

In the Matter of a Fatality Inquiry  
Regarding the death of Captain Donald LeBlanc  
Englishtown, Nova Scotia

**REPORT**, pursuant to the Fatality Investigations Act

April 5<sup>th</sup>, 2007

A. Peter Ross  
Provincial Court Judge  
Sydney, Nova Scotia

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COUNSEL

Frank Hoskins and Diane McGrath, Nova Scotia Public Prosecution Service,  
Counsel for the Inquiry

Mr. Guy LaFosse, Q.C., for Nelson Edge

Ms. Lee Anne MacLeod-Archer, for Sandy Jardine

Mr. Michael Pugsley, for the Department of Transportation and Public Works

Mr. Ralph Ripley, for Alice MacInnis

Mr. David Roberts, for the Nova Scotia Government Employees Union

Mr. James Stanley, for the Canadian Union of Public Employees

#### WITNESSES

Arnold Baxendale - Safety and loss Control specialist, DTPW

Dr. C.J. Brooks - Survival Systems Ltd., Halifax

Kevin Caines - Director, Fleet Management, DTPW

Glenn Christie - purser/engineer, ET ferry

Donald Currie - Manager for OHS, DTPW; formerly supervisor of Training Programs

Daniel Curtis - mechanic, Robbie's Truck Repair, Sydney

Nelson Edge - captain in charge, ET ferry

Dr. Mark Fleming - Director, CN Center for Occupational health and Safety,  
St. Mary's University, Halifax

Vince Garnier - Provincial Manager, OHS division, DEL

David Gibson - OHS consultant; formerly Senior Manager and Director, DTPW

William Horton - captain, ET ferry

Kyle Jardine - excavation contractor

Sandy Jardine - Equipment Instructor Inspector, DTPW

Gerard Jessome - Director, DTPW; formerly project engineer

Thomas Kearsey - Master Mariner, Survival Systems Ltd., Halifax

Bruce Langille - Risk Manager, DTPW

Angus MacAskill - former contractor

Kerr MacAskill - shift captain, ET ferry

Alice MacInnis - purser/engineer, ET ferry

John MacLeod - mechanic, DTPW, Baddeck

Neil MacLeod - mechanic, DTPW, Baddeck

Const. Thomas MacLeod - officer in charge, RCMP Underwater Recovery Team  
for Nova Scotia

David MacNeil - formerly captain in charge, ET ferry

Joel Marsman - Public Service Commission; formerly Manager for OHS, DTPW

Ernest Roberts - Chief, Baddeck Fire Department

Dr. Leslie Russell - consulting engineer

Doug Smith - formerly Director of Fleet Management, DTPW

Cpl. Michael Towle - RCMP

Allison Tupper - consulting engineer

Patrick Van Oostrum - farm equipment dealer, Annapolis Valley

William Yarn - Financial Manager (Fleet), DTPW

#### Abbreviations used herein

DEL - Nova Scotia Department of Labour

DTPW - Nova Scotia Department of Transportation and Public Works

ET - Englishtown

JOHS - Joint Occupational Health and Safety (committee)

OHS - Occupational Health and Safety

SWP - safe work practice

## INTRODUCTION

This Inquiry was called because of a workplace fatality. Donald Anthony LeBlanc, born November 15<sup>th</sup>, 1964 died while plowing snow at the ferry at

Englishtown, Victoria County, Nova Scotia on February 8<sup>th</sup>, 2003. His death raised questions and concerns.

The evidence led during the hearings allows me to describe what occurred on the morning he died. Some details are still unclear, but the uncertainty attending these is relatively insignificant compared to the abiding mystery surrounding this question: why is it that Mr. LeBlanc did not or could not stop the tractor he was operating as it followed a fatal trajectory down a snow-covered concrete pad towards the frigid waters of St. Ann's Bay?

What employers owe to workers like Donald LeBlanc is a duty to take all reasonable precautions to minimize risk of death and injury. There is a corresponding duty on the worker to be safety-conscious in the performance of his or her duties. A number of measures have already been undertaken in response to this tragic event. The evidence led during the hearings permits me to suggest some further steps which may lessen the likelihood of a similar occurrence in future.

### Structure of the Report

Part I will address the mandatory requirements of s.39(1) of the Fatality Investigations Act. The identity of the deceased and the date and place of death have already been noted. I will deal briefly with the time of death. The cause and manner of death will be considered as one, beginning with the immediate cause. Next follows proximate circumstances - a description of the events leading up to and including February 8, 2003. I will then proceed to consider the broader circumstances and context surrounding Mr. LeBlanc's duties.

The discussion of broad circumstances overlaps one of the issues specifically set out by the Minister of Justice, namely, whether there was a safe environment for the performance of the duties required of Mr. LeBlanc. The Inquiry understood this to mean not simply the immediate conditions of that day but also the occupational health and safety policies, practices and systems which were in place within DTPW relevant to the Englishtown work site.

Part II looks at various aspects of the OHS regime as of February 8<sup>th</sup>, 2003. I will attempt to explain how these may have changed from the time before the death, to the situation as it existed at the date of death, to the way it is today. I will consider what the future might bring. This approach will answer the question “was there a safe environment?” in the only way that can make sense, i.e. in a comparative sense. As counsel for one of the parties put it, we can ask “could it have been safer?”

Finally, the Minister has directed inquiry into the rescue effort and recovery operations, asking whether they were “timely, appropriate and of sufficiently wide scope”. Rescue comes into play when, because of the inadequacy of an occupational health and safety regime, or despite adequate precautions, a person falls into a life-threatening situation. Recovery refers to retrieval of the body of a deceased. These matters are taken up in Part III.

Following upon the previous discussion, in Part IV, are some recommendations.

It is worth reiterating that this has not been a fault-finding exercise, as a trial would be. I am concerned with elucidation of circumstances and with learning lessons, not with recrimination and blame. Before the advent of the Charter of Rights it was not unknown for judges conducting fatality inquiries to make pronouncements of illegality and negligence. This is now expressly forbidden by s.39(2) of the Fatality Investigations Act. While some of the people and organizations involved in this matter have had legal representation, they have not had the protections afforded by a trial. I may say, however, that it would be a mistake to think that in the absence of s.39(2) I would, on the basis of the evidence I heard, be assigning blame. There is not always someone to blame. Rarely, however, is there nothing to be learned.

### Background

Reproduced below is a portion of Inquiry counsel's final written submission of October 30<sup>th</sup>, 2006. By setting out the legal framework, touching on



many of the issues noted above, and recapitulating the Inquiry proceedings themselves, it serves as a useful introduction to the matters at hand. For the sake of completeness I have made some minor additions, and I have made a few deletions to avoid repetition of what is dealt with elsewhere.

#### MANDATE/TERMS OF REFERENCE

On June 2, 2004 the then Minister of Justice, the Honorable Michael G. Baker Q.C., on the recommendation of the Chief Medical Examiner, called an Inquiry into the death of the late Donald LeBlanc, pursuant to s. 27 (1) of the Fatality Investigations Act, 2001, c. 31, s. 1 .

Pursuant to s. 27(3) of the Act Judge A. Peter Ross of the Provincial Court of Nova Scotia was appointed to conduct the Inquiry. As the Inquiry Judge he has, pursuant to s. 29 of the Act, all the powers, privileges and immunities of a commissioner under the Public Inquiries Act, 2001, c. 31, s.29. The issues which must be addressed by the Inquiry Judge in a written report are set out at s.39 of the Act as follows:

39 (1) At the conclusion of the fatality inquiry, the judge shall make and file with the Provincial Court a written report containing any findings made by the judge as to

- (a) the identity of the deceased;
- (b) the date, time and place of death;
- (c) the circumstances under which the death occurred;
- (d) the cause of death;
- (e) the manner of death; and
- (f) the issues identified by the Minister in the order requiring an inquiry to be held;

and shall send a copy of the report to the Minister.

(2) The findings of the judge shall not contain any findings of legal responsibility.

By the Order of the Minister on June 2, 2004 the Inquiry was also directed

to  
examine and make recommendations on the following issues:

1. Was there a safe environment for the performance of the duties required of the decedent at the time of the mishap?
2. Were the rescue operations (a) timely (b) appropriate (c) of sufficiently wide scope?

By subsequent letter of the Minister of Justice to the family of the late Donald LeBlanc dated March 17, 2005 the mandate of the Inquiry was further clarified to include the recovery efforts as being included in the term "rescue operations".

#### LEGAL STANDING

Pursuant to the Fatality Investigations Act, the participants at a Fatality Inquiry are set out in s. 36 and include a Crown Attorney or counsel for the Minister; a personal representative of the deceased; and any person who applies to the judge before or during the Inquiry and is declared by the judge to be an interested person.

In the present proceedings, in addition to the Crown and family of the deceased, the following people applied for and were granted standing as interested persons:

- the Department of Transportation and Public Works (DTPW) - the employers of Mr. LeBlanc at the time of his death;
- The Canadian Union of Public Employees (CUPE) - the union to which Mr. LeBlanc belonged at the time of his death and which represents casual and part-time employees at the work site where the death occurred;
- The Nova Scotia Government Employees Union (NSGEU) - the union which represents permanent employees at Mr. LeBlanc's work site;
- Alexander (Sandy ) Jardine - an Equipment Inspector Instructor for

DTPW and the person who had trained Mr. LeBlanc to operate the tractor he was using at the time of his death;

-Nelson Edge - Mr. LeBlanc's supervisor at DTPW at the time of his death;

-Alice MacInnis - the co-worker who was on duty with Mr. LeBlanc at the time of his death.

## THE COURSE OF THE PROCEEDINGS

While the family of the late Donald LeBlanc had standing at the Inquiry by virtue of s. 36 (2) of the Act, it participated only in the initial days of the hearings choosing on the fifth day of the proceedings, October 19, 2005, to withdraw.

The Inquiry began hearing evidence on October 12, 2005 and sat on the following dates:

October 12 - November 2, 2005;  
March 28 - 31, 2006;  
May 23 - 25, 2006;  
June 12 -16, 2006;  
June 20 - 23, 2006; and  
July 21, 2006.

31 witnesses were called over 31 days of testimony. 134 exhibits were tendered, including 5 expert reports. Closing submissions were made on October 30<sup>th</sup>, 2006. There were no *in camera* proceedings. There were no publication bans.

While this Inquiry has greatly exceeded the original estimate of time allocated, it has done so in an effort to conduct a very thorough and exhaustive review of all of the surrounding circumstances of the death of the late Donald LeBlanc, including the cause and manner of death. This was necessary in order to make comprehensive and meaningful recommendations dealing with the issues identified in the Ministerial Order of the Minister of Justice and Attorney General dated June 2, 2004, which include issues of whether or not there was a safe work environment for the performance of the duties required of Donald LeBlanc and whether the rescue operations were

timely, appropriate and of sufficiently wide scope. The broad scope of this Inquiry necessitated a thorough and exhaustive review of the policies, procedures, practices and programs of the entire operation of the Englishtown Ferry. In our endeavor to apply a contextual approach in our review of all of the evidence, which included programs, safe work procedures and policies, we carefully examined the culture within which the ferry operators executed their duties.

Notwithstanding the thorough manner in which we have conducted this Inquiry there are, and will undoubtedly remain, unanswered questions surrounding the circumstances which caused the tractor to enter the water. However, the extensive evidence proffered in this Inquiry will hopefully provide significant assistance to the development and implementation of occupational health and safety measures designed to reduce the risk of having another tragic occurrence of this nature.

As previously stated, the mandate of the Inquiry includes an examination and/or review of whether there was a safe environment for the performance of the duties required of the late Donald LeBlanc at the time of the tragic event. Accordingly, the mandate provides an opportunity to identify improvements to the safe work place at Englishtown and as well as at similar operations and sites within the Province of Nova Scotia.

As Your Honour stated earlier in this Inquiry, while the parameters of the Inquiry are not as broad as some may have wished, they are set out in statute and in the letter of the Minister ordering the Inquiry, which states amongst other things, that "the findings of the judge shall not contain any findings of legal responsibility", which as Your Honour has stated, "is not a fault-finding exercise as much as it is an Inquiry that will minimize the risks attendant upon the workplace. It is in a sense about the 'next' Donald LeBlanc".

The Inquiry was provided with extensive background information on both the workings of the Englishtown Ferry Operations and the Occupational Health and Safety Program that was in place within the Department of Transportation and

Public Works at the time of the accident in 2003.

#### OCCUPATIONAL HEALTH AND SAFETY PROGRAM WITHIN DTPW

In 1996 the government of Nova Scotia introduced changes to the existing legislation requiring government departments to implement policies and procedures in the area of Occupational Health and Safety (OHS). Nova Scotia's Department of Transportation and Public Works (DTPW) responded by introducing a formalized OHS Program in 1997.

This Program underwent revision in 2000 and resulted in the production of a Manual, Volumes 1 and 2, which were entered into evidence as exhibits P-43 and P-44. Volume 1 contains DTPW's policies and program elements while volume 2 contains the various safe work practices and job procedures for DTPW operations. These revisions were undertaken in an attempt to standardize practices and procedures throughout the province.

The revision of the OHS Program which took place in 2000 was overseen by the Manager of OHS at DTPW who was also responsible for the further development of the program.

DTPW employs not only a Manager of OHS but also 2 occupational health nurses and an occupational hygienist. The OHS office is a corporate group which is part of the head office of DTPW. Their role is to provide technical support and assistance to line divisions, to further develop the OH&S program within the Department and to implement and administer some of the policies and programs.

DTPW also employs 4 individuals throughout the province in the position of safety and loss control specialist. These 4 people supplement the head office

OHS personnel by working more closely with local managers and supervisors as well as work teams and Joint Occupational Health and Safety Committees on OHS issues.

DTPW, like many other large employers, is required to have Joint Occupational Health and Safety Committees (JOHS committees) comprised of representatives from the unions and management. These committees deal with OHS issues and concerns and assist in ensuring the program is being adhered to as outlined in the departmental policy. These

committees meet regularly and produce minutes which are submitted to management for informational purposes only.

The OHS Program as it exists within DTPW has an audit and evaluation component which consists of annual internal audits and an external audit which occurs in every third year. The audit tool employed is one that has been approved by both the NS Construction Safety Association (NSCSA) as well as the Department of Environment and Labor (DEL).

In 2000 DTPW recognized the need to upgrade and standardize the training programs it delivered to its workers and the documentation of such programs. Thus in 2002 they set about reviewing existing training programs and developing a generic training template that could be utilized in all training programs. The new training programs were to incorporate all SWPs and job procedures identified for the tasks which were being covered in the training programs. 2004 saw another revision of the program, new Manuals, and further effort to educate departmental personnel.

The OHS Program at DTPW also contemplated the use of hazard assessments. These are used to identify hazards which may exist in the workplace and identify ways in which the hazard can be eliminated or controlled.

## THE WORK ENVIRONMENT AT THE FERRY SITE

### (a) Geographic Location & Environmental Conditions

The Englishtown ferry site is located in Victoria County on Cape Breton Island in the Province of Nova Scotia. The ferry runs between the small rural communities of Englishtown and Jersey Cove. The Englishtown ferry typically ferries local traffic and emergency vehicles, such as fire, ambulance and police. There is an alternate route available by land, however it adds approximately 20-25 minutes to the travel time. There are about 253,000 vehicle crossings per year (many of course being the same vehicle crossing multiple times). A DTPW official said that the number one year was closer to 280,000. In winter the figure would be 200 to 300 per day.

The ferry itself, named the Angus MacAskill, is a cable ferry which crosses approximately 600 feet of ocean water at the entrance to St. Ann's Bay. The current in that area is very strong and has been known on occasion to reach 15 knots. The typical current however, is in the 3 to 7 knot range. The channel through which the ferry travels is approximately 90 feet deep.

The ferry is 80 feet long and 35 feet across. Its loading ramps, one on either end of the vessel, are 16 feet wide. It has a capacity of up to 15 cars and is pulled across the harbour with internal diesel power acting on a steel cable that stretches from one shore to the other. The cable emerges from an anchor on shore through a slot in the centre of the concrete ramp, runs along the ramp (or "pad"), passes through the hull, winds around two internal traction drums, exits the other side and runs up into a similar anchor on the other side.

The pads themselves are constructed of concrete with steel rebar in a grid pattern. They are 68 feet wide and 150 feet long. Approximately 20 to 30 feet of the pad is under water at low tide, about 40 to 50 feet of it is under water at high tide. The pad is level at the top and then slopes at a 13% grade down to and beneath the water. At this point it drops off at 90 degrees to the bottom of the bay, a vertical distance of about 10 feet.

At one time there were wear strips constructed of steel "I-beams" imbedded in the concrete. These wear strips were removed in the fall of 2000 when the pads underwent extensive repairs.

In winter that area of Cape Breton receives heavy snowfall and the strong tides often bring large ice floes into the channel. These ice floes can impede the travel of the ferry through the channel and have a tendency to wash up on the ferry pads thus making it difficult if not impossible for the ferry to dock.

(b) The duties and/or responsibilities of Ferry Operators prior to 2000

DTPW operates 4 cable ferries, 2 self-propelled ferries and 1 ocean-going ferry in the Province of Nova Scotia. Responsibility for the 7 ferry operations in the Province fell within the job description of the Manager, Finance and Administration, Fleet Management which is based out of the DTPW offices located at Miller Lake. At each individual ferry site there is a captain-in-charge who is the supervisor or manager on site and who is

responsible for the day to day operations of the ferry.

The captain-in-charge supervises the other ferry employees which include the shift captains, the engineers and the pursers. The Englishtown Ferry is a 24/7 operation. The shifts at the Englishtown Ferry are either 8 hour shifts or 12 hour shifts, with either 2 or 3 people working, depending on the time of the year. From November to May there are 2 people working 12 hour shifts. Each shift is led by a shift captain. Often there is both an engineer and a purser on the ferry. During 12 hour shifts in the slower times of the year the job of engineer and purser is combined and performed by one individual who is identified as a purser-engineer. Donald LeBlanc was working such a shift in February of 2003.

As previously noted the shift captain is in charge of the operation of the ferry during his/her shift. He/she reports to the captain-in-charge of the ferry site who oversees the entire operation at Englishtown. The shift captain is responsible for operating the ferry and has the authority to make operational decisions such as shutting the ferry down due to weather conditions or mechanical problems. He/she is also expected to maintain a captains's log book which records things such as weather conditions and tides.

The engineer on shift is responsible for the mechanical workings of the ferry including the engine, pumps, hydraulics and fire equipment. The engineer maintains these systems and performs basic service such as grease jobs. The engineer is also responsible for maintaining a log book which is expected to indicate what maintenance has been carried out during the shift and any problems noted.

The purser's responsibilities involve the collection of fares, issuing of tickets and the direction of traffic both on and off the ferry. The purser is required to maintain crossing logs and shift reports which indicate how many crossings have been made during the shift and how much money has been collected.



Having just borrowed so freely from the work of Inquiry counsel, this may be an appropriate place to acknowledge the effort and care they exhibited in presenting the evidence, and also to express my appreciation for the thoughtful and constructive approach brought to bear by all counsel, for all the parties, in their questioning and in their submissions.

Before the hearings began, Inquiry counsel proposed a procedure to provide guidance for everyone in preparing for and conducting the Inquiry. This was developed and circulated to all interested parties and their counsel. These procedural rules may be found in Appendix A.

For the sake of completeness the exhibit list is also attached, as Appendix B.

## PART I

## MANNER, CAUSE AND CIRCUMSTANCES OF THE DEATH

Donald LeBlanc died of drowning at approximately 8:35 on the morning of February 8<sup>th</sup>, 2003. By the time his body was recovered, some six months later, an autopsy was unable to determine anything about his physical state or the possibility of some physical event at the time of death.

Fellow workers noticed nothing unusual and he made no complaints of feeling unwell before he began to use the tractor. Although the tractor became completely submerged, Mr. LeBlanc managed to extricate himself from the enclosed cab, surface, holler to his crew mate for help, and swim a short distance before succumbing.

