

**Effective Report Writing: Tools  
for the Appointed Actuary**

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**Actuarial Report and Workpapers:  
Just the Facts**

- The appointed actuary must give assurance that the actuarial report and underlying actuarial workpapers will be maintained at the company for seven years in the Statement of Actuarial Opinion.
- The Actuarial Report must be available to the regulator no later than **May 1** or within two weeks after a request from an individual state commissioner.
- Must be consistent with ASOP No. 9 (repeal pending), ASOP No. 41 (revision pending), ASOP No. 36 (revision pending), ASOP No. 43, and the CAS Statement of Principles Regarding Loss Reserves.

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**Actuarial Report and Workpapers:  
Just the Facts (cont.)**

- The Report and workpapers are usually requested by the state as part of a financial exam or analysis.
  - All are usually considered confidential depending on individual state laws and regulations.
    - Ask your friendly regulator for details.
- Must contain both **narrative** and **technical** components.

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### Actuarial Report and Workpapers: Just the Facts (cont.)

From the NAIC Instructions:

- “The narrative component should provide sufficient detail to clearly explain to company management, the regulator, or other authority the findings, recommendations and conclusions, as well as their significance.
- The technical component should provide sufficient documentation and disclosure for another actuary practicing in the same field to evaluate the work. This technical component must show the analysis from the basic data, e.g., loss triangles, to the conclusions.”

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### Actuarial Report and Workpapers: Just the Facts (cont.)

“The Report must also include:

- An exhibit which ties to the Annual Statement and compares the Actuary’s conclusions to the carried amounts;
- Summary exhibit(s) of either the actuary’s best estimate, range of reasonable estimates, or both, that led to the conclusion in the OPINION paragraph regarding the reasonableness ...;
- Documentation of the required reconciliation from the data used for analysis to the Annual Statement Schedule P;
- Extended comments on trends that indicate the presence or absence of risks and uncertainties that could result in material adverse deviation; and

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### Actuarial Report and Workpapers: Just the Facts

- Extended comments on factors that led to unusual IRIS ratios ...and how these factors were addressed in prior and current analyses.”
- The CASTF, through the Regulatory Guidance Brief, also encourages the actuary to include in the actuarial report an exhibit that summarizes changes in the Appointed Actuary’s estimates from the prior analysis, with extended discussion of significant factors underlying the changes.
- The Actuary is also encouraged to present their findings in person whenever possible.

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### ASOP No. 23 – Data Quality

- Selection of Data – Considerations
  - Appropriateness, reasonableness, comprehensiveness, limitations, methodologies
- Disclose data source and reliance on data supplied by others
- Professional judgment needed when you have problems with data

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### Reconciliation: Required



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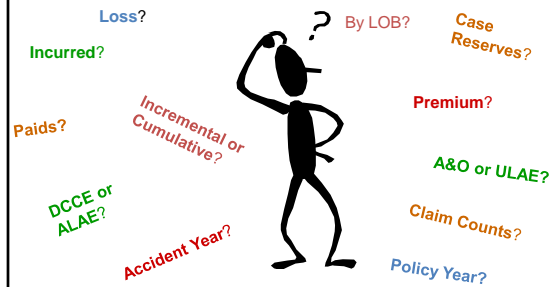
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### What Data Needs To Be Reconciled?



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**ASOP No. 21 – Responding to or Assisting Auditors or Examiners in Connection with Financial Statements**

- Responding actuary
  - Be prepared to discuss with auditor/examiner:
    - Data
    - Environmental considerations
      - Changes in operations, trends, or products
- A well written report can save you time and your company/client money during an audit or examination
- Consider how you would react if you picked up your report for the first time in order to learn about the company and its reserves.

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**DOCUMENTATION**

Documentation should be sufficient for another actuary practicing in the same field to evaluate the work.

- ASOP No. 9 (repeal pending)

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**ASOP No. 9– Documentation**

- Clearly describe sources of data, material assumptions, and methods, as well as any material changes in these items from prior analysis.
- Documentation includes worksheets and reports.
- Documentation should be retained for a reasonable period of time.

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**ASOP No. 9– Disclosure**

- Disclosures
  - Conflict with professional judgment, and of advocacy
  - Deviation from standard
- Reliance on others
  - Means using that person’s [material] work without assuming responsibility
    - Reliance on the SAO for pool reserves
  - Documentation should define the extent of any such reliance and identify the person relied upon.

