

Ottawa Light Rail Commission

Scott Krieger
on Tuesday, May 10, 2022



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OTTAWA LIGHT RAIL COMMISSION

STV - SCOTT KRIEGER

May 10, 2022

--- Held via Zoom Videoconferencing, with all participants attending remotely, on the 10th day of May, 2022, 2:00 p.m. to 4:00 p.m.

1 COMMISSION COUNSEL:

2 Mark Coombes, Litigation Counsel Member

3 Fraser Harland, Litigation Counsel Member

4

5 PARTICIPANTS:

6 Scott Krieger: STV

7 Michael O'Brien, Eileen Church Carson: Tyr LLP

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9

10 ALSO PRESENT:

11 Helen Martineau, Stenographer/Transcriptionist,

12 Gabriel Lavoie, Virtual Technician

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1 --- Upon commencing at 2:00 p.m.

2 SCOTT KRIEGER: AFFIRMED.

3 MARK COOMBES: Good afternoon,
4 Mr. Krieger. I'm just going to begin with an
5 introduction and then we'll jump in to asking
6 questions.

7 The purpose of today's interview is to
8 obtain your evidence, under oath or solemn
9 declaration, for use at the Commission's public
10 hearings. This will a collaborative interview
11 such that my cocounsel, Mr. Harland, may
12 intervene to ask certain questions. If time
13 permits, your counsel may also ask follow-up
14 questions at the end of the hearing.

15 The interview is being transcribed and
16 the Commission intends to enter this transcript
17 into evidence at the Commission's public
18 hearings, either at the hearings or by way of
19 procedural order, before the hearings commence.
20 The transcript will be posted to the
21 Commission's public website, along with any
22 corrections made to it, after it is entered into
23 evidence.

24 The transcript, along with any
25 corrections later made to it, will be shared

1 with the Commission's participants and their
2 counsel, on a confidential basis, before being
3 entered into evidence. You will be given the
4 opportunity to review your transcript and
5 correct any typos or other errors before the
6 transcript is shared with the participants or
7 entered into evidence. Any non-typographical
8 corrections made will be appended to the
9 transcript.

10 Pursuant to section 33(6) of Public
11 Inquiries act 2009, a witness at an inquiry
12 shall be deemed to have objected to answer any
13 question asked him or her upon the ground that
14 his or her answer may tend to incriminate the
15 witness or may tend to establish his or her
16 liability to civil proceedings at the instance
17 of the Crown or of any person, and no answer
18 given by a witness at any inquiry shall be used
19 or be receivable in evidence against him or her
20 in any trial or other proceedings against him or
21 her thereafter taking place, other than a
22 prosecution for perjury in giving such evidence.

23 As required by section 33(7) of that
24 Act, you are also hereby advised that you have
25 the right to object to answer any question under

1 section 5 of the Canada Evidence Act.

2 Any questions at the outset?

3 SCOTT KRIEGER: No questions.

4 MARK COOMBES: Okay.

5 Well, good afternoon, Mr. Krieger. I
6 think we'll start, your counsel sent me over a
7 copy of your CV, so if we can pull up your CV to
8 start with, we can ask a few questions.

9 Okay, Mr. Krieger, do you recognize
10 this document?

11 SCOTT KRIEGER: I do.

12 MARK COOMBES: And is this -- I don't
13 know if you would describe this as your CV or it
14 seems to be a document maybe that STV uses for
15 marketing purposes?

16 SCOTT KRIEGER: It's based on an STV
17 document, but I brought up my previous work
18 history as well.

19 MARK COOMBES: So you've been with STV
20 for -- from 2000 it looks like?

21 SCOTT KRIEGER: That is correct.

22 MARK COOMBES: And can you describe
23 for me what STV, what does it do?

24 SCOTT KRIEGER: STV is a full service
25 engineering consulting company. We do

1 everything from buildings and bridges and
2 highways to construction management,
3 transportation and infrastructure.

4 My part of STV is what's called the
5 national vehicle practice. We are directly
6 involved in supporting transportation
7 authorities with vehicles. Me, personally, it's
8 rail vehicles.

9 MARK COOMBES: And is it fair to say
10 that most, if not all, of your experience is
11 indeed with rail operations or rail vehicles?

12 SCOTT KRIEGER: Yes, that would be a
13 good statement.

14 MARK COOMBES: If we can maybe just go
15 to page 2 of Mr. Krieger's CV, down to the entry
16 for the City of Ottawa, Confederation Line LRT.

17 So if we review this paragraph, it
18 appears that it would be fair to say that you
19 were involved in several different aspects of
20 the LRT project in Ottawa, is that right?

21 SCOTT KRIEGER: That's correct.

22 MARK COOMBES: And could you maybe
23 break down for us, just at a high level, if
24 there were different types or periods of your
25 involvement with the project?

1 SCOTT KRIEGER: Sure. I was involved
2 from project kick off, which was about 2010,
3 getting the project running, starting off
4 preliminary investigation and alternatives
5 analysis for the proposed vehicles.

6 I then transferred that lead vehicle
7 engineer's job to Greg Barstow and pretty much
8 took a backseat with Greg and taking the lead
9 with a guy named Peter Talbot. They really ran
10 with the specification development construction
11 oversight.

12 I was called back in 2018 to
13 participate in what I found out was the IAT, the
14 Independent Assessment Team, which was
15 supporting OC Transpo with readiness for
16 service.

17 In parallel with the IAT, I was asked
18 to put a team together to put, let's call them,
19 maintenance oversight people in Alstom and RTG's
20 facility to evaluate their performance and their
21 readiness for service, almost like preliminary
22 auditing, if you want to call it that. That ran
23 up to the start of revenue service. From start
24 of revenue service to present, really. I would
25 call it ongoing support. I'm called in as

1 needed.

2 The first time we were called in was
3 an operations' review, which was a paper
4 generated in January of 2020 that went to the
5 City Manager on performance to date after RSA.

6 But then it's other things. We
7 assisted in review of documents for the
8 derailments, at least the first derailment. We
9 assisted in changes in vehicle configuration.
10 We call them FMIs, field modifications.

11 And most recently, we are helping them
12 with their due diligence of their contractor by
13 helping them get an auditing process off the
14 ground. So we've audited several subsystems and
15 are continuing to do that for the year.

16 MARK COOMBES: Thank you for the
17 overview.

18 Maybe if we can just start with your
19 involvement from the beginning of the project.
20 You mentioned you came into the project in 2010.
21 What was happening in 2010? What was the lay of
22 the land at the time you entered the picture?

23 SCOTT KRIEGER: So that was the very
24 start of the project. It was mobilization. It
25 was -- I mean, the very beginning part was just

1 getting the project running, charge numbers and
2 work breakdown structure, WBS. How we were
3 going to do the work.

4 But we quickly got into vehicle
5 evaluation. What did the City want and what
6 would the technical specification look like for
7 the light rail vehicle?

8 MARK COOMBES: And this is prior to
9 any specific manufacturer or vehicle being
10 considered. This is really at the beginning
11 phases when you're really -- are you designing a
12 vehicle to meet the specifications that the City
13 is asking for or designing specifications that
14 that vehicle would need to have in order to be
15 acceptable for the project?

16 SCOTT KRIEGER: So we don't design a
17 vehicle. That's up to the vehicle manufacturer.
18 What we were doing right then we, I believe --
19 very early on we had vendors in. I don't
20 remember exactly which ones, but the procurement
21 department at RIO, Rail Implementation, had
22 vendors in. It was like an industry outreach,
23 what's available in the industry right now.

24 With that information and with the
25 expectations of the City, as far as capacity and

1 what they wanted the system to look like, that
2 would start to generate the requirements of what
3 turned into the Project Agreement. What was
4 requested as performance criteria for the
5 selected bidder.

6 MARK COOMBES: And were you based in
7 Ottawa at that point?

8 SCOTT KRIEGER: I did a lot of
9 travelling, but I was never based in Ottawa.

10 MARK COOMBES: So you mentioned sort
11 of, you know, coming up with a concept for the
12 project based on what the City's needs and
13 requirements were for the system. Do you
14 recall, what was your understanding of what the
15 sort of needs and requirements for the system
16 were?

17 SCOTT KRIEGER: They had --
18 essentially the layout was understood. The
19 layout of the system, that is. They had a
20 capacity target, which would drive things like
21 train length, passenger capacity, speed,
22 braking. They wanted a light rail vehicle. And
23 that's where we started is a light rail vehicle
24 that would meet the expected capacity.

25 MARK COOMBES: And did you have any

1 sort of considerations at that time about
2 whether a light rail vehicle was the right
3 choice for this type of project, the right, sort
4 of, vehicle for the City's goals?

5 SCOTT KRIEGER: I mean, there were a
6 bunch of options, but a light rail vehicle is
7 what the City wanted. That was from the get-go
8 what it was to be, a light rail system.

9 MARK COOMBES: I see. So you started
10 with that, with the concept in mind, that the
11 LRV was what we were looking at and so you
12 started on that path with an LRV system in mind?