A letter from Mr. LeBlanc's family doctor, tendered in evidence before the Inquiry, said that he had recovered fully from a heart valve replacement operation in 1997. It goes on to say:

Mr LeBlanc was seen last in my office November 24<sup>th</sup>, 2002 . . . He was feeling well with no shortness of breath or chest pain. His only complaint was mild reflux or heartburn. In addition, his mood was excellent, no anxiety as he was now working steady and much better able to provide financial stability for his wife and 2 young children.

The Days Preceding February 8<sup>th</sup>, 2003

The tractor used to clear ice and snow at the ferry site was a Case/International 684 with a front bucket and rear blade attachment. It was serviced from the DTPW depot in Baddeck.

On January 21<sup>st</sup>, Mr. LeBlanc used the tractor for about 2 hours.

On January 28<sup>th</sup> John MacLeod, a mobile service mechanic, was sent to check on the tractor because it wouldn't start. He found that water and ice were keeping fuel from going to the engine. He cleaned and re-installed the filters, got it up and running and ordered new ones.

On February 2<sup>nd</sup> one of the employees noticed that the brakes were "spongy." He wrote this up in the pre/post trip records which stayed with the tractor, and in the engineer's log which stayed on the Ferry. On the 4<sup>th</sup> Nelson Edge, the captain-in-charge at the site, noted in his personal diary that he had been informed about this and had called out a mechanic. He testified that in the interim the tractor was put out of service.

John MacLeod returned to the site on the 5<sup>th</sup>. He installed new filters as a follow-up to his earlier visit, and then proceeded to test the brakes. He felt there was air in the system, and confirmed this by attaching clear hoses and watching for bubbles. The brakes and steering were both part of "one system" - a hydraulic system independent of the engine - and thus functioned whether the engine was running or not. He bled the air out and did another visual test, in general accordance with the manufacturer's instructions. The captain on duty mentioned that the transmission fluid was down, so this was checked and corrected, as was a small leak in the hydraulic control for the bucket. In normal use the left and right pedals are locked together so that they operate as one. Mr. MacLeod tested both left and right sides by taking the tractor out on the pad, setting it in motion down the ramp, and applying the pedals separately. He was satisfied that the brakes were working properly when he left. Nelson Edge tried the tractor out within the next day or two and found that "the brakes worked fine."

The engineer's and captain's logs for the 6<sup>th</sup> and 7<sup>th</sup> point to nothing remarkable. They note some minor problems and conditions concerning the ferry and washrooms. The "usual chores" were done. One of the items to be checked on the Thursday night shift, according to the maintenance schedule, was the life saving equipment, including the life rings. These can accumulate ice from freezing spray, as other parts of the ferry do. For instance, on January 22<sup>nd</sup> Alice MacInnis noted in the log that she had to clean ice off both ramps - ice which had built up from high winds and spray. Nelson Edge was sure the crew would have noticed icing-over problems on the night of the 5<sup>th</sup> had there been any. Nelson Edge worked a shift on the 7<sup>th</sup>. He said if there had been any problem with the life rings then he definitely would have noticed.

### The Events of February 8<sup>th</sup>, 2003

The day he died Mr. LeBlanc had begun a 6:00 am to 6:00 pm shift with Alice MacInnis, he as shift captain. There had been bad weather the night before.

Alice MacInnis had worked the day-shift with Nelson Edge on the 7<sup>th</sup>. Hearing the weather forecast she decided to return that same evening and sleep in the on-site trailer so as not to miss her shift on the 8<sup>th</sup>. Nelson Edge, as supervisor of the Englishtown ferry operation, mindful of the weather, phoned Mr. LeBlanc on the 7<sup>th</sup> in the evening offering to take his shift should he not want to attempt the drive in. Mr. LeBlanc decided that he would do his shift.

The snow and wind started up after midnight. The tractor and the ferry were both operated overnight. Mr. LeBlanc / Alice MacInnis were relieving Glenn Christie / Kerr MacAskill on the 6:00 pm to 6:00 am shift. These pairs had worked together many times before.

Glenn Christie used the tractor at 12:45 am. He gave it a pre-trip inspection, tested the brakes on the incline of the pad, and cleared snow from the Englishtown side. Later, around 4:00 am, it began to snow heavily and Glenn Christie cleared the snow on that side a second time. He next took the tractor aboard the ferry where he swiped the deck, the accumulation being shoveled into the bucket, the tractor backed off, and the snow dumped. They then took the tractor across to the Jersey Cove side to clear that approach. This all took about 30 to 40 minutes, after which Glenn Christie parked the tractor and checked its fluid levels.

It would appear that the usual practice of Glenn Christie / Kerr MacAskill was to have the ferry on shore when the tractor was clearing, or backed off only a few feet with the loading ramp in a horizontal position. However, as one put it, "it was not carved in stone". One of the two would clear the slope of the pad by backing down to the water, lowering the blade on the rear of the tractor, dragging snow up to the top of the pad, then pushing it off to one side. The other would go forwards, using the front bucket to push snow down the incline and into the water. The latter method was more commonly used by those who had cleared the pad over the years.

Alice MacInnis relieved Glenn Christie at about 5:20. Kerr MacAskill left at 6:00, upon the arrival of Mr. LeBlanc. Arriving just after 6:00 am, he described the drive as "terrible". He was disappointed that there was no place open to get a coffee en route.

Just before leaving Kerr MacAskill used the tractor to clear a small area where employees' cars were parked. Neither he nor Glenn Christie noticed anything unusual about the operation or condition of the tractor. The pad was clear when they left.

There was very little traffic that morning. One car crossed from Jersey Cove around 8:00 am. It had difficulty getting up the ramp on the Englishtown side. Mr. LeBlanc and Alice MacInnis decided that the pad should be cleared of the 3 to 4 inches of snow which had come down since they began their shift. Mr. LeBlanc was the only one of the two tasked with operating the tractor. Whenever he did, Alice MacInnis took the controls of the ferry. Though not a shift captain *per se* it was a common practice for the purser/engineers to move the ferry under the captain's direction from time to time.

And so it was the Mr. LeBlanc set out to clear the pad - the third time in an eight hour period. He told Alice MacInnis that he was going to plow the Jersey Cove side as well.

The following description of what ensued is taken largely from the evidence of the sole witness, Alice MacInnis. Her honest attempt to recollect the events is mistaken in at least one respect, noted later. As with the evidence of many who have experienced a traumatic event, it is unrealistic to expect unflinching accuracy.

Mr. LeBlanc went to the tractor and spent about 15 minutes doing the usual checks on it. Alice MacInnis stayed in the wheelhouse so that she could move the ferry according to his directions. Mr. LeBlanc began to plow in the area of the office trailer. He then went to the east side of the pad and did a couple of sweeps there. The boat was 20 to 30 feet out from shore. There was a phone in the wheelhouse, and Mr. LeBlanc had a cellphone. In the past they had communicated in this way if the need arose. There were no cars waiting on either side.

After 10 or 15 minutes of operation, Mr. LeBlanc stopped the tractor in front of a yellow bollard at the top of the incline. Alice MacInnis recalls that his left arm dropped. She recalls that he beckoned her to come in to shore - "he waved with his right arm to come and get him". She thought for a moment that he may have wanted to go over to the Jersey Cove side. The tractor was on the east side of the pad. Alice MacInnis said the ferry and the tractor were more or less "lined up". The ramp was partly down so that she could see him. As she began to move the ferry towards shore, the tractor started down towards the water at a faster rate of speed than she was used to seeing.

The ferry would not respond quickly when powered. Six feet per second is about as fast as it would go, less in a strong current. The tractor, with Mr. LeBlanc in the cab, rolled straight down the incline and into the water. It disappeared from Alice MacInnis's line of sight once it went below the level of the ramp. She did not see any attempt on his part to get out before disappearing from view.

Alice MacInnis continued to shore and lowered the ramp. She ran down on deck and peered over the bulwark. The tractor had disappeared. She heard a scraping sound from under the boat. She went to the other side of the ferry and grabbed a life ring. A few seconds later Mr. LeBlanc surfaced. He was not wearing any type of flotation device or life jacket. She threw the life ring but it did not reach the spot where Mr. LeBlanc was, about 20 to 25 feet away. He yelled to Alice MacInnis to save him. He flailed with his arms in a swimming sort of motion, but the tide was taking him in towards the Bay, away from the ferry, parallel to the shore.

Alice MacInnis ran to other life rings. The attached ropes were "frozen". She kicked one off and threw it, but the rope became tangled over the side. It is highly unlikely she would have been able to reach him with it even if it had been free of ice. Mr. LeBlanc continued to yell for help as she tried to untangle the rope. When next Alice MacInnis looked up, he was gone from sight.

If the tide was moving in at 2 kph, a fairly conservative estimate, Mr. LeBlanc would have drifted beyond the reach that a lifebuoy could be thrown within 18 seconds.

The water into which Mr. LeBlanc plunged was -1.4 degrees Celsius. There is a physiological response to cold water immersion. Put very simply, there is an initial "gasp" reaction which is unavoidable and often results in taking water into the lungs. This alone may lead to drowning within the first 3 to 5 minutes. The heart rate rises sharply. Ventilation increases so that if waves are splashing over the face, it is difficult to avoid aspiration of water. Within 15 minutes frigid water has a marked effect on one's ability to swim or use the hands. Even grasping a life ring becomes impossible. Hypothermia becomes life-threatening after 30 minutes.

Looking at the account of Alice MacInnis and the other available evidence, both Dr. Brooks and Thomas Kearsey concluded that Mr. LeBlanc drowned because of cold water shock. Death likely occurred in less than 5 minutes.

Mr. Kearsey postulates that Mr. LeBlanc got out before the tractor became fully submerged. Others believe it is more likely that he got the door open after submersion, once the cab filled with water. Until it did, the pressure from outside would have been enormous. They point to a cracked door glass as evidence of attempts to force it open.

Alice MacInnis ran to the phone and called Nelson Edge, who lived alongside the ferry site. He was there very quickly, likely within a minute. He noticed Alice MacInnis on the deck of the ferry preparing to re-throw a life ring. She was distraught, but managed to tell him what had happened. He could see the tractor below the water on the west side of the Ferry. It was at the very end of the pad just where it "dropped off". The front bucket was facing the shore, "hung up" on the edge. The yellow revolving light on top was still going. There was no sign of Mr. LeBlanc.

At first Nelson Edge thought Mr. LeBlanc might still be trapped in the tractor. He called 911. He told the dispatcher he wanted a dive team. He instructed Alice MacInnis to activate the lights at the highway which signaled that the Ferry was out of operation. He told her to stop any traffic which might approach in order that the tracks left in the snow would not be obscured.

Nelson Edge got a fuller account of what had happened from Alice MacInnis. He scanned the water and shore with binoculars. Still there was

no sign of Mr. LeBlanc. He took steps to preserve the scene, and later took photographs of the tire tracks with a disposable camera kept on the ferry. Other investigators did the same, and these were subsequently examined by forensic experts, as was the tractor.

The person who trained Mr. LeBlanc in the use of the tractor some two years earlier said that he preferred, at least at that time, to clear the snow by backing down the ramp and dragging the snow up with the rear blade. Nelson Edge remembers Mr. LeBlanc doing it this way. Another worker recalled seeing Mr. LeBlanc plowing snow according to this method. Alice MacInnis had worked with Mr. LeBlanc many times before. She had seen him plow about a dozen times. She thought that his usual method was to drive forwards, pushing the snow down the incline with the bucket. When someone used this method, the person on the ferry would take it out a certain distance to allow room for the tractor to push the snow or ice into the water. She recalls that Mr. LeBlanc would tell her to take it out "a boat length".

Alice MacInnis says that the tractor was moving forwards as it moved down the incline toward the water. She told this to an RCMP officer that very morning. She told this to the Inquiry. She believes that she observed Mr. LeBlanc through the tractor's windshield - that he was facing towards the front of the machine. If true, the tractor would have entered the water bucket first, the smaller and narrower front wheels would have preceded the larger rear wheels, and Mr. LeBlanc would have had the controls of the tractor in front of him.

The clear impressions left in the snow by the tires of the tractor show that it went backwards down the pad, and in a nearly straight line. The larger rear wheels were followed by the narrower front wheels. The expert evidence on this point is unequivocal. Alice MacInnis's belief on this point is mistaken. It is a textbook example of an honest but mistaken witness.

If the tractor rolled down backwards, and yet Alice MacInnis saw him face-on, he must have been turned around in his seat, as one would expect an operator to be if he were going to back up.

The expert witnesses also concluded, as do I, that there was no braking of



the tractor during its trajectory towards the water. Braking above the water line would have been evident in the impressions left in the snow. Any significant application of the brake would have created some disturbance of the pattern. It is possible, but not likely, that there was some ice under the snow. As a rule the pad was well-salted. Be that as it may, examination of the tread marks showed no sign of normal braking, nor any attempt to perform a panic stop using either the front bucket or the rear blade.

There certainly was no ice on the pad below the edge of the water. The wheels of the tractor, after entering the water, would have had good contact with the concrete pad. Hence, even after the wheels of the tractor entered the water, braking would have been possible. The water itself would have offered resistance and slowed down the tractor somewhat. No physical examination was done, indeed none may have been possible, for evidence of braking on this underwater section of the concrete pad.

Estimates of the distance from the water's edge to the end of the pad at the time of the incident vary. The waterline on the pad changes with the tide. Allison Tupper thought it was at least 30 feet. At the end of the pad is a 10 foot drop to the harbour bottom. This is where the tractor ended up, rear wheels on the bottom, front bucket hung up on the edge of the pad. Given the distance that the tractor traveled through the water before tipping over the end, it is reasonable to infer that there was no braking of the tractor either before or after it entered the water. Since the brakes were hydraulically operated within a closed system, immersion in water would not have affected them at all. They would have locked up the wheels either in or out of the water.

Moving from distance to time, the Inquiry heard evidence of reaction time and travel time. If the tractor had been powered down the slope, in gear, it would maintain a slower speed than if it were out of gear in a free roll. In the latter scenario, the more plausible one, the tractor would have picked up speed as it descended. Mr. Tupper estimated that Mr. LeBlanc would thus have had 7 to 8 seconds from the time he started rolling until he reached the water, and an additional 5 to 10 seconds after entering the water (but before the machine dropped off the end of the pad) to react to what was happening. He said that typically the time it takes a driver of a car (and by extension the operator of a tractor) to perceive and react to a

complex but unexpected event is 3 to 5 seconds.

The brakes were configured to be applied with the right foot, as in a standard automobile. Mr. LeBlanc displayed both physical capability and a strong survival instinct by extricating himself from the cab, surfacing and calling for help. Hitting the brakes was described as "a simple, inflexive action to a conscious, thinking driver", yet it appears he did not do so. Neither was there any steering away. The machine was mechanically sound. Mr. LeBlanc would have employed all its usual features in the plowing he did at the top of the pad. In the words of Mr. Tupper, this aspect is "deeply puzzling".

The tractor's park brake acted mechanically. Evidence suggests that Mr. LeBlanc might have stopped (or at least slowed) his progress down the ramp by engaging it, provided there were no power going to the wheels at the same time. Yet it appears, from the foregoing account and later examination of the tractor, that he did not.

It seems clear that the tide, moving as it was from the sea into the Bay, moved the tractor laterally on the pad after it became submerged. Given the height of the tractor, the depth of the Ferry and cable, and the description of events, this lateral movement likely occurred while the machine was "hung up" over the edge of the pad. The noise Alice MacInnis heard may have been the tractor making contact with the Ferry, though one is left to wonder whether it was the sound of the tractor scraping the pad which she heard. It could have been one or the other. No analysis was done for paint scrapings on either the Ferry or tractor.

Chains for the tractor were available on site and the employees who operated it had been shown how to install them on the wheels. This was not an easy task, but could be accomplished by one person, and somewhat more readily by two. Glenn Christie and Kerr MacAskill said they saw no reason to deploy the chains. The rubber treads were in good shape, the tires were weighted with calcium chloride solution to make them heavier, and it had power to all four wheels. Expert evidence supported the view that using chains on this machine, at this site, under the conditions which prevailed on the day in question would not necessarily have been safer or more effective, and indeed may have been less so.

As the tractor was lifted from its resting place at the end of the pad and lowered onto the deck of the ferry, it appears the arms to the rear blade were broken. A fireman shut off the ignition as a precaution. Otherwise, when the tractor was examined two days later it was in the same physical and mechanical condition as it was when extracted from the water.

Mechanics determined that the main transmission was in second gear and the range selector was in neutral. The machine would "roll away" on a slope in this configuration. Another expert concluded, however, that the fact it was found in neutral after-the-fact does not necessarily mean that it was in neutral when it went into the water. Mr. LeBlanc, in his efforts to escape from the close confines of the cabin, might easily have knocked the lever into neutral if the engine was at idle or not running at all. It does *not* seem that he could have inadvertently knocked the transmission *into* second gear in this way. I will return to this mechanical examination later.

If the tractor's range selector was in neutral, and the tractor was thus in a free roll down the incline, pulling the engine stop switch (which shuts off fuel to the engine) would not bring it to a stop.

On the question whether the engine was running at the time it became submerged, the Inquiry has heard a divergence of opinion. Because water is incompressible, entry through the manifold and into the cylinders of a diesel engine could damage the pistons if the engine were running. Damage is a virtual certainty if the engine is revving high when the water comes in. At idle speed, some have suggested, the engine might stall before the rods bend. The best that can be said is that the engine was probably not running as of the moment the tractor entered the water, though it is possible it was running at a low idle (appx 500 rpm's). Nelson Edge said that there was no reason to set the throttle any higher than idle for the work they were doing. He had never seen the tractor set at anything else. In any case, as noted above, the brakes would have been fully operational whether the engine was running or not.

Mr. LeBlanc's wife, Sherry LeBlanc, arrived on scene late in the morning of February 8<sup>th</sup>, shortly after Mr. LeBlanc's brother Sandy. She told Nelson Edge that she had been speaking with her husband earlier that morning on his cell phone. He had mentioned the weather and the conditions at the

ferry. She spoke to an RCMP officer later that day and again referred to this phone call, though saying nothing more of its contents. In the long time since, she has not disclosed anything else about this call. She was invited to testify at the Inquiry but chose not to, and no steps were taken to compel her to appear and testify. One is left to assume that this call dealt with private matters or matters unrelated to the tragic events which followed shortly after they spoke.

Six months later, when Mr. LeBlanc was found, the cell phone was still buttoned in the left chest pocket of his jacket.

## INVESTIGATION / CONDITION OF THE TRACTOR

The Inquiry was not mandated to evaluate the investigative measures undertaken after Donald LeBlanc's death. I will include only a brief account of these steps, including the subsequent examination of the tractor.

The RCMP soon concluded that this was not a matter for a criminal investigation. Some statements were taken, the dive team called, and some coordination provided, but by the time the tractor was lifted out of the water the day following the drowning, any investigation into possible wrongdoing was taken over by DEL.

Vince Garnier, at the time Regional Manager for Cape Breton for the Occupational Health and Safety Division of DEL, was notified of the incident at 11:30 am on the 8<sup>th</sup>. He arrived around 1:00 pm. Two DEL safety officers arrived somewhat later. They were responsible for investigating potential infractions under OHS legislation. While at first they took a back seat to the RCMP, they nevertheless examined the scene, met with certain ferry workers and DTPW officials, and took custody of documentation such as safety notices, logs, inspection records, JOHS committee minutes, etc.

Bruce Langille is a risk manager for DTPW. He arrived at 3:30 pm on the 8<sup>th</sup>. His responsibilities to the Department included risk analysis and claims management. The incident occurred on DTPW property. The concern which brought him to Englishtown was the possible liability of

DTPW or its employees. He considered his investigation parallel to DEL's, although when their paths crossed, it appears he relented, if reluctantly. He did not take any statements from employees, nor seize any documentation, until DEL had first gotten what it wanted.

