



# TREBOL

A **MAPFRE RE** Publication

Nº 4 - Year II - July 1997

## SUMMARY

- 1 Editorial
- 2 Electronic trading
- 4 Option contracts and reinsurance
- 6 Asset valuation
- 7 News
- 8 Agenda

The last months have seen a number of mergers and acquisitions between large groups in the world of insurance, reinsurance and algo broking. In the actual conditions of the markets it is difficult to reach objective conclusions about the immediate possible effects on our industry. Therefore, it is wiseable to wait some time before we make an analysis in these pages.

In the fourth edition of TREBOL we have also published an article of topical interest concerning options and reinsurance. This will help the reader to gain an understanding of the working mechanisms of this

market on the Chicago Board of Trade. It also launches the problem of a possible substitution of traditional reinsurance by such financial products or if they can complement each other under certain assumptions. It seems that we are in front of another way of proximity between banking and assurance products.

The growing importance of technological innovations in the field of communications in the reinsurance industry has brought about the proliferation of a variety of electronic operation systems. In the article which is published here the author contrasts the various electronic systems which are making their debut on the market, and goes on to analyse the differences between them. It seems that there is a certain amount of human resistance to the gradual introduction of these new working methods.

After a number of asset valuation seminars, which have been carried out during the last few months in the various markets in which MAPFRE RE operates, in this edition we have attempted to show the basic concepts and procedures which are used in the valuation procedures. This also allows us to summarize the content of these seminars for those who could not attend the courses.

# Electronic trading

Tony Gasking & Andrew Manning  
MAFPRE RE.London Branch

**The problem of human reluctance in embracing electronic transactions has two sides: on the one hand, those placing insurance face the risk of losing their jobs through increased use of electronic transactions, and on the other hand, if they do not adopt this new technology it is possible that in some cases the entire framework of the insurance agency could collapse.**

Information Technology is playing an increasingly important part in our daily lives and the reinsurance industry is no exception.

Electronic trading of insurance and reinsurance is seen as this industry's equivalent to the London Stock Exchange's "Big Bang" embrace of screen based stock and share trading, leading to higher

profits and lower backroom overheads.

The London Insurance Market is looking for similar benefits from electronic trading but is taking the process more slowly. This slower rate of progress may be attributed variously to:

- The complexities of the business - the contracts themselves are more difficult to express electronically than stocks and shares trading;
- The number of official bodies attempting to work together;
- Human resistance.

Firstly let us look at the main interested parties, starting by defining their role:

- London International Insurance and Reinsurance Market Association (LIRMA) - the major representative body for companies transacting international insurance and reinsurance, mainly non-marine, in the London market. LIRMA was also the pioneer of electronic trading in London;

- Lloyd's, as the oldest established insurance market place has thrived on innovation. It provides a full service of slip signing and accounting through its bureau, the Lloyd's Policy Signing Office (LPSO) and within its new building has a full IT communications network to which all syndicates are connected;

- Institute of London Underwriters (ILU) - the trade association for the majority of companies writing marine, aviation and transport classes within the London market. In January 1994 the ILU amalgamated its policy and claims processing bureau with the bureau operations of LIRMA to form the London Processing Centre (LPC);

- Lloyd's Insurance Brokers Committee (LIBC) - represents the interests of the majority of broking houses transacting business within the market- arguably the brokers have the most to gain in terms of administrative savings from electronic trading.

Then there are the networks:

- London Insurance Market Net-

work (LIMET) - LIRMA, Lloyd's, ILU and the LIBC, under the banner of LIMET, utilise a computer network managed by IBM to provide IT services to their members.

In 1990 a pilot trading system initiated a great deal of discussion which resulted in publication of the Joint Market Initiative (JMI) to produce a data standard, the Common Core Record (CCR). LIMNET launched the Electronic Placement Support (EPS) system and infrastructure in March 1992, the first general placing system based on JMI. At the same time, Willis, Sedgwick and Datasure launched their own software to allow brokers to place risks via LIMNET. As LIRMA focus extends beyond the UK it is offering a potentially competitive service to "RINET", with LIMET now available to any member company anywhere in the world, other than the USA;

- Reinsurance and Insurance Network (RINET), is a non profit-making co-operative society which set up the first insurance specific computer network from its Brussels base in 1987. The eight founding partners' aim was to establish an Electronic Data Interchange (EDI) for the transfer of standard electronic messages between members and for placing risks;

