

Ottawa Light Rail Commission

Thomas Fodor
on Wednesday, April 20, 2022



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6	OTTAWA LIGHT RAIL COMMISSION
7	PARSONS/DELCAN - THOMAS FODOR
8	APRIL 20, 2022
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14	--- Held via Zoom Videoconferencing, with all
15	participants attending remotely, on the 20th day
16	of April, 2022, 2:00 p.m. to 5:05 p.m.
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1 COMMISSION COUNSEL:

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3 Kate McGrann, Co-Lead Counsel Member

4 Liz McLellan, Litigation Counsel Member

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7 PARTICIPANTS:

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9 PARSONS/DELCAN:

10 Thomas Fodor

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14 ALSO PRESENT:

15

16 Judith Caputo, Stenographer/Transcriptionist

17 Elizabeth Deasy, Virtual Technician

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INDEX OF EXHIBITS

NUMBER/DESCRIPTION

PAGE NO.

(None) .

* * The following is a list of documents undertaken
to be produced or other items to be followed up * *

INDEX OF UNDERTAKINGS

The documents to be produced are noted by U/T and
appear on the following pages: 118:23

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

2

3 THOMAS FODOR: AFFIRMED.

4 KATE MC GRANN: Good afternoon,

5 Mr. Fodor. My name is Kate McGrann, I'm one of the

6 co-lead counsel for the Ottawa Light Rail Transit

7 Public Inquiry. I'm joined by my colleague, Liz

8 McLellan, who is a member of the counsel team.

9 The purpose of today's interview is to

10 obtain your evidence under oath or solemn

11 declaration for use at the Commission's Public

12 Hearings.

13 This will be a collaborative interview,

14 such that my co-counsel, Ms. McLellan, may

15 intervene to ask certain questions.

16 This interview is being transcribed and

17 the Commission intends to enter this transcript

18 into evidence at the Commission's Public Hearings,

19 either at the hearings or by way of a procedural

20 order before the hearings commence.

21 The transcript will be posted to the

22 Commission's public website, along with any

23 corrections made to it after it is entered into

24 evidence.

25 The transcript, along with any

1 corrections later made to it, will be shared with
2 the Commission's participants and their counsel on
3 a confidential basis before being entered into
4 evidence.

5 You will be given an opportunity to
6 review your transcript and correct any typos or
7 other errors before the transcript is shared with
8 the participants or entered into evidence. Any
9 non-typographical corrections that you make will be
10 appended to the transcript.

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

24 As required by Section 33(7) of that
25 Act, you are hereby advised that you have the right

1 to object to answer any question asked under
2 Section 5 of the Canada Evidence Act.

3 If at any point during the interview
4 you need to take a break, just let us know. We
5 will stop recording and take a break as-needed.

6 THOMAS FODOR: Okay.

7 KATE MC GRANN: To start, would you
8 provide us with a summary of your professional
9 experience as it relates to the work that you did
10 on Stage 1 of Ottawa's Light Rail Transit System.

11 THOMAS FODOR: I was working for
12 Parsons at the time. My primary project was the
13 Eglinton LRT system as an operations and
14 maintenance planning specialist.

15 But in the course of my work there,
16 Parsons asked me to serve as a consultant for the
17 City of Ottawa in ensuring that the maintenance
18 planning was performed accordingly and that when
19 the Ottawa LRT system would start up, that the
20 maintenance organization and the maintenance
21 structure was in place.

22 So it was a -- sort of like a monthly,
23 bimonthly trip I used to take to Ottawa to review
24 with certain individuals the progress of the whole
25 maintenance plan and all the activities and the

1 organizational structure for the maintenance of the
2 system.

3 KATE MC GRANN: How long had you been
4 working as an operations and maintenance planning
5 specialist before you started working on Stage 1 of
6 the Ottawa LRT?

7 THOMAS FODOR: About 40 years,
8 35 years.

9 KATE MC GRANN: And you mentioned that
10 you had been working on the Eglinton LRT at the
11 time you started working on the Ottawa LRT.

12 Can you just provide us with some
13 examples from your 35 or 40 years of experience
14 before you started in Ottawa of work that you've
15 done?

16 THOMAS FODOR: Other projects that I've
17 worked on?

18 KATE MC GRANN: Yes.

19 THOMAS FODOR: Well, I started in 1977
20 working on the Vancouver SkyTrain system, helped
21 put that system in. The Scarborough LRT system. I
22 worked in South Africa, the Gautrain system and did
23 many, many proposals in Dubai, Australia, basically
24 all around the world.

25 Worked in Korea, Malaysia, put the

1 Kuala Lumpur Putra system in place there.
2 Basically doing operations and maintenance
3 planning, helping with testing, commissioning.
4 Ankara, Turkey, I helped put that system in as
5 well, one of the metros there.

6 All in all over ten projects from start
7 to finish, and many, many more proposals.

8 KATE MC GRANN: What's your educational
9 background?

10 THOMAS FODOR: I'm an industrial
11 engineer from U of T. I graduated in 1976 and I
12 started in transit in 1977. So it's since then
13 I've been doing operations and maintenance
14 planning.

15 KATE MC GRANN: I believe that you
16 started working on the Ottawa Light Rail Transit
17 system in September of 2015; is that right?

18 THOMAS FODOR: I think it was around
19 that time, yes.

20 KATE MC GRANN: Do you know if Parsons
21 had been working on the project prior to your
22 involvement?

23 THOMAS FODOR: I wasn't aware. It was --
24 at the time there were three or four of us that
25 were requested to go there, one for operations, one

1 for maintenance, another one for systems
2 engineering, overseeing what they were doing.

3 I think the City of Ottawa needed some
4 help, so they had approached Parsons and they asked
5 us because we were close by, we were all in
6 Kingston. So it was close by, so it was pretty
7 easy for us to get up there occasionally and check
8 to see what was going on.

9 KATE MC GRANN: Okay. And so am I
10 right that you were reviewing and overseeing work
11 done by others in preparation for maintenance once
12 the system went into revenue service?

13 THOMAS FODOR: Yes. It was
14 preparation. Like, spare parts, the maintenance
15 organization, the training programs for them, a
16 host of things.

17 What type of subcontract they were
18 getting for different elements. Just general, you
19 know, making sure, maintenance away equipment.
20 What type of maintenance away equipment did they
21 have?

22 I was reviewing a lot of documents --
23 well, not procurement documents but documents for
24 specifications on this equipment and generally
25 dealing with the organization that was preparing

1 for this.

2 It was -- there was RTG, I think, that
3 was constructing it then RTM which was the entity
4 that was going to become the maintenance group,
5 once the system was -- and everything was going to
6 be handed to them from RTG to RTM, if I'm not
7 mistaken. It's been a little while, but I just
8 remember that's the way it was set up.

9 I worked with a small group of guys who
10 were setting up the RTM organization.

11 KATE MC GRANN: If I've got it right,
12 your role is to basically review and oversee the
13 work they're doing on behalf of the City?

14 THOMAS FODOR: Yes, well, yeah, I was
15 hired by the City to oversee what they were doing
16 as a means of, you know, providing the maintenance
17 for the OLRT later on.

18 KATE MC GRANN: Just to make sure that
19 I understand, you're hired by the City to oversee
20 the work being done by whom?

21 THOMAS FODOR: RTG and RTM. RTM was
22 going to be the maintenance contractor,
23 subcontractor, for the City of Ottawa because
24 Ottawa was the operator, the operators were Ottawa,
25 then they had a maintenance group called RTM.

1 KATE MC GRANN: Did you take over this
2 job from somebody else when you started?

3 THOMAS FODOR: No, I don't think there
4 was anybody there; that's why we went in. There
5 were some documents that we started writing
6 immediately because we realized there were some
7 deficiencies in some of the typical documents we
8 would create, like, a concept of operations
9 document, a concept of maintenance document,
10 concept of safety and security.

11 So those are three documents that we
12 wrote for the City of Ottawa, so people would have
13 an idea, a good idea as to how this system would
14 operate and be maintained. And that wasn't in
15 existence when we went in. Which should have been.

16 Typically, you have that at the
17 beginning, and when we got in they were already
18 well under construction and we sort of asked the
19 questions and they were, you know, there wasn't
20 anything like that. So we helped them create these
21 documents for them.

22 KATE MC GRANN: When you say that these
23 three documents, the concept of operations, the
24 concept of maintenance and the concept of safety
25 and security documents?

1 THOMAS FODOR: Yeah?

2 KATE MC GRANN: That you would have
3 them at the beginning. Can you help me understand
4 what you mean when you say "the beginning"?

5 THOMAS FODOR: Well, normally before
6 you -- when you start -- like right now I'm working
7 on Austin, in Texas, an LRV project there. So they
8 are going into the design and they have an
9 alignment and they have an idea what type of
10 vehicle they want, the traction power, signalling
11 the system.

12 It comes down how is this going to
13 operate? Are you going to have spatial attendance
14 or no spatial attendance? Are you going to have
15 full ATO, or cab signalling, where the guy has some
16 control?

17 All of this gets put into a concept of
18 operations document and it explains to someone at a
19 higher level -- we don't get into super detail --
20 but at a higher level how this thing will work in
21 normal operation as well as failure management.
22 Like, we've got crossovers here so you can do
23 certain things with it.

24 So it's a high-level way of
25 understanding and for us to understand what we're

1 looking at, what type of signalling system we need,
2 and in the same thing when we were looking at
3 concept of maintenance.

4 To what degree are we working with
5 people here? Are we subcontracting certain work?
6 What level are we going to do in-house work?

7 And then some things are proprietary so
8 you can't touch it, you know, it's like your
9 computer try to open up an iPhone. You know, you
10 can't.

11 But you can do certain things before
12 that. It's got everything, fare collection, power
13 distribution, the vehicles themselves, stations,
14 station facilities, maintenance away equipment.

15 All this comes into play in concept of
16 maintenance document and you're highlighting, for
17 example, snow removal. How are you going to remove
18 snow? There's many ways of doing it.

19 And one type of methodology may work
20 out in the fields out, you know, out in the woods
21 with CN but it's not going to apply in the City
22 when you're dumping snow over a bridge.

23 You have to highlight a number of these
24 things, so people when they read it get a pretty
25 good idea how this is going to work.

1 And then, you know, the detail
2 documents come into play. What exactly are you
3 buying? What exactly are these maintenance away
4 equipment you're getting; what are the
5 specifications and how many are you getting?

6 So it's a precursor to a lot of other
7 documents.

8 KATE MC GRANN: Okay. You used two
9 phrases and I just want to make sure we understand
10 what they mean, you referenced ATO. What is that?

11 THOMAS FODOR: Automatic train
12 operation.

13 KATE MC GRANN: I think you also
14 referenced cab signalling; is that right?

15 THOMAS FODOR: Well, cab signalling
16 there's about three or four levels. We call it
17 "Grades of Moderation", "GOA". There's GOA0, 1, 2,
18 3, 4.

19 0 is pure manual; the guy is driving.
20 There's no controls outside of his own braking and
21 acceleration.

22 Then another level, cab signalling,
23 that's a GOA2. If he tries to exceed the speed
24 limit the system will slow him down or stop the
25 train.

1 So there are some built-in safety
2 mechanisms. If he tries to out -- exceed them, the
3 system will react. The on board control system.

4 SkyTrain for example is UTO, it's
5 unattended train operation. That's GOA4; that's
6 the highest level. There are no drivers. It's
7 like an elevator. You get on board -- in the old
8 days you had a guy who pressed the buttons for you.
9 Same thing with the train. It's just a horizontal
10 elevator as far as I'm concerned.

11 SkyTrain, for example, is GOA4. UTO,
12 the train, has a lot of redundancy, so if the train
13 breaks down you still get to the station or get
14 back home.

15 But you still need field staff because
16 occasionally something goes wrong and it comes to a
17 stop and then you have to retrieve it. That's a
18 very rare thing, though, that's how they design it.

19 KATE MC GRANN: How does cab signalling
20 fit into that?

21 THOMAS FODOR: Cab signalling is pretty
22 standard in most places now. There's always some
23 level of safety that systems want to put in. The
24 Austin one is the same thing; they want a GOA2.

25 Now, in the yard, they're going to

1 GOA4. They want to go totally automated. So the
2 guy gets off and the trains go off to wherever they
3 go and then it comes back. The guy picks it up
4 before he gets out on the revenue line, so there's
5 a lot of ways of doing it.

6 And SkyTrain is GOA4 all over the
7 place, yard and main line.

8 So there's different levels, it's
9 money, also, it's complexity and money. GOA2 is
10 pretty standard. You have a driver on board you
11 don't want that guy running into another train in
12 front of him so there's safety distances involved.

13 And this level of automation will
14 prevent him from running into a train in front of
15 him, or exceeding speed limits. So there's always
16 a safe stopping distance in front of him.

17 And if he let's go of the handle, for
18 example, it will come to a stop. Like, if he has a
19 heart attack, it's a deadman's brake, basically.
20 It will stop the system. He can't accelerate and
21 go into the wall, for example, or another train.

22 KATE MC GRANN: Okay. And Ottawa,
23 where would it have fallen on that scale?

24 THOMAS FODOR: Ottawa was a GOA2, a cab
25 signalling type of set up.

1 KATE MC GRANN: Coming back to the
2 concept of operations maintenance safety and
3 security, I'm trying to understand where in the
4 process from RFP to project agreement and detailed
5 system design implementation, where you would
6 expect to see those documents prepared and
7 available?

8 THOMAS FODOR: Usually we were writing
9 the PSOS, the specs for Eglinton, and we were just
10 issuing -- just getting the bids, we already had
11 the concept documents last year.

12 So we can provide it to them or provide
13 it to anyone who wants to understand how the system
14 works.

15 Usually at the front end, where you're
16 starting to write the specifications a lot of time
17 the specification would reflect how you
18 conceptually want to operate, maintain and provide
19 security in your specification that goes out to the
20 bidders.

21 That was not the case in Ottawa. That
22 was, we came in much later. They were already
23 constructing and there was only a few years left
24 before it was coming on stream. We were a little
25 surprised.

1 It's not like without it you can't
2 proceed, but it's unusual, in my experience, not to
3 have those documents. Have them, as well as other
4 documents that I use to provide for other projects
5 as well. And they weren't around either.

6 KATE MC GRANN: Okay. When you use
7 acronyms, I will try to --

8 THOMAS FODOR: Sorry.

9 KATE MC GRANN: It's PSOS, is "project
10 specific output specifications".

11 THOMAS FODOR: That's right. That's
12 what you hear all the time now.

13 KATE MC GRANN: So you would expect
14 these concepts of operations, maintenance safety
15 and security to be written by the City?

16 THOMAS FODOR: Well, someone for, you
17 know, the owner, I guess would want that to be
18 written by someone under their, you know,
19 employment.

20 And they would then have a high level,
21 you know, you talk to the high level senior up
22 people, they don't want nitty-gritty stuff but at
23 least if they read this they would get a good idea
24 as to how we, you know, our expectation is. And of
25 course they can say, what about this?

1 Then it's a quick way for them also to
2 review and say, yeah, you're in line with what we
3 want. That's what I'm doing with Austin right now.

4 We're writing this document up, and
5 it's going to go the senior people to make sure
6 that they're in agreement and we're in agreement
7 with them, and they're in agreement with us, before
8 we start putting out the spec and specifying
9 something they're going, what are you talking about
10 -- that's not what we wanted.

11 KATE MC GRANN: When you joined -- who
12 identified that these concept of operations,
13 maintenance safety and security needed to be
14 written? Does the City know that this was
15 something --

16 THOMAS FODOR: No, no the City didn't
17 know. It was myself, and the other colleagues that
18 I work with, Jon Hulse, who was, I think he's still
19 at Parsons.

20 A good friend of mine I've worked with
21 for many years in Bombardier before I joined
22 Parsons and we immediately -- I guess we're used to
23 how to do these things, and it just wasn't there.

24 So we mentioned it to the City and the
25 boss we had -- I can't remember his name now -- he

1 said by all means let's write this up and make sure
2 we have it.

3 KATE MC GRANN: What inputs did you use
4 to inform yourself in order to be able to write
5 these documents?

6 THOMAS FODOR: Well, usually start with
7 a template. We had other co-operations and
8 co-maintenance documents. It's high level. You
9 know, discussing what type of level of automation
10 you want, GOA2, okay, good so at least we have that
11 checkmark.

12 We looked at the alignment. So we knew
13 where the crossovers were, so we could determine
14 what type of failure management capabilities it
15 had.

16 Where the maintenance storage facility
17 was and how do you get in and out of there. So
18 just looking at that, just from experience, you get
19 a pretty good feel for how this thing should work.

20 Again, as I said, it's high level, so
21 it's, you know, once you've done a few projects you
22 know what to look at.

23 There's usually a template, the table
24 of contents, you just follow that down, and there's
25 a lot of questions. As I said, right now for

1 Ottawa, I just looked at one of the things and
2 already I'm filling in, but I'm putting question
3 marks.

4 Like were TDT here? Not too sure it's
5 GOA2 or whatever? Well, I do, but if you're not
6 sure you put a question mark and that's questioned
7 later and you fill it in.

