



RSA - Global Consulting Scandinavia

Water Mist Systems – From an insurance company perspective

May 2013 - Copenhagen

Daniel Maria in collaboration with Stephan Malon & Pia Ljungren
Global Consulting – RSA Group

Statement



The material and conclusions in this presentation are based on RSA Global Consulting own engineering field experience. It does not necessarily represent the whole insurance industry's opinion on water mist systems.

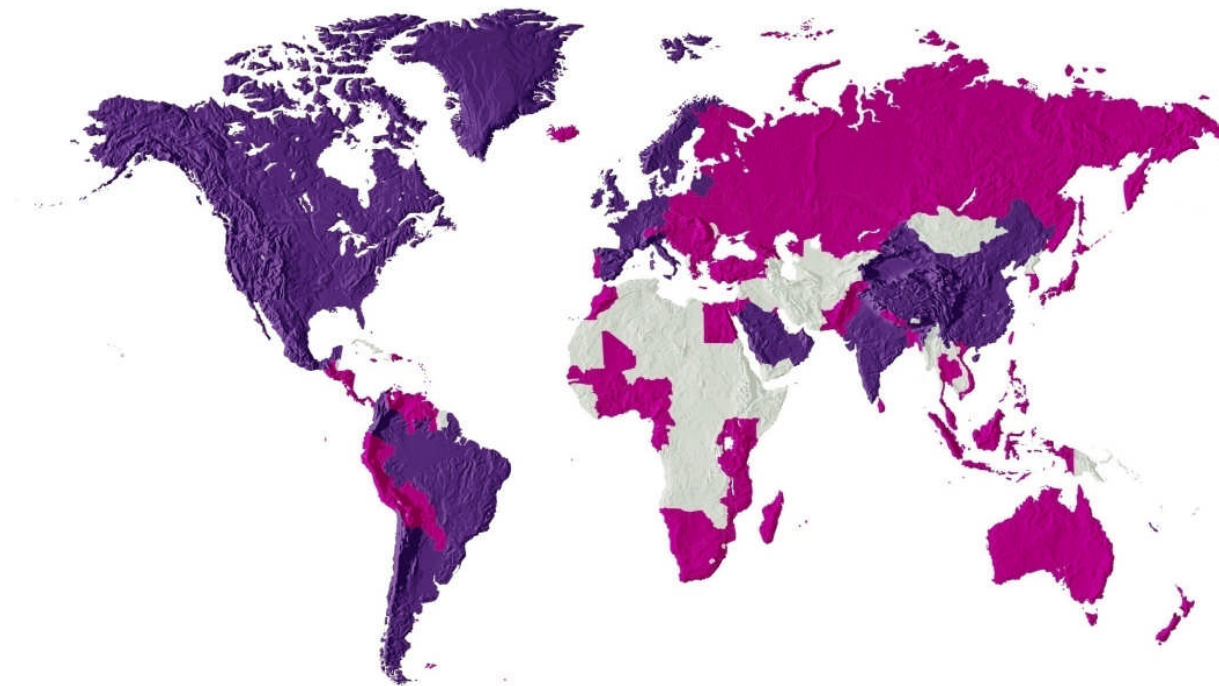
Agenda

- RSA & Global Consulting
- Pros & Cons from our perspective
- End Discussion / Questions



RSA

- ❑ Business in around 140 countries - Focus on general insurance
- ❑ Around 23,000 employees
- ❑ 2011 net written premiums were £8.1bn

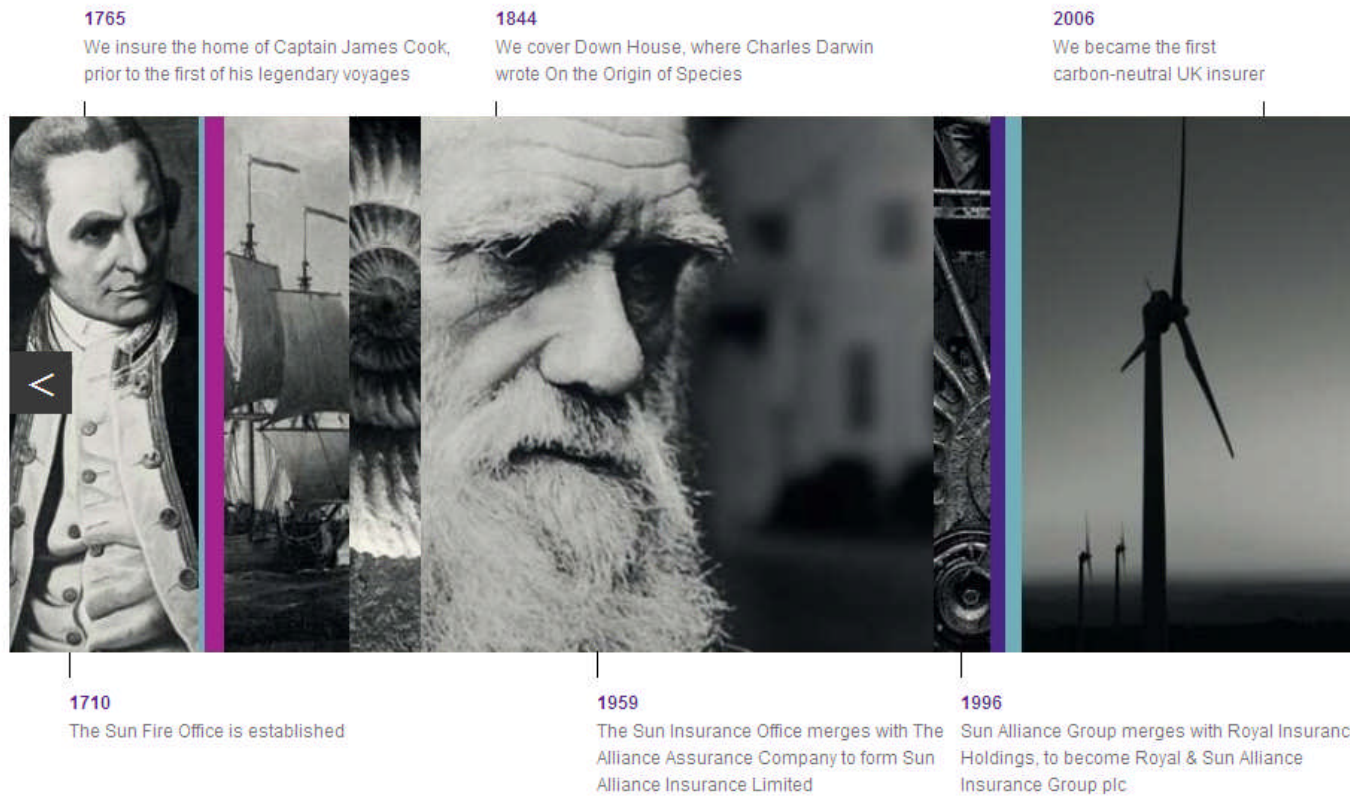


● RSA

● Network Partner

RSA

