November 5, 2014
(9:41 a.m.)
CHAIRMAN:
Q. Well, good morning, everybody. I'll call this hearing to order. This is a public hearing into an Application by Facility Association under the Automobile Insurance Act for new rates for its taxi and limousine class of business. My name is Andy Wells, I'm Chairman. On my left is our Vice-Chairman, and on my right are our two other commissioners, Vice-Chairman--I'm having a senior's moment. I am. I'm losing my mind.
COMMISSIONER WHALEN:
Q. Darlene.
CHAIRMAN:
Q. Darlene Whalen. What's wrong with me? And Commissioners Oxford and Newman. Jacqui Glynn is Board counsel and she'll be speaking momentarily. Cheryl Blundon is our Director of Corporate Services and Board Secretary and she is--oh, she is there, okay, and we have with us also, Ryan Oake, our Regulatory Analyst, and Robert Byrne is at the back, our Director of Regulatory and Advisory Services,

and we have our Board actuary Paula Elliott with Oliver Wyman. I'll now ask the parties to introduce themselves, and I hope they haven't forgotten their names. So, who goes first? I guess the Applicant.
STAMP, Q.C.:
Q. Good morning, Mr. Chairman, Commissioners, I'm Kevin Stamp and with me is Jennifer Newbury. We're both with the law firm Martin, Whalen, Hennebury, Stamp, and sitting behind me are Shawn Doherty of Facility Association, and Cosimo Pantaleo, he's with Ernst & Young. Both Mr. Doherty and Mr. Pantaleo have significant experience in the insurance industry. Each are fellows of the--or each is a fellow of the Canadian Institute of Actuaries, and both are members of the Casualty Actuarial Society. Of course, we'll be hearing from Mr. Doherty momentarily when he commences his evidence.
MR. JOHNSON:
Q. Good morning, Mr. Chairman. I'm the Consumer Advocate in these proceedings, Tom Johnson and with me is my colleague Tom Williams, a lawyer with whom I practise. Also appearing with me

this morning is Mr. William or Bill Vulcan, (phonetic)--is an actuary from Millimans who has been providing guidance and helping--assisting us in our understanding of the technical matters that are inherent in these types of applications.
CHAIRMAN:
Q. Okay. Well, we'll be having our transcripts done by Discoveries Unlimited, and they will be available of curse as soon as we possibly came make them available. Andrew Davis is the Board's Computer and Regulatory Support Technician, and of course he will be assisting us--he's over there on the right--my right, your left--with our electronic filing. Now our sitting hours I think we've decided are going to be 9:00 to 11:00, although we're starting somewhat late today, and 11:30 to 11:30 with a 30-minute break. I think there's going to be some changes for tomorrow, Mr. Stamp, to accommodate you and I think our solicitor Jacqui Glynn will make reference to that now shortly. Actually, she'll do it right now because I'm going to turn it over to him. I think I've finished my opening

remarks.
MS. GLYNN:
Q. Thank you, Mr. Chairperson. Good morning to the panel and everybody else who has joined us here this morning. On March 6th, 2014, the Board received a rate application from Facility Association for it's taxi and limousine class of business. Notice of this application was published in newspapers throughout the province starting on March 26th, 2014. On July 7th, 2014, notice that the application would proceed via way of an oral hearing, a public hearing, was published and on October 9th, 2014, notice of today's hearing date was published. The Board received notice that the Consumer Advocate had been appointed on April 23rd, 2014. We have received two requests to make an oral presentation. Todd Edmunds from Star Taxi and Doug McCarthy from the former Co-op Taxi. These presentations will immediately follow any opening statements from the Applicant and the Consumer Advocate. These will not be sworn witnesses and there will no cross-examination of these witnesses. The one

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remaining deadline is November 12th, 2014, and this is the date that any member of the public may submit a letter of comment. As the Chair alluded to, our normal sitting hours are from 9:00 to 1:30 with a half-hour break. Tomorrow our sitting hours will be from 11:00 to 2:45. The transcript will be delayed tomorrow because of the later sitting hours. Counsel has agreed to the filing of some documents for information, and we will enter them onto the record as the evidence is presented. The application has been properly filed, and there are no further preliminary matters that I have been made aware of. The Board is able to commence hearing of this application.

CHAIRMAN:

Q. So Mr. Stamp, I think it's your application, sir, so the matter now is in your hands.

STAMP, Q.C.:

Q. Thank you, Mr. Chairman. I don't intend to make any significant opening statement, Mr. Chairman, Commissioners. We'll have the information that we're going to present come through Mr. Doherty, the actuarial expert who has provided the report, but I just would

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initially make this comment, that this rate application, in our view, is driven strictly by experience. There is, as you know, no profit component for Facility or for the underlying insurers. There is no cost of capital recovery for Facility or the underlying insurers. So again, the application is driven strictly by the experience that has been demonstrated in the documentation. So we'll put that experience before the Board for its consideration in deliberations.

CHAIRMAN:

Q. Okay, sir. So you're going to call your -

MS. GLYNN:

Q. No.

STAMP, Q.C.:

Q. Unless somebody else has a remark.

CHAIRMAN:

Q. Oh, is there any other--are there any other-- I'm sorry?

MR. JOHNSON:

Q. Yes. Mr. Chairman, I'll just be very brief, as well.

CHAIRMAN:

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Q. Okay.

MR. JOHNSON:

Q. The Consumer Advocate has concerns about the application of Facility Association, coming as it does on the heels of an application made by Facility last year which did result in a large increase to taxi operators operating in the Province of Newfoundland and Labrador. We believe that Facility's rate proposal in fact has not been justified, and we note in that regard that the Board's consulting actuaries, Oliver Wyman, have exhaustively examined the FA proposal, as well as the experience, and have concluded that FA's 56.7 percent overall rate level change to be higher than they calculate based on assumptions they find to be reasonable and the Board's guidelines. With that brief opening statement, let me say that we look forward to participating in the application's review as efficiently and as effectively as possible. Thank you.

STAMP, Q.C.:

Q. I think there are going to be some statements from some of the -

MS. GLYNN:

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Q. Yes.

CHAIRMAN:

Q. Pardon?

MS. GLYNN:

Q. We've discussed the order of the presentations, and Mr. McCarthy has graciously agreed to give his presentation first.

CHAIRMAN:

Q. Oh, okay. Mr. McCarthy, sir. Come forward. So we got one or two?

MS. GLYNN:

Q. We have two.

CHAIRMAN:

Q. Two? Okay.

MS. GLYNN:

Q. Mr. McCarthy and Mr.--

CHAIRMAN:

Q. Have a seat here, sir.

MS. GLYNN:

Q. - Edmunds?

MR. MCCARTHY:

Q. Good morning, Mr. Commissioner, panel. Ladies and gentlemen, thank you very much. Bear with me, I have the flu, not Ebola.

CHAIRMAN:

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Q. B'y, don't say that around here, you're liable to get arrested.

MR. MCCARTHY:

Q. My name is Douglas McCarthy. Until Sunday evening, I was the General Manager and Treasurer for Co-op Taxi here in St. John's, a company that was in business for 25 years. Unfortunately, we had to close our doors, and having said that, I'm still a taxi operator, I'm still representing the majority of the industry here within the City of St. John's as their spokesperson. The application for Facility Association Limousine and Taxi Association rates. The proposed rate increase by Facility Association for the taxi and limousine industry here in the province, if approved will have a drastic impact on the overall industry, as well as the entire economy of the province. In August of 2013, this Commission approved a rate increase of 50 percent for third liability, a 100 percent increase in accident benefits and a 100 increase in the uninsured automobile. This increase came as a complete shock to the industry, as we had no notification of the

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application for a rate increase. We only became aware of the rate increase upon renewal of our insurance premium. To many, this increase was enough to force some marginal operators to retire from the industry. This year once again Facility has requested an additional increase of 50 percent for PLPD, a 294.3 percent increase in the accident benefits and a whopping increase of 329. 3 percent for the uninsured automobile. I had many objections to the proposed increase for various, different categories. PLPD 50 percent, once again, on top of the 50 percent from the previous increase, will total approximately 125 percent in just one year from the rates effective July 31st, 2013. This I find hard to believe, that in two years the cost of settling a claim has increased by 125 percent. To me, this would indicate that what cost $1,000.00 to repair in July, 2013 now costs $2,250.00, or that a soft-tissue injury of the same $1000.00 now costs $2,250.00. What is driving up these costs? Certainly not inflation. Perhaps in their haste to settle claims, Facility is paying out

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whatever the claimant is asking without doing any investigative work, as people have the attitude, well, it's only a taxi company and they have lots of insurance. What they fail to realize is that's it's the consumer of our service, that the more it costs the owners to operate, the more the consumer will have to pay. Accident benefits, 294.3 percent, this increase is totally unbelievable. You cannot justify an increase of over 300 percent in just one year. Once again, oh, it's only the taxi industry. It would seem like this is the underlying train of thought: hit them as hard as you can, and hit them again. Uninsured automobile, 429.3 percent in just over one year. I, as an operator, am required by law to carry adequate insurance to operate my vehicle, as is every other taxi in this province. The minute I cancel my policy, the insurance company must notify City Hall that my policy has been cancelled. City Hall will then inform the stand operator, who must withdraw that vehicle from service until such time it's proved to the City that the stand operator once again is covered by insurance.

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However, if you listen to any local radio or TV channel, there is rarely a day goes by that someone would be arrested for driving with no insurance, registration or license, then only to find out the outstanding finds total tens of thousand of dollars. This has nothing to do with the taxi industry. We are insured. This is an enforcement issue. If the insurance companies are having a problem with uninsured drivers, then they should be going after the government and have them do the job that they are supposed to be doing. If I sell my vehicle to someone, then it should be my responsibility to remove the plate from the vehicle after I--because after all, I paid for the plate, not the car. The plate is mine, therefore it should be my responsibility-- therefore it should be the responsibility of the new owner to acquire the appropriate plate for the vehicle. In this manner, the Province will be able to control who can operate a vehicle on the road, also make it the responsibility of the insurance industry to notify a Motor Vehicle branch if someone cancels their insurance and fails to insure

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with another company, seize the vehicle, if necessary, until such time as the vehicle is properly insured. Our industry should not be the scapegoat for the Province and insurance industry not doing their jobs correctly. The taxi industry is a very volatile industry. We are subject to the whims of every gas company, as are all consumers, however, we use more fuel than the average driver will in five years. We already pay higher insurance rates than the average driver. As with all consumers, we are faced with the same increase in the consumer index as they. Two years ago, I needed to make $78.00 every day just to cover my expenses. Then last year, I had to make $98.00 every day just to cover my costs. With the proposed increase, my insurance rate will cost me nearly $5000.00 a year. This will drive up my daily requirement to nearly $125.00 a day before I put five cents in my pocket. At this rate, I will not put a second vehicle on the road. Yes, I realize that we are a high-risk business. Even Stats Canada says that as a taxi operator, we are ranked in the top five high-risk stress occupations.

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However, my insurance rates should be based on me, the individual, and not what I do for a living. If I drive for 25 years without an accident or a claim, I will still be classified as high risk because what I do and not who I am. Is this not another form of discrimination? If this increase is improved, it will have a drastic impact on the entire of the economy of the province, for it will drive those marginal operators out of business, thereby reducing the amount of vehicles available to provide service to the public. In some areas, we are the only source of public transportation. This increase would, if approved, force many of these operators out of business. It will have an impact on other areas of the economy as well. With fewer vehicles available for use, it will have a negative impact on the entertainment industry, as more individuals will opt not to go out for the evening, or it will have an even greater impact on public, what with the possibility of even more impaired drivers on the road putting the public at risk. Yes, I realize that as things increase in cost, costs have to be

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passed on. However, Facility has failed to cover their losses in the past and now they seem to want to play catch up at our expense. If it is because of a management issue, then Facility should get their own house in order before they burden the industry with rates that may force many of us from the business and have an overall impact on the provincial economy. Thank you very much.

CHAIRMAN:

Q. Thank you, sir. Do we have a second presenter?

MS. GLYNN:

Q. Yes, we do. Todd Edmunds from Star Taxi.

MR. EDMUNDS:

Q. Good morning. My name is Todd Edmunds, and I represent Star Taxi in Corner Brook, Newfoundland. I would like to take a moment to encourage the Board to take a good look at

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CHAIRMAN:

Q. Just one second. Can everybody hear him at the back? Perhaps, sir, you could just speak a little bit louder so everybody can hear you in the room?

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MR. EDMUNDS:

Q. I would like to encourage the Board to take a look at the Facilities application before making a decision. Last year, the increase drove the costs for my cars from $1206.00 per car to $3,021.00 per car. In that case, I had to remove seven cars from my fleet and three independent cars also removed their cars. That makes it harder for my business to operate. Another increase would even be greater to our business because there are talks that other independent drivers are removing their cars. One of the biggest problems that I have with the increases and that is when we make a claim, we can't get no one to return a phone call or an adjuster to look at the claim. They just tell me that it's cheaper for them to pay the claim off then investigate. I wonder if they would do more investigations on the claims and that may keep their costs down. I'm not a very good speaker.

CHAIRMAN:

Q. Oh, that's fine. Take your time, sir.

MR. EDMUNDS:

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Q. First time ever, right?
CHAIRMAN:
Q. You're doing fine.
(10:00 a.m.)
MS. GLYNN:
Q. You're doing fantastic.
MR. EDMUNDS:
Q. In my closing remarks, our expenses keeps going up and we got no way to get our money back, so I don't know, it's probably going to be--put us out of business, too, you know?
CHAIRMAN:
Q. So you said $1,200.00 to $3,000.00 in one year?
MR. EDMUNDS:
Q. When I first bought the taxi stand, I paid $1,206.00 a car. The last increase, my cars went from $1,206.00 to $3,221.00 a car.
CHAIRMAN:
Q. Okay.
MR. EDMUNDS:
Q. And if you look at another increase, well, that's going to, you know, put us out of business, that's all I can say.
COMMISSIONER WHALEN:

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Q. How long have you had your -
MR. EDMUNDS:
Q. Three years.
COMMISSIONER WHALEN:
Q. Three years?
MR. EDMUNDS:
Q. Yeah.
CHAIRMAN:
Q. Okay. Thank you very much.
MR. EDMUNDS:
Q. Okay, thank you.
CHAIRMAN:
Q. So Mr. Stamp, I guess now finally it's back to you? I want to thank both of those--thank you, gentlemen, for that presentation, by the way. It was much appreciated, and of course, you understand it will form part of the public record. Okay, sir.
STAMP, Q.C.:
Q. Thank you, Mr. Chairman. Mr. Doherty is ready to take the stand and present the material that we need to present.
MS. GLYNN:
Q. Mr. Stamp, we didn't query whether your witnesses would like to be sworn or affirmed.

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Does it matter?
STAMP, Q.C.:
Q. I'll let Mr. Doherty answer that when he gets to the mic. Mr. Doherty, the choice is yours as to whether you will be swearing on the Bible or take a solemn declaration. Do you have any preference?
MR. DOHERTY:
Q. I'll take a solemn declaration.
MR. SHAWN DOHERTY (AFFIRMED), EXAMINATION-IN-CHIEF BY KEVIN STAMP, Q.C.
STAMP, Q.C.:
Q. Mr. Chairman, Commissioners, there's been discussion before today on the issue of Mr. Doherty and of course, Ms. Elliott being declared experts and there's no objections, as I understand it, on anybody's part in that regard, but I will have Mr. Doherty speak briefly to his credentials. Mr. Doherty, first of all, if you could tell us your full name and your address, please?
MR. DOHERTY:
A. Shawn Francis Doherty. I live at 4801 Vivian Road in Cedar Valley, Ontario.
STAMP, Q.C.:

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Q. And where are you employed, Mr. Doherty?
MR. DOHERTY:
A. I'm currently employed with the Facility Association.
STAMP, Q.C.:
Q. And what is the nature of your employment with Facility?
MR. DOHERTY:
A. My title is Senior Vice President of Actuarial Services, and the Chief Financial Officer. I'm responsible -
STAMP, Q.C.:
Q. Can you--I'm sorry.
MR. DOHERTY:
A. Sorry. I'm responsible for both provision of actuarial services, the management of external actuarial services, and I'm responsible for accounting and finance.
STAMP, Q.C.:
Q. Can you speak, Mr. Doherty, to your--you know, your education and training in terms of--as an actuary?
MR. DOHERTY:
A. Certainly. I have a Bachelor of Science from the University of Toronto. I'm a fellow in

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good standing of the Canadian Institute of Actuaries and the Casualty Actuarial Society. I have approximately 25 years of experience in the actuarial profession. I started off working on pricing exclusively for the first five years of my tenure. After that, I worked at various organizations where the primary responsibility was to either start an actuarial services part with the organization or to reorganize one that was already existing. With the Facility Association, I joined in December of 2010 with the initial charge of bring the actuarial services that were current--at that time, were all outsourced--to bring them inside and to promote what we call a hybrid actuarial model where some services are performed internally with the Facility Association and some are provided by an external party.

STAMP, Q.C.:

Q. Those are all my questions with respect to Mr. Doherty's training and experience, Mr. Chairman. I would ask that he be declared an expert in actuarial science related to, I guess, topics for the purposes of the

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presentation of the Actuary Report to the Board.

CHAIRMAN:

Q. Absolutely.

STAMP, Q.C.:

Q. Thank you. All right. Mr. Doherty, if we turn first of all to your--start just with your Actuarial Memorandum. Can you turn to that, please?

MR. DOHERTY:

A. Absolutely, and I will confirm that I prepared the indications of the Newfoundland taxis on behalf of the Facility Association, and I completed those indications in compliance with the Canadian Institute of Actuaries' standards of practise--all of the standards of practise, but in particular Section 2600, which is on rate making for property casualty insurance.

STAMP, Q.C.:

Q. All right, then, and so the Section 2(a) report which is at Page 3 of 32 of the Actuarial Memorandum. Is that your signature and is that the--I guess adoption of the report by you?

MR. DOHERTY:

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A. That's correct.

STAMP, Q.C.:

Q. All right. Now I just want to briefly have you speak to the issue of the data that is used for purposes of preparing your report. There is a section on that at Page 432. Could you just speak briefly to the data component that is relied upon?

