REINSURANCE SECTION NEWS

ISSUE 48 MAY 2001

Toward Regulatory Efficiency and Modernization —

ACLI Explores Optional Federal Chartering for Life Insurers and Life Reinsurers

by Monica M. Hainer

Both industry and regulators alike have recognized the need for overhauling the present system of life insurance regulation. More than two years ago, the American Council of Life Insurers (ACLI) undertook a thorough review of life insurance regulation; the review acquired added urgency with the passage of the Gramm-Leach-Bliley Financial Services Modernization Act in November 1999. Resulting analyses revealed that life insurance regulation has not kept pace with rapid changes in the financial services marketplace and hinders life insurers' abilities to effectively serve the needs of consumers.

Today, life insurers compete not only with one another but also with banks and securities firms. At the same time, these

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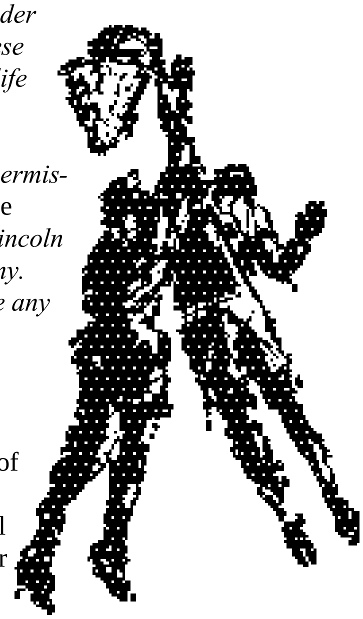
Joe Athlete vs. Joe Average:

Who's The Safer Mortality Bet?

by C. Allen Pinkham

Editor's Note: The misbehavior of professional athletes, from drug abuse to car crashes, surfaces constantly in headlines across the country. It's no wonder insurers take a dim view of these "bad boys" when it comes to life policies.



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When Bobby Phills of the Charlotte Hornets basketball team died earlier this year after a high-speed race in his Porsche with another player, some observers commented that it was just another example of the "bad boy" conduct to which many professional athletes seem especially prone. "There are so many incidents," reported NBC on May 23, "that some say they make America's sport pages read like a police blotter."

With the media spotlight often on drug and alcohol abuse, violence, and car crashes (like the one that took Phills' life)

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competitors are regulated under more streamlined and centralized systems, allowing them to more quickly introduce new products to a national market.

ACLI has concluded that for the life insurance business to remain viable, fundamental changes to the insurance regulatory system need to be implemented as expeditiously as possible. Of equal importance, ACLI also has concluded that any such changes must preserve effective solvency oversight of life insurance companies and assure that consumer protection remains paramount.

ACLI is diligently working to improve the regulatory system for life insurers and has instituted a dual-track approach. On track one, which entails significant efforts to improve the current state regulatory system, ACLI is working with the National Association of Insurance Commissioners (NAIC) by providing detailed proposals in areas both groups have identified as priorities — producer licensing, speed-to-market, and market conduct. At the same time, on track two, ACLI is exploring the feasibility and desirability of optional federal chartering (OFC) for life insurers. The working draft of ACLI's OFC proposal is based on the dual regulatory system presently found in commercial banking, thrift, and credit union businesses.

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ACLI's working draft would establish an Optional Federal Charter (OFC) for the regulation of life insurance and life reinsurance companies. It creates the National Insurer Act and the National Insurer Solvency Act and establishes an Office of National Insurers in the Department of the Treasury. Many of the specific regulatory concepts found in the OFC proposal are based on insurance laws and consumer protections currently found in state insurance statutes. This draft reflects only one area of ACLI's work to reform and modernize the regulation of the life insurance industry. The majority of the ACLI's resources focus on reforming the state-based regulatory system, and this approach will continue.

The working draft envisions the establishment of an optional federal chartering system intended to provide strong, efficient, and effective insurance regulation. In no way does the proposal suggest deregulation of the life insurance business. By contrast, it proposes a level of regulatory oversight and scrutiny of life insurance companies that is at least equal to that which presently exists in the states. Its objective is to create a strong regulatory system, through a single regulator, which can be administered efficiently. The proposal achieves that goal while ensuring two items of paramount importance: effective solvency regulation and appropriate consumer protections.

The proposal assumes that life insurance companies will choose to be either federally or state regulated based on the particular needs and circumstances of their operations. Whatever their choice, ACLI believes that the regulation of life insurance companies will remain at a high standard and the efficiencies resulting from an insurer's choice of regulatory scheme will benefit insurance consumers.

Given the fact that life reinsurance is one of the most complex but fundamentally important components of a smoothly functioning life insurance industry, ACLI called on a team of experts from within its membership to draft the reinsurance portions of the OFC. When the reinsurance team began crafting the reinsurance proposal, they carefully considered the changing landscape for the life reinsurance industry. Facing the same competitive challenges as primary insurers and increased client demand for more sophisticated risk transfer products, ACLI's reinsurance team concluded that reinsurers also need a regulatory apparatus that is dynamic and efficient in order to continue to compete effectively in the risk transfer marketplace. The OFC reinsurance section is designed to assist life reinsurers with staying competitive and broadening the range of approaches and products available to the life insurance industry.

The reinsurance team identified four main reasons for the need for regulatory change:

- Life reinsurers' core business is international in scope, generally more so than the direct market. A random poll of ACLI member company reinsurers revealed that international business is a rapidly expanding part of their overall business and international growth is a significant item in their strategic plans. Also, as more and more direct insurers seek to expand their markets internationally, life reinsurers are considered a vital component in those companies' strategies.

- Life reinsurers are competing directly against reinsurers from countries with less distinction between insurers and commercial banks than the U.S. Reinsurers, particularly those from the European Union, have significant advantages over U.S. reinsurers because their regulatory environment facilitates greater market responsiveness.

- Market demand by U.S. life insurers for nonproportional and nontraditional reinsurance products, which the current insurance regulatory framework does not accommodate, is growing significantly.

- Life reinsurers are now competing against financial services institutions selling risk transfer products that function like reinsurance but are not subject to the same capital and regulatory burdens. The alternative risk transfer (ART) market is not large now, but it is growing rapidly. Undoubtedly, new ART products will emerge, and the entire ART market will grow exponentially as capital market investors become more familiar with insurance risk.

