INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

September 2013 Examinations

Subject CA1 – Actuarial Risk Management

Paper Two

Introduction

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

D C Bowie
Chairman of the Board of Examiners

January 2014

General comments on Subject CA1

This subject examines applications in practical situation of the core actuarial techniques and concepts. To perform well in this subject requires good general business awareness and the ability to use common sense in the situations posed, as much as learning the content of the core reading. The candidates who perform best learn, understand and apply the principles rather than memorising the core reading.

The examiners set questions that look for candidates to apply the principles specific to the situation set out in the questions, having read the question carefully. Many candidates gain few marks by writing around the subject matter of the question in a more general fashion. Detailed specialist knowledge is not required and nor is very detailed development of particular points.

Good candidates demonstrate that they have used the planning time well to understand the breadth of the question and to structure their answer – this is a big advantage in making points clearly and without repetition. This also enables candidates to use the later parts of questions to generate ideas for answers to the earlier parts.

Time management is important so that candidates give answers to all questions that are roughly proportionate to the number of marks available.

Comments on the September 2013 papers

The general performance was slightly higher than in April 2013. Question 4 on paper 1 and question 2 on paper 2 were on average less well answered.

The comments that follow the questions concentrate on areas where candidates could have improved their performance. Candidates approaching the subject for the first time are advised to use these points to aid their revision.

1 (i) Monitoring the experience is a fundamental part of the actuarial control cycle.

The actual experience of a provider should be monitored to check whether the method and assumptions adopted for financing the benefits continue to be appropriate and, if not, what changes should be made in order to achieve the desired level of profit.

The experience will be monitored so as to:

- update assumptions as to future experience for pricing and reserving
- monitor any adverse trends in experience so as to take corrective actions
- provide management information

(ii) The basic requirement is that there is a reasonable volume of stable, consistent data from which future experience and trends can be deduced.

The data ideally needs to be divided into sufficiently homogeneous risk groups, according to the relevant risk factors. However, this ideal has to be balanced against the danger of creating data cells that have too little data in them to be credible.

Data would be split by age and gender and also by the year the annuity was taken out. The more recent annuities are more likely to be affected by the increased availability of impaired life annuities in the market and may experience lighter mortality. Also size of annuity

In practice the level of detail in the classification of the data depends upon the volumes of data available. The volume of data will indicate whether or not an analysis will produce meaningful results; it may be preferable to group data by age bands if necessary rather than date of commencement of the annuity. We have a large volume of data so a detailed level of classification is likely although at the extreme ages the data may be sparse

It will also be necessary to have data on the exposed to risk, divided into the same cell structure as the experience data. An analysis of experience is not valid unless experience and exposed to risk correspond.

The grouping will depend on the use of the data, in this case there was likely to be less competition several years ago and thus would be less relevant.

(iii) Monitoring of experience is fundamental to effective implementation of the actuarial control cycle.

The results of analysing the experience can be used to reassess the view of the future. This may result in changes to the assumptions or models used for calculating annuity rates or provision.

When analysing the results, LongLife can look into whether the period under investigation was typical and whether the experience is likely to be representative of future experience.

LongLife can use the results to see if their mortality experience is getting lighter. It is likely that annuities taken out many years ago are not representative of the company's current experience as they are likely to include a range of healthy and less healthy lives, although their mortality will still need to be monitored. The more recent annuities are likely to have a higher proportion of healthy lives and so will be more appropriate if future expected rates are being considered. This trend is likely to continue.

If it had not been possible to split the analysis into sufficiently homogeneous groups, it is important to consider whether the individuals to whom the investigation related are relatively homogeneous with the individuals whose benefits will be affected by future experience.

LongLife may then use the results as part of the assumptions setting process. However, depending upon the purpose of the assumptions, it may first be appropriate to make an adjustment in these assumptions to create a margin for prudence. This may allow for any uncertainty as to the validity of the results of the analysis.

The results can also be used as rating factors e.g. post code and annuity size

And they can be used to drive business strategy, e.g. whether to follow the competition by offering enhanced annuity rates.

Generally well answered especially parts (i) and (ii) but many candidates missed some of the basic bookwork. Better candidates commented on the importance of competitors offering enhanced annuity rates to lives in poor health and that the size of this market was increasing. Far too few mentioned exposed to risk and the need for consistency of this with experience data.

