049	9,772
Volkswagen	2,867,777	1,303,547	1,546,731	11,467	11.07	83,769	9,163
Bmw	1,718,014	587,950	1,078,368	43,157	10.08	79,346	5,458
Audi	1,559,208	672,517	881,957	3,186	9.75	79,528	4,892
Mercedes-Benz	1,552,625	513,337	1,016,340	14,434	9.86	74,976	4,996
Nissan	1,532,406	907,417	591,329	199	10.12	67,060	4,927
Toyota	1,480,081	867,414	270,039	335,649	11.42	78,666	4,769
Peugeot	1,399,819	700,158	696,979	206	10.71	71,523	4,555
Citroen	1,011,418	453,480	556,650	23	10.59	73,533	3,313
Renault	990,896	510,060	468,726	11	10.87	74,086	3,321
Honda	921,760	706,521	195,145	13,292	12.51	79,647	2,892
Land Rover	862,162	53,508	801,925	4,924	11.57	85,676	2,786
Hyundai	799,510	551,879	222,707	21,128	8.93	55,584	2,503
Kia	797,079	432,720	337,893	22,690	8.54	56,744	2,525
Fiat	763,490	543,728	219,678	1	10.66	57,574	2,497
Mini	738,256	584,715	146,822	6,635	10.33	61,249	2,341
Skoda	702,021	392,667	309,014	241	9.16	71,975	2,179
Volvo	525,782	138,487	378,199	8,039	10.68	87,547	1,684
<b>Total</b>	<b>29,751,111</b>	<b>15,803,336</b>	<b>13,300,061</b>	<b>538,229</b>	<b>10.46</b>	<b>74,008</b>	<b>95,390</b>

# Makes

**39.3M**  
Tests Conducted

**29.8M**  
Tests Passed

**7.3M**  
Tests Failed

**75.8%**  
Pass Rate

**18.6%**  
Fail Rate

**5.0%**  
PRR Rate

## Test Outcomes by Vehicle Make

Displaying makes with 25 tested vehicles or more

Make	Vehicles	Tests	Passed	Failed	PRR	Incomplete					
Ford	4,308,068	5,517,232	14.63%	4,073,154	73.8%	1,099,579	19.9%	312,136	5.7%	32,362	0.6%
Vauxhall	3,013,284	3,934,454	10.43%	2,846,203	72.3%	844,726	21.5%	222,655	5.7%	20,868	0.5%
Volkswagen	2,867,777	3,621,790	9.61%	2,760,579	76.2%	678,737	18.7%	162,738	4.5%	19,733	0.5%
Bmw	1,718,014	2,104,405	5.58%	1,696,833	80.6%	320,698	15.2%	75,073	3.6%	11,800	0.6%
Audi	1,559,208	1,901,549	5.04%	1,536,800	80.8%	291,999	15.4%	63,257	3.3%	9,493	0.5%
Mercedes-Benz	1,552,625	1,936,078	5.13%	1,545,795	79.8%	311,527	16.1%	66,557	3.4%	12,198	0.6%
Nissan	1,532,406	1,962,662	5.21%	1,463,395	74.6%	387,671	19.8%	101,670	5.2%	9,926	0.5%
Toyota	1,480,081	1,870,019	4.96%	1,437,473	76.9%	302,871	16.2%	119,611	6.4%	10,063	0.5%
Peugeot	1,399,819	1,815,158	4.81%	1,313,420	72.4%	378,825	20.9%	113,141	6.2%	9,772	0.5%
Citroen	1,011,418	1,331,316	3.53%	941,050	70.7%	294,966	22.2%	88,362	6.6%	6,937	0.5%
Renault	990,896	1,343,324	3.56%	937,777	69.8%	329,171	24.5%	69,434	5.2%	6,941	0.5%
Honda	921,760	1,139,482	3.02%	867,928	76.2%	200,799	17.6%	64,832	5.7%	5,920	0.5%
Land Rover	862,162	1,069,202	2.84%	842,883	78.8%	178,612	16.7%	41,063	3.8%	6,644	0.6%
Hyundai	799,510	992,686	2.63%	769,098	77.5%	167,807	16.9%	51,474	5.2%	4,307	0.4%
Kia	797,079	995,735	2.64%	774,300	77.8%	171,824	17.3%	45,214	4.5%	4,397	0.4%
Fiat	763,490	987,785	2.62%	729,946	73.9%	203,815	20.6%	48,605	4.9%	5,418	0.5%
Mini	738,256	910,445	2.41%	715,174	78.6%	145,566	16.0%	44,459	4.9%	5,246	0.6%
Skoda	702,021	857,640	2.27%	685,869	80.0%	131,841	15.4%	36,360	4.2%	3,570	0.4%
Volvo	525,782	664,179	1.76%	509,304	76.7%	124,822	18.8%	26,780	4.0%	3,273	0.5%
<b>Total</b>	<b>29,751,111</b>	<b>37,706,880</b>	<b>100.00%</b>	<b>28,570,898</b>	<b>75.8%</b>	<b>7,048,656</b>	<b>18.7%</b>	<b>1,883,959</b>	<b>5.0%</b>	<b>203,351</b>	<b>0.5%</b>

