Federal Court | Cour fédérale

Date: 20180531

Docket: T-1236-01

Citation: 2018 FC 564

BETWEEN:

DARIN GRENKE, as personal representative of the ESTATE OF EDWARD GRENKE, and 284849 ALBERTA LTD.

Plaintiffs

and

DNOW CANADA ULC, NATIONAL OILWELL VARCO INC., and 769388 ALBERTA LTD.

Defendants

REASONS FOR JUDGMENT

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PHELAN J.

I. INTRODUCTION

[1] This is the damages phase of the patent infringement action. It has taken a long time to reach this point. On June 3, 2010, in *Weatherford Canada Ltd v Corlac Inc*, 2010 FC 602, 370 FTR 54 [*Weatherford Canada*], the Court found that Canadian Patent No 2,095,937 [937 Patent], relating to seals in stuffing boxes on oil drilling equipment, was valid and had been infringed.

The infringers were Corlac Inc, Corlac Equipment Ltd, National Oilwell Inc (now known as National Oilwell Varco Inc), and National Oilwell Canada Ltd.

[2] The Court concluded that the Plaintiffs were entitled to an accounting or to damages to be assessed by the Court including claims for exemplary or punitive damages and pre and post-judgment interest as of June 3, 2010.

The Plaintiffs elected to recover damages rather than an accounting of profits.

[3] On appeal, the Federal Court of Appeal [FCA] upheld the trial decision with the exception of "Claim 17", the issue involving inducement. This issue was re-determined by the Court in accordance with the FCA directions. The FCA then found the first FCA decision in

error and directed a second re-determination which occurred in the context of the assessment of damages.

[4] Despite continuing to pursue Claim 17, the Defendants now agree at the damages phase that Claim 17 is irrelevant because it has no impact on the award. The Defendants claim the issue is moot and ask this Court not to decide the matter. However, the FCA directed this Court to consider the matter and it will. It is the subject of a separate Judgment and Reasons.

[5] The Plaintiffs originally sought an award of:

a) $13,118,000 in damages, including interest;

b) $1,882,000 in punitive and exemplary damages; and

c) Costs to be determined after written submissions of the parties.

[6] As a result of evidence at trial, the Plaintiffs have reduced their damages claim to between $9,517,000 and $9,995,000. The difference depends principally on which royalty rate the Court accepts.

II. ISSUES

[7] The parties largely agree on the issues to be considered in this assessment of damages:

NUMBER OF INFRINGING PRODUCTS

1. How many drives did the Defendants make or sell with “Enviro” stuffing box products (including “Retrofit”, “Integral”, or “Griffin” stuffing boxes) during the 2000 to June, 2010 timeframe [the Infringement Period or the relevant years]?

2. How many standalone “Enviro” stuffing box products were made or sold during the Infringement Period?

LOST SALES

3. Has GrenCo established that it lost sales of drives due to the infringement by the Defendants?

4. Is estimated market share an appropriate method to determine lost sales and, if so, what is the relevant market? [Not addressed by the Defendants]

5. What was GrenCo's estimated market share in the relevant market? [Not addressed by the Defendants]

6. What would GrenCo's market share have been if the Defendants were not in the market with their infringing products?

7. How many sales of drives would GrenCo have made but for the Defendants' infringement (GrenCo's "lost drive sales" in a "but for" analysis)?

8. What was GrenCo's lost profit per lost drive sale during the Infringement Period; what were the price and incremental cost for drive sales at GrenCo?

9. What are the Plaintiffs' total lost profits for lost drive sales?

REASONABLE ROYALTY

10. What is the royalty rate on sales price that should be applied to the Defendants' sales of infringing drives and stuffing boxes?

11. How many drives and stuffing boxes are subject to a reasonable royalty and what prices were charged for those drives and stuffing boxes?

12. What total royalties are the Plaintiffs entitled to based on the Defendants' infringing sales of drives and stuffing boxes?

LOST SERVICE, DRIVE REBUILDS, AND CONVOY PRODUCTS

13. Has GrenCo established that the Defendants' infringement caused GrenCo to lose the sale of rebuilt drives?

14. If the answer to ISSUE 13 is yes, how many sales of rebuilt drives did GrenCo lose? What was GrenCo's lost profit per lost sale of a drive rebuild during the Infringement Period? What are GrenCo's total lost profits on lost sales of drive rebuilds?

15. Has GrenCo established that the sale of infringing products by the Defendants caused it to lose sales of other non-infringing products?

16. If the answer to ISSUE 15 is yes, what products did GrenCo lose sales of and over what period of time? How many of each of those products did GrenCo lose the

sale of? What was GrenCo's lost profit on sales of these products? What are GrenCo's total lost profits on lost sales of other products?

17. What are GrenCo's total lost profits on lost drive servicing?

NON-INFRINGING ALTERNATIVE

18. Are the SAI stuffing boxes or other sealing systems non-infringing alternatives?

19. If the answer to ISSUE 18 is yes, what was the impact of the availability of the SAI stuffing box (or others) as a non-infringing alternative on the market? What are GrenCo's total lost profits taking into account the SAI stuffing box (or other sealing systems) as a non-infringing alternative?

PUNITIVE DAMAGES

20. Is an award of punitive damages, in addition to what may otherwise be awarded, warranted in this case?

INTEREST

21. Is GrenCo entitled to claim pre-judgment interest?

22. Prior to the sale of GrenCo's assets to a third party, should pre-judgment interest on damages be calculated on a compound basis?

COSTS

23. What are the costs payable for the liability and remedies phases of this proceeding and to whom?

III. BACKGROUND

A. *The Parties*

[8] GrenCo Industries Ltd, a small machine shop in the Edmonton area, was founded by Edward Grenke. He was the President, General Manager, and a shareholder of the company, and the inventor and owner of the 937 Patent.

[9] Grenke originally licensed the 937 Patent to GrenCo Industries Ltd in December 1992, but then assigned all its rights, title and interest in the 937 Patent to GrenCo Industries Ltd on June 3, 2010, the day the Judgment of this Court in his favour was rendered.

On October 25, 2011, GrenCo Industries Ltd changed its name to 284849 Alberta Ltd [GrenCo], which is now a named party in the place of GrenCo Industries Ltd.

[10] Just over two months after the Court's Judgment, Grenke died. Darin Grenke, one of Grenke's sons, was the Personal Representative of the Estate.

[11] The Defendant, 769388 Alberta Ltd, formerly known as Corlac Inc [Corlac], is an Alberta company based in Lloydminster, Alberta.

[12] Corlac was the parent and sole shareholder of Corlac Equipment Ltd, which manufactured, assembled, and sold drive heads and stuffing boxes until 2003. Corlac Equipment Ltd was purchased by National-Oilwell Canada Ltd [NOC] on November 20, 2003 and amalgamated with NOC on January 1, 2004. NOC became the successor company.

[13] NOC is an Alberta corporation based in Calgary. From January 2004 onward, NOC sold Enviro stuffing boxes in Canada. The current Defendant, DNOW Canada ULC, is a corporate successor to NOC.

[14] The current Defendant, National Oilwell Varco Inc [NOV] is also a corporate successor of NOC. NOV is a Delaware corporation with a head office in Houston, Texas, and the ultimate parent of NOC.

[15] Weatherford Canada Ltd is an Alberta corporation based in Calgary. It had claimed under the patentee as the amalgamation successor to Weatherford PC Pump Ltd, who was the sole sub-licensee of the 937 Patent from GrenCo from February 1, 2000 to February 1, 2001.

[16] Weatherford Canada Partnership was formed through the transfer of assets from Weatherford Artificial Lift Systems Canada Ltd, a successor of Weatherford PC Pump Ltd, and a predecessor corporation of Weatherford Canada Ltd. Weatherford Canada Partnership claimed under the patentee as the sole sub-licensee of the 937 Patent from GrenCo from February 1, 2001 onward.

[17] The Defendants entered into a settlement agreement with Weatherford Canada Ltd and Weatherford Canada Partnership [collectively, Weatherford] dated September 1, 2012. Although they have disappeared from this litigation, they were in the relevant market in 2000 onward.

B. *937 Patent/Technology*

[18] The description of the 937 Patent and the rotary progressive cavity pump [PC or PCP] were fully described in this Court’s judgment in *Weatherford Canada*.

The 937 Patent claimed a seal assembly combination designed to fix a problem of leaking stuffing boxes on PC pumps. In simple terms, a stuffing box is the device which seals off the top of the oil well from the oil being drawn up by a turning rod.

[19] The 937 Patent was designed to limit leakage, which causes a loss of oil, environmental damage, and unplanned wellhead shutdowns. The patented device allowed for planned maintenance by having the seals in the stuffing box fail in sequence and permitting the inspection of the progress of seal failure to anticipate complete failure of the sealing mechanism.

[20] GrenCo's wellhead drive with its unique design [the GrenCo Product] had, as the evidence in this proceeding confirmed (see, for example, the Freeson Report), many benefits including durability, ease of maintenance, environmental friendliness, and lower operating costs.

[21] The description of the introduction of the GrenCo Product as causing "a paradigm shift for the PC Pump industry" is an accurate one.

C. *Witnesses*

[22] It is not the Court's intention to summarize each witness' evidence. The important parts of such evidence are discussed in relation to the relevant issues in these Reasons. However, a brief review and some comments about the expert evidence will set some context for the findings on these issues.

(1) Plaintiffs’ Fact Witnesses

(a) *Wes Grenke*

[23] Wes Grenke gave useful evidence both in terms of background and market behaviour during the relevant Infringement Period. He was helpful in explaining how the company operated, some of which was relevant to the calculation of GrenCo’s costs. While he held a high opinion of GrenCo’s influence in the market which was not totally supported by other market evidence, he was a straightforward, modest witness who gave generally credible evidence even when retracting from evidence given years ago. The Defendants’ criticism of his evidence is unwarranted.

(b) *Robert Moneta*

[24] Robert Moneta was a senior applications technologist at Weatherford. He gave evidence about Weatherford’s business in stuffing box products although some of his evidence could not be admitted. He also gave general evidence of other players in the market.

(c) *Shane Freeson*

[25] Shane Freeson was called both as a fact witness in relation to his own work as well as a market expert on market behaviour and size. His general evidence of the market was useful, particularly up to 2004. As discussed later, his assumptions about later market shares proved to be incorrect because he had not seen the market evidence, particularly that presented by Hult.

[26] I assessed him as an honest witness who tried to assist the Court but did not always achieve that goal. His erroneous information was discounted and the Plaintiffs were able to work with more accurate information on market share. The other important failing of his evidence was his heavy emphasis on personal experience which was inconsistent with the role of an expert.

