Hereford & Worcester Fire and Rescue Service
Senior Management Board
5th December 2017

Replacement Officer Car Review

Purpose of report

1. This report seeks to update SMB on the recent review of Officers cars, and to gain SMB's approval for replacement of Officers cars, in accordance with the Fleet Strategy.

Recommendations

It is recommended that SMB:

i) Approve the Volvo XC60, as specified is procured as the preferred vehicle to replace the fleet of Officer response cars within the year 2018/19.

ii) Approve the publication of the contents of this report, and associated data, to ensure all relevant information in this matter is transparent and available.

Executive Summary

2. Following an extensive review it has been established that the Volvo XC60 is the preferred vehicle to replace the existing fleet of Officers' response cars. The review has also identified that the continuance of a provided car scheme is the most appropriate scheme for Officer vehicles.

3. From the 28 potential vehicles examined, a final three vehicles underwent an in-depth assessment, with all three vehicles meeting the user specification. Of the final three (which includes the vehicle currently in use, the Land Rover Discovery Sport) the Volvo XC60 represents the best value in terms of both initial purchase price against predicted residual values, and in comparison to the current vehicles provided. In particular the Volvo XC60 offers a significant saving against the latest purchase price for the 2018 Land Rover Discovery Sport, which has increased in the last two years against the discounted price. It is also slightly cheaper than the third vehicle evaluated (Skoda Kodiaq) based upon the latest quotations and discounts being offered by the manufacturers.

4. Whilst all three vehicles have a high safety rating, the Volvo XC60 scored the highest in all safety categories.

5. The Skoda Kodiaq, also performed well overall and whilst the Skoda is also significantly cheaper than the Land Rover, the Volvo appears to offer better value, and performed slightly better in most key areas.

6. Of all three vehicles it was also found that the Skoda and Volvo generally outperformed the Land Rover in many of the peripheral areas such as: blue light fitment, customer support infrastructure, reliability ratings, and additional costs.

7. It is therefore proposed that the Volvo XC60 is procured for all Officers (SC to PO) and that the entire fleet is replaced within the year 2018/19, in accordance with the provisions of the Fleet Strategy 2017.

Background

8. The Service currently provides a fleet of Land Rover Freelanders and latterly the Land Rover Discovery Sport for all Officer response vehicles. A large proportion of these vehicles (over two thirds) are due for replacement by July 2018 with the remainder of the fleet shortly afterwards; therefore a full review of the specification, market provision, and associated costs has been undertaken to inform this replacement programme.

9. The replacement programme, methodology and proposals from this review are all in accordance with the Fleet Strategy (2017) and meet the requirements and guidance contained within the strategy.

10. The Officer Vehicle User Specification has been reviewed with the relevant user group and is attached in Appendix 1.

11. The route to market on the replacement vehicles has been determined to continue through the Crown Commercial Services (CCS) national framework. This framework negates the need to go through a full tender process and offers a wide range of heavily discounted vehicles with many options to procure, of which direct award has been selected for this procurement. It is vital, therefore, that a rigorous evaluation process has been undertaken to ensure that the best value and most appropriate vehicle is selected. CCS provides for a wide range of vehicles from nearly all commercially available manufacturers at competitive discounted (for the public sector) prices.

User Specification and Initial Sift

12. The user specification was reviewed and agreed through the Officer car user group which includes the appropriate representative bodies. This provides some key criteria which enabled an initial sift of the vehicles available in order to reduce the number and type of vehicles that could be considered to a manageable level. The key headline criteria are listed below:

- Must have an all-wheel drive capability
- Must have stated emissions and fuel usage no more than 150g of CO2 & greater than 52mpg
- Must have adequate boot space below the provided load liner (of 469L), no less than is currently provided in the Discovery Sport
- Must have suitable automated electronic downhill and stability functions
- Must have a minimum engine power of 140bhp
- Not essential, but highly desirable to have an above average reliability rating
- Should have a high New Car Assessment Programme (NCAP) safety rating.

13. The table in Appendix 2 details the initial sift and the reduction of 28 potential vehicles to a final 5 vehicles that broadly met the specification and were then subject to an in-depth evaluation and trial, as appropriate:

- Skoda Kodiaq
- Volvo XC60
- BMW X3 (below average reliability rating)
- Land Rover Discovery Sport (below average reliability rating)
- Jaguar F pace

In-depth Evaluation and Assessment

14. Further evaluation of the five vehicles listed above led to the Jaguar F pace being eliminated due to cost (see Appendix 6).

15. The BMW X3 was subsequently eliminated on three criteria: due to previous poor performance in adverse conditions trials (2014) and that BMW were unable to quote due to the transition of models at the time of this review. The X3 also has a below average reliability rating on the current model. This led to only three vehicles undergoing further in-depth scrutiny:

- Skoda Kodiaq
- Volvo XC60
- Land Rover Discovery Sport

16. The in-depth evaluations looked at the following areas:

- Detailed evaluation against specification (Appendix 3)
- Off road tests by specialist instructors (Appendix 4)
- On road tests by Service driving instructors (Appendix 5)
- Costs evaluations (Appendix 6)
- Customer support and additional costs and considerations

Evaluation Results

17. Cost Evaluation – A comparative evaluation of the three vehicles has been undertaken based upon the quoted discounted purchase price for the specified model, against the estimated residual costs after 3 years (independently researched, Appendix 7), with average mileage (see Appendix 6), and including the service package and initial road fund licence costs. Additional costs such as Blue Light fitment have been excluded as they would be similar for each vehicle.

- Volvo XC60 - £7017 or **£2339 per annum**
- Skoda Kodiaq - £8066 or **£2688 per annum**
- Land Rover Discovery Sport - £10189 or **£3396 per annum**

The Volvo XC60 would present a saving in comparison to the current annual cost for a Land Rover Discovery Sport. It is also anticipated that subject to like for like leasing arrangements it is unlikely that the final costs of the 2018 Volvo XC60 would exceed that which were paid for the 2014 Land Rover Freelanders.

18. Safety Rating (NCAP) - All three vehicles (models) have a high NCAP safety rating (see Appendix 8), however in key areas the Volvo scored the highest:

Table 1.

Vehicle	Adult Occupant	Pedestrian	Safety Assist
Volvo	**98%**	**76%**	**95%**
Skoda	**92%**	**71%**	**54%**
Land Rover	**93%**	**69%**	**82%**

19. On Road and Adverse Weather Conditions evaluations - It can be seen that from Appendix 4 and 5 all three vehicles would be suitable for both on road (normal and response driving) and in adverse conditions.