MR. DOHERTY:

A. Sorry, we want to go to page -

STAMP, Q.C.:

Q. 4 OF 32 of the Memorandum and to the heading--the data.

MS. GLYNN:

Q. Mr. Stamp, we're trying to bring them up on this screen, so if you -

STAMP, Q.C.:

Q. Oh, I'm sorry. Yes, okay.

MS. GLYNN:

Q. And we'd just like to confirm that that's the page that we're looking for, please?

STAMP, Q.C.:

Q. Oh, my. I need better glasses than this, Mr. Chairman.

MR. DOHERTY:

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A. I think it's Page 40. You're looking for exhibit -

STAMP, Q.C.:

Q. 4 of 32.

MR. DOHERTY:

A. 4 of 32?

MS. GLYNN:

Q. Of which section, Mr. Stamp?

STAMP, Q.C.:

Q. 2(a) 2.1. It's in the very early part of the report, Mr. Doherty, and it follows--after the Actuary's Report, there's a heading on "Data and Methodologies" and then there's a further section on data. And I believe the next page will be the page I'm looking for--yes

MR. DOHERTY:

A. So Data and Methodologies, Section 2(a) 2?

STAMP, Q.C.:

Q. No. The one below it.

MR. DOHERTY:

A. 2(a) 2.1?

STAMP, Q.C.:

Q. 2.a.2.1.

MR. DOHERTY:

A. Yeah. So, with respect to the data that we

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used, we take it from several sources. The results that we have from the actual taxi itself, we have them as claims recorded and premiums that have been recorded and provided to us at the time of the--available at the time we completed the indication--the data available to use at the time was as at December 31st, 2012. We augment this with valuation data that was prepared with respect to Facility Associations non-private passenger data set as at June 30th, 2013. Our valuation process is updated every quarter for the Facility Association business in each jurisdiction and we view the results on two basis: private passenger and non-private passenger. The rationale for that split is that our members share the results of the Facility Association on the basis of jurisdiction, business segment, being private passenger and non-private passenger, and accident year results, and the sharing is done based on share ratios that are determined for each of the members at that level of detail. In addition to the valuation, then, as identified in .2, as I mentioned already we

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use the experience of the taxis that is provided to us through the servicing carriers providing that information to the Insurance Bureau of Canada, who operate as the statistical agent on behalf of GISA, which is the government agency in charge of gathering information. The information is provided by the servicing carriers to the Insurance Bureau of Canada through what is called Statistical Plan Nine, which is the automobile plan specifically for Facility Association. The results were compiled as of December 31st, 2012. We also used, as identified as Number 3, the industry automobile insurance experience through that same basic data structure, of the commercial vehicle experience as at, also, December 31st, 2012. Our view is that the data is reliable and is sufficient for the analysis that was completely. We did not do independent analysis or independent confirmation on individual pieces, particularly of the industry results, as we do not have access to that audited information. However, we believe that it is appropriate and we do look at how

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it changes from one year to the next and identify any reconciling issues, and if we find that there are concerns, we will raise it with the IBC to get an understanding of it. We are fine with the data as been provided.

STAMP, Q.C.:

Q. All right. So with that preliminary discussion, Mr. Doherty, I'm going to ask you to turn to the exhibit package and in particular, first of all, to Exhibit D-1.

MR. DOHERTY:

A. So that would be on Page 40 of the overall package. The structure of this particular exhibit, along the rows you're going to see that there are accident years, and each of the sets of accident years is split among the coverages. The top one that we have is total; that is the all-coverages experience. Down below, we have it broken down into various components. The first one that you will see there is referred to as Third-Party Liability. We'd put it in brackets as indivisible. That is the combination of bodily injury and property damage. Beneath that, you will see Accident Benefits. Again, we refer to it as

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indivisible. There are component pieces or kinds of loss within accident benefits: medical, disability income, death benefit, etcetera. We've grouped those all together under the one common heading of "Accident Benefits." Below the Accident Benefits, you will have uninsured automobile, and then the physical damage coverages will follow after that. If I could -

STAMP, Q.C.:

Q. So Mr. Doherty, you're saying that the top block is the sum of all of the coverages that are listed below the individual coverages?

MR. DOHERTY:

A. That's correct.

STAMP, Q.C.:

Q. And in each of these areas, the total coverages and the individual coverages, you have the years 2003 through 2012 identified?

MR. DOHERTY:

A. That's correct.

STAMP, Q.C.:

Q. Okay. So if you can just walk us through, let's start with the--going across the page with the Earned Exposure, just explain to us

what that is, please?
MR. DOHERTY:
A. Yeah. So in Column 1, we have the Earned Exposure rate that's taken from the AIX data exhibit. Earned Exposure is a description of the number of taxis that are insured through that particular period. So, it's a calendar year adjusted number. If you have a taxi that's insured for six months in the calendar year, it will be counted as half a taxi. So 816 exposure counts for accident year 2012 refers to the exposure of 816 taxis equivalent to being insured for one year over that period. In Column 2, from that same data source, we have the Earned Premium. Earned Premium, again, reflects policies that are exposed and the exposure during that particular period. So if you have a policy that is written in--on July 1st and it's for 12 months, half of that premium would get earned in the initial year and half of it will get earned in the second year, and in this case again, focusing on accident year 2012, we have $5,534,000.00 of Earned premium represented. In Column -

STAMP, Q.C.:
Q. I'm sorry, where were you reading from when you mentioned the Earned Premium amount?
MR. DOHERTY:
A. Oh, sorry. I want to take you up, please--I'm sorry, I'm looking at the screen, it's--that was for UA. The total at the top, yes, is $1,677,734.00.
STAMP, Q.C.:
Q. So this is the Earned Premium for taxi business only?
MR. DOHERTY:
A. For taxi business only for the Facility Association.
STAMP, Q.C.:
Q. For 2012, and this is the sum of the premium for all coverages that are listed below, is that correct?
MR. DOHERTY:
A. That's correct.
STAMP, Q.C.:
Q. Okay. Go ahead.
MR. DOHERTY:
A. In Column 3, we come up with the Averaged Earned Premium simply by dividing Column 2 by

Column 1, and you'll see that the average, and this isn't reflective of any one individual taxi but for the period 2012 and again, this is on an earned basis, the average premium charged was $2,056.00.
STAMP, Q.C.:
Q. And so if I go back to 2003, Mr. Doherty, what is that average number in 2003?
MR. DOHERTY:
A. It was $1,931.00.
STAMP, Q.C.:
Q. That's for all of the coverages that those taxis, at that time 652 taxis, carried?
MR. DOHERTY:
A. That's correct.
STAMP, Q.C.:
Q. And in 2012, the number is $2,056.00?
MR. DOHERTY:
A. Correct.
STAMP, Q.C.:
Q. Okay, and the Recorded Indemnity, Column 4?
(10:15 a.m.)
MR. DOHERTY:
A. Yeah, and I apologize that--the heading in here on Column 4, it says FA PPV Valuation

Data. That's incorrect. It's actually the FA AIX data. It's recorded indemnity for the taxi business. That's an unfortunate typo there.
STAMP, Q.C.:
Q. And what is Recorded Indemnity?
MR. DOHERTY:
A. Recorded Indemnity reflects some of the transactions on claims payments and the current case reserves that have been provided for from the servicing carriers and through the AIX system. So it reflects the life-to-date payments plus outstanding case reserves as at December 31st, 2012, for each of those accident years. So all of them are as at December 31st, 2012. You can think of it as at December 31st, 2012, this is what the servicing carriers have provided as their best estimate of the cost for settling the claims for each of those individual accident years. Because it involves actual claims payments, they don't have to estimate that part of it. They've actually settled, at least partially, some of those dollar amounts. The case reserves are the part that they also provide,

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which is an estimate that is based on an assessment that's done on individual claims themselves.

STAMP, Q.C.:

Q. So this Column 4, Mr. Doherty, does this column reflect known accidents, so to speak?

MR. DOHERTY:

A. That's correct.

STAMP, Q.C.:

Q. And the amounts that have been paid to date and the amounts that are expected to be paid in respect to those known accidents?

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. Okay. Can you just tell us what Column 5 is?

MR. DOHERTY:

A. Yeah. Column 5, you'll see that it has nothing in the total, but it would reflect, when you look at the individual coverage levels, what we refer to as loss development factors. The idea behind the loss development factor is that it's an adjustment for the information we know as at December 31st, 2012, what we believe those claims will ultimately

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get settled at. In addition to the claims that we know, it also has a provision for claims that have occurred or events that have occurred and claims that could arise out of that, for which a provision is not already included in the individual case reserves. Obviously -

STAMP, Q.C.:

Q. And so--sorry?

MR. DOHERTY:

A. Sorry. Obviously if a claim hasn't been reported to the servicing carrier or it's at the servicing carrier, but they haven't forwarded that information in through the IBC, the claim has occurred, we just don't have it recorded at the Facility Association yet, and so part of our job is to estimate a provision for those amounts.

STAMP, Q.C.:

Q. So those unknown claims, so to speak, are not recognized in Column 4, but they're trying to be accounted for through Column 5?

MR. DOHERTY:

A. Correct.

STAMP, Q.C.:

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Q. Just for purposes of clarification here, there aren't any factors listed in Column 5 for the all coverages group, but if I were to take the 2003 ultimate indemnity in each of the individual coverages and bring it to a total, would that 2003 amount be the $2,125,082.00?

MR. DOHERTY:

A. That's correct, and the implied factor--you can divide Column 6 by Column 4 and you can get an implied loss development factor for each of those accident years.

STAMP, Q.C.:

Q. For all coverages?

MR. DOHERTY:

A. For each of the coverages, and even for the total. You can certainly tell that, because the column for--accident 2003, Column 6 is the same as Column 4, so we aren't in--assuming that there's any further development on claims that we already know about for 2003.

STAMP, Q.C.:

Q. All right, and what is--so the ultimate indemnity is just the amount that's in Column 4 adjusted for the factor that you have in Column 5?

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MR. DOHERTY:

A. Yeah. So really we're looking at two different provisions and we have case reserves that are amounts that the servicing carriers and their claims adjudication process have identified that they think they're ultimately going to pay out. We look at the history of how claims develop over time and then we make an assessment of that, and so our final assessment will include a provision for both claims that have occurred but are not reported and included in the case assessment, but also it will include an assessment of how adequate the historical case reserve activity is at that point in time. And the reason I bring that up is that it is possible to have a value in Column 6 that's actually below the value that's in Column 4. And I think you'll find that, for example, in accident year 2009, the amount of recorded level that we have in total is $2.8 million but we're estimating that at final resolution we will only pay out $2.6 million and that's because the case reserves historically, at that point in time, have tended to be higher than what's necessary to

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resolve the cases.
STAMP, Q.C.:
Q. Can you tell us about the ratio that is identified in Column 7, the Ultimate Loss Ratio? What is that, please?
MR. DOHERTY:
A. The loss ratio is a key performance metric that's used throughout the insurance industry and it's simply a measure of how much are you ultimately going to pay out in, in this case, indemnity claims only. So this includes on loss adjustment expenses. This is only for paying out in indemnification for events that have occurred that are insurable. And this ratio is a ratio of how much premium has been collected and how much the indemnity is in relation to that premium collected. So it's Column 6 divided by Column 2. If that ratio is below 100, that means that we have collected more premium than we're going pay out in indemnity, which allows us to recover some of the cost of the expense associated with it. If that ratio is above 100, that means that the ultimate payout to indemnity is going to be higher than we collect in premium.

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STAMP, Q.C.:
Q. So Mr. Doherty, the ultimate loss cost, is that an exposure number generated in Column 8?
MR. DOHERTY:
A. Yeah. So Column 8 is a--you can think of it as an average loss per vehicle. Just like in Column 3, we have an average premium amount per vehicle or per taxi, Column 8 des the same thing but for the losses. So for example, for 2003, the average premium was $1,931.00 but the average loss per taxi was $3,252.00. You can get the same ratio in Column 7 by dividing Column 8 by Column 3. It's the same number, same ratio.
STAMP, Q.C.:
Q. So just to come back then, Mr. Doherty, to the Earned Premium for, say, 2012 in Column 2, that's shown as $1,677,734.00, is that correct?
MR. DOHERTY:
A. That's correct.
STAMP, Q.C.:
Q. And then the recorded indemnity in Column 4 for that same year is $2,847,576.00?
MR. DOHERTY:

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A. That's correct.
STAMP, Q.C.:
Q. So what do those two numbers reveal?
MR. DOHERTY:
A. That payments on accident year 2012 plus the case reserves that have already been established for events that we know about is in excess of the premium that we collected for that period.
STAMP, Q.C.:
Q. And then if you adjust it for the loss development factors that you talk about in Column 5, what happens to the recorded indemnity in Column 4?
MR. DOHERTY:
A. It reaches the point where it's almost twice the level of the earned premium.
STAMP, Q.C.:
Q. Okay. So to understand what this table is telling us, is that the expectation is that just about 200 percent would be paid out in indemnity payments compared to the premium earned for that same year?
MR. DOHERTY:
A. That's correct.

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STAMP, Q.C.:
Q. At the top of the page or near the top of the page, this is described as FA Experience Projected Provincial Loss Ratio (Indemnity Only), what does that mean?
MR. DOHERTY:
A. This reflects the taxi business in Newfoundland only and again, with indemnity it's for indemnification. This does not include any of the expenses associated with the servicing carriers adjudicating the claims, or any cost associated with adjudicating the claim, including any costs associated with hiring professionals to do any kind of work associated with adjudicating the claim.
STAMP, Q.C.:
Q. So the 199.5 percent in Column 7, which is intended to reveal that the ultimate payout for the known accidents and those that are not yet known but have been--but these are existing policies, will be 199.5 percent before any expenses are taken into account?
MR. DOHERTY:
A. That's correct.

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STAMP, Q.C.:
Q. All right. If you can just come across the page, then, to the--Columns 9, 10 and 11, Mr. Doherty.
MR. DOHERTY:
A. The portion of this exhibit beyond Column 8 is an attempt, then, to work through the process of what we're trying to achieve in terms of a rate level indication. What we're trying to look at is a forward-looking exercise for a future policy period, what is the rate that we need to charge to capture all the costs associated with providing insurance, and that includes, obviously, the indemnification part, but also to capture our expenses. To go through that exercise, we have two bases that we start with and this--in particular, all of D-1 is associated with looking just at the experience itself, and again we're looking at a 10-year period. Our goal through this process is to take the historical events that have occurred and use those as a way of estimating what might happen in the future. WE don't know what's going to happen in the future, but we have a pretty good idea of

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what's happened in the past, and we believe there should be a connection between what's happened in the past and what's going to happen in the future, and to that extent, the process that we're going through here, we're trying to, then, adjust the premium levels to what we expect to see before any other rate changes occur and we're projecting for each of the accident years. For the events that gave rise to claims, say, in action year 2003, what claim activity could we expect to arise from those same events if they instead incurred, at the average accident date, under the future policy period that we're looking at. The average accident date of the policy period that we're looking at is about midway through accident year 2015. So our goal of this exercise is saying I don't know what's going to happen in the future, but I can look at these ten years and say they might give me some insight into what might happen in the future, but I need to put them on a basis that I expect to see in terms of cost in the future, and we do that through a process that's identified through--on the law side

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through columns 12 through 16. And we also need to recognize that the premiums that we charged in the past are not the premiums that we're currently charging. And in addition to that, there are underlying changes in the business itself and the coverages that are purchased and the vehicle values that are being insured that we're going to get additional premium for as a matter of course, and so we estimate what those impacts are. We treat those through the drift characteristics that we referred to in Column 10 and I'm happy to go through any of those.
STAMP, Q.C.:
Q. All right, so just quickly then, what is the - what number is showing up in Column 9, what's that you intend to identify?
MR. DOHERTY:
A. So Column 9 should reflect the difference between the rate level that was available for any particular accident year, and the rate level that is currently available before we make any changes. In particular, the total, we're not reflecting anything in any of those columns because we'd have to do some weighted

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averages to get to a total level, but if you look just down below, the first set that you see below is third party liability, and the factor that you're seeing there at 1.4992 is an estimate of the increase that happened for third party liability effective August 1st, 2013, a 50 percent rate increase. So we're adjusting the premium levels for each of those accident years to reflect the fact that after each of this accident years, the only rate changes that had occurred happened effective August 1st, 2013. In fact, as I understand it, rates for taxis for the Facility Association prior to our filing last year and the approval, the rates hadn't changed since 1993.
STAMP, Q.C.:
Q. And so you spoke about the drift features that are generated in the factor in Column 10, and how do those factors apply to impact on Column 11?
MR. DOHERTY:
A. Yes, so there's a number of characteristics that we look at on here. Through time, taxis may purchase higher limits. Instead of

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purchasing a half a million dollar limit, they may purchase a million dollar limit. They may instead of purchasing a million dollar limit, they may purchase a 2 million dollar limit. When they purchase a higher limit, we charge a higher premium, and if we see a trend in the purchases, then we're collecting more premium over time and if we believe that trend is going to continue, then over time the portfolio of taxis are buying a higher limit, then we know we're going to collect more premium and we reflect that as part of what we would call "a limit drift". To the extent that they are purchasing a high limit, obviously, they're exposed to higher values on the claim side. So on the claim side, you would also see increases that are imbedded in the trend analysis on the claim side. So we recognize that we're collecting additional premium. When you look at what's happening on the claim side, buried in there may be some impact because over time they're buying high limits, and so severity, for instance, might go up because of that. A limit is one consideration. Deductibles on physical

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damage, if the taxis over time are buying higher deductibles, the premium would actually decrease because we're collecting less money, but again if they're buying high deductible on the claim side, that would have downward pressure on the claims. So you're getting it in both sides, and it should be reasonably aligned. Rate group is another characteristic that we look at. Unfortunately, with taxis, we don't have detail provided through the plan of operation process on the individual distribution of the taxis by rate group. A rate group is a description of the vehicles themselves. So for this, we're assuming that over time purchases of new taxis as you renew your fleet will generate on average a higher overall rate group, and so we would be collecting more premium on the basis of that. Because we don't have detail, we make an assumption that the overall drift is similar to inflation, so I believe we use a 1.5 percent additional premium that we would collect because of the rate group drift. All of those are put together. The various characteristics will affect different

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coverages differently. Rate group doesn't affect the third party liability, for instance, it doesn't affect the accident benefits, for instance, but it does affect the physical damage coverages. Deductibles don't apply to - purchase deductibles don't apply to third party liability and accident benefits, but they do apply to physical damage. Limit doesn't apply to physical damage, but it does apply to third party liability. So we mash it up with the coverages themselves.

(10:30 A.M.)

STAMP, Q.C.:

Q. All right, and following from that, if you could speak to the claim side, the two columns that contain data there?

MR. DOHERTY:

A. Yes, so Columns 12 through 16 provide the process that we use to get from the level of ultimate claims that we believe we're going to pay out for each accident year to that future level. The first three columns are described as input. Column 12, 13, and 14, they're loading factors that we would put in that are not used in this particular filing, but I'll

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just very briefly introduce what they would be if they were. Number 12, if you have individual claims detail, you might be able to cap individual claims with a view that particularly large claims may not happen all that often, but you want to reflect it. So if you're looking at a very small narrow period, your experience could be over - you could have adverse impact because you're looking at an event in a five year period that really only happens once every 10 years or once every 20 years. You just got some bad luck, it just happened in that five year period. So what you would do is cap that loss or remove it altogether and replace it instead by a large loss load. So in the case where you have an event that has happened, but you think that size of that is only going to happen once every 10 years, you would remove the claim, say, it's a million dollars, take it out, and because it happens once every 10 years, you replace it with $100,000.00. Because it happens once every 10 years, if you replace a million dollars with $100,000.00, you're capturing the million dollars over a 10 year

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span. In this particular case, we don't have detailed access for the individual claims. My understanding is that there have not been any significantly large claims that are impacting any of the results that you're seeing in Column 6 or 4, but nonetheless, if we did have that detail, we would look at perhaps doing that. Similar to that, in Column 13, you may get what we would refer to as "catastrophic events". Those are the types of events that, as opposed to impacting a single event, you know, an accident that happens where there's a large claim came out of it, catastrophic events are more when one type of event happens that affects multiple policy holders. So, for instance, a hail storm might happen that has an impact on a large number of individual claims. The same thing as with large losses, if you're able to identify those single events that impact multiple policies, and you think that they're influencing your shorter period that you're using for your rate indication when really they don't happen that often, you want to remove those and replace them with something that spreads it to the frequency

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that you would expect. Again if you had a hail storm or hurricane, or a very large winter storm, ice storm, something like that that happened and you're able to isolate it and you looked at the entire cost of all the policies that were impacted, if it's a million dollars and you only expect an event like that to happen once every 10 years, you'd replace the million dollars with $100,000.00 per year. Column 14 is a catchall for any other types of adjustments. Now when we get into the trend discussion, our trend process captures both trends which are changes over time, slopes of lines, if you want, but there are times where there are reforms that we would call "shifts" in how claims activity will occur. If we haven't captured some piece of it, we believe, in our trend structure, then this provides us an opportunity to make an additional adjustment. We haven't done any here, but as a for instance if we completed our trend analysis and subsequent to that, but before we did our rate level indication, a reform that was under review, but wasn't included in our trend structure, was introduced and we knew it

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was going to be impacted, rather than going back and changing our trend structure models, we would probably just put in an adjustment directly in here for the anticipated impacts of those reforms. Again none of 12, 13, or 14, are used in this particular analysis, but that's what they're there for.