(d) *David Garland*

[27] David Garland, General Manager of Cougar Wellhead Services, gave evidence about the general market as well as Kudu's sales, the Oryx product, and the dominant position Weatherford held for a period of time and its declining position. He was generally helpful to the Court.

(e) *Darin Austin*

[28] Darin Austin, an engineer, had worked for many operators in the PCP field including Kudu, Robbins & Meyers, and others. He described the various products with which he was familiar, the rise of GrenCo in the market, and the competitive landscape – all of which was useful background and context information.

(f) *John Gazdewich*

[29] John Gazdewich was a consultant in finance who had been involved with Weatherford and Oil Lift Technology Inc [Oil Lift]. His information was useful for purposes of calculating a reasonable royalty.

(2) Plaintiffs' Expert Witnesses

(a) *Farley Cohen*

[30] Farley Cohen, a CPA, was GrenCo's principal accounting expert for the quantification of economic damages. His evidence is referred to and relied upon in these Reasons' canvassing of the issues to be addressed by the Court.

[31] He explained his approach and methodology clearly and succinctly. He supported his conclusions with logic, and admitted the areas of weakness and subjectivity, even in relation to the debate about what constitutes a fixed versus variable cost.

[32] I found Cohen to be highly credible, objective, and extremely helpful. I gave his evidence great weight and generally preferred it to others, particularly those who challenged his methods and conclusions.

(b) *Cam Matthews*

[33] Cam Matthews was an expert in PC pumps who gave evidence on the range of reasonable royalty applicable in this case. He explained logically how he came to a base of 6% reasonable royalty, which was accepted by the Defendants' expert, and then bumped it up to take account of various factors and the unique circumstances of the case to 8%.

[34] Matthews' attempt to explain how a reasonable royalty could rise to 10% based on his "maximum willing to pay/minimum willing to accept" analysis was flawed and I can find no real support for this higher figure. The Defendants' attempt to attack Matthews' personal credibility was unwarranted and unsustainable. Subject to some limitations, I found his evidence helpful, as is reflected later in these Reasons.

(3) Defendants' Fact Witnesses

(a) *Jared Kaluski*

[35] Jared Kaluski was a procurement manager at Weatherford. He gave evidence on drive sales in the latter of the relevant years. His evidence was not of material assistance to this case and his efforts to downplay the merits of the GrenCo Products begged the question why NOV would go to such efforts to infringe on a product of such limited value.

(b) *Denis Blaquiere*

[36] Denis Blaquiere is the Managing Director of PCP Solution at Dover Corporation. He attempted to be helpful, gave some necessary information on Corlac's record keeping practices, and some evidence about drive sales. His evidence, in many cases, was based upon limited knowledge or reliance on other people's work.

(c) *Craig Hall*

[37] Craig Hall was co-owner of Brightling. He attempted to assist the Court with drive sales information during the Infringement Period. While the company was not competitive with GrenCo, his information as to the market and products generally was useful background and context.

(d) *Glen Martinka*

[38] Glen Martinka was a surface equipment sales and service manager at NOV. He gave some useful background about Kudu products and about drive sales, some of which was anecdotal.

(e) *Vern Hult*

[39] Vern Hult was the former president and co-founder of Oil Lift. He was a credible witness who gave the best evidence he could recall about Oil Lift drive sales during the Infringement Period. While his evidence was “ball park” numbers, it was sufficient for the Court’s purposes. He underscored the substantial technology and the market for pressurized hydraulic drives as distinct from electric drives.

(f) *Murray Robertson*

[40] Murray Robertson, an Oil Lift technician, gave evidence about Corlac and inventory lists and similar matters.

(4) Defendants' Expert Witness

(a) *David Hall*

[41] David Hall is the Managing Director of Disputes & Investigations at Alvarez & Marsal in Denver with relevant experience for this case. The Court's comments on his conclusions are set forth under the specific issues in these Reasons. He was a credible witness who generally explained the basis for his conclusions well. In many areas he was not appreciably different from Cohen.

[42] He put great focus on the reasonable royalty aspect of his reports, which is perhaps consistent with the Defendants' theory of the case that a reasonable royalty was the best way to calculate compensation. He did not have the in-depth knowledge of GrenCo's business that Cohen had, and therefore his costing analysis was less satisfactory. As indicated earlier, Cohen's evidence was generally preferred as it was a better attempt to find fair and reasonable damages.

D. *Market*

[43] Historically, oil producers had thought of the down-hole pump as the most significant consideration when it came to choosing a supplier, with the drive being considered merely a "throw-in" item.

[44] When GrenCo introduced its drives and new sealing system – the surface equipment side of the oil drilling equation – oil producers defined two independent roles to manage PC pump

operations, one focused on down-hole activities and another to deal with surface equipment, including drive heads. Customers were purchasing separately the down-hole equipment and the surface equipment including drive heads, depending on who had better products, among other factors.

[45] The market in which GrenCo operated and in which the Defendants sought to operate through their infringing products was environmentally friendly wellhead drives for general application in the oil industry. The oil producers were demanding – often spurred on by environmental concerns and government action – some form of environmentally friendly or leakless sealing system. Rope style stuffing boxes were generally declining in sales and use. The product at the root of the market competition was mechanical lip sealing mechanisms as opposed to hydraulic pressurized seals.

[46] By 2000, three major manufacturers dominated the market in terms of environmentally friendly wellhead drives: GrenCo, Corlac/NOV, and Weatherford. In addition to this “Big 3”, Oil Lift with its pressurized stuffing box on the market in 2000 used primarily by producers of sandy heavy oil and Kudu with its Oryx stuffing box on the market in 2002, competed in the market as well.

[47] There were other market players such as Brightling and Baker Hughes/Enerstar but their products were not a major factor in this market.

E. *GrenCo*

[48] After GrenCo came out with its GrenCo Product, the company grew from being a small machine shop to a major manufacturer of surface equipment for PC pumps.

[49] By 2000, GrenCo had expanded operations to provide a product line of surface equipment and services for the rotary wellhead market. Rebuilding and maintenance services for its drives and associated products became a major part of GrenCo's business. In the period 2000-2010, GrenCo's business model included marketing to its own customer base an "exchange program" for drives by which GrenCo offered to exclusively rebuild and refurbish its own drives. GrenCo also provided other services for its own drives and sealing system.

[50] GrenCo was active in every part of the Canadian oil market such that wherever NOV was competing, GrenCo was also in that area. GrenCo directly competed with NOV and, as NOV said, competition in this market was a "zero sum game", so any sales made by NOV were at the expense of GrenCo. This is borne out throughout the period by the direct infringement of GrenCo's Product.

F. *Corlac/NOV*

[51] Initially Corlac refurbished, repaired, and resold equipment made by other manufacturers. In late 1999 to early 2000, Corlac entered the market manufacturing and selling Enviro stuffing boxes which came in different designs referred to as "Integral", "Retrofit", and "Griffin". The Court found that these stuffing boxes infringed the 937 Patent.

During the Infringement Period of 2000 to June 2010, the Defendants also sold non-infringing stuffing boxes such as rope style and pressured boxes as well.

[52] The infringing Enviro stuffing boxes were a direct substitute for the GrenCo Product.

[53] Corlac/NOV experienced considerable growth in the volume of wellhead drives sold from 2000 onwards. With the Enviro products, Corlac would offer complete pumping solutions through related products in a single package. These pumping solutions were highly successful.

[54] In early 2004, NOV began offering a pressurized hydraulic product – the SAI sealing system. NOV moved its hydraulic drive sales to the SAI sealing system such that over time NOV's infringing sales were electric drive units.

[55] The SAI is different from the 937 Patent invention and the infringing Enviro product as it does not have multiple leak passages for monitoring whether a seal had failed. It is a very different type of leak detection system compared to the infringing Enviro product.

G. *Weatherford*

[56] Weatherford offered a broad range of related products. As a licensee of GrenCo's 937 Patent, Weatherford manufactured royalty bearing products under licence, the bulk of which was sold in Canada.

[57] Weatherford did well in the field of PC pump applications using drive equipment until the late 2000s when problems with their stuffing boxes continually surfaced and Oil Lift with its pressurized hydraulic products took significant hydraulic sales away from Weatherford.

H. *Kudu's Oryx*

[58] Kudu sold down hole pumps, service equipment, and anything related to a PC pump system, including drive heads. Its stuffing box was the rope type – a type being rejected in the market in favour of the GrenCo Product. It is common ground that the rope type stuffing box was slowly falling out of favour.

[59] Kudu developed in about 2002 the Oryx stuffing box as its environmentally friendly seal housing. That product went on the market about August 2003 but for various reasons was not really competitive with the GrenCo Product. From 2005 onward, when Kudu linked its Oryx with a VH60, drive sales of Oryx increased from about 200 to 320, until 2009 to June 3, 2010, when the sales dropped to 200-250 units. Kudu also sold non-Oryx drives.

[60] The evidence does not establish Kudu as a significant competitor to GrenCo Products.

I. *Oil Lift*

[61] Oil Lift manufactured surface equipment for progressive cavity pumping systems, principally drive heads with stuffing boxes which were part of a pressurized system.

[62] The vast majority of the sales were pressurized hydraulic drives where the hydraulic oil pressure kept the seals or the stuffing box pressurized.

[63] The Oil Lift product sales started slowly in 2000 and had trouble gaining acceptance and distribution until 2008. During that period sales went from approximately 250 units to 1,600 in 2008, of which 400 were electric. The evidence showed that in any year electric drives were about 25% of the Oil Lift sales.

[64] Like almost all participants in the oil business, Oil Lift was negatively impacted by the 2009 market crash.

[65] The impact of the crash was acknowledged in all the financial analysis performed by both parties. For Oil Lift sales dropped back in 2009 to 2010 to 300-400.

J. *Others*

[66] There were a number of other “small players” in the stuffing box market. Some, such as R&M, sold a drive which came with an environmentally friendly stuffing box but did not have a material effect on the market for the GrenCo-like Products.

[67] There were other players like Amik, Tierra Alta, and Can-K which were even less influential in the market.

[68] The experts on both sides accounted in different ways for the impact of the sales of all competitors, even the smaller ones, on GrenCo's market share and lost sales, as discussed under the relevant issues heading below.

IV. ANALYSIS

A. *Overview of Damages*

[69] The first principles of this case are that the Defendants infringed, knowingly, the Plaintiffs' 937 Patent and the Plaintiffs are therefore entitled to a damage award that will compensate them for the harm they have suffered. The Plaintiffs exercised their right to claim damages rather than a disgorgement of the Defendants' profits.

[70] Such a damages award seeks to put the Plaintiffs in the position they would have been in if not for the infringing actions of the Defendants.