Whilst both the Skoda and Volvo have slightly reduced manufacturer stated wading depths than the Services current Discovery Sport (500mm), the capability of each vehicle would be adequate for an officer's response role. Technical assessment shows that the stated wading depth figures could be exceeded safely to a limited extent for both the Skoda and Volvo. The Volvo XC60 has a manufacturer's stated wading depth of 400mm, but it has been determined that this could safely be exceeded by a suitably trained operator to depths of 500mm, thus meeting the previous stated standard and an equivalent capability to the current provided Land Rover Discovery Sport.

20. Customer Support and Additional Costs –

In this category a number of points should be noted:

- Some essential additional items required, such as mud flaps and spare wheels, were similar in price for Skoda and Volvo, however Land Rover were found to be around double the comparative cost (e.g. mud flaps - Skoda/Volvo circa £130, Land rover £279)

- Customer Support from Land Rover in recent years has degraded with numerous Officers suffering from unacceptably low levels of customer support from all dealerships. Whilst there is no guarantee that either Skoda or Volvo would offer a better standard of service, research indicates that Volvo have a strong presence and investment in the emergency services sector. Volvo employ dedicated representatives and have systems dedicated to supporting emergency services. It appears that that the resilience and support required to maintain a fleet of emergency response cars is available with Volvo.

- All vehicles have been specified with automatic transmission as recommended by both driver training experts and as highly desirable in the user specification.

- Blue Light fitment – whilst cost for blue light fitment may be similar between all three manufacturers, both Volvo and Skoda offer blue light fitment at source and would be installed and guaranteed by the manufacturer. This is preferable, not only for convenience and that it reduces the capacity demands on Ops Logistics staff, but most importantly does not invalidate any part of the on-going warranty of the vehicle.

- Adverse weather training – there will be some additional costs if the Land Rover were not the vehicle purchased, as training is currently undertaken at a Herefordshire Land Rover site at very reduced rates. Training Centre staff are currently evaluating the provision of alternatives sites which may incur some additional costs, however, these costs would be minor in comparison to the savings being offered by the lower price vehicles.

Conclusion / Summary

21. See Executive summary above (sections 2-7 inclusive).

Corporate Considerations

Resource Implications (identify any financial, legal, property or human resources issues)	None, all included in capital programme and Fleet Strategy 2017.
Strategic Policy Links (identify how proposals link in with current priorities and policy framework and if they do not, identify any potential implications)	As above
Risk Management / Health & Safety (identify any risks, the proposed control measures and risk evaluation scores)	None, the proposed vehicle has been fully assessed against the user specification and meets all safety requirements.
Consultation (identify any public or other consultation that has been carried out on this matter)	Consultation has been undertaken already, but subject to an SMB decision further consultation with representative bodies will be undertaken.
Equalities (has an Equalities Impact Assessment been completed? If not, why not?)	To be completed.

Supporting Information

HWFRS Fleet Strategy 2017 (available on Intranet)
Officer Cars Factsheet 2014 (available on intranet)

Background Papers

None

Contact Officer

Head of Operations Support

Email:

Appendix 1

Hereford and Worcester Fire and Rescue Service

Officer Car User Specification July 2017.

1.0 Vehicle Use

HWFRS provides level 2, 3 Command at incidents through Station and Group Commanders and level 3 & 4 for Area Commanders and Principal Officers. To enable these officers to perform their roles, the Service provides them with an appropriate vehicle with which they can respond to incidents.

The vehicle is used to transport responding officers to emergency incidents along with PPE and specialist roles (multiple specialist roles in some cases), transport equipment in a suitable and safe manner, to provide transport for Officers in order to carry out their managerial duties and with permission of the CFO for private use which is charged to the individual and taxable.

These vehicles must also provide a high degree of safety for responding officers as well as play a key role in business continuity resilience. All such vehicles for responding officers will therefore need to have to be all wheel drive or suitable all weather capability. This must enable the responder to respond in adverse weather conditions, roadway flooding and occasionally over difficult/soft terrain and unmade roads and tracks.

This specification aims to provide vehicles for responding officers that will be procured appropriately and must meet the user needs.

Features are marked Essential (E) or Desirable (D)

The Service requires officer vehicles:

1.1 To be able to safely attain and maintain speeds in excess of posted speed limits in accordance with Service policy. The vehicle must have ample performance to enable safe blue light driving, overtaking, and manoeuvring at higher than normal speeds. (E)

The vehicle is a response vehicle and as such the driver is able to take advantage of an exemption to the speed limits whilst driving under blue light conditions.

1.2 To have a driving position to enable safe operation as a response vehicle (E). Preferably an elevated driving position (D).

As a response vehicle it is essential that the driver is in a good position to be able to operate the vehicle and to assess traffic and other hazards

1.3 To have 4x4 and/or limited all wheel traction capability. It is essential that the vehicle can operate safely in limited traction conditions, mud, ice and water on normal roadways and in limited other off road applications (E). The vehicle should not just solely have an all-wheel drive capability but must also be fitted with appropriate and suitable electronic driver assist technology to improve driver safety and enable electronic stability, skid and traction control of all wheels, or similar. (E)

The vehicle must be able to be used on road and off road to access fires, RTCs and other emergency incidents and must be able to do so in poor weather/ground conditions (snow, ice, flood, mud)

1.4 To have the ability to adequately and safely control vehicle descent in adverse conditions, on and off road (E)

The vehicle must be able to be used on road and off road to access fires, RTCs and other emergency incidents and must be able to do so in poor weather/ground conditions (snow, ice, flood, mud)

1.5 To have the ability to drive through standing water in flooded roadways (primarily), to an acceptable degree. Where manufacturers cannot supply a wading depth, an assessment of the vehicle will be made based on design specifications provided and professional judgement. (E)

The vehicle must be able to be used on road and off road (in a limited capability) to access fires, RTCs and other emergency incidents and must be able to do so in poor weather/ground conditions (snow, ice, flood, mud).

1.6 To have the ability to be driven safely across uneven terrain (the vehicle must have good ground clearance, entry/departure angles). The vehicle must have adequate ground clearance to provide for this functionality and be fitted with a suitable tyre for on road emergency response usage as well as additional traction and grip in adverse conditions. (E) Preferably wheel size should be no less than 18 inches to enable improved traction, grip and handling (D).