STAMP, Q.C.:

Q. And Column 15, Mr. Doherty.

MR. DOHERTY:

A. So Column 15 reflects two components of trying to move from the events and the claims arising out of events that occurred in the past to how they might look in the future. In our trend structure, we really focus on three things. One is the relationship between loss cost, if you want, and time, and there may be more than one time period that we consider if we believe that the trend rate, if you want, the change in loss cost over time itself has changed between periods. Maybe for a period of five years we believe that loss costs are going up by 2 percent, and then for some reason they're now going up by 5 percent, we would bifurcate those two periods and treat them separately,

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and it also provides us with an opportunity again to identify where we think reforms and what those impacts of reforms might have, a one time shift up or down in the loss cost. So you may introduce a reform that you think has a one time impact of decreasing loss cost by 25 percent. We would capture that in your loss cost projection model. The idea behind this is that for any individual accident year, we can take it from the events that occurred in that accident year and the claims arising out of those, and estimate what those same events would have looked like, and claims arising out of the events would have looked like in the 2015 period. To give you an example, our view using the commercial experience for the industry as that for bodily injury, the frequency of claims is actually dropping. So if you've got a claim - you have events that occurred in accident year 2013, and claims arising out of those events. Moving forward just on the frequency side to the 2015 period, you would actually have fewer claims for the events. Now I don't know if the number of events has dropped or if the

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number of claims per event have dropped. I'm not trying to separate those two out, it's not important for me. All I recognize is that claims arising out of events in 2013, you have fewer claims arising out of events in 2015, and so we would reflect that in this loss cost projection factor. Similarly, the cost of those events, the severity of those events, so each individual claim on average, how much does it cost to settle those claims. Between 2003 and 2015 for bodily injury, we believe those costs have gone up and have gone up substantially. So you would reflect that. In moving from 2003 to 2015, you'd see an annual increase in each of those costs on the severity side, but we also believe that the automobile reform or something happened in 2004 that caused a dramatic drop, both in the severity and in the frequency, which causes 2003 accident year losses to have dropped, in addition to those two individual pieces that I talked about, which are the downward trend in the frequency, the upward trend in the severity, but there was a one time shift and I assume that it's because of or related to the

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2004 product reform, but it might be related to something else. I don't know. All I know is that when I look at the data, something changed in 2004 and I want to reflect that, and I reflect that in how I move from 2003 to 2015. Now I will say, when we look at the overall experience, we do look at this 10 year period, and I think it's important to keep in the context the 10 year period, but in terms of the actual experience, that period that we're using for the indications themselves, we're only using the most recent five years. So the only year - there's two years that are impacted, in our view, by this 2004 reform or whatever it was that changed in 2004 because we believe it happened in the second half of 2004. So those impacts only have an influence on the experience projected forward for accident years 2003 and 2004, and neither of those periods are actually used to determine the experience projected loss ratio in our indication, but nonetheless it's there. If I go down to the bodily injury piece in Column 15, if you go down just to third party liability and you look at those loss

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adjustment factors, you can see them in Column 15 there. The top one is 2003, and it's 1.0598, and accident year 2004 is the next one, 1.2383, and then accident year 2005 is 1.4788. You can see that those factors have actually increased up to 2005. After 2005, those factors all decreased, and the reason 2003 and 2004 are low is because of that adjustment that we put in because of what we're seeing, something happened in 2004. Otherwise, you would see - generally because our overall loss cost for bodily injury and property damage are increasing, you would see all of those factors increasing as you move from accident year 2012 back to accident year 2003.

STAMP, Q.C.:

Q. All right, and just the last two columns, Mr. Doherty, can you summarize what they are?

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. That's Column 17 and 18.

MR. DOHERTY:

A. Yes, so Column 17 then - first of all, Column

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16, this is now trended ultimate loss. This is - go back to accident year 2003. Accident year 2003, 16, this is the cost of the claims that we think that if you took those events from 2003 and you had them occur in 2015, instead of generating whatever the value was in Column 4 or Column 6, you're going to generate 2.8 million dollars of claims, and like 2012, instead of whatever the value is that we had that occurred in 2012, you would generate 3.8 million for those types of events if they occur in 2015. This provides us with 10 data points, if you want, of possible years of how 2015 could manifest itself. So those are the trended ultimate losses, and the trend again - the trended piece takes you from that prior accident period to the future period, as opposed to loss development, which is really just trying to get how much are we ultimately going to pay up for 2003. The trend piece takes you from those events that occurred in 2003 as if the occurred in 2015. In Column 17, all we're doing then is dividing the trended ultimate losses in 16 by our On-Level Earned Premium in Column 11. These are the

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loss ratios that those accident years would generate if in 2015 the events from those accident periods took place, and we got the premium that we are currently charging for the taxies. So, in particular, for 2003, notwithstanding the fact that we got a 50 percent rate increase, if you charge those rates in 2015 and you had the same events that you had in accident year 2003 occurring in 2015, we believe the loss ratio would be 151 percent. Similarly, for 2012, the bottom one there, if the events that occurred in 2012 were to be repeated in 2015, and we're charing the premium that we're currently charging, the loss ratio would be 155 percent. Again this column to me indicates that even though we got a 50 percent rate increase last year, I'm still expecting the experience if I don't get further rate increase to be in excess of 100 percent loss ratio, and you can see that 100 percent is for every year, bar one, 2004, and 2005 is close too, but that only gets us to paying for the indemnity if you're at 100 percent. If you're below - if you're over 100 percent, we're not even collecting enough

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money to pay for the claims themselves, let alone the expenses that are involved in adjudicating the claims, but also our administrative expenses.

(10:45 A.M.)

STAMP, Q.C.:

Q. So Mr. Doherty, if we were to go back to the on-level premium Column 11, and take, for example, 2012, $2,474,620.00, that's the on-level premium that has been, if you like, grossed up premium for all coverages?

MR. DOHERTY:

A. That's right.

STAMP, Q.C.:

Q. So if we were to approximate the proposed increase that is now being requested, what would that number look like, the 2012 number in Column 11, what would that number look like if it included the rate increase we're now seeking?

MR. DOHERTY:

A. In Column 11, it does include it, I think, if we go back to the loss ratio.

STAMP, Q.C.:

Q. No, but this on-level earned premium, that

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rate increase that's included there, is that for the 2013 rate increase?

MR. DOHERTY:

A. That's correct.

STAMP, Q.C.:

Q. But the 2014 Application?

MR. DOHERTY:

A. Yeah, that's not included there.

STAMP, Q.C.:

Q. No.

MR. DOHERTY:

A. This is all assuming that we receive no further rate increase. This is a view of the world if the rates remain as they currently are.

STAMP, Q.C.:

Q. But if that rate changes in the manner that we have proposed, what would Column 11 for 2012 look like if that rate were to take you back to 2012? Can you speak to that?

MR. DOHERTY:

A. I'd have to look at what the total amount is.

STAMP, Q.C.:

Q. Well, put it this way, the on-level earned premium for 2012 for all coverages was

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$2,474,620.00, right?

MR. DOHERTY:

A. Yeah.

STAMP, Q.C.:

Q. And what percentage component approximately would be composed from third party liability in that number?

MR. DOHERTY:

A. It's approximately 93 percent.

STAMP, Q.C.:

Q. Okay, so a very significant portion of it is third party liability?

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. Okay. All right, so you've spoken to some extent about the D-5 factor influence, the loss development factor in D-5. Can you then just take us to how that loss development factor is created? I think, Mr. Chairman, Commissioners, I don't understand this loss development factor issue to be much of an issue as between the parties. That's my understanding at least, but I'm going to have Mr. Doherty just sort of run through it, at

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least briefly, to explain how that factor is generated?

MR. DOHERTY:

A. Yes, on this particular D-1 Exhibit, the factor that we're referring to is in Column 5.

STAMP, Q.C.:

Q. Yes.

MR. DOHERTY:

A. And the reference then is to D-2. The factor itself comes directly from Section C on the D-2 Exhibit, so I would ask to move to the D-2 Exhibit. As I understand it - I'm just trying to find where it is exactly. I think it's down probably three or four pages. There you go.

STAMP, Q.C.:

Q. Here you go.

MR. DOHERTY:

A. So as I mentioned at the onset, the loss development process is not directly related to the experience of the taxies as provided to us. Instead we use the valuation for Newfoundland experience for non-private passenger as the basis for determining how the claims activity moves from different points in

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time to their ultimate settlement. At the June 30, 2013, the valuation process relied on three different valuation methodologies. There was a Link Ratio Method, an Expected Loss Ratio Method, and a Bornhuetter-Ferguson Method. The Link Ratio Method was completed at a coverage level and an accident half year level, and I'll talk about that process in a minute and I'll take us to Appendix A, where the determination of the factors that we used in the estimates of ultimate associated with that are derived. In addition to that, though, we have the second estimate process that we use that's called the Expected Loss Ratio Methodology. Unfortunately, we didn't include the results of that in our original filing. We did provide a summary of those exhibits with our response in the March 31st Oliver Wyman request for additional information. There's not a lot of difference between our selections on a Link Ratio basis and the Expected Loss Ratio. The Bornhuetter-Ferguson Method is really a weighting methodology between a Link Ratio Method and Expected Loss Ratio Method, but there is not a

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lot of difference between the Link Ratio Method and the Expected Loss Ratio Method with respect to Newfoundland non-private passenger. In fact, as I recall, for accident years 2010 and prior, we used the Link Ratio estimates directly. For accident years 2011 and 2012, we did give some weight to the Expected Loss Ratio Method. For third party liability, that actually reduced the estimate rather than increase it. The Expected Loss Ratio Method valuation estimate was lower than the Link Ratio Method. The June 30th valuation, when we got to the Expected Loss Ratio approach, we did not complete that approach at a coverage level and an accident half year level. That level of detail was only done on the Link Ratio. That's the process that we in place at the time. So we would come up with what we refer to as expected loss ratios for each accident year, but we would do it at what we call a government line level, that is third party liability accident benefits and other coverages. The title comes from when you're reporting your results to government agencies. Typically, they only ask you to summarize your

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results into those three categories. Again historically, we've only done it on an accident year basis, and the government line for the Expected Loss Ratio, and because the Bornhuetter-Ferguson Method is a weighting of the Link Ratio and the Expected Loss Ratio, it too is only done at the government line level. As we selected results estimates based on the Link Ratio, because we done it on accident half year basis, and because we done it on a coverage year basis, we can sum those up to an accident year and a government line level just by adding together the selections. So the process is determine your estimates of ultimate using the Link Ratio Method and accident half year on a coverage level basis, then summarize those selections up to an accident year and a government line basis, compare those to estimates you would get using an Expected Loss Ratio Method, compare those to what you would get from a Bornhuetter-Ferguson Method, and then the appointed actuary, in fact, selects their final estimate of ultimate from those three methodologies giving whatever weight he determines

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appropriate for the various estimates. What we have here in Exhibit D-2 then is not the taxi experience. It is the non-private passenger experience, but taxi is included in this experience, and the top part, Section A, is at June 30th, and this is the ultimate indemnity amount by coverage that was selected through the process. In Section B below is the recorded activity for that same data, but as at December, 2012, and the reason we pull up the recorded indemnity for non-private passenger in that Section B is because our taxi experience is as at December 31st, 2012, and if we apply the methodology as I'll point out in a minute in Section C, we've got an estimate at June 30th that's a selection of ultimate, and I can apply that selection of ultimate to any prior diagonal. I can look at it, compare to results as at December 31st, 2009, and I will be able to tell you from 2009 what do I think it is to get to ultimate just by comparing it, because I have a selection of ultimate for that period. Obviously, at 2009, I don't have any accident year 2010, 2011, or 2012, so I'm not going to have any data there

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at all to apply anything to. I will have it for 2009 and prior. So if we go down to Section C, all I'm doing here is creating what's called an Implied Loss Development Factor from my selection of ultimate to the recorded activity that's in Section B. So for accident year 2012 in Section C for bodily injury, I would use a factor of 1.1239, apply to any piece of my non-private passenger to get from the recorded activity at December 31st, 2012, to my ultimate estimate associated with my results as at June 30th, 2013. Now the results that we have, the data that we have available to us on taxies through the AIX does not split for us bodily injury and property damage. So we have to use instead the column there in Section C, Column 36 called TPL Indivisible. You can see that the weighting is just simply a sum of the results of bodily injury and property damage. Now we do have a column in there called DCPD, Direct Compensation Property Damage. In some jurisdictions that is a coverage under TPL. That is not a coverage for TPL under Newfoundland, but we include it, anyway.

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Because we've standardized this template, this indication template is applied for all classes of business across all jurisdictions, so you will every now and again see something that doesn't necessarily apply specifically to Newfoundland taxies, but where it doesn't apply, it doesn't have any impact. So when you look at Section C, Column 36, TPL Indivisible in accident year 2012, you'll see an Implied Loss Development Factor of 1.1316, and I believe if you go back then to Exhibit D-1, you should see that 1.131, and you'll see it down there at the bottom under TPL Indivisible. For 2012, there's a factor of 1.1316. Now that describes how the D-2 Exhibit produces that factor. I do want to take us now to Appendix A, where we look more closely at the loss development process itself.

STAMP, Q.C.:

Q. Just before you go there, Mr. Doherty, so Column 36 factors find their way into the TPL Indivisible Column 5 grouping in the D-1 Exhibit?

MR. DOHERTY:

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A. That's correct.

STAMP, Q.C.:

Q. And, I guess, similarly, the other coverages, I think, in Column 42 and onward, find their way into the individual coverages in D-1 as well?

MR. DOHERTY:

A. That's correct.

STAMP, Q.C.:

Q. Okay, and you were going to take us, I think you said, to Appendix A.

MR. DOHERTY:

A. If we can go to Appendix A, I believe it starts on page 78. This is the title page. We'll go down to page 79. This first section is a summary of the results of the Link Ratio estimate process itself. Again, unfortunately, we didn't include the results of the Expected Loss Ratio. We did provide that as an appendium to earlier questions in March. So Section A is the Link Ratio estimates by accident year for non-private passenger, and if we slide down here, you'll see, say, for accident year 2012, we do have in here - you'll see accident year 2013 is in

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here because this is a valuation at June 30th, so we do have results for accident year 2013 for non-private passenger. This only reflects half an accident year because it's at half a year, but that result is not used in our indication because we're not using accident year 2013 anywhere. So I'm going to focus my attention on accident year 2012. You see for bodily injury the estimate, if you use the Link Ratio Methodology, is $4,992,958.00, and next to it is property damage, the estimate using Link Ratio is $657,350.00, and if you add those two numbers together, you get $5,653,308.00, which is in that column for TPL Indivisible. These are the results if you are using the Link Ratio process to estimate your ultimates. I'm going to slide down then to the next page. Now these are the government line selected ultimates, and you'll see Column 22 says final selection, so again the valuation result, we select ultimates at the government line level. So Column 22 reflects what was actually selected. So if we slide down to take a look at accident year 2012, the final selection was $5,088,963.00, which is

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lower than the Link Ratio estimate. What we want to do is take that government line level and allocate it to the coverage because I need to have coverage level ultimates for use in the indication. We have a process in place to move from government line to the coverage through an allocation, and it depends on the individual government line. For third party liability, if there's any difference between the final selection and the Link Ratio estimate, we would put all of that difference into bodily injury. So you'll notice here for 2012 the property damage selected ultimate is $657,350.00. That's the same estimate ultimate as you saw in Section A, but the selected ultimate under bodily injury at $4,431,613.00 is lower than the estimate from the Link Ratio, and that's because the difference for third party liability is pushed all into the bodily injury. The reason again for accident year 2012, anyway, there's a difference between the final selection and the Link Ratio estimate is because we gave weight in the process to the Expected Loss Ratio estimate, and that Expected Loss Ratio

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estimate for third party liability was lower than the estimate if you used the Link Ratio Method. So that again that difference is all pushed into bodily injury. For accident benefits, we would do the same thing except all of the difference gets pushed into - maybe if you'll just slide up a little bit, I'll see what the column is. In Column 24, called Total Excluding Uninsured Automobile and Underinsured Motorists, the accident benefits government line in Newfoundland includes both uninsured automobile and underinsured motorist coverages. For taxis, there is no underinsured motorist coverage, but again this is non-private passenger in total. So any differences between the final selection for accident benefit government line and the Link Ratio estimate would get pushed into this Column 24, which is really just the accident benefits piece. It's accident benefits indivisible. On the physical damage side, any differences we would actually spread among all the coverages in relation to their contribution at the Link Ratio. So if we had collision, the Link Ratio estimate was

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$100.00, but comprehensive was $50.00, and a difference of $1.00 we would put two-thirds of it into collision, and one-third of that difference into comprehensive. We just split it that way instead of picking one coverage to put all the difference into. Now down below this summary we will see the actual - again the focus of this piece is only on the Link Ratio estimate. We didn't provide the other information, and I apologize for that. If we go down a little bit then into the next section, this is when we actually show the historical development triangles for in this particular case bodily injury, and the snapshots by accident half year, and at different development ages.

(11:00 A.M.)

So if I go down near the bottom there, you'll see that there is a reference to an accident period called 2012-2. The first number in that row is $1,270,697.00. That is the reported losses, recorded losses, both payments and case reserves at June 30th in relation to - sorry, at December 31st, in relation to claims that occurred in the second

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half of accident year 2012. For accidents that occurred in the first half of 2012, they're reflected in the row above. So the first column that we see there, the amount is $1,856,324.00. That is the amount of recorded activity at June 30th, 2012. The next column will show you what the recorded activity was six months later. That is at December 31st, 2012. The final column for that one reflects $3,148,441.00, and that is the recorded activity for accidents that occurred in 2012, the first half, but as at June 30th, 2013. In fact, that last diagonal in that triangle reflects the view of each of those accident periods as at June 30th, 2013. The immediately prior diagonal is the one that is December 31st, 2012. So you'll recall in an earlier section, I said that we looked at our selection ultimates and we compared them to the recorded activity at December 31st, 2012. Those values that we got as at December, 2012, came from that penultimate diagonal, the second from last diagonal. So if we were to go down now - this is the actual experience at different points in time for each of those

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accident periods. Stop me if I'm missing anything.