8 Some of the vehicle information. I
9 don't know what vehicle they want yet, so now
10 they've handed me some information; I'll put that
11 into the concept document. But not too detailed,
12 just a general, so people know it's, you know,
13 100 meters long and, you know, so they have an idea
14 what the platform length is.

15 Same thing with Ottawa. What's the
16 platform length, the train length, two car train,
17 three car train?

18 Is there, you know, are there station
19 attendants, you know, maybe only at underground
20 stations? What's the tunnel ventilation system
21 length? Do they have that in? Is it jet fans or
22 the big fans in the walls type of thing?

23 So there's a lot of questions that, you
24 know, that just evolve, just talking to them. I
25 don't know if we had too many documents to look at,

1 because they were -- if we did we probably looked
2 at some generals, but it was hard to get, like,
3 they didn't have a configuration summary document,
4 which we usually do.

5 Again, it's our way of doing it, but a
6 configuration summary is something like a bible
7 where all the information, like, you know, what is
8 the track signal? Is it 650, 750 or 1500 volts?
9 You try to find it somewhere. But the
10 configuration summary has a chapter on track signal
11 and power supply. Tells you how many substations
12 there are. What's the voltage, you know, for
13 signalling, whether it's GOA1, 2, 3, 4? What type
14 of signalling?

15 It's one of those things, what's the
16 length of this system? Go to the alignment it will
17 tell you it's 45 kilometers long, 12 stations and
18 whatever. It's hard to find it when you're looking
19 for documents and specific questions.

20 Configuration summary usually has that
21 in there. It takes a little time to develop it. A
22 lot of times it's TBD -- we're not sure yet so you
23 put a TBD in.

24 But you get a document that gives you a
25 really good view of the data that you'd like to

1 know, normally want to know, some of us want to
2 know. What's the real diameter for the bogies? I
3 don't know it could be 15 inches, 12 inches. I
4 don't know. But in that you would probably find
5 it.

6 KATE MC GRANN: And just so that I know
7 the name of --

8 THOMAS FODOR: Sorry.

9 KATE MC GRANN: Sorry, say again.

10 THOMAS FODOR: And that type of
11 document wasn't around either. It seemed to be
12 very haphazard. There were a lot of documents but
13 nothing that seemed to tie things together.

14 Like, with us when we walked in, it
15 was, give me a document so I can understand the
16 system. There wasn't too many like that. They
17 were all doing their design work, but nothing that
18 seemed to bring it all together as a system.

19 I think that's the best way to put it.
20 There was system documents and system design
21 documents seemed to be missing. You know, the
22 overall big umbrella, there's people doing their
23 things, but unless you talk to them you really
24 couldn't figure out where everything fit in. At
25 least that was my perspective, you know.

1 There was a PSOS, okay, so that helped
2 us a lot because you can go in there and get it.
3 But even there, I found some things lacking that I
4 would normally expect to find for operations and
5 maintenance, you know.

6 In fact that PSOS became the PSOS for
7 Eglinton. It somehow migrates and it became what
8 went to the Finch west and it's been to other
9 things.

10 But for Eglinton, we spent a year and a
11 half expanding on it. I remember that. That was
12 the PSOS was probably the first of its kind, in
13 Ottawa, and when I went to Parsons in Eglinton I
14 realized shortly thereafter or once I started
15 Ottawa, hey, this is where our PSOS came from. But
16 it was much more expansive.

17 KATE MC GRANN: With respect to the
18 PSOS and the information that you expected to see
19 that was lacking, can you summarize for us what you
20 thought would be there that you found to be
21 missing?

22 THOMAS FODOR: Well, for example,
23 normally I write a system performance in failure
24 management document we call the "SPFMA", "System
25 Performance Failure Management Analysis". And it's

1 a pretty detailed document.

2 It tells you virtually how this thing
3 is going to run and you look at all the different
4 routes and all the different failure management
5 routes; it's a detailed assessment. There was none
6 for, no request for it, in Ottawa.

7 When I went through their PSOS, I said
8 you don't have this. How are you going to know
9 what your failure management routes are?

10 In fact, I wrote up a number of failure
11 -- created a number of failure management routes
12 because they didn't seem to have any at the time,
13 for the signalling guys.

14 I think they came up with -- if they
15 put up if you put this together with that, you
16 create any route. I want to see the routes all
17 made out, so that's number 1, 2, 3, 4. Not if I
18 put this, and I put this, and I put that together,
19 I can create a route.

20 I just found it a little -- not as
21 detailed as I would have liked to have seen some of
22 this information.

23 And that's why I've been -- I'm talking
24 about the operations so I was sort of -- although I
25 was mandated to do maintenance, my background is

1 mainly operations, so I was helping a lot in that
2 aspect as well.

3 One of the guys who worked with me from
4 Parsons he was more the operator, but he was more a
5 programmer so he was looking at their programs and
6 see how things were going with the signalling and
7 things like that. So I helped him out on that,
8 too.

9 KATE MC GRANN: What was that person's
10 name?

11 THOMAS FODOR: I was really supposed to
12 be -- Glen McCurdy. He's still, I think he's still
13 there in Kingston.

14 KATE MC GRANN: I interrupted you. I
15 think you were going to say you helped Mr. McCurdy
16 with operations, but your role was really focused
17 on maintenance; is that right?

18 THOMAS FODOR: Well, that was -- yeah.
19 I was basically told stick with the maintenance,
20 which I did, but, you know, talking with Glen, a
21 lot of times we were together I would help him on
22 things.

23 Then when we were there for the actual
24 opening and the testing, I was in the control
25 centre with a number of other people watching what

1 was going on. And then in the evenings I would go
2 out and watch the maintenance guy, so it was a
3 pretty crazy time. I was putting in 18-20 hour
4 days for a couple of weeks.

5 KATE MC GRANN: So you've talked about
6 -- the document that you mentioned, I'm not sure I
7 caught the name of it. Is it a configuration
8 summary?

9 THOMAS FODOR: Yeah, when I worked for
10 Bombardier for about 35, 37 years, we always wrote
11 a configuration summary.

12 It was -- basically what it is is, it
13 gives you information on every element, critical
14 element. Vehicle, traction power, signalling,
15 tunnel ventilation, stations all that kind of
16 stuff, the main elements that -- communications.

17 You'd have a chapter, you know, four,
18 five pages on alignment. Track work. So you knew
19 how many number six switches you had, how many
20 number eight switches, the life of track.

21 How many centre platforms, how many
22 side platforms. Simple stuff, but every time you
23 look at the drawing you could count out, this is
24 how many we got. Or when you're designing it.

25 So if someone asked, how many stations

1 you got? We got 24. How many tunnel? There's
2 five tunnel, three elevated. So these are the type
3 of things you want to know because each, that will
4 also affect your concept of operations.

5 So tunnel operation is different than
6 elevated. And there's a difference in the at-grade
7 operation, at-grade meaning ground. You're going
8 through intersections very different than a totally
9 exclusive tunnel or elevated guide way.

10 So all of these things, when you put it
11 together, it gives you a very quick idea, okay,
12 I've got tunnel, now I have fire, tunnel
13 ventilation issues. If it's all at-grade I have no
14 issues with fire and smoke; there's nothing to
15 contain it.

16 So that would immediately affect your
17 concept of operations. And there's another
18 terminology that I use a lot is SOPs, which are
19 standard operating procedures.

20 Again, from the concept of operations,
21 you know that for V-graded operations I have to
22 worry about tunnel operation, or elevated. How do
23 you get people off an elevated guide way? How do
24 you get snow off an elevated guideway as opposed to
25 at-grade. You have to worry about snow in the

1 tunnel? No, you don't have to worry about snow in
2 a tunnel.

3 So everything, it also, from a system
4 umbrella point of view, once you know all these
5 little itty bitty pieces of information, you can
6 quickly surmise what you need. And this is what
7 the concept of operations reflects, and the
8 configuration summary helps you with all the little
9 details you need.

10 How many vehicles? Even, I don't know
11 how many times you walk around and go, how many
12 trains we got? You -- wait a second -- not how
13 many trains, how many vehicles? How many spares?

14 So these are all in that config
15 summary. And then it's a quick thing, you know, I
16 can't remember, 5 percent or 10 percent? Oh, 10
17 percent, you know. And 76 vehicles, not 80. You
18 know, 80 is with spares. So you know these things
19 and it helps you devise it.

20 Then it comes to staffing; then you've
21 got a whole new thing. How many operators?
22 Drivers, if you have drivers? How many people in
23 the control centre? How many people in the
24 maintenance facility? The shift work?

25 So that's all the stuff I used to do

1 was from that concept of operations and concept of
2 maintenance, very quick, when a concept of
3 maintenance; are you going to work seven days a
4 week, 24 hours a day? Or five days a week, eight
5 hours a day? Or five days a week, 16 hours a day,
6 or weekends?

7 There's so many variations for each one
8 that tells you for that one person do I need,
9 three, four, five, maybe six people. That tells
10 you have what your total count is for staffing.
11 And that of course goes in to your money situation.
12 How much is this going to cost to run? Lifecycle
13 costs.

14 KATE MC GRANN: With respect to the
15 configuration summary, in Ottawa, you've got the
16 City is the owner; you've got RTG as the project
17 partner with its subcontractors. Who would you
18 expect to be the author of the configuration
19 summary, one or the other? Both of them working
20 together?

21 THOMAS FODOR: Not usually the guys who
22 are constructing. RTG is the constructor. They're
23 building and passing it off over to RTM.

24 RTM, anything like that would be the
25 City of Ottawa; the owners should want to have

1 that. If nobody told them and they weren't sure or
2 didn't know, then obviously they wouldn't even have
3 an idea.

4 So it was just from our perspective,
5 when we went in we realized there's no config
6 summary, no concept document. The PSOS didn't call
7 for SPFMA. These things to me was, you should
8 have.

9 It doesn't mean it isn't going to work,
10 but it makes it easier to understand how things are
11 going to work and prepare everybody for it.

12 I'm not saying that they didn't have a
13 training plan, and a test commissioning plan; they
14 did. But the front end seemed to be a lot of
15 things missing. I think they just jumped in and
16 started building. We'll get her out and figure out
17 how to operate.

18 I'm not saying with the concept of
19 operations documents and the other one that things
20 would have been better, but from our perspective it
21 just seemed like it wasn't well-thought-out at the
22 beginning, at the front.

23 KATE MC GRANN: And did you see any
24 implications flowing from that, the fact that those
25 sort of foundational documents were not in place?

1 THOMAS FODOR: You know, they had their
2 signalling guy, signalling company. They knew what
3 type of signalling they wanted. It was piecemeal,
4 you know, they all seemed to have an idea.

5 My problem was that there didn't seem
6 to be an overall system approach. People were, you
7 know, doing their thing, and, yeah, it will come
8 together, but I think that sometimes you get into
9 problems trying to integrate and interface when you
10 have these different elements out there doing their
11 thing and not too many people see the big broad
12 picture, you know, the overall picture.

13 KATE MC GRANN: Okay. So you've talked
14 about the concept of operations, concept of
15 maintenance, concept of safety and security, and
16 then the configuration summary is documents that
17 you would have expected to see when you arrived
18 that weren't yet in place.

19 Are there any other documents or
20 processes, structures that you would have expected
21 to see when you arrived that weren't in place?

22 THOMAS FODOR: Not from what I was
23 asked to look at. I wasn't into the construction
24 schedule, so I, you know, I watched them build and,
25 you know, I could see what they were doing.

1 I was moreover, you know, my role was
2 to just watch as they were developing the
3 maintenance organization and making sure that they
4 had like an asset management plan. And some type
5 of computer system that would monitor -- almost
6 like an inventory control system. So they were
7 doing that.

8 This is the type of stuff where I went
9 through the listing and said, okay, you need this.
10 Do you have this? Yeah, we're working on it. You
11 need to do this. Yeah, you're working on that.

12 So I was making like a checklist and
13 then they would, I would go in and see how are you
14 doing with this? A lot of them were, like, it's
15 going to take time to get this done. You need a
16 maintenance plan -- when are you going to have it
17 ready? A few months from now. Fine.

18 Then I'd review it and we'd comment on
19 it. And there were a lot of documents that, other
20 than that, that I looked at. Operations and
21 maintenance related documents.

22 I've got a whole list I can provide you
23 where I actually provided comments, as well as
24 others. You know, for them to -- from a review
25 point of view so they could put the final

1 version out.

2 So, you know, spares list. They were
3 providing me with spares lists. Of course there
4 were things that they were trying to get from RTG
5 because RTG was supposed to hand over, but they
6 were too busy building.

7 So, you know, there was difficulties,
8 but ultimately from what I saw, they were getting
9 their spares list together. I could tell how many,
10 the quantities, and these were massive lists like
11 you know, 4,000, 5,000 lines of things. And so
12 spares list. Maintenance away equipment. We went
13 through a whole list. Have you got this? Yes.
14 Have you got that?

15 So I wanted to make sure, which my role
16 was, to make sure that when this thing opened up
17 there was an maintenance organization actually
18 ready, trained, they had all the equipment to do
19 the job.

20 And from what I saw, and -- there were
21 -- the difficulty was that they were subcontracting
22 a lot of things to, I think it was Alstom, who
23 seemed to take a lot of the track work or maybe it
24 was Siemens, I can't remember.

25 A couple of subcontractors, the main

1 subcontractor was Alstom, so they're the Alstom
2 vehicle. So why wouldn't you let the builder be
3 the maintainer?

4 But they were also doing other
5 maintenance roles as well. What I found out was
6 that RTM was actually a relatively small group of
7 people who managed a lot of subcontracts.

8 And there's nothing wrong with that,
9 because, you know, like, for example, elevators and
10 escalators, you can't do that on your own. You
11 have to go through an elevator -- a unionized type
12 of thing. And usually the only ones who can do the
13 maintenance, the detailed maintenance, are the
14 elevator suppliers.

15 So I knew they had a contract with
16 whoever they had for that, and I dealt with a guy
17 who's doing the procurement and everything, so --
18 but again, I couldn't see a lot because a lot of it
19 is, you know, not for my eyes.

20 That was just things they could show me
21 here's the contract, but the details I wouldn't
22 know how much it cost for the year and things like
23 that. That's, you know, within the company itself
24 and I didn't need to know that.

25 My role was to make sure they had that

1 in place, you know. So it was just -- the other
2 thing was the inventory control system, that was a
3 big one. We call it "MMIS", "Maintenance
4 Management Information System".

5 And that monitors work orders, the
6 inventory, spare parts list, when do you have to
7 procure them. You know, when you're starting to
8 deplete the spares, is there reordering?

9 It is a massive computerized system
10 that sort of takes care of everything. It does the
11 capital assets, asset management for like the
12 30-year. It will project when you need to replace
13 certain things, you know, at a ten-year lifecycle
14 or whatever. Very detailed.

15 And they had a contractor that was
16 developing the system for them. So I mean
17 everything seemed like it was okay from the
18 maintenance point of view.

19 They had the maintenance staff from
20 Alstom for the vehicles, and again, you know, when
21 you set up a maintenance organization, the
22 assumption is that things are going to be working
23 as they were supposed -- as they were designed, you
24 know.

25 You don't hire, like, if you've got 50

1 maintenance techs that you need to maintain the
2 vehicles, your assumption is that these vehicles
3 are as reliable as they say they are.

4 The problem that occurred was that the
5 vehicles weren't as reliable, so maintaining them
6 was becoming very difficult early on, because they
7 broke down too often.

8 And, of course, when you only have 50
9 techs and you may need a hundred at that point to
10 keep going, you start getting into problems. It
11 gets into a vicious cycle. You can't keep up; it
12 gets even worse. Then you're starting to hire but
13 they're not up to speed, so things like that can
14 become out of control.

15 And so I think that what I saw was that
16 a number of items were unreliable and then, you
17 know, you have problems because you've got a
18 maintenance staff that's set up for what you assume
19 is going to be for the reliability of the system
20 that you expect, and I think that initially that
21 wasn't the case.

22 Maybe they should have hired a few more
23 people. I'm sure they did. Because I know I
24 talked to them and they said, yeah, we've got a few
25 more people because we know things when you first

1 start off there's always the unexpected things.

2 I think there was more than they ever
3 expected, things that went wrong. And I think
4 that's where things started devolving, where, you
5 know, you try to fix something and you can't figure
6 out why, or you don't have the time, then you send
7 out another vehicle and that breaks down and now
8 you have two vehicles that are having problems.

9 Yeah, I know they questioned me earlier
10 on are you confident that these, the RTM is ready
11 for it? Yeah, based on what I would expect the
12 vehicles and the system would operate like, I
13 thought they were in good shape.

14 But I didn't realize how unreliable
15 some of the things were that we saw. Not just
16 vehicles, switches, things like that. They were
17 always out of sync and switch goes -- you can't get
18 through. That just stops everything.

19 You have a great vehicle sitting there
20 and you can't get through because the status is
21 lost and you can't drive through.

