

Peterson, Greg

From: Peterson, Greg
Sent: February 22, 2017 8:17 AM
To: Johnston, Darren
Subject: RE: REDRAFT (rev2) - Passengers on the Vehicle Deck

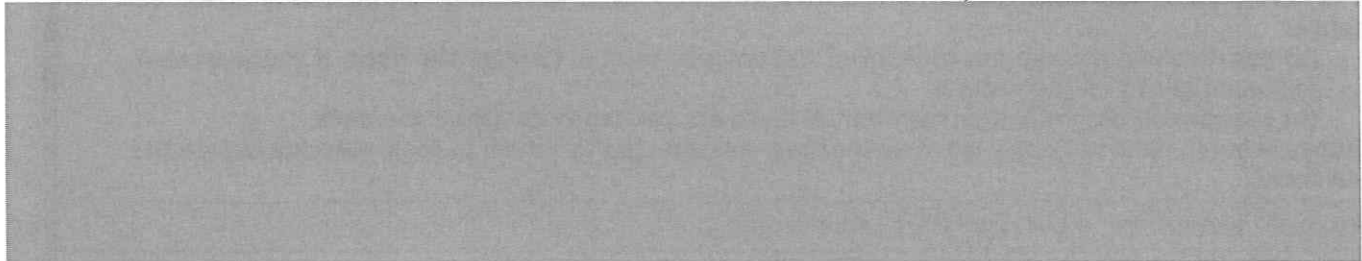
It is the format of the submission that leads us into saying what we will do—sections 3, 5, 6, 7. I have revised (see below) to restate what we have previously offered as the status quo.

In section 3, I am simply stating that we will continue to allow passengers access to the closed vehicle deck.

Greg

From: Johnston, Darren
Sent: February 22, 2017 7:41 AM
To: Peterson, Greg
Subject: RE: REDRAFT (rev2) - Passengers on the Vehicle Deck

FOIPP Act, s. 13



From: Peterson, Greg
Sent: February 21, 2017 12:14 PM
To: Johnston, Darren; Paterson, Bruce
Subject: REDRAFT (rev2) - Passengers on the Vehicle Deck

Darren;

This is the revision of the previously sent Feb 8 REDRAFT. This time I have used the TC format for MTRB. I'll redraft the letter request (table form) once we agreed on this redraft content. I have removed the reference to evacuation analysis

VOYAGE LIMITATION
Near Coastal 2
SUBJECT
Passengers on Closed Vehicle Deck Cargo Fumigation & Tackle Regulation section 152, as amended in 2007 that provides no general authorization to allow passengers in a closed deck
REGULATORY REFERENCE
<i>Canada Shipping Act</i> Cargo, Fumigation and Tackle Regulations SOR/2007-128 Section 152

PRECEDENTS

1. Review

VESSEL GROUP: The vessels included in this request for variance are the ro/ro ferries of the BC Ferries' coastal fleet that meet the definition of a having a "closed deck" and operate on routes for which the posted crossing time is 2 hours or less. The vessels included in this VESSEL GROUP are described below by construction group (sister vessels) where applicable, operate in the Straits of Georgia (Salish Sea) and are non-Convention vessels (i.e., are not certified or built for international voyages):

QUEEN OF NEW WESTMINSTER;

C-CLASS (5): QUEEN OF ALBERNI, QUEEN OF COQUITLAM, QUEEN OF COWICHAN, QUEEN OF SURRY, QUEEN OF OAK BAY;

S-CLASS (2): SPIRIT OF BRITISH COLUMBIA, SPIRIT OF VANCOUVER ISLAND

COASTAL CLASS (3): COASTAL RENAISSANCE, COASTAL INSPIRATION, COASTAL CELEBRATION

SALISH CLASS (3): SALISH ORCA, SALISH EAGLE (registry pending), SALISH RAVEN (registry pending)

An MTRB request for each vessel in the VESSEL GROUP shall need to be prepared from the content of this master VESSEL GROUP request. It is proposed that this VESSEL GROUP request can assist the Transport Canada MTRB Secretariat in expediting the process for all the vessels.

2. Details of regulatory requirements

Closed Vehicle Decks

152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger

(a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or

(b) is accompanied by a crew member, if there are packaged goods on the deck.

(2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.

3. Proposed alternative to the regulatory requirement

As a key operational requirement, it will continue to be necessary for passengers to have access to the closed vehicle deck while the vessel is underway.

4. Reason why regulatory requirement cannot be met or why alternative proposal is preferable

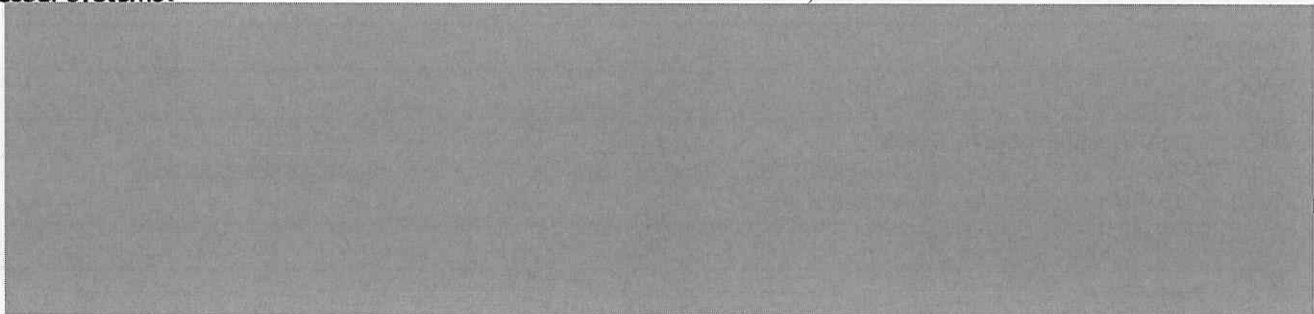
Cargo Fumigation & Tackle Regulation section 152 was brought into the statute without consideration for very large passenger and vehicle volumes and very short in berth turnaround times demanded by the service schedules of the British Columbia Coastal Ferry Act. The application of section 152 is not consistently practicable for these crossings of 2 hours or less.

5. Reason why safety and the environment will not be compromised

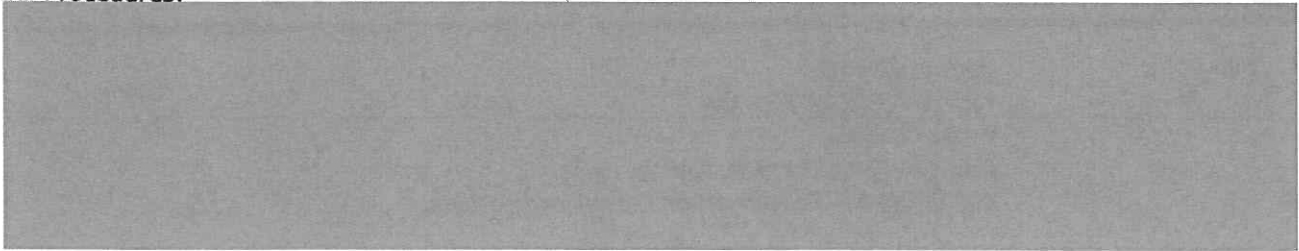
BC Ferries assessment of the risks inherent in the "closed deck" of vessels in the VESSEL GROUP has for many years resulted in vessel procedures and standard features to reduce the risks to ALARP status.

FOIPP Act, ss. 13, 15 and 19

Vessel systems:



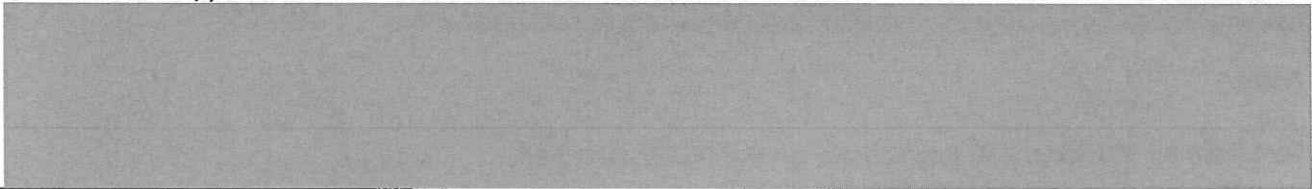
Vessel Procedures:



Passengers Requiring Assistance: FOIPP Act, ss. 13, 15 and 19



Organizational Support:



6. Potential risks to safety and the environment

Risks to passengers remaining on a closed deck are:

- not receiving the safety briefing
- lack of situational awareness
- vehicle fire on deck (smoke, toxicity);
- proximity to dangerous goods (e.g. van, pickups), CNG/LNG propelled vehicle

FOIPP Act, ss. 13, 15 and 19

7. Proposed conditions

The vessel has a "closed deck" and operates on a route for which the posted crossing time is 2 hours or less.

Greg Peterson
 Director Engineering Services
 Engineering
British Columbia Ferry Services Inc.
 12800 Rice Mill Rd, Richmond, BC, V6W 1A1

FOIPP Act, ss. 15, 19 and 22

greg.peterson@bcferries.com
bcferries.com | Facebook | Twitter

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

Paterson, Bruce

From: Johnston, Darren
Sent: February 15, 2017 7:37 AM
To: Paterson, Bruce
Cc: Peterson, Greg; Marshall, Captain Jamie
Subject: Re: *REDRAFT - Passengers on Closed Vehicle Deck

[REDACTED] FOIPP Act, s. 13

Sent from my iPhone

On Feb 15, 2017, at 7:27 AM, Paterson, Bruce <Bruce.Paterson@bcferries.com> wrote:

[REDACTED] FOIPP Act, s. 13

Bruce.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Johnston, Darren
Sent: Tuesday, February 14, 2017 5:34 PM
To: Peterson, Greg; Marshall, Captain Jamie; Paterson, Bruce
Subject: RE: *REDRAFT - Passengers on Closed Vehicle Deck

Greg - sorry for delay in response, just got into office after a few vessel visits.

[REDACTED] FOIPP Act, s. 13

Perhaps we could schedule a 1 hour meeting/call to review and finalise.
My calendar is up to date if you want to set something up.

Darren Johnston
Director, Fleet Operations
British Columbia Ferry Services Inc.

[REDACTED] FOIPP Act, ss. 15, 19 and 22

darren.johnston@bcferries.com
bcferries.com

From: Peterson, Greg
Sent: February 09, 2017 8:04 AM
To: Johnston, Darren; Marshall, Captain Jamie; Paterson, Bruce
Subject: *REDRAFT - Passengers on Closed Vehicle Deck

As per our discussion post-meeting with TC Ottawa, I have redrafted the MTRB submission.

[REDACTED]
FOIPP Act, s. 13

PROJECT or EVENT	VESSEL	DATE
------------------	--------	------

Regulatory Change	VESSEL GROUP	2017-JAN-20
--------------------------	---------------------	-------------

SUBJECT

Passengers on Closed Vehicle Deck

Cargo Fumigation & Tackle Regulation section 152, as amended in 2007 that provides no general authorization to allow passengers in a closed deck

RO LR, ABS	PRECEDENTS FOIPP Act, s. 13	APPLICATION TYPE MTRB or Letter of Policy	DECISION DEADLINE ASAP
----------------------	---------------------------------------	---	----------------------------------

1. EQUIPMENT/STRUCTURAL INFORMATION

VESSEL GROUP: The vessels included in this request for variance are the ro/ro ferries of the BC Ferries' coastal fleet that meet the definition of a having a "closed deck" and operate on routes for which the posted crossing time is 2 hours or less. The vessels included in this VESSEL GROUP are described below by construction group (sister vessels) where applicable, operate in the Straits of Georgia (Salish Sea) and are non-Convention vessels (i.e., are not certified or built for international voyages):

QUEEN OF NEW WESTMINSTER;

C-CLASS (5): QUEEN OF ALBERNI, QUEEN OF COQUITLAM, QUEEN OF COWICHAN, QUEEN OF SURRY, QUEEN OF OAK BAY;

S-CLASS (2): SPIRIT OF BRITISH COLUMBIA, SPIRIT OF VANCOUVER ISLAND

COASTAL CLASS (3): COASTAL RENAISSANCE, COASTAL INSPIRATION, COASTAL CELEBRATION

SALISH CLASS (3): SALISH ORCA, SALISH EAGLE (registry pending), SALISH RAVEN (registry pending)

An MTRB request for each vessel in the VESSEL GROUP shall need to be prepared from the content of the master VESSEL GROUP request. It is proposed that this VESSEL GROUP request can assist the Transport Canada MTRB Secretariat in expediting the process for all the vessels.

2. BACKGROUND and REASON for REQUEST

Cargo Fumigation & Tackle Regulation section 152 was brought into the statute without consideration for very large passenger and vehicle volumes and very short in berth turnaround times demanded by the service schedules of the British Columbia Coastal Ferry Act. The application of section 152 is not consistently practicable for these crossings of 2 hours or less.

3. REQUIREMENTS of STATUTES, STANDARDS or RULES

Voyage Classification	Near Coastal Voyage, Class 2, Limited Home Trade III
Source	Canada Shipping Act Cargo, Fumigation and Tackle Regulations SOR/2007-128
Section	<i>Closed Vehicle Decks</i> 152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger (a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or (b) is accompanied by a crew member, if there are packaged goods on the deck. (2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.
Specific provisions for Variance	"Every passenger shall keep off a closed vehicle deck."

4. PROPOSED ALTERNATIVES - the means of achieving an equivalent level of safety

Description	As a key operational requirement, it is necessary for passengers to have access to the closed vehicle deck while the vessel is underway: <ul style="list-style-type: none"> for a reasonable period after the start and prior to the end of the voyage
-------------	---

	(crossing) to allow large volumes of passengers to relocate between the vehicle deck and the upper decks of the vessel; and <ul style="list-style-type: none"> for short duration crossings if a passenger can reasonably spend no more than 50% of the crossing time on an upper deck.
Risk Mitigation	[REDACTED]
5. PROPOSED CONDITIONS – <i>If not met, the alternative ceases to continue in effect</i> FOIPP Act, s. 13	
Limitations	[REDACTED]
6. SUPPORTING DOCUMENTATION FOIPP Act, s. 13	
List of attachments	[REDACTED] FOIPP Act, s. 13
7. REFERENCE NOTES	

Greg Peterson
Director Engineering Services
Engineering
British Columbia Ferry Services Inc.
12800 Rice Mill Rd, Richmond, BC, V6W 1A1

[REDACTED] FOIPP Act, ss. 15, 19 and 22
greg.peterson@bcferries.com
bcferries.com | Facebook | Twitter

Notice:
This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

Peterson, Greg

From: Peterson, Greg
Sent: January 17, 2017 5:37 PM
To: Johnston, Darren; Paterson, Bruce
Subject: VESSEL GROUP - MTRB master request - Passengers on Closed Vehicle Deck
Attachments: VESSEL-GROUP-VR-PassengerAccessMCD-v0.0.pdf; VESSEL-GROUP-VR-PassengerAccessMCD-v0.0.docx

Importance: High

Darren,

Re-draft attached. I have put this together for the entire group of vessel but we will also have to submit a request for each vessel in the group. I will have this done once everyone is satisfied with the approach prescribed here.

regards

Greg

Greg Peterson
Director Engineering Services
Engineering
British Columbia Ferry Services Inc.
12800 Rice Mill Rd, Richmond, BC, V6W 1A1

greg.peterson@bcferries.com

bcferries.com | [Facebook](#) | [Twitter](#)

FOIPP Act, ss. 15, 19 and 22

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

PROJECT or EVENT Regulatory Change	VESSEL VESSEL GROUP	DATE 2017-JAN-20
--	--------------------------------------	----------------------------

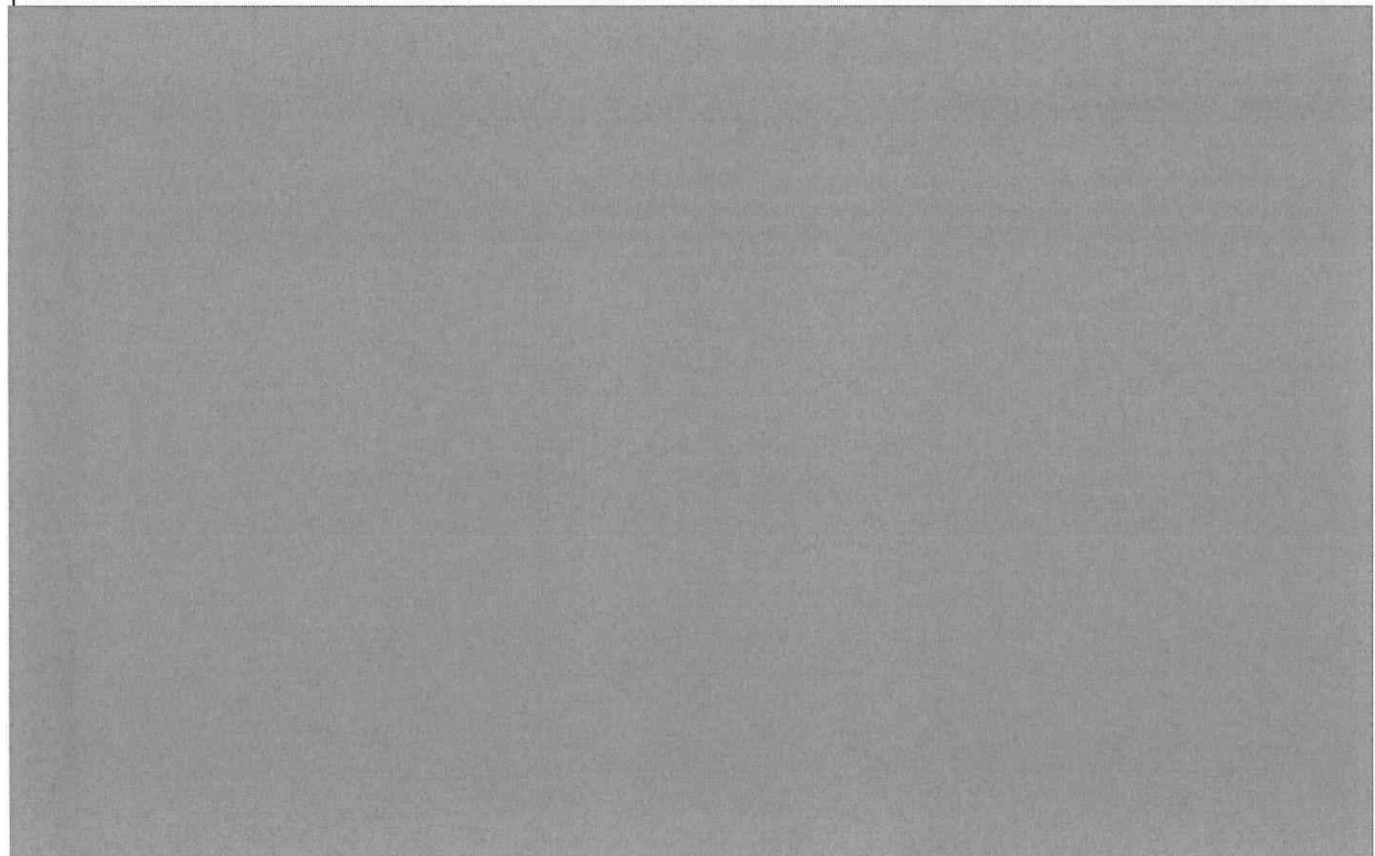
SUBJECT
Passengers on Closed Vehicle Deck
 Cargo Fumigation & Tackle Regulation section 152, as amended in 2007 that provides no general authorization to allow passengers in a closed deck

RO LR, ABS	PRECEDENTS FOIPP Act, s. 13	APPLICATION TYPE MTRB or Letter of Policy	DECISION DEADLINE ASAP
----------------------	---------------------------------------	---	----------------------------------

1. EQUIPMENT/STRUCTURAL INFORMATION

VESSEL GROUP: The vessels included in this request for variance are the ro/ro ferries of the BC Ferries' coastal fleet that meet the definition of a having a "closed deck" and operate on routes for which the posted crossing time is 2 hours or less. The vessels included in this VESSEL GROUP are described below by construction group (sister vessels) where applicable, operate in the Straits of Georgia (Salish Sea) and are non-Convention vessels (i.e., are not certified or built for international voyages):

QUEEN OF NEW WESTMINSTER;
 C-CLASS (5): QUEEN OF ALBERNI, QUEEN OF COQUITLAM, QUEEN OF COWICHAN, QUEEN OF SURRY, QUEEN OF OAK BAY;
 S-CLASS (2): SPIRIT OF BRITISH COLUMBIA, SPIRIT OF VANCOUVER ISLAND
 COASTAL CLASS (3): COASTAL RENAISSANCE, COASTAL INSPIRATION, COASTAL CELEBRATION
 SALISH CLASS (3): SALISH ORCA, SALISH EAGLE (registry pending), SALISH RAVEN (registry pending)



FOIPP Act, s. 13

FOIPP Act, s. 13

2. BACKGROUND and REASON for REQUEST

Vessel systems:

FOIPP Act, s. 13

FOIPP Act, ss. 13, 15 and 19

Vessel Procedures:

FOIPP Act, ss. 13, 15 and 19

Passengers Requiring Assistance:

FOIPP Act, ss. 13, 15 and 19

Organization Support:

FOIPP Act, ss. 15, 19 and 22

Specific concerns have been recently expressed by Transport Canada regarding risks to passengers remaining on a closed deck are:

- not receiving the safety briefing;
- not hearing the PA system;
- lack of situational awareness;
- sufficient evacuation time and route

- o taking into account IMO guidelines, but also additional factors not addressed in the IMO MSC Circular such potential obstruction of evacuation route by cars/open doors, response time to help persons with reduced mobility and young children from within the vehicle, etc.;
- vehicle fire on deck (smoke, toxicity);
- proximity to dangerous goods (e.g. van, pickups), CNG/LNG propelled vehicle
- adequate surveillance by crew during transit, and
- orderly evacuation (crowd control)

FOIPP Act, s. 13

3. REQUIREMENTS of STATUTES, STANDARDS or RULES

Voyage Classification	Near Coastal Voyage, Class 2, Limited Home Trade III
Source	<i>Canada Shipping Act</i> Cargo, Fumigation and Tackle Regulations SOR/2007-128
Section	<p><i>Closed Vehicle Decks</i></p> <p>152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger</p> <ul style="list-style-type: none"> (a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or (b) is accompanied by a crew member, if there are packaged goods on the deck. <p>(2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.</p> <p style="text-align: right;">FOIPP Act, s. 13</p>
Other citations	

FOIPP Act, s. 13

Specific provisions for Variance	"Every passenger shall keep off a closed vehicle deck."
4. PROPOSED ALTERNATIVES – the means of achieving an equivalent level of safety	
Description	
FOIPP Act, s. 13	
Risk Mitigation	
5. PROPOSED CONDITIONS – If not met, the alternative ceases to continue in effect	
Limitations	

FOIPP Act, s. 13

REQUEST for VARIANCE

FOIPP Act, s. 13

--	--

6. SUPPORTING DOCUMENTATION

List of attachments

--

FOIPP Act, s. 13

7. REFERENCE NOTES

FOIPP Act, s. 13

--

Are there operational aspects to this Request for Variance? (Yes/No)
 Where there are operational aspects for new construction, the manager for review should be an operational manager.