Although all states have adopted substantially similar versions of the basic NAIC models on life reinsurance, interpretation and application of those laws varies significantly. Lack of regulatory uniformity has been the life reinsurance community's single-most important criticism of state regulation. Additionally, the current life reinsurance regulatory regime does not accommodate the post-Gramm-Leach-Bliley environment where functionally similar risk transfer products are being regulated differently, depending solely upon the charters of the contracting entities (e.g., reinsurers and banks) rather than upon the actual risk characteristics of the business being assumed. As a result, domestic laws and rules regulating reinsurance need to be modernized in order to be flexible enough to oversee a rapidly changing market with new market players and new kinds of risk transfer products.

The reinsurance regulatory solution offered in the OFC working draft is based on four fundamental underpinnings. They are:

- <u>Uniformity</u> of law and regulation to foster regulatory predictability and transparency for ceding companies and reinsurers and encourage efficiency and best practices in the industry;

- A dynamic regulatory system that allows commercial <u>responsiveness</u> to evolving business needs for sophisticated risk transfer mechanisms;

- A <u>level playing field</u> among financial entities selling functionally equivalent products; and

- A system that supports and fosters the <u>international scope</u> of the business.

The ACLI has not decided whether to seek introduction of optional federal chartering legislation in Congress. Should the ACLI decide to pursue an Optional Federal Charter, three principal improvements in the regulation of the business of life reinsurance could occur. The OFC could expand opportunities and choices in reinsurance products and providers for ceding companies, make reinsurance transactions more efficient, and foster growth, greater competition, and more prudent financial management in the reinsurance industry.

The ACLI is currently in the process of thoroughly vetting the draft OFC proposal with its membership, regulators and legislators, leading consumer groups, and other important organizations. Their input will be crucial in evaluating whether ACLI should pursue an Optional Federal Charter. To the extent that readers of this article work for companies who have membership in the ACLI, your review of the draft documents and your substantive feedback are welcome. Materials are available on ACLI's Web site, *www.acli.com*.

Monica M. Hainer, FSA, MAAA, is president and chief executive officer of London Life Reinsurance Company. Monica is a long-time member of the American Council of Life Insurers Reinsurance Committee and currently is serving the first year of a two-year term as Committee chair. Monica also is a member of ACLI's Board of Directors and serves on the Board-level committee responsible for overseeing the Optional Federal Charter project. Additionally, Monica is a past chairperson of the Society of Actuaries Reinsurance Section.

What Is A Dollar Worth? (An Overview of Financial Reinsurance)

by Mark Troutman

Editor's Note: This is the first part of a multi-part series presenting an overview of Financial Reinsurance.

What is Financial Reinsurance? For purposes of this discussion and any follow-up articles, let's describe it as any reinsurance where the primary purpose is financial management rather than risk management. At my former employer, the financial reinsurance unit was called FX, which was appropriate since that can stand for "special effects." The name of the unit was ultimately changed to Financial Strategies Group, given the perception that financial reinsurance had in the market. As Shakespeare wrote, "A rose by any other name will still smell as sweet." A case in point about labels! All reinsurance is financial reinsurance, just some more so than others!

This article will cover: financial reinsurance as a form of capital; a few differences between property and casualty vs. life and health financial reinsurance deals; financial reinsurance objectives; and a discussion of key dynamics upon which a financial reinsurer must focus.

Financial reinsurance is really a form of capital (or capital relief) and needs to be compared to other forms of capital. These include equity, debt (including surplus notes), and reinsurance. Each has its advantages and disadvantages to various interested parties such as shareholders, regulatory authorities, rating agencies, and policyholders. For example:

1) Equity is the most permanent form of capital. Debt may be the cheapest. Reinsurance typically falls between these two alternatives in both permanence and cost. This seems only fair, since equity owners deserve the most upside potential since they have the most downside risk.

2) It is often easier to tailor the terms of a reinsurance treaty to meet insurance company needs while providing other valuable services such as pricing, underwriting support, and claim services in addition to actually assuming insurance risk. Executing a reinsurance treaty is clearly quicker and easier than raising equity in the capital markets.

3) Reinsurance is less visible than debt as a leverage vehicle, and unlike debt or equity, it may impact the income statement of the operation. This depends on the business and the treatment in the NAIC model act for life and health reinsurance agreements.

4) Surplus relief reinsurance is more flexible than debt repayment terms because the surplus relief is repaid as the profits emerge (if they emerge!), rather than via some bank schedule regardless of financial results of the block of business or the company.

5) The regulatory environment is mixed regarding these sources of capital and is heavily dependent on the transaction. It may be possible to obtain regulatory approval in advance for a financial reinsurance transaction, and this may occur quicker than a protracted Form A/Form B filing.

Motivations of various financial reinsurers can vary dramatically, e.g., why go onshore or offshore? Is the company using surplus relief to shelter taxable income elsewhere? Are they looking for fee income? It is easy to dispel the myth of offshore smoke and mirrors by giving examples of using a letter of credit versus a dollar of real equity. There are good offshore companies and bad ones, just as there are good onshore companies and bad ones. Watch the size of the brush with which you paint!

Let's play Jeopardy. The answer is: "Earth, wind, and fire." The question is: "What is an old rock group that is also three perils associated with reinsuring P&C business?" Property and casualty financial reinsurance is a different kind of animal. The differences of P&C financial reinsurance from life and health financial reinsurance are:

a) More cash is involved.

b) P&C vs. life and health risk underlying the business.

c) More international business is involved.

d) More brokers/intermediaries are involved.

e) More banks and external players to make deal structures work given cash flow considerations.

f) Further along the spectrum of blurring of capital market and insurance risk.

g) More GAAP-driven versus statutory accounting, and it is still a gray area versus the NAIC model act for life and health, which is straightforward.

h) Clients are typically reinsurers rather than direct writers

i) Often quota share participations for several players given size of deal /nature of risk.

j) More forward looking to future earnings and balance sheet stability versus surplus enhancement now.

Financial reinsurance for both P&C and life and health business can effectively be used to accomplish any or all of the following results:

1) Support company growth by providing a form of capital.

