

# ASTIN NEWSLETTER

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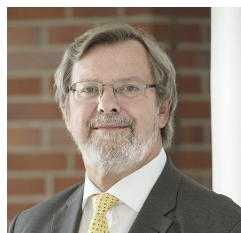
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Dear members, welcome to the July-August 2020 edition of ASTIN Newsletter. It provides a general update regarding the ASTIN activities over the last two months as well as its future planned activities.

## Guest Editorial

### *Interview with Eberhard Müller – ASTIN Treasurer*

This interview was conducted by Yuriy Krvavych, ASTIN Secretary, on the occasion of Eberhard Müller's 70th Birthday.



Eberhard's career path is aspirational for young actuaries. Eberhard spent 33 years working at Hannover Re, leading Risk Management Division, acting as CRO and Chief Actuary and leading large business transformational projects associated with Solvency II

implementation and internal model approval.

He represented Hannover Re in the CRO Forum and also served on numerous local and international committees and working parties and contributed with many publications and presentations. Eberhard is currently running his own enterprise Riskmueller Consulting GmbH and serving on the ASTIN Board as ASTIN Section Treasurer.

**Yuriy Krvavych (YK):** Eberhard, you recently turned 70. It's an important milestone in your life. Also, 70 is a special number in the world of maths - it's a 'sphenic' number (product of three distinctive primes), it's also 7<sup>th</sup> Pell number, 7<sup>th</sup> pentagonal number, 4<sup>th</sup> tridecagonal number, 5<sup>th</sup> pentatope number, and just 19 years apart from the next Fibonacci number.

On behalf of ASTIN Board, we wish you a Happy Birthday and many more happy years to come.

Eberhard, you have built a fantastic career of an actuary, leader, innovator and entrepreneur. Looking back and

reflecting on your life path, what do you feel? What and/or who inspired you?

**Eberhard Müller (EM):** Well Yuriy, what a question! Continuing with your figure series I should answer with Douglas Adams: I feel "42, the Answer to the Ultimate Question of Life, the Universe and Everything" without knowing the question ...

Slightly more serious: I'm thankful for all the opportunities that I got and for the people I had the privilege to work with. There have been so many that it would fill pages to name them all, but a handful, subjectively selected, were really instrumental for my career. First of all, Prof. Walter Karten, who hired me as an assistant straight after I received my university diploma in maths back in 1978. Unfortunately, I disappointed him "deeply" when I stopped working on my half-completed PhD thesis in April 1982 and joined Hannover Re. Again, as an assistant to another outstanding person: Claus R. Bingemer, CEO and a man of the first hours of Hannover Re. This man allowed me to do a lot of "crazy" things: to buy the first little Basic programmable computer, Sharp PC 1500, already in 1982, to "upgrade" it to an IBM XT with 10 MB (!) hard-disk in 1984 and to get the responsibility for all personal computers, independent from the IT department, until 1993. So, I was able to develop a lot of actuarial programs for non-life applications: reserving with chain ladder (and other methods), cash flow analysis for long-tail business and profitability checks (gross and net) for all business segments. In 1989, I got his permission to license CATMAP from Applied Insurance Research (AIR), a Monte Carlo simulation-based model for (re)insurance losses from natural catastrophes.

Claus Bingemer's successor as CEO, Dr. Michael Reischel, encouraged me to have a deeper look into capital allocation models. This brought me to acknowledge Jim Stanard's (former chairman of ASTIN) and Stephen Lowe's work "An Integrated Dynamic Financial Analysis and Decision Support". Together with some aspects of the newly designed NAIC RBC system this stimulated Hannover Re's internal capital allocation model and helped to develop a "minimum margin system" in order to measure the profitability of business segment.

And finally, this DFA approach led to the first accepted internal model in Europe under Solvency II on July 1<sup>st</sup>, 2015.

But all this would not have been possible without my fantastic team. From 1985 onwards I had the privilege to select all my staff personally and I was lucky to find the right persons - some of them have grown into friends over the years.

One of my "leadership tools" might have assisted: the "happy hour" on Friday afternoon after 5pm! It was done for decades (whenever I was not travelling...), brought together people from different departments and provided numerous constructive discussions and business solutions while simultaneously having lots of fun.

**YK:** Eberhard, you became an actuary after studying mathematics and teaching insurance science.

Why actuary? What is an 'actuary' for you and what qualities and skills you think a good actuary should possess? In particular, what role you think mathematics should play in shaping up a good actuarial professional?

**EM:** When I studied mathematics in the 70s in Hamburg it was not yet possible to choose "insurance mathematics". This was only introduced in the 80s. But my intention when studying mathematics (favourite topic was probability theory) was always to combine theoretical knowledge with practical applications.

Not only for gambling! (Despite others might have a different view...). So, I chose economic sciences as secondary course and later specialised in insurance science. What I liked most were the excursions to other universities, insurance and reinsurance companies and participating in congresses. This "opened the world" for me (and still does).

