

SAFETY  
BULLETIN

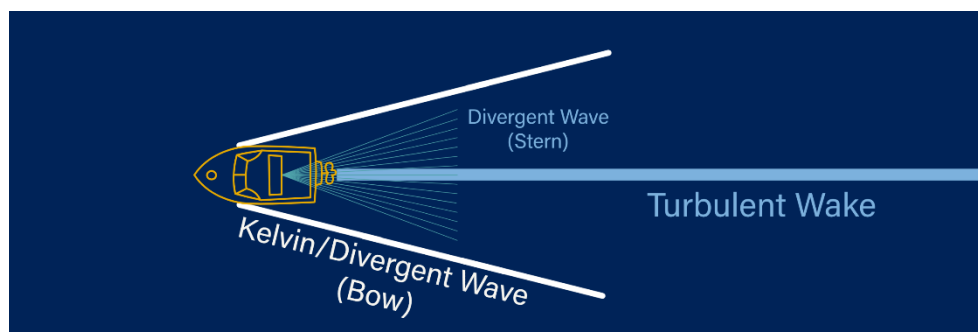
# WATCH YOUR WASH

As the master of a power-driven vessel operating on the river Thames, you have a responsibility not only to your passengers and crew, but also other river users and the environment. The wash created by your vessel making way, as well as the draw-off effect, can be dangerous to those around you.

## WHAT IS VESSEL WASH?

When any displacement craft moves through the water, it displaces the water around it, causing a disturbance that propagates as waves. These waves are known as wash.

Wash can vary in size and intensity depending on factors such as the size and speed of the vessel, the shape of its hull, and the conditions of the water (*see the last page of this Safety Bulletin*). Wash can extend behind the vessel in a V-shaped pattern and can be observed as a trail of waves and turbulence in the water.



## WHAT IS DRAW-OFF?

Draw-off, or vessel interaction, refers to the effects that occur when two or more vessels come into close proximity to each other when either one or both vessels are making way. Draw-off is when a vessel's movement or passing causes another vessel to experience a 'pull-off' effect, resulting in it being pulled away from its moorings.

When a large vessel passes by a stationary vessel, it can create a pressure differential and generate significant hydrodynamic forces. These forces can exert a pull on nearby vessels, including those that are moored or anchored. The magnitude of the pull-off effect depends on factors such as the size and speed of the passing vessel, the distance between the vessels, and the conditions of the water. Available water is a factor. The effect is more prevalent at low water, when there is less water available to replace the volume of water displaced by the passing vessel.

**EXPIRY DATE:**  
**04/07/2024**

Port of London Authority  
London River House, Royal Pier Road,  
Gravesend, Kent DA12 2BG

**BOB BAKER**  
**Chief Harbour Master**

## IS THERE A PROBLEM?

The PLA receives in excess of 400 incident reports per year. On average, over a quarter of these are wash complaints. The top five reported locations are Upper Pool, Wandsworth Reach, Kings Reach, Battersea Reach and Nine Elms Reach.



*Figure 1 - Wash report hotspot areas, shown graphically as orange areas.*

The hotspots within these are: Downings Roads Moorings and Hermitage Wharf in Upper Pool; Point Pleasant Marina in Wandsworth Reach; and Nine Elms Pier in Nine Elms Reach.

Whilst the majority of wash complaints the PLA receives are submitted by members of the houseboat community, the PLA also receives many reports from recreational users as well as passenger boat operators.

## HOW IS IT DANGEROUS?

**Houseboats:** When a large wake meets a houseboat its effect can be very dangerous to those inside. Not only is it dangerous to those boarding and exiting the houseboat, but the severe disturbance can cause household items to fall and move, posing a real danger to any occupants.

**Damage to smaller vessels:** The powerful waves generated by a vessel can pose a threat to smaller boats, yachts, or other watercraft in their vicinity. The sudden rise and fall of water levels caused by vessel wash can capsize or swamp smaller vessels, endangering the occupants. In addition, the turbulence can cause vessels to break their moorings and gangways, which in itself poses a significant danger to those nearby.

**Safety of swimmers and divers:** The turbulence created by vessel wash can be dangerous for swimmers (where swimming is permitted) and divers near the vessel's path. The sudden changes in water currents and the force of the waves can make it difficult to swim or maintain stability, increasing the risk of accidents, collisions, and drowning. There are often underwater divers operating in wash report hotspot areas.

