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Vehicle Security

A publication from Vauxhall's Education Service



VAUXHALL
Raising the Standard

Committed to vehicle security

Vauxhall's range of products is leading the motor industry's fight against car crime with an array of innovations and an unparalleled commitment to vehicle security. Vauxhall spends more than £75 million annually developing and implementing measures to prevent vehicle crime.

Car crime is of concern to everyone

Car Crime costs motorists an estimated £3 billion each year in England and Wales alone, with one in five car-owning households suffering from car theft related crimes. These figures could be understated by as much as £1 billion. Also, results from a recent Fleet Marketing Survey revealed 32 per cent of British drivers believe that they will become victims of car crime.

Some of the costs of car crime are passed on to motorists through increased premiums that insurance companies charge to offset the cost of claims. The British Insurance Industry is paying out as much as £386 million a year on car crime.

The taxpayer also pays by contributing to the huge cost of police time. Home Office statistics confirm that vehicle crimes accounted for nearly 25 per cent of all notifiable offences in recent years making it one of the the largest groups of criminal offences.

Annually, the Home Office publish figures for recorded crime in England and Wales. Results for the year April 1998 to March 1999 showed that there were 391,807 thefts of vehicles and 685,919 thefts from vehicles - a total of 1,077,726 incidents of vehicle crime.

Figures for the year from April 1999 to March 2000 showed a slight drop in both thefts of and thefts from vehicles with a total vehicle crime figure of 1,043,918 incidents reported.

Sadly, although these results showed a down turn, the police were able to clear up or solve fewer detected vehicle crimes in 1999/2000. In round figures, the police clear-up rate was 8.4 per cent against the previous year's figure of 13.2 per cent.

Research also showed that many of these car crimes could have been avoided by drivers with a better understanding of crime prevention.

Vauxhall and Crime Prevention

Vauxhall is actively involved in crime prevention campaigns and has made several crime prevention videos in conjunction with the Home Office and police. These videos have been made available to crime prevention officers throughout the country.

Vauxhall sponsors the Crimestoppers SMART (Stop Motorcrime And Ring Today) campaign. The scheme enables members of the public to "help put the brakes on motor-crime" by reporting, anonymously if they prefer, actual or suspected vehicle crimes. Since the campaign began in 1998, calls to the Crimestoppers Freephone 0800 555 111 number have increased by 34 per cent, and the number of arrests is up by 51 per cent.

Vauxhall's Market Research Department and Northumbria Police, have created an Autocrime Database. Information from the database is used to identify where and how offences are committed and is used by Vauxhall's technical department to develop future vehicle security programmes.

Vauxhall has been an active member of the Vehicle Crime Prevention Group which, since it began in 1992, has significantly raised public awareness of vehicle crime and vehicle security. Vauxhall has also supported the Vehicle Crime Action Team (VCRAT) which was announced to the public in September 1998. This Home Office high-level strategy group continues to be a forum for action. The team deals with a range of issues including security for old as well as new cars, mileage fraud and illegal vehicle builders.

One of the most significant outcomes of the VCRAT group has been the establishment of a national vehicle crime reduction target. This has been a moving target for everyone involved in reducing and preventing vehicle crime and involves the police authorities and motor industry, as well as motorists. Vauxhall has also helped form a joint manufacturers working group on vehicle security.

Steven Norris - Transport for London (left) presents Vauxhall's John Winter with the company's ninth BVRLA award for security excellence, this time for Lower-Medium and Supermini vehicle sector.



Vauxhall Security Systems

The simple act of locking a car is a basic deterrent to the casual thief. As criminals become more sophisticated vehicle manufacturers must fight back with ever more innovative designs.

Engine Deadlock Immobiliser

Announced at the 1994 London Motor Show, the Engine Deadlock Immobiliser has proved to be a major security breakthrough developed by Vauxhall at a cost of £10 million. Deadlock continues to be the most sophisticated security devices fitted to any mass-produced vehicle. Standard on most petrol-engined Vauxhalls produced after October 1994, it was progressively introduced on other engine variants.

The heart of the system - a tiny transponder 'chip' sealed into the ignition key - communicates with the car's Engine Management System (EMS) through a receiver in the ignition lock. Because Engine Deadlock has been designed to operate only when the key is in the ignition lock, vehicle security is made even more effective.

The transponder is programmed at the factory with one of an infinite number of codes. If this unique code is not recognised by the EMS, the car will not start, and after a certain number of attempts the system will completely shut down.

The system cannot be 'hot wired' or decoded by the 'scanners' that are known to be used by professional car thieves. Any attempt to interfere with Engine Deadlock's circuitry will be

reported back via the on-board diagnostics system.

The system, now known as Deadlock 2, remains at the centre of Vauxhall vehicle security systems and has been a standard feature on every Vauxhall vehicle since the 1999.