- World Insurance Network (WIN) - With EPS usage apparently stagnating in 1995 and targets not being met, some brokers were becoming frustrated. Alexander & Alexander, Aon, Johnson & Higgins, Marsh & McLennan, Sedgwick and Willis Corroon, the world's six largest broking houses, got together to develop the potential of modem computing hardware, software and high speed telecommunications infrastructures through their own communications structure - WIN. The first message between broker and underwriter was sent earlier this year;

- The INTERNET may in due course render the other networks irrelevant by adopting one of their data standards and selling on its global availability.

So how are these networks fairing?:

- Since the first version of EPS was produced, LIMNET has brought in an improved version, EPS2, which like its predecessor is based on mainframe technology, and LIRMA has developed a windows-based Graphical User Interface (GUI) to facilitate usage;

- Various targets were set by Lloyd's, LIRMA and the ILU for the volume of business placed via LIMNET with the ultimate aim of all risks being traded electronically by July 1996. As this date approached it became obvious that by trying to account for the diversities of all elements of the insurance market, the CCR was too complex, which in turn led to disenchantment with EPS;

- The latest move by the LIMNET partners is to produce a simpler system which reduces the input necessary for initial slip placement by using a building block approach to CCR and slip text completion. This recognises the fact that a fast response is an essential element of the placement process.

This new system, known as "EPS Support", is expected to be available in the second quarter of 1997. As an alternative to EPS2, renamed "EPS Electronic", EPS Support retains the paper slip on which the underwriter records his participation as the legal contract as opposed to the exclusively computer-generated record of EPS Electronic. In the current test version of the software the underwriters note their lines both physically and electronically, and having placed the whole slip, the broker then updates the EPS record to reflect the full text and CCR. In the finished version, the CCR could then be downloaded to the participating underwriters' databases to form the nucleus of their risk record;

- One of the main reasons for the LIMNET partners pushing for acceptance of EPS is the need for their policy signing and accounting bureaux to have a fully structured core record of all risks written by their members. This is a fundamental requirement for the next major London Market IT project, Electronic

Closing and Accounting (ECA). ECA will bring greater automation to the slip signing and accounting process, both technical and financial, improving cash flow and credit control whilst also drastically reducing the number of payments held up by queries, as the bureaux would have a full electronic record of the slip. With the fact that LPC now passes all its closing information to members electronically via LIMNET, this innovation should bring about virtual transparency to the closing process and mean that less checking will need to be undertaken by the underwriters as their records should hold the same information as the bureaux;

- WIN is still a relatively new concept and development continues. The aim is to form a large capacity communication network across 35 countries utilising the facilities of various strategic alliances with the likes of British Telecom (BT), US communications company MCI, Hewlett Packard, Anderson Consulting and Control Data Corporation. The network will be accessed from any subscriber's desktop computer via an interface known as WINconnect. This software will allow a simple mouse click and point action to send the kind of insurance presentations currently printed from proprietary software such as Word, Excel, Lotus 123 and WordPerfect to be sent to underwriters electronically. The network software is compatible with the major electronic mail systems, thus allowing communication between cc:Mail, MS-mail and Lotus Notes Mail users. Trials are currently being undertaken by Cigna, CU, Generali, Royal Sun Alliance, Gerling, XL and the WIN broker partners. In the short term it appears that the majority of traffic over this new network will be the larger commercial insurance risks. The fact that WIN is not constrained by a data structure and is being broker driven by the major firms means that it probably stands a reasonable chance of acceptance. WIN has not ignored the advantages of sending structured messages and although no such messaging system are currently being developed it is a member of a joint venture with

RINET, LIMNETT and other interested parties developing EDI standards for the industry.

Finally, the human element:

- The next step is to see whether the dual approach to EPS will produce greater utilisation. The problem of human resistance applies on both sides - placing brokers fear putting themselves out of work by promoting electronic trading and yet if they do not embrace the new technology then in some cases the whole broking house may fail. This then is a management problem for the broking house to address;

- The underwriter resistance is not universal but at present there is little perceived benefit to the underwriting fraternity. The benefits to underwriters are more altruistic in nature in that if electronic trading works well it will contribute to the general health of the London Market and beyond.

