INSTITUTE AND FACULTY OF ACTUARIES

EXAMINER'S REPORT

September 2014 examinations

Subject SA4 – Pensions and other Benefits Specialist Applications

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 at the date the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

F Layton
Chairman of the Board of Examiners

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General comments on Subject SA4

This subject examines the ability of candidates to apply actuarial practice and concepts, together with specific knowledge of the UK pensions and employee benefit environment to potentially complex problems, integrating their analysis into a coherent whole, and evaluating and interpreting results to draw explicit conclusions.

The examiners therefore look for candidates to demonstrate their understanding of the syllabus by applying their knowledge and core actuarial skills to the specific situation that the examiners asked, having read the question carefully. Many of the unsuccessful candidates provide answers that are not sufficiently specific to the subject matter of the question, reproduce core reading that does not directly relate to the question context, or focus on one specific point without covering a sufficient range of points to answer the question. This does not enable the candidates to achieve the required marks. As regularly stated, the examiners encourage future candidates to remind themselves of what they learned in the Core Actuarial subjects, and to use past paper questions to practice applying these skills to the specific scenarios tested.

Good candidates demonstrate that they have structured their solutions well – this is a big advantage in making points clearly and without repetition. There is a significant incidence of points being repeated in slightly different ways, restricting the scope for candidates to score marks. Good structure enables candidates to use the latter parts of questions to generate ideas for answers to the early parts (or use their solutions to earlier parts of questions to create a structure for latter parts). Time management is important so that candidates give answers to all questions that are roughly proportionate to the number of marks available. The questions are set so that it should take approximately twice as long to answer a 10 mark question as a 5 mark one. Answers should therefore be similarly proportionate.

In addition, candidates should carefully consider the instruction – for example an instruction to list points should be answered with a list without attaching discussion. Similarly, a question asking for a discussion cannot be answered with a list of undeveloped points.

Comments on the September 2014 paper

The overall standard of scripts was similar to the previous session, although there was a slightly higher pass rate than at the previous session. It is consistently the case that candidates appear to find the step up to a smaller number of more involved questions relatively difficult, finding the application aspects of the course harder to score well on. This is an area that SA candidates consistently need to work harder on in preparation.

It is important that candidates make sure they provide a full answer to all questions. Breaking the question down into smaller parts helps to make sure that a suitable breadth of answer is supplied. Candidates need to check that their answers specifically refer to the details of the question, using all of the information in the question pre-ambles. It is not the intention of the examiners to include information in the questions that is not relevant to the answers. Taking care in these points of technique will help students score better.

1 (i)

- Benefits could be more expensive than expected
  - For example due to longevity, inflation or salary increases
- Contributions under the current schedule of contributions are higher than expected due to non-benefit costs
  - for example because administrative costs are unknown in advance (or other suitable example)
- In setting a new schedule of contributions the Trustees request higher contributions
  - For example because the funding position had deteriorated
    - Which may be the result of poorer asset returns that expected
    - Or the Trustees strengthening the Technical Provisions
    - Or member experience
  - Or the Trustees wish to remove a funding deficit more quickly
- Legislative changes
  - For example the taxation treatment of contributions is changed to make it less valuable
  - A requirement to improve benefits
  - Increases in the PPF levy
  - Abolition of contracting out

[4]

(ii)

- The risk register would categorise the various risks which the Scheme exposes the Sponsor to.
- Against each risk would be recorded a quantification of impact
- …and timing implications for the Sponsor
- …and probability
- The quantification might simply be a subjective assessment of 1 to 5 for each risk.
- Or stochastic modelling (or sensitivity testing/scenario analysis) could be carried out.
- Input should be sought from the relevant parties e.g. trustees
- and advisers e.g. actuaries, lawyers, investment consultant
- The product of the impact and the probability measures give an idea of the relative
- importance of the various risks.
- The risk register could be extended to indicate how the risk has been dealt with:
  - Retained (and how much capital is needed to support it)
  - Transferred
  - Mitigated (and a revised assessment of the remaining risk)
  - Diversified (and a revised assessment of the remaining combination of risks)
- The risk register should be reviewed regularly.

