T-2515-94

AN ACTION IN REM AGAINST THE SHIP "MARGARET ELIZABETH NO. 1" and IN PERSONAM AGAINST HER OWNERS, CHARTERERS AND ALL OTHERS INTERESTED IN HER.

BETWEEN:

MARY ELLEN HAWKINS, a minor, as represented by her Litigation Guardian, Thomas Hawkins,

Plaintiff,

- and -

THE M.V. "MARGARET ELIZABETH NO. 1", HER OWNERS - VONNDEL II FISHERIES LTD., CHARTERERS AND ALL OTHERS INTERESTED IN HER,

Defendants,

- and -

HER MAJESTY THE QUEEN,

Third party.

REASONS FOR JUDGMENT

RICHARD J.:

On July 21, 1994, at approximately three o'clock in the afternoon, while the female plaintiff, who was then 17 years old, was fishing for mackerel off the end of the public concrete breakwater wharf owned and operated by the Government of Canada, known as the Beaver Harbour Wharf, located in Beaver Harbour, New Brunswick, a member of the crew of the *Margaret Elizabeth No. I*, a fishing vessel built in 1971 weighing 369 gross tons, asked her and other persons fishing on the wharf to reel in their lines so that they would not snarl in the propeller of the boat. The plaintiff complied with the request and as she was reeling in her line,

she heard someone shout "Watch out". As she turned she was struck suddenly and violently by a precast concrete light standard which had been standing on a five-foot seawall between her and the fishing vessel. The fishing boat had tied up at the outer side of the wharf hours earlier to change its seines. As it was leaving its berth, the boat's moveable outrigger, also described as an A Frame, located on its starboard side and used for stabilizing a fish vacuum device, struck the light standard which abruptly snapped at its base, and, due to a tethering effect from a power cord attached to a navigational aid at the end of the wharf, fell in the direction of the plaintiff striking her neck, her back and her left extremity resulting in serious injuries.

The evidence establishes that the fishing boat's A Frame was in the down position when it should have been secured in the up position prior to the ship's departure. No explanation was given for this omission. The evidence also establishes that the extended outrigger struck the light standard mid-pole and perpendicular to it. The light standard snapped suddenly and fell on the plaintiff. The plaintiff had no opportunity to avoid the falling pole. I find that as between the plaintiff and the defendants, the defendants were negligent and 100% liable. The plaintiff was the unfortunate victim of this incident and did not contribute to her injuries. I will deal later with the defendants' third party claim for indemnity or contribution from the owner and operator of the wharf.

The plaintiff claims the following damages against the defendants:

A. Special damages:

1.	Medicare	$ 19,442.34
2.	Chiropractor	193.00
3.	Clothing	495.00
4.	Hospital - x-rays	13.62
5.	St. George Pharmacy	15.89
6.	Mileage	840.00
	Total Special Damages:	$ 20,999.85

B. General Damages;

C. Loss of future income;

D. Cost of future care;

E. Prejudgment interest at the prevailing rates.

Special Damages

The parties are in agreement with the special damages claimed by the plaintiff and with the payment of simple annual interest at the rate of 3½% from July 21, 1994 on the amount of $1,557.51 of these special damages and I so order.

General Damages

General Principles

The principles governing the award of damages in personal injury cases are set out in the *Andrews* case.[1] The judgment of the Supreme Court of Canada was delivered by Dickson J., as he then was. Mr. Justice Dickson stated that the method of assessing general damages in separate amounts rather than a lump-sum amount is a sound one. It is the only way in which any meaningful review of the award is possible on appeal and the only way of affording reasonable guidance in future cases. Equally important, it discloses to the litigants and their advisers the components of the overall award, assuring them thereby that each of the various heads of damage going to make up the claim have been given thoughtful consideration.

Dickson J. also stated the principle that the person suffering the damage is entitled to full compensation for the financial loss suffered. Obviously, a plaintiff who has been gravely and permanently impaired can never be put in the position he or she would have been in if the tort had not been committed. Money is a barren substitute for health and personal happiness, but to the extent, within reason that money can be used to sustain or improve the mental or physical health of the injured person, it may properly form part of a claim. There cannot be complete or perfect compensation; an award must be moderate and fair to both parties.

Therefore, the fundamental purpose of an award is to achieve, as nearly as possible, full compensation for the injuries sustained by the plaintiff.

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[1] *J. A. Andrews et al. v. Grand & Toy Alberta Ltd. et al.*, [1978] 2 S.C.R. 229.

Non-pecuniary Losses

At the time the plaintiff sustained her injuries she was 17 years old, a single parent with a young son and a grade eleven student in High School with above average academic marks.

