

RATEMAKING 1989

Nolan Asch

INTRODUCTION

Before he went on to even greater thespian heights, Dave Skurnick was bound and gagged in Dallas in March, 1989 at the CAS Ratemaking Seminar! In light of the positive reaction of the audience at the time and the timelessness and interest of the theme, I thought it worthwhile to publish this play manuscript belatedly in the Actuarial Forum. There are serious issues forwarded inside the context of the humor. Also, it is a belated way of honoring the cast who put a lot of time and effort into this production.

Nolan Asch

NARRATOR

This year we will be presenting a brief play entitled "Rate-making 1989." I will act as your narrator. The cast is the "NOT READY FOR A STABLE MARKET PLAYERS." Please remember that the companies are totally fictitious and any resemblance to any actual firm is totally coincidental.

Pricing decisions are often driven by many non-technical factors; not least among them is "The State of the Market." Each firm has a perception of itself and a corporate culture, corporate situation, and corporate strategy it, consciously or unconsciously, brings to all its actions.

ACT I

GLOBAL GALACTIC

CAST

Nolan Asch. CHAIRMAN
Jerome Tuttle. PLANNER
Dave Skurnick. NARRATOR

ACT I

GLOBAL GALACTIC

PLANNER: ...As you can clearly see -- the trend in pricing for all lines is clear via our monthly monitoring systems.

(SHOW CHART)

Price Levels
See Chart 1



(Slide 1-1)

June 1984 June 1986

The decline continues ... although at a less severe slope this month ...

CHAIRMAN: I know all this -- what I must know is where the break-even profit position for these rates is -- I am the chairman and the final strategic decision must be mine.

PLANNER: Break-even levels are, as you know, a result of many factors -- the payment pattern and loss ratio outcomes, investment returns --

CHAIR: Yes, I know all this. It's clear the June 1984 rates were ruinously low and the trend had to change. In 1986, rates peaked out at high profit margins, and rates have plummeted ever since. --- My actuary keeps telling me about claims cost inflation, "shock" awards, the next "pollution fiasco" -- while my marketing VP keeps telling me about the market share and anti-selection. But what I want to know is ...

PLANNER: Yes - I know - you want to know which strategy will have the better impact on long-term Earning Per Share.

CHAIR: And Short-term EPS.

PLANNER: Well, here I can maintain a simple position. Given our large casualty distribution of business, the easiest way to improve short term earnings is--

CHAIR: I know - maximize current premium volume. The losses cannot appear immediately, but the premiums do. Let's look at those premium numbers again.

PLANNER:

(SLIDE 1-2)

As you know, premiums exploded from 1985 thru mid-1987, due to price increase. As you can see, (SHOW CHART) our commitment to high standards led to flat premiums through 1988 and signs of premium shrinkage in 1989.

However, our actuarial analysis shows clearly, that on the "1985 standards basis," the percentage of premiums written to that standard has dropped consistently -- from 1985 - 100%.

To 1987 - Jan. 90% Dec. 70% (SLIDE 1-3)

1988 - July 50% Dec. 25%

In other words - only.

CHAIR:

Yes, I know --

PLANNER:

Don't interrupt!

CHAIR:

Damn those actuaries, their logic is irrefutable. They're like my conscience! So... the only certain way to achieve the desired EPS increase is to increase premiums - by writing more business whose rates, terms and conditions today are marginal and appear to be still deteriorating.

PLANNER: We don't have to kow-tow to Wall Street. We're a Top Ten firm in this industry and we have credibility with most on Wall Street.

CHAIR: It's not just Wall Street I'm worried about ... It's our parent company. The cereal people.

PLANNER: I thought they said ...

CHAIR: Yes -- I have their total confidence. Since they bought us in 1984, I showed them nothing but massive earnings increases in 1985 and 1986. In 1987, they saw that EPS was increasing, but at a much slower rate. In 1988, they didn't like flat earnings, with several "down" quarters, AT ALL. Now, I'm afraid, if 1989 isn't up they'll be eating me for breakfast. They don't totally understand all the technical nuances of this business -- like we do. I'm afraid if EPS doesn't move up, I'll be replaced. Aside from ego and selfish motives, replacing me with a less responsible or less competent CEO will be bad for the whole industry ... and the public. What should I do?

ACT II

COWBOY CASUALTY

CAST

Nolan Asch. CHAIRMAN
Jerome Tuttle PLANNER & STAFF MAN
Cecily Gallagher. STAFF MAN 2

ACT II

CAFETERIA OF COWBOY CASUALTY

(THE CHAIRMAN IS HOLDING ONE OF HIS "KITCHEN
CABINETS" WITH SEVERAL KEY EXECUTIVES)

CHAIR: You know ... we have a motto here at Cowboy
Casualty -- "No one has a job here unless
somebody out there makes a sale." It's taken us
from a medium-sized regional insurer to a major
national insurance company in less than 5 years.
We have had a compound premium growth rate of
over 30% a year throughout the period.
(SHOW SLIDE 2-1)

STAFF: But to continue that growth rate we'd need to
become a \$450 Million company in 1992.
(SHOW SLIDE 2-2)

CHAIR: Why not? It's just perpetuating the same growth
rate of the last 4 years.