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**ASOP No. 41– Requirements**

- Identify principal and scope of assignment.
- Form and content should be clear and appropriate for the intended audience.
- Actuary should issue actuarial communication in a **timely** manner.
- Identify work of responsible actuary and reliance on others.
- Significant findings should be in written or electronic form, unless otherwise agreed-upon by the principal and the actuary.
- ***Actuarial report should identify data, assumptions, and methods used such that another actuary could make an objective appraisal of the work.***

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**ASOP No. 43 – Property/Casualty  
Unpaid Claim Estimates**

- ASOP No. 43 applies to the actuary only with respect to unpaid claim estimates that are communicated as an actuarial finding (as described in ASOP No. 41 [revision pending]) in written or electronic form.
- The terms “best estimate” and “actuarial estimate” are not sufficient identification of the intended measure, as they describe the source or the quality of the estimate but not the objective of the estimate.

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ASOP No. 43 – Disclosures

“... consistent with the intended purpose or use, the actuary should disclose the following in an appropriate actuarial communication:

- “the intended purpose(s) or use(s) of the unpaid claim estimate ...”
- “significant limitations, if any, which constrained the actuary’s unpaid claim estimate analysis, such that ... there is a significant risk that a more in-depth analysis would produce a materially different result ...”
- “the scope of the unpaid claim estimate ...”
- **Three** key dates (accounting, valuation, and review)

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ASOP No. 43 – Disclosures

“... consistent with the intended purpose or use, the actuary should disclose the following in an appropriate actuarial communication:

- “specific significant risks and uncertainties ... with respect to whether actual results may vary from the unpaid claim estimate ...”
- “significant events, assumptions, or reliances ... [that] have a material effect on the unpaid claim estimate ...”
- if “the actuary specifies a range of estimates, the actuary should disclose the basis of the range provided ...”

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Some Final Facts

- About 2,600 statutory opinions were issued by about 500 actuaries in 2009
- Top 19 opiners (4 percent):
  - 579 opinions (22 percent)
  - Signed between 21 and 52 opinions each
- 37 actuaries provided 1/3<sup>rd</sup> of opinions
  - 879 opinions
  - Signed 15 or more
- 27% signed only one opinion (137 opinions)
- Question: How many is too many?

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### In Conclusion

From the Regulatory Guidance Appendix of the Practice Note:

“The CASTF believes that regulators should be able to rely on the Report as an alternative to developing their own independent estimates. A well-prepared and documented Actuarial Report that is consistent with the spirit of ASOP No. 9 can provide a foundation for efficient reserve evaluation within a statutory examination. This provides benefits to the examination process and potential cost-savings to the company.”

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### Writing a Good Actuarial Report: Best Practices & Considerations

A Texas Regulator’s Viewpoint  
per Nicole Elliott, TX DOI

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### Your Mission

- Tell the story
  - Include background, historical information, details
  - What, where, why, when, how,...and how much?
- Provide a road map
  - Help the reader navigate through the narrative and exhibits
  - Describe the process and the steps along the way

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### Who wants to hear the story?

- Management, Regulators, Auditors
- Actuaries and non-actuaries
  - need to strike a balance between technical details and summarized information for different audiences
- Assume a knowledgeable reader
  - Knowledgeable about what? Actuarial analysis or insurer background?
- Put yourself in the reviewers' shoes

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### Who tells a good story?

- Appointed actuaries who are Company employees
  - Reports tend to follow the internal management reporting system
  - Formalized Report lacks the “glue” that ties everything together for the external audience
  - Maybe two reports are needed (gasp!) to satisfy both internal and external audiences
  - May be easier to provide a Report with aggregated analysis using combined segments for external audience; the detail is available if needed

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### Who tells a good story?

- Appointed actuaries who are consultants
  - Reports tend to be fairly well organized
  - Reports tend to look the same (not necessarily a bad thing)
  - Sometimes there is difficulty incorporating analysis and verbiage that differs from the standard
  - Template language and footnotes often not updated

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### Chapter 1: Executive Summary

- Main audience: Management
- Overall conclusions in the aggregate and maybe by segment (Schedule P line of business or other)
- Discussion regarding uncertainty, range estimates
- Exhibit comparing current estimate with prior years
- Table of Contents to direct reader to further detail and illustrate organization of report

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### Chapter 2: Company Background

- Main audience: Regulator
- History of the Company
- Lines and types of business written
- Discussion of overall reinsurance program by line and year, including commutations or retroactive arrangements
- Overview of claims handling and claims characteristics
- Highlight significant changes in the organization in the current year or historically

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### Chapter 3: Technical Narrative

- Describe the process used to get your estimates
  - What data was used
  - How was it segmented
  - How was it analyzed – methods used
  - How was reinsurance handled (different methods for net and gross data?)
  - How were the loss adjustment expenses analyzed

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### Technical Narrative cont.