22 KATE MC GRANN: Let me ask you some
23 follow up questions on what you've just said.

24 So a couple of things. You mentioned
25 that RTM was subcontracting a lot of the

1 maintenance to Alstom and you mentioned they would
2 be performing maintenance on the trains. And then
3 you said something like, they were also doing other
4 maintenance roles.

5 Did you mean Alstom was also taking on
6 maintenance roles in addition to the trains?

7 THOMAS FODOR: Alstom, yeah. I think
8 what happened is Alstom more or less took most of
9 the systems and then they would subcontract to,
10 like, Siemens, who did the power.

11 So it seemed to be like this levels of
12 subcontracting, again, nothing wrong with it. I
13 think it's just that RTM ultimately seemed to be
14 just a small group of people, there were a few
15 people who were doing, got to change a light here,
16 why don't we subcontract that?

17 Or plumbing fixtures broken, the guys
18 could do that. But there seemed to be a small
19 group of them. And then they had all these
20 subcontractors under them.

21 So you had the small RTM group, and
22 then below it, it was Alstom, and some other
23 subcontracts like elevator. And I remember Alstom
24 had track work, comms, you know, signalling -- no,
25 sorry, not signalling. What was the company,

1 signalling? I think it was Thales. Again, here's
2 the suppliers, why would you not give it to them?

3 It wasn't just Alstom. Alstom had a
4 big one who was vehicle. I'm almost positive it
5 also had track work but that shifted down to
6 Siemens and some other track work companies. I
7 never -- I can't remember exactly how it was set
8 up.

9 So RTM itself was a relatively small
10 group of people who were sort of running the show
11 and then it was all, you know, flowed down to
12 others.

13 KATE MC GRANN: In terms of how the
14 information that you were reviewing and commenting
15 on got to you, did it come to you through RTM or
16 did it come to you directly from subcontractors?
17 How did you receive information?

18 THOMAS FODOR: That was the difficulty,
19 I seemed to have to always go through RTM. I did
20 talk to Alstom a few times but they're really,
21 really busy. There was a lot of turnover as well.
22 They're under pressure to get the vehicles built
23 and tested, so the last thing they want to do is
24 see me.

25 And most of the stuff I got from -- not

1 that they didn't want to. But you know I did go
2 over and I did get some information from them, but
3 basically, my role was to monitor RTM and they were
4 the ones who came up with the overall maintenance
5 plan.

6 So it was their responsibility and now
7 from there they could say, well, we're
8 subcontracting this, we're subcontracting that.
9 But their maintenance plan ultimately had a lot of
10 other maintenance plans thrown in from the elevator
11 guys, from the vehicle guys, so their little
12 maintenance plan ended up really thick because it
13 was other subcontractors adding their stuff in.
14 It's one way to consolidate your maintenance plan.

15 So a lot of times they just say, oh,
16 elevator maintenance, refer to Appendix D. Okay,
17 elevator guy, there it is. For vehicle maintenance
18 there's that thick vehicle maintenance from Alstom.
19 From signalling, another maintenance plan from
20 Thales. And that's typical, you know.

21 Nowadays it is. 20, 30 years ago it
22 wasn't like that. They used to have a large
23 maintenance organization that you took most of the
24 roles on. Now it seems to be more like just farm
25 it out to these guys, let them do it.

1 KATE MC GRANN: And the work that
2 you're doing, reviewing RTM's maintenance plan and
3 things like that, was your role also to take a look
4 at the way in which it was breaking out its
5 subcontracting responsibilities and whether that
6 looked feasible, workable?

7 THOMAS FODOR: Oh yeah, yeah. I had no
8 problems. It was just difficult trying to find out
9 how many subcontractors there were, even for IT
10 there was a subcontractor; then for comms, radios
11 there was a subcontract.

12 You know, you can have a lot of
13 subcontracts or you can have a few. In general, I
14 didn't think there was anything wrong with what I
15 saw. The subcontractors were legitimate
16 subcontractors; they weren't mom and pop shop type
17 of things. They seemed to have everything covered.

18 And as far as I'm concerned, if the
19 system was sort of reliable, as it should have
20 been, I don't think they would have had a problem
21 maintaining it, you know.

22 KATE MC GRANN: You mentioned the MMIS,
23 I think that's the Maintenance Management
24 Information System?

25 THOMAS FODOR: Yeah.

1 KATE MC GRANN: Is that a live system?
2 And by that what I mean is, is that a system that
3 you're expecting various players in the system to
4 input information into on a regular basis when the
5 system is in revenue service?

6 THOMAS FODOR: There are two MMISs that
7 work together. Alstom, because they had such a
8 large maintenance organization and maintenance
9 elements in there, vehicle and all the, you know,
10 subparts to it. And then there was RTM's.

11 And again, you know, I left when they
12 started operating, so I never fully saw how they
13 integrated, but I did see and I did understand that
14 Alstom's was a different MMIS. RTM's was
15 different, because Alstom had their own from
16 France.

17 So he couldn't tell him you can use
18 this one, when we've been using this for 30 years,
19 but there was an interface element there so they
20 can pass information back and forth. Made it a
21 little more complicated as opposed to having one,
22 you know, architecture and one software platform.

23 But you couldn't ask Alstom to, say,
24 dump everything you've got. They had information,
25 you know, and the way they were structured they

1 were familiar with it.

2 What RTM did was, they had a contractor
3 come in and make sure that this worked together
4 with that. And then they sort of hopefully
5 seamlessly passed information back and forth. And
6 only information that was allowed to go through,
7 not, you know, stuff like employee's wages and
8 stuff like that.

9 So there were certain things you could
10 extract from there. But anything related to work
11 orders, the type of failures, you know, history of
12 the vehicle, that would have been passed over to
13 RTM so they would be able to provide the reports as
14 to how the maintenance was working from month to
15 month.

16 KATE MC GRANN: Okay. You talked about
17 how a maintenance program, please tell me if I'm
18 paraphrasing or summarizing this inaccurately, but
19 you talked about how a maintenance program you're
20 designing it with a view to service a reliable
21 system?

22 THOMAS FODOR: Yes, yeah. Because the
23 PSOS normally we'll say, we want a reliability of
24 99 percent, and RAMS targets.

25 RAMS is "reliability, availability,

1 maintainability and safety", RAMS. So you'll hear
2 that a lot.

3 And normally in a system you will have
4 targets. I need a RAMS target of 99.5 for the
5 vehicle. 99.99 for the signalling system. 98.5
6 for the power distribution system.

7 And then to do that, they know that if
8 this vehicle -- and overall, that would give you a
9 system availability of 99.3 percent, you know. So
10 you can tell from those numbers, how many hours you
11 can be down in a year, systemwide, and how reliable
12 your vehicle is.

13 And when you're designing the vehicle
14 you would say, I know that, you know, the doors
15 have a reliability of 95 percent, or 98 percent.
16 Then you break it all down, all the elements, and
17 when you put all those numbers together, it's got
18 to meet that 99.5. It's a little bit -- it's a lot
19 of numbers that come together.

20 One thing I don't recall ever seeing in
21 the PSOS was reliability numbers. I don't know if
22 there was an availability number, it may be, but I
23 don't recall seeing reliability numbers.

24 And I noticed that because I questioned
25 that at Eglinton as well. Where are the

1 reliability numbers? And they basically said,
2 well, we approached it a different way.

3 There's a payment mechanism, which is
4 another element that's -- and I don't remember if
5 Ottawa had a payment mechanism. Maybe, I'm sure it
6 did.

7 Where you're not reliable on
8 reliability and availability numbers, you're
9 looking at this payment mechanism that has
10 penalties if you don't meet certain things. It is
11 a roundabout way of looking at it to say, if I fail
12 more than this many times I'm going to get
13 penalized a thousand dollars a day.

14 Of course, the higher the number, the
15 more you're worried about it. If it was \$10 a day
16 who cares? So that sort of goes back indirectly so
17 you can then look at it and say, well \$10 a day, do
18 I really care if this thing is reliable? No. Or,
19 as reliable as, you know, I think it should be. Or
20 can I make it less reliable and therefore I can
21 make it cheaper.

22 The more reliable, the more costly.
23 That's what it all comes down to.

24 So the payment mechanism, it is a new
25 way of looking at ensuring that you have a reliable

1 system. And it's something that I only really got
2 involved in in Eglinton and then with the Ottawa,
3 now with a few other ones. It now seems to be the
4 new vogue thing. This payment mechanism. To me
5 I'd much rather see the reliability numbers.

6 When I worked in South Africa on
7 Gautrain we actually could actually forecast our
8 penalties just from if we didn't meet the system
9 availability number. I can tell you if we got 98,
10 this will cost us this much. If we got 97.5 or got
11 down to '93 you might as well close shop because
12 you're losing money left, right and centre. There
13 is a much simpler way of doing it than this payment
14 mechanism. They get awfully complicated. I never
15 liked it. It's an indirect way of determining what
16 your reliability is.

17 Again, I don't know whether -- I tend
18 to like the old way, the RAMS, not the payment
19 mechanisms.

20 KATE MC GRANN: So the RAMS, where
21 would you first expect to see it? Would you see
22 the RAMS in the PSOS --

23 THOMAS FODOR: Yeah.

24 KATE MC GRANN: -- then expect to see
25 them play through?

1 And how do they operate to ensure or
2 incentivize reliability service?

3 THOMAS FODOR: Well the RAMS numbers,
4 like a system building number, 98 percent, that
5 basically says 2 percent of the time of the whole
6 year you can be down, but you won't get penalized.
7 But you better be up for 98 percent of the time.

8 So you can calculate how many hours
9 that is, you know just by doing the simple math.
10 And then say, on a weekly basis, on average that
11 means we've only got a half hour that I can be
12 down.

13 So that drive, the reliability of
14 everything, like if your switch goes down for an
15 hour you just screwed yourself royally if that
16 happens every day. If a vehicle fails, if you can
17 get it out of there, put in another vehicle, that
18 doesn't hurt. But if you stopped everything for
19 20 minutes you just lost 20 out of your 30 minutes.

20 And this is where the concept of
21 operations comes in. Like the train fails, what do
22 I do? Do I go to the end of the line? Or do I
23 have a pocket track where I can get out and just
24 leave it there?

25 Or do I carry on for another round trip

1 or so because the failure rate is not a Level 1,
2 it's Level 3, and our prediction is you can still
3 stay out for two, three hours before you're getting
4 in a risk.

5 So the RAMS, RAMS will dictate the cost
6 of the system. I mean, if I said I want
7 99.999 percent availability, system availability,
8 you can be sure the cost of that system will be sky
9 high because you're basically saying I'm going to
10 make everything redundant. If one thing fails I
11 can still keep operating.

12 That's what I said about the UTO, and
13 ATO, UTO, everything is redundant you can't afford
14 to have something break down and the train stops
15 and you're in the middle of nowhere with no driver
16 on board.

17 So it all sort of ties together. But
18 yeah, the RAMS normally is not -- numbers are
19 normally in the PSOS. Actually come to think of
20 it, they did have some numbers, but not all of
21 them, because I -- was that Eglinton? No that was
22 Eglinton.

23 Because I have a only had a couple of
24 numbers, and I said why can't you figure out the
25 other numbers, because I can. And they didn't have

1 the other numbers. I said this is simple math. I
2 can tell you what the other availability numbers
3 should be then. I don't remember seeing it in
4 Ottawa.

5 Again, I can't remember.

6 KATE MC GRANN: Okay.

7 THOMAS FODOR: But it was something to
8 check, if there's no RAMS numbers, I would find
9 that -- that's a driver for design, the RAMS
10 numbers for signalling, for vehicle, for switches,
11 for everything, comms, you know the big killers on
12 vehicles, doors. Because if the door doesn't open
13 or close, you're not moving.

14 Obviously the signalling system and
15 there's no platform screen doors in Ottawa, yeah,
16 there are, so they can be a reliability factor,
17 too. That's just on the other side of the train
18 doors the platform screen doors are a lot of times
19 unreliability, or other factors like that that
20 could drive things.

21 KATE MC GRANN: Okay. So coming back
22 to the notion that the maintenance program is
23 designed to maintain a reliable system; is that
24 accurate?

25 THOMAS FODOR: Yes.

1 KATE MC GRANN: And was it the case
2 from what you saw that the maintenance program that
3 you were working on, was designed to work on a
4 reliable system?

5 THOMAS FODOR: Well, when you're
6 supposed to have, I think it was 16 or 15 trains
7 out there, and you can only get seven out through
8 the test and commissioning phase, we've got a
9 problem.

10 They could never get the number of
11 trains out that they needed. So, you know, that
12 was automatically -- either it was poorly built and
13 designed. I think this was a vehicle that had
14 already been designed and built many times, but
15 you're building it in a new environment. You know,
16 it's not in France, it's in Canada. I don't know
17 if they had the right people assembling them.

18 They were building it in the
19 maintenance and storage facility, which I
20 immediately said, are you guys crazy? Because I
21 said, what happens if you have an endemic failure
22 like you find cracks in every bogie? You've got to
23 change all the bogies, because you don't want any
24 serious accidents.

25 I worked on a system where that

1 happened and they had to take every train and
2 within a week or two, I think it took almost a
3 month but they had to replace all the bogies, took
4 them time because they didn't have enough bogies.
5 Secondly, you couldn't run the trains.

6 They weren't allowed to run out there
7 with these cracked bogies and it took a lot of time
8 and space to get all these trains in and change
9 them.

10 Well, if you're building all the
11 vehicles in the maintenance and storage facility,
12 where are you going to do one of these -- oh my
13 God, all hell has broken loose and now I've got
14 some major work to do and you've got no place to do
15 it.

16 I think what happened is, ultimately
17 when I first went there, I was stunned. Like,
18 you've got to be kidding. You don't have a
19 maintenance facility. Well, these are proven
20 vehicles. Well, now it's proven to be not true.

21 But they did, at the time, start
22 looking at building another facility in the back,
23 in the ONSF where they were, which gave me a little
24 -- okay I have a little breathing space. If
25 something happens you have a little more space.

1 Originally I don't recall them having
2 that other building. I was stunned when I heard
3 they were assembling in the maintenance and storage
4 and there's only one maintenance bay. So to me it
5 was like, this is crazy.

6 I think the assumption was that, you
7 assemble it, vehicles are proven vehicles,
8 therefore shouldn't be as many problems. Even if
9 we only need one maintenance track, you know, for
10 maintenance, all the vehicles aren't going to be
11 anyway. So as you trickle into the system, then
12 we'll have more space in there. And By the time
13 the last vehicle goes out, you have all the
14 maintenance bays. Theoretically it sounds right,
15 but that's not the case usually.

16 I think outside of -- I think that
17 wasn't the big problem. The problem was that when
18 I looked at the numbers, you've got a staff,
19 there's a certain number of vehicles.

20 You can sort of do some numbers and
21 say, that looks about right. But it's -- and I
22 remember we talked, I talked to the RTM manager and
23 he said, we do have extra people, because we know
24 that initially you're going to have, you know, more
25 problems than you expect.

1 It's like a bathtub curve. At the
2 beginning you have more problems, then it comes
3 down, then you've got a long period where you've
4 got fairly stable maintenance, activities. And
5 then it starts going up again when things start
6 really breaking down. So they did have more people
7 originally.

8 But I think it was still
9 overwhelmingly, there was just so many problems
10 with the vehicle that they could never get even
11 three quarters of the vehicles out. I mean if they
12 needed 15, I don't -- I think they finally managed
13 to get 12 or 13 out, you know, weeks later. But
14 originally, I don't think I saw more than six or
15 seven, maybe eight vehicles. You know, to me
16 that's yikes, that's scary.

17 KATE MC GRANN: At what point in time
18 is this happening that they're supposed to be
19 getting more vehicles out but you're seeing six,
20 seven go out?

21 THOMAS FODOR: Testing and
22 commissioning.

23 KATE MC GRANN: And can you describe to
24 me generally in time when that was taking place?

25 THOMAS FODOR: Testing and

1 commissioning, there's two phases. There's the one
2 where you test a section out to make sure its
3 signalling works and everything works.

4 And then when construction says we're
5 finished this area, now you carry on. That was a
6 bit of a problem because construction was behind,
7 and you've got to remember, they had a horrible
8 winter and the winters were bad at that time, too.

9 So I mean, you've got to feel sorry for
10 these guys because every weekend there was some
11 blizzard and, you know, it would stop construction,
12 and then that would stop T and C, T and C meaning
13 testing and commissioning. There were several
14 months there where they were just lagging behind
15 because the weather was just absolutely horrendous.

16 But the problem was during the testing
17 and commissioning was, there was a lot of arguments
18 between construction, RTG and the operators, and
19 RTM, trying to get track to test and make sure that
20 the signalling system worked and everything went
21 smoothly.

22 Because construction was lagging, and
23 that holds everything up. But, you know, you've
24 got six months, this date stays, you know, where it
25 is. And the construction is going on, and there's

1 problems and they've got to go back and your
2 testing and commissioning is getting squeezed down
3 to the point where you're just doing, quick, yeah,
4 it looks okay, we're going to do this.

5 You really need a good six months to do
6 it. You start losing time and it gets critical.
7 Then at the end you've got the trial run plan. The
8 trial run where you're actually running the system
9 like, starting at 6 o'clock, you've got so many
10 trains. You're running the schedule.

