



Experience Rating for Workers Compensation: A Look Back at the First Century

Presented by:

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Experience Rating for Work Comp Introduction

- Experience Rating for Workers Compensation (WC) was in use by 1915
- This presentation highlights some of the major features of the WC experience rating plans over the years and how they've changed
- The focus of this review is on:
 - NCCI ER Plans, although several predecessor plans will also be discussed
 - Major features and high-level formula changes



The Year Was ... 1916



Experience Rating for Work Comp

1916: Plan A

- Adjusted Loss Ratio (LR) was first computed using the following severities:
 - Indemnity: (Actual weekly award) x (Assumed avg weeks by injury type)
 - Medical: Assumed avg med cost by injury type
- Neutral zone: 40-65% ... no Mod
- Formula (not subject to Schedule Rating)
 - LR < 40%: % Credit = $(40-LR)/40 \times 25^*$
 - LR > 65%: % Debit = $(LR-65)/35 \times 25^*$... capped at 25%
- Issue - didn't distinguish between risk sizes
 - Large risks with LR just above 40% got no credit
 - Small risks with near-zero claim expectation got large credit

*Max credit/debit used (rather than 25%) if subject to schedule rating ... in which case the credit varied by risk size because the schedule rating max credit/debit varied by risk size; Max 40% credit for ER and schedule rating combined



The Year Was ... 1917



Experience Rating for Work Comp

1917: Plan B

- Fatal and PTD injuries treated separately from others and a flat charge was used for their severity
- All Other injury types treated similar to Plan A with the Neutral zone slightly changed to 45-65%
- An overall Mod was derived by combining the results from these two injury groupings
- Maximum credits and debits varied according to 7 size-of-rate groups



The Year Was ... 1918



Experience Rating for Work Comp

1918: Plan D

- Actual losses now used but adjusted to level of rates (premiums) used in ER formulas
- Fatal and PTD indemnity losses continue to be treated separately from the All Other injury grouping
- Expected loss varied for each of these two groups and by size-of-rate (accomplished via Table B applied to premium)
- Credibility introduced
 - Precursor of current plan
 - The following Mod formula was applied to each of the two separate injury groups:
$$P + z(p - P), \text{ where:}$$
 - P = Manual Premium (expected loss)
 - p = Indicated Premium (adjusted actual loss)
 - $z = P / (P + K)$
- The K-values varied by state and for the two different claim groups and were developed on the basis of judgment