STAMP, Q.C.:

Q. So this is simply taking those dollar value data out six months, 12 months, 18 months, and so on?

MR. DOHERTY:

A. Absolutely. They're different snapshots, but they're cumulative totals of recorded activity, so it's life to date payments for that particular accident period and the current estimate of case reserves at that period.

STAMP, Q.C.:

Q. Okay.

MR. DOHERTY:

A. So we'll continue going down to the next page. This is just more of the same. This is a continuation of the triangle. The triangle is kind of two big. We could put it all on one page, but I think we'd have to call my brother-in-law, the optometrist, to help us out with seeing it.

STAMP, Q.C.:

Q. Have we gone too far?

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MR. DOHERTY:

A. No, this is perfect. You'll see here now we're actually looking at what we refer to as link ratios. These are simply the division of one column by the prior column from the previous triangle. So at the bottom there, you'll see 2012-2, that's accidents occurred in the second half of 2012. The 6 to 12 link ratio is the results you get when you divide the value that was under Column 12 by the value under Column 6 for that accident year. What it means is that between H6 months and 12 months, accident year 2012-2, the recorded losses increased by 46 percent. That's the 1.46. Similarly, at that same period going from accident year - sorry, from H6 months to H12 months for the previous accident period, that is accidents that occurred in the first half of 2012, those claims increased by almost 44 percent, and for that same accident year - sorry, accident period, accident half year, between ages 12 and 18 they increased a further 17.81 percent. The Link Ratio Methodology is based on the assumption that you can use these increases that are noted in

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each of these periods as a way of estimating how in the future an accident period will develop between ages 6 and 12 months, and between ages 12 and 18 months. So what we do is we look at those ratios and we select from that ratios that we think going forward will occur. So if we slide down a little bit, you'll see that we've got a - the top numbers are our final selections for each of those, but you'll see that there are a number of different averages that relate to those factors above, and there are a number of factors that also relate to either other results that we have for other jurisdictions, sometimes we look at all the Atlantic, sometimes we look at the industry, and we do look at prior selected LDFs as a guide to help us to understand what changes we're going to make. In this particular case, our final selections for the individual movement from one development to the next are in that first row referred to as "Final Selection". So based on our analysis of the results, we would say that between 6 months and 12 months, an accident half is going to - the reported

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activity is going to increase by approximately 51 percent. Then in the next period between 12 and 18 months, it's going to increase by another 4 percent, and the period after that, it's going to increase by about another 1.5 percent, and then by 2 percent, then by 5 percent, and then barely increase at all, go down a little bit, go down a bit more, go up a little bit. Now in order for us to - instead of having to multiply each of these periods each time for an accident year to take it from wherever it is to the ultimate, that is to include all that future development, to simplify the process, we have another row in here called "The Product" where the 1.5427 is just multiplying all of the factors that you see above. The idea is that that would take you from 6 months all the way to ultimate because you're taking into account, I'm first going to increase by 51 percent, and then on top of that I'm going to increase by another 4 percent, and then I'm going to increase by another 2 percent. This just combines all that information into a single matrix, a 54 percent increase from when you initially the

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first time look at that particular accident period when it's 6 months of age, it will increase by 54 percent by the time you ultimately settle that based on that particular matrix. If you're got an accident period and it's at 12 months of age, it's going to increase from that period by about 2 percent only to ultimate level, and if you've got an accident period that is at 18 months of age, it's actually going to decrease. You've actually got more recorded than you actually are going to have to sell it for. It's going to settle for something a little bit less and 2 percent below what you've currently got it at, and 24 to 30, it's going to drop by 97 percent. So we would take these factors and apply them to then the values in the most recent diagonal of the triangle to get us to estimates of ultimate. The 6 to 12 factor that we have here, the 1.5427 would apply to accident year 2013/1. That's the accident period at June 30th that's at 6 months of age. I'm not interested in that one, it's not going to show up in our indication, but the next two do have an impact. The 12 to 18 month, the

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1.022 gets applied to the recorded activity for accident year 2012/2, and the 18 to 24, the .9835 gets applied to my accident period 2012/1. So if you went back up and you keep in your head 1.022 and .9835 - good for you, I wouldn't be able to keep track of that, I'd have to actually look at a piece of paper. So we're going to slide up and look back at the triangle again. Not that triangle, the previous page, sorry, and we'll slide down and look at accident year 2012. So if you look at 2012/2 at June 30th, the reported activity is $1,855,520.00, and that's the amount that we would multiply by the 1.022 factor. For accident period 2012/1, the recorded activity is $3,148,441.00, and that's the one that we would multiply by .9835. If you do those two multiplications, and I applaud you if you can do it in your head, and then you add those two together, the sum is $4,992,833.00, and that's the value that you will see in Exhibit D-2. If we can go back then to Exhibit D-2, I'll try and show that that is, in fact - sorry, not D-2, it's the Appendix A. The D-2 is the final ultimate. I apologize. So page 78 or

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79, I guess, and if you go down to Section B on it - sorry, go up to Section A. There we go. You'll see for bodily injury under 2012, we have $4,992,958.00 and that's how that reflects back into - so that's how we determine the Link Ratio estimate, and again when we get to the selection of ultimate, we take into account Expected Loss Ratios.

STAMP, Q.C.:

Q. So, in effect, Mr. Doherty, what we're doing here, as I gather, is filling out the bottom of that triangle that's blank?

MR. DOHERTY:

A. That's correct. We're trying to estimate how claims will emerge over time.

STAMP, Q.C.:

Q. Right. So that whole process is what gives you the Loss Development Factor that you have in Column 5 of D-1?

MR. DOHERTY:

A. That's correct. So if we go back then to D-1 and just look at the total for a second. So in Column 4, we have the total recorded activity. This is before we do the estimates of ultimate, and you'll see at the bottom the

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total is $22,552,791.00. When we develop all the individual accident years to ultimate, the total is $22,552,118.00. You can see there's not much of a difference there. The difference between the recorded indemnity and the ultimate indemnity we refer to as IBNR. That's a provision for both true incurred but not reported levels, that is for claims that have occurred, but haven't been reported, but also for development unknown claims. In this particular case, the two for this particular portfolio and for non-private passenger business in Newfoundland, the two of those basically are washed. The future development unknown claims is going to be a negative number, so that it offsets the provision we would need for truly incurred, but not reported to us. So the end result is, as you can see, there's really in total no IBNR. There is IBNR certainly on individual accident periods. You can see the difference between 2012, there's about a $500,000.00 of IBNR that take you from 2.8 million up to 3.3 million. There's a small amount of IBNR in 2011. It's about 66/67 thousand, something like that.

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For 2009 and 2010, actually it's a negative IBNR, and those were the places where again we saw those cumulative factors, those link ratios were actually below 1, meaning that we believe that the recorded activity is more than sufficient for providing for claims that we're ultimately going to pay out.

STAMP, Q.C.:

Q. All right, then. Mr. Doherty -

CHAIRMAN:

Q. We were going to take a break. Are you going to be finished - is it okay for you now?

STAMP, Q.C.:

Q. Yes, this is an excellent time.

CHAIRMAN:

Q. Okay, we'll take fifteen and be back at 11:30.

(RECESS - 11:13 A.M.)

(11:45 A.M.)

STAMP, Q.C.:

Q. Okay, Mr. Chairman.

CHAIRMAN:

Q. Yes, sir, you may carry on.

STAMP, Q.C.:

Q. Thank you. Mr. Doherty, I'm going to have us move along now to the Column 15 discussion,

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which we touched on already on our way through D-1, and come back to that more specific detail, again just to have you clarify as we lead into this, the distinction between the Column 5, Loss Development Factor, and the Column 15, Loss Cost Projection Factor?

MR. DOHERTY:

A. Column 5, Loss Development Factor, is meant to take the recorded activity to what we think that particular accident year we're ultimately going to pay out for claims that have occurred whether or not we know about them. The Loss Projection Factor is a way of taking again events that occurred in a particular accident period and claims arising out of those and projecting them forward to a future period to make it look like what would happen if those same events occurred in that future period, what would the claims arising out of that look like. So if we move across to Column 15 -

STAMP, Q.C.:

Q. Just before we go there, Mr. Doherty, in my remarks before we began the discussion on Column 5, I did indicate that it was my impression, at least, that there wasn't

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significant disagreement between ourselves and perhaps Oliver Wyman on those factors that are found in Column 5. Is there a divergence of opinion in respect to the factors in Column 15?

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. And order of magnitude?

MR. DOHERTY:

A. Significant.

STAMP, Q.C.:

Q. Okay.

MR. DOHERTY:

A. So under Column 15, I'm going to first take us to Exhibit D-5, and then I will first show where these factors that you see in D-1 come from, how we derive them, and then we'll drill down into more detail on how the support in behind those factors is generated. So if we move to D-5, which I believe is on page 61 of the package, the first section is just - now all of the results that we have in the top part is reflective of the Newfoundland Facility Association taxis. The first part is

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earned exposure, so this will look the same as what you saw, I believe, in Column 2 of D-1, and it's by accident year. We have a line drawn between accident year 2012 and 2013 because we're now getting into the prospective exercise. We are now trying to move from what has happened in the past and estimate what may happen in the future. We need to have the future levels of earned exposures by coverage so that we can do weightings if we need to. So you'll see under - first of all, Columns 1, 2, and 3, which are the sub-coverages under third party liability, again the dataset that we have to use at December 31st, 2012, for Newfoundland taxis, did not have that detail split, and that's why you see those exposures as zero, but the third party indivisible, which I believe is in Column 10, will show the exposure counts that we are seeing for all those coverages on a combined basis. You can see that beyond accident year 2012, we're just using the same exposure as we have in 2012, so for the purposes of this, there's no need to assume any kind of increase of decrease in purposes by coverage for what we're trying to

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achieve here today, but we do need to have some number in there so we can sum across. So we'd just assume that the same level of taxi purchases by coverage is what you see here, and you can see that third party liability in 2012, we had 816 earned exposures or earned taxis, accident benefits was slightly lower than that, so not all the taxis purchased accident benefits. Uninsured automobile, all of them do purchase uninsured automobile coverage, and we'll talk a bit about the average premiums and stuff like that a little bit later on when I get to the C-1 Exhibit. Very few purchase collision and very few purchase comprehensive, but about a quarter of them purchase specified perils, which is a subset of coverages under comprehensive. So under the second section on this exhibit, if we could just slide down a little bit, what we're seeing here are model loss costs of industry data as at December 31st. This is modelled loss cost not of Newfoundland taxis, but of Newfoundland industry commercial vehicles. This comes out of our trend analysis process. As I'll show a little bit

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later on, we produce models for frequency and severity, and if you multiply frequency and severity, you get loss cost. These are fitted values. That's the model output. These are not actual values, but are fits for those, for each of those accident periods, and you'll see that they go out to 2017, and again this is a prospective exercise. If you look at the change, say, for bodily injury going from 2016 to 2017, that reflects the annual increase from our trend model for bodily injury. Similarly, with property damage, you'll see 2016 to 2017 going from 201 to 204, almost 205. Down below that, you'll see that there are - it's a section that's referred to as @ Projected Average Accident Dates, and we have two sets. One is the prior analysis and the current analysis. So the prior analysis, the average accident date that was used was June 22nd, 2014. The current one is July 23rd, 2015, and what we're doing here is we're trying to estimate from our loss model output for commercial vehicles what would be the loss cost we would project at that average accident date. So for July 23rd, 2015, which is with

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respect to the current indication. For bodily injury, we want to give - accidents that occurred midway through 2015, those are going to be a weighted average of accident year 2015 and accident year 2016, and that's because the average accident date for 2015 is July 1, so it's a little bit earlier than that, so you have to give some weight to accident year 2015, and you'll see at the very bottom there it says, "weights by accident year". So we give 2015 accident year the loss cost from Column 17. We give it 94.2 percent weight, and in 2016, we give 5.8 percent weight. Those weights are determined by the number of days relative to the average accident date of the individual accident year. So each accident year has an average date, and it's generally around July 1. Sometimes it'll be July 2, sometimes it'll be July 20th, it depends on the number of days and the year itself, and we take the average of that. So this allows us to for bodily injury, you can do a weighted average of $360.78, which is the fitted loss cost we're projecting for accident year 2015 for commercial vehicles bodily injury, and

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$376.78, and if you weight those two together using the weights down below, you'll get $361.71. That's our projection for accidents that occur on average on that date for bodily injury. This allows us to determine a loss cost projection factor for any accident year, moving from that accident year as average accident date, to that future date. So, for instance, if I want to determine a factor that takes me from 2012 accident year, I would simply divide $361.71 by the loss cost projected fitted value for 2012, being $316.76, and that gives me a way of moving from accidents that occurred in 2012 to my projected level, July 23rd, 2015. We do this for each of the coverages. So you'll see for each coverage there is a projected loss cost based on the above, weighted average of the above, for the current analysis average accident date of July 23rd, 2015. The factors themselves then, I believe, are on the next page if you scroll down a little bit. For each of these, we're simply dividing again the amount that's in the column for the individual accident year, and we're dividing that into

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the projected level for the July 23rd. So for 2012, if you take the $361.71, which is the projected value at 2015, July 23rd, and you divide that into the $316.76 that was the projection for accident year 2012, that ratio is 1.1419. That is to move from events that occurred or claims that arise out of events that occurred in 2012, the average accident date, to that future average accident date, you need to increase them by approximately 14.2 percent to get them to what we would refer to as on-level. We take these factors directly from this D-5 Exhibit and put them into the D-1, and that's where you'll see these factors. All of the factors that you see in this table here make their way directly into the D-1. So from here, what I want to do is move into the Appendix B, but before I do that - I can go right there, sorry. So if we go to Appendix B, Appendix B itself starts on page 117 of the package, but I do just very quickly want to relate back to that bodily injury loss cost fitted value for accident year 2012 that we talked about a little earlier, $316.76, and how that relates to what

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we're going to see here. Actually, it's a weighted average of the selected loss cost that we're seeing on this page, so if we slide down a little bit until we see accident period 2012, there we go, there's two values for accident year 2012. For the first half, if you go across to the final column, it might be a little bit difficult to trace across, but the value is $313.19. That's the average loss cost that we fitted for accident half 2012, H1, and for 2012, H2, it's the next one, $320.06. Now the value that we have for the whole accident year is $316.76. It's a weighted average of those two values and we weight it based on the earned exposures. It's not an even split between the two accident years. So if we scroll down now to page 123, this is the underlying data that supports our analysis, and if we go down to the bottom a little bit, you'll see the exposures that we have. That first column of numbers, you'll see that for 2012-H1, and 2012-H2, the earned exposures in the first period is $11,448.00 and in the second period it's $12,361.00. These are commercial vehicles for the

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industry. We would weight those two sets of loss cost that I talked about earlier, $313.00 and change, and $320.00 and change, against these two values to come up with the final value for 2012, being $316.76. Again this is for industry Newfoundland commercial vehicles, and this is the basis that we modelled on. Now I want to stay on this page for a little bit and maybe just scroll up to give an idea of the overall. This is our dataset that is used for the trend analysis. I'll just get you to scroll up just a little bit more, so I can see the column headings. So again this is the Newfoundland commercial vehicle experience. In Column 1, that's pulled directly from AIX. It's earned car years. It's the same type of idea that we talked about for the taxi, so one car insured for six months counts as half a car with respect to this. We have three sets of claim counts in Columns 2 through 4. The first one is Life to Date Closed Claims, Column 3 is Open Claims, and the fourth one is our Ultimate, so it's the sum of 1 and 2, plus to the extent that we think that recorded claims activity is going

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to go down or up, we would include that in our ultimate. How can claim counts go down? The way that the data is captured through the AIX system, if a claim is settled with no indemnity payment, it's no longer considered a claim, so the count disappears and we reflect that. So to the extent that you got some open claim counts in 3, some of them might ultimately disappear and resolve themselves as zero, that is they got settled for no indemnity payment and, therefore, it's not considered a claim. Column 5 and 6, these are matrix that we use to help to view potential uncertainty in our estimates. There's a favourable and an unfavourable count. The idea behind here is that the analyst is able to put in a range that allows him to say what happens if claim counts are 5 percent favourable, that is lower than what we're expecting, or if they're 5 percent higher. Now that's not relative to what's actually been reported and closed. We're not going to change those counts, those things are done. What we're actually doing on the plus or minus on the favourable count is with respect to the

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difference between our ultimate claim count and 2. So if we go down to the bottom and look at accident year 2012, we have 12 closed claims for the most recent accident half year, and we're assuming that ultimately there's going to be 71 claims that are resolved. So that difference between 71 and 12 reflects the piece that's unresolved claims. If you focus on that difference, then plus or minus 5 percent of that difference added to the 12 would get you either 68 or 74 ultimately, so plus or minus 5 percent for us, favourable or unfavourable, means that if it's 5 percent favourable, there are only going to be 68 claims; if it's unfavourable, it could be 74 claims. You'll see once you go back a bit, the favourable and the unfavourable in the claim count doesn't really have an impact any more because most of the claims are actually at that settlement piece. Again this is just to give us an idea of potential uncertainty or variability. If we scroll back up, I'll take a look at the next few columns then. Columns 7, 8, and 9, are similar to the counts, except it's with respect to amounts. So Column 7 is

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Life to Date Claims Paid. For the most part, you can consider these resolved. There may be some instances where we are able to recover or salvage a subrogation, so your life to date payments might actually go down, but for the most part, you can view that as this is already done, it's done and over with.

STAMP, Q.C.:

Q. And these are dollar amounts, Mr. Doherty, in thousands of dollars, are they?

MR. DOHERTY:

A. It is in thousands of dollars, yes. In Column 8, it's Case Reserves. Again this is Newfoundland commercial vehicles for the industry, and number 9 is Our Valuation Estimate. All the dollar amounts here are indemnity only. There are no industry loss adjustment expenses, no industry ULAE put in here. Because our analysis, our indication, and our workup is all on indemnity only due to the way that we compensate the service and carriage for the adjudication process, we don't do trend analysis, including any loss adjustment expenses. We focus only on the indemnity, and the indemnity trends that we

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get out of this are applied to indemnity only, so it's a like to like basis. So Column 9 is our view of the ultimate resolution of industry commercial claims on indemnity from our valuation process. Our valuation guys go through the same thing they would do on our portfolio, but apply it to the industry to come up with these estimates of ultimate. Again the difference between 9 and 7 is both case reserves plus IBNR. In Column 10, 11, and 12, or Column 10 and 11, I guess, we have the same sort of concept that you could apply to the unpaid amount, that is case and IBNR as being favourable or unfavourable. So again this gives us a sense for how good or bad might it look, and if the analyst is uncertain on particular values, they can actually go through and say what happens with my trend analysis if things are much more favourable than what I'm expecting or if they're much more unfavourable. For the most part, we haven't done a lot of that analysis because we haven't had the time to do it, but it is in there for the analysts if they have the opportunity to look at it. As we keep going

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across then, I'm just going to focus on Columns 12, 13, and 14. These then are the matrix that we will be looking at for the trend analysis; its frequency, severity, and loss cost. In our model, we have the ability to do regression analysis on any one of those three matrix, and typically while we're going through the exercise, if we build a structure that is determine certain periods of time that we want to include or exclude, that period of time is available for frequency, severity, and loss cost, and we will typically look at the impact on all of those, but when we do our final selections, almost exclusively we do rely on models that are frequency and severity and we arrive at our fitted loss cost by multiplying the two of them together.