13 SCOTT KRIEGER: Yes. Those were --
14 those were the arrangements presented by the
15 industry when the industry came in. That was
16 sort of a starting understanding. That's what
17 it was to be, a light rail system.

18 MARK COOMBES: And so at that point
19 you had mentioned that there was some, I guess
20 would you call it, industry outreach or was
21 there an examination of what systems were in
22 use, what LRV systems were in use elsewhere in
23 North America or the world?

24 SCOTT KRIEGER: Yeah. Two things
25 happened. One is, the City brought in vendors

1 to present their wares, if you use the word.
2 And they came in and it was a marketing
3 opportunity for them, but also to present what
4 their platforms were, what they had available
5 that they felt would meet the City's needs.

6 At the same time, we did
7 investigations on what other cities had done,
8 especially around the world. Light rail is more
9 prolific in Europe and overseas. So we
10 investigated what was done, vehicle length, you
11 know, vehicle arrangement, stuff like that.

12 MARK COOMBES: And do you recall what
13 vendors were presenting at that point in time or
14 what sort of systems or vehicles you had been
15 investigating at that time?

16 SCOTT KRIEGER: Honestly without
17 reviewing the paper, I really couldn't say. I
18 could guess, but I don't want to guess for you
19 guys.

20 MARK COOMBES: Sure. And given the
21 location of the project in Ottawa, did you, at
22 that time, think that there would be any sort of
23 specific risks or specific requirements that the
24 Ottawa system would be designed to meet?

25 SCOTT KRIEGER: There would be things

1 that you obviously need to take into
2 consideration. Its ability to perform in cold
3 weather. So you're looking at insulation,
4 you're looking at heating, and stuff like that.
5 Its ability to run under a catenary in snowy,
6 rainy, icy weather. Yeah, we recognized all
7 that.

8 MARK COOMBES: You discussed that you
9 were sort of involved with the vehicles. To
10 what extent did that extend to the sort of
11 overall integration with the vehicle in this
12 overall system, from your standpoint?

13 SCOTT KRIEGER: There was
14 collaboration back and forth. When you're
15 talking about the vehicle, you need to
16 collaborate with the traction power system and
17 the overhead catenary system for voltage and
18 height and stuff like that. So there was system
19 integration back and forth.

20 Of course the vehicle is only one
21 part, a major part, but only one part of the
22 system.

23 MARK COOMBES: So, for example, in
24 your CV it says you led the development of
25 technical requirements for light rail vehicles.

1 So presumably, those technical requirements
2 would have taken into account the environment in
3 which the vehicle needed to operate?

4 SCOTT KRIEGER: Yes.

5 MARK COOMBES: In your CV it also
6 mentions that you led a team that developed a
7 concept report. Can you describe for me what a
8 concept report is in this contract?

9 SCOTT KRIEGER: Sure, sure. This is
10 about the time where Greg Barstow took over as
11 the lead engineer, but the concept report was an
12 initial, high level summary of what the vehicle
13 was expected to do, more than simply saying, you
14 know 19,000 passengers an hour, blah, blah,
15 blah. We expected to have this kind of
16 propulsion and this kind of acceleration rate
17 and should we do this? And temperature should
18 be this. So the concept report is a bridge
19 between very high-level performance and the
20 technical specifications.

21 MARK COOMBES: In terms of coming out
22 of that concept report, did you have any -- like
23 a view or concerns at that point whether the
24 City's goals could be achieved by what you were
25 seeing as being available on the market?

1 SCOTT KRIEGER: To be honest, I'm
2 trying to remember if I was still involved at
3 that point. That would be a better question for
4 Greg. So whether it could be met, yeah, that's
5 really a Greg question.

6 MARK COOMBES: I see. So but just
7 even if we step back from, say, a higher level,
8 say back -- step back from the concept report,
9 but when you're brought onto the project and you
10 hear about what the City is -- what their goals
11 are, is it too early at that point in the
12 project to say those goals are or are not
13 achievable using an LRV system or are you still
14 at that, it's too early to tell phase?

15 SCOTT KRIEGER: No. I will say that
16 if they were not achievable with an LRV, we
17 would have said that at this point.

18 MARK COOMBES: So beyond that, it's
19 more of a question of sort of the specific
20 technical implementation than it is about
21 whether or not it's doable?

22 SCOTT KRIEGER: That's correct. Our
23 study showed light rail vehicles delivering
24 service in all kinds of environments around the
25 world. So we didn't think that this was not

1 possible.

2 MARK COOMBES: And I'm guessing, based
3 on one of your previous answers, that this may
4 not be a question for you, but did you have any
5 involvement in the selection of the vehicle or
6 advice on any of the vehicles that were
7 ultimately considered or selected?

8 SCOTT KRIEGER: I was actually
9 complete -- I was actually on another project
10 for another client. So I was not involved in
11 the selection process. Greg reported back to me
12 here and there, but that's how the process was
13 also very tightly locked down because of its
14 nature. I really was not involved at all.

15 MARK COOMBES: So at that point, you
16 exit the project and then you really come back
17 into the picture in 2018?

18 SCOTT KRIEGER: That's correct.

19 MARK COOMBES: So can you talk
20 about -- do you have a sense of the reason why
21 2018? Why were you being brought back into the
22 project at that point?

23 SCOTT KRIEGER: As it was explained to
24 me by Tom Prendergast, who I believe you spoke
25 with, we were asked to come in and provide some

1 advisory support to the General Manager and his
2 senior staff on readiness for service. What
3 they had seen was the consortium miss a number
4 of potential RSA dates.

5 And the expectation was we would help
6 evaluate from -- on the agency's side, when we
7 felt it was appropriate, what an appropriate RSA
8 date was.

9 So I was not at the beginning of the
10 IAT, but as it became evident that vehicles were
11 a major driver, one way or the other, I knew Tom
12 from a previous job, he knew that I had a lot of
13 experience, so he asked if I would join him and
14 the rest of the IAT team.

15 MARK COOMBES: So is it fair to say
16 then that your involvement with the IAT was more
17 from a vehicle focus?

18 SCOTT KRIEGER: Absolutely.

19 MARK COOMBES: And is that a vehicle
20 focus in terms of both vehicle production and
21 maintenance, or were you more involved with one
22 or the other?

23 SCOTT KRIEGER: It was more on the
24 maintenance side. Most of the vehicles had been
25 produced. They weren't clean of issues, but

1 they had been produced. It was more a readiness
2 to maintain service.

3 MARK COOMBES: And maybe you can speak
4 to me a just little bit about the IAT. So when
5 you arrive at the project in 2018, what does the
6 IAT look like? Who are the members? How many
7 people are involved on that side of the advisory
8 side of things? To your recollection.

9 SCOTT KRIEGER: My recollection, Tom
10 Prendergast obviously was the head from STV.
11 Joe North was on the IAT, he was no longer with
12 STV, I believe he was with RailPros at the time.
13 Larry Gaul was -- participated quite a bit.
14 Later Ron Hopkins took Larry's place. I'm not
15 sure whether Brian Dwyer was an active IAT
16 person, but he was there quite a bit on the
17 ramp-up to revenue service. There was a
18 scheduler, whose name I completely forgot. And
19 then a couple of other people from other
20 consulting companies that I can't remember.

21 MARK COOMBES: And at that point,
22 again, were you located in Ottawa or were you
23 taking trips to Ottawa? What was the
24 requirement of you at that point?

25 SCOTT KRIEGER: Yeah. IAT was not a

1 full-time thing. So I would go up, most of the
2 time it was, you know, three days or four days,
3 something like that, we would get up. Sometimes
4 we toured the system. We'd see what the
5 maintenance operation looked like and then we
6 would get together and evaluate readiness for
7 service, effort to complete, stuff like that.
8 You've seen the reports. So those would get
9 generated over those three or four days.

10 MARK COOMBES: And so was it the case
11 that then the City was -- you would come up to
12 Ottawa as a result of a specific ask by the City
13 or what sort of generated STV and IAT's
14 involvement in any part of that time period?

15 SCOTT KRIEGER: As far as scheduling
16 IAT meetings, I was not involved in that
17 decision. I was just told, we're getting back
18 together again, does two weeks from Thursday
19 work for you?

20 MARK COOMBES: And at the time you
21 arrive on the project in 2018, can you give us a
22 sense of what the lay of the land was at that
23 point? What was it looking like? I guess there
24 was a potential RSA date approaching. What do
25 you recall about what things looked like in the

1 project at that point?

2 SCOTT KRIEGER: I can talk, like we
3 said, on the vehicle side. They did not have
4 their 34 vehicles. They had issues -- some
5 operations issues, they had some parts issues,
6 they had some open design stuff, they had
7 relatively low mileage on the vehicles.

8 So it was -- struggle's the wrong
9 word. There were a lot of issues. Let's put it
10 that way.

11 MARK COOMBES: And I think we'll
12 likely get into some of those specific issues.
13 Maybe we'll start taking a look through some
14 documents. I'm going to put some documents to
15 you and just ask for your recollection on some
16 of them.

