6 Motorcycle Parking

www.motorcycleguidelines.org.uk
Motorcycle Parking

6.1 Summary

- Motorcycling has significantly grown in use since the mid 1990s.
- Motorcycle theft rates remain high even when sales drop; approx. 26,000 machines are stolen every year.
- National policy and design regulations are firmly in place
- Local demand can be challenging to assess but relatively straightforward to satisfy
- Effective motorcycle parking is “near, clear, secure and safe to use”

6.2 Context

Parking provision is an important tool in local transport policies as well as traffic management and crime reduction. It is also essential for any motorcycle user. Motorcycle parking can be provided on-street or off-street, in surface or multi-storey parking and by commercial site operators, local authorities, employers, retailers and colleges.

6.2.1 Demand

In 2012 there were just over 1.2 million licensed motorcycles in Great Britain which represents a 70% increase since 1994. Despite the unavoidable impact of economic factors, sales of new and second hand indicate that interest has remained relatively consistent.

As motorcycling continues to grow, demand for parking outstrips supply in many cases, especially during peak periods. A study of the London Congestion Charging area for Transport for London (TfL) found motorcycle on-street parking occupancy to be 33% over-capacity (Tilly 2004).

6.2.2 Crime Reduction

Motorcycles are attractive to thieves because of their relative low weight and high value. Motorcycle theft is often opportunistic and takes place in public places. Theft rates are generally highest in urban areas; police forces covering large urban areas record around three times the rate of theft (per thousand motorcycles) than in more rural areas. The City of London and Metropolitan police force areas have the two highest rates of motorcycle theft in England and Wales (Braun 2003). 50% of all motorcycle thefts in 2010 were inside the M25 (Motorcycle Crime Reduction Group and Metropolitan Police Stolen Vehicle Unit, 2010). It is worth noting that just 7% of on-street parking in London were equipped with anchor...
points (Tilly 2004).

Motorcycle theft is a continuing concern for riders, the police, parking providers and insurers. Constructive initiatives include “Lock It or Lose It” security awareness campaigning, “Sold Secure” and “Thatcham” product testing and rating standards and the “Park Mark: Safer Parking Award” for operators aiming to protect customers and vehicles. Safer parking status, Park Mark®, is awarded to parking facilities that have met the requirements of a risk assessment conducted by the police.

Around 26,000 motorcycles are stolen per year, which represents 22% of all bikes sold (MCRG and MPSVU, 2010). The most ‘at risk’ motorcycles are 600cc and above as these represented 60% of those stolen in 2010.

To combat the this problem, the MCI promote their MASTER Security Scheme (Motorcycle and Scooter Tagged Equipment Register). The scheme has been adopted by many leading manufacturers and is approved by police authorities.

### 6.2.3 Policy Background

Prior to the development of Local Transport Plan (LTP) guidance, other than general statutory requirements to provide safe high networks, there was little national recognition of the need to provide for motorcycle users. The Road Traffic Regulation Act 1984 was amended in 2000 to extend local authority powers to provide devices for securing motorcycles and the Traffic Signs Regulations and General Directions (TSRGD), revised in 2002, prescribes specific signs and markings for bays. Details are contained in the Traffic Advisory Leaflet TAL 2/02 Motorcycle Parking (DfT 2002).

The policy impetus for motorcycle parking provision was documented in the DfT’s LTP guidance and, following the recommendations of the Government Advisory Group on Motorcycling, through the development of a National Motorcycle Strategy (AGoM 2004).

### 6.3 Assessing Demand

Motorcycle use is characterised by its flexibility and seasonality. Demand for parking and how to meet it can therefore be difficult to assess.

As noted in TAL 2/02 few authorities base motorcycle parking decisions on specific data for motorcycle movements. Although this may be available from classified traffic counts or origin and destination surveys there is unlikely to be a large body of data to work from. Traffic accumulation surveys based on existing traffic counts depend on the ability of automatic traffic counters to identify motorcycles, whilst the results from occasional manual counts may be vulnerable to random variations due to the relatively low volumes of motorcycles in many areas.

Unsolicited user requests and opportunistic inclusion in other traffic schemes or development works seem to be the most common trigger for provision. Some authorities and other organisations have taken a more pro-active approach by seeking users’ suggestions, often through a motorcycle forum (see Chapter 2).
As with the provision of parking for bicycles, understanding the nature of motorcycle use within a geographical area is essential for effective and efficient use of parking resources.

The following data indicates a need for serious consideration of parking demands:

- 3% of households have at least one motorcycle (DTF 2009);
- There are approximately 4 million licence holders in Great Britain, with over 400,000 new and used motorcycles changing hands each year (MCI 2012);
- Motorcycling is highly seasonal, with roughly twice as much usage in summer months (DTF 2010); and
- 2.9 billion vehicle miles were travelled by PTWs in Great Britain in 2010 (MCI 2012).

