



**Endurance Specialty Holdings Ltd.**

2015 Loss Development Triangles

## **2015 Loss Development Triangle Cautionary Language**

This report is for informational purposes only and is current as of December 31, 2015. We are under no obligation and do not expect to update or revise this report, whether as a result of new information, future events or otherwise, even when such new data has been reflected in the filings of Endurance Specialty Holdings Ltd. (“Endurance” or the “Company”) with the U.S. Securities and Exchange Commission (the “SEC”) or otherwise. Although the loss development patterns disclosed in this report are an important factor in the process used to estimate loss reserve requirements, they are not the only factors considered in establishing reserves. The process for establishing reserves is subject to considerable variability and requires the use of informed estimates and judgments. Important details, such as specific loss development expectations for particular contracts, years or events, cannot be developed solely by analyzing the information provided in this report. In addition to analyzing loss development information, management incorporates additional information into the reserving process, such as pricing for insurance and reinsurance products, current market conditions, the publicly disclosed historical experience of peer companies and feedback from the Company’s executive management and business units. Readers must keep these and other qualifications more fully described in this report in mind when reviewing this information. This report should be read in conjunction with other documents filed by the Company with the SEC, including the most recent Annual Report on Form 10-K.

## **Safe Harbor for Forward-Looking Statements**

Some of the statements in this report may include forward-looking statements which reflect management’s current views with respect to future events and financial performance. Such statements may include forward-looking statements with respect to the Company in general and the insurance and reinsurance business segments specifically, both as to underwriting and investment matters. Statements which include the words “should,” “expect,” “intend,” “plan,” “believe,” “project,” “anticipate,” “seek,” “will,” and similar statements of a future or forward-looking nature identify forward-looking statements in this report for purposes of the U.S. federal securities laws or otherwise. The Company intends these forward-looking statements to be covered by the safe harbor provisions for forward-looking statements in the Private Securities Litigation Reform Act of 1995.

All forward-looking statements address matters that involve risks and uncertainties. Accordingly, there are or may be important factors that could cause actual results to differ from those indicated in the forward-looking statements in this report. These factors include, but are not limited to: (i) changes in the size of the claims payable by Endurance relating to natural catastrophes, (ii) greater frequency or severity of claims and loss activity than Endurance’s underwriting, reserving or investment practices anticipate based upon historical experience or industry data, (iii) trends in rates for property and casualty insurance and reinsurance, (iv) changes in the judicial, legislative or regulatory environments in which Endurance operates, (v) changes in general economic conditions, including foreign currency exchange rates, inflation and other factors and (vi) the other factors described in the Company’s most recent Annual Report on Form 10-K.

Forward-looking statements speak only as of the date on which they are made, and the Company undertakes no obligation publicly to update or revise any forward-looking statement, whether as a result of new information, future developments or otherwise.



**ENDURANCE SPECIALTY HOLDINGS LTD.**

**2015 GLOBAL LOSS TRIANGLES**

**Table of Contents**

<u>Section</u>	<u>Page</u>
I. Introduction	1
II. Comments and Observations on Data Presented	3
III. Data Compilation and Definitions	4
IV. Triangle Line of Business Details	10
V. Overview of Reserving Methodology	14
VI. Reconciliations	17
VII. Data and Exhibits (Summary Exhibits and Triangles)	
Consolidated Total	Exhibit 1
Insurance Agriculture	Exhibit 2
Insurance Casualty and Other Specialty	Exhibit 3
Insurance Professional Lines	Exhibit 4
Insurance Property, Marine/Energy and Aviation	Exhibit 5
Reinsurance Catastrophe	Exhibit 6
Reinsurance Property	Exhibit 7
Reinsurance Casualty	Exhibit 8
Reinsurance Professional Lines	Exhibit 9
Reinsurance Specialty	Exhibit 10
Insurance Segment Total	Exhibit 11
Reinsurance Segment Total	Exhibit 12

## I. INTRODUCTION

This report provides information on the loss development history of Endurance Specialty Holdings Ltd. and its consolidated subsidiaries (“Endurance” or the “Company”) as of December 31, 2015. This report provides detail on Endurance’s reserves by showing global loss triangles for net paid and reported loss and allocated loss adjustment expenses (“ALAE”) by accident year at annual evaluation dates. The most recent evaluation is as of December 31, 2015. These triangles do not include amounts related to losses or premium arising from business written by Montpelier Re Holdings, Ltd. (“MRH”), which was acquired by the Company on July 31, 2015. MRH data was excluded from the triangles due to data compatibility limitations.