17 Maybe we can bring up STV0000296.
18 This is an email. It's from Tom Prendergast to
19 some people at the City of Ottawa, and
20 specifically Jocelyn Begin, Michael Morgan,
21 Steve Cripps, Richard Holder, John Manconi is
22 copied as well. I don't expect you to be able
23 to identify this document because you're not
24 copied on it, but one of the elements in this --
25 one of the attachments, I should say, is a

1 document called "RTG November 2 RSA Proposal
2 Krieger Barstow Comments".

3 SCOTT KRIEGER: Uhm-hmm.

4 MARK COOMBES: You would be that
5 Krieger in Krieger Barstow I presume?

6 SCOTT KRIEGER: That'd be me.

7 MARK COOMBES: At this point, the
8 email is about, I suppose, a proposal that RTG
9 has made to be ready for revenue service, the
10 email indicates November 2nd, and that's
11 November 2nd of 2018 from the context. Maybe we
12 can bring up that specific attachment, which is
13 now STV0000299. Sorry, my apologies, can we
14 bring up STV000297.

15 This document is entitled "RTG
16 Proposal On RSA". Do you recall this document?

17 SCOTT KRIEGER: I don't recall it
18 specifically, but it's certainly familiar,
19 absolutely.

20 MARK COOMBES: If we can go to page 2
21 of that document. So page 2 indicates:

22 "On Tuesday September 4, 2018,
23 OLRTC, RTG, RTM and Alstom provided a
24 proposal to the City of Ottawa [...]
25 The City and IAT team listened to the

1 proposal and starting on slide 4 is
2 the team's assessment and
3 recommendations."

4 Is that the type of meeting that you
5 would have been in attendance at?

6 SCOTT KRIEGER: Yes.

7 MARK COOMBES: Do you recall attending
8 that meeting specifically?

9 SCOTT KRIEGER: I don't specifically
10 remember the meeting, but that is the kind of
11 thing I would have been there for.

12 MARK COOMBES: So generally speaking,
13 in this document, I presume it's the City going
14 through and identifying a number of concerns.
15 If we go to page 8 of this document. So
16 throughout this document there's a number of
17 different red, green indicators, presumably red
18 indicating that there's concern with this
19 element.

20 So can you speak to -- let's just talk
21 a little bit about the -- what this slide refers
22 to as the "fleet count".

23 SCOTT KRIEGER: Sure.

24 MARK COOMBES: Did you have an
25 understanding or appreciation of what the

1 Project Agreement called for in terms of fleet
2 count or what that number was based upon?

3 SCOTT KRIEGER: So again, the Project
4 Agreement wasn't something I was directly
5 involved in. As I came in at this point, it was
6 explained to me that the Project Agreement had a
7 capacity, it was a performance requirement,
8 number of people per hour on the system.

9 The contractor proposed the 30
10 vehicles with 2 -- they call them 2 ready spares
11 and 2 maintenance vehicles. So 30 vehicles, 2
12 vehicles ready for service, sitting on
13 sidelines, and 2 vehicles out of service for
14 maintenance.

15 MARK COOMBES: And can you just maybe
16 comment for me, from your experience, what is
17 the reason for having two spares and what is the
18 reason for having two maintenance vehicles?

19 SCOTT KRIEGER: Sure. Standard
20 maintenance on a fleet of vehicles, you're
21 always going to have periodic maintenance, a
22 periodic maintenance schedule, things that need
23 to be done on a regular cycle.

24 So you end up with what's called a
25 "spare ratio". It's the number of vehicles out

1 of service compared to the number of vehicles in
2 service. So if you look at the standard
3 maintenance that you would expect, you come up
4 with a spare ratio.

5 And what was come up with here for
6 out-of-service vehicles was two vehicles out of
7 service to perform that maintenance.

8 It would also include, of course,
9 unexpected maintenance. So -- but what they're
10 saying is 32 vehicles to run the service and 2
11 vehicles out of service. The spare vehicles are
12 when something fails in service, an unscheduled
13 failure, you have a train set to replace it with
14 immediately and you continue to maintain full
15 service.

16 MARK COOMBES: So this may be an
17 obvious question to you, but just for my sake,
18 if you don't have those spares or extra
19 maintenance vehicles, what are the concerns, at
20 least as far as impacts on service are
21 concerned?

22 SCOTT KRIEGER: If you don't have any
23 spares, your ability to perform preventative
24 maintenance is extremely hampered, let's put it
25 that way. You're -- any time you're running

1 service at capacity, you have nothing to work
2 on. So your contact time with the vehicle fleet
3 for maintenance is very limited.

4 You also -- if you lose something
5 for -- there's going to be in-service failures.
6 So if you lose a train set for an in-service
7 failure, you now are not running at capacity.
8 You're not providing the contracted service.

9 MARK COOMBES: And so at that point,
10 the ridership of the system is going to be
11 impacted?

12 SCOTT KRIEGER: Yes.

13 MARK COOMBES: Perhaps we can go to
14 slide 9 of this presentation? So this is a --
15 an indication of -- at this point in time, so if
16 this slide show was prepared in September of
17 2018, OLRTC, at least as part of that
18 consortium, is advising that they can have
19 vehicles ready on the 2nd, the 9th, the 30th,
20 and then other vehicles available in April.

21 So at that point, had you -- what was
22 your view of this timeline?

23 SCOTT KRIEGER: I don't understand the
24 question.

25 MARK COOMBES: We're in September,

1 right, at this slide show, and OLRTC is advising
2 they can have vehicles ready. They've got,
3 presumably, 29 vehicles ready, and now vehicle
4 30 is going to be on the 2nd of November,
5 vehicle 31 on the 9th of November and so on.
6 Did you have a view at that time about whether
7 that timeline was realistic? Achievable? Do
8 you recall any discussions about that schedule?

9 SCOTT KRIEGER: I don't recall
10 specific discussions. This was -- this was
11 their presentation of when they'd complete
12 vehicles.

13 MARK COOMBES: And was there a view as
14 to whether or not that schedule was realistic?

15 SCOTT KRIEGER: I can't recall.
16 You're not talking about ability to support RSA,
17 right? You're talking strictly construction of
18 vehicles now?

19 MARK COOMBES: Correct.

20 SCOTT KRIEGER: Yeah. I can't recall
21 if we felt that was a reasonable target date for
22 completion of vehicles.

23 MARK COOMBES: And then maybe we can
24 go to slide number 10, and I can have you walk
25 me through a few of these points as well.

1 So here the slide starts by saying:
2 "Traditionally, months of
3 extensive testing in real operating
4 condition would be carried out to
5 identify latent design issues."

6 So can you maybe speak just generally
7 about your experience, whether it's on this
8 project or others, what are we talking about
9 when we're trying to identify latent design
10 issues? What does that mean?

11 SCOTT KRIEGER: So you can design a
12 vehicle as best you can at a drafting table or a
13 CAD system, but until you put it in service and
14 until you run it at performance duty cycle, some
15 design issues are going to escape you. The
16 doors don't quite work right, or you can't cut
17 something out, or you can't maintain something
18 well enough to keep it in service.

19 The only way to really know that is to
20 operate the fleet. That's what that means, is
21 you want to get some -- you want to get a pretty
22 good number of service hours, kilometres. So
23 you can kind of work out as many of those bugs
24 as you can. You don't want to do it with people
25 on the vehicles.

1 MARK COOMBES: I see. So that was
2 going to be my next question. So ideally this
3 is performed prior to revenue service?

4 SCOTT KRIEGER: Yeah. I mean, you can
5 do it with people on the equipment, but each bug
6 that you find, you're inconveniencing service
7 and you're taking a performance hit.

8 MARK COOMBES: And I would presume
9 that another way you could find bugs like this
10 is using something that we've heard referred to
11 as a soft start?

12 SCOTT KRIEGER: Yes and no. The way I
13 would interpret, and this is me talking, the way
14 I would interpret a soft start would be not
15 running 15, two-car train sets a day. Running
16 12, two-car train sets a day. You're ramping up
17 their ability to roll out the contracted number
18 of vehicles every day.

19 You're not putting that kind of stress
20 on the maintenance operation, but you still have
21 24 vehicles with passengers on them that haven't
22 been burned into a reasonable level, if you know
23 what I mean.

24 MARK COOMBES: Do you know, for
25 example, it says:

1 "Additionally, each vehicle would
2 have been required to operate failure
3 free (burn in) for 500 - 1000 km to
4 identify infant mortality issues."

5 So is that burn-in period, is that
6 separate from what the previous paragraph first
7 says months of extensive testing? How do those
8 differ?

9 SCOTT KRIEGER: Yeah. So one of them
10 is looking for design issues, latent design
11 issues.

12 The second one is a reliability test
13 really. It's trying to work out, you know, as
14 you know when you buy a car, some cars are
15 great, some cars are middle of the road and
16 operate as you expect, and some cars are lemons.

17 It's trying to identify components
18 that are at the lower end of reliability so that
19 they can be replaced before you go into service.
20 It's early failure components. It's not a
21 design level as much as it is a component
22 reliability level.

23 MARK COOMBES: We can take this slide
24 down and bring up ST0000299. This is another
25 attachment to that previous email that I took

1 you to. It's entitled "Critical Ottawa Vehicle
2 Issues". Do you recall drafting this document?
3 Do you recall who might have drafted this
4 document?