The Year Was ... 1920



Boston Daily Globe, August 19, 1920

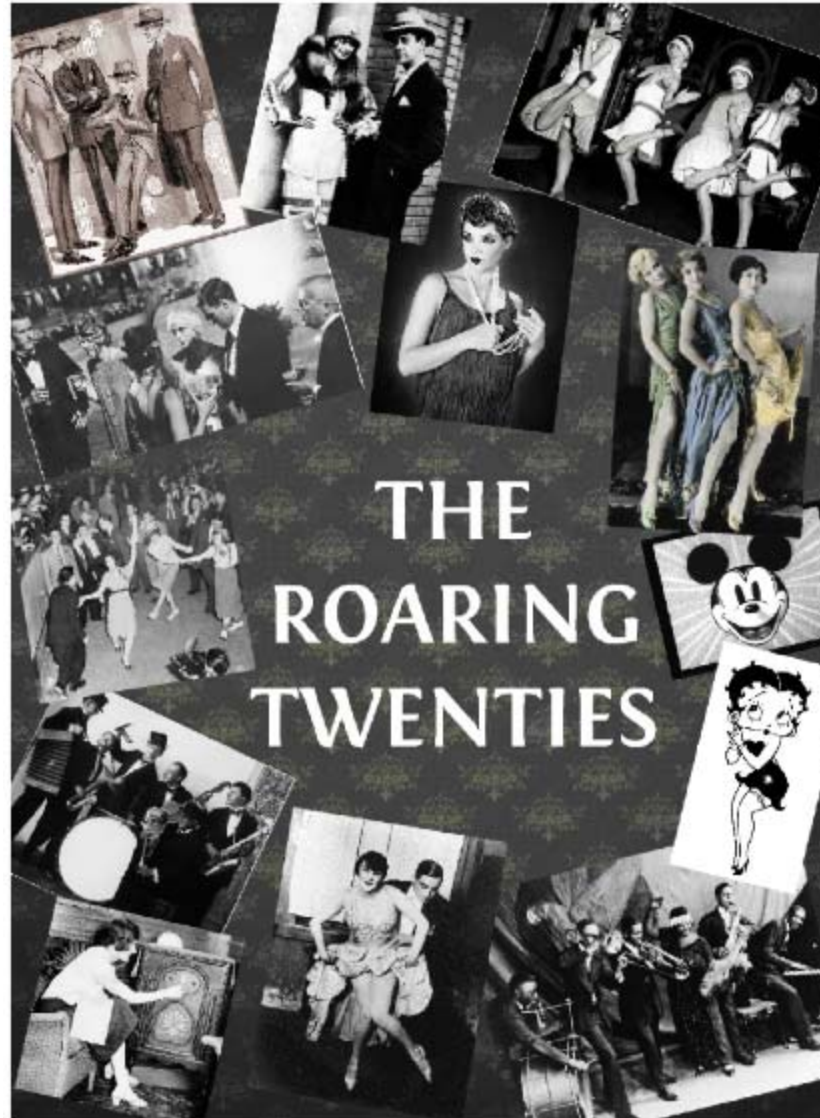
Experience Rating for Work Comp

1920 (NCCI) Plan

- Expected loss now varies by class
- Overall Mod formula unchanged but z-credibility formula changed for the All Other injury group:
$$z = (P + C) / (P + K + C)$$
- However, $z=1$ (for both injury groups) if premium \geq \$80,000 (self-rated)



The Year Was ... 1923



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1923 Plan

- Actual and Expected loss split into primary and excess components
 - Actual split through the use of Table A “normal” values; excess portion of Fatal and PTD not used
 - Expected loss split by class through the use of Table B
- Z-credibility calculation returns to: $Z = P / (P + K)$... separately for primary and excess loss
- Credibility-weighted losses then calculated from:
 $L = A * Z + E * (1 - Z)$
separately for primary and excess loss
- Mod adjustment = $(L - E) / E$
L and E represent combined primary and excess loss
- \$80,000 self-rating point changed and made gradual



Experience Rating for Work Comp

1940 Plan

- 3 equally-weighted years of experience vs 5 weighted years being used since 1928
- Indemnity and medical treated on a combined basis
- Multi-split Plan introduced; formula assigns variable amount to primary depending on size of claim:
 - Primary portion of first \$500 layer of claim = 500
 - Primary portion of next \$500 layer of claim = $500(2/3)$
 - Primary portion of next \$500 layer of claim = $500(2/3)^2$, etc.

(Primary maxes out at 1500 in above)
- ELRs and D-ratios introduced



Experience Rating for Work Comp

1940 Plan ...continued ...

- Weights and Ballasts introduced as a new way to reflect credibility; a risk = 3 times eligibility threshold would get a max 25% debit for a single claim

- Underlying Z_p changed again: $Z_p = E / (E_p + WE_e + B)$

$$Z_e = W * Z_p$$

- $$\text{Mod} = \frac{A_p + B + W * A_e}{E_p + B + W * E_e}$$

- $W=0$ for risks with $E < 2x$ (Fatal and PTD avg benefit value)
... thus, for majority of risks:

$$\text{Mod} = \frac{A_p + B}{E_p + B}$$

The Year Was ... 1961

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The Huntsville Times

WEDNESDAY, APRIL 12, 1961

Where Progress ...

Cover: The Patient

VOL. 11, NO. 31

10 PAGES TODAY

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Man Enters Space

'So Close, Yet So Far,' Sighs Cape

U. S. Had Hoped For Own Launch

SAFE CASUALTY, 7th CAPS — The Russian rocket which the United States had hoped would launch the first man into space stands on a launching pad here. The Soviet Union had its firing date by at least two weeks.

"So close, yet so far," commented a technician who is helping guide the Russians to send one of America's astronauts on a short sub-orbital flight, hopefully over the month of early in May.

