

UNALLOCATED LOSS ADJUSTMENT EXPENSE PROVISIONS

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1 Terms of reference

- 1.1 Lloyd's syndicates are required to obtain annual Statements of Actuarial Opinion ("SAOs") in respect of their solvency reserves. Provisions for unallocated loss adjustment expenses are included in the reserves covered by certain of these SAOs – namely the gross and net reserves covered by the SAO submitted to the Council of Lloyd's and the net reserves covered by the SAO submitted to the International Insurers Department (IID) of the National Association of Insurance Commissioners in the US. Actuaries will therefore be required to consider the appropriateness of such provisions.
- 1.2 Allocated loss adjustment expenses ("ALAE") are those costs that are directly attributable to individual claims. Unallocated loss adjustment expenses ("ULAE") are those costs which are related to the settlement of claims but which are not directly attributable to individual claims. We note that the Faculty and Institute of Actuaries Claims Reserving Manual (1997) and the ABI SORP (1998) use the terms "direct" for ALAE and "indirect" for ULAE.
- 1.3 ULAE can be either proportionately related to the time spent on claims activity (e.g. salary and related costs) or not proportionately related to time spent (e.g. accommodation). Throughout this paper we use the terms "proportionate" and "non-proportionate" to refer to these components of the ULAE.
- 1.4 The scope of the ULAE provision includes all claims handling expenses, including related overheads, except for those expenses directly attributable to individual claims. It includes both salaries and related (proportionate) costs and non-proportionate costs.

- 1.5 There is currently no single standard actuarial approach to the assessment of ULAE provisions. Against this background, the working party has undertaken the preparation of this paper on ULAE provisions. The paper includes:-
- the principal actuarial issues which need to be considered when setting ULAE provisions;
 - a review of the actuarial literature concerning methodologies used for setting ULAE provisions; and
 - the documentation of a further methodology, used in practice by a Lloyd's managing agency, which could be applied by actuaries who are providing SAOs.
- 1.6 This paper is **not** intended to **prescribe** methodologies which actuaries **must** follow. This could unreasonably restrict professional judgement and would therefore be unacceptable to the actuarial profession. This paper is, rather, intended to **describe** methodologies which actuaries **may** follow or find helpful. However, the General Insurance Board would like to encourage a broadly consistent approach among actuaries providing Lloyd's solvency opinions. It is considered that such a consistent approach would:-
- be beneficial to the standing of the actuarial profession within the Lloyd's market; and
 - provide practical support to actuaries signing SAOs.
- 1.7 We note that the ULAE reserve will generally be small compared to the overall level of syndicate claim reserves. We further note, however, that in practice materiality may be assessed relative to the difference between the managing agent's estimate and the actuary's estimate, rather than relative to the actual level of claims reserves.

1.8 The work that can practically be undertaken by actuaries in the area of ULAE provisions for Lloyd's syndicates is restricted by:-

- data limitations, in particular the difficulty in assessing historical ULAE amounts;
- time constraints; and
- budget constraints.

Consequently, this paper concentrates on what is likely to be possible in practice given the constraints listed above.

1.9 It is not necessary that the actuary actually conducts the ULAE calculations as long as the actuary is satisfied, having reviewed the methodology and assumptions used, that the overall reserve being opined on is sufficient. Given the considerations outlined in the previous paragraphs, the provision for ULAE may well be an area where calculations are conducted by the syndicate's staff and reviewed by the actuary.

1.10 This paper concentrates on ULAE provisions in the context of SAOs provided to Lloyd's and the IID in respect of claim reserves of individual syndicates. The principles and methodologies described in this paper may, however, also be applicable in other contexts. Actuaries will need to use their professional judgement to decide how and to what extent the principles and methodologies described in this paper should be applied in any individual case.

1.11 Members of the working party accept no responsibility for any use that is made of the contents of this paper, and disclaim any and all liability arising from the use of this paper by any party for any purpose. In particular, the production of this paper was a group effort, and individual members of the working party reserve the right to dissent from certain items.

2 Lloyd's considerations.

- 2.1 This section sets out some issues relating to ULAE in the context of SAOs provided to Lloyd's. References in this paper to the Syndicate Return and the Lloyd's Valuation of Liabilities rules are to those in force for year-end 1999. The actuary will need to be familiar with the relevant version and any other instructions issued by Lloyd's for this purpose.