# Country of Origin

**39.3M**  
Tests Conducted

**29.8M**  
Tests Passed

**7.3M**  
Tests Failed

**75.8%**  
Pass Rate

**18.6%**  
Fail Rate

**5.0%**  
PRS Rate

## Outcomes by Country of Origin

January 2022 - December 2022

Origin	Vehicles	Tests			Passed		Failed		PRS		Incomplete	
		Count	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Germany	7,863,617	9,757,857	29.34%	7,705,809	79.0%	1,624,971	16.7%	372,574	3.8%	54,498	0.6%	
Japan	5,394,418	6,788,820	20.41%	5,164,417	76.1%	1,214,202	17.9%	374,321	5.5%	35,876	0.5%	
America	4,494,948	5,761,771	17.32%	4,249,932	73.8%	1,153,588	20.0%	324,096	5.6%	34,154	0.6%	
France	3,402,210	4,489,880	13.50%	3,192,325	71.1%	1,002,963	22.3%	270,937	6.0%	23,653	0.5%	
England	2,056,824	2,534,460	7.62%	2,006,648	79.2%	408,955	16.1%	103,357	4.1%	15,500	0.6%	
South Korea	1,620,747	2,020,074	6.07%	1,566,147	77.5%	346,626	17.2%	98,417	4.9%	8,884	0.4%	
Italy	886,709	1,142,665	3.44%	850,592	74.4%	231,871	20.3%	53,824	4.7%	6,377	0.6%	
Sweden	589,517	749,491	2.25%	568,771	75.9%	146,242	19.5%	30,661	4.1%	3,816	0.5%	
China	5,938	8,416	0.03%	5,403	64.2%	2,466	29.3%	416	4.9%	131	1.6%	
Malaysia	3,321	4,623	0.01%	2,937	63.5%	1,386	30.0%	269	5.8%	31	0.7%	
Australia	184	217	0.00%	174	80.2%	34	15.7%	8	3.7%	1	0.5%	
<b>Total</b>	<b>26,318,433</b>	<b>33,258,274</b>	<b>100.00%</b>	<b>25,313,155</b>	<b>76.1%</b>	<b>6,133,304</b>	<b>18.4%</b>	<b>1,628,880</b>	<b>4.9%</b>	<b>182,921</b>	<b>0.6%</b>	

# Locations

39.3M Tests Conducted      29.8M Tests Passed      7.3M Tests Failed      75.8% Pass Rate      18.6% Fail Rate      5.0% PRS Rate