Reviewed By	Name	Date
Manager:		YYYY-MM-DD
Technical Authority:		YYYY-MM-DD

ENDORSEMENT / RECOMMENDATION

Review Notes

PART II: optional

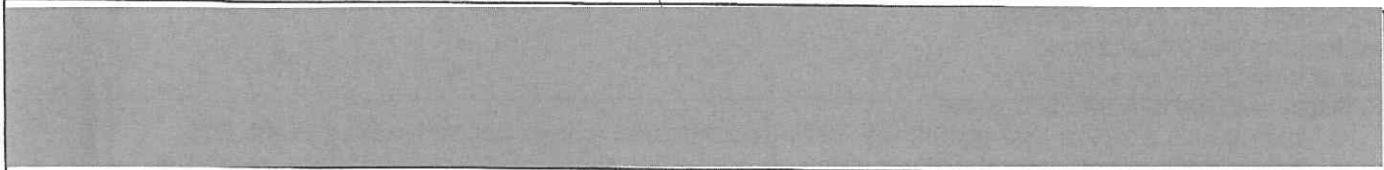
Text of submission to external authority.

VOYAGE LIMITATION
e.g., Near Coastal 2
SUBJECT
Description of proposed variance
REGULATORY REFERENCE
Name and section number of applicable regulation(s)
PRECEDENTS
e.g. previous MTRBs

1. Review	
2. Details of regulatory requirements	
3. Proposed alternative to the regulatory requirement	
4. Reason why regulatory requirement cannot be met or why alternative proposal is preferable	
5. Reason why safety and the environment will not be compromised	
6. Potential risks to safety and the environment	
7. Proposed conditions	
Attachments	
list any attached documents	
REVISED BY	REASON FOR REVISION

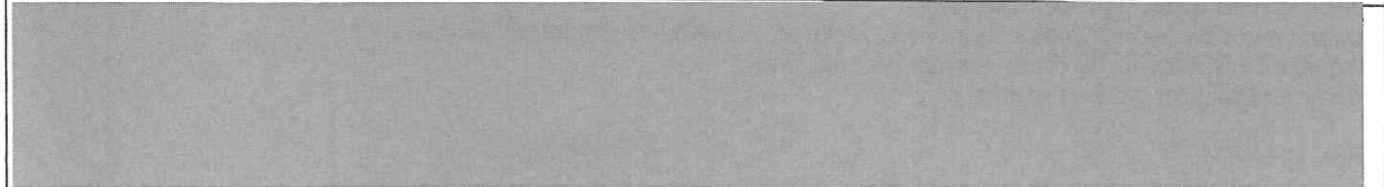
PROJECT or EVENT Regulatory Change		VESSEL VESSEL GROUP	DATE 2017-JAN-20
SUBJECT Passengers on Closed Vehicle Deck Cargo Fumigation & Tackle Regulation section 152, as amended in 2007 that provides no general authorization to allow passengers in a closed deck			
RO LR, ABS	PRECEDENTS FOIPP Act, s. 13	APPLICATION TYPE MTRB or Letter of Policy	DECISION DEADLINE ASAP
1. EQUIPMENT/STRUCTURAL INFORMATION			
<p>VESSEL GROUP: The vessels included in this request for variance are the ro/ro ferries of the BC Ferries' coastal fleet that meet the definition of a having a "closed deck" and operate on routes for which the posted crossing time is 2 hours or less. The vessels included in this VESSEL GROUP are described below by construction group (sister vessels) where applicable, operate in the Straits of Georgia (Salish Sea) and are non-Convention vessels (i.e., are not certified or built for international voyages):</p> <p>QUEEN OF NEW WESTMINSTER; C-CLASS (5): QUEEN OF ALBERNI, QUEEN OF COQUITLAM, QUEEN OF COWICHAN, QUEEN OF SURRY, QUEEN OF OAK BAY; S-CLASS (2): SPIRIT OF BRITISH COLUMBIA, SPIRIT OF VANCOUVER ISLAND COASTAL CLASS (3): COASTAL RENAISSANCE, COASTAL INSPIRATION, COASTAL CELEBRATION SALISH CLASS (3): SALISH ORCA, SALISH EAGLE (registry pending), SALISH RAVEN (registry pending)</p>			
FOIPP Act, s. 13			

FOIPP Act, s. 13



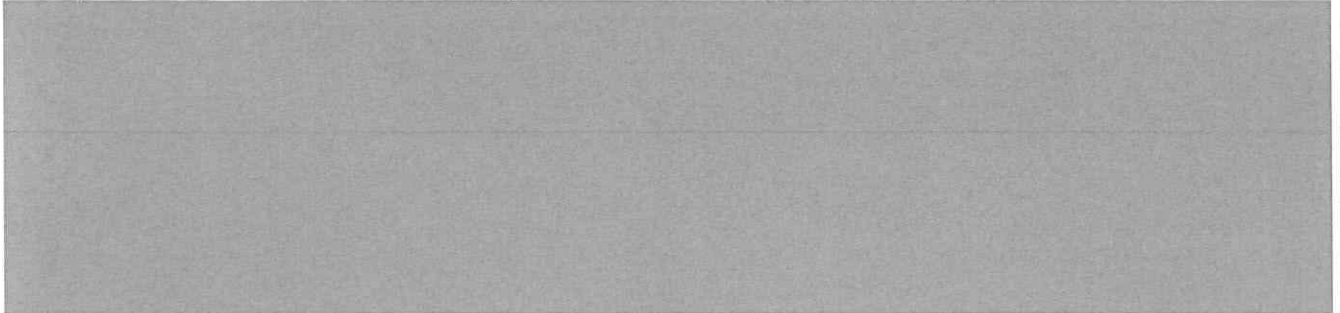
2. BACKGROUND and REASON for REQUEST

FOIPP Act, s. 13



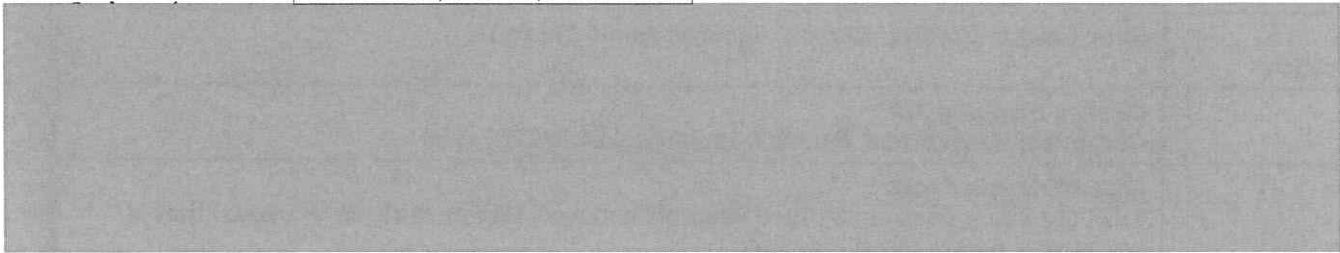
Vessel systems:

FOIPP Act, ss. 13, 15 and 19

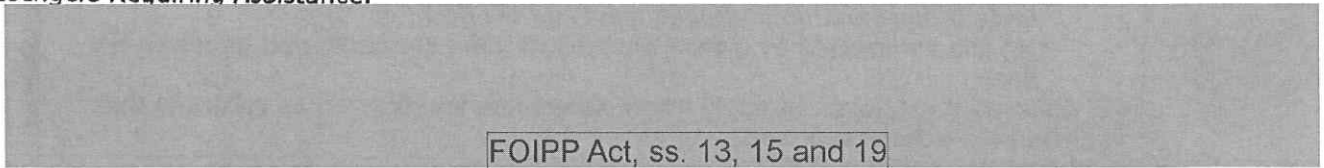


Vessel Procedures:

FOIPP Act, ss. 13, 15 and 19



Passengers Requiring Assistance:



FOIPP Act, ss. 13, 15 and 19

Organizational Support:

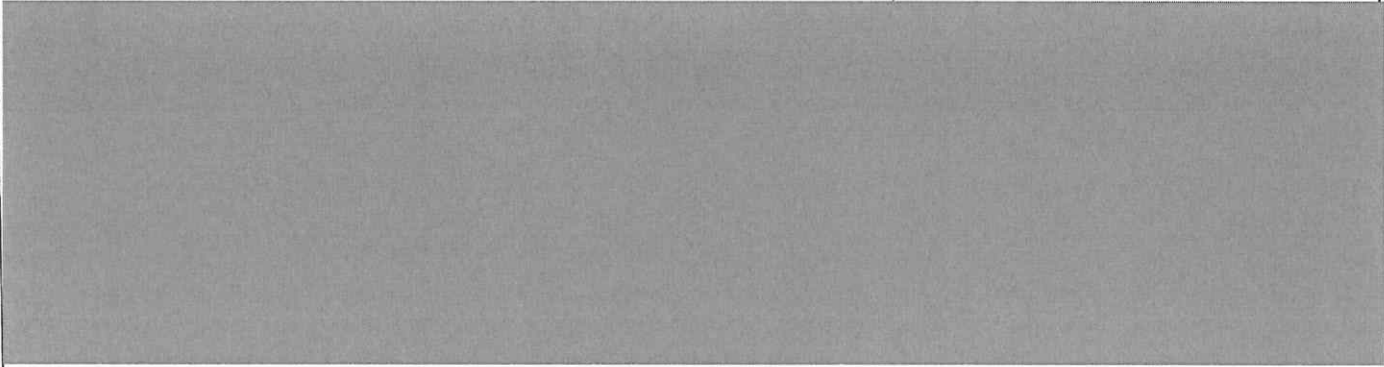


FOIPP Act, ss. 13, 15 and 19

Specific concerns have been recently expressed by Transport Canada regarding risks to passengers remaining on a closed deck are:

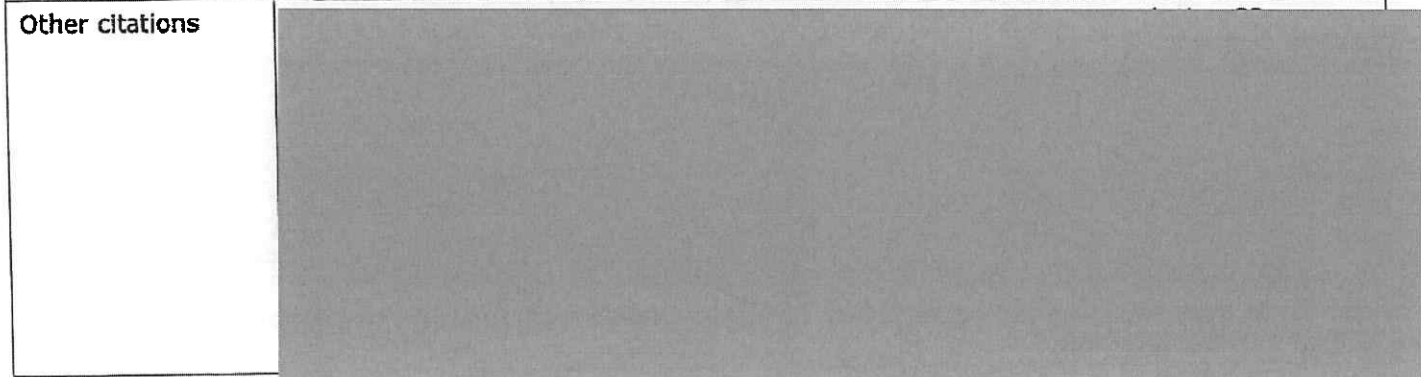
- not receiving the safety briefing;
- not hearing the PA system;
- lack of situational awareness;
- sufficient evacuation time and route
 - taking into account IMO guidelines, but also additional factors not addressed in the IMO MSC Circular such potential obstruction of evacuation route by cars/open doors, response time to help persons with reduced mobility and young children from within the vehicle, etc.;
- vehicle fire on deck (smoke, toxicity);
- proximity to dangerous goods (e.g. van, pickups), CNG/LNG propelled vehicle
- adequate surveillance by crew during transit, and
- orderly evacuation (crowd control)

FOIPP Act, s. 13



3. REQUIREMENTS of STATUTES, STANDARDS or RULES

Voyage Classification	Near Coastal Voyage, Class 2, Limited Home Trade III
Source	Canada Shipping Act Cargo, Fumigation and Tackle Regulations SOR/2007-128
Section	Closed Vehicle Decks 152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger (a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or (b) is accompanied by a crew member, if there are packaged goods on the deck. (2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.



FOIPP Act, s. 13

Specific provisions for Variance	"Every passenger shall keep off a closed vehicle deck."
4. PROPOSED ALTERNATIVES – the means of achieving an equivalent level of safety	
Description	
Risk Mitigation	

FOIPP Act, s. 13

--	--

5. PROPOSED CONDITIONS - *If not met, the alternative ceases to continue in effect*

Limitations

FOIPP Act, s. 13

--

6. SUPPORTING DOCUMENTATION

List of attachments

FOIPP Act, s. 13

--

7. REFERENCE NOTES

--

Are there operational aspects to this Request for Variance? (Yes/No)

FOIPP Act, s. 13

Where there are operational aspects for new construction, the manager for review should be an operational manager.

Reviewed By	Name	Date
Manager:		YYYY-MM-DD
Technical Authority:		YYYY-MM-DD

ENDORSEMENT / RECOMMENDATION

Review Notes

PART II: optional

Text of submission to external authority.

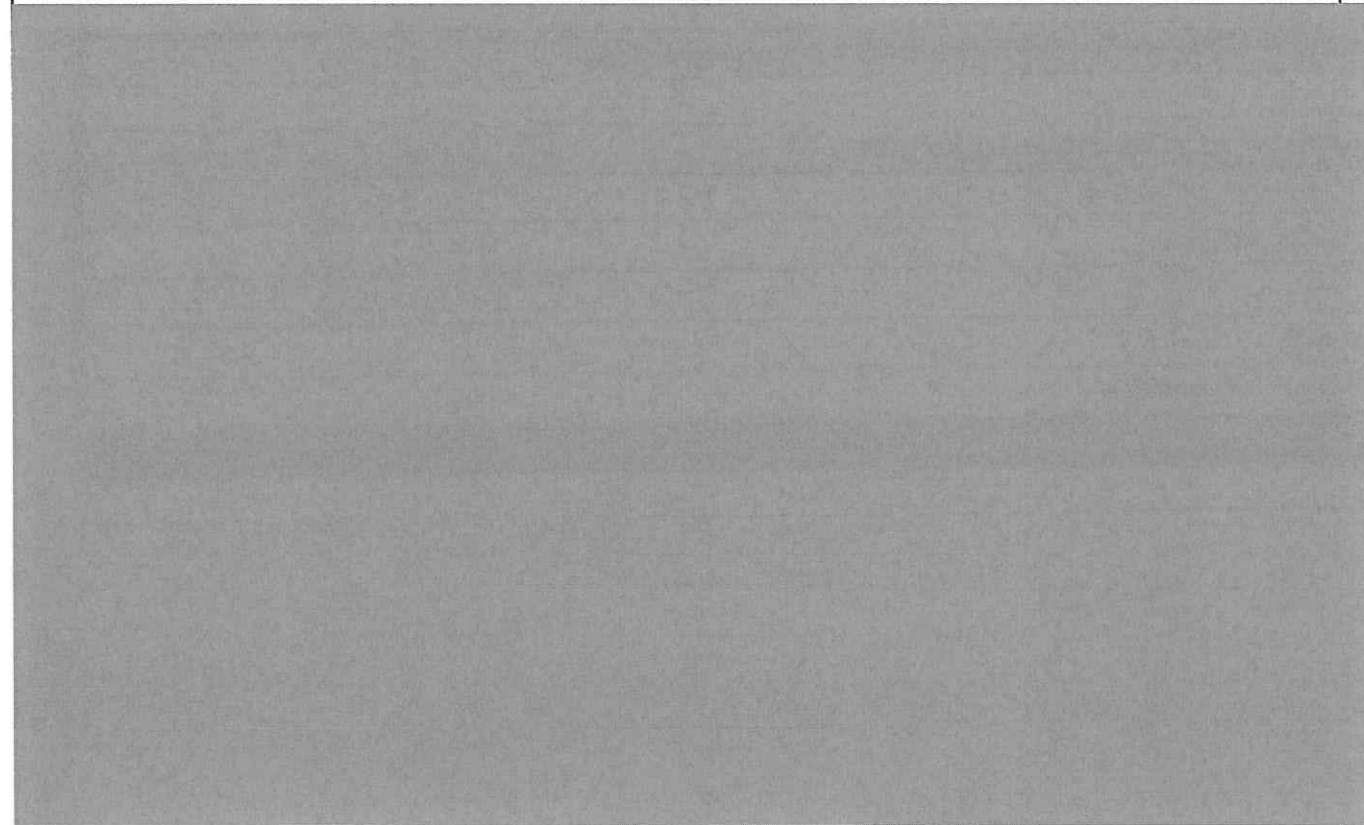
VOYAGE LIMITATION	
e.g., Near Coastal 2	
SUBJECT	
Description of proposed variance	
REGULATORY REFERENCE	
Name and section number of applicable regulation(s)	
PRECEDENTS	
e.g. previous MTRBs	
1. Review	
2. Details of regulatory requirements	
3. Proposed alternative to the regulatory requirement	
4. Reason why regulatory requirement cannot be met or why alternative proposal is preferable	
5. Reason why safety and the environment will not be compromised	
6. Potential risks to safety and the environment	
7. Proposed conditions	
Attachments	
list any attached documents	
REVISED BY	REASON FOR REVISION

PROJECT or EVENT Regulatory Change		VESSEL VESSEL GROUP	DATE 2017-JAN-20
SUBJECT Passengers on Closed Vehicle Deck Cargo Fumigation & Tackle Regulation section 152, as amended in 2007 that provides no general authorization to allow passengers in a closed deck			
RO LR, ABS	PRECEDENTS FOIPP Act, s. 13	APPLICATION TYPE MTRB or Letter of Policy	DECISION DEADLINE ASAP

1. EQUIPMENT/STRUCTURAL INFORMATION

VESSEL GROUP: The vessels included in this request for variance are the ro/ro ferries of the BC Ferries' coastal fleet that meet the definition of a having a "closed deck" and operate on routes for which the posted crossing time is 2 hours or less. The vessels included in this VESSEL GROUP are described below by construction group (sister vessels) where applicable, operate in the Straits of Georgia (Salish Sea) and are non-Convention vessels (i.e., are not certified or built for international voyages):

QUEEN OF NEW WESTMINSTER;
 C-CLASS (5): QUEEN OF ALBERNI, QUEEN OF COQUITLAM, QUEEN OF COWICHAN, QUEEN OF SURRY, QUEEN OF OAK BAY;
 S-CLASS (2): SPIRIT OF BRITISH COLUMBIA, SPIRIT OF VANCOUVER ISLAND
 COASTAL CLASS (3): COASTAL RENAISSANCE, COASTAL INSPIRATION, COASTAL CELEBRATION
 SALISH CLASS (3): SALISH ORCA, SALISH EAGLE (registry pending), SALISH RAVEN (registry pending)



FOIPP Act, s. 13

2. BACKGROUND and REASON for REQUEST

Vessel systems:

FOIPP Act, ss. 13, 15 and 19

FOIPP Act, s. 13

Vessel Procedures:

FOIPP Act, ss. 13, 15 and 19

Passengers Requiring Assistance:

Organizational Support:

FOIPP Act, ss. 13, 15 and 19

FOIPP Act, ss. 13, 15 and 19

Specific concerns have been recently expressed by Transport Canada regarding risks to passengers remaining on a closed deck are:

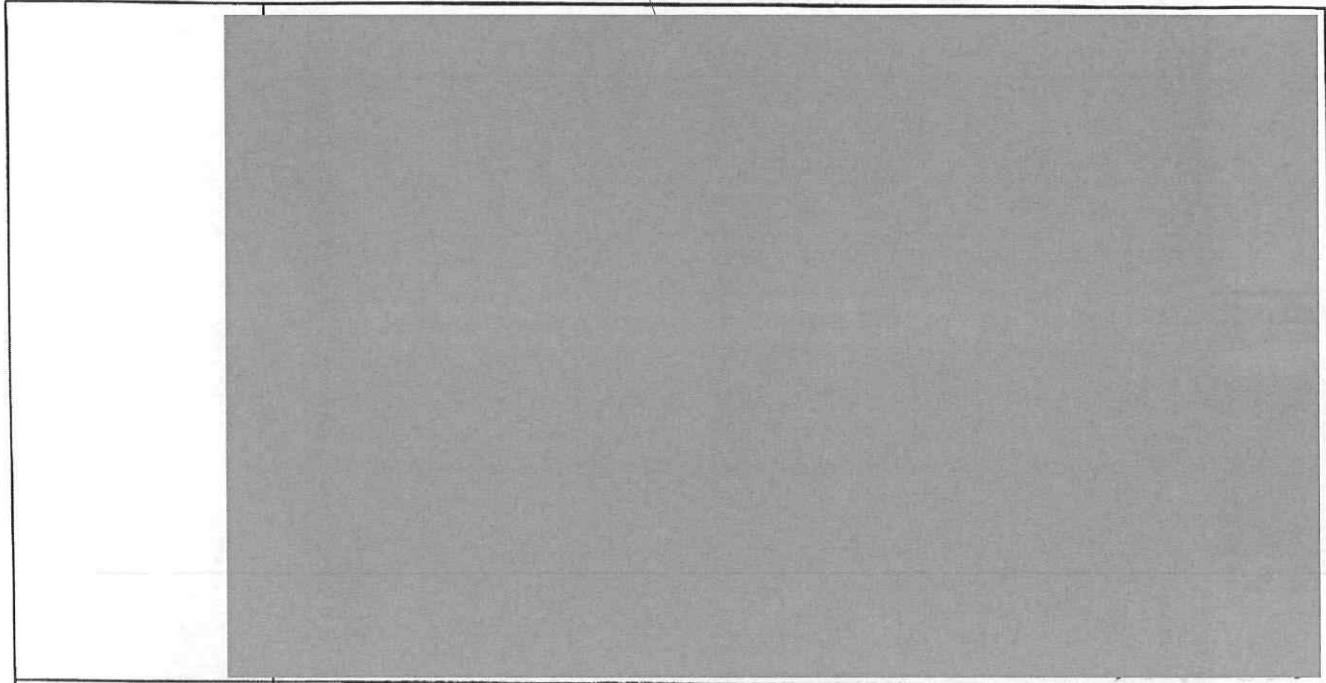
- not receiving the safety briefing;
- not hearing the PA system;
- lack of situational awareness;
- sufficient evacuation time and route
 - taking into account IMO guidelines, but also additional factors not addressed in the IMO MSC Circular such potential obstruction of evacuation route by cars/open doors, response time to help persons with reduced mobility and young children from within the vehicle, etc.;
- vehicle fire on deck (smoke, toxicity);
- proximity to dangerous goods (e.g. van, pickups), CNG/LNG propelled vehicle
- adequate surveillance by crew during transit, and
- orderly evacuation (crowd control)