STAFF: Because, sooner or later there are limits to our
size. We can't write almost every risk. And by
continuing to cut rates we are helping to reduce
the total Industry Premium pie every year.

CHAIR: I know you worry about our recent rate reductions -- but let's look at the "big picture" (SHOW SLIDE 1-1 AGAIN ON IND RATES) Even though rates are declining. They are still well above 1983/84 rate levels. ... Also, you forget our 3 secret weapons ...

STAFF: I know

CHAIR: But do you really believe? We have a saying here at Cowboy Casualty ...

STAFF: I know ... "Knowledge without belief is a barren tree."

CHAIR: Well -- Let's review our 3 weapons:
#1 - you no longer need underwriting profits to realize a profit on business. Our investment department has consistently earned returns 2 to 3 points better than the industry.

STAFF: Only over 5 years, after investing in riskier instruments than our competitors.

CHAIR: But you agree we've been earning 10% annum. Our average payout is 3 years after premium collection. That means we can break even at a 133% combined ratio. (SLIDE 2-3)

STAFF: If the 10% holds up. Also, you're ignoring the new tax law and the fact that at 20% commission you only earn interest on 80%, and you are not always going to earn investment income faster than loss payments materialize. (SLIDE 2-4)

CHAIR: Your 80% point is well taken ... (SLIDE 2-5) But we still break even at $1.0648 - .80 = .267 + 1 = 126.48\%$. Also, our new plan is write even longer-tail business to increase our investment leverage.

Our second weapon is our superior portfolio. We have had a clientele of smaller, loyal risks in rural locales. Their frequency characteristics have always been superior to industry averages. And we avoid anti-selection by being the lowest priced market in each of our target sectors.

STAFF: This weapon is eroding. We're now a national company with a slightly less select book and our

target sectors now cover 50% of our premium volume ... not 10% as when we started the program. Also our rate is eroding.

CHAIR: How are we going to lose money on people who never file claims? My claims-free discount system has been praised by many industry experts.

STAFF: Giving a 5% discount on renewal to a claims-free risk the first year is fine, even for a 2nd or 3rd year -- but extending it up to 10 years for a maximal 50% discount!!! It didn't matter in the early years when no one had earned many discounts -- but we're now in year 4 and 90% of those policyholders have earned a 20% discount.

CHAIR: That's great! We've kept them loss free and with us for 4 years! 90% claims-free!!! Just imagine if 10% or 20% more had left us?! We'd have lost all that clean premium! These people are going to think twice about leaving us, or filing any small claims to forfeit their claims free discount!

STAFF MAN 2: Mr. Chairman - we've got a large risk new business submission that needs your immediate attention.

CHAIR: YA HOO - There's nothing like new business.

STAFF MAN 2: It's a fairly large firm. The key to the risk is their products liability for automobile parts. (SHOW CHART) As you can see -- with loss development, their rate per exposure has been climbing slowly. (SLIDE 2-6) With current trends, it seems next year's ultimate net loss cost should be \$322,000 grossed up for 25% Expenses by 100/75ths; (SLIDE 2-7) that's a \$430,000 Premium. That's probably not enough since their latest loss control report from their existing carrier has caused them to quote a renewal rate higher than this designed to lose the renewal.

CHAIR: Maybe -- Maybe not. Also, what's the policy limit and policy aggregate? Let's see, with a 5-year average payout at 10% ... that's a 161% combined to break-even. So -- we don't need \$430,000. We need $430/1.61 = \$286,000$. (SLIDE 2-8)

STAFF MAN 2: It's a \$1M occurrence policy with a \$2M general policy aggregate but the LAE is in addition to limits. (SLIDE 2-9) The 5-year average indication is \$326,000 not \$430,000 but the risk

manager is looking for a premium of around \$150,000. Last year, they paid \$250,000 and Mindless Mutual is competing also.

CHAIR: (TO STAFF 1) We haven't yet factored in our 3rd and strongest secret weapon ... (PAUSE)

STAFF 1: What's that?

CHAIR: RICKETTY RE

If memory serves me well, we have a 750 xs 250 treaty with Ricketty Re and a 1M xs 1M treaty. We pay a rate of 10% for both covers combined. Aggregate excess is included for products. That means we are writing a policy with a \$250,000 Net Aggregate loss-limit and 5-year average pay-out lag.

STAFF 1: But -- I've told you how shaky Ricketty Re is getting. Also, we know we'll suffer that full 250K loss for certain -- and the payout pattern for us will be far shorter than 5 years, since we're paying the first losses -- our reinsurer will be paying the later losses. We can't just assume 10% interest rates.

CHAIR: Hmm - This sounds like a tough one -- well --
Let's call our actuary in on this one. Go get
him.

(ACTUARY IS WHEELED OUT -- BOUND AND GAGGED)

(CHAIR SPEAKS WHILE STAFF UNTIES ACTUARY)

Let's summarize -- let him look at all the data
on this risk -- then give him 3 minutes to
speak.