In addition, accident year summary exhibits are provided which highlight the gross, ceded, and net results by business segment and triangle classes as of December 31, 2015. These summaries include the historical experience of MRH; therefore, they are on a different basis than the loss triangles noted above. These summaries include: earned premiums, paid loss and ALAE, case outstanding losses, additional case reserves, incurred but not reported losses (“IBNR”), paid unallocated loss adjustment expense (“Paid ULAE”), unallocated loss adjustment expenses reserve (“ULAE Reserve”), and the ultimate loss & loss adjustment expenses (“LAE”) ratios as of December 31, 2015 on an inception to date basis.

Section II of this document offers general observations on the data presented in both the triangles and the summary exhibits, while Section III provides a discussion of the means used to compile the data, as well as definitions for many of the terms used in this report. A more detailed description of the business underlying the triangle information is found in Section IV of this report. Section V of this report contains a summary description of management’s loss reserving methodology.

The inherent uncertainty associated with the estimation of loss and LAE reserves remains a significant balance sheet risk for all property-casualty, specialty insurance and reinsurance companies, including Endurance.

The process of establishing and periodically adjusting loss and LAE reserves is an inherently complex process containing numerous management judgments related to the segmentation of data, methodologies utilized and their associated parameters, along with the weights applied to the various techniques used in the reserving process. Actuarial determinations of unpaid future losses and LAE are subject to potential errors of estimation, which could be significant, due to the fact that the ultimate disposition of claims incurred prior to the date of such estimation, whether reported to Endurance or not, is subject to the outcome of events that have not yet occurred. Likewise, any estimate of future costs associated with claims settlement is subject to the inherent limitation on the ability to predict the course of future events. Consequently, it should be expected that the actual emergence of the ultimate loss and LAE will vary, perhaps considerably, from any prior estimate. Readers should also review additional reserve disclosures and company risk factors that are provided in the Company’s most recent Annual Report on Form 10-K filed with the SEC.

Readers of this report are strongly advised against projecting ultimate losses and LAE for Endurance directly from the loss development triangles in this report, as these calculations rarely take into account fully the true underlying nature of the liabilities. The nine lines of business that we have presented are the compilation of over 300 discrete reserving groups within Endurance that represent different geographies, pricing environments, legislative climates and policy forms. In addition, as noted above, the loss triangles do not include the historical development of MRH; thus, using these triangles to develop MRH losses could produce misleading results.

Also, depending upon which actuarial reserving method is utilized, the presence or absence of large catastrophe losses and how they are treated may have a significant impact on the estimated ultimate loss and LAE. In addition, changes to the premium volume, mix of business and the underlying exposures within a class may have significant effects on the resulting ultimate loss estimates and overall reserve levels. Without incorporating this critical information, the results derived from a direct extrapolation of the loss development triangles in this report have the potential of being materially misleading.

The triangles and summary exhibits are provided for both the Insurance and Reinsurance segments of the Company. In addition, while analysis, reviews and reporting of reserves focuses primarily on the loss reserve development classes within each line of business, the information provided in the triangles in this report has been expanded to capture some of the additional differences in reporting that naturally occur within these lines of business. The losses in these exhibits and triangles represent the Company's December 31, 2015 gross, ceded and net loss and LAE reserves in their entirety, although these amounts have been adjusted for changes in foreign currency. A reconciliation to select data from the Company's financial statements prepared in accordance with generally accepted accounting principles in the United States ("GAAP") is included in Section VI of this document.

As discussed more fully in Section III, the accident year losses in these exhibits and triangles are adjusted for changes in calendar year earned premium adjustments and foreign exchange movements. Because of these adjustments, which we expect to continue, future versions of this information will not tie directly to the data included in this report.

## II. COMMENTS AND OBSERVATIONS ON DATA PRESENTED

The triangle groupings have changed compared to the 2014 Global Loss Triangles. Grouping changes are as follows:

- In this year's presentation, the Company has provided information in total, by segment, and summarized in nine lines of business, consistent with how the Company manages its business and reports such information in its 2015 Form 10-K.
- Last year, triangles were shown gross of reinsurance. This year, triangles are being shown net of reinsurance. Due to the Company's increased usage of ceded reinsurance, we believe providing triangles net of reinsurance is more appropriate.

