

## Introduction to Business Interruption Insurance

### Module 3: The Amount Payable

#### (Reduction in Turnover and Rate of Gross Profit)

There are many interpretations of the term “consequential loss”. It might be considered to include loss of goodwill, loss of shareholders’ funds, or loss of market capitalisation. But BI insurance is only concerned with the loss of profit resulting from a loss of sales or an increase in expenses.

Again, this statement has no authority unless I can justify it with reference to the policy document.

The policy item that specifies how a claim must be calculated is usually called the **Gross Profit Item**. It is a pity that BI insurance has picked up the term “Gross Profit” because, as I have shown in “Module 1: The Basics of BI”, Gross Profit is just a subtotal and it can be before or after deduction of, say, Manufacturing Wages, and before or after direct factory expenses. Therefore it is subject to too many possible variations to be a reliable indicator of what should be insured. From the accounts that I have shown, would you insure Gross Profit for \$1,500,000 or for \$3,700,000?

<b>Sales</b>	<u>\$12,000,000</u>
<b>Cost of Sales</b>	
Opening Stock	\$100,000
Purchases	\$8,350,000
Wages- Manufacturing	<u>\$2,200,000</u>
sub-total	\$10,650,000
Less Closing Stock	<u>-\$150,000</u>
	\$10,500,000
<b>Gross Profit</b>	<u>\$1,500,000</u>
<b>Other Expenses</b>	
Depreciation	\$250,000
Rent	\$150,000
Salaries	\$500,000
Wages - Admin	\$225,000
Other	<u>\$412,000</u>
Total Other Expenses	\$1,537,000
<b>Net Operating Profit/Loss</b>	<u><u>-\$37,000</u></u>

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Opening Stock	\$100,000
Purchases	<u>\$8,350,000</u>
sub-total	\$8,450,000
Less Closing Stock	<u>-\$150,000</u>
Material Costs	\$8,300,000
<b>Gross Profit</b>	<u>\$3,700,000</u>
Wages- Manufacturing	\$2,200,000
<b>Other Expenses</b>	
Depreciation	\$250,000
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To be more precise, and to distance us from the wrong use of the term, I prefer to call it “**Insured Gross Profit**” unless I am directly quoting from a policy.

**The Insured Gross Profit Item specifies a claim in three sections:**

- 1 A claim in respect of loss of sales**
- 2 A claim for increased expenses**
- 3 A deduction for savings in expenses**

(Only the first two of these are mentioned in the policy words quoted below):

*“Item 1: Gross Profit*

*The insurance under this Item is limited to the loss of Gross Profit due to (a) **reduction in turnover** and (b) **increase in cost of working** and the amount payable as indemnity under this Item shall be:”*

The most important and unfortunately the most complex is the claim in respect of loss of sales. A typical policy specifies it in the following manner:

*“(a) in respect of reduction in Turnover, the sum produced by applying the Rate of Gross Profit to the amount by which the Turnover during the indemnity Period, in consequence of the Damage, falls short of the Standard Turnover.”*

We will look first at the calculation of lost sales, which is “*the amount by which the Turnover during the Indemnity Period, in consequence of the Damage, falls short of the Standard Turnover*”.

“Turnover” is defined in the policy and it simply means sales. I use the terms interchangeably.

The “Indemnity Period” is also defined. This is the period for which insurers will provide an indemnity. It starts with the date of damage and continues for as long as the business is affected by the damage but limited to the maximum period stated in the policy’s Schedule.

To be precise, one does not specify the Indemnity Period in the Schedule. The Indemnity Period is the interruption period and it varies with the severity of the damage. It is the maximum insured Indemnity Period that is stated in the Schedule,

After the maximum Indemnity Period has expired any ongoing losses are not covered. It is therefore critical to insure an adequate period. Usually 12 months was considered

reasonable but difficulties over building consents have made this a minimum. Each case must be assessed on its own needs. More on that subject later!

### Reduction in Turnover

The reduction in turnover is the difference between actual sales and the sales that would have been achieved **but for the damage**.

The actual maintained turnover during the Indemnity Period is self evident from the financial records of the insured business. But the most critical element in most claims is, "What turnover would have been achieved but for the Damage?"

To illustrate the calculation as the policy specifies it, let us consider a business that suffered severe fire damage on 30 June 2003, which destroyed the finishing stage at the end of its No.1 Production Line. Smoke and water affected other equipment. The undamaged production line (No.2) resumed after 10 days and immediately went on to additional overtime at its finishing stage to handle a portion of the output of the No1 line, which could operate all production stages except the last (finishing) stage.

The business maintained limited sales in the first month from undamaged stock of finished goods and thereafter from the output achieved by both production lines feeding into the finishing stage of the No.2 line.