The vehicle must be able to be used on road and limited off road, to access fires, RTCs and other emergency incidents; it must be able to do so in poor weather/ground conditions (snow, ice, flood, mud). This includes both made and unmade roads, rural tracks and access tracks.

1.7 In addition, the Service needs to provide appropriate cost effective, practical and theoretical training for officers required to use responding vehicles in both normal conditions and limited traction conditions. This must therefore be a consideration when procuring replacement vehicles. (D). It is intended that this specification will identify the appropriate vehicle based on this document for all officers, but will aim for standardisation across the fleet in this vehicle type. (D

2.0 <u>Vehicle Derivative</u>

2.1 Officer cars should be of an ‘estate’ type to provide sufficient boot space and have 5 seats. (E) Preferably the vehicle should continue to be of an ‘SUV’ style in order to effectively provide the best value and functionality (D).

Officers are required to transport PPE and other specialist equipment (FI, Hazmat, ILO etc) to the scene of an incident, and on occasion additional equipment. In addition, they are required to transport personnel at incidents and during adverse conditions to support business continuity arrangements.

3.0 <u>Engine</u>

3.1 The vehicle engine should be based on min 2.0lt diesel type engine with adequate power and torque, no less than 140bhp (E) and have an appropriate gearbox either manual or automatic.

This is to give sufficient response for the vehicle to attain and maintain safely the speeds permitted in responding to incidents.

4.0 Colour

Silver colour bodywork is preferable with dark cloth interior to match existing provision (D). Interior colours, materials and treatments should provide an ability to be easily cleaned and maintained without the need for seat covers etc, (E). The exterior colour does not need any enhancement or additional features and should be a suitable colour for Service use.

5.0 Safety Features

As these vehicles fulfil multiple roles including emergency response, all reasonably equivalent safety features across manufacturers would be deemed essential, with optional features that improve the safety of the vehicle being deemed highly desirable, such as lane deviation warning and safety assist devices.

5.1 Anti lock brakes (E)

The vehicle is a response vehicle and as such the driver is able to take advantage of an exemption to the speed limits whilst driving under blue light conditions. HWFRS limits driving of all response vehicles to a maximum of 20mph above the posted limit. For the safety of the driver and other road users it is essential that commercially available features are incorporated as control measures to the identified hazards of response driving.

5.2 Enhanced Stability Programme (E)

The vehicle is a response vehicle and as such the driver is able to take advantage of an exemption to the speed limits whilst driving under blue light conditions. HWFRS limits driving of all response vehicles normally to a maximum of 20mph above the posted limit. For the safety of the driver and other road users it is essential that commercially available features are incorporated as control measures to the identified hazards of response driving.

5.3 Traction control (E)

The vehicle is a response vehicle and as such the driver is able to take advantage of an exemption to the speed limits whilst driving under blue light conditions. HWFRS limits driving of all response vehicles to a maximum of 20mph above the posted limit. The vehicle must be able to be used on road and off road to access fires, RTCs and other emergency incidents and must be able to do so in poor weather/ground conditions (snow, ice, flood, mud).

5.4 Hill descent control or similar (E)

The vehicle must be able to be used on road and off road to access fires, RTCs and other emergency incidents and must be able to do so in poor weather/ground conditions (snow, ice, flood, mud). The vehicle must be able to descend hills/slopes safely and under control in poor road, weather and ground conditions.

5.5 Airbags - 2 front, 2 side and 2 curtain minimum (E)

The vehicle is a response vehicle and as such the driver is able to take advantage of an exemption to the speed limits whilst driving under blue light conditions. HWFRS limits driving of all response vehicles to a maximum of 20mph above the posted limit.

For the safety of the driver and other road users it is essential that commercially available features are incorporated as control measures to the identified hazards of response driving.

5.6 Front & Rear fog lamps (E)

The vehicle must be used in poor weather conditions and fog lamps provide a control measure for the identified hazard of fog/mist.

5.7 Load Space (E)

The vehicle must be able to provide an adequate load space for equipment in its overall height, width and depth, with the height being measured up to the fitted load cover. This is to enable all officer equipment and PPE to be stowed safely and out of sight in the rear load space, with some allowance for additional capacity spare (E).

The vehicle is used to transport responding officers to emergency incidents along with PPE and specialist role equipment in a suitable and safe manner. Equipment must be stowed out of sight of casual observers and items prevented from shifting from the loadspace and entering the passenger compartment in the event of a collision.

5.8 Down lights on inside of tailgate and inner boot area (E)

Officers don their PPE at the rear of the vehicle. These lights provide illumination of the area to permit ease of dressing and provide an additional control measure to the identified hazard posed by other road users. These lights are to activate when the tailgate is opened and deactivate when closed. Warning lights must also be visible when the boot is open (E).

5.9 Windscreen

Heated front screen or rapid defrost facility, including, where appropriate, automatic defrosting of external water wash nozzles. (E)

The vehicles will often be kept outside and must be capable of responding promptly in all weather conditions.

5.10 Heated or rapid defrost of rear view mirrors (E)

The vehicle will be kept outside and must be capable of responding promptly in all weather conditions. The heated mirrors are a control measure against the identified hazard of frost.

5.11 Head lamp washers (D)

On rural roads in winter lights can often be quickly obscured due to mud and other contaminants on the roadways. Head lamp washers provide a control measure to the identified hazard of mud/dirt build up on headlamps whilst responding to incidents.

5.12 Integral Satellite Navigation system, (E).

Preferably the satnav function should be able to accept voice activation (D). Also other ICT/application type devices that improve functionality for mapping, communications and data are desirable (D).

Officer response vehicles are single crewed but can respond to all parts of the Service and on occasions can be deployed nationally. Provision of satellite navigation is a measure that officers can arrive and return safely from incidents without having to stop and refer to maps.

5.13 Hands free solution for mobile telephone, with wireless linkage to vehicle (E)

Officer response vehicles are single crewed and the officer must be able to respond to cell phone for communications with Fire Control and other officers/crews as a support to the airwave radio provision.

6.0 Usability

6.1 Rear and front parking sensors (E)

Officer response vehicles are single crewed and as such cannot be provided with a 'banksman'. Parking sensors provide a control measure to the identified hazards of manoeuvring a vehicle in poor conditions and in limited space areas.