5 SCOTT KRIEGER: It looks familiar. It
6 certainly reads like I wrote it. I would have
7 to say, based on what's in there, that this
8 would have been Greg and myself. Definitely has
9 information that we would have both participated
10 in.

11 MARK COOMBES: Maybe we can go through
12 some of the concerns that are identified in this
13 document and have you comment on them as we go.

14 SCOTT KRIEGER: Sure.

15 MARK COOMBES: So it's broken down in
16 several categories. Completion of vehicles,
17 completion of tests, vehicle count on opening
18 day, and then the next page is additional open
19 issues.

20 So in terms of completion of vehicles,
21 for example, point 2:

22 "The City has not been provided
23 an up-to-date list of modifications
24 required. RTG states that the missing
25 redesigns will not impact safety or

1 the passenger experience."

2 So I take it that you're essentially
3 being passed on, at this point, information from
4 the City. Is it to comment on? To look into?
5 It says:

6 "The City has not been provided
7 an up-do-date list of modifications
8 required."

9 Were you having issues getting
10 information from the contractor at that point?

11 SCOTT KRIEGER: I would have to say
12 that is what I recall.

13 MARK COOMBES: And, for example, let's
14 go down to "Completion of Tests", point
15 number 5, for example:

16 "There are many PA
17 non-compliances in the vehicle design.
18 It does not appear that Alstom/RTG
19 intend to address the issues."

20 Can you recall what those
21 noncompliances were?

22 SCOTT KRIEGER: This would be a Greg
23 Barstow question, to be honest.

24 MARK COOMBES: Let's go down to
25 "Vehicle Count on Opening Day":

1 "Alstom/RTG have clearly
2 indicated that the best case scenario
3 for vehicle availability on opening
4 day is 30 vehicles. 30 vehicles is
5 the minimum number needed to meet the
6 system capacity requirements."

7 So going back to your previous
8 comments on the slide, if the opening day count
9 was 30 vehicles, there would be issues?

10 SCOTT KRIEGER: Yes, that's correct.
11 So 30 vehicles is the minimum number of
12 vehicles, all operating, all at the same time to
13 meet the contract capacity.

14 As a system, though, which requires
15 maintenance and understands that there would be
16 unexpected failures, 30 vehicles is not enough
17 to support this system operating.

18 MARK COOMBES: And I assume, what
19 someone, if it was you that drafted this point:

20 "Maintenance will be required,
21 all of the open modifications need to
22 be installed and tested, the open
23 vehicles testing must be completed.
24 How will this be performed when all
25 vehicles are in service?"

1 That's what you're referencing there?

2 SCOTT KRIEGER: Yup. And just like if
3 I were to go with my recollection, I wrote this
4 vehicle count on opening day part.

5 MARK COOMBES: So then in terms of
6 point number 3:

7 "Early life failures of
8 components is always an issue on new
9 vehicle design. It appears that RTG
10 has reduced the time for burn-in and
11 trial running with each new schedule
12 submitted. The risk associated with
13 an unproven vehicle/infrastructure is
14 very high."

15 SCOTT KRIEGER: Correct.

16 MARK COOMBES: So did you have a sense
17 at that time, I mean, it sounds as though the
18 amount of time that had been allotted for
19 burn-in and trial running was sort of being
20 reduced as time went on. Did you have a sense
21 of why that was occurring? Why that sort of
22 scheduling was being done that way?

23 SCOTT KRIEGER: I honestly can't
24 comment on why. All I can think is, from a
25 vehicle point of view, the impact on the system.

1 MARK COOMBES: So you weren't involved
2 in evaluating the schedule or evaluating any
3 causes of what might have been impacting the
4 schedule from RTG's perspective?

5 SCOTT KRIEGER: Well, I think those
6 are two different things. I was participating
7 in evaluating proposed schedules. I was not
8 participating in RTG's logic and decision making
9 on why they would request that time.

10 MARK COOMBES: I see. So you didn't
11 know for what reason the schedule was being
12 shortened. You just knew that it was being
13 shortened and you were evaluating the impact?

14 SCOTT KRIEGER: Yeah, yeah. I mean,
15 personal experience, on the end of a job,
16 schedule compression is not unexpected. But I
17 was not in the room when RTG said let's do this
18 or let's do that.

19 MARK COOMBES: Just to focus on the
20 last point of that, point number 3:

21 "The risk associated with an
22 unproven vehicle/infrastructure is
23 very high."

24 Can you comment on the different types
25 of risks that might be associated?

1 SCOTT KRIEGER: Well, I mean, it could
2 be performance risks, it could be vehicle
3 amenity risks, it could be inability to comply
4 with capacity, it could be integration risks,
5 like we said, latent design issues; anything
6 like that.

7 MARK COOMBES: Maybe we can take that
8 down and maybe we can bring up STV000312. So
9 this is an email chain, it looks like it was
10 started by you, sending preliminary schedule
11 assessment vehicles to Tom Prendergast and
12 others from, presumably, from that advisory
13 group of other people that were sort of in the
14 loop on that.

15 SCOTT KRIEGER: Yeah, those are the
16 IAT members. That's correct.

17 MARK COOMBES: So that's just for the
18 sake of the transcript, that email is to Tom
19 Prendergast, Anil Parikh, Navin Sagar, Robert
20 Rocco, Jose Gamez, Jack D'Andrea, Joe North is
21 also on that email. And you say in that email:

22 "Here are my thoughts on the
23 proposed schedule.

24 I did not include any discussion
25 of open documentation, testing, safety

1 certification, etc. as I see that as
2 more than just a vehicle issue."

3 So maybe we can bring up now the
4 attachment, which is entitled "Comments on
5 November 30th Proposal", and that is STV0000313.

6 Now, do you recognize this document,
7 Mr. Krieger?

8 SCOTT KRIEGER: Again, it looks like
9 something I would have wrote. It looks like
10 something in the scope of what I would have
11 wrote.

12 MARK COOMBES: You don't recall it
13 specifically?

14 SCOTT KRIEGER: No, I mean, I don't
15 recall it specifically. But, you know, I
16 wouldn't say I didn't write it. It looks like
17 something I would have provided. And honestly,
18 we saw the email.

19 MARK COOMBES: Right. I just want
20 to -- to be fair to you, I don't want to drill
21 down on specific details if you don't recall
22 drafting them, but I'll let you say if you do or
23 not.

24 So in the first paragraph, it says:

25 "With the requirement to maintain

1 the protect spares ready for service,
2 this equates to an actual spare ratio
3 of 6.67 percent which is quite low,
4 especially considering the service is
5 intended to run the vehicles in
6 pairs."

7 So maybe I can break that down a
8 little bit.

9 You're referring to "protect spares"?

10 SCOTT KRIEGER: Yes.

11 MARK COOMBES: What is "protect
12 spares" referring to?

13 SCOTT KRIEGER: Those are the two
14 ready spares that, for all intents and purposes,
15 are in service. They are sitting on a track,
16 inspected, ready to put on the rails.

17 MARK COOMBES: So if a vehicle has to
18 come out of service, for whatever reason, those
19 are the vehicles that are ready to replace it?

20 SCOTT KRIEGER: That's correct.

21 MARK COOMBES: It says:

22 "[...] this equates to an actual
23 spare ratio of 6.67 percent [...]."

24 So I think this goes back to an answer
25 you gave me earlier about what the spare ratio

1 is or should be. Your comment is that
2 6.67 percent is quite low?

3 SCOTT KRIEGER: Yes.

4 MARK COOMBES: Do you have a view of
5 what would be standard or a good ratio?

6 SCOTT KRIEGER: Over 10. Ten is also
7 could be considered low. Especially with a
8 small fleet running in pairs, I would have liked
9 to have seen more than that. 15 percent,
10 20 percent.

11 MARK COOMBES: And again, for the sake
12 of -- for my sake, it says especially
13 considering the services are intended to run the
14 services in pairs. What is the additional risk
15 associated with running vehicles in pairs?

16 SCOTT KRIEGER: If we're looking at
17 the spare ratio, which is number of vehicles in
18 maintenance compared to vehicles available for
19 service, and if I'm running in pairs, and one of
20 my pairs of vehicles -- one of my pairs of
21 vehicles has a failure, I lose two vehicles.

22 So the spare ratio would need to
23 consider the fact that a single failure takes
24 two vehicles out.

25 You could almost run the spare ratio

1 considering that you have 34 units, if you want,
2 with only one spare, if you know what I mean.
3 Or no, the other way.

4 MARK COOMBES: Yes.

5 SCOTT KRIEGER: Seventeen units with
6 only one spare.

7 MARK COOMBES: So essentially cutting
8 the fleet, sort of halving it in a way?

9 SCOTT KRIEGER: Because you run in
10 pairs, yes.

11 MARK COOMBES: Just going down to the
12 last sentence of that section, it says:

13 "Additionally, the schedule
14 includes the performance of Overall
15 Acceptance Testing for 30 vehicles
16 over a 7 calendar day period. This
17 process was originally staggered over
18 a two month period."

