



AMERICAN ACADEMY *of* ACTUARIES

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# 2019 Casualty Loss Reserve Seminar

## Data, Documentation, and Report-Writing

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# The Advice Presented During This Session

- Is discretionary, not mandatory
- Does not constitute legal advice. Statements and opinions expressed here also are not definitive interpretations of standards of qualifications or practice, except for those that may be publicly available through the Academy's website and may have been issued by the appropriate board or committee.
- Should not be used as a substitute for your own professional judgment and discretion

*The views expressed in this session are those of the presenters and do not necessarily reflect the views or position of the Academy or its boards, councils, or committees, nor do they express the opinions of their employers.*



# Your Responsibilities

- All actuaries who are members of any of the five U.S.-based actuarial organizations are subject to the Code of Professional Conduct:
  - Precept 1, Annotation 1-1 says, “An Actuary shall perform Actuarial Services with skill and care.”
  - Precept 4 says, “An Actuary who issues an Actuarial Communication shall take appropriate steps to ensure that the Actuarial Communication is *clear and appropriate to the circumstances and its intended audience*, and satisfies applicable standards of practice.”



# NAIC Instructions

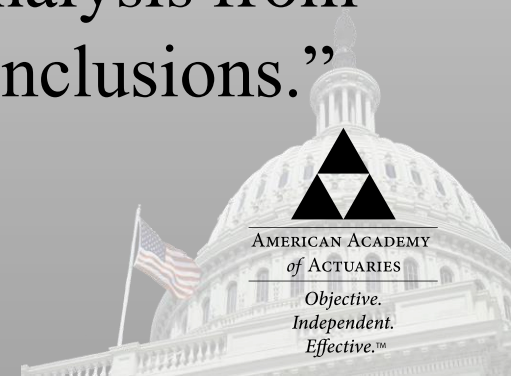
## Actuarial Report and Workpapers

- 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 appropriate actuarial standards of practice promulgated by the Actuarial Standards Board (ASB) and Statements of Principles promulgated by the Casualty Actuarial Society
- Must contain both **narrative** and **technical** components
- The appointed actuary must give assurance in the Statement of Actuarial Opinion that the Actuarial Report and underlying actuarial work papers will be maintained at the company for seven years



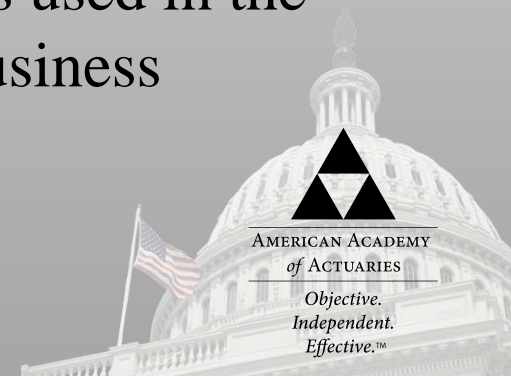
# NAIC Instructions (cont'd)

Section 7 of Instructions: “The narrative component should provide sufficient detail to clearly explain to Company management, the Board of Directors, 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.”



# NAIC Instructions (cont'd)

- Description of actuary's relationship to the company, including role in advising board or management regarding carried reserves
- Identify how and when actuary presents analysis to the board and, where applicable, company officers
- Exhibit that compares actuary's conclusions to the carried amounts consistent with the liability groupings used in the actuarial analysis
- Exhibit that reconciles and maps the data used by the actuary, consistent with the liability groupings used in the actuarial analysis, to the Schedule P line of business reporting



# NAIC Instructions (cont'd)

- Exhibit showing the change in the actuary's estimates from the prior report, including extended discussion of factors underlying any material changes
- Extended comments regarding risks and uncertainties that could result in material adverse deviation
- Extended comments on factors that led to unusual Insurance Regulatory Information System (IRIS) ratios and how these factors were addressed



# P/C Statement of Actuarial Opinion Practice Note

The Practice Note on Statements of Actuarial Opinion is one of many resources available to Appointed Actuaries.