6.2 Air conditioning (E)

The vehicle must be able to be used on road and off road to access fires, RTCs and other emergency incidents and must be able to do so in all weather conditions.

6.3 Front and rear fitted mats, and load mat for rear boot (can be aftermarket versions), (E)

To prevent mud/dirt build up on the carpets, ease vehicle cleaning and to prevent loads shifting and moving in the rear compartment.

6.4 Front and rear mud flaps (D)

The vehicle must be able to be used on road and off road to access fires, RTCs and other emergency incidents and must be able to do so in poor weather/ground conditions (snow, ice, flood, mud). Mud flaps are a measure to control the build-up of mud on wheels, brakes and lights.

6.5 Load space cover (E).

Where possible the load space cover should be rated to prevent the load shifting on any impact, in lieu of a fixed barrier guard between the load space and passengers (D).

6.6 Tyre repair/replacement solution (E)

Spare tyre or space saver wheel and tyre are highly preferably to an inflation and temporary repair system.

6.7 Passenger cabin storage for maps, surcoat, log book (E)

7.0 Operational

7.1 12 volt Power points in boot and front of vehicle (E)

7.2 Stowage compartments for, camera, mobile telephone etc (D)

7.3 Fire ground radio charger in cabin space (E)

7.4 Fire extinguisher (E)

8.0 Emergency Response, 360 degree compliant blue and red light system

8.1 Blue light/siren switch panel (E), preferably wireless (D). Conveniently located for use, preferably with the ability to be moved out of sight

8.2 Roof mounted 360 blue-red light (E)

Secured in place but with the ability to remove (E). The vehicle is used to transport responding officers to emergency incidents along with PPE and specialist role equipment in a suitable and safe manner. Blue lights must be visible from 360 degrees around the vehicle and must be on the roof in order to be seen from distance. It is preferable that on arrival rear facing lights can be turned to colour red and front facing lights can be switched off (D).

8.3 Front grille min. 2 blue lamps (E)

It has been identified that this is a further control measure to enable other road users to see the vehicle when operating under blue light conditions and approaching traffic

8.4 Front wing/bumper blue lights (E)

It has been identified that this is a further control measure to enable other road users to see the vehicle when operating under blue light conditions and emerging from road junctions.

8.5 Rear mounted tail gate blue/red lights (E)

It has been identified that this is a further control measure to enable other road users to see the vehicle when stationary at an incident and the officer is donning PPE at the rear of the vehicle. They are located for visibility with tailgate open.

8.6 2 flashing red lamps - rear light clusters (E)

It has been identified that this is a further control measure to enable other road users to see the vehicle when proceeding to an incident or stationary at an incident and the officer is donning PPE at the rear of the vehicle. They are located for visibility in the rear light clusters so they are not obscured by the officer donning PPE.

8.8 Flashing head lamps or similar equivalent (E)

It has been identified that this is a further control measure to enable other road users to see the vehicle when operating under blue light conditions and in stationary traffic, approaching traffic, emerging from junctions and approaching incidents.

8.9 Audible siren warning device operation via car horn (E)

This is a control measure to the hazard created by other road users not hearing the approach of an emergency vehicle. It should have different, changeable tones to allow for all traffic conditions and should be controllable from the road horn to allow for operation without removing hands from the steering wheel.

Bull Horn is an acceptable addition to the yelp/wail/siren function

Siren speaker should be of sufficient output for sirens to be heard (E). Minimum 100 watt output or equivalent (E).

8.10 Cradle and handsfree kit for airwave radio (E)

Cradle for Airwave SAN J Radio and push to talk button mounted near to steering wheel for airwave radio to allow operation without removing hands from steering wheel

8.11 Isolator switch for blue light accessories (D)

Covert switch to allow all emergency features to be isolated. Increases security of vehicle

9.0 Service, Warranty and Maintenance

The vehicle should have options for maintenance and warranty no less than three years in term (E), alongside service option prepaid packages (D), as well as ready access to local dealerships for support and maintenance (D).

Provided Car Scheme

The provision of an allocated vehicle to each Officer is considered the most practical and efficient option based upon the requirements of the role and the need for Officers to work flexibly and be available at various times, even when off duty. At any time Officers may be requested to “recall to immediate duty” or to provide essential cover or skills, which is a requirement of their role.

The use of pool cars rather than a dedicated provision to every Officer has been considered and has been rejected based upon it not meeting the operational need and efficiency considerations (costs and capacity). To exchange pool cars or collect pool cars from fixed FRS locations would primarily create a barrier to the flexibility required from the role, along with the flexible and intermittent working hours and flexible operational cover. Furthermore, with regard to pool vehicles, officers are a valuable and limited resource with finite capacity, therefore it would be undesirable to consume valuable working hours changing, returning and picking up vehicles from a pool. This arrangement also makes no provision for flexible working and recall to duty.

The Treasurer has evaluated the provision of a lease scheme and does not deem it to offer value for money against the current scheme. With a lease scheme, there is also a significant loss of control over what vehicle is purchased and how the vehicle is maintained and managed which would not be acceptable to the Service in terms of assurance, capability, and professionalism.

The value of providing officers with all-wheel drive vehicles has been proven on many occasions, particularly during adverse weather and in poor road conditions. The Service’s Business Continuity Plan is greatly enhanced by the provision of this capability that was not in place prior to 2009, supported by the training that Officers receive. With this type of vehicle, Duty Commanders have the capability and flexibility to deploy officers alone, safely, and in adverse conditions which greatly improves the efficiency and delivery of core duties, both operational and managerial. As Officers predominantly travel and work alone it is essential that they can, as safely as possible, access and travel in both counties, on all road types, 24hrs a day and 365 days a year.