- Use the presentation of your exhibits to help you write and organize your narrative
- Should your narrative be by segment or by type of loss or reinsurance program?
- Discuss how the ultimates were selected by segment
- If diagnostic exhibits are provided, explain why they are meaningful to your analysis

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### Chapter 4: Technical Exhibits

- How technical should you get?
  - Probably depends on volume and complexity
  - If a small company, probably could include “everything”
  - If a large company, aggregated exhibits probably ok; indicate in the narrative or via a list what other information is available or include it in an appendix
- Organization trumps detail!
  - More informative to discuss what, why, and how in an organized manner than to present triangles and data at every possible level of detail with no explanation

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### Further Considerations

- Support assumptions & judgment
- Support selections
- Support Ranges
- Address catastrophe analysis
- Include a proper Reconciliation
- Coordinate with the Auditor
- Have a peer review
- Misc

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### Assumptions & Judgment

- Don't just state WHAT was done; say WHY
- How did you apply actuarial judgment?
  - If another reasonable alternative assumption would cause a material difference in estimates, the assumption requires further explanation.
  - What considerations helped form your judgment?
    - Not asking for you to give away your secrets, just be more informative
  - If you used external data or benchmark data, cite where it came from and why it is applicable to your analysis.

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### Support Selections

- Expected loss ratios used in Born-Ferg methods
- LDFs that are not reasonably supported by the historical data
- Tail factors
- **Ultimates**
- Application of selections – help the reader get from point A to point B
- Merely stating “Selected” in footnotes or “based on actuarial judgment” is not sufficient

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### Selection of Ultimates

	(1)	(2)	(3)
Accident Yr	Paid LDM	Incurred LDM	Selected
2003	11,244	11,250	11,250
2004	12,985	12,738	12,738
2005	15,215	14,471	14,471
2006	17,588	16,308	16,308
2007	19,109	17,539	17,539
2008	21,435	20,119	20,119
<b>Total</b>	<b>97,576</b>	<b>92,425</b>	<b>92,425</b>

(1) From exhibit 3, sheet 2, column (8)  
 (2) From exhibit 3, sheet 4, column (8)  
 (3) Selected

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### Selection of Ultimates

- What was wrong with the paid method or paid data?
- Why wasn't the average used?
- Where is the support for the selection?
- Would use of the average, if material, constitute a material change in methods or assumptions worthy of opinion disclosure?
- If the paid method or the average were used, is the difference in estimates material for this company?

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### Support Ranges

- A Range is often provided in Reports with no explanation of how it was derived
- ASOP 43 4.2a: In the case when the actuary specifies a **range** of estimates, the actuary should disclose the basis of the **range** provided, for example, a **range** of estimates of the intended measure (each of such estimates considered to be a reasonable estimate on a stand-alone basis); a **range** representing a confidence interval within the **range** of outcomes produced by a particular model or models; or a **range** representing a confidence interval reflecting certain risks, such as process risk and parameter risk..."

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### Catastrophe analysis

- The CAT reserve should not merely be an amount added to the final reserve estimates with no explanation
- Did you use a model or historical data?
- Did you rely on the Claims Dept or the Reins Dept? If so, how did you become comfortable with their estimates?
- How does the reinsurance apply?

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### Proper Reconciliation

- All significant data should be reconciled – earned premium, paid amounts, case reserves, claim counts, etc.
- By Schedule P line of business and by accident year
- Net and gross data
- The analysis data should be shown in columns in the Reconciliation and summed to get the Total and then compared to Schedule P data
  - Often the “actuarial data” column can not be replicated
- Material differences by accident year require explanation

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### Coordinate with the Auditor

- May need to document your reserving process, especially if you are a Company actuary, including risk assessment and key controls over risks, in accordance with Model Audit Rule
- Expect to provide the auditor with a letter regarding significant data elements used in your analysis

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### Have a Peer Review

- Reviewer to look at your work with ‘informed skepticism’
- Scrutinize assumptions and methods
  - Pre-ponderance of optimistic or pessimistic assumptions?
- Re-perform some calculations
- Identify missing narrative or exhibits
- Use a review checklist

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### Misc

- Support roll-forwards
- Make sure the amounts in your Report match your Opinion, your Summary, and the financial statement
- Contact your friendly regulatory actuary with any questions

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### What Makes a Good Actuarial Report?