Parking provision for both bicycles and motorcycles will be in demand around educational establishments, workplaces, shopping and leisure destinations, transport interchanges and residential areas lacking in private parking opportunities. Similar to growth in leisure use across all modes, leisure use by motorcyclists often involves attending evening or weekend events and is often motorcycle ‘themed’. Some locations will therefore experience high demand for parking at weekends. Other locations will experience demand during general business hours, but may see far lower demand for evening leisure and shift work.

Look out for the following clear signals of under-supply:

- illegal or inappropriate parking;
- machines secured to street furniture;
- unauthorised use of cycle parking;
- overflow at motorcycle parking bays;
- obstruction to traffic; and
- complaints from residents, businesses or riders.

It is important to survey a wide range of locations at a variety of times to get a meaningful picture.

### 6.4 Parking Behaviour and Needs

In terms of convenience, flexibility and security motorcycles are more similar to bicycles than cars. Consequently, the behaviour and requirements of motorcyclists often follows the cycle parking model. Good practice dictates that motorcycle parking should be:

- Near
- Clear
- Secure and
- Safe to use

**Near**

Motorcycle users will naturally look for parking opportunities close to their destination. A distance of 20 metres is desirable and facilities more than 50 metres from the destination will compete with unofficial opportunities nearer by. Riders will want to be able to see or stay close to their machine.
Marginal areas, especially those already utilised by riders, can be formalised using relatively low-cost measures to protect parked machines and avoid conflict with other road users.

**Clear**

Difficulties finding suitable formal parking tend to reduce the benefits of motorcycle use. Parking signage from main routes and within a site is essential. TAL 2/02 explains the provisions for making orders and for signage.

**Secure**

Physical security measures are highly attractive to riders (local or tourists) who need to park for more than a few minutes. This will allow a machine to be secured to something immovable. At the very least, a rider would opt for and expect a location where the machine will receive maximum casual observation and therefore minimise the risk of theft.

Covered off-street parking is desirable in order to offer protection from the elements and damage from tree debris, sap and bird waste. Many motorcycles do not have large load spaces that can be secured so riders value secure places to stow cumbersome and expensive riding equipment (eg protective helmets and clothing). Riders have less opportunity to carry food or drink so provision of litter bins and vending machines is wise.

**Safe to use**

Personal safety considerations when parking include the surface on which the machine is manoeuvred, mounted and dismounted, as well as lighting, CCTV coverage and the level of passing pedestrian traffic.

Appropriate formal parking provision reduces the attraction of informal parking. The latter will lead to exploitation of inappropriate opportunities which may cause obstructions or hazards. Motorcycle parking within multi-storey car parks is best provided as a dedicated area within sight of attendants and ideally on the ground floor at the entrance/exit in order to avoid the ramps and circulation areas.

**6.5 Motorcycle Parking Resources**

It is good practice to maintain a complete map of all current public motorcycle parking locations. This should be linked to local authority asset management data listing their dimensions, capacity, and security provisions within each authority. Identifying the number, location and nature of existing spaces is essential for planning and management and to inform motorcycle users (eg by way of a leaflet or web page).

Motorcycle parking capacity is determined by the size of bay and of machines that use it. On-street motorcycle parking bays will often follow a similar lay-out to car parking bays, ranging in depth from 1800 to 2700 mm (length varying according to circumstances) but with the motorcycles parked at right angles to the kerb rather than parallel. Generally, motorcycle parking bays are not marked out for individual machines, allowing flexible and efficient use of limited space. Motorcycles range in length from around 1900 mm for a moped to 2500 mm for a large cruiser. In practice, the manner of parking means that even
the largest machines should be capable of parking across a 2100 mm bay without encroaching onto the carriageway.

It is the effective width of a motorcycle and space to mount/dismount from the side which will determine the usable area. Most machines range from 700-1000mm wide (including handlebars, mirrors and fixed luggage) although in practice most machines are parked with handlebars turned to the locked position which reduces both width and length. With a nominal 600mm spaced needed to mount/dismount, this suggests that an average effective width of around 1400mm per machine is required. Where there is significant usage by smaller or larger machines this figure can be altered to suit.

These figures serve as a guide to the total area needed to meet motorcycle parking demand or as an indicator of capacity for existing or proposed facilities. However, where parking capacity is insufficient, riders will try to fit into the available space. In the most extreme cases riders will manoeuvre machines so that there is no space on either side. Such informal parking may make for the most efficient use of space but it may compromise riders’ safety. Such overcrowding, if experienced, is a clear sign that further parking provision is required.