Scope of ULAE reserve

- 2.2 The line on form SR16 of the Syndicate Return for "unallocated claims handling expenses" refers to the ULAE provision as discussed throughout this document.
- 2.3 The Lloyd's Valuation of Liabilities rules reads (paragraph 10): "The gross reserve ... must include provisions for future claims handling costs including the expenses of managing the run-off of the business." We understand, therefore, that the scope of the ULAE reserves for solvency purposes is as set out in paragraph 1.4 above, i.e. including a proportion of operating and management expenses. The ULAE reserve should be equal to the estimated cost of all activity (not directly allocated to individual claims) that is yet to arise in the process of settling claims on business undertaken.
- 2.4 For business written in Lloyd's annual venture system, separate reserves would be established in respect of claims ultimately expected to arise on the business ultimately signed in each year of account.
- 2.5 For business written at Lloyd's, most if not all of the unallocated loss adjustment expenses will be incurred in the UK and denominated in Sterling. Where expenses are incurred in accounting currencies other than Sterling, however, appropriate ULAE reserves should be included in those accounting currencies.
- 2.6 The net reserve for ULAE will include the estimated cost of activities related to outwards reinsurance. It can be argued that the gross reserve for ULAE would not include the cost of such activities and that therefore the gross ULAE reserve would be less than the net ULAE reserve. We note, however, that the Lloyd's Valuation of Liabilities rules reads (paragraph 11): "For practical reasons, it should be assumed that the costs of handling gross claims and reinsurance recoveries should be included in the gross provision for Unallocated Claims Handling Expenses." That is, for the purposes of the Syndicate Return, Lloyd's requires the gross ULAE reserve to be the same as the full net ULAE reserve.

Going concern vs Run-off

- 2.7 Lloyd's Valuation of Liability rules state that the ULAE reserve should normally be calculated on the practical assumption that each syndicate is a going concern. In particular, this is intended to imply that each year of account will be closed into the subsequent year at the end of three years. If the syndicate has ceased underwriting, or is anticipated to do so, then the basis for the ULAE may depend on the other business controlled by the Managing Agent. It will often be the case that the Managing Agent has another syndicate that is continuing to underwrite new business. If the run-off syndicate is intended to close into the ongoing syndicate at the usual point in the future, then it is reasonable to calculate the ULAE reserve on a going concern basis. If this is not the case, then consideration should be given to whether a break-up basis may be more appropriate for the ULAE reserve.

Opinion wording

- 2.8 We note that for the purposes of the gross and net SAOs provided to Lloyd's and the net SAO provided to the IID, the actuary opines on the solvency reserves including the ULAE, rather than on the ULAE reserve in isolation.

3 Theoretical considerations

Definition of ULAE reserve

- 3.1 The reserve for Unallocated Loss Adjustment Expense should be equal to the estimated cost of all activity (not directly allocated to individual claims) that is yet to arise in the process of settling claims on business undertaken.

Modelling the claims settlement process

- 3.2 In an ideal world the reserve might be established by constructing a model encompassing each aspect of the claims settlement process. This model could be parameterised using the historical experience, projecting the various costs in line with expected inflationary trends.
- 3.3 It is unlikely that the ULAE reserve will be sufficiently material in relation to the reserves as a whole to justify such a process. Even if it were, establishing such a model is unlikely to be practicable. We believe, nevertheless, that it is helpful to consider the possible components of such a model and the factors influencing them. These are outlined in the following paragraphs.
- 3.4 The broad categories of activity could be categorised as follows:
- claims notification;
 - claims review prior to settlement;
 - claims settlement; and
 - administrative costs associated with:
 - IT systems;
 - running the claims department;
 - management; and
 - reporting (including professional fees).

3.5 Specific issues giving rise to claims costs include:

- claims processing costs charged by Lloyd’s Policy Signing Office (LPSO) and Lloyd’s Claims Office (LCO);
- internal processing costs connected with the processing of Syndicate Claims Messages (“SCMs”) and the establishment of claims records;
- discussion with brokers;
- discussion of the circumstances of the claims with internal or external legal advisors;
- identifying and processing relevant reinsurance recoveries;
- the claims department’s periodic review of the claim prior to settlement;
- where claims are disputed, the time spent negotiating, preparing a defence and attending hearings;
- closing the claim; and
- cheque issue.

3.6 Non-claims-specific costs will include all or part of the costs associated with the following:

- IT systems;
- salaries and accommodation relating to:
 - running the claims department;
 - other departments providing service to the claims department (such as IT and Personnel); and
 - management overheads;
- reporting:
 - internally to management;
 - to Lloyd’s and other regulators;
 - audit;
 - syndicate reserving; and
 - actuarial review.