2) Demonstrate integrity of surplus position to increase dividend capacity.

3) Manage risk-based capital by increasing actual surplus or reducing required surplus. Deficiency reserve/xxx strain — Financial reinsurers are tripping over themselves for this new form of surplus relief demand by clients.

4) Support acquisition financing or divestiture strategy.

5) Manage the asset or liability side of the balance sheet.

6) Facilitate tax planning.

7) Maintain/upgrade ratings with rating agencies.

8) Smooth out earnings over time such as spreading losses or gains.

9) Facilitate other activities ("conduit").

10) Securitization of mortality risk into an investment in a bond. ("Q-bond" where q is mortality!)

11) Perception assets (junk bonds/ mortgages) where perception is not reality. Use the profits on the business as collateral for an asset with a high R.B.C. value.

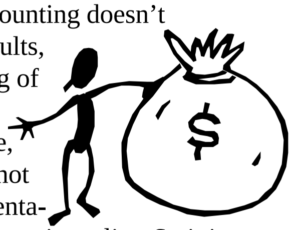
Almost all of the above will, by definition, improve return on equity and create value-added. How do they do that? Contrary to popular belief, it is not done with smoke and mirrors. It is balance sheet arbitrage in a legitimate reinsurance treaty wrapper. But it focuses on clients where the financial statements do not truly reflect economic reality, clients whose opportunities to increase value is in excess of their internal capacity, clients who face some structural constraints to optimizing such performance, and clients with unusual and complex needs for an economically viable block of business.

One trademark of a financial reinsurer is its flexibility in adapting to a changing landscape. This involves successfully navigating various dynamic environments and disciplines including tax, accounting, regulatory, and risk. To use a sports analogy, "Take what the defense gives you." Or "A proliferation of new laws creates a proliferation of new loopholes." The key is to structure deals that manage risk while providing a viable capital and balance sheet impact to the client. The number and types of tools in your toolbox determine your success in deal structuring.

Various dynamics a financial reinsurer must focus on include:

Risk appetite - No pain, no gain. No risk, no reward. It all starts with understanding and assessing risk — the mortality or morbidity, lapse, investment return, asset default, disintermediation, etc. You have to understand the perceived economics, as well as the true economics, and structure a deal appropriately for those risks. Arbitrage risk preferences between various players/markets.

Accounting framework - Let us not forget that accounting doesn't change the results, only the timing of their recognition. Therefore, accounting is not always representative of the economic reality. So it is your job as a financial reinsurer (should you decide to accept it) to allow the reinsurance treaty structure to better reflect true economic reality. The flagship surplus relief is essentially a reinsurance agreement, which improves the capital surplus position of the company by advancing the present value of future profits (a proportion), which reduces surplus strain. In essence, a reinsurer acts like a pawn shop, where the person drops off the asset and the pawnbroker pays a fraction of the cost and a financing fee and allows the person to buy it back.



Tax law - I.R.C. Section 845 is a powerful weapon. You're not looking for tax loopholes. You're looking for a tax-efficient treaty in the overall context of the deal. Tax should not be a primary motivating factor. However, still structure a deal to pay as little as possible as late as possible, all within the law. One could cite the origin of financial reinsurance as the 820 modco deals and even some small life company qualifications. These are much less prevalent given IRC 845 allowing them to reallocate or even unwind transactions, which have a disproportionate tax effect.

Regulatory bodies - Make sure you walk a mile in their shoes and figure out why they regulate companies the way they do. Make sure your treaty complies with the spirit and intent of the laws.

Structural facilitation - What if you know what you need to do or where you need to get to, but you need help getting there? Do you need certain tools to help facilitate the transaction? A helping hand? Packaging is key. Facilitation and structure is valuable. You need a variety of companies with a variety of economic motivations to make things work. Not every tool is used on every job. But he who has the biggest toolbox, and knows how and when to use the tools, wins!

Editor's Note: In the next newsletter, Mark will continue this series by discussing some examples of financial reinsurance and presenting a checklist of how to get into the mainstream of financial reinsurance activity.

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Brazil: Reinsurance In A Closed Market

by Ronald Poon Affat

Brazil is home to approximately 15 representative offices of international reinsurers. This article summarizes the manner in which it is possible to conduct reinsurance in a market which is effectively closed. This is a follow up article to that which was originally published in the International Section newsletter dated February 1999.

Who are they?

The reinsurers in question are: 1) GeneralCologne Re, 2) Munich Re, 3) Swiss Re, 4) Zurich Re, 5) Mafre Re, 6) American Re, 7) ERC, 8) Transatlantic Re, 9) Scor Re, 10) Copenhagen Re, 11) Catalyst Re, 12) Sorema Re, 13) Secura Re, 14) Toa Re, 15) Gerling Re. In addition to these, there are many representatives of Reinsurance brokers such as Aon, GuyCarpenter, Jardines and Health.

Where are they?

The vast majority are in Sao Paulo; however there are four who are based in Rio de Janeiro, and a couple have offices in both cities.

The IRB

The Instituto de Resseguros do Brasil SA, founded in 1939, is owned 50% by the insurance companies that are licensed to do business in Brazil (non-voting shares) and the Government of Brazil (voting shares). All reinsurance business must be transacted with and via the IRB.

What are the business opportunities?

The main business opportunity lies in the retrocession of the IRB portfolio. The present portfolio is approximately R$1.2 billion (US$0.6 billion); this includes both Life & P&C business split approximately 2%/98% respectively. Thirty percent of the IRB`s total premium is retroceeded to the international Reinsurance market. The IRB retroceeds whenever their own internal capacity is exceeded or when they do not have sufficient experience in the line of business.

In general, life business is reinsured by the IRB on a proportional surplus basis, and health business is reinsured on an excess loss basis.

Any premium that is retroceeded to the exterior bears a 2% retrocesion tax and an additional commission, which is paid to the IRB (approx. 5%). If the IRB decides to take a proportional percentage of the risk in a particular contract, then the taxes and commission are only applicable to the amount which is not retained by the IRB.