So where do things go from here?:

- The real problem is to convince both halves of the market of the necessity for electronic trading, which ironically has not produced the savings in time and expense which were expected of it. In practice, in this highly volatile market, business will be placed by the most effective method available which at the present moment is not electronic. There are many who feel it may take another turn in the market cycle and pressure on margins to bring the optimum power balance to make electronic trading a reality;

- Looking forward, it is certain that the industry can achieve cost and efficiency savings from the utilisation of computer trading systems. What appear to be the essential ingredients are modular placing systems based on globally standardised class-specific slip structures with the added flexibility in presentation of narrative and visual supporting information to allow brokers to distinguish their differing broking styles. I.T. and telecommunications have a proven track record. All that is required now is a group of dedicated people to turn this potential into reality.

# Option contracts and reinsurance

Pedro López  
MAPFRE RE

**Futures and options contracts are an institutionalised form of delayed trading, and consist of an agreement by two parties to buy or sell a particular asset at some future date.**

The Chicago Board of trade (henceforth to be known as CBOT) has developed a series of option contracts based on claims experience in catastrophe losses in the United States. Despite the doubts which may be raised by the introduction of this new product, in principle it should be received with satisfaction because of the innovation which it represents in an activity which is as traditional as is reinsurance.

Futures and options contracts are an institutionalised form of delayed trading, and consist of an agreement by two parties to buy or sell a particular asset at some future date. Futures contracts were developed in 1960 by the Chicago Board of Trade and have had a spectacular development since then.

The futures and options markets have four general characteristics:

1. They are traded on organised markets.
2. They are based on standardised contracts with regard to the asset and the time and place of the final contract settlement.
3. There is a clearing house and there is a clear commitment of the parties to the clearing house, thereby reducing risks arising from bad faith.
4. There is a daily value for the future or option.

An option is a right - not an obligation - to buy or sell a certain asset under certain conditions in exchange for the payment of a fee or premium. Options can be traded for commodities (e.g. wheat) or for indices (e.g. futures on the IBEX-35). There are two types of options: "calls" and "puts". In both cases, when a buyer acquires a call or a put he acquires a right, not an obligation.

The party that does acquire an obligation is the seller of the call or the put. Let us take a simple example based on the Ibex 35 index (an index of the 35 most significant stocks on the Madrid stock exchange). Let us suppose that the purchaser wishes to buy "the option to buy" shares on the Ibex 35 to the value of 3,500 units in 6 months time (he wishes to buy a call). The present value of the index is 3,250, and to acquire this option he pays a fee. If within 6 months the value of the index is 3,700, the investor exercises his option and buys shares at 3,500. These shares have a market value of 3,700 and the purchaser will therefore have gained 200, less the cost of the fee. This amount will be exactly the same as the loss borne by the seller of the option.

As can be surmised, two of the key factors which allow an option market based on an index to work are:

1. The determination of the index.
2. The determination of the premium.

## 1) THE DETERMINATION OF THE INDEX

The main problem which is faced when developing an index-based reinsurance options market arises from the difficulties which are generated by the formulation of this index. Principally these are: obtaining information from a significant number of insurance companies with the necessary regularity; the advantages which are given to these companies

which provide the information as opposed to the other companies (inside information), and finally, once this index has been obtained, this should be capable of allowing the participants in the market, primarily insurance companies, to determine a relationship between the variations in the index and the variations in their individual risk portfolios.

All these problems would disappear if, instead of creating a new index, it were to be created based on existing information, this approach was finally taken by basing an index on catastrophe data which has been provided by the Property Claim Services since the Seventies in the United States.

The PCS defines a loss as being catastrophic when the insured sum is greater than \$5 m, and it affects a significant number of policies and insurance companies. The estimate provided by the PCS, provides the best possible estimates of claims payable due to damage to assets, private property, vehicles, yachts, boats and associated material damage. The PCS estimate does not include losses which affect non-insured properties such as public assets, aircraft and assets which are insured by the National Flood-Insurance programme. The methodology employed by the PCS uses information sent by the insurance companies, their portfolio of insured domestic risks (an inventory of insured buildings and vehicles in 3,100 counties) and, when appropriate, its own estimates. From this information the PCS determines the approximate number of insured risks, the specific area covered by the catastrophe, and completes its estimates using information received from cedants.