- 3.7 Factors that are likely to influence the cost incurred include the following:
- the basis on which the business is written (facultative, treaty, cover, binder);
 - whether the syndicate leads or follows the risk;
 - the experience of the claims team;
 - numbers of claims;
 - the period to claims settlement;
 - complexity of claims / disputed claims;
 - complexity of outward reinsurance;
 - the ease with which outward reinsurance is collected;
 - sophistication of claims and reinsurance systems; and
 - emergence of new claims types (eg. latent claims, class actions, Year 2000)
- 3.8 Class of business and jurisdiction may also be relevant, although these are likely to be proxies for activities associated with certain types of claim.
- 3.9 Each of the costs identified should be inflation adjusted to the period at which the expense is anticipated to be incurred. Relevant inflationary trends may include:
- salary;
 - accommodation;
 - changes in the levels of automation of certain activities;
 - IT costs / new systems; and
 - professional fees.
- 3.10 It must be emphasised that these lists of issues and factors are intended to be illustrative and are by no means exhaustive.

Practical Considerations

- 3.11 In practice, building a complex theoretical model may not be commercially justified. Limitations in the information available are likely to mean that many assumptions and judgements will need to be made in the parameterisation of any model.
- 3.12 Key factors determining the scope of the work undertaken will include:
- the materiality of the ULAE reserve in the context of the total reserves;
 - the sensitivity of the ULAE reserve to changes in the factors influencing it;
 - the detail to which ULAE costs are recorded.
- 3.13 The identification and allocation of the ULAE cost incurred in the past is likely to require significant interpretation and/or judgement. Whilst the working party do not believe that it should be within the scope of the actuary's work to conduct this exercise, the actuary should be aware of, and comfortable with, any assumptions and judgements that have been made in this process. In particular:
- 3.13.1 Few, if any, managing agents will account for each type of activity undertaken within the claims department. Consequently, there is unlikely to be any transactional accounting of expenses by class of business, underwriting year, currency etc.
- 3.13.2 The claims team may spend time on ongoing activities (such as providing data or other support for the purchase of reinsurance) which should be excluded from the ULAE.
- 3.13.3 Where claims teams deal with more than one syndicate, costs will need to be split between the syndicates.
- 3.13.4 The non-specific costs, listed above, are likely to be highly material to the total ULAE and the subdivision of these between ULAE and the cost arising from the ongoing business will need to be considered.

4 Methods used in practice

4.1 Moving from theory to practice

4.1.1 The previous section dealt with the issues involved in determining and projecting ULAE and described the difficulties likely to be encountered. This section sets out some methods that might be used in practice.

4.1.2 Any method used to calculate ULAE reserves will comprise two stages:-

- the determination of past ULAE; and
- the projection of future ULAE.

4.1.3 The first method set out below covers both of these stages. The remaining methods assume that the first stage of determining the historical ULAE costs has been satisfactorily completed and present alternative ways of dealing with the second stage of projecting the past ULAE into the future.

4.2 ULAE based upon budget projections

4.2.1 This method derives the ULAE reserve based upon current calendar year expenses. These expenses are apportioned into expense types across years of account and classes of business and the result is extrapolated over future expense budgets. Within the calculation are a number of variables and assumptions, which are discussed in more detail in Appendix C.

4.2.2 The reserves set by year of account will vary depending upon the historical time and expense requirements.

Methodology

4.2.3 Historical costs by calendar year are allocated into years of account and activity types (i.e. claims handling, acquisition and operating activities). The allocated costs are then used to estimate, by year of account, the percentage of the total calendar year expenses which relate to claims handling activities. This percentage is then applied to the future calendar year budgets to give a reserve for future claims costs. Further refinements can be made by analysing the data by class of business. Within the calculation are a number of variables which can be tailored to each syndicate.

4.2.4 The calculation can be summarised into three parts as follows:-

- the allocation of historical expenses, both proportionate and non-proportionate, into claims handling expenses, acquisition costs and operating costs in order to calculate the costs of handling claims for each calendar year;
- the allocation of these expenses across years of account and classes of business in order to calculate the costs of handling claims by year of account and class of business for each calendar year; and
- the calculation of the percentage of the costs of handling claims divided by the total calendar year expenses, applying this to future calendar years to produce a ULAE by year of account and class of business, allowing for the reduction in ULAE as each year of account develops over time.

Data

4.2.5 The data required are as follows:-

- historical calendar year expenses;
- timesheet allocations detailing activities, class of business and years of account;
- future calendar year budgets; and
- information to support the length of tail of each year of account, such as claims triangulations.

Inputs / Assumptions

4.2.6 Subjective judgements are made regarding time, year of account and class of business allocations along with an overall assumption of the length of tail of the year of account.

Checks for reasonableness

4.2.7 Within the body of the calculation there are a number of areas where the underlying data can be subject to checks for reasonableness. These include:-

- calendar year expenses should agree to the syndicate’s quarterly return (“SQR”) or the audited annual solvency return;
- the staff timesheet can be reviewed for reasonableness - it could be assumed that underwriters would spend a larger proportion of their time underwriting and dealing with strategic issues, whilst the claims department would mainly be involved in older years rather than the current year;
- the staff time allocations should be reasonably in line with the claims triangulations - in rough proportion to the number and/or size of claims movements; and
- a review of the claims triangulations will confirm the assumptions regarding the lengths of the tail of each year of account and class.