The most up-to-date practice note can be found on the Academy's website using the following link:

<https://www.actuary.org/category/site-section/public-policy/casualty/practice-notes>





# Relevant Actuarial Standards of Practice

- ASOP No. 23—*Data Quality*
- ASOP No. 41—*Actuarial Communications*
- ASOP No. 43—*Property/Casualty Unpaid Claim Estimates*



# ASOP No. 23—Data Quality

- Is the data appropriate for your intended purpose?
- Is the data reasonable and consistent?
- Use professional judgment to decide whether:
  - The quality of the data is acceptable
  - The quality of the data should be enhanced
  - The data can be used with judgmental adjustments or assumptions
  - The data contains significant defects which may warrant a more extensive review of the data
  - The data is so defective that it is unusable: obtain different data or decline assignment



# ASOP No. 23—Data Quality

- ASOP No. 23 requires compliance with ASOP No. 41, *Actuarial Communications*. In addition, the actuary should disclose:
  - Source(s) of data
  - Reliance on data supplied by others
  - Review of data
  - Judgmental adjustments or assumptions
  - Unresolved concerns
  - Any limitations on work product, including potentially biased results



# ASOP No. 41: Requirements for Actuarial Communications

The actuary should ensure:

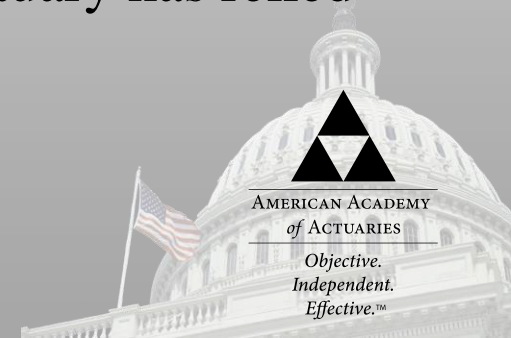
- Form and content of each actuarial communication are clear and appropriate to the particular circumstances, taking into account the intended users
- Actuarial communication is issued within a reasonable time period, recognizing the needs of the intended users
- Actuarial communication clearly identifies the actuary (or actuaries) responsible for it
- If the actuarial findings will be relied upon by any intended user, an actuarial report is to be completed
  - Report may be one or several documents
  - If several documents, specify which documents constitute the report



# ASOP No. 41: Actuarial Report

## ■ Required Disclosures:

- Actuarial findings
- Methods, procedures, assumptions, and data, 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
- Scope/intended purpose and intended users
- Acknowledgement of qualifications
- Cautions on risk and uncertainty
- Limitations or constraints on the use or applicability of the actuarial findings
- Conflict of interest, if any (also see Precept 7 of the Code)
- Information material to the findings on which the actuary has relied and does not assume responsibility
- Information date
- Subsequent events, if any



# 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) in written or electronic form.
- According to ASOP No. 43, Section 3.3(a)(1), “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.”



# ASOP No. 43—Disclosures

- Required Disclosures:
  - The intended purpose(s) or use(s) of the estimate
  - The scope of the estimate
  - Three key dates (accounting, valuation, and review)
  - Significant risks and uncertainties associated with the estimate
  - Significant events, assumptions, or reliances that have a material effect on the unpaid claim estimate



# ASOP No. 43—Disclosures

- Required Disclosures:
  - Significant limitations, if any, on the actuary's analysis such that there is a significant risk that a more in-depth analysis would produce a materially different result
  - If the actuary specifies a range of estimates, the actuary should disclose the basis of the range provided
  - If updating a previous estimate, changes in assumptions, procedures, methods or models that have a material impact on the estimate and the reasons for such changes





# Preparing An Effective Actuarial Report

- Understand your audience(s)
- 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



# Preparing An Effective Actuarial Report

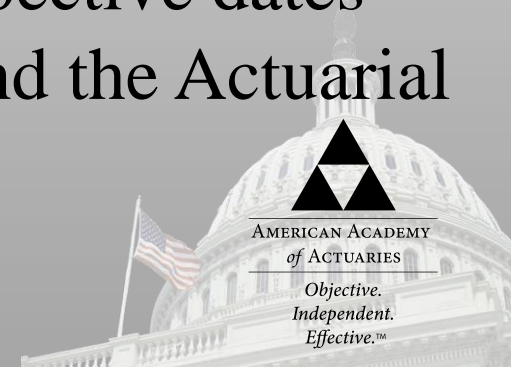
The 2018 Actuarial Opinion Working Group Regulatory Guidance contains the following in Section II.I:

Regulators should be able to rely on the Actuarial Report as an alternative to developing their own independent estimates. A well-prepared and well-documented Actuarial Report that complies with ASOP No. 41 can provide a foundation for efficient reserve evaluation during a statutory financial examination. This expedites the examination process and may provide cost savings to the company.