[5]

(iii)

- The Sponsor should consult with other interested parties e.g. the Trustees
- Based on the risk register the Sponsor could determine which risks require further action.
- The Sponsor could then consider all the possible de-risking actions that could be taken
- …and quantify the risk reduction impact they would have
- …considering the effect on the Sponsor's objectives
- … for example its balance sheet and profit & loss account
- …alongside the cost of taking the identified actions
- …and identifying any barriers to implementation and residual risks
- The Sponsor could then prioritise the potential actions

[3]

(iv) Any 3 valid suggestions from the categories below:

- **Review the investment strategy**
- For example switch return-seeking assets into those that provide a better match for the liabilities (or diversification or other valid suggestion)
- This may simply involve a switch of some of the equity holding into bonds
- An ALM could help determine the appropriate allocation to minimise risk
- And what type of bonds to move in to, given that the Scheme's liabilities are largely inflation-linked

- **Purchase insurance products**
- For example a buy-in covering the pensioner liabilities (or buy-out, longevity hedge or other valid suggestion)
- In exchange for an agreed premium
- …annuities would be purchased from an insurer
- …and held as an asset by the Scheme
- The income from the annuities would be used to pay members' pensions

- **Carry out an incentive exercise**
- For example a Pension Increase Exchange exercise (or Enhanced Transfer Value exercise, offering a transfer to a DC arrangement before retirement or other valid suggestion)
- An option offered to members
- …to exchange the increases on their pre 97 excess over GMP pension
- …for a one-off uplift to their pension
- Could be offered to members at retirement or members who have already retired
- Would reduce inflation and longevity risks

- **Changes to the Scheme design**
- For example close the Scheme to future accrual (change to CARE, change normal retirement age or other valid suggestion)
- Perhaps future benefits could be accrued on the same arrangement as for new entrants.

- By continuing to allow members to accrue DB benefits risk is continuing to build up
- The Sponsor could instead provide a DC arrangement for future benefits
- Scheme closure would need to be preceded by an employee consultation

For all the above actions (only give credit once if written for specific actions):
- The Sponsor should consult with interested parties, particularly the Trustees to obtain their agreement/input
- The Sponsor should seek advice from its advisers
- Any restrictions imposed by the Scheme documentation or legislation should be considered

[9]

(v) The table shows the relevant credit for the examples given in (iv). Give credit for valid points made for other examples

Points relevant to all actions:

Sponsor's balance sheet

The impact depends on:

- Which accounting standard is adopted
- The materiality of the change
- The views of the Sponsor and auditor for example, whether the event is considered a settlement or a curtailment

Cost to the Sponsor

- It is important to distinguish between the expected impact on cost and the impact on Statutory Funding Contributions
- In all cases there are likely to be transitional costs
- …including implementation and advisory costs

Members

- The impact on security of benefits and level of benefits and level of benefits for all categories of members needs to be considered.

	Reduce return-seeking assets	**Pensioner buy-in**	**PIE**	**Close to future accrual**
Sponsor's balance sheet	• No immediate impact on the funding level • Volatility should reduce as assets and liabilities are better matched • Especially if there is an increased bond-holding • …as the discount rate used to calculate the	• Impact on the funding level will depend on the accounting standards adopted • And the precise treatment of the buy-in under that standard • There may be a difference in the value placed on the annuity policy and	• If successful the exercise will reduce the Scheme liability • The effect will depend on the terms versus the accounting basis • …and take-up rates • For a bulk exercise aimed at members who are already	• No immediate impact on the funding level unless the salary link for accrued benefits is removed • The liabilities will eventually be smaller than they would otherwise have been • …and will eventually reduce as the Scheme

	Reduce return-seeking assets	Pensioner buy-in	PIE	Close to future accrual
	liabilities is based on bonds • Over the longer term a balance sheet deficit might emerge due to the lower expected return	the premium paid • Which would affect the funding level • Volatility should reduce as the pensioner liabilities will be matched by the annuity policy	retired the saving will materialise when at the next reporting date • The saving will materialise over time for an option at retirement • Or the actuary may make an assumption about take-up rates so that the saving is incorporated into the liabilities • Volatility should reduce as inflation risk is reduced • And the mean term of the liabilities reduces	matures • But this will take time
Cost to the Sponsor	• There may be an immediate cost relating to investment manager and other adviser fees • If the discount rate used to set the Technical Provisions is based on the assets held, contribution requirements may increase • In the long term, asset returns would be expected to decrease, requiring more contributions from the Sponsor • But the contributions should be less volatile • Risk-based PPF levies may decrease	• There may be significant adviser costs involved in implementing the transaction • The Scheme is in deficit on a Technical Provisions basis; the deficit is likely to be larger on a buy-out basis • Due to the insurer's profit and expense margins • The difference will depend on the strength of the TPS • …and the competitiveness of insurers' premiums • The Trustees may require the Sponsor to fully fund the notional pensioner share of assets on a buy-out basis • This would be at least 600/1,500*100 = £40m even if the TP basis was as strong as the insurer's • But as the annuity policy will be held as an asset of the Scheme the Trustees may not require a top-up • Especially if the contract can be un-wound • LP!4% benefits may be expensive to insure as they are unusual	• There may be significant costs involved in implementing the transaction • These will include the cost of designing, communicating and administering the option. • Financial advice or guidance will also need to be paid for. • This is required by the Code of Good Practice on Incentive Exercises. • Any reduction in deficit may reduce deficit contributions required in future valuations • The cost of purchasing annuities with an insurer will reduce	• The Sponsor will make significant savings as no future service contributions will be required. • The size of the active liabilities on the balance sheet suggests the active population is significant. • There will be costs involved in communicating the changes to actives. • The Sponsor will need to make alternative pension provision for employees. • This is likely to be in the form of a DC scheme. • The contributions to this arrangement will offset the savings made