Comments

4.2.8 The reserve produced by this method is easy to manipulate, particularly in light of the number of variables involved in calculating the reserve. In addition, this method does not directly take into account the claims incidence and the results may vary depending upon the subjective nature of some of the assumptions, although the effect may not be material.

4.2.9 This method produces two useful by-products, as follows:-

- the split of expenses across years of account, which may be used in the final calculation of the year of account expenses in the syndicate’s accounts; and
- the split of expenses into claims handling, acquisition and operating costs, which can be used in US GAAP reporting.

- 4.2.10 The method is fairly detailed and could be time consuming, although it does produce a reserve which covers both proportionate and non-proportionate costs relating to running off a year of account. Furthermore, the data are easily available to managing agents, as the expenses have to be produced to satisfy regulatory requirements and the assumptions made can be verified through the checks for reasonableness such as those noted above.

4.3 Other projection methods

- 4.3.1 The method set out above serves as a worked example of how some of the considerations in section 3 have been applied in practice. It was formulated by a managing agent and is intended to utilise the data readily available to syndicates. The actuary will not necessarily try to follow all the detail of these calculations in estimating the ULAE reserve. Particular circumstances may make modifications to this approach, or other methods, more appropriate. Modifications might include projecting individual elements of the ULAE costs separately, rather than projecting then apportioning the total future budget. We highlight that, as stated in paragraph 1.9, the actuary may prefer to review the work carried out by the managing agent rather than applying a separate methodology.
- 4.3.2 The remainder of this section outlines some of the methodologies for projecting ULAE which have already been reported in actuarial literature. Further details can be found in the papers listed in the bibliography in Appendix A.

4.4 ULAE as a percentage of claims reserves

- 4.4.1 The methods described in the Faculty and Institute of Actuaries Claims Reserving Manual [1] (“CRM”) express the reserve required for ULAE as a loading on the claims reserve. They therefore assume that the unallocated loss adjustment expenses (or Indirect Expenses in the terminology used in the CRM) will tend to vary over time as the claims themselves do.

Methodology

$$\text{ULAE Reserve} = \frac{\text{ULAE paid in last period}}{\text{Claims paid in last period}} \times \text{Claims Reserve}$$

- 4.4.2 The expense to claims ratio could be based on experience over the last year or some other recent period. Also, any trends in the expense to claims ratio, or distortions due to unusual events such as catastrophes, could be analysed and allowed for in the future projection.
- 4.4.3 It is suggested in the CRM that this method may overstate the reserve required for ULAE, and the following crude modification is suggested:
- 4.4.4 Assume that 50% of the unallocated loss adjustment expense is incurred when the claim is first reported and the remainder when it is settled. Then:

$$\text{ULAE Reserve} = \frac{\text{ULAE paid in last period}}{\text{Claims paid in last period}} \times (0.5 \times \text{Outstanding Claim Reserve} + \text{IBNR Reserve})$$

Data

- 4.4.5 The data required are as follows:-
- historical ULAE;
 - historical paid claims over the period(s) corresponding to the historical ULAE data;
 - outstanding (including IBNER) and IBNR claims reserves;
 - information to analyse the breakdown of ULAE between when a claim is first reported and subsequent expenses (if it is considered necessary to assess the appropriateness of the 50% assumption in the above formula)

Inputs / Assumptions

- 4.4.6 The method assumes that ULAE tend to vary over time in proportion to the claims to which they relate.

Comments

- 4.4.7 There are various factors which might affect the size of ULAE relative to the claims to which they correspond. These include different inflation rates applying to expenses and claims.

- 4.4.8 For the Lloyd's SAOs, it is necessary to allocate the ULAE between separate economic entities. As the claims reserves are already allocated in this way, this can be done by applying the expense to claims ratio to the separate economic entities.
- 4.4.9 This method is similar to the classical method used in the US. For further details see Salzmann [2]. It has been suggested, for example in Johnson [3], that this method only produces reliable results for short tailed, stable classes of business.
- 4.4.10 Mango & Allen [8] discuss a number of other drawbacks of this method, which they call the Paid-to-Paid method. They suggest that one of these drawbacks – the distortions that can be caused by random fluctuations in paid claim amounts – can be overcome by replacing the denominator *actual claims paid in last period* with *expected claims paid in last period*.