2 (i) Interactions between risks may mean that the effect of multiple risk events is greater or less than the sum of the individual risks. A practical technique needs to be developed to address this

Some risks, particularly operational risk, are still highly subjective in their assessment, particularly when it is necessary to construct a plausible adverse scenario that occurs at a very low probability. The temptation is to think of risk events that have occurred, which are therefore likely to be more common than the required ruin probability

Using past data to estimate future consequences of rare events need to be undertaken with caution – i.e. what is an assessment of a 0.5% probability for mortality etc.

A stochastic model would ideally need to be used to assess the impacts. If this model was to have more than two stochastic variables it will be impractical to run. Thus a means of assessing the correlation between the risks needs to be developed. The most common technique uses a correlation matrix. Populating the correlation matrix is a largely subjective exercise

(ii) Main risk is mortality being significantly higher than expected. I.e. more policyholders than expected die and therefore the company pays out more death claims than expected.

Or policyholders die sooner than expected resulting in significantly less premiums being received as well as having to pay out claims

Poor experience could be a result of a change in the underlying population, poor underwriting or anti-selection (or other valid example)

This would mainly arise from a catastrophic event (e.g. outbreak of global disease) or a concentration of risk such as a nuclear disaster or war in a particular geographic area. Although sometimes contracts specify exclusions from such events

Other risks such as expenses or lapses are unlikely to be so bad that they cause ruin. Unless an economic crisis results in a large number of lapses or significant increase in expenses

But legislative changes or operational risk might be a problem. For example an increase in reserving requirements or change in assets allowed (although the investment is unlikely to be so significant)

A very large increase in expenses, e.g. a mis-selling penalty or financial fine or fraud

Large scale fraud or investment failure

Reinsurance failure coupled with heavier mortality experience might also cause ruin

(iii) The whole enterprise is likely to use risk budgeting and by doing this maximum use can be made of diversification benefits, and thus the minimum capital be needed to support the risks undertaken

There is also the opposite of diversification, inverse correlation. For example there is annuity business in another part of the company

There will therefore need to have a system of risk reporting the allocations across the company.

The chief risk officer will need to ensure that all the products are using the risk allocation that they have been given and when looking at any back book transactions will need to be aware of the issues this might give for diversification and capital impacts

Some risks from the different products (like mortality from the term assurance and longevity from annuity business) might diversify away, but if one of the two products does not take on the risk exposure allocated this could actually increase the capital requirements of the company

This is also very important if any reinsurance or disposals are considered as this could also increase the overall level of capital required for the company

Risk exposures will not be matched, and additional capital may have to be held to cover the unbalanced risk taken on

Further risk management comes from management information such as claims and premiums analysis across the units, monitoring primary and secondary reporting systems

The least well answered question of the paper. In part (ii) few candidates focussed on ruin situations rather than possible loss making scenarios more generally.

3 (i) Costs for the different categories may have escalated differently over the period. For example, if claims management is carried out by professional staff whose salaries have risen faster than direct holiday costs such as air fares.

Claims volumes may have fallen while claims management staffing has not changed.

The mix of claims may have changed, either by size of claim or by category of damage/injury. For example, claims expenses as a %age of claim cost, may be lower for small claims that are admitted with minimal investigation. Or they may be lower for very large claims.

The company may have set thresholds for how claims are managed, for example only involve loss adjusters for claims above £500. If these thresholds have not increased in line with claims costs, then a greater proportion of claims will have exceeded the threshold and so incurred higher expenses.

This may be a deliberate result of spending more on claims management to eliminate fraudulent/excessive claims (and so reduce the overall claims ratio including management costs).

The company may have revised the way it allocates claims management expenses between lines of business, or has allocated more of its overhead costs to claims management.

Strengthening of currency if claims paid in foreign currency but mgt expenses paid in domestic currency. .

The level of excess has not changed and so more claims are over the excess level and hence being paid

(ii) The company can review claims dept staffing levels and remuneration.

…to ensure that these are appropriate to the volume and mix of claims

… and that operational efficiency is maximised.

The company can review claims management thresholds in line with inflation.

It could review the claims management structure in order to reduce costs, ensuring that these are proportionate to the need to identify fraudulent/excessive claims

The company could better use statistical analysis to identify fraudulent claims with lower management costs

Review policy terms and conditions, including the level of excess

(iii) Independent hospital charges would include their profit margins, and they may over-estimate treatment costs/requirements in order to increase their own profits.