The medical evidence establishes that the plaintiff, in great pain, was transported by ambulance to the Saint John Regional Hospital, seen in the Emergency Department and given antibiotics. Her injuries included a high grade (Grade 111 A) open or compound injury of her left femur. She had a comminuted or shattered left femoral fracture, as well as a comminuted or shattered patellar fracture. She was taken to the operating room and, under general anaesthesia, underwent a debridement of her left femoral wound. The wound was very large extending approximately 25 cm. in longest diameter and was in the anterior thigh approximately midway between the hip and the knee. Following the debridement, the orthopaedic surgeon, Dr. T. A. Barnhill, proceeded to fix the fractures with an intramedullary device. At the same time he proceeded with treatment of her ipsilateral left patellar fracture. Because of the degree of small fragments associated with this patellar fracture much of her patella was removed and only one third remained in large enough pieces to preserve. The large wound on the anterior thigh was left open. She also had a small undisplaced intra-articular fracture of the distal tibia on the same side. She had abrasions on her back and contralateral limb.

She was returned to the operating room on July 26, 1994. With the assistance of a plastic surgeon the wound was again debrided by Dr. Barnhill. A skin graft from the lateral proximal left thigh was applied to the opening on the anterior thigh. Her splints were reapplied. She was discharged on August 5, 1994, but was followed up through the Orthopaedic clinic.

A third anaesthetic was required on October 24, 1994 at which time the knee was manipulated. Some of the musculature about her knee had stuck down at the fracture site and she was having difficulty regaining knee flexion. The surgeon also removed the two distal locking screws from the femur and removed the pin from the patella. She was placed on CPM (constant passive motion machine) for three days to improve her knee flexion and was discharged on October 27, 1994.

On October 20, 1995, some 15 months after the incident, the plaintiff was brought to the operating room for two operative procedures under a general endotracheal anesthesia. Dr. Barnhill removed a nail from the left femur, which was now healed. Dr. G. C. Sparkes carried out a wound revision of the area which was skin grafted on her anterior thigh.

Dr. Barnhill referred the plaintiff for physiotherapy treatment on August 15, 1994. The series of 19 treatments commenced on August 26, 1994 and continued to December 30, 1994. She was also treated by a chiropractor on 8 visits commencing on December 13, 1994 and ending on May 23, 1995.

At the time of her injuries, the plaintiff was in good health. In a written report dated May 2, 1995, Dr. Barnhill, who also testified at the trial, was of the opinion that the plaintiff will undoubtedly have some weakness about the left knee related to both the muscle damage at the time of the injury as well as the fact she has had a very nasty patellar fracture which will interfere with knee function. In his oral testimony, Dr. Barnhill stated that the plaintiff's knee function was not normal and that she would be obliged to avoid labour intensive activities. He stated that arthritis of the knee could occur within 2 years, would be unrelated to age and have the potential to be progressive. He confirmed that there was now a solid union at the fracture site of the femur. He also noted that she is concerned with the scarring on her exterior thigh which is quite extensive in the area of the skin graft.

The plaintiff testified to the following injuries: damage to her neck, scrapes and bruises from head to toe, bruised muscle on her right arm, damage to her back, a compound fracture to her left femur, a shattered left knee, a cracked left ankle and bruises to her right leg. She was in great pain en route to the hospital . After her discharge from the hospital on August 5, 1994, she experienced constant pain for 6 months, could not eat or sit up, sleep, dress or go the bathroom. She could not interact with her 1½ year old son. She remained in bed at home and attempted unsuccessfully to return to school. She managed to complete one course by doing work at home. As a result, she was unable to graduate from High School in the Spring of 1995 and her graduation was delayed for one year.

Even today she experiences pain two to three times a week and receives pain medication. Her indoor and outdoor activities are limited. She can't bend, run, scrub, sweep, pare or cut hard vegetables, dance, swim, climb, hike or drive long distances. Her sleep is disturbed and she is continuously tired. Three years following the incident, she has neck and back problems. She has lost her normal left knee function. She has lost power and strength in her knee and there is a real possibility that arthritis will set in. She also has obvious scarring on her left thigh. Heavy labour is out of the question.

The plaintiff's mother also testified. She described how the injuries affected her daughter. Her daughter was a healthy young woman, active and socially congenial. Now she is subject to pain and disability. She is now sedate, cries a lot, has lost much of her sense of humour, is more self-conscious and apprehensive.

The plaintiff suffered significant injuries. She is permanently partially disabled for life and is subjected to pain..

Counsel for the plaintiff and the defendants drew my attention to a number of personal injury general damage awards in reported decisions between 1989 and 1995. These ranged from a low of $60,000.00 to a high of $90,000.00 in the plaintiff's brief and a low of $26,500.00 and a high of $70,000.00 in the defendants' brief. Considering all the factors, the plaintiff is entitled to a substantial award. I assess the plaintiff's non-pecuniary general damages at $75,000.00.

The parties have agreed that the award of any non-pecuniary general damages shall bear simple annual interest at the rate of 7% from October 12, 1994;

Pecuniary loss

Under this heading the plaintiff claims future retraining costs, future loss of earning capacity, future loss of earnings during working life, early retirement and loss of valuable services.

In addition to relying on the plaintiff's evidence and that of her mother, counsel for the plaintiff called the following expert witnesses:

- Dr. T. A. Barnhill, M.D., E.R.C.S.(C);
- Mark McGovern, Rehabilitation Management Consultant;
- Conrad Ferguson, Fellow of the Canadian Institute of Actuaries.