19 Can you comment on what "Overall
20 Acceptance Testing" is and what it is designed
21 to achieve?

22 SCOTT KRIEGER: Acceptance testing
23 is -- this is going by my recollection here, but
24 I believe what this is talking to is the
25 acceptance of the vehicles from the builder.

1 So you do an inspection evaluation,
2 you review the paperwork, you put together a
3 punch list of things that need to be fixed.
4 It's, you know, it's you're buying something.

5 MARK COOMBES: So this is the client
6 accepting the vehicles from the manufacturer,
7 essentially?

8 SCOTT KRIEGER: Correct.

9 MARK COOMBES: Let's go down to a
10 section "Vehicles Testing and Commissioning".
11 We've already spoken about, in the first
12 paragraph, traditionally months of extensive
13 testing in real operating condition is performed
14 to identify latent design issues. I think you
15 spoke to that earlier, so I'll skip over that.

16 But just going to the section, the
17 first sentence of this next paragraph:

18 "A related issue is the seeming
19 inability to operate the vehicles in
20 two vehicle trainsets."

21 SCOTT KRIEGER: Uhm-hmm.

22 MARK COOMBES: Could you elaborate on
23 that? Do you recall what you were seeing that
24 led you to comment on the seeming inability to
25 operate those vehicles?

1 SCOTT KRIEGER: Yeah. They weren't
2 running in pairs. And as I understood it,
3 running in pairs created a problem. I can't
4 talk more about what they found as root cause.
5 I can't talk about how it was fixed, but I know
6 there was a concern about not running pairs of
7 vehicles, at this point in time. Again, all
8 this stuff is a snapshot, but at this point in
9 time.

10 MARK COOMBES: Let's go down to
11 "Maintenance Readiness":

12 "As a new maintenance provider,
13 it is not expected that the
14 maintainers have the experience to
15 efficiently troubleshoot or maintain a
16 new fleet of vehicles."

17 Can you comment on -- I mean, there's
18 a lot to unpack in that sentence. But, first,
19 as a new maintenance provider, so and I assume
20 you're referring to RTM at that juncture?

21 SCOTT KRIEGER: That is correct.

22 MARK COOMBES: So comment to me on how
23 were they a new maintenance provider? What made
24 them new?

25 SCOTT KRIEGER: They didn't exist

1 before this contract, right?

2 MARK COOMBES: Right. But presumably,
3 sort of, subcontractors of theirs did. Are you
4 referring to the fact that they had never been
5 brought together to maintain this system before?

6 SCOTT KRIEGER: So let me clarify. So
7 what I'm talking about now is vehicle
8 maintenance. And I'm -- so then I would be
9 talking about the Alstom team working with MSF.
10 This is new staff. This is not the construction
11 staff. And additionally, it's different to
12 build a vehicle than it is to troubleshoot what
13 happened.

14 So the doors stopped opening, what's
15 wrong? That's a troubleshooting skill. And
16 that's what this is talking about.

17 MARK COOMBES: And did you -- so I
18 don't know if you can comment on this from your
19 experience elsewhere, but Alstom is a -- as a
20 manufacturer, is a worldwide entity. They
21 provide maintenance elsewhere in the world.

22 What was it about here and in the
23 Ottawa context that they were new to? Like,
24 what aspect of it was new to Alstom?

25 SCOTT KRIEGER: The staff on the

1 ground, as far as I could tell, was not an
2 experienced Alstom staff. That's it. I mean,
3 it's not a comment on Alstom. I'm talking about
4 the specific property.

5 MARK COOMBES: I see. And maybe we'll
6 get into that in a little bit more detail. So
7 we can take down this slide, or this document,
8 now.

9 So generally speaking, these emails
10 are being sent, these reports, or commentaries,
11 are being written for the City's consumption.
12 Your, sort of, target audience is the City of
13 Ottawa?

14 SCOTT KRIEGER: That's correct.

15 MARK COOMBES: And do you have any
16 sense of how that commentary was received by the
17 City?

18 SCOTT KRIEGER: I can't comment on
19 what people thought. I know -- well, I think I
20 made my concerns clear, let's put it that way.

21 MARK COOMBES: And did you have a
22 direct interface with the City?

23 SCOTT KRIEGER: I was in the IAT
24 meetings, but as far as the transmission of this
25 kind of document, as you saw, I didn't transmit

1 this stuff directly.

2 So I would say I did not have direct
3 contact on this kind of thing. This went
4 through Tom.

5 MARK COOMBES: I see. And so, I
6 guess, in other words, you wouldn't be able to
7 comment on how any individual person at the
8 City, how concerned they were about these
9 issues? Were they concerned in the same way
10 that you were?

11 SCOTT KRIEGER: Yeah, I really
12 couldn't say.

13 MARK COOMBES: In terms of the outcome
14 of those reports or submissions, did you see any
15 impact on -- like, you would make these reports
16 and then would they just, sort of, disappear
17 into the void, or did you get a sense that what
18 you were raising was actually being addressed in
19 some way as time went on?

20 SCOTT KRIEGER: So and I can't be
21 specific. I can talk at a high level. The
22 General Manager, John Manconi, recognized that
23 there were concerns. There were concerns with
24 the performance of Alstom wrapping up production
25 and readying themselves to do preventative

1 maintenance and inspection and repair on the
2 fleet of vehicles.

3 We did push -- I mean, you can't
4 direct them what to do. That's a P3, but we
5 made a lot of recommendations. They tried to
6 put some of them in place.

7 I'm sure we'll talk later on the
8 operational review where we said, you know, you
9 need a much stronger control over your shop and
10 your direction and your direction of your work
11 force. And they did re-allocate some labour,
12 Alstom did, that is.

13 So I think there was a drive to change
14 things based on some of these observations, but
15 I'm sure you're going to get into documents,
16 going forward, which read the same way.

17 So it was not a dramatic shift.

18 MARK COOMBES: Right. Well, you've
19 already foreshadowed it, so we might as well
20 bring up another one, STV000565.

21 So the text here is small and I'm not
22 going to ask you to -- I don't expect you'll be
23 able to identify this document because you're
24 neither copied on it, nor was it sent to you.
25 But this is an email from Tom Prendergast. If

1 we can just roll this up a little bit. We can
2 see it's from Tom Prendergast to City staff.
3 And it's -- you are copied on this one actually,
4 I should say.

5 This was sent on June 24, 2019. So
6 this is in 2019 coming close, surpassing,
7 obviously, the previous potential RSA date,
8 which was proposed to be November 2nd in the
9 documents we were looking at.

10 And this is now Tom commenting on
11 RTM's readiness.

12 SCOTT KRIEGER: Yup.

13 MARK COOMBES: Now, he says in the
14 first paragraph:

15 "As some of you have now heard
16 when I was asked individually what
17 rating on a scale of 1-10 I would give
18 RTM, I stated a 3-4 rating. I realize
19 that this rating might differ
20 substantially from those others likely
21 provided."

22 Do you recall what your view of RTM,
23 at least with respect to vehicles, was at this
24 point? Had things improved from 2018 when you
25 were commenting previously?

1 SCOTT KRIEGER: Yeah. I would say --
2 I'm just looking at this email. I either worked
3 with Tom on this or drafted some of it.

4 I think a lot of the issues that we
5 identified six months before this were the same.

6 MARK COOMBES: And so, for example,
7 under "Vehicle Inspection Maintenance and
8 Revenue Service Support", which Tom says is high
9 important and he gives a low to moderate rating
10 of 3 to 4:

11 "While Alstom will be the prime
12 party responsible for these functions,
13 the staff that they have been using to
14 date are relatively inexperienced in
15 most of these areas. They have been
16 almost solely devoted to the vehicle
17 build activities and have not had to
18 perform routine inspection and
19 maintenance functions and likely have
20 little or no experience in
21 troubleshooting defects and making
22 effective repairs [...]."

23 So you would say you shared that view
24 at that time?

25 SCOTT KRIEGER: Yes, I would agree

1 with that.

2 MARK COOMBES: And do you have a
3 sense, in terms of they have not had to perform
4 routine inspection and maintenance functions,
5 was that just because they were -- this was
6 prior to revenue service? Why weren't they
7 getting that experience?

8 SCOTT KRIEGER: That's -- I can't
9 answer why. But I would say, yes, it's because
10 they had not entered revenue service.

11 MARK COOMBES: And do you know, if you
12 can comment from your understanding, was that a
13 function of the Project Agreement or was there
14 resistance on their part to become involved? Do
15 you know what was driving, sort of, the -- that
16 division?

17 SCOTT KRIEGER: So I can answer that
18 this way, Alstom had a, call it a construction
19 delivery group, and Alstom had a maintenance
20 group. One was on RTG's side, one was on RTM's
21 side. And I think that organization arrangement
22 may have led to this issue.

23 Again, I wasn't in the room when the
24 decision was being made, but from my own
25 personal observations, I could say that could

1 have been the cause.