4.5 Average ULAE per weighted open claim

- 4.5.1 This method derives the ULAE reserve as an average cost per open claim multiplied by the number of open claims in subsequent years. It assumes that there are ongoing expenses with maintaining a claim file, and so there are expenses throughout the lifetime of a claim. It also assumes that the ULAE do not vary much with the nature of particular claims. Further details are given in Johnson [3] and 1990 CLRS [4].

Methodology

- 4.5.2 Consider the average cost defined by the ratio:

$$\frac{\text{ULAE paid in year}}{\text{Weighted number of claims open}}, \text{ where}$$

weighted number of claims open =
number of claims open at year end + number of claims opened in the year.

This is under the assumption that claims cost twice as much in absolute amounts (ignoring inflation) to handle in the year they are opened than they do in subsequent years, and are closed at the beginning of the year of closure.

- 4.5.3 Look at any trends in this average cost and estimate the average cost that will apply in future years.
- 4.5.4 Estimate the weighted number of open claims for each of the subsequent year ends, and apply the relevant projected ULAE ratio.

Data

- 4.5.5 The data required are:-
- historical calendar year paid ULAE. This might just be for the most recent year, or it might allow for trends;
 - number of claims open at year end(s);
 - number of claims opened during the last year(s).

Inputs / Assumptions

- 4.5.6 Weighting of claims opened and claims open at year end.

Comments

- 4.5.7 The method will automatically split the ULAE reserve into separate years of account if the projected claim numbers are estimated for each separate year of account.
- 4.5.8 For most classes of business analysed for the purpose of SAOs at Lloyd's, it is unlikely that the number of claims will be analysed to assess the claims reserves. Thus, even if data on the number of opened/open claims are available, the method may require a large amount of additional analysis to be carried out which must be justified having regard to the materiality of the ULAE reserve.
- 4.5.9 If it is thought that average ULAE per claim varied significantly with duration then it might in theory be argued that more analysis be conducted on the average ULAE per claim calculation.
- 4.5.10 Alternative definitions of the weighted open claims numbers could be considered. For example, assume a greater level of effort also applies in the year in which a claim is closed.

4.5.11 Alternatives to the use of the weighted open claims numbers could be considered. For example, Mango & Allen [8] suggest using the sum of calendar year opened, closed and pending claims. They combine this with projections of future claims staff costs, headcount and workloads along similar lines to those set out in the lines of section 4.2. For Lloyd's SAO purposes, this method suffers the same drawbacks as the Johnson method: while budgetary projections are likely to be available, it is unlikely that numbers of claims will have been analysed.

4.5.12 The method might be modified to allow for rapid growth in business and/or changes in claim disposal rates.

4.6 Standard claims reserving methods

4.6.1 The 1993 CLRS paper on ULAE [5] includes a description of the application to ULAE reserving of a number of actuarial methods usually applied to claims data. Some of the methods described are as follows:

4.7 Chain ladder method (age-to-age development factor method)

Methodology

4.7.1 Apply the standard Chain Ladder technique to a development triangle of paid ULAE figures.

Data / Inputs / Assumptions

4.7.2 Development triangle of paid ULAE amounts.

Comments

4.7.3 If the development triangle is available by underwriting year then this method will produce estimates of future ULAE costs by underwriting years.

4.8 Bornhuetter-Ferguson method

Methodology

- 4.8.1 Apply the Bornhuetter-Ferguson method to the ratio of ULAE to some measure of exposure. Suggestions for the exposure measure include claim amounts (including allocated loss adjustment expenses), claim numbers or premiums.

Data / Inputs / Assumptions

- 4.8.2 Prior ULAE ratio estimates for each year of origin.
- 4.8.3 Development pattern for ULAE paid amounts. This might be derived from the Chain Ladder method applied to a paid ULAE development triangle.
- 4.8.4 Latest paid ULAE amounts by year of origin.

4.9 Paid ULAE to paid claims ratio

Methodology

- 4.9.1 Divide a development triangle of incremental paid ULAE amounts by a development triangle of paid claims to derive a triangle of ULAE to claims ratios. Select representative average ratios for each development period.
- 4.9.2 For each year of origin, produce a projected cashflow of claims paid in future development periods.
- 4.9.3 Apply the corresponding selected representative ULAE ratios to the future claims paid in each development period, to calculate the ULAE in each period. Sum the ULAE over future periods of development to give the ULAE reserve for each year of origin.

Data / Inputs / Assumptions

- 4.9.4 Development triangles of paid ULAE and claim amounts.