Counsel for the plaintiff also relied on other medical and rehabilitation reports which were entered into the record on consent. Counsel for the parties did not offer any expert evidence under this head and relied on cross-examination.

In his report and testimony Mr. McGovern noted that the plaintiff had maintained an average of approximately 84% throughout school. These marks are impressive and indicate considerable academic potential. Prior to her accident, the plaintiff had planned on applying for entrance into the RCMP. He was of the opinion that following the accident it was unlikely that she could successfully complete the RCMP PARE test (Physical Abilities Requirements Evaluation), a measure of physical abilities which includes running, pushing, pulling, climbing, jumping, vaulting and lifting within a limited time. Therefore, due to physical requirements, a career with the RCMP is not an appropriate option. She has lost the opportunity to practice occupations which require considerable physical demands such as running, excessive walking and climbing. He notes that the plaintiff, in view of the physical functional consequences of her accident, has changed her vocational aspirations and has decided to pursue a four-year Bachelor of Nursing Degree. He was of the opinion that, if she chose that career path, a two-year post graduate degree in nursing would be appropriate to further minimize the potential for physical activity.

The plaintiff testified that she had planned on a career with the RCMP. Although she was seventeen at the time of the accident, she was eligible to apply and complete the required tests and interviews at eighteen and commence her training at nineteen. In her evidence, the plaintiff's mother confirmed that her daughter had expressed an interest in joining the RCMP or a police force on graduation from High School. Mr. McGovern could not predict that she would have been accepted in the RCMP but was of the opinion that she was interested and academically suited. Should she have been accepted, she would have had the opportunity to

train in a career which would not have required extensive university or other preparation which she would have to pay prior to commence employment.

In his opinion, her condition following the accident imposed limitations on her range of career choices and would have a continuing impact on her training and her work. She must compensate for her physical functional restrictions regardless of the career she chooses; her options are limited.

Mr. McGovern estimated that the fees and tuition for a four-year Bachelor Degree would be approximately $16,500.00 and for two years of Graduate Studies, approximately $6,600.00 in 1996 dollars.

The defendants called Corporal Michelle Martin of the RCMP, a recruiting officer. She described the various requirements and tests before a Canadian citizen can be accepted in the RCMP. She estimated that the average age of a successful female applicant is 26 years of age, ranging in the last year for New Brunswick from a low of 19 to a high of 40.

Conrad Ferguson, who was recognized as an expert in the field of actuarial science, prepared a Report dated April 1997 assessing of the present value of future loss of earning capacity and future loss of valuable services of Mary Ellen Hawkins as a result of injuries sustained by her. He gives the following personal data:

Name of Plaintiff:	Mary Ellen Hawkins
Date of Birth:	March 4, 1977
Present Value Date:	May 26, 1997
Age at Date of Accident:	17.4 years
Age at Present Value Date:	20.2 years

He noted that given the relatively young age of the plaintiff, she has no earnings history on which to base his assessment.

With respect to the nature of the loss, he states:

> At the time of the accident of July 22, 1994,[2] the plaintiff was in high school and planned on pursuing a career as a police officer with the

[2]The actual date of the accident is July 21, 1994.

> RCMP. Given the relatively young age of the plaintiff, she has no earnings history on which to base this assessment.
>
> ...
>
> For purposes of this case, I have assessed the present value of future pre-accident earning capacity assuming she would have been successful in reaching her goal of becoming a police officer with the RCMP.
>
> With respect to residual earning capacity, I understand that she now wishes to pursue a career in nursing. I further understand that Dr. Barnhill has suggested she should try to attain a Masters Degree in nursing to enhance her chances of obtaining either an administrative position or a specialized position requiring a lower level of physical effort. I have therefore calculated the present value of residual earning capacity assuming she will pursue a career in nursing.
>
> The possible scenarios for assessing loss of earning capacity in this case are numerous. I have based my assessment on my understanding of her career goals and preferences both before and after the accident.
>
> ...
>
> The assessment of loss based on an RCMP Constable versus a nurse's career and earnings patterns and the multipliers provided will allow the parties or the Court, as the case may be, to consider various approaches in the assessment of loss of earning capacity in this case.

The results of his calculations are summarized below, separately for future loss of earning capacity, and multipliers for potential ongoing long term future loss of earning capacity, retirement earlier than normal and future loss of valuable services.:

Future Loss of Earning Capacity

He pointed out that the present value of future loss of earning capacity is the difference between the present value of the plaintiff's future pre-accident earning capacity and her future residual earning capacity.

He calculated the present value of pre-accident earning capacity, assuming an entry into the workforce as an RCMP cadet on May 26, 1997 and progression to a First Class Constable level. For the purpose of calculating the residual earning capacity, he assumed that the plaintiff would be available for employment as a nurse starting in the spring of 2003, after the completion

of her Bachelor and Masters degrees in nursing. He assumed that after eleven years in the nursing field, she would earn a salary equivalent to that she would have earned as an RCMP Constable.

The result of his calculations appear in Table 1 of his Report.