## Functioning of the index and types of contract

The PCS reports to the CBOT on nine different indexes: a national index, five regional indexes and three state indexes. Only call and put oper-



Contract month	Period in Force	Cut-off date		Settlement or striking date	
		6 months	12 months	6 months	12 months
March	Jan-Mar	SEPT 30	MAR 31	SEPT 30	MAR 31
June	April-June	DEC 31	JUNE 30	DEC 31	JUNE 30
September	July-Sept	MAR 31	SEPT 30	MAR 31	SEPT 30
December	Oct-Dec	JUNE 30	DEC 31	JUNE 30	DEC 31
ANNUAL	Jan-Dec	JUNE 30	DEC 31	JUNE 30	DEC 31

ations are permitted on these indexes, and these are available “upper layer” and “lower layer” contracts (comparable to non-proportional reinsurance contracts). The contract period varies depending on the contract and on the settlement period. A breakdown of the possibilities offered by the CBOT is as follows:

### Index values

The index/es reflect catastrophe losses which range in value from \$0 to \$50,000 m. Therefore the index/es represent the sum of the PCS estimates for losses brought about by catastrophes on insured assets.

The index is published for each area and period, divided by \$100 m. In other words, if the PCS estimate for losses totals \$5,643,000,000, then the index will have a value of 56.43, and each point of the index will be equivalent to \$200. A fee of 5.2 points will therefore be paid to buy an option, and the price of the option will be \$1,040.

## 2) DETERMINATION OF THE PRICE

The price of the option, which is the equivalent to the cost of reinsurance, is determined on an open market and depends on various factors.

- Market conditions such as supply and demand and economic variables.

- Intrinsic value: difference between the index and the option value when taken up. In other words, if the price paid at the time of purchase is today less than the value of the index, the option will have a greater value.

- Temporal value: this depends on the volatility of the index and the time remaining until the settlement of the option. The longer the time remaining until settlement, the greater will be the value of the option. Volatility also affects the value of an option at any given time and consequently also affects the price.

### Options - call spreads

The so called call spreads involve a simultaneous purchase and sale of call options with the same cut off dates but with different settlement or striking prices. Let us suppose that a company wishes to buy catastrophe coverage to protect itself against the risk of hurricanes during the third quarter of 1996 in Florida for total losses of between \$6,000 m and \$8,000 m; since traditional reinsurance only provides cover up to \$6,000 m, the company is therefore estimating, using its individual portfolio of risks as a basis, that it may be affected by a global loss in Florida of \$8,000 m.

If we suppose that it has a 0.2% stake in the global portfolio of the state, its catastrophic accumulation would be  $0.2\% \times \$8,000 \text{ m} = \$16 \text{ m}$ . It would therefore buy a 60/80 “call spread” option for the September period, or what amounts to the same - it would buy a call option for an index of 60 and it would sell a call option for an index of 80, for a price of let us suppose 5 points.

In monetary terms, it is buying cover of \$4,000 (20 points x \$200 per point) for the price of \$1,000 (5 points x \$200 per point).

Its real cover would therefore be determined by two factors:

a) The number of options it is buying.

b) How much the insurance company would be affected by a hurricane occurring in Florida causing losses of between \$6,000 m and \$8,000 m.

If, as we have supposed, the company has 0.2% of the insurance market for catastrophic risks, and the catastrophe occurs and is valued by the PCS at \$8,000 m, the participation of the company in the loss within the limits which have been bought would be  $(\$8,000 - 6,000) \text{ m} \times 0.2\%$  of market share = \$4 m. Therefore to cover itself it would need to buy 1,000 60/80 call spread options (1,000 options x 20 points of cover x \$200 per point = \$4 m cover) paying a premium of \$1,000 m (1,000 options x 5 points of premium x \$200 per point).

In other words it is buying XL CAT cover of \$4 m in excess of \$12 m, for a premium of \$1 m (or a 25% rate on line).

If a loss of \$7,500 m occurs and the insurance company’s estimates are correct, its portfolio will be affected by a loss of \$15 m ( $\$7,500 \text{ m} \times 0.2\%$  participation). As it has an option to buy for a price of 60 and the index will increase to 75 ( $\$7,500,000 \text{ m loss} / \$100,000,000 \text{ m}$ ); it will exercise its option and buy at 60 that which in the market is worth 75, gaining 15 or, what amounts to the same, recovering as if it were dealing with a reinsurance contract, 1,000 options x 15 points difference  $(75 - 60) \times \$200$  price per point = \$3 m.