2 MARK COOMBES: Did you have any
3 involvement in trial running?

4 SCOTT KRIEGER: Not really.

5 MARK COOMBES: So you were not
6 involved either in the execution of trial
7 running or planning for it?

8 SCOTT KRIEGER: I mean, I was in IAT
9 meetings, maybe even during trial running. I
10 was aware of them having to make decisions on
11 restarting the clock on failures in service.
12 But I was -- I didn't participate in those
13 decisions at all.

14 As far as I can recall, I wasn't at
15 the table for that.

16 MARK COOMBES: So in other words, you
17 may have been aware of what was happening, but
18 you didn't necessarily have any input over that
19 process?

20 SCOTT KRIEGER: That's correct.

21 MARK COOMBES: So maybe we can just
22 talk a little bit more about RTM and sort of the
23 role that you had or IAT had in evaluating the
24 maintenance capacity of Alstom or maintenance
25 ability. In terms of any sort of gaps you saw

1 in -- we can take this document down now as
2 well.

3 You've commented on the experience
4 gaps that you maybe saw with Alstom. Were there
5 any other concerns or gaps that you saw in
6 Alstom's ability to maintain the vehicles once
7 they entered service?

8 SCOTT KRIEGER: Well, again, I'm not
9 going to say anything that's not in the
10 documents we've been looking at, but, like I
11 said, we had a team on the ground starting --
12 and I don't know the exact dates, I'm sorry, but
13 starting from about August of '18, where I'd
14 made my first trip up there, through about the
15 start of revenue service, that was working in
16 the maintenance facility with the Alstom
17 maintenance teams, and we were concerned with a
18 lot of things.

19 We were concerned with processes and
20 procedures and their completion or their
21 availability. We were concerned with spare
22 parts and material management. We were
23 concerned with quality assurance -- follow-up
24 from supervisors or follow-up from quality
25 assurance group of inspection and repair

1 activities. We were concerned with a strong
2 directive of what's expected on a shift-by-shift
3 basis.

4 Without a high spare ratio, your goal
5 has to be to triage the defects and inspections
6 and turn around almost the entire fleet for the
7 next morning and that's a lot of work and that's
8 a lot of co-ordination. And we were concerned.
9 We didn't see that co-ordination.

10 MARK COOMBES: And do you know, do you
11 have a sense of what was driving that lack of
12 co-ordination?

13 SCOTT KRIEGER: Again, I think goes
14 back to lack of experience in this environment,
15 in a rail maintenance environment. And this is
16 an area that I did. I mean, I ran car shops
17 with hundreds of mechanics on the floor. And
18 all you did was look at the vehicles out of
19 service, look at what needed to be done, look at
20 your work force and your materials, and you
21 drove that work for eight hours. That's the
22 goal. You followed up work, you double checked,
23 you put your best people, you sent a follow-up
24 person to check a weaker mechanic, all that
25 stuff. Your goal was to make the number the

1 next day.

2 So I guess my answer would be lack of
3 that experience.

4 MARK COOMBES: And you mentioned a
5 spare ratio and sort of a lack of spares. Do
6 you know what was driving the lack of access to
7 spares?

8 SCOTT KRIEGER: Are we talking spare
9 parts?

10 MARK COOMBES: Correct.

11 SCOTT KRIEGER: Yeah. That would have
12 been -- I don't know why. I can't answer why,
13 but we felt that material -- access to material
14 was going to be an issue for them.

15 Material is something where there is
16 no workaround. If I don't have a brake unit, I
17 don't have a brake unit. You can't sort of have
18 a brake unit. So material can be a major
19 problem.

20 MARK COOMBES: So at that point you
21 would have been pointing to the issues with lack
22 of spares, but you never really would have had
23 an understanding as to what was driving the lack
24 of spare parts?

25 SCOTT KRIEGER: Why they hadn't

1 procured the level of spares that we would have
2 liked to have seen? No.

3 MARK COOMBES: So you have no
4 understanding of whether that was a supply chain
5 issue or a materials mismanagement issue?

6 SCOTT KRIEGER: No.

7 MARK COOMBES: Were there any concerns
8 that you had about the maintenance facility
9 itself?

10 SCOTT KRIEGER: I'm trying to give you
11 a real answer, so I'm thinking for a second.

12 MARK COOMBES: Sure.

13 SCOTT KRIEGER: I don't think so. I
14 don't think the maintenance facility -- you
15 know, the -- you always want more. You always
16 want more shop spots. You always want better
17 logistics, you always want more cranes, but I
18 don't think that was a major concern.

19 MARK COOMBES: So it wasn't a concern
20 that the maintenance and storage facility was
21 also being used as an Alstom assembly facility?

22 SCOTT KRIEGER: Oh, okay. So we were
23 concerned about transition. So that's not the
24 maintenance facility proper. I mean, I was
25 looking at it as a plant engineering facility,

1 the building.

2 MARK COOMBES: Right.

3 SCOTT KRIEGER: So, yeah, we were
4 concerned with a couple of things during
5 transition. One is the continuing of
6 construction and the other is then they were
7 talking about relocating construction to
8 somewhere else. And we were worried that those
9 Alstom construction people, who knew the most
10 about the vehicles, would no longer be there.
11 So we were worried about those two things.

12 MARK COOMBES: So there was never
13 really a concern that there was a -- at least
14 from your perspective, that there was maybe
15 going to be a competition for space in the
16 facilities, at least to the extent that it would
17 have raised a real concern for you?

18 SCOTT KRIEGER: For me personally, I
19 don't recall being that concerned with shop
20 spots.

21 MARK COOMBES: So the issues that
22 you're seeing at this point, on the maintenance
23 side, could you comment on, there's issues --
24 you're concerned with Alstom's experience.
25 Maybe you can comment on whether is it advisable

1 to go into service with those concerns, sort of,
2 hanging in the air? Like, I assume these
3 issues, from your perspective, were they solved
4 prior to revenue service, to your recollection?

5 SCOTT KRIEGER: Let me -- first I just
6 want to clarify, maybe it's obvious, but my
7 concern is not with Alstom as a company. My
8 concern is with the cast of characters here.

9 So the group that's here. So I'm not
10 commenting on Alstom proper. Okay?

11 MARK COOMBES: Yup.

12 SCOTT KRIEGER: As far as my concerns,
13 I think they all spelled out -- I think they
14 speak for themselves. They all spell out a risk
15 of entering service. Those would have to be
16 weighed by other people with other variables and
17 other considerations, but I think what was
18 spelled out in the documents that we've reviewed
19 together is there's a risk here. You know, the
20 ability to maintain the contracted service. The
21 ability to rollout the vehicles as expected. To
22 maintain the City's assets.

23 So I don't know if that answers your
24 question, but, yeah, there was concerns.

25 MARK COOMBES: And I suppose it wasn't

1 probably your mandate to say either yes or no
2 you should or shouldn't go into service with
3 these concerns hanging in the area?

4 SCOTT KRIEGER: No. No. It was my
5 task to do exactly what we reviewed. What are
6 we seeing? What does it look like? And what
7 are the risks? What's the exposure?

8 MARK COOMBES: And so I guess maybe
9 comment for me, you've already done this at the
10 earlier point, but with these issues, with your
11 perceived issues about the maintenance side of
12 the vehicles going into revenue service, what
13 would you assess is the level of risk to the
14 project? What are the types of risks the
15 project's going to encounter, after revenue
16 service, with these maintenance issues existing?

17 SCOTT KRIEGER: I think, as we said,
18 if you struggle on performing maintenance, and
19 if you have a limited spare ratio, you will
20 struggle to make 16, 2-car train sets every day.

21 So the concern is the provision of
22 service. Longer term, you have other concerns.
23 A backlog of repairs, other issues, degradation
24 of the fleet, but that's not an opening day
25 concern. The opening day concern is the ability

1 to make service.

2 MARK COOMBES: And do you have a
3 sense, at that time, about if there were these
4 concerns with maintenance at the time, would it
5 have been advisable to delay revenue service or
6 you just sort of enter revenue service accepting
7 that there is going to be a risk of degraded
8 performance?

9 SCOTT KRIEGER: That was a decision
10 for others besides me.

11 MARK COOMBES: So it was your job to
12 point out the risk, but not necessarily -- and I
13 shouldn't say not necessarily, not at all make a
14 call as to what should or shouldn't be done as a
15 result of those risks?

16 SCOTT KRIEGER: No. As I said, other
17 people have a lot more variables and a lot more
18 considerations. What I did was present my
19 concerns for the maintenance of vehicles and
20 provision of, you know, 16 -- 32 vehicles a day,
21 every day.

22 MARK COOMBES: And maybe we're going
23 to be going past revenue service in this next
24 question.

25 SCOTT KRIEGER: It's okay.

1 MARK COOMBES: But do you have a sense
2 of whether some of your concerns, even up to the
3 present, have been addressed? Have been
4 considered? Have been made acceptable from the
5 perspective of lowering the overall risk to the
6 system in terms of maintenance of vehicles?

7 SCOTT KRIEGER: I can't comment -- so
8 let me caveat this by saying I'm not there every
9 day. So I don't know every day. What I do know
10 is they struggle making the number. There are
11 issues with getting modifications done. So I
12 would say they are not where they need to be.