As I see it, it's a golden opportunity. This
is precisely the kind of longer tail business
we now want to write. With our reinsurance
arrangements at a \$150,000 Premium and a 10%
treaty cost ... (that's what the risk manager
wanted) That's \$135,000 left and 1.61 for
investment income, that's \$217,000 to pay a
maximum loss of \$250,000. That's good odds to
me. (SLIDE 2-10)

ACTUARY: This is nonsense! You need to subtract at
least 25% for commissions, taxes and expenses
up front! Even using all your assumptions that
generates $(217) \times (.75)$ Not 217. (SLIDE 2.11)
The 250 is expected to be paid every year.
Also, there is generally 40 cents of LAE for
every dollar of loss - (SLIDE 2.7, again) so
expect $322 \times .40 = \$129,000$ of LAE per annum to

fund. That yields an ultimate loss and LAE of \$451,000 per annum to pay for. Our payout pattern is going to be shorter than 5 years! Most importantly -- my security review of Ricketty Re finds them very Ricketty indeed.

CHAIR: That's enough. I'm beginning not to like you -- Boy. Ricketty Re is solid! Highly regarded by all the rating agencies.

ACTUARY: They're growing too fast in relation to their surplus! They're at 2.5 to 1! Their loss reserving is consistently testing inadequate.

CHAIR: Hell! That's what everybody's whispering about us -- Growing too fast!! Overleveraged! We've got positive cash flow up our ying-yang!!! See you later!
(ACTUARY IS REBOUND AND REGAGGED)

CHAIR: (ALONE) That actuary is a smart guy. Stands up to me. I like that. Got to think about that angle. Still -- these technicians just somehow cannot grasp the BIG PICTURE.

END

ACT III

MINDLESS MUTUAL

CAST

Nolan Asch CHAIRMAN
David Skurnick ACTUARY
Jerome Tuttle. SAM SALES
Cecily Gallagher NEW PLAYER

ACT III

MINDLESS MUTUAL

CHAIRMAN: Well, I can see here that premiums are not meeting our growth plans.

ACTUARY: I told you that accepting the sales department's proposal of a 20% rate decrease would generate less premium rather than more ----.

CHAIRMAN: But they guaranteed us a 50% increase in policies in-force at those rates to create 20% premium growth.

ACTUARY: And once again they failed us all -- And -- the analysis shows us that they only wrote more business in the "preferred category" -- where rates are down 40%, and less business than ever in the one-third of the former portfolio with no rate change. So the original plan was as follows:

CHART 1 (SLIDE 3-1)

	<u>TERRYTY 1</u>	<u>TERRYTY 2</u>	<u>TERRYTY 3</u>	<u>AVERAGE</u>
Old Weight	1/3	1/3	1/3	
Rate Change	-40% (.60)	-20% (.80)	0% (1.00)	-20% (.80)
Planned PIF	1.5	1.5	1.5	1.5
Planned New Weight	1/3	1/3	1/3	
Premium Volume Change				+20.0%

WHAT WE GOT LAST YEAR WAS THIS

CHART 2 (SLIDE 3-2)

	<u>TERRYTY 1</u>	<u>TERRYTY 2</u>	<u>TERRYTY 3</u>	<u>AVERAGE</u>
Old Weight	1/3	1/3	1/3	
Rate Change	-40% (.60)	-20% (.80)	0% (1.00)	-20% (.80)
Act. PIF Change	+20%	+0%	-20%	
Premium Volume Change				-23%

A 23.2% PREMIUM DECREASE WITH SAME POLICY COUNT
AND EXPOSURE LEVEL

SAM SALES: Hello everyone

OTHERS: Hello Sam!!!

SAM SALES: Still trying to brainwash our chairman against the "tried and true" techniques that this firm has used for 30 years.

ACTUARY: And should have stopped using 30 years ago ---

SAM: When Charlie's dad founded this firm 70 years ago -- its intent was to supply low cost and reliable insurance to people no one else would insure. We're not a greedy stock firm -- a prisoner of Wall Street's expectations. We are not in existence for greed and profit. We represent a way of life.

ACTUARY: Yes -- we all know --
THE MINDLESS WAY

SAM: Well -- I know the 23% premium drop was a disappointment to us all. Our sales reps worked like mad last year -- but -- as I told you last year -- even with that ^{measly}~~mealy~~ 20% rate decrease, our rates are still not competitive. Our high rate levels cause only the poorer risks to stay with us and the good ones to leave -- perpetuating poor loss ratios that justify more rate increases that drive away more "good" business.

ACTUARY: This is ridiculous! We took a rate decrease -- not a rate increase. Not competitive!!! With whom?!