This amount is exactly the same as if it had bought a conventional reinsurance line. As the company has bought the equivalent of a cover of \$4 m in excess of \$12 m, the recovery which corresponds to it would be \$3 m ( $\$15 \text{ m loss} - \$12 \text{ m retention}$ ).

As can be deduced, the greatest risk which the insurance company runs if it decides for the alternative of options as against reinsurance arises from an error in the calculation of its individual participation in the globally calculated loss. If the 0.2% estimate in fact turns out to be 0.3%, the company’s participation in the loss will be \$22.5 m instead of \$16 m, leaving it with an excess exposure of \$6.5 m. The amount of the loss in excess of \$16 m would be attributable to the company.

## Options as an alternative

Without going into a comparison of the price of options used as reinsurance cover with the price of reinsurance for programs similar to those which are traded in the CBOT, American legislators do not believe that at the moment options are a valid alternative to reinsurance for various reasons. These reasons are basically related to the treatment which this instrument should receive and the consequences of this legal treatment.

- The purchase of options - is this an expense or an investment? (Premiums paid for catastrophe cover are an expense.)

- Treatment of the solvency margin, reserves for unearned premiums, cover for technical reserves, minimum capital, security etc.

Finally, the problems which are created by the calculation of the correlation between the individual portfolio of an insurance company and the globally considered loss should not be forgotten. These problems do not have an easy solution and their negative consequences can be the cause of large losses for insurers/reinsurers.

No one knows what will happen in the future with this new instrument or whether it will be exclusively used in only a few specific operations on the CBOT. Its advantages and disadvantages and the way it works have been dealt with very briefly in this article and only time will show its true usefulness.

# Asset valuation

**Carlos Larrad**

ITSEMAP Servicios Tecnológicos MAPFRE

**One of the pillars on which the insurance sector depends in order to give satisfactory service to its policyholders is to find and establish uniform evaluation procedures concerning the sum insured or the compensation to be given in case of loss.**

## Introduction

One of the factors which causes the greatest problems in the insurer/policyholder relationship is, in a number of cases, the difference between the sum insured and the sum to be compensated which is determined by loss adjusting.

It is not infrequent that these differences are brought about due to the fact that the policyholder is unaware of the established evaluation criteria. These problems may also be caused by an inadequate distribution of insured sums (building, contents, merchandise and stock).

When an insurance policy is taken out, either due to poor advice, or due to tacit presumption of valuation criteria, erroneous values are frequently established which lead to greater compensation expectations than are in fact due to the policyholder.

Given the importance of the consequences of this situation, the most commonly used procedures and

criteria for asset valuation are given below.

## Definitions

The most commonly used valuation concepts are: replacement value, as-new replacement value and new value.

**Replacement value:** also known as **real value**, this is the cost of replacing the assets by others of similar characteristics and economic value, discounting, if applicable, those factors which affect their value (depreciation), such as deterioration due to physical causes and functional or economic obsolescence. This is obtained by subtracting the corresponding depreciation from the as-new value.

**As-new replacement value:** this is the cost of replacing the asset by another of similar characteristics and economic value which exists in the market, without any kind of depreciation being made for use or obsolescence.

**New value:** the difference between the new value and the as-new replacement value does not come from the determination of the sum insured but from the calculation of the compensation, where the following limit is established. In the case of a loss, the damaged assets are compensated by adding to the real value of the assets a complementary compensation which should not exceed a given percentage (30 - 50%) of the as-new replacement value of the damaged assets.

Given the similarity of the terminology which is used there are numerous confusions amongst the policyholders in the interpretation of these terms.

When applying an as-new replacement value clause the insurance companies should pay special attention, above all, to the installations and machinery. It is necessary to assess the age of the installations



and to evaluate the subjective risk in order to prevent possible frauds.

The as-new value should be used in those installations whose assets are not very old, so that in the case of a loss the policyholder will not be faced with a possible excess over the compensation established by the insurance contract. It is preferable to use the replacement value in very old installations.