Based on the data as of December 31, 2015 presented in this report, we believe the following general observations are noteworthy:

- On an inception to date basis, 59% and 41% of gross earned premium arises from the Reinsurance and Insurance segments, respectively. Correspondingly, on a gross basis 45% and 55% of loss and LAE reserves arise from the Reinsurance and Insurance segments, respectively. On a net basis, 55% and 45% of the loss and LAE reserves arise from the Reinsurance and Insurance segments, respectively.
- Additional Case Reserves ("ACRs") amount to 4% of reported net case reserves. Within Endurance's Reinsurance segment, this amount is 7% of the net reported case reserves.
- Excluding MRH, the Reinsurance and Insurance segments have contributed approximately 62% and 38% to the total inception to date prior year favorable net reserve development, respectively.
- Endurance's overall inception to date net ultimate loss and LAE ratio of 59% is comprised of a 70% net loss ratio for the Insurance segment and a 54% net loss ratio for the Reinsurance segment. Excluding Agriculture, the Insurance segment inception to date net ultimate loss and LAE ratio is 59%. The Insurance Agriculture inception to date net loss and LAE ratio is 91% is higher than other lines due to the business's low expense ratio.

### III. DATA COMPILATION AND DEFINITIONS

The Global Loss Triangles and summary exhibits are presented on an accident year (or report year where applicable) basis. While underwriting or policy year statistics may also provide useful information for analysis purposes, management believes the accident/report year presentation better highlights the true loss activity that occurs at Endurance within a given calendar year. We note that the accident year presentation of triangles requires the utilization of assumptions and allocation procedures with respect to certain lines of business underwritten by Endurance (bordereaux allocation). This is primarily a result of not receiving sufficient information from ceding companies in certain lines of business, which prevents the allocation of claims to specific accident years with certainty. Although we attempt to keep the allocations as reasonable and as accurate as possible, to the extent our assumptions and allocation procedures differ from actual historical loss development patterns, the actual loss development may differ materially from the loss development included in this report.

#### Data Presented

The data presented in the accident year triangle and summary exhibits is as follows:

- Global Loss Triangles
  - Paid loss and ALAE
  - Case incurred loss & ALAE (including ACRs)
  - Ultimate loss and ALAE
  - Earned Premium
  - Ultimate loss and ALAE ratio
  - Ultimate loss and ALAE emergence
  
- Summary Exhibits
  - Gross earned premium, paid losses, reserves (case outstanding, ACRs, IBNR, and ULAE)
  - Ceded earned premium, paid losses, reserves (case outstanding, ACRs, IBNR, and ULAE)
  - Net earned premium, paid losses, reserves (case outstanding, ACRs, IBNR, and ULAE)

#### Basis of Presentation

Information presented herein may differ materially from that reported in Endurance's financial statements prepared in accordance with GAAP due to differences in foreign currency exchange rates, the impact of premium adjustments and other data adjustments.

All amounts are presented in thousands of U.S. dollars and reflect the conversion from the original currency of the underlying business if not denominated in U.S. dollars (“USD”). Foreign currency denominated losses and premiums are converted based on exchange rates at the dates of the transactions to the currency of the legal underwriting entity, which are either USD or British Pounds (“GBP”). Endurance’s reporting currency is USD. Fluctuations in currency exchange rates can cause material shifts in loss development. To reduce distortions caused by such fluctuations, data in the triangles for the Company’s United Kingdom entities have been restated using the year end 2015 rate of exchange of 1.4739 USD to GBP.

Some (re)insurance contracts and policies contain provisions resulting in a variation of the premium or acquisition expenses as a result of loss experience under the contract or policy. Within the analysis, estimated reinstatement premiums are included in the premium totals.

Intercompany reinsurance transactions have not been reflected in the triangles.

The loss development triangles are presented on the basis of applying reinsurance accounting to all Endurance’s business and do not reflect any adjustments that may be required for financial reporting purposes to comply with Accounting Standards Certification Topic 340 Subtopic 30 *“Other Assets and Deferred Cost Insurance Contracts that do not Transfer Risk”* as highlighted in the reconciliation to GAAP reserves in Section VI of this document.

### **Earned Premium**

The earned premium triangle includes the calendar year changes in accident year earned premium due to premium adjustments. For financial reporting purposes, the premium adjustments are recognized in the calendar year they were determined. For actuarial reserving purposes, these premium adjustments are allocated to the accident year or years based on the initial policy or treaty to which the adjustment belongs. For example, if a premium adjustment is recognized in calendar year 2015 from a policy written and exposures earned in 2013, the additional premium is recognized in the 2015 calendar year for financial reporting purposes. However, for reserving purposes, the premium is allocated to the years in which the premium for the 2013 treaty was originally earned. As a result, the information provided herein may differ materially from that presented in Endurance’s financial statements.

