



Department
for Transport

Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR

Miss Lorraine Harris
Area Coroner
East Riding of Yorkshire and City of
Kingston Upon Hull
The Guildhall, Alfred Gelder Street
Kingston Upon Hull
HU1 2AA

28 February 2023

Dear Miss Harris,

Regulation 28: Report to Prevent Future Death - Inquest of Donald Frederick Hooker - Hull and East Yorkshire

Thank you for your Regulation 28 report dated 21 December 2022, sent to the Secretary of State for Transport following the conclusion of your inquest into the death of Donald Frederick Hooker. I am also grateful for the further details you provided subsequently. I am replying as Head of Vehicle Engineering in the International Vehicle Standards division, which leads for the Department for Transport on road vehicle construction and safety standards, including motorcycle helmets.

I understand that Dr Hooker fell from his motorcycle after the drive chain failed and he collided with a vehicle travelling in an adjacent lane, sustaining fatal head injuries when his helmet became detached. You found that the evidence considered during the inquest revealed matters of concern relating to helmet detachment, sizing and fitting of helmets, and how this may be checked and assessed.

In Great Britain, motorcycle helmets are regulated through the Motor Cycles (Protective Helmets) Regulations 1998 (as amended), which require that a helmet is fastened securely to the head using retention systems provided for that purpose. The technical requirements for helmets, including retention systems, are set out in British Standard BS 6658: 1985 and more recently, United Nations Economic Commission for Europe (UNECE) Regulation 22. These requirements ensure that helmets are designed to maintain position on the head, with as little rotation as possible, and prevent the total opening of the retaining system, in the event of a crash. To prevent any possible misuse,

detailed instructions on the use of the fastening devices are provided by helmet manufacturers. It remains the responsibility of the rider to follow the manufacturer's instructions to ensure that the chin strap is fastened securely, including adjusting and maintaining tension in the strap.

I note from the evidence provided that the chin strap of Dr Hooker's helmet was seen to be fastened post-collision and that the Forensic Collision Investigator provided no explanation as to why it became detached during the incident. As noted in your report, it is not a common occurrence for a rider's helmet to detach during a collision, but research indicates this to be a contributory factor in 10% to 14% of casualties. There does not seem to be any conclusive evidence on why this might happen, but it is generally thought to be due to a failure of the retention system, neglecting to securely fasten the retention systems, as well as poorly fitted or loosely worn helmets.

It is also important to recognise that helmet materials are subject to normal wear and tear and hence to a gradual decay of the inherent mechanical characteristics of the material itself. Open-cell foams typically used for comfort padding bands within helmets' inner liners often suffer from deterioration or relaxation from aging or use, such that helmet fit may worsen with extended use or age. As a consequence, a head/helmet size and shape mismatch may create a condition where a helmet with a notionally good static fit becomes one with a poor dynamic (impact) fit, leading to increased risk of loss. To mitigate this risk, helmet manufacturers advise that riders should be looking to replace a helmet that has been subject to regular use after 3 to 5 years.

The Department recognises the importance of a good fitting and performing helmet and has for many years been providing advice and guidance to motorcyclists through its Safety Helmet Assessment and Rating Programme (SHARP). Working with the motorcycle helmet supply industry, SHARP has established the best practice and produced a guidance that offers advice on helmet selection and appropriate fitting. This is available on the SHARP website at the following link: <https://sharp.dft.gov.uk/get-the-right-fit/>.

The Driver and Vehicle Standards Agency (DVSA) leads for the Department on compulsory basic training (CBT) for motorcyclists. Its syllabus contains information on helmet fitting and fastening, and DVSA examiners undertake checks to ensure that candidates have securely fastened their helmets before any riding takes place. Further advice for motorcyclists is available in the Highway Code and in the DVSA publication, *Riding the Essential Skills*, available on GOV.UK.

The Department is committed to improving safety for all motorcyclists and will continue to review the technical standards for new helmets under the UNECE to ensure they reflect new and emerging technology and offer increasing levels of safety, while at the same time promoting and raising awareness of

the importance of motorcycle helmet fitting and their correct usage through the SHARP programme. It is important that a helmet fits well and is maintained securely on the head if it is to provide its best protection.

I hope you find this information helpful and are assured that there are measures in place, and future actions, to help mitigate the potential risk of such incidents occurring in the future.

Yours sincerely



Head of Vehicle Engineering