## Test Outcomes by Location

January 2022 - December 2022

Area	Tests		Vehicles	Passed		Failed		PRS		Incomplete		Avg. Age (Years)	Avg. Mileage	Avg. Rejections
London	1,401,975	3.57%	1,161,844	1,098,018	78.3%	186,165	13.3%	107,357	7.7%	10,434	0.7%	10.52	70,586	3.57
Birmingham	1,150,482	2.93%	952,368	886,558	77.1%	181,702	15.8%	73,899	6.4%	8,323	0.7%	10.63	76,901	3.95
Sheffield	864,022	2.20%	706,590	672,423	77.8%	146,653	17.0%	40,492	4.7%	4,454	0.5%	10.46	75,095	3.80
Nottingham	752,220	1.91%	592,661	564,341	75.0%	153,955	20.5%	30,148	4.0%	3,776	0.5%	10.57	74,791	4.47
Bristol	728,183	1.85%	565,068	530,740	72.9%	158,176	21.7%	35,447	4.9%	3,820	0.5%	11.05	75,651	4.78
Peterborough	714,152	1.82%	578,136	541,644	75.8%	129,911	18.2%	38,745	5.4%	3,851	0.5%	10.89	81,019	4.14
Leicester	676,545	1.72%	553,816	519,445	76.8%	116,856	17.3%	36,181	5.3%	4,063	0.6%	10.78	76,815	3.88
Cardiff	654,365	1.66%	509,364	482,823	73.8%	137,329	21.0%	30,399	4.6%	3,814	0.6%	10.23	74,834	4.41
Newcastle	652,040	1.66%	522,158	497,566	76.3%	121,361	18.6%	29,903	4.6%	3,209	0.5%	9.73	68,754	4.54
Glasgow	638,894	1.63%	504,781	485,638	76.0%	127,360	19.9%	22,067	3.5%	3,829	0.6%	8.76	61,098	4.27
Reading	592,140	1.51%	486,531	458,311	77.4%	100,229	16.9%	30,173	5.1%	3,427	0.6%	10.70	73,461	4.14
Portsmouth	585,187	1.49%	457,148	431,427	73.7%	124,153	21.2%	27,199	4.6%	2,408	0.4%	11.55	76,247	4.83
Coventry	564,705	1.44%	463,390	436,884	77.4%	96,136	17.0%	28,856	5.1%	2,829	0.5%	10.60	75,411	4.02
Manchester	563,145	1.43%	457,304	423,077	75.1%	101,804	18.1%	34,038	6.0%	4,226	0.8%	10.75	75,572	3.96
Norwich	546,207	1.39%	433,028	412,452	75.5%	108,355	19.8%	23,255	4.3%	2,145	0.4%	11.36	79,242	4.47
Guilford	529,621	1.35%	428,995	402,081	75.9%	97,627	18.4%	26,993	5.1%	2,920	0.6%	10.89	72,129	4.32
Tonbridge	525,886	1.34%	425,536	399,644	76.0%	96,711	18.4%	26,571	5.1%	2,960	0.6%	11.30	73,736	4.24
Northampton	525,142	1.34%	415,768	392,308	74.7%	104,194	19.8%	25,940	4.9%	2,700	0.5%	10.47	78,347	4.27
Derby	523,573	1.33%	427,146	405,087	77.4%	92,317	17.6%	23,706	4.5%	2,463	0.5%	10.48	74,139	4.16
<b>Total</b>	<b>39,306,053</b>	<b>100.00%</b>	<b>31,030,887</b>	<b>29,811,672</b>	<b>75.8%</b>	<b>7,327,564</b>	<b>18.6%</b>	<b>1,952,210</b>	<b>5.0%</b>	<b>214,590</b>	<b>0.5%</b>	<b>10.59</b>	<b>73,791</b>	<b>4.32</b>

# Time Intelligence

<b>39.3M</b>	<b>29.8M</b>	<b>7.3M</b>	<b>75.8%</b>	<b>18.6%</b>	<b>5.0%</b>
Tests Conducted	Tests Passed	Tests Failed	Pass Rate	Fail Rate	PRS Rate