### **Ultimate Loss and ALAE Ratio**

The ultimate loss and ALAE ratio triangle shows the year to year changes in the ratio of all expected settlement amounts, whether paid or reserved, together with any associated settlement expenses to earned premium. The ultimate loss and ALAE ratio is presented to show the relationship between management’s best estimate of expected ultimate losses and ALAE and the associated premiums that were received by Endurance to assume the risks related to those losses. Ultimate losses and ALAE within an accident year are subject to many factors that impact the recorded value of such losses (such as favorable/adverse claims emergence, frequency/severity trends, inflation, methodology changes, foreign exchange fluctuations, and premium adjustments

from prior accident periods). Endurance distributes earned premium from premium adjustments to the appropriate accident year in its reserving process, so changes in booked ultimate losses can occur solely due to these premium changes. Because of this, the triangle of ultimate loss & ALAE ratios essentially removes the effect of changes in premium from the loss estimates. At any point (maturity) in the triangle, management's best estimate of booked ultimate loss and ALAE estimate is the product of the corresponding accident year earned premium and ultimate loss and ALAE ratio.

### **Ultimate Loss and ALAE**

The triangle of ultimate loss and ALAE is derived by multiplying the most recent accident year earned premium (the last diagonal of the earned premium triangle) by the historical accident year ultimate loss and ALAE ratio as presented in their respective triangles. This presentation removes the effect of premium adjustments from the development of ultimate losses, and provides a better picture of the changes occurring to the true accident year ultimate loss and ALAE. Reconciliation to Endurance's GAAP financial statements is included in Section VI of this report.

### **Ultimate Loss Emergence**

The triangle of ultimate loss emergence is calculated by taking the difference of corresponding cells in the ultimate loss and ALAE triangle. For example, using the consolidated triangles, the change in ultimate loss from 12-24 month maturity for the 2010 accident year is derived by subtracting the ultimate loss & ALAE at the 12 month maturity for the 2010 accident year from the ultimate loss & ALAE at the 24 month maturity for the same accident year. The full calendar year emergence is represented by the total of any given diagonal (excluding the loss emergence within the first 12 months of an accident year), and is also shown as an additional row at the bottom of the triangle.

### **Global Loss Triangle Classes**

Triangles are provided for 9 lines of business: 4 for the Insurance segment and 5 for the Reinsurance segment. These lines of business are consistent with how the Company manages its business and reports such information in its 2015 Form 10-K. It is important to note that for the Reinsurance lines of business, there is no differentiation between proportional and non-proportional business that could have different loss emergence patterns. The 9 lines of business included in this report are listed below:

#### **Insurance Segment Loss Triangle Lines of Business**

- Insurance Agriculture
- Insurance Casualty and Other Specialty
- Insurance Professional Lines
- Insurance Property, Marine/Energy & Aviation

### **Reinsurance Segment Loss Triangle Lines of Business**

- Reinsurance Catastrophe
- Reinsurance Property
- Reinsurance Casualty
- Reinsurance Professional Lines
- Reinsurance Specialty

Further detail of the types of business contained in each class is provided in Section IV of this document.

### **Accident Year Loss Allocation**

Many proportional reinsurance contracts are submitted using quarterly bordereau reporting by underwriting year with a supplemental listing of large losses. As a result, a two-step allocation process was utilized to allocate these losses by accident year. The first step is to identify large losses and allocate them to the corresponding accident year as reported on a large loss listing. The second step is to allocate the remaining losses to particular accident years based on selected payment and reporting patterns applied to the earning of the underlying exposures, which in many instances is premium. To the extent management's assumptions and allocation procedures differ from actual historical loss development patterns, the actual loss development may differ materially from the loss development included in this report.

### **Large Losses and Other Adjustments**

The triangles are unadjusted with respect to large losses and catastrophic losses, including losses related to the 2004, 2005, 2008, 2011 and 2012 catastrophes. The loss amounts are net of any retrocession recoveries. The premium data is adjusted for gross and ceded reinstatement premiums associated with the loss events.

### **Business Not Included**

The triangles do not include amounts related to losses or premium arising from business written by MRH, which was acquired by the Company on July 31, 2015. MRH data was excluded from the triangles due to data compatibility limitations. No other business has been excluded from the analysis.

### **Discounting**

The losses and IBNR stated in the triangles do not include a provision to reflect the time value of money.

### **Maturity of Triangle Periods**

Since Endurance was formed in late 2001, underwriting data is available only for periods beginning 2001 or subsequent. For the business lines with sparse or limited data presented, there is an additional amount of uncertainty in the estimated ultimate loss and LAE and actual loss experience could differ materially from the estimated ultimate loss amount.

## Definitions

To assist the reader, several key definitions are highlighted below.

**Accident Year** means the year in which the event occurred that triggered a claim to Endurance. All years referred to are years ending December 31<sup>st</sup>.

**Additional Case Reserves** or **ACRs** are amounts that are held in addition to Case Reserves that result from Endurance's claims professionals determining that the established Case Reserves (which are often established by ceding companies or third parties) are expected to be insufficient to meet the expected future settlement amounts.