DEL and DTPW officials were both intensely interested in the condition of the tractor. They suspected that some mechanical malfunction may have contributed to what had happened. Although the DTPW people felt the tractor should have been taken to a Case dealer or to one of their own garages for inspection, DEL asserted its authority and decided to take it to a garage in Sydney. Detailed photos were taken of the inside of the cab before it left the ferry. Consideration was given to the condition of the life rings at the time of the incident, the results of the subsequent examination of the tractor, the training given to Donald LeBlanc, what OHS measures had been taken previously, and other aspects of the case. The lack of a personal flotation device was noted, and existing regulations consulted. The first DEL officers recommended no prosecution. A subsequent re-investigation by a different officer reached the same conclusion.

The tractor was taken to Robbie's Truck Repair in Sydney and secured. It was inspected on the 10<sup>th</sup> by two of their mechanics in the presence of a DEL officer, DTPW officials and mechanics, and a union representative. Aside from the cracked window in the door to the cab, the only damage noted was the broken arm on the rear blade. It is almost certain that this occurred after the tractor became submerged, either when it slipped off the end of the pad, or when it was lowered onto the deck of the ferry. The main transmission shift was found to be in second gear. The auxiliary shift, or range selector, was found to be in neutral. The two side-by-side brake pedals, one for the right wheels and one for the left, were joined together as they were meant to be under normal use. This is to say that they effectively worked as one pedal. The 4 wheel drive selector was engaged; the parking brake was not. The throttle was set at a low idle. The engine "kill switch" was not pulled out to where it would shut down fuel to the engine. Some of these points were confirmed by an expert witness at the Inquiry who viewed the video and still photos taken on the 8<sup>th</sup>.

Water had entered the oil system which serviced the engine and transmission together, and so it had to be drained. When it was re-filled

the engine started up and it ran smoothly. The transmission was fine. The tires were in good shape. The vehicle was taken out into the yard. The hydraulic braking system was "closed" and did not need to be drained. The brakes were tested by Reid's mechanics and were deemed sound. John MacLeod, the DTPW mechanic, was then given permission to test the brakes. He was relieved to find that they were working as they had been when he fixed and tested them on the 5th.

Another person called to the scene was Arnold Baxendale, a Safety and Loss Control Specialist within DTPW. This position serves as a resource to management and employees on OHS matters. He had participated in meetings of the JOHS committee for the Englishtown Ferry. He did not function as an investigator *per se* but on February 13<sup>th</sup> he was named to an investigative committee set up by and within DTPW. Its purpose was to examine the cause of the fatality and make recommendations for improving safety. Such an approach was called for by the governing legislation and the Department's own safety policy. Besides Arnold Baxendale, it was comprised of two union representatives and two management representatives, one of whom was Nelson Edge. Others in the Department were specifically tasked to act as resource persons to the committee.

The investigative committee was directed not to find fault, but rather to look for underlying causes and system failures, with a view to improvements which would prevent recurrence in the future. To this extent the mandate of the committee was similar to this Inquiry's. It functioned independently of the DEL investigation, but anything it found was to be made available to DEL. It was instructed not to interfere with any other investigation. For example, it withheld interviewing certain witnesses until DEL had done so. It reviewed its progress with the JOHS committee. Nobody in DTPW interfered with what they did. The members worked five days a week for a month and a half and generated a number of pertinent recommendations, many of which have been implemented. Dr. Fleming said that many organizations would not have responded so readily. He termed DTPW's efforts to prevent recurrence "commendable".

One thing the investigative committee did was request further testing of the tractor, which had been released by DEL back to DTPW. Sandy Jardine test drove the tractor at DTPW's Sydney River depot. Further testing was

done in late February at Miller Lake, DTPW's central mechanical facility, by Don Currie. He drove backwards and forwards through snow to test the tread patterns left behind. He tested various stopping procedures on a slope roughly equivalent to the pad at the Ferry. He tested stopping in various gears, at various speeds, with the engine running and not running. In all situations he found that the application of the foot brake served to stop the tractor and lock the rear wheels. He also found that an emergency stop procedure using the front bucket halted the vehicle in 30 to 40 feet. The brakes being a closed hydraulic system, they functioned equally well whether the engine was running or not. He found that the tractor could be steered while in motion with the engine off. He tested the "kill switch" and found that it could be readily pulled out and that it did stop the engine by cutting the fuel, as it was designed to do.

Dr. Leslie Russell was engaged by DTPW in March of 2003 to confirm the direction of travel, and later to do a full report. He also testified at the Inquiry. Another expert, Allison Tupper, was engaged by Inquiry counsel in 2005. He was able to examine an identical "sister" tractor, the original having been disposed of by the time the Inquiry was called. Each of these engineers had access to all records, photos, statements and results of previous investigations. Anything they were able to conclude, and things that could not be determined, have been referenced in the section dealing with the manner and cause of death. I only wish to note here that one of them expressed some regret that certain steps and certain precautions were not taken in the hours and days following the incident with respect to the physical evidence. They would have wished to see a metallurgical examination of the broken arm on the rear assembly to determine whether it had an existing crack, an analysis of the engine oil, a more definitive look at the position of the levers, a closer examination of the machine for scrape marks and of the Ferry and pad for any paint which might help trace the movement of the tractor under the Ferry. As noted above, this Inquiry is not mandated to evaluate the investigation, and it is well to remember that the responders to this crisis were focused on rescue and recovery. I think it is highly improbable that these steps, had they been taken, would have provided answers to the questions that still remain. I note them as matters of general interest and potential importance to those responsible for preserving evidence in such situations.

## PART II

Preface

In this and succeeding sections of the report I will not go into the same detail about the bases upon which observations are made or conclusions drawn. I heard extensive evidence, over many days, on occupational health and safety matters as they relate to this worksite and this incident, and the commentary which follows is based upon a consideration of all the evidence heard at the Inquiry. In a general sense these issues are not amenable to distinct "findings" or black and white conclusions. With many of the concerns which arise there is no obvious right and wrong - there is better or worse, safe or safer, dangerous or less dangerous. .

In an obvious way Mr. LeBlanc was not functioning in a "safe environment." He died in the performance of his duties. Even if some medical condition contributed to his going in the water (which is pure speculation) the mere presence of the water and the need to operate such equipment were environmental conditions creating risks in the face of untoward events. There were risks attendant upon any snow and ice clearing operation at this site. Some things were done to reduce these. More could have been done, and some things could have been done better. The death of Mr. LeBlanc has prompted changes at the site, and more broadly within DTPW, already.

I wish to emphasize again that this Inquiry is not a blame-seeking exercise. One might read the first part of this report and come away thinking that if there is any "fault" it rests with Mr. LeBlanc. But I do not think this would be either fair or productive. One might read the second part, or the evidence or reports upon which it rests, and come away thinking that this person or that is to blame for this thing or that. However it is well to bear in mind the following comment of Dr. Mark Fleming, Director of the CN Center for Occupational Health and Safety at St. Mary's University :

Although the actions or inactions of individuals directly involved may be proximate causes of accidents, the underlying causes are usually systemic failures. It is often tempting to blame those directly



involved . . . For this reason the victim is often the person to be blamed for the accident. Unfortunately blaming individuals is not an effective method for preventing future accidents, as it is very likely that another person in the same situation would have behaved in a similar way.

Having now heard the Inquiry evidence, I would go still further and say that it is not possible to lay Mr. LeBlanc's death on the doorstep of any of the systemic features or failures I am about to discuss. While there were some inadequacies in 2003 and before, I believe there is reason to be encouraged by the processes undertaken and progress made thus far, and I hope that the following commentary and recommendations will contribute to the goal of making the Englishtown ferry and other workplaces in Nova Scotia as safe as is realistically possible.

### Organization of Part II

I have organized this Part around some well-recognized principles of occupational health and safety.

A "schematic" for the job of managing risk in the workplace might look like this:

- (1) Anticipation and (2) Evaluation of workplace hazards before work starts
- (3) Control of the hazard by sequentially utilizing
  - a. Elimination
  - b. Substitution
  - c. Engineering controls
  - d. Administrative controls such as
    - (i) training
    - (ii) safe work practices and job procedures
  - e. personal protective equipment

to which may be added :

- (5) Inspections of the worksite and equipment

(6) Recognition of hazards as they arise during work

all overlaid by :

- (7) Review mechanisms such as
- a. direct supervision
  - b. ongoing monitoring within the system
  - c. formal audits

I have attempted to fit the considerable evidence heard by the Inquiry into this framework.

If I were to follow this sequence strictly, it would lead me to deal first with the issue of hazard assessments. However, I am going to defer that topic and first consider some things which might be thought of as elimination or substitution of the hazard. This should give the reader a more coherent narrative and some historical background. At the same time it will permit me to touch upon some rather sweeping suggestions as to how the hazard might be avoided altogether. I will proceed then to discuss the choice given to employees not to confront the hazard. Having considered what was done and not done, and the choices made, I will, with this background, turn to the topic of hazard assessment and thereafter to the various control and review mechanisms.

### History

The principle source of danger at this site to anyone clearing snow and ice is the water. The danger at Englishtown is particularly acute because of the strong tidal current in the channel. Anyone who has worked, fished, boated or dived in this area is well acquainted with the danger the current presents. It is erratic and unpredictable. It can sweep someone away very quickly and often makes swimming to the nearby shore a virtual impossibility. It affects the operation of the ferry, including where it is able to put in on the pad. It can be so strong as to prevent the ferry from crossing. These conditions are not found at other cable ferry locations in Nova Scotia, if anywhere in Canada.

Ice and snow accumulate on the pad and approaches to the ferry, as on any highway or parking lot. This presents both a hazard and an impediment to the traveling public. In addition, ice builds up at the water line. Slushy material forms on the surface of the bay which is washed ashore or brought ashore by the ferry itself, eventually forming an icy ridge on the pad. It can accumulate to the point where the ferry's ramp cannot be deployed, and vehicles cannot board. Lastly, there are times, especially in late winter and early spring, when larger pans of ice (the notorious "claspers" of local dialect) drift in from the ocean, sometimes piling up (or "rafting") many feet high.

Those who clear snow and ice at the ferry thus permit its continued operation and remove a potential danger to the motorists who use it. However, in doing so they themselves are confronted with the hazard that the snow, ice, and frigid, fast-moving water present.

Anyone who has not traveled in the area of St. Ann's Bay has missed one of the most attractive parts of Nova Scotia. The ferry service was established in 1975. It saves travel for those wishing to proceed from the direction of either Baddeck or Sydney to northern Cape Breton. Many still choose, at least from time to time, to take the Cabot Trail around the entire perimeter of the bay in order to enjoy its natural features and visit its establishments. Commercial vehicles, emergency vehicles and school buses make regular use of the ferry. People who reside in this part of Victoria County have come to count on the service the ferry provides.

There are times when the ferry is out of service. Each spring there is a scheduled shutdown while it undergoes refit. Occasionally mechanical problems require the ferry to stop running for some shorter period of time. More commonly ice, snow and general bad weather will interrupt the service. When this occurs, flashing lights at the junctions of the main highways advise motorists coming from either direction to choose the longer route around the bay.

The decision to put a ferry at Englishtown was based upon very broad policy considerations. From DTPW's point of view this is characterized as an "operational" decision. Any decision to close this service, either permanently or for the winter months, would have to be made on the same

bases, which are beyond the scope of this Inquiry. Elimination of the hazard (which closing the ferry would achieve) is therefore not a step I am prepared to recommend.

Neither is substitution of the water hazard an option I can realistically consider. There has been talk of a bridge (fixed or swing-type) from time to time. The capital costs would be very high. One suggestion which arose in submission before the Inquiry was to move the landing site on the Englishtown side to a less dangerous part of the shoreline. This idea (even assuming there is a less dangerous spot to land) entails a longer crossing, construction of a new approach, possible disruption of local property, etc. Again, these are options which go well beyond the business of this Inquiry.

Something which received considerable attention during the hearings was the use of private operators to clear snow and ice. Superficially this may seem to be a "substitution" of the hazard, but a moment's reflection will reveal that is actually a hand-off to someone else. In an OHS sense it might be thought of as an administrative control, and may well be part of an operational plan; however, it should be recognized that contracting-out amounts to a transference of OHS responsibilities to someone else. The hazards remain. That being said, the use of private sector operators was once the norm. Why did this change? I will begin by briefly relating the experience of three of them.

Angus MacAskill was one of the first to clear snow and ice from the ferry site. He did it for about 10 years beginning in 1977. He would be called out as needed. This might be three times in a day, some weeks not at all. He used a 2WD farm tractor with a blade. Later he added a snowblower attachment though it wasn't much use on the slope where the application of salt made the snow wet and heavy. He plowed forward, which is to say that he pushed the snow down the pad towards and into the water where it washed away. Occasionally he might have to back down to move a piece of ice, or when the cable was in a certain position. He said the water was not a great concern, though he "was watching it all the time." He preferred the ferry to be off 30 or 40 feet. He would go out into the water until it was up a foot or more on the front wheels. He would do a simple survey of the site when he arrived and make sure his machine was working properly. Other than that he could not suggest any particular method or offer any

advice other than to exercise caution. At the same time, he recognized that experience was important. He spent about 350 hours per year on his tractor. He was not "on call" just to the ferry; he did other snow clearing besides.

Nelson Edge, later to become captain-in-charge of the Englishtown ferry, cleared snow from the early 80's until 1991. He used a 2WD tractor with either a blade or bucket on front. He too would push off ice until it floated away. Other than ensuring his machine was in good shape, he did not follow any set procedure. His safety measures came intuitively, having used a tractor from the age of 10.

Kyle Jardine was an excavating contractor who was retained to do snow and ice removal at the ferry from 1993 to 1998. He had 10-plus years experience driving heavy equipment and put about 1000 hours per year on his tractor. He estimated he would be called to ET about 15 times per winter. He did other plowing besides, spending many hours on his machine with each storm that came along. He met with the captain in charge who told him how others had done it. He used a 4WD backhoe with front bucket and a shuttle shift, a feature he valued as it eliminated the use of a clutch. He too pushed the snow down into the water, and might enter until the water was half way up his front tires. Once, at low tide, he was cautioned not to go out too far into the water because of the abrupt drop-off at the end of the pad. The ferry would be backed off 30 feet, or even at the other side, which he liked best of all (no cars likely to approach him from behind, the cable not taut and in the way). He used the hoe only occasionally, when there was thicker ice. It took Mr. Jardine about an hour to reach the site from his home.

Nelson Edge gained regular employment with the Ferry in the late 80's, becoming a captain in 1991. He remembers that in the 1990's frustration was growing at how long it would sometimes take for the private operators to get to the ferry. They were using 3 different contractors, who were not always available. He said there were times when the service would be held up for 4 or 5 hours because of a piece of ice that could be cleared away in 10 minutes. Besides this delay there was some concern that if the pad were not kept constantly clear a bus or ambulance or other such vehicle might become stuck on the pad.

### Transition

1998 saw the beginning of a process to bring a tractor to the site. In addition to snow and ice removal it would be a help with rock and gravel which occasionally accumulated on the pad. In 1999, David MacNeil, the captain in charge, with the blessing of his superiors and the assistance of Nelson Edge, "put out the question" whether anyone was interested in operating a tractor. They were told that training would be provided.

Enough employees expressed interest to make the plan feasible. While management did not consider it absolutely necessary that there be someone working at all times who was also qualified to plow, obviously the plan did not make sense unless most of the employees were willing to sign on to the idea. There was no indication from any of the witnesses at the Inquiry that the employees were pressured to take on this job. Every employee was given the choice of "opting out". Most if not all had seen the private operators do the job at one time or another and could thus envisage what the job entailed. They were told it would not affect the number of shifts they received. Witnesses said that this later proved to be the case. All this was undertaken in a unionized environment. Both CUPE and NSGEW represented workers at the site. A member of the JOHS committee recalls that it was discussed there.

Doug Smith testified that although there was a cost to hiring the private operators, DTPW didn't decide to bring the work in-house simply to save money. Bill Yarn didn't think there was any financial advantage one way or the other. Another said that plowing was, after all, part of their business.

Once a sufficient number had expressed a willingness to add this task to their existing duties, DTPW sent a 2WD tractor to the depot in Baddeck. Some training was given in March of 1999 by a Mr. Merv MacAulay. By the time this was completed the winter was over. In 2000 Nelson Edge took over from David MacNeil as captain-in-charge.

Nelson Edge was not happy with the 2WD and requested a 4WD. DTPW obliged. The tractor DLB would later operate on the 8<sup>th</sup> of February, 2003 arrived at Englishtown in December of 1999. Early in January of 2000

Nelson Edge and Sandy Jardine, a heavy equipment instructor for DTPW, met to discuss a training program.

“ . . . required of the decedent”

The Order of the Minister asks about the duties “required of the decedent.” The Occupational Health and Safety Act gives an employee the right to refuse dangerous work. I will not delve into what this might mean in a given situation, but it can be said that it does not give an employee the right to unilaterally decide to go home any time he or she feels unsafe. Appeal to the supervisor would be the first recourse, and if the matter cannot be resolved at that level, there are mechanisms in place whereby DEL may ultimately be involved. CUPE’s shop steward, and its health and safety rep, both said that at the time Mr. LeBlanc was hired “the first thing new employees were told” was the right to refuse unsafe work, and so one assumes that Mr. LeBlanc, a member of CUPE, was aware of it. With this, he decided to plow the pad that fatal day.

At the same time one must recognize that Mr. LeBlanc was not doing anything on February 8<sup>th</sup> 03 that he had not done before. No new dangers arose that morning. In all the circumstances here, it is reasonable to say that he was expected and required to do this job. He had made a general commitment to it; the snow was accumulating on the pad. It is entirely reasonable to say that as of that fatal morning it was a required duty, as the Minister’s question suggests.

Different from but related to the “right to refuse” is the fact that Mr. LeBlanc, like the other employees, was told three years earlier that he could opt out of the plowing at any time. However, to conclude that he was doing this “voluntarily” is a bit simplistic. Some of the 18 employees happened to have experience on heavy equipment of some sort. They readily signed on for this extra duty. Some without any such experience, including Mr. LeBlanc, agreed as well. Four - two men and two women - decided to opt out either at the outset or shortly after they began their training. At least one other, when canvassed in the fall of 03 about whether they should recommence plowing, said that he had never wanted to plow but felt some pressure to do it - he felt it had become “part of the job.”

It is difficult from the Inquiry evidence to know just how Mr. LeBlanc himself felt about it. We did not have the benefit of any family member's input. None of the five witnesses who were ferry workers ever heard him express a concern. One who also saw him socially from time to time said "he never expressed dissatisfaction with his job or his duties." Another, who also saw him quite regularly outside work, and who was also an employee rep on the JOHS committee, said that "the tractor was never a subject of conversation." Some people, though, keep things to themselves, especially when self-esteem is involved.

The witnesses the Inquiry heard from were in complete accord with the assertion that there was no requirement to plow against their wishes, and that no undue pressure was applied. This was so whether they were casuals or permanents, whether represented by CUPE or NSGEU. Upper management and the captain in charge supported the idea and did not penalize anyone who opted out. Nobody missed any shifts on the ferry because they could not operate the tractor.

Whether this sort of thing is a wide-spread practice is difficult to say. David Gibson said that giving employees choice of task was not unique to DTPW or Englishtown - that employees at other workplaces, public or private, may be asked whether they wish to train on a new piece of equipment. Don Currie said he could think of no other case like this one in DTPW. One might ask: is the employee being asked to "opt in" beforehand, or given the right to "opt out" after the fact? But then again, this may be like asking whether a glass is half empty or half full.

There is a clear difference of view on the wisdom of giving workers such an option. On the one hand it was seen as more pro-active and more formal than the "right to refuse" under OHS legislation, while at the same time consistent with it. On the other hand it was said that workers will accept more risk if a task is voluntary than if they are told to do it, and that for this reason it is not a good risk management technique. Some would argue that it is better, in the long run, to force employees to refuse, or go to their Union or JOHS committee.