[71] In *Apotex Inc v Merck & Co, Inc,* 2015 FCA 171 at para 42, 387 DLR (4^{th}) 552, leave to appeal to SCC refused, 36655 (April 14, 2016) [*Merck FCA*], the Federal Court of Appeal described appropriate compensation as follows:

> Thus, in the event of infringement, under-compensation of an inventor discourages research and development, and the disclosure of useful inventions. Equally, over-compensation of an inventor chills potential competition to the extent that a potential infringer is uncertain about the scope and validity of a patent. The balance at the heart of the Act requires perfect compensation.

[72] In *Janssen Inc v Teva Canada Ltd*, 2016 FC 593 at para 69, 269 ACWS (3d) 156 [*Janssen*], Justice Hughes indicated that compensation is determined by "the exercise of a sound imagination and the practice of a broad axe in seeking to restore a plaintiff by monetary means to the condition that it would have been had the infringement not occurred".

[73] Justice Hughes' approach is one of long standing. Justice Harrington in *Société Telus Communications v Peracomo Inc*, 2011 FC 494 at para 57, 389 FTR 196, referred to this broad approach by reference to Lord Justice Winn's comments in *Doyle v Olby (Ironmongers) Ltd*, [1969] 2 All ER 119 at 124:

> I think myself with confidence that there is already sufficient evidentiary material available to enable this court to make a jury assessment in round figures. It would be wrong and indeed an intolerable expenditure of judicial time and money of the parties to embark on any detailed consideration of isolated items in the account on which a balance must be struck.

[74] Each sale made by the Defendants of an infringing item is an illegal transaction and the Plaintiffs are entitled to recover damages for each one, as was held in *Jay-Lor International Inc v Penta Farm Systems Ltd*, 2007 FC 358 at paras 116-117, 313 FTR 1 [*Jay-Lor*], citing *United Horse-shoe and Nail Co Ltd v John Stewart and Co* (1888), 5 RPC 260 at 266-267 (HL (Eng)). The Plaintiffs bear the burden of demonstrating the amount of loss, including that they would have made the sales if the infringing product had not been on the market: see *Jay-Lor* at para 118.

[75] In calculating damages, the Court may assess the sales that the plaintiff patentee has lost due to the actions of the infringer (the "captured market") and, if there are infringing sales that

the plaintiff could not or would not have made, the quantum of damage for those latter sales will be a "reasonable royalty". The Plaintiffs bear the burden of establishing what would have happened in that hypothetical world. In *Pfizer Canada Inc v Teva Canada Ltd*, 2016 FCA 161, 400 DLR (4th) 723 [*Pfizer*], Justice Stratas for the Federal Court of Appeal stated as follows:

> [50] Both "would have" and "could have" are key. Compensatory damages are to place plaintiffs in the position they would have been in had a wrong not been committed. Proof of that first requires demonstration that nothing made it impossible for them to be in that position—*i.e*., they *could* have been in that position. And proof that plaintiffs would have been in a particular position also requires demonstration that events would transpire in such a way as to put them in that position—*i.e*., they *would* have been in that position.
>
> [51] Both elements have to be present. "Could have" does not prove "would have"; "would have" does not prove "could have":
>
> - Evidence that a party would have done something does not prove that it could have done something. I might swear up and down that I would have run in a marathon in Toronto on April 1 aiming to complete it, but that says nothing about whether I could have completed it. Maybe I am not fit enough to complete it.
>
> - Evidence that a party could have done something does not prove that it would have done something. A trainer might testify that I was fit enough to complete a marathon race in Toronto on April 1, but that says nothing about whether I would have completed it. Perhaps on April 1 I would have skipped the marathon and gone to a baseball game instead.

[76] In *AlliedSignal Inc v DuPont Canada Inc*, 78 CPR (3d) 129, 1998 CarswellNat 271 (WL Can) at para 34 (FCTD), aff`d (1999) 86 CPR (3d) 324 (FCA) [*AlliedSignal*], the Federal Court laid out a number of factors to be considered in assessing damages:

> The process of examining the hypothetical situation where one assumes that the infringing product never entered the market is an uncertain one. Nonetheless, there are several factors that serve to answer the question, "What would have happened?" The following factors have been considered in various cases:
>
> (a) Presence of competing products in the market;
>
> (b) Advantages of the patented product over competing products;
>
> (c) Advantages of the infringing product over the patented product;
>
> (d) Market position of the patentee;
>
> (e) Market position of the infringer;
>
> (f) Market share of the patentee before and after the infringing product entered the market;
>
> (g) Size of the market before and after the infringing product entered the market; and,
>
> (h) Capacity of the patentee to produce additional products[.]
>
> [Footnotes omitted.]

[77] Broadly speaking, the positions of the parties are as follows:

- The Plaintiffs submit that they are entitled to recover the profits that they would have made from sales in the “captured market” of the but-for world. Further, the Plaintiffs are entitled to recover a reasonable royalty for those infringing sales that they would not have made in the but-for world. The Plaintiffs also submit that they are entitled to punitive damages and compound pre-judgment interest.
- The Defendants submit that the Plaintiffs have failed to establish their market share in the but-for world; therefore, the appropriate method of quantifying

damages is a reasonable royalty. The Defendants deny that the Plaintiffs are entitled to punitive damages.

B. *Number of Infringing Products*

(1) ISSUE 1: How many drives did the Defendants make or sell with “Enviro” stuffing box products (including “Retrofit”, “Integral”, or “Griffin” stuffing boxes) during the 2000 to June 2010 timeframe [the Infringement Period or the relevant years]?

[78] The parties agree on the number of infringing units sold from 2006-2010, when NOV had a SAP accounting system. For 2005, the experts agree that an average number based on sales in 2004 and 2006 can be used as there was no accounting system in place for ten months of 2005.

[79] For 2000-2004, the two experts, Cohen for the Plaintiffs and Hall for the Defendants, disagree on the number of infringing drives that were sold. This is because a number of NOV’s sales records are ambiguous as to whether an infringing stuffing box was included in the sale. The difference amounts to about 330 units (Cohen claims the larger number, 2,751 in total, as infringing; Hall claims that the Defendants sold 2,416 new drives and 80 used drives).

[80] The experts took different approaches in assessing the ambiguous sales records. Hall assumed that if the records did not indicate that the units were infringing, then those sales were not infringing. Cohen relied on his understanding that the “market was moving away from rope style stuffing boxes, and on a reconciliation that he had carried out to categorize these unlabelled sales as being infringing”. This reconciliation attempted to match the number of units made to

the number sold, and Cohen found a difference of about 2% (with more units being sold than made). When Hall's numbers were used this difference was much larger.

[81] Cohen outlined a number of the inclusion discrepancies in his Reply Report. He noted that for the sale of certain units, Hall had included that type of unit where it was indicated to be infringing but had excluded that same type if the description was silent on the matter (i.e. DH565K – 108 units; DH682K – 34 units). In my view, it is a safe conclusion that if some of those units were described as infringing, then the sales of all of those units were infringing – therefore, I accept Cohen's conclusion on these numbers. His approach is consistent with what was happening in the market whereas Hall's approach was unduly narrow.

[82] However, during cross-examination, it was established that certain of Cohen's numbers were incorrect. For example, the evidence showed that the invoices in Exhibit D-63 were of non-infringing sales. Further, Cohen's count included more infringing units than were made:

> Under cross-examination, it was apparent that Mr. Cohen had actually included more infringing units than were made for the periods 2000-2001, 2002, 2003 and 2004. As noted in the chart below, Mr. Cohen counted: (1) 103 more units sold than made from 2000 to 2001; (2) 115 more units sold than made from 2000 to 2002; (3) 197 more units sold than made from 2000 to 2003; and (4) 127 more units sold than made from 2000 to 2004.
>
> (Defendants' Closing Submissions.)

[83] The difference between the parties with respect to the number of infringing drives sold is relatively small. I agree that the evidence in this case was that the market was moving away from the rope style stuffing boxes. Further, the evidence clearly indicates that NOV did not sell any new drives with rope style stuffing boxes after 2006. Nonetheless, in my view, the Defendants

have clearly established that Cohen's count is problematic in that it includes more units sold than were made. As no explanation for these discrepancies was provided by the Plaintiffs, I would accept Hall's count of new drives with the minor changes identified above.

[84] However, the error is small and consistent with the broad approach to the damages assessment. Although the Court will make some adjustment, it has no material impact.

(2) ISSUE 2: How many standalone "Enviro" stuffing box products were made or sold during the Infringement Period?

[85] The Parties agree that the Defendants sold 1,350 new and 2,497 used standalone stuffing boxes during the Infringement Period.

C. *Lost Sales*

(1) ISSUE 3: Has GrenCo established that it lost sales of drives due to the infringement by the Defendants?

[86] Causation is determined under the "but for" test, which requires a substantial connection between the Defendants' conduct and the injury to the Plaintiffs.

[87] In respect of lost sales, the Plaintiffs must establish they would have had the sales but for the infringement of Corlac/NOV. For sales made by Corlac/NOV that GrenCo would not have made, GrenCo is entitled to a reasonable royalty.

[88] The Plaintiffs submit that Grenke gave evidence to the effect that GrenCo had the ability to sell its drives in all of the relevant markets. This evidence was confirmed by Kaluski for Weatherford and Hult for Oil Lift. The Plaintiffs emphasize the similarity between the GrenCo Product and the Corlac/NOV product: “the Corlac/NOV products were seen in the market to directly compete with the GrenCo drives. Both sealing units were seen as ‘mechanical’ or ‘lip seal’ products, not pressurized, with multiple leak detection ports. The two suppliers offered the same solution for both electric and hydraulic units in the market”. The Defendants do not contest that GrenCo was in all of the relevant markets, but they argue that the Plaintiffs have not put forward any reliable data on market share or produced evidence to show that market share is a reasonable proxy for what could have or would have occurred in the “but-for” world.

[89] In reality, the market had a choice between the GrenCo Product and the Corlac/NOV sealing system (the infringing product). Non-lip seal systems or systems not using the invention’s sealing system were not direct competition.

[90] In my view, the Plaintiffs have established, on a balance of probabilities, that there were lost sales due to the infringement by the Defendants: the parties were in the same geographic markets and they offered similar products (or “the same product”, as the Court found in the liability phase of this case). There was also evidence of losses of specific sales such as the Penn West situation.