TABLE I
Present Value of Future Loss of Earning Capacity
(figures rounded to nearer $100.00

Item	Amount
Present value of future pre-accident earning capacity as a police officer as at May 26, 1997 (from Appendix 1	609,600
Less, present value of future residual earning capacity as a nurse, as at May 26, 1997 (from Appendix 2)	354,900
Net future loss of earning capacity	254,700

Potential Ongoing Future Loss of Earning Capacity

He assumed that the plaintiff would lose on average two weeks of income work a year as a result of her injury. Using the ultimate annual level of earnings for residual earning capacity, this would represent an annual level of loss of about $2,000. The present value of future ongoing loss of earning capacity would then be equal to $2,000 multiplied by the multiplier of 16.9 for a total of $33,800.

Potential Retirement Earlier Than Normal

He provided in Table 2 the multipliers for a potential retirement earlier than normal as a result of her injuries. He assumed alternative early retirement five years earlier than normal and ten years earlier than normal.

TABLE 2
Present Value of Potential Loss of Earning Capacity
due to Retirement Earlier than Normal

Period	Multiplier per $1.00	Examples of Present

of Early Retirement	Annum of Loss	Annual Earnings $	Value of Loss $
5 years	1.9	51,000	96,900
l0 years	4.2	51,000	214,200

Loss of Valuable Services

He used a multiplier of 25.8 before tax gross-up and of 39.0 after tax gross-up for each $1. per annum of future loss of valuable services. The multiplier was calculated assuming services would have been provided to age 70. He illustrated the use of the multiplier by way of the following example.

> Assume that the annual level of loss of valuable services is $1,000. The present value of future loss of valuable services would be equal to $1,000 times the multiplier of 39.0 for a total of $39,000.00.

He concluded his Report with this caveat:

> It is important to note that all of the examples presented above are for illustration purposes only. The ultimate level of ongoing future loss of earning capacity, loss due to early retirement and loss of valuable services will have to be negotiated between the parties or determined by the court based on evidence presented at trial.

The defendants challenged Mr. Ferguson's assumptions that the plaintiff would have been accepted into the RCMP at age 19 without further training or education. They also challenged the assumption that she would require a further two years of graduate studies. If these two years were removed from his calculations she would have commenced to work as a nurse two years earlier thereby reducing his assessment of her net future loss of earning capacity by $85,000.00 producing $169,700.00 rather than $254,700.00. However, Mr. Ferguson cautioned that without a graduate degree she may not earn, as a nurse, a salary equivalent to an RCMP constable after 11 years in the nursing field, that is, at age 36.

Counsel for the defendants accepted that the plaintiff was entitled to an award for loss of earning capacity; the issue was the amount. He submitted that an appropriate award would be a lump sum of $100,000.00. Counsel for the defendants did not take issue with the multipliers of 16.9 or 22.5; only with the appropriateness of using that approach. Nor did counsel for the defendants take issue with calculation of fees and tuition; only with the rationale behind it. Counsel for the defendants recognized that there was some merit to the claim for loss of future services but took issue with the amount claimed. The annual amount should be $l,000.00 rather than $2,600.00. As I noted earlier, the defendants did not introduce any expert evidence of their own concerning the calculation of pecuniary loss.

In reviewing prospective loss of earnings in the *Andrews* case, Dickson J. stated:

> We must now gaze more deeply into the crystal ball. What sort of a career would the accident victim have had ? What were his prospects and potential prior to the accident? It is not loss of earnings but, rather, loss of earning capacity for which compensation must be made: *The Queen v. Jennings*, [1966] S.C.R. 532. A capital asset has been lost: what was its value?

As the trial judge, I am called upon to determine what compensation must be made.

In *Bulmer v. Horsman*[3] the New Brunswick Court of Appeal dealt with the situation of a partial disability and a situation where a young plaintiff (an 18 year old) had no employment history. Speaking on behalf of the Court, Mr. Justice Hoyt, now the Chief Justice of New Brunswick, stated

> In my view actuarial opinions, provided their assumptions are grounded in evidence, are as useful when a partial loss is at issue as when a person is totally disabled. I recognize, of course, that another variable is introduced, namely, the likely earning power of the partially disabled person. But, that is a matter of evidence and when, as here, the trial judge is satisfied of its proof, that ends the matter. Nor is it my view that a person who has not been employed cannot be the subject of actuarial opinion. Again it is a matter for the trial judge to be satisfied in the circumstances of the case that there is a basis for the assumption. For example, in *Floyd v. Bowers* (1978), 89 D.L.R. (3d) 559 (Ont. H.C.), and in *Bogusinski v. Rashidagich*, [1974] 5 W.W.R. 53 (B.C.) (a situation not unlike this), where the plaintiffs were students, the

[3](1987), 82 N.B.R. (2d) 107 at 123.

> court used their school experience to evaluate their potential earning capability. In *Arnold v. Teno*, [1978] 2 S.C.R. 287; 19 N.R. 1; 83 D.L.R. (3d) 669; 3 C.C.L.T. 372, an award for future loss of income was made to a 4½ year old child who, naturally, had no employment history.