CAS Spring Meeting  
May 2011

By:  
Joseph A. Herbers  
Pinnacle Actuarial Resources, Inc.



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### OUTLINE OF PRESENTATION

- Background on Herbers
- General Observations & NAIC CATF Guidance
- Essential Elements of Report
  
- General Comments

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### Background on Herbers

- COPLFR Member for 13 years, Current Chair
  - Faculty for AAA Seminar on Effective P/C Loss Reserve Opinions
  - Practice Note, Law Manual and Model Audit Rule Subcommittees
- Member of CPC & FRC of AAA
- Write over 100 reserve analysis reports every year
- Reports are reviewed by internal peer reviewer, auditors, regulators, reinsurers, brokers, etc.
- Involved in audit support work reviewing other actuaries' reports

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### General Observations

- Focus of my comments are on actuarial reports – not on SAOs or AOS
- **AAA Code of Conduct – Precept 4**  
“take appropriate steps to ensure that the Actuarial Communication is clear and appropriate to the circumstances and its intended audience”
- **ASOP 9, Section 5.2**  
“Documentation should be sufficient for another actuary practicing in the same field to evaluate the work”

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### Observations – ASOP 41

- **Section 3.3.3 - Actuarial Report**  
“... an actuarial report should identify the data, assumptions, and methods used by the actuary with sufficient clarity that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary's work as presented in the actuary's report.”
- **Section 3.6 - Documentation**  
“Such documentation should identify the data, assumptions, and methods used by the actuary with sufficient clarity that another actuary qualified in the same practice area could evaluate the reasonableness of the actuary's work.”

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### Observations – CASTF Guidance

NAIC CASTF – Regulatory Guidance Memo on Actuarial Report noted three notable weaknesses in documentation of many actuarial reports:

- Expected Loss Ratio
- Actuarial Judgment
- Entity

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### Observations – CASTF Guidance

- Report should contain exhibit summarizing changes in estimates from prior analysis, with extended discussion of significant factors underlying the changes – *in order to improve transparency of disclosures*
- Exhibit comparing held reserve amounts with actuarial indications
- Reconciliation exhibit between financial statement and data provided to actuary
- Added disclosures for “roll forward” type analyses

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### Report Components

- Sections of Report
 

Title Page	Methodology
Transmittal Letter	Discussion & Analysis
Table of Contents	Findings
Purpose & Scope	Reliances &
Limitations	
Distribution & Use	Index of Exhibits
Background	Exhibits
Data Used	Index of Appendices
	Appendices

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### General Comments

- Documentation of assumptions is often sparse
  - Background section of report with info on retentions, deductibles, unique program features is invaluable
  - Are LAE included in losses? Was A&O LAE considered?
- Footnotes to exhibits leave something to be desired
- Data limitations are often significant and need discussion
- Tables, charts and graphs can add immeasurably to understanding of report

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### Background

- Runoff (actual v expected) can be helpful
- Description of changes in volume
- Changes in average rates
- Changes to company's net retention
- Operational changes
  - Management
  - Claims Handling
  - Underwriting
  - Markets served
  - Systems / data sources