A capital compensation clause is generally included so as to reduce the negative consequences of an erroneous distribution of the values of the assets between the various sums insured of the buildings, installations and machinery. In this way, in the case of a loss, and in the same risk situation, the assignation of values to these assets is made more flexible.

### Valuation procedures

#### Buildings:

The main procedures so as to determine the as-new replacement value are:

- Analytical: little used due to its high cost. This involves constructing a detailed breakdown of the various aspects of the construction.
- Historical cost: this is used in recent buildings where the cost of construction is known. This involves the updating of the values through the use of construction price variation indexes.

- Synthetic: this is the most commonly used procedure, although its application should be carefully reasoned. This consists of the determination of the unit cost by M<sup>2</sup> of the building by comparing it with other types and categories of real estate. These example prices can be obtained from specialised construction magazines, forms used by professional associations of architects for the determination of minimum construction prices on which to base their rates, physical methodologies which establish distinct types of construction site to determine the value of buildings for the later application of taxes, etc.

To determine the replacement value, the corresponding depreciation is subtracted from the as-new replacement value. The concept of depreciation is understood to be the sum of the costs which are necessary to transform the building in

its present state to its original state using present construction methods. In addition to this analytical procedure, there are also depreciation tables which are used by recognised authorities as well as others included in fiscal regulations.

#### Machinery and installations:

The difficulty in determining the as-new replacement value is increased due to the possible diversity of assets which are included in this section. The most usual procedures in this determination are:

- Historical: this procedure is similar to that given for buildings. Given the diversity of assets, the indices which are used for updating can introduce errors which should be corrected through a sampling of market prices.

- Comparative: this is used when there are either no purchase invoices or when the machinery or installations are of a certain age. This involves searching the market for values or assets of similar characteristics.

The replacement value is calculated in the same way as for buildings, but using specific depreciation tables provided by manufacturers. In this case it is necessary to know the number of hours of use and the conditions of that use, as possible wear and tear is fundamental for the calculation of the depreciation.

#### Merchandise and stocks:

In general, the value of the merchandise and stocks is estimated by using the usual price on the nearest market.

#### Conclusion

Valuations are based on well founded opinions, therefore the more progress is made in the procedures used to reach these opinions, the more solid they will be, reducing the problems which are brought about by discrepancies between the parties involved, lowering claims handling costs and reducing delays which are caused as a result.

Insurance companies should make these procedures more widespread both in their application for the determination of compensation in the case of a loss, and during the process of establishing the sums insured in the policy.

## News

According to figures released by the banking supervisory authority in the Republic of Ecuador, net premiums accounted by insurance companies in the Ecuadorian market totalled 743,641 million sucres in 1996, showing an increase of 20% over the previous year. This growth was negative in real terms when compared with the rate of inflation which was 25.6% in 1996.

The wave of mergers and acquisitions has also reached the Greek market. After the acquisition of the insurer Metrolife by Banco Comercial Griego in 1996 and its merger with its own insurance company Ioniki to form the new "Embroski-Metrolife" with a 4.3% share of the market, two other important mergers will take place before the end of 1997.

The National Bank of Greece has decided to merge its four insurance companies (composed of Ethniki, Astir, Panellinois and Eteba) under the name of Ethniki. The new company will have a market share of 15% in life business and 23% in non-life business.

At the same time a three sided merger is being considered between Generali's subsidiary in the Greek market, the subsidiary of Banco de Credito Alpha (Emporiki) and Hellenobretanniki.

In Spain, an order of the Ministry of the Economy and Treasury of May 21, 1997, establishes a maximum technical rate of interest of 4% for life insurance contracts expressed in pesetas and signed after June 26, 1997. The notable decrease in interest rates in the financial markets caused this measure to be brought forward without waiting for the normal progression of Act 30/1995 on the Regulation and Supervision of Private Insurance

A spectacular tornado crossed the centre of Miami, Florida, on May 12, 1997. The giant tornado caused a commotion throughout the city, more due to its spectacular nature than to any damage caused.

There is no record of any victims, it only caused damage to various buildings, uprooted trees and caused other minor damage.