For example, if the reinsurance net risk premium (excluding the IRB commission & retrocession taxes) is R$10 million, and the IRB`s retention is 25%, the final gross reinsurance premium, which includes the IRB commission (5% say) and retrocession tax (2%), will be R$7.5 * (1.07) + R$2,5 = R$10.525 million.

Currency of transaction: Brazilian Real R$2 = U.S.$1

Depending on the risk, the original risk may be denominated in R$ (e.g., life and health) or U.S.$ (e.g. aviation). Let's consider the case of life & health. The original risks are in R$, the client pays R$ to the IRB, the IRB may decide to accept a percentage of the risk, that part which is retroceeded to the exterior is converted to U.S.$ (using a floating rate of exchange). Any future claims that arise (in this case it will be in R$) are converted to U.S.$. This amount is paid to the IRB who then converts it to R$. Therefore, if the R$ devalues against the U.S.$ during the term of the contract, then the external reinsurer receives an additional margin. If the R$ strengthens against the U.S.$, the external reinsurer receives a financial loss.

Opening an account with the IRB

In order to work with the IRB, a reinsurer must visit the IRB, present its financials, and enter a formal request of its intention to work in the Brazilian market. If the reinsurer's petition is successful, the IRB will formally advise the Reinsurer that its request has been successful and will then ask it to indicate an "assigned foreign account" via which all future transactions will be made. There is no need to establish minimum deposit within this assigned foreign account.

Let's consider the scenario where the IRB has a small percentage of a particular risk. In the event of a claim, the IRB will include a clause in the slip/treaty advising that claims will only be paid (to the local Brazilian insurance company) when the foreign reinsurer has transferred the necessary funds into the assigned foreign acccount.

If the IRB has a majority stake in a particular risk, then in the event of a claim, the IRB may pay the entire claim and then will ask the foreign reinsurer to then transfer the necessary funds into the assigned foreign acccount. This process really depends on the relationship that the

IRB has with its Brazilian client and the foreign reinsurer.

How does one do business on a direct basis?

Reinsurers are very busy visiting potential clients. If a Brazilian client decides that it would like to place a health risk (say) with a foreign reinsurer, the procedure is a follows. The foreign reinsurer and the local Brazilian insurance company exchange data, terms, and conditions and arrive at a price. The local Brazilian insurance company must then advise the IRB of the details of the risk and its desire to place the risk with the foreign reinsurance partner. The IRB may decide to:

1) Accept the entire risk itself

2) Place the risk 100% with the foreign reinsurer

3) Ask various reinsurers to quote on the risk and then divide the risk between several reinsurers, which may or may not include the indicated foreign reinsurer

4) Share the risk between itself and the indicated reinsurer, or

5) Any permutation or combination of these options

The final arrangement between the IRB an the foreign reinsurer will be based on the IRB's relationship with the foreign reinsurer, the perceived quality of the underwriting, the suggested price and the perceived relationship between the local Brazilian insurance company and the foreign reinsurer.

In the case of the recent Petrobras disaster involving the P-36 offshore platform, the IRB placed 100% of the risk with foreign reinsurers.

At the same time, the external reinsurer should visit the IRB's retrocession department and advise of its desire to accept the risk. If the reinsurance is transacted on a direct basis, the risk transfer is as follows: 1) The direct writer that assumes the original risk passes it on to 2) the Brazilian insurance company, who then passes it on to the 3) IRB, who finally passes it on to the 4) foreign reinsurer.

If a reinsurance broker in involved, the risk transfer is as follows: 1) the direct writer assumes the original risk, the risk is then passed on to 2) the Brazilian insurance company, who then passes it on to 3) the IRB, who passes the risk on to 4) the reinsurance broker, who finally passes it onto 5) the foreign reinsurer. The reinsurer will bear the credit risk in the event that the reinsurer broker defaults in paying the reinsurer.

Health Reinsurance

The IRB is authorized to accept reinsurance only from registered insurance companies. Therefore, if a health risk is originating from a non-Insurance company (e.g., self-administered plan (autogestão), HMO (Medicina de Grupo), ve Association e an insurance y involved fronts" the risk. , a fronting ance company carry no risk atsoever, but this may soon change.

There were two previous articles published by the *International Section News* newsletter dated June and September 1998 which discussed the Brazilian health market.

When will the IRB be privatized?

We really cannot say. The general consensus is that it will be later this year. In as few words as possible, the situation is as follows: The sale of the IRB was approved by means of a Presidential Decree (Medida Provisória), however at the 11th hour, the Opposition Party (PT, Partido dos Trabalhadores) filed an injunction saying that the sale procedure of the IRB was set out in the Constitution of Brazil and required a Congressional Act (Lei Complementar) to approve the sale. Such a Congressional Act would need to be presented to the Senate and receive a two-thirds majority. The Supreme Court has gotten involved, and they must decide whether the Presidential Decree can indeed be applied to determine the sale procedure of the IRB. The Supreme Court was supposed to meet during the first three months of 2001 to make its decision. We understand that the IRB decision is still very high on the Supreme Court's agenda, but a hearing date has not been announced as yet.

Web sites

IRB`s Web site:
http://www.irb-brasilre.com.br

Society of Actuaries Brazilian Web site:
http://www.soa.org/links/brazil.html

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Joe Athlete vs. Joe Average: Who's The Safer Mortality Bet?

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among athletes, it's no surprise that they're often perceived as poor insurance risks — even by many in the business of risk. For example, Lincoln Re often finds it difficult to bind our retrocessionaires for professional athletes at normal rate levels.

But are professional athletes actually worse mortality risks than other insurable young males? To ascertain the facts, Lincoln Re undertook a study of the risk of death among professional male athletes in one of the four major team sports. We focused on mortality risk only during the athletes' careers because their policies often do not persist past their playing days, particularly if the policies are owned by their teams for contractual reasons.

How the study was designed

Our study examined mortality among players on a seasonal basis, with each year of experience extending from the start of the playing season through the end of the subsequent off-season. (For instance, the 1970 basketball season ran from November 1, 1970 through October 31, 1971.) Thus, two basketball players who died recently are counted in the 1999 season even though the deaths occurred in 2000. The study begins with each sport's 1970 season and ends on May 31, 2000 (March 31, 2000 for baseball since that was the natural end of the 1999 season). Consequently, the 1999 season is only 50% complete for basketball and hockey, and 75% complete for football.

