

## Safety and the closure of the funicular at Cairn Gorm in August 2023

### Description

On 5 December 2024 Gordon Bulloch submitted a two part information request to Highlands and Islands Enterprise. 60 working days later and only after a Review request he received a few highly redacted emails to the first part of his request which was for:

1. *All reports and associated correspondence concerning the decision to stop operation of the funicular in August 2023.*

This post considers what the unredacted information in the first of those emails tells us about the safety of the funicular.

From: [REDACTED]  
Sent: 23 August 2023 23:17  
To: James Palmer [REDACTED]  
[REDACTED]@balfourbeatty.com  
Subject: Cairngorm Funicular - Supervisor Inspection 23/08/23  
Importance: High

Note the time, 23.17! The footer at the bottom of the email (see below) shows it was from Pick Everard to James Palmer, who works for HIE, someone at Balfour Beatty

Evening All,

We have concluded this evenings inspection and have identified some issues that we would like to highlight for discussion. If these are not considered important then apologies for the late email, however, we seek the opinion of others.

#### Issue 1 – 38mm nuts to vertical rods on scarf joints loose.

1. During our inspection this evening we found a 38mm spanner at pier 9 which had been left on site by someone.
2. We used this spanner on the lower right hand inner vertical nut of the scarf joint to assess tightness adjacent to where we found it. The nut was found to be loose. See attached video.
3. We then continued down the railway using our newly acquired spanner checking the remainder of the 38mm nuts as we went. We found un-tensioned nuts at the following locations:-

The following

two sections of the email are completely redacted which means HIE is still covering up comments on what was found, including the number of loose nuts.

All those nuts were on the scarf joint brackets, numbered 3 in the next photo, and are safety critical”.



The figure one shows the position of the brackets round the beams referred to under Issue 2 below

The whole purpose of the No 3 type brackets was to strengthen the scarf joint to stop the ends of the “I” beams breaking up and to keep tension in those scarf joints.



Cracking at Pier 9, where the spanner was found, but before the brackets were fitted. Photo courtesy of the COWI report Dec 2018.

This first part of the email raises some other issues:

1) What was the purpose of the inspection and qualifications of the inspector? It appears that it wasn't to check the tension of the brackets as that only happened after the chance find of the spanner. While the person did the right thing reporting what they had found, the fact that they were not sure if this was important suggests they had limited qualifications. The implication is that previous inspections could have missed the fact that many of the brackets were not tensioned properly.

2) Why had the spanner been left by Pier 9? Possible explanations include:

(a) It had been left there since the repairs were concluded in January 2023;

(b) It was left in the intervening 7 months by another team doing "snagging work" or routine maintenance on the track; or, more disturbingly,

(c) It was left by some person or persons unknown deliberately interfering with the funicular. When an FOI request was sent to the Department for Transport about why they had signed off the funicular as safe in January 2023, the threat of terrorism was one of the reasons given for not releasing all the documentation on the funicular!





The area near pier 9 and showing how the low height of the funicular above the ground makes the brackets easily accessible in that area:-

3) Why was anyone using a spanner when, as referred to in numerous press releases from HIE, specialised equipment is necessary in order to check the torque of a nut and the tension in the studding? Had someone at HIE or CMSL discovered the nuts were loose and just decided to tighten them up in order to save costs and keep the funicular running?

The email from Pick Everard continues by moving onto a second related issue:

Issue 2 – Beam strengtheners

1. In addition to this we checked a number of the beam strengtheners with the smaller yokes and 38mm nuts between Pier [REDACTED] and found the following un-tensioned items:-



- o However, please note, we did not focus on checking all yokes as we passed.

Our inspection with the aid of the acquired 38mm spanner covered [REDACTED] Given the small number of 38mm bolts checked we found that circa [REDACTED] were affected by the issue. We have not checked any of the other sized nuts. All other nuts were found to be bare hand tight.

Without the

Given the scale and potential severity of this issue we would appreciate a discussion on this issue and have taken the liberty of issuing a diary invite for a meeting for first thing tomorrow morning at 8am. If everyone is free to discuss this before the first train in the morning that would be appreciated.

as redacted  
" beyond the

Thanks in advance and apologies again.



[REDACTED]  
Director

Main: 0345 045 0050  
Mobile: [REDACTED]



It appears

from the statement in the email that "we continued our way down the railway" (from Pier 9) that at most 9 sections out a possible 93 were checked that day. A further email in the early hours of the 25<sup>th</sup> August reveals surveys the next day found a significant number of other loose nuts but again without saying how many. If any one of the joints affected had failed that could have at the very least caused serious injuries to staff and passengers with a possibility of worse.

## At what point in time did the critical safety brackets start to become loose?

When the funicular was re-opened in January 2023, after being closed for over four years for repair work, the public expectation was that all the problems had been solved and that it was safe to operate. There had been a report on the health and safety of structure by Sequs Consulting and examinations by LECS UK allowed the Department for Transport to authorise its re-opening ([see here](#)).

Nuts don't just come loose overnight if they have been fitted and tightened properly in the first place, although tension can alter throughout the day as temperatures rise and fall and this could, over time, have loosened the nuts. While COWI designed the repairs to address the original problems they were not guaranteeing that the structure would last for the rest of its design life let alone its operational life which was 40years!

### **“4.2 Design life**

*The original design life is not known. A draft version of EN 13107 is referenced on the original design certificate but that version of the standard is no longer available. The current version of BS EN 13107 recommends the following design lives for civil engineering elements of funicular railways: 20 years for bearings, 50 years for the remainder of the supporting structure.*

*Strengthening proposals are intended as a “long term” solution to the structural deficiencies identified, and therefore there is an intent to achieve the design lives given above in all areas of intervention. However, this cannot be guaranteed for the whole structure as the design is constrained by the existing structure and there is the possibility that new defects in the existing structure may manifest themselves in the future. The risk of further defects has been minimised by non-destructive testing and detailed structural appraisal but cannot be eliminated completely.”*

(Quote courtesy of the COWI report Dec 2019).

While this statement says “*Strengthening proposals are intended as a “long term” solution.....*” at the same time it said “*there is the possibility that new defects in the existing structure may manifest themselves in the future*”! That appears to have happened but far sooner than anyone predicted!

Following the re-opening of the funicular in January 2023 HIE released information showing that a 12 month inspection and snagging programme was in operation but not what this involved or who was responsible. HIE's news release on 25<sup>th</sup> August 2023, stating the funicular was being closed again after only 7 months of operation “*in the interests of public safety*” gave no explanation other than that the programme of snagging works had identified some problems. We now know that programme only picked up the funicular was dangerous to operate by accident thanks to an abandoned spanner and were being highly economical with the truth at the time, this was a disaster waiting to happen.

Both COWI and Balfour Beatty are reputable international businesses and therefore it could be reasonably presumed that whoever was doing the snagging, which may have included staff at CM(S)L, were provided with a regime and possibly even onsite training. So why weren't the problems detected as soon as they arose? As seriously, following the re-opening of the funicular last week, HIE have still not explained what safety regime they have put in place to ensure problems with the tensioning of the brackets are detected as soon as they occur so that the public are not put in danger again.

Until then, the funicular should be withdrawn from service because it is quite obvious that it is not fit for purpose and it will only be a matter of time before a very serious incident occurs as a result of HIE's inadequate safety regime.

**Category**

- 1. Cairngorms

**Tags**

- 1. Cairn Gorm
- 2. funicular
- 3. HIE

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