(2) ISSUE 4: Is estimated market share an appropriate method to determine lost sales and, if so, what is the relevant market? [Not addressed by the Defendants]

[91] The Federal Court has used market share as a proxy for determining a plaintiff's lost sales, as is demonstrated by *Jay-Lor*:

> [208] [T]he Defendants' own witness, Mr. Barran, an expert in these matters, presented his estimate of JAY-LOR lost sales using a market share approach. Mr. Barran appeared to have no doubt that a reliable estimate of lost sales could be obtained on the information provided to him. Had this case involved sales of only a few infringing products, more customer-specific evidence might have been required, as was the case in *AlliedSignal*, above at 141:
>
> > It should be noted that courts usually avoid "requiring the plaintiffs to establish . . . that any definite number of retailers would have come to the plaintiffs if the defendants had not supplied infringing instruments"(*Meters Ltd. v. Metropolitan Gas Meters Ltd.* (1911), 28 R.P.C. 157 (C.A.) at 161, per Cozens-Hardy M.R.). However, in the case at bar, there are only nine customers in question, and as a factual matter it is clear that a review of the evidence on a customer-by-customer basis is necessary. […]
>
> [209] In this case, with a total of over 800 sales during the time of the alleged infringement, the market share approach is an appropriate methodology for establishing lost sales. Such methodology is not "just marshmallow".

[92] As noted above, in *Pfizer* the Federal Court of Appeal indicated that the plaintiffs must establish both that they could have and would have done something, such as made sales or had a certain market share in the hypothetical but-for world.

[93] The Defendants submit that the Plaintiffs have failed to present reliable data on market share. Further, the Plaintiffs are said not to have provided any reason to believe that market share

is a reasonable proxy for what could have or would have occurred in the but-for world. The Plaintiffs did not put forward any evidence on how customers would have behaved in the absence of Corlac/NOV's infringing sales. The factors influencing the decision to purchase from a certain supplier include price, service, maintenance, relationships, and products, and "[i]t cannot simply be assumed that the customers of the defendants would have purchased drives from GrenCo in the 'but for' world".

[94] The Plaintiffs submit that the market shares of competitors can stand as proxies for determining what the buyers of infringing products would have done (i.e., buy GrenCo Products) if the infringing products were not available, since "market share factor has been identified as one of the factors that is relied upon to determine the number of NOV sales that would have been *captured* by GrenCo if NOV's products were not available".

[95] In the Hall Sur-Reply Report, the captured market number (GrenCo's Lost Drive Sales) is estimated at 911 in Scenario 1. In the Cohen Reply Report, this number (Estimated Units Lost by GrenCo) is estimated at 1,268 in Schedule 2 and 1,192 in the original Schedule 2b. As indicated later, I find Cohen's <u>modified</u> Schedule 2b calculations to be of considerable assistance.

[96] In my view, market share is an appropriate method of determining damages.

[97] This is not a case with a small number of customers, referenced above in *Jay-Lor*, which might require "customer-specific" evidence, as was suggested by the Defendants. The more

pressing question is whether the Plaintiffs have sufficiently established the market share that they would have had in the but-for world, as discussed below.

(3) ISSUE 5: What was GrenCo's estimated market share in the relevant market? [Not addressed by the Defendants]

ISSUE 6: What would GrenCo's market share have been if the Defendants were not in the market with their infringing products?

ISSUE 7: How many sales of drives would GrenCo have made but for the Defendants' infringement (GrenCo's "lost drive sales" in a "but for" analysis)?

[98] As noted above, the Defendants indicate that the Plaintiffs have not established GrenCo's estimated market share in the real world or the but-for world. The expert evidence of Freeson, which was intended to provide the necessary market share information, was flawed – both of the parties agree that it cannot be trusted for certain periods. Although Freeson was knowledgeable with respect to the players in the market, the evidence showed that in particular from 2004 onwards he underestimated the size of certain competitors including Kudu and Oil Lift. Therefore, both the Plaintiffs and the Defendants have constructed their own market share analyses from the available data from which the Court can draw its own conclusions.

[99] I would note that the Plaintiffs submit that "there is no completely accurate set of figures that can be used to fix on the actual market shares at the relevant time". However, as the Defendants point out, the Plaintiffs did not acquire or put forward evidence as to the sales of Oil Lift, Kudu, and the other competitors during the Infringement Period. Therefore, if there are deficiencies in the data, the Plaintiffs must accept some blame for this situation.

[100] As discussed earlier, the Plaintiffs' expert, Freeson, on the market and market share was shown to be wrong in respect of the share of some competitors. While it is open to reject Freeson's evidence, his evidence in respect of the product market generally and the size and nature of the competitors was reliable up to the market entry of Oil Lift and some other competitors.

[101] With the more accurate evidence produced at trial, the Court can examine the competing market analyses now put forward by the parties. This is not a case of no evidence being available but of evidence which can be used to draw reasonable conclusions.

[102] In piecing together the evidence to determine if the Plaintiffs have made out a case for damages and the quantum which can reasonably be set, I have followed the reasoning of this Court and of the Ontario Court of Appeal.

[103] In the Federal Court, in *Xerox of Canada Ltd v IBM Canada Ltd*, 33 CPR (2d) 24, 1977 CarswellNat 669 (WL Can) at para 30 (FCTD), Justice Collier stated as follows:

> In respect of the use of those tendered opinions, I endeavoured to instruct myself in the way juries are instructed in respect of evidence put before them by non-expert and expert witnesses. As a trier of fact I am entitled to accept the whole or part of the evidence of one witness, and to reject all or other parts. **Equally in the case of expert witnesses the trier of fact may accept or reject the beliefs or opinions tendered, or any part of those beliefs or opinions**. Always, opinion evidence must be scrutinized with great care.
>
> [Emphasis added.]

The Ontario Court of Appeal in *R v Abbey*, 2009 ONCA 624, 97 OR (3d) 330, made the following similar statement in the context of jury instructions regarding expert evidence:

> [63] A determination of the scope of the proposed expert opinion evidence and the manner in which it may be presented to the jury if admissible will be made after a *voir dire*. The procedures to be followed on that *voir dire* are for the trial judge to decide. Sometimes the expert must be examined and cross-examined on the *voir dire* to ensure that the proposed evidence is properly understood. At the conclusion of the *voir dire*, the trial judge must identify with exactitude the scope of the proposed opinion that may be admissible. He or she will also decide whether certain terminology used by the expert is unnecessary to the opinion and potentially misleading: see *R. v. G. (P.)* (2009), 242 C.C.C. (3d) 558 (Ont. C.A.), at para. 16. **Admissibility is not an all or nothing proposition. Nor is the trial judge limited to either accepting or rejecting the opinion evidence as tendered by one party or the other. The trial judge may admit part of the proffered testimony, modify the nature or scope of the proposed opinion, or edit the language used to frame that opinion**: see, for example, *R. v. Wilson* (2002), 166 C.C.C. (3d) 294 (Ont. S.C.J.).
>
> [Emphasis added; footnotes omitted.]

(a) *Market Share*

[104] Just as the parties were able to create their market share models based on a number of sources including the fact evidence of Freeson, it is therefore possible to reach conclusions on market share in the real world and the hypothetical but-for world.

[105] With respect to market share, the focus should be on what customers of the Defendants would have done if the Defendants' infringing products were not on the market. Based on their real world purchases, such customers were looking for an "environmentally friendly" option – therefore, I find the Defendants' inclusion of and focus on rope style stuffing boxes to be misplaced. It distorts the market share analysis and is contrary to the product market already described. The market at issue is the "environmentally friendly stuffing box market".

(i) Years 2000-2002

[106] There was conflicting evidence with respect to when Kudu's Oryx came onto the market, which plays the biggest role in the difference between the market share estimates of the Plaintiffs and the Defendants during this time. Garland testified that the Oryx product was not launched until 2003, while Martinka suggested that it was available as of 2002.

[107] I prefer the Plaintiffs' determination of market share for these early years. These numbers take into consideration that there were minimal sales by certain competitors identified by the Defendants, including Robbins & Myers, Kudu, and Baker Hughes/Enerstar. I accept the evidence provided by the Plaintiffs that, during this time period, the attempts by these companies to create environmentally friendly stuffing boxes were largely unsuccessful and therefore these competitors had very little market share, and would have had little market share in the but-for world.

[108] Because of the vagaries with the count of units sold and made and other problems with the data discussed here and later, some adjustment must be made to the numbers which can be more readily done by discounting the Plaintiffs' monetary calculation of this head of damage.

(ii) Year 2003

[109] The parties agree that Oil Lift's market share increased in 2003, and that it would have done so in the but-for world. Similarly, Kudu's Oryx solution would have been available on the market after 2002. The Plaintiffs' market share model takes these increases into account.

(iii) Years 2004-2010

[110] There is a disagreement between the parties as to the appropriate conceptualization of the market in these later years. The Plaintiffs submit that, given the Defendants' switch to the non-infringing SAI stuffing box on its hydraulic drives in early 2004, the infringing sales by the Defendants "became entirely infringing electric drive units". I find the Plaintiffs' approach (the alternative model considering hydraulic units separate from electric units) to be logical, and I find it to be the best method of assessing the perfect compensation due to the Plaintiffs. A similar model was used by Hall in one of his scenarios. The alternative approach is likely to under-compensate the Plaintiffs for the infringement.

[111] The Plaintiffs' model takes into account the evidence at trial of significant sales by Oil Lift in both the hydraulic and electric markets, although the evidence of Hult was that the vast majority of Oil Lift sales were in the hydraulic market.

[112] I find that the inclusion of Oil Lift's extremely high hydraulic drive sales in the electric market share would be problematic – the evidence at trial indicated that "if a well site had an electric connection, the drive would be electric". The model used by the Plaintiffs, which takes into account Oil Lift's increased electric drive sales, is to be preferred. Further, the Plaintiffs' model takes into account increased market share for the Kudu Oryx system, which could be used on either an electric or a hydraulic drive. Sales by Brightling were also included in the Plaintiffs' model.

[113] In the final two years of the Infringement Period, 2009-2010, the evidence indicates that the Defendants' infringing sales were very limited. The captured market for these years will be extremely small.

(iv) Conclusion

[114] Overall, I would accept the conceptualization of the market, the numbers, and the models put forward by the Plaintiffs subject to adjustments discussed. I find the Defendants' conceptualization of the market to be problematic in that it takes into account matters inconsistent with the better evidence and thus leads to under compensation of the Plaintiffs.

(4) ISSUE 8: What was GrenCo's lost profit per lost drive sale during the Infringement Period: what were the price and incremental cost for drive sales at GrenCo?

[115] The parties generally agree on the approach to be taken with respect to determining GrenCo's lost profit per lost drive sale. The controversy in this case is with respect to the identification of certain variable costs versus fixed costs. Variable costs vary with product output while fixed costs remain static regardless of output. The key question is "what costs of GrenCo would have increased simply to handle an increase in business due to capturing some of the NOV drive sales?"