Appendix 2

	Model	Price	BHP	0-60	MPG	CO2	BOOT SIZE (MANUFACTURERS QUOTED FIGURES)	HILL DESCENT CONTROL	ACTUAL BOOT SIZE	OVERALL	Indicative reliability, taken from JD Power vehicle dependability study 2017 industry average
AUDI Q5	2.0 tdi	£32,580	150	10.8	50.4	147	550	✓	467	×	BELOW
BMW X3	2.0D	£38,880	190	8.1	54.3	136	550	✓	470	✓	BELOW
BMW X5	25D se	£48,530	231	8.2	50.4	154	650	✓	475	×	BELOW
DACIA DUSTER	DCI	£16,495	110	12.4	60.1	123	1570	×	448	×	BELOW
FORD EDGE	2.0 TDCI	£29,995	180	9.9	48.7	149	602	×	523	×	BELOW
FORD KUGA	2.0 tdci	£25,045	150	10.7	47.9	154	442	×	420	×	BELOW
HONDA CRV	1.6 DTEC	£28,060	160	9.6	57.7	129	589	×	497	×	BELOW
HONDA HRV	1.6 DTEC	£20,245	120	10.1	70.6	104	470	×	416	×	BELOW
HYUNDAI TUCSON	2.0CRDI	£27,045	185	9.9	47.9	154	513	✓	358	×	ABOVE
HYUNDAI SANTA FE	2.2CRDI	£33,535	200	9.8	46.3	159	585	✓	495	×	ABOVE
JAGUAR F PACE	2.0D PRESTIGE	£37,080	180	8.5	57.7	129	650	✓	473	✓	ABOVE
JEEP CHEROKEE	3.0CRD	£48,755	250	8.2	37.7	198	591	✓	NOT MEASURED NO LOCAL DEALER	×	NOT INCLUDED
KIA SPORTAGE	2.0 CRDI	£25,850	134	10.1	54.3	139	564	✓	341	×	ABOVE
KIA SORENTO	2.2CRDI	£28,795	197	9	49.6	149	605	×	441	×	ABOVE
LANDROVER DISCOVERY SPORT	2.0 TD4	£33,720	150	9.8	57.7	129	981	✓	469	✓	BELOW
LANDROVER FREELANDER									351		
MAZDA CX5	2.2D SPORT	£29,795	175	9.2	47.1	139	503	×	471	×	ABOVE
MITSUBISHI OUTLANDER	2.0 D	£25,255	150	10.2	53.3	139	591	×	306	×	BELOW
MERCEDES GLC	2.1 220D	£35,580	207	8.3	56	129	550	✓	378	×	ABOVE
NISSAN QUASQAI	1.6 DCI	£26,680	130	10.9	57.6	129	430	×	296	×	ABOVE
NISSAN X TRAIL	2.0 DCI	£31,645	177	10	46.3	158	565	×	378	×	ABOVE
RENAULT KADJAR	Dyn s	£27,765	130	9.9	58	129	527	×	338	×	BELOW
RENAULT KOLEOS	Dyn s	£30,400	177	10.7	50.4	148	579	×	350	×	BELOW
SKODA KODIAQ	2.0TDI SEL	£27,045	150	10.1	56.5	131	720	✓	530	✓	ABOVE
SUBARU FORRESTER	2.0D	£24,995	147	10.2	49.6	148	505	✓	NOT MEASURED NO LOCAL DEALER	×	NOT INCLUDED
TOYOTA RAV 4	2.5 HYBRID	£33,275	197	8.4	57.6	118	501	×	495	×	ABOVE
VAUXHALL MOKKA	1.6 CDTI ACTIVE	£24,275	136	9.7	60.1	124	340	✓	264	×	ABOVE
VOLVO XC60	D4 AWD SE Nav	£37,855	190	7.6	62.8	117	494	✓	475	✓	ABOVE
VW TIGUAN	2.0 tdi	£27,280	150	9.3	58.9	125	470	✓	300	×	ABOVE

Appendix 3

	Skoda Kodiaq 2.0 Tdi SEL 184 dsg 4x4	XC60 D4 (190) AWD Momentum Pro Automatic 5 Door	Landrover Discovery Sport SE TD4 180 Auto
Power Min > 150 PS	187	190	180
Torque min > 380 Nm	400	400	380
Maunfacturers quoted MPG (combined)	49.6	52.3	52
0-60 time	8.6	7.9	8.4
4x4	Y	Y	y
Hill Descent Control	£33.33	Y	y
Automatic transmission	7 Speed	8 Speed	9 Speed
5 seats	Y	Y	Y
Silver Colour	£462.50	FREE	£512.00
fuel Diesel	Y	Y	Y
Euro 6 compliant	Y	Y	Y
Min 2000cc	Y	Y	Y
Top speed > 100MPH	130	127	117
Emmisions < 150g/km	150	142	139
Euro N cap rating min 5	Y	Y	Y
Heated front screen	£279.19	Y	Y
ABS brakes	Y	Y	Y
Electronic brake force distribution	Y	Y	Y
2x front 2x side 2x curtain airbags	Y	Y	Y
front fog lamps	Y	Y	Y
parking sensors front and rear	291.67	£242.20	Y
Daytime running lights	Y	Y	Y
Xenon or LED Headlights	Y	Y	£837.50
Drivers seat height adjustment	Y	Y	Y
Dark cloth trim	Y	Y	Y
steering wheel controls for audio	Y	Y	Y
Integrated Sat Nav	Y	Y	Y
Floor mats	£25.00	FREE	£91.67
Bluetooth telephone link	Y	Y	Y
12v Power point in boot	Y	Y	Y
18 inch Alloy wheels	Y	Y	Y
all season tyres	Y	Y	Y
Payload> 600 KG	600	605	776
boot capacity > 469 litres	530	475	469
ground clearance > 180mm	187	216mm	212mm
Wading Depth	300mm	400mm	600mm
Electric windows	Y	Y	Y
Power steering	Y	Y	Y
Air conditioning	Y	Y	Y
service package	locally available	£332.50	£625.00
warranty	3 YRS 60000M	3 YRS 60000M	3 YRS UNLIMITED
Roadside asistance	Y	Y	Y
manufacturers exetnded warranty available	Y	Y	Y
blue light fitment facility	Y	Y	N

Appendix 4

EVALUATION OF PROPOSED RESPONSE OFFICER VEHICLES IN AN ADVERSE WEATHER / LIMITED TRACTION (AWLT) ENVIRONMENT

Skoda Kodiaq

Under body and body clearances are good, close to or even equal to our current fleet. Ride across undulating ground is as expected for a modern car but hampered by the difficulty in travelling slowly. 1st gear is exceptionally high for a vehicle where AWLT use is required resulting in the need to constantly slip the clutch or risk stalling if over using the brakes. Hopefully a model fitted with an auto gearbox would do better.

I was unable to fully test the car on low grip descents or ascents. With the high 1st gear and no electronic aids, descents were unstable. All but the shallowest were ignored. Attempts of ascents resulted in excessive wheel spin and were not sympathetic to the clutch. The car was particularly unhappy when there was slip in conjunction with wheel articulation.