Parking occupancy and duration can only be reliably assessed by manual surveys. Linking observations of time and machines present (including informal parking activity) to data on the dimensions of bays and motorcycles allows an objective assessment of supply and demand at different times and locations. Other information can be collected at the same time. For example, to what extent are machines secure? Are fixed anchor points required?

Motorcycle parking surveys have three important functions:

- To create or update a motorcycle parking inventory. Essential data will include location, dimensions (including capacity) and the presence of security features.
- To audit the quality of a facility including surfaces, signage and road markings, anchor points, CCTV, lighting, potential hazards and obstructions.
- To analyse motorcycle usage and parking duration, by reference to day-of-week, time of year, weather conditions, extent and type security being used, the characteristics of riders (by interview) and/or their machines (by observation or interview).

Wider consultation with users and interested parties is likely to produce better solutions through identifying unresolved issues and stimulating dialogue to resolve them. Some local authorities benefit from a regular motorcycle forum or at least approach motorcycle representatives through general transport consultation channels.

6.5.1 Practical Design Ideas

Refer to Chapter 3 for a thorough review of design considerations, but some practical design issues surrounding theft-reduction and personal safety deserve further discussion.
6.5.1.1 Security

Physical security need not be difficult or expensive to provide. Fixed and robust features such as rails, hoops or posts which provide a simple locking-point to secure a motorcycle by chain or similar device should be an early consideration for any parking scheme. In the past, introducing CCTV systems may not have been affordable or appropriate but connection costs of broadband and ‘3G’ have dropped significantly and therefore selecting locations within monitored areas may well now be feasible.

A range of suitable designs exist for security anchors of varying degrees of sophistication. Where motorcycles are parked with one wheel against the kerb, a simple continuous steel rail satisfies most situations. This has the advantage of being easily and inexpensively sourced and installed with similar costs to equivalent cycle parking.

The continuous rail can accommodate machines of varying style and size, is well understood by users and is compatible with most types of shackling devices. The rail should be set at around 600mm above the surface to accommodate the range of wheel sizes. Securing the rail to a wall or installing a waist-height upper rail minimises the risk of tripping.

Other designs, such as posts with captive chains (with or without a captive lock), accommodate riders who do not have chains or locking devices.

Flush-mounted locking rings set into the floor or carriageway may seem less obtrusive but can be difficult or unattractive to users; they allow the mounting surface to be used as a leveraging point to break locks, are subject to debris and rain water and suffer wear and tear. They may also present a tripping hazard, particularly to visually-impaired pedestrians.

Generally speaking, sophisticated designs with moving parts and locking mechanisms are more expensive to provide and maintain. Offsetting these costs through parking charges is difficult to implement successfully. Ticket-based pay and display methods are inappropriate for motorcycles as there is nowhere to display and secure the ticket. Meter-based systems also alert thieves to the likely length of time the motorcycle will be left unattended. However, a number of highway authorities (particularly in London) have included motorcycles in their automated mobile phone parking schemes at a reduced cost than cars and often based on a defined area, rather than individual bay.

6.5.1.2 Safety

Safety considerations should include the actual process of manoeuvring a motorcycle whilst parking and personal safety at or around the location.

Motorcycle parking areas should have limited gradients in order to facilitate manoeuvrability and to ensure the motorcycle is unlikely to topple over. Surfaces should offer good grip for feet and tyres. Poor drainage and debris may also cause a manoeuvring rider to lose their footing.

European law requires all motorcycles to have at least one device which maintains the machine in a vertical, or near vertical, parking position when unattended. There are two main types of these devices:
• The ‘prop stand’. This provides a triangulating point of contact, along with the front and rear tyres, such that the vehicle leans to the left. Riders will generally use the “prop stand” for convenience or where parking on a camber.

• The “centre stand”. This provides two centrally positioned triangulating points such that the machine rests vertically, often with one wheel lifted from the floor. This usually requires more effort from the rider and is often less stable unless the parking area is level.

In each case the motorcycle will generally be parked with its steering locked in a fixed position usually with the front wheel turned to the left.

Based on EU regulations for motorcycle stand performance, surface slope angles should be less than 5 degrees (EC 1993). Figures 1a and 1b demonstrate the extremes of motorcycle stand performance against a transverse tilt, while Figure 2 shows the effect of longitudinal tilt (both upstream and downstream).

As motorcycles are not fitted with a parking brake, the rider must be able to position their machine so that it cannot roll forward under its own weight and fall over. Therefore, where the ground is not level, riders will try to park so that the weight of the machine is working with the direction of the stand, usually with one wheel touching the kerb. This requires sufficient space and visibility to manoeuvre the machine in and out of position safely.

Parking areas must have a firm surface capable of supporting the weight of a motorcycle through its stand. The footprint of the stand might typically measure 10cm2 and carry a load of 10kg per cm2. The surface of the parking area must be capable of withstanding penetration by the stand. Care should be taken to ensure bitumen-based surfaces remain solid during hot weather.