# Introduction

- Qualifications for acting as appointed actuary
- Description of actuary's relationship to the company, including role in advising board or management regarding carried reserves
- Identify how and when actuary presents analysis to the board and, where applicable, company officers
- Signature of the Appointed Actuary responsible for providing the Actuarial Opinion and the respective dates when the Actuarial Opinion was rendered and the Actuarial Report finalized



# Chapter 1: Executive Summary

- Audience: primarily Management (including the Board)
- Overall conclusions in the aggregate and maybe by segment (Schedule P Line of Business or other)
- Discussion regarding uncertainty, range of estimates
- Exhibit comparing current estimate with prior estimate
- Table of Contents to direct reader to further detail and illustrate organization of report



# 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

*Tip: Ask company management to confirm this section of your report characterizes their business appropriately*



# Chapter 3: Technical Narrative

- Main audience: Actuaries or “technical types”
- Describe the process used to get your estimates
  - What data was used? How was it segmented?
  - How was company data balanced with industry data and why, if applicable?
  - What methods were used?
  - How was reinsurance handled (different methods for net and gross data)?
  - How were the loss adjustment expenses analyzed?
  - What assumptions were used and why?
  - How were estimates selected?



# Chapter 4: Technical Exhibits

- How technical should you get?
  - Depends on volume and complexity of company
  - Consistency of conclusions from year to year
- 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



# Further Considerations

- Peer review helps to ensure your report is clear and complete, and appropriate to your audience(s)
- Avoid simple mistakes: check spelling and grammar, ensure that the numbers in your Actuarial Report tie to the Opinion, AOS, and Annual Statement where applicable
- Did you:
  - Support selections
  - Support assumptions and judgment
  - Support ranges (if they are used)





# Support Selections

- Relevance of benchmark data
- Loss development factor selections
- Loss ratios used in Bornhuetter-Ferguson analysis
- Ultimate selections and/or weighting
- Significant assumptions
- Documentation of roll-forwards
- Use of “actuarial judgment”



# Support Assumptions and Judgment

- Don't just state WHAT was done; explain 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?
  - If you used external data or benchmark data, cite a source for it, and explain why it is applicable to your analysis



# Support Ranges

- A range is often provided in reports with no explanation of how it was derived
- ASOP No. 43, Section 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” (emphasis added)



# Report Writing Examples

- Review excerpts of sample actuarial report
  - Evaluate the written text and supporting exhibits in the context of the discussion provided in the previous slides
  - Discuss areas of potential improvement
- Present modified language from a “better” actuarial report
  - Discussion of enhanced wording for intended regulatory use of the report.
  - Questions/comments from audience



# SAMPLE EXCERPT #1 (ORIGINAL)

This report presents our analysis and supports my Statement of Actuarial Opinion for the Company. I meet with the Board annually to discuss the Opinion and my results. This report has been distributed to the Board of Directors. In accordance with the Instructions, this report must be retained so that it is available to state regulatory authorities for a period of seven years.



# SAMPLE EXCERPT #1 (BETTER)

This report presents our analysis and supports my Statement of Actuarial Opinion for the Company. **I met with the Board on March 26, 2019 in-person and presented a summary of this analysis; my PowerPoint presentation is included in the Appendix.\*** This report has been distributed to the Board of Directors. **It is my understanding that the distribution of the Report and my presentation are being documented in the Board minutes in accordance with the NAIC Annual Statement Instructions.** \*\* In accordance with the Instructions, this report must be retained so that it is available to state regulatory authorities for a period of seven years.