	Reduce return-seeking assets	**Pensioner buy-in**	**PIE**	**Close to future accrual**
		• …so 4% fixed or inflationary pensions may be insured which would lead to more complexity and cost		
Scheme members	• Members would not see any impact as their benefits are not related to investment returns • Ultimately benefit security may be improved as the Scheme's funding level will be less volatile • But this may be countered to some extent by the impact any increase in contributions required from the Sponsor may have • May affect option terms and any discretionary benefits as the likelihood of good experience leading to surplus is reduced	• Members would still receive their pensions direct from the Scheme • So would not be affected • Security of benefits may be improved	• No impact on members who do not accept the offer • Members may prefer the higher pension in the short term • But they will be exposed to inflation risk • The extent to which it proves to be the right choice for them will depend on actual inflation • …and their lifespan • …and their personal circumstances	• Active members will lose their valuable DB future accrual. • Will retain benefits already accrued. • Under a DC scheme members will bear most of the risk rather than the Sponsor. • Active members will no longer have to contribute to the DB Scheme • But this may be (more than) offset by the cost of contributing to an alternative arrangement • Deferred pensioners and pensioners would not be directly affected

[18]

(vi)

- The two quotations are based on different dates
- So different market conditions will apply
- For example, gilt yields may have fallen
- Or there may have been significant experience
- …such as retirements
- …or deaths of members with large benefits
- …which may change the risk profile of the liabilities
- The insurer may have changed its pricing basis
- Perhaps due to changes in solvency regulations
- Or increased expenses or profit margin
- Or its appetite to take on new business
- Or new longevity modelling leading to a longer expectation of life
- For example if it has recently completed a large transaction it may have capacity issues
- The Scheme's liability profile may no longer fit as well with the rest of its portfolio
- The quotes might be based on different membership data
- For example individual member data versus summarised data
- Or there might have been a data cleansing exercise
- Which would allow the insurer to price more accurately

- Benefits may have been increases e.g. discretionary pension increases awarded
- There could have been an error in the insurer's calculations

[5]

(vii)

- Any restrictions under legislation, the Scheme's Rules and guidance need to be considered
- The Sponsor should seek advice from advisers with specialist knowledge of transactions
- Review the investment strategy
- Embark on a communication exercise with members, the Pensions Regulator and HMRC

How a transaction might be made more affordable

- Consider only insuring the pensioner liabilities
- Deferred pensioner liabilities can be relatively expensive to insure
- Due to the long term nature
- And increased uncertainty relating to member options
- For example when they will retire
- Consider insuring only a portion of the pensioner liabilities
- Such as the post 97 benefits
- The 4% p.a. cap on increases on pre 97 excess over GMP is unusual and may be expensive to insure
- In a buy-in the annuity policy is an asset of the scheme so there is no need to cover members' benefits in their entirety

- Consider amending the scheme design to simplify benefits
- For example by equalising GMP

- Consider only including a subset of the pensioner lives
- But the lives covered will need to be chosen carefully
- As members with the largest benefits will have the most risk attached to them
- But they will also be the most expensive to insure

- Ensure the Scheme's data is clean
- Data that is not in good order will attract a risk premium from the insurer
- Carrying out a proof of existence exercise might reduce the pensioner liabilities
- Any uncertainty over benefit entitlements in the Scheme's documentation should be resolved
- Consider whether medical underwriting could reduce the premium payable
- For example if some high liability members are known to have ill heath

- Carry out an early retirement exercise, reminding non-pensioners of their entitlement to retire

- Possibly enhancing the terms available
- Members who accept are likely to take a lump sum, reducing the pension that needs to be insured
- And they will become cheaper to insure as they move from deferred to pensioner status

- Carry out an enhanced transfer value exercise
- Members who accept will cease to have any liability in the Scheme
- The enhancement would be set at a level such that a saving is made against the cost of insuring the member