It is impossible to know to what extent pride, or naivete, may have



influenced the decision to undertake this task. While management did not want to foist the job on anyone against their wishes, safety systems were still needed. And they should not be more or less necessary, nor more or less vigorous, depending on the subjective comfort level of the individual employee.

The question of whether a person can adequately reflect on his/her own competence is a vexing one. Self-improvement is a worthwhile goal in and of itself, and deserves encouragement. Perhaps the difficulty arises when the job the worker is asked to add to his or her repertoire is categorically different than the job he or she is used to doing. When the new task is not a natural progression from an existing one, giving a choice to do it may not be good policy. Whatever one's view of this, it seems clear that when a distinctly new task is being considered, one which entails significant risk to health, a proper hazard assessment conducted by both employees and management would better inform the choices both sides make about whether and how to proceed.

In so far as the Englishtown site itself is concerned, I think that it is time to bring an end to the opting-out feature. There is now a list of "designated competent operators," and they have been doing snow and ice removal for a number of years now. I am not suggesting that this list be "frozen". Those that do not drive the tractor still have an important role to play (see section on SWP). I am no authority on collective agreements and the Inquiry did not address those implications, but barring some such impediment I think the best practice now would be to consider snow and ice clearing as an aspect of the job, and to acknowledge that both of the on-duty crew members play a role in ensuring that it is done safely.

DTPW's position is that the status quo should be maintained. David Gibson said "we do not contract out hazards to others." Kevin Caines, while acknowledging that there will be times when they need to get a private contractor, said that in general he would be more confident knowing that the person doing the task has the training DTPW can provide. I do not think it necessary to recommend that snow clearing be returned solely to private operators or to dedicated plow operators within DTPW. But if DTPW intends to maintain this job "in-house," I would recommend that previous experience in operating mobile equipment be considered an

asset, if not a required skill, in any future hiring. Obviously anyone hired should still be put through the training program and tested. If categorizing this task as a job requirement results in too few crew members on the designated competent list, DTPW will either have to contract the work out once again, or have it done by dedicated mobile equipment operators within its own ranks.

In the immediate aftermath of February 8<sup>th</sup>, 2003, Kyle Jardine was brought in once again to plow for the remainder of the winter. Again DTPW considered whether to continue this job or revert to contracting it out. Two more employees decided to opt out (though one subsequently opted back in). There were meetings and consultations. In the end a majority felt that the job should remain with the employees. In the intervening months DTPW did many things differently than it had before in order to ensure that there was "a safe work environment for the performance of the duties." One was to do a full and proper assessment of the hazard. It is to that topic which I now turn.

## HAZARD ASSESSMENTS

In the schematic on p. 33 this topic would fall under anticipation and evaluation of workplace hazards.

The danger presented by the water was so obvious and well known that it went almost without mention. None of the private operators had ever had what they would describe as a "close call." Employees who have plowed before and since February 8<sup>th</sup>, 2003 say the same thing.

There is no instrument to measure the chances of a mishap. They may be exceedingly small. One cannot say with any degree of certainty that if such and such had been done or not done that Mr. Leblanc would be alive today.

The fact remains that Donald LeBlanc died at work. Every year in this province and elsewhere people are killed or seriously injured at their workplace. This requires of employers and employees alike that they take all reasonable steps to identify and address the dangers.

Everyone who walks down a flight of stairs does a hazard assessment of sorts. In an OHS sense, a hazard assessment is a more formal process undertaken before a task begins, before equipment and personnel are assigned to it. Clearly, the more dangerous and novel the task the greater the need for an assessment of the potential danger. Clearing ice and snow was, for many of the employees, a new and unfamiliar task using equipment they had not used before. They brought different levels of competence and confidence to the job. They had been asked, and had agreed, to perform a task which, strictly in terms of the skill required to manipulate levers and controls, was perhaps more complicated than operating the ferry. The first step which ought to be undertaken in such circumstances is a formal hazard assessment. This should then inform all subsequent steps undertaken, such as choice of equipment, training, work practices, personal protective equipment, etc.

The Occupational Health and Safety Act of Nova Scotia speaks to the need for a hazard identification system. DTPW's OHS manuals had forms for doing a hazard assessment. Senior managers said they gave a program at Englishtown in the late 90's on DTPW's newly revamped OHS manual, including a component on doing hazard assessments, though David MacNeil did not remember getting any instruction on such a thing. Nelson Edge had received a course on preparing hazard assessments from the NSCSA. The local JOHS committee had worked on the occasional one in the late 90's. Yet, for whatever reason, no formal hazard assessment was done in preparation for having the employees operate the tractor. Perhaps because DTPW routinely plowed near water the need for one here was obscured.

In the late 90's a single JOHS committee was formed for all the Eastern District ferries. The concerns of all three sites were brought here. While the Inquiry did not undertake a complete review of the work of this committee, which met bi-monthly, minutes from September 02 show that it considered specific incidents - a two-car collision on the Little Narrows ferry, the cable at Englishtown striking an employee in the leg, etc. One senior manager said that he would expect a hazard assessment to be reviewed by a JOHS committee once completed. But it is not at all clear that the JOHS committee would actually evaluate the quality of the product. Another said hazard assessments were to be done "in conjunction with" the

JOHS committee where they might undergo "peer review". Another said a person doing a hazard assessment would "consult" with the JOHS committee. Arnold Baxendale, a safety and loss specialist with DTPW, attended meetings of this committee, giving advice, acting as a resource, but said he "was not brought into the loop" on any hazard assessments done at the sites. The 2000 DTPW OHS Manual describes the JOHS function as "co-operative identification of hazards" and "co-operative auditing of compliance with safety requirements," in addition to other things. The functions are described in much the same way in the most recent 2004 Manual.

It seems the involvement of this JOHS committee, at least, in such things as a hazard assessment or a SWP was *ad hoc*. Nobody disputes that the ultimate responsibility to see that a hazard assessment is done (whatever shape it takes) resides with management. As of 2000 there was a program at DTPW which spoke of hazard assessments at some length, but the closest thing to a review of hazard assessments at Englishtown was perusal of the minutes of the JOHS committee by upper management in the Miller Lake office. Nobody remembers the JOHS committee ever requisitioning or reviewing a formal hazard assessment. For his part, Bill Yarn said that in 1999 OHS was still "getting off the ground" in response to the new Act of 1997 and there was not much general awareness of hazard assessments.

This is not to say that there was no consideration given to safety. A more suitable tractor was requisitioned. Considerable thought and effort was put into a training program. Even those who thought they didn't need instruction were given it. Nelson Edge and the trainer surveyed the site and tested the machine. They did not think about consulting a DTPW safety specialist because they knew more about the operation of the tractor than he did. It was said "we thought we were doing a more comprehensive job than a piece of paper would have accomplished." However, a formal hazard assessment - utilizing a proper template, done by a team, guided and reviewed by a safety specialist - would likely have resulted in a better and more consistent work practice later on.

Once a job is underway it can be difficult to change. Habits are formed, workers become familiar with a certain procedure, a form of inertia sets in.

How a task *is* being done can obscure how it *might* be done differently.

In December of 2001 a hazard assessment form respecting snow clearing was filled out by Nelson Edge and filed at the site. The training was completed by then. The work was already underway. There seems to have been no particular reason for this hazard assessment, other than, possibly, to have something on file to satisfy an auditor. Nobody helped Nelson Edge do it. Afterwards, nobody evaluated the assessment to see if it had been done properly. It identified the risk as low but the consequences as catastrophic. OHS experts reviewing it for the Inquiry thought that to this extent, at least, it was done correctly. Ironically Nelson Edge said that he had in mind the possibility that the tractor might accidentally back over somebody. The possibility of the tractor entering the water, while in the back of his and everybody's mind, was never articulated. Had it been, more specific safety measures would likely have been put in place, and the work environment would have been safer in this sense.

There was some "how to" information on preparing hazard assessments in DTPW's OHS manual, but it seems Nelson Edge did not reference it. A form he used, while not ideal, did provide some guidance. Nelson Edge has, by all accounts and appearances, been conscientious about his job. He took great pride in the operation. He lived next door to the ferry. What happened there was not just part of his job, it was part of his day-to-day life. He was knowledgeable, trusted by his employees, and willing to listen to any concerns they may have had about safety or other issues. Yet his individual efforts, his responsible nature, his good intentions, the instinctive knowledge he possessed, the discretion he exercised - these alone were not enough to generate a proper hazard assessment. There could hardly be better exemplification of the importance of OHS systems. In addition to being a check against the careless, they also serve to focus the efforts of responsibly-minded workers and managers.

In December of 2002 news came of a workplace fatality in Newfoundland in which a tractor had spilled over a wharf into the water. It turns out (so the Inquiry was told) that the reason for the mishap was equipment failure. However, before this was known, the incident was seen as a warning of what might happen when plowing near water. Steps were taken to draft a SWP for the task (though it was not completed before the fatality). Once

again a proper hazard assessment, done beforehand, would have been helpful.

In the fall of 2003, when the issue of plowing was revisited, the employees' concerns were understandably more acute. But after consultation and at least one general meeting, staff and management reached agreement on maintaining the work on-site rather than contracting it to private operators. Two additional employees decided to opt out; one of these later opted back in again. Those who had opted out in 2000 remained out. This operational decision having been made, the steps then taken in regard to hazard assessment and control were better conceived, better documented and better executed.

The hazard assessment was this time conducted not by one person but by a team which included a safety specialist. It was much more explicit in detailing the hazards and specified control modalities (which I will address in separate sections of the report). Still, it might be improved, according to one expert who reviewed it. He said "it seems unlikely a fatality will occur in Englishtown because of the steps taken since," but contended that the value of critiquing the hazard assessment process is not simply to fill holes in the OHS system at Englishtown - there are far fewer of those than there used to be - but for the possible instruction it might provide for other job sites, inside and outside DTPW. It is therefore noted that this second hazard assessment confuses tasks with hazards, to some degree, and does not specify a hierarchy of controls (with priority going to elimination, then substitution, then engineering, etc.). In addition the form does not prompt the assessment team to break the task down into steps and identify hazards associated with each.

I will not pretend, with only this brief exposure to OHS matters, to be an expert in hazard assessments. As David Gibson explained, a hazard assessment is an intellectual exercise that looks at the "what ifs" in distinction to an inspection which is a visual exercise that looks at "what is". A hazard assessment would look at any history - warnings, incidents, etc. It would look at the nature of the work and the people doing it. It would identify the serious hazards and assess the probability of occurrence. It would blend probability with seriousness to identify where the highest priorities lay. Lastly it would determine what action should be taken

(elimination, substitution, various controls, protective equipment, etc.).

It is not always easy to conceptualize a hazard . To take the Englishtown example, most said the hazard was "the water." Another said it was "entering the water." At first blush this seems to be a distinction without a difference. But the water is not going to suddenly swallow up someone working on the pad. It is natural to think instead "how might I end up there?" and thus turn one's mind to, say, mishandling the tractor. If a certain feature of the tractor makes it difficult to handle (say, the clutch) then what is the hazard - the clutch or the water? And if the hazard were described as "drowning" might it direct the mind to how easily one could open the doors? I may again be betraying my lack of experience in the field of OHS, but taking myself as a notional worker or supervisor embarking on a hazard assessment, it would be useful to have some guidance, something that would ensure that what needs to be thought of, is.

Some contend that one does not have to use a "form" or checklist to perform a hazard assessment. They say that while the above components should be present, some flexibility should be given, and that only comprehensive hazard assessments for a major new and clearly dangerous undertaking need be done by a team.

No one doubts that by involving a team, with multiple perspectives, one is more likely to obtain a better hazard assessment. Yet there was disagreement expressed over whether one would have expected a full-blown team-based comprehensive hazard assessment at Englishtown when the employees took on the job of plowing. One said he did not regard it as a "high hazard operation which required the assembly of a team." This seems to beg the question: how does one know whether it is high hazard without an assessment? On the other hand, no employer of this size can do a formal hazard assessment for every single one of the thousands of tasks, from simple to complicated, which are part of its operations. So how does one know how to choose which jobs should be subjected to a formal hazard assessment?

According to Dr. Fleming one way to approach this problem is to keep a safety-critical task list for each job site. The Canadian Centre for

Occupational Health and Safety suggests selecting jobs for a hazard assessment according to accident frequency, for newly established jobs, and modified jobs. For the latter, one assumes they mean a significant modification, though this again begs the question of who decides what modifications are significant.

Another suggestion is that someone who has access to the purse strings should be part of the hazard assessment team. Obviously the front-line supervisors and workers should be members, but control mechanisms require expenditures. Without such input, it is argued, the team won't feel free to recommend costly controls. What is the point of recommending an engineering control mechanism if the boss won't pay for it? Knowing the cost of controlling a hazard, the employer may decide to avoid it by substituting another method or not doing the job at all.

Whether the foregoing is practical in all cases is another matter. It is difficult to envisage how the senior levels of management in DTPW could actively participate in the number of hazard assessments which some would say are needed. In any case, it is difficult to argue with the proposition that some sort of involvement, consultation or review by a person with the power to pay for the recommended measures would assist in achieving consistency between operational objectives and safety considerations. Doug Smith, who made the final decision to bring the tractor to Englishtown, gave these three factors in increasing importance - cost, the availability of a machine, and timeliness in getting the job done. But if a hazard assessment had identified a need for a different sort of machine than the one "on offer" at the time (one, say, with a shuttle shift) DTPW could then have made a well-informed decision about whether to procure such, or to stick with the private operators and tolerate the resultant delays and minor cost.

Officials at "Miller Lake" - the DTPW office from whence the ferry operations were overseen - did not turn their minds to the need for a hazard assessment when considering whether to position a tractor at the site. From their point of view, this would be a responsibility of the supervisor on site and the local JOHS committee. They noted that they had thousands of pieces of equipment in their fleet. If a hazard assessment was done, they would not have reviewed it. This is not to say



they would not have listened to a request from the local supervisor for a specific piece of gear, and inquired into the need for it. The general concern, however, is whether a hazard assessment team might shy away from recommending a measure that requires approval from upper management - whether it will limit itself to measures and expenditures that can be handled from already-approved funds. This is the argument for involving financial decision-makers in the hazard assessment process itself.

Senior managers in DTPW used the term "hazard assessment" for both (a) comprehensive "big picture" documented team surveys and (b) one-person on-site real-time unrecorded visual checks. It would be helpful to use different terminology for these two related but distinct activities. I incline to use the term to mean the former. The latter of course is equally necessary and, one hopes and expects, is routinely done. As a job proceeds, new dangers could present themselves, yet one would not necessarily expect that with every turn in the road things grind to halt so that a written formal hazard assessment can be done. There is a natural progression to any job. Supervisors and employees alike must be constantly aware of changing conditions. There may already be accepted nomenclature in the field for (b), and if there is it ought to be used. DTPW's manuals should spell out the distinction. I note, for instance, that the current training package for the plowing operation advises employees to do a "visual hazard assessment" prior to using the machine, looking for ice, pedestrians, etc., and yet the section in which this is contained is titled "Hazard Assessment". The term "inspection" is already spoken for - it refers (according to DTPW's own manual) to tours of the workplace to determine compliance with already-established standards or controls. An inspector would thus not be considering the "what-ifs."

Discussion around this issue would benefit enormously from some clarification of terms. DTPW has begun to use the term "hazard inventory." The word "inventory" smacks more of counting than it does of evaluation, but the meaning attributed to words changes sometimes. Whatever words are employed, some well-understood distinctions are needed. Clearer language will result in clearer thinking.

In his critique of DTPW's hazard identification system Dr. Fleming focused

exclusively on the documented regime as distinct from practice, unwritten procedures, general competency, safety-consciousness, etc. Neither he nor I am in a position to pronounce judgement on the system as a whole. It certainly appears, as Dr. Fleming himself said, that DTPW's documented system generally met or exceeded industry standards. Still, as one might expect, there are ways to make it better, and with respect to hazard assessments this includes the development of a better form, i.e. one that breaks down a job into steps and calls for separate analysis of each, one that clearly distinguishes tasks from hazards, and one that includes a clear hierarchy of controls showing the order in which they should be considered. I agree on the need for the clearest and best possible form. While manuals and instructors are valuable they can easily be defeated by a misleading or incomplete form. A form is a reminder of principles learned, and a roadmap to guide the process to the right destination.

There is more to say on the topic of hazard assessments, but as it ties in with the area of review mechanisms I will defer that discussion to the end of Part II (see p. 75) and turn now to the controls which were implemented, or not, as the case may be.

## ENGINEERING CONTROLS

If an identified hazard cannot be eliminated, or a less dangerous method substituted, the risk presented by the hazard must be controlled. Engineering controls are the first of such measures, and I begin with the tractor.

When the 2WD tractor became available, DTPW decided to send it to Englishtown and thereafter determine whether it was suitable. From an OHS perspective the better sequence is to do a hazard assessment and then identify the engineering controls. Either way, a hazard assessment should have been done at the first opportunity. If equipment is already on site, at least it can be evaluated for safety features before work commences.

Nelson Edge considered safety and efficiency when he requested, in 2000, that DTPW send a 4WD. Aside from this no other features were specified.

As local captain in charge he did not have the spending authority to requisition a special piece of equipment. He made a request for something which DTPW would most likely have within its existing fleet.

One Inquiry witness, a mechanic who had himself operated heavy equipment, said that the assigned tractor had too many pedals and levers - that it required too much of the operator to be used around water, particularly for a novice.

When the 4WD arrived, it was tested and driven on the pad at Englishtown by both Nelson Edge and Sandy Jardine. Both pronounced it fit for its intended purpose, but neither, before doing so, had the benefit of a formal hazard assessment (though both had extensive experience clearing snow with such equipment). They believed, with complete bona fides, that they could teach the employees the skills and techniques to drive it safely. To simplify use of the levers, for instance, the employees were taught to leave it always in first gear, whether going forwards or backwards. Working with what they were given, they gave the training a serious effort, and there is no evidence at the Inquiry that any of the people who went on to use the tractor ever showed an inability to operate it effectively. But equally it is now clear that the tractor which DLB and the others trained on and used was more complicated than it needed to be. No direct connection can be drawn to the particular incident of February 8<sup>th</sup>, 2003, but the brief discussion which follows may illustrate the potential benefit of hazard assessments in general.

For any who wish to see a general description of the controls of the Case/International 684 tractor, from the operator's perspective, I have included as Appendix "C" the description given in Inquiry counsel's closing submission.

Backhoes, tractors, 4WDs, 2WDs, blades, buckets and snowblowers had all been used at one time or another by the private operators. While Nelson Edge had done some of the plowing himself, there is no indication that any of the others were consulted about what equipment they thought safest or most effective. A hazard assessment would have drawn from this well of experience. If the hazard were conceptualized as "entering the water", the assessment might proceed to how this could occur, thinking of

the mistakes a newer operator might make. If possible confusion over simultaneous use of levers and clutch were one, then a machine that did not require use of a clutch might be identified as a desirable "engineering control". If visibility were a concern a large cab with easy viewing out the windows may come to mind. If, in an emergency, inability to get out the door were a concern, a split door, or windows designed to open readily may be desirable. If stalling were a concern, brakes that continued to work would be vital. If an icy pad may lead to slippage, chains should be available for use.

Some of the foregoing features were found on the tractor, some were not. One might argue whether any or all are necessary; my point is that such features might have been identified and "put on the table" for due consideration. Such things may also inform the training, e.g. showing that hydraulic brakes work just as well if the machine is rolling down a slope after a stall. They may inform a SWP, e.g. when the chains should be used.