FOIPP Act, s. 13

3. REQUIREMENTS of STATUTES, STANDARDS or RULES

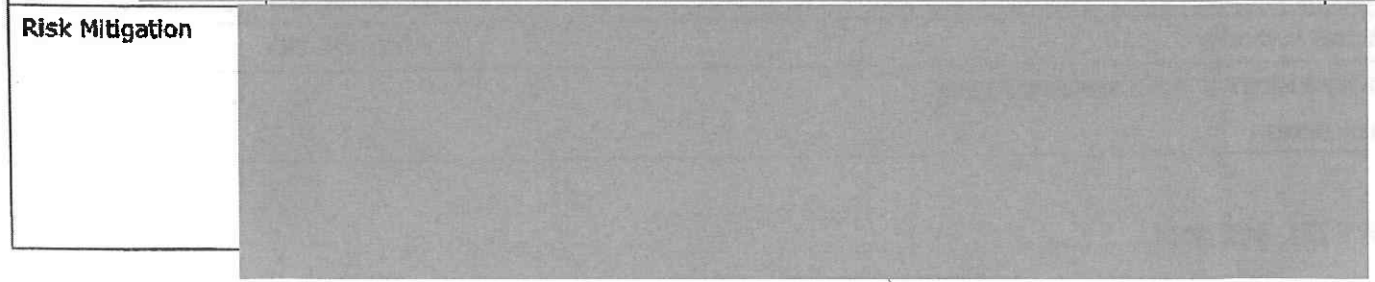
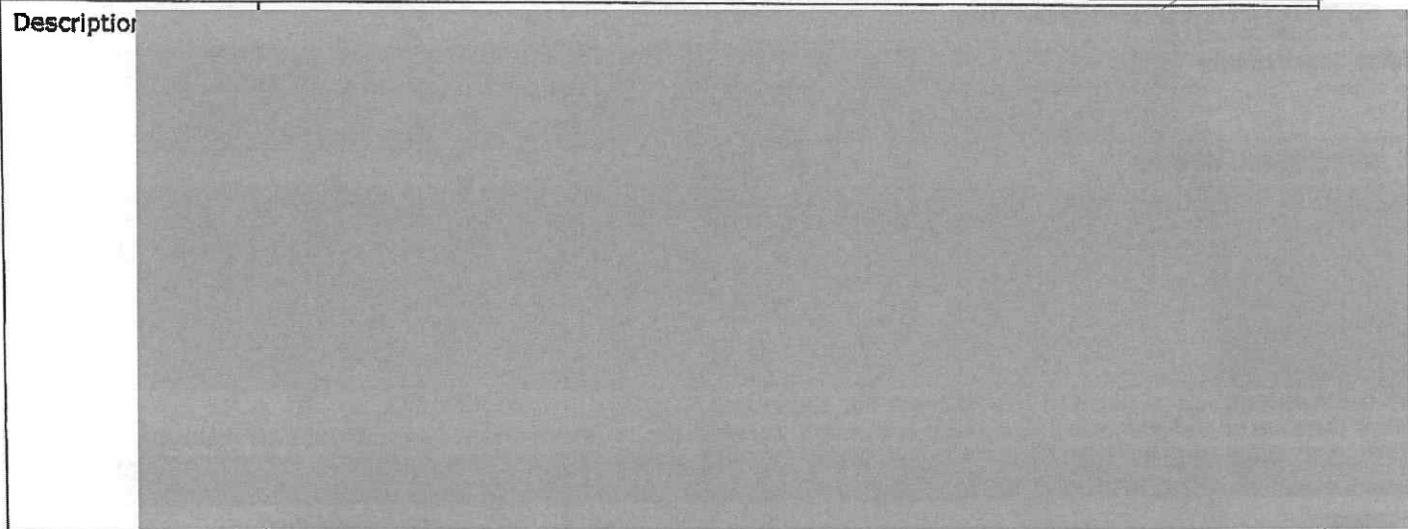
Voyage Classification	Near Coastal Voyage, Class 2, Limited Home Trade III
Source	Canada Shipping Act Cargo, Fumigation and Tackle Regulations SOR/2007-128
Section	<i>Closed Vehicle Decks</i> 152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger (a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or (b) is accompanied by a crew member, if there are packaged goods on the deck. (2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.
Other citations	

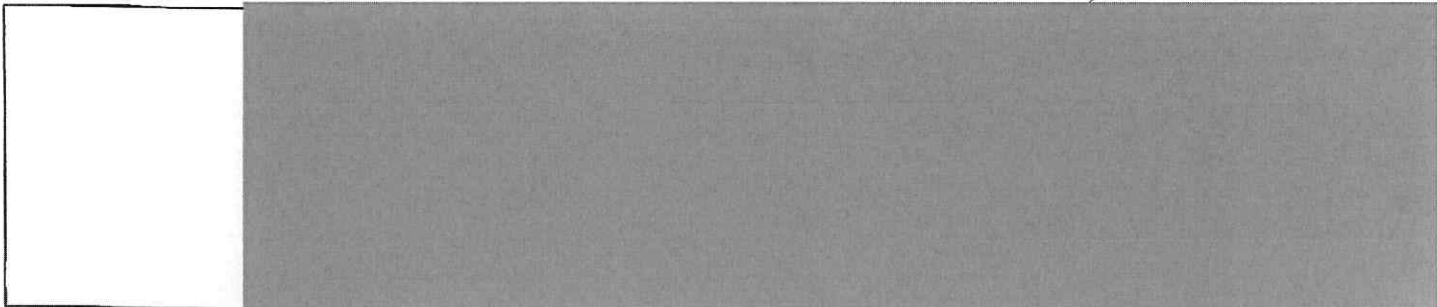
FOIPP Act, s. 13



Specific provisions for Variance	"Every passenger shall keep off a closed vehicle deck."
----------------------------------	---

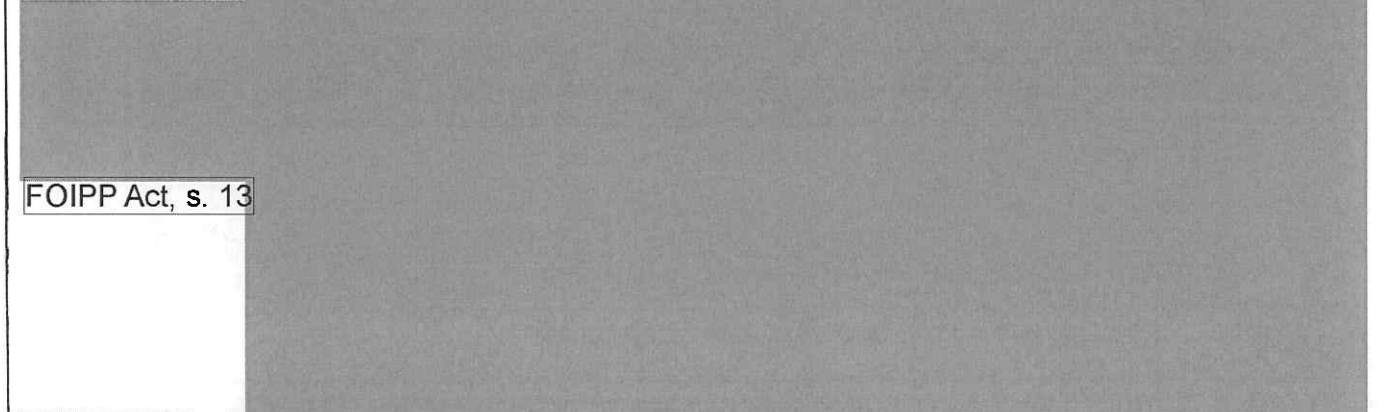
4. PROPOSED ALTERNATIVES – the means of achieving an equivalent level of safety FOIPP Act, s. 13





5. PROPOSED CONDITIONS - *If not met, the alternative ceases to continue in effect*

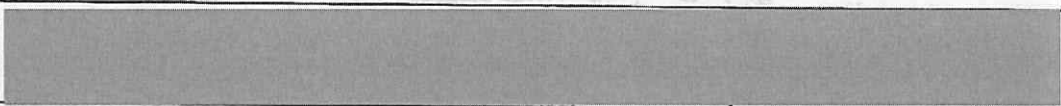
Limitations



FOIPP Act, s. 13

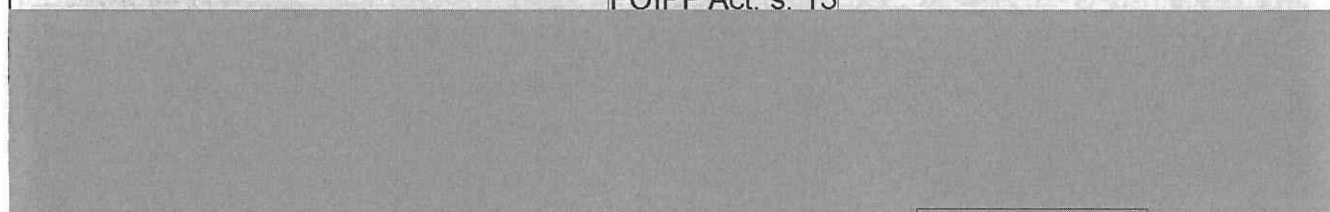
6. SUPPORTING DOCUMENTATION

List of attachments



7. REFERENCE NOTES

FOIPP Act, s. 13



Are there operational aspects to this Request for Variance? (Yes/No)

FOIPP Act, s. 13

Where there are operational aspects for new construction, the manager for review should be an operational manager.

Reviewed By	Name	Date
Manager:		YYYY-MM-DD
Technical Authority:		YYYY-MM-DD

ENDORSEMENT / RECOMMENDATION

Review Notes



PART II: optional

Text of submission to external authority.

VOYAGE LIMITATION	
e.g., Near Coastal 2	
SUBJECT	
Description of proposed variance	
REGULATORY REFERENCE	
Name and section number of applicable regulation(s)	
PRECEDENTS	
e.g. previous MTRBs	
1. Review	
2. Details of regulatory requirements	
3. Proposed alternative to the regulatory requirement	
4. Reason why regulatory requirement cannot be met or why alternative proposal is preferable	
5. Reason why safety and the environment will not be compromised	
6. Potential risks to safety and the environment	
7. Proposed conditions	
Attachments	
list any attached documents	
REVISED BY	REASON FOR REVISION

Christensen, Melanie

From: Johnston, Darren
Sent: January 13, 2017 4:11 PM
To: Marshall, Captain Jamie; Marshall, Deborah; Storey, Corrine; Daye, Rhonda; King, Zoe; Phipps, Captain Dale; Paterson, Bruce; Peterson, Greg; Lucia, Melanie; Lomax, Captain Lance; Boyle, Kevin; Currie, Jessica; Barabash, Jason; MacKay, Captain Lewis; Fagen, David; Brockhausen, Captain Jan; Grewal, Captain Hardeep; de Koninck, Captain Al; Clackson, Gregg; Nussbaum, Stephen; Camaraire, Frank
Cc: Corrigan, Mike; Collins, Mark
Subject: No Pax on Closed Vehicle Decks

All – due to recent discussions with Transport Canada, specifically some concerns that they have with our internal policy (e.g. routes of 45 minutes or less), we will be submitting an MTRB (request for variance from the regulation) to TC next week. The turn-around time is about 40 days on MTRB's so we'll be putting the policy implementation on hold until further notice.

We have been advised by TC that there is no immediate pressure to comply with the regulation CFTR 152 and the status quo will continue until such time as we are fully ready to implement any required changes.

I will be sending an update communication to the fleet next week to advise everyone that the original 15th Feb date is no longer in effect. I have advised Graeme Johnston at BCFMWU of this development.

Darren Johnston
Director, Fleet Operations
British Columbia Ferry Services Inc.
The Atrium
Suite 500, 1321 Blanshard St., Victoria, BC V8W 0B7

FOIPP Act, ss. 15, 19 and 22

darren.johnston@bcferries.com
bcferries.com | Facebook | Twitter

Notice:

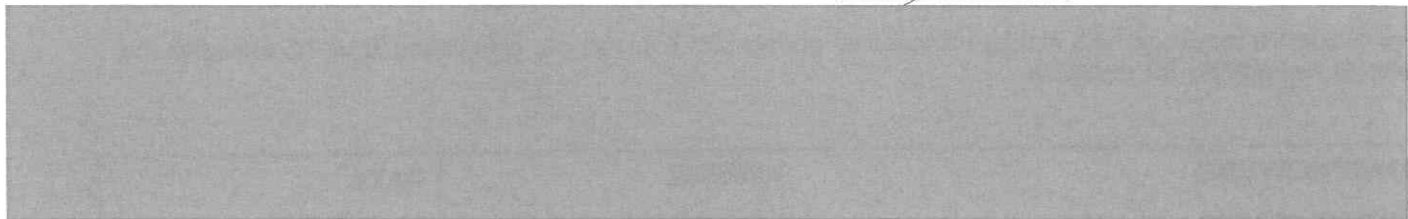
This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

Paterson, Bruce

From: Johnston, Darren
Sent: January 09, 2017 2:26 PM
To: Peterson, Greg
Cc: Paterson, Bruce
Subject: RE: DRAFT REN MTRB Request - Passengers on Closed Vehicle Deck

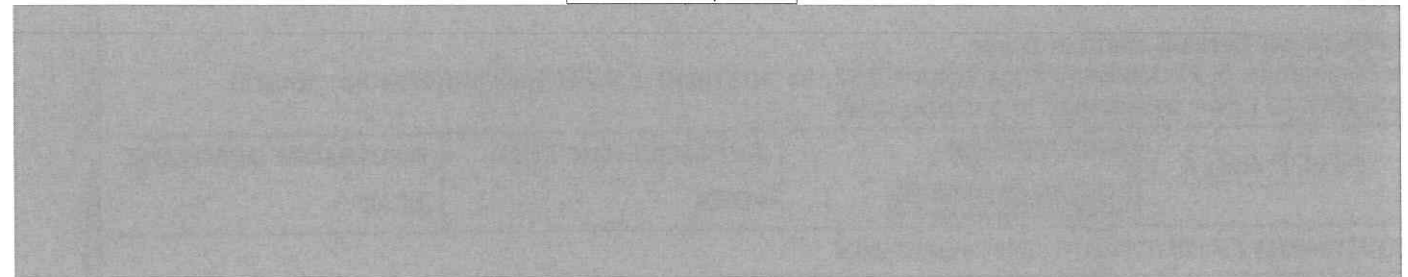
Greg – this is good. I would not go so far as to say that...

FOIPP Act, s. 13



I think it would be OK to say...

FOIPP Act, s. 13



I have made these 2 edits in the form attached. I will ask Shereen to get fire and DG incident summaries by end of tomorrow.

Darren Johnston
Director, Fleet Operations
British Columbia Ferry Services Inc.

darren.johnston@bcferries.com
bcferries.com

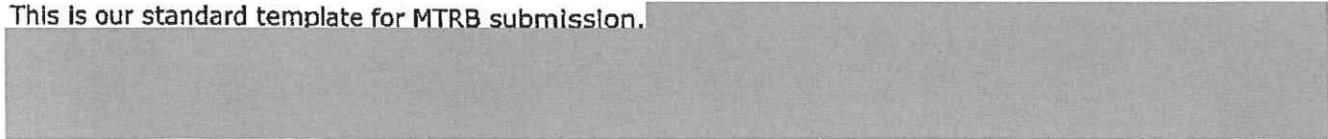
FOIPP Act, ss. 15, 19 and 22

From: Peterson, Greg
Sent: January 06, 2017 7:04 AM
To: Johnston, Darren
Cc: Paterson, Bruce
Subject: DRAFT REN MTRB Request - Passengers on Closed Vehicle Deck

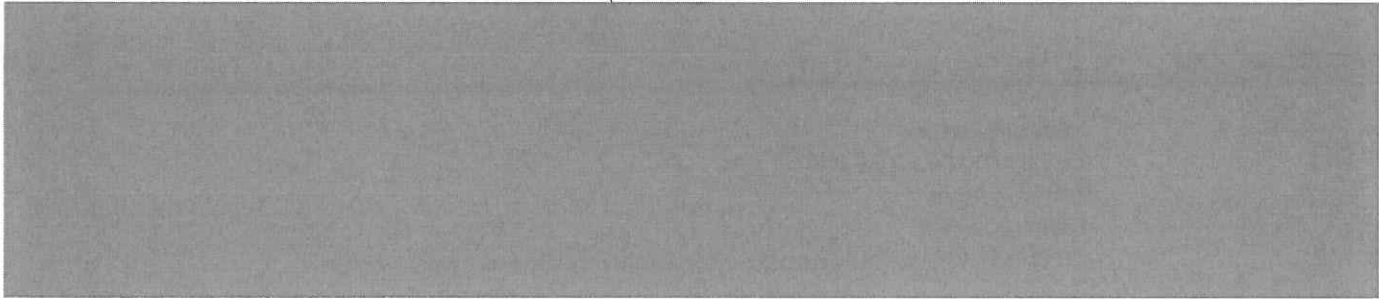
Darren,

As per your call yesterday afternoon...

This is our standard template for MTRB submission.



FOIPP Act, s. 13



Please do your edits directly in the form below. Once you are satisfied, I will make the submission and have it added to our MTRB database in sharepoint.

I have also left a message with Makhan Chowdrey giving him a heads up, requesting that TC expedite the request(s) and asking for direction.

PROJECT or EVENT Regulatory change		VESSEL Coastal Renaissance	DATE 2017-JAN-06
SUBJECT Passengers on Closed Vehicle Deck Cargo Fumigation & Tackle Regulation section 152, as amended in 2007 that provides no general authorization to allow passengers in a closed deck			
RO ABS	FOIPP Act, s. 13	PRECEDENTS 	APPLICATION TYPE MTRB
DECISION DEADLINE ASAP			
1. EQUIPMENT/STRUCTURAL INFORMATION			
Coastal Renaissance Official No. 832105 IMO No. 9332755	GRT: 21777 tonnes LOA: 160 m Passengers: 1571	Material: Steel Power: Diesel Electric 22,000kW Screws: 1 Forward, 1 Aft	Built: 2007 Passengers: 1571 Crew: 33
2. BACKGROUND and REASON for REQUEST			

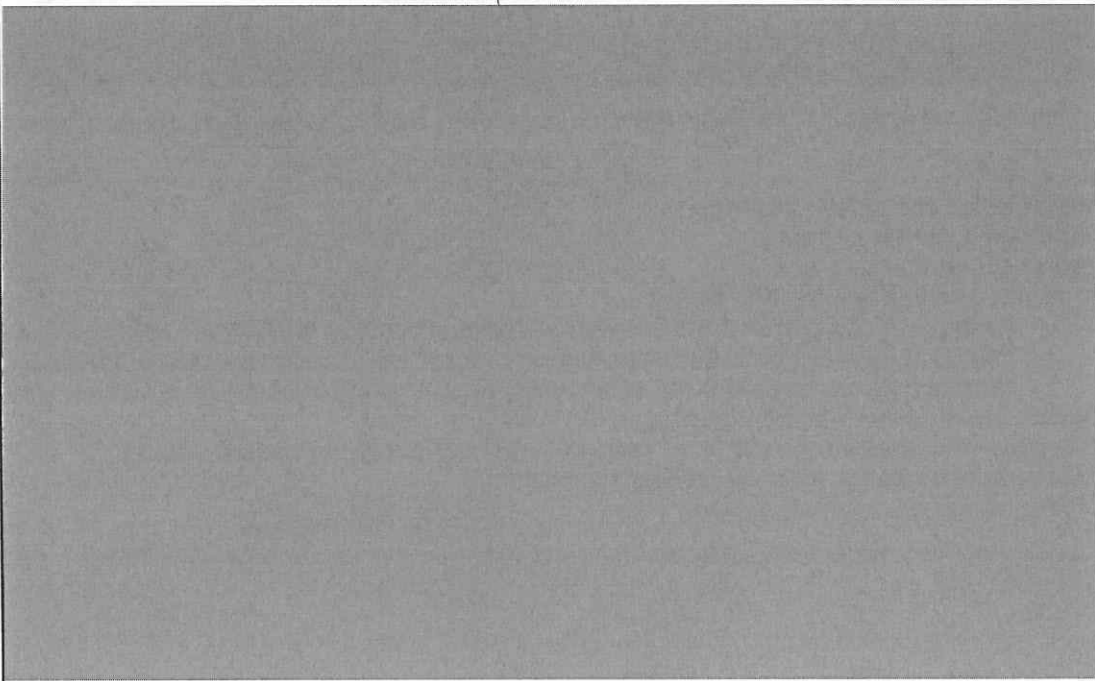
Specific concerns expressed by Transport Canada regarding risks to passengers remaining on a closed deck are:

- not receiving the safety briefing;
- not hearing the PA system;
- lack of situational awareness;
- sufficient evacuation time and route
 - taking into account IMO guidelines, but also additional factors not addressed in the IMO MSC Circular such potential obstruction of evacuation route by cars/open doors, response time to help persons with reduced mobility and young children from within the vehicle, etc.;
- vehicle fire on deck (smoke, toxicity);
- proximity to dangerous goods (e.g. van, pickups), CNG/LNG propelled vehicle
- adequate surveillance by crew during transit, and
- orderly evacuation (crowd control)

FOIPP Act, s. 13

3. REQUIREMENTS of STATUTES, STANDARDS or RULES

Voyage Classification	Near Coastal Voyage, Class 2, Limited Home Trade III
Source	<i>Canada Shipping Act</i> Cargo, Fumigation and Tackle Regulations SOR/2007-128
Section	<i>Closed Vehicle Decks</i> 152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger (a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or (b) is accompanied by a crew member, if there are packaged goods on the deck. (2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.
Other citations	

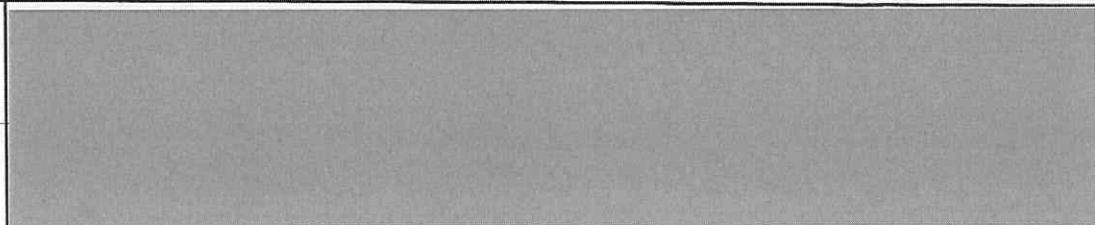


Specific provisions for Variance

"Every passenger shall keep off a closed vehicle deck."