At the outset of oral argument, counsel for the plaintiff presented what he described as three scenarios for the calculation of an award for pecuniary loss.

In each of the three scenarios, there is a claim of future retraining costs, early retirement and loss of valuable services. They are constant and calculated as follows:

Future Retraining Costs

Nursing - BA - $,125. x 3.8	$15,675.00
Nursing - Masters $3,330. x 1.76	5,860.80
Travel - 150 kms per/day @ .20¢ x 35 weeks for four years ($5,250.) x 3.8	19,950.00
for six years ($5,250.) x 5.56	29,190.00

Early Retirement

Based on earning level of $40,700

Five years early - (multiplier of 1.9)	$ 77,330.00
Ten years early - (multiplier of 4.2)	170,940.00

Loss of Valuable Services

Housekeeping, Snow removal and Lawn care	
Based on a lump sum of $2,660.00 per annum x .39 multiplier	$ 103,740.00

Two of the scenarios (Number 1 and Number 2) claim a future loss of earning during working life. It is calculated as follows:

Allotting for sick/missed time
from work - 4 out of 5 days a
week due to wear and tear from
injury based on yearly income
as an RN - $40,700.00 ($782.69
weekly - $156.53 daily)

$156.53 x 52 days = $8,139.56
x multiplier of 16.9 $ 137,558.56

The remaining difference between the three scenarios involves the calculation of future loss of earning capacity.

Scenario Number 1 repeats the calculation found in Table 1 of the actuarial Report, that is, $254,000.00.

In Scenario Number 2, the claim is limited to the loss of earning capacity during retraining. It is calculated as follows:

Four years loss of earnings for
retraining for BN @ $20,000.00
per year x 3.8 $ 76,000.00

Six years loss of earnings for
retraining for BN & Masters
@ $20,000.00 per year x 5.56 $111,200.00

In Scenario Number 3, there is a claim of a lump sum in the amount of $200,000.00 for dimunition of earning capacity.

Conclusion

<u>Future Retraining Costs</u>

I find that the plaintiff's injuries have limited her career options and her ability to take up an employment without incurring herself the cost of further training or education. The plaintiff has been accepted at the University of New Brunswick at Saint John for the session commencing in the Fall of 1997. She plans to commute from her residence. Accordingly, an award for future retraining costs is appropriate. I find that two years of graduate studies would allow her to further minimize the potential for physical activity in her chosen field. I therefore allow for six years of retraining. I award the sum of $50,725.80 under this head.

Loss of Valuable Services

I also find that the plaintiff's permanent partial disability which limits the range of indoor and outdoor activities justifies an award for loss of valuable services. I award the sum of $103,740.00 under this head.

Loss of Earning Capacity

There is no assurance that the plaintiff would have been accepted in the RCMP at age 19. The major factor in the calculation of the net future loss of earning capacity in Table 1, which compares her pre-accident earning capacity as an RCMP cadet and constable with her residual earning capacity as a nurse, is the first six years during which she is not earning any income due to retraining. I find that it is more appropriate to adopt the calculation in Scenario Number 2 which calculates the loss of earning capacity during retraining and for the six year period. It is based on an annual income of $20,000.00. Accordingly, I award the sum of $111,200.00 under this head.

Early Retirement

I find that due to her permanent partial disability and the potential for arthritis, that an award for early retirement is appropriate. I award the sum of $77,330.00 under this head.

Further Loss of Earning During Working Life

This plaintiff has been awarded the cost of retraining which includes two years of graduate studies to allow her to further minimize the potential for physical activity. She has also

been awarded an amount to allow for five years early retirement. There is no evidence to support the claim that in these circumstances the plaintiff will only be able to work four out of five days. Accordingly, I make no award under this head.

Interest

In accordance with the agreement expressed by all counsel, the award for loss of valuable services shall bear simple annual interest at the rate of 7% from May 26, 1997.

Total Award

1.	Special Damages		$ 20,999.85
2.	General Damages		
	1) Non pecuniary loss	$ 75,000.00	
	2) Pecuniary loss		
	a) Future retraining costs	$ 50,725.80	
	b) Costs of valuable services	$103,740.00	
	c) Loss of earning capacity	$111,200,00	
	d) Early retirement	$ 77,330.00	
	Sub total		$417,995.80
	Total		$438,995.65

The plaintiff will have judgment against the defendants for $438,995.65 with costs payable by the defendants.

Third Party Claim

The defendants seek an order that the third party is liable to indemnify the defendants for any amounts the defendants are found liable to the plaintiff.

The *Margaret Elizabeth No. 1* is a steel-hulled herring purse seiner. She operates on the fishing grounds off the shores of New Brunswick and Nova Scotia from the Bay of Fundy to waters off Cape Breton. Her owners, Vonndel II Fisheries Ltd., is a family owned company

now run by Delma Doucette. The operation of the *Margaret Elizabeth No. 1* is Vonndel II Fisheries Ltd.'s only business.