## Test Outcomes by Month

January 2022 - December 2022

Season	Month	Tests	Passed	Failed	PRS	Incomplete					
Winter	January	3,520,654	8.96%	2,616,321	74.3%	704,915	20.0%	180,554	5.1%	18,862	0.5%
Winter	February	3,241,557	8.25%	2,443,728	75.4%	618,815	19.1%	160,958	5.0%	18,053	0.6%
Spring	March	4,130,027	10.51%	3,166,352	76.7%	742,017	18.0%	199,961	4.8%	21,697	0.5%
Spring	April	2,262,096	5.75%	1,717,844	75.9%	415,922	18.4%	115,249	5.1%	13,079	0.6%
Spring	May	2,551,337	6.49%	1,944,655	76.2%	464,245	18.2%	128,411	5.0%	14,026	0.5%
Summer	June	2,862,853	7.28%	2,190,545	76.5%	515,083	18.0%	142,107	5.0%	15,117	0.5%
Summer	July	2,959,593	7.53%	2,249,661	76.0%	547,337	18.5%	146,395	4.9%	16,199	0.5%
Summer	August	3,350,237	8.52%	2,543,867	75.9%	623,993	18.6%	164,262	4.9%	18,115	0.5%
Autumn	September	3,972,795	10.11%	3,050,744	76.8%	710,544	17.9%	190,899	4.8%	20,604	0.5%
Autumn	October	3,959,478	10.07%	2,979,901	75.3%	762,246	19.3%	195,738	4.9%	21,592	0.5%
Autumn	November	3,763,649	9.57%	2,826,812	75.1%	727,608	19.3%	188,133	5.0%	21,093	0.6%
Winter	December	2,734,041	6.96%	2,083,034	76.2%	495,127	18.1%	139,719	5.1%	16,161	0.6%
<b>Total</b>		<b>39,308,317</b>	<b>100.00%</b>	<b>29,813,464</b>	<b>75.8%</b>	<b>7,327,852</b>	<b>18.6%</b>	<b>1,952,386</b>	<b>5.0%</b>	<b>214,598</b>	<b>0.5%</b>

# Month on Month

39.3M Tests Conducted
29.8M Tests Passed
7.3M Tests Failed
75.8% Pass Rate
18.6% Fail Rate
5.0% PRS Rate

## Month on Month Comparison of Test Outcomes

January 2022 - December 2022

Season	Month	Tests	MoM	Passed	MoM	Failed	MoM	PRS	MoM	Incomplete	MoM
Winter	January	3,520,654		2,616,321		704,915		180,554		18,862	
Winter	February	3,241,557	-279,097	2,443,728	-172,593	618,815	-86,100	160,958	-19,596	18,053	-809
Spring	March	4,130,027	888,470	3,166,352	722,624	742,017	123,202	199,961	39,003	21,697	3,644
Spring	April	2,262,096	-1,867,931	1,717,844	-1,448,508	415,922	-326,095	115,249	-84,712	13,079	-8,618
Spring	May	2,551,337	289,241	1,944,655	226,811	464,245	48,323	128,411	13,162	14,026	947
Summer	June	2,862,853	311,516	2,190,545	245,890	515,083	50,838	142,107	13,696	15,117	1,091
Summer	July	2,959,593	96,740	2,249,661	59,116	547,337	32,254	146,395	4,288	16,199	1,082
Summer	August	3,350,237	390,644	2,543,867	294,206	623,993	76,656	164,262	17,867	18,115	1,916
Autumn	September	3,972,795	622,558	3,050,744	506,877	710,544	86,551	190,899	26,637	20,604	2,489
Autumn	October	3,959,478	-13,317	2,979,901	-70,843	762,246	51,702	195,738	4,839	21,592	988
Autumn	November	3,763,649	-195,829	2,826,812	-153,089	727,608	-34,638	188,133	-7,605	21,093	-499
Winter	December	2,734,041	-1,029,608	2,083,034	-743,778	495,127	-232,481	139,719	-48,414	16,161	-4,932
<b>Total</b>		<b>39,308,317</b>	<b>2,734,041</b>	<b>29,813,464</b>	<b>2,083,034</b>	<b>7,327,852</b>	<b>495,127</b>	<b>1,952,386</b>	<b>139,719</b>	<b>214,598</b>	<b>16,161</b>

8.1%

# Key Figures

We'll shift our focus on to the vehicle class, the class with the most tests and vehicles, **Class 4**. Class 4 vehicles made up **94.4%** of all tests conducted and **94.2%** of all vehicles tested in 2022. That's an average of **99,550** vehicles tested each day.

**Pass** rate was **75.8%** (29,787,735 tests) while the **Fail** rate was **18.6%** (7,323,499 tests). This translates to just over a sixth of all tests in this vehicle class failed. An average of **4** rejections were recorded for a vehicle in this class.

**March** had the highest number of tests at 4.1 million (**10.5%**) while the following month, **April**, saw the least number of tests at 2.3 million (**5.8%**). **September** had the highest pass rate at **76.8%** while **January-blues** were felt by the **18.6%** of tests that failed – the highest of any month.

The average vehicle age was **10.5 years** and the average mileage was **73,790**. Therefore, a typical Class 4 vehicle covered around **7,000** miles a year.