- Carry out a pension increase exchange exercise
- Will remove increases on pre 97 excess pensions for members who accept
- Non-increasing benefits will be cheaper to insure
- As there are no inflationary increases to be hedged
- And the duration is shorter
- The terms are likely to be set such that there is a reduction to the liability
- Deferred pensioners who accept will possibly be able to take a higher lump sum

- Offer deferred members who are eligible to retire the choice of transferring their benefits to a DC arrangement and purchasing an annuity
- Members who accept will cease to have any liability in the Scheme
- The Scheme's transfer basis is likely to give a significant saving against buy-in cost

- Offer any members who are eligible to take a trivial commutation lump sum
- Members who accept will cease to have any liability in the Scheme
- At a much cheaper cost than buy-in, usually the Scheme's commutation factors
- Members with small benefits can be disproportionately expensive to insure

- Approach other insurers for quotes
- To ensure a competitive price
- Other insurers may price contracts differently
- And may get into a bidding war for an attractive deal
- Negotiating with insurers may reduce the price

Preparatory work

- The Sponsor and Trustees should ensure they are in a position to transact
- To avoid missing windows of opportune pricing
- Monitoring the movements in insurers' pricing can help to identify the best time to transact
- They should put in place a governance structure so that decisions can be made quickly

- And ensure the Sponsor and Trustees are in agreement over when a deal should be done
- Consider putting in place trigger-based decision making
- Audit the Scheme's documentation to ensure the benefits are all known and understood
- With any uncertainties resolved
- Cleansing the Scheme's membership data
- Get legal advice at an early stage
- Review option terms and consent requirements
- Review any discretionary practices

[20]
[Total 64]

This question was relatively well answered, and was generally found to be reasonably straightforward. Parts (iv) and (v) were, however, often not answered sufficiently completely. In part (iv) it was important to answer with distinct actions that may be taken – in many cases there were re-statements of the same actions made in slightly different ways. These do not obtain marks and potentially waste candidates' time.

In Part (v) it was important to ensure the answer covered all of the areas – for each action, a discussion needed to be covered for each of the bullet points. If candidates had answered part (iv) reasonably well, and approached part (v) in a methodical way, there was significant opportunity to demonstrate ability relative to other candidates.

Part (vii) required candidates to think widely to score well, and often answers were too narrow.

2 (i)

- The cost of running one scheme will be lower than the cost of running two schemes
- As pension scheme management involves a number of overhead costs which do not proportionately increase with the size of the scheme
- For example, producing figures for the annual accounts
- Improved governance – easier to apply a single policy of investment, funding, etc.
- Reduction in management time
- For example only one set of funding discussions
- To operate and communicate one scheme for all
- A wider range of investment options may be available to a larger scheme
- Which could allow increased diversification
- Any liability management options would be more cost efficient to implement
- A larger scheme would have less volatile experience and so less volatile contributions

- To make use of winding-up lump sums
- to settle benefits for members with relatively small pensions of the scheme that is eventually wound up

[4]

(ii) *Switching Scheme A's liabilities to Scheme B's basis is also acceptable.*

Scheme A

- Funding level = 350/360 = 97%

Scheme B

- Assets at 30 June 2014 = £600m
- Need to switch the liabilities to a consistent basis to Scheme A to enable a comparison to be made between the two funding levels
- Assume all other assumptions are the same for both schemes
- Assume all pension increases in payment and deferment are inflation-linked

- Assume the active pre-retirement term mean term is 15 years
- Assume the active post-retirement term mean term is 13 years
- Both salary increase assumptions give a nominal increase of 4.75% per annum
- Active liabilities on Scheme A basis = $20*(1.05/1.055)^{15}*((1.05/1.055)*(1.0325/1.035))^{13}$
- =£17m
- Assume the deferred pre-retirement term mean term is 15 years
- Assume the deferred post-retirement term mean term is 13 years
- Deferred pensioners liabilities on Scheme A basis = $250*((1.05/1.055)*(1.0325/1.035))^{15}*((1.05/1.055)*(1.0325/1.035))^{13}$
- =£205m

- Assume the pensioner term mean term is 11 years
- Pensioner liabilities on Scheme A basis = $470*((1.05/1.055)*(1.0325/1.035))^{11}$
- =£434m

- Total Scheme B liabilities at 30 June 2014 on Scheme A basis = 17+205+434 = £656m
- Funding level = 600/656 = 91%

- Scheme A is better funded than Scheme B

[10]

(iii)