5 Checks for reasonableness

- 5.1 Consider the ratio of ultimate ULAE to ultimate claims in each year of origin, and any trends in this ratio from year to year.
- 5.2 In any modelling exercise conducted, it should be possible to reproduce previous years' ULAE reserves.
- 5.3 Whatever the methodology used, the ULAE reserves should be compared to those set up the previous year.
- 5.4 Whatever the methodology used, the assumptions made (eg. regarding budgets) should be tested against the actual outcome.
- 5.5 In a stable situation, where the ULAE reserve for the earliest year of account is exhausted as the latest year of account is added, the total ULAE reserve across all years of account should increase from one year to the next by the rate of expense inflation.
- 5.6 Similarly, in a stable situation without inflation, the calendar year's ULAE costs for all but the current year should equal the total ULAE reserve.
 - 5.6.1 Therefore, if ULAE reserves were calculated as a proportion of claims reserves, using some benchmarking process, one check that can be made is to compare the reserve to the calendar year expenses.
- 5.7 Each of the methods set out in section 4 could be regarded as a check of the reasonableness of any of the other methods.

Appendix A: Select bibliography

- 1 Faculty and Institute of Actuaries (1997). Claims Reserving Manual. Section K4
- 2 Ruth E Salzmänn (1984). Estimated Liabilities for Losses and Loss Adjustment Expenses. Prentice-Hall. Chapter 8
- 3 Wendy Johnson (1989) Proceedings of the Casualty Actuarial Society v76, pages 111-125.
- 4 Glenn A. Evans, James F. Cerone, Wendy A. Johnson, John D. Zicarelli (1990). Loss Adjustment Expenses. Casualty Loss Reserve Seminar 1990, Session 3C/7B, pages 651-703.
- 5 Wendy A. Johnson, Glenn A. Evans, Donna S. Munt (1993). ULAE Reserves. Casualty Loss Reserve Seminar (CLRS) 1993, Session 6B, pages 1517-1568.
- 6 Association of British Insurers (1998). Statement of Recommended Practice (SORP) on Accounting for Insurance Business.
- 7 Association of British Insurers. Controls over procedures for establishing general insurance business technical provisions.
- 8 Donald F. Mango, Craig A. Allen (1999). Two Alternative Methods for Calculating the Unallocated Loss Adjustment Expense Reserve. Casualty Loss Reserve Seminar 1999 (pages 226-249 of the Call for papers).

Appendix B: Comparison of data requirements of various methods

- 1 Historical ULAE
 - (a) historical calendar year expenses;
 - (b) timesheet allocations detailing activities, class of business and years of account; together with
 - (c) subjective judgements regarding time, year of account and class of business allocations.
- 2 Future ULAE based upon Budget Projections:-
 - (a) future calendar year budgets;
 - (b) information to support the length of tail of each year of account, such as claims triangulations; together with
 - (c) subjective judgements regarding time, year of account and class of business allocations, along with an overall assumption of the length of tail of the year of account.
- 3 ULAE as a Percentage of Claims Reserves:-
 - (a) historical ULAE;
 - (b) historical paid claims over the period(s) corresponding to (a);
 - (c) outstanding and IBNR claims reserves;
 - (d) information to analyse the breakdown of ULAE between when a claim is first reported and subsequent expenses (if it is considered necessary to assess the appropriateness of the 50% assumption in the above formula); together with
 - (e) the assumption that ULAE tend to vary over time in proportion to the claims to which they relate.

- 4 Average ULAE per Weighted Open Claim:-
- (a) historical calendar year paid ULAE, for the most recent year alone or considering trends;
 - (b) number of claims open at year end(s);
 - (c) number of claims opened during the last year(s); together with
 - (d) the assumption that a claim costs twice as much in absolute amounts (ignoring inflation) to handle in the year it is opened than in subsequent years, and is closed at the beginning of the year of closure
- 5 Chain Ladder Method (age-to-age development factor method):-
- (a) development triangle of paid ULAE amounts.
- 6 Bornhuetter-Ferguson Method:-
- (a) prior ULAE ratio estimates for each year of origin;
 - (b) development pattern for ULAE paid amounts, possibly derived from the Chain Ladder method applied to a paid ULAE development triangle;
 - (c) latest paid ULAE amounts by year of origin.
- 7 Paid ULAE to Paid Claims Ratio:-
- (a) development triangles of paid ULAE and claim amounts.

Appendix C: A budget projection method used in practice

General

- 1 The ULAE is established to match the costs of handling the day to day operation of the syndicates' claims handling activities. The reserve incorporates both proportionate and non-proportionate ULAE costs.
- 2 The following method is illustrative of a framework that can be used for establishing the ULAE. It has been formulated by a managing agent and is intended to utilise the data readily available to syndicates. The numerical example included in Appendix D illustrates a calculation made as at 31 December 1999.
- 3 The objective of the method is to review current costs relating to claims handling and using this, possibly expressed this as a percentage of total calendar year expenses, to forecast future costs, taking account of the future level of syndicate activity. The complication in the Lloyd's market is the use of underwriting year accounting, where both expenses and reserves need to be allocated to years of account.
- 4 The method described below attempts to accomplish this by allocating historical costs by calendar year into years of account and activity types (i.e. claims handling, acquisition and operating activities). The allocated costs are then used to estimate, by year of account, the percentage of the total calendar year expenses that relates to claims handling activities. This percentage is then applied to the future calendar year budgets to give a reserve for future claims costs. Further refinements can be made by analysing the data by class of business. Within the calculation are a number of variables which can be tailored to each syndicate.