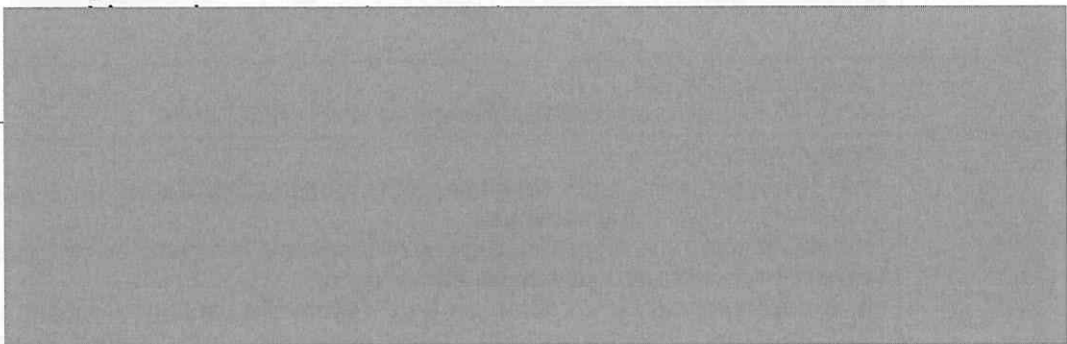
4. PROPOSED ALTERNATIVES - *the means of achieving an equivalent level of safety*

Description



FOIPP Act, s. 13

Vessel systems:



FOIPP Act, ss. 13, 15 and 19

Vessel Procedures:



FOIPP Act, ss. 13, 15 and 19

FOIPP Act, ss. 13, 15 and 19



Passengers Requiring Assistance:

FOIPP Act, ss. 13, 15 and 19



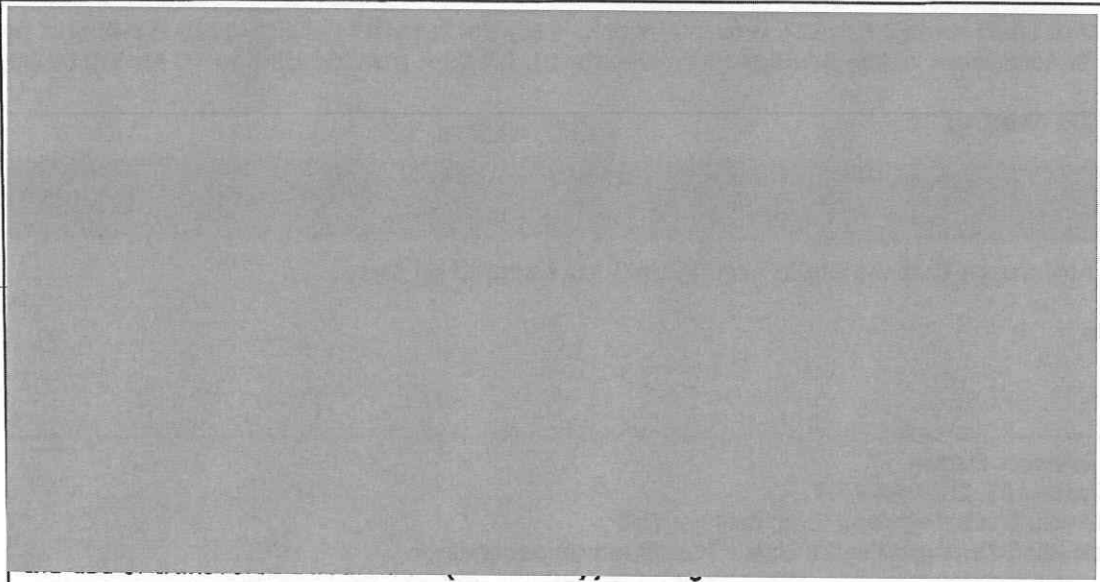
Organization Support:

FOIPP Act, ss. 13, 15 and 19



Risk Mitigation

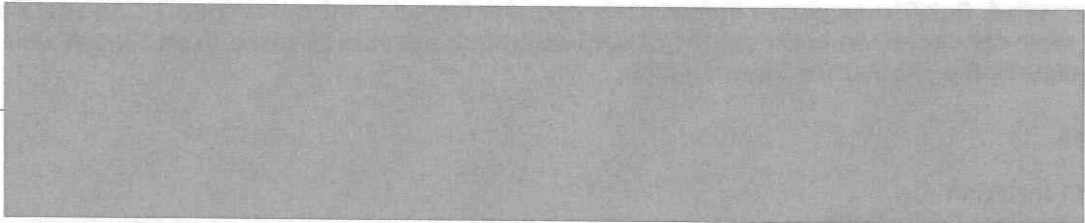
FOIPP Act, ss. 13, 15 and 19



5. PROPOSED CONDITIONS – *If not met, the alternative ceases to continue in effect*

Limitations

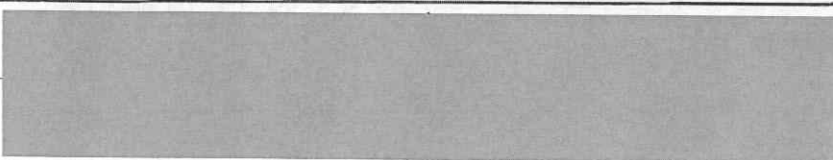
FOIPP Act, s. 13



6. SUPPORTING DOCUMENTATION

List of attachments

FOIPP Act, s. 13



Paterson, Bruce

From: Peterson, Greg
Sent: January 03, 2017 4:28 PM
To: Johnston, Darren; Paterson, Bruce; Kearney, Bob
Subject: RE: C Class and Coastal Class - TC position on pax on deck

Bruce,

I discussed the approach to getting an "interpretation" on this with Ben (LR) this afternoon for C-Class vessels. *The paths to consider include one of the following:*

1. (Blind approach) – Ask LR if the C-Class vessels are compliant with CFTR 152 with specific attention to "Closed vehicle deck." LR to do the technical analysis and provide this to TC for TC to confirm.
2. Ask LR to review the BCF technical work, e.g., Bob's tech brief FTE-2016-37-A and provide an endorsement of the findings (interpretation). LR then provides this to TC for TC to confirm.
3. Go direct to TC.

FOIPP Act, s. 13

Ben is now aware that we would need a quick turnaround on this.

regards

Greg

From: Johnston, Darren
Sent: January 03, 2017 4:09 PM
To: Paterson, Bruce; Peterson, Greg; Kearney, Bob
Subject: RE: C Class and Coastal Class - TC position on pax on deck

Hi – follow up from meeting today:

As requested, Bob/Bruce please immediately request formal clarification from TC on the definition of our C Class main car decks. As indicated the SOLAS definition appears to make them Closed but it is a grey area that requires the regulators determination.

Thanks

Darren Johnston
Director, Fleet Operations
British Columbia Ferry Services Inc.

darren.johnston@bcferries.com
bcferries.com

FOIPP Act, ss. 15, 19 and 22

From: Paterson, Bruce
Sent: December 23, 2016 2:32 PM
To: Johnston, Darren; Peterson, Greg

Cc: Kearney, Bob
Subject: RE: C Class and Coastal Class - TC position on pax on deck

Darren,

FOIPP Act, s. 13

Attached is the memo summarizing the regulatory situation viz. "closed decks" and the assessment of the two C-Class on Route 3. Please review. My thoughts have evolved since our last discussion.

I can also answer your question re. the Coastals and MTRB 8539.

Have a Merry Christmas,

FOIPP Act, s. 13

Bruce Paterson, P.Eng, M.Eng
Director, Naval Architecture, Engineering British Columbia Ferry Services Inc.

FOIPP Act, ss. 15, 19 and 22

bruce.paterson@bcferries.com

www.bcferries.com

Safety and Operational Readiness

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

From: Johnston, Darren
Sent: December 23, 2016 11:34 AM
To: Peterson, Greg; Paterson, Bruce
Subject: C Class and Coastal Class - TC position on pax on deck

Hi Greg and Bruce - as you both know we are working to get some clarification on the issue of whether:

A. Whether the CFTR 152 applies on the C Class main car deck as we now understand that this deck may be considered a Open Deck.

B. Whether the Coastal Class have an exemption from prior MTRB 8539.

FOIPP Act, s. 13

Bruce - as soon as your team completes that technical calculations please advise and forward to Lloyd's (or another RO) for verification.

Greg - please clarify the result of MTRB 8539 and advise whether it gives allowance under the CFTR for is to have pax on Coastal MCD.

Mike has said (this morning) that he does not want anything else announced about this until we have these steps completed.

Thanks
Darren

Sent from my BlackBerry 10 smartphone on the TELUS network.

TB Reference No. FTE-2016-37-A
Prepared For: BCF Internal
Subject: **Passengers on Closed Decks – Regulatory Review and Assessment of the Route 3 (C-Class) Vessels**
Date: 21 December 2016
Prepared By: Bob Kearney, AScT
 BCF Fleet Technical Engineering
Reviewed By: Bruce Paterson, P.Eng. M.Eng.
 Director, Naval Architecture
Revision: 1

INTRODUCTION

The Transport Canada *Cargo, Fumigation and Tackle Regulations* state:

Closed Vehicle Decks

- 152 (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger
 - (a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or
 - (b) is accompanied by a crew member, if there are packaged goods on the deck.
- (2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.

However, the Regulation does not explicitly state the definition of a closed vehicle deck.

VEHICLE DECK ARRANGEMENTS

Transport Canada Marine Safety:

There are a variety of definitions employed in Transport Canada Marine Safety regulations and Technical Publications (TPs). In general BC Ferries has the following vehicle deck arrangements:

Vehicle Deck Arrangement	Example
Open	<i>Kahloke</i>
Partially Enclosed	<i>Queen of Coquitlam</i>
Special Category Space	<i>Northern Adventure</i>

In general, a description of the above arrangements is:

Open vehicle deck: Vehicle deck bounded on sides by deckhouses or bulwarks, no overhead deck and no bow or stern doors.

Partially Enclosed vehicle deck: Vehicle deck bounded on sides by deckhouses or bulwarks, partial overhead deck and no bow or stern doors or vehicle deck bounded on sides by curtain plate with openings, full overhead deck and bow or stern doors.

Special Category Space: Enclosed spaces used for the carriage of motor vehicles with fuel in their tanks for their own propulsion and to which passengers have access.

SOLAS (IMO):

SOLAS Reg 3 has the following definitions:

12. Closed ro-ro spaces are ro-ro spaces which are neither open ro-ro spaces nor weather decks.

13. Closed vehicle spaces are vehicle spaces which are neither open vehicle spaces nor weather decks

35. Open ro-ro spaces are those ro-ro spaces that are either open at both ends or have an opening at one end, and are provided with adequate natural ventilation effective over their entire length through permanent openings distributed in the side plating or deckhead or from above, having a total area of at least 10% of the total area of the space sides.

36. Open vehicle spaces are those vehicle spaces which are either open at both ends, or have an opening at one end and are provided with adequate natural ventilation effective over their entire length through permanent openings distributed in the side plating or deckhead or from above, having a total area of at least 10% of the total area of the space sides.

SOLAS rules do not explicitly apply to most of the BCF Fleet as SOLAS applies to "Convention Vessels" (vessels that engage in international voyages). However SOLAS provides the clearest definition of "closed" vs. "open" deck, and thus the principles of the Rules may be useful and applicable in view of proposed TC regulations for vessel construction..

DISCUSSION

There are uncertainties in the application of CFTR 152. Nowhere in the CFTR does it explicitly define a closed vehicle deck. In other publications and regulations, Transport Canada does not use standard terms found in SOLAS for non-Convention vessels.

CFTR 152 permits passengers on the closed vehicle deck at certain times. This has been agreed to mean that passengers may be on the deck for the first 15 minutes at the start of the voyage, in addition to stated allowance for passengers to return to closed deck to disembark, also taken as 15 minutes before the ship docks.

This brings operational issues on shorter duration routes such as Route 3 (Horseshoe Bay - Langdale) which is 40 minutes in duration. This essentially means that passengers may be permitted on the vehicle deck for 75% of the voyage. In practical terms, it only allows 10 minutes for the deck watch to enforce CFTR 152 before passengers would be permitted to proceed back to the vehicle decks to disembark.

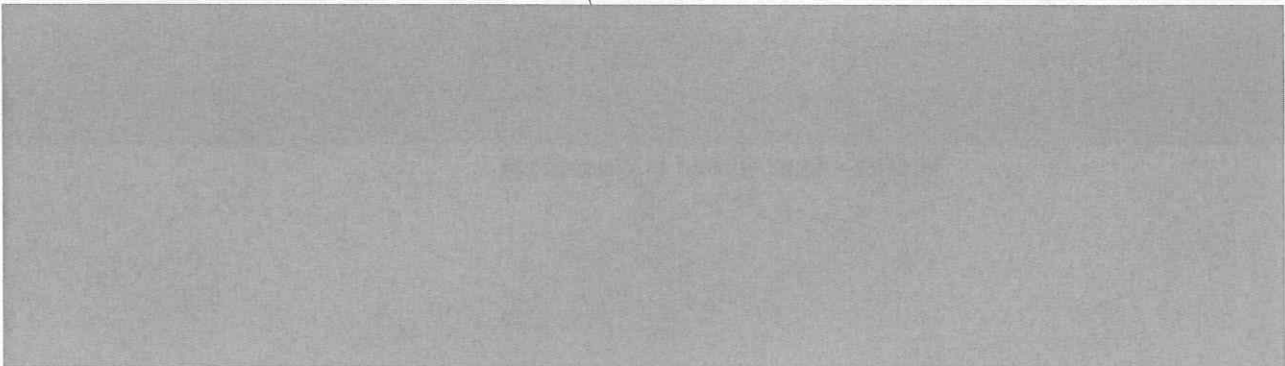
ASSESSMENT OF THE ROUTE 3 VESSELS

Service on Route 3 (Horseshoe Bay - Langdale) is provided by two vessels, the QUEEN OF SURREY and the QUEEN OF COQUITLAM. Both vessels are referred to as C-Class vessels, although they differ in configuration from both time of build, and following their respective mid-life upgrades in the 2000's. Each vessel has an upper and lower (Main) car deck, with intermediate gallery decks outboard of twin casings.

C-Class RO-RO decks are not sealed and are not considered watertight or weathertight in stability or fire zoning documents. The vessel's curtain plates (RO-RO deck side plates) contain approximately 42 x 2.22 m² (~93m² total) openings on each side. Profiles of each vessel are included as **Attachment A**. The Main Deck and the Gallery Decks can be considered a single space as they are connected at each end. This equates to 11-12% of the main deck sides.

CONCLUSIONS

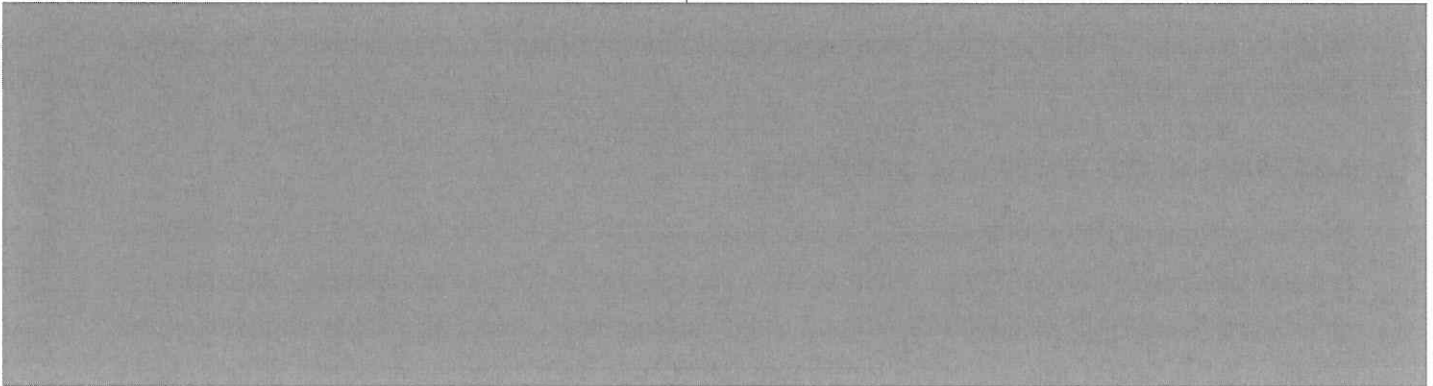
FOIPP Act, s. 13



ATTACHMENTS: A: Vessel Profiles – SURREY and COQUITLAM

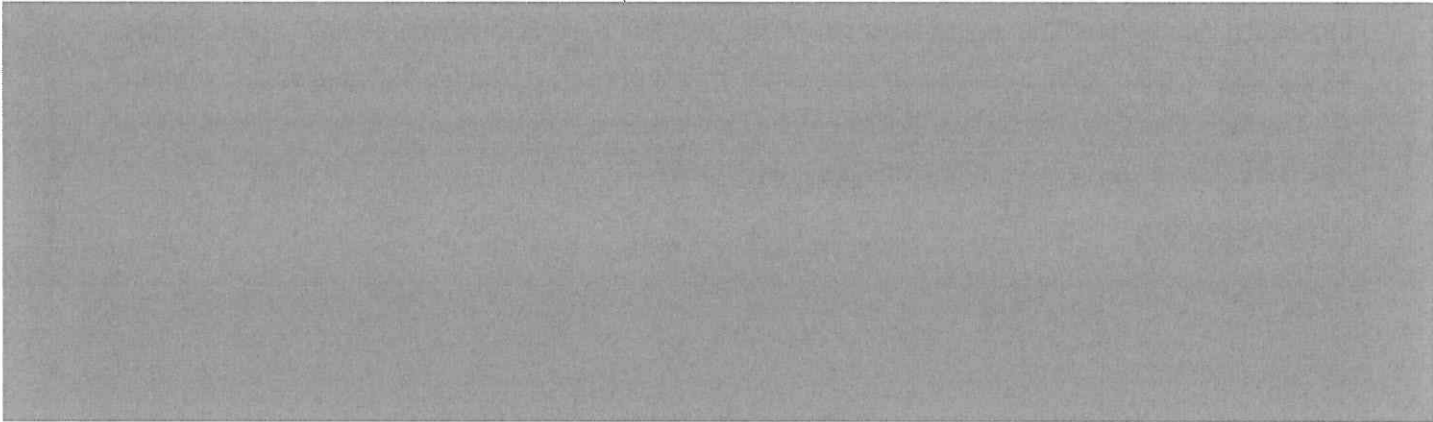
ATTACHMENTS: A: Vessel Profiles – SURREY and COQUITLAM

FOIPP Act, ss. 15 and 19



Profile – M.V. *Queen of Surrey*

FOIPP Act, ss. 15 and 19

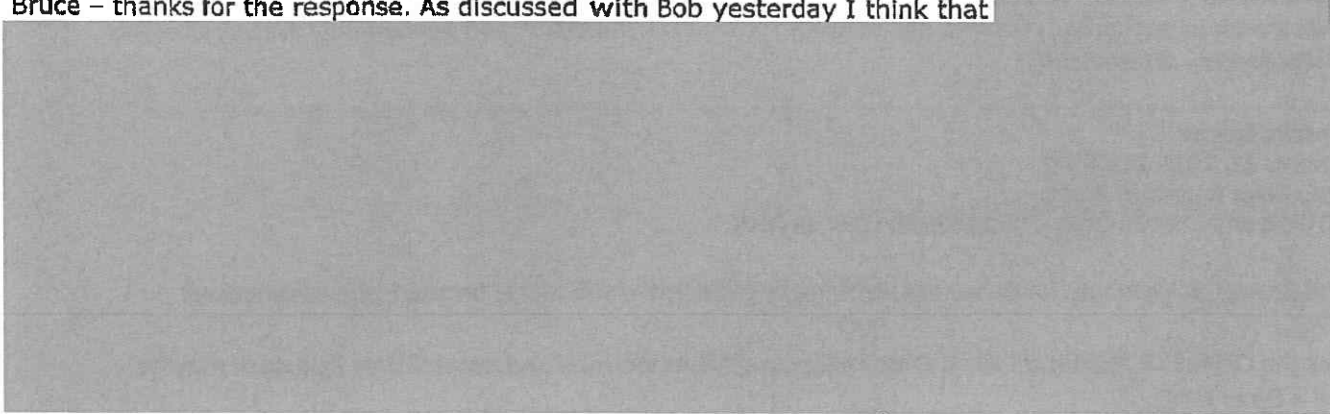


Profile – M.V. *Queen of Coquitlam*

Paterson, Bruce

From: Johnston, Darren
Sent: December 29, 2016 2:26 PM
To: Paterson, Bruce
Cc: Kearney, Bob; Marshall, Captain Jamie; Peterson, Greg
Subject: RE: C Class and Coastal Class - TC position on pax on deck

Bruce – thanks for the response. As discussed with Bob yesterday I think that



Intention is to discuss further (meeting scheduled Jan 3rd).

FOIPP Act, s. 13

Darren Johnston
Director, Fleet Operations
British Columbia Ferry Services Inc.

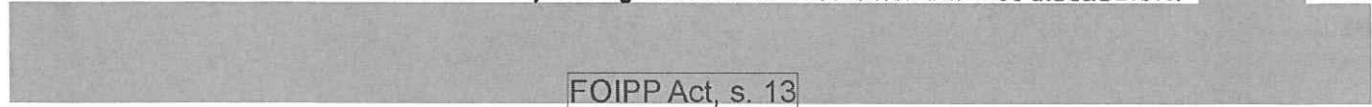
darren.johnston@bcferries.com
bcferries.com

FOIPP Act, ss. 15, 19 and 22

From: Paterson, Bruce
Sent: December 23, 2016 2:32 PM
To: Johnston, Darren; Peterson, Greg
Cc: Kearney, Bob
Subject: RE: C Class and Coastal Class - TC position on pax on deck

Darren,

Attached is the memo summarizing the regulatory situation viz. "closed decks" and the assessment of the two C-Class on Route 3. Please review. My thoughts have evolved since our last discussion.



FOIPP Act, s. 13

I can also answer your question re. the Coastals and MTRB 8539.



Have a Merry Christmas,

FOIPP Act, s. 13

Bruce Paterson, P.Eng, M.Eng

Director, Naval Architecture, Engineering British Columbia Ferry Services Inc.

FOIPP Act, ss. 15, 19 and 22

bruce.paterson@bcferries.com

www.bcferries.com

Safety and Operational Readiness

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

From: Johnston, Darren

Sent: December 23, 2016 11:34 AM

To: Peterson, Greg; Paterson, Bruce

Subject: C Class and Coastal Class - TC position on pax on deck

Hi Greg and Bruce - as you both know we are working to get some clarification on the issue of whether:

A. Whether the CFTR 152 applies on the C Class main car deck as we now understand that this deck may be considered a Open Deck.

B. Whether the Coastal Class have an exemption from prior MTRB 8539.

FOIPP Act, s. 13

Bruce - as soon as your team completes that technical calculations please advise and forward to Lloyd's (or another RO) for verification.

Greg - please clarify the result of MTRB 8539 and advise whether it gives allowance under the CFTR for is to have pax on Coastal MCD.

Mike has said (this morning) that he does not want anything else announced about this until we have these steps completed.

Thanks
Darren

Sent from my BlackBerry 10 smartphone on the TELUS network.

TB Reference No. FTE-2016-37-A
Prepared For: BCF Internal
Subject: **Passengers on Closed Decks – Regulatory Review and Assessment of the Route 3 (C-Class) Vessels**
Date: 21 December 2016
Prepared By: Bob Kearney, AScT
BCF Fleet Technical Engineering
Reviewed By: Bruce Paterson, P.Eng. M.Eng.
Director, Naval Architecture
Revision: 1

INTRODUCTION

The Transport Canada *Cargo, Fumigation and Tackle Regulations* state:

Closed Vehicle Decks

152 (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger

- (a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or
- (b) is accompanied by a crew member, if there are packaged goods on the deck.

(2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.

However, the Regulation does not explicitly state the definition of a closed vehicle deck.

VEHICLE DECK ARRANGEMENTS

Transport Canada Marine Safety:

There are a variety of definitions employed in Transport Canada Marine Safety regulations and Technical Publications (TPs). In general BC Ferries has the following vehicle deck arrangements:

Vehicle Deck Arrangement	Example
Open	<i>Kahloke</i>
Partially Enclosed	<i>Queen of Coquitlam</i>
Special Category Space	<i>Northern Adventure</i>

In general, a description of the above arrangements is:

Open vehicle deck: Vehicle deck bounded on sides by deckhouses or bulwarks, no overhead deck and no bow or stern doors.

Partially Enclosed vehicle deck: Vehicle deck bounded on sides by deckhouses or bulwarks, partial overhead deck and no bow or stern doors or vehicle deck bounded on sides by curtain plate with openings, full overhead deck and bow or stern doors.

Special Category Space: Enclosed spaces used for the carriage of motor vehicles with fuel in their tanks for their own propulsion and to which passengers have access.

SOLAS (IMO):

SOLAS Reg 3 has the following definitions:

12. Closed ro-ro spaces are ro-ro spaces which are neither open ro-ro spaces nor weather decks.

13. Closed vehicle spaces are vehicle spaces which are neither open vehicle spaces nor weather decks

35. Open ro-ro spaces are those ro-ro spaces that are either open at both ends or have an opening at one end, and are provided with adequate natural ventilation effective over their entire length through permanent openings distributed in the side plating or deckhead or from above, having a total area of at least 10% of the total area of the space sides.

36. Open vehicle spaces are those vehicle spaces which are either open at both ends, or have an opening at one end and are provided with adequate natural ventilation effective over their entire length through permanent openings distributed in the side plating or deckhead or from above, having a total area of at least 10% of the total area of the space sides.