In 1987, a professional football players' strike resulted in three games played primarily with replacements. Of the approximately 1000 replacement players, most did not play in any other NFL games, so their exposure was excluded from the study. (None died during the 1987 season).

To calculate expected deaths, we used the first-duration select rates from the Society of Actuaries 1975-80 table, adjusting by experience year. The year 1977 was pegged at 100%, and we assumed that the mortality changed by 2% per year for the other years (i.e., 1970 uses 114% and 1999 uses 56% of the '75-'80 table). The first-duration select rates should represent an overly conservative assumption (i.e., the mortality ratios will be higher because we assume too few deaths). While athletes receive complete annual physicals and access to top-notch medical care, the focus is primarily on their immediate ability to play.

As a result, some athletes demonstrate ratable minor medical impairments (such as abnormal builds, diabetes, asthma, etc.) that do not preclude them from playing. Also, some athletes with non-medical impairments (having files which show driving under the influence of alcohol, drug use, hazardous avocations, etc.) would be rated or declined by insurers. Many of these impairments would be discovered in the insurance underwriting process, so many of the worst mortality risks (and presumably a disproportionate share of the early deaths) would be declined.

Mortality results prove favorable

Table 1 shows the mortality ratio results (with 95% confidence intervals) by decade for each of the four major professional team sports. The mortality ratio is generally favorable, but not significantly less than expected. While basketball players show an overall mortality ratio above 100%, the small number of deaths renders the result statistically insignificant. The results by decade, while mostly favorable, are also mostly insignificant. Note the large fluctuations in some decade results, particularly for baseball, with 10 deaths in the '70s and none in the '80s; and football, with two in the '70s and 10 in the '80s.

While the favorable results obtained are not significantly better than expected at the 95% confidence interval level, remember that we used a rigorous mortality assumption (first duration select rates for all players). In practice, each player would be underwritten, rated for higher mortality when appropriate, and the worst risks would be declined. A less rigorous mortality assumption probably would have yielded a significant favorable result. In any case, the mortality for professional athletes is similar to what calculations based on the insured table would project (and probably a bit better).

When reviewing cause of death (COD), we found differences between professional athletes and insured groups of similar-aged males (see table 2). The athletes died from violent causes more often and from medical causes less often than the insured population. Given the relative youth of the players and the difficulty of playing with severe medical problems, this seems logical. Of the violent deaths, auto accidents (often involving alcohol) were most common, but tragic accidents (commercial airline crashes, drowning, homicide, etc.) also took players' lives.

* * *

TABLE 1

BASEBALL

Decade	Exposure	Adj Expected Deaths	Actual Deaths	Mortality Ratio	95% CI LL	95% CI UL
1970s	9108	6.5	10	153%	73%	2822%
1980s	10215	5.9	0	0%	---	---
1990s	11603	5.1	3	59%	12%	174%
TOTAL	30926	17.5	13	75%	40%	127%

BASKETBALL

Decade	Exposure	Adj Expected Deaths	Actual Deaths	Mortality Ratio	95% CI LL	95% CI UL
1970s	3378	2.4	2	85%	10%	306%
1980s	3257	1.8	3	164%	33%	479%
1990s	3762	1.7	4	242%	65%	621%
TOTAL	10397	5.9	9	154%	70%	293%

FOOTBALL

Decade	Exposure	Adj Expected Deaths	Actual Deaths	Mortality Ratio	95% CI LL	95% CI UL
1970s	13272	9.5	2	21%	2%	76%
1980s	16081	9.3	10	108%	51%	198%
1990s	14989	7.2	10	139%	67%	256%
TOTAL	44342	26.0	22	85%	53%	128%

HOCKEY

Decade	Exposure	Adj Expected Deaths	Actual Deaths	Mortality Ratio	95% CI LL	95% CI UL
1970s	5188	3.8	3	79%	16%	231%
1980s	7352	4.5	2	45%	5%	162%
1990s	8115	3.7	3	82%	16%	238%
TOTAL	20655	12.0	8	67%	29%	132%

GRAND TOTAL

Decade	Exposure	Adj Expected Deaths	Actual Deaths	Mortality Ratio	95% CI LL	95% CI UL
1970s	30946	22.2	17	77%	45%	123%
1980s	36905	21.5	15	70%	70%	115%
1990s	38469	17.6	20	114%	114%	176%
TOTAL	106320	61.3	52	85%	85%	111%

(continued on page 10)

Joe Athlete vs. Joe Average: Who's The Safer Mortality Bet?

continued from page 9

TABLE 2

Ages 20 - 29	Pro Athlete	Lincoln Re 95 -99	SOA 85 - 90
Accidents	73.0%	42.2%	31.1%
Suicide	8.1%	11.8%	12.7%
Homicide	5.4%	18.7%	5.6%
Circulatory	8.1%	5.9%	18.1%
Neoplasms	5.4%	4.8%	14.1%
Other Medical	0.0%	16.6%	18.4%

Ages 30 - 39	Pro Athlete	Lincoln Re 95 -99	SOA 85 - 90
Accidents	84.6%	27.5%	19.2%
Suicide	7.7%	10.6%	9.6%
Homicide	0.0%	6.7%	3.7%
Circulatory	0.0%	18.0%	28.4%
Neoplasms	7.7%	15.9%	20.5%
Other Medical	0.0%	21.3%	18.5%

The Return of Ms. Re

After a long sabbatical, Ms. Re has agreed to return to the Reinsurance Section Newsletter and to once again be available to answer your reinsurance questions. For those unacquainted with Ms. Re, she is the "Dear Abby" or "Ask Mr. Knowledge" of the reinsurance world. In responding to your questions, Ms. Re calls upon her many reinsurance friends to assist her in answering. So, if you have any questions for Ms. Re, please contact Dean Abbott, the newsletter editor, via e-mail at *dean_abbott@allianzlife.com,* and he will make sure that she receives them.

Due to the small number of deaths, we were unable to draw many statistically significant conclusions. However, a review of the deaths and their circumstances (see table 3) produced two noteworthy observations:

1. Few star players were among the deaths. Instead, we found a random mix of young players and older veterans, of prominent players and obscure journeymen.