(12:00 P.M.)

Frequency, severity, and loss cost are all simple matrix that are driven from the actual underlying data. Frequency is the claim count, divided by your exposures, that is out of 1,000 claims or out of 1,000 vehicles, we capture frequency per 1,000 vehicles, you would have 5.94 claims per 1,000 vehicles for

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that first period that we're seeing under Column 12. The severity recognizes then what's the average claim cost, so it's the claim amount divided by the number of claims. In that first case then, it's $57,804.00 is the average size of the claim, if you want, and then finally the loss cost, there's a couple of ways you could derive loss cost, it's all kind of the same, but we've just done it here simply as Column 12 times Column 13. You could also do it by dividing the ultimate claim amount by the exposures. You'll get the same answers, a couple ways to getting at it. In this case then, it's saying that for that first one there's $343.36 of losses per vehicle in that particular period. Now if we scroll down a little bit, I just want to take a quick look at some of the charts. In this particular case, the page that we're on is bodily injury. So the first one is we have a view then of the entire 20 year period. There's 40 accident periods in place here. The blue bars are closed, the orange represents open claims. These are claim counts - sorry, the frequencies, but they

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reflect the counts, and it's been normalized because you're putting it against exposures. You can see - it's hard to see, actually, but there's a red dotted line and a green dotted line that are the favourable and unfavourable, but the black line is our selected ultimate frequencies, and you can see there's not a lot of variance that's happening in there. So even at the plus or minus 5, you wouldn't see a lot of difference because the main one that's going to differ would be 2012-H2. So in this case the analyst might look at that and say, I don't really feel I need to do any additional work unless I spread out or think that there's more uncertainty in my selection of claim counts and I need to pick something higher than a plus or minus 5. If we slide across, the next chart that we'll see is severity, and here - now this again is claim dollar amount per claim itself. Paid is the blue column, case reserves are the orange, and then the black line represents the per claim IBNR, and we've got these bands around that to reflect a plus or minus, and the plus or minus is reflective of the orange bar and the

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implied difference between the total of the two bars and the black line. You can see the impact of potential variation on that. Then the final chart that we have on here down below is loss cost. The two of them kind of combine, and again you can see the experience. Now when we're doing the analysis, typically it starts with a view of this, and certainly there seems to be some concern that we consider or look at a 20 accident year period. My own personal view is I like to look at as much data as I can. That's why we've moved from a five year view in our indications to at least looking at ten years. I think there's information you can glean from those earlier years, even if ultimately you decide to give it no weight. When we're doing our trend analysis, I think there's good information that you can learn from looking at a 20 year period, and in this particular case, when we're looking at the bodily injury, the frequency, severity, in particular, I can - this is a bit of a challenge. I think I can see something that perhaps other people aren't seeing, but I still believe that there are two

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different periods that are reflective of trends in this loss cost data, and we'll get into that in a minute, but maybe we'll just slide up for the frequency for a second. Now when we were looking at this, and I think it will become more evident if you start looking at the other piece, there appears, in my mind, to be two distinct periods, and we know that there is a reform that occurred in 2004. Now the challenge is what impact does it have, and whether or not it has any impact at all. A $2,500.00 pain and suffering deductible was introduced effective August, 2004. The introduction of a deductible, when I think about it, I have claims before that were brought and part of the claim was for pain and suffering. The pain and suffering award - sorry, the pain and suffering claim prior to the reform was at or below $2,500.00. After the reform, that claim disappears. So I would expect to the extent that there are claims that are only for pain and suffering, some of those claims where the award that they would have gotten before the deductible, those claims have gone now because your award is

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below the deductible. That cost is borne by the claimant, they have to eat the first $2,500.00 of a potential settlement. On the severity - if all of the pain and suffering awards are above $2,500.00, then all those cases potentially would still be brought and there would still be some pain and suffering awards. It's just that each one of them would be reduced by $2,500.00. In that case, there would be no impact on the frequency, but there would be, obviously, an impact on the severity. Regardless of what the impact is on the frequency or on the severity, removing $2,500.00 from pain and suffering, in my view, should reduce the loss cost. Certainly if it doesn't, you'd have to wonder why you bothered introducing legislation in the first place, and as we get into it, I'll try and show where I see the initial impact with 2004-H2, and 2005-H1, the impact of the reform on the loss cost. Nonetheless, as we look at the frequency and as we're looking at it, we believe there's at least two distinct periods certainly post-2004 reform. We think that frequencies have been dropping. If I look at

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around the beginning of the 2004 period, the frequency is around 6 per 1,000, and then they're dropping down to something less than 6, so I think there's a decrease in trend there. I think, before that, one, it seems to be very volatile. I'm not sure why there was so much volatility in the claims frequency for commercial vehicles in Newfoundland prior to 2004, but I think there was significant volatility there, and I think that there was at least one trend. There may be two trend periods in there, but because we're not going to be bringing forward any accident periods between 1993 and almost 2003, it doesn't have a huge impact on my analysis. While I might get an analyst who wants to dig into and try and do more work on those initial periods, I wouldn't encourage it just because it's not useful information to have. Nonetheless, we did bifurcate into pre and post 2004, and we assume that it's because of reform. When we go over to the severity side, as we look at that, and these are very jagged lines, they're all over the place, but again when we look at it, we kind of see one period pre-2004 and one

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period post-2004, and that's just looking at this data. Now when we actually go through the exercise, we start with this, and we kind of look at it, we try not to get a bias in our mind on what's happening, but we want to have an understanding of how these things look. Our first step then is to - we go through a number of what we would call standard results. So we would look at the full -

STAMP, Q.C.:

Q. Mr. Doherty, before you go to that, just to clarify where we are here, Appendix A is a significant package of documentation, and, I guess, in the first grouping of that, we have some 15 pages that touches on the bodily injury component, do we not?

MR. DOHERTY:

A. Correct.

STAMP, Q.C.:

Q. And a separate 15 pages following that for property damage, and a separate 15 for accident benefits and so on for all the coverages?

MR. DOHERTY:

A. Yes.

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STAMP, Q.C.:
Q. So we're just looking at the bodily injury package at the moment?
MR. DOHERTY:
A. Yeah, we'll focus on the bodily injury. That's where the - I'll run through the process, but the same process applies to all the coverages.
STAMP, Q.C.:
Q. So when we look at the severity here, we go back down to the chart below, which is the combined loss cost, right, it's a combination, is it, of frequency and severity?
MR. DOHERTY:
A. That's correct, yes.
STAMP, Q.C.:
Q. So you look at that. As you say, it's lots of jagged points and dips and so on. You're trying to create from that jagged information some information going forward that you can rely upon, is that really what you're trying to do here?
MR. DOHERTY:
A. Yeah, what we're going to do from a process standpoint is determine whether or not there is a relationship between loss cost and time,

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or loss cost and seasonality. I don't know in the beginning whether or not there is actually a relationship between the two of them. The regression process that we go through allows you the opportunity to identify that, one, if there is a relationship, what is that relationship, but then further analysis is, is that relationship you've identified statistically valid and significant or is it just a result of the mechanics of the process, and that's the key part.
STAMP, Q.C.:
Q. Before you go there, what is this regression process? I mean, at a high altitude, what are you thinking about doing?
MR. DOHERTY:
A. The regression process itself is really we're trying to again identify whether or not there's a relationship between a particular matrix, frequency, severity, or loss cost, and in this case the main one we have is time. We also have seasonality. We're looking to see whether or not there is a relationship. A regression analysis itself, as we apply it, is referred to as a "least squares process".

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We're effectively trying to draw a line through the results so that we can say your loss cost on that axis on your left, there is some sort of relationship that we can derive in relation to the time periods on the bottom, and we can do it to such extent that we could then use that relationship going forward to project into future periods what loss cost might be, but the key part is to first of all do the regression which is simply a mathematical process of estimating what we would call a parameter. In this case, the parameter that we're looking at would be a trend factor. Determining that factor through a regression is simply mathematics. You take the values that you have and effectively you're looking at differences and you're squaring them, but really it's trying to fit a line through a bunch of data points. That's all it's doing, but it's doing it in a very mechanical way. There are a number of different ways you could draw that line to fit it through it. Least squares is probably the most popular and that's what's built in through the regression process. So we're

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trying to fit a line through a bunch of data points. Once we fit that line, then we've identified a parameter, an estimate of the parameter, and in this case we would call that a trend, an annual trend. That's the first step of the process. The second step of the process, though, is to look at the results of the regression to see whether or not it's an actual statistically valid connection between the two of them. The first part is completely mechanical. To come up with an estimate of the parameter is straight mathematics. If you give me two columns of data, I can give you a parameter estimate based on those two columns of data. We could do shoe size and income of the people in this room, and I could determine a parameter estimate for the relationship between shoe size and income, but that doesn't mean it's a statistically valid relationship. To do the second part, which is establishing whether or not there's a statistically valid relationship between the two of them means you have to look at other regression statistics that come out of that. The ones that help us to determine whether or not it's a valid

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relationship, one that you can rely on, or is it simply a determination based on the noise. The fitting itself is based on a concept of the residuals or differences between the actual result that you're seeing and the fitting result. That difference is called the residual, and the least squares process relies on squaring that and trying to minimize the difference when you do the squares of those residuals. That's all that we're trying to do.

(12:15 P.M.)

STAMP, Q.C.:

Q. So Mr. Doherty -

MR. DOHERTY:

A. And the mathematics that support it drive from that.

STAMP, Q.C.:

Q. Are we - to sort of try and get a understanding of what you're saying here, are we trying to draw a line, a straight line, or maybe several straight lines through this loss cost data or through the severity data, or through the frequency chart you showed us, and fit that line - that's the fitted line you're

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talking about?

MR. DOHERTY:

A. That's right.

STAMP, Q.C.:

Q. And then once you have that line, try to determine if that line means anything?

MR. DOHERTY:

A. That's right. It may help going through an example. I'll take you through frequency for BI, as an example. So I think it's - you have to scroll down for this one or scroll up - I can't remember. No, sorry, you have to go up.

STAMP, Q.C.:

Q. Back to the first page, is it?

MR. DOHERTY:

A. Yes, I think it would be maybe 124 - 119 maybe. Yes, perfect. Okay, so in this structure that we have for our modelling process, you'll see in the box of data result that we have, the first column is called Chart Periods. It's simply describing the period, whether it's by accident year or half. The second column is Exclude the Datapoint Yes. Well, if you are going to exclude a datapoint because you feel it's an outlier after you've

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done your analysis, then you would put a "yes" in that particular column. You would see what the results are of excluding that point. I'll talk about outliers in a little bit. The next one is a parameter called season, and so your season in our structure is 1 or 2. You can put any indicator you want. You can put 0 and 1, you could put 5 and 10, it doesn't really matter, all you need is an indicator to differentiate between the first half of the year and the second half of the year, so we simply use 1 and 2. The next one is All Years. This is the year parameter, and you'll notice that we're using - in the first one, it's 1993.25. That's because we're taking the average accident date for 1993, the first half. So the first half covers from January 1 to June 30th. June 30th, we consider to be 1993.5, it's half way through the year, but the average accident date for that first half is at .25. This allows us, actually - I don't know if I want to get into that. Probably not. It's neat for actuaries, probably boring for everybody else. Then we have a number of other options that the analyst has available

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to him allowing him to choose scalars which allow you to move up or down, or have one time impacts for different periods, or you can add in different periods altogether. The way the analyst does that is through the first row underneath the titles where it's 0's or 1's. So in this particular case, we have bodily injury, its frequency. In this particular model structure that's in front of you, there's a 0 for seasonality, meaning that seasonality was not included in this model. All years is a 1. All the years was used in this model. Scalar 1 has a 1, so that particular parameter was used, and if we scroll down, you can see that it's 0 for most of the years, but it becomes 1 at 2004-H2, and that's because we've now - we believe that there's a second period where the underlying trend itself or for the scalar there's been a shift in the curve. The next column is for the trend associated with the post-2004. If there's no - there could be a shift in the curve itself, but not necessarily a change in the slope of the line that we're drawing. If there's no change in the slope, then we

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wouldn't have that additional trend piece. We would not pick that one because the trend itself, the long term trend hasn't changed, we've just shifted the line, and I'll try and show some of that down below. Maybe we'll just scroll up a bit and continue with this chart until I get through the whole piece. So just outside of it, the trend periods that the analyst has options to look at, the final ones are the frequency value. So the first column says, "From the valuation". This is the actual frequency then that's brought forward. It's actual, it's taken from the data sheet. The second column says, "regressed fit". This is a fitted value based on the model the analyst has selected. The third one is called "residual". This is the difference between the actual value for the frequency and the fitted value. So in that first one, you'll see it's 5.94, and the regressed fit value is 5.755, so the residual. The part of the actual frequency for that year, that is not described by the regression model. That's what the residual is, that difference, and that's an important difference. Most of our

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analysis is around that residual. If you're building a model and you're able - our goal on the residuals is kind of two-fold. One is they should look like they're random; that is, when you look at them you can't tell if it's going to be up or down, and when you're looking down, you should see pluses and minuses exhibited randomly. There shouldn't be a number of residuals that are all positive and then they go all negative. That would indicate bias because your model is not showing residual as being random around 0, they're too high and then they're too low. If I saw that, then I would say your model is missing something. Then the absolute value of the residuals themselves, in an ideal world, if the residuals are small, then you've explained a lot of what's going on in the data. The final column here is called the Selected Model. We do allow the analyst to superimpose a model in addition to the regression fit. We haven't used that in any of these, but if you can think about it, in a case where you have product reform and you believe that it's going to affect frequency,

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it's going to cause a one time downward shift in frequency, you could build a model that has that built into it, and it would be different than the fitted model because the model wouldn't be able to fit it. It doesn't have any data that shows frequency is going to all of a sudden drop, but you could build one that does that. We have the capability of building it in here if that happens. Again for all of the Newfoundland commercial industry trend analysis that we've done with respect to this particular filing, the selected models were always the regression fits. So now let me go down a little bit. Okay, so we've identified the particular structure. If we could just slide down a little bit more, I'm going to focus a bit on the charts. Okay, so the regression - the periods that we selected then are two separate periods. We're looking at the whole 20 years, but we've bifurcated it into two periods. When we go through the exercise, the first thing, we have five sets of standard views that we have across all of the jurisdictions. We look at private passenger and commercial across all the

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jurisdictions that we have. In some cases, we also look at motor cycles where we feel the industry has not enough experience in motor cycles. In all of those, we first look at what happens if you just do a regression across all the 20 years assuming no seasonality, but it's just a full on all the periods, what does that tell you. Then introduce seasonality. Then we have a standard one where we eliminate the first 10 accident years, so we're only focused on the latter 10 accident years, and we split it into two five year periods. This one is because what we found is typically if you're in a jurisdiction where there's a regulatory board that does their own analysis, they typically look at only the most recent 10 periods, and they tend to split it into five year periods. This gives us kind of a view of what the regulatory body might be looking at. The fourth one that we have is referred to as "Standard Reform", and it doesn't matter what jurisdiction you're in, if reforms have been introduced at different points in time, we will split up the period into when those

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periods happened, and we found across all jurisdictions reforms generally across many coverages are very good indicator of changes in trends, and a lot of times it actually happens in coverages that you wouldn't expect, that there is a reform that happens that's supposed to only reflect bodily injury, and yet accident benefits or property damage, other changes that happen in there. It may be that, you know, those types of reforms impact claimant behaviour, I don't know. All I'm doing here is looking at the data and saying are you telling me something that has changed at about the same time the reform has happened. I can't even say for sure it was the reform that caused it. All I can say is something changed at that point in time and I want to reflect it, or see if I reflect it, whether or not it's statistically meaningful. Now in this particular case, there's a fifth standard one that we do is also trying to replicate what - if we know that there's a regulatory benchmark and we know what those results are, we try and replicate that using indemnity only. Typically, if there's a

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regulatory review, it's on indemnity plus expenses. We just try and overlay it, and I might get a chance to go into that a little bit. So in this particular case, after you've done that initial analysis, you may do a whole bunch of other options. You may split up in a few different periods. In this particular case, though, when we look at the result for frequency, just bifurcating the experience into two periods, pre and post 2004, we get, we feel, is a good fit. The first thing that we look at are some measures that are above, but I just want to show you the charts to start off with. The blue line is the actual result of frequency that we got from that first page that I talked about. I just put it in line instead of having all the bars and stuff like that. The chart on the top is actual and fitted. On the right, the chart above is actual and selected. Throughout this, those two are going to look exactly the same because the red line - the selected model and the regression fit model are the same. Below that, we have two residual charts that I'll talk to in a little bit as well. Those

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residual charts become important as we try and analyze whether or not we believe that the model we have in place is legitimate and it's worthwhile to use going forward. So if we slide up, I just want to look at some of the other - sorry, the other way. This table down here is called "Regression Statistics", and below it there's a table that says, "Coefficient" and some other funny acronyms. The top part are output from regressions. Now again the regression itself is a mechanical exercise, and you can do it in Excel. You can actually do it from First Principles. If you've got two columns of data, you can come up with the regression coefficients that you're seeing here yourself. You can replicate this process because it is just mechanical. What we're trying to look at here is, first of all, going back to what our goal is, is there a relationship between, in this case, frequency and time, and is there a different relationship between frequency and time over different periods. Here we've got two different periods, a pre-2004 and post-2004. When you look down below and it says a

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coefficient, we've got options to have an intercept season, all years, and then the various scalars. You're only going to see coefficients on the ones that we selected we were actually modelling. So there's always going to be an intercept that's part of the model itself. You'll see there's nothing there for seasonality. It's because we didn't choose seasonality as a parameter. We did choose all years, we did choose scalar 1 and we did choose trend 1. As we're looking at this, we would go up to the regression statistics and the first thing that we want to understand is does this regression model that we've put together actually explain changes in the data or explain the data.

STAMP, Q.C.:

Q. Just before you go there with that analysis, are you saying that you did a whole range of lines--fitted lines, different regression, taking all the years--taking this five-year, that five-year, and we only see one of these on this documentation here?