SOLAS rules do not explicitly apply to most of the BCF Fleet as SOLAS applies to "Convention Vessels" (vessels that engage in international voyages). However SOLAS provides the clearest definition of "closed" vs. "open" deck, and thus the principles of the Rules may be useful and applicable in view of proposed TC regulations for vessel construction..

DISCUSSION

There are uncertainties in the application of CFTR 152. Nowhere in the CFTR does it explicitly define a closed vehicle deck. In other publications and regulations, Transport Canada does not use standard terms found in SOLAS for non-Convention vessels.

CFTR 152 permits passengers on the closed vehicle deck at certain times. This has been agreed to mean that passengers may be on the deck for the first 15 minutes at the start of the voyage, in addition to stated allowance for passengers to return to closed deck to disembark, also taken as 15 minutes before the ship docks.

This brings operational issues on shorter duration routes such as Route 3 (Horseshoe Bay - Langdale) which is 40 minutes in duration. This essentially means that passengers may be permitted on the vehicle deck for 75% of the voyage. In practical terms, it only allows 10 minutes for the deck watch to enforce CFTR 152 before passengers would be permitted to proceed back to the vehicle decks to disembark.

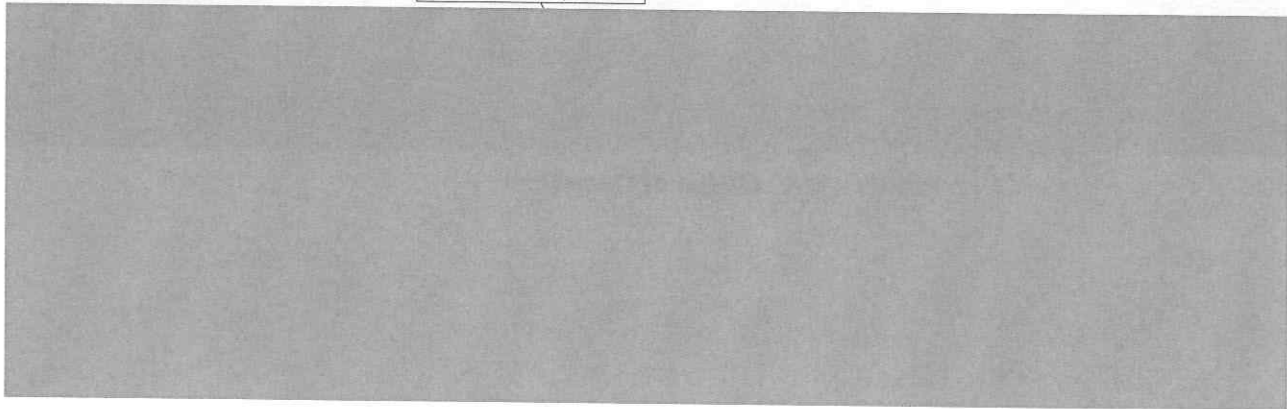
ASSESSMENT OF THE ROUTE 3 VESSELS

Service on Route 3 (Horseshoe Bay - Langdale) is provided by two vessels, the QUEEN OF SURREY and the QUEEN OF COQUITLAM. Both vessels are referred to as C-Class vessels, although they differ in configuration from both time of build, and following their respective mid-life upgrades in the 2000's. Each vessel has an upper and lower (Main) car deck, with intermediate gallery decks outboard of twin casings.

C-Class RO-RO decks are not sealed and are not considered watertight or weathertight in stability or fire zoning documents. The vessel's curtain plates (RO-RO deck side plates) contain approximately 42 x 2.22 m² (~93m² total) openings on each side. Profiles of each vessel are included as **Attachment A**. The Main Deck and the Gallery Decks can be considered a single space as they are connected at each end. This equates to 11-12% of the main deck sides.

CONCLUSIONS

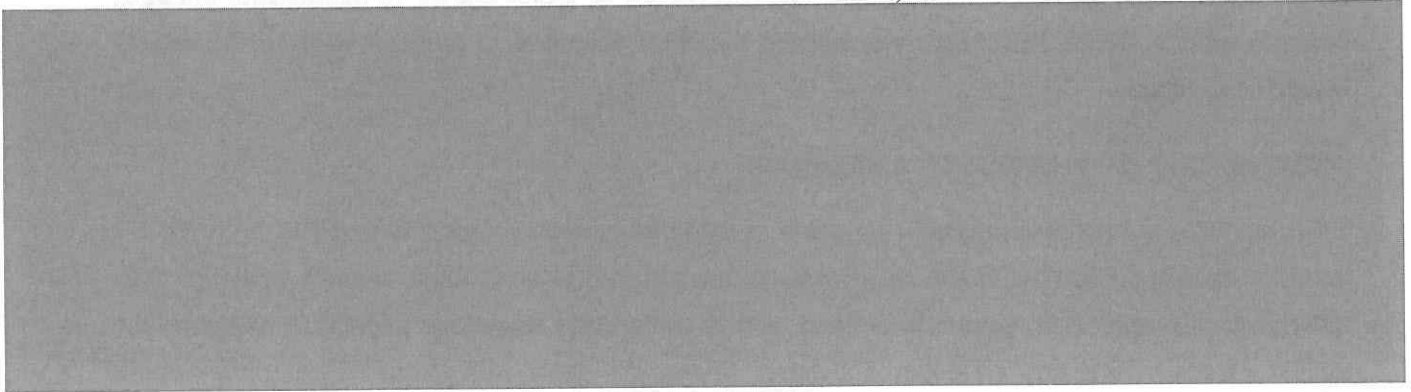
FOIPP Act, s. 13



ATTACHMENTS: A: Vessel Profiles – SURREY and COQUITLAM

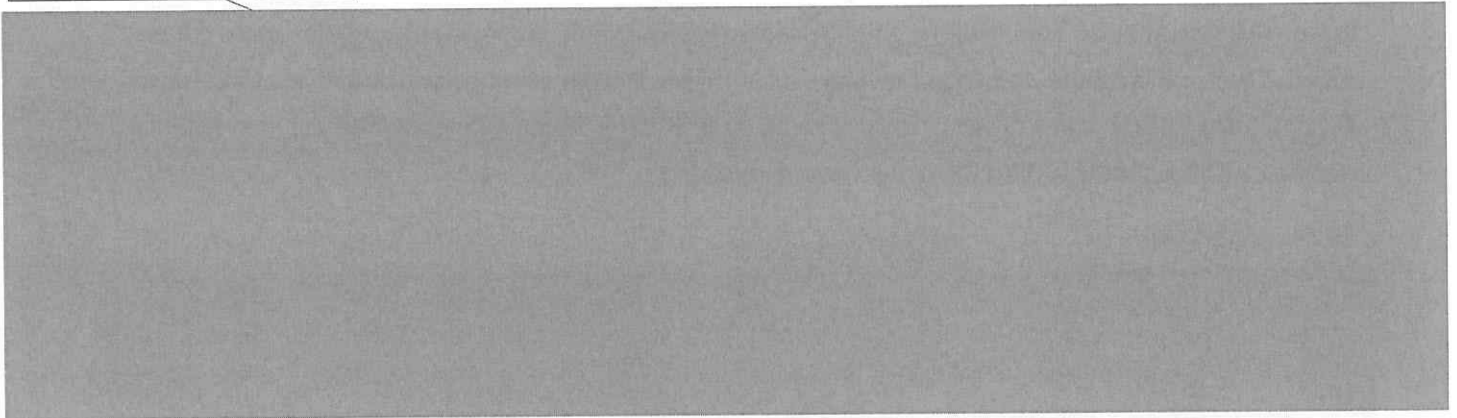
ATTACHMENTS: A: Vessel Profiles – SURREY and COQUITLAM

FOIPP Act, ss. 15 and 19



Profile – M.V. Queen of Surrey

FOIPP Act, ss. 15 and 19



Profile – M.V. Queen of Coquitlam

Paterson, Bruce

From: Kearney, Bob
Sent: December 29, 2016 8:17 AM
To: Paterson, Bruce
Subject: RE: C Class and Coastal Class - TC position on pax on deck

FOIPP Act, s. 13

Bob Kearney, ASCT
Naval Architect, Fleet Technical
British Columbia Ferry Services Inc.

FOIPP Act, ss. 15, 19 and 22

Bob.kearney@bcferries.com
bcferries.com

From: Paterson, Bruce
Sent: Wednesday, December 28, 2016 4:28 PM
To: Kearney, Bob
Subject: Re: C Class and Coastal Class - TC position on pax on deck

FOIPP Act, s. 13

Bruce.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Kearney, Bob
Sent: Wednesday, December 28, 2016 3:02 PM
To: Paterson, Bruce
Subject: FW: C Class and Coastal Class - TC position on pax on deck

Bruce,

Just had a chat with Darren Johnson. Upon closer reading of the SOLAS definition of Open Vehicle Decks it states:

Bob Kearney, ASCT

FOIPP Act, s. 13

Naval Architect, Fleet Technical
British Columbia Ferry Services Inc.

[Redacted] FOIPP Act, ss. 15, 19 and 22

Bob.Kearney@bcferries.com
bcferries.com

From: Paterson, Bruce
Sent: Friday, December 23, 2016 2:32 PM
To: Johnston, Darren; Peterson, Greg
Cc: Kearney, Bob
Subject: RE: C Class and Coastal Class - TC position on pax on deck

Darren,

Attached is the memo summarizing the regulatory situation viz. "closed decks" and the assessment of the two C-Class on Route 3. Please review. My thoughts have evolved since our last discussion. [Redacted]

[Redacted] FOIPP Act, s. 13

I can also answer your question re. the Coastals and MTRB 8539. [Redacted]

[Redacted] FOIPP Act, s. 13

Have a Merry Christmas,

Bruce Paterson, P.Eng, M.Eng
Director, Naval Architecture, Engineering British Columbia Ferry Services Inc.

[Redacted] FOIPP Act, ss. 15, 19 and 22

bruce.paterson@bcferries.com
www.bcferries.com
Safety and Operational Readiness

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

From: Johnston, Darren
Sent: December 23, 2016 11:34 AM
To: Peterson, Greg; Paterson, Bruce
Subject: C Class and Coastal Class - TC position on pax on deck

Hi Greg and Bruce - as you both know we are working to get some clarification on the issue of whether:

A. Whether the CFTR 152 applies on the C Class main car deck as we now understand that this deck may be considered a Open Deck.

B. Whether the Coastal Class have an exemption from prior MTRB 8539.

Bruce - as soon as your team completes that technical calculations please advise and forward to Lloyd's (or another RO) for verification.

Greg - please clarify the result of MTRB 8539 and advise whether it gives allowance under the CFTR for is to have pax on Coastal MCD.

Mike has said (this morning) that he does not want anything else announced about this until we have these steps completed.

Thanks
Darren

Sent from my BlackBerry 10 smartphone on the TELUS network.

TB Reference No. FTE-2016-37-A
Prepared For: BCF Internal
Subject: Passengers on Closed Decks – Regulatory Review and Assessment of the Route 3 (C-Class) Vessels
Date: 21 December 2016
Prepared By: Bob Kearney, ASCT
 BCF Fleet Technical Engineering
Reviewed By: Bruce Paterson, P.Eng. M.Eng.
 Director, Naval Architecture
Revision: 1

INTRODUCTION

The Transport Canada *Cargo, Fumigation and Tackle Regulations* state:

Closed Vehicle Decks

- 152 (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger
- (a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or
 - (b) is accompanied by a crew member, if there are packaged goods on the deck.
- (2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.

However, the Regulation does not explicitly state the definition of a closed vehicle deck.

VEHICLE DECK ARRANGEMENTS

Transport Canada Marine Safety:

There are a variety of definitions employed in Transport Canada Marine Safety regulations and Technical Publications (TPs). In general BC Ferries has the following vehicle deck arrangements:

Vehicle Deck Arrangement	Example
Open	<i>Kahloke</i>
Partially Enclosed	<i>Queen of Coquitlam</i>
Special Category Space	<i>Northern Adventure</i>

In general, a description of the above arrangements is:

Open vehicle deck: Vehicle deck bounded on sides by deckhouses or bulwarks, no overhead deck and no bow or stern doors.

Partially Enclosed vehicle deck: Vehicle deck bounded on sides by deckhouses or bulwarks, partial overhead deck and no bow or stern doors or vehicle deck bounded on sides by curtain plate with openings, full overhead deck and bow or stern doors.

Special Category Space: Enclosed spaces used for the carriage of motor vehicles with fuel in their tanks for their own propulsion and to which passengers have access.

SOLAS (IMO):

SOLAS Reg 3 has the following definitions:

12. Closed ro-ro spaces are ro-ro spaces which are neither open ro-ro spaces nor weather decks.

13. Closed vehicle spaces are vehicle spaces which are neither open vehicle spaces nor weather decks

35. Open ro-ro spaces are those ro-ro spaces that are either open at both ends or have an opening at one end, and are provided with adequate natural ventilation effective over their entire length through permanent openings distributed in the side plating or deckhead or from above, having a total area of at least 10% of the total area of the space sides.

36. Open vehicle spaces are those vehicle spaces which are either open at both ends, or have an opening at one end and are provided with adequate natural ventilation effective over their entire length through permanent openings distributed in the side plating or deckhead or from above, having a total area of at least 10% of the total area of the space sides.

SOLAS rules do not explicitly apply to most of the BCF Fleet as SOLAS applies to "Convention Vessels" (vessels that engage in international voyages). However SOLAS provides the clearest definition of "closed" vs. "open" deck, and thus the principles of the Rules may be useful and applicable in view of proposed TC regulations for vessel construction..

DISCUSSION

There are uncertainties in the application of CFTR 152. Nowhere in the CFTR does it explicitly define a closed vehicle deck. In other publications and regulations, Transport Canada does not use standard terms found in SOLAS for non-Convention vessels.

CFTR 152 permits passengers on the closed vehicle deck at certain times. This has been agreed to mean that passengers may be on the deck for the first 15 minutes at the start of the voyage, in addition to stated allowance for passengers to return to closed deck to disembark, also taken as 15 minutes before the ship docks.

This brings operational issues on shorter duration routes such as Route 3 (Horseshoe Bay - Langdale) which is 40 minutes in duration. This essentially means that passengers may be permitted on the vehicle deck for 75% of the voyage. In practical terms, it only allows 10 minutes for the deck watch to enforce CFTR 152 before passengers would be permitted to proceed back to the vehicle decks to disembark.

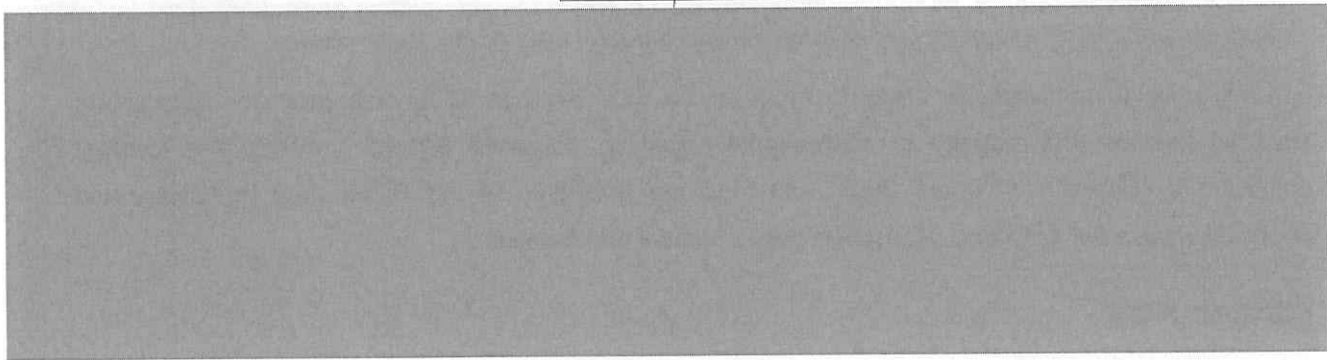
ASSESSMENT OF THE ROUTE 3 VESSELS

Service on Route 3 (Horseshoe Bay - Langdale) is provided by two vessels, the QUEEN OF SURREY and the QUEEN OF COQUITLAM. Both vessels are referred to as C-Class vessels, although they differ in configuration from both time of build, and following their respective mid-life upgrades in the 2000's. Each vessel has an upper and lower (Main) car deck, with intermediate gallery decks outboard of twin casings.

C-Class RO-RO decks are not sealed and are not considered watertight or weathertight in stability or fire zoning documents. The vessel's curtain plates (RO-RO deck side plates) contain approximately 42 x 2.22 m² (~93m² total) openings on each side. Profiles of each vessel are included as Attachment A. The Main Deck and the Gallery Decks can be considered a single space as they are connected at each end. This equates to 11-12% of the main deck sides.

CONCLUSIONS

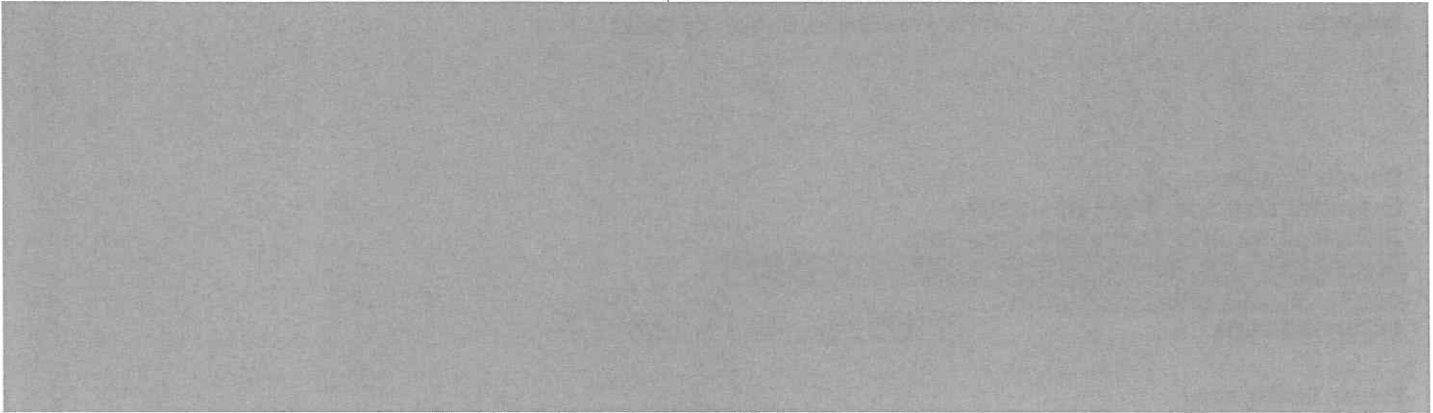
FOIPP Act, s. 13



ATTACHMENTS: A: Vessel Profiles – SURREY and COQUITLAM

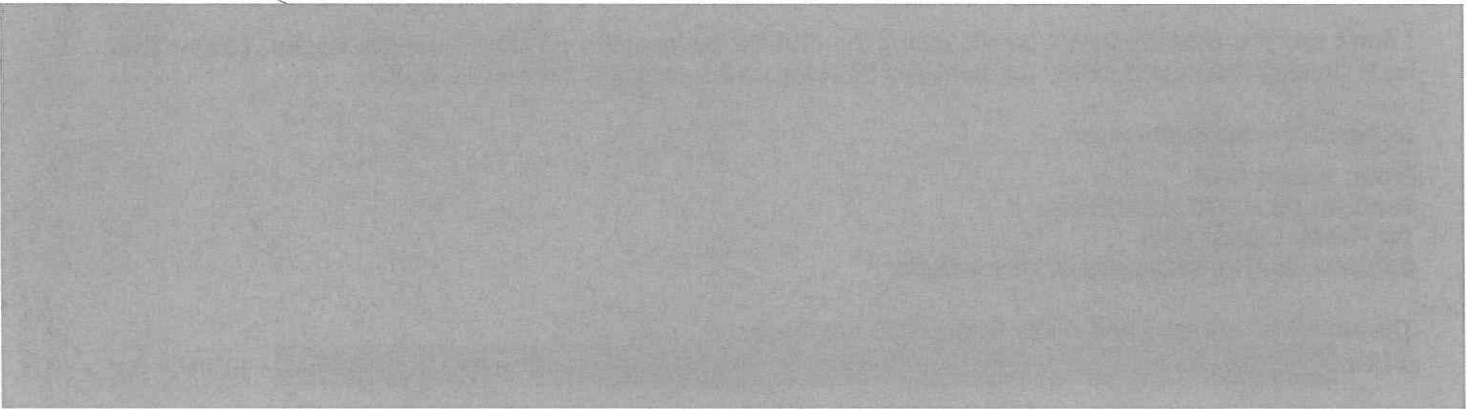
ATTACHMENTS: A: Vessel Profiles – SURREY and COQUITLAM

FOIPP Act, ss. 15 and 19



Profile – M.V. *Queen of Surrey*

FOIPP Act, ss. 15 and 19



Profile – M.V. *Queen of Coquitlam*

Christensen, Melanie

From: Johnston, Darren
Sent: March 21, 2020 5:52 PM
To: Christensen, Melanie
Subject: FW: FRA-Passengers on Vehicle Decks

Darren Johnston
Executive Director, Fleet Operations
British Columbia Ferry Services Inc.

darren.johnston@bcferries.com
bcferries.com

FOIPP Act, ss. 15, 19 and 22

From: Judson, Brad
Sent: August 11, 2016 9:50 AM
To: Johnston, Darren
Subject: FW: FRA-Passengers on Vehicle Decks

I don't see you cc'd on Dale's emails about the FRA for passengers on closed vehicle decks. I know that he is making the report ready for Jamie by Monday and I presume for you as well.

So, here is the link to the report...

From: Judson, Brad
Sent: August 10, 2016 11:36 AM
To: Phipps, Captain Dale
Subject: RE: FRA-Passengers on Vehicle Decks

The report is updated and ready in the SMS Library at
<http://>

FOIPP Act, s. 15

Brad Judson, Manager SMS
Safety & Health Department
British Columbia Ferry Services Inc.
Swartz Bay Terminal
11300 Patricia Bay Highway, Sidney, BC V8L 3S8

Brad.judson@bcferries.com

FOIPP Act, ss. 15, 19 and 22

bcferries.com | [Facebook](#) | [Twitter](#) | [LinkedIn](#)

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

From: Phipps, Captain Dale
Sent: August 05, 2016 1:26 PM
To: Paterson, Bruce; Judson, Brad
Subject: Re: FRA-Passengers on Vehicle Decks

Some good points, I marked up responses in red plus added a few other comments in the controls section. We

Regards,

FOIPP Act, s. 13

Dale

Captain Dale Phipps
Director Fleet Renewal & Standards
Fleet Operations, British Columbia Ferry Services Inc.

Dale.Phipps@bcferries.com
www.bcferries.com

FOIPP Act, ss. 15, 19 and 22

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

From: Paterson, Bruce
Sent: August 5, 2016 12:04 PM
To: Phipps, Captain Dale; Judson, Brad
Subject: RE: FRA-Passengers on Vehicle Decks

Please see the attached, I had a number of editorials and clarification points presented as comments. I don't think I conflict with the gist of the RA, but didn't want to spark a great discussion without you having a look.

Bruce Paterson, P.Eng, M.Eng
Director, Naval Architecture, Engineering British Columbia Ferry Services Inc.

FOIPP Act, ss. 15, 19 and 22

bruce.paterson@bcferries.com
www.bcferries.com
Safety and Operational Readiness

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.

