Inquiry into the circumstances surrounding the closure of the Forth Road Bridge

Written submission to the Infrastructure and Capital investment Committee

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I was a member of FETA from 2007 until the Board was disbanded. I attended virtually all the Board meetings. The Board meetings were open to the public and usually had a media reporter there. The only times the meetings were in private were if we were discussing employee contracts and terms. The accounts were addressed by Audit Scotland and our internal auditors.

Any technical Reports were presented by Barry Colford the Chief Engineer….Barry was an expert and an open and honest man. We did manage to keep him beyond his contract date for the three month period before FETA was officially disbanded precisely because we wanted his experience to be passed on to Amey staff.

I was always the Board member grilling Barry on technical issues regarding future maintenance projects which he would speak to on his written Reports. After the tolls were removed any funding for major works were passed through Transport Scotland to the Scottish Government. Not in one instance were our reasons or costs ever queried. These projects cost many millions of pounds. The piling and pier protection from ship collisions, the hangers and bolt replacements, major painting, resurfacing, cable maintenance and anchor inspections are some I recall. The bridge is getting old and there were projects that would require increasing costs as the loads on the bridge increased. Like an old brush with 5 new handles and 7 new heads the bridge would eventually have to be renewed bit by bit.

Because of this costly inevitability, the SG FM Alex Salmond decided, correctly and perceptively, that a new crossing was needed.

On the run up to this the issue of strands of the main cables breaking were a concern. The contract for opening and inspecting the cores was awarded after a complex weighting process where tenders were evaluated. We were always briefed on these tenders. Because the bridge is in a marine environment, virtually a ship, all the problems associated with that were impacted on the steel structure. We were involved in every decision and the Report on the cable condition and possible solutions were sought worldwide where similar symptoms were being newly found. The chosen option was to cover the cables in an airtight butyl sleeve and inject dry air under slight positive pressure….this both to stop the ingress of moisture and halt further existing corrosion. The reason cable strands were breaking…..about 200 in the thousands in the loom…..turned out to be cracks in the galvanised wire. This was down to the bending radius of the spinning jenny being less than a metre in diameter. Salt moisture found its way in. The original engineers had done a very good job in protecting the bundles smearing them in, I think Densochrome. Another innovative solution to monitor the rate of breakages was to listen on an acoustic monitoring system for the ping as a strand snapped. This system was very effective but a new better system was installed before FETA was disbanded….again, the
costs were met without complaint. So, after a year or so the data showed the rate of breakages had slowed right down. At that point the Greens and others were publicly questioning the need for a new bridge. Safety was never in doubt....Barry was very conscious of that and we were aware of the safety factors and maths. Many options were studied by our consulting engineers.....these included laying auxiliary cables in parallel with the existing ones, either to the anterior or topside. Any solution would have meant the bridge closing for about a year. This was unacceptable to us. Reports we had indicated that the bridge could last decades if the load was reduced and a proposal to use the bridge for public Transport was tabled. It was also discussed that a light rail link could be made to existing transport.

Other major expenditure was incurred, again no opposition raised, even after the new crossing was building. Concern was expressed in a Report by Barry that the cable anchors especially at the South Queensferry end, could be corroding due to the high water table. Basically, huge concrete counterweights buried in the ground. These took the load of the bridge and traffic (80% of the load is the bridge structure). The worry was that the pre stressed rods running through the concrete could be corroded and snap. The only way to find out was to dig deep inspection chambers from the surface to the base of the concrete anchor. Happily there was very little corrosion....again a job that cost millions and granted freely.

In a program of repairs there was an inspection of the Truss Ends required which would require a pilot program to design and strengthen them if required. This project was priced and money in the kitty to do the job but because of the likely disbandment of FETA and the complexities of following through such a contract with AMEY meant we agreed it should be handed over for Amey to deal with.

As far as I am aware, looking at the Pictures on the press, the fault was not where our pilot was to test but higher up close to the road. We did not discuss the project in detail because of the handover. I do remember making the point to Barry that there should be a follow up in order that we were sure future engineering staff were appraised of the on-going project and it shouldn't be lost. At that time Barry said there was no evidence of failures on the Truss Ends but if I recall he was not happy with the original design given the ever increasing load on the bridge but I got the impression the timescale could be years to evaluate the project.

No one from the SG or FC has been in contact with me but they may have been with the Lab Convener Lesley Hinds or LibDem Tony Martin the vice Convener. These roles and supporting members of the Board CEOs of FC were exchanged periodically. Ronnie Hinds was FC CEO ....in FC s governance. Both were very very diligent and I could criticise neither. Both went the extra mile to get satisfactory packages for the Bridgemaster and senior staff who we all had complete faith in.

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