In the fall of 2003, once it was decided to continue the plowing in-house, and with the benefit of its investigative committee's report, DTPW stationed a somewhat different machine at Englishtown. Nelson Edge describes it as a "backhoe type" but one from which the rear assembly has been removed. Notably it has a shuttle shift. This allows the driver to change direction without coming to a complete stop and clutching. It is simpler. Because the floor is level there is easier egress from either side. There are more windows and so visibility is better. One employee describes it as a "godsend". Evidently the rear window will pop out, giving another escape route in an emergency. Having no rear attachment, it allows for only the forward method of plowing, the one experienced users thought best. Chains are left on this tractor, but the Inquiry was told that this is because the tire treads are worn. It is not possible to make a hard and fast rule regarding use of chains, but general guidelines can be found in some of DTPW's SWPs and such should pertain to any tractor used on site, now or in future.

It may be possible to fit additional handles at the top of the doors. Such a modification would permit someone pinned inside at the top of the cab to get the doors open. This may address a concern which employees and

some managers alike have expressed about wearing a life jacket. While a life jacket would bring someone to the surface, it may also bring a person to the top of a submerged tractor. When, as will happen, the current machine is replaced, split doors, or a roof escape mechanism - again for ease of egress - should be looked into. Kevin Caines testified that DTPW was exploring the matter of an extra handle with the manufacturer to see if it is possible to retrofit the existing tractor with this feature.

Aside from the tractor, other engineering controls were suggested by experts who looked at this site on behalf of the Inquiry. Heating pipes to melt snow and ice are simply not practical. Even if the pad were being newly constructed, this would likely be a very expensive option, and still wouldn't make a dent in an ice flow. Retractable posts, set in the pad just below the waterline as a barrier to the tractor entering the water, while possible to install at the same time as a new concrete pad, would be very costly to install now. Constructing booms or some sort of permanent high-hoe would likewise be very expensive and seemingly unnecessary. It bears mention that such controls would have to be done on the Jersey Cove side as well.

Closer to reality is the possibility of a tether. Mr. Tupper thought it might be possible to design a system whereby a self-tensioning retractable line is hooked to the back of the tractor when it plows close to the water. He goes on to say that such would *not* be necessary if the job were being done by "purpose-trained operators", which I understand to mean workers whose primary job, day to day, is operating mobile equipment. DTPW officials say they have looked into a tethering system but could not find any other place where such a thing was being used. Neither could they devise something to fit the site. Mr. Tupper believed a tether system would completely control the risk of water entry.

Here, as elsewhere, cost and practicality are valid considerations. Resources are limited and expenditures of money and human capital must be justified. It may seem callous to suggest that a measure which would virtually guarantee the safety of operators may simply be too expensive to pursue, but it is entirely possible that the efforts and resources could be put to better use elsewhere. However, I think that it is premature to abandon the tether concept completely. I therefore suggest that DTPW remain open

and alert to the possibility of a tethering system. Engineering is a dynamic discipline. Perhaps DTPW will yet find, or someone design, a cost-effective tether system for powered mobile equipment. Such may be of use at Englishtown and/or elsewhere.

The ferry was identified as an engineering control in the following sense - the ramp was being used as a barrier to the tractor entering the water. There was no consistent practice here, but the idea is a good one. Kevin Caines has indicated that at some point in the near future DTPW will be replacing its cable ferries across the province. By the time this report is completed and filed steps may already have been taken in this regard.

In so far as possible the design of the ferry for Englishtown ought to complement and enhance the safety of the plowing operation. Visibility, communications, lighting - such things as these will, no doubt, be carefully considered. I would also suggest that DTPW explore, at the very inception, in consultation with marine architects and ship builders, the possibility of a guard - something which, possibly, could deploy with the ramp, effectively widening the protective skirt it affords, thus giving still greater protection to any vehicle (tractor or motor car) which is approaching the ferry. I note here that it was, at times, difficult for the ferry operator to "hold" the ferry in position. This too is something which may be improved with a newly designed vessel.

## TRAINING

DTPW viewed training as the primary control mechanism to ensure a safe plowing operation at Englishtown. It was not preceded by a hazard assessment or SWP or any detailed consideration of engineering aspects.

Donald LeBlanc was hired in 1998 as a purser. DTPW sent him to Nautical School so that he could get a "point to point" ticket, enabling him to work his way up to captain. He and the other crew received training of various sorts. The captains possessed the necessary nautical certification for that class of vessel. Many had Marine Emergency Duties (MED) training. The engineers had at least 4<sup>th</sup> class tickets. There were traffic control courses, WHMIS, confined spaces training, basic first aid, general water safety

courses, etc. This training was primarily directed to operation of the vessel, use of the work boat, and the safety of passengers and public.

The first training of ferry employees in the use of a tractor occurred in the spring of 1999. They practiced in a salt shed in Baddeck. A number of them passed a test administered by Mr. Merv MacAulay. Some were already quite competent, having operated similar machinery in the past. There is no evidence that Mr. LeBlanc participated in this training.

A more concerted training effort was mounted in December of 1999. The person assigned the job this time was Sandy Jardine. He was one of four Equipment Instructor Inspectors (EqII) within DTPW. He had extensive experience operating heavy equipment. He had delivered training to winter operators at a "snow school" and helped design that program. In 1999 he had taken a one-week course at Debert in how to evaluate a person's ability to operate heavy equipment.

Sandy Jardine asked whether there were some sort of training package already in place for something like this, but his superior was not aware of any. He was simply told to ensure that personnel operating the tractor were competent. To this end he devised a training program, having in mind the particular task these employees were going to do. He invited a mechanic with DTPW who was familiar with the particular make of tractor to come to the site and they went over the controls, fluid levels, etc. He spoke with Mr. MacAulay to see what he had done in 1999 and procured a copy of the test form he had used. He spoke to the workers themselves about concerns they might have. He drove the machine on the pad for about 2 hours to see how it behaved, including putting the wheels in the water.

While there was no template available for him to follow, Sandy Jardine did have access to a supervisor for training at the Miller Lake office, Donald Currie, who remembers that they spoke a couple of times per week. He was not especially worried that these people were being "cross-trained"; he said this sort of thing happened frequently.

Nelson Edge was assigned as a resource person, and helped in various ways. He requested a 4WD, which was delivered to the site. He tracked

down a copy of the manual from someone he knew and delivered it to Sandy Jardine. He offered a piece of property near the ferry site upon which the workers could practice and be tested. He agreed to coach any who wanted extra help in preparing to take their test. Finally, he assisted Sandy Jardine in surveying the site, examining the tractor, considering the dangers associated with the operation, and discussing what to emphasize.

The decision to train the employees off-site was taken to avoid shutting down the ferry. As well, it would have been very difficult to schedule training around the weather - to predict when there would be snow and ice to practice with. According to witnesses, off-site and simulated training was not unusual; indeed it was the norm. The area chosen was a sloped piece of land with piles of sand and gravel which the employees could practice moving as though it were snow. It was also considered a safer place for the novices to practice.

Everyone was aware that the water posed the greatest threat to the safety of these employees. At the training site a rope was used to mimic the waterline. But risk of drowning, *per se*, was not on the agenda.

Sandy Jardine did what he described as a visual and verbal hazard assessment of the site. He consulted someone who had previously done the same job, spoke to the workers, tested the suitability of the machine, examined the site - steps one would do in a formal hazard assessment. But the steps were not documented, nor were they guided by pre-set criteria. He relied on experience and intuition. In a sense, the system left him no choice.

The workers worried that the tractor might slide into the bay if it hit the water. Sandy Jardine had already tested how the tractor would behave with its wheels in the water; however, to lessen their worries he devised a method of clearing which utilized the rear blade, rather than the front bucket. By backing down to the water's edge and dropping the blade, the snow could be dragged up to the top of the pad and later pushed off to one side. Having been presented with the option of not plowing at all, they were also given the option of plowing by this method if it made them more comfortable. Some who have looked at this after the fact have expressed some misgivings about the back-down/drag-up method. Having to turn



one's torso to locate the snow and water while at the same time operating the controls was cited as a concern. There is little doubt, however, that Sandy Jardine believed it was an equally safe method, though not as efficient. He had used a rear blade on his own tractor for years.

I can draw no firm conclusion about this. Sandy Jardine believed it was not especially difficult to navigate through the rear window, and suggested that simply having to lower the rear blade at the water's edge could be simpler and easier than maneuvering the front bucket. Mr. LeBlanc and two others chose to use the back-down/drag-up method. The more experienced and confident ones elected the push-down-forwards way.

The employees were instructed on both procedures, and general operation of the tractor, at the practice area. Obviously, use of the brake was a part of this. Sandy Jardine demonstrated emergency stopping - by dragging the bucket and/or blade, or pulling the engine stop button (kill switch). Glenn Christie remembered practicing these emergency stop procedures. They were required to test the park brake, to ensure it was "holding". The engine stop button and park brake would have been used every time they parked the machine. They were told how to put chains on the wheels should they be needed. They were instructed to operate the tractor only in low range, first gear. With the transmission set this way, the fastest it would go is about 2 miles per hour, the speed of a brisk walk.

Those who had passed the training given the previous year by Mr. MacAulay were "familiarized" to the machine, as it was not the same tractor they had trained on (though very similar). Overall it would appear that the training program administered by Sandy Jardine was far more intensive and true-to-life than the previous one.

Employees who did not become tractor operators by 2000 had either (1) chosen not to undertake training (2) begun but not completed training or testing (3) taken the training but failed the test and chosen not to go any further.

On January 7<sup>th</sup>, 2000 the instructor did a preliminary evaluation of Mr. LeBlanc's skills. Using the test form to shape his comments he lastly noted "Donald has never operated machinery before, and therefore requires

some instruction to meet the necessary standard.” Mr. LeBlanc was left to consider whether he wanted to test at a later date. In a general sense he did not appear to be any more or less sure of himself than the others.

Mr. LeBlanc decided to pursue it further. He went to the training area again to practice. Nelson Edge supervised this and gave him further coaching, and felt he was becoming quite proficient. He called Sandy Jardine later on to say that Mr. LeBlanc wanted to be tested again. On February 10<sup>th</sup>, he went to the test site for a couple of hours practice and was then tested that same day. The test, including the pre-trip inspection portion, took about 1 hour. He completed and passed it. The pass mark was 70%. He got 76%, which was pretty much in line with the test scores received by the others who passed and went on to plow. By the time he passed his test he'd had about 10 hours actual operation of the tractor, in addition to a short get-acquainted session at the beginning.

On February 11<sup>th</sup> Sandy Jardine gave a pre-trip course in the community hall. They were told how to check fluids, test controls, etc. before operating the machine, using prescribed forms. He reported on this, and the testing of the previous day, to his superior in DTPW. He expressed satisfaction with the performance and enthusiasm of the group as a whole. He noted that as time went on they would become “more familiar,” and would likely begin to “plow the ramps forward” as he would do.

Sandy Jardine also suggested that head office leave the machine on site year-round. Nelson Edge wanted this too. Perhaps the benefit of further practice during the summer did not make a sufficient impression, because the tractor was put to use elsewhere after the winter season.

Sandy Jardine returned to the site a few times later that winter, at the suggestion of Doug Smith, to ensure that the machine was being pre-tripped and maintained. He was satisfied with what he saw. He was not asked to return to watch the employees actually doing the job. Between 2000 and 2003 he spoke to the workers if he happened to be in Englishtown. He remembers seeing Mr. LeBlanc once on the ferry, who said that the plowing was “going ok.”

The test administered at the end of the training did not include an

“emergency stopping” component. One expert witness saw this as an omission. If so, it is one which might have been avoided if a hazard assessment had been done before the training program was designed. A trainer will refer to any existing hazard assessment. The training with which the Eqll was tasked, in this instance, was not tractor operation in a generic sense. It was to teach how to clear ice and snow at a particular location. If the training package he developed, pretty much from scratch, had been preceded by a hazard assessment, it seems to me more likely that emergency stopping would have found its way into the test and the formal documentation of the practice component may have been better than it was. Sandy Jardine’s superiors did not require or request to see any documentation of the training as such.

Neither Sandy Jardine, nor by extension Mr. LeBlanc, had the benefit of an initiative that DTPW would commence later that year. In November of 2000 DTPW began a general upgrading of its training program. A Supervisor of Training position was created, and an additional person was hired a couple of years later specifically to assist with revamping and consolidating its training packages. DTPW clearly regards training as the fundamental component of workplace safety, and great strides have been made in the years since to standardize training on various types of equipment. In this regard, as with the implementation of other OHS measures, DTPW faces significant challenges. It has large numbers of employees doing a wide variety of jobs at many disparate locations. At the same time, its size gives it assets to draw upon, including a large pool of expertise and experience.

Part of the response to the Englishtown tragedy was to put in place a special training package for those operators. It is likely the only site in the province where there is a specific test for a specific task. It was developed around the new hazard assessment, SWP and equipment. It includes a new test form, a lecture component, a review of documented practices and regulations, etc. Don Currie says that DTPW’s objective is to make all their training packages as complete as this one. He indicates that their training program already exceeds private sector requirements in some respects. He says that they have a 40 to 60% failure rate on some things and supervisors complain that there are not enough qualified operators.

One employee testified that he went through both the 2000 training program and the new one. He had opted out after the death of Mr. LeBlanc, and then came back into the pool of operators in December of 2005 and was retrained. He said the training was pretty much “the same as before”. This supports the position of some that the earlier training included much of the same material as the current one, but that the steps were just not documented as fully. There may be some truth in this. Still, there are definite improvements in the current package, and improved documentation is itself a worthwhile thing. Here, as elsewhere in OHS practice, documentation ensures effective communication of information and provides a record for others to examine, learn from, and evaluate.

In the fall of 2003, everyone who was still willing to plow was retrained with the new package and familiarized to the new shuttle-shift tractor. The only method employed is push-down-forward. It includes use of two-way communication between tractor operator and ferry operator. The 60-page training manual, which includes safe work practices, applicable regulations, service information, training notes, checklists, etc., is left on site. Emergency stops are practiced on the pad; the rest of the training is still administered in the practice area. A new test form has been developed, spelling out results in more detail.

Every fall, before the ice and snow arrive, the employees are re-familiarized with the tractor, and each is required to demonstrate emergency stopping. A list of “designated competent operators” has been created. In 2003 there were six on the list. In 2006 there were eight. A log has been created to keep track of the number of hours each person operates the tractor. Although the employees seem to think that they must keep a minimum number of operating hours per year, no such number has been set. However, the supervisor and Eqll take this into account when they re-evaluate the employees each year. The tractor is now left on site all year round. This ought to allow the users to keep up their skills even if they have not done much plowing in the preceding winter.

## SAFE WORK PRACTICE

A safe work practice is another of the so-called “administrative controls”.

Like the others, it follows upon a hazard assessment of some sort. It is a written document, not simply a learned method or a standard practice. It draws on experience, and identified hazards, to create a standard which can then be "disseminated through time and space". Because a given task might be done at different work sites a SWP may be fairly general, but will always contain basic precautions which the worker should observe. A "job procedure", when used in an OHS context, is a specific step-by-step guide to performing a critical task. The difference is important, but not to my present purposes.

Thousands of different tasks are performed in DTPW every day. Not all are covered by a written safe work practice, nor need be. In its 2004 Manual there are about 120 SWPs. The list may be longer now. The safety of a workplace cannot be measured simply by the number of SWPs in the employer's files. Joel Marsman and others said that training was fundamental to safety - that this was what DTPW primarily relied upon. David Gibson expressed the view that a SWP would "fall out of a hazard assessment only in a minority of cases". None the less, there are many instances where a SWP will advance the safety objective. This is one of them.

There is no doubt that Nelson Edge and Sandy Jardine discussed safe use of the tractor. Jointly, they attempted to impart a working knowledge of the machine and safe ways to perform the task. But had a formal hazard assessment been done, it likely would have generated a SWP, which would in turn have informed the trainer what to emphasize in a training course and what to include in the testing. For instance, Patrick Van Oostrum thought that dropping the bucket would not be effective as an emergency stopping procedure if the tractor were moving backwards down the ramp. If this is correct, those with the least confidence (who used the back-down method) were deprived of this option if they got into difficulty. In this way and others, a formal SWP would have provided guidance to the trainer, the employees and their supervisor thereafter.

Some contend that had a SWP been developed, one or the other of the two plowing methods, push-down-forward or back-down-drag-up, would have been specified. This proceeds from the assumption that one is inherently safer than the other, and that the subjective comfort of the operator is not

as important as the objective safety of the procedure. What is important for my purposes is not which view is correct; rather, it is this : a formal SWP, following upon a properly done hazard assessment, would have shown that a proper conclusion was reached as to whether one, or the other, or both, ought to be used. It also would have included some guidance on the practices of the co-worker on the ferry, for these too are part and parcel of a safe plowing operation.

This is especially so in respect to positioning of the Ferry. This in turn is directly related to whether the clearing was done by the back-down-drag-up method or the push-down-forward one. The latter required the Ferry to be backed off at least a short distance to allow the snow to be pushed or dumped into the water. This had been discussed during training, but it seems that by February of 03 there was no clear or consistent practice, either as to backing off, or by how much. It seemingly depended on the wishes of the tractor operator or captain at the particular time. In a memo in January 2000 updating Doug Smith on the training of the employees, Sandy Jardine says "Having the ferry in dock would provide some assurance" to those who intended to use the back-down-drag-up method. Yet Sandy Jardine indicated that as of February 03 he was unaware that the Ferry was routinely being backed off various distances.

Initially, at least, Mr. LeBlanc used the back-down-drag-up method. Alice MacInnis, who usually worked with Mr. LeBlanc testified that as of Feb. 2003 he usually plowed forward, and wanted her to take the ferry off 20 to 30 feet. He may indeed have plowed both ways from time to time. Kerr MacAskill's usual practice was to back down. Evidently one other worker did as well. It may be no coincidence that these were the two employees who decided to stop after Mr. LeBlanc died. Glenn Christie plowed forwards. He said that because he plowed forwards the ferry would have to back off somewhat, but his partner usually took it off only 10 feet, with the ramp down. This made him feel "more comfortable." William Horton said he understood the ferry should be "no further out than it had to be," which in his mind was about 10 or 12 feet for "claspers," closer for snow. The private operators often wanted the ferry 30 to 40 feet off.

One worker said the positioning of the ferry was not "carved in stone". It should at least have been written on paper. Had there been a written safe

work practice it would have provided some guidance the co-worker as well. Alice MacInnis had not taken training on the tractor. The training program, therefore, no matter how intensive it was, could not have substituted for a SWP in this sense. Where others besides the trained operator are required to participate in the operation a SWP can provide an additional level of safety. If this line of thinking has merit, it is not enough for DTPW or other employers to rely exclusively on training, no matter how good it may be. David Gibson made the point that a SWP may be helpful where training is not available. No doubt this is true, but I am left thinking that a SWP can also be helpful when it is. As he participated in producing the current SWP #117, I assume he would agree.

Needless to say, a SWP may address other things besides the water hazard. Kyle Jardine was more nervous of traffic coming up behind him than he was of going into the water in front of him, so much so that he preferred the ferry on the other side so there would be no confusion in the mind of a motorist approaching the pad. If a hazard assessment pointed to motor traffic, as well as the water, as posing a risk, a SWP may have something to say about putting out pylons, etc.

In late 2002, when he learned of the fatality in Newfoundland, Doug Smith directed correspondence to Nelson Edge. In it he indicates that it "might be advisable . . . to create a Safe Work Practice for utilizing the tractor for clearing . . . the ferry ramps." In the same paragraph he says "I understand you have implemented safe working procedures, such as having the ferry berthed at the ramp . . ." It is clear from this alone that he felt learned procedures should be backed up by a documented SWP. He asks "the group" to draft something. By this he apparently meant a committee which had been struck in order to consolidate DTPW's job procedures, SWPs, etc. and standardize them across the province. Nelson Edge was on this committee. It had been meeting more or less monthly, in Halifax.

In this same note Doug Smith suggests that a SWP for plowing might include a "visual hazard assessment." With respect to an unrelated matter (possible use of hardhats when working underdeck) he suggests that the employees first make a "hazard assessment of their workplace with respect to this issue."