11 Well, I got down to, I think two or
12 three weeks. It should be two months easy. So a
13 lot of these problems of construction and getting
14 things done and weather not cooperating and holding
15 things back, just squeezed the schedule.

16 I know there was one thing where they
17 -- one of the first things when they had the
18 revenue service and someone held the door open,
19 because the walls were a little bit short, and
20 everything stopped. The vehicle just stopped.

21 That proved to me that there wasn't
22 enough time to really test everything out.
23 Normally, someone like me would go out there and do
24 that deliberately. Let me just see what happens if
25 I hold this door. You know, they never did that.

1 And there was a big problem they didn't
2 understand why it stopped everything. And it's
3 just a good example of it wasn't really tested the
4 way it should have because they didn't understand
5 what the response would be if you held that door,
6 and, you know, things like that.

7 So certainly the testing and
8 commissioning was too short. Trial run plan, I
9 don't think they ever -- well, in my view, I don't
10 think there was a day in two weeks that they
11 actually passed.

12 What they did was, they said, well, it
13 worked for, you know, five hours, not the 12, but
14 that five hours it worked well with, you know,
15 three-quarters of the trains that we're supposed to
16 have. But those, you know, 10, 12 trains worked
17 well for five hours, so success.

18 KATE MC GRANN: Let me stop you for a
19 second, because I have written down a number of
20 questions to ask you about what you've said. And
21 then I will come back to the trial running because
22 I do have questions about that as well.

23 THOMAS FODOR: Okay.

24 KATE MC GRANN: But we had started that
25 part of our conversation with me asking you about

1 whether you're designing a maintenance plan to
2 maintain a reliable system.

3 And what I would like to ask you is, is
4 that the starting point and is that what you expect
5 RTM to be putting together? And that's what you
6 were evaluating for, will this maintenance plan
7 achieve effective maintenance of a reliable system,
8 right?

9 THOMAS FODOR: Yeah, you design for the
10 system. If they say it's going to be -- if someone
11 told me it's going to be an unreliable system, then
12 I would have said the number of staff you better
13 double.

14 KATE MC GRANN: So that's actually --
15 go ahead.

16 THOMAS FODOR: Well, that's the
17 problem. I mean if someone told me, look, this is
18 a totally brand new vehicle, you know, it's not
19 even a proven vehicle. The first thing I would
20 have said was, oh, God. Don't design for what you
21 typically would see in other systems. You've got a
22 vehicle that's not proven. Therefore, you better
23 pad your maintenance staff, okay?

24 We were told, the Citadis vehicle,
25 they've built hundreds of them, which they have.

1 One Citadis vehicle is not exactly the same another
2 other one in another city. They all have their
3 little quirks.

4 Again, if you're building it in a plant
5 and it's that same crew that's building 200, 300
6 vehicles, that's different than saying, oh, we're
7 going to built 70 here and just get a crew together
8 and put it together. It's not just the same then.

9 Perhaps I should have realized at the
10 time that this was not going, and at the time the
11 testing was going on. Everything seemed to pass.
12 Yeah, because they didn't test it vigorously until
13 the passengers got on board and started holding
14 doors. Why would you not test to see that to see
15 how does this react?

16 As I said, it's a given that you always
17 allow for more people, maintenance staff at the
18 beginning, because you know you're going to have
19 more problems. When you can't even get half your
20 vehicles out, day by day, you know, from one day to
21 another that's a problem now. Now you realize, oh,
22 we've got problems. And it wasn't just the
23 vehicles.

24 The switches, the switch contacts, they
25 had problems right, left and centre with them. I

1 never did know what the problem was. But I suspect
2 and I know that a couple of us were thinking that
3 the ballast that they were using, ballast being the
4 rocks that the tracks are on, I don't know when I
5 went out there I looked at it and I thought, this
6 is not the typical ballast I would see. It was
7 already crumbling. It was --

8 KATE MC GRANN: Did you raise that with
9 anybody when you saw it?

10 THOMAS FODOR: We talked about it. It
11 was already there. I just said, oh my God, I don't
12 like this. Again, I'm not a track expert. But
13 I've seen enough where I, you know, we went out and
14 the maintenance guys saw what had already been put
15 in.

16 Again, it's not the maintenance guys;
17 they're only inheriting what's there. I thought
18 the ballast was -- the cheapest stuff you can get.
19 Not the good quality ballast.

20 What happens with that is that this
21 thing will -- instead of, you know, the grey
22 ballast you see, it's almost like limestone, you
23 know. It's gravel but big chunks; that's what they
24 use for ballast.

25 This was like granite, like broken up

1 granite, but granite is quartz and feldspar and
2 they do crumble. If it's a sheer grade, a wall,
3 it's hard. But if you break it up it's not a solid
4 mass like the limestone is.

5 It's more like, under pressure you can
6 crumble, the quartz will break off, feldspar. I'm
7 looking at this track and all this pink stuff and
8 I'm going, I don't recall seeing ballast with the
9 granite or the granite type of ballast.

10 But I think what was happening was that
11 this thing -- and we noticed that because we walked
12 the track. And even the maintenance manager said,
13 this thing has already got -- it's very dirty,
14 which means there's a lot of crumbling going on
15 inside. Which means now you've got to clean it.
16 If it keeps crumbling it's also settling. And I'm
17 wondering -- again, this is just my own thing.

18 I was thinking because these switches
19 are very sensitive on the switches, so if one side
20 is crumbling a little bit more than the other, they
21 may be on super elevation. If those two points
22 don't, if one switch down it doesn't contact
23 anymore and there's no more status.

24 And again, I'm not a track expert, but
25 I just looking at what I saw, I did not like the

1 ballast. I don't know why they want ballast. To
2 me an LRV system in the middle of the City I would
3 go with concrete pad. That's what I always work
4 with in any system.

5 And usually in the yard you'd use
6 ballast, but on a main line it was always a
7 concrete pad. They didn't have that here; it was
8 ballast. And I gather it's cheaper, but again, you
9 get what you pay for.

10 KATE MC GRANN: Did you work any of
11 your observations about the ballast for starters,
12 into -- did you take that into account in your
13 review of the maintenance plan?

14 I have seen this ballast, I have
15 concerns that it's crumbling, I have concern for
16 disconnect that could affect the switches and
17 therefore I'm going to look for some accounting for
18 that in the maintenance plan; does that come into
19 play at all in the work that you're doing?

20 THOMAS FODOR: No, I'm not a track
21 expert. They did have ballast regulators and
22 things like that to deal with dirty ballast. And
23 they had subcontracts because some of this
24 equipment is massive.

25 All I kept thinking was, you're going

1 to probably be cleaning this a lot earlier than you
2 expected. But that doesn't mean that you wouldn't
3 start the day and say, hey, maybe for the first
4 two, three years everything is going to run well.

5 But this was already during the testing
6 and commissioning things weren't working. So it
7 may have been also improper installation of
8 switches. Again, I'm just saying I didn't like
9 what I saw out there with the ballast, but they did
10 have equipment for cleaning ballast and replacing
11 and I thought well if you have to replace it, don't
12 use this crap, get some good stuff.

13 But that's part of the maintenance
14 plan. You have that type of equipment. If you
15 have ballast you need a ballast regulator, you need
16 a ballast tampering. These are massive pieces of
17 equipment and what they already had was contracts
18 with outside, like DNR and other companies.

19 Okay, the ballast may not be what I
20 would like to see. At least you've got equipment
21 and maybe I would have expected you not to have to
22 do any for eight years and you may have to do it in
23 five. That doesn't mean it's not a good system.

24 KATE MC GRANN: Because you've
25 accounted for how to maintain it and everything is

1 there ready to go if a problem comes up?

2 THOMAS FODOR: Exactly, yeah. You
3 know, whether I mean -- ultimately, it will cost
4 like over 30-year period, if you only have to do it
5 three or four times instead of six times replacing
6 ballast, obviously that's an added cost.

7 So, again, if the company decided to
8 cheaper out in the beginning, you're going to pay
9 more for it at the end. That's part of the deal.
10 You put it in cheap. That's going to cost you more
11 to maintain, may cost you more at the beginning and
12 cheaper at the end.

13 So it's just a trade off, really, you
14 know. And I don't think that was any, that was the
15 issue for the opening type of problems they had.
16 It was really more I think, vehicle related and
17 some equipment, like switches, they just seemed to
18 have problems and I wish it was that, because they
19 could have easily tamped in that area.

20 But I think it was more than just that.
21 I think it was probably other, maybe not proper
22 installation. You're an installer right,
23 haphazard. It will work sometimes; it won't work.
24 Again, I wasn't involved in that at all.

25 KATE MC GRANN: In the work that you're

1 doing reviewing the maintenance plans, we've -- I
2 keep coming back to this, because I have a couple
3 of more questions to ask you about it.

4 THOMAS FODOR: Yeah.

5 KATE MC GRANN: The idea that the
6 maintenance plan is prepared to maintain a reliable
7 system.

8 It sounds to me like throughout your
9 time on the project, you begin receiving
10 information that suggests that the system may not
11 be -- it's not reliable at the time; fair enough?

12 THOMAS FODOR: No. No. At the time,
13 you know, that was just one observation when I went
14 out. I just didn't like what I saw and I thought,
15 uhm-hmm, that's, you know, that's one element that,
16 you know, I remember saying when we were out there.

17 I said, well, you guys may have to
18 clean this earlier than you'd expect. That's not a
19 problem, they go, yeah, probably, but that's it.

20 Operationally, there was a problem, in
21 that, you know, the train would break down. Then
22 they wouldn't know what was wrong with it. Then
23 the train would stop, someone would open the door
24 and it wouldn't go anywhere.

25 And, as I said, then there was supposed

1 to be 15 trains up there, they could only get ten
2 out.

3 I'm not a vehicle expert, so I don't
4 know how -- until you see the testing and
5 commissioning going, but again, that got shortened
6 so much that -- and, you know, yeah, it passed this
7 test, okay.

8 Well, I'm not one of the testing and
9 commissioning guys but you heard it's later towards
10 the trial run that they realize they can't get the
11 trains out. What's the problem? We've got this
12 problem, we've got that problem.

13 Then they lost three or four
14 maintenance techs, so they had to hire more people.
15 So just everything seemed to just come down on
16 them, and then it was just, you know, sometimes
17 everything comes together and bad timing and
18 everything comes together.

19 But from my perspective, now I did
20 mention, because we did watch some of the guideway
21 guys, maintenance guys out there, and there were a
22 couple of times where I said I think you guys are
23 going to need more people. And just to be on the
24 safe side, you know.

25 But even there, the problem at the time

1 was they couldn't get out there because there was
2 still construction. So you know when you start to
3 build something and you're supposed to maintain it
4 but it's not ready yet, you've got these guys
5 sitting around and they can't get out there. And
6 when they do they don't have enough time or the
7 construction group comes back and they've been
8 delayed or delayed getting out there.

9 I found construction really hindered a
10 lot of things. The weather certainly didn't help,
11 that was just a brutal winter for many months there
12 that held a lot of things back.

13 KATE MC GRANN: Which year was the
14 brutal winter?

15 THOMAS FODOR: Oh geez -- 2013.

16 KATE MC GRANN: You started in 2015
17 so...

18 THOMAS FODOR: I'm thinking. Just
19 before the pandemic started, that was the last time
20 I was up there, that winter. So that was 2019?

21 KATE MC GRANN: I believe that you were
22 involved in the project from September 2015 to
23 October of 2019 if that helps.

24 THOMAS FODOR: Then it was the winter
25 at the beginning of 2019, yeah. You said '19,

1 right?

2 KATE MC GRANN: You end in October 2019
3 is what I believe and the system goes into revenue
4 service in September of 2019.

5 THOMAS FODOR: Yeah, okay. The winter
6 before that. Yeah, the spring -- the winter and
7 spring there, 2018, 2019, that was a critical time
8 for them and construction really got delayed.
9 Testing really got delayed there.

10 And then they went through with this
11 phase of the testing and commissioning. I'm not
12 part of it. I'm just hearing, things are passing.
13 To what degree and how strictly they were doing the
14 tests, I don't know.

15 Because, again, I'm only there to look
16 at, this is what you need for this many vehicles
17 assuming these vehicles are going to operate as
18 well as they're supposed to.

19 Yeah, you have the little buffer, you
20 have the wayside people that are doing it, but they
21 can't even get on to half the tracks because
22 they're still considered construction zones.

23 And a lot of these things will only
24 evolve not that opening day, it will evolve later
25 on where they usually would have time. If you

1 start a system, it's like a new house. I get a new
2 house you've got a few little problems. You can
3 see the roof deteriorate and get ready for it and
4 say I've got to do there. Or you spring a leak and
5 say I better to change the plumbing.

6 You don't expect it to be I need a new
7 roof and I move in.

8 Which is almost the analogy of what I'm
9 doing with what happened here. All of a sudden
10 everything was not working. Switches weren't
11 working. They're brand new switches why not?
12 What's the problem? They couldn't figure it out.

13 Trains aren't working. What's the
14 problem? Well there's this, this, this, this a
15 number of issues that were constantly plaguing
16 them.

17 You know, then maintenance plan, they
18 had it all ready and of course they had, I can't
19 remember if it was a good number of maintenance
20 techs that left. I think they were being
21 overworked I think after time they just had enough.
22 Then all of a sudden you don't have enough people.

23 KATE MC GRANN: When did the
24 maintenance techs leave?

25 THOMAS FODOR: I can't remember. It

1 was just before the trial run because all of a
2 sudden they had to hire some more people because a
3 whole group of them left. But I can't remember.

4 It's just prior to the trial run and
5 they were scrambling to get more people. They were
6 bringing more people out from France if I'm not
7 mistaken. They kept saying, these guys we're
8 bringing in they've worked on these vehicles
9 before, so there won't be any problems.

10 But again, you can only work on so many
11 things on one night. If there's five things of
12 fixing you can only do two and you try to take it
13 out and it craps out again, bring it back in and we
14 don't have enough vehicles.

15 KATE MC GRANN: At any point were you
16 or to your knowledge was anybody at RTM asked to
17 revisit the maintenance plan in light of potential
18 reliability issues that may be experienced when
19 going into revenue service?

20 THOMAS FODOR: No.

21 KATE MC GRANN: By that I mean things
22 including, here is the information we've got about
23 the reliability of the system right now. Build out
24 the plan to account for maintenance if it continues
25 to look like this?

1 THOMAS FODOR: Not in that direct way.
2 I think they were looking at, they realized that
3 their staff couldn't keep up. And they were
4 looking for, you know, additional staffing to keep
5 going, but the problem then is even if you maintain
6 the vehicles if they broke down while you were in
7 service, you know, operationally that was the
8 problem. The reliability wasn't there.

9 You can only fix the thing so many --
10 if you fix it and five minutes later it breaks -- I
11 remember vehicles coming out and going, yeah,
12 you've got the sticks coming out to the main point
13 ready to go and crapped out again, you have to
14 bring it back.

15 KATE MC GRANN: When do you remember
16 seeing that happen?

17 THOMAS FODOR: During the trial run.

18 KATE MC GRANN: During the trial runs.
19 When did you see them -- I'll ask you the question
20 then we'll clarify who "them" is.

21 You said you saw them trying to build
22 out their staff. Are you talking about RTM?

23 THOMAS FODOR: Alstom.

24 KATE MC GRANN: Alstom?

25 THOMAS FODOR: Yeah, just basically

1 saying, guys you have a problem. Your vehicles
2 aren't reliable. What can you do? They're
3 scrambling trying to keep up and get more people in
4 the evening shifts but I remember, yeah, several
5 times when I was there for the trial run.

6 And the train would come in, it was
7 already late, they've got it running. Came out,
8 stopped, get the driver on board, crapped out, you
9 oh, take it back in another 20 minutes later
10 another vehicle came and that crapped out.

11 So they're going, okay, something is
12 wrong here. Why are these vehicles so unreliable?
13 That's what I'm saying.

14 If someone told me these vehicles are
15 going to be 80 percent reliable, that would be a
16 different story than saying these are proven
17 vehicles. They run all over the world. There's
18 nothing wrong with them. They're reliable.
19 They're not new.

20 Because if it's unproven, I would have
21 looked at it a totally different way, you know.
22 This was proven technology. It was a proven
23 vehicle. They built hundreds of them. Okay, well,
24 you know what am I going to say? Triple your
25 staff? Someone is going to say no, because we

1 didn't budget for it. What do you do with
2 two-thirds of them after lay them off? You can't
3 do that.

4 KATE MC GRANN: Who gave you the
5 instructions or the assumption to review the
6 maintenance plans on the basis that these were
7 proven vehicles?

8 THOMAS FODOR: It wasn't on the basis
9 they were proven. I just knew they were proven
10 vehicles. I mean, I didn't know anything about
11 Alstom, I mean that was one of our arch enemies
12 from Bombardier.

13 We were told these are French vehicles
14 and they've built hundreds of them and, you know,
15 it wasn't like this is a new vehicle; it's never
16 been proven. Most systems won't allow you to put
17 in an unproven vehicle, although there are some,
18 because they want new technology. This was
19 basically a proven vehicle.