Wading was not possible; the lowest water depth available was over 400mm. Skoda quote a wading depth of 280 – 300mm.

(Second test different model)

As above with regard to body clearances and ride. This model was fitted with auto gearbox and “off road button”.

Descents now stable with electronic hill descent function selected. Ascents now within car’s capability due mostly to auto gearbox.

Low slip conditions better dealt with - I suspect a retuning of electronic slip controls when “off road button” selected to increase speed of response and so increase capability.

Volvo XC60

Delivered good performance using routes where we have previously tested/trained in Freelander / Discovery Sport.

Grip levels were good with its drive distribution system and traction control working well. A version of hill descent control was fitted which performed adequately, if not quicker, on descents than we currently expect.

Ground clearance on the test car was good (230mm) but this model was fitted with air suspension. A standard car sees ground clearance reduced by at least 20mm to around 210mm and I feel this would have been noticeable. This is less than our current cars. *(note: manufacturer’s published figures ground clearance for Discovery Sport is 212mm Volvo 216mm)*

Did not test wading as Volvo state a max depth of 400mm for the car supplied.

Land Rover Discovery Sport

Not tested but forms part of our current fleet.

Without doubt the class leader for use in all adverse weather and other limited traction conditions.

Capability equal to or comparable with the vehicles tested above.

Overall

Any reduction in the wading depth from the previous specification of 500mm would mean that training should be given to update and convey the message of any slightly reduced capability.

For complete capability in all AWLT conditions that the Service operates within, our current supplied vehicle has the greatest capability.

Ignoring the above, both Volvo XC60 and Skoda Kodiaq (version 2) performed well. Of the two, the Volvo was the more sure footed. It is a capable car for use in the majority of adverse weather and other limited traction conditions.

Going forward, and as recommended previously, I would suggest only auto gearbox models are specified for any future purchases. This is to improve the driver experience, increase mechanical sympathy and will, in most cases, reduce fuel costs.

Appendix 5

EVALUATION OF PROPOSED RESPONSE OFFICER VEHICLES

Driver Trainers, [redacted] and [redacted] had the opportunity to evaluate the below vehicles and have given an overview of each and a recommendation at the end of this short report.

1. **Landrover Discovery Sport.** As this vehicle is the current vehicle used by the service both Driver Trainers are aware of the capabilities and characteristics of this product. The vehicle has good interior space and has good performance levels that would fulfil the requirements of the service. Of the existing fleet that the Trainers have used for training the Auto transmission is the preferred option.

2. **Volvo XC 60 Auto.** This vehicle again had good capabilities and characteristics to make a suitable Response Officer Vehicle. Both driver trainers felt the cabin space was a little less roomy than the other vehicles evaluated.

3. **Skoda Kodiaq Auto.** This vehicle again performed well in comparison to the others and both driver trainers felt the cabin space felt airy and roomy which made the vehicle appear bigger internally.

As an overall evaluation, both driver trainers felt that the Service should consider that the replacement vehicle selected be automatic and that all three vehicles would be a suitable alternative to the current fleet.

Of the three vehicles, the Discovery did appear to have more discernible body role compared to the Skoda and Volvo, however all three vehicles would be suitable.

Appendix 6

Whole Life costs not including fuel and tyres					
	Skoda Kodiaq 2.0 Tdi SEL 184 dsg 4x4				
	Purchase price ex vat	£27,766.65			
	Discount	18%			
	Net ex vat	£23,529.98	Cost for 3 years		Annual cost
	Value at 3yr 45000m	£16,162.00	£8,066.98		£2,688.99
	Servicing	£279.00			
	Road Fund Licence	£420.00	140x3		
	Volvo XC60 D4 (190) AWD Momentum Pro Automatic 5 Door				
	Purchase price ex vat	£32,562.49			
	Discount	22%			
	Net ex vat	£25,614.57	Cost for 3 years		Annual cost
	Value at 3yr 45000m	£19,350.00	£7,017.07		£2,339.02
	Servicing	£332.50			
	Road Fund Licence	£420.00	140x3		
	Discovery Sport 2.0 TD4 (180ps) Auto SE TECH				
	Purchase price ex vat	£31,570.83			
	Discount	20%			
	Net ex vat	£25,256.00	Cost for 3 years		Annual cost
	Value at 3yr 45000m	£16,112.00	£10,189.00		£3,396.33
	Servicing	£625.00			
	Road Fund Licence	£420.00	140x3		
	Jaguar F-PACE 2.0d i4 180ps AWD Auto Prestige				
	Purchase price ex vat	£33,516.66			
	Discount	10%			
	Net ex vat	£29,840.00	Cost for 3 years		Annual cost
	Value at 3yr 45000m	£18,662.00	£12,297.00		£4,099.00
	Servicing	£699.00			
	Road Fund Licence	£420.00	140x3		
	BMW X3 unable to quote as new model just coming out				

Appendix 7

KWIKcarcost

Accurate and unbiased **whole life costs**, covering outright purchase and lease of up to **20,000 UK vehicles** from **59 Manufacturers**.