The Vehicle Identification Number

Every new vehicle on the road now has a unique Vehicle Identification Number, known as a VIN code. The code is recorded on a small metal plate (VIN plate) fixed in a discrete position on the vehicle's body during manufacture.

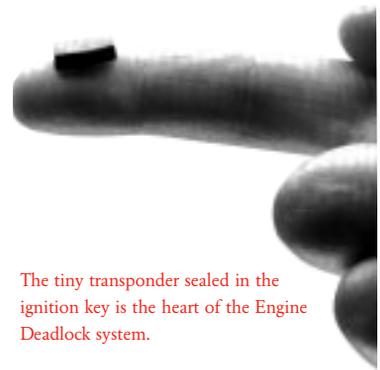
Car thieves often try to disguise a vehicle by altering the number plates and sometimes even the VIN plate, in an attempt to make it more difficult for the police to confirm the true identity of a vehicle.

To combat this threat, new Vauxhall cars now come with a laser-etched VIN plate. This features a combined alpha-numeric and barcoded system that is much harder to alter or copy. This high-visibility VIN plate is located on the top corner of the dashboard which can be viewed through the windscreen. This further discourages thieves and makes it easier to confirm a vehicle's identity.

Central locking

Central locking is available on all Vauxhall models and standard on most. The system ensures that all doors, and in some models the fuel filler flap, tailgate or boot lid, are secured by a single key operation at the driver's door and in many cases by 'smart' radio frequency remote control.

Vauxhall's 'Smart' radio frequency key transmitters operate the deadlocking and alarm where equipped. Additionally, the transmitter operates the car's interior light for added personal security. The built-in security code changes every time the system is operated.



The tiny transponder sealed in the ignition key is the heart of the Engine Deadlock system.

Deadlock

Even if a window is broken on a Vauxhall car, the thief would find it virtually impossible to gain entry through a door as the internal lock releases do not function after the car is deadlocked. Many thousand possible combinations of special side profile keys add to the security of Vauxhall cars.

The Vauxhall Deadlock system also incorporates a window closing facility in some models, ensuring that a window is not left open accidentally.

Thieves often gain entry to a vehicle by inserting special probes into a door in an attempt to operate the internal door release mechanism. Most models have a labyrinth structure inside the door-shuts to make it almost impossible for a thief to insert a probe. In addition locks and latches are shielded.

The Vauxhall Omega was the first car in its class to be fitted with a remote deadlock system approved by Thatcham, the insurance industry's own research centre. The system is operated by a radio frequency 'key' that communicates with a receiver in the car. Every time this happens the security combination changes.

With over 69 billion combinations, the Omega's Deadlock system can resist the 'learning systems' or scanners operated by professional car thieves.

Freewheeling lock cylinders

The opportunist car thief will often try to gain entry to a vehicle by forcing one of the door locks with a screwdriver. A simple but highly effective deterrent is the freewheeling lock. The design permits the key slot to rotate without engaging the lock mechanism if anything other than the correct key is inserted. All Vauxhall vehicles now feature these locks.



Alarms

Vauxhall was the first British car manufacturer to receive Thatcham's approval for a factory-fitted, ultra-sonic car alarm and immobiliser. This highly effective security system is available as standard on many models and as an option on all others.

Vauxhall alarm systems are set by simply central locking the car. After a delay of 10 seconds the system is fully armed. The alarm system's separate siren which has its own back-up power source, can be triggered by an array of sensors located throughout the vehicle. A visual warning is given by the vehicle's hazard warning lights which are brought into operation if the alarm is triggered. A flashing red light-emitting diode, mounted prominently inside the vehicle, tells potential intruders that the alarm is activated. Only the most dedicated thief would attempt to enter a Vauxhall at this point.

The first line of defence consists of electronic switch sensing. If the bonnet is opened, a switch activates the alarm. The interior courtesy light switches sense the opening of the tailgate and doors.

Special ultrasonic motion detectors watch for any movement inside the car, possibly as a result of a hand reaching in from a broken window. The motion detector can be turned off by owners should they wish to leave a pet in the car for a short time.

Even the rear screen heater element or specific rear side glass has become a security device, triggering the alarm if broken.

The audio system is also protected by the alarm system, which is activated if any attempt is made to remove it.

Great emphasis is placed on false triggering of the alarm which can become socially unacceptable. Vauxhall alarms are protected against bulb failure, rocking that can be caused by passing traffic or high winds, and accidental impacts. If the alarm is set off, it sounds for 30 seconds after which time it resets.

Immobilisers

The alarm system in Vauxhall vehicles is supplemented by a three-point immobiliser which disables the engine by disconnecting the power supply to the fuel pump, starter relay and Electronic Management System.

In the case of Vauxhall diesel-powered vehicles, fuel is prevented from reaching the engine by a cut-off valve or controlled by a software lock.