"I've been told that they are not too far off on the date and that the rocket will go up on time. It's a matter of a few days."

"That's all we can give you. We can't say more. They're not going to say anything more."

The flight will be the first of a series of sub-orbital flights from the Cape Canaveral, Fla., launch complex.



Soviet Officer Orbits Globe In 5-Ton Ship

Maximum Height Reached Reported As 188 Miles

RECORDS 1961—A Soviet astronaut has orbited the globe for more than an hour and returned safely to earth, the officials of scientific and political bodies here. Soviet announcement of the feat brought praise from President Kennedy and U. S. space experts left behind in the contest to put the first man into successful space flight.

By the Soviet account, Maj. Yuri Gagarin, 34, gave a five-hour, 48-minute tour around the earth in an orbit taking on four and 16 minutes. He was in the air a total of an hour and 48 minutes.

The whole sequence of events and the astronaut's words relating to it raised a number of questions. The Soviet announcement came two days before the flight of the first man into space, Alan Shepard, on the Freedom 7, Feb. 20, 1961, but some critics in America's Washington, D.C., were skeptical that the feat actually occurred.

Hobbs Admits 1944 Slaying

TOY BRASS'S REACTION

To Keep Up, U. S. A. Must Run Like Hell



Experience Rating for Work Comp

1961 Plan

- Current version of Mod formula adopted:

$$\text{Mod} = \frac{A_p + W * A_e + (1-W) * E_e + B}{E + B}$$

- Primary = $\frac{\text{Actual Loss} \times 3,750}{\text{Actual Loss} + 3,000}$

if Actual Loss < 750, then all primary
(primary maxes out at 3,750 in above)

- Underlying formula for primary credibility once again reverts back to:

$$Z_p = E / (E + B)$$


The Year Was ... 1977

FINAL **DAILY NEWS** Cloudy and humid, showers. Low 59s. Sunny tomorrow. Details page 21

NY 26, No. 61 New York, Wednesday, August 17, 1977 Price: 25 cents

ELVIS PRESLEY DIES AT 42

Singer Suffers Heart Attack



Berkowitz Pleads Innocent; Plans Insanity Defense
Stories on pages 3, 12 and 23

Report Carter Picks Ala. Judge As FBI Chief
Story on page 2

Elvis Presley, one of the greatest of rock and roll stars, dies at 42
Stories on page 2; other pictures in the centerfold



Experience Rating for Work Comp

1977 Plan

Primary Loss redefined as:

$$\text{Primary} = \frac{\text{Actual Loss} \times 10,000}{\text{Actual Loss} + 8,000}$$

if Actual Loss < 2000, then all primary
(primary maxes out at 10,000 in above)



Experience Rating for Work Comp

1991: RERP (Revised Experience Rating Plan)

- Primary Loss redefined again ... single split point used:

Primary = first \$5,000 of each claim

The Year Was ... 1998



Experience Rating for Work Comp

1998: ERA (Experience Rating Adjustment)

- Medical-only claims reduced by 70%
 - Reduction comes after the primary/excess split applied
 - E.g. A \$7,000 med-only claim would result in \$1,500 primary and \$600 excess
- Proposed indexing the split point as needed

The Year Was ... 2013

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The CAS Centennial Celebration is not your average Annual Meeting! Plan to attend this once-in-a-lifetime event and help celebrate 100 years of expertise, insight, and solutions.

The celebration will take place at the NY - Hilton Midtown in New York City, November 9-12, 2014.

Meeting Overview

On November 7, 1914 the Casualty Actuarial and Statistical Society held its first meeting in New York City with 97 charter members as Fellows. Now 100 years later with more than 6,200 members, the Casualty Actuarial Society is back in the Big Apple to celebrate our first century and explore the challenges and opportunities that face us in the next.



Experience Rating for Work Comp

2013: E-1402 (Increase and Index of Split Point)

- \$5,000 split point increased to \$15,000 plus severity indexation
- A 3-year transition utilized
 - 2013 split point: \$10K
 - 2014 split point: \$13.5K
 - 2015 split point: \$15.5K
- 2016 and subsequent: severity-indexed value





Thank You!