13 Have my concerns all been addressed?
14 No.

15 MARK COOMBES: And do you feel that
16 they're the same -- again, you're not there
17 every day, but do you feel that they're the same
18 concerns that you had before in terms of lack of
19 experience or have steps been taken to improve
20 that lack of experience?

21 SCOTT KRIEGER: So I can't comment
22 directly on -- you would hope that the
23 maintenance force, after two years and change,
24 would become familiar with troubleshooting these
25 vehicles and idiosyncrasies, et cetera, et

1 cetera.

2 I don't think that the operations and
3 the supervisory team was -- expanded their
4 experience. I don't think they picked up other
5 people to get a firm control over the
6 maintenance operation. And I think there's --
7 no, I can't comment. I was going to say I'm not
8 sure about Alstom, the two halves of Alstom, so
9 let's not go there.

10 MARK COOMBES: Did you ever hear a
11 concern coming from Alstom maintenance that, or
12 at least a commentary from Alstom in terms of
13 maintenance, that they didn't believe their work
14 started until RSA?

15 SCOTT KRIEGER: I would be passing you
16 secondhand information, but if you want, I can
17 tell you what I understood. RTG was RTG, and
18 RTM was RTM. And I think RTM's belief was they
19 didn't start performing maintenance activities
20 until revenue service. That was my
21 understanding. Again, I don't believe I was
22 ever in a room where someone from RTM said that.

23 FRASER HARLAND: Can I maybe just jump
24 in here to ask a clarifying question and it may
25 be obvious, but does that mean that RTM was not

1 involved in trial running, to your knowledge?

2 SCOTT KRIEGER: That I can't comment
3 and I don't know when they finally mobilized and
4 stepped in. It may have finally been for trial
5 running. I know, if I'm recalling correctly,
6 the feeling was if this is true trial running,
7 it should be RTM maintaining the vehicles
8 because that's part of what you're testing.

9 But I can't comment 100 percent on
10 when RTM stepped up and mobilized.

11 MARK COOMBES: Do you have a sense of
12 whether this -- you do have extensive experience
13 in the industry, and I assume, to a certain
14 extent, these problems are present in different
15 ways on many different projects.

16 Do you have a sense of whether the
17 sort of -- the problems that you see or saw with
18 maintenance on this project, is that unusual for
19 this type of project or is it just one of the
20 growing pains that a new system would have?

21 SCOTT KRIEGER: I think any start-up
22 like this is going to have growing pains. Any
23 start-up is going to have a certain level of
24 lack of experience, a certain level of design
25 surprises, like I said, idiosyncrasies. Not

1 just vehicles, everything.

2 But I think, if we go back to the
3 concerns that we've been talking about all
4 along, the expectation is you'll have at least
5 some people that have done this before, that
6 have mobilized a start-up. And I think that
7 that exacerbated the issues that you're seeing
8 as a start-up.

9 MARK COOMBES: And are you talking
10 specifically from the maintainer or just in the
11 project generally, people that have sort of seen
12 it and done it before?

13 SCOTT KRIEGER: I guess what I'm
14 saying is, and it goes back to the -- I'm not
15 saying anything that we haven't reviewed.

16 If we go back to the comments, I would
17 have liked to have seen somebody in charge of
18 maintenance operations, or a couple of people,
19 or somebody in the role that I used to have,
20 which was called General Foreman, that had the
21 experience in maintaining and rolling out a
22 fleet every day, what that meant. How to
23 address issues. How to address infant mortality
24 issues. How to address latent design issues?
25 How to delegate and make these maintenance

1 things happen with a sense of urgency that
2 you're moving people.

3 MARK COOMBES: And just in terms of,
4 if you can comment broadly on the impacts, if
5 you have a system -- maybe I'm going to be
6 asking you to speculate here, and you don't have
7 to do that, so if you don't feel like you can
8 answer this question, you can say that.

9 But if you have a system that hasn't
10 been tested maybe as much as it should be
11 because the schedule has been compressed and
12 testing that has otherwise been taking place
13 over months is taking place over the span of a
14 week or weeks or not at all, would you say that
15 would put more pressure on the maintainer
16 entering into service?

17 SCOTT KRIEGER: I don't think it's
18 speculation to say that if you compress your
19 burn-in and your testing time, you are shifting
20 identification of latent design issues and
21 infant mortality from the acceptance period to
22 the maintenance period, the operations period.

23 And again, I'm not saying anything
24 new, this was the concern, by shortening that
25 time, by deferring modifications, by deferring

1 retrofits, you're pushing it all to post-RSA to
2 the maintenance contract. So yes, that's a
3 risk. That's exposure.

4 MARK COOMBES: So I think actually
5 this might be a good time to take a break.

6 -- RECESSED AT 3:22 P.M. --

7 -- RESUMED AT 3:37 P.M. --

8 MARK COOMBES: Mr. Krieger, I think at
9 this point, we will start to explore some of
10 your activities since revenue service has
11 started. So this would be, I suppose, from the
12 late 2019 period forward.

13 Could you just give us an another
14 overview, like you did at the start, about what
15 have your general activities been with the
16 Ottawa LRT project since the revenue service
17 started?

18 SCOTT KRIEGER: So after revenue
19 service, and I'm going by memory, after revenue
20 service, there was a bit of a lull, but I was
21 called backed up in -- wait, we did a -- we did
22 an operational review that was released in
23 January of 2020 for -- presented to Steve
24 Kanellakos. It was kind of like, how are they
25 doing? Where can they improve? What are the

1 issues that we see with the provision of
2 service? Like I said, that was delivered in the
3 end of January 2020. I don't believe I went
4 back up before the pandemic in mid-March. And I
5 haven't been to Ottawa since.

6 But we've been supporting the
7 operations, the train systems operations group
8 that is under Matt Pieters who works for Troy
9 Charter, on an as-requested, kind of, services
10 blanket, if you will. Maintenance service plan
11 gets submitted they send it to us to take a look
12 at.

13 The first derailment issue with the
14 cracking wheels, we were involved in reviewing
15 RTM and Alstom's mitigation plan. And we
16 provided, you know, comments back to the City.

17 Little things here and there until we
18 started helping them develop an audit plan, an
19 annual audit plan, to identify which systems and
20 subsystems would be audited, the frequency of
21 the audit. Then we started to develop the audit
22 plans and procedures.

23 And then at the end of last year, we
24 actually started helping them perform audits. I
25 believe the first one was on the tunnel

1 ventilation system, then light rail vehicle
2 system, then the overhead catenary system, which
3 we just did. And the track system is coming up
4 in June or July.

5 I am not an expert in that stuff, of
6 course. But I'm kind of the person who rallies
7 the troops, the appropriate staff, for each one
8 of those.

9 The light rail vehicle I was supposed
10 to go myself and assist with that audit, but
11 that was right at the Omicron surge and we
12 cancelled that, and OC Transpo did that one
13 themselves. But I expect the follow-up audit,
14 I'll be personally involved in.

15 MARK COOMBES: So thank you for that
16 overview. Maybe we'll just step sort of in a
17 stepwise fashion through some of those different
18 items and we can ask questions and you can
19 discuss.

20 So you mentioned the operational
21 review at the end of January 2020.

22 You said that the -- I just wanted to
23 clarify because you said that that presentation
24 was to sort of assess how they were doing. And
25 who is "they"?

1 SCOTT KRIEGER: RTM.

2 MARK COOMBES: Is that RTM
3 specifically with respect to vehicles again or
4 is this RTM with respect to maintenance,
5 generally, at this point?

6 SCOTT KRIEGER: This is maintenance --
7 I can't recall directly if it's RTG/RTM, but it
8 is system wide. So this was not authored solely
9 by me.

10 MARK COOMBES: And can you give us a
11 sense, you know, if the operational review was
12 designed to sort of assess how they were doing,
13 at that point, in January 2020, how were they
14 doing?

15 SCOTT KRIEGER: The comments, and I'll
16 be honest, I had to refresh my memory on this
17 one, the comments were the same as the comments
18 we've been talking about throughout this
19 interview.

20 Lack of strong leadership, lack of
21 resources. I can't quote it verbatim, but the
22 concerns were the same.

23 MARK COOMBES: And when you say "lack
24 of resources", I just want to clarify on that,
25 because I've heard other witnesses use that word

1 specifically. When you say "resources", are you
2 referring specifically to people? Money? Time?
3 Parts? What is "resources" referring to?

4 SCOTT KRIEGER: When I used it just
5 now, that's people.

6 MARK COOMBES: And is that in terms of
7 experienced people or in terms of just raw
8 manpower?

9 SCOTT KRIEGER: It's -- well,
10 experienced raw manpower, I guess we would say.
11 You know, you're running a 7-day a week, 24-hour
12 day operation through Ottawa winters. That
13 takes a significant amount of labour. So
14 that -- it's talking about numbers of people.

15 MARK COOMBES: And you commented that
16 you were also involved in either providing
17 commentary on or in conjunction with the
18 derailment. Which derailment are you referring
19 to?