Calculation

- 5 The calculation can be summarised into three parts as follows:-
 - the allocation of historical expenses, both proportionate and non-proportionate, into claims handling expenses, acquisition costs and operating

costs in order to calculate the costs of handling claims for each calendar year;

- the allocation of these expenses across years of account and classes of business in order to calculate the costs of handling claims by year of account and class of business for each calendar year; and
- the calculation of the percentage of the costs of handling claims divided by the total calendar year expenses, applying this to future calendar years to produce a ULAE by year of account and class of business, allowing for the reduction in ULAE as a year of account develops.

(A) Allocation of historical expenses

Salaries and related (proportionate) costs

- 6 A timesheet is prepared by the syndicate detailing the amount of time spent by each member of agency staff on various activities by year of account and syndicate. The activities considered could include areas such as writing and administration of premiums, claims adjusting, validation and processing, reinsurance credit control, statistical records, preparation of reserving data and commutations. The activities are constructed so that the further analysis into claims handling, acquisition, operating and other (used for expense types that do not automatically fit in the first three) categories can be achieved. An example of this is included in Appendix D1.
- 7 The activities could also be split by class of business as it can be argued that the claims reserve will be different for each class.
- 8 Salaries are then applied to the time allocations to produce the total salaries and related costs apportioned across activities, years of account and class of business.

Non-proportionate costs

- 9 The remaining calendar year expenses, ranging from accommodation to Lloyd's charges, are allocated between years of account and class of business, depending upon the type of expense. For example, Travel and Entertaining may be split based upon the result of the allocation of Salaries, whereas the year of account split for Lloyd's charges will be known. It may be considered appropriate to allocate certain costs, such as IT usage, across years of account based upon the number of transactions.

- 10 These expenses are then allocated into claims handling, acquisition, operating or other categories based upon the type of expense under consideration. This calculation is shown in Appendix D2.

(B) Allocation to operating categories

- 11 The expenses, split between four categories - claims handling, acquisition, operating and other - are totalled and the last is split in proportion to the totals for the first three categories. This is also shown in Appendix D2.
- 12 This produces a total cost by year of account allocated between types of expenditure. The total claims handling cost by year of account is divided by the total calendar year expenses to produce the ULAE percentage, i.e. the percentage of costs by year of account and class of business which relate to the cost of handling claims.

(C) Application of the ULAE percentage to future costs

- 13 The analysis and allocation described above may indicate that the claims handling expenses for a given year of account decrease over time. In such a case, a time Reduction Factor (TRF) may be applied against the ULAE percentage for that year of account, representing the decreasing amount of time spent on a year of account as that year of account develops. For example, a TRF of 65% assumes that 65% of the time spent the previous year will be required for the following year. The TRF will depend on the mix of classes of business written by the syndicate.
- 14 In some cases, however, it will be found that the claims handling expenses for a given year of account do not decrease over time. For example the expenses may rise to a peak in year 3 (when the account is closed) and decrease only thereafter. In such a case, applying a constant Time Reduction Factor to the ULAE percentage for year 2 will give a smaller ULAE percentage for year 3, when instead a larger ULAE percentage is required.
- 15 In these circumstances, to calculate a ULAE percentage for year 3 which better reflects the pattern of ULAE, an Efficiency Factor (EF) can instead be applied to the ULAE percentage for year 3 of the **previous** year of account.

- 16 The Efficiency Factor reflects explicitly the assumed increases in efficiency, year after year, of the managing agent's claims handling function, where this is not already included in the budgetary projections. It can also reflect the spreading of expenses over an increasing number of years of account, when this occurs.
- 17 In some cases, however, the volume of business changes significantly between years of account. In this case, applying an Efficiency Factor to the ULAE percentage for a year with less business will not give an appropriate ULAE amount for a year with more business. In such a case it may be more appropriate to use a Time Reduction Factor approach, or a mix of TRF and EF approaches, or other approaches which directly model development patterns based on claims activity.
- 18 The ULAE percentage, reduced by the EF, TRF or whatever is appropriate, is applied to the total calendar year expenses for future years.
- 19 The number of future years to which the ULAE percentage is applied will depend on the length of tail of the syndicate's business. For example, it could be assumed that for a relatively short tail syndicate, costs would not be incurred after eight years from the start of the year of account (5 years beyond the time of the usual Reinsurance to Close). Again, this will depend on the mix of classes of business written by the syndicate.
- 20 The claims handling reserve is the sum of the reserves calculated by year of account and class for all future calendar years.
- 21 All the above calculations are illustrated in Appendices D3 and D4. Appendix D3 uses the Time Reduction Factor methodology while Appendix D4 uses the Efficiency Factor methodology.