**Ford** had the highest number of vehicles tested, 4.3 million (**13.9%**) vehicles out of a total of **31 million**. The top two models that were tested most both belonged to **Ford**, the **Focus** and the **Fiesta**.

# Characteristics Analysis

**Petrol-powered** vehicles took the lead with 16.6 million (**53.6%**) vehicles tested, with an average vehicle age of **11 years**. **Diesel** came in second with 13.6 million (**43.9%**) vehicles tested, with an average vehicle age of **10.1 years**. The prevalent age for a petrol-fuelled vehicle was **4 years** whereas for diesel, it was **7 years**.

The structure of a **diesel** engine generates more torque than a similar sized petrol engine. Diesel engines have a longer stroke of the piston and the compression involved to ignite diesel fuel generates more turning power, thus more torque. Therefore, **diesels** are sought after for vehicles undertaking long-distance trips frequently. This is vindicated by analysing average mileages and popular engine sizes. Diesel's average mileage sat at **90,000** whereas petrol's was **61,000**. Popular engines in the diesel category were the **2 litres** (2000cc) and the **1.6 litres** (1600cc). For petrol vehicles, **1.2 litres** (1200cc) was the most common capacity, followed by **1.6 litres** (1600cc).

The average age for an **Electric** vehicle was **5.5 years** and the average mileage **41,382**. Electric vehicles are increasingly popular for their efficiency, running costs and business benefits. However, most aren't as capable for extra-long-distance journeys, so they aren't used as such. This explains the lower average mileage than the combustion fuels' mileage.

**Black** was the most popular shade (**19.3%**, 6 million vehicles) followed by **White** (**17.6%**, 5.4 million vehicles) and **Silver** (**16.5%**, 5.1 million vehicles).

**Hybrids** had the highest pass rate with **85.4%**, followed by **Electrics** with **84.5%**. **Petrol** edged out **Diesel**, with **76%** versus **75.1%**.

Looking at the list of common engine sizes, (1000cc, 1200cc, 1400cc, 1600cc, 1800cc, 2000cc and 3000cc), **3 Litre** engines had the highest pass rate (**81.6%**), followed by **1 Litre** engines (**80.2%**) and finally **2 Litre** engines (**78.2%**).

# Make Analysis

**McLaren** had the highest pass rate at **94.3%** while **Daewoo** had the highest fail rate at **32.7%**.

**Ford** had the most vehicles tested at 4.3 million (**13.9%**), and the most tests conducted at **5.6 million**. **Ford's Fiesta** (1.4 million vehicles) and **Focus** (974,000 vehicles) were the nation's most popular models.

**Vauxhall** came in second place with 3 million vehicles tested (**9.7%**), **Volkswagen** in third with 2.9 million vehicles (**9.3%**), **BMW** in fourth with 1.7 million (**5.5%**) and **Audi** in fifth with 1.6 million (**5%**) vehicles.

Of the three popular **German** brands (BMW, Mercedes-Benz and Audi), **BMW** had the most vehicles tested, **Audis** were driven the most with the highest average mileage of **79,528** but kept around the least with the lowest average age of **9.7 years**.

We filtered out makes with less than 25 vehicles tested to improve data quality. After filtering, **Lagonda**, now owned by Aston Martin, had the oldest average vehicle age at **72 years**. The make with the lowest average age was **London Electric Vehicle Company** (LEVC), who make the iconic **TX electric black cab**.

# Failure Analysis

The most common reason for a failed MOT tests in Class 4 was a **suspension pin, bush or joint excessively worn**, making up **7.6%** of rejections in the **Fail** category.

Overall, the most common rejection recorded was the **tyre tread depths not being in accordance with requirements**, accounted for by **14.1%** of all rejections.

In the **Minor Defect** category, **the rear registration plate not being lit up** found its way to the top of the list again, with **19.5%** of rejections.

The most common components to fail were **tyres, brakes, lights, suspension** and **exhaust components**. Corrosion, leaking fluids, rust, worn out bearings or bushing or damage all instigated failures.

Common PRS defects recorded included **missing or damaged windscreen wiper blades, headlight aim not in line with requirement** and **missing windscreen washer fluid**.