Sales were seriously affected for the six months it took to reinstate the damage but during this time several customers found alternative suppliers and were slow to return and so the loss continued until at least March 2004. Because there was a maximum nine-month indemnity period, March 2004 was the cut-off point for the calculation of claim. This illustration therefore ignores as irrelevant, the possibility of continuing loss of sales beyond that date.

Actual turnover was:

Month	Maintained Turnover 2003/2004
Jul	\$350,000
Aug	\$575,000
Sept	\$625,000
Oct	\$610,000
Nov	\$590,000
Dec	\$715,000
Jan	\$890,000
Feb	\$850,000
Mar	\$910,000
TOTAL	<u><u>\$6,115,000</u></u>

But what turnover would have been achieved but for the Damage?

The policy uses a term “Standard Turnover”, which it defines as follows:

*“ ‘Standard Turnover’ means the Turnover during the period in the twelve months immediately before the date of damage which corresponds with the Indemnity Period.”*

The twelve months immediately before the date of damage is 1 July 2002 to 30 June 2003. The period that corresponds with the Indemnity Period is therefore 1 July 2002 to 30 March 2003. I will immediately label this the “Historical Standard Turnover” for reasons that will become apparent later.

We can add the Historical Standard Turnover to the table of monthly sales as follows. As with the actual maintained turnover during the indemnity period these figures are factual and extracted from the financial records of the business.

Month	Historical	Maintained
	Standard 2002/2003	Turnover 2003/2004
Jul	\$932,000	\$350,000
Aug	\$956,000	\$575,000
Sept	\$890,000	\$625,000
Oct	\$821,000	\$610,000
Nov	\$1,014,000	\$590,000
Dec	\$934,000	\$715,000
Jan	\$964,000	\$890,000
Feb	\$1,009,000	\$850,000
Mar	\$1,047,000	\$910,000
TOTAL	<u>\$8,567,000</u>	<u>\$6,115,000</u>

It is apparent that sales during the indemnity period (\$6,115,000) fell short of what was achieved in the equivalent months of the previous year (\$8,567,000) by \$2,452,000.

But is this a fair measure of the loss of sales? No! It is merely a comparison between one period of nine months and the same nine months of the previous year.

Let us assume that, by analysing sales trends over the twelve months pre-fire, I have identified that this business was growing steadily by, say, 13.4% per annum. In the absence of other evidence to the contrary it might be reasonable to assume that sales would have continued to grow by +13.4% if the fire had not occurred. Therefore the appropriate standard against which to measure the loss is sales in July 2002 to March 2003 (i.e. the same months in the previous year) plus 13.4%.

And fortunately the basic BI policy provides exactly for this situation because the definition of historical Standard Turnover as I have quoted it above is incomplete until one reads the “Adjustments Clause”, which is an essential element of it.

*“ ‘Standard Turnover’ means the Turnover during the period in the twelve months immediately before the date of damage which corresponds with the Indemnity Period*

*to which such adjustments shall be made as may be necessary to provide for the trend of the Business and for variations in or other circumstances affecting the Business either before or after the Damage or which would have affected the Business had the Damage not occurred, so that the figures thus adjusted shall represent as nearly as may be reasonably practicable **the results which but for the Damage would have been obtained** during the relative period after the Damage.”*

I have highlighted the key words and now I slightly re-arrange them, as follows;

“the results (i.e. turnover) which would have been obtained  
but for the Damage”

And so the loss of sales is measured, not against what was achieved last year but against the sales that would have been achieved but for the Damage. Assuming that there are no variations or special circumstances that require adjustment, the addition of a trend of 13.4% produces an “Adjusted Standard Turnover” as follows:

Month	Historical Standard 2002/2003	Adjusted Standard plus 13.4%	Maintained Turnover 2003/2004
Jul	\$932,000	\$1,057,000	\$350,000
Aug	\$956,000	\$1,084,000	\$575,000
Sept	\$890,000	\$1,009,000	\$625,000
Oct	\$821,000	\$931,000	\$610,000
Nov	\$1,014,000	\$1,150,000	\$590,000
Dec	\$934,000	\$1,059,000	\$715,000
Jan	\$964,000	\$1,093,000	\$890,000
Feb	\$1,009,000	\$1,144,000	\$850,000
Mar	\$1,047,000	\$1,188,000	\$910,000
TOTAL	<u>\$8,567,000</u>	<u>\$9,715,000</u>	<u>\$6,115,000</u>

The reduction in turnover is the difference between the Adjusted Standard Turnover (\$9,715,000) and the actual maintained turnover (\$6,115,000), which is \$3,600,000. The small trend adjustment of 13.4% has increased the measure of lost sales by \$1,148,000.

It is a pity the policy uses so many words to achieve this result.