The *Margaret Elizabeth No. 1* paid the federal Crown annual berthage fees set by regulation which entitled her to tie up and use the wharf at Beaver Harbour.

The defendants claim that the evidence establishes that the third party or her representatives knew or ought to have known of the defect in the light standard and are therefore liable to indemnify the defendants.

The defendants submit that the third party owed a duty to them as described above and that failing to replace the defective light standard or warn of the defect or warn that they had not taken steps to ensure that the light standards were safe, renders the federal third party liable to indemnify the defendants for those amounts, if any, the defendants are liable to the plaintiff.

It is admitted by the third party that she was the owner and occupier of the wharf at Beaver Harbour.

On July 21, 1994, the *Margaret Elizabeth No. 1* had come into Beaver Harbour to change nets as her second seine was stored on the wharf. By approximately 3:00 p.m. the change of nets was complete and the crew made preparations to move the ship.

The part of the boat which made contact is known as the A frame, a platform made from steel pipe which pivots on the starboard tower of the ship. It is used to assist the raising and lowering of the ship's vacuum line when fish are pumped from the ship's purse seine. The A frame came in contact with a concrete light standard on the edge of the cap of the wharf and the standard fell over.

The light standard which fell was the last of the series of poles along the side of the wharf and had been attached by a wire to a navigation light at the end of the wharf. The standard was

made of solid concrete with steel reinforcing rods. It is admitted by the third party that the standard was defective as the steel reinforcing rods did not extend into the base.

Delma Doucette, who was at the helm of the boat at the time of the incident, confirmed that the boat's A Frame was down and that it struck the light standard on the wharf. At the time, the boat was drifting sideways in the direction of the wharf. It contacted it mid-pole. The standard snapped at its base and fell on the plaintiff. He testified that boats normally berthed on the other side of the wharf where there were no light standards but that his and other boats did regularly berth at the outer side of the wharf to change seines. He had never been warned otherwise.

He admitted that the A Frame should not have been in the downward position and that someone in the crew forgot to raise it.

Ronald Kennedy was the crew member who asked the persons who were fishing on the wharf, including the plaintiff, to reel in their lines. He saw the standard fall. It broke cleanly. He testified that the A Frame which struck the standard was undamaged; it only had broken paint on the front of it.

Daniel MacPherson was a member of the crew of the *Margaret Elizabeth No. 1* on the day of the incident. He confirmed that the crew was changing its seines, he was at the stern of the boat and saw the pole and navigation aid fall on the wharf. Before that occurrence he heard nothing, didn't feel anything and had not noticed that the boat had struck anything. He did not see the boat strike the pole.

Counsel for the defendants read in portions of the discovery of two officers of the Crown, Graham Frampton and Regis Doucet. The Small Craft Harbours Branch of the Department of Fisheries and Oceans has the mandate to build, construct, maintain and manage public harbours for commercial fishery uses, including, since 1972, the wharf in Beaver Harbour. Mr. Doucet agreed that a properly constructed light standard would have had the reinforcing steel extending completely into its base and that the light standard that struck the plaintiff did not meet that standard. He also stated that following the incident of July 21, 1994, the remaining

light standards were removed and that one of them was found not to have the reinforcing steel extending down into the base. The light standards were supplied by the contractor who erected the wharf. Their design, a Class A pole with five feet cut off the end, was approved by Public Works prior to tender.

The defendants entered into evidence an Engineering Report dated May 10, 1995 prepared by James B. Holder, M.Eng., P. Eng., of Williamson, Estabrooks Engineering Ltd. Mr. Holder was accepted as an expert in the field of design of concrete structures. He first visited the wharf in early september 1994 after being retained by the solicitors for the defendants.

His investigation and analysis led him to four conclusions:

1. The reinforcement of cantilevered light standard was terminated at the base where the point of maximum flexural stress occurs.

2. The light standard failed suddenly and in a brittle, unsuspecting fashion at the point that the reinforcement was terminated.

3. The termination of reinforcement at the point of flexural tension is a violation of the National Building Code of Canada 1965 and the CSA S6-1966 Design of Highway Bridges.

4. Given the geometry of the wharf and the geometry and position of the ship, steel reinforcement, had it been present, would have had sufficient ductility to prevent the brittle, catastrophic collapse of the light standard thus preventing injuries to any persons on the wharf.

He explained that the outrigger of the ship could only displace the light standard a maximum horizontal distance of approximately 50 mm at a height above its base. This distance was determined by measuring the horizontal distance that the outrigger protruded past the side of the ship. From this, he subtracted the distance from the edge of the seawall to the seaward edge of the light standard. This is the maximum distance that the ship could displace the light standard, in a direction perpendicular to the length of the wharf, before the ship would be stopped by the wharf itself. The presence of air filled fenders approximately 900 mm in diameter were neglected in this calculation. He proceeded on the basis that the ship was level and wave heights were negligible at the time of the accident. The height at which contact was made is approximately

2760 mm above the light standard base (top of rail). This was established by tidal data he had requested.