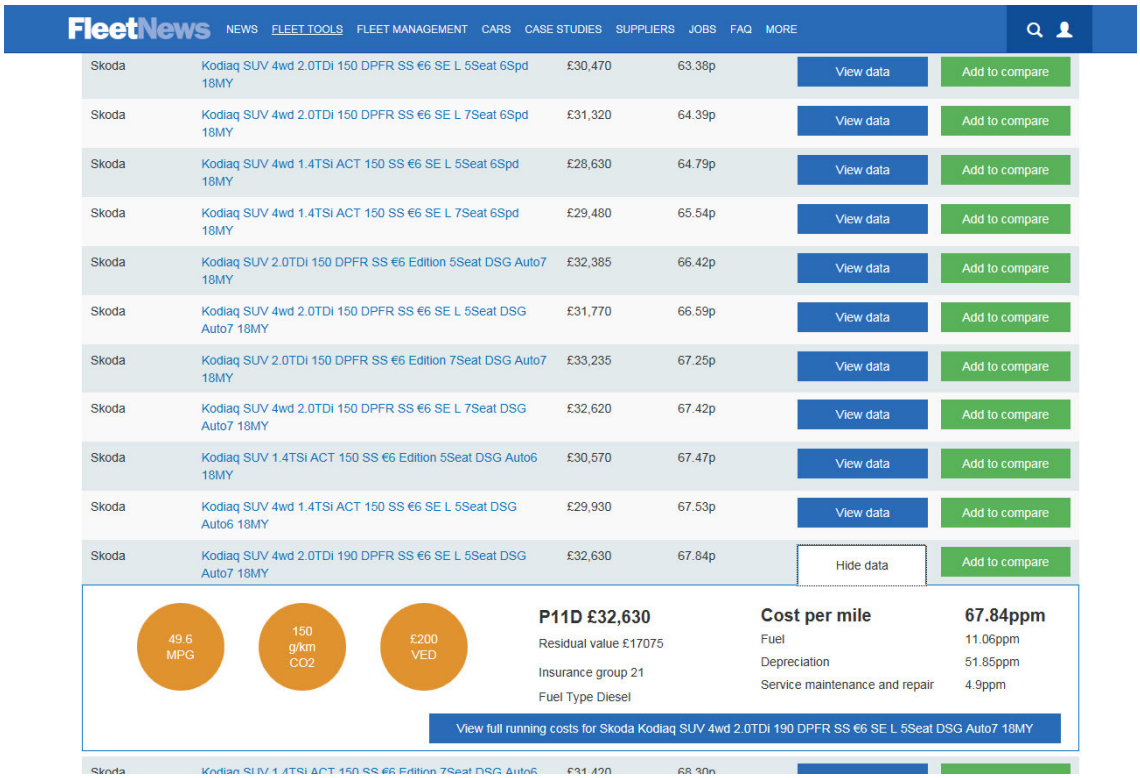
Kwik car cost are the market leaders in forcasting residual values of vehicles and are used by all large fleet users and the manufacturers themselves.

Kwik car cost normally work the mileage on either 10000 miles per year or 20000 miles per year, therefore the mean figure between 30000 miles and 60000 miles for 3 year old vehicle were taken

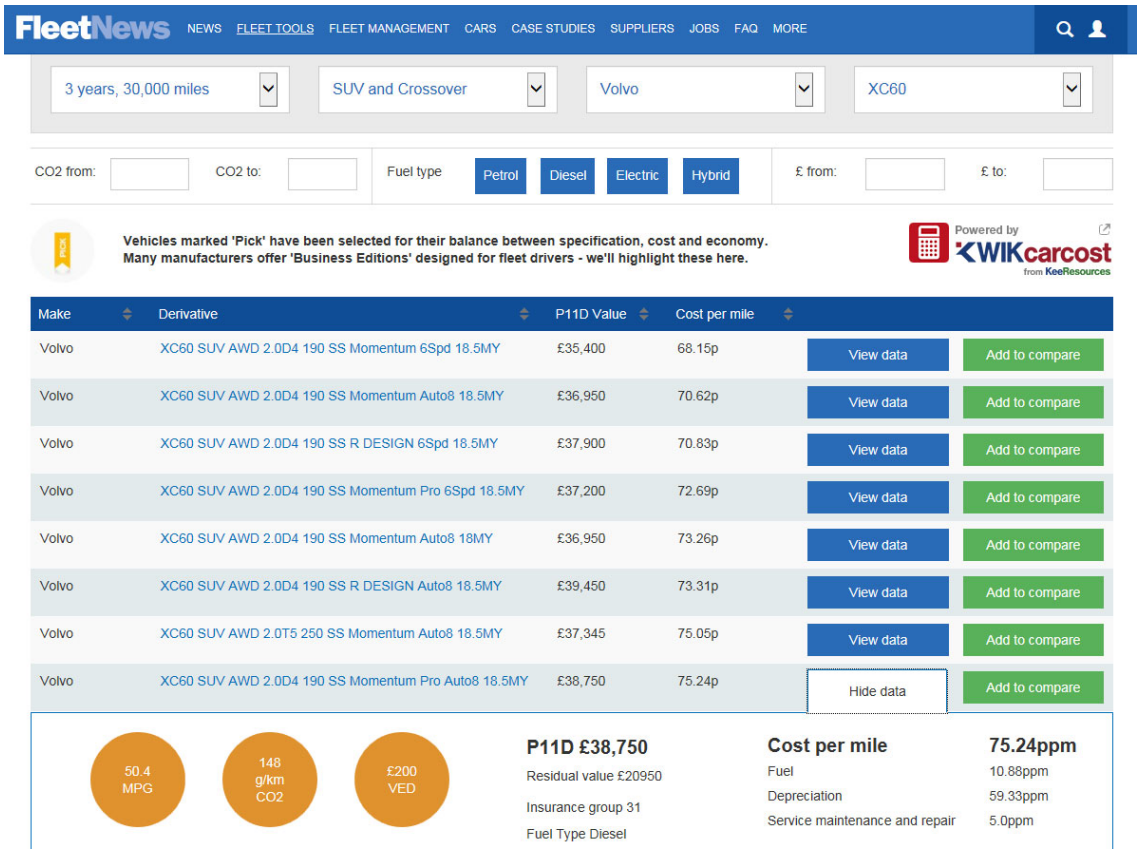
Figures collected on 29-11-17

This data was double checked with Volkswagen group and the values were correct within £1.