**Environmental impacts:** Vessel wash can have detrimental effects on marine ecosystems. The waves and currents can stir up sediments, disrupting the delicate balance of underwater habitats and potentially harming marine organisms.

**Disruption of navigation:** Vessel wash can create hazardous conditions for other vessels, particularly smaller boats, human powered vessels or vessels in close proximity. The turbulent waves and currents can make it challenging for vessels to maintain control, leading to potential collisions, contacts, loss of cargo, or damage to infrastructure.

**Shoreline damage and flooding:** In areas with vulnerable coastlines or low-lying shores, vessel wash can contribute to coastal flooding. The forceful waves can breach river wall defences and cause inundation of shore areas, threatening human settlements, infrastructure and ecosystems.

**Noise and vibrations:** Large vessels produce significant noise and vibrations as they move through the water, which can have negative effects on marine life. Underwater noise pollution from vessel wash can disrupt the communication, feeding patterns, migration, and breeding behaviours of marine wildlife such as seals, fish and birds.

**Erosion and scouring:** Vessel wash can erode shorelines, riverbanks, and coastal structures such as jetties, breakwaters, and seawalls. The force of the waves created by a passing vessel can dislodge sediments, leading to the erosion of vulnerable areas and potentially destabilising ecosystems.

## ARE THERE LEGAL CONSEQUENCES?

As a trust port, the PLA has a responsibility to exercise its legal powers to protect the safety of all river users. To that end, the port may prosecute suspected offenders under [Thames Byelaw 57](#):

### WASH AND DRAW-OFF

Except in an emergency, the master of a power-driven vessel must, at all times when underway on the Thames, ensure that the vessel is navigated at a speed and in a manner such that any wash or draw-off created by the vessel must not compromise:

- a) the safety of others using the Thames, the foreshore, adjacent piers, moorings, berths, jetties or other facilities; or
- b) the integrity of the foreshore

In addition to Byelaw 57, the PLA has the option to indict suspects under the [Port of London Act 1968, Section 108](#) for masters who navigate “without due care and attention” or “in a manner liable to injure or endanger persons, other vessels, the banks of the Thames ... or any structure or installation in or beside the Thames”.

Either way, convicted offenders may be liable to an **unlimited fine**.

## HOW CAN I REPORT SUSPECTED OFFENCES?

The PLA encourages all river users to submit a wash complaint, even by those not personally affected. The PLA investigates all reports it receives and uses sophisticated data analysis to identify trends. This data in turn can be used to effect appropriate mitigation measures with the aim of continually improving safety.

Wash complaints (as with incidents and near misses) can be reported via the reporting portal which be accessed in the following ways:

By visiting this web address in your preferred web browser:  
[pla.co.uk/resolver](http://pla.co.uk/resolver)

Scanning this QR code with your smart phone or tablet



Through the [PLA Tidal Thames app](#) available on iOS and Android.

## WHAT AFFECTS VESSEL WASH?

Several static and dynamic attributes affect vessel wash and draw-off and the science in this area is extremely complex. However, understanding your vessel and the locations in which you navigate (keeping vessel wash in mind) as well as being aware of external factors on wash, will go a long way to reducing wash.

The following points should be remembered whilst navigating. Whilst the list is not exhaustive or detailed, it summarises some of the components that collectively influence the magnitude of vessel wash.

- The speed of the vessel through the water
- Whether the vessel is accelerating or decelerating
- The hull form and wash and/or draw-off characteristics of the vessel
- The manoeuvring characteristics of the vessel
- The charted depth and height of tide
- The strength and direction of the wind
- The density and type of vessel traffic in the area and the potential for the build-up of a cumulative wash and/or draw-off effect.

The PLA has created a useful poster, to print out and display, which serves as handy go-to reference. This is contained on the next page.

# WATCH YOUR WASH

As a vessel Master of a power-driven vessel, in determining safe speed in respect of wash or draw-off, you should consider these factors\*:

Your **speed** through the water

Rate of **acceleration** or **deceleration**

**Hull** form and wash/draw-off **characteristics**

The **manoeuvring characteristics** of the vessel

The strength and direction of the **wind**

**Activities** underway on the water, foreshore or berths, moorings and facilities which may be **vulnerable** to wash or draw-off

Requests from **London VTS** or **Notices to Mariners**, to proceed with caution or at slow speed

The **density** and type of **vessel traffic** and the potential for the build-up of a **cumulative wash** or draw off