(a) *Wages/Salaries and Benefits*

[116] I accept Cohen's conclusion with respect to these costs. The evidence at trial indicated that the number of "front office" employees remained relatively static over the Infringement

Period and commissions and bonuses were not based on sales volumes. Increases in employees for the field locations were connected to new product lines rather than increased sales.

The Defendants submit that Grenke's evidence was that bonuses increased with increases in revenue.

[117] In my view, Cohen's analysis accords more closely with the evidence in this case, which indicates that increases in wage expenses were not related to increases in revenue. Hall's analysis may be logically sound, but it is not supported by the evidence in this case. The evidence indicated that wages and benefits varied over time, but they did not track with increases in revenue. Therefore, this should not be included as a variable cost.

(b) *Management Salaries*

[118] According to Grenke's evidence, bonuses to management were a method of pulling profits out of the business for tax purposes. I accept the Plaintiffs' rationale that "it does not make sense to include the way of paying out profits to the owners as an expense". This is particularly germane in closely held family companies.

[119] Nonetheless, the Defendants submit that some management salaries and bonuses were paid out to non-shareholder employees. Some small variability here, as suggested by the Defendants, might be warranted but it is not the Court's role at this point to become lost in the accounting minutiae.

(c) *Advertising, Travel, and Promotion*

[120] Cohen's approach to this cost is appropriate. GrenCo had a website and brochures for advertising. The evidence indicates that it was well-known in the marketplace. There is no reason to believe that increased advertising would be necessary to deal with increased revenue.

[121] The figures cited by the Defendants do not take into account that any increase in advertising may be connected to the introduction of new product lines rather than simply increases in revenue. Therefore, I accept Cohen's conclusion on these costs.

(d) *Utilities*

[122] Cohen admits that utilities are variable, but puts them at 25% rather than Hall's 50%. I find Cohen's approach to be consistent with Grenke's evidence as to the "minimal" increased costs of increased use of the manufacturing machine electric motors.

(e) *Bank Charges and Interest*

[123] The evidence does not indicate that the day-to-day operations of GrenCo were financed through debt or that increased production would lead to an increase in debt.

(5) ISSUE 9: What are the Plaintiffs' total lost profits for lost drive sales?

[124] The consideration of this issue must be divided into two sub-issues:

a) sales by the Defendants which the Plaintiffs would have made but for the Defendants' sale of infringing products (direct loss/profit for which the Plaintiffs are entitled to their own profit); and

b) sales by the Defendants that the Plaintiffs would not have made or for which the Plaintiffs cannot show it would have made but for the presence of the infringing product for which the Plaintiffs are entitled to a reasonable royalty.

(a) *Direct Loss/Profit*

[125] On this sub-issue the Court must consider the number of infringing units sold by NOV, for which there are some ambiguous records, the estimated captured market by GrenCo in the "but-for" world, which involves a consideration of the errors in the Freeson market share evidence, and the determination of the lost profit per drive (price minus cost), which takes into consideration the costing issues discussed in the above areas.

[126] In addressing the "but-for" market shares, I find Hall's approach to be less helpful in that he developed different scenarios based on assumed GrenCo market share of 10 to 30%. The approach was unrealistic as it assumed a GrenCo market share much lower in the early years than all the evidence suggests. In those early years 2000-2004, GrenCo was "the" or "a" dominant player.

[127] As I generally preferred the approach of Cohen as more realistic and balanced, as said before, I found the modified Schedule 2b from Cohen's Reply Report to be very helpful. It was

modified to take account of the evidence which developed at trial – including adjusting for the evidence of Oil Lift/Kudu which countered Freeson's erroneous market share assumptions.

[128] I am satisfied, after detailed review, that the facts proven in this case, including by the Defendants' witnesses, support the modified Schedule 2b approach and calculation in respect of loss of profits on original drives.

[129] In summary, modified Schedule 2b establishes in the period 2000 to June 3, 2010:

Units sold by NOV – original drives	2,592
Estimated GrenCo's market share average	40.5%
Estimated Units lost by GrenCo	1,051
GrenCo's weighted average price per unit	$10,955
Total original drive revenue	$11,513,722
Estimated contribution margin	38.8%
Lost profit – original drive unit	$4,468,000

[130] Given some of the vagaries of the evidence and debatable cost elements as well as a "broad axe" approach, I consider that on this matter the proper award should be $4,400,000.

D. *Reasonable Royalty*

(1) General

[131] Turning to the matter of the reasonable royalty, the parties advanced considerably divergent royalty percentages at the outer edges but with greater consistency in the middle.

[132] The Plaintiffs are entitled to a reasonable royalty for any sales made by the Defendants that the Plaintiffs would or could not have made in the "but-for" world: *Jay-Lor* at para 119. In *AlliedSignal*, the Federal Court stated as follows:

> [199] A reasonable royalty rate is "that which the infringer would have had to pay if, instead of infringing the patent, [the infringer] had come to be licensed under the patent": *Unilever PLC v. Procter & Gamble; Consolboard Inc. v. MacMillan Bloedel (Saskatchewan) Ltd*. The test is what rate would result from negotiations between a willing licensor and a willing licensee.
>
> [Footnotes omitted.]

[133] Furthermore, in *Jay-Lor*, the Federal Court stated as follows:

> [126] This notion is premised on the assumption that someone who wishes to use patented technology would normally have sought permission and been willing to pay a royalty for its use. The patentee, if prepared to license its invention, would then negotiate the terms of the licence, including the amount of royalty, with the intended licensee. The construct is obviously artificial in the sense that the infringer, in this case, did not make the choice to seek permission from the patentee when it began to use the patented technology in its own device. Assumptions on how parties might have negotiated must be made. However, licensing is a very common practice in the intellectual property field and has developed into an area of academic study. It appears that the methodology is well established and somewhat consistent. Accordingly, evidence of how parties negotiate licence agreements and the theory applicable to the negotiations is available. In other

> words, from studying what is happening in the real world of licensing practices and applying generally-accepted methodology to the known facts in a specific case, we can form an opinion as to what would have happened in hypothetical negotiations between the parties in this case.

[134] In *Merck & Co, Inc v Apotex Inc*, 2013 FC 751 at para 159, 437 FTR 1, aff'd 2015 FCA 171, leave to appeal refused 36655 (April 14, 2016) [*Merck FC*], the Federal Court agreed with an expert witness that the timing of hypothetical negotiations was prior to the first infringement of the patent:

> [T]he underlying premise of the hypothetical negotiations . . . is that, by entering into the licensing agreement, an infringer avoids <u>all</u> future acts of infringement, no matter how such infringement might occur or no matter how much infringement might take place.
>
> [Underlining in original.]

[135] A number of approaches have been used by the Federal Court to arrive at reasonable royalty rates. In this case, the parties both used the "anticipated profits approach" (*AlliedSignal*, *Jay-Lor*) and supplemented this analysis with the "minimum willingness to accept (MWA) versus maximum willingness to pay (MWP)" approach.

[136] In constructing the hypothetical negotiation of the royalty rate, it is important to take into account the realities on the ground. It is particularly relevant that GrenCo had market strength because of its technology and also important is that all the evidence suggests Grenke would have been an unwilling seller, difficult to deal with, and prepared to push the limits of "reasonableness" to the edge (and perhaps over). This all suggests a rate at the upper end of reasonableness. It is somewhat ironic that Grenke would be deemed, under this hypothetical

negotiation, to accept any amount of royalty rate given his general intransigence to the point of "going down with his ship" rather than to settle. However, the Court must accept some of the realities in constructing the hypothetical negotiation and resolution.

(2) ISSUE 10: What is the royalty rate on sales price that should be applied to the Defendants' sales of infringing drives and stuffing boxes?

[137] The parties agree that the Plaintiffs are entitled to a reasonable royalty for any infringing sales made by the Defendants that the Court does not believe would have been made by the Plaintiffs in the but-for world. This includes sales of "stand alone" stuffing boxes and sales of NOV drives outside of the captured market, including, from 2004-2010, sales of all infringing NOV hydraulic drives and sales of infringing NOV electric drives that would not be captured by GrenCo.

[138] The parties further agree on the approach to be taken and the relevant jurisprudence. Both of the experts on this topic, Hall and Matthews, used the anticipated profits approach to determine a reasonable royalty. The experts were not terribly far apart in their determinations of a reasonable royalty rate: Matthews ultimately determined that a reasonable royalty rate was 8-10% while Hall determined it was 7%. Both of the experts arrived at the same base rate (6.3%) and the discrepancy is due to a difference in the "bump" for special circumstances of this case – a somewhat subjective assessment, discussed further below.

In addition to the anticipated profits approach, both of the experts also considered the approach in *Merck FC*, minimum willing to accept v maximum willing to pay.

[139] As noted above, a consideration of the factors in *AlliedSignal* led both experts to the same base royalty rate. The controversy in this case is with respect to the subsequent "bump". The parties agree that such a bump is warranted in this case, but disagree on the magnitude of the bump.

[140] I prefer the approach of Matthews. Although Hall is an expert in business valuation and licensing arrangements, Matthews has expertise in the industry. In *Jay-Lor*, the Federal Court found that a 1% increase was warranted due to factors such as anticipated penetration into the market and the benefit of being a manufacturer and distributor. Those factors were also relevant in this case, as were the potential for convoy sales, repairs, and maintenance, and refurbishment opportunities. Matthews concluded that all of these factors warranted an additional bump above the *Jay-Lor* 1%, leading to a royalty rate of 8%.

Hall reached a number of similar conclusions as Matthews, but ultimately found that a smaller bump was warranted.

[141] In my view, Hall placed too much emphasis on Corlac's status as a larger company with more products, and not enough emphasis on the benefits of the patented technology. I conclude that Matthews' analysis is more rigorous and is better supported by the jurisprudence, including *Jay-Lor*.

[142] Further, in my view, the Weatherford royalty rates (3.1% to 4.7%) should not be used as "confirmation" that a 7% rate would be accepted by GrenCo (as suggested by the Defendants).

Those lower royalty rates were the result of a unique set of circumstances, including cross-licensing, that would not be at play in the hypothetical GrenCo-Corlac negotiations.

[143] With respect to the MWP versus MWA analysis, although I agree with Matthews that GrenCo was in a strong bargaining position, in my view a royalty rate of 10% cannot be supported by Matthews' testimony during the trial. Although Matthews indicated in his Expert Report that GrenCo's MWA would be 10%, during cross-examination he indicated that a reasonable range for GrenCo's MWA would be 8-10%.

[144] In *Merck FC*, the Federal Court indicated that if there were no overlap between the MWA and the MWP, then the reasonable royalty is the MWA. The "minimum" of the MWA must, logically, be the lower end of the range – therefore, the application of *Merck FC* to this case leads to the conclusion that 8% is a reasonable royalty rate.

[145] Therefore, I find that the appropriate royalty rate is 8%.