His report and conclusions were based on the following information:

(1) Site visits to the Beaver Harbour Wharf measuring the existing structure and visually inspecting the remainder of the failed light standard base connection.[4]

(2) Review of the National Building Code of Canada 1965, CSA S6-1966 Design of Highway Bridges, and related marine design reference manuals.

(3) Site visit to the Margaret Elizabeth 1 to measure various dimensions and to interview the pilot at the time of the accident, Mr. Delma Doucette.

(4) Climate and tidal data for the general area at the time and date of the accident.

(5) R.C.M.P. photographs of the demolished light standard on the wharf.

At the time of preparation of the report, neither the wharf engineering drawings nor the shop fabrication drawing for the light standard and the wharf were available for review.

On cross-examination, he recognized that Conclusion No. 4 was not based on load but on ductility. He accepted that if the fishing boat had not made contact with the light standard it would likely still be standing. It had withstood wind and weather for 27 years. He also recognized that his calculations could vary if the assumptions he had made, such as tidal information, the force of the wind, the direction and velocity of the boat, the height of the waves and the measurements were different.

The third party called RCMP Constable Eric Larose who conducted an investigation on the date of the incident. He identified some photographs of the wharf taken by him the day following the incident and confirmed that no criminal charges had been laid and that there was no reason to suspect that Delma Doucette was under the inflluence of alcohol or drugs at the time of the incident.

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[4]The owners of the *Margaret Elizabeth No. 1* were told to remove the light standard from the wharf at their expense. It was placed on the fishing boat and dumped overboard sometime in August 1994.

Edward Spear, an electrical contractor, described how he removed the five remaining light standards in January 1995, with a boom truck and a jackhammer. One pole, which also had no reinforcing steel extending to the base snapped easily, but the others bent and stretched and had to be cut.

Regis Doucet, a civil engineer with Public Works and Government Services Canada, described the routine inspections made by him of the fifty wharves in his district, including the wharf at Beaver Harbour. There was an annual inspection and frequently others as well. Any small repairs could be authorized from an existing budget; while major repairs required further budgetary approval. The wharf at Beaver Harbour had a major inspection of its pipe piles in 1985 and of its major components in 1993. None of these were directed at the light standards. He inspected the site after the incident. The remaining light standards were removed as a safety concern since one had fallen. He testified that he was not concerned with the cracks in the poles.

Charles Ponder, P.Eng., formerly a principal with ADI Engineering, and now retired, was involved in the design and site supervision of the wharf at Beaver Harbour in 1964. The contractor was McNamara Construction. The light standards were fabricated by Jos. A. Likely Limited of Saint John. In accordance with their design, the reinforcing steel should have extended for the length of the pole. However, once fabricated there was no way of seeing inside. The pole was imbedded into a 12" square recess and the space around it was filled with a non-shrink grout. Its life expectancy was 40 years.

He explained that the regular length of the pole was shortened by five feet at the precast stage because it was going to sit on a five-foot seawall on the wharf. This shortened length is contemplated by the CSA Standard which deal specifically with maximum overall lengths. This pole did not exceed the maximum length. It was a standard pole shortened by 5 feet meaning that the fabricator cast the pole 5 feet shorter than what was shown on the standard NBEPC drawing.

He also stated that his contract did not call for plant inspection and if it was done it would be by Public Works Canada. On cross-examination, he agreed that insofar as anybody would normally inspect a precast concrete pole it would have been inspected bythe purchaser,

Public Works. He also stated that the defect was a mistake of Jos A. Likely Ltd.. the manufacturer. He said that it was an option to inspect the manufacturer's premises and that every item produced by a precast concrete plant isn't necessarily inspected by the purchaser.

Accordingly, any inspection of the fabricator's premises would be made by the purchaser. He did not inspect the manufacturer's premises and did not know whether Public Works did. He would not expect the purchaser to be present during the whole manufacturing process.

Jos. A. Likely Limited was a regular supplier of Class A poles, such as those it supplied for the wharf, to the New Brunswick Electric Power Commission. R.G. Likely of Jos. A. Likely Limited was a member of the CSA Committee on reinforced concrete poles at the time of the contract to build the light standards.

Appendix B of the CSA Standard is entitled "Privelege of the Purchaser". it is specified in a note that this Appendix is not a mandatory part of this Standard. Paragraph B1 reads as follows:

> The Purchaser or his representative should have, at all reasonable times, free access to the place of manufacture of the poles for the purpose of examining, sampling, and testing materials in the poles, and for inspecting the making of them.

This appendix does not impose a mandatory duty on the purchaser to inspect the making of the poles.

Denis Mitchell, Eng., Ph..D., a professor at McGill University, was accepted as an expert in the field of design and behaviour of concrete structures and in failure investigations. Since 1989, he has been the Chair of the CSA Committee A23.3 "Code for the Design of Concrete Structures" and a member of the Standing Committee on Structural Design for the National Building Code of Canada. He has been a consultant to the Montreal Olympic Tower Project.