The subsidiary chain might better check that treatments are linked to injury/accident sustained while travelling, rather than to pre-existing conditions that may not be covered

With a subsidiary chain, management controls could ensure high quality treatments and minimise costs, e.g. liaising across countries if treatment continues after the policyholder returns home.

Treatments could be carried out on a non-profit basis, or any profits could be paid to the company as dividends to offset claims costs.

There may be economies of scale with the existing hospital chain that can be shared between the travel/health businesses.

Claims management costs can be reduced because invoicing can be done directly and no need for management controls. And other examples such as economies of scale

(iv) This change to policy documentation would require disclosure to customers. Would it affect premium volumes or customer satisfaction?

Do the hospitals have the skills and resources to cope with the additional workload?

Does the chain have sufficiently wide coverage? It only operates in countries where the health insurance business operates, but travel will be worldwide, and even within countries injuries will arise while skiing/trekking/diving/etc in remote locations. Many travel insurance claimants will require emergency treatment and will be taken to the nearest facility which may not be one of the chain.

What arrangements can be made for areas where the chain doesn't have coverage and/or doesn't have the ability to treat these policyholders?

The company will need to establish procedures to allocate hospital costs between travel and health businesses.

Conflicts of interest for medical staff in that they are employees of the same company as the insurance company and want to keep the costs down but have a professional duty of care towards their patients.

Consider if the benefits outweigh the costs

Reasonably well answered but many candidates did not read the question carefully and in part (i) gave reasons why claims costs had increased when the focus of the question was on claims management expenses. Better candidates scored quite highly on parts (iii) and (iv).

4 (i) Immediate annuities purchased by a single premium could remove a liability to a current pensioner

The immediate annuities may be increasing at a fixed rate or increasing in line with a given index

They may continue after death to a surviving spouse, at either the full or a reduced amount

Deferred annuities could extinguish a scheme's liability to a member with an entitlement to a deferred pension

The annuity may have to increase in both deferment and payment, either at a fixed rate or at a rate linked to an inflation index. Schemes can have complexities such as differing levels of increases, Is it possible to match the nature of the scheme with an annuity

Longevity swaps could be purchased whereby the scheme pays a guaranteed level of payments to the insurance company in return for the insurance company to pay the actual payments that would be required to pay the members (i.e. the company takes the risk over and above the agreed level of payments)

(ii) As required the main advantage of these products is that they reduce the longevity risk

This would reduce long term cost uncertainty for the scheme and so reduce reliance on sponsoring employer's support.

For the immediate and deferred annuities it also removes the inflation and investment risk, depending on the financial product used

Longevity swaps still leave the scheme with the opportunity of making investment profits

The disadvantages of the immediate and deferred annuities are that:

- It removes the upside longevity, inflation and investment risks – however given the scheme wants to remove longevity risk it is only the 2 latter risks that are a disadvantage in this case

- The purchase price has to cover insurance company expenses and a contribution to its profit which may make the product relatively expensive

- Dealing with issues such as future addition of discretionary pension increases could become complicated depending on whether they remove all the risks when transferring to an insurance company (either way these issues could be complicated)

- Need to have liquid cash available

Longevity swaps still means the scheme has inflation and investment risk and will need to decide whether to cashflow match the payments to the insurance company or maintain the investment risk with the hope that they outperform

The market for longevity swaps may be in its infancy and thus hard to find an insurance company to enter into the swap with

There is counterparty risk with any such product.

Data issues. There data may well be old and there may have been changes to benefits so tying down benefits exactly may be a difficult exercise

(iii) Merits?

Uplift

- The scheme will reduce the tail risk where increasing longevity will be coupled with continual increasing benefits

- Still have the longevity risk for the individual member and there will be a cross over point where the scheme would win/lose from this transaction

Transfer value

- If the member took this option then the scheme will have reduced the longevity risk, and indeed all investment/etc. Risks and the individual will have removed their longevity risk

- But the scheme needs to pay out the enhanced transfer value now, and it will pay out more than the benefits would have cost in the case of a member who does not live longer than average

In both cases there are anti-selection issues, whereby members who are in poor health take the option.

– E.g. for the transfer value offer, because they can buy an enhanced annuity from an insurance company whereby they could get an increased pension,

– or for the pension uplift because they are just giving up future increases that they wouldn't have lived to receive.

– If the scheme is left with members who are in good health (and can't get a better deal elsewhere), it ends up with a worse longevity risk than when they started

The scheme will need to consider if doing either of these makes any further de-risking options more expensive in the future – e.g. will life insurance companies think that the scheme has been selected against and hence be more expensive by assuming lighter mortality for anyone who has not taken the offers?