MR. DOHERTY:

A. Yes.

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STAMP, Q.C.:
Q. So how did we get to the decision to put on this chart the fitted line, which is the one that you're showing us, which is reform-fitted, I guess, and no seasonality--but there are a whole bunch of other fitted lines that you've created that aren't shown here?
MR. DOHERTY:
A. Yes. So, the overall process that we go through on the trend analysis is that we first do it internally, so there's an analyst who does the initial regression views, and they start with the standards, but then they will start building other models as they deem appropriate. After that, it comes to me. I will review the work that was done and then I will--if I feel it necessary, I will also look at different periods. If I think that they might have missed something or if I want to see what happens if you include or exclude, I might include seasonality to see what the impact is, etcetera. Once that's done, we handle it off to our external partner, E&Y. For them to review, first they do technical checks to make sure everything is fine in what

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we've actually done, and then they also come back with some views on the selections that we have, because we do end up with a model that we've selected. They may throw in some options of their own. Once that's done, we get together with E&Y, we talk about the pros and cons of the various models that have been selected and then with ourselves and with E&Y, we come up with what we would refer to as management's recommended trend. We would take that to the Facility Association's Actuarial Committee. Our Actuarial Committee is an advisory board. It's made up of senior actuaries from various members--I think it consists of 10 actuaries, and we present to them the results of our trend analysis for discussion and we get their feedback on it. WE may end up, based on their feedback, selecting a different model, or we may end up with the same model that we had.
STAMP, Q.C.:
Q. Before you go any further in that, though, Mr. Doherty, I think what I was trying to ask you, and I haven't asked it very well, is to address the extent to which there are other

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fitted lines that were created and that--there was an analysis done?
MR. DOHERTY:
A. Absolutely, yes.
STAMP, Q.C.:
Q. I mean, you are here with this fitted line--
MR. DOHERTY:
A. Yes.
STAMP, Q.C.:
Q. - showing us this fitted line and you think this is the fitted line that is the one that you wish to use?
MR. DOHERTY:
A. Correct.
STAMP, Q.C.:
Q. So you discarded a number of other fitted lines. What was the process that led to their being discarded?
(12:30 p.m.)
MR. DOHERTY:
A. Yeah. Typically, we would look at a number of these statistics. So, in comparing various models, one measure of fit is R squared and you'll see it's there. In this particular case, it's suggesting that what you've put

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together as your selection explains 64 percent of the variance that we're seeing. The initial differences that you're seeing happening in the loss cost over time, you can explain 64 percent of it by having these two periods and not having any seasonality. The trouble with the R squared measure is that it's fine if you're only looking at one model. If you're trying to compare models, R squared--it's a measure that the more parameters you throw at it, at a regression, the better that fit will be. So in this case, if I added six more periods and I added my shoe size as another variable, I would get a better fit through the R squared, even though I don't think my shoe size has any bearing on commercial loss cost, but I would probably see that R squared value increase just by adding that additional parameter. The adjusted R squared is another measure that adjusts for the number of parameters that you're using. So in this case, we're using three parameters. We're using all years, we're using a scale of one and we're using a trend one. So there's three parameters that are in here. If I want

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to compare the fit of this model to another fit using this particular fit statistic, the R squared kind of view of the world, and it has a different number of parameters, I really should be using the adjusted R squared. So we use the adjusted R squared just as our main one. We'll go to that one first as opposed to the R squared, just as a matter of course. The other part that we would look at is not just the R squared, but we would also look at what we--we look at the one that's called P value in the table below. When you're doing a regression analysis, you are trying to address the residuals. When you're doing that fit, though, there's a chance that through that calculation, you're going to come up with something that says I'm describing it, but it's really--it's just describing the randomness in the residuals themselves. It's not really describing a relationship. It's misinterpreting the randomness as a relationship, and so what we look at--and I think the preferred metric that Oliver Wyman uses is the T-statistic. The P value is related to the T statistic, just changes it

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into a percentage, and what we--what the P value tells you is that this is the probability--the coefficient that you've chosen or one of this size happened just through randomness, that there is really no relationship, this can just happen by chance. So when we're looking at the P values in our coefficients, we want to select P values that are low. That is, there's a low chance that the relationship you've identified is because of randomness and it's not really a relationship at all. Through the exercise, we normally refer to a nul hypothesis, and the nul hypothesis that we measure ourselves against in all of these things is that there is no relationship. The coefficient that you're actually seeking to identify is really zero, and so if you've got a high P value, that means there's a good chance that the coefficient you've identified is in fact caused by randomness and you should really not reject the idea that your coefficient is really zero. There is no relationship. So we do look at P values, and if we've got trend structures and we have a lot of P values, we

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will start knocking out the parameters that have those high P values to see if by knocking them out, you get to a result where all the parameters you selected are ones that we believe are statistically significant and generally use a cut off of a P value of five percent to help us to identify that. It doesn't mean that there is now only a five percent chance you got it wrong. That's not how to interpret it. It just means that there's a five percent chance that the parameter coefficient that you selected is actually being generated just by noise and it's not really true. Five percent means that if you did 20 of these things, one of them, you're going to get that result just by the randomness, but in the other 19 it's going to be due to actual relationship, and that's why we cut it off. The five percent is a bit arbitrary but it seems to be used quite often in social sciences and I think it's appropriate for us to adopt it here. We sometimes veer off of that if we believe something is going on that's not quite being picked up yet by the regression, but for the

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most part, we use the five percent.

STAMP, Q.C.:

Q. Okay. So you were trying to get us from where you are in this chart--what we're trying to do is get back to D-1, Column 15, and we're working our way through this in this bodily injury component piece?

MR. DOHERTY:

A. Yeah. So what we end up, then, is--on the frequency side, we ended up with a model, we're satisfied it's not--you know, it's not a great fit, 52 percent described by the regression, but it's the best we could do with the limitations of the parameters and not trying to over-parametize the model and have the impact due to that. There's another metric that's in here, it's called the Residuals Run Test, and for this one, it gets back to the idea that your residual should be balancing around zero, and if you've got all of them above and then all of them below, given a number of points, you should be switching back and forth. And so a Residuals Run Test is just looking to see are you going back and forth, are you flipping back and

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forth between positive and minus on your residuals in what looks like a random way, and there's a test statistic for that, and in this particular case, the residual runs, based on this model, we would say that they're random and so we end up--now there were some questions on whether or not for bodily injury there should be seasonality in the frequency. We tested for that and we rejected it based on the P value but in general, with seasonality--because we're only applying these things to full-on accident years, seasonality allows you to have kind of a saw action that you're reflecting that one half of the year performs worse that the other half of the year and you can reflect that difference. It typically does not have an impact on the slope of the line itself, it just creates a better fit because you're accounting for the jaggedness, but the direction and the slope typically doesn't change. It doesn't mean it doesn't change ever, but typically it won't--it doesn't have an impact, and in this particular case, we tested for it and the parameter didn't satisfy our requirements so we rejected

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it. So we ended up, for bodily injury, saying that post the 2004 reform, frequencies for commercial vehicles in Newfoundland have been decreasing by 2.3 percent per year as our estimate for that trend parameter. Now if we go to the flip side on the severity -

STAMP, Q.C.:

Q. Before you go to the severity, can we just look at the chart again, your line, your fitted line for frequency, show us the chart, what you're talking about, what--this decline?

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. So what have you done? What is this chart revealing?

MR. DOHERTY:

A. So this is actually the result. The whole process of the regression is to come up with, really, a line. You can draw the line. And because we have two different periods, you can see between 1993 and 2003--I guess it's 2004-H1, an upward sloping line. That is, through that period, we see frequencies increasing annually, and then there was a one-time drop

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between 2004-H1 and 2004-H2, at which time, after that, frequencies were dropping, and again, you know, is it because of the reforms in 2004? I don't know, but we get a good fit when I have those two periods, that bifurcation, and so it may be that that's not the cause, but nonetheless I see a change there, and we do get a good fit.

STAMP, Q.C.:

Q. And insofar as we're looking to develop this Column 15 trend factor, is this one of the influences to this factor?

MR. DOHERTY:

A. Sorry?

STAMP, Q.C.:

Q. Insofar as we're trying to develop the Column 15 factors in D-1, -

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. - is this frequency declining from that period one of the influences in that -

MR. DOHERTY:

A. Absolutely. So we actually have fitted values. The red line is actual fitted

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frequencies, then, which will show--actually go into our determine of the fitted loss costs going up. I do want to just touch briefly on the residual plot down below. So we take the differences between the blue dots and the red dots--or the red line--and I apologize, this is an earlier version of our trend model, so unfortunately in this version we didn't align the period. So in the upper chart, it goes from '93 to 2017, because we wanted to get that forecast period. In the lower one it goes from '93 to 2012. So you can't do a direct comparison between the two. We have corrected that.

STAMP, Q.C.:

Q. The top one and the one below it don't line up, in other words?

MR. DOHERTY:

A. Yeah. They don't line up, exactly.

STAMP, Q.C.:

Q. Yeah.

MR. DOHERTY:

A. You kind of have to lean back a little bit, but you will see that there's three or four data points that are well above the zero line,

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and that's where you might come back in after the analysis to say that may be what we would refer to as outliers. They're residuals that are significantly different than our fitted line, and at that point in time, the analyst would--if he felt it necessary, if he felt that they were outliers, he would want to test whether or not they're influential outliers, meaning that their inclusion is having a significant impact on your fitted result. And so he would go in and one at a time, remove them. Well, if you remove one of them, you may have a new line because you know, it's a calculation and now you've removed one data point, you'll get a different calculation. Whether or not it's a better fit or not is--that's what you would want to analyze. In this particular case, we were more interested, for the purposes of our indications, of what happened after 2004, and so we--again, we didn't spend a lot of time trying to do a perfect fit on the frequencies prior to 2004-H1 because it wasn't going to influence our results, because we're not using that data point, even though in the two thousand and--

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you know, we do have 10 accident years that we're showing. 2003 is before that reform period. We just didn't feel it was necessary to go through that exercise, but if you look at the residual plots post-2004, you can see they look kind of randomly scattered around the zero point and that again is what's reflected in our residual runs. It's also reflected in the fit itself that the residuals are pretty narrow around the values themselves, so it's near around the zero. Pre-2004, for whatever reason, the frequency was significantly--appears to be significantly more volatile. You get significantly more stuff going on in the residual plot. Now our squared value that we talked about is a measure of fit, measures this entire fit. Now I could get a much better fit if I completely excluded the 2004-H1 and prior periods. I would get the same sloping line, it's just that now I'm not trying to fit that very bumpy stuff and so my R squared value would go way up, I'd be describing much more, it happens, because my residuals are much smaller post that. We just didn't do it because it's--

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that's not important to us, to--because we're looking at comparing different models which--all the time we're trying to compare the full 20-year period. So relatively it's not important to have, you know, the perfect fit only for the period that we're interested in, that we think is going to influence our indication, but I want to emphasize, while we looked at 20 years, it's--a fit on the most recent eight years is the one that's actually used that has an influence on our indication.

STAMP, Q.C.:

Q. So if this were a straight line all the way from '93 to '17, for example, a single straight line, which would be fitting a single line to all that--to all those periods, you could have done that, I guess?

MR. DOHERTY:

A. We did do that, yes.

STAMP, Q.C.:

Q. All right, and I presume it wouldn't capture what sort of, to me, intuitively, seems like a bit of an upward trend for a while and then a bit of a downward trend in frequency? That wouldn't be captured the same way in a single

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line?

MR. DOHERTY:

A. No. When you do the residual runs, you would--the way it would fit--well, I mean, I'd have to go back and take a look at it, but yeah, I think it would be very challenging to fit that but--and obviously when we looked at it, it wasn't as good a fit as this, so we accepted this one.

STAMP, Q.C.:

Q. Okay.

MR. DOHERTY:

A. So then if we look at the severity, I think you have to go--like scroll down to the next page, like 21 or 22.

STAMP, Q.C.:

Q. The couple of pages there.

(12:45 p.m.)

MR. DOHERTY:

A. So this top part, it's the same thing and the same structure that you had seen for the frequency, except now in those columns of actual values, it's the severity values. Now here we included the same periods. So one of the concerns you would typically have is that

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if you are modelling frequency and severity separately and you choose different periods, there may be a relationship between frequency and severity that is causing a problem when you're putting the two pieces together, and we're very cognizant of that. So we would typically only choose different periods if we felt that there was really something underlying going on differently, and we would still, even then, try to make sure that we're aligning them somehow. So if you think about it in terms of we had frequency two different periods, if we thought something was happening in severity in that second period, we might split up the second period, but we wouldn't try to make two periods that didn't overlap properly with the frequency. We try and avoid that because of concern that there is some sort of relationship or correlation between frequency and severity, that we might be messing up or not appropriately accounting if we have different periods. Now I want to scroll down a little bit because in this particular case, we did exclude a data point, we excluded 11-2. So again, on the frequency

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side, we identified some things that could potentially have been outliers that you might want to analyze. In this particular case, when we did the original analysis, the analyst would have done it with all the data points and then once he or she did the results, they identified that through their analysis of the residuals, one was significantly outside--and maybe we'll just scroll down and take a look. The results here aren't prior to the exclusion. Keep going down, I want to just go down to the next one. So you can see to the right there's a blue data point that's well above the line. Now there's a whole bunch of them in the pre-2004 period that are also above the line, but the analyst again was focused on what's happening post-2004 and there was a significant one for 2011-H2 that was deemed to be worthy of analysis as a potential outlier, that is having an influence on the results that maybe it shouldn't ought to be allowed to have. And so they excluded it and tested it, you get a different result, and so we deem that as an influential outlier, and it should be excluded. The result of the

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slope of the line after 2004 by excluding this data point is actually--reduces the trend. I believe it was over eight percent if you included that point, and it's--I think it was 6.6 percent after the trend.

STAMP, Q.C.:

Q. I'm sorry. I didn't catch that, Mr. Doherty, just -

MR. DOHERTY:

A. I think it's something around eight percent prior to--when you included that data point. When you remove it, it comes down to 6.6. Whatever the value is, we'll see it -

STAMP, Q.C.:

Q. So the effect of the exclusion of that single data point lowered or raised trend?

MR. DOHERTY:

A. It reduced the trend.

STAMP, Q.C.:

Q. And so what did that--how did that impact indications?

MR. DOHERTY:

A. All else being equal, it would create an indication that's lower than if you had included that data point.

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STAMP, Q.C.:

Q. Okay. So by that single data point being left out, Facility's indications are lower?

MR. DOHERTY:

A. Yes. Okay, I want to slide up because I do want to look at the output of this. Okay, so first of all, the R squared, it's not a great fit, it's only 35 percent of--the variance that we're seeing in the severity is actually explained, and it's because there's a lot of volatility in the annual severity. I also want to draw your attention to the all-years factor of P value, it's 72 or almost 73 percent. Normal circumstances, we would say you need to reject that parameter because the test says it's not--the coefficient that you've picked is caused by randomness in the residuals themselves, it's not actually different than zero. But if you actually look at the coefficient, it's almost zero anyway. So in fact, the reason we decided to leave this one in--and we would have removed it, but the reason we decided in is because it's effectively zero already. So by discarding it you make it zero; it's effectively zero

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already. And if you slide down and look at the chart, you can see that as a straight flat line pre-2004. There's a slight decline because we're saying there's a slight lowering trend if you leave that parameter in, but it's barely noticeable, and again it's pre-2004, so it wasn't really important to our analysis, but looking at it now, I would say just from a process standpoint, we should have just knocked that one out and we should have just made it zero as opposed to almost zero. And again, if you look at the residual plot down below, now this one is interesting because you'll see that there's a lot pre-2004 where there's a lot of potential outliers above, not so many below. Like if you look at the scale on the right, it says plus or minus--well, the lower scale is minus 30,000 and the upper is 40,000, but if you focus on maybe things being plus or minus 20,000, there's a number of points that--where the residuals are more than 20,000 outside of it, but they all seem to be up, and so when we're doing an analysis on this, the worry is if you start knocking out a whole bunch of outliers, you could end up

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removing a big chunk of the data, and when you remove a big chunk of the data, then our challenge is are you really representing the data or are you ignoring the fact that there's a lot of volatility here? And again, because this didn't have an influence on our trend post-2004, we ignored it--but even if they didn't, I would be challenged if my analyst came to me and said I've decided to knock out those four earlier data points, I would say, you know what, there's just a lot of volatility, I don't know what it is, I think you might be biasing the selection of how it aligns because you've knocked out four high ones but you haven't knocked out any low ones. So you're pushing the severity line down. Even though it's a flat line, you'd be pushing it down relative to where I think it should be because it seemed to be pre-2004 there were a number of periods where you had these what appear to be very high levels of severity for whatever reason.

STAMP, Q.C.:

Q. This severity residuals plot, those blue boxes, -

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MR. DOHERTY:

A. Yeah?

STAMP, Q.C.:

Q. - are they actual events, actual circumstances that--is this history?

MR. DOHERTY:

A. Yeah. This is the history, it's--and the blue dots represent the difference between the dot that you would see on the fitted result, the actual result itself--the difference between that and the red line for that dot. So again, it's the residual, it's the difference between actual and fitted. So our goal ideally is that you'd be able to build a model where the residuals are very small, they're random around zero. If you've done that, you've explained a lot of the variance that you're actually seeing, and maybe something happened in the past, that you could introduce some other variable that you know about that can help explain it. I don't know what that might be, but if you could, maybe that would help to explain the model. And certainly one of the concerns we always have doing these types of analyses is what's called parameter omission

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bias. If there is an additional parameter that you're omitting because you don't know it or it's unobservable, and those are the worst ones, what you're seeing as residuals are actually differences that could be explained by this other data that you don't have available for you. I know a lot of--you know, in the financial world they worry a lot about that stuff and that's why they--in their regression models, they bring out all kinds of stuff to satisfy themselves that they've reduced the risk of omission error as much as possible, but I'm--you know, I'm fine with where we are and the data and the approach that we've taken on this. So we end up then with--again, like with the frequency, we did a number of models using different time periods and this was the one that we think makes sense, and when we look at the data, to us it makes sense that for whatever reason, frequency pre-2004 seemed to be flat but quite volatile and post-2004, it's been increasing and perhaps not quite as volatile as what it was previously.

STAMP, Q.C.:

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Q. So you have now looked at the frequency and severity for bodily injury for the trending purposes. Does this bring you back to the first--or maybe it's the--the first page of the -

MR. DOHERTY:

A. Yeah. So I think we have to go up to 118, maybe? Yeah. So those red lines that we had are--the data points that support it are represented as selected frequency of that column, the selected severity of that column and then the selected loss cost and we also show on here the actual values so you can see the comparison for yourself. We replicate the fitted and actual charts for each of frequency, severity, and then when we get to loss cost, the fitted loss cost is just the frequency multiplied by the severity, and so if you slide down--I think maybe just before we slide down, and again, you know, I'm satisfied with the frequency, I'm satisfied with the severity. They're going in two different directions, but to me that's what's reflected in the data itself. So if we slide down and just look at the loss cost chart.