Sufficient space and visibility for riders is required to allow manoeuvring without undue risk of collision with other road users. On-street parking should not be positioned so that riders are tempted to use footways to access it. Local authorities should also ensure safe and legitimate means of access to off-street parking.
even where access is from the road onto private land.

6.5.2 Parking Standards and Dimensions

6.5.2.1 Parking Standards

PPG13: Transport does not set specific standards for motorcycle parking but many local authorities have published their own local motorcycle parking standards and guidance. These are typically based on a proportion of car capacity (up to 5%) with a minimum provision (one or two spaces). The Motorcycle Industry Association has called for 5% of all public parking spaces to be set aside for motorcycle use (MCI 2001).

The British Motorcyclists' Federation (BMF) proposes the following set of minimum motorcycle parking standards for different developments:

<table>
<thead>
<tr>
<th>Description of Land Use</th>
<th>Minimum Motorcycle Parking Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camping Site</td>
<td>1/4 staff, 1/10 pitches</td>
</tr>
<tr>
<td>Marinas</td>
<td>1/4 moorings</td>
</tr>
<tr>
<td>Car parks</td>
<td>1/10 parking spaces</td>
</tr>
<tr>
<td>Park and ride sites</td>
<td>1/10 parking spaces</td>
</tr>
<tr>
<td>Rail stations</td>
<td>10/Morning Peak Service</td>
</tr>
<tr>
<td>Bus stations</td>
<td>4/1 bus bay</td>
</tr>
<tr>
<td>Key bus stops</td>
<td>4/Stop</td>
</tr>
<tr>
<td>Hospitals</td>
<td>1/4 staff, 1/20 beds</td>
</tr>
</tbody>
</table>

Source: BMF

TAL 2/02 Motorcycle Parking links journey purposes to length of stay:

<table>
<thead>
<tr>
<th>Length of Stay</th>
<th>Typical Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;30 minutes</td>
<td>Shopping</td>
</tr>
<tr>
<td></td>
<td>Dropping passengers off</td>
</tr>
<tr>
<td></td>
<td>Delivery</td>
</tr>
<tr>
<td>30 minutes – 1 hour</td>
<td>Shopping</td>
</tr>
<tr>
<td></td>
<td>Leisure</td>
</tr>
<tr>
<td></td>
<td>Personal business</td>
</tr>
<tr>
<td>1-3 hours</td>
<td>Shopping</td>
</tr>
<tr>
<td></td>
<td>Employment</td>
</tr>
<tr>
<td></td>
<td>Leisure</td>
</tr>
<tr>
<td>4 or more hours</td>
<td>Shopping</td>
</tr>
<tr>
<td></td>
<td>Employment</td>
</tr>
<tr>
<td></td>
<td>Rail or bus use</td>
</tr>
<tr>
<td></td>
<td>Education</td>
</tr>
</tbody>
</table>

Source: DfT TAL 2/02
In addition to use, other factors affect length of stay. Broadly speaking, close proximity to destination will probably be the primary consideration for short visits, although secure facilities are still desirable by the rider. For visits longer than 30 minutes, while proximity remains influential, security features such as rails to which to secure vehicles, and opportunities for maximum monitoring and minimum theft by van will become more important. Extent of weather protection and passing traffic increases in desirability for longer term parking.

6.5.2.2 Motorcycles: Indicative Dimensions

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>Effective Length (mm)</th>
<th>Effective Width (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moped</td>
<td>1600</td>
<td>650</td>
<td>85</td>
</tr>
<tr>
<td>Middle-weight</td>
<td>1900</td>
<td>800</td>
<td>230</td>
</tr>
<tr>
<td>Motorcycle/scooter</td>
<td>2300</td>
<td>900</td>
<td>350</td>
</tr>
<tr>
<td>Large motorcycle</td>
<td>2000</td>
<td>800</td>
<td>260</td>
</tr>
</tbody>
</table>

95%ile (estimated)  

Source: MCIA

Motorcycle length and width dimensions are generally reduced when parked because the front wheel turns to a locked position. It is this effective length and width that is relevant.

Further information about dimensions, layouts and signage is collated in “A Guide to the Design and Provision of Secure Parking for Motorcycles”.

A further consideration is that of disabled riders. The range of difficulties faced by disabled riders will be similar to those using other modes and the British Parking Association (BPA) suggests provision for disabled riders should also be provided by way of specifically marked-out bays of increased size. Any rider experiencing reduced mobility and strength will benefit from extra room to position themselves to the side of the bike when manoeuvring or mounting. An ageing population may well make this a more common issue in the future.

If such provision does not meet demand then disabled riders should, on display of a ‘blue badge’, be allowed to park exempt from penalties in the same way as car drivers.