20 And in that sense, again, I'm not a
21 vehicle expert, when I see a vehicle and I did
22 check to see Citadis, they're all over the place,
23 they've built a lot of them. It's not a new
24 vehicle.

25 There may be slight, small differences

1 but I'm not a production expert and realizing that
2 may be the way they assembled them and people they
3 had, I didn't get into who they hired.

4 And again, the assumption then is that
5 you have a proven -- a reasonable tested
6 commissioning period. You're building this
7 maintenance plan and hiring. You're starting nine
8 months before; at that time things are still
9 growing smoothly.

10 It's only later you realize, well, they
11 really haven't tested that well and they've got
12 constant problems. Now the trial run they can't
13 even get vehicles out. You're already too late if
14 all of a sudden they say, we need twice the staff.
15 Well, good luck. Go and find another 25, 30
16 maintenance techs to fix this thing.

17 KATE MC GRANN: So when was it that it
18 came to your attention that this is not a proven
19 vehicle, we're not getting reliable service. When
20 did you become aware of that?

21 THOMAS FODOR: About the trial run
22 period.

23 KATE MC GRANN: Trial run period.

24 THOMAS FODOR: You have to realize I
25 didn't work there all week. I was there maybe once

1 a month, maybe twice at the most.

2 KATE MC GRANN: So you're not being fed
3 the results of testing and commissioning on a
4 regular basis to inform your own work or anything
5 like that?

6 THOMAS FODOR: No. And if it was
7 really a concern beforehand, it would have come up.
8 And, you know, we would have probably made the
9 changes at the time. But, you know, when we're
10 making the maintenance plan that's eight, nine
11 months ahead of time because by then you have to
12 have a maintenance plan, I think six months before
13 running any service, it has to be done, they start
14 nine months before.

15 Six months before it's done they have
16 all the equipment. Now they start mobilizing and
17 training. Now it will take six months to train all
18 these people. Last six weeks, you realize, holy
19 shit, these vehicles are nowhere near where you
20 expect them to be. You know, now you're scrambling
21 and there's no way you're going to catch up.

22 Sorry about the swearing as I forgot
23 you're...I just realized the transcript.

24 Okay, you realize as time goes on.
25 When we're in the control centre, I'm watching

1 things I thought oh, God, this is not working well.
2 Maybe it will be better tomorrow. Three weeks
3 later it's still like, this is not getting better.

4 We knew at the time this was not good,
5 you know.

6 KATE MC GRANN: So before we go to
7 trial running, just a couple of more questions
8 here. The assumptions that you were operating on
9 as you were reviewing the maintenance plan and
10 things like that, did they come from the City? Did
11 you put them together based on what you knew about
12 the system? How did you understand what you were
13 reviewing the plan to maintain?

14 THOMAS FODOR: Well first of all, I
15 look at what's the technology, okay? Signalling
16 system, Thales. I know Thales so I knew the
17 signalling system, no problem.

18 Vehicle, Citadis they built hundreds of
19 them, so it's not a new unproven vehicle. There's
20 a driver on board, actually there's a driver, too,
21 I don't have to worry about failures because
22 there's a guy that can drive the vehicle away.
23 That comes under the concept of operations.

24 I did not know about the track ballast
25 until I went out one day, but, again, that was just

1 my own gut feel and, again, I don't think that
2 caused any problems at, in the initial things. It
3 may later on but that, again, that's just my -- I'm
4 not a track expert I maybe shouldn't have said
5 anything, but just my observations, okay?

6 So when you look at it, like any other
7 time, like for Austin, Texas right now, how many
8 vehicles do we have right now? This many. Am I
9 assuming they're going to fail every five minutes?
10 No. My assumption is it's a proven vehicle. It's
11 going to work the way it's supposed to, if there
12 are failures, rail failures then I have a plan how
13 to get around it.

14 Maintenance wise, you look at it and
15 say for X-number of vehicles I need this many
16 people, I need five technicians, ten of these
17 support people, blah, blah, blah.

18 If I triple that, I know immediately
19 somebody is going to say, are you crazy? I'm going
20 to say, that's because I don't believe the vehicles
21 are reliable and they're going to break down every
22 five minutes. They'd fire me.

23 First of all, that's the wrong
24 assumption. Secondly they're going to be reliable,
25 for sure.

1 Okay, so I'm only going on the
2 assumptions that I've used for 40 years. I don't
3 set up immediately for a poorly designed,
4 unreliable vehicle. It just -- unless someone
5 tells me so, I will set it up the way I set up
6 every other system which has worked well. Except
7 for Ottawa.

8 KATE MC GRANN: At no point during your
9 work on this project were you told: Prepare for
10 the unexpected. Prepare for a less reliable
11 vehicle, prepare for anything like that?

12 THOMAS FODOR: No, well, nobody -- I
13 mean there's always contingencies. You have risk
14 management contingency and that's always added in
15 for maintenance planning you have contingencies.

16 You always know no matter what they
17 say, oh, you only need five of these, but I'll buy
18 ten especially if it's a critical part, I'll buy
19 double just for that purpose, because you need that
20 back up, you know.

21 You don't want to -- there's gut feel
22 sometime and we've done that many times where we've
23 looked at the spare part manual, you know what?
24 Two? No, let's get five.

25 Why did you do that? Because I've been

1 doing this for many years. I know that's going to
2 be a problem if that is.

3 But nobody has ever told me that the
4 vehicle that you're dealing with is going to break
5 down and you can't, can only get half the trains
6 out.

7 That's why we allow for 10 percent
8 spares. I know a lot of places that allow for
9 25 percent. SkyTrain we did a 5 percent.
10 Virtually there was one train in the maintenance
11 facility; all the others were out there. I had
12 people say you can't do that, and I say we did it.

13 But typically, in this industry, ten is
14 about the reasonable number. But it can go as high
15 as 20, 25.

16 KATE MC GRANN: In this project, what
17 was it?

18 THOMAS FODOR: Certainly not 25. Maybe
19 ten percent. I wish there was 25, but again, it's
20 money. Someone better pay up if you've got that
21 many extra trains, you know. Then you need drivers
22 for that, so it's, again, I think it was ten
23 percent if I'm not mistaken.

24 KATE MC GRANN: Going back over some of
25 the things that you said just to clarify them for

1 the record so when someone is reading the
2 transcript later they'll understand what's
3 happening.

4 You were talking about the schedule for
5 testing and commissioning being compressed and
6 becoming shorter. You said one date that stayed
7 the same, then the testing and commissioning period
8 getting shorter and shorter. The date that stayed
9 the same and didn't move; what date are you
10 referring to?

11 THOMAS FODOR: I think that was the
12 opening day. I think that actually moved as well a
13 couple of weeks because it was supposed to be the
14 end of the -- beginning of September, end of
15 September. They went a couple of more weeks
16 because they couldn't pass the trial run thing and
17 we knew we were getting really compressed, you
18 know, in time.

19 The maintenance organization was there
20 and ready. I watched them go out at night checking
21 this, checking that. They went into the
22 maintenance building; they're doing this. Yeah,
23 this vehicle will be ready.

24 As I said, the problem was so many
25 times, when it came to, okay, 5 o'clock, vehicles

1 are coming out, we'd be getting a call we can only
2 get this many out.

3 You know, there's only so -- or if they
4 got there, they crapped out either on the way out
5 or somewhere on the main line and they'd have to
6 bring them back in.

7 I do know that for the trial run, I
8 don't recall a day where we had all the trains that
9 we needed for normal peak operation. I mean, if
10 they for evening period, where you had half the
11 trains, yeah they had enough. But peak, couldn't
12 make it.

13 KATE MC GRANN: When was the
14 maintenance plan finished; do you remember?

15 THOMAS FODOR: Oh geez. Well, started
16 draft, when I got there. It was shortly after
17 that, then they have to have the maintenance plan
18 done; I think it was six months before revenue
19 service if I'm not mistaken. I can't remember.

20 But it was well before revenue service
21 we had to have a finalized maintenance plan.

22 I think there were two or three
23 iterations because I commented on the first one,
24 you need to expand on this. Then the last one --
25 the I think it was the three months. The last one

1 was a real detailed one where they had all the
2 subcontractor maintenance plans in there.

3 So then it became a real thick one;
4 that's where I had everything in there. But that
5 was just a formal, you know, here is the formal
6 maintenance plan. I knew what was coming anyway
7 because I knew what Alstom's maintenance plan would
8 look like and everything else, but it was not
9 consolidated at that time.

10 And you know, for example, all the
11 maintenance away equipment had already been
12 provided and had been, you know, stored here and
13 there on the tracks and in some cases already used.

14 KATE MC GRANN: What is maintenance
15 away equipment?

16 THOMAS FODOR: Rail grinding. Rail
17 grinders. Like tampers for the ballast. There's a
18 number of ones. The snow clearing equipment.
19 Anything to make sure that, you know, switch
20 machine cleaners. There's things -- the brushes
21 and to clean out the gravel and then you've got
22 welding equipment, for welding rail together.

23 So anything that you use for
24 maintaining the trackway itself. Ballast, the
25 track itself, welding track together, as well as

1 cranes, you know, you've got these heavy things for
2 the trailers, steel wheel trailers that you load
3 equipment on.

4 Like if you have to change a switch
5 machine, that's a pretty bulky thing, you get a
6 crane put it on a skinner then you take it out
7 there, take off the old one pop it back in. You
8 need a crane to put it back in place.

9 Then you have the smaller hand tools
10 and things like that for pick shovels and things
11 like that. But there's tools.

12 So maintenance away equipment are
13 fairly large pieces of equipment. And high rail, I
14 don't know if you've seen them, you have the rubber
15 tires but then you have the little steel wheels on
16 the CN pick-up trucks.

17 They can drive on the highway and they
18 go on to a flat area and they can lower the steel
19 wheels and drive on the tracks. Those are called
20 high wheels they had a number of those as well.

21 KATE MC GRANN: It sounds like it's
22 sort of all the maintenance equipment that may be
23 required to go to a problem and maintain it on site
24 as opposed to bringing it back to the maintenance
25 and storage facility.

1 THOMAS FODOR: Yeah it's fixed in
2 place. You got to go there and fix it or replace
3 the part and then come back.

4 KATE MC GRANN: You mentioned not --
5 sorry. I see Ms. Caputo coming on the screen.

6 -- OFF THE RECORD DISCUSSION --

7 -- RECESS TAKEN AT 3:41 --

8 -- UPON RESUMING AT 3:50 --

9 THOMAS FODOR: Just on the break there,
10 I had two thoughts that I wanted to pass on to you
11 if you don't mind.

12 KATE MC GRANN: Please go ahead.

13 THOMAS FODOR: You were asking about
14 the, you know, why did I think the vehicles were
15 such good vehicles and everything? And I forgot to
16 mention that when I was working on Eglinton, there
17 was a problem with Bombardier with their delivery
18 of their vehicles. They were late, late and late
19 and late.

20 And Metrolinx decided that they were
21 going to purchase the Alstom Citadis vehicles, the
22 same one that were in Ottawa. This was before I
23 started working on the Ottawa.

24 And we did a huge study on the
25 differences between the this vehicle -- the

1 Bombardier vehicle and the Alstom because they're
2 different dimensions and you have to make sure if
3 we were going to get the Alstom Citadis vehicle,
4 that the alignment that we had would work with it.

5 But for, I think it was about three
6 months that I worked with a couple of other people
7 on the assessment of one vehicle versus the other,
8 it was basically, you know, and the push was really
9 to get the Alstom Citadis vehicle -- there was
10 never any argument or discussion about how
11 unreliable.

12 They were gung-ho on it and I think
13 ultimately what happened was, Bombardier finally
14 started to deliver. I think out of the outcome
15 they were also barred from any other project in
16 Toronto for several years from providing any LRVs.

17 So, you know, when I got to Ottawa, oh,
18 Citadis, this is the same one -- this is what
19 they're going to buy. I remember even getting on
20 the vehicle and going, wow, this looks pretty
21 impressive. You know you don't start off on is
22 this vehicle going to be a crappy vehicle? How are
23 we going to maintain it?

24 It was already, this is the savior for
25 Toronto and it's already in Ottawa. So don't think

1 we're going to buy something that's crap.

2 So I just wanted to point out that I
3 already had a bias and an understanding that this
4 thing was that top notch, top quality vehicle. And
5 it was a front runner for the Bombardier vehicle,
6 that Flexity vehicle that Eglinton had bought.

7 Another thing I kept talking about
8 switches, we discussed the problems. One of the
9 other complicating things with the switches was
10 that Thales's signalling system, unbeknownst to
11 many of us who worked with Thales for many years,
12 they had modified a procedure for getting around a
13 switch that failed, you know, didn't have status.

14 When I worked with them many years ago
15 you know, crossovers going from one track to
16 another, you see the X's like this on the track.
17 If the switch stats fails on one side, the idea is
18 you use the crossover to get around then you use
19 another crossover further down to get past it. Or
20 if there's a blockage somewhere you use the
21 crossovers to bypass.

22 And I remember being in a control
23 centre and we were doing some simulations and the
24 train stopped and they wouldn't go past us and we'd
25 initiate a switch failure here. I go what the...

1 why is it not going past? Why doesn't it cross
2 over and get around this problem?

3 Well, apparently there was some safety
4 -- this was just recent from that point in time --
5 there was some safety risk analysis that they did
6 where they said they didn't want to use the
7 crossover because of some risk factor in it.

8 So basically, from my perspective it
9 was like you mean to tell me I put a crossover
10 there to get around something but you're afraid to
11 get around it because there's some risk that, for
12 some reason you may create another risk?

13 That to me was a major problem for a
14 long time. They didn't understand why trains would
15 stop when they had a switch failure or a status
16 problem out there. And it wouldn't allow the train
17 to go through the signalling system, wouldn't allow
18 the train to bypass it.

19 This is the type of stuff where even
20 new safety regimes that came in that actually
21 contradicted what you were doing there. You wanted
22 to do something and they said I'm not doing it
23 because it wasn't safe, and you go, what?

24 This was the type of stuff they were
25 learning. It was a surprise to me. I just

1 thought, you've got to be kidding, I never heard of
2 this before. And I went and argued, like, you
3 can't do this. You'll never get to running down
4 the system any time there's a problem.

5 So that also was probably contributing
6 to a lot of these stoppages. Not just the vehicle
7 itself but other things like signalling protocols
8 and switch status problems. These all make you
9 stop and now, you know, you got problems with
10 people at stations wondering why isn't the train
11 coming.

12 For a long time they had no idea and
13 didn't know why things were stopping. So, again,
14 not enough time to test and find out exactly and
15 get all these kinks out in the system. Then when
16 you start running, all you need is a couple of bad
17 days where all the kinks come out in one fell
18 swoop, and then you're shot.

19 KATE MC GRANN: On this switch piece,
20 do you remember when you learned in the control
21 room as you've just described that this decision
22 had been made?

23 THOMAS FODOR: During the testing
24 commissioning phase. And I was flabbergasted
25 because I kept -- because the operations guy came

1 to me and says, Tom I don't understand what's going
2 on. And I went in and they were doing this
3 simulation. I said, well, you've got to go around
4 it and get it back in, and he says it's not
5 allowing it. I go, what? That's when we started
6 going into it and discussing it.

7 We never got a full answer, because,
8 again, we're dealing with Thales a subcontractor
9 that we weren't directly dealing with.

10 But there's some safety investigation,
11 or risk analysis that someone came up with, or
12 maybe because of new standards, but effectively
13 blocked using a bypass strategy when you most
14 needed it, you know. I got a switch status loss on
15 the back tail, I can't get through but I'll go
16 through the other crossover and it wouldn't allow
17 it.

18 And I never did get to figure out what
19 it was because I was busy on other things. But I
20 remember him calling me and going, I don't get it.
21 I thought this is the stupidest thing I ever heard.

22 I thought, why would I put a crossover
23 there? I created two problems, two switches for a
24 crossover. Now I've just created more problems --
25 don't put any crossover. Now you've got a problem

1 because if you do have a blockage in front of you
2 you can't get around it.

3 So it was really frustrating. It
4 wasn't just vehicles, there were other issues.
5 Signalling, unknowns that happened, switch status
6 that I kept hearing they had problems with switches
7 not providing status, then trains not being able to
8 get through.

9 So you know...

10 KATE MC GRANN: So when you say you
11 discovered this during testing and commissioning,
12 would this have been before trial running?

13 THOMAS FODOR: You know, I can't
14 remember. It could have been just before. And I
15 thought that they resolved it and they may have,
16 but it was a real problem during test and
17 commissioning.

18 However, there were trains that stopped
19 out there, I kept hearing it's a switch problem
20 again, the same damn switch at whatever station it
21 was.