In response, Nelson Edge prepared a hand-written draft of a SWP on January 7, 2003. In it he puts "move ferry off pad only as far as needed to allow snow and ice to wash away," "never drive in water," "chains should be used if the pad is icy," and other things. Evidently he and Doug Smith had also spoken on the phone, and it was his understanding that he was to present his draft to the provincial committee. It was to meet in the third week of January, but the meeting was cancelled. No further progress was made before the events of February 8<sup>th</sup>.

In the aftermath of those events, a new SWP was adopted (#117 in DTPW's indexing). It flowed from a formal hazard assessment. It is quite detailed, and indeed verges on being a detailed job procedure, though this is of no matter. What matters is the specific guidance it gives on such points as the positioning of the ferry, whose ramp is now to be horizontal and no more than 3 meters from the edge of the water. It also requires the operator to plow no more than the width which is protected by the ramp of the ferry. Impliedly, they would have to wait until the tide moved the ferry before plowing the next section, should this be needed.

SWP #117 is included in a larger "training package" - another product of DTPW's efforts to prevent recurrence of such an event. This package includes certain procedures and precautions specific to moving ice floes. Mr. Tupper noted the different risks which might attach to this particular task. If it has not already been done, it would seemingly take little time to put this into a SWP to be included with #117. The "package" sets out precautions to take when clearing the deck with the tractor. Here again, a separate SWP for this, or at least inclusion in #117, may be advisable. The hazard assessment which led to SWP#117 was dated Sept. 9, 2003. It is for "snow clearing operations." I am left to wonder whether it ought to have broken down the operation into tasks, and the tasks into steps. This site has received a huge amount of scrutiny since February 8<sup>th</sup>, 2003, yet still it is not clear, from looking at the documentation, that a hazard assessment was done in a way that would generate a documented SWP(s) addressing the various tasks the employees would be doing.

Some points mentioned in testimony before the Inquiry that have *not* found their way into SWP #117, at least in so many words, include the activation of 2-way radio communication between tractor and ferry, plowing parallel to



the sides of the pad whenever possible (not sideways across the incline), and not plowing if fatigued (which might occur if the crew were storm-stayed). These points *are* covered in the current training package.

The package, and hence the SWP, were designed for use with the particular machine which has been on site since 2003. This may account for the fact that chains are not mentioned. Because the present machine has no rear implement, there is no guidance on which of the two methods to use. Plowing forward is the only option, but one dictated by the equipment, not the SWP. It may be that different procedures could be used for gravel than for snow, etc. But whether one or both methods are endorsed, under whatever circumstances, the absence of any mention of method should be rectified. The package says, with respect to ice floes, that if they do not dislodge, or are off the pad but still must be removed, a private operator (presumably using a hoe) should be called. This too, it would seem, could be included in SWP#117. There may be points raised elsewhere in this report which could be included as well.

## PERSONAL PROTECTIVE EQUIPMENT

The last in the hierarchy of control mechanisms is personal protective equipment - the thing you hope will save you from harm if the other precautions fail. Admittedly, some workplace dangers are so pervasive that protective gear is probably both the first and last line of defense - steel toed boots come to mind, or safety goggles. At Englishtown personal flotation devices, or PFD's (the only type of protective equipment I shall deal with here) would indeed be a last resort.

Prior to 2003 little or no thought was given to the use of PFD's in the tractor. Water entry was seen as a remote possibility at best. During training the workers were told that if the machine was going towards the water, and all the emergency stopping procedures failed, to simply "get out". That, of course, is good advice, but there was no examination of what measures could be put in place to make that an effective means of self-rescue.

Getting out, in an emergency, would be the first step. In the section on Engineering Controls I considered features of the tractor relevant to how readily someone could get out in an emergency situation. Once out, assuming the tractor is in water, PFD's become the next piece of the survival puzzle. I note here the physiological response to sudden cold water immersion as described in Part I. The last piece to surviving entry in the water is rescue, which is dealt with in Part III.

I will put aside whether there was or is any regulatory requirement to use PFD's in this situation. There is difference of view. DTPW considered their use necessary when a person was working over water, untethered. At the site they thought that "exposure to risk of drowning" (the way the regulation was worded) referred to the possibility of a sudden drop off into the water. Hence, on this view, there were protocols requiring use of a life jacket if they were working over the side of the ferry, or working from the utility boat. It is not for me to say that this was a misinterpretation of the regulation. What I am left to wonder is whether, regulations aside, a proper hazard assessment would have directed the use of PFD's in the tractor as well.

DTPW's investigative committee found that no other ferry operation, in

Nova Scotia or elsewhere, required people plowing snow around wharves and docks to wear PFD's. Apparently Newfoundland implemented such a requirement after the fatality there. Just what the regulatory regime might be regarding the use of PFD's by operators of powered mobile equipment near water in the various federal and provincial jurisdictions is beyond the scope of this Inquiry.

More germane is the likelihood that a proper hazard assessment would at least have generated a discussion about PFD's - whether needed and if so, what type. Const. MacLeod, Dr. Brooks and Thomas Kearsley held the opinion that had Mr. LeBlanc been wearing an appropriate PFD he would have survived, or at the very least the body would have been recovered. This is based on the fact that he managed to escape from the tractor, surfaced and shouted for help. This view assumes (1) that the PFD itself would not have impeded his ability to get out, and (2) that a water rescue operation could have been effected quickly, given that Dr. Brooks states he would have become "dangerously hypothermic" within 40 minutes. Cold is a relative term here. Even in summer the water in the Englishtown channel is cold. In winter, as it is salt water, it cools to sub-zero temperatures. "Frigid" might better describe the feeling, and the effect.

Before considering (1) above I should mention, in regard to (2), that some have suggested Mr. LeBlanc might have been swept under the ice in the Bay even if he were wearing a PFD. There seems to be little to base this on, aside from observing what happens to driftwood from time to time. The current in the channel is extremely strong, and those familiar with the area may well be correct to say that in some conditions of ice and current even a PFD would be no guarantee of staying afloat. But I do not think one can conclude that it would not have mattered.

Some PFD's are inherently bouyant; some are inflatable. The former type include some which offer thermal protection from cold water (so-called floater jackets and floater suits) but they are bulkier than an inflatable vest. There is a legitimate concern about whether having a permanently buoyant PFD would impede one's ability to get out of a submerged machine. The bulkier the apparel the more buoyancy and warmth it gives, but the more awkward to escape in. A person may be forced to the top of the cabin and thus unable to open the door. The issue has arisen where helicopters have

crashed in the ocean, the crew was wearing flotation suits, and fatalities ensued.

Nelson Edge testified that back in 1999 there was discussion about using a lifejacket while plowing. He said that the employees rejected the idea out of fear they might become "trapped" in the tractor. He says they "still share this concern." I earlier discussed the possibility of fitting the doors with an extension rod to allow someone trapped inside to escape by opening them from the top. The current tractor's rear window can be popped open from inside. These are features which should alleviate fear of being trapped.

Inflatable devices are much lighter and easier to wear and are very effective at keeping the head above water. However they too have some disadvantages. If deployed too soon (while still inside a submerged cab) they would cause more trouble getting out than a floater jacket would. This is a particular concern for the type which inflate automatically upon water entry. Inflatables also require regular maintenance, and are susceptible to puncture.

Manually inflatable types require that the wearer pull a tab. In an emergency the wearer might be disoriented; it might be difficult to find the tab, or it might get caught up in something. The sudden expansion of the bladder from the compressed air cylinder can itself be disconcerting, especially the first time one experiences it. Of course, one must be conscious to deploy it.

Some thought that a floater jacket or suit would be uncomfortable in the warmth of the cabin. If this is so, one wonders whether it would be possible to turn down the heat. They also worried that it might "get caught up on something," and thus create a danger during operation. Both Dr. Brooks and Thomas Kearsney took strong exception to this. They said the floater apparel is designed to be worked in and no more likely to get caught up in controls than street clothing. They urged people to actually try one before coming to any such a conclusion. I note here that had PFD's been identified as an appropriate control mechanism in a hazard assessment the workers could have been habituated to them during the training.

After the fatality, acting on the findings of the investigative committee,

DTPW provided both manually inflatable vests and floater jackets to the employees. Auto-inflatable types were rejected. These are now being used year-round both in the tractor and during certain tasks on the ferry. Instruction has been given in how to use them, but as yet this has not included actual deployment. The floater jacket can double as a work jacket in winter, given its thermal insulation properties. The workers are not required to wear it. It was said "they are entitled to wear what they want." It must be kept zippered to preserve its effectiveness in the water. Clearly some think it is too warm to wear in the wheelhouse or in the tractor, and some think that it would not add much to one's survival time in the water in any event.

At first blush, this smacks of giving the employees another right to "opt out" based upon their own subjective assessment of the situation. At the same time Dr. Brooks, a strenuous advocate for use of PFD's, said that it was very difficult to legislate and supervise their use. He stressed orientation and education - not only to various types of PFD's but also on such things as how to manage cold shock. He thought that some cold water survival training might be available at the Coast Guard College in Sydney. He went on suggest that the employees might even be given simulation training on how to exit a submerged vehicle. This idea has not generated much enthusiasm amongst the workers; the Inquiry was told that they would simply not plow if forced to do this. He said anyone working around water should be required to have basic swimming skills. In the final analysis he seemed to think that an inflatable vest in summer and a floater jacket in winter was a good option for the Englishtown workers. He commended a "beaver-tail" type of floater jacket, one with a piece that can be drawn up between the legs for additional insulation from the cold water.

All types of flotation devices offer protection from the effects of cold water shock. Any of them would keep someone in Mr. Leblanc's situation afloat for more than the couple of minutes he managed on his own.

In frigid water the floater jacket would add at least some survival time over and above what an inflatable vest would, and the beaver tail type would add more still. Even if an emergency response took up to an hour, having one of these on would greatly increase the chances that at the end of the day people would be speaking of a rescue rather than a recovery. Other

factors in the rescue vs. recovery equation are (1) a person wearing a PFD is more likely to be able to swim to shore, even in the presence of currents and even with the short time one has use of arms and legs in frigid water, and (2) it is easier to haul a person out of the water if they are wearing flotation gear.

## REVIEW

Any management system requires oversight. Monitoring is essential to ensuring that stated objectives are being met. This is no less true in a system concerned with OHS. Using the aegis of the so-called Review Principle I will touch on the Inquiry evidence as it relates to supervision, inspection, auditing and evaluation of OHS measures at the Englishtown site.

I have cautioned myself on the potential pitfalls of reasoning from the particular to the general. I caution the reader that while the scope of this Inquiry became fairly broad, it was never intended to be a wide-ranging in-depth examination of an entire OHS system. This accounts for the somewhat guarded nature of some observations and suggestions.

There were, needless to say, review mechanisms in place within DTPW pertaining to Englishtown. In addition to on-site supervision by the captain-in-charge the regime included the Eastern Ferries JOHS committee which met regularly, meetings of ferry captains from time to time and cross-inspection of each other's sites, and audits within the Department and by an outside agency. In addition, staff safety specialists were available as resource persons.

DEL had its own powers of inspection, which could be invoked anonymously by any employee or instigated at random, but it is not this sort of policing that concerns me here.

One expert witness who brought an outside perspective said that DTPW had a good program and by all appearances tried to promote a culture of

safety for its workers. Still, he had concerns with (1) how effectively the various review mechanisms ensured compliance with set standards and (2) how well DTPW assessed the quality of the product. To a large extent, the audits were concerned with the former more than the latter. An auditor may look to see whether a hazard assessment was done, whether the required people were involved, whether recommended measures were implemented, etc., but it is very difficult, without knowledge of what was being evaluated, to grade the result. This sort of evaluation is best done by knowledgeable people within the organization. In addition, audits are done infrequently. An internal review would reveal shortcomings sooner - ideally in time to correct them before-the-fact.

Notably DTPW has already reconfigured management responsibility for Englishtown. Whereas before this responsibility was an adjunct to the position of Financial Manager, there is now a full-time Manager of Marine Services. Kevin Caines estimates that OHS matters occupy about 20% of the time of this person. Also, in the spring of 2006, the eastern and western JOHS committees came together into a Joint OHS Marine Committee. There is a new Safety and Loss Control specialist at Miller Lake to work with this committee on SWP's, emergency plans, etc.

### Site Supervision

Perhaps the most obvious level of review is on-site supervision. In effect, site supervisors conduct "spot audits" by observing employees to ensure they are doing what they were taught. There are also various inspection functions which a supervisor will monitor. Here, for instance, the pre and post-trip inspections sheets were checked periodically, both to see that the tractor was working properly and to ensure that the inspections were being done properly. Inspection of safety equipment aboard the ferry was done according to a schedule and documented in logs. Again, the captain-in-charge checked these periodically to ensure compliance and to note any problems requiring action.

As of 2003 Nelson Edge, as supervisor, had responsibility for infrastructure, human resource issues, financial matters, etc. He was also part of the regular crew rotation. He was termed a "working supervisor"

(which I am fairly sure was not meant to imply that full-time supervisors don't work). He lived next door to the site, was intimately acquainted with the local conditions, was knowledgeable about the operation, and had the confidence of his employees and superiors. As of 2003 he had seen Mr. LeBlanc plow the site 2 or 3 times. He remembers that he was doing a "good job". Undoubtedly Mr. LeBlanc had operated the tractor more than 2 or 3 times, though his exact usage is not documented. Between 2000 and 2003 Nelson Edge saw all the employees plow at one time or another and "never saw anything to raise a concern".

Upon completion of the training, the matter of when Mr. LeBlanc actually cleared snow on the pad was a function of the weather. It would have been good to have in place some mechanism whereby the newly-trained operators were observed in their first attempts at the job. Arguably this might have been a specified component of the training program. Others may see it as a purely supervisory function. In these circumstances it may have required the employee to notify Nelson Edge or someone else that he was about to use the tractor. As Nelson Edge would neither be working nor "on call" at all times, another seasoned operator, or the trainer, might have to be called out. I note here that Nelson Edge did not "officially take over" (in his words) from the previous captain-in-charge until June of 2000. I note it only to point out that my focus here, as elsewhere, is not on the individual as much as the position. However good a simulation the training area may have been, observation of the newly trained employees under actual conditions would have been well worth somebody's time and trouble. Given what I have noted elsewhere, one cannot conclude that this deficiency had an effect on the safety of the workplace in February of 2003. It may however be an illustration of the general principle that the degree of supervision of employees should depend, in part, on the extent of their training and experience.

### Inspections

Inspections seem to have been done regularly and properly. Site inspections, logs, daily maintenance sheets, pre-trips of the tractor - the Inquiry glanced at all of these but nothing warrants particular mention.



## The JOHS Committees

When asked how DTPW ensured that “things were being done” according to its OHS program, one senior manager began by mentioning the JOHS committees. I heard that there were 28 such committees in DTPW, meeting monthly, whose minutes were reviewed periodically by senior management. While this might catch an item that cropped up repeatedly, or a glaring error in how some particular thing was handled, or some breakdown in process, it will not determine if something is missing in the first place.

Nova Scotia’s Occupational Health and Safety Act requires a JOHS committee for workplaces of a certain size, and sets out its functions in very broad terms. These include cooperative identification of hazards, cooperative auditing of compliance with safety requirements, disposition of complaints, participation in investigations, making recommendations, advising on policy, and any other duties assigned to it by the employer. The 2000 DTPW safety manual painted the role of its JOHS committees in equally broad strokes, and the current manual does the same (with the addition of an environmental component - they are now referred to as JOHSE committees). They are directed to conduct workplace inspections, and I have heard that the committee at Englishtown does this quarterly, rotating the members of the team.

With respect to hazards, the committee, if it becomes aware of a hazard via an inspection, complaint, “hazard inventory” or some other means, “shall address the elimination of the hazard or, where that is not possible, use substitution or control” through one or more of the usual mechanisms (engineering, SWP, PPE, etc.). Another section says that the committee may become involved in “the actual conduct of some hazard inventories.” It follows that if it may, it also may not. Presumably a team doing a formal hazard assessment must be *ad hoc*, created as the need arises, using immediate supervisors and workers, etc. In other words, it is not feasible to have the JOHS Committees function as some sort of ‘standing hazard assessment team’.

With respect to the review function Dr. Fleming said of JOHS committees that “they are not a quality control process”, that “policing is the job of

management”, that JOHS “should not be an oversight body.” How this accords with the statutory mandate of JOHS committees is somewhat beyond the scope of this Inquiry.

I emerge from considering all this evidence with the concern that the JOHS committee may be a ready repository for too many OHS responsibilities. I touched on this at page 43 *et seq.* Kevin Caines said, as the Inquiry’s concluding witness, that hazard assessments will now be done differently than before, using the new “hazard inventory” methodology, with specific guidance on how they are done, by whom, etc. Further he says they will be reviewed, not merely filed as before. I would hope that the review function of the JOHSE committees in all of this is made clear - what they will and will not be expected to do.

The hazard assessment process undertaken in regard to the plowing is likely the clearest example of potential shortcomings within the DTPW system. As explained earlier, a written hazard assessment was performed, more or less after-the-fact, in 2001. It was filed away and never seen again. The manual gave some direction on how to perform one; the author had received some instruction in what a hazard assessment entailed. But nobody ever reviewed it to see whether it was done in accordance with established standards. The closest thing to a review was management’s perusal of the JOHS committee minutes. While the architects of DTPW’s OHS program saw the JOHS committee as “on-going program auditors . . . a multi-partite group to keep an eye on things”, this committee didn’t deal with a hazard assessment at any time. As previously noted, this may speak to the need for some clarification of the role of the JOHS committee, a reinforcement of its mandate and/or some other quality control process altogether.

#### Internal Monitoring / Audits

As of 2003 DTPW was doing yearly internal audits of its OHS system. As one might expect, these did not hit on every work site in the province, but a representative sample. These were not surprise audits - supervisors would know in advance that they were coming - but management believed that this did not diminish their effectiveness. Most were done in the fall. Some

were done in the spring. None were done in the winter. Nelson Edge, to the best of his recollection, thought that Englishtown had been captured by an audit three times prior to 2003, one of these being an external audit done by the NSCSA in 2000. He says he "never got a report card as such for the site" but knew it had "passed" and was given to understand that Englishtown was "one of the better sites."

The Nova Scotia Construction Safety Association, an independent agency, was contracted to do an external audit of DTPW operations every 3 years. This too was a selective audit of representative sites and operations. The audit of 2003 covered the "Miller Lake" operation of DTPW and hence the eastern ferries, including Englishtown. Certain deficiencies were identified. With respect to hazard assessments particularly, it states that documentation was weak, including a failure to document corrective action. It noted "hazards not being prioritized" and expressed concern that fewer were being done than departmental policy would expect. It requests DTPW's critical task inventory. It recommends that DTPW "provide training in the hazard assessment process (and) seek advice from the safety specialist and involve workers." It asked DTPW to submit further evidence of compliance in a number of areas if it wished to maintain its certification. I have no evidence that this was not done.

Dr. Fleming spoke to the Inquiry of the need for DTPW and other employers to have some internal mechanism to double check the quality of any hazard assessments which are done. He believes there should be a critical task inventory at each site which would allow auditors to determine whether hazard assessments have been done for dangerous jobs.

It appears DTPW has begun to move towards a systematic assessment of HA's - to monitor how well they are being done. In this and other areas it seems their internal audits will attempt to move beyond documentation review to actual evaluation of the result, something which DTPW says "goes above and beyond" other government programs. If a hazard assessment were done at Englishtown today I am led to understand that it would be sent immediately to Miller Lake to be reviewed by a safety specialist and the manager for marine services. Kevin Caines indicates that inspections are now more detailed and are capable of picking up situations where a hazard assessment should have been done but wasn't.

I commend a continuation of this approach and a fulfillment of this objective. It is one which other departments and private employers with the necessary resources would do well to follow.