**Additional Event Reserves** are amounts that are held in respect of known events that are expected to give rise to future settlements but at the time of being established, not enough is known to allocate them to specific (re)-insureds.

**Allocated Loss Adjustment Expense or ALAE** is an estimate of the associated external expenses to be incurred in settling a claim. ALAE includes the costs of third party loss assessors and legal experts.

**Case Incurred Loss and ALAE** is the sum of Paid Losses and ALAE, plus Case Reserves and any Additional Case Reserves.

**Case Reserves** are amounts set aside in relation to claims that have been made but not yet been paid and represent an assessment of the remaining amount to be paid in respect of each notified claim.

**Ceded Claims** are those amounts Endurance received or expects to receive from third party reinsurers to whom Endurance ceded premiums.

**Ceded Premiums** are those premiums paid by Endurance to third party reinsurers.

**Diagonals** in the triangle from bottom left to top right represent evaluation dates. For example, the last diagonal in our published triangles shows the position of each Accident Year as at December 31, 2015.

**Earned Premium** is the amount of policy premiums allocated between Accident Years in accordance with the assumed incidence of risk.

**FCIC** is the U.S. Federal Crop Insurance Corporation, the government reinsurer of multi-peril crop insurance underwritten by Endurance's agriculture insurance subsidiary.

**Gross Premiums and Gross Losses** are shown before the impact of any third party outwards reinsurance that Endurance purchases.

**IBNR** means incurred but not reported reserve. IBNR reserves represent a provision for claims that have been incurred but not yet reported to the Company, as well as future loss development on losses already reported in excess of the Case Reserves and Additional Case Reserves. In this presentation, Additional Event Reserves are included within IBNR. Endurance's process for establishing IBNR is discussed further in Section V of this document.

**Loss Adjustment Expense or LAE** is expense incurred in settling the claim. LAE includes the costs of third party loss assessors or legal experts and the cost of internal time necessary to settle a claim. LAE is the sum of ALAE and ULAE.

**Maturity** is measured in months from the start of the Accident Year.

**Net** means the retained portion of premiums written or losses paid and incurred. Net Premium equals Gross Premium less Ceded Premium and Net Losses equals Gross Losses less Ceded Losses.

**Paid Losses** are claim amounts paid to insureds or ceding companies.

**Report Year / Claims Made Year** refers to the year in which a claim is reported to Endurance. All years referred to are years ending December 31<sup>st</sup>.

**Triangle** is a cross tabulation of data usually showing financial quantities in respect of periods of exposure (e.g. Accident Years), each evaluated at regular intervals (maturities).

**Unallocated Loss Adjustment Expense or ULAE** is an assessment of the internal expenses required to settle the current claims.

**Ultimate Loss and LAE** are the total of all expected settlement amounts, whether paid or reserved together with any associated settlement expenses and is the estimated total amount of loss at the measurement date. For the purposes of this report, Ultimate Loss & LAE is calculated by adding: Paid Loss & ALAE, Case Reserves, Additional Case Reserves, IBNR (inclusive of Additional Event Reserves), Paid ULAE, and ULAE Reserves.

**Ultimate Loss and LAE Ratio** is the ratio of Ultimate Loss and LAE amounts to Earned Premium, which shows the relationship between expected losses and the associated premiums that are received related to those losses.

## **IV. TRIANGLE LINE OF BUSINESS DETAILS**

### **a) Insurance Agriculture**

The Company's agriculture insurance line of business focuses on traditional multi-peril crop insurance, crop hail, livestock risk protection and other agriculture risk management products, all offered through independent agents in the United States. The protections offered provide coverage for yield and revenue losses resulting from weather related perils, such as drought and hail, as well as losses stemming from commodity price movements. The majority of this triangle class is multi-peril crop insurance; in 2015 it comprised approximately 95% of the net earned premium of this line of business

In 2012, this line of business was impacted by a severe drought in the Midwest United States. In 2013 and 2014, results were impacted by sharp decreases in corn and soybean prices during the policy periods, which resulted in an increased number of policies making revenue coverage payments. The 2015 loss ratio improved versus 2014 due to favorable crop yields and only modest declines in commodity prices during the policy year.

### **b) Insurance Casualty and Other Specialty**

The Company's casualty and other specialty insurance line of business includes casualty, healthcare liability, and contract and commercial surety insurance. The casualty insurance business provides third party excess and primary liability insurance for a wide range of industry groups. In 2015, excess liability business comprised 59% of the casualty net earned premium. The healthcare liability insurance business is focused on excess hospital medical professional liability insurance. The surety insurance business provides contract and commercial surety insurance in the United States. The Company has been writing casualty and healthcare liability insurance business since 2002, while the surety insurance business commenced its operations in 2012. In 2015, net earned premium was split as follows between these classes: casualty 77%, healthcare 16%, and surety 7%.