Extra Protection for Used Vehicles

One of the latest techniques in the Vauxhall anti-theft arsenal is the unique collaboration between Vauxhall's Network Q programme for quality-inspected used cars and forensic marking company, SmartWater, which provides Network Q cars with a "DNA" type code.

SmartWater provides a liquid that contains a unique Forensic "fingerprint" painted onto a car's components such as the wiring loom, wheels or the interior trim. Each brush stroke contains millions of particles encoded with the car's identity. Identification by the Police of which cars carry SmartWater is easy using an ultra-violet light which locates parts identified by SmartWater.

Audio security

Each year more than half of reported car break-ins result in the theft of mobile phones, lap-top computers, and in-car audio equipment. Vauxhall has done more than any other British motor manufacturer to deter the thief and make his task more difficult.

Security coding

Since 1987, radio-cassette players fitted to Vauxhall vehicles have incorporated a four-digit security coding system. This code is actually 'burnt' onto a micro-processor chip inside the radio. If the radio is disconnected from the car's electrical supply, the code, supplied to the owner, must be re-entered for the unit to operate again.

The code system is so secure that even Vauxhall cannot erase or change the code of an audio unit. With 10,000 code combinations, accidental selection by a thief is virtually impossible. Only an owner visiting a Vauxhall dealership can obtain the security code for his or her audio unit. Even then, they must present comprehensive proof of ownership, which is then confirmed with Vauxhall's Security Scheme Computer. This also applies to customers requiring replacement keys and service documents for their vehicles.

Many Vauxhall audio units from

1993 onwards will emit a loud, intermittent bleep when reconnected after removal from the console. This security feature operates even when the security code system has not been activated.

Display Panel

Most models now feature a removable display panel which is unique to each unit. The panel can be retained by the owner when the car is unattended.

Requests for replacement panels received by a dealer must be verified with the owner's details, held on Vauxhall's central computer. Only when the code and individual radio chassis identification match the customer's details will a replacement be authorised.

Vauxhall audio units are retained by special fixings which can only be removed with specialised dealer equipment, making the casual thief's task even harder.

The new Corsa features Vauxhall's latest generation in-car entertainment equipment with "double DIM" sized systems, which can be upgraded to include the latest navigation and communications features.

The equipment is protected with a factory-installed four-figure security code burnt into the memory chip, and a remote read-out of the audio information via a multi-functional display unit on the car's fascia.

This makes it virtually useless to any thief since the audio equipment itself cannot be used in any other installation. A detachable front panel is also provided on these latest models.

The removable display panels fitted to some models are unique to each unit. The panel can be retained by the owner when the car is unattended.



Vauxhall's success in reducing audio crime can be measured by the number of replacement audio units ordered by dealers. Since the introduction of security coding in 1987, dealers' orders have fallen by around 70 per cent.

MFD-Multi-Function Display

Vauxhall's innovative MFD audio security system can be seen on Astra, Corsa, Vectra, and flagship Omega models. On these models, the MFD advises the driver of the outside temperature, time and date as well as audio system information.

With MFD equipped cars the audio unit is rendered useless to a thief as it has no display panel and cannot operate independently. In addition to MFD, audio units on many models feature a removable security code module.

The latest generation in-car entertainment equipment fitted to the Vauxhall Corsa.



The MFD is positioned carefully within the driver's forward field of vision so that information can be read at a glance. Models such as the Astra, Omega and Vectra even incorporate information from the trip computer on the MFD.

More security features

Many Vauxhall vehicles allow the owner to keep personal possessions secure and out of sight. Some insurers do not cover such items, and features such as retractable load compartment covers help prevent theft of valuables by the opportunist thief.

Accessories are available to further improve the security in new and older Vauxhall cars. These range from special locks to secure expensive alloy wheels to heavy-duty steering wheel security bars.

Even such items as roof racks, which offer a tempting target to a thief, are made more secure with carrier and attachment locks.

Accessories are available to further improve the security in new and older Vauxhall cars. These range from special locks to secure expensive alloy wheels to heavy-duty steering wheel security bars.

Vauxhall Security Scheme Computer

Once a vehicle has been built, details are placed on the Vauxhall Security Scheme Computer. A vehicle entered on this system can be identified more easily in the event of a theft.

Vauxhall Assistance

Should the owner of a new Vauxhall have the vehicle stolen in the first year after registration, he or she will



Even Vauxhall accessory roof racks are lockable.

receive a free (excluding insurance and fuel) loan car for up to two days.

After alerting the police, an owner merely has to contact the special Vauxhall Assistance Freephone telephone number with the Police crime reference number to obtain a loan car that can be delivered to any UK mainland location. This facility allows Vauxhall owners to continue their every-day business whilst efforts are made by the police to recover their vehicles.



Vauxhall accessory steering wheel locks, gearlock and lockable wheel nuts make the thief's work that much harder.

Every effort was made to ensure that the contents of this publication were accurate and up-to-date at the time of publication.

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