SAM: I'm glad you asked -- Look at these figures -- You can see we're never the lowest rated. Podunk Mutual is beating our brains out in most places --

SLIDE 3-3 PREMIUM COMPARISON

	TER'TY	TER'TY	TER'TY	AVG
	<u>1</u>	<u>2</u>	<u>3</u>	<u> </u>
Podunk Mutual	100	80	80	96
Global Galactic	80	110	80	104
Cowboy Casualty	60	60	60	60
Mindless Mtl - Before	100	100	100	100
Mindless Mtl - After	60	80	100	80
Actuarially Indicated	100	100	100	100
Weight	1/3	1/3	1/3	
Policy Count Change	+20%	0	-20%	(100)

ACTUARY: We've been through all this -- These three firms; Podunk Mutual, Global and Cowboy, only represent 20% of the market. Our tables always use the 5 largest firms in the market for comparison. Global Galactic has 80% of their portfolio in Territory 2 so their average rate is $(110) (.80) + (.2) = 88 + 16 = 104$. (SLIDE 3-4) Podunk Mutual writes 80% in Territory 1 -- so they come to $(100) (.8) + (.2) (80) = 96$. (SLIDE 3-5)

SAM: What about Cowboy Casualty? They're the "hot market," -- They're big and getting bigger fast! They beat us everywhere. Also -- rumor has it that even Global Galactic is about to get more competitive. Their field offices get so many mixed signals from their Home Office -- everyone's dizzy.

ACTUARY: Cowboy Casualty will be bankrupt within 5 years --

SAM: Says you -- They're A-rated and surplus goes up every year --

ACTUARY: Yeah -- much faster than their absurdly understated loss reserves!

SAM: So emotional! By the way, Charlie -- How's the golf game?

CHAIR: Fine -- We really need to get together soon. You know I love to play with you.

ACTUARY: Let's get back to business.

CHAIR: Must we?! It's a lovely day.

ACTUARY: Look at the situation we've put ourselves in! Our average rate is only 80 now! Our premium is dropping! Our loss ratios are booming!

CHAIR: You know -- you really should take up golf. You're far too emotional and serious about all this. We've gotten by for 70 years without all this advanced Actuarial analysis. It was my idea -- over Sam's objections, to start Actuarial 5 years ago. How are you going to get us the sales we need?

ACTUARY: What! Sam's the sales VP, not me! I've already bent over backwards to accommodate him.

NEW PLAYER: (TIMIDLY) Excuse me -- I thought it important to show you a new business proposition just in from Fearless Freddie.

SAM: See -- Sales once again can save the day.

(SAM READS THE NEW BUSINESS PROPOSAL)

We're up against Cowboy Casualty on this one -- It will be tough. However, we've had the property insurance on this account for 20 years! It has had a 30% loss ratio at \$100,000 per year. That's 2 Million in Premium with a profit of (30% +30% Exp = 60%) \$800,000. If Cowboy gets the Casualty the Property will be next. We need to defend this core account.

ACTUARY: Don't get emotional! Why don't you go to your normal office at the golf course.

SAM: It can be done! We can quote \$100,000 and use our Property profits on the risk to make it profitable on a joint basis.

(EVERYONE LEAVES BUT THE CEO)

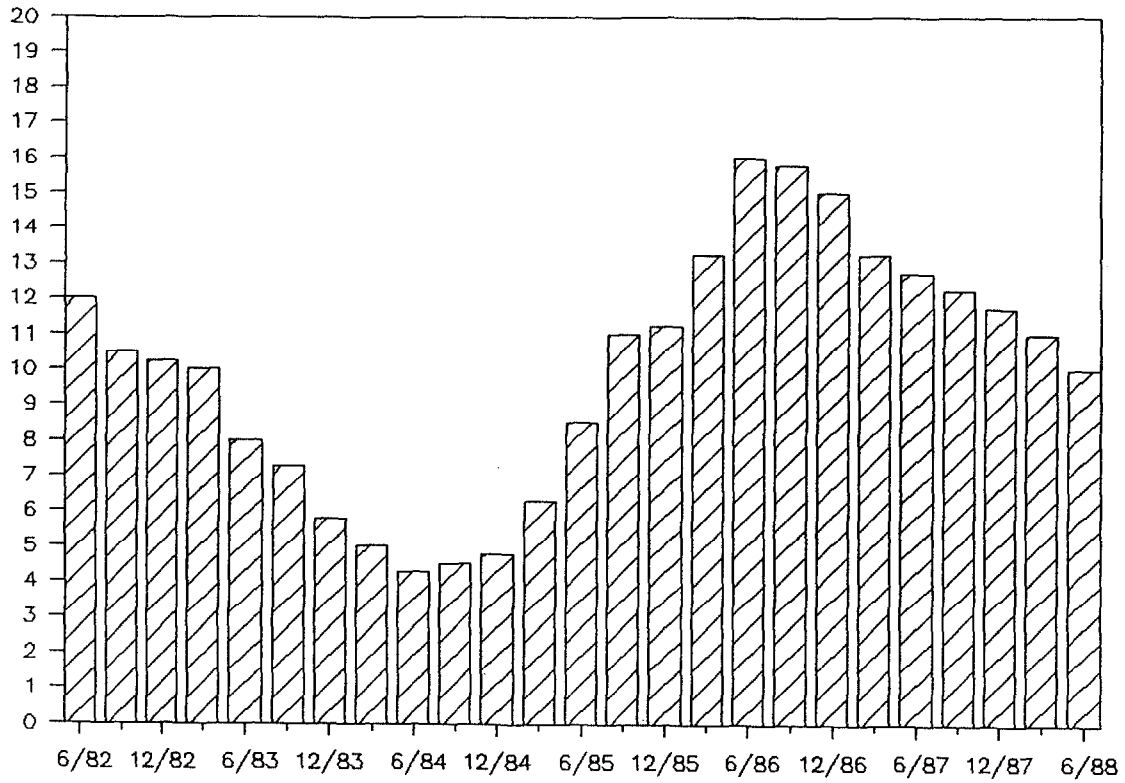
CEO: What should I do? Sam has been with the firm forever. The Actuaries appear to be so smart, with all their logic and numbers. I'm going to have to make a policy decision, sooner or later. The status quo or this new "scientific" Actuarial approach to pricing?