- To merge the schemes members' past service benefits would need to be transferred
- This could be done with member consent
- But, especially as deferred pensioners and pensioners are involved, it is unlikely that consent could be obtained for every member
- So a bulk transfer without member consent would be the only practical way forward
- Professional guidance on transfers without member consent is provided by the Transformations TAS
- The law permits transfers without consent only if certain conditions are met
- The Scheme Actuary must be able to certify that the rights in the scheme the members are being transferred to are broadly no less favourable than in the old scheme
- This will involve comparing the values of benefits before and after the transfer,
- …comparing the terms of member options (such as early retirement or commutation) before and after the transfer; and
- …discretionary practices; and
- …comparing funding levels before and after the transfer
- Benefits could be mirrored within the merged scheme
- But there may be differences in option terms and discretionary benefits
- Which may require terms to be levelled up
- Or require ring-fencing of assets
- And as the two schemes have the same Sponsor there may be no differences in Sponsor covenant
- Although any contingent security provided to either of the schemes would need to be considered
- There may be differences in the balance of powers between the Trustees of the two schemes and the company
- This may require the company to give more power to the Trustees of the scheme that currently has the least power
- The funding levels of the two schemes differ significantly (92% vs 97%)
- The combined funding level of the two schemes on the current Scheme A basis would be (350+600)/(360+656) = 94%
- Whilst the Trustee of Scheme B might be happy with this
- The Trustees of Scheme A would not be as they would not accept a deterioration in funding level
- It is likely that the sponsor would need to equalise the funding levels of the two schemes to enable a transfer to take place
- On Scheme A's basis the Sponsor would need to top Scheme B up to a funding level of 97%
- So a payment of 0.97*656 – 600 = £36m
- This is a significant amount to fund immediately
- And would be on top of the legal, actuarial and other costs of merging the schemes

- The impact on accounting and solvency positions should also be considered
- The Sponsor might look to equalise funding levels by putting in place an asset backed funding arrangement for Scheme B
- Where a legal structure is put in place such that some of the Sponsor's assets can be used to improve the Scheme's funding level

[12]

(iv)

- The Scheme Actuary would be conflicted by advising all three sides of the triangle; the Company and the Trustees of both schemes
- The company will want to achieve a merger at the lowest cost practical
- The Trustees of both schemes will be seeking to protect security of their members' benefits
- The actuary needs to consider whether it is possible to be impartial, or whether one or more of the parties should take independent advice
- For example by there being a different Scheme Actuary for each scheme and a different Company actuary
- The Actuaries' Code requires members of the Profession to disqualify themselves from acting where there is a conflict of interest that cannot be reconciled
- ..and to document the steps they have taken to reconcile a conflict and will agree those steps with their clients if they would be ineffective without their agreement
- The extent to which the Scheme Actuary is able to manage his conflicts will depend on the extent to which the company is willing to level up differences between the two schemes
- But it seems more likely that he would suggest another party advises the company
- This may be another actuary within the same firm
- In which case appropriate measures will need to be taken to ensure the two advisers have adequate separation of advice
- Or another firm entirely
- The practicality of confidentiality agreements should be considered with all appointments
- The conflicts should be disclosed
- APS P1 should be considered

- The Finance Director is also a trustee of Scheme A
- The Trustees of Scheme A will be looking for Scheme B to topped-up to an equivalent funding level before consenting to a merger [give credit if calculations in part (ii) were incorrect but a valid comment is given based on the candidate's result]
- But the FD will be looking to pay as little in as possible
- The FD could consider resigning as a Trustee of Scheme A
- Or could absent himself from any discussions on the merger

[5]

(v) *Short term*

- Decide who the Trustees will be going forward
- Decide on the administrator for the merged scheme, assuming these previously differed
- Decide who any advisers for the new scheme will be
- …and which investment managers will be used
- Communicate with members to let them know the merger has taken place
- Tell the Pensions Regulator about the merger
- Make any changes needed to the scheme's documentation

Medium term

- Carry out a funding valuation
- To determine the contributions required from the company
- Review the investment strategy
- To ensure it adequately reflects the new mix of liabilities
- …and takes advantage of any options that were not available to the two smaller schemes
- Review discretionary practices
- Review option terms and consent requirements
- Review the use of insurance in the scheme

[5]
[Total 36]

The key to scoring well on this question was taking account of all of the information provided. On part (ii) for example, candidates who scored well clearly stated their assumptions by carefully considering what assumptions would be needed to calculate all of the key liability figures provided in the question.

In part (iii) knowledge of the professional guidance was sketchy for many candidates and explanations of the difficulties to be addressed were not very complete before moving on to the possible solutions.

For part (v) checklists were not sufficiently detailed for many.

END OF EXAMINERS' REPORT