From: Phipps, Captain Dale
Sent: August 03, 2016 11:13 AM
To: Paterson, Bruce; Sweet, Captain Derek; Fowler, Captain Fred; Toevs, Captain Mike; Fleming, Captain Tracy; Gymer, David; McKenzie, Louise; Nielsen, Martin S; Dutka, Metro; Daver, Yezdi
Subject: FRA-Passengers on Vehicle Decks

Thank you for your recent participation in the risk assessment convened to review the carriage of passengers on open/closed vehicle decks. The attached report is intended to capture the discussions of the day. Please review and advise if there are any errors or omissions in the report. The review of this draft report is not to intended to spark new discussion but rather confirm the discussions that were held that day are accurately captured in the report.

Please review and advise if there are any concerns/comments by close of business August 9th.

At this time I will also request: Do not distribute or discuss the report contents outside the FRA participants.

Regards,

Captain Dale Phipps
Director, Fleet Renewal & Standards
Fleet Operations
British Columbia Ferry Services Inc.

FOIPP Act, ss. 15, 19 and 22

Email Address: Dale.phipps@bcferries.com
bcferries.com | Facebook | Twitter

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.



COMPANY: British Columbia Ferry Services Inc.	DOCUMENT NUMBER: FRA-ORC-98	
	ASSET: All Vessels/Terminals	REVISION: V3
	REVISION DATE: Aug 21 2017	
PROJECT: Passengers on Closed and Open Vehicle Decks	SHEET: Page 1 of 14	

DOCUMENT TITLE:
BC Ferries Passengers on Closed and Open Vehicle Decks Risk Assessment

ABSTRACT

The purpose of this document is to report on the findings and action recommendations of the risk assessment of passengers remaining on closed and open vehicle decks during a voyage. The scope of the risk assessment was to compare the risks between the status quo and if passengers were required to move to the accommodation and assembly station decks after vehicle loading and until a suitable time to prepare for vehicle unloading.

Recommendation Summary:

While the accident history demonstrates that the frequency of an event leading to an abandoned ship (massive consequence '5') was **Remote** and the overall Risk Level was **High**, it is expected that if passengers were required to be on accommodation decks rather than vehicle decks (where the assembly station is on an accommodation deck) that the risk of an extreme event resulting in fatalities and injuries would decrease from **High to Medium**.

- 5.1 Except during the embarkation period or when passengers are directed to return to their vehicles before the vessel docks, passengers should not be permitted to remain on an open or closed vehicle deck except as follows:
 - Where vehicle location is at or near the Assembly Station/Embarkation Station (e.g., Skeena Queen);
 - The time to move to the accommodation deck after loading and the time to return to the vehicle deck prior to arrival plus 15 minutes is less than the voyage duration (e.g., for a total of 45 minutes – the Queen of Cumberland would be exempt);
 - Permission is provided by the Master such as where an occupied vehicle requires special consideration such as: an emergency services vehicle, hearse, livestock carrier, dangerous goods transport; or
 - The passenger(s) is accompanied by a crew member.
- 5.2 Provide for stairwell sentries in an emergency.
- 5.3 Change the welcome aboard announcement from "You are invited to come up to the passenger decks..." to "You are required to come up to the passenger decks..." or "Transport Canada regulations require that you come up to the passenger decks..."
- 5.4 During car deck sweeps after the vessel departs, and passengers remaining in their vehicles will be politely asked to leave. If they refuse they will be issued a card/pamphlet that states they have chosen to be non-compliant with a federal TC regulation. The passenger location(s) will be noted (for increased response time for potential evacuation).
- 5.5 Develop a policy to manage passengers that are repeatedly non-compliant.
- 5.6 There will be no change to emergency response procedures on the vehicle decks as a result of this policy.

Revision Record

Rev.	Date				
V1	June 28 2016	Issued for Review by FRA Team			
V2	Aug 15 2016	Issued for Internal Review			
V3	August 21 2017	Approved			

Document Verification

Prepared by:	Name: Brad Judson Job Title: Manager, SMS	
	Signed: Date:	
Checked by:	Name: Bruce Paterson Job Title: Director, Naval Architecture	
	Signed: Date:	
Approved by:	Name: Capt. Dale Phipps Job Title: Director, Fleet Renewal	
	Signed: Date:	
Company Approval:	Technical Approval	Fleet Operations Approval
	Name: Job Title:	Name: Capt. Jamie Marshall Job Title: VP Fleet Operations
The person who has the authority for the Company's Technical and Operations, quality and management approval.	Signed: Date:	Signed: s. 22 signature Date: 21 Aug 2017.

TABLE OF CONTENTS

1.	INTRODUCTION	4
1.1	PURPOSE	4
1.2	SCOPE	4
1.3	DISTRIBUTION AND INTENDED AUDIENCE	4
1.4	DEFINITIONS, ACRONYMS AND ABBREVIATIONS	4
•	General Definitions	4
•	Specific Terms, Definitions, Acronyms and Abbreviations	4
1.5	REFERENCE DOCUMENTS AND LINKS	5
2.	ROLES AND RESPONSIBILITIES	5
2.1	PARTICIPANTS	5
3.	METHODOLOGY	6
3.1	RISK ASSESSMENT BASIS	6
3.2	RISK ASSESSMENT PROCESS	6
4.	FINDINGS	7
4.1	REGULATION	7
4.2	RISK LEVEL	7
4.3	CARGO AND ASSEMBLY STATION LOCATION	9
4.4	EMERGENCY MANAGEMENT	9
5.	RECOMMENDATIONS	10

ANNEX A MINOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

ANNEX B MAJOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

1. INTRODUCTION

Background and context to the risk assessment

1.1 PURPOSE

The purpose of this document is to report on the findings and action recommendations of the risk assessment of passengers remaining on closed and open vehicle decks during a voyage.

1.2 SCOPE

The scope was defined in the Convening Letter as:

1. Identify risks associated with passengers remaining in Closed Vehicle Decks during a Vessel's Voyage:
 - Examine the likelihood of any emergency where passengers remaining on a closed vehicle deck may compromise the emergency response or impact the safety of passengers or crew. Identify any differences different closed deck configurations have on the risk.
 - Compare the risk if passengers were not permitted to remain on the vehicle deck.
2. Identify risks associated with passengers remaining in Open Vehicle Decks during the Vessel's Voyage:
 - Compare the findings of risk for a closed vehicle deck to an open vehicle deck.

1.3 DISTRIBUTION AND INTENDED AUDIENCE

This document is a qualitative analysis using expert judgment to assess risk and provide guidance for policy evaluation. Unless otherwise authorized by BC Ferries, the distribution of this document is confined to BC Ferries.

1.4 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

- General Definitions

The word **shall** is used to indicate that a provision is mandatory.

The word **should** is used to indicate that a provision is not mandatory, but recommended as good practice.

- Specific Terms, Definitions, Acronyms and Abbreviations

Term / Acronym / Abbreviation	Explanation / Definition
BCF or BC Ferries	British Columbia Ferry Services Inc.
Risk	An estimate of consequences and their likelihood
ALARP	As Low as Reasonably Practicable

Term / Acronym / Abbreviation	Explanation / Definition
MES	Marine Evacuation System
SOLAS	Safety of Life at Sea Convention

1.5 REFERENCE DOCUMENTS AND LINKS

Unless specifically designated by date, the latest edition of each publication shall be used, together with any amendments/supplements/revisions thereto.

Ref.	Document Number / Link	Title / Description
(1)	CSA ISO 31000	ISO 31000 2009 Risk Management Standard
(2)	Operational Risk Management Policy	09.010 OperationalRiskManagementPolicy SM

2. ROLES AND RESPONSIBILITIES

The Passengers on Vehicle Decks risk assessment was chaired by Capt. Dale Phipps. Capt. Phipps gave an overview of the objectives and process and Brad Judson recorded the discussion and assessment.

2.1 PARTICIPANTS

The review team consisted of the following members:

Name	Position	Department
Capt. Dale Phipps (Chair)	Director Fleet Renewal	Fleet Operations
Brad Judson (Secretary)	Manager SMS	Safety and Health
Bruce Paterson	Director Naval Architecture	Fleet Engineering
Capt. Derek Sweet	Senior Master Salish Eagle	Fleet Operations
Capt. Fred Fowler	Master SOVI	Fleet Operations, SWB
Capt. Mike Toews	Senior Master Queen of Cumberland	Fleet Operations, SWB
Capt. Tracy Fleming	Senior Master Salish Raven	Fleet Operations, LONG
David Gymer	Safety Auditor	Safety and Health
Louise McKenzie	Chief Steward	Catering - SWB
Martin Nielsen	Deckhand / 3 rd Officer	Fleet Operations, SWB
Metro Dutka	Engineering Superintendent	Fleet Engineering, TSA
Yezdi Daver	Chief Engineer SOBC	Fleet Engineering, TSA

3. METHODOLOGY

3.1 RISK ASSESSMENT BASIS

The Passengers on Vehicle Decks risk assessment was convened by Capt. Jamie Marshall. The risk assessment workshop was facilitated by Capt. Dale Phipps, following the guidance of the Operational Risk Management Policy [Reference Document 2].

3.2 RISK ASSESSMENT PROCESS

The risk assessment began with a discussion of the objective to compare the risks between:

- two scenarios – a minor vehicle fire and a major vehicle deck fire;
- two conditions – a closed vehicle deck (the main car deck) and an open vehicle deck (the upper car deck); and
- two alternative policies – the status quo and a situation where passengers are not permitted on open or closed vehicle decks.

For each scenario, the Chairman walked through each condition and each policy alternative to draw information on risks, risk controls and the change in risk. The scenarios and discussion are recorded as Annex A and B.

The BCF Operational Risk Matrix was not required during the review. However, it was used in the analysis and preparation of this report to classify likelihood, consequence severity and overall risk level (Figure 1).

Likelihood - What is the probability or frequency of the event occurring?	Operational Risk Matrix				
	5	10	15	20	25
5. Frequent: Event likely or known to occur several times per year at a worksite	5	10	15	20	25
4. Probable: Event likely or known to occur twice per year at a worksite	4	8	12	16	20
3. Possible: Unlikely, but possible the event will occur at least once in 10 years at worksite	3	6	9	12	15
2. Remote: Unlikely but with a remote chance the event will occur sometime in the company or has occurred within the industry	2	4	6	8	10
1. Improbable: So unlikely that the event may not occur	1	2	3	4	5
Consequence Severity - How severe is the impact of the event or exposure once it occurs?	1. Negligible	2. Minor	3. Moderate	4. Major	5. Massive

Figure 1 Operational Risk Matrix

4. FINDINGS

4.1 REGULATION

Transport Canada has passed a regulatory requirement under the Canada Shipping Act, 2001: Cargo, Fumigation and Tackle Regulations as follows:

152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger

(a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or

(b) is accompanied by a crew member, if there are packaged goods on the deck.

(2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.

Vehicle decks are defined by SOLAS II-2, Part G, Regulation 20 as equivalent to Special Category spaces. Having passengers leave Special Category spaces and move to accommodation decks is presumed safer in SOLAS¹.

4.2 RISK LEVEL

Collisions and Grounding

Prior to SailSafe, BCF experienced a massive consequence event² on average every six years (see Figure 2). These events were primarily collisions and groundings (see Table 1). Abandon Ship was ordered on two occasions.

In consideration of this accident history, the frequency of an event leading to an abandoned ship (massive consequence '5') was Remote, '2'; therefore, the overall Risk Level was High, '2x5'. Since SailSafe, there have been no massive consequence events and no near miss events that would have resulted in an Abandon Ship order at sea. This recent history suggests that the Risk Level for massive incidents may be lower than in the past.

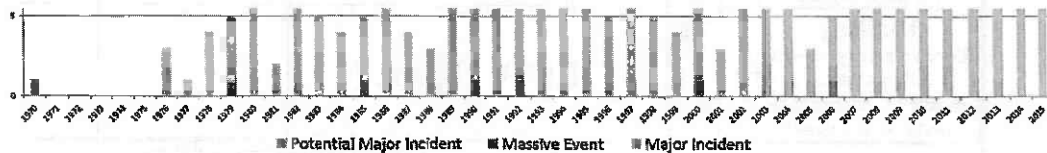


Figure 2 BCF Major and Massive Consequence Incidents - 1970 – 2015

¹ Note that SOLAS applies to larger vessels (> 400 passengers), international voyages, with more restrictive requirements for lifesaving equipment (Lifeboats vs MES)

² A Massive Consequence Event is ranked as a '5'. Examples of impact are defined by the BCF Operational Policy (reference 2). The Risk Matrix is provided (see Figure 1).

Table 1 BCF Massive Consequence Incidents Since 1970

Date	Worksite	Critical Incident Type
1970-08-02	Queen of Victoria	Collision
1979-08-01	Queen of Alberni	Grounding (abandon ship ordered)
1985-08-12	Queen of Cowichan	Collision
1990-07-09	Horseshoe Bay	Runaway Truck
1992-08-13	Queen of New Westminster	Premature departure
2000-09-14	Spirit of Vancouver Island	Collision
2006-03-22	Queen of the North	Grounding (abandon ship ordered) ³

Vehicle Deck Fire

A previous study by BMT Fleet Technology⁴ assessed the probability of a major, multi-vehicular fire occurring as Unlikely; therefore the risk rating of this scenario using their risk matrix would be Medium (see Table 2). This finding is consistent with BCF experience to date where there have been no Extreme fire events with multiple casualties.

Table 2 BMT Risk Matrix

<p>Seldom Incident has occurred on a similar vessel and may reasonably occur on this vessel within the next 30 years</p>	2	<p>I H O O D</p>		MEDIUM RISK		
	1		LOW RISK			
			CONSEQUENCE			
			1	2	3	4
			Incidental	Minor	Serious	Major

³ QON had a policy to conform to SOLAS regarding passengers on the vehicle deck

⁴ BMT Fleet Technology, *BC Ferries Super C Class Risk Assessment of the Design and Construction Regulatory Requirements Final Report*, February 2005, p.27

4.3 CARGO AND ASSEMBLY STATION LOCATION

The review team identified the two risk factors that impact the decision to limit access to vehicle decks:

FOIPP Act, ss. 15 and 19

Limiting passenger access to vehicle decks would result in lower risk to crew and passengers.

4.4 EMERGENCY MANAGEMENT

Passenger safety management and emergency management is more controlled and quicker when passengers are on accommodation decks. This would result in fewer casualties and lower risk because:

FOIPP Act, ss. 15 and 19

While the accident history demonstrates that the frequency of an event leading to an abandoned ship (massive consequence '5') was **Remote**, '2' and the overall Risk Level was **High**, '2x5' (Section 4.2), it is expected that if passengers were required to be on accommodation decks rather than vehicle decks (where the assembly station is on an accommodation deck) that the risk of an extreme event resulting in fatalities and injuries would decrease from **High** to **Medium**.

⁵ Less resources and time spent on care and control of passengers by the Damage Control/Fire Party would result in a quicker more effective response to the incident and less damage to the vessel

5. RECOMMENDATIONS

- 5.1 Except during the embarkation period or when passengers are directed to return to their vehicles before the vessel docks, passengers should not be permitted to remain on an open or closed vehicle deck except as follows:
- Where vehicle location is at or near the Assembly Station/Embarkation Station (e.g., Skeena Queen);
 - The time to move to the accommodation deck after loading and the time to return to the vehicle deck prior to arrival plus 15 minutes is less than the voyage duration (e.g., for a total of 45 minutes – the Queen of Cumberland would be exempt);
 - Permission is provided by the Master such as where an occupied vehicle requires special consideration such as: an emergency services vehicle, hearse, livestock carrier, dangerous goods transport; or
 - The passenger(s) is accompanied by a crew member.
- 5.2 Provide for stairwell sentries in an emergency.
- 5.3 Change the welcome aboard announcement from "You are invited to come up to the passenger decks..." to "You are required to come up to the passenger decks..." or "Transport Canada regulations require that you come up to the passenger decks..."
- 5.4 During car deck sweeps after the vessel departs, and passengers remaining in their vehicles will be politely asked to leave. If they refuse they will be issued a card/pamphlet that states they have chosen to be non-compliant with a federal TC regulation. The passenger location(s) will be noted (for increased response time for potential evacuation).
- 5.5 Develop a policy to manage passengers that are repeatedly non-compliant.
- 5.6 There will be no change to emergency response procedures on the vehicle decks as a result of this policy.



ANNEX A: MINOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

Status Quo - Passengers on closed vehicle deck - Main Car Deck (S Class / C Class / Coastal Class); Lower Car Deck (Salish Class)	Status Quo - Passengers on open vehicle deck - Upper Car Deck (S Class / C Class / Coastal Class); Main Car Deck (Salish Class)
<p>Risks</p> <p>Controls</p> <p>No passengers on closed vehicle deck</p>	<p>Risk comparison to closed vehicle deck</p> <p>Controls</p> <p>FOIPP Act, ss. 15 and 19</p>
<p>No passengers on closed vehicle deck</p>	<p>No passengers on open vehicle deck</p> <p>FOIPP Act, ss. 15 and 19</p>



ANNEX B: MAJOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

Status Quo - Passengers on closed vehicle deck – Main Car Deck (S Class / C Class / Coastal Class); Lower Car Deck (Salish Class)	Status Quo - Passengers on open vehicle deck – Upper Car Deck (S Class / C Class / Coastal Class); Main Car Deck (Salish Class)
<p>Risks</p> <p>Controls</p> <p>[Redacted]</p>	<p>Risk comparison to closed vehicle deck</p> <p>Controls</p> <p>[Redacted]</p> <p>FOIPP Act, ss. 15 and 19</p>
No passengers on closed vehicle deck	No passengers on open vehicle deck
<p>Risks</p> <p>Controls</p> <p>[Redacted]</p>	<p>Risk comparison to closed vehicle deck</p> <p>Controls</p> <p>[Redacted]</p> <p>FOIPP Act, ss. 15 and 19</p>



COMPANY: British Columbia Ferry Services Inc.	DOCUMENT NUMBER: FRA-ORC-98	
ASSET: All Vessels/Terminals	REVISION: V1	REVISION DATE: June 28 2016
PROJECT: Passengers on Closed and Open Vehicle Decks	SHEET: Page 1 of 14	

DOCUMENT TITLE:
BC Ferries Passengers on Closed and Open Vehicle Decks Risk Assessment

ABSTRACT

The purpose of this document is to report on the findings and action recommendations of the risk assessment of passengers remaining on closed and open vehicle decks during a voyage. The scope of the risk assessment was to compare the risks between the status quo and if passengers were required to move to the accommodation and assembly station decks after vehicle loading and until a suitable time to prepare for vehicle unloading.

Recommendation Summary:

See notes/comments in Recommendation Section 5.1 (could use comments in this block)

Revision Record

Rev.	Date				
V1		Issued for Internal Review			

Document Verification

Prepared by:	Name: Brad Judson Job Title: Manager, SMS	
	Signed:	
	Date:	
Checked by:	Name: Capt. ?? Job Title:	
	Signed:	
	Date:	
Approved by:	Name: Capt. Dale Phipps Job Title: Director, Fleet Renewal	
	Signed:	
	Date:	
Company Approval:	Technical Approval	Fleet Operations Approval
	Name: Job Title:	Name: Capt. Jamie Marshall Job Title: VP Fleet Operations
The person who has the authority for the Company's Technical and Operations, quality and management approval.	Signed: Date:	Signed: Date:

TABLE OF CONTENTS

1.	INTRODUCTION	4
1.1	PURPOSE	4
1.2	SCOPE	4
1.3	DISTRIBUTION AND INTENDED AUDIENCE	4
1.4	DEFINITIONS, ACRONYMS AND ABBREVIATIONS	4
1.4.1	General Definitions	4
1.4.2	Specific Terms, Definitions, Acronyms and Abbreviations	4
1.5	REFERENCE DOCUMENTS AND LINKS	5
2.	ROLES AND RESPONSIBILITIES	5
2.1	PARTICIPANTS	5
3.	METHODOLOGY	6
3.1	RISK ASSESSMENT BASIS	6
3.2	RISK ASSESSMENT PROCESS	6
4.	FINDINGS	7
5.	ADDITIONAL CONTROLS	ERROR! BOOKMARK NOT DEFINED.
6.	RECOMMENDATIONS	10

ANNEX A MINOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

ANNEX B MAJOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

1. INTRODUCTION

Background and context to the risk assessment

1.1 PURPOSE

The purpose of this document is to report on the findings and action recommendations of the risk assessment of passengers remaining on closed and open vehicle decks during a voyage.

1.2 SCOPE

The scope was defined in the Convening Letter as:

1. Identify risks associated with passengers remaining in Closed Vehicle Decks during a Vessel's Voyage:
 - Examine the likelihood of any emergency where passengers remaining on a closed vehicle deck may compromise the emergency response or impact the safety of passengers or crew. Identify any differences different closed deck configurations have on the risk.
 - Compare the risk if passengers were not permitted to remain on the vehicle deck.
2. Identify risks associated with passengers remaining in Open Vehicle Decks during the Vessel's Voyage:
 - Compare the findings of risk for a closed vehicle deck to an open vehicle deck.

1.3 DISTRIBUTION AND INTENDED AUDIENCE

This document is a qualitative analysis using expert judgment to assess risk and provide guidance for policy evaluation. Unless otherwise authorized by BC Ferries, the distribution of this document is confined to BC Ferries.

1.4 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

- General Definitions

The word **shall** is used to indicate that a provision is mandatory.

The word **should** is used to indicate that a provision is not mandatory, but recommended as good practice.

- Specific Terms, Definitions, Acronyms and Abbreviations

Term / Acronym / Abbreviation	Explanation / Definition
BCF or BC Ferries	British Columbia Ferry Services Inc.
Risk	An estimate of consequences and their likelihood
ALARP	As Low as Reasonably Practicable

SAFETY DEPARTMENT

Term / Acronym / Abbreviation	Explanation / Definition

1.5 REFERENCE DOCUMENTS AND LINKS

Unless specifically designated by date, the latest edition of each publication shall be used, together with any amendments/supplements/revisions thereto.

Ref.	Document Number / Link	Title / Description
(1)	CSA ISO 31000	ISO 31000 2009 Risk Management Standard
(2)	Operational Risk Management Policy	09.010_OperationalRiskManagementPolicy_SM

2. ROLES AND RESPONSIBILITIES

The Passengers on Vehicle Decks risk assessment was chaired by Capt. Dale Phipps. Capt. Phipps gave an overview of the objectives and process and Brad Judson recorded the discussion and assessment.

2.1 PARTICIPANTS

The review team consisted of the following members:

Name	Position	Department
Capt. Dale Phipps (Chair)	Director Fleet Renewal	Fleet Operations
Brad Judson (Secretary)	Manager SMS	Safety and Health
Bruce Paterson	Director Naval Architecture	Fleet Engineering
Capt. Derek Sweet	Senior Master Salish Eagle	Fleet Operations
Capt. Fred Fowler	Master SOVI	Fleet Operations, SWB
Capt. Mike Toevs	Senior Master Mayne Queen	Fleet Operations, SWB
Capt. Tracy Fleming	Senior Master Salish Raven	Fleet Operations, LONG
David Gymer	Safety Auditor	Safety and Health
Louise McKenzie	Chief Steward	Catering - SWB
Martin Nielsen	Deckhand / 3 rd Officer	Fleet Operations, SWB
Metro Duika	Engineering Superintendent	Fleet Engineering, TSA
Yezdi Daver	Chief Engineer SOBC	Fleet Engineering, TSA

Commented [P81]: Is he QUEEN OF CUMBERLAND?

3. METHODOLOGY

3.1 RISK ASSESSMENT BASIS

The Passengers on Vehicle Decks risk assessment was convened by Capt. Jamie Marshall. The risk assessment workshop was facilitated by Capt. Dale Phipps, following the guidance of the Operational Risk Management Policy [Reference Document 2].