His report, dated April 21, 1997, was taken into the record. It reads as follows:

REPORT ON
BEAVER HARBOUR CONCRETE POLE FAILURE

This brief report addresses technical issues related to the failure of the concrete light standard at Beaver Harbour on July 21, 1994 as follows:

1. The termination of the reinforcement at the base of the pole, where the maximum moment occurs, constitutes a deficiency. This termination of the reinforcement at this location is not permitted by Canadian design standards.

2. The drawings and specifications for the project required conformance with the usual standards of practice.

3. It is not usual practice to design the concrete pole for impact loads from a ship.

4.The deficiency would not have been apparent to anyone on site during the construction.

5.There was no reason, during its 28-year life, to suggest that there was a deficiency in the pole.

6.Normal inspection procedures of the wharf would not have revealed the deficiency.

7.A photograph of the pole, taken on May 18, 1994, a little over two months before the incident, does not indicate that there is a deficiency in the pole.

In a report dated May 5, 1997, which was taken into the record, Professor Mitchell agreed with the first three conclusions reached in the report by Williamson, Eastabrook Engineering Ltd. and presented in evidence by James B. Holder. He had some differences of opinion concerning the last conclusion which states that "Given the geometry of the wharf and the geometry and position of the ship, steel reinforcement, had it been present, would have had sufficient ductility to prevent the brittle, catastrophic collapse of the light standard thus preventing injuries to any persons on the wharf."

He summarized these differences as follows:

1.The factored total wind force calculatedon page 46 of the report is 2.71 kN, that is a horizontal force of about 609 pounds. Impact from a ship having a weight of 369 gross tons can result in a much greater force than 609 pounds on the light standard.

2.The report provides some calculations which attempt to show that the "steel reinforcement, had it been present, would have had sufficient ductility to prevent the brittle, catastrophic collapse of the light standard". There are a number of assumptions made, in arriving at this conclusion which are questionable. ...

There are a number of important assumptions, many of which are based on interviews after the event. These include the following: that the velocity was negligible (i.e., no increase in load due to impact against the pole), that the outrigger hit the pole exactly perpendicular to the wharf (i.e., no twisting effect on the pole), that the ship was level (i.e., there was no rolling of the ship giving a much greater impact effect and permitting a greater possible displacement), that the wave heights were negligible (i.e., a calm sea on this side of the wave break and thus no rolling of the ship), that the ship barely touched the light standard (i.e., no

> impact effect and little force effect), the report does not address the magnitude of the force of impact, especially in light of the photographs which show damage to the concrete light pole in the region around the hand hole. This damage was not addressed in the report.

> The report addresses a hypothetical situation with a scenario in which the reinforcing bars go the very base of the concrete pole. The conclusion of the report (conclusion number 4) is that "steel reinforcement, had it been present, would have had sufficient ductility to prevent the brittle, catastrophic collapse of the light standard". In assessing this hypothetical situation, the ship with its large mass, could deliver a force large enough to fail the pole and in addition I cannot rule out brittle modes of failure, such as a shear failure in the region of the hand hole, which could cause a sudden collapse of the pole, even for this hypothetical situation.

Conclusion

The third party did not know of the defect in the pole. The defendants claim that they ought to have known through inspection either at the premises of the fabricator when the poles were being manufactured or at the wharf following their installation.

I accept the evidence of Professor Mitchell that the defect was hidden and would not have been revealed by normal inspection procedures of the wharf. The cracks and spalling on the subject light standard and the other standards on the wharf was minor and would not affect the structural capacity of the pole. The steel was not exposed and there were no signs of corrosion. His evidence that the cracks in the concrete and the spalling were not significant from a structural point of view is consistent with all the evidence.

His opinion that the hidden defect would not be revealed by normal inspection is further supported by the fact that Mr. Holder and Mr. Doucet visually inspected the remaining poles after the accident and did not detect that one of them also had the same hidden defect as the one that fell on the plaintiff.

The defendants claim that the third party had a duty to inspect the poles during their construction. None of the witnesses suggested that it would be reasonable for the purchaser to have a representative in the plant during all of the manufacturing process. The witnesses agreed that once the poles were fabricated, they were encased in concrete. I find nothing in the

evidence to suggest that the purchaser should have had any reasonable apprehension that the fabricator would not construct the concrete reinforced poles in accordance with specifications. The fabricator was a supplier of such poles to the New Brunswick Electric Power Commission and one of its principal was a member of the Standard Committee for such poles. Although, on appropriate notice, the standards contemplate that the purchaser may visit the fabricator's premises, I find that there was no duty on the purchaser to do so, and even if it had, the defect in the subject pole would not necessarily have been detected on that visit.

Professor Mitchell disputes Mr. Holder's conclusion that had steel reinforcement been present the light standard would have had sufficient ductility to prevent its collapse. I accept the evidence of Professor Mitchell that applicable standards were designed to withstand weather and wind forces and not the impact forces from a boat. If the fishing boat had not made contact with the light standard it is most likely that the pole would remain standing today.

I find that there has been no breach of duty of care owed by the third party to the defendants.

Accordingly, the third party claim is dismissed with costs payable by the defendants to the third party.

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Judge

Ottawa, Ontario
June 10 , 1997