Accident years 2006 to 2009 include \$550.0 million of net earned premium for a book of California workers compensation business, which adversely impacted the results for this line of business, particularly in accident years 2008 and 2009. Prior year development for this book was flat in calendar years 2014 and 2015. Note that the Company exited California workers compensation insurance in early 2009. In addition, this line of business was impacted in accident years 2010 to 2013 by several large losses impacting the Company's healthcare and excess casualty businesses. The increase in the accident year 2011 ultimate loss ratio during calendar year 2013 was due to an excess casualty shock loss; that loss decreased somewhat in calendar year 2015. Accident year 2013 increased during the past calendar year due predominately to shock losses for the healthcare book. However, over all accident years, the Company's healthcare insurance business experienced favorable development in 2015, and it has consistently experienced favorable calendar year development over the history of the book.

Due to the change in executive and underwriting management in 2012 and 2013, the Company significantly increased its usage of reinsurance, reduced gross limits, and improved risk selection. These factors should reduce the impact of shock losses and improve results for accident years 2014 and later.

### **c) Insurance Professional Lines – Professional Lines**

The Company's professional lines insurance business includes directors' and officers' liability, errors and omissions, employment practices liability, fiduciary, environmental liability and pension trust liability insurance and includes both non-profit and for-profit entities representing a wide range of industry groups. Results in claims made years 2007 to 2008 were adversely impacted by financial crisis claims. During that time period, the high excess Bermuda professional lines book comprised approximately 90% of the net earned premium. In 2015, due to the growth of the business in the United States and London and the acquisition of MRH, the high excess Bermuda professional lines book comprised approximately 16% of the net earned premium. Consequently, due to this diversification of the portfolio, greater purchases of reinsurance and gross limits management, the Company has reduced its net exposure to the type of losses experienced in claims made years 2007 and 2008.

### **d) Insurance Property, Marine/Energy and Aviation**

The Company's property, marine/energy and aviation line of business includes property insurance, inland marine, ocean marine, marine war, energy and aviation insurance. The property insurance business provides coverage against all risks of physical loss or damage of commercial properties, engineering and construction of properties and resultant loss of business income. The properties insured are of a commercial nature and are spread across a variety of industries, such as real estate, retail, manufacturing, chemicals, financial services, utilities, telecommunications, hospitality, food processors and municipalities/institutions.

The inland marine insurance business provides indemnification of loss related to property in transit; movable or specialized types of property, which may include construction equipment, medical diagnostic equipment, rail road rolling stock; instruments of transportation such as bridges, pipelines and roads; instruments of communication, such as cell phone and radio towers; high value and one of a kind articles, such as fine arts, jewelry and musical instruments; property in the course of construction; legal liability coverage for bailees and warehousemen for property in their care, custody or control; as well as a wide variety of other types of property that are non-homogenous in nature. The Company commenced writing this business in 2013.

The ocean marine insurance business covers the loss or damage of ships, cargo, terminals, piers, wharfs and any transport or cargo by which property is transferred, acquired, or held between the points of origin and final destination and associated third party liability, as well as general

liability coverage for marine risks. The Company commenced writing this business in 2013.

The energy business provides upstream, midstream, downstream, power and renewable energy coverage covering property and liability risk, control of well, transportation and storage, business interruption, cargo and equipment risks. The Company commenced writing this business in 2014.

The aviation business provides general liability and property coverages for a wide range of aviation risks across the globe, including hull and liability coverage as well as general liability coverage for ground based risks such as fixed base operators, airport owners and aircraft manufacturers and distributors. The Company commenced underwriting aviation insurance in late 2015.

In 2013 and prior, nearly the entire net earned premium for this line of business was for property coverages. In 2014, approximately 37% of the net earned premium was for ocean marine and energy. In 2015, approximately 45% of the net earned premium was for ocean marine and energy.

#### **e) Reinsurance Catastrophe**

The Company's catastrophe reinsurance line of business reinsures catastrophic perils for ceding companies on a treaty basis primarily for property and workers' compensation business. The principal perils reinsured include natural perils such as hurricanes, typhoons, earthquakes, floods, tornados, hail and fire and certain man-made perils such as industrial events and terrorism.

Calendar year 2015 year development was favorable for this line of business. The favorable development in calendar years 2013 and 2014 was due to IBNR reductions on the Company's workers' compensation catastrophe book and favorable emergence on Hurricane Sandy.