2. Most of the deaths occurred in the off-season. Rather than promoting trouble, time away from home seems to at least reduce the chance of athletes dying in their own automobiles.

TABLE 3

Baseball Deaths:

Athlete	*Date of Death*	*Age*	*Cause of Death*
Cliff Young	11/4/93	29	auto accident
Tim Crews	3/23/93	31	boating accident
Steve Olin	3/22/93	27	boating accident
Thurman Munson	8/2/79	32	plane crash
Lyman Bostock	9/23/78	27	homicide
Mike Miley	1/6/77	23	auto accident
Danny Frisella	1/1/77	30	dune buggy accident
Danny Thompson	12/10/76	29	leukemia
Bob Moose	10/9/76	29	auto accident
Don Wilson	1/5/75	29	suicide
Roberto Clemente	12/31/72	38	plane crash
Chico Ruiz	2/9/72	33	auto accident
Herman Hill	12/14/70	25	drowning

Basketball Deaths:

Athlete	*Date of Death*	*Age*	*Cause of Death*
Malik Sealy	5/20/00	30	auto accident
Bobby Phills	1/12/00	30	auto accident
Reggie Lewis	7/27/93	27	cardiac arrest
Drazen Petrovic	6/7/93	28	auto accident
Ricky Berry	8/14/89	24	suicide
Nick Vanos	8/16/87	24	plane crash
Bill Robinzine	9/16/82	29	suicide
Terry Furlow	5/23/80	25	auto accident
Wendell Ladner	6/24/75	26	plane crash

Football Deaths:

Athlete	*Date of Death*	*Age*	*Cause of Death*
Eric Turner	5/28/00	31	stomach cancer
Derrick Thomas	2/8/00	33	auto accident
Rodney Culver	5/11/96	26	plane crash
David Griggs	6/19/95	28	auto accident
Jeff Alm	12/14/93	25	suicide
Dave Waymer	4/28/93	34	cocaine overdose
Jerome Brown	6/25/92	27	auto accident

(continued on page 12)

Joe Athlete vs. Joe Average: Who's The Safer Mortality Bet?

continued from page 11

TABLE 3 (continued)

Football Deaths:

Athlete	*Date of Death*	*Age*	*Cause of Death*
Eric Andolsek	6/23/92	25	auto accident
Shane Curry	5/3/92	24	homicide
Fred Washington	12/21/90	23	auto accident
Brad Beckman	12/18/89	24	auto accident
Ralph Norwood	11/24/89	23	auto accident
Stacey Toran	8/5/89	27	auto accident
David Croudip	10/10/88	30	cocaine overdose
Don Rogers	6/27/86	23	cocaine overdose
David Overstreet	6/24/84	25	auto accident
Kirk Collins	2/22/84	25	cancer
Joe Delaney	6/29/83	24	drowning
Larry Gordon	6/25/83	29	cardiac arrest
Rusty Chambers	7/1/81	27	auto accident
Troy Archer	6/22/79	24	auto accident
Chuck Hughes	10/24/71	28	cardiac arrest

Hockey Deaths:

Athlete	*Date of Death*	*Age*	*Cause of Death*
Dmitri Tertyshny	7/23/99	22	boating accident
Steve Chiasson	5/3/99	32	automobile accident
John Kordic	8/8/92	27	cocaine overdose
Pelle Lindbergh	11/10/85	26	automobile accident
Don Ashby	5/30/81	26	automobile accident
Scott Garland	6/9/79	27	unknown
Bob Gassoff	5/27/77	24	motorcycle accident
Tim Horton	2/14/74	44	automobile accident

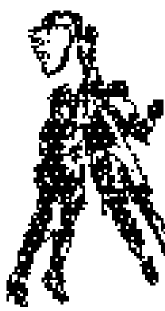
Are the pros really such cons?

Drug use, assaults, and bar fights among professional athletes attract attention in the media, but we wanted to know if these behaviors actually occur more often than in the population at large. One study we reviewed indicated that in a sample of 509 professional football players, 21% had been arrested for crimes of a more serious nature.[1] (A *Newsweek* article also comments on the increased risk of violence among athletes who associate with friends with whom they grew up and who may have serious criminal backgrounds.) [2] However, a subsequent study found that the violent crime arrest rate among a sample of NFL players was less than half that found in the general population (taking age, sex, and race into account).[3] While not identical to a comparison with an insurance applicant population, the latter study nonetheless indicates that the risk level is not as great as might be presumed.

Motor vehicle accidents are the most common cause of death for athletes in the study. To put the risk into context, we compared it to the number of motor vehicle deaths expected in the general population. We used U.S. Department of Transportation death counts for male drivers and U.S. Census Bureau population estimates to calculate age-specific death rates for 1998.

Using these rates, we would expect more than 50 motor vehicle driver fatalities in the combined study (the fatality rates have fallen over time, so if we adjust for the higher rates in earlier years, we would actually expect more deaths from motor vehicle fatalities than from all causes using the duration 1 select rates from the SOA 75-80 table). Actually, there were, at most, 22 motor vehicle driver fatalities among the athletes studied, assuming all were drivers when details were unknown. Although the number of motor vehicle deaths seems substantial, it's actually less than half that to be expected in the age-matched general population.

To see whether the athletes in our study tended to exhibit poor driving records, we reviewed a random sample of 85 insurance application files to estimate the adverse Motor Vehicle Report (MVR) rate for professional athletes. We found only 8 applications (11%) with MVRs poor enough to be rated under Lincoln's underwriting guidelines, a percentage similar to industry estimates of 8-12%.[4] (Among the professional athletes in the sample, we found that about 65% had at least one violation and 35% had two or more.) Another noteworthy finding: only about 40% (62 of 158) of violations in which we knew the month of occurrence happened during the active sports season. This is consistent with the fatalities finding, as both occur disproportionately during the off-season period.