How much will it cost to run the offers, including communications and administration?

And will the changes affect the ongoing admin of the benefits (e.g. for the uplift option will having some members having increases and some not cause the admin teams problems)

The scheme will need to consider how it funds the transfer value option and to a lesser extent the uplift option, what assets will it sell and does it have liquid enough assets to fund if the offer is successful

<u>Factors</u>

For both options the scheme will need to decide on how generous to be – this will probably depend on how paternalistic the scheme feels to its members

In both cases, the take-up will depend on how generous the offer is. There is an inverse relationship with generosity and take up, The smaller the uplift to the pension now (or enhancement to TV) the more benefit the scheme will see but probably a lower take up from the membership, the higher the uplift/enhancement the higher the take up would be BUT the lower the benefit to the scheme

The scope for enhancing the TV will depend on how prudent/otherwise the TV basis currently is

Targeting certain risk groups. The scheme will need to decide whether it asks for medical information before deciding the enhancement to offer, to reduce anti-selection risk, or whether to offer to just joint life policies – this would probably seem to be unfair and not filled in correctly if at all

If the members who have not retired are still working for the sponsoring company then the scheme will need to consider the impact on the members/employees if the deal offered is not seen to be fair or reduces their benefit security

Will need to know whether the company is prepared to put money into the enhancements to get a higher take up rate such that more longevity risk is removed

Funding level and whether the company can afford to will influence the generosity

Legislation may require that the members are able to get financial advice should they require it (such that the members know what they are giving up – e.g. benefits of increases). And therefore would want to take account of what the advice might be when designing the offers

For the transfer value option will there be an option to join a defined contribution scheme (either run by the company/scheme or another)

Will need to consider the tax issues before deciding on the structure e.g. if members accepting the offers might incur higher tax.

With both options the scheme will need to be professional and consider regulatory and reputational issues

The scheme should consider variations to the designs: for example to pay a guaranteed cash sum rather than a pension uplift.

Parts (i) and (ii) were often poorly answered – many unsuitable products were suggested and many candidates did not go into enough detail for the marks available. On part (iii) better candidates did actually discuss the issues rather than just raising issues that need to be considered.

5 (i) A provider is solvent if its assets are adequate to enable it to meet its liabilities.

(ii) Capital
Supervision (regulatory/statutory)
Disclosure

(iii) The main focus of the assessment will be around the risks that the business is taking on. It will also be interested in the probabilities of the risks occurring; and any correlations (diversifications of those risks); and any concentrations of possible risks

Will need to consider the impacts on capital of stressed events which could lead to other risks (e.g. Liquidity risk)

Need to ensure that the claims of the company can be paid – both the expected claims and the unexpected claims that it could have to pay under a 1 in 200 scenario

Will also need to understand the reinsurance contracts, and any other risk management tools, it has in place (the types of reinsurance in place and how much has been reinsured) and how this affects the solvency of the company. It will also need to consider the impact of a failure of the reinsurer and the impact that this would have on the solvency of the fund

The company will need to follow the Statutory requirements in doing the assessment i.e. regulation

The solvency assessment will need to consider the investments that the company has and in particular what the assets might do in certain scenarios. Will also need to consider how the assets are to be valued (and how subjective those valuations might be). The matching positions and correlations i.e. how the assets move relative to the liabilities in certain scenarios

The solvency assessment will need to consider how experienced the company is (established company versus new set up), and how much checking that will need to be done on the assessment

The NEW business volumes of each type of business will be important in looking at the assessment of solvency

Will need to ensure the correct tax treatment is used when doing the solvency assessment

The cashflows of the INFORCE business needs to be considered in the assessment - that is the premiums coming in and need to consider the expenses that are being paid out both in terms of acquiring the business and also expected ongoing expenses for administering the business (i.e. renewal expenses need to be part of the cashflows for calculating the best estimate liabilities)

If the company is writing new business then will also want to consider the capital that should be held if they closed to new business

Need to consider the operational risks as well in calculating the solvency assessment

(iv) An annuity provider's liabilities are long term in nature and therefore solvency measures are more important to ensure the provider can pay the annuitants.

The payments by the annuity provider are also uncertain in terms of timing, and amount (if index linked) – in particular the unknown length of time that the members will live

More uncertainty means more exposure to extreme events and higher potential shortfalls. The solvency capital requirements will aim to allow for this.