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Too far; there you go. So if you put those two pieces together, then you get this result that again you have two periods. It's a bit more of a challenge, I think, to see on the loss cost. You know, there's pre-2004 and then you've got this post-2004 period. There's a significant amount of volatility in loss cost. That volatility post-2004 is driven by the severity, not so much the frequency. Pre-2004 I think there is both frequency and severity that were driving all of those changes, and I think that if you're just looking at loss cost, you would be really challenged to try and identify periods without doing a lot of work. If I were looking at just the loss cost, I might think there is potentially one period that ended in '99 and then something happened after '99 or maybe--I'm not sure how I would interpret that if I was just looking at loss cost. But the reason, again, we look at frequency and severity separately is again the worry that through--you get omission bias, and so by only looking at the loss cost but not looking at the underlying changes in claim frequency and

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severity, you're kind of missing a potential parameter in there. Now there's a large concern with collinearity between frequency and severity. The regression modelling maybe isn't the right type of modelling to try and capture that. You might want to look at some other type of modelling, maybe generalized linear regression or something else, but I'm satisfied it's not an issue, I'm satisfied with the results that we have and I'm satisfied with the end result. Here we're showing a bodily injury increase post-2004 of 4.4 percent annually. Now we did tests, and the one of the other tests that we do--and I don't think I mentioned but through all of this modelling, we always do--what we kind of do is a walkback, because one of the things we're interested in is certainly have the trends changed, right? So in here we bifurcated between pre- and post-2004 and just looking at the loss cost, I think there was a change not so much maybe in the slope--the slopes look kind of similar although they're not exactly the same, but there is a one-time drop down--but maybe post-2004, in that eight-

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year period we have after that, maybe the trend has changed again. Maybe instead of having one period that has a 4.4, maybe it went down or went up, and so we do what we call a walkback where we would--we don't like to do anything more than three years, because I think once you get three years, you're dealing with six data points, you're really introducing a lot of variance due to noise and it's very hard to model that few data points. So we would typically start with five. Now in this case, we were challenged because we only had a period that was eight long, so--we started with four, and our goal then is we would just bifurcate that period, that eight-year period. We said okay, what if there's two periods in here and we're not capturing that change? And so we tested for that and it came back and said of course, I can give you those parameters, I can tell you the slope is this and the slope is that, but if you look at the results, it's not a valid fit. You're modelling noise, you're not modelling what's going on, and so we rejected that both for frequency and severity. That doesn't mean

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that there isn't an underlying change that's happening in 2009 or 2010 or 2011. That hasn't been long enough to manifest itself, and part of our exercise next time certainly is to continue doing that test because we want to see--the biggest challenge we face is has the underlying trends changed during our periods that we've selected, and in this case we looked at it but we didn't find evidence of that.

STAMP, Q.C.:

Q. So how is this information then that you've--the trend model you've come up with, the information, the data you've generated, how does that find its way back to--in what way does it get translated back to Column 15?

MR. DOHERTY:

A. So this final column of Fitted Loss Costs, so you see--and again, I'll look at 2012, so we have that $30.06 as a fitted value for accident year 2012-H1--or-H2, and then-H1 was $313.19 and again, we wait those two based on the exposures of those two periods to come up with a total loss cost for the accident year 2012, and when you go back to D-5--I think

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you're looking at Page 161. Let me scroll down a little bit more to the model loss cost. You'll see accident 2012 there. The fitted loss cost is $316.76. That's a weighted average of the two values that we had for the two halves.

STAMP, Q.C.:

Q. Now what I'd like you to do, Mr. Doherty, if you can, is--this is the process you followed, Facility followed, and I gather Oliver Wyman followed a different kind of process?

(1:00 p.m.)

MR. DOHERTY:

A. Yeah. So maybe just to predicate a little bit, Canadian Institute of Actuaries' Standards of Practice, there's a section called 1600, it refers to another person's work, speaks to the actuary's choice of using another person's work and either taking responsibility for it or not taking responsibility for it, and you can do that through an exercise like this. If you're not going to take responsibility for the work, but you're going to use it, you need to make the users aware of that so that they can make a

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determination on what the potential impact of that is. Now I work for the Facility Association and I work on behalf of management in going through these exercises, and my view with respect to the benchmarking trends that are produced by--and publicized by the PUB in Newfoundland and referenced in their filing guidelines, there's not enough information in the directives that are posted for me to be able to take responsibility for that work if I were to choose to use it as part of my work product. However, Oliver Wyman does produce a report that provides some detail into their process of determining those trends. Again, in my view, there's not enough information that's provided in there for me to be able to take ownership of that, so I would not take responsibility of that work, and as such, I need to provide management with a view of what does it mean and what would you do if you did it. So we go through this exercise, and I would do it probably anyway, but nonetheless in my view there's not enough information provided in the report for me to be able to rely on the trends that have come out of

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Oliver Wyman's review and use it as my work and take responsibility for it.

STAMP, Q.C.:

Q. And what kind of information is it you're looking for to assist you to do that?

MR. DOHERTY:

A. I would be looking for the fits statistics, the P values and determination of the coefficients that they've identified, these trend factors that they've identified and that they've selected, how well do they describe the data. Now, the other part of it is I want to be able to apply those factors in a way that I understand relative to my review. My indication structure has ten accident years and I need to be able to take those ten accident years and the claims that I currently estimate for those ten accident years and project them forward to that future period to make it look as if those events underlying the claims occurred in that future period. So I need to have factors that go back at least to accident year 2003, so that I can bring those forward and at least look at them, even though I may not decide to use them or give them any

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weight in my process. The presentation of the trend parameters that are estimated through the process in Oliver Wyman's Report doesn't really tell me specifically what periods I can apply those to. As I understand it, I can at least apply those to the most recent five exit years of experience, but I'm not sure it's meant to be applied to periods prior to that, so it's a bit of a challenge for me then to rely on those on that respect.

STAMP, Q.C.:

Q. Mr. Doherty, before you get into that, is there an implication for the indemnity only and then indemnity plus in the two analysis?

MR. DOHERTY:

A. Potentially and certainly I believe that was addressed in Oliver Wyman's report. Their view is that the adjudication expenses, both internal to a company and external to a company, when you put that altogether for the industry, they're probably moving aligned with the indemnification. That may be the case, I don't know, I've not independently tested that. For me, it's not really relevant because I'm only looking at indemnity facility

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association's cost structure with respect to the servicing carriers is only that the cost structure is different than the industry and so, a trend analysis that includes the expenses, if I'm going to do it, I'm not going to do it with the expenses, it doesn't apply to me. I can't determine whether or not the inclusion of expenses would have an impact or not. I would have to do a separate analysis for that.

STAMP, Q.C.:

Q. All right. So you were going to, I think, take a look at what Oliver Wyman has, the approach that they took?

MR. DOHERTY:

A. Yes, so if we can maybe bring up Oliver Wyman's Selected Trend Rate Report, I believe it was provided to the Consumer Advocate at one of their information requests.

STAMP, Q.C.:

Q. I'm sorry, what did you say just then, I didn't catch what you said.

MR. DOHERTY:

A. Sorry, the Consumer Advocate requested Oliver Wyman's report. I believe it was provided to

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them.

MS. GLYNN:

Q. Do you have the RFI?

MR. JOHNSON:

Q. I think it would also be Consent 4, I believe.

MS. GLYNN:

Q. Well, we haven't entered any -

MR. JOHNSON:

Q. Oh, I'm sorry.

STAMP, Q.C.:

Q. Are you looking at the questions and responses, the responses in particular that -

MR. DOHERTY:

A. No, this would be Oliver Wyman's actual report. The Consumer Advocate requested it, I think it was CA -

STAMP, Q.C.:

Q. 16 of May, 2014? Oh, I'm sorry, you're looking at the benchmark discussion?

MR. DOHERTY:

A. No, I think that's the revised final report. No, it's the first request for information that the Consumer Advocate had for Oliver Wyman.

MR. JOHNSON:

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Q. CA PUB 1. It's also Consent 4 if you went to go there.

MR. DOHERTY:

A. Yeah, I think it's CA 01. So what I would like to do is just kind of walk through the report and identify a few things that, you know, is different, highlight some differences in the way that we approach things and where, you know, some thoughts for consideration on it. So if you move down to page 2, the first part of Oliver Wyman's report, they talk about the process and why they're doing this. They emphasize in this third paragraph that past trend rates should reflect the underlying trend patterns that occurred during the experience period and as we talked about, I fully agree with that, the experience period that we're actually going to be using is the most recent five and that's why we've focused on that period, but we are--we didn't pull information for the full ten accident years and that's why we felt it was important, I think it's important anyway but just look at the full twenty years, but we believe that the trends that we selected reflect the most

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recent five year experience period. It, in fact, reflects an eight-year period, but it also applies to the most recent five years, and I also agree that in the next paragraph that actual judgment is applied. At the bottom of that paragraph, the paragraph starts with the identification of other line trend patterns, but the last sentence, I think, is important. Starting the third from the bottom line, "And without certain data points that are considered to be statistical outliers and over time periods that are longer than the experienced period as a means of increasing stability reliability of the data analyzed." Clearly the latter part, we would certainly agree with. We believe that you should look at the entire data set that's available to you and test whether or not trends had changed over time. So we're fine with that, and in principle I agree that certain data points that are considered to be statistical outliers should be tested to see whether or not they're influential outliers and whether or not then they should be excluded from your model.

STAMP, Q.C.:

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Q. So is the decision to identify an outlier made after the testing is done or before the testing is done?

(1:14 p.m.)

MR. DOHERTY:

A. Well our approach is after the testing is done because again, our view is it's a residual exercise and so I can't determine a residual before I fit the line, there's no definition of a residual because a residual is the difference between the actual value and my fitted value. So if I don't have a fitted value, I have no residual. So I would suggest I would be challenged in having predetermined statistical outliers if I haven't done my analysis. I think that's the cart before the horse, you fit your values and then you determine, doing an analysis of the regression itself and the statistics that come out and particularly of the residuals and determine whether or not you feel there may be an outlier and then you test to see whether or not again that outlier is influential to your outcome. So if we scroll down a little bit more, this first paragraph they describe the

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data, we use the same data, except we did indemnity, not including the allocated loss adjusting expense and the ULAE (phonetic) factor. They do go on to say that the derive annual loss rates based on a regression model. Throughout their final report and in comparing to what we do, there does seem to be an implication that when you're doing these regression fits, you should try and estimate your parameter for the trend by looking at a whole bunch of different windows of data in your period. I don't subscribe to that view. I believe if you think that there is a trend that covers a period, you use all the data in the period to determine what that parameter is. I would not recommend that you look at the period and then take a subset of it, come up with a parameter estimate for that, take another subset of the same data, come up with a parameter estimate for that and then average the two parameter estimates that you have to come with your final estimate. I believe the strength in the regression process itself of linear least squares of coming up with one estimate of that parameter that in the case of

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using a regression, it superior to then trying to come up with different estimates for that same parameter using different periods of time. Much in the report and I'll touch on this a little bit later, you know, looking at different snap shots within periods and saying that you get a different parameter estimate and therefore, things are volatile, I think that's a bit misleading. If I have two different data sets, but within the same period, I will come up with two different estimates for that, just like if you ask me to determine the average height of the people in this room and I decide only to use some of the people, I come up with an estimate and then I take another group of people and come up with another average, I would be surprised if they were the same. I'm just measuring data and averages are just, I would take all your heights and divide by the number of people I took the height and I would take another average. That doesn't mean that the actual underlying average height in the room is somehow volatile, it just means that I've decided to take two samples to come up with my

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average. My preference, actually, would be to take a larger sample and come up with my sample that way. If you think in terms of estimating these parameters, I didn't use, I think, average is an easy way to kind of think about it, if we're trying to take or estimate the average height in this building and we've decided that we can do that by taking a sample of people's heights in this room and then use that as an estimate for the average height for the entire building. If I wanted to use a smaller sample than this room and say I'm going to measure you first and come up with an average, then I'm going to measure you and come up with an average, but before I do that, I'm going to decide not to take into account the really tall people, the really short people. I'm not sure that's the best way to come up with that initial estimate. It is a way, but I don't think it's the best way. I would rather just take the average of everyone in this room and then say that's my estimate and I think it's reasonable to assume the rest of the building kind of looks like this population. If you reduce the size of the

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sample and you're trying to estimate an overall population average, the smaller the sample size, the bigger the error is going to be between your estimate of the average and the ultimate average. So if you think about my example here, if we take half the rooms, we call around to half the rooms of this building, and we ask them to do the same thing that I'm doing here, but for half of the rooms that we ask, they do it the same way, measure everybody in the room and take an average and come up with an average height. But for the other half we say only do that for half the people in the room. Well, if you took the two sets of rooms then, the one that--both of them, I believe, would come up in total with an average that's pretty close to the overall average of the building. The problem is the ones that only used half the size for their sample, when you look at them individually and compare that to the overall average, they're going to be much different overall than the ones that use the same room. The variance between their estimate is going to be wider, even though they may come up, when you put all

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of them together, they come up with a good estimate and that's the idea behind the sample size. Get a bigger sample size and you reduce your variation of error in your estimate of that parameter. So to take smaller subsections of a period where I'm saying I got a parameter I believe that is going to stay constant or I'm trying to estimate over this eight-year period, I don't estimate that parameter by taking a bunch of small averages of periods in between that and then average these things together. I just take the full ten-year period because that's my biggest sample size that I have available to me. Now, again, if you do believe that the underlying parameter itself has changed, that the trend has changed, then identify the period where you think it has changed and test to see whether or not there is statistical support that there's a new parameter and that parameter is now going forward. If there's not statistical support for it, you should reject it and say there's just one parameter for a trend over that whole period.

STAMP, Q.C.:

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Q. So how does this discussion, how does this translate into your review of the Oliver Wyman approach that we're looking at here? You're saying you take a sample period and a subset of that, are you speaking specifically to what you think they have done in their approach?

MR. DOHERTY:

A. My understanding of the approach, the end goal, I believe we're trying to find a trend parameter that applies to my experience period; particularly the five years that I'm using in my indication of the accident years 2008 to 2012. When I did my analysis on bodily injury, I had two periods, pre and post 2004. Obviously the trend parameter post 2004 is the only one that influences my indication because that's the only one that applies after 2008. The trend parameter that has been estimated by Oliver Wyman is not based strictly on that same eight-year period that I have. They did a number of different measures, but their goal is to try and estimate that same parameter, the parameter that applies to the most recent five years. They've just taken a different approach and

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it's not one that I think leads to the best estimate of that parameter. And maybe if we go down a little bit further, let's go to the time periods we consider, I think it's on the next page. Keep going down please, yeah, next page. There we go. So the approach obviously we have, I don't have a pre-determined period in mind, I will look at the whole period but then I have some standard views, usually based on reform, but other than that one where we have a standard that's really trying to replicate what we think the regulator review would look like, we don't have a pre-determined idea of where the parameter might change, where trends might change over time, and so going into the process, when I look and take a step back and I look at the overall process that is used as I understand it by Oliver Wyman where you look at a specific ten-year period, then you look at a subset of that, being a five-year period, then you move back six months, you have another ten-year period which in some ways is a subset of the first one, there's some overlap there certainly, and then you take a subset of that

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and you come up with regressions. All of those regressions are trying to come up with the parameter value and then in addition to that, they're not just looking at the periods, but before they start the analysis, they've already excluded what they view as statistical outliers, being highs and lows and highs and lows being with reference to the loss cost being a high value or a low value, I think you can appreciate that before you start, if in fact things are going up, your high values are more likely to come from over here and your low values are coming from over there, so if you exclude them, starting off with I'm not sure that's a great thing, likewise if your trend, underlying trend is going down and your lows are probably at this end and your highs are probably at that end, you're basically removing data points, you're reducing your sample size before you even begin. And I'm not sure necessarily if that's appropriate. Now the other nuance in the outlier removal at the onset, as I understand it, is that outliers are identified not by their absolute value, but by their change relative to that

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value a year prior. So if you're looking at 2012-H2, you would look at the change from 2011-H2 to 2012-H2 and you're looking at the change in that value over that period and they look at all the changes, as I understand it, and remove the ones that have the highest and lowest. Now the first thing when I read that, the first thing I go to is if I got a straight line and most of my data is on that line, but I have a high value up here, that's a big change, but the next period is also a big change, it's a big change in the other way, but it's just bringing you back to the line. So one data point that had a big change can actually knock out two data points because the one immediately after is automatically potentially going to be the one with the biggest decrease and so it's also going to be knocked out. And in fact if you look at the results of one of the five-year periods Oliver Wyman used for bodily injury, I believe that exact thing happened where the high and the low are both taken out because of the high of one of the two periods and that will be in one of the exhibits that I bring to your attention

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a little bit later on.

Now the process, I think the biggest benefit of this process from somebody who has built actuarial practices in a number of organizations, it is very efficient if we believed this process was good at determining the trend parameters. This is a fantastic process in terms of efficiency. I can have my guys build this process, it would probably take a couple of days, but I'm sure that our analysis would end up taking 15 or 20 minutes to do most of the jurisdictions that we work in because it's very mechanical. You identify the outliers upfront, you do four regressions, you get the results out and average it against the one you had before. That's great, it's very efficient from a resource standpoint. The issue that I have is that it's not effective, I believe, at determining what the proper parameter is because you're not doing any analysis to determine whether or not any of the parameters that you've actually determined through the regression is statistically valid and if you can't do that, then I don't think you come up with a good

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parameter, which is the whole idea of the process.

Now I think the other thing I'm curious about is that we look at a ten-year period and a five-year period. I'm not sure why five years and ten years are predetermined. I don't know what the basis of that is, again I'm not sure that even if parameters did change or trends changed every five years or every ten years, whenever you're doing this analysis you're moving it forward six periods, so your five-year window keeps changing every analysis, so I'm not really sure this would capture even if your trends changed once every five years. I don't believe this process would capture the parameter change itself.

Now, down below they did indicate the data points we considered. In the second line it starts a five year period, and then they go to say, can be sensitive to one or two of the data points. This isn't in--and in supporting the view that we should be removing outliers, but it works both ways because being sensitive to one or two data points means that if you remove the, your result can also be sensitive

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to that. That is start with all the data that you have and then determine whether or not you think you should remove one and then test whether or not it's influential. Then you can see whether there's any sensitivity to one or two of the data points. I don't believe that that's something you should be doing upfront as part of a mechanical process and particularly as I indicated, when it's not based on the residual itself, but it's based on some other metric--so, you're doing it at the onset.

Okay, so I want to move down to--I'm just going to focus on the bodily injury. All this stuff I'm going to say really goes back to that, but if we just go down, I think it's a couple of pages.

STAMP, Q.C.:

Q. So, page 5 of the report.

MR. DOHERTY:

A. Maybe I'll start with the seasonality. As I mentioned, we also test for seasonality. And, you know, we too, sometimes, in some models it's a parameters we accept, some other ones we didn't. In the ones we determined for

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bodily injury, we didn't exclude seasonality because over the periods that we picked, seasonality was not a parameter that was deemed statistically significant. The only thing I'd have to say here is that the comment, "we find that seasonality is sometimes evident with respect to bodily injury", depending on the time period selected, I agree with that. Then they go on to say that "we take this into consideration of our review of bodily injury trend patterns". I'm not really sure how it's taken into consideration, so I don't know what impact seasonality had in our final selections. When I look through the determination, it doesn't appear that, as far as I can tell, it was taken into account, but I'd be interested to hear how it was actually taken into account and if it had anything like--like I said before, most times with or without seasonality, the slope of the line is the same. That is the trend is the same, you're just not reflecting the saw pattern that you might see for seasonality. So, maybe it has no impact whether or not you included,

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I'm not really sure.