# Location Analysis

**London** conducted the most tests with 1.4 million (3.6%) on 1.2 million vehicles. **Birmingham** came in second, with 1.2 million (2.9%) tests on 952,000 vehicles. Finally, **Sheffield** came in third with 864,00 (2.2%) tests on 706,000 vehicles.

**Enfield** had the highest pass rate at 80.5%, **Bromley** followed with 80.3% and **Romford** tailed with 79.7%. Scottish cities **Kirkcaldy** and **Dundee** topped the list of areas with the highest fail rates, with 26.2% and 25% respectively. **Truro**, **Cornwall** had the third highest fail rate at 24.3%.

**Dorchester** had the oldest average vehicle age at 12.5 years and the highest average mileage at 84,953. The top five areas with the oldest average age (greater than 11.7 years) all belonged to the **South-West** region, in the beautiful counties of **Devon**, **Cornwall**, **Somerset** and **Dorset**. The **South-West** region also had the highest fail rate at 21.9%.

Of all regions, **Greater London** had the highest pass rate at 78.8%. This could be attributed to the low mileage covered by vehicles (other than taxis) residing in this region, meaning less wear-and-tear on parts. Vehicles in **Scotland** tended to be the newest with the lowest average of 9 years.

# Time Analysis

**March, September and October** were the busiest months in 2022. Each of these months undertook at least **3.9 million** tests. Leading the quietest months was **April** with **2.3 million** tests, followed by May with **2.6 million** tests and finally December with **2.7 million** tests.

**January** had the highest fail rate at **20%** while **March** had the highest pass rate at **76.7%**. From **April** to **October**, the number of tests steadily increased month on month before teetering off for the festive break.

**Electric** vehicles were tested mostly in **September** whereas **petrol, diesel and hybrid** vehicles followed the general trend of being tested most in **March** and **September**. Electric vehicles have only recently (within the last 5 years) been a viable choice and for many, 2022 was the year for the first MOT to be conducted. Therefore, the drift of the test date seen in older vehicles wasn't present for electric motors.

**Autumn** had the most tests at **11.7 million**, while **Spring** had the least at **8.9 million**. However, **Spring** enjoyed the highest pass rate at **76.4%** while **Wicked-Winter** danced in delight with the highest fail rate of **19.2%**.

# Nutshells

Now that we've analysed the most popular class, what have we learnt?

**Hybrids** have the highest pass rate of all powertrains. Granted, the number of hybrids is **less than a million** at the end of **2022** but this is forecasted to increase as regulations on fossil fuels become more stringent. **Petrol** vehicles with small engines are very popular because of their efficiency and accessibility.

**Diesels** remain popular in the larger-engine segment because of their long-distance, long-running capabilities. Goods-vehicles, ambulances, fire-engines, police cars and minibuses all sport diesel engines.

**German** brands are more common on the UK roads than **Korean, Japanese** or **French** brands. **Ford** is the most popular by some margin, thanks to their **Focus** and **Fiesta** line up.

The busiest times in the year for an MOT are **February, March, August, September** and **October**.

Checking your car's **tyres, fluid levels, dashboard** for any lights, **headlights** and **rear lights, under-carriage** for corrosion and **registration lamps** before taking your vehicle in for test will save you money and a lot of headache in the long run.

Section 6

# Technical

# Sources

## **MOT Dataset**

The MOT dataset was published on 9th May 2023 by the Department of Transport on the [data.gov.uk](https://data.gov.uk) website.

## **Postcode Areas**

<https://ideal-postcodes.co.uk/guides/postcode-areas>

## **Vehicle Makes**

<https://www.canstarblue.com.au/vehicles/car-country-of-origin/>

## **Vehicle Make History**

<https://www.canstarblue.com.au/vehicles/car-country-of-origin/>

## **Galvanizers Association's Map**

<https://www.galvanizing.org.uk/corrosion/corrosion-map/>

# Software & Metadata

## Software

**Database:** MariaDB 11.1.0

**Visualisation:** Microsoft PowerBI Desktop (May 2023)

## Metadata

**Number of Rows:** 127,992,979

**Number of Tables:** 13

**Sync Time:** 6 minutes 26 seconds

**File Size:** 1,946,597 KB (1.95 GB)

## System

**CPU:** I5 13600K

**GPU:** AMD RX 6950XT

**RAM:** 32GB DDR5 6000MHz

**SSD:** WD Black SN770 2TB