I would urge DTPW to also begin (if it has not already begun) to develop a list of safety-critical jobs for which hazard assessments should be done. If it is possible to define which jobs require "designated competent operators," for instance, it should be possible to do this. NSCSA's request for DTPW's "critical task inventory" also leads me to think that construction of such a list is possible.

### PART III

## RESCUE / RECOVERY

### Actions of the Parties

The first rescue attempts were those of Alice MacInnis. They are described in Part I. Like other crew members she had taken a marine emergency duties (MED) course. None had practiced rescue drills beyond throwing the life rings a couple of times. Thomas Kearsey adjudged her response to be appropriate in the circumstances. It is extremely unlikely that she or anyone else in her situation would have been able to save Mr. LeBlanc. This is so even if the rope on the second life ring had not been iced over.

If a person in the water is wearing a PFD it is more important, and likely more realistic, to get a rope to him/her than it is to get a life ring. There are devices designed for such a purpose. Piecing together some of the Inquiry evidence leads me to think that such devices may have a place in an emergency response plan, but that more thinking may need to go into what kinds of lines or ropes are available, how they might be deployed on the ferry, etc. This ferry is never far from dry land. Getting a line to a person and finding a way to tow or pull them to shore may be a viable course of action.

As noted in Part I, Nelson Edge called 911 shortly after 8:35. As he waited he scanned the shore and Bay with binoculars for signs of Mr. LeBlanc. All he saw was a life ring moving along with the tide. It appears an ambulance, and trucks from the Baddeck Fire Department, both arrived shortly after 9:00. Some individuals who lived in Englishtown also began to arrive, having been notified in their capacity as members of the auxiliary Fire Department and/or Coast Guard. RCMP Baddeck received its call from telecoms at 8:50. Cpl. Towle said that he and another member arrived at Englishtown at 9:27. Up to this point, Nelson Edge seems to have been in charge of the scene, at least in a *de facto* sense.

En route to the scene the Baddeck Fire Chief, Ernest Roberts, radioed the

Sydney Mines Fire Department and told them to put their dive team on standby. This was the usual protocol in such a situation. A decision whether to actually call it out is made at the scene.

Immediately upon arrival the Fire Department initiated a shoreline search. They called in the Ingonish RCMP and Indian Brook Fire Departments to search the other side. Sgt. Towle spoke with the RCMP Rescue Coordination Centre. They told him that they would call the RCMP dive team. When Chief Roberts was told of this, he again called and spoke with Paul MacCormack of the Sydney Mines Department and learned that they could have someone in the water at Englishtown in approximately 40 minutes (counting the driving and preparation time). Ambulance personnel had told Cpl. Towle that the outside limit on reviving a person in these circumstances was 48 minutes. For his part, Chief Roberts had spoken to the dive master of the Sydney Mines team about survival times in cold water and the likelihood of rescue within the time frame they were then facing. Const. Macleod of the RCMP dive team would later testify that people can sometimes be revived as long as 1 hour after submersion in cold water. Even this slim possibility was vanishing.

Towle and Roberts conferred about what to do, particularly with respect to the dive team. They operated on the assumption, which was correct, that the incident had occurred around 8:30. They concluded that there was no realistic possibility that the Sydney Mines team could effect a rescue. They decided that the sole function a dive team could then serve was recovery of the body. The RCMP team had been alerted and dispatched. Cpl. Towle had been told that the RCMP could not utilize the services of an outside agency, whose qualifications and training they would not be aware of, because of potential liability issues. Chief Roberts believed that because the operation had gone from rescue to recovery the RCMP had authority. Given the foregoing, and the fact that the RCMP team was on the way, the decision was taken not to call out the Sydney Mines unit.

The RCMP dive team is stationed in Dartmouth. The person in charge, Constable Thomas MacLeod, described it as the RCMP's underwater recovery team (URT) for Nova Scotia. He indicated that it provides support to emergency response teams. They received a call, according to Const. MacLeod, at 9:22. He told Cpl. Towle about their policy of not allowing

outside divers to work with them, under their supervision. He conceded that they could not stop a Fire Department or anyone else from conducting an independent operation. He said that their time to prepare and assemble upon arrival at a scene was about 1.5 hours.

With the Sydney Mines unit called off, and the RCMP's URT team en route from Dartmouth, people at the scene did the best they could with the resources at their disposal. The RCMP took over the accident investigation, the Fire Department continued the shore search and Nelson Edge continued to direct a water search with members of the auxiliary Coast Guard, using the utility boat kept on the Ferry. As it was winter, this boat was covered in a tarp, and it took three of them a half-hour to launch it. They picked up the life ring which had drifted to the edge of the ice field covering the bay. The coast guard vessel Edward Cornwallis was dispatched to the scene, arriving about 1:00 pm. It put out a smaller vessel which searched the outer reaches of the harbour.

The Baddeck Fire Department was not equipped with a rescue boat of any kind. Although they responded with three vehicles, including a rescue unit, the only equipment they had to effect any kind of water rescue was rope. The Chief knew that the Ferry had a small boat which could be utilized, but the experience here demonstrates that it was not designed for quick deployment. Chief Roberts was not aware, at least before this incident, whether RCMP or municipal police had dive teams available locally.

The matter of the dive team was a source of great frustration for Nelson Edge. The RCMP squad was first able to put a person in the water at 5:15 pm. In addition to travel time they had to evaluate the ice and current, learn the last known location of Mr. LeBlanc, speak to locals about the bottom conditions, etc. A search plan was formulated and commenced, but within a very short time, with the approaching dark, it was suspended for the day.

The efforts of the dive team began in earnest the following morning. Using a support vessel the divers covered the area in a systematic way. Fifteen dives were done over two and a half days. They could not locate the body. The search area was expanded to the edge of the ice field in the bay. They would go no further because to the dangers of diving under ice

without specialized equipment, which they did not possess.

On the 9<sup>th</sup> the divers also helped secure slings to the submerged tractor so that it could be hoisted onto the Ferry. Const. MacLeod thought that the cracked glass in the door may have been the result of Mr. LeBlanc "shouldering it" in his effort to escape. He said the cab would have filled with water quickly, relieving pressure from the outside, permitting exit.

In the days following February 8<sup>th</sup>, other recovery efforts continued as well. Local fishermen assisted in searching the bottom of the bay. DTPW helped with some of the fuel costs. A tugboat was enlisted to break up the ice. An underwater camera was brought in. Two shoreline searches were conducted by helicopter. As of the 18<sup>th</sup> all this had been to no avail and the search was suspended until spring. Despite this, Fire Department members conducted a three mile shore search on the 28<sup>th</sup>. In May the Sydney Mines dive team searched the area again. The body was not found until August 17<sup>th</sup>. Some tourists happened to notice it floating in the outer harbour.

The efforts of these people and organizations, including many of Mr. LeBlanc's fellow employees, acting mostly in a volunteer capacity, deserve acknowledgment.

### Equipment Aboard the Ferry

Although coming under provincial jurisdiction, the ferry was equipped according to Canada Shipping Act standards. The life-saving equipment was designed primarily for emergency evacuation of the vessel (life rafts in large drums suspended over the sides, boxes of life jackets on deck plus life jackets in the captain's cabin for crew). There was an aluminum boat suspended over the side on davits. Apparently it was used in July of 2003 to rescue a couple of swimmers who got carried away by the current from a nearby beach. Despite the appearance this might give, this craft was meant only as a work boat and then only in non-winter months. On February 8<sup>th</sup>, 2003 it was covered by a tarp.

There were four life rings aboard, inspected weekly. Occasionally high



wind would cause freezing spray to cover them in ice. Obviously these are meant to be thrown to someone who has unexpectedly entered the water. Equally obviously, a person wearing a PFD wouldn't need one.

DTPW's safety manual contained a "man overboard" procedure (filed as a "job procedure") but it was not designed for a cable ferry - it presumed the ability to manoeuvre the vessel as part of the life saving effort. It might be of guidance if someone fell out of the utility boat.

Life rings are difficult to throw any distance or with any accuracy. 10 meters would be a good toss for just about anyone. Where current is taking a person away, the throw would have to be right on the mark. Thomas Kearsey concluded, upon a review of the circumstances, and with his expertise in marine rescue, that "Mr. LeBlanc was most likely out of reach of a thrown life buoy by the time Alice MacInnis reached the bulwark at the starboard bow." While iced-over ropes are to be avoided, this had no bearing on the outcome here.

Hypothetically, if the life buoy had reached Mr. LeBlanc, he might have been able to save himself, provided he knew how to use it. The proper method is to put head and shoulders inside the ring and entwine one's arms in the ropes. Then, even if a person weakens, he or she will stay above water. There may be circumstances (good weather, weak current, etc.) where a life ring could be utilized. I do not mean to suggest that they are entirely useless and should be ignored.

As of the time the Inquiry was concluding, the Englishtown ferry was about to be fitted with a different utility boat. This was expected to be a so-called Boston whaler - 17 feet long, fibreglass, suspended over the side on davits, capable of being lowered and operated by one person, and easy to start in cold weather. It could be put in the water in 10 to 15 minutes. Crew were going to receive training in its use; a hazard assessment and SWP were being developed. While still not a rescue boat *per se*, it might be of some use in an emergency.

As well, procedures have been developed by the JOHS committee dealing with, among other things, a "man overboard" sort of situation. It directs crew to respond immediately and render all possible assistance. Nelson

Edge indicated it is still a work in progress. However it is never expected to progress to the point of a true water rescue capability, which requires very specialized training, a certain complement of people, and a rescue craft more sophisticated than a Boston whaler. It is not something that can realistically be expected of these employees.

Evidently the new auxiliary boat planned for the ferry can be launched by one person. As noted above, all that may be needed is to drag someone to shore. Thomas Kearsey suggested that the new boat could be brought into service in an emergency. No doubt this is true - people facing an emergency will use whatever they can. The more difficult question is : what expectations exist that certain equipment or procedures will be used? Expectations of use create expectations of success. Standards creep into the picture. Training becomes an issue. And so it goes.

Again, this is a topic for further consideration by DTPW. It may require further consultation. For instance, it ties in with the possibility of a new ferry. A former captain said that it was difficult to launch the work boat "if the tide was running underneath the ferry". And so, if the auxiliary boat on the new ferry is meant to be used in an emergency (or even available for use, which may not be the same thing) some thought may have to be given to design, placement, etc.

Thomas Kearsey said that MED training can be delivered locally, using the actual equipment at the disposal of rescuers. He believed this was more effective and may even be less costly than sending people elsewhere for such courses. He suggested that local members of the auxiliary coast guard could be trained in the use of an "emergency boat" that would be carried aboard the ferry. He urged training drills for the crew in whatever response plan is developed, including any on-site rescue procedures. He said such "man overboard" drills should be practiced regularly.

Kevin Caines was not sure whether use of any "emergency boat" would be a job requirement. He said that it would be another form of cross-training. He thought "most of them have small vessel experience" already. That starts a bell faintly ringing.

Someone needs to sort the chickens from the eggs. I do not have the

expertise or necessary information to do so here. Expectations must be realistic. Cost is a valid consideration. I suggest that reasonable objectives drive decisions regarding equipment rather than attempting, after the fact, to cobble together some sort of rescue procedure out of whatever is around.

### The 911 response

Having considered rescue measures which might be mounted from the ferry, I turn lastly to the response of the agencies after a 911 call. As in other matters, the Inquiry did not conduct an exhaustive study of the entire system. But the brief snapshot we have may point to possible improvements in respect to water rescue and recovery.

Because Englishtown is within 30 minutes of a fire department and hospital, it is not considered a "remote location" and it does not have to have an Emergency Response Plan as such. As Nelson Edge said, the plan is to call 911. But having done that on February 8<sup>th</sup>, Nelson Edge was frustrated by the inability of the system to dispatch the asset which he had specifically requested - a dive team. He may have been "hoping against hope" that Mr. LeBlanc's life could be saved even if he had gone underwater. In other moments, he may have felt a dive team could at least recover the body. In the following discussion I am not only concerned with a dive team *per se*, but water rescue in a broader sense.

The earlier narrative explains how the RCMP dive team came to be called to the scene. Late in the Inquiry we received memos from two local agencies who seemingly could have put divers there sooner. Because the hearings were wrapping up, after a number of previous delays, we did not want to extend it yet again for more testimony. I therefore take the letters at face value.

The Cape Breton Regional Police Service have what it calls a "forensic dive team". It was created in 1997 so that local police would not have to rely on the RCMP unit based in Halifax. Its purpose, however, is "to provide search and recovery expertise in locating evidence . . . and providing investigation in water related sudden deaths". It provides

emergency response only where the officers are actively on marine patrol or in cases where an emergency unit is unable to attend. Even here, according to the letter from its supervisor, the function is one of “. . . search and recovery. The survival rate of a submerged victim is extremely low.” The boat they use is a Boston whaler. They do not employ surface air supply, which somewhat restricts their capability.

The CBPRS unit primarily responds to calls for assistance from its own police officers within CBRM. Although it has assisted the RCMP on occasion there is no memorandum of understanding in place (as there is with Traffic Safety, for instance) to coordinate efforts in a formal way. Hence, if another police agency requested its assistance, the Associate Chief would have to be consulted on a case by case basis. While volunteer dive teams have assisted it in the past, there are now liability concerns surrounding this practice. Volunteer teams are not required to follow the same standards and regulations as an accredited dive team, raising safety issues and issues of responsibility if they are “folded in” so to speak. Here we have an echo of the concern expressed by Constable MacLeod about potential exposure to liability if assisted by non-RCMP divers. His concern, however, extended to the involvement of any other dive team, volunteer or otherwise. On February 8<sup>th</sup>, 2003 the other team under consideration was the one in Sydney Mines.

There appear to be a number of fire departments in CBRM which provide some sort of “water rescue.” It is difficult to know just what that might entail. The Sydney Mines department has a specific unit which provides “ice and water rescue or recovery service to the community and surrounding area”. It has been in place for the past 20 years. It is presently comprised of 8 certified divers. It employs a 16 foot Zodiac boat, a rescue truck outfitted to support prolonged dives year-round, in-water communication, etc. For insurance reasons, it must be activated through the 911 Regional Dispatch Centre. The letter says that the originating call could come from “another fire department, or one of the law enforcement agencies, or anyone who requires the service”. It suggests that the response time to Englishtown would be approximately 30 minutes. It is possible that one would have to add to this the time it would take to route the call through the dispatch centre, and any time it would take for them to “set up” at the site. I am therefore reluctant to suggest that this unit could

have been in the water at Englishtown within "x" minutes of 8:35 on February 8<sup>th</sup>, 2003. I have no reluctance in suggesting that the issue of emergency water rescue be examined by local and provincial agencies with a view to providing the most efficient use of available resources.

The Sydney Mines unit would seem to be well-placed geographically to supply rescue service to Sydney harbour and the surrounding coastline. Baddeck would appear to be another location from which a water rescue capability could be extended. It would be even closer to Englishtown than Sydney Mines. As some noted at the Inquiry, the Baddeck Fire Department could, theoretically, supply such a service to the Bras d'Or Lakes, where presently none exists.

Kevin Caines is involved in a DTPW study of volunteer fire dispatch. As of July 2006 it was looking at how services such as ground search and rescue are dispatched in various parts of the province. Apparently it will turn its attention to how particular assets (such as jaws of life, or a water rescue team) might be identified and deployed immediately by a central dispatch rather than by a fire department once it gets to the scene. Conceivably a system might permit at least certain pre-identified locations or "persons in authority" (if not every member of the public) to request a particular asset.

The 911 system is multi-faceted. Issues of coordination, communication, jurisdiction and liability abound. It is not possible for me to make specific recommendations about the manner in which emergency calls are received and filtered, how central dispatch systems may be reconfigured, nor how available local resources ought to be marshaled. The Fire Safety Act and the Municipal Act come into play. Both federal and provincial police forces may be involved. It is complicated. Nevertheless an examination of needs, an inventory of existing capabilities, consideration of means by which specific assets could be immediately deployed - such could enhance the effectiveness of the response in situations like the one that arose on February 8, 2003 and I urge the continued pursuit of those objectives. Needless to say, as I am here dealing with a death by drowning, water rescue is the particular facet I have in mind.

#### PART IV

## RECOMMENDATIONS

Even though the recommendations contained in this Part arise out of the earlier discussion, it is natural that those who are interested in the "bottom line" will read this section first, and perhaps only. The background, detail and comment found in Parts I, II, and III may be of little interest except to those who were directly involved in the Inquiry, are directly affected by the recommendations, or to those with a particular interest in the subject matter. However, these earlier sections contain some fairly specific suggestions. Rather than pull them out of their context (but also to avoid repetition) I will occasionally refer back to earlier parts of the report.

The questions and concerns arising from this workplace fatality do not readily admit to a list of pat answers. In the body of the report I attempted to tie the many strands of evidence together into a coherent narrative. There, some may find things which are instructive for their purposes. Rightly or wrongly I think there is value in a basic explication of these events. Someone who actually supervises a workplace, trains workers, drafts policy, advocates for safety, manages an organization or plows snow may take something from the foregoing account that I did not see. In this sense I am entrusting the report to interested persons to draw whatever lessons there may be for them, in their circumstances, in light of their particular responsibilities.

I am mindful of the reservations expressed by some of the parties that given the "singular nature" of the events here, and also of the site, there is a danger in making wide-ranging recommendations. They say, in effect, that a fatality Inquiry comes with its own hazards - that it is difficult to predict the costs, or even the risks associated with the implementation of recommendations. I was reminded that the OHS regime in DTPW and elsewhere is a complex web of checks and balances, built up over years, and constantly evolving.

However these are, after all, recommendations. Others have the final responsibility. Given the time and effort that went into this Inquiry, from many quarters, I would not want to see this report simply gather dust. There will be plenty of time for that in years to come. But there is nothing to preclude further thought and study now. The Inquiry was given to

understand that there is an interdepartmental union/management committee(s) which provides advice to the provincial government on OHS issues. There are managers with their own individual perspectives. There are resources and materials available, both inside and outside of government, which may assist, some of which were identified at the Inquiry. So, in the end, I think there is an expectation that the recommendations will be addressed, and that those in authority should be able to justify to themselves and others a decision not to act on any particular one.

In what follows, I use the term hazard assessment to mean a formal, written document prepared before a dangerous job is begun.

1. DTPW, and by extension others involved in OHS issues, should strive for clarity and consistency in its terminology concerning hazard assessments. I have heard the term "hazard assessment" used in a number of different ways, with a number of different qualifiers. New terminology has been introduced in the most recent iteration of its safety program. If recommendation number 5. is implemented, presumably this will include a definition. Further comment may be found at page 49.
2. DTPW should develop a guidance document for the preparation of formal hazard assessments. This may indeed be something which other government departments could adopt, and which may also serve as an example to private sector employees who wish to maintain the highest possible standard of workplace safety.
3. DTPW should ensure that it utilizes a hazard assessment form which breaks down the operation or task into its component steps, identifies hazards associated with each, and which clearly separates hazards from tasks. It should also prompt sequential use of a hierarchy of controls. The prescribed form should support the guidance document which is developed pursuant to #2., above
4. (A) DTPW should ensure that hazard assessments are, as a rule, done by a team which includes a safety expert. There may be exigent circumstances where it is impracticable to assemble such a team, but these should be very much the exception. (B) The team should include a

person (or if this is not practical, the process should include some input from a person) who has authority to approve expenditures associated with any recommended controls.

5. I am particularly cautious about recommending regulatory changes. These cast a broad net and have many implications. I nevertheless recommend that the province, in consultation with stakeholders, draft a new regulation for formal documented hazard assessments. Any such regulation should establish a reasonable and realistic standard for when a hazard assessment ought to be done, the form it ought to take, the process by which it is completed, and what it ought to include. The Inquiry was advised that such regulation exists in some other jurisdictions (Alberta was mentioned). Obviously Nova Scotia would want to draw upon that experience in deciding whether to make such changes to our own OHS regulations.