An actuary - that was my conclusion - is by far not the lonely guy, sitting in front of the computer and crunching numbers. An actuary is a salesman too! With his analytical skills he is able to achieve results for difficult problems, but simply to provide the result "42" would be too short jumped. He has to develop the communication skills that are necessary to convince decision makers. He must be able to demonstrate that he understood the problem, that he handled it properly using his actuarial toolkit and that he is able to communicate the analytical results back in real-world terms.

This brings me to the conclusion that mathematical education should more and more open up to the question of how analytical results can be best presented using a "normal language". To achieve this, it is important to offer respective education like, for example, the DAV does with their "communication seminars".

**YK:** Eberhard, you have been serving the global actuarial profession for decades - locally at DAV as well as internationally within the IAA and ASTIN.

What was the actuarial profession back then, at the beginning of your career, and how is it compared to what we have now?

**EM:** When I realised that I am an actuary I might have already been an 'actuary of the second kind', i.e. leaving the "exciting" task of updating mortality tables and turning to non-life insurance questions like pricing and reserving of casualty business, estimating the impacts from natural catastrophes and doing the first capital allocation.

From the mid 90s I followed Hans Bühlmann's classification and became an 'actuary of the third kind', combining insurance and investment considerations and finding integrated solutions by means of stochastic processes and Dynamic Financial Analysis.

And when taking over as Chief Risk Officer of Hannover Re in 2006, I think I had already made steps towards becoming an 'actuary of the fourth kind' - a holistic enterprise risk manager capable of dealing with all kinds of risk in his universe, including hard / non-quantifiable risks like operational risk.

**YK:** Eberhard, throughout your career you led Risk Management Division at Hannover Re acting as CRO and Chief Actuary and leading large business transformational projects associated with Solvency II implementation and internal model approval.

You served on the CRO Forum, representing Hannover Re, as well as on numerous local and international committees and working parties and contributed with many publications and presentations.

You pioneered many applications in risk modelling, capital management, securitisation and placement of structured deals.

What / who was the main inspiration in your life? What was it that kept you going to achieve all this?

**EM:** The answer is very simple – “curiosity”! And I always loved sophisticated toys and intensely tried out what they can and cannot do. In this respect, I finally was a “nightmare” for the IT-service department.

Also, before joining Hannover Re, I always had the latest toys: programmable calculators like Aristo M75, HP 25 and TI 59 (magnetic cards). Also, one of the first gambling consoles from Philips – back in 1977!

At Hannover Re, I introduced the Sharp PC1500 in 1982, the IBM XT in 1984 and the first integrated Software Tool Framework from Ashton Tate. In 1985, I had the predecessor of today's laptops: the IBM PPT (25kg). I even travelled to London with this machine to be able to have instant answers for questions arising during negotiations, e. g. for commutations.

In 1989, I was fascinated by the calculation power of the latest PCs already allowing for meaningful Monte Carlo simulations of complex systems like natural catastrophes. This led to the licensing of AIR's CATMAP and becoming its first continental European user back in 1989. The cooperation with Applied Insurance Research still exists!

Some other “firsts” include: the first securitisation, Hannover Re's \$85m KOVER back in 1994, the “Swap” called K2 transaction in 1996 and 1998, totalling 160m, and in 2002 the 210m CatBond K3 (Kaith Re) now combining natural catastrophes, marine and aviation after 9/11. What I really liked were the annual investor presentations in Bermuda.

And finally, as mentioned above, we were successful in getting the first approval in Europe for our internal capital model at Hannover Re after seven years of pre-application phase with numerous visits and discussions with the German regulator BaFin.

**YK:** When did you first join ASTIN and what are your memories of ASTIN from those times?

**EM:** I joined the first local (German) ASTIN meetings back in the 80s without even being a DAV member. And I missed hardly any ASTIN Colloquium since then! I always loved travelling to interesting destinations, meeting personalities like Teivo Pentikäinen, Hans Bühlmann or Paul Embrechts (and many more) and having a lot of fun during excursions and evening events. But don't underestimate the scientific impact: I always tried to find out what presentations might be useful for solving my business problems – and there were many! From pricing of reinsurance treaties to reserving and capital allocation and quantification of operational risk!

**YK:** ASTIN has definitely fulfilled its initial purpose by revolutionising the actuarial profession in the second half of the 20th century. Do you think ASTIN's new mission is now to contribute to developing the next generations of actuaries of new kind – e.g. ‘actuaries of the fourth kind’ (modern risk managers) and ‘actuaries of the fifth kind’ (InsurTech quants)?

Where do you see ASTIN in the future, say in 10 to 20 years from now?

**EM:** We are already “actuaries of the fourth kind”. Our world is more and more determined by integrated risk management rather than silo solutions. That does not mean that we are no longer required to deliver solutions for isolated actuarial problems, but we usually do this with full knowledge of the environment where our solutions fit in.