(3) ISSUE 11: How many drives and stuffing boxes are subject to a reasonable royalty and what prices were charged for those drives and stuffing boxes?

[146] As discussed above, and the parties agree, a reasonable royalty must be paid on standalone infringing stuffing boxes as well as the number of drives that are outside of the "captured market" in the but-for world.

[147] Again, modified Schedule 2b captures the estimated units sold by other competitors, pricing, revenue, and applies the 8% royalty rate. That analysis establishes as follows over the period 2000 to June 3, 2010:

Estimated units sold by other competitors including hydraulic units (February 12, 2004 – June 3, 2010)	1,700
Weighted average price per unit	$9,459
Total original drive revenues	$16,080,115
Royalty amount (8%)/original drives	$1,285,000

(4) ISSUE 12: What total royalties are the Plaintiffs entitled to based on the Defendants' infringing sales of drives and stuffing boxes?

[148] Therefore, the Plaintiffs are entitled to recover $1,285,000 in respect of a reasonable royalty.

E. *Lost Service, Drive Rebuilds and Convoy Products*

(1) ISSUE 13: Has GrenCo established that the Defendants' infringement caused GrenCo to lose the sale of rebuilt drives?

[149] It is more likely than not that the infringement by the Defendants caused GrenCo to lose sales of rebuilt drives. However, the fact that GrenCo offered such an option to its customers is not sufficient to establish, on a balance of probabilities, that GrenCo would have lost the number of rebuilt drive sales identified in the Cohen Report.

[150] Further, as identified by the Defendants and admitted by Cohen, Cohen's analysis would result in double counting of at least some of GrenCo's losses. That is, if the Defendants sold an infringing drive and then later sold another infringing drive as a replacement, the Plaintiffs would recover an amount for the second infringing drive as well as an amount for the loss of a rebuild sale (based on the sale of the first infringing drive).

[151] The Defendants identified a number of other problems with Cohen's model: the term "rebuild" was used liberally to refer to the sale of any used drive, the model did not differentiate between customers who purchased a rebuilt drive and those who "exchanged" a GrenCo drive for a rebuilt drive, and the model included warranty replacements as rebuild transactions.

[152] Therefore, although it seems probable that GrenCo did lose sales of rebuilds, in my view Cohen's model is not a trustworthy measure for calculating those sales. It is overly speculative and would result in greater than "perfect" compensation. As the Plaintiffs have failed to establish the appropriate method for calculating these damages (or even if it is possible to calculate these damages), I must conclude that the only appropriate method of calculating such damages is according to the Defendants' used drive sales.

(2) ISSUE 14: If the answer to ISSUE 13 is yes, how many sales of rebuilt drives did GrenCo lose? What was GrenCo's lost profit per lost sale of a drive rebuild during the Infringement Period? What are GrenCo's total lost profits on lost sales of drive rebuilds?

[153] Bearing in mind Hall's Sur-Reply Rebuttal Report and in particular Attachment 38R, the Defendants have established, subject to their primary position that no award for this heading should be made, that the Plaintiffs' lost profit from services would be $327,835.

[154] Therefore, the Plaintiffs are entitled to an award of $327,835 for this item of damages.

(3) ISSUE 15: Has GrenCo established that the sale of infringing products by the Defendants caused it to lose sales of other non-infringing products?

[155] In *Jay-Lor*, the Federal Court indicated that the loss of "add on" (or, in the language of this case, "convoy") sales may flow from the loss of sales of patented products, and in such cases these losses should form part of the damages claim:

> [198] Finally, I note one further related argument by the Defendants. They submit that the costs of certain components – most notably, the conveyors – should not be included in the assessment of costs. In their view, these are separate "add-ons", and are not part of the vertical feed mixer. **The problem with this argument is that the conveyor and other add-ons are sold with a vertical feed mixer and form part of the same sale.** Although conveyors are mentioned briefly, as an option to transport the mixture, in the specifications of the '092 Patent, JAY-LOR would not have sold a vertical feed mixer without a conveyor. When JAY-LOR lost a sale of a vertical feed mixer to Penta, it also lost the sale of the conveyor and other add-ons. Therefore, the Plaintiffs' damages include the loss of the sale of the conveyors. **The costs of any add-ons, sold as a unit with the vertical feed mixer, should not be artificially severed from the assessment of the Plaintiffs' losses.**

> [199] In sum, this is not a case where the losses to the Plaintiffs should be apportioned and limited to the auger in the patented vertical feed mixer or to exclude add-ons. The assessment of damages on lost sales should be made on the entire vertical feed mixer as sold to the customer.
>
> [Emphasis added.]

[156] In *Beloit Canada Ltd v Valmet-Dominion Inc* (1997), 73 CPR (3d) 321, 1997 CarswellNat 719 (WL Can) at para 130 (FCA), the Federal Court of Appeal indicated that “[a] patentee is entitled to damages assessed upon the sale of non-infringing components when there is a finding of fact that such sale arose from infringing the patented component”.

[157] In this case, the evidence indicated that a number of products were commonly sold with GrenCo drives, such as “drive caps, clamps, wellheads, power transmissions, chemical pumps, recirculation pumps, electric motors, flow-tees, generators, drive caps, sheaves, bushings, belts, prime movers (engines), skids (which includes a hydraulic pump and hydraulic tank), enclosures, quiet shacks, tubing rotators, and variable frequency drives and enclosures (optional), and tubing rotators”. These products were not marketed independently of the drives.

[158] It was common for oil producers to purchase a surface equipment “package” from one manufacturer, although producers also purchased different components from different manufacturers. Other manufacturers, including the Defendants, sold convoy products with their driveheads. The Plaintiffs submit that “[t]he lost sales of convoy products was foreseeable and was a consequence of the business model of GrenCo as well as its competitors in the industry”.

[159] On the other hand, the Defendants submit that the Plaintiffs must establish that the sale of the infringing product caused the loss with respect to convoyed sales, and "[a] patentee is not presumed to be entitled to lost profits on convoyed sales as a portion of its damages". The Defendants cite *Monsanto Canada Inc v Schmeiser*, 2004 SCC 34, [2004] 1 SCR 902, wherein the Supreme Court of Canada emphasized the causal relationship in a case concerning the accounting of profits:

> 101 It is settled law that the inventor is only entitled to that portion of the infringer's profit which is causally attributable to the invention: *Lubrizol Corp. v. Imperial Oil Ltd.*, [1997] 2 F.C. 3 (C.A.); *Celanese International Corp. v. BP Chemicals Ltd.*, [1999] R.P.C. 203 (Pat. Ct.), at para. 37. This is consistent with the general law on awarding non-punitive remedies: "[I]t is essential that the losses made good are only those which, on a common sense view of causation, were caused by the breach" (*Canson Enterprises Ltd. v. Boughton & Co.*, [1991] 3 S.C.R. 534, at p. 556, *per* McLachlin J. (as she then was), quoted with approval by Binnie J. for the Court in *Cadbury Schweppes Inc. v. FBI Foods Ltd.*, [1999] 1 S.C.R. 142, at para. 93).

[160] The Defendants suggest that a patentee cannot recover lost profits that were derived from convoyed products protected by other patents, and cite an English case, *Celanese International Corp v BP Chemicals Ltd*, [1999] RPC 203 (Pat Ct). The Defendants wish this Court to follow the American jurisprudence, wherein "[t]he Court held that if the convoyed sale had a use independent of the patented device, that suggests a non-functional relationship": *Warsaw Orthopedic, Inc v Nuvasive, Inc*, 778 F (3d) 1365 (Fed Cir 2015), amended on other issues, 824 F (3d) 1344 (Fed Cir 2016).

[161] Although the Defendants are correct in asserting that there is limited Canadian jurisprudence with respect to add-on or convoyed sales, in my view they have not succeeded in

differentiating *Jay-Lor* from this case. The Defendants argue that “[i]f an item’s only purpose is to function with the infringing unit, such as the conveyor in *Jay-Lor*, then it may be a conveyed [*sic*] sale on a common sense view of causation. However, if a product can be sold separately or sold for a different purpose, then it is not being sold only because of the infringement, but likely for business reasons or convenience”.

[162] I see two problems with the Defendants’ reasoning: first, *Jay-Lor* does not implicitly or explicitly reference such a limitation when speaking of “add-on” sales (in that case, the Federal Court simply states that the add-on items were “sold with a vertical feed mixer and form part of the same sale”), and second, the fact that convoyed products were sold for “business reasons or convenience” does not negate the fact that such products would have been sold by the patentee “but-for” the Defendants’ infringement.

[163] If compensation is not provided for such add-on items, then the patentee is not being put in the position that they would have been in but-for the infringement (resulting in less than perfect compensation). If the Plaintiffs can show, on a balance of probabilities, that such sales would have been made by the Plaintiffs in the but-for world, then in my view this is a loss for which they should be compensated. This approach is consistent with the limited Canadian case law on the topic, and I would reject the requirement suggested by the Defendants that such convoyed sales must have no function independent of the patented object.

[164] I conclude that a common sense view of causation indicates that these products were convoyed sales that, on a balance of probabilities, would have been made by the Plaintiffs but-for the infringement by the Defendants.

[165] I agree with the Defendants that the purchase of "associated products" was up to the customer and that certain products could be interchangeable. However, in my view, the evidence amply demonstrates that associated products were often (but not always) purchased with a drive. As discussed below, I find that Cohen's model is capable of covering off the concern that not all sales of drives would include convoyed products by making a deduction from his estimated loss.

(4) ISSUE 16: If the answer to ISSUE 15 is yes, what products did GrenCo lose sales of and over what period of time? How many of each of those products did GrenCo lose the sale of? What was GrenCo's lost profit on sales of these products? What are GrenCo's total lost profits on lost sales of other products?

[166] Cohen's approach of looking at the average revenue GrenCo would have received on the sale of a new drive and the historic average contribution margin is more reasonable than the Defendants' approach. Cohen's approach takes into account the fact that producers sometimes sourced "convoy" products from other manufacturers.

[167] As discussed above with respect to variable costs and contribution margin, I accept Cohen's numbers as more reflective of GrenCo's situation.

[168] Cohen has estimated that there were 1,051 lost units of convoy sales. Accepting that not all drive sales lead to sale of associated product but such was often the case, there must be a

deduction from Cohen’s estimated sales. The evidence suggests that convoyed sales happened the majority of the time but not always, and taking the “broad axe” approach, I would use the mid-point between 50% and 100% to find that 75% of drive sales lead to convoy sales.

[169] Using Cohen’s Schedule, I conclude that the lost profit on convoyed sales is estimated as $750,000 – the amount of the award for this item of damages.