22 It was like, why is that switch acting
23 up all the time? You know, it's -- I don't know.

24 KATE MC GRANN: You said you argued
25 with someone about this. Who did you argue with?

1 THOMAS FODOR: Well, not argue. We
2 argued amongst ourselves. But Thales says this is
3 a risk safety thing. I said, they're full of it;
4 you can't do that. You're stopping a train and
5 then -- I think it allowed it, but you had to --
6 the guy would have to switch into the main wall
7 then drive-through it and it had to be a certain
8 timeframe, then he'd have to drive-through at two
9 kilometers or something then you have to view the
10 track?

11 I'm like what are you viewing? There
12 is nothing in front of him. It wouldn't allow an
13 automatic system that would stop the train then
14 this guy would, I think it was a timing thing, then
15 he'd have to put it in manual then go through the
16 switch really slowly. I thought, oh, my God I've
17 lost all the advantage of just going around it.

18 It wasn't that it wouldn't allow it, it
19 just took a long time, like nothing I had ever
20 heard in my life before.

21 KATE MC GRANN: Do you know if this
22 issue was escalated to anybody who could actually
23 deal with it?

24 THOMAS FODOR: We took it up. Glen did
25 as well, took it up. But I think it was one of

1 those things like how do you argue against a safety
2 risk mitigation thing?

3 We were part of the -- had I worked at
4 Thales I would have told them to go shove it, like,
5 that's crazy.

6 It's just like we found out later it
7 was because of some -- we questioned it, like, what
8 the hell is going on? Why is this thing not
9 allowing the train to go through?

10 Then it came back later, a week later I
11 talked to him and he said, it's some safety risk
12 thing they did. I said, who? He said, well,
13 Thales. That's the way the program is set up.

14 Once the program is set up it's very
15 hard to change things. You have to go through some
16 very, very iterative safety simulation process and
17 you have to re-check all the software. Once it's
18 there, it's like, it's hard to get it out of there
19 or modify. Then it's like millions of dollars
20 worth of changes to software.

21 KATE MC GRANN: I just want to
22 understand at a high level. As you're reviewing
23 RTM's work preparing for a maintenance after
24 revenue service, are you reviewing against a
25 schedule they've provided?

1 Are you reviewing it against
2 requirements in the project agreement? What is
3 your benchmark that you're reviewing them against?

4 THOMAS FODOR: Both. You have to have
5 these things three months before, six months
6 before. So I'm telling them next month you have to
7 have this document.

8 Okay the document has to have this,
9 this, this in there, which is in the PSOS or
10 whatever the spec is. Over and above that, there's
11 things that I would expect to see in there from my
12 experience. Like, you need to expand on this.

13 And the PSOS is very detailed. It
14 talks about access management plan, then the
15 EIS system, and so it gets pretty detailed. Then
16 you have to have a vehicle maintenance schedule and
17 one for signalling, all those other -- not the
18 schedule, but the maintenance plan itself.

19 So it's not just overall maintenance,
20 it's a maintenance of every major element that's
21 got to be in there. You start off small. By the
22 time you get it it's a very detailed document, you
23 know.

24 Again, it's all they're writing it,
25 based on like when Alstom wrote its maintenance

1 plan it's writing it on the basis of its own
2 reliability of that vehicle, you know.

3 They're not going to do it, put the
4 maintenance plan, saying well, we assumed this
5 thing is going to be out of commission half the
6 time. They're saying our vehicle is this reliable
7 and based on this, from our experience, this is how
8 many people we have and here is the schedule with
9 all of our maintenance, preventative maintenance.

10 So you can see a whole schedule of what
11 they have on a, you know, on a weekly basis when
12 they do overhauls.

13 Again, as I said. It's on the basis
14 that it meets the reasonable requirements for
15 reliability. If it doesn't, that maintenance plan,
16 you can double the effort then or triple. And
17 that's where the problems come in.

18 KATE MC GRANN: At any point during
19 your work, did you have any concerns that RTM was
20 not in compliance with the project agreement
21 generally?

22 THOMAS FODOR: No.

23 KATE MC GRANN: Did you have any
24 concerns they were off schedule in their preparing
25 for revenue service from the maintenance

1 perspective?

2 THOMAS FODOR: Not from a maintenance
3 perspective. Based on what they had, what we had
4 planned out, they were ready. In fact, the way
5 they had to sort of ask a lot of subcontractors,
6 because the contracts had been started by, it was
7 supposed to start I think September 1st or a couple
8 of months before, then it got delayed.

9 And they had to go back and now tell
10 these people, don't hire these people for the
11 subcontract, can you extend it out for two months
12 or something?

13 So they were having a difficulty
14 because of the shift in the revenue service start,
15 because they were already setting from here, and
16 then all of a sudden it's like, well, we don't want
17 to start paying you now; we're not ready. Can you
18 extend it out to this point?

19 So they were backtracking a lot with
20 their subcontractors, basically asking them for
21 extensions and saying, you know, don't start
22 billing us now, even though a contract had been
23 signed.

24 KATE MC GRANN: When you talk about the
25 delay, are you talking about the delay in revenue

1 service availability from the spring of 2019 to the
2 end of the summer of 2019, approximately?

3 THOMAS FODOR: Yeah it was like three
4 months or something. And as I said, these
5 contracts are written up and, you know, months
6 before, and, you know, we're telling them you
7 better be ready. All of a sudden we're saying, can
8 you hold off for three more months, well, we're
9 hiring people for this project.

10 It was only the difficulty -- they were
11 backtracking a lot towards the end. But it also
12 gave them time to get the spare parts together,
13 because that was a difficult thing to get from RTG
14 because, you know, construction guys are not
15 worried about spare parts. They're trying to
16 finish something.

17 The last thing they want is you coming
18 with 5,000 rows of spare parts of, I want to
19 itemize everything, where is this, this, this?
20 They're like, get out of here, we're so far behind.

21 That was a difficulty getting it. But
22 we did get, I'd say about 95 percent of spares.
23 From the maintenance point of view, the spare parts
24 were there; the staffing was there. The problem
25 was that it's like, you know, all of a sudden

1 you've got four commission things to do in one day,
2 you know. You can't do it. It gets delayed.

3 And that was a problem with these guys.
4 Every time they worked on it. Okay, I got it
5 fixed, they move the vehicle, something else breaks
6 down.

7 And it could have been maybe
8 inexperience. Again, you hire maintenance people
9 it's like anything. Until you get to know the
10 vehicles and little nuances... I mean, there was
11 one guy who was really good. The operator would be
12 on board, the train would crap out, and the guy
13 didn't know what happened.

14 And this guy knew the vehicle well.
15 He'd say, okay, press this button, and flip that
16 switch, and it would work. Like, but this guy knew
17 the design, the circuitry and everything and what
18 the guy, the operator is calling back, he goes,
19 it's not working anymore; what do I do? Try this?
20 No, that doesn't work.

21 Then this guy knew the vehicle really
22 well. He'd be able to say, flip this switch, do
23 this and do that and see if it worked. Then it
24 worked. Oh my God, like this guy he's worth his
25 weight in gold because he could solve problems just

1 because he already was familiar with the little --
2 the design of the system and how to get around
3 something.

4 The average operator who's only learned
5 how to drive the thing, he wouldn't have a clue if
6 something starts red light coming on; what does
7 that mean?

8 KATE MC GRANN: In terms of in-depth
9 knowledge of the vehicles on the system, what was
10 your view on the readiness of the maintenance team
11 from that perspective?

12 THOMAS FODOR: Well, the help desk
13 which is where they call in, he tends to be a
14 maintenance expert, you know. There's probably
15 more than one, but the one I saw, he knew his
16 stuff.

17 He was a driver, he was a driver
18 himself, but he was also a maintenance tech, so he
19 had both the knowledge of what's in the cab, and
20 how the vehicle reacts and he also had maintenance
21 experience.

22 So you know, when there was issues, he
23 could help, but he's not there all the time. And
24 there were a lot of issues where they just didn't
25 know because again, you know, maybe it wasn't --

1 maybe it was a new vehicle and they're slightly
2 different things in the door design and nobody
3 understood that they, if you hold it, it will crap
4 everything out.

5 I was surprised when I heard that.
6 That was one of the first things that ever happened
7 and it went and got into the news I thought, oh,
8 Jesus, you know, how do you, you know?

9 But again the door design document
10 should have indicated that, but because normally
11 that will tell you how this functions and if you
12 hold it for more than three seconds it will time
13 out and do this and that.

14 Now who is the operator? It's the City
15 of Ottawa. Did they read those documents and
16 understand? Because they're operating the vehicle.
17 It's not a maintenance issue; it's an operating
18 issue.

19 The thing times out, the train stops.
20 The operator, should know that is because of this,
21 and they should know how to get around that. Again
22 the operators are -- City of Ottawa operates buses
23 not LRVs, okay?

24 To get around a problem with a bus is a
25 lot different than getting around a problem on an

1 LRV. Bus you can bypass, just drive around a
2 failed bus, not a problem.

3 LRV, you can't get through the
4 crossover and there are instances where I watched
5 during a trial run where I thought get that train
6 out of there. Why aren't they stopping everything
7 and get him out of there? They kept bypassing it.
8 But bypassing will double, triple your headway,
9 like the number of trains can get through.

10 It would be there for an hour. And I'm
11 like, why are they not just stopping for five
12 minutes and get that train out of there? And lose
13 five minutes, but don't spend an hour having a
14 third of the trains getting through there, because
15 of this stalled train there, you know.

16 All the guy had to do is go up reset a
17 switch on the panel on the side. I thought all you
18 have to do is stop traffic, flip the switch and
19 they can drive-through it. No he stayed there,
20 they kept the thing operating at very low frequency
21 for an hour. That's an operator issue.

22 KATE MC GRANN: When you say that
23 having a train sitting there doubles or triples the
24 headway, you it mean doubles or triples the time
25 between when one train reaches one station and the

1 next station. It's an extension of time between
2 service, right?

3 THOMAS FODOR: Remember I talked about
4 the crossovers. You have a train stuck at a
5 station it's not moving. Now, if you can't move
6 it, you can't get by him on the westbound track
7 let's say.

8 So if you have a crossover, get through
9 over to eastbound track, get by it, get back on to
10 the westbound track further down.

11 The problem is, you can only get
12 another train through once you get this guy, then
13 the opposing train can come through on that one
14 track because this guy is still sitting there.

15 So usually, like, if you look at the
16 time to go through and you double that, that's what
17 your headway is. If it's a five-minute trip to get
18 around before it's clear for the next one, that's
19 another five minutes, then this guy can come around
20 again, that's a ten-minute gap.

21 Now if you're operating at three
22 minutes you just tripled your time. It would have
23 been smarter to say let this guy get out. All he
24 has to do is reset a switch from the side, outside,
25 and then he can just start driving.

1 But they didn't do that. They left,
2 they kept the guy in there and kept doing this
3 bypass operation at a third of the capacity, or the
4 headway, because they -- I don't know. We
5 questioned it ourselves.

6 But I wasn't in the OCC, I was in the
7 other turnover. I was just watching the MMIS. Why
8 aren't these guys, the operators, you know, doing
9 what I would have done?

10 KATE MC GRANN: To your knowledge, was
11 there ever any discussion or consideration by the
12 City of bringing in an experienced operator to act
13 as a resource for the OC Transpo staff who were
14 running the system at the beginning of revenue
15 service, a sort of shadow operator type of people;
16 are you aware of anything like that?

17 THOMAS FODOR: I wasn't aware. It
18 would have been a good idea. But I wasn't aware --
19 my problem is, I wasn't in the OCC, I was at the
20 maintenance control centre where I could see what
21 was going on, on the main line.

22 The OCC, the operating control centre
23 where the City of Ottawa was, was just down the
24 road. But I did not go there, I was just watching
25 from the maintenance, because I was supposed to be

1 doing maintenance, making sure the trains were
2 getting out.

3 But I could see what was going on, and
4 I just remember commenting a couple of times,
5 going, oh, my God, you know, what are these guys
6 doing?

7 KATE MC GRANN: So I understand you're
8 talking about the day where you see this one
9 incident take place and the decision not being
10 taken.

11 But more generally, do you know if
12 there were any consideration given by the City to
13 bringing in a shadow operator, operators with more
14 experience to act as a resource for the drivers and
15 operators once it went into revenue service?

16 THOMAS FODOR: I think there was --
17 there were a couple of people -- no, I honestly
18 think that -- I don't think there was ever anybody
19 -- I know what I was thinking.

20 There were airport operators, because
21 they had this knack the way they talk like if you
22 were an airport controller, like at Pearson, for
23 example. That's what their experience was.

24 I don't think there was ever any
25 operator like, you know, there's a number of them

1 RAPT, and KEOLIS, whatever it is and another
2 company, these are pure operators that were doing,
3 they never brought them in.

4 Ottawa is going to run it. Again,
5 that's my understanding. I don't recall. But
6 again, I don't deal with the OCC that much. It's
7 just from watching, I thought, you're not doing
8 what I would be doing, and I've operated systems.
9 So I just thought this doesn't make sense.

10 KATE MC GRANN: Did you mention that to
11 anybody at the City at any time?

12 THOMAS FODOR: No, because it was trial
13 run. I was working days and nights to watch the
14 trains going in and out. But I commented to a
15 couple of other people around there. It wasn't my
16 place to say Ottawa, you guys have got it wrong
17 there.

18 It was -- I didn't understand at the
19 time why they did. It was later on that I found
20 out this guy could have gotten out. I kept
21 thinking, that train, why isn't it moving? And why
22 are they not getting it out of there?

23 Then someone who had come in, I can't
24 remember who it was, so many people walking in and
25 out. He said all the guy has to do is get out in

1 between the two tracks and flip the switch and he
2 can go. Reset something.

3 And I thought, oh, you know, but that's
4 typical if you're not -- again, I don't know what
5 the operating plan was. I always thought the
6 concept of operations and, again, I think on the
7 complexity of Bombardier there is no outside reset
8 switch that you can switch reset something.

9 But the Alstom one I never dealt with.
10 I guess there's some switch they could have reset
11 from underneath on the side or something and then
12 it would work. You have to know the vehicle design
13 to know that.

14 KATE MC GRANN: What was your role
15 during trial running?

16 THOMAS FODOR: Pardon?

17 KATE MC GRANN: What was your role
18 during trial running?

19 THOMAS FODOR: Monitor the train input
20 and output and the maintenance activities. Of
21 course, I monitored how the thing's operating as
22 well, which is why I spent 20 hours.

23 KATE MC GRANN: And how did you -- were
24 you scoring the train input/output? Were you
25 recording what you saw? What kind of output were

1 you generating from your review.

2 THOMAS FODOR: That was already being
3 scored. There were guys from the City of Ottawa
4 who were scoring how many trains are going in. How
5 late they were? Things like that.

6 I was just there to observe and then at
7 night actually monitor the workout there, I could
8 hear them on the radio, I'd also go out and check
9 to see what they were doing. Go over the vehicle
10 maintenance building as well, but, you know, again,
11 they were under pressure and it's not like they
12 really liked a lot of people walking around.

13 I can go through with another guy and
14 just you know see how they're doing and they were
15 busy but, you know, are they okay? Yeah, yeah. It
16 will be ready. Then three hours later it wasn't
17 ready.

18 KATE MC GRANN: What was the purpose of
19 your observation during the daytime and checking on
20 maintenance at nighttime? What function did that
21 serve for the City?

22 THOMAS FODOR: To confirm what type of
23 maintenance was being done. Because it was a
24 maintenance plan. So the maintenance plan said,
25 this week we have to inspect this switch. And

1 every night there was a plan of, you know, the
2 vehicles they were pretty detailed. They had these
3 vehicles, this and this. It was a very detailed
4 thing.

5 We knew, we went over and they had all
6 the schedules out. But on the main line there was
7 things like switch inspection, signal inspection,
8 track inspection. They had to walk the track to
9 make sure, because our maintenance plan said every
10 week you have to have a visual inspection of the
11 tracks.

12 So they would go out -- I'd go out,
13 yeah they were checking the track making sure there
14 were no cracks. We were literally doing what you
15 would normally do on a regular weekly and daily
16 basis whatever maintenance had to be done. Then
17 have others there was corrective maintenance.

18 If OCS line broke then you had to fix
19 that or something that had failed out there, you'd
20 have to fix it. That's not preventative; that's
21 corrective maintenance. They actually have to go
22 through the whole maintenance tests that were
23 assigned. This week this is what we're going to do
24 every night. I would be there to make sure they
25 did that.

1 KATE MC GRANN: Would it be fair to say
2 you were auditing RTM's compliance with its own
3 maintenance?

4 THOMAS FODOR: Yeah.

5 KATE MC GRANN: What was your
6 assessment whether they were able to comply with
7 the maintenance plan during the trial period?

8 THOMAS FODOR: They may have -- there
9 was one they couldn't get out there in time or
10 another group; I can't remember. But basically
11 they followed it to the T.

12 It was, you need to do this; you know
13 and you need to open and close the station doors at
14 a certain time and I'd be at the control centre and
15 they'd press the buttons you can see the doors
16 opening up at the stations right on time, otherwise
17 they're penalized.

18 KATE MC GRANN: With respect to the
19 corrective maintenance that you saw, were you also
20 auditing their ability to achieve the corrective
21 maintenance required by the system?