(D) Different types of ULAE cost

- 22 For some categories such as Lloyd's charges and Legal and Professional fees, ULAE may be allocated based upon historical costs at the latest year-end if this is more relevant. For example, the worked examples attached to this document allow for four categories of expenses to develop differently from each other.

Assumptions

- 23 The calculation of the ULAE reserve is based upon a number of assumptions as follows:-

Staff time allocation

- 24 If the syndicate does not maintain an ongoing allocation of time spent across the required categories, a subjective allocation will need to be made. This procedure may yield volatile results when repeated from year to year. Such volatility can, however, be mitigated slightly if the allocations of the staff with the highest salaries are scrutinised.

Non-proportionate expenses

- 25 The allocation of the non-proportionate expenses across years of account is subjective and will vary across syndicates.
- 26 Both of the above assume that the years of account continue to track in a consistent pattern. For example, a year which is suddenly subject to an increase in loss incidence may not be adequately provided for if the projection assumes that the year remains at the historic activity level. Consideration must also be given to changes in mix of business.

Historical syndicate expenses

- 27 The claims handling percentage relies upon the accurate and complete reporting of the latest calendar year expenses. If the historical syndicate expenses are incomplete, the future expense reserves will be impacted.

Allocation between expense categories

- 28 The allocation between claims handling, acquisition, operating and other is very subjective. This can have a significant effect on the overall ULAE and is unlikely to be standard across managing agents.

Time reduction factor

- 29 The assumption underlying this percentage is the decaying amount of time spent on a particular year of account. This will obviously vary from syndicate to syndicate depending upon the length of the tail. The time reduction factor might be estimated by looking at some measure of claims activity, for example projected claims payments, changes in level of outstanding claims etc.

Efficiency factor

- 30 The assumption underlying this percentage is the decaying proportion of total expenses for a given duration, reflecting the spreading of expenses over an increasing number of years of account. In the case where there are stable volumes of claims from year to year and the oldest year has already run off, then the efficiency factor would be taken as equal to 1.
- 31 The efficiency factor will also reflect any anticipation of increased efficiency in the future, to the extent that this has not already been reflected in the budget projections.

Future budgets

- 32 The ULAE percentage is applied to future budgets. Budgets are generally available one year ahead of current calendar year, although there is no Lloyd's requirement for any further budgeting exercise to take place. In the absence of formal procedures, it is likely that a rough approach will be adopted in setting future budgets, such as a general percentage increase over the previous budget. This may lead to lowered reserves if, for example, future staff increases are ignored.

Future budget requirements

- 33 An assumption is made as to the number of years for which a ULAE is applied to the future budgets. This is subjective and is based upon an estimate of the length of the tail of the particular year of account.

Checks for reasonableness

- 34 Within the body of the calculation there are a number of areas where the underlying data can be subject to checks for reasonableness. These include:-
- calendar year expenses should agree to the syndicate’s quarterly return (“SQR”) or the audited annual solvency return;
 - the staff timesheet can be reviewed for reasonableness - it could be assumed that underwriters would spend a larger proportion of their time underwriting and dealing with strategic issues, whilst the claims department would mainly be involved in older years than the current year;
 - the staff time allocations should be reasonably in line with the claims triangulations - few movements would suggest low time utilisation; and
 - a review of the claims triangulations will confirm the assumptions regarding the lengths of the tail of each year of account and class. This can be used to support assumptions regarding the TRF/EF and number of years for which a ULAE is applied to the future budgets.

Summary

- 35 The reserve produced by this method is easy to manipulate, particularly in light of the number of variances involved in calculating the reserve. In addition, this method does not directly take into account the claims incidence and the results may vary depending upon the subjective nature of some of the assumptions, however the effect may not be material.
- 36 This method also produces two by-products as follows:-
- the split of expenses across years of account, which may be used in the final calculation of the year of account expenses in the syndicate's accounts; and
 - the split into claims handling, acquisition and operating costs, which can be used in US GAAP reporting.
- 37 The method is fairly detailed and could be time consuming, although it does produce a reserve which covers both proportionate and non-proportionate costs relating to running off a year of account. Furthermore the data are easily available to managing agents, as the expenses have to be produced to satisfy regulatory requirements and the assumptions made can be verified through the checks for reasonableness such as those noted above.