*\* Added: When the Appointed Actuary presents the analysis to the Board of Directors, and the manner of presentation.*

*\*\* Helpful to regulator to know that you are aware of the requirements*



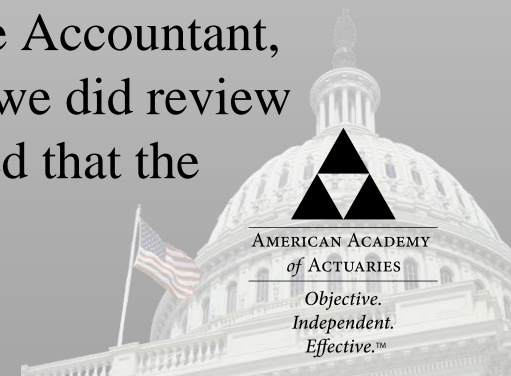
# SAMPLE EXCERPT #2 (ORIGINAL)

## Analysis Data and Review Date

My review for the Opinion was based on claim data evaluated through 12/31/2018 and other information provided by the Company. The date that my Statement of Actuarial Opinion was signed was 2/13/2019. We are not aware of any events or additional information arising after the Opinion was issued that would have a material impact on our analysis as of the time of writing this report.

As required by the NAIC, we have reconciled the data used in our analysis to the data shown in Schedule P – Part 1 of Zeta’s Annual Statement. In particular, we reconciled earned premium, paid loss and DCC amounts, and case loss reserves.

In performing this analysis, we relied on data provided by Joe Accountant, Comptroller of the Company. We did not audit this data, but we did review the data for reasonableness and consistency. We have assumed that the information is complete and accurate.



# SAMPLE EXCERPT #2 (BETTER)

## Analysis Data and Review Date

My review for the Opinion then was based on claim data evaluated through 12/31/2018 and other information provided by the Company **through the review date of 02/13/2019\***; that is the date my Statement of Actuarial Opinion was signed. **I am** not aware of any events or additional information arising after the review date that would have a material impact on our analysis as of the time of writing this report.

As required by the NAIC, **I** have reconciled the data used in our analysis to the data shown in Schedule P– Part 1 of Zeta’s Annual Statement. In particular, **I** reconciled earned premium, paid loss and DCC amounts, and case loss reserves.

*\*Added: Be specific as to the Review Date.*

*Opinion is provided by individual, not group. Consistent pronouns.*





# SAMPLE EXCERPT #2 (BETTER)

In performing this analysis, we relied on data provided by Joe Accountant, Comptroller of the Company. We did not audit this data, but we did review the data for reasonableness and consistency. We have assumed that the information is complete and accurate.

**The Company has indicated to me that it will require its independent certified public accountants to subject the data significant to our analysis to testing procedures. I have supplied Joe Accountant and Company management with a letter informing the Company of the data elements I deemed significant to our analysis.\* A copy of this letter is included in this Actuarial Report.\* It is the duty of Company management to inform me as the Appointed Actuary if there are findings that affect the data used for our analysis as our results are dependent on the accuracy and completeness of the underlying data.**

*\*Add: It is not required to comment on the data attribute testing in the Report or to include the data attribute testing letter in the Report by the Instructions at this time, but it is helpful to the regulator.*



# SAMPLE EXCERPT #3 (ORIGINAL)

## Company Risk Factors, Materiality and Risk of Material Adverse Deviation

I have analyzed the Company's risk factors including the limited Company history, rapid premium growth, use of affiliated reinsurance and the relationship of reserves to surplus.

Based on my understanding of the use of this Opinion, I have selected \$6.5 million as my materiality standard.

I have concluded that the Company is exposed to the potential for material adverse deviation. These risks are explained in more detail in the attached Statement of Actuarial Opinion.



# SAMPLE EXCERPT #3 (BETTER)

## Company Risk Factors, Materiality, and Risk of Material Adverse Deviation

I have analyzed the Company's risk factors including the limited Company history, rapid premium growth, use of affiliated reinsurance and the relationship of reserves to surplus.\*

*\*Add: Further information should be provided here, such as tables showing the Company's growth and limits distribution, relationship of reserves to surplus, etc., and extended comments regarding risks and uncertainties. Do not merely provide a list of factors; rather, explain how those factors present a risk. Some Appointed Actuaries have added such tables and information into their Opinions as well.*



# SAMPLE EXCERPT #3 (BETTER)

Based on my understanding of the use of this Opinion by regulators, I have selected \$6.5 million\* as my materiality standard **from the rounded minimum amount of three measures. The measures were: 12.5% of the Company's net loss and loss adjustment expense reserves, 25% of statutory surplus, and reduction in the Company's adjusted surplus that would trigger the next action/control level Risk Based Capital threshold at December 31, 2018.**

I have concluded that the Company is exposed to the potential for material adverse deviation. These risks are explained in more detail in the attached Statement of Actuarial Opinion.