#### **f) Reinsurance Property**

The Company's property reinsurance line of business reinsures property insurance policies issued by our ceding company clients including personal lines, commercial exposures and engineering (principally covering buildings, structures, equipment, contents and time element coverages on a treaty basis). Loss exposures in this line of business include the perils of fire, explosion, collapse, riot, vandalism, wind, tornado, flood and earthquake.

The property reinsurance triangle class contains international and U.S. per risk excess of loss and proportional treaty business.

In total, calendar year 2015 development was favorable for this line of business. Accident year 2014 developed unfavorably due to emergence on several large fire losses on the Company's European treaty property book. The favorable development in calendar years 2013 and 2014 was due largely to favorable emergence on Hurricane Sandy and the Thai Floods.

### **g) Reinsurance Casualty**

The Company's casualty reinsurance line of business reinsures third party liability exposures from ceding companies such as automobile liability, general liability, umbrella liability and workers' compensation. In 2015, net earned premium this line of business was split as follows: automobile liability 23%, workers compensation 14%, and all other lines (mostly general liability and excess liability coverages) 63%.

Accident year loss ratios for 2009 to 2013 were impacted by UK motor excess of loss business, which had exposure to an increase in periodic payment order claims. Reserve increases for this exposure were taken in calendar year 2013. In mid-year 2013, the Company ceased writing UK Motor excess of loss business.

### **h) Reinsurance Professional Lines**

The professional lines reinsurance triangle class contains the reinsurance treaties covering the following classes of business: directors & officers liability, errors & omissions, employment practices liability, fidelity, medical malpractice, and fiduciary liability for commercial and financial institutions. The underlying business is written almost exclusively on a claims made basis. Business in this triangle class is written on either an excess of loss or a proportional basis.

Ultimate loss ratios have developed favorably for this line of business, as the Company has recognized the favorable experience of claims made years 2010 and later. In addition, loss ratios in this line of business were better than the industry in claims made years 2007 to 2009, as the Company's exposure to financial institutions was less than the industry average.

### **i) Reinsurance Specialty**

The Company's specialty line of business includes aerospace, international agriculture, marine and energy, and trade credit and surety, all of which are underwritten on either a proportional or non-proportional basis. This business line also includes weather risk management products. The agriculture business includes reinsurance of international multi-peril crop insurance policies, crop hail policies and other types of crop insurance; most of this business is written for clients outside of the United States. The aerospace business is comprised of the reinsurance of aviation and space risks. The marine business consists of the reinsurance of river and ocean vessels and cargo risks. The energy business includes offshore energy risks such as (drilling, oil) rigs and platforms. Note that aerospace, marine and energy businesses include both first party and liability coverages. The trade credit and surety business includes the reinsurance of trade credit and political risk, contract surety and commercial surety on a worldwide basis. The Company also provides surety reinsurance for contract and commercial surety insurers, as well as for fidelity insurers. The remaining business in this line represents a variety of contracts which are underwritten utilizing the expertise of the Company's senior underwriting staff.

Favorable development in calendar year 2015 was due predominately to lower than expected claims emergence in the aerospace, political risk, and surety businesses, as well as an IBNR reduction for the Company's self-insured risk business, which the Company ceased writing in 2003.

## **V. OVERVIEW OF RESERVING METHODOLOGY**

In order to estimate Endurance's reserve for losses and loss expenses, management uses information either (i) developed from internal or independent external sources, or (ii) pricing information created by Endurance or provided to Endurance by insureds, reinsureds, and brokers at the time individual contracts and policies are bound. In addition, management uses commercially available risk analysis models, contract by contract review by our underwriting teams and to a limited extent, overall market share assumptions to estimate our loss and loss expense reserves related to specific loss events. When the applicable information has been obtained, Endurance uses a variety of actuarial methods as well as professional judgment to estimate the ultimate losses and loss expenses incurred by Endurance in connection with business it has underwritten and thus, the applicable reserve for losses and loss expenses.

While management does not at this time include an explicit or implicit provision for uncertainty in its reserve for losses and loss expenses, certain of Endurance's business lines are by their nature subject to additional uncertainties, including Endurance's casualty, professional, property, catastrophe, and specialty lines in the Reinsurance business segment and Endurance's casualty and professional lines in the Insurance business segment, which are discussed in detail above. In addition, Endurance's Reinsurance business segment is subject to additional factors which add to the uncertainty of estimating loss and loss expense reserves. Time lags in the reporting of losses can also introduce further ambiguity to the process of estimating loss and loss expense reserves.