NARRATOR: What decisions did the 3 CEOs make in 1989? We'll leave that to your imagination and judgment. We wanted to make a non-technical presentation at the start to make several things clear ...

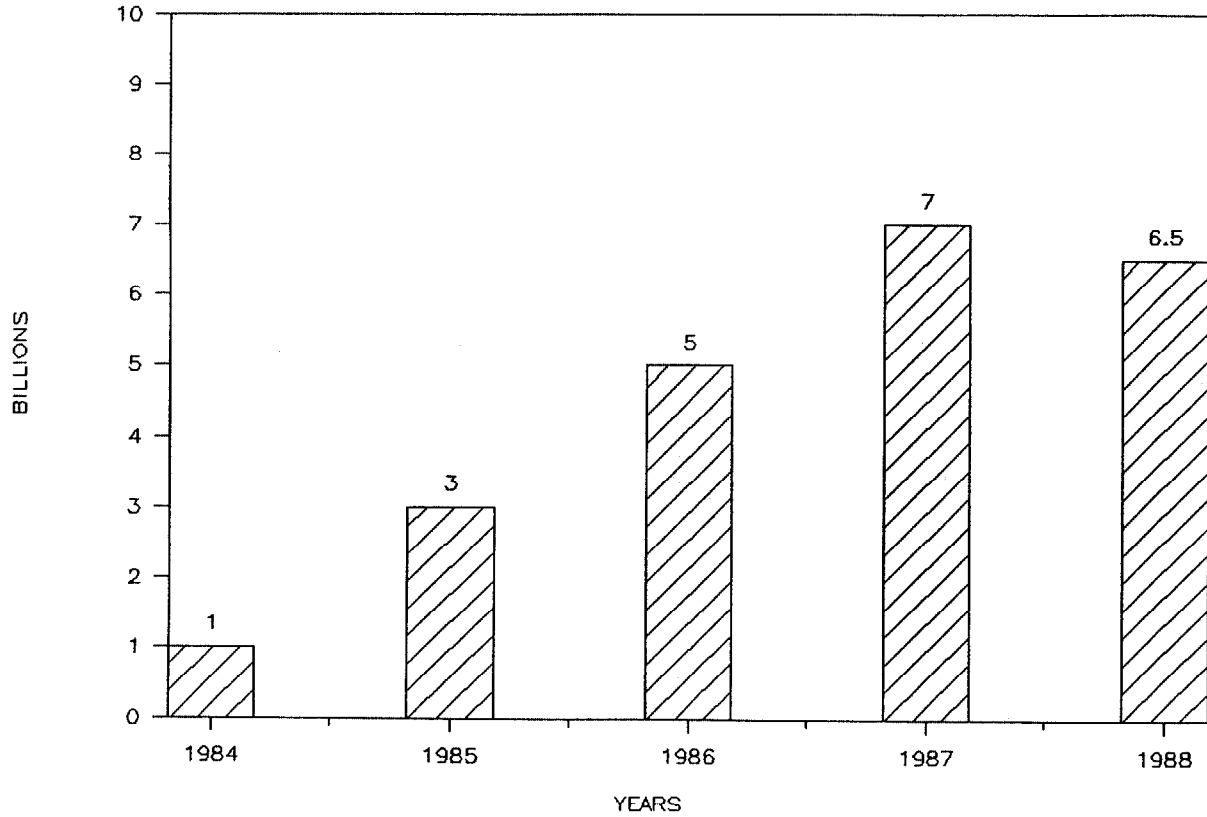
1. These issues are of paramount importance to any firm.
2. They are complex.
3. They should not be left to habit, "gut feel," subjective analysis or prejudice. You will spend the rest of this seminar listening to technical and educational sessions. We hope this has provided some spice to the diet for both our technical and non-technical audiences.