22 THOMAS FODOR: Well, it's not required.
23 I mean, you put a work order in if there is a
24 corrective maintenance issue then a work order
25 would be generated, which I could see.

1 And then they would assign it and then
2 either try to get it out. If it was critical then
3 it would be immediate, like tonight. If it was
4 something that could be done during the day, like
5 if it was not right on the main line, then the guy
6 would go out to do the whatever work.

7 And then some of it would be held off
8 to the weekend when it was less traffic and less
9 revenue service hours, and they would say, well,
10 plan that out.

11 But that was all, that's just pretty
12 standard type of thing, you know. You know what's
13 critical and what isn't. Changing a light bulb you
14 can wait until the weekend.

15 KATE MC GRANN: Would it be fair to say
16 you were reviewing and assessing RTM's response to
17 work orders received; is that what you were doing?

18 THOMAS FODOR: Yeah, and generated by
19 the maintenance plan.

20 KATE MC GRANN: And how, what were you
21 reviewing that against? What was the standard or
22 the benchmark that you were reviewing their work
23 orders as against?

24 THOMAS FODOR: The schedule would, the
25 preventative maintenance schedule was there. If it

1 said you had to inspect this week, then they would
2 have a schedule. I mean, it didn't have to be on
3 Tuesday, if they couldn't do it Tuesday it was on
4 Wednesday. But if the schedule said, you must do
5 this inspection this week, usually it's down to a
6 week type of thing or once a month, then they would
7 do it. But let's say if it was a weekly thing for
8 three weeks, if I was there, they would do it three
9 times.

10 And again, the problem is a lot of
11 times what they do is they'll say, you can't
12 inspect the whole alignment.

13 So they'll say, we're inspecting
14 segment one tonight. Tomorrow we're going to
15 inspect segment two, next week we inspect segment
16 three. Over a month they'd inspect the whole
17 thing.

18 We just noted that, okay they were
19 going to do this one this night, that one the next
20 night and they would check that. And they got the
21 OCS lines that they've got to check as well.

22 KATE MC GRANN: With respect to the
23 corrective maintenance or reacting the work orders
24 that are generated during trial running, you were
25 also evaluating that, correct?

1 THOMAS FODOR: Only in the sense that
2 it if a work order has been done, and if it's going
3 to affect service, then they would work on it as
4 soon as possible.

5 If it's -- there's a lot of work orders
6 generated that are, you know, it's like, you know,
7 in your car a little light comes on, it's a yellow
8 light, I've got to do it, but it's not immediate.

9 Again, that's the type of thing where
10 you fit it in the best you can. If there's one
11 night where you're doing a lot of preventative
12 maintenance, then, you know, you're going to do it.

13 The problem was, with vehicles, it
14 wasn't just preventative maintenance issues that
15 they had to contend with, it was a lot of these
16 corrective maintenance things. The doors didn't
17 work again; or it stopped in the middle of nowhere.
18 That's a signalling issue, you know, the controls.

19 So you take it back, and that's where I
20 think the overkill was in that respect with the
21 corrective maintenance issues. Because you
22 never -- you've got your preventative maintenance
23 plan, and you've got your preventative maintenance
24 tasks, but your corrective maintenance should never
25 be twice as much as your preventative maintenance.

1 KATE MC GRANN: Is that what you were
2 seeing during trial running, that the corrective
3 maintenance wasn't as much?

4 THOMAS FODOR: I'm just giving you a
5 number.

6 Oh, yeah, well that's why they couldn't
7 keep up. Because all of a sudden, there were all
8 these problems that just popped up, and that's on
9 top of what they need to do. And then recurring
10 problems. They'd fix it and it would, again, the
11 same problem. And you go, is it a design problem?
12 Or, is it a maintenance problem? Like, did the guy
13 fix it properly? Is that why it broke? Or is it
14 the component that's faulty? Or is it --

15 KATE MC GRANN: And were you reporting
16 that back to the City that you were seeing that the
17 corrective maintenance needs were overwhelming the
18 maintenance staff during trial --

19 THOMAS FODOR: No, that just came out
20 as we were going along and we realized -- you know,
21 the test and commissioning part where they were
22 running the vehicles, you know that you're going to
23 have problems on test and commission.

24 I've been on projects where, you know,
25 first two months, the trains don't want to go, you

1 know. But you slowly get these problems, you know,
2 removed. And ultimately, it's that bathtub curve.
3 Initially it's one problem after another.

4 And certain vehicles seem to be like
5 lemons, you know, really hard to get at them. And
6 that's expected.

7 What isn't expected is that there's so
8 many issues and so many recurring issues that you
9 can't get enough trains out.

10 KATE MC GRANN: Right. So --

11 THOMAS FODOR: When you do they break
12 down all the time.

13 KATE MC GRANN: I want to, and I don't
14 yet, understand your role in assessing maintenance
15 performance during trial running with respect to
16 corrective maintenance.

17 I think what you're telling me is that
18 what you were seeing was that the corrective
19 maintenance needs were overwhelming the maintenance
20 staff during trial running; is that right?

21 THOMAS FODOR: Yes.

22 KATE MC GRANN: And who did you report
23 that to? That's what you're there to assess, who
24 did you report your findings to?

25 THOMAS FODOR: It was during the trial

1 run. At that point it was already a given that
2 there are problems and they were scrambling to try
3 to fix it. I didn't have to tell anybody, it was
4 obvious. The maintenance staff can't keep up.
5 Why? They got problems coming out their ying-yang.
6 They don't even know how to get at them.

7 There's problems on the main line,
8 switches are not allowing -- you know, trains can't
9 get through switches.

10 There were operational problems, like
11 you're leaving a train out there and you're holding
12 back traffic.

13 So it wasn't just because there was
14 corrective -- and why are there so many corrective
15 maintenance problems? Because it was either a poor
16 design -- I don't believe it was poor maintenance.
17 Again, or -- I don't know. I never got around to
18 saying, what exactly is causing this?

19 This vehicle was supposed to be the
20 premier vehicle of Alstom, and it seemed to be
21 working everywhere else except in Ottawa. Why?

22 Well, the only conjecture I have is
23 that it was put together very quickly, assembled by
24 maybe inexperienced people. Very little test and
25 commissioning.

1 A lot of times when they -- the trains
2 went out, but that's expected in a lot of places I've
3 seen it, but the timeframe was not there. You
4 can't have a two-week trial run in which you never
5 passed any day, even though they claimed they
6 passed.

7 You can't have a test and commissioning
8 that went from six months to like two and a half
9 months. And even there, they had to cut back
10 because there's only so much time. So you go,
11 well, I've got 150 things to check, I'll do 25 of
12 them, the basic ones.

13 So who tested the doors? They never
14 did, until the people did. But that would be a
15 typical one to test, but if you don't have time,
16 you can't do everything.

17 KATE MC GRANN: How did you record your
18 assessment work during trial running?

19 THOMAS FODOR: I reported on, I think
20 it was a sheet, basically, what was going on. But
21 I wasn't going through all the corrective work
22 order numbers. If I needed that, or if I wanted
23 that, I would just go to Alstom and say, you know --
24 you see, that's the other thing.

25 They would have to put that into the

1 monthly report or weekly report that they put
2 together, "here are all the problems." That's what
3 the maintenance plan and the whole maintenance
4 inventory, maintenance management information
5 system is.

6 It provides a report and says, "these
7 are all the problems that we've had". I don't need
8 to go and hunt them, that's just generated: These
9 are all the work orders that were generated
10 yesterday. These are all the work orders that were
11 generated over the month.

12 KATE MC GRANN: What was the purpose of
13 having you there to observe the trial running?
14 What were you there to achieve?

15 THOMAS FODOR: Just to make sure that
16 they did the maintenance that they needed to do.

17 KATE MC GRANN: And is that what you in
18 fact observed? That they did the maintenance that
19 they needed to do?

20 THOMAS FODOR: To the best of their
21 ability. The preventative maintenance, they did.
22 The corrective maintenance, I would assume that
23 they would -- because they couldn't get half the
24 trains out, even if they claimed that they fixed
25 it, it didn't last long because they wouldn't get

1 out. They'd start out and crap out again and
2 they'd pull them back in.

3 Sort of, you know, I mean, yeah, I
4 could've asked for all the corrective maintenance
5 things, but that was about the time I was also
6 pulled out of there because it was already running
7 and the whole point was, well, we do have a
8 maintenance staff that's operating. But it was
9 apparent that there were other issues, operational,
10 design issues, or whatever you want to call it.

11 The fact that maintenance couldn't keep
12 up with it, all that proved was, the product wasn't
13 a good product.

14 KATE MC GRANN: And what I'm trying to
15 understand is, it sounds like you knew all the way
16 through trial running, that maintenance staff could
17 not keep up with what was happening on the system;
18 is that fair?

19 THOMAS FODOR: In a way, yeah. Yeah.
20 But I mean it's too late. They're opening up in
21 two weeks, and they knew they were already -- as I
22 said, I knew that their people had left. So they
23 were scrambling to get people to come onboard.

24 KATE MC GRANN: Did you report back to
25 the City what you saw about the maintenance staff

1 not being able to keep up with the demands during
2 trial running?

3 THOMAS FODOR: Well, I told my boss who
4 was -- I actually can't remember his name right
5 now. But he knew, because I talked to him every
6 night. "How is it going, Tom?"

7 Operate -- you know, maintenance, they
8 did this. They're operationally doing that, but
9 you got a problem, they can't get enough trains
10 out.

11 And when they were out, you know, he
12 would get reports, like what happened today? Well,
13 we got 66 percent availability out there. That's
14 not good, you know.

15 And it came out to a number of issues,
16 and one of them was vehicle problems, operational
17 issues, you know, things like that, switch status
18 problems kept popping up all the time.

19 KATE MC GRANN: I understand that you
20 don't remember your boss's name. Where was he
21 employed? Are you referring to your boss at
22 Parsons, or are you referring to somebody at --

23 U/T THOMAS FODOR: No, no. City of Ottawa.
24 I can get his number or name, I just can't remember
25 it now.

1 KATE MC GRANN: Okay. I want to step
2 back from trial running for a second --

3 THOMAS FODOR: Sure.

4 KATE MC GRANN: -- and understand, did
5 you have any involvement in assessing the
6 efficiency or the process for RTM and its
7 subcontractors receiving and responding to work
8 orders?

9 THOMAS FODOR: Sorry, say that again.

10 KATE MC GRANN: Yes, let me try to make
11 that a little bit more clear.

12 I'd like to understand if you had any
13 involvement in assessing the system by which RTM
14 receives and responds to work orders on the system?
15 I think it's --

16 THOMAS FODOR: It's all part of the
17 MMIS system. The work orders are all generated.
18 They all respond in a certain timeframe. There's
19 open work orders, closed work orders. It was all
20 reported on a daily basis.

21 You know, it's one thing to report
22 them. It's another to keep up. If you can't do
23 it, because you don't have enough people, or the
24 work orders just keep piling up, the result is, you
25 can see it, it's evident. They can't get the

1 trains running.

2 I didn't have to go there, because I
3 knew that these things would all be in the monthly
4 reports. Actually, at that time, there was a
5 weekly report, I think they still had weekly
6 reports. But the monthly would give you an overall
7 monthly assessment. But there were daily reports,
8 weekly reports, and these are all listed there. So
9 they knew exactly -- I didn't go into detail. To
10 me, most of it was vehicle-related problems. And
11 to me, it was other than -- it wasn't the fact that
12 the maintenance guys didn't know how to maintain
13 it, maybe there's a little to that. And I wasn't
14 going to start playing who's to blame. All I knew
15 was, there's too many work orders coming in, and
16 it's too fast and furious and nobody can keep up
17 with it.

18 That was a combination of, as I said,
19 it could be poor training. I doubt that, because
20 most of the guys were Protrans who came over, and
21 were already working on the Citadis vehicle, even
22 though some of them left.

23 There could be a design issue. There
24 could be component issue where they, you know, you
25 buy a component maybe cheaper from some other place

1 and that's giving you problems of FMECA and
2 everything else, and I'm not into that. That's
3 where you're looking at failure modes, and is it
4 this component, or that? And, what's the
5 reliability? And, you know, what's the impact if
6 this fails on the whole fence, I don't get into
7 that.

8 It was really more, do we have the
9 people and the resources to keep this system going?
10 Assuming that it's been designed and built
11 properly. If it isn't, I can't -- obviously, if I
12 had known before I would have said, "you better
13 triple your staff".

14 KATE MC GRANN: Stepping back from all
15 of that for a second.

16 It's my understanding that work orders
17 and the MMIS system are one of the instances in
18 which OC Transpo as operator and RTM as maintainer
19 interface with each other; is that right?

20 THOMAS FODOR: Yeah, yeah.

21 KATE MC GRANN: Do you know whether
22 before going to revenue service at any time,
23 whether there was any testing done to see if that
24 interface worked as it expected?

25 So I'll give you some examples of what

1 I mean. OC Transpo staff are entering work orders
2 correctly and in the anticipated sort of pace, and
3 order, and time of day that you would expect. And
4 that RTM staff are receiving them properly and
5 responding in the way that you would expect?

6 THOMAS FODOR: I don't think OC Transpo
7 staff did any work orders in that respect. If it
8 was to call them saying that there's a problem, the
9 work order -- they could call in a work order,
10 yeah, yeah. Then that would be maintenance
11 problems.

12 Most of the work orders were within
13 Alstom and RTM, because they're the maintainers.
14 But certainly -- and usually, anything onboard a
15 vehicle, would be generated by the vehicle itself,
16 or the driver, or the maintenance staff knowing
17 what the problem was.

18 But, yeah, definitely if OC staff
19 pointed out and say, this train number five failed
20 at a station, we don't know why. Obviously, well,
21 even I could see that then, and there was
22 communication, then there would be a work order
23 generated.

24 First of all, get the damn train out of
25 there. Secondly, what's the problem?

1 Usually by the time they got back you
2 usually had an idea, because you get statuses from
3 SCADA as to what you -- SCADA, "Supervisory Control
4 and Data Administration".

5 So it's a big board, and has a lot of
6 flashing lights, and it tells you, this vehicle is
7 a red failure which is a critical one. And you
8 can, you know, dumb down into it and see what it
9 is.

10 Or, the message will come directly like
11 a radio message saying, or on from the screen
12 saying, this fault category on this train. So they
13 even before it's gotten back.

14 The problem is that there were a lot of
15 things that they didn't know what the problem was,
16 which makes it harder. Because now you've got to
17 figure out, you think it's this problem, but it's
18 something else. And if you don't know, now it
19 takes longer to figure out why the thing failed and
20 why did this not work?

21 KATE MC GRANN: So what I would like to
22 know is: First of all, did you have any
23 involvement in any sort of practice runs whereby OC
24 Transpo's staff get to act as if this is real life,
25 call in work orders and see, are they calling them

1 in properly? Is this happening as expected? How
2 is RTM responding? Was any kind of dry run done
3 like that that you were involved in?

4 THOMAS FODOR: That was the trial run.

5 KATE MC GRANN: Other than trial
6 running.

7 THOMAS FODOR: Well, the test and
8 commissioning, I wasn't involved in test and
9 commissioning. That would probably involve the
10 control centre as well. Because they would control
11 a certain segment and say, yeah, you can come out.

12 But once they're out there, usually
13 it's just the guys running trains back and forth.
14 And it doesn't necessarily have to deal with the
15 OCC.

16 But I'm sure that they would be
17 watching, or if there was a problem, they'd call up
18 OCC and say, we had a problem here. There is some
19 talk. But that wouldn't stop work orders from
20 being generated. I mean, both of them -- that's
21 all fed into the computer.

22 So if they're calling in, that is
23 generated, they type the failure in, or they call
24 and the help desk will put that failure in, and
25 there's a work order generated. It's not like they

1 called in and, you know, RTM didn't or Alstom
2 didn't do anything. I mean, if the train failed,
3 first of all, they had to get it out of there and
4 then get it back and try to fix it as soon as
5 possible.

6 Again, as I said, I think that the
7 problems were they thought they fixed it, and it
8 wasn't. And again, that comes down to knowing the
9 vehicle, whether these guys had as much experience
10 as I was led to believe, I don't know.

11 Secondly, it could be, again, recurring
12 problems. That, to me, could be either it wasn't
13 fixed properly, or that component is a piece of you
14 know what. And if they're all built like that,
15 you're going to have that same occurring problem
16 all the time.

17 But I never got into analysis as to how
18 many of these failures occurred, that wasn't my
19 role at the time. That's a FMECA thing, and they
20 have engineers who do that and see, is this a
21 problematic component for the whole fleet? Or, is
22 it just this one lemon, you know.

23 KATE MC GRANN: Did you have any
24 involvement in the City's assessment of whether
25 revenue service availability had been achieved?

1 THOMAS FODOR: No. I was there, I
2 heard what the end result was for the day, every
3 day that I was there. That was determined by City
4 of Ottawa representative who was taking notes
5 there. We watched, I made notes for our own
6 people. But, no, I did not assess whether it was a
7 pass or a fail.