This illustration is confined to a simple trend adjustment. But there is scope for much more. Perhaps the insured has installed additional productive capacity to double its

output. Subject to the persuasiveness of the evidence, the Historical Standard Turnover can be adjusted for this variation also. Of course, the insured would have to provide reasonable evidence that there was sufficient demand for the extra output, an adequate supply of raw materials, the premises were large enough, etc. etc., but if all these factors “stacked up” the claim should be based on what would have been achieved but for the damage, including the anticipated sales that would have resulted from the additional plant capacity.

Something as simple as a movement in exchange rates could also affect the business. When the NZ dollar strengthens against other currencies our exports become dearer, i.e. less competitive. The portion of turnover that resulted from export sales might have been reduced even if there had been no insured Damage and no business interruption. Therefore the Historical Standard Turnover should be adjusted downwards to produce an Adjusted Standard Turnover that is the best possible estimate of the sales that would have been achieved but for the Damage.

As you can imagine, with the multitude of factors, good and bad, which create variations in the fortunes of all businesses, the identification, calculation, negotiation and adjustment process can be difficult in the extreme. Insurers will appoint specialist loss adjusters to verify the legitimacy of adjustments made and those that should have been made. (Most BI policies include an item of cover to pay for the insured to get the help of experts to assist in these potentially complex calculations.)

### **Rate of Gross Profit**

The policy specifies that the amount that can be claimed in respect of the reduction in turnover is “*the sum produced by applying the Rate of Gross Profit to the*” reduction in turnover.

To understand why, we must go back to the Statement of Financial Performance and in particular, the arrangement of that statement that shows Gross Profit as a subtotal after deduction of only Raw Material Costs (i.e. Purchases adjusted for Opening and Closing Stocks).

<b>Sales</b>	<u>\$12,000,000</u>	100%
<b>Material Costs</b> (or Cost of Sales)	\$8,300,000	69%
<b>Gross Profit</b>	<u>\$3,700,000</u>	31%
Wages- Manufacturing	\$2,200,000	
Other Expenses		
Depreciation	\$250,000	
Rent	\$150,000	
Salaries	\$500,000	
Wages - Admin	\$225,000	
Other	<u>\$412,000</u>	
Total Other Expenses	\$1,537,000	
<b>Net Operating Profit/Loss</b>	<u><u>-\$37,000</u></u>	

You will notice that I have shown Gross Profit as a percentage of sales (31%), which is the Rate of Gross Profit as defined by the policy.

*“Rate of Gross Profit” means the Rate of Gross Profit earned on the Turnover during the financial year immediately before the date of Damage.*

(The complement of the Rate of Gross Profit is the Material Costs of 69%.)

### Claim in Respect of Reduction in Turnover

The sum produced by multiplying the reduction in turnover by the 31% Rate of Gross Profit is:

<u>Claim in Respect of Reduction in Turnover</u>				
Rate of Gross Profit		x	Reduction in Turnover	
31%		x	\$3,600,000	= <u><u>\$1,116,000</u></u>

This is the calculation as specified in the policy.

I have stated that the policy provides an indemnity for the loss of sales by reimbursing the insured for its loss of sales minus the savings in expenses. I have stated that there

will almost inevitably be a saving in Material Costs. Therefore, however the policy specifies the calculation, we could expect the result to be as follows:

Reduction in Turnover	\$3,600,000	
Less Savings		
Material Costs	-\$2,484,000	69%
	<u>\$1,116,000</u>	31%

.....which is the same figure as produced by the policy's formula.

So, by applying the Rate of Gross Profit to the reduction in turnover, the policy provides an indemnity for the loss of sales minus the savings in Material Costs.

There are good reasons why the policy specifies the amount payable in this manner but it is beyond the scope of this session to consider them. At this point we will just accept that it is so, and acknowledge that it works.

### **Savings in Other Expenses**

Let us now consider that there might be other savings in addition to the materials. In "Module 1: The Basics of BI" I illustrated the impact of a business interruption on a Statement of Financial Performance, in which there were also savings in Electricity, Freight and Repairs & Maintenance. I will now make a distinction in these savings between the Freight on the one hand and both Electricity and Repairs & Maintenance, on the other.

For the purpose of this illustration, only, I am saying that Freight is a directly variable expense. That is, the cost of freight will increase by, say, 50% if sales increase by 50% and it will go down by, say 30% if sales decrease by 30%. On the other hand Electricity and Repairs & Maintenance are not directly variable. If sales decrease by 30% there might be a saving in these two but not necessarily, and probably not to the extent of a 30% saving. In some circumstances of business interruption there might not be any saving at all in Electricity or in Repairs and Maintenance.

Therefore, for now, I am going to concentrate on the saving in Freight and I will allow for it by including Freight with Material Costs, as an element in the calculation of Rate of Gross Profit.