# Agenda

## COURSES ORGANISED BY MAPFRE RE AND ITS GROUPS COMPANIES

Course	Date	City	Country	Organiser
• Technical Loss Research	1, 2 Sep.	Caracas	Venezuela	MAPFRE RE
• Technical Loss Research	4, 5 Sep.	Bogotá	Colombia	REASEGURADORA HEMISFÉRICA
• Inspection and Assessment of Industrial Risks	8-12 Sep.	Istanbul	Turkey	MAPFRE RE
• PML-MFL Symposium	18 Sep.	Brussels	Belgium	C.I.A.R.
• Inspection and Assessment of Industrial Risks	23-25 Sep.	Madrid	Spain	MAPFRE RE
• PML-MFL Symposim	25 Sep.	México D.F.	Mexico	MAPFRE RE
• PML-MFL Symposium	6 Oct.	Río de Janeiro	Brazil	MAPFRE RE
• Asset Valuation Symposium	6 Oct.	San Salvador	El Salvador	MAPFRE RE
• PML-MFL Symposium	6 Oct.	Asunción	Paraguay	CAJA REASEGURADORA
• Technical Loss Research	6-7 Oct.	Quito	Ecuador	REASEGURADORA HEMISFÉRICA
• PML-MFL Symposium	8 Oct.	Porto Alegre	Brazil	MAPFRE RE
• Asset Valuation Symposium	8 Oct.	Tegucihualpa	Honduras	MAPFRE RE MEXICO
• Technical Loss Research	9-10 Oct.	Lima	Peru	CAJA REASEGURADORA
• PML-MFL Symposium	15 Oct.	Cyprus	Cyprus	CIAR
• Asset Valuation Symposium	21-22 Oct.	Lisboa	Portugal	MAPFRE RE
• PML-MFL Symposium	10 Nov.	Lima	Peru	CAJA REASEGURADORA
• PML-MFL Symposium	10 Nov.	Santo Domingo	Dominican Republic	MAPFRE RE
• Workplace Accidents	24-25 Nov.	Bogotá	Colombia	REASEGURADORA HEMISFÉRICA
• Marketing and Distribution of Life Assurance	22-23 Nov.	Santiago de Chile	Chile	MAPFRE RE CAJA RE CHILE FUNDACIÓN M. ESTUDIOS
• Marketing and Distribution of Life Assurance	25-26 Sep.	Miami	USA	MAPFRE RE FUNDACIÓN M. ESTUDIOS
• Management Control and Information Systems in Insurance Companies	17-18 Nov.	Santiago de Chile	Chile	MAPFRE RE CAJA RE CHILE FUNDACIÓN M. ESTUDIOS
• Management Control and Information Systems in Insurance Companies	20-21 Nov	Miami	USA	MAPFRE RE CAJA RE CHILE FUNDACIÓN M. ESTUDIOS

## COURSES ORGANISED BY ITSEMAP STM

Curso	Fecha	Lugar	País
• Analysis of Process Risks, Consequences and Vulnerability	6-8 Aug.	São Paulo	Brazil
• Special Electrical Installations in Areas with Risk of Fire/Explosion	12 Aug.	Santiago de Chile	Chile
• Analysis of Workplace Accidents	14-15 Oct.	Lisbon	Portugal
• Emergency Plans. Computer Programs. <b>Emergex</b> and <b>Lince</b>	2-3 Oct.	São Paulo	Brazil
• Fire safety	27-29 Oct.	Madrid	Spain
• Health and Explosion Risks in Dusty Environments	Oct.	Buenos Aires	Argentina
• Risks Management	4-6 Nov.	Lisbon	Portugal
• Risk Control in Dangerous Chemical Products	Nov.	Buenos Aires	Argentina

This agenda may be submitted to changes.

© **TREBOL** is a MAPFRE RE publication

• **Chairman:** Andrés Jiménez. **Editor:** Javier Fernández-Cid. **Coordinator:** Roberto Gil.

**Editorial Board:** Luis de Mingo, Lorenzo Garagorri, Eduardo García Mozos, Juan Mayo, Raúl Morato, Juan Antonio Pardo, Juan Luis Román, Emilio Taboada • **Technical Coordination:** ITSEMAP Servicios Tecnológicos MAPFRE, S. A.

• **Publisher and Printer:** Editorial MAPFRE, S. A. • P.º de Recoletos, 25 - 28004 Madrid • **ISSN:** 1137-246X • **Depósito Legal:** M. 33.552/1996.