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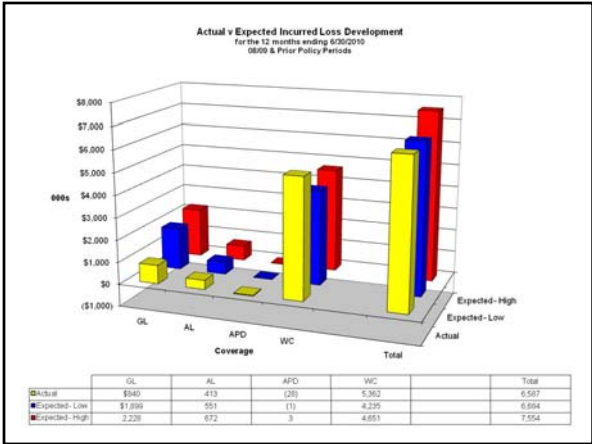
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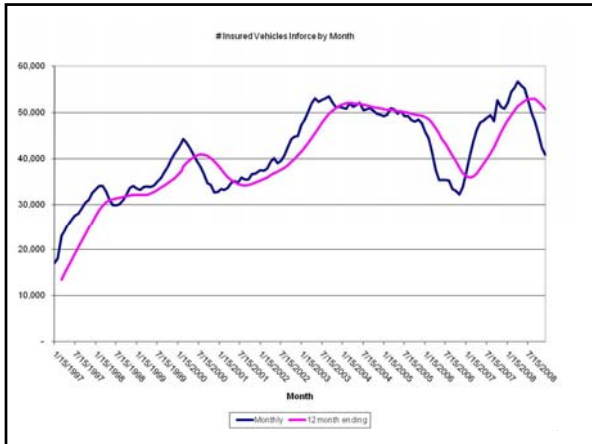
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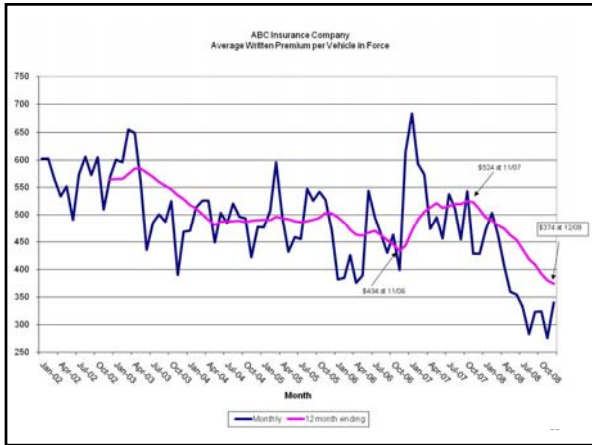
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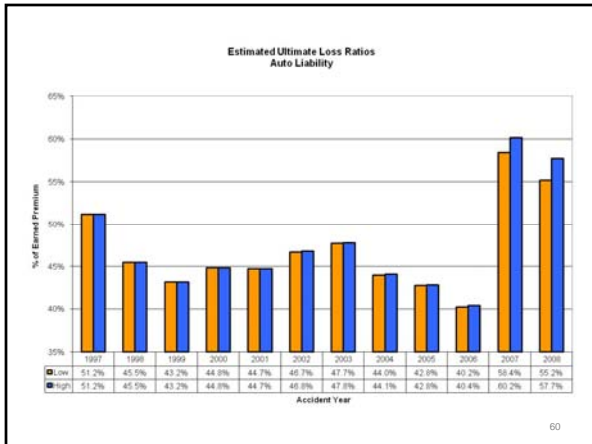
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### Circumstances

- Large rate reductions in late 2006
- New business discount of 10% implemented at same time
- Surge of new business activity in 2007
- In mid 2008, rate increases implemented, commissions scaled back, agencies cancelled
  
- In light of these facts, are the higher LRs in 2007-08 reasonable? Can the reviewer follow the work?

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### Actuarial Judgment

Per Section 4.5.3 of the Introduction to the ASOP's (Oct. 2008)

**Professional judgment** – Actuaries bring to their assignments not only highly specialized training, but also the broader knowledge and understanding that come from experience. The ASOPs frequently call upon actuaries to thoughtfully apply both training and experience to their professional assignments, recognizing that reasonable differences of opinion are appropriate, if not inevitable, when professionals undertake to project the effect of contingent future events. The ASB anticipates that the actuary's use of professional judgment will be presented in such a way that another qualified actuary would recognize when and where judgment has been applied, even if the other qualified actuary might disagree with the resulting conclusions.

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### Report Content

- Are all assumptions and methods specified?
- Are the assumptions and methods reasonable for this assignment?
- Are the data sources identified and appropriate for their use in the analysis?
- Are the resulting calculations correct?
- Are the results, findings and recommendations reasonable and adequately supported by the analysis?
- Does the work product meet actuarial standards of practice or other professional standards?
- Are any reliances and limitations appropriate and clearly delineated?
- Is the potential variability of results adequately discussed?

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### Discussion & Analysis

- Why are the assumptions reasonable? Are other assumptions not reasonable?
- What has changed since last year? What are the drivers of those changes? Are they random or systematic?
- What tests of reasonableness were considered?
- Are conclusions significantly different than those from last year?
- Which segments of the book of business should be more closely scrutinized than others?
- What are circumstances affecting your actuarial judgment?

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### Discussion & Analysis – Flow of Report

- General description of each block of business reviewed
- More detailed description of analysis for each block of business
  - Changes since last evaluation
  - Important assumptions
  - Impact of factor A, factor B, ...
  - Results
  - Tests of reasonableness
- Block 2, 3, ...
- Indicated reserves for all programs combined / covariance
- DCC LAE
- Time Value of Money
- Risk Margins
- A&O Expense

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