PRICE LEVELS

SLIDE 1 - 1

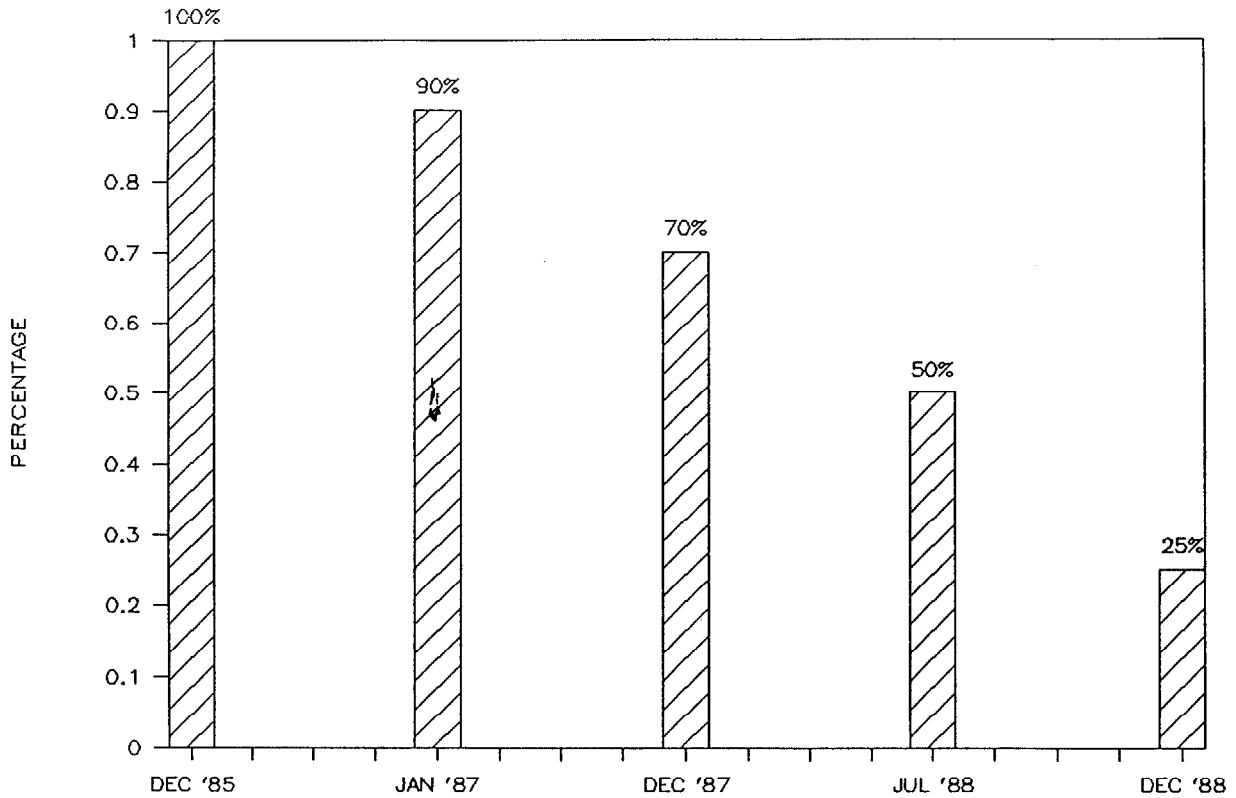


GLOBAL GALACTIC WRITTEN PREMIUMS



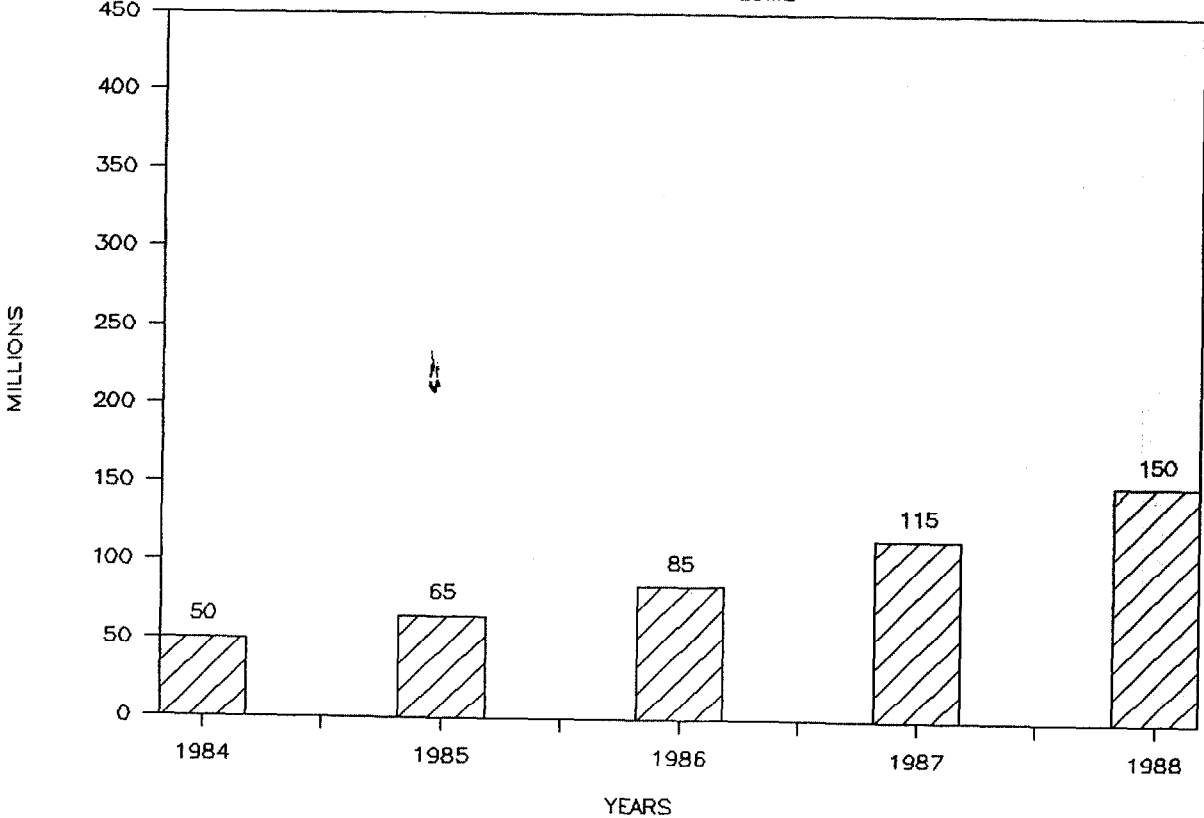
side 1 - 2

% WRITTEN PREMIUMS USING 1985 STANDARDS



COWBOY CASUALTY COMPANY

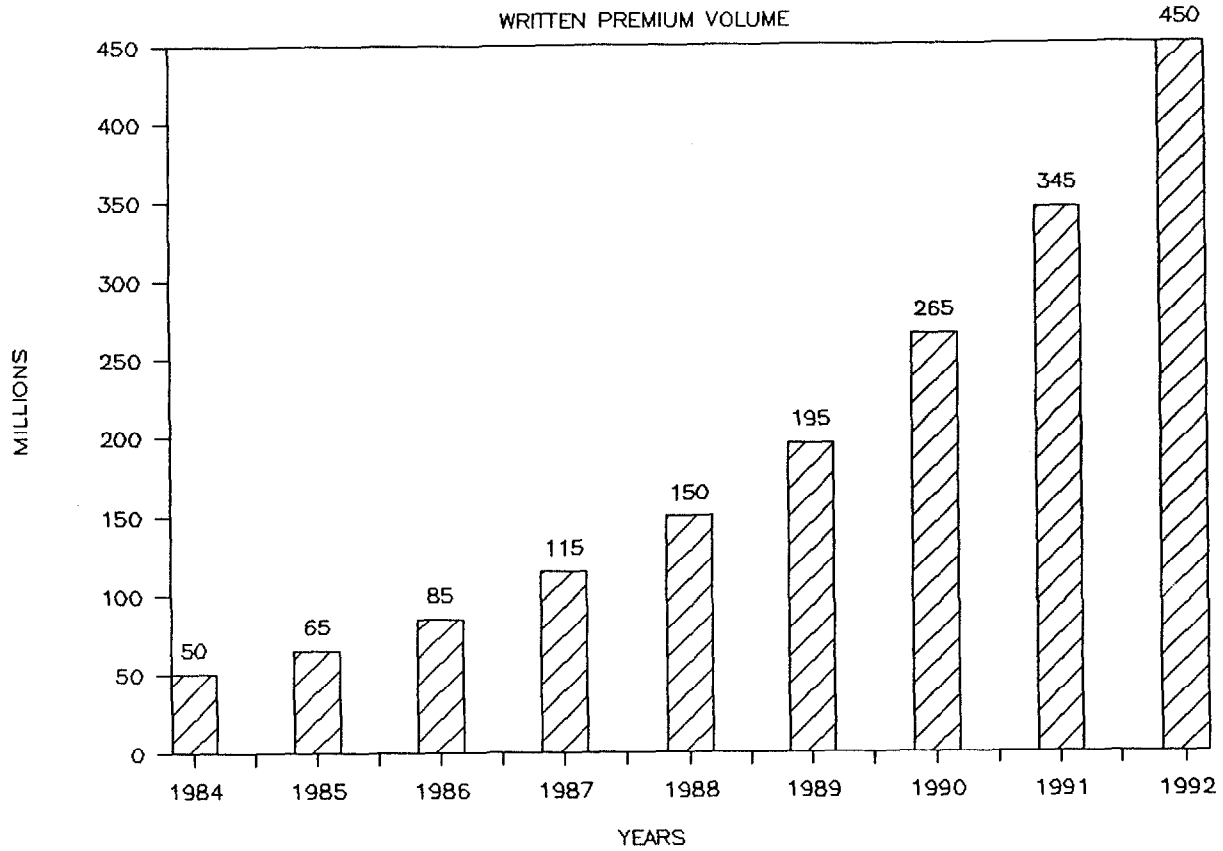
WRITTEN PREMIUM VOLUME



slide 2 - 1

COWBOY CASUALTY COMPANY

WRITTEN PREMIUM VOLUME



slide 2 - 2

320

slide 2 - 3

$$(1 \ . \ 1)^3 = 1 \ . \ 3 \ 3 \ 1$$

slide 2 - 4

$$(.8)(1.1)^3 = 1.0648$$

slide 2 - 5

$$\begin{aligned} 1.0648 - .80 &= 0.2648 + 1 \\ &= 126.48\% \end{aligned}$$

S U B M I S S I O N

XYZ AUTO PARTS

YEAR	EXPOSURES	ULTIMATE LOSS COSTS	ULTIMATE COST PER EXPOSURE	ESTIMATED AVERAGE PAYOUT
----	-----	-----	-----	-----
1982	1,000	200	200	3.0 YEARS
1983	1,000	220	220	3.5 YEARS
1984	1,000	242	242	4.0 YEARS
1985	1,000	266	266	4.0 YEARS
1986	1,000	293	293	4.5 YEARS