<b>Sales</b>	<u>\$12,000,000</u>	100%
<b>Material Costs</b> (or Cost of Sales)	\$8,300,000	69%
<b>Gross Profit</b>	<u>\$3,700,000</u>	31%
Wages- Manufacturing	\$2,200,000	
Other Expenses		
Depreciation	\$250,000	
Rent	\$150,000	
Salaries	\$500,000	
Wages - Admin	\$225,000	
<b>Other (incl Freight)</b>	<u>\$412,000</u>	
Total Other Expenses	\$1,537,000	
<b>Net Operating Profit/Loss</b>	<u><u>-\$37,000</u></u>	

<b>Sales</b>	<u>\$12,000,000</u>	100%
<b>Material Costs</b>	\$8,300,000	69%
<b>Freight</b>	<u>\$100,000</u>	1%
<b>Gross Profit</b>	<u>\$3,600,000</u>	30%
Wages- Manufacturing	\$2,200,000	
Other Expenses		
Depreciation	\$250,000	
Rent	\$150,000	
Salaries	\$500,000	
Wages - Admin	\$225,000	
<b>Other (excl Freight)</b>	<u>\$312,000</u>	
Total Other Expenses	\$1,437,000	
<b>Net Operating Profit/Loss</b>	<u><u>-\$37,000</u></u>	

By taking Freight out of Other Expenses (\$412,000) and including it as an expense above the "Gross Profit" subtotal, I have reduced the Rate of Gross Profit by 1% to 30%. Now, by applying the Rate of Gross Profit to the reduction in turnover, I am not only adjusting for the savings in Material Costs but also for the savings in Freight.

This is the policy formula:

<u>Claim in Respect of Reduction in Turnover</u>				
Rate of Gross Profit		x	Reduction in Turnover	
30%		x	\$3,600,000	= <u><u>\$1,080,000</u></u>

..... and this is the deduction of savings in Material Costs and Freight.

Reduction in Turnover	\$3,600,000	
Less Savings		
Material Costs	-\$2,484,000	69%
Freight	-\$36,000	1%
	<u><u>\$1,080,000</u></u>	30%

If there are other expenses that are directly variable with turnover we can also allow for the savings in them that are an inevitable result of the reduction in turnover by reducing the Rate of Gross Profit as we have done for Freight.

Although this might seem to be a complicated way to adjust for the savings, there is a very good reason for it, which I will come to shortly.

Now I want to justify the calculation I have done by looking to the policy for authority.

The definition of Gross Profit is:

*“Gross Profit’ means the amount by which:*

- (i) the sum of the turnover and the amount of the Closing Stock shall exceed;*
- (ii) the sum of the amount of the Opening Stock and the Uninsured Working Expenses.”*

In the calculation, the Uninsured Working Expenses are Purchases and Freight and these will have been defined as uninsured in the BI policy. I can now use the term “Insured Gross Profit”, which I mentioned earlier, to distinguish what I have calculated in accordance with the above definition, from the various versions of Gross Profit that have appeared in the financial statements that I have used.

To conclude this module and to lead into the next, I want to make a distinction between the three ways in which Gross Profit is used in a BI policy.

*“Item 1: **Gross Profit (1)***

*The insurance under this Item is limited to the **loss of Gross Profit (2)** due to (a) reduction in turnover and (b) increase in cost of working and the amount payable as indemnity under this Item shall be:*

- (a) in respect of reduction in Turnover, the sum produced by applying the **Rate of Gross Profit (3)** to the amount by which the Turnover during the indemnity Period, in consequence of the Damage, falls short of the Standard Turnover.”*

- 1 The basic indemnity under the policy is provided by the Gross Profit item.
- 2 This item insures loss of Gross Profit and it specifies exactly how it is to be calculated.
- 3 Gross Profit is used as a rate, which is applied to the reduction in turnover to calculate the claim due to the reduction in turnover.

I have described the use of Insured Gross Profit as a rate. In the next module I will describe how it is used as the sum insured under the Gross Profit item. Before leaving, here is a summary of the lessons from “The Amount Payable; Gross Profit as a Rate”.

### **Review**

- 1 The term “Gross Profit” is used in a variety of ways in financial reports and is therefore an unreliable indicator of the appropriate sum to insure.**
- 2 Insured Gross Profit is also used in BI insurance as a rate (Gross Profit as a percentage of Sales). This rate is applied to the reduction in turnover to calculate the claim.**
- 3 The application of the Rate of Gross Profit to the reduction in turnover adjusts the loss of sales for savings in the variable expenses, which have been listed as uninsured.**
- 4 The insured is then able to pay all expenses that were not saved and have the same profit margin left over as it would have achieved, but for the damage and business interruption.**

Brett Fawcett  
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