Certain aspects of Endurance's casualty and professional lines in the Reinsurance business segment and the casualty and professional lines in the Insurance business segment complicate the process of estimating loss reserves. These include the lack of long-term historical data for losses of the same type intended to be covered by the policies and contracts written by Endurance, and the expectation that a portion of losses in excess of Endurance's attachment levels in many of its contracts will be low in frequency and high in severity, limiting the usefulness of claims experience of other insurers and reinsurers for similar claims. In addition, a portion of Endurance's casualty line in its Insurance business segment that is underwritten in Bermuda includes policy forms that vary from more traditional policy forms. The primary difference in the casualty policy form used by Endurance's Bermuda subsidiary from more traditional policy forms relates to the coverage being provided on an occurrence reported basis instead of the typical occurrence or claims-made basis used in traditional policy forms. The occurrence reported policy forms typically cover occurrences causing unexpected and unintended personal injury or property damage to third parties arising from events or conditions that commence at or

subsequent to an inception date and prior to the expiration of the policy, provided that proper notice is given during the term of the policy or the discovery period.

The inherent uncertainty of estimating Endurance's loss and loss expense reserves for its Reinsurance business segment can be greater principally due to the following:

- (i) the lag between the time claims are reported to the ceding company and the time they are reported through one or more reinsurance broker intermediaries to Endurance;
- (ii) the differing reserving practices among ceding companies;
- (iii) the diversity of loss development patterns among different types of reinsurance treaties or contracts; and
- (iv) Endurance's need to rely on its ceding companies for loss information.

In addition to the factors creating uncertainty in Endurance's estimate of loss and loss expense reserves, Endurance's estimated reserve for losses and loss expenses can change over time because of unexpected changes in the external environment. Potential changing external factors include:

- changes in the inflation rate for goods and services related to the covered damages;
- changes in the general economic environment that could cause unanticipated changes in claim frequency or severity;
- changes in the litigation environment regarding the representation of plaintiffs and potential plaintiffs;
- changes in the judicial and/or arbitration environment regarding the interpretation of policy and contract provisions relating to the determination of coverage and/or the amount of damages awarded for certain types of claims;
- changes in the social environment regarding the general attitude of juries in the determination of liability and damages;
- changes in the legislative environment regarding the definition of damages;
- new types of injuries caused by new types of injurious activities or exposures; and
- in the case of assumed reinsurance, changes in ceding company case reserving and reporting patterns.

Endurance's estimates of reserves for losses and loss expenses can also change over time because of changes in internal company operations. Potential changing internal factors include:

- alterations in claims handling procedures;
- growth in new lines of business where exposure and loss development patterns are not well established; or
- changes in the quality of risk selection or pricing in the underwriting process.

Due to the inherent complexity of the assumptions used in establishing Endurance's loss and loss expense reserve estimates, final claim settlements made by Endurance may vary significantly from the present estimates, particularly when those settlements may not occur until well into the future.

For a more detailed discussion of the Company's reserving methodology and an analysis of the potential variability in reserves for losses and loss expenses, please see the Company's most recent Annual Report on Form 10-K as filed with the SEC.

## VI. RECONCILIATIONS

### *Reconciliation of Gross Unpaid Loss and LAE*

The following table reconciles the reserves for losses and loss expenses as of December 31, 2015 as reported in Endurance's financial statements prepared in accordance with GAAP to the reserves for losses and loss expenses published in the triangles (all amounts in millions of U.S. dollars, on a gross basis):

Consolidated triangles unpaid loss and LAE	\$4,535.8
Deposit accounting reserves	(13.8)
Purchase GAAP fair value adjustments related to MRH	(9.1)
Foreign exchange and other	<u>(2.5)</u>
Adjusted unpaid loss and LAE	\$4,510.4
Reserves for losses and loss expenses Per December 31, 2015 GAAP Financial Statements	\$4,510.4

*Reconciliation of Calendar Year Loss Emergence*

The following table reconciles the calendar year 2015 development of prior year losses and loss adjustment expenses as of December 31, 2015 as reported in Endurance's financial statements prepared in accordance with GAAP to the development of losses and loss adjustment expenses published in the triangles (all amounts in millions of U.S. dollars).

Calendar year net loss & ALAE emergence per triangles	(\$213.8)
Plus calendar year emergence on ULAE	(4.3)
Plus emergence on contracts subject to deposit accounting	1.1
Plus emergence on acquired MRH reserves	(39.3)
Plus misc. emergence due to foreign exchange & other*	<u>12.8</u>
Adjusted Calendar Year Emergence	(\$243.5)
Calendar Year Emergence per December 31, 2015 GAAP Financial Statements	(\$243.5)

Please note that the negative amount above indicates favorable development on prior year losses.

\*A majority of the miscellaneous effect is due to the impact of premium adjustments and the level of aggregation used to compute the prior year development within the global loss triangles.