The building society's liabilities are known in terms of the savings accounts; and apart from the default risk the short term loan assets will be known (the timing will be set at the time of the loans). Therefore the solvency measures are unlikely to be as significant. As these loans are secured, the default risk is mitigated to some extent

(v) Analysts and rating agencies

Will be concerned with the level of capital held by the provider. Those with lower solvency may end up with lower credit rating

Brokers

They will not want to place business with companies that have low solvency, a poor reputation and low credit rating

Shareholders

They have supplied capital to the annuity provider and they will want a representative level of return on this capital. Stronger company, higher solvency level and thus more capital may be required

Policyholders

They have also provided capital in terms of premiums paid. They want the security, higher solvency, that their claims will be met as they fall due. In the case of the annuity provider the policyholder has/is retiring and will need prompt access to their annuity.

Competitors

If they see that you have low solvency and are weak there may be a take over bid

Employees and pensioners

Employees receive a salary from the provider and if there was a staff pension scheme then former employees who have retired will be dependent on the provider for their annuity. Again they will have more reassurance if the company is in a stronger solvency position

Regulator or policyholder protection groups

Will be concerned with the level of solvency capital held by the annuity provider to ensure that policyholders are safeguarded against future adverse experience

Professionals e.g. Auditors, actuaries and lawyers are responsible for signing off the accounts and possibly for the development of new products

Government and Society. Cost of bailing out in case of insolvency or general financial instability

Bond holders and creditors. Will want a company to remain solvent so that they receive their payments

Board

As well as ensuring policyholders are protected they want to ensure a good return for capital providers to the company

In parts (i) and (ii), many candidates gave more explanatory detail than required for the marks available, which may have given them less time to spend on other questions such as part (iii). On part (iv) many candidates focussed on the annuity provider rather than comparing against the building society. Part (v) was generally well answered.

6 (i) The objectives for the project

For example the desired impact on attendance

Statements on how the objectives will be met

The role of different parties in the project

Including management, existing performers and any new staff or associates required to introduce animals

The cost of the project

Details of how finances will be raised for the project (financing policy)

Policy for any legal or technical issues

Key milestones for reviewing the project including deadlines

Risk management policy

(ii) The operational risk is the introduction of animals into the Nimbus Circus entourage

Firstly need to find out whether these animals can be purchased for use in a circus or even better if they can be loaned

The animals will need to be fed which will mean having sufficient and appropriate food brought along with the circus

Housing animals will also take up significant space and require greater planning of the circus enclosure. Snakes are excellent escape artists.

Particularly if any animals are dangerous, protect staff, are likely to disturb others (e.g. noisy), or have particular requirements (e.g. need cool shaded areas) or liable to eat each other. Regular inspections to ensure adequate conditions

The performance area will need to be reviewed to ensure it is large enough for any animals being used

And that there is sufficient protection for spectators from dangerous animals

There may also be requirements to register any animals. Or to apply for permits to use potentially endangered animals. Beware fines for mistreatment etc.

Or restrictions on the numbers or types which can be kept for the circus

Considerations as regards what happens to the animals at the end of their working life, they can't just simply be sold

There may be a reputational risk that previous attendees are no longer interested in the circus following these changes, i.e. that the changes could decrease attendance. Especially if the previous animal ban reflects sentiment towards performing animals and cruelty issues. This includes disruption from animal rights protestors, increased security to ensure against this

Current performers might also be uncomfortable travelling with animals and decide they no longer wish to be part of Nimbus Circus

It is also unclear when the licensing rules will change, which means that planning which show animals will be introduced for may be difficult

The change may also encourage other competitors to introduce animals to their shows meaning there may be limited benefit for any changes

The two key financial risks are that the cost is higher than expected

Or the revenue generated is lower than expected

The initial cost for obtaining any animals may be higher than expected

The salary required for handlers or trainers may also be higher than expected

There may be an additional risk that any handlers or trainers may be in short supply and hence might be able to command higher salaries, higher salary increases, or leave to support other circuses

Transportation costs may be higher due to size and weight as well as need to transport animals safely

If any animals are particularly large or heavy this may create additional problems with transportation (e.g. giraffe and low bridges, or elephant and weight restrictions)

Some venues might place their own restrictions on the use of animals despite the change in the law

This might change the countries and/or locations where the circus can operate

There is a financial risk that finance cannot be raised by Nimbus Circus. This may be due to financial backers not being available, or banks being unwilling to loan on a risky venture

