Chiltern Society

We care for the Chilterns

Chris Rayner

Director of Infrastructure

High Speed Two (HS2) Limited

Two Snowhill, Snowhill Queensway

Birmingham B$ 6GA

27th May 2020

Dear Mr Rayner

RE: Various Correspondence and Queries Relating to the Design, Construction and Operations of HS2

Thank you for your letter dated 14th May 2020. I appreciate that you are trying to reassure us that the safety design for HS2 is of a high standard and meets the operating requirements of the appropriate TSIs.

As you state in your letter, we have had a number of meetings with HS2 staff. The results of these meetings have increased our concern over the safety design of in particular the Chiltern Tunnel.

We met with Mr Tim Smart, HS2 Chief Engineer, who responded when we queried the safety procedures, with '*Well, if the operating safety procedures are insufficient, the number of trains and/or their top speed can be reduced'.* You will appreciate that this destroys the Business Case, which is already weak. This attitude increased our concerns.

We have had a number of meetings with David McCann, Lead Engineer for the Chiltern Tunnel. He arranged a meeting with Dr Reuben McDonald, Head of Safety Systems, who gave us a detailed explanation of the Safety procedures should a train be forced to stop within the Chiltern Tunnel. After this meeting, we wrote to Dr McDonald and Mr McCann, setting out a number of detailed questions, as to how the passengers would be managed having left the train. Despite a number of reminders, we have never received a response.

We also attempted to obtain copies of a tunnel safety report prepared for HS2, under FOI legislation. Your refusal to release any information is still under investigation by the FOI commissioner.

As you will appreciate all of this has added to our concerns, which are:

1. **The interpretation of the TSIs**. These state that in the event of the need to evacuate passengers, they must be moved to a place of 'Safety'. Mr Smart in his presentation to the House of Commons Select Committee described the other tunnel as a place of 'relative safety'. As you will appreciate, this is not the same as a place of 'Safety'.
2. **The choice of a reference safety case.** Mr Smart said that HS2 has used HS1 as a reference case. Clearly this is inadequate as it only has short tunnels and significantly fewer trains. Why was the more appropriate reference case of the Frecciarossa High Speed line in Italy not used? This runs up to 13 trains per hour and has 13 km and 16 km tunnels. The 13 km

tunnel has 8 exits to the open air. The 16km tunnel is 3 bore for two thirds of its length, thus giving the ability to stop the train in a position where passengers can be disembarked to the third tunnel a place of 'Safety'.

3. **The safety of the 'non-incident' tunnel.**
    a. Mr McDonald informed us that stopping trains entering the non-incident tunnel when a train was stopped in the one tunnel required manual intervention. As you will appreciate, should passengers be on the ledge in the tunnel, a train passing at even 40mph has the risk of lifting a person, in particular a child, off their feet.
    b. The walkway on which passengers will have to stand is 1.6m wide, while they wait for a train to rescue them. It has no protective barrier along the edge next to the railway.
    c. The cross tunnels are planned to be 450m apart, with a train stopping so that certain carriage doors are opposite the cross tunnel. This would allow approximately 500 people to stand shoulder to shoulder between cross-passages. How will passengers be directed to turn left or right at a cross passage exit to avoid meeting people from the next cross passage, with the risk of pressure from those behind?
    d. How will passengers be informed of what is happening to avoid panic? We understand that the train staff will remain with the train to complete the disembarkation of passengers.
    e. When a train arrives to rescue passengers, Dr McDonald informed us that it would be part of the regular service, and thus already have passengers on board. If there is insufficient room in the 'rescue' train, how will passengers not able to embark be kept informed of what is happening to avoid panic?

Overall, these questions need to be answered to make it clear how panic among passengers can be controlled to ensure that a Hillsborough effect does not occur during evacuation.

We note that you state that the proposed safety procedures 'must be' accepted by Fire and Rescue, and ORR. Since the point at issue is whether the non-incident tunnel can be considered a 'place of safety', and this is a fundamental structural feature of the two bore design adopted, we would urge that these procedures be presented for acceptance *before* committing to construction as planned.

You will appreciate that, unless the above can be addressed now, there is a severe risk that the tunnel design will be inadequate for operational safety and the Business Case for HS2 destroyed.

Yours Sincerely

John Gladwin
Trustee

CC Andrew Stephenson MP – HS2 Minister