Coming to the (future?) fifth kind, I would not think that the InsurTech quants really make up of this. The real challenge for actuaries of the fifth kind is, in my view, the soft skills. An actuary has to learn the language of the ultimate decision maker and to create a "communication level playing field". Achieving this might certainly help to be one of the "sought after" actuaries in 10 to 20 years. And of course, it helps already today!

**YK:** What do you think attracts people to ASTIN today? What we, ASTIN Board, do well, and what should be improved?

**EM:** As ASTIN Board we frequently discuss how to create value for our members and we always try to find ways to increase this value, e.g. by offering opportunities like the *actuvview* access during the ICA2018. Also, the current initiatives like Master Classes and Expert Helpline are serving this purpose. On the other hand, we are bound by the same restrictions as others in Corona times. Here we have to make crystal clear that we do what we can despite all the constraints we are currently facing. Organisation of the first virtual section colloquium replacing the Paris event was one important step into this direction.

**YK:** Eberhard, at the end I would like to ask you a few blitz questions.

How would you briefly describe Eberhard Müller?

**EM:** A grown-up child who still loves to play around – especially with model trains.

**YK:** What is your favourite book of all times and what do you read these days?

**EM:** Stanislaw Lem (*Solaris*) was my favourite author when I was young. I liked his sentence very much: "Every thought is thinkable". Nowadays, I have to admit that my favourite literature is travel books.

**YK:** Your favourite actuarial joke?

**EM:** There are three kinds of actuaries: those who can count and those who can't.

**YK:** Your favourite destination?

**EM:** In this order: San Francisco, Sydney, Boston.

**YK:** Your next ASTIN Colloquium?

**EM:** Orlando, of course!

**YK:** Eberhard, I really enjoyed our conversation. Thank you for your time.

## ASTIN Regional Event

*Modelling Tail Events - NZSA webinar by Dr. Frank Cuypers*



On 30 July 2020 the New Zealand Society of Actuaries (NZSA) hosted a webinar on *Modelling Tail Events* presented by Dr. Frank Cuypers, ASTIN Chair. The webinar covered the following topics:

- Rare events in the context of risk and solvency models.
- Experience models of extreme events and their calibration.
- Exposure models of extreme events and their validation.
- Tail dependencies and their inference.

The video recording of the webinar is freely available and can be accessed [here](#).

## Orlando 2021



The 2021 Actuarial Colloquia of the AFIR-ERM (Finance, Investment & Enterprise Risk Management) and ASTIN (Non-Life Insurance) Sections of the IAA will be held in Orlando, Florida, USA. The Casualty Actuarial Society (CAS) is delighted to host this event. These colloquia will bring together the best actuarial researchers and practitioners, along with their papers exhibiting the latest actuarial and scientific techniques.

For more details please visit the colloquia website at

<https://actuarialcolloquia2021.org>

### *Call for Papers*

Call for Papers for the 2021 Actuarial Colloquia is now open. To express your interest, please submit your abstract using this [online form](#).

## ASTIN Webinars

ASTIN regularly organises its topical webinars with the assistance of the IAA Secretariat. They are used to share knowledge and expertise among ASTIN members and the wider non-actuarial community.

A recording of each webinar, along with a PDF copy of the presentation, can be found on the ASTIN website and are freely accessible to ASTIN members (login required). Not a member? You can participate by simply [joining ASTIN Section](#) (membership fee is CAD 50.00).

### *Our recent webinars*

We have recently organised the following webinar:

- 16 July 2020 - **Strategic Modelling and Scenario Planning** by Carlos Fuentes (USA).

## Forthcoming Events

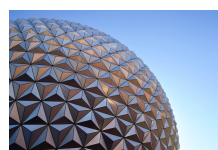
### IAA Meetings

- [Virtual Council and Committee Meetings \(4Q 2020\)](#)
- [Brussels, Belgium 8-13 May 2021](#)
- [Seoul, South Korea 11-15 Oct 2021 \(tentative\)](#)
- [Sydney, Australia 30 Mar - 3 Apr 2022](#)

### ASTIN Colloquia

#### **2021 - May 25-28, Orlando, FL, USA**

The ASTIN Colloquium will be held jointly with the AFIR-ERM Section at Disney's Coronado Springs, in collaboration with the CAS.



#### **2022 - April 4-8, Sydney, Australia**

ASTIN Colloquium will be held as part of 32<sup>nd</sup> ICA.



#### **2026 - Tokyo, Japan**

ASTIN Colloquium will be held as part of 33<sup>rd</sup> ICA.



## Resources

Don't forget the following resources which have a lot of information about ASTIN, and its research:

[ASTIN Annual Report](#) | [ASTIN Bulletin](#) | [ASTIN Video](#) | [ASTIN Newsletters](#) | [ASTIN website](#)

Also, please follow us on social media: [LinkedIn](#), [Twitter](#) and [Facebook](#).

## Contacts

Key contacts on the ASTIN Board

- [Frank Cuypers](#) [Chairman]
- [Yuriy Kravych](#) [Secretary]