There may also be other constraints on the finances of the circus. This is particularly key as there will be a significant up front expense in obtaining any animals and the relevant equipment

There is a financial risk if any of the animals are injured or taken ill. This would expose the circus to (specialist) vets bills and inflation of those fees. Given the animals involved there may be a limited number of vets able to assist, which may command higher fees or place unexpected restrictions on locations the circus can operate in

(iii) <u>Avoid the risk</u>

Do not use animals in the show. Or use animals that require less specialist care and vets knowledge

<u>Reduce the risk</u>

Ensure handlers and trainers are appropriately trained to minimise the risk of injury to animals and to be in a position to administer basic first aid

<u>Reduce uncertainty</u>

Research the requirements and care for each animal before hand, and market research on what customers want. I.e. likelihood (frequency) of illness and then severity (amount of costs) if get ill.

<u>Transfer risk</u>

Hire handlers and trainers on the basis that they will look after the animals and always have one available for performance, effectively sub-contracting the care and costs of the animals. Or lease the animals (and handler) from a local zoo. I.e. not purchasing the animal but finding areas where there are local zoos and where a contract can be made to lease the animal

Insure the risk

Take out an insurance policy which will pay out if any of the animals are injured. This will involve transporting in a specialist vet or the animal to the vet. This will have complications given the potential size of the animal and that specialist vets are likely to be few and far between

Share the risk

Work with a zoo or animal organisation to use the show to promote awareness about specialist animals. The circus may not even have to own the animals, they could lease them from a safari park

(iv) Diversification

By introducing animals into the Nimbus Circus there is already diversification, as the existing acts provide diversification relative to the animal acts

Diversification could also be introduced by having a number of different animals available.

This could be animals of the same type, who could carry out the act if another was injured

Or of a different type so that there are a number of different acts available

Which would reduce the significance of a single act being withdrawn

Underwriting

This could effectively be health screening for the animals

It could include checking if the animals had been vaccinated or quarantined in an appropriate way

It could involve looking at an animal's medical history or pedigree to determine any predisposition to illness or injury. General research into this

This would require there to be adequate medical records

Which may not be possible if the animal is young, or has only been in captivity for a short while

Testing could also be undertaken, for example blood tests, to screen for common illnesses

However, for rare animals there may be little information available which may mean medical testing is unable to identify high or low risk animals of a given species

The activities undertaken in the show could also be screened

This would be equivalent to checking for dangerous leisure pursuits for life assurance contracts

Shows constructed in a safe way, or involving less dangerous activities would reduce the risk of injury to the animals

However, this could reduce the impact of the animals in increasing interest and revenue if the act was not deemed interesting or exciting by potential customers

Claims control procedures are not applicable as Nimbus Circus is not insuring the risk of injury. However there will need to be internal management procedures for spotting illnesses and getting the animal well again

<u>Management control systems</u>

Recording of animal illness and injury will help the management team identify any animals which are regularly unavailable

This might identify particular species or individual animals which are higher risk

And therefore provide information that can be used when choosing animals to join Nimbus Circus in future years

(v) The criteria will be whether the project has made a profit

And the variability of profit stream

This will require an assessment of the additional revenue brought in which will be difficult

… as changes in attendance will be influenced by many outside factors

For example the broader economic environment, or the success of competitors

As a basic measure this could simply be the value of tickets sold in the most recent year compared to tickets sold the last year before animals were introduced

This will need to be compared to the additional costs incurred

Both direct costs, such as licensing the animals and trainer wages

And indirect costs, for example management time, shared fuel costs or changes to publicity and marketing strategy

Amortisation – Large one off expenses (such as cages for animals) will need to be considered relative to the disposal value of those assets or the full working life.

The difference between expenditure and revenue will be the gross operating profit of the project

A further adjustment may be required for tax

The objectives in the strategy document will also confirm the success criteria for the project

This could include other non-financial objectives

For example, the level of press coverage and publicity obtained

Or greater success in particular countries or locations, even if offset by poorer performances elsewhere

Or audience feedback

Which may help establish whether initial results might have been better due to the novelty of a new act and thereafter it may become less profitable

Benchmark against competitors i.e. those without animals

This question was generally well answered, with some imaginative responses to the specifics of this project, although in part (iv) many candidates treated underwriting too briefly. In part (v), better candidates discussed how to assess the impact on profits and non-financial objectives.

END OF EXAMINERS' REPORT