20 SCOTT KRIEGER: I believe that was the
21 first significant derailment. It happened early
22 in -- it was early in 2020. I don't remember
23 the date. It had to do with the wheel cracking
24 issue.

25 MARK COOMBES: Do you recall what

1 specifically was your role in that assessment or
2 review? What were you called upon to do in that
3 instance?

4 SCOTT KRIEGER: So as is the nature of
5 this contract, design, build, maintain, it is
6 Alstom and RTM's responsibility to identify what
7 happened and how to address it and how to fix
8 it. That's what they're contracted for.

9 But we were called in to assist the
10 City in reviewing RTM and Alstom's findings, and
11 provide advice back to the City, if there's
12 additional information we would request, or if
13 there's a concern or if it seemed reasonable,
14 that was our scope.

15 MARK COOMBES: And do you recall what
16 your assessment of the mitigation plan was at
17 that time?

18 SCOTT KRIEGER: Again, I can't comment
19 verbatim. What I can say, from memory, is the
20 mitigation plan looked reasonable. There was
21 other things we thought should be followed up
22 on, some things that -- that seemed like they
23 were the right answer, but you didn't want to
24 just jump to a conclusion, so we talked about
25 some additional research and investigation that

1 we would have liked to see going forward.

2 MARK COOMBES: And do you recall that
3 the conclusion of that, I suppose, the
4 investigation into the causes was determined to
5 be -- or at least the supposition was that it
6 was caused by the, sort of, loosening of a nut
7 on a gear box or assembly?

8 SCOTT KRIEGER: That's the second
9 derailment.

10 MARK COOMBES: Yes, sorry. My
11 apologies. You're correct.

12 SCOTT KRIEGER: The second derailment
13 is when the City called in a third-party
14 independent oversight engineering and we were
15 not independent. We'd been working for the City
16 for 10 years. So we weren't really involved in
17 that one.

18 MARK COOMBES: So if we go back then
19 to the first derailment, so I suppose, in other
20 words, your involvement at that point was,
21 again, as a -- not necessarily determining
22 causes or determining solutions, but assessing
23 other entities' approach to the problem, is that
24 fair to say?

25 SCOTT KRIEGER: Yes. It would be

1 reviewing their process and procedure and making
2 sure, in our opinion, it made sense.

3 MARK COOMBES: And maybe you can just
4 speak to us briefly about this discussion you
5 have about the audit plans and procedures that
6 you mentioned. So maybe you can just talk to us
7 about what an audit plan is and why it's
8 required and sort of what it looks like?

9 SCOTT KRIEGER: Sure. So to state the
10 obvious, the City is paying RTM a lot of money
11 to maintain millions of dollars worth of
12 equipment. Performing an audit is a due
13 diligence activity to validate that the
14 contractor is doing what they should be doing,
15 doing what they're both contracted to do and
16 doing both -- also what they told the authority
17 they would be doing. In other words, with the
18 maintenance plan or with a maintenance schedule,
19 are you living up to your own process and
20 procedures? So the audit is an evaluation of
21 RTM's appropriate performance of their
22 contracted maintenance activities.

23 So when we started doing this, we
24 worked with Matt Pieters' group to come up with
25 a sequence of annual audits. So how often?

1 What's the inspection interval between an audit?
2 Maybe we do the light rail vehicles twice a
3 year. Maybe we do -- and these are just --
4 these are made up, but maybe we do a track audit
5 four times a year. Maybe we do an inspection of
6 cleanliness on stations once a month.

7 So we start with that. Then we
8 generate the process for an audit. So we would
9 go in, we would request documentation. This is
10 in a process. You know, step 1, request
11 information from RTM as necessary to perform a
12 documentation review. Step 2, review the
13 documentation. Step 3, schedule an on-site
14 audit. So we would develop an audit process, an
15 audit plan.

16 Then after that, it's performing the
17 audit. It's doing that stuff in the audit plan.
18 Requesting documentation, reviewing the
19 documentation, going on site, doing an
20 inspection, or an audit, or an evaluation, or
21 shadowing RTM or their subcontractors on a
22 maintenance activity, and generating an audit
23 report with findings.

24 You know, what was -- what needs to be
25 remedied? What's an opportunity for

1 improvement? And that would get transmitted
2 back to RTM as the results of an audit.

3 MARK COOMBES: So, in other words, the
4 audit would be designed to, sort of, ensure that
5 the maintainer is doing what it's supposed to be
6 doing and if there's any deficiencies found,
7 suggesting areas that they need to improve?

8 SCOTT KRIEGER: Well, yeah. I mean,
9 you can say the findings are two-tiered. One is
10 telling them, you dropped the ball somewhere,
11 you need to go fix that. The other is what
12 maybe we call an opportunity for improvement
13 where you don't have to do this, you probably
14 still would be compliant, but it would be a
15 whole heck of a lot more efficient if you did
16 this. So this is sort of two levels of
17 findings.

18 MARK COOMBES: So have you been
19 involved -- it sounds like there's two
20 perspectives. One is designing the audit plans
21 and procedures and then also performing the
22 audits themselves?

23 SCOTT KRIEGER: As I said, I haven't
24 been site, but I did participate in some
25 documentation review, mostly on the light rail

1 vehicle audit.

2 So the answer to your question, in
3 short, is yes. But not on site, not yet.

4 MARK COOMBES: Maybe we can just talk
5 at a high level about, sort of, your view, at
6 least as far as your involvement in assessing
7 derailments or other issues.

8 Do you have a sense of whether, and
9 again if this speculative, you can tell me this,
10 but whether the maintenance issues that you have
11 been identifying throughout this interview
12 resulted in some of these issues that the system
13 has seen in operation?

14 SCOTT KRIEGER: I couldn't say if
15 these issues resulted, if there's a direct cause
16 and effect. I can't say that. Like you say, I
17 would be jumping to a conclusion.

18 MARK COOMBES: Fraser, do you have any
19 additional questions for Mr. Krieger?

20 FRASER HARLAND: No, I don't think so.

21 MARK COOMBES: So I think that's all
22 of my -- the areas that I wanted to explore with
23 Mr. Krieger.

24 Do you have any comments you would
25 like to make that I haven't asked you about or

1 any issues that you had seen in your time
2 involved with the project that you think I
3 should know about that I haven't asked you
4 about?

5 SCOTT KRIEGER: To be honest, I
6 think -- and from my understanding of your goal,
7 as it was explained to me and as we've been
8 talking, I think we've covered the concerns that
9 my group identified, the issues identified, what
10 was shared. I mean, you have the documentation,
11 what was shared with OC Transpo.

12 I can't think of anything else. I
13 can't think of anything else that we haven't
14 really touched on, to be totally honest.

15 MARK COOMBES: Thank you.

16 Mr. O'Brien, did you have any
17 follow-up questions?

18 FRASER HARLAND: Sorry, just related
19 to that, Mr. Krieger, the Commission, part of
20 the Commission's role is to identify
21 recommendations that might prevent some of the
22 issues that have happened. And obviously we can
23 glean things from this discussion and from some
24 of the documents, but if you were to try and
25 summarize some key recommendations that you

1 would provide, do any come to mind for you?

2 SCOTT KRIEGER: Are we talking
3 recommendations going forward or what should
4 have been done two years ago?

5 FRASER HARLAND: Well, I'm interested
6 in both, I guess.

7 SCOTT KRIEGER: So what should have
8 been done two years ago is pretty well spelled
9 out in the documents we've been looking at. I
10 wouldn't change any of that. It's resources,
11 it's experience, it's material, it's management,
12 it's all the same stuff. I wouldn't append that
13 at all.

14 Going forward now, I would assume some
15 of that has been addressed, but I would still --
16 and this is just Scott speaking to you guys, I
17 would still go in, I would evaluate where they
18 are resource wise. I would do -- and that's
19 labour count, actual number of people. We used
20 to do this, where you come up with -- how long
21 does it take to do something? How many things
22 do I need to do? And you build all the way up
23 to the right number of people you're supposed to
24 have.

25 I would like to see the results of

1 that, a staffing level, and I would like to see
2 the level of experience on similar assignments
3 elsewhere in North America, or the world, and
4 there needs to be some senior people involved in
5 the maintenance activity.

6 Again, I can't comment on who's there
7 now. I haven't been there in two and a half
8 years. But my recommendations would be I would
9 start with evaluating how many people are there
10 and what's their experience?

11 FRASER HARLAND: Thank you.

12 MARK COOMBES: Thank you.

13 Mr. O'Brien, did you have any
14 follow-up questions for the witness?

15 MICHAEL O'BRIEN: I don't have any
16 questions for Mr. Krieger, thank you.

17 MARK COOMBES: Okay. I think that can
18 conclude the interview. We can go off the
19 record.

20 --- Completed at 4:00 p.m.

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REPORTER'S CERTIFICATE

I, HELEN MARTINEAU, CSR, Certified
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That the foregoing proceedings were
taken before me at the time and date therein set
forth;

That the statements of the presenters
and all comments made at the time of the meeting
were recorded stenographically by me;

That the foregoing is a certified
transcript of my shorthand notes so taken.

Dated this 11th day of May, 2022.



PER: HELEN MARTINEAU
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