3.2 RISK ASSESSMENT PROCESS

The risk assessment began with a discussion of the objective to compare the risks between:

- two scenarios – a minor vehicle fire and a major vehicle deck fire;
- two conditions – a closed vehicle deck (the main car deck) and an open vehicle deck (the upper car deck); and
- two alternative policies – the status quo and a situation where passengers are not permitted on open or closed vehicle decks.

For each scenario, the Chairman walked through each condition and each policy alternative to draw information on risks, risk controls and the change in risk. The scenarios and discussion are recorded as Annex A and B.

The BCF Operational Risk Matrix was not required during the review. However, it was used in the analysis and preparation of this report to classify likelihood, consequence severity and overall risk level (Figure 1).

Likelihood - What is the probability or frequency of the event occurring?	Operational Risk Matrix				
	5	10	15	20	25
5. Frequent: Event likely or known to occur several times per year at a worksite	5	10	15	20	25
4. Probable: Event likely or known to occur twice per year at a worksite	4	8	12	16	20
3. Possible: Unlikely, but possible the event will occur at least once in 10 years at worksite	3	6	9	12	15
2. Remote: Unlikely but with a remote chance the event will occur sometime in the company or has occurred within the industry	2	4	6	8	10
1. Improbable: So unlikely that the event may not occur	1	2	3	4	5
Consequence Severity - How severe is the impact of the event or exposure once it occurs?	1. Negligible	2. Minor	3. Moderate	4. Major	5. Massive

Figure 1 Operational Risk Matrix

4. FINDINGS

4.1 REGULATION

Transport Canada has passed a regulatory requirement under the CSA(2001) (Canada Shipping Act, 2001), Cargo, Fumigation and Tackle Regulations as follows:

152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger

(a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or

(b) is accompanied by a crew member, if there are packaged goods on the deck.

(2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.

Vehicle decks are defined by SOLAS II-2, Part G, Regulation 20 as equivalent to Special Category spaces. Having passengers leave Special Category spaces and move to accommodation decks is presumed safer in SOLAS.

4.2 RISK LEVEL

Collisions and Grounding

Prior to SailSafe, BCF experienced a massive consequence event¹ on average every six years (see Figure 2). These events were primarily collisions and groundings (see Table 1). Abandon Ship was ordered on two occasions.

In consideration of this accident history, the frequency of an event leading to an abandoned ship (massive consequence '5') was Remote, '2'; therefore, the overall Risk Level was High, '2x5'. Since SailSafe, there have been no massive consequence events and no near miss events that would have resulted in an Abandon Ship order at sea. This recent history suggests that the Risk Level for massive incidents may be lower than in the past.

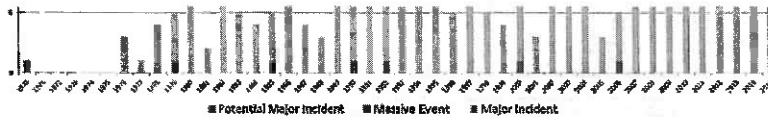


Figure 2 BCF Major and Massive Consequence Incidents - 1970 – 2015

Commented [PE2]: Noting SOLAS applies to larger vessels, > 400 pax, international voyages, more restrictive requirements for lifesaving equipment (Lifeboats vs MES)

FOIPP Act, s. 13

¹ A Massive Consequence Event is ranked as a '5'. Examples of impact are defined by the BCF Operational Policy (reference 2). The Risk Matrix is provided (see Figure 1).

Table 1 BCF Massive Consequence Incidents Since 1970

Date	Worksite	Critical Incident Type
1970-06-02	Queen of Victoria	Collision
1979-08-01	Queen of Alberni	Grounding (abandon ship ordered)
1985-08-12	Queen of Cowichan	Collision
1990-07-09	Horseshoe Bay	Runaway Truck
1992-08-13	Queen of New Westminster	Premature departure
2000-09-14	Spirit of Vancouver Island	Collision
2006-03-22	Queen of the North	Grounding (abandon ship ordered)

Commented [PS4]: • Where this vessel had a policy to conform to SOLAS regarding passengers on the vehicle deck.

Vehicle Deck Fire

A previous study by BMT Fleet Technology² assessed the probability of a major, multi-vehicular fire occurring as Unlikely; therefore the risk rating of this scenario using their risk matrix would be Medium (see Table 2). This finding is consistent with BCF experience to date where there have been no Extreme fire events with multiple casualties.

Table 2 BMT Risk Matrix

Seldom Incident has occurred on a similar vessel and may reasonably occur on this vessel within the next 30 years	2	I H O D	MEDIUM RISK			
			LOW RISK			
Unlikely Given current practices and procedures, incident is not likely to occur on this vessel	1		CONSEQUENCE			
			1 Incidental	2 Minor	3 Serious	4 Major

² BMT Fleet Technology, BC FERRIES SUPER C CLASS RISK ASSESSMENT OF THE DESIGN AND CONSTRUCTION REGULATORY REQUIREMENTS FINAL REPORT, February 2005, p.27

4.3 CARGO AND ASSEMBLY STATION LOCATION

The review team identified the two risk factors that impact the decision to limit access to vehicle decks:

[Redacted text block]

FOIPP Act, ss. 13, 15 and 19

FOIPP Act, ss. 13, 15 and 19

[Redacted text block]

4.4 EMERGENCY MANAGEMENT

Passenger safety management and emergency management is more controlled and quicker when passengers are on accommodation decks. This would result in fewer casualties and lower risk because:

[Redacted text block]

FOIPP Act, ss. 15 and 19

Overall, it is expected that if passengers were required to be on accommodation decks rather than vehicle decks (where the assembly station is on an accommodation deck) that the risk of an extreme event resulting in fatalities and injuries would decrease from High to Medium.

[Redacted text block]

FOIPP Act, ss. 13, 15 and 19

5. RECOMMENDATIONS

FOIPP Act, s. 13

5.1

5.2

5.3

5.4

5.5

5.6

FOIPP Act, s. 13



ANNEX A: MINOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

Status Quo - Passengers on closed vehicle deck - Main Car Deck (S Class / C Class / Coastal Class); Lower Car Deck (Salish Class)	Status Quo - Passengers on open vehicle deck - Upper Car Deck (S Class / C Class / Coastal Class); Main Car Deck (Salish Class)
<p>No passengers on closed vehicle deck</p>	<p>No passengers on open vehicle deck</p>
<p>FOIPP Act, ss. 13, 15 and 19</p>	<p>FOIPP Act, ss. 13, 15 and 19</p>

SAFETY DEPARTMENT



ANNEX B: MAJOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

Status Quo - Passengers on closed vehicle deck – Main Car Deck (S Class / Coastal Class); Lower Car Deck (Salish Class)	Status Quo - Passengers on open vehicle deck – Upper Car Deck (S Class / Coastal Class); Main Car Deck (Salish Class)
No passengers on closed vehicle deck	No passengers on open vehicle deck
Risks	Risk comparison to closed vehicle deck
Controls	Controls

FOIPP Act, ss. 13, 15 and 19

FOIPP Act, ss. 13, 15 and 19



COMPANY: British Columbia Ferry Services Inc.	DOCUMENT NUMBER: FRA-ORC-98	
ASSET: All Vessels/Terminals	REVISION: V1	REVISION DATE: June 28 2016
PROJECT: Passengers on Closed and Open Vehicle Decks	SHEET: Page 1 of 14	

DOCUMENT TITLE:
BC Ferries Passengers on Closed and Open Vehicle Decks Risk Assessment

ABSTRACT

The purpose of this document is to report on the findings and action recommendations of the risk assessment of passengers remaining on closed and open vehicle decks during a voyage. The scope of the risk assessment was to compare the risks between the status quo and if passengers were required to move to the accommodation and assembly station decks after vehicle loading and until a suitable time to prepare for vehicle unloading.

Recommendation Summary:

See notes/comments in Recommendation Section 5.1 (could use comments in this block)

Yes, intend to put comments in after all comments are back in from the draft report.

Revision Record

Rev.	Date				
V1		Issued for Internal Review			

Document Verification

Prepared by:	Name: Brad Judson Job Title: Manager, SMS	
	Signed: Date:	
Checked by:	Name: Capt. ?? Job Title:	
	Signed: Date:	
Approved by:	Name: Capt. Dale Phipps Job Title: Director, Fleet Renewal	
	Signed: Date:	
Company Approval:	Technical Approval	Fleet Operations Approval
	Name: Job Title:	Name: Capt. Jamie Marshall Job Title: VP Fleet Operations
The person who has the authority for the Company's Technical and Operations, quality and management approval.	Signed: Date:	Signed: Date:

TABLE OF CONTENTS

1.	INTRODUCTION	4
1.1	PURPOSE	4
1.2	SCOPE	4
1.3	DISTRIBUTION AND INTENDED AUDIENCE	4
1.4	DEFINITIONS, ACRONYMS AND ABBREVIATIONS	4
1.4.1	General Definitions	4
1.4.2	Specific Terms, Definitions, Acronyms and Abbreviations	4
1.5	REFERENCE DOCUMENTS AND LINKS	5
2.	ROLES AND RESPONSIBILITIES	5
2.1	PARTICIPANTS	5
3.	METHODOLOGY	6
3.1	RISK ASSESSMENT BASIS	6
3.2	RISK ASSESSMENT PROCESS	6
4.	FINDINGS	7
5.	ADDITIONAL CONTROLS	ERROR! BOOKMARK NOT DEFINED.
6.	RECOMMENDATIONS	10

ANNEX A MINOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

ANNEX B MAJOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

1. INTRODUCTION

Background and context to the risk assessment

1.1 PURPOSE

The purpose of this document is to report on the findings and action recommendations of the risk assessment of passengers remaining on closed and open vehicle decks during a voyage.

1.2 SCOPE

The scope was defined in the Convening Letter as:

1. Identify risks associated with passengers remaining in Closed Vehicle Decks during a Vessel's Voyage:
 - Examine the likelihood of any emergency where passengers remaining on a closed vehicle deck may compromise the emergency response or impact the safety of passengers or crew. Identify any differences different closed deck configurations have on the risk.
 - Compare the risk if passengers were not permitted to remain on the vehicle deck.
2. Identify risks associated with passengers remaining in Open Vehicle Decks during the Vessel's Voyage:
 - Compare the findings of risk for a closed vehicle deck to an open vehicle deck.

1.3 DISTRIBUTION AND INTENDED AUDIENCE

This document is a qualitative analysis using expert judgment to assess risk and provide guidance for policy evaluation. Unless otherwise authorized by BC Ferries, the distribution of this document is confined to BC Ferries.

1.4 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

- General Definitions

The word **shall** is used to indicate that a provision is mandatory.

The word **should** is used to indicate that a provision is not mandatory, but recommended as good practice.

- Specific Terms, Definitions, Acronyms and Abbreviations

Term / Acronym / Abbreviation	Explanation / Definition
BCF or BC Ferries	British Columbia Ferry Services Inc.
Risk	An estimate of consequences and their likelihood
ALARP	As Low as Reasonably Practicable

SAFETY DEPARTMENT

Term / Acronym / Abbreviation	Explanation / Definition

1.5 REFERENCE DOCUMENTS AND LINKS

Unless specifically designated by date, the latest edition of each publication shall be used, together with any amendments/supplements/revisions thereto.

Ref.	Document Number / Link	Title / Description
(1)	CSA ISO 31000	ISO 31000 2009 Risk Management Standard
(2)	Operational Risk Management Policy	09.010 OperationalRiskManagementPolicy_SM

2. ROLES AND RESPONSIBILITIES

The Passengers on Vehicle Decks risk assessment was chaired by Capt. Dale Phipps. Capt. Phipps gave an overview of the objectives and process and Brad Judson recorded the discussion and assessment.

2.1 PARTICIPANTS

The review team consisted of the following members:

Name	Position	Department
Capt. Dale Phipps (Chair)	Director Fleet Renewal	Fleet Operations
Brad Judson (Secretary)	Manager SMS	Safety and Health
Bruce Paterson	Director Naval Architecture	Fleet Engineering
Capt. Derek Sweet	Senior Master Salish Eagle	Fleet Operations
Capt. Fred Fowler	Master SOVI	Fleet Operations, SWB
Capt. Mike Toevs	Senior Master Mayne Queen	Fleet Operations, SWB
Capt. Tracy Fleming	Senior Master Salish Raven	Fleet Operations, LONG
David Gymer	Safety Auditor	Safety and Health
Louise McKenzie	Chief Steward	Catering - SWB
Martin Nielsen	Deckhand / 3 rd Officer	Fleet Operations, SWB
Metro Dutka	Engineering Superintendent	Fleet Engineering, TSA
Yezdi Daver	Chief Engineer SOBC	Fleet Engineering, TSA

Commented [PB1]: Is he QUEEN OF CUMBERLAND? Yes he is now

3. METHODOLOGY

3.1 RISK ASSESSMENT BASIS

The Passengers on Vehicle Decks risk assessment was convened by Capt. Jamie Marshall. The risk assessment workshop was facilitated by Capt. Dale Phipps, following the guidance of the Operational Risk Management Policy [Reference Document 2].

3.2 RISK ASSESSMENT PROCESS

The risk assessment began with a discussion of the objective to compare the risks between:

- two scenarios – a minor vehicle fire and a major vehicle deck fire;
- two conditions – a closed vehicle deck (the main car deck) and an open vehicle deck (the upper car deck); and
- two alternative policies – the status quo and a situation where passengers are not permitted on open or closed vehicle decks.

For each scenario, the Chairman walked through each condition and each policy alternative to draw information on risks, risk controls and the change in risk. The scenarios and discussion are recorded as Annex A and B.

The BCF Operational Risk Matrix was not required during the review. However, it was used in the analysis and preparation of this report to classify likelihood, consequence severity and overall risk level (Figure 1).

Likelihood - What is the probability or frequency of the event occurring?	Operational Risk Matrix				
	5	10	15	20	25
5. Frequent: Event likely or known to occur several times per year at a worksite	5	10	15	20	25
4. Probable: Event likely or known to occur twice per year at a worksite	4	8	12	16	20
3. Possible: Unlikely, but possible the event will occur at least once in 10 years at worksite	3	6	9	12	15
2. Remote: Unlikely but with a remote chance the event will occur sometime in the company or has occurred within the industry	2	4	6	8	10
1. Improbable: So unlikely that the event may not occur	1	2	3	4	5
Consequence Severity - How severe is the impact of the event or exposure once it occurs?	1. Negligible	2. Minor	3. Moderate	4. Major	5. Massive

Figure 1 Operational Risk Matrix

4. FINDINGS

4.1 REGULATION

Transport Canada has passed a regulatory requirement under the CSA(2001) (Canada Shipping Act, 2001), Cargo, Fumigation and Tackle Regulations as follows:

152. (1) Every passenger shall keep off a closed vehicle deck on a vessel that is under way unless the passenger

(a) has received the express consent of the vessel's master to enter the deck, if there are no packaged goods on the deck; or

(b) is accompanied by a crew member, if there are packaged goods on the deck.

(2) Subsection (1) does not apply when passengers are directed to return to their vehicles before the vessel docks.

Vehicle decks are defined by SOLAS II-2, Part G, Regulation 20 as equivalent to Special Category spaces. Having passengers leave Special Category spaces and move to accommodation decks is presumed safer in SOLAS.

4.2 RISK LEVEL

Collisions and Grounding

Prior to SailSafe, BCF experienced a massive consequence event¹ on average every six years (see Figure 2). These events were primarily collisions and groundings (see Table 1). Abandon Ship was ordered on two occasions.

In consideration of this accident history, the frequency of an event leading to an abandoned ship (massive consequence '5') was Remote, '2'; therefore, the overall Risk Level was High, '2x5'. Since SailSafe, there have been no massive consequence events and no near miss events that would have resulted in an Abandon Ship order at sea. This recent history suggests that the Risk Level for massive incidents may be lower than in the past.

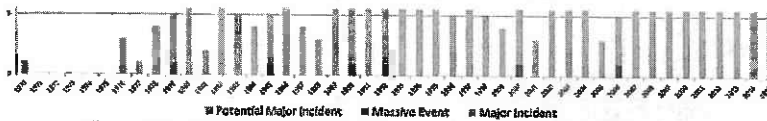


Figure 2 BCF Major and Massive Consequence Incidents - 1970 – 2015

Commented [PB2]: Noting SOLAS applies to larger vessels, > 400 pax, international voyages, more restrictive requirements for lifesaving equipment (Lifeboats vs MES)

FOIPP Act, s. 13

¹ A Massive Consequence Event is ranked as a '5'. Examples of impact are defined by the BCF Operational Policy (reference 2). The Risk Matrix is provided (see Figure 1).

Table 1 BCF Massive Consequence Incidents Since 1970

Date	Worksite	Critical Incident Type
1970-08-02	Queen of Victoria	Collision
1979-08-01	Queen of Alberni	Grounding (abandon ship ordered)
1985-08-12	Queen of Cowichan	Collision
1990-07-09	Horseshoe Bay	Runaway Truck
1992-08-13	Queen of New Westminster	Premature departure
2000-09-14	Spirit of Vancouver Island	Collision
2008-03-22	Queen of the North	Grounding (abandon ship ordered)

Commented [PB4]: • Where this vessel had a policy to conform to SOLAS regarding passengers on the vehicle deck.

Vehicle Deck Fire

A previous study by BMT Fleet Technology² assessed the probability of a major, multi-vehicular fire occurring as Unlikely; therefore the risk rating of this scenario using their risk matrix would be Medium (see Table 2). This finding is consistent with BCF experience to date where there have been no Extreme fire events with multiple casualties.

Table 2 BMT Risk Matrix

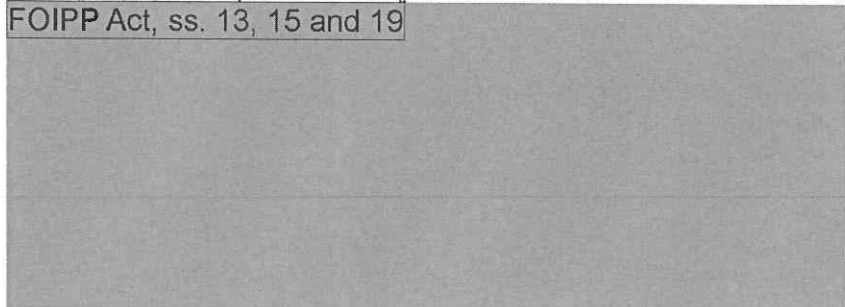
Seldom Incident has occurred on a similar vessel and may reasonably occur on this vessel within the next 30 years	2	I H O O D	MEDIUM RISK			
			LOW RISK			
Unlikely Given current practices and procedures, incident is not likely to occur on this vessel	1		CONSEQUENCE			
			1 Incidental	2 Minor	3 Serious	4 Major

² BMT Fleet Technology, BC FERRIES SUPER C CLASS RISK ASSESSMENT OF THE DESIGN AND CONSTRUCTION REGULATORY REQUIREMENTS FINAL REPORT, February 2005, p.27

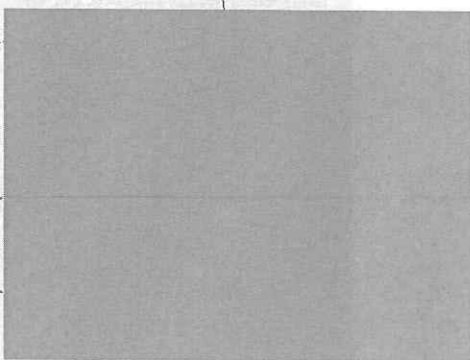
4.3 CARGO AND ASSEMBLY STATION LOCATION

The review team identified the two risk factors that impact the decision to limit access to vehicle decks:

FOIPP Act, ss. 13, 15 and 19



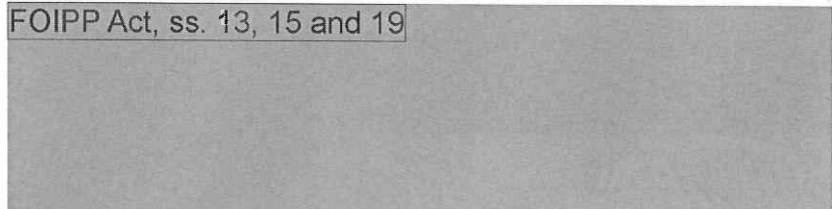
FOIPP Act, ss. 13, 15 and 19



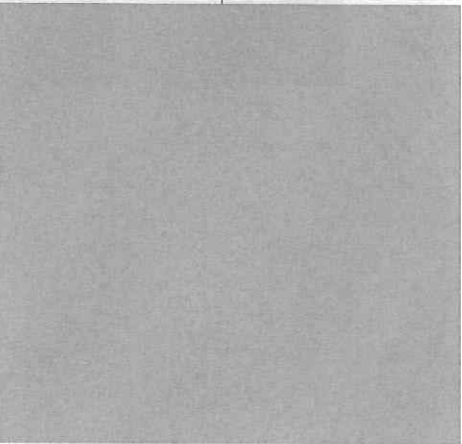
4.4 EMERGENCY MANAGEMENT

Passenger safety management and emergency management is more controlled and quicker when passengers are on accommodation decks. This would result in fewer casualties and lower risk because:

FOIPP Act, ss. 13, 15 and 19

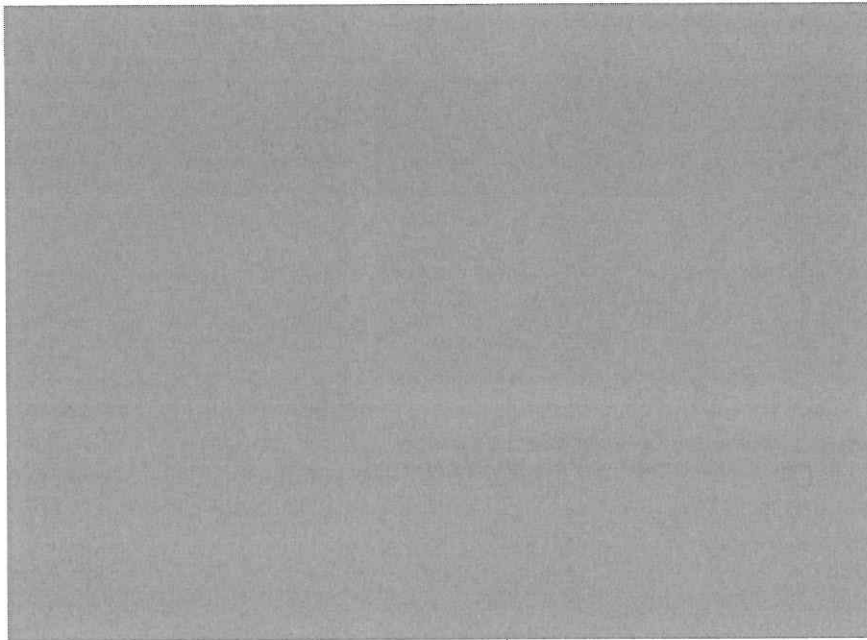


FOIPP Act, ss. 13, 15 and 19

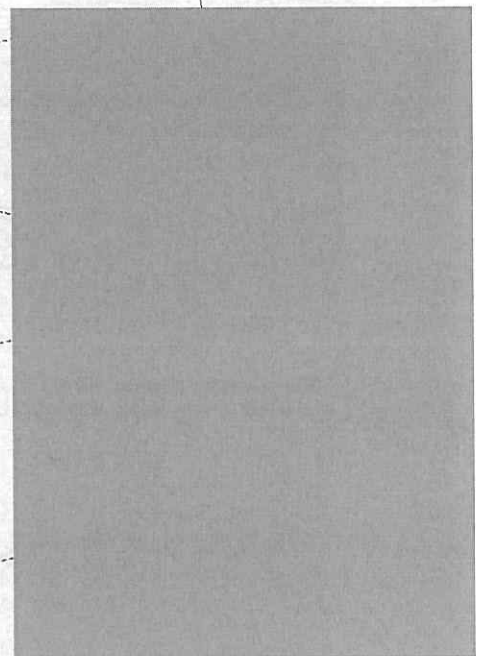


Overall, it is expected that if passengers were required to be on accommodation decks rather than vehicle decks (where the assembly station is on an accommodation deck) that the risk of an extreme event resulting in fatalities and injuries would decrease from High to Medium.

