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Marmer Penner Inc. Newsletter

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Court of Appeal Endorses Use of *Black-Scholes* Formula in Valuing Employee Stock Options

During December 2006, the Court of Appeal released the long awaited decision on *Ross v. Ross*, originally heard in June 2005. Valuators especially were awaiting this decision to see if the Court of Appeal would uphold the lower court's use of the "if-and-when" approach to valuing employee stock options, or, whether the use of the *Black-Scholes* model would be endorsed.

There were actually two issues that were tested in the *Ross* appeal:

1) The use of the "if-and-when" approach; and

2) Whether a tranche of options awarded after the date of separation should be considered property under the *Family Law Act*.

The facts of the case were as follows:

- On the date of separation (August 31, 2001), Mr. Ross owned 175,000 employee stock options in Iamgold Corporation ("Iamgold") ("first tranche"), a very volatile mining stock. Less than four months after the date of separation, Mr. Ross was granted an additional 245,000 employee stock options in Iamgold ("second tranche");

- When the second tranche was awarded, a letter from Iamgold indicated that the second tranche was related to the significant progress made during 2001 towards increased value for

the shareholders and Iamgold's appreciation for Mr. Ross' effort. At trial, Mr. Ross acknowledged that the second tranche was also meant to bring him in line with other senior executives of the company when he was appointed CFO prior to the date of separation; and

- The first tranche was initially valued at $21,000 by applying the *Black-Scholes* formula discounted for income taxes and the illiquidity and restrictions unique to employee stock options. At trial, this value was revised to $49,200, as according to the Reasons from the original trial, [Mr. Ross' expert] "had given insufficient weight to the time-value of the options". These options had a gross *Black-Scholes* value (i.e. prior to considering discounts for vesting and illiquidity) of approximately $118,000. The second tranche was not valued on the basis that they had not yet been granted (and were therefore not property) on the date of separation.

The original trial judge rejected the use of the *Black-Scholes* formula and adopted an "if-and-when" approach in valuing Mr. Ross' options. In addition, 8/12 of the second tranche was held to be property under the *Act* on the basis that the second tranche was related to efforts made by Mr. Ross during 2001, 8/12 of which was prior to the date of separation. Accordingly, 338,333 employee stock options (being the 175,000 from the first tranche and 8/12 of 245,000 from the second tranche) were included in Mr. Ross' net family property as follows:

Options	Date Issued	Strike Price	Pre-Tax Value of Options Before Discounts[1]	Date Exercised	Stock Price at Exercise Date	Value per option included under "if-and-when"
25,000	Mar 1996	$5.75	0.71	Apr 2005	$7.45	1.70
25,000	Dec 1996	$6.90	0.71	Apr 2005	$7.80	0.90
50,000	Dec 1997	$3.20	0.52	Dec 2002	$5.80	2.60
25,000	Feb 2000	$2.95	1.07	Jan 2005	$8.00	5.05
50,000	Dec 2000	$2.56	1.32	Apr 2005	$7.45	4.89
163,333 (being 8/12 of 245,000)	Dec 2001	$3.90	Not determined	Apr 2005	$7.45	3.55

[1] These are the values determined by Mr. Ross' expert preliminarily using the *Black-Scholes* formula before discounts for vesting and illiquidity.

The findings of the Court of Appeal were that the trial judge erred in adopting an "if-and-when" approach and that the court should have adopted a date of separation value based on the *Black-Scholes* formula. Before discounts, the *Black-Scholes* value for the first tranche was approximately $118,000. Assuming the *Black-Scholes* calculation was done correctly and all the input variables into the formula were correct, $118,000 represents the hypothetical absolute ceiling for the value of the first tranche. The correct value has to be something less than $118,000 because discounts for vesting and illiquidity must be considered. Under the "if-and-when" approach, the ultimate value realized for the first tranche was approximately $424,000. Thus, the "if-and-when" approach penalized Mr. Ross by accounting for post-separation growth in the stock. The above chart illustrates this clearly, as the value per option under the "if-and-when" was higher than the hypothetical ceiling value determined by the *Black-Scholes* formula in all cases.

Although the Court of Appeal called into question the discounts that were taken against the pre-discount value for the first tranche, they adopted the *Black-Scholes* calculation as the appropriate starting point in determining a value for Mr. Ross' options. The Court of Appeal indicated that the "if-and-when" method makes no attempt to provide a date of separation value, which is evident from the chart above. The Court of Appeal applied a 20% discount to the gross *Black-Scholes* number to arrive at a discounted value for the first tranche of $94,757 ($118,447 less 20%).

The Court of Appeal accepted the original trial judge's findings that a portion of the second award should be included in Mr. Ross' net family property[2]. However, they were faced with the task of assigning a value to these options, because there was no evidence at trial with respect to the value of the second tranche. Based on its review of the terms of the first

[2] Justice Borins dissented, indicating that Mr. Ross did not own the 245,000 employee stock options that he acquired about four months thereafter. Consequently, the 245,000 options should not be part of his net family property.

tranche and the option values determined therefrom, the Court of Appeal determined an option price of $0.54/option for the second tranche and determined a value of $88,200 for the second tranche (163,333 options deemed to be property on the date of separation x $0.54/per option). These findings may be unique to this case because of the documentation that existed to relate the award of the second tranche to Mr. Ross' efforts during 2001. In most cases, employee stock options are awarded as a way to retain senior executives using the long vesting periods and expiry dates. In these cases, it may not be appropriate to include post-separation option awards in an individual's net family property.

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We would like to introduce the newest member of the Marmer Penner Inc. team – Anna Barrett, BSc, CA. Between September 1999 and December 2001, Anna worked with us as a student when she was studying at the University of Toronto. Anna is returning to us after spending several years with a CA firm where she did her mandatory CA training. Anna wrote her Uniform Final Examination and qualified as a CA in November 2006. Anna has enrolled in the CBV Program of Studies and is continuing her formal education and her training under our supervision. We welcome Anna back to the firm after taking "time off" to get her CA. Anna's hourly rate is $180.