(5) ISSUE 17: What are GrenCo’s total lost profits on lost drive servicing?

[170] The Plaintiffs submit that the evidence established that manufacturers service their own drives and generally did not service the drives of other manufacturers. The GrenCo business model included drive servicing – the seals on GrenCo drives needed to be serviced and replaced about every three years. The evidence indicated that drive servicing was lucrative.

[171] The Defendants agree that the Plaintiffs are entitled to recover damages for lost drive servicing. They submit that the Plaintiffs must show causation.

[172] The Plaintiffs have established causation. The evidence at trial was that once a manufacturer sold a drive, they would service that drive: “Corlac/NOV would have known that by selling the infringing drive sales at GrenCo’s expense, it would also benefit from being able to service those infringing drive sales at GrenCo’s expense”.

[173] The best evidence is that servicing would be required every three years and that it would include elements such as a seal kit, a wear sleeve, and 1-2 hours of labour. Cohen determined these amounts using historical data.

[174] Based on Cohen's approach, the loss of drive service fees over the period from 2003, when that aspect of the business developed, to June 3, 2010, less costs, is $1,150,000, to which GrenCo is entitled as damages for this item.

F. *Non-Infringing Alternative*

(1) ISSUE 18: Are the SAI stuffing boxes or other sealing systems non-infringing alternatives?

[175] This issue was not addressed by the Plaintiffs in writing, but dealt with orally.

[176] This issue turns on the assumption that the relevant market includes both electric and hydraulic systems. It is the Defendants' position that not only does the relevant market include both types of systems but that the SAI stuffing boxes are a non-infringing alternative. The evidence shows that hydraulic sealing systems did compete with the mechanical lip seal product in certain types of operating conditions but was not in the relevant market as a substitute.

[177] There is no question that the SAIs are non-infringing; the question is whether they are an alternative.

[178] The availability of a non-infringing alternative is relevant in terms of whether the Plaintiffs would have captured sales in the but-for world. In *Merck FCA*, the Federal Court of Appeal described the relevant considerations thus:

> [73] When considering the effect of legitimate competition from a defendant marketing a non-infringing alternative, a court is required to consider at least the following questions of fact:
>
> i) Is the alleged non-infringing alternative a true substitute and thus a real alternative?
>
> ii) Is the alleged non-infringing alternative a true alternative in the sense of being economically viable?
>
> iii) At the time of infringement, does the infringer have a sufficient supply of the non-infringing alternative to replace the non-infringing sales? Another way of framing this inquiry is <u>could</u> the infringer have sold the non-infringing alternative?
>
> iv) <u>Would</u> the infringer actually have sold the non-infringing alternative?
>
> [74] As a matter of principle, **the burden lies on the defendant to establish the factual relevance of a non-infringing alternative on a balance of probabilities.** Indeed, Apotex acknowledged in oral argument that it bears the persuasive burden, on a balance of probabilities, to prove that it would have used the non-infringing alternative. This is consistent with jurisprudence such as *Rainbow Industrial Caterers Ltd. v. Canadian National Railway Co.*, [1991] 3 S.C.R. 3, 84 D.L.R. (4th) 291.
>
> [Underlining in original; emphasis added]

[179] Therefore, the issue requires the Court to look at whether the SAIs <u>could</u> have and <u>would</u> have been a non-infringing alternative to the Defendants' Enviro stuffing box as of February 2004.

[180] As indicated earlier, the relevant market did not include hydraulic drives – the relevant market was for electric drives. Customers interested in electric drives would not have purchased a hydraulic drive as an alternative.

[181] Consistent with the above, the evidence is that the SAI was sold from 2004-2010 but only 10 units were made by the Defendants for electric drives. This small amount is not sufficient to establish the SAIs for electric drive as a real alternative – the odd sale here and there is insufficient.

The Defendants have produced no other substantial evidence that they could have had sufficient SAIs for electric drives nor is there evidence that they would have done so.

[182] The Plaintiffs are entitled to a reasonable royalty for the sale of the infringing units for hydraulic drives. These amounts are included in the award for reasonable royalty of $1,285,000 discussed earlier.

(2) ISSUE 19: If the answer to ISSUE 18 is yes, what was the impact of the availability of the SAI stuffing box (or others) as a non-infringing alternative on the market? What are GrenCo's total lost profits taking into account the SAI stuffing box (or other sealing systems) as a non-infringing alternative?

[183] Given the finding on Issue 18, there is no need to discuss this issue.

G. *Punitive Damages*

(1) ISSUE 20: Is an award of punitive damages, in addition to what may otherwise be awarded, warranted in this case?

[184] In *Whiten v Pilot Insurance Co*, 2002 SCC 18, [2002] 1 SCR 595 [*Whiten*], the Supreme Court described the role of punitive damages as follows:

> 36 **Punitive damages are awarded against a defendant in exceptional cases for "malicious, oppressive and high-handed" misconduct that "offends the court's sense of decency"**: *Hill v. Church of Scientology of Toronto,* [1995] 2 S.C.R. 1130, at para. 196. The test thus limits the award to misconduct that represents a **marked departure from ordinary standards of decent behaviour**. Because their objective is to punish the defendant rather than compensate a plaintiff (whose just compensation will already have been assessed), punitive damages straddle the frontier between civil law (compensation) and criminal law (punishment).
>
> 37 Punishment is a legitimate objective not only of the criminal law but of the civil law as well. Punitive damages serve a need that is not met either by the pure civil law or the pure criminal law. . .
>
> 94 To this end, not only should the pleadings of punitive damages be more rigorous in the future than in the past (see para. 87 above), but it would be helpful if the trial judge's charge to the jury included words to convey an understanding of the following points, even at the risk of some repetition for emphasis. (1) Punitive damages are very much the **exception rather than the rule**, (2) **imposed *only* if there has been high-handed, malicious, arbitrary or highly reprehensible misconduct that departs to a marked degree from ordinary standards of decent behaviour**. (3) Where they are awarded, punitive damages should be assessed in an **amount reasonably proportionate to such factors as the harm caused, the degree of the misconduct, the relative vulnerability of the plaintiff and any advantage or profit gained by the defendant**, (4) having regard to any other fines or penalties suffered by the defendant for the misconduct in question. (5) **Punitive damages are generally given only where the misconduct would otherwise be unpunished or where other penalties are or are likely to be inadequate to achieve the objectives of retribution, deterrence and denunciation**. (6)

> Their purpose is not to compensate the plaintiff, but (7) to give a defendant his or her just desert (retribution), to deter the defendant and others from similar misconduct in the future (deterrence), and to mark the community's collective condemnation (denunciation) of what has happened. (8) **Punitive damages are awarded *only* where compensatory damages, which to some extent are punitive, are insufficient to accomplish these objectives**, and (9) they are given in an amount that is no greater than necessary to rationally accomplish their purpose. (10) While normally the state would be the recipient of any fine or penalty for misconduct, the plaintiff will keep punitive damages as a "windfall" in addition to compensatory damages. (11) Judges and juries in our system have usually found that moderate awards of punitive damages, which inevitably carry a stigma in the broader community, are generally sufficient.
>
> [Italics in original; emphasis added.]

[185] Recently, in *Airbus Helicopters, SAS v Bell Helicopter Texteron Canada Ltée*, 2017 FC 170 at para 395, 276 ACWS (3d) 915, Justice Martineau noted that "it is perfectly acceptable to use punitive damages to relieve a wrongdoer of its profits where compensatory damages would amount to nothing more than an expense paid to earn greater profits while flouting the law". However, patent infringement alone, even knowing infringement, is not sufficient to ground an award of punitive damages: *Bauer Hockey Corp v Sport Maska Inc (Reebok-CCM Hockey)*, 2014 FCA 158 at para 29, 242 ACWS (3d) 404.

[186] At the liability phase of this action, the Court found that the Defendants:

a) intentionally set out to create a product which they knew or ought to have known would infringe the Patent;

b) have used a stuffing box design which is the same as the Grenke design, and profited from the sale of the infringing articles over a 10 year span (until enjoined by this Court from further infringement);

c) were considered by this Court to have been unjustified and egregious; and

d) had denied infringement of the Patent, yet at the same time claimed ownership in the Patent and argued that the Plaintiffs had in fact infringed their patent rights.

[187] The Plaintiffs submit that the Defendants' intentional infringement of the patent and their overall conduct are relevant factors for consideration: *Whiten* at para 113. In *Varco Canada Ltd v Pason Systems Corp*, 2013 FC 750 at para 469, 437 FTR 243, this Court stated in the context of an accounting of profits that "[h]ad the remedy been restricted to normal damages, I would have awarded exemplary/punitive damages because of the deliberate infringement carried out in the face of advice from Leier and recklessness as to the consequences". The Plaintiffs point to Corlac's profits and NOV's exploitation of the patented technology, arguing that the Defendants saw this lawsuit as a "cost of doing business".

[188] It does not lie within the Defendants' purview to argue that the Plaintiffs are not entitled to equitable relief from the Defendants' knowing infringement. There are no equities working in favour of the Defendants but this absence of equities can be accounted for in other areas where the Court has discretion without over-penalizing the Defendants by a punitive damages award. The evidence suggests that at the time there were multiple players claiming ownership or rights in other similar patents. This case seems to be part of that brawl.

[189] The above demonstrates that there must be something more than knowing infringement to support an award of punitive damages. The high-handed malicious misconduct necessary to ground this relief is not present in this case. The Plaintiffs have not shown any reason why a

compensatory damages award based on real loss plus costs and interest awards rather than a fall back to reasonable royalty for all infringing sales, as suggested by the Defendants, is not sufficient denunciation and deterrence to knowing infringement.

[190] Therefore, there will be no award of punitive damages.

H. *Interest*

(1) ISSUE 21: Is GrenCo entitled to claim pre-judgment interest?

[191] The Court may grant pre-judgment interest under s 36 of the *Federal Courts Act*, RSC 1985, c F-7. Under s 36(2), the Plaintiffs are entitled to pre-judgment interest subject to judicial discretion to disallow interest under s 36(5). In *Apotex Inc v Merck & Co*, 2006 FCA 323 at para 140, [2007] 3 FCR 588, leave to appeal to SCC refused, 31754 (May 10, 2007), the Federal Court of Appeal stated that "[j]udicial discretion as to the appropriate rate and period for which interest will run is said to assist the court in controlling the litigation process and to avoid inappropriate compensation".

[192] In *Bank of America Canada v Mutual Trust Co*, 2002 SCC 43 at para 38, [2002] 2 SCR 601, the Supreme Court noted that "[a]lthough not historically available, compound interest is well suited to compensate a plaintiff for the interval between when damages initially arise and when they are finally paid". Interest is available both at common law and at equity.