5. RECOMMENDATIONS



FOIPP Act, s. 13



FOIPP Act, s. 13



ANNEX A: MINOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

Status Quo - Passengers on closed vehicle deck – Main Car Deck (S Class / C Class / Coastal Class); Lower Car Deck (Salish Class)	Status Quo - Passengers on open vehicle deck – Upper Car Deck (S Class / C Class / Coastal Class); Main Car Deck (Salish Class)
Risks	Risk comparison to closed vehicle deck
Controls	Controls
No passengers on closed vehicle deck Risk comparison to Status Quo	FOIPP Act, ss. 15 and 19
• Elevator availability	
No passengers on open vehicle deck	No passengers on open vehicle deck
Risk comparison to Status Quo	Risk comparison to Status Quo
Controls	Controls
FOIPP Act, ss. 15 and 19	FOIPP Act, ss. 15 and 19

SAFETY DEPARTMENT



ANNEX A: MINOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

- Less injury potential
- Complacency

--	--	--



ANNEX B: MAJOR VEHICLE FIRE SCENARIO RISK ASSESSMENT WORKSHEET

Status Quo - Passengers on closed vehicle deck - Main Car Deck (S Class / C Class / Coastal Class); Lower Car Deck (Salish Class)	Status Quo - Passengers on open vehicle deck - Upper Car Deck (S Class / C Class / Coastal Class); Main Car Deck (Salish Class)
<p>Risks</p> <p>Controls</p>	<p>Risk comparison to closed vehicle deck</p> <p>Controls</p> <p>FOIPP Act, ss. 15 and 19</p>
No passengers on closed vehicle deck	No passengers on open vehicle deck
<p>Risks</p> <p>Controls</p>	<p>Risk comparison to closed vehicle deck</p> <p>Controls</p> <p>FOIPP Act, ss. 15 and 19</p>

Johnston, Darren

From: Graeme Johnston <graemejohnston@bcfmwu.com>
Sent: January 05, 2017 3:25 PM
To: Johnston, Darren
Subject: RE: New Regulations Limiting Passenger Access to Closed Vehicle Decks

Hi Darren,

Not putting any pressure, just had a flag come up on this as a reminder for me and thought I'd pass it on.

Happy New Year.

Graeme

This e-mail may be confidential. Unauthorised use is prohibited. Unintended recipients are asked to return and delete this message. E-mail is inherently vulnerable to interception and I will use alternate means upon request.

From: Johnston, Darren [<mailto:Darren.Johnston@bcferries.com>]
Sent: December 13, 2016 10:39 AM
To: Graeme Johnston <graemejohnston@bcfmwu.com>
Cc: Eduardo Munoz <eduardomunoz@bcfmwu.com>; Dave Kattler <davekattler@bcfmwu.com>; Kevin Hall <KevinHall@bcfmwu.com>
Subject: FW: New Regulations Limiting Passenger Access to Closed Vehicle Decks

[REDACTED]

Please let me know if you have any questions.
Darren

FOIPP Act, s. 21

Darren Johnston
Director, Fleet Operations
British Columbia Ferry Services Inc.

[REDACTED]
darren.johnston@bcferries.com
bcferries.com

FOIPP Act, ss. 15, 19 and 22

From: Johnston, Darren
Sent: December 12, 2016 9:46 AM
To: BCF All Employees
Subject: New Regulations Limiting Passenger Access to Closed Vehicle Decks

Please print and post the attached bulletin in crew and staff areas.

[http:](http://) [REDACTED]

FOIPP Act, s. 15

Thank you,

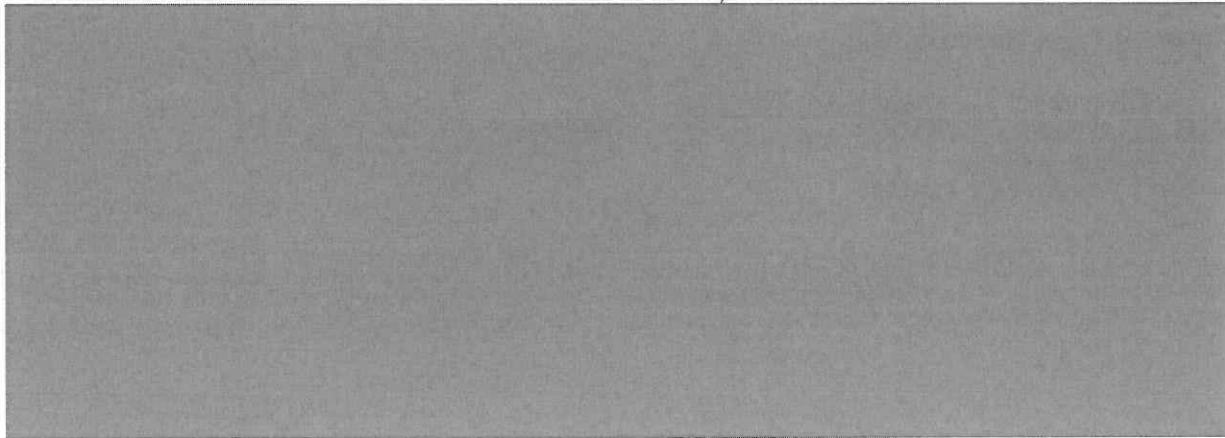
Darren Johnston
Director, Fleet Operations
British Columbia Ferry Services Inc.
The Atrium
Suite 500, 1321 Blanshard St., Victoria, BC V8W 0B7

FOIPP Act, ss. 15, 19 and 22

darren.johnston@bcferries.com
bcferries.com | Facebook | Twitter

Notice:

This message, including any attachments, is confidential and may contain information that is privileged or exempt from disclosure. It is intended only for the person to whom it is addressed unless expressly authorized otherwise by the sender. If you are not an authorized recipient, please notify the sender immediately and permanently destroy all copies of this message and any attachments.



4.2.3.3 *Level of Risk*

Using the chart at Figure 3.1, the risk to the Super C class from downflooding due to direct access to spaces below the bulkhead deck is considered to be [redacted] based on the vessel following the operating procedures identified in this report, and required under SOLAS.

4.3 **Passenger Access to the Vehicle Deck**

FOIPP Act, ss. 15, 19 and 21

4.3.1 Regulatory Requirements

CSA has no explicit regulations prohibiting passenger access to vehicle decks while a vessel is underway, regardless of whether they are open or enclosed. SOLAS on the other hand has a very specific prohibition on allowing passengers onto enclosed vehicle decks while at sea, as outlined in Chapter II-1, Regulation 20-3.

In all Ro-Ro passenger ships, the master or the designated officer shall ensure that, without the expressed consent of the master or the designated officer, no passengers are allowed access to an enclosed Ro-Ro deck when the ship is under way.

4.3.2 Regulatory Intent

The principle intent of this regulation is safety of passengers by excluding them from an area considered, by IMO, to be a higher risk area. This specifically applies to enclosed vehicle decks, and therefore infers that access to open vehicle decks is not considered an issue.

4.3.3 Risk Assessment

4.3.3.1 *Safety Issues on Vehicle Decks (Open Versus Enclosed)*

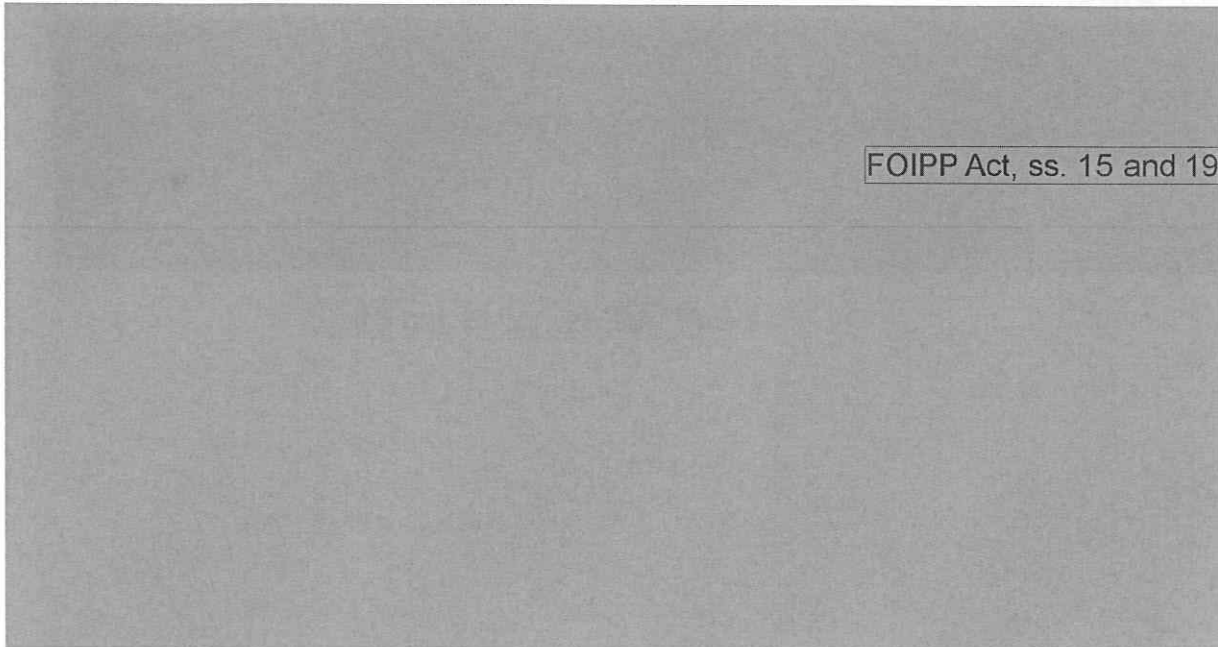
Passenger safety on any vehicle deck can be looked at in discrete topics; ventilation, escape, accessibility, electrical appliance, fire and flood (shipping water) safety:

Ventilation: There are definitive criteria in SOLAS and Class relating to the number of air changes required on vehicle decks, to ensure a habitable environment for all personnel. SOLAS states a minimum of 10 air changes per hour for vehicle decks (Chapter II-2, Regulation 20/3.1.1.1).

Escape: A minimum of two escape routes, widely separated, are required, for both enclosed and open decks.

Accessibility: Movement around a deck loaded with vehicles is equally as difficult on both enclosed and open decks.

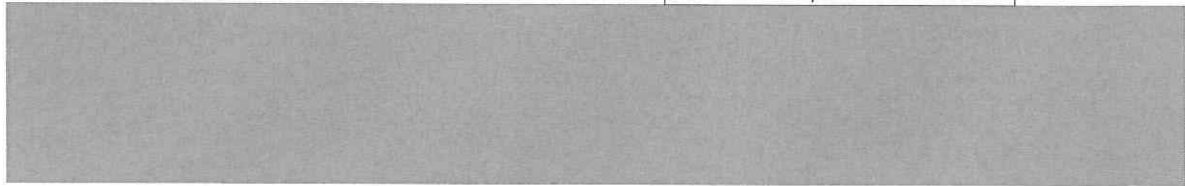
Flood: The probability of swamping an enclosed vehicle deck is lower than an open vehicle deck by design. The consequences if it were to occur though would be greater as drainage is limited to scuppers and bilge systems. From a passenger safety perspective though, the issues and relative effects are similar; passengers being swept off their feet, or simply being drenched.



FOIPP Act, ss. 15 and 19

4.3.3.1 Preferred Design

FOIPP Act, ss. 15 and 19



4.3.3.2 Methods of Reducing Risk on the Vehicle Deck

As SOLAS considers vehicle decks unsafe for passengers to access during transit, it is necessary to look at ways to improve the safety of passengers in these spaces. Based on the issues above, possible solutions are discussed in Table 4.11.

4.3.3.3 Frequency

As stated in Section 4.1.3.3, the Incident database for BC Ferries, compiled from TSB and BCF records indicates that there have only been six fires on vehicle decks in the last 28 years, while the vessel is at sea. These fires have at worst, been single vehicle fires extinguished quickly by the crew using handheld appliances (CO₂ and foam extinguishers), and not major multi vehicle fires.

[Redacted] FOIPP Act, ss. 15, 19 and 21

4.3.3.4 Severity

[Redacted]

FOIPP Act, ss. 15, 19 and 21

Table 4.11: Improving Passenger Safety on Vehicle Decks

Topic	Objective	Improvement
Ventilation		
Escape		
Accessibility		
Flood		
Electrical Appliances		
Fire – Firefighting		
Fire – Fire Zoning		

4.3.3.5 Level of Risk

FOIPP Act, ss. 15, 19 and 21

Using Figure 3.1, the risk is assessed as

It should be noted that it is intended to outfit the vehicle deck to comply with SOLAS, but that operating under the provision of Chapter II-1, Regulation 20-3, which permits passengers on the vehicle deck under the Master’s discretion, is entirely consistent with the current Canada Shipping Act.

FOIPP Act, ss. 15, 19 and 21

Table 4.10: Fires on Vehicle Decks

Date	Vessel	Description
7/23/1995	Queen Of Surrey	Car Onboard Ferry Burst Into Flames. Extinguished By Crew. No Apparent Damage Sustained By Vessel.
7/27/1998	Queen Of Surrey	A Car Fire Occurred On Car Deck Of Ferry "Queen Of Surrey". Fire Extinguished And Ferry Proceeded On Its Way.
5/12/2003	Queen of Surrey	A fuel gauge line on the #2 main engine ruptured and the fuel ignited, forcing the Chief Engineer to shut down the #2 main engine and subsequently #1 main engine and both generators. The fire was suppressed with CO2 flooding. The vessel was then towed to Langdale terminal where all passengers and vehicles were discharged. Gibsons' Fire Dept attended; Coast Guard informed.
May-99	Tsawwassen	While Loading Traffic, Car W/High Performance Engine Stalled On Ramp. When Unable To Restart It, Owner Opened Hood And Removed Air Filter From Carburetor And It Burst Into Flames. Fire Put Out By Deckhand, Vessel 16 Minutes Late. Summary Investigation Called. File #820-99-8. Owner Of Car Had Left Key In Ignition.
1/31/2003	Queen Of Alberni	On 31 January, 2003, The P/F "Queen Of Alberni" Reported A Fire On The Main Car Deck, Near Tsawwassen, B.C.
5/13/1984	Queen Of Vancouver	Fire Broke Out In A Truck Onboard This Vessels - Put Out By Crew
6/22/1992	Queen Of Nanaimo	Vehicle On Car Deck Caught Fire - Extinguished.

As shown in Section 4.1, the chance of shipping water onto the MVD as a result of the bow doors being open or damaged is [redacted] unless the ship is sailing in unusually high sea states for that region. Additionally, over the 28-year period recorded by the TSB and BCF, despite a number of collisions, only one incident caused sufficient damage leading to flooding. This flooding, into compartments below the bulkhead deck occurred directly, and was not a result of downflooding. Service history therefore shows that the likelihood of downflooding is also [redacted]. We can therefore say that there [redacted] of downflooding as a result of the bow doors being open or damaged. FOIPP Act, ss. 15, 19 and 21

FOIPP Act, ss. 15, 19 and 21

Therefore the probability of downflooding is assessed as [redacted] FOIPP Act, ss. 15, 19 and 21

4.2.3.2 Severity FOIPP Act, ss. 15, 19 and 21

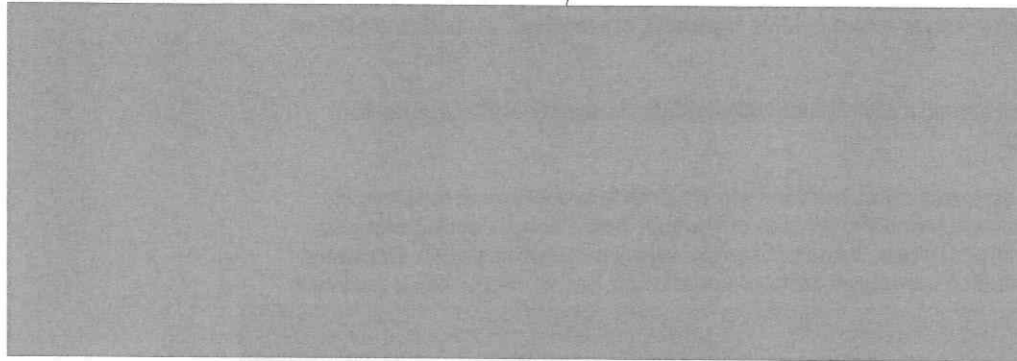
Under normal operating procedures, the watertight door into the elevator trunk will be closed and locked. Thus any downflooding event would be limited to the volume of the elevator trunk, which poses [redacted]. In the event, that a downflooding event did occur with the watertight door open, [redacted]

FOIPP Act, ss. 15 and 19

[redacted] Thus a flooding event of this nature would be contained [redacted] to the stability or continued operation of vessel.

FOIPP Act, ss. 15, 19 and 21

FOIPP Act, ss. 15, 19 and 21



4.2.3.3 Level of Risk

Using the chart at **Figure 3.1**, the risk to the Super C class from downflooding due to direct access to spaces below the bulkhead deck is considered [redacted] based on the vessel following the operating procedures identified in this report, and required under SOLAS.

Formatted: Font: Bold

4.3 Passenger Access to the Vehicle Deck

FOIPP Act, ss. 15, 19 and 21

4.3.1 Regulatory Requirements

CSA has no explicit regulations prohibiting passenger access to vehicle decks while a vessel is underway, regardless of whether they are open or enclosed. SOLAS on the other hand has a very specific prohibition on allowing passengers onto enclosed vehicle decks while at sea, as outlined in Chapter II-1, Regulation 20-3.

In all Ro-Ro passenger ships, the master or the designated officer shall ensure that, without the expressed consent of the master or the designated officer, no passengers are allowed access to an enclosed Ro-Ro deck when the ship is under way.

4.3.2 Regulatory Intent

The principle intent of this regulation is safety of passengers by excluding them from an area considered, by IMO, to be a higher risk area. This specifically applies to enclosed vehicle decks, and therefore infers that access to open vehicle decks is not considered an issue.

4.3.3 Risk Assessment

4.3.3.1 Safety Issues on Vehicle Decks (Open Versus Enclosed)

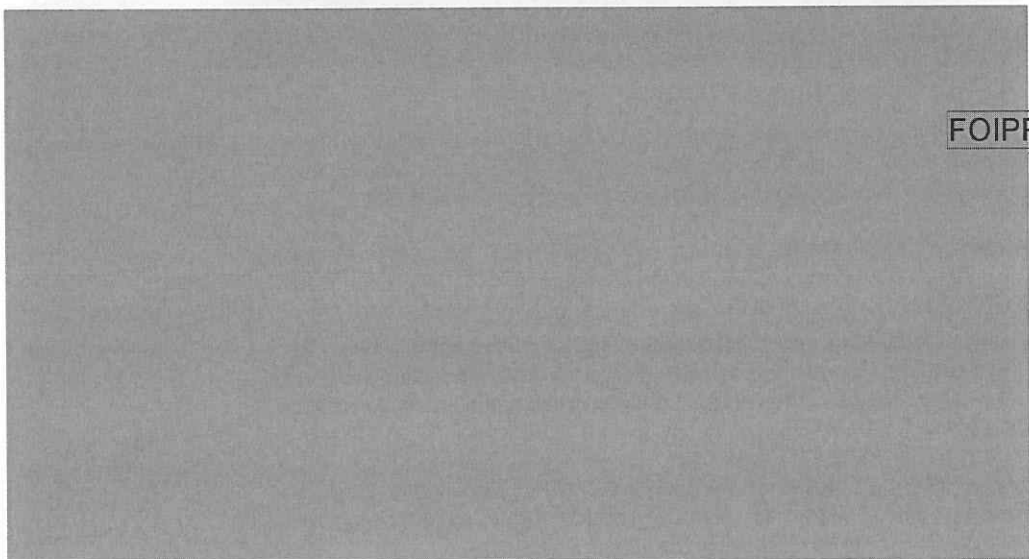
Passenger safety on any vehicle deck can be looked at in discrete topics; ventilation, escape, accessibility, electrical appliance, fire and flood (shipping water) safety:

Ventilation: There are definitive criteria in SOLAS and Class relating to the number of air changes required on vehicle decks, to ensure a habitable environment for all personnel. SOLAS states a minimum of 10 air changes per hour for vehicle decks (Chapter II-2, Regulation 20/3.1.1.1).

Escape: A minimum of two escape routes, widely separated, are required, for both enclosed and open decks.

Accessibility: Movement around a deck loaded with vehicles is equally as difficult on both enclosed and open decks.

Flood: The probability of swamping an enclosed vehicle deck is lower than an open vehicle deck by design. The consequences if it were to occur though would be greater as drainage is limited to scuppers and bilge systems. From a passenger safety perspective though, the issues and relative effects are similar; passengers being swept off their feet, or simply being drenched.



FOIPP Act, ss. 15 and 19

4.3.3.1.1 Preferred Design



FOIPP Act, ss. 15 and 19

4.3.3.2 Methods of Reducing Risk on the Vehicle Deck

As SOLAS considers vehicle decks unsafe for passengers to access during transit, it is necessary to look at ways to improve the safety of passengers in these spaces. Based on the issues above, possible solutions are discussed in **Table 4.11**.

Formatted: Font: Bold

4.3.3.3 Frequency

As stated in Section **4.1.3.24-1.3-3**, the Incident database for BC Ferries, compiled from TSB and BCF records indicates that there have only been six fires on vehicle decks in the last 28 years, while the vessel is at sea. These fires have at worst, been single vehicle fires extinguished

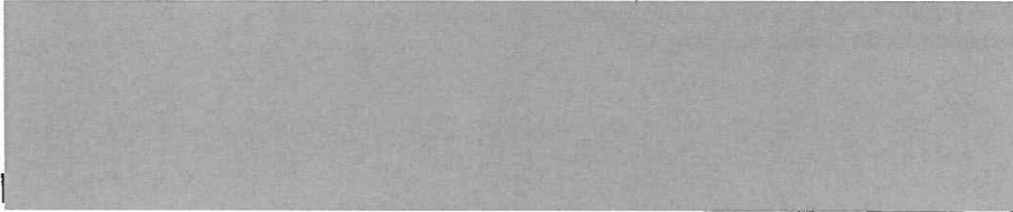
quickly by the crew using handheld appliances (CO₂ and foam extinguishers), and not major multi vehicle fires.

FOIPP Act, ss. 15, 19 and 21



4.3.3.4 Severity

FOIPP Act, ss. 15, 19 and 21



Formatted: Font: Bold

Table 4.11: Improving Passenger Safety on Vehicle Decks

Topic	Objective	Improvement
Ventilation		
Escape		
Accessibility		
Flood		
Electrical Appliances		
Fire – Firefighting		
Fire – Fire Zoning		

FOIPP Act, ss. 15, 19 and 21

[Redacted]

4.3.3.5 Level of Risk

Using ~~Figure 3.1~~ ~~Figure 3.1~~, the risk is assessed as

Formatted: Font: Bold

It should be noted that it is intended to outfit the vehicle deck to comply with SOLAS, but that operating under the provision of Chapter II-1, Regulation 20-3, which permits passengers on the vehicle deck under the Master's discretion, is entirely consistent with the Canada Shipping Act.