To explore how many of the deaths in this study were related to the status and lifestyle of the athletes (often a concern of underwriters), we attempted to identify which deaths could be deemed status-related. The issue is highly subjective, as a certain amount of status and fame accrue to anyone chosen for a professional athletic team, and even the minimum salary seems like an enormous windfall, particularly to players from an economically disadvantaged environment. For our study, we reviewed factors that might be classified as status-related, including drug use, star player status, excessive lifestyles enabled by their financial means, expensive toys (such as airplanes and boats), and loss of status resulting in suicide. Even with a liberal definition of status-related deaths, few fell into this category. Most were simply tragic happenstance or occurred under circumstances common to other young males.

Could underwriting have helped identify these risks?

How many of these athletes would have been identified as adverse risks in the normal underwriting process? Insurers would certainly face limitations, both legal and practical, on how much information could be obtained and used. In many cases, underwriting would merely result in more appropriate risk classifications (particularly true for aviation and avocation risks) — rather than solely identifying risks that could be declined.

At least for cocaine-related deaths, the increased risk might have been identified with cocaine screens performed for underwriting purposes. However, some of the deaths in our study occurred prior to insurers instituting routine cocaine screens, so drug use would have been discovered only if *current* underwriting practices had been used. It's also likely that the cocaine screen would have been negative if the athlete had abstained from cocaine in the few days prior to the exam and blood draw, which is usually scheduled in advance. The most recent cocaine-related death in our study occurred in 1993, prior to the implementation of random drug testing programs by professional sports leagues. In truth, the teams' own testing programs are more likely than insurers' screens to help prevent future drug-related deaths, as the former's random, unscheduled nature makes them more likely to reveal a problem.

As for the motor vehicle deaths, we would probably find adverse MVRs or alcohol abuse problems among some players. About 10% of insured males this age would be expected to have ratable adverse MVRs, so we might find a somewhat higher percentage among the deaths in our study (perhaps 15-20%). However, most of them either would not have ratable adverse MVRs or we would not find complete records in the underwriting process, but this is typical for other young male insurance applicants.

Underwriting might provide valuable indicators of increased risk in cases involving a history of mental illness (relating to suicide deaths), aviation risk, and foreign travel risk. The level of medical screening routinely done each year by the sports teams, particularly for heart and circulatory disorders, may also serve to flag problems and improve mortality. Two of the players who died earlier (Gordon and Hughes) might have benefited from current medical screening technology. Finally, a player's contract often precludes him from participating in certain activities (like hazardous avocations), so obtaining a copy of the contract for underwriting review probably would be beneficial.

Athletes — no more risky

While many believe that professional athletes are poor insurance risks, our mortality study raises questions about whether the facts support this perception. With careful underwriting, professional athletes are no worse mortality risks than other insurable young males.

C. Allen Pinkham is a senior consultant - internal research, at Lincoln Re, where he performs various research studies concerning mortality, cause of death, medical impairments, and other topics.

Mr. Pinkham holds a bachelor's degree in mathematics from Wabash College, Crawfordsville, Ind., and a master's degree in actuarial science from Ball State University, Muncie, Ind. He is an associate member of the Society of Actuaries and a member of the American Academy of Actuaries and the American Statistical Association. Mr. Pinkham joined Lincoln in 1983, spending his first nine years in its former Employee Benefits Division before joining Lincoln Re in 1992.

* * *

Endnotes

1. Jeff Benedict and Don Yaeger, *Pros and Cons: the Criminals Who Play in the NFL,* © 1998, Warner Books.
2. Mark Starr and Allison Samuels, "A season of shame," *Newsweek,* May 29, 2000.
3. Alfred Blumstein and Jeff Benedict, "Criminal violence of NFL players compared to the general population," *Chance* 1999; Vol. 12, No. 3, pp. 12-15.
4. Danny Perkins, "The new driving risk," *On The Risk,* 1994; 4:44.

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Joe Athlete vs. Joe Average: Who's The Safer Mortality Bet?
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Attention To Lapse Rates Required For Pro Athlete Policies

Using the same lapse rates for young male professional athletes as for other young males in the general insured population would be like offering the same meal to a llama and a tiger. You better make adjustments if you plan to keep them both healthy.

Anticipating expected lapse rates is crucial to developing premiums that will be both competitive and profitable for professional athletes. While it may not be possible to develop a separate set of premiums to use for professional athletes, the actuary should be aware of the impact higher expected lapse rates will have on policies sold to professional athletes. Such policies generally coincide with the athletic careers of these athletes. This period of time may be insufficient to fully recover all expenses associated with issuing the policy.

The insurer working with the young professional athlete would be wise to study the average length of time insurance stays in force in relation to the athlete's contract as well as the mortality rate of young male athletes seeking life insurance.

Looking at athlete risk from the retrocessionaire's perspective

by Julie Hecke, Assistant Vice President, New Business Services, Lincoln

Editor's Note: A significant share of the large-case market involves risk associated with professional athletes — whose applications often exceed the combined retentions of the direct writer and reinsurer's retention and retrocession capacity.

However, recurring headlines about misbehaving high-profile athletes have prompted more than one retrocessionaire to express concerns about accepting coverage on these athletes. The *perception* is that mortality rates are higher for athletes compared to other insurable young males. Lincoln Re decided to test this perception and conducted a study of the mortality of young professional male athletes.

Overall, the conclusion of Lincoln Re's study is that there is not a significant difference in athletes' mortality compared to the mortality of other insurable young males.

While every capacity decision must be made on sound underwriting, Lincoln Re anticipates that sharing study results with retrocessionaires will help alleviate some of their concerns associated with risk assumed on athletes and prevent further reductions in capacity available to the reinsurer and issuing company.

Currently, many retrocessionaires are not comfortable with large amounts of inforce and applied-for coverage on athletes, often associated with the explosion in salaries paid to athletes and their lack of supervision. Many retrocessionaires agree to be bound on the reinsurer's underwriting only if the athlete is not considered to be "high profile." Such a determination is subjective, and its underlying criteria is often inconsistent.

Some retrocessionaires reduce the amount of coverage they will accept automatically on athletes compared to other risks; others reduce the acceptance amount only if the total inforce and applied-for insurance on the life exceeds a certain amount. In addition, retrocessionaires frequently reduce their approval amount — even on risks they underwrite facultatively.