[193] Subsection 55(1) of the *Patent Act*, RSC 1985, c P-4, is also a statutory basis for the interest, as an element of compensation. In *Eli Lilly and Company v Apotex Inc*, 2014 FC 1254, 471 FTR 292 [*Eli Lilly*], Justice Zinn stated as follows:

> [116] Interest may be payable by a right under another statutory provision. Justice Gauthier implicitly recognized this when she wrote that Lilly could be awarded compound prejudgment interest "as an element of compensation." **The source for "compensation" is subsection 55(1) of the *Patent Act* which provides that the infringer is liable to the patentee "for all damage sustained" by reason of the infringement.** If the patentee can establish that it lost profits as a result of the infringement and that those profits would have generated income on a regular basis over the period of deprivation of those profits, then the patentee has also sustained the damage of the lost income from those profits.
>
> [117] Apotex submits that Lilly has failed to prove any such loss. It has failed to prove that it would have invested the lost profits and reinvested any income from it or that it would have paid down existing debt.
>
> [118] In my view, **the patentee is not required to prove exactly what use it would have made of the profit it has lost as a result of the infringer's actions**. This is after all, a hypothetical scenario because it did not have the funds in hand. I subscribe to the view expressed by S. M. Waddams in *The Law of Damages* (3rd ed 1997), at 437, cited at para 37 of *Bank of America*:
>
>> [T]here seems in principle no reason why compound interest should not be awarded. Had prompt recompense been made at the date of the wrong the plaintiff would have had a capital sum to invest; the plaintiff would have received interest on it at regular intervals and would have invested those sums also. By the same token the defendant will have had the benefit of compound interest.
>
> **I would go further and say that in today's world there is a presumption that a plaintiff would have generated compound interest on the funds otherwise owed to it and also that the defendant did so during the period in which it withheld the funds.**
>
> [Underlining in original; emphasis added.]

[194] I concur with Justice Zinn's comments that in today's world, compound interest is an accepted form of redress.

[195] In *Apotex Inc v Wellcome Foundation Ltd* (2000), [2001] 1 FC 495 at para 123, 195 DLR (4th) 641(CA), aff'd 2002 SCC 77, the Federal Court of Appeal indicated that interest was an element of compensation: "I would adopt the longstanding principle in the Anglo-Canadian jurisprudence that interest should be used neither as penalty nor reward, but should stand as part of an award to make the aggrieved party whole". The Plaintiffs indicated that pre-judgment interest comprises "(1) compensation for the inability to use the money owed, and (2) compensation for the reduction in its value over time due to inflation".

[196] The Defendants argued that the Plaintiffs are not entitled to pre-judgment interest because some portion of the delay between the commencement of the action and the trial was due to disagreements between the current plaintiffs and the former Weatherford plaintiffs, who initially commenced two separate actions and only consolidated the proceedings in 2007. In the alternative, if the Court does not exercise its discretion to disallow interest, then the Defendants submit that interest should be calculated on a simple basis.

[197] As indicated earlier, the conduct of the Defendants was far from pristine. To the extent that the Defendants are referring to conduct prior to the liability trial, it should be noted that the Defendants advanced every defence open, and not so open, to it, including limitation periods, obviousness, anticipation, misnamed inventors, misrepresentation in the petition for patent, deemed abandonment of the application during prosecution, and prior public disclosure of the

patented subject matter. There is great danger in tripping over the inconsistencies prevalent in this shotgun approach to patent litigation. It certainly unmeasurably complicates and lengthens the trial.

[198] The Defendants also counterclaimed for ownership of the patent on the basis that Art Britton was the proper inventor and had assigned his rights to the Defendants. In the liability judgment, this Court indicated that this was “the problem of riding too many horses in too many directions, all at the same time”. The Defendants also twice appealed the liability judgment.

[199] As noted above, the decision to disallow interest is discretionary. The Defendants have not put forward any evidence to the effect that the Plaintiffs acted with the intention of delaying these proceedings. Therefore, I would grant pre-judgment interest.

[200] Although the Plaintiffs suggest that there is some disagreement as to the period of time for which interest ought to accrue, the Defendants have not addressed this in their closing submissions and have not provided any reason why the period of interest in this case should differ from the norm.

[201] In *AlliedSignal*, the Federal Court dismissed an argument that delay by one party with respect to the production of documents should lead the trial judge to suspend the calculation of interest for a certain period of time:

> [264] Counsel for the defendant urged me to exercise my discretion to suspend prejudgment interest over two periods. In his submission, the plaintiff should not be entitled to interest from September 1, 1993 to April 30, 1995, which corresponds to the

period between the decision of the Trial Division and the decision of the Federal Court of Appeal. He submitted that the patent was invalid during this period. In addition, he submitted that the plaintiff should not be entitled to interest from April 1, 1996 to June 30, 1997 due to what he called a lack of cooperation on the part of the plaintiff in the production of documents.

[265] I am unable to accept the defendant's submissions on this issue. This reference involved a number of complex issues and required the production of an enormous number of documents. **Although the defendant made a number of requests for discovery of witnesses and documents, there is nothing on the record before me to suggest that the plaintiff was not reasonably forthcoming**. I have already dealt with Mr. Petty's recollection of conversations with customers about prices, and the fact that the defendant was not given notice. In my view, these circumstances are not relevant to the determination of the prejudgment interest issue.

[266] It is my opinion that the circumstances at bar are such that the plaintiff should not be penalized through a reduction in the award of interest. I respectfully adopt the principles enunciated by the Ontario Court of Appeal in *Royal Bank v. Roland Home Improvements Ltd* as follows:

> If the claimant is to be penalized, it should be in costs and the trial judge here, by awarding party-and-party costs in a case which prima facie merited solicitor-and-client costs, has already done that. **Pre-judgment interest is part of the value of the award, and just as the court would not reduce the amount of the award proper because of delay in bringing the matter to court, so should it not reduce the value of the award by reducing the interest to which the claimant would otherwise be entitled**. To the defendant who complains about being obliged to pay interest beyond the period within which he might reasonably have expected the dispute would be settled, the answer is twofold:
>
> > (a) he is not suffering an interest penalty because, during the delay period, he has the use of the money which is ultimately awarded to the claimant; and,
> >
> > (b) he can always stop interest running by making his own estimate of damages and paying

> it into court without prejudice to his continued right to dispute liability and quantum.

> [Footnotes omitted; emphasis added.]

[202] Therefore, pre-judgment interest should cover the period of January 2000 to May 1, 2017, which was the commencement of the damages phase of this trial.

[203] The parties agree that the appropriate interest rates are those prescribed in Alberta's *Judgment Interest Act*, RSA 2000, c J-1.

(2) ISSUE 22: Prior to the sale of GrenCo's assets to a third party, should pre-judgment interest on damages be calculated on a compound basis?

[204] The Plaintiffs seek compound interest on the damage award between the commencement of the action in 2000 and the date GrenCo was sold to a third party, and claim simple interest thereafter. There is disagreement between the parties as to whether interest should be calculated on a compound basis; the Defendants argue that interest should be awarded on a simple basis throughout.

[205] Paragraph 36(4)(b) indicates that compound interest cannot be awarded under the *Federal Courts Act*. However, as discussed above, it is available through other statutory and equitable routes.

[206] The Plaintiffs submit that "[b]y being denied compensation it should have had at the time the Defendants committed the wrong, GrenCo lost the opportunity to use such compensation to

pay off debts and/or for additional investment into equipment or research and development". Compound interest is an appropriate method of compensating the Plaintiffs for the loss of the "time-value" of money that the Defendants gained at their expense.

[207] The Defendants, however, submit that simple interest ought to be awarded unless the Plaintiffs establish that compound interest is required to achieve full compensation. The Defendants submit that "[t]he most reasonable conclusion from Grenco's conduct in the real world is that Grenco would not have re-invested any additional profits earned into its business".

[208] In contrast to the compound interest-friendly decision of Justice Zinn in *Eli Lilly* quoted above, the Defendants cite *Janssen* at para 138, wherein Justice Hughes considered that "[t]he decision of Zinn J. in *Eli Lilly* appears to consider lost profit arising from damages for lost sales is somehow reflected in an award of compound interest. Perhaps the Court of Appeal will clarify the situation".

[209] Although the jurisprudence is not entirely consistent on this point, I find the reasoning of Justice Zinn in *Eli Lilly* to be persuasive. This case was recently cited in *Dow Chemical Company v Nova Chemicals Corporation*, 2017 FC 350 at para 169, 279 ACWS (3d) 385, wherein the Court awarded compound interest in a case where the injured party elected an accounting of profits. Justice Fothergill found that "[t]he Court must decide the rate of interest to be applied and whether the interest should be compounded or not. The Court's jurisdiction in equity and s 55(1) of the *Patent Act* allow it to award compound interest".

[210] The evidence indicates that GrenCo tended to pay bonuses and salaries out of its profits. However, there is also some evidence that profits were used to finance research and development (albeit in a limited manner). With additional profits, further research and development projects may have been undertaken. In *Eli Lilly*, Justice Zinn at para 118 indicated that "the patentee is not required to prove exactly what use it would have made of the profit it has lost as a result of the infringer's actions." In this case, there is sufficient evidence upon which to conclude that profit may have been used for research and development or for other useful business purposes.

[211] As a matter of discretion taking into account the equities and the conduct of the Defendants, this also suggests that compound interest in respect of the period prior to the GrenCo sale is appropriate.

[212] Therefore, I award compound interest on that basis and simple interest thereafter.

I. *Costs*

(1) ISSUE 23: What are the costs payable for the liability and remedies phases of this proceeding and to whom?

[213] The Plaintiffs shall have their costs. The nature and level of costs including the awarding of a lump sum is to be a matter of further submissions. The parties may request the Court to set a schedule for cost submissions.

V. CONCLUSION

[214] Therefore, the Court will issue an Order directing that the Defendants pay to the Plaintiffs within 30 days:

1. damages in the amount of $7,915,000; and

2. interest calculated in accord with this Judgment.

The matter of costs will be settled by separate Order.

"Michael L. Phelan"
Judge

Ottawa, Ontario
May 31, 2018

FEDERAL COURT

SOLICITORS OF RECORD

DOCKET:	T-1236-01
STYLE OF CAUSE:	DARIN GRENKE, as personal representative of the ESTATE OF EDWARD GRENKE, and 284849 ALBERTA LTD. v DNOW CANADA ULC, NATIONAL OILWELL VARCO INC., and 769388 ALBERTA LTD.
PLACE OF HEARING:	TORONTO, ONTARIO
DATE OF HEARING:	MAY 1-5, 8-12 AND 17-18, 2017
REASONS FOR JUDGMENT:	PHELAN J.
DATED:	MAY 31, 2018

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