6. With a view to quality control, DTPW should (A) continue implementation of a system to provide ongoing evaluation of its hazard assessments, as described at page 75, and (B) it should attempt with equal vigor to ensure that training in the preparation of hazard assessments is provided to employees, particularly its supervisors.

7. DTPW should develop and thereafter maintain a list of so-called "safety critical tasks" for its various work sites. Identification of such tasks should be logically connected to any guidance document, regulation or other criteria which serve to trigger a hazard assessment. In time there should be hazard assessments done for all of these, and appropriate control mechanisms put in place.

8. As discussed at page 73 *et seq.*, the role of the JOHSE Marine committee, and indeed of JOHS committees generally, in the instigation, completion and review of hazard assessments could be better defined. It is not clear, from the evidence at the Inquiry, just what is expected of them in this regard. I commend their continuing to meet, with OHS issues as a standing agenda item.

9. (A) The SWP for snow and ice clearing at Englishtown should be examined for possible inclusion of the following: specification of forward-



plowing; having the tractor operator's crew mate check, just prior to the plowing, the life rings and any other apparatus on the ferry which might be needed in an emergency; any specific duties the crew mate is expected to perform, including traffic control; other points mentioned at pages 64, 65.

(B) DTPW should continue to ensure that private operators or specialized equipment are made available in any situation, however infrequent it may be, where the on-site tractor is not capable of clearing the snow or ice in accordance with the SWP. DTPW should continue to ensure that all such private contractors are themselves cognizant of and compliant with any SWP, job procedure, hazard assessment, etc. which may be in place.

10. The circumstances in which the captain on shift may delegate limited operation of the ferry to a purser/engineer should be delineated in writing.

11. The existing hazard assessment for plowing at the Englishtown ferry, while much improved, should be repeated in accordance with any new form, guidance document, etc. which is developed, and separate consideration given to distinct aspects of the operation such as plowing the deck, or pushing off ice floes.

12. It would be advisable for DTPW to conduct audits at different times of the year, given the seasonal nature of so many of its operations.

13. If DTPW intends to keeping the plowing at Englishtown "in house", i.e. done by ferry employees rather than private operators or other full-time operators within the department, it should consider making experience in the operation of such equipment a factor in future hirings. As discussed at page 39 *et seq.*, DTPW should consider ending the "opting out" feature of tractor operation at the Englishtown ferry.

14. There should be a requirement that persons on the "designated competent list" for plowing at Englishtown, not being dedicated equipment operators, have some set minimum number of hours per year on the tractor, either in actual use during working hours, or in refresher practice / training. If an employee does not maintain such hours, formal retraining and testing should be required in order to maintain the designation. Yearly refamiliarization should continue each fall, with the requirement to demonstrate emergency stopping procedures on the pad. If this requires

that the ferry be out of service for a short time, so be it.

15. Institutions which offer marine emergency duties (MED) training should be contacted and arrangements made for on-site training of the employees utilizing the actual equipment which is at their disposal. It would be most productive to do this with any new equipment (ferry, emergency boat, PFD's, throw ropes, etc.) in place. This could include basic safety, small vessel, and survival craft courses, as needed.

16. Further consultation should take place with respect to personal flotation devices (PFDs) at Englishtown and other such sites. Available expertise should be utilized. Employees should not only be consulted but encouraged to actually "try out" some of the available options. Once it is determined that a certain device is optimal for a given time of year (i.e for certain water temperatures), a firm policy should be put in place, rather than leaving use entirely to the wishes of the individual employee.

17. (A) There should be training in the use and maintenance of the chosen PFDs, including education on how to manage and survive cold water shock. (B) Other survival training relevant to sudden immersion should be developed and implemented, with particular reference to the tractor in use and any safety features and escape mechanisms it possesses. Inclusion of some actual in-water component should be encouraged. Here I do *not* have in mind simulating escape from a submerged vehicle.

18. DTPW should consider making the ability to swim a factor in any future hiring of ferry employees. Existing employees, if they do not know how to swim, should be encouraged to learn and provided with this opportunity.

19. (A) DTPW should complete its consultation with the manufacturer of the existing tractor to see whether an additional handle can be fitted at the top of the doors. (B) At such time as the tractor is replaced, escape mechanisms should be a primary consideration, and fresh consideration given to all other available safety features. (C) as noted on page 53, the idea of a "tether system" deserves on-going attention.

20. In situations where a newly-trained or newly-hired employee is beginning a particular task, employers should be particularly careful to

ensure that there is, at the very outset, on-site supervision of that person's work to ensure competence under actual work conditions. Obviously the degree and nature of supervision will depend on the inherent dangerousness of the task.

21. As discussed at page 82, it is likely not realistic to expect that there should be a true water rescue capability at the Englishtown ferry. However, an appraisal should be made of how, and under what circumstances, an emergency boat (whether it is a Boston whaler or some other auxiliary vessel) could be utilized by a crew member or members to aid someone in distress. Any plan for deployment of an auxiliary vessel from the ferry in an emergency will have to take account of whatever training the employees presently possess, or may be given in future. The specifications and design of any new ferry and/or emergency vessel should advance this objective. Other suggestions regarding future ferry design may be found at page 54.

22. Officials should examine what devices are available which are designed to cast a rope or line a significant distance to a person in the water. These should be put aboard the ferry and auxiliary vessel in addition to, not in substitution for, the life rings, and training should be provided for their use.

23. I urge whatever agencies of government are responsible for and involved in the "911 system" to examine the need for a water rescue capability in Victoria County, particularly on the Bras d'Or Lakes, and in other parts of the province. Local fire departments would seem to be appropriate places to base such a service. In a province surrounded by water, it may be instructive to do an analysis of existing water rescue capabilities and determine where additional resources are needed. I refer to commentary at page 83, et seq.

24. I urge those responsible for the "911 system" to examine how it may build in the capability to immediately deploy a particular asset, rather than requiring, as now, that such requests come from one of its "first responders" when it has arrived on the scene.

25. Further to the comments made at page 85, I encourage dialogue

among various police agencies and other first responders about possible jurisdictional or liability issues in order to identify and resolve any areas of confusion or contention. The facts in this matter would provide one starting point for a useful discussion.

26. DTPW should maintain a current "emergency response plan" at Englishtown and other sites, updated in accordance with any actions taken under the preceding recommendations or otherwise. Drills and practice in the use of vessels, throw ropes, etc. would enhance the likely effectiveness of any emergency procedures which are put in place.

27. Employers everywhere should make all reasonable efforts to ensure that new employees are oriented to hazards in their workplace, receive appropriate safety-related training and supervision, are familiar with any safety program or manuals, and review any hazard assessments, safe work practices, emergency response plan, etc.

All parties to the Inquiry received copies of the expert reports which were tendered into evidence. These may be helpful to anyone who wishes to follow up on certain of the foregoing recommendations. For the same reason I have appended to the exhibit list some "recommended reading" from one of the experts who testified.

### conclusion

For the most part, the foregoing recommendations will be relevant to larger employers with formal OHS systems. Many thousands of jobs and tasks are performed daily in Nova Scotia which are not governed or guided by any formal safety regime. Even within large employers such as DTPW there is a legitimate expectation that the individual take a large measure of responsibility for his or her own safety, and for the safety of fellow employees.

One of the self-employed operators who used to clear snow at Englishtown, when asked what advice he would give to others, said "be cautious . . . take stock of things . . . and experience is important for

whatever you do". He was rather more taciturn than I have been. To "experience" in this comment I would only add "training", and conclude with a common valediction. Take care.

Sydney, Nova Scotia  
April 5<sup>th</sup>, 2007

## APPENDIX "A"

## PROCEDURAL RULES

Inquiry Counsel proposed a procedure to provide guidance in the preparation for and conduct of the Inquiry was developed and circulated to all counsel on February 18, 2005. The procedure agreed upon was set out as follows:

## Pre-Inquiry Interviews

It is anticipated that counsel for the Inquiry (counsel) may request any person or any organization to submit to one or more interviews with counsel or other persons designated by counsel for preparation purpose, at any reasonable time appointed by counsel. No person or organization is required to submit to such interviews.

## In Camera Proceedings

Section 32 of the Fatality Investigations Act, provides that the hearing shall be open to the public except where the Judge is of the opinion that

(a) matters involving public security may be disclosed; or (b) the intimate or personal matters or other matters may be disclosed at the hearing that are of such a nature, having regard to the circumstances, that the desirability of avoiding disclosure of the matters in the interest of any person affected or in the public interest outweighs the desirability of adhering to the principle that hearings be open to the public, in which case the Judge may hold the hearing or part of it concerning any such matters in camera.

If any interested party wishes any portion to be in camera they are required to make an application to the Court for an order that any portion of the proceedings be in camera or an order prohibiting the disclosure, publication, communication of any testimony, document or evidence. Such applications shall be made in writing, supported by affidavit(s) at the earliest opportunity. The evidence and submission of such applications may be presented in private or in public, or a combination of both, at the discretion of the Court. As stated, the Court may hold the hearing or any part of it concerning any such matters in camera.

## Witnesses

Counsel will call and question witnesses to testify at the Inquiry in accordance with Section 3 1 of the Fatality Investigations Act. Counsel will provide each interested party with a proposed witness and exhibit list well in advance of the commencement of the Inquiry. All parties are encouraged to provide counsel, at the earliest opportunity, the names and address of all witnesses whom they feel should be heard, together with a brief description of the witnesses, as well as relevant evidence and copies of all relevant documentation. Counsel has a discretion to refuse to call a witness or present evidence. Where counsel refuses to call a witness or present evidence, a party may apply to the Court for an order that such witness or such evidence be presented. Such application must be made in writing, supported by an affidavit. It must indicate the name and address of the witness, give a summary of his or her testimony or the reasons for not providing it. A copy of any document which the witness intends to file into the record must accompany his or her application. If the Court is satisfied that the witness or evidence is needed, counsel will call the witness or present the evidence.

## Expert Witnesses

Counsel will provide each party with the name, address, and qualifications of each proposed expert witness. This shall include any report which the proposed witness has prepared, as well as the area of expertise in which the opinion is being sought and a summary of the anticipated evidence if not clear from the report.

## Order of Examination

Counsel will first adduce evidence from the witness. Except as otherwise directed by the Court, counsel can adduce evidence by way of both leading and non-leading questions. All interested parties will then have the opportunity to cross-examine the witness to the extent of their interest. At the Court's discretion, the order of cross-examine will be determined by the parties, failing which by the Court.

## Access to Evidence

All documentary or physical evidence filed before the Court shall be identified and marked "P" for public hearings in numerical order and if necessary, in camera hearings for which a nondisclosure, a non-publication, or non-communication ban

order has been issued shall be identified and marked as "IC" in numerical order. One copy of the "P" transcript of the evidence and a "P" list of exhibits of the public hearings will be available to be shared and consulted by counsel for all parties.

## APPENDIX "B"

### LIST OF EXHIBITS

Exhibit 1	CD Englishtown Photos
Exhibit 2	Photos A1 - A17
Exhibit 3	CD
Exhibit 4	Photos P1 - 21
Exhibit 5	Large scale drawing of ferry
Exhibit 6	Hazardous Check List December 2001
Exhibit 7	Man Overboard Form Jan 12, 2000/Safe Procedure Form
Exhibit 8	Group of 4 photos (tractor tire on pad)
Exhibit 9	Single photo of lifting of tractor
Exhibit 10	Handwritten sheet 7 Jan 03 Safe work practice plowing snow/ice
Exhibit 11	Chart - ramp (pad)
Exhibit 12	Chart - Cross section view of pad
Exhibit 13	Work order record and repairs to tractor
Exhibit 14	Operator's manual for tractor
Exhibit 15	Video of tractor removal (Feb 9/03) of Englishtown Ferry
Exhibit 16	Photos made from video
Exhibit 17	Series of 4 photos of snow tracks
Exhibit 18	3 pictures (lift arm)
Exhibit 19	3 pictures (pictures of tractor after lifted)
Exhibit 20	E-mail from Doug Smith
Exhibit 21	E-mail from Doug Smith dated December 5/02
Exhibit 22	Letter to Doug Smith from Sandy Jardine
Exhibit 23	Letter to Doug Smith from Sandy Jardine
Exhibit 24	Letter dated March 28/00 to Doug Smith from Sandy Jardine
Exhibit 25	Familiarization Report
Exhibit 26	Safe work practice dealing with snow removal
Exhibit 27	Duties - Job fact sheet - supervisor, training
Exhibit 28	Job fact sheet - EQII
Exhibit 29	Training template
Exhibit 30	Loader test
Exhibit 31	Loader test



- Exhibit 32 Loader/operator test (Feb 10/2002)
- Exhibit 33 Utility tractor test
- Exhibit 34 List of employees who attended a pre-post trip course
- Exhibit 35 Video - pre-trip on the road and post trip inspection
- Exhibit 36 E-mail and color photos of Don Currie's investigation
- Exhibit 37 Snow and ice control (training binder) Englishtown Ferry
- Exhibit 38 Department of Transportation and Public Works loader test
- Exhibit 39 A number of documents stapled - note - Nelson Edge, fax, safe work procedure, wharf equipment, etc.
- Exhibit 40 Memo dated 17 July '03 to Dave MacDonald
- Exhibit 41 Memo - Kevin Caines/Sandy Jardine, hazard assessment 8 Sept '03
- Exhibit 42 Minutes of OHS meeting September 18, '02
- Exhibit 43 Occupational Health and Safety Manual (2000)
- Exhibit 44 Occupational Health and Safety Volume 2
- Exhibit 45 Report from Investigation Team
- Exhibit 46 Memorandum from J. Marsman to Investigation Team dated Feb 13, '03
- Exhibit 47 Handwritten document of Joel Marsman (July 16/'03)
- Exhibit 48 Series of photographs 1 - 22
- Exhibit 49 Response from Kevin Caines re Inv. Report
- Exhibit 50 E-mails (copies) re memo of K. Caines
- Exhibit 51 Competent versus designated competent
- Exhibit 52 Safe work practice #117
- Exhibit 53 Safe work practice #118 dated 17 Sept
- Exhibit 54 Safe work practice #118 dated 18 Sept
- Exhibit 55 Safe work practice # 119
- Exhibit 56 Final version #117
- Exhibit 57 Final version #118
- Exhibit 58 Final version #119
- Exhibit 59 Hazard assessment document
- Exhibit 60 Section 7 of 1997 Manual(OH & S Training)
- Exhibit 61 Two handwritten hazard assessments
- Exhibit 62 Memorandum of Mr. Baxendale
- Exhibit 63 Resume of Sandy Jardine
- Exhibit 64 Notes - Training of S. Jardine
- Exhibit 65 Guidelines for conduction hazard assessments
- Exhibit 66 Loader operator test - D. LeBlanc January 7, '00
- Exhibit 67 Loader operator test - T Campbell
- Exhibit 68 Loader operator test - L. Christie - January 6, '00
- Exhibit 69 Loader operator test - K. MacAskill January 8, '00

Exhibit 70	Tests by Mr. MacAulay
Exhibit 71	Pre-trip inspection training manual
Exhibit 72	Utility tractor operator list (test)
Exhibit 73	TBW/OHS training initiative/training template for equipment training
Exhibit 74	Vehicle pre-trip inspection book Jan '03
Exhibit 75	Tractor log book Dec 2, '03
Exhibit 76	Operation of powered mobile equipment - loader tractor - Englishtown
Exhibit 77	Certification for Mr. Morton
Exhibit 78	Angus MacAskill Ferry night shift maintenance
Exhibit 79	M.E.D. training certificate
Exhibit 80	List of courses taken by witness Glen Christie
Exhibit 81	Columnar book
Exhibit 82	Single sheet with 4 photos
Exhibit 83	911 and RCMP Dispatch calls - transcript
Exhibit 84	Page from continuation report
Exhibit 85	Copy of Cpl. Towle's notes
Exhibit 86	Training and certification of Kerr MacAskill
Exhibit 87	C.V. of Dr. Christopher Brooks
Exhibit 88	Power point outline Dr. Brooks
Exhibit 89	C.V. of Dr. Russell
Exhibit 90	Letter dated March 17, '03, of Leslie Russell
Exhibit 91	Englishtown fatality accident reconstruction
Exhibit 92	Scale mode of ramp and model tractor
Exhibit 93	Photos of tractor in water (3)
Exhibit 94	Photos of Dr. Russell
Exhibit 95	C.V. of Captain Thomas Kearsey
Exhibit 96	Review (binder) of the rescue operations
Exhibit 97	Power point outline (binder) with 3 CD's
Exhibit 98	Floater vest
Exhibit 99	Floater vet (front buckles)
Exhibit 100	Floater coat
Exhibit 101	Floater coveralls
Exhibit 102	Working immersion suit
Exhibit 103	Inflatable vest
Exhibit 104	C.V. of Allison Douglas Tupper
Exhibit 105	Englishtown Ferry inquiry - engineer report
Exhibit 106	Supplemental engineering report Feb 8, '03
Exhibit 107	C.V. of Dr. Mark Fleming
Exhibit 108	Review of safety procedures and implementation - May 2006

Exhibit 109	C.V. of Clive MacGregor
Exhibit 110	C.V. of Nelson Edge
Exhibit 111	List of all training courses of Nelson Edge
Exhibit 112	Captain's log book entries
Exhibit 113	Group of photos (by Nelson Edge - Englishtown)
Exhibit 114	Copy of Nelson Edge's diary notes
Exhibit 115	Colored pictures of training area of tractor (Nelson Edge's property)
Exhibit 116	Manual Inflate PFD (In bag)
Exhibit 117	Floater coat (red)
Exhibit 118	Excerpts of time book of ferry
Exhibit 119	Donald LeBlanc's resume
Exhibit 120	Memo to crew Feb 15/03
Exhibit 121	E-mail dated February 24/ '03, SWP - clear snow, from Dave Gibson
Exhibit 122	Note: years experience of Englishtown employees operating
Exhibit 123	Emergency response plan
Exhibit 124	Fax - from Clifford Kaiser
Exhibit 125	Throw bag
Exhibit 126	Rope - knot on end
Exhibit 127	CD - video files for Dr. Chris Brooks
Exhibit 128	Health, Safety and Environment Program - 3 vol
Exhibit 129	Terms of reference
Exhibit 130	Autopsy Report
Exhibit 131	Medical Report of Dr. Kirkpatrick
Exhibit 132	Copy of letter from D. McGrath and attached subpoena and affidavit of service
Exhibit 133	Letter - CBR Police Inspector Thomas Hastie, Dive Team Supervisor
Exhibit 134	Letter from William Burchell re Volunteer Fire Department

expert reports are in exhibit #'s 96, 105, 106, 108, 127, supplemented by the oral testimony of each such witness.

suggested additional reading : James Reason, "Managing the Risks of Organizational Accidents"; Transport Canada, "Survival in Cold Water" (2003); Canadian Red Cross, "Drownings in Canada / Ice and Cold Water" (2006)

## APPENDIX "C"

## CONTROLS FOR THE TRACTOR

At the time of the fatality Donald LeBlanc was operating a Case International 486 tractor. The tractor was equipped with four wheel drive, a high/low range selector and an eight forward/four reverse transmission. The use of a clutch was required to change gears. The tractor had both a hand throttle or accelerator that was mounted on the right side of the steering wheel and a foot throttle. The tractor was also equipped with two brake pedals that could be coupled together or uncoupled ( left and right brake) a park brake, an engine kill switch and a roll over protected cab. If one were seated in the driver's seat of the tractor the controls would be located as follows: the clutch pedal is located by the left foot and the two brake pedals by the right foot. The hand throttle is located on the right hand side just below the steering wheel. As for the gear levers, the outside lever on the left hand side is the range transmission indicating high or low range or reverse. Next to that lever is the speed transmission lever which has a first, second, third and fourth gear. On the right hand side the levers for the three point hitch and draft control are located. On the front console is the engine kill switch on the left hand side, and the key switch is down on the right hand side almost below the console. In the upper right hand corner of the console are the light switches and signal switches.