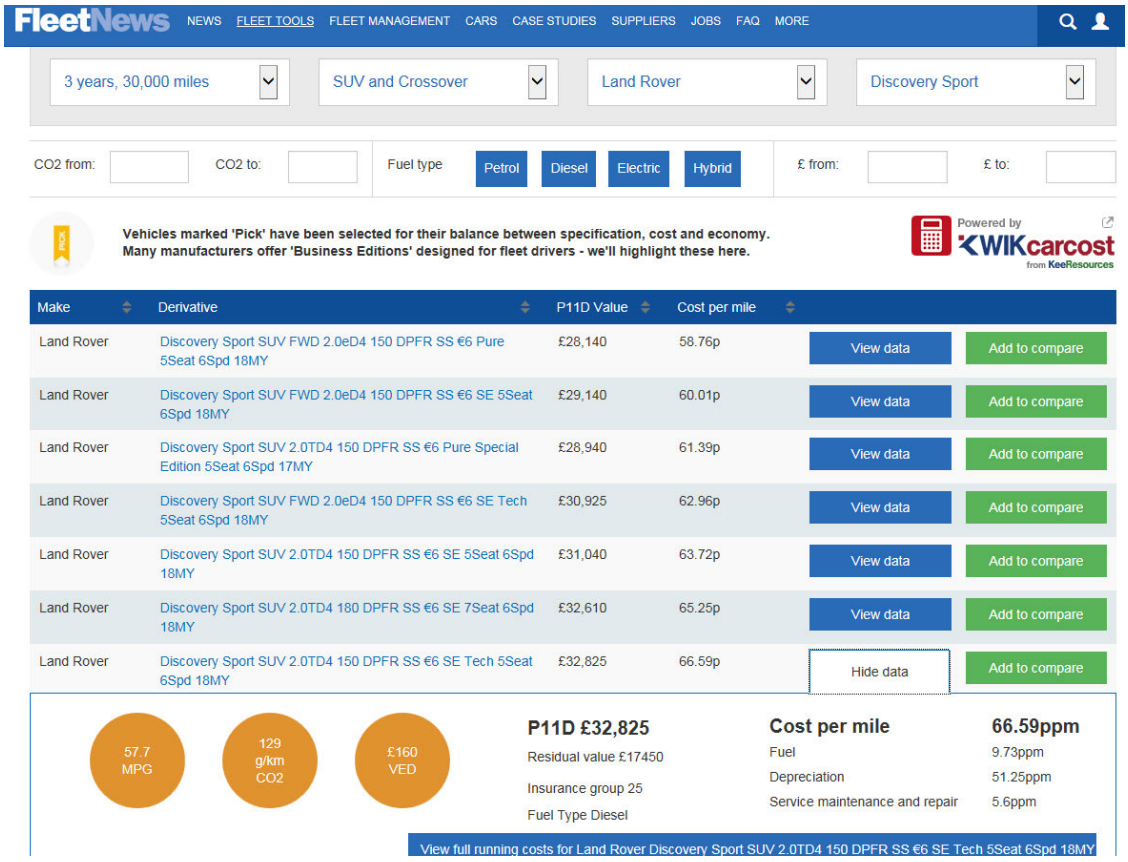
Kodiaq



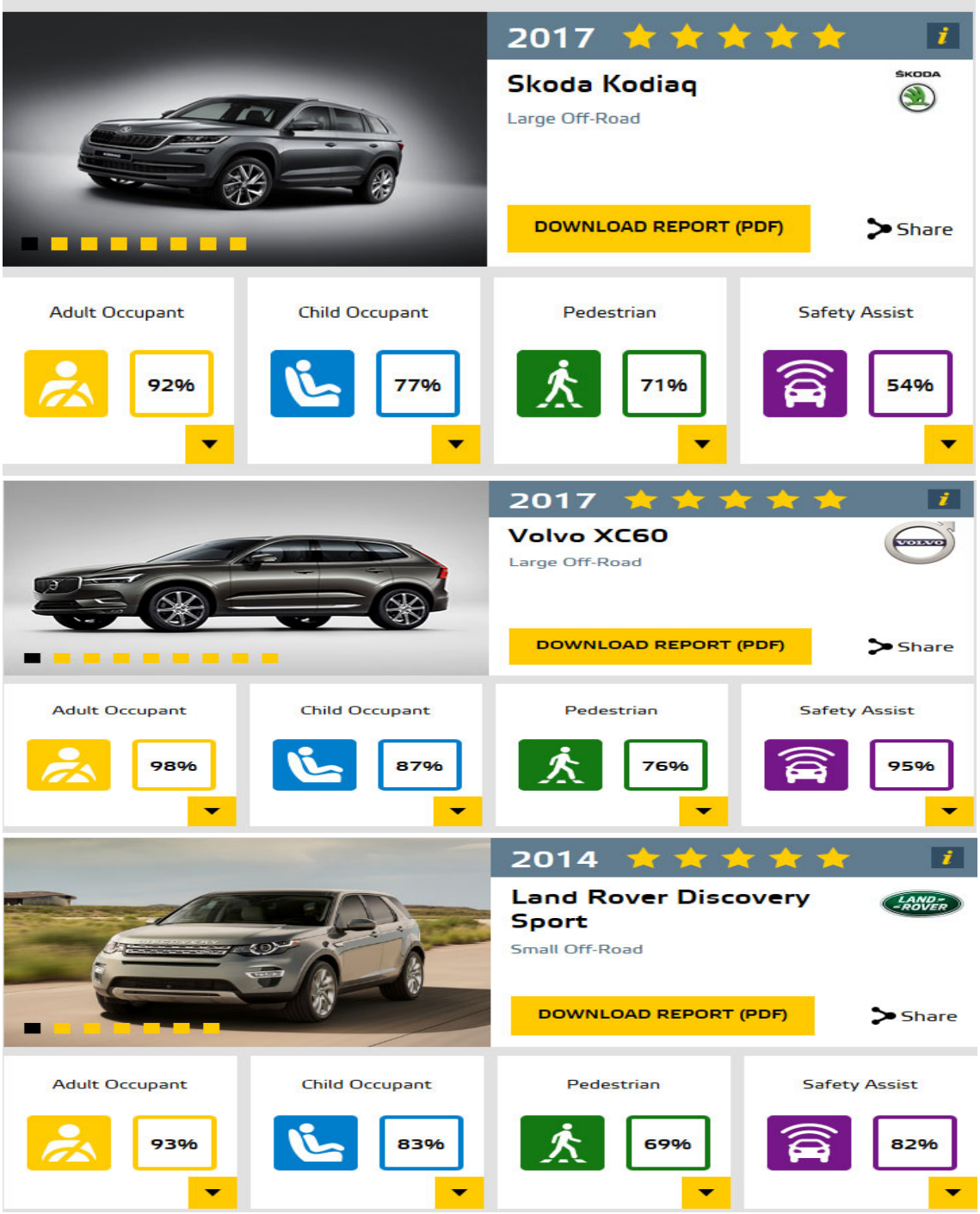
Volvo



Land Rover



Appendix 8


2017
Skoda Kodiaq
Large Off-Road
DOWNLOAD REPORT (PDF)
Share
Adult Occupant
92%
Child Occupant
77%
Pedestrian
71%
Safety Assist
54%
2017
Volvo XC60
Large Off-Road
DOWNLOAD REPORT (PDF)
Share
Adult Occupant
98%
Child Occupant
87%
Pedestrian
76%
Safety Assist
95%
2014
Land Rover Discovery Sport
Small Off-Road
DOWNLOAD REPORT (PDF)
Share
Adult Occupant
93%
Child Occupant
83%
Pedestrian
69%
Safety Assist
82%