8 I heard later, towards the end, that
9 things were being passed because of the pressure to
10 open this up. Whereas, you know, as I said, if you
11 only take the 10 hours everything worked well out
12 of the 18, sure it's a pass. But what about the
13 other 8 hours, you know, so...

14 KATE MC GRANN: Who told you about the
15 pressure to get the system opened, and if that
16 effect on the --

17 THOMAS FODOR: Nobody had to tell me,
18 everybody knew, there was pressure. It was all --
19 everybody knew. This has to open, it's already
20 been delayed.

21 There was no more delay times, it was
22 "let's get this done".

23 KATE MC GRANN: And did you or anybody
24 at Parsons have any involvement in the City's
25 consideration of when to open to revenue service to

1 the public?

2 THOMAS FODOR: No.

3 KATE MC GRANN: Was any feedback sought
4 from you about when that should happen or anything
5 like that?

6 THOMAS FODOR: Indirectly, yes, I said,
7 "which year?"

8 KATE MC GRANN: Who asked you to elicit
9 that answer? Who did you have that conversation
10 with?

11 THOMAS FODOR: That was just a joke
12 between me and the City of Ottawa boss that I had.
13 He talked about opening -- actually, it was
14 earlier. I think it was in the early summer that
15 they first were going to open. And he said
16 something, and I said, "next year, right?" He
17 said, "no, this year."

18 He says, "well, maybe they'll extend to
19 October." I said, "I'd hold out for another six
20 months."

21 Because I remember telling him, it's
22 not going to open well. You don't have enough time
23 to do a proper test and commissioning and trial
24 run.

25 And even when I saw the trial run

1 process, and how it gets evaluated, I thought, this
2 is going to be a piece of cake. And even that they
3 couldn't do, you know.

4 And I have seen trial runs where you
5 run for three months, if not longer. This was
6 three weeks at the most, and it was not really
7 passed.

8 KATE MC GRANN: Where have you seen the
9 trial runs for three months or longer? Was that
10 because it was originally determined that the trial
11 run period should be that long? Or, was it because
12 the trial running period had to restart over and
13 over again because of what was being seen?

14 THOMAS FODOR: Well, there are some
15 systems where I know they've had three months, if
16 not more. And in fact, one -- what was it I was
17 reading? They ran for six months before they
18 opened up. But that's pretty -- that's a long
19 time, you know.

20 But my feeling was, if it was less than
21 two months, it ain't going to work. Not if it was
22 the type where you had to pass X-number of days,
23 and if you didn't like pass it -- if you didn't,
24 you started it from scratch again.

25 So we always allowed for like two to

1 three months. Two to three weeks, I just said,
2 this is -- "it's not going to open up well." And I
3 made that verbally clear. I did not send it to,
4 you know, City Hall or anything like that. But I
5 remember telling my boss, "there's no way you're
6 going to do it. I've never seen it done."

7 It was just one of those things where,
8 just gut feel. Knowing that -- even if it was --
9 even if a vehicle was good, was reliable, it just
10 takes a long time to make sure all the elements
11 work in unison.

12 And when you get an unreliable element,
13 especially a vehicle, the vehicle in which is a
14 critical piece of it, then it becomes almost
15 impossible.

16 KATE MC GRANN: Did you deliver any
17 kind of final report on the readiness of the
18 maintenance team to the City after trial running?

19 THOMAS FODOR: No. Because after that,
20 our contract was up, and I never went back.

21 KATE MC GRANN: You never went back to
22 the City after trial running?

23 THOMAS FODOR: No.

24 KATE MC GRANN: And you didn't do any
25 further work on the system after trial running?

1 THOMAS FODOR: No, I was back on
2 Eglinton. Basically, we were waiting for a renewal
3 of the contract, and then of course there was all
4 these problems there and everything, so that sort
5 of dragged on.

6 Then they wanted me to join -- to get
7 on to the second part of the extensions, and that
8 was about the time I left and I went to HDR and
9 went on to the Ontario line from the Eglinton line.

10 So, yeah, the last thing I remember was
11 driving out of Ottawa and hearing about the doors
12 being stuck or something. And I thought, oh my
13 God, I thought, I got to go back, and I never did.
14 I never did go back and talk to them about it.

15 That's why I can't really tell you how
16 the follow up was. Because I had been there for
17 like two weeks and literally sleeping four,
18 five hours, having weird hours. Like sleeping in
19 the afternoon and working the midnight shift. By
20 the time I left, I was just like, I want to go
21 home.

22 And then after that, I never went back.
23 So I never knew -- I never really got into any
24 discussions with anyone about some of the questions
25 you're having as to what exactly went wrong? It's

1 just what I saw and what I suspected.

2 KATE MC GRANN: The Commission has been
3 asked to investigate the commercial and technical
4 circumstances that led to the breakdowns and
5 derailments on the system.

6 Based on the work that you did, are
7 there any topics or areas that you think the
8 Commission should be looking at that we haven't
9 discussed today?

10 THOMAS FODOR: Well, I think the whole
11 OCC, I don't know whether they were the proper
12 people to have run it. I'm sure a lot of them had
13 qualifications as, you know, for buses and
14 airports. But I think what you mentioned earlier,
15 if they had some ghost operator there -- and they
16 may have. Honestly, as I said, I don't know.

17 It's just that some of the things I saw
18 what they did, it just -- I thought, they're not
19 doing what I would have done. And just again, my
20 gut feel, I never did deal with them. I was more
21 or less in the maintenance area. And because
22 there's a maintenance control centre there, we
23 could watch the OCC, all the trains out there. We
24 could hear them communicating with them -- and we
25 could communicate with them. But we could hear

1 what was going on, and our role was really watching
2 the faults coming in, the statuses of different
3 things and, you know, stuff like that. And so
4 dealing with failures, you know, issues like that.

5 So I mean, I may be out of my -- the
6 realm of what I should say about the OCC. But I
7 just thought -- and I know a couple of other people
8 that I've worked with said the same thing, they're
9 bus operators and it shows. Just one of those
10 lines where -- take it for what it's worth.

11 KATE MC GRANN: "OCC" stands for.

12 THOMAS FODOR: "Operations Control
13 Centre".

14 KATE MC GRANN: Okay. And that's
15 staffed by OC Transpo staff?

16 THOMAS FODOR: Yes, City of Ottawa was
17 the operator. Yeah.

18 KATE MC GRANN: And the Commissioner
19 has also been asked to make recommendations to
20 prevent issues like this from happening again.

21 Are there any specific recommendations
22 or areas of recommendations you think you should be
23 considering as part of that work?

24 THOMAS FODOR: Well, my -- I think
25 SNC-Lavalin was the one that was the main

1 contractor for RTG, right?

2 KATE MC GRANN: SNC-Lavalin was a main --
3 sorry. Explain to me what you mean by that.

4 THOMAS FODOR: It was one of the main
5 elements within the RTG group. Well, I don't want
6 to belittle them, but I know I dealt with
7 SNC-Lavalin as a parts competitor for Bombardier
8 for many years. And this is just what I
9 experienced, okay? And I'm just suggesting that
10 this may have happened.

11 For many years, for a number of years,
12 we lost a lot of contracts, bids to SNC-Lavalin. I
13 remember a number of my directors saying, we've got
14 to cut this out, and cut systems engineering out,
15 blah, blah. We can't win projects and everything
16 because SNC-Lavalin keeps winning them.

17 And I thought, the only way they can be
18 winning this is because they're cutting out system
19 engineering, definitely. And their bribing or
20 something like -- and that happened, we found out
21 later, SNC-Lavalin won a lot of things. I'm not
22 saying they won Ottawa from bribes.

23 But I do believe there was no system
24 engineering. SNC-Lavalin's format was, we'll take
25 this project on, and then we'll throw out all these

1 things to these guys and tell them, "it's your
2 responsibility to interface".

3 And, sure, you've taken out a huge
4 element. Where in Bombardier, what I did, and
5 others was, we had a system engineering group that
6 made sure that all these elements were designed
7 properly in, instead of just throwing them out to
8 these people and then say, "make it work". And I
9 honestly believe that's one of the biggest problems
10 and -- because of the way SNC-Lavalin worked.

11 In fact, I do know that the yard was
12 not signalized the way it was supposed to have
13 been. It should have been ATO. In other words,
14 the trains automatically come to a point and a guy
15 gets on board. That didn't get done when I was
16 there. It was going to be done in the future, but
17 that was one of the original plans.

18 And you know why? Because SNC-Lavalin
19 took Thales' bid, and then extracted the system
20 engineering element out of it. Because Thales does
21 the same type of thing, where they want to make
22 sure everything works. And the management part,
23 the internal management, and then they gave them
24 the bid, the contract, and it was only later that
25 Thales found out that their engineering, or system

1 engineering and engineering design element was
2 taken out.

3 And so they were actually doing this
4 job for a lot less, because SNC-Lavalin won it
5 because the price difference. So there was a big
6 argument, and from what I understand, SNC-Lavalin
7 refused to do any signalling in the yard until they
8 got paid. And it was probably going to be some,
9 "later on we'll pay you to do it". But there was
10 never any ATO yard, and that was part of the
11 design.

12 I remember asking, "why isn't this
13 thing signaled?" So it's done so that the guy gets
14 on here and he's not walking through the whole
15 thing.

16 "Well, that's because there was a feude
17 between Lavalin or RTG, because they took out some
18 of the costs that were internal to Thales, and then
19 they just said, 'do the design'." And then they
20 did it.

21 But you know, you don't take out a
22 certain portion of it and keep the profits for
23 yourself, or cut it down so you win the project.

24 But again, I do know SNC-Lavalin was
25 famous for not doing system engineering. Probably

1 from what I've been saying, you understand how I
2 look at system engineering, everything ties in, and
3 you look at one thing.

4 SNC-Lavalin did not do that. And I do
5 know that that was probably why half the documents
6 that we expected to find, they weren't there.
7 Because they were more systems-oriented documents,
8 overall, you know, how does this thing work?

9 They were famous for, I'll give you
10 this, I'll give you that, and you guys are all
11 responsible to put it together. It doesn't work
12 like that. And that is a classic case.

13 And I think Ottawa suffered from the
14 lack of system engineering.

15 KATE MC GRANN: And the evidence of
16 that, the direct evidence of that that you cite is,
17 information or documents that you would've expected
18 to find there when you got there, that weren't
19 there; is that right?

20 THOMAS FODOR: Yeah, yeah.

21 KATE MC GRANN: Can you give me some
22 examples of what you expected to find and didn't
23 find when you got there?

24 THOMAS FODOR: I'm only talking about
25 from my maintenance and operations.

1 But I mean looking -- you need a system
2 engineering plan, I don't know if they got one, but
3 you can check and see.

4 There's a quality assurance plan.
5 There's a whole ton of plans that you need upfront.
6 Implementation plan, you name it.

7 They probably had their construction
8 plan, but when it comes to any type of interface
9 design and -- like in Eglinton, God, I must have
10 read 200 different interface packages between, you
11 know, tunnel ventilation system and the signalling
12 system. The signalling system and the
13 communication system, how do they interface?

14 I don't recall reading too many of
15 those in Ottawa. And I don't recall ever seeing
16 too many of those interface management documents.
17 To me, that smacks of not having a system
18 engineering aspect there.

19 KATE MC GRANN: And those documents
20 that you're talking about that you didn't see many
21 of and you didn't read. If they had existed, would
22 you have known about them based on the work you
23 were doing?

24 THOMAS FODOR: If I was there on a
25 daily basis, I probably would have gotten into more

1 deeper, you know, like what exactly do we have here
2 and what don't we have?

3 Again, my problem was, I was going
4 once, twice a month. And when I got there, I had
5 things I had to get done, you know, on my role.

6 So it was hearsay, or a couple of days
7 extra where I got into a meeting and I found out
8 that they didn't have this, or they didn't have
9 that, that's where I realized, there's something
10 missing here.

11 And, you know, a big problem, and I
12 think -- and again, I don't know how the whole
13 contract was set up with the constructors, it was a
14 pretty unique way of doing it. To me, just looking
15 at the ballast I thought, man, they cheaped out.
16 Why did we not specify -- why didn't someone
17 specify, concrete pad all the way down. Why
18 ballast? That is so maintenance heavy to deal with
19 ballast, that's nuts.

20 KATE MC GRANN: The work that you were
21 doing, you were there, I think a couple of days a
22 month; is that right?

23 THOMAS FODOR: Yeah, yeah.

24 KATE MC GRANN: Was there someone --
25 did you have a counterpart at the City who was

1 there every day doing the same kind of work as you?

2 THOMAS FODOR: No.

3 KATE MC GRANN: Would you normally
4 expect someone in your role to be on the project
5 full-time for at least some of the project?

6 THOMAS FODOR: Well, I'm doing that on
7 Eglinton, I'm the operations and maintenance
8 specialist. So you would expect someone to be
9 there, but I don't recall anybody who was doing
10 that role.

11 We had an operations specialist; we had
12 a maintenance specialist; and we had a systems
13 specialist that were hired by the City of Ottawa.
14 Maybe someone suggested that they do this, because
15 of the way it was structured and everything. I
16 don't think Ottawa had that -- those resources.

17 KATE MC GRANN: And are those
18 resources, resources that you would expect to see
19 on the project?

20 THOMAS FODOR: Yeah. I would, again,
21 if I was setting up a system, I would have a system
22 engineering specialist, or a system engineering
23 team, which --you know, there were a lot of
24 different people that I dealt with and I met, who
25 were specialists. One guy was on fare collection,

1 and the other guy knew the traction power.

2 What I didn't see was a system
3 engineering group. I may be wrong, but I don't
4 recall. And if it was, maybe just one person. You
5 need a team. Again this goes back --

6 KATE MC GRANN: This is at the City you
7 need a team?

8 THOMAS FODOR: -- this goes back to, I
9 don't know if there was that much emphasis on it,
10 you know...

11 KATE MC GRANN: When you say you would
12 expect to see a systems engineering group, you
13 would expect to see that at the City working on
14 behalf of the owner?

15 THOMAS FODOR: At least one person
16 watching the system engineering team on the other
17 side, which they didn't have one, because they
18 don't believe in that.

19 But, you know, you still have a system
20 engineer who would try to -- or a group that would
21 be able to see how this interface is. But the
22 problem is that that's the client, he's not writing
23 the interface documents. It's supposed to be the
24 proponent, you know, the people who got the job,
25 and that was RTG. They're the ones who are

1 supposed to be writing interface documents.

2 If they're not writing it, then
3 everyone is on their own little thing and we'll put
4 it together, and oh, my God, it doesn't work right.

5 KATE MC GRANN: From the client's
6 perspective, who's monitoring that work being done
7 by the contractor? Who at the City was monitoring
8 that work, or lack thereof being done by RTG?

9 THOMAS FODOR: I don't know. I mean,
10 they would -- they'd have schedulers, and they'd
11 have program managers worrying about what these
12 people were doing and all that. And there were
13 signalling guys who dealt with Thales, you know.

14 But it's an approach that, you know,
15 that not everyone follows, and I've heard a lot of,
16 in the past, people saying, we've got to get rid of
17 system engineering. It is a costly element,
18 because you've got another group that is trying to
19 put all this together. I'm not a door expert. But
20 I've dealt with people dealing with doors. I'm not
21 a vehicle expert, I deal with vehicle people all
22 the time. I deal with power, signalling, you name
23 it. And I start to put it all together and make it
24 work.

25 And I think that is where sometimes

1 you'll find with that gap, you know, that this guy
2 is working, but he doesn't exactly know how it's
3 going to fit together. But the guy who's handing
4 it out says, "it's your problem". Now you're
5 relying on these two people to shake hands, and it
6 usually doesn't work too well. Too many grey areas
7 then.

8 KATE MC GRANN: Well, I think that
9 those are my questions for today. And so we can
10 bring the interview to an end. Unless there's
11 anything else you wanted to add before we draw this
12 to a close.

13 THOMAS FODOR: No, I think I'm fine. I
14 hope I answered enough to your satisfaction and
15 everybody else's.

16 KATE MC GRANN: Thank you for your time
17 today.

18
19 -- Concluded at 5:05 p.m.

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25

1 REPORTER'S CERTIFICATE

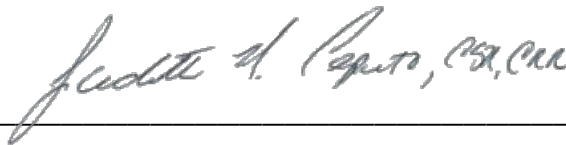
2
3 I, JUDITH M. CAPUTO, RPR, CSR, CRR,
4 Certified Shorthand Reporter, certify;

5 That the foregoing proceedings were
6 taken before me at the time and place therein set
7 forth; at which time the interviewee was put under
8 oath by me;

9 That the statements of the presenters
10 and all comments made at the time of the meeting
11 were recorded stenographically by me and
12 transcribed at my direction;

13 That the foregoing is a Certified
14 Transcript of my shorthand notes so taken.

15
16 Dated this 21st day of April, 2022.

17 
18 _____

19 NEESONS, A VERITEXT COMPANY

20 PER: JUDITH M. CAPUTO, RPR, CSR, CRR
21
22
23
24
25

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