STAMP, Q.C.:

Q. When you did bodily injury, your own analysis, was there seasonality evident in that, from your perspective.

MR. DOHERTY:

A. Not in the period that we chose. The 2004-H 2 to 2012 period, it was--actually over that whole regression, it was not.

STAMP, Q.C.:

Q. So, you tested for it, you saw -

MR. DOHERTY:

A. We tested for it. Now, we tested both for it over the full 20 years, the way we split up the data, but we also excluded all the pre-2004 and just focused on the 2004-H2 to 2012 and it's wasn't evident there. In one of Oliver Wyman's--I think it's actually in the final report, they did say if you use the period 2005 to 2012 seasonality is evident. If you exclude 2004-H2, yeah, the parameter--I believe the measure of the P value is something like 7 or 8 percent. If you include 2004-H2 in our data--if you exclude it, exclude 2004-H2 so you start at 2005, it drops

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down to 4.2, so we'll probably accept it. The issue is that we didn't use that period. So, it's like a different model all together. That's not the period that we selected. And as far as I know, 2005 to 2012 was not one the periods that Oliver Wyman used. It's not a ten-year period, it's not a five-year period. It doesn't seem to encompass the periods that they actually chose. So, while they introduced that into the report, I'm not really sure how that relates to their selection and it certainly doesn't relate to our selection.

STAMP, Q.C.:

Q. Well, I think we're going to come to that a little bit later, in any event. But in the analysis that you did, as you say, bodily injury, you tested for it.

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. Didn't find seasonality to be evident.

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

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Q. And so you excluded that parameter.

MR. DOHERTY:

A. Correct.

STAMP, Q.C.:

Q. Now, in property damage, for example, was there a different conclusion?

MR. DOHERTY:

A. There may have been, I'd have to go back and take a look. I'm sure that there are some coverages where it is evident and some where it's not.

STAMP, Q.C.:

Q. You'd have to go back to Appendix B to find that, would you?

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. Okay. In the Oliver Wyman report, and I'll just--without bringing it up for a moment--I'll just refer to the property damage discussion in the Oliver Wyman report with respect to the discussion on your work, I guess. The second bullet in Property Damage says "FA includes a parameter to take into consideration the difference in the loss

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experience between the first and second half of the year, based on the loss experience we find this to be reasonable". Is that a seasonality issue?

MR. DOHERTY:

A. That would be seasonality. I'm not sure what coverage that it referring.

STAMP, Q.C.:

Q. That's property damage.

MR. DOHERTY:

A. Property damage, okay.

STAMP, Q.C.:

Q. So, but I think the indication was that you did not find include seasonality in the bodily injury component and I think Oliver Wyman suggested that they saw seasonality.

MR. DOHERTY:

A. Apparently in the period where they did 2005 to 2012.

STAMP, Q.C.:

Q. Well, we'll come to that a little bit later again. In Accident Benefits, the report of Oliver Wyman, on that point, on that coverage discussion, it's in the second bullet, says "FA does not include a parameter to take into

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the consideration the difference in the loss experience between the first and second half of the year. Based on the loss experience we find this to be reasonable". Is that a suggestion then that FA did not take into account in Accident Benefits seasonality?

MR. DOHERTY:

A. I would believe so; I'd have to confirm that.

STAMP, Q.C.:

Q. No, but that's what this appears to be saying.

MR. DOHERTY:

A. Yeah.

STAMP, Q.C.:

Q. I'm just trying to understand what this comment--so, the comment from Oliver Wyman in his report is that in some coverages you included seasonality and in some coverage you rejected seasonality.

MR. DOHERTY:

A. Correct.

STAMP, Q.C.:

Q. That's true, is it?

MR. DOHERTY:

A. Yeah.

STAMP, Q.C.:

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Q. Okay. Now, if we move forward in the CA OW 1 Response, there is a discussion, I guess, following the seasonality which is on bodily injury. Are you going there now?
MR. DOHERTY:
A. I was going to go to their review of the bodily injury trends. I just want to go right to the part where they actually indicate how they came up--so, I want to focus on that first part.
So, again, as I understand, what they've done is they've looked at a ten-year period, so that's 20 data points ending December 31, 2001 (sic.). So, you have 20 data points and they've excluded the two highs an d the two lows as I -
STAMP, Q.C.:
Q. Ending when?
MR. DOHERTY:
A. Sorry?
STAMP, Q.C.:
Q. Ending--when does the first ten-year period end?
MR. DOHERTY:
A. The first one, I believe, is ending December

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31, 2012.
STAMP, Q.C.:
Q. So, that includes-H2?
MR. DOHERTY:
A. It does include-H2, yes.
STAMP, Q.C.:
Q. Okay.
MR. DOHERTY:
A. So, you start off with 20 data points, but they excluded two highs and two lows based on the percentage changed. So, you've eliminated 20 percent of your data points off the top. Again, I'm not sure I understand that rationale for that. We would be testing for that. To me, 20 percent reduction in your sample size is significant. And by doing so, I think the variance in your parameter estimate has increased substantially that adds the uncertainty of whether or not this is a legitimate fit.
STAMP, Q.C.:
Q. And when you do this, I mean, this is, I guess, a strategy or approach that they've announced there.
MR. DOHERTY:

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A. I believe so.
STAMP, Q.C.:
Q. And the strategy or the approach is we'll take the first ten-year period ending at a certain period and it includes 2012-H2 and they'll exclude certain data points.
(1:30 p.m.)
MR. DOHERTY:
A. Yes.
STAMP, Q.C.:
Q. As you say, it happens to be four data points, the two highest and two lowest. So, do you interpret that strategy as being one that looks at this analysis after they've run the regression, drawn the lines or if they just strike it up beforehand.
MR. DOHERTY:
A. My understanding is that the outliers are removed before they do any analysis. It could be that they do an analysis with it, I don't know. Reading through this it looks like the results they're producing always exclude these highs and lows.
STAMP, Q.C.:
Q. So, you don't get to do the analysis with

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these highs and lows in. They're gone before you do the analysis?
MR. DOHERTY:
A. As I understand it. Again, they may be doing something, none of the results that I've seen through here would suggest that they've come up with a parameter based--or they've accepted a parameter that's based on periods that include highs and lows.
STAMP, Q.C.:
Q. And are you able to say particularly, Mr. Doherty, which are the highs and lows were excluded for that first ten-year review to get the -1.7.
MR. DOHERTY:
A. I am able to, based on the results. I mean, certainly they provide the data itself. I'm trying to see if I have it here. Just give me one second.
STAMP, Q.C.:
Q. I'm looking at a little note you provided me, but I don't know if that's something you got available to you.
MR. DOHERTY:
A. Yeah, what the name of the file at the bottom

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there, the very bottom, Jennifer might be able to see it.

STAMP, Q.C.:

Q. OW regression period weights, is that possibly it?

MR. DOHERTY:

A. Sorry, just give me one second. Oh yeah, I got it here. Yes, so as I understand it, the two low periods for that first one would have been 2003-H1 and 2005-H1 and the highs would be 2007-H2 and 2011-H2.

STAMP, Q.C.:

Q. Now, when we go back, when you were discussing your own fitted line and the regression analysis that you conducted, your period started when, when the second line was created.

MR. DOHERTY:

A. Yeah, so I would have started my second post 2004 reform would have been 2004-H2.

STAMP, Q.C.:

Q. Okay. And when is the reform you spoke about?

MR. DOHERTY:

A. August 2004, so it would be in the 2004-H2.

STAMP, Q.C.:

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Q. And so when would you--what periods would you begin to see that present itself, do you think?

MR. DOHERTY:

A. I would expect it to be 2004-H2 and then the first half would be 2005-H1.

STAMP, Q.C.:

Q. Okay, so the 2005-H1 is one of the data points that's excluded.

MR. DOHERTY:

A. That's correct, as I understand, yes.

STAMP, Q.C.:

Q. Now, we'll come to this in a bit more detail, but there was a discussion on the part of Oliver Wyman that they did not see any impact in trend from the tort reform or legislation in 2004.

MR. DOHERTY:

A. Correct, I believe that replicated in here as well.

STAMP, Q.C.:

Q. You spoke about the deductible being introduced and the $2,500.00--so every claim that existed from the time that legislation came in effect, every claim was reduced by

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$2,500.00 and that meant some claims -

MR. DOHERTY:

A. Pain and suffering, yes.

STAMP, Q.C.:

Q. Yeah, pain and suffering. Some claims would disappear potentially and others would be reduced by that value. So, you saw that as a change. What did Oliver Wyman see, can you say, on that point?

MR. DOHERTY:

A. Well, as I understand it, they--again, it's as I understand their approach. Again--this isn't again, this is the first time I'm emphasizing this, but we don't adjust the data. We take the data as developed to ultimate and then we look at the data and try and find different periods. And if there is a bifurcation in the periods and it creates a gap in between the two periods and we affect the slope, if asked, we will say whatever caused it, but here's the impact of it. And the way we determine the impact is to just project from the first one forward one period and then compare that to the value that we get in the new line. And that tells us whether it

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went up or down and by how much. And so it's an estimate of the impact of whatever it is that caused that change. And I could be wrong on this, but as I understand it, and this is another approach that actuaries will use is that if there if a reform that you know about, you will adjust the data to account for the reform so that you don't have to worry about bifurcating the periods. If there are two different periods, I would keep them as two separate periods, but you can adjust the data so that the two of them are lined up. You eliminate that thing before you do the analysis, I guess, conceptually you would think that, I guess, the underlying thought is the trend is the same pre and post and so you're just doing an adjustment. As I understand, with respect to the reform for bodily injury, Oliver Wyman does not believe there's an impact. So, as far as I know there was no adjustment to the data. And so they would look at it as I understand it, the trend parameter, I guess, doesn't really change pre and post 2004. So, I take that as the trend could be determined based on the full 15 year

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period they have available as presented in their report, but that's not what they did. So, I don't know why they--if there's no reform, why they used a ten-year period instead of using the full 15-year period, they don't think the parameter--they don't think the trend parameter itself has changed over that period. And if they do believe it changed, when did it change? And which of these ten or five year periods reflects when it changed and what was the value before the change and after the change? Those are the types of questions I would have based on this.

STAMP, Q.C.:

Q. So, can you say whether Oliver Wyman tested for the impact of reform?

MR. DOHERTY:

A. I don't--I assume they did some sort of test because they have in here asserted that there was no impact.

STAMP, Q.C.:

Q. Okay. Well, I just want to come back to the discussion on the time periods which you had just been referring to a moment ago in the Oliver Wyman OW CA 1, I guess, it says "In our

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judgment a ten-year period is generally a reasonable time period for determining the underlying trend rates for the bodily injury and accident benefits coverages." And then they say five years for some other features. Just go to the second paragraph following that, can you bring that up? Do you have that in front of you?

MR. DOHERTY:

A. I'm not driving.

STAMP, Q.C.:

Q. I'm looking for the Oliver Wyman Report, it's CA OW 1 response.

MS. GLYNN:

Q. Yes.

MR. DOHERTY:

A. Yes, it's that report, I'm not sure--what page are you looking at?

STAMP, Q.C.:

Q. I'm on page 4 of that report.

MR. DOHERTY:

A. You might have to go down one more because they start -

STAMP, Q.C.:

Q. There you go. So I'm just referring to the

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top sentence in the top paragraph there that we see on the screen, which appears to be Oliver Wyman's position that underlying trend for bodily injury and accident benefits can be generated from the ten-year time period.

MR. DOHERTY:

A. Yes, that's what it says.

STAMP, Q.C.:

Q. Is that what you see that he's saying?

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. And for property damages it looks to me like it's a different period, five years.

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. What's being said in the next paragraph?

MR. DOHERTY:

A. As I understand the approach, they would estimate a parameter for trend by looking at a ten-year period, but they opted as well to use a shorter period within that same period, so I guess from my view when I'm trying to estimate a parameter, I've got a ten year period, I'm

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taking, you know, I'll go back to my averaging for the height, so I take the average of these people here and come up with an average, but then I take your average alone. To me, that sounds like re-sampling. I don't know why I would rely on the smaller sample to come up with my parameter when I've got an estimate from the bigger one. I don't think that then averaging these two gives me a better estimate of how tall people are in the room on average.

STAMP, Q.C.:

Q. So when you come back to the four test periods now, which is two pages or so beyond where we are.

CHAIRMAN:

Q. Mr. Stamp, it's 1:40, we were supposed to break at 1:30. Is there a natural -

MS. GLYNN:

Q. We did have some discussion of maybe pushing on, but I don't know where Mr. Stamp is in regards to cluing up.

STAMP, Q.C.:

Q. I would certainly like to push on, Mr. Chairman and Commissioners, if I may. I won't be finished by 2:00.

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CHAIRMAN:
Q. Pardon?
STAMP, Q.C.:
Q. I will not be finished by 2:00.
CHAIRMAN:
Q. Yeah, but you want to push on.
STAMP, Q.C.:
Q. I'd like to.
MS. GLYNN:
Q. Do you have any idea of how much longer you may be? I mean, if we go to 2:00, are you still -
STAMP, Q.C.:
Q. Oh I'm still going to be undone.
MS. GLYNN:
Q. Any idea how much time you will take tomorrow?
STAMP, Q.C.:
Q. I hate to say this, but perhaps an hour and a half.
CHAIRMAN:
Q. So you've got an hour and a half left to go.
STAMP, Q.C.:
Q. I think and perhaps being conservative.
CHAIRMAN:
Q. You're not noted for that. I think maybe we

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should probably adjourn and you can finish tomorrow. I mean, it is 1:40. Do you violently object if we adjourn now.
STAMP, Q.C.:
Q. Oh no, no, Mr. Chairman.
MS. GLYNN:
Q. Did you have a point to finish before -
CHAIRMAN:
Q. I mean, I'm sorry, yes, are you--is there a trend you have to finish. Excuse the terrible pun.
STAMP, Q.C.:
Q. Quite a bit of trend I have to finish. But perhaps we can just wrap up this point, if I can, if that's okay.
CHAIRMAN:
Q. Sure, yes.
STAMP, Q.C.:
Q. So, Mr. Doherty, at the top of page 6 which you have there now, we have four periods that are being, I guess, analyzed by Oliver Wyman.
MR. DOHERTY:
A. Yes.
STAMP, Q.C.:
Q. And the first ten-year period happens to end

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December--I guess December 31st, 2012.
MR. DOHERTY:
A. Correct.
STAMP, Q.C.:
Q. But leaving out some data points. Is the next period a subset of that?
MR. DOHERTY:
A. Yes. It's a five-year period, so -
STAMP, Q.C.:
Q. The most recent five years of that?
MR. DOHERTY:
A. Yes, but those five years are within the first ten-year period.
STAMP, Q.C.:
Q. But now only leaving out one data point.
MR. DOHERTY:
A. Two data points, a high and a low.
STAMP, Q.C.:
Q. Yeah, but not four, it's half of the data points left out before, and again, is this, you know, a guess a formula for doing it as opposed to an analysis?
MR. DOHERTY:
A. My understanding is that it's a formula.
STAMP, Q.C.:

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Q. Okay, and then we come to the second two groups, it's a ten-year and a five-year again, but they are slightly different, are they?
MR. DOHERTY:
A. Yeah, they end six months before the two periods above.
STAMP, Q.C.:
Q. Okay, so each of those analysis reveals a percentage?
MR. DOHERTY:
A. Yes, so they each reveal an estimate of the underlying trend parameter.
STAMP, Q.C.:
Q. How, for example, does the minus 1.7 percent relate to anything that you've done in terms of the period?
MR. DOHERTY:
A. So we did frequency and severity, our eight-year period for bodily injury is for an annualized trend of 4.4 percent.
STAMP, Q.C.:
Q. Okay.
MR. DOHERTY:
A. I believe what they're trying to do here is estimate a parameter for loss costs that would

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be comparable to our selection of 4.4. They're just using different periods than what we've used, but they are using, again they appear to be re-sampling because they're doing regressions on different pieces.

STAMP, Q.C.:

Q. So am I looking at--do you understand that I'm looking at a regression result for four periods?

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. With certain exclusions.

MR. DOHERTY:

A. Yes.

STAMP, Q.C.:

Q. And the regression result is those four percentages at the end of those lines?

MR. DOHERTY:

A. Those are the estimates of the parameters. The underlying parameter for trend.

STAMP, Q.C.:

Q. Yes that's the trend rate, is it that they're seeing?

MR. DOHERTY:

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A. Yes, that's their estimate of what that trend rate is.

STAMP, Q.C.:

Q. And that effectively compares to your 4.4 percent for bodily injury?

MR. DOHERTY:

A. As I understand it, yes.

STAMP, Q.C.:

Q. Okay, and so then do you make any--or can you make any analysis of which of these regression results is, I guess, the best fit?

MR. DOHERTY:

A. There's no data provided on the fit metrics themselves, there's no data provided on whether or not you would accept the period itself or that the, you would effectively reject the nul hypothesis. So for instance, in the first period you done a regression, you've done a simply calculation, again, you can do it in Excel, it will come up with an answer. It tells you, you know, you asked me to determine this least squares estimate for this period, excluding those two highs and two lows, so you give me 16 data points and with those 16 data points I can determine a

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coefficient, it's minus 1.7 percent. That doesn't mean it's a good fit, it doesn't mean that you should accept that or the alternative is to say you shouldn't use this coefficient at all because our test for it suggests that you're better off picking zero because you're generating something that is more like to have come just from random variation in the residuals themselves. I don't have any statistical information about any of these regressions, but the only thing that I would suggest again is that at least for each of those periods, the five-year period is a sample of the ten-year period and I'm not sure I understand why you would do a regression unless you thought there was a change. Over the ten-year period I guess I'm seeing minus 1.7, perhaps the regression statistics suggest that yeah, that's a value period and 1.7 is actually statistically significant. Now my second one says it's not quite as much. Okay, well does that mean that this one is steeper? Are there two distinct periods or are you saying there just happens to be another period over here and I can still use a ten-year with

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the five year, that doesn't sit with me. Either you have two periods or you have one period and what are the fits on that. So I don't have any of that information from the details that are available here. Now I did do my own on this, but I don't think we want to get into that day.

STAMP, Q.C.:

Q. Okay, no. So, Mr. Chairman, if that's a convenient time now, we'll leave that and come back to this piece tomorrow morning first thing.

CHAIRMAN:

Q. So we're adjourned now until tomorrow morning at 11:30, is that correct?

MS. GLYNN:

Q. Eleven.

CHAIRMAN:

Q. Eleven, oh sorry, okay, all right. Thank you.

STAMP, Q.C.:

Q. Thank you.

Upon concluding at 1:46 p.m.

CERTIFICATE

I, Judy Moss, hereby certify that the foregoing is a true and correct transcript in the matter of a Facility Association Application re: Taxi and Limousine Automobile Insurance Rates heard on the 5th day of November, 2014 before the Board of Commissioners of Public Utilities, 120 Torbay Road, St. John's, Newfoundland and Labrador and was transcribed by me to the best of my ability by means of a sound apparatus.

Dated at St. John's, Newfoundland and Labrador this 5th day of November, A.D., 2014

Judy Moss

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