*\*Added: rationale for the selection of the materiality standard.*



# SAMPLE EXCERPT #4 (ORIGINAL)

## Schedule P Reconciliation

I have reconciled Schedule P data to the data used for our analysis. In particular, I reconciled earned premium, paid loss and DCC amounts, and case loss reserves. The exhibits in Section I show the Schedule P line of business and column references which I compared with the data used in our analysis.



# SAMPLE EXCERPT #4 (BETTER)

## Schedule P Reconciliation

I have **independently** reconciled Schedule P to the data used for our analysis. In particular, I reconciled earned premium, paid loss and DCC amounts, and case loss reserves. The exhibits in Section I show the Schedule P line of business and column references which I compared with the data used in our analysis **with column references to our detailed segment review exhibits. For each Schedule P Line of Business, I have added a conclusion mostly citing small dollar amounts as immaterial. I note there is one known problem with the WC data that is further discussed in the WC detailed segment analysis and on Exhibit E8. I have confirmed that our analysis uses the corrected data.**

*\*Added: A written narrative of your methodology and conclusions*

- *Include if you reviewed another's analysis or if you created these exhibits independently.*
- *Comment on what the "differences" mean ( in your opinion differences of \$x are immaterial)*
- *Discuss specific areas that do not reconcile. Regulators need to know you are aware of these differences.*
- *Discuss how the amounts that did not reconcile affected your analysis.*



# SAMPLE EXCERPT #4 (BETTER)

*\*Add: Other insights to consider.....*

- *Remember: Pages and pages of Schedule P reconciliation exhibits with difference columns with no explanations are not sufficient. Include sources for your “analysis” data so the Reconciliation can be verified by the regulator.*
- *Additional 9/30/2018 data considerations: Think about if your whole analysis is done on 9/30/18 data, and you are reconciling 12/31/18 data from a different actuarial system. How do you convince the regulator your analysis data is reconciled?; i.e., you may need to show an intermediary step 9/30/18 from actuarial system 1 with more granularity matches to 9/30/18 summaries from actuarial system 2, 12/31/18 data from actuarial system 2 reconciled to Schedule P. Please do discuss these specific details in the actuarial report.*



# SAMPLE EXCERPT #5 (ORIGINAL)

**Selection of Ultimates:** We selected our estimates based on a review of the methods and judgement.





# SAMPLE EXCERPT #5 (BETTER)

**Selection of Ultimates:** We selected our estimates based on a review of the methods. **For the full analyses, we assigned weights to each method to sum to 100% based on an overall review of the trends in the historical data and various reasonability checks of metrics implied by our selections. Generally, we relied on the loss development method projections for more mature accident years, the BF method for less mature accident years, and Expected Loss Ratio method for the latest year.**

*\*Added: Using weights to select ultimate losses, and discussion of how ultimates were selected.*



# SAMPLE EXCERPT #6 (ORIGINAL)

## Diagnostic Exhibits

We performed a multitude of reasonability checks on our estimates, including the calculation of ultimate loss and DCC ratios, ultimate average frequencies, ultimate average severities, ultimate average pure premiums, and average case reserves.



# SAMPLE EXCERPT #6 (BETTER)

## Diagnostic Exhibits

We performed a multitude of reasonability checks on our estimates, including the calculation of ultimate loss and DCC ratios, ultimate average frequencies, ultimate average severities, ultimate average pure premiums, and average case reserves. **When we begin each analysis, we look at diagnostic information to discern unique situations where we might need to alter our analysis. Diagnostic exhibits that helped inform our analysis have been included in the segment analysis.**

**After our analysis was completed, we produce diagnostic exhibits that are included in Section J of this analysis which show many key metrics historically, e.g., average ultimate severity. A memo is prepared by the actuarial team for each segment which discusses these diagnostic exhibits.\* These memos have been included in Section J and referenced in Detailed Segment Analysis.**

*\*Added: Make reference to these exhibits, discuss their relevance, and discuss how the results of these checks affected the analysis. Consider including Loss Ratios and/or other diagnostics in exhibits.*



# Key Takeaways

- Know the standards that apply to the work you are doing
- Thorough documentation and disclosure are your best defense
- Can another actuary evaluate and follow the work?
- Support your assumptions and selections
- Quality peer review(s) can go a long way to ensuring the quality of your work.



# Data, Documentation, and Report Writing



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