5 YEAR AVERAGE		244		

slide 2 - 7

S U B M I S S I O N

XYZ AUTO PARTS

<u>YEAR</u>	<u>EXPOSURES</u>	<u>ULTIMATE LOSS COSTS</u>	<u>ULTIMATE COST PER EXPOSURE</u>	<u>ESTIMATED AVERAGE PAYOUT</u>
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EXPECTED '87 VIA TREND ANALYSIS	===== >	322		

325

$$\$ 3 2 2 , 0 0 0 \times (1 0 0 / 7 5 \text{ ths }) = \underline{\underline{\$ 4 3 0 , 0 0 0}}$$

S U B M I S S I O N

XYZ AUTO PARTS

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EXPECTED '87 LOSSES
VIA TREND ANALYSIS ===== > 322

$$\$ 3 2 2 , 0 0 0 \times (1 0 0 / 7 5 \text{ ths }) = \$ 4 3 0 , 0 0 0$$

$$(1 . 1) ^ 5 = 1 . 6 1 0 5 1$$

$$\begin{array}{r} \$ 4 3 0 , 0 0 0 \\ \hline 1 . 6 1 0 5 1 \end{array} = \$ 2 8 6 , 0 0 0 .$$

slide 2 - 8

326

slide 1 - 9

S U B M I S S I O N

XYZ AUTO PARTS

<u>YEAR</u>	<u>EXPOSURES</u>	<u>ULTIMATE LOSS COSTS</u>	<u>ULTIMATE COST PER EXPOSURE</u>	<u>ESTIMATED AVERAGE PAYOUT</u>
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5 YEAR AVERAGE	===== >	244		

$$\$ 2 4 4 , 0 0 0 \times (1 0 0 / 7 5 \text{ ths }) = \underline{\underline{\$ 3 2 6 , 0 0 0}}$$

R I C K E T T Y R E

WRITTEN PREMIUM	\$150,000
TREATY COST	10%
NET INVESTABLE FUNDS	\$135,000
5 YR COMPOUNDED INTEREST INCOME	1.61
CUMULATIVE FUND AFTER 5 YEARS	= \$217,000

slide 2 - 10

R I C K E T T Y R E
A C T U A R I A L A N A L Y S I S

side 2 - 11

COMMISSIONS, TAXES & EXPENSES	25%
ADJUSTED CUMULATIVE FUND AFTER 5 YRS	\$217,000 (.75) = \$163,000
EXPECTED ULTIMATE LOSSES	\$322,000
EXPECTED LAE PER ANNUM	40%
EXPECTED LAE AMOUNT PER ANNUM	\$129,000
TOTAL EXPECTED LOSSES	\$451,000

M I N D L E S S M U T U A L

C H A R T 1

slide 5 - 1

	<u>TREATY 1</u>	<u>TREATY 2</u>	<u>TREATY 3</u>	<u>AVERAGE</u>
OLD WEIGHT	1/3	1/3	1/3	
RATE CHANGE	-40% (.60)	-20% (.80)	0% (1.00)	-20% (.80)
PLANNED PIF CHANGE	1.5	1.5	1.5	1.5
PLANNED NEW WEIGHT	1/3	1/3	1/3	

330

P R E M I U M V O L U M E C H A N G E = = = = = > + 2 0 . 0 %

M I N D L E S S M U T U A L

C H A R T 2

	<u>TREATY 1</u>	<u>TREATY 2</u>	<u>TREATY 3</u>	<u>AVERAGE</u>
OLD WEIGHT	1/3	1/3	1/3	
RATE CHANGE	-40% (.60)	-20% (.80)	0% (1.00)	-20% (.80)
ACTUAL PIF CHANGE	+20%	+ 0%	-20%	

P R E M I U M V O L U M E C H A N G E = = = = = > - 2 3 %

slide 5 - 2

P R E M I U M C O M P A R I S O N

slide 5 - 5

	<u>TERR 1</u>	<u>TERR 2</u>	<u>TERR 3</u>	<u>AVERAGE</u>
PODUNK MUTUAL	100	80	80	96
GLOBAL GALACTIC	80	110	80	104
COWBOY CASUALTY	60	60	60	60
MINDLESS MUTUAL - BEFORE RATE CHANGE	100	100	100	100
MINDLESS MUTUAL - AFTER RATE CHANGE	60	80	100	80
ACTUARIALLY INDICATED	100	100	100	100
WEIGHT	1/3	1/3	1/3	1/3
PIF CHANGE	+20%	0%	-20%	-110%