In addition to finding no significant difference in athlete mortality compared to the mortality of other insurable young males, Lincoln Re also found that only a small portion of deaths were on star players who might be considered "high profile" risks.

* * *

Chairperson's Corner

by Robert W. Beal

The Reinsurance Section Council continues to promote professional development of actuaries in the areas of reinsurance. Considerable attention has been given to organizing quality reinsurance-related topics at the two spring meetings and the annual meeting of the Society.

Spring Meetings

Jeff Katz is the Reinsurance Program Committee Representative for the Spring meetings. The Dallas meeting, scheduled for May 30 through June 1, emphasizes health and pension topics. There are two reinsurance related sessions planned:

- New and Improved Managed and Unmanaged Care-Reimbursement Models and Disease Management Programs
- Large Medical Claims: Types, Trends, and Management

The Toronto meeting, to be held June 20-22, emphasizes product development and financial topics. The reinsurance related sessions include:

- Recognizing Reinsurance Costs in Direct Pricing
- Regulatory and Tax Issues

These sessions have been fully recruited. We are confident that you will find them to be very worthwhile.

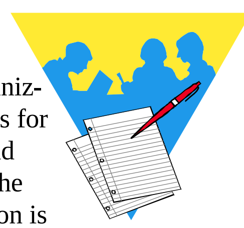
Annual Meeting

Kathy Anderson is the Reinsurance Program Committee Representative for the Annual Meeting scheduled for October 21-24 in New Orleans. We have five sessions on the drawing board:

- Problem Solving with Financial Reinsurance - *Robert Reale, Session Coordinator*
- Regulator and Tax Topics in Reinsurance Workshop - *Kathy Anderson, Session Coordinator*
- Latest News in Life Mortality Studies - *James Keller, Session Coordinator*
- Managing the Annuity Risk with Reinsurance - *Robert Reale, Session Coordinator*
- Reinsurance Section Hot Breakfast: New Developments in the Optional Federal Charter and Off-shore Reinsurance - *Bob Beal, Session Coordinator*

We have just begun recruiting speakers for these sessions. Please contact the session coordinators if you are interested in volunteering to speak at any of these sessions or would like additional information about them.

Reinsurance Seminars



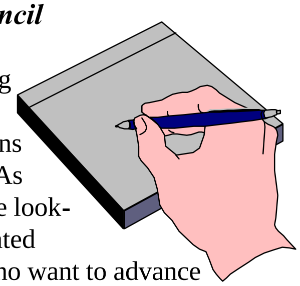
In addition to organizing topical sessions for the SOA spring and annual meetings, the Reinsurance Section is sponsoring annually at least one SOA reinsurance-related seminar. Last September, the Reinsurance and Financial Reporting Sections jointly sponsored a seminar on Financial Reporting for Reinsurance. This seminar was very well attended. We appreciate the great effort of Bob Buckner for organizing this seminar and helping to make it a very successful event.

For this year, Jim Dallas of RGA has agreed to develop a Reinsurance Boot Camp to be scheduled possibly during the SOA's "Power Week" in the first week of December. For "Power Week," a number of seminars are being held at a single location. Tentatively, Jim has recruited Jeff Poulin, Al Klein, and Denis Loring to be members of the faculty.

International Congress of Actuaries

Please leave your calendars open for the International Congress of Actuaries scheduled for Cancun in March 2002. This meeting will provide a great, and for many of us, rare opportunity to meet actuaries from other countries and exchange ideas and information within the global community. Reinsurance will be one of the areas of focus. The ICA is calling for papers describing reinsurance methods from different countries.

Section Council Elections



We are making preparations for the elections this summer. As always, we are looking for motivated individuals who want to advance the professional development of their fellow actuaries in the area of reinsurance to submit their names for nomination. Please contact anyone on the Reinsurance Section Council or Lois Chinnock at the SOA if you are interested. We will need to have the names to the SOA by May 11. Ballots will then be mailed during the week of July 2.

Thank you for your support of the Reinsurance Section Council. We are very interested in receiving your ideas and concerns, and most of all, your involvement. If you have not already, you will soon be receiving a blast e-mail from us soliciting ideas, comments, and volunteers. Please respond. The success of the Reinsurance Section depends greatly on your vitality and willingness to share your ideas and time in advancing reinsurance among the members of the SOA.

Robert W. Beal, FSA, MAAA, is a consulting actuary at Milliman & Robertson, Inc. in Portland, ME. He can be reached at Bob.Beal@milliman.com.

2001 Meeting Editors Wanted

Are you interested in reading 2000-2001 SOA meeting manuscripts in your specialty areas (Reinsurance) **before** they are published onto our Web site? Do you want an opportunity to increase your professional actuarial knowledge and exposure to current ideas? If so, this volunteer position is for you.

What would I do?
Review *Record* manuscripts that have already been edited for grammar, style, and format for actuarial content and accuracy. Work with SOA staff and moderators to help us get the Record sessions onto the SOA Web site faster.

What do I need?
A red pen and actuarial knowledge in the following areas:
Actuary of the Future,
Financial Reporting,
Health, Health Disability Income, Investments,
Long-Term Care,
Management and Personal/Professional Development,
Nontraditional Marketing,
Pension and Reinsurance.

How much time will it take?
It takes a few hours to review papers. We only send one or two manuscripts at a time depending on your workload. You can choose 1-3 meetings.

How can I sign up?
Contact the Chairperson, Rich Cruise at 402-361-7499 or by e-mail at: *rcruise@LincolnDirectLife.com.*

Do it now!
You'll be listed in the Yearbook as a member of the Editorial Board, and your name will appear in the meeting table of contents on the SOA Web site.

Photos from the Reinsurance Section Council Meeting

Reinsurance Section Council Members — incoming and outgoing — take time to pose during their planning meeting at the Annual Meeting in Chicago last October

Left to right: Bob Beal (2000-2001 Section Chairperson), Jeff Katz, Bryan Featherstone, Jim Keller, Jack Bailey, Bernie Goebel (outgoing newsletter editor), Tim Alford, Graham Bancroft (1999-2000 Section Chairperson), Kathy Anderson, Dean Abbott (incoming newsletter editor)

Paul Schuster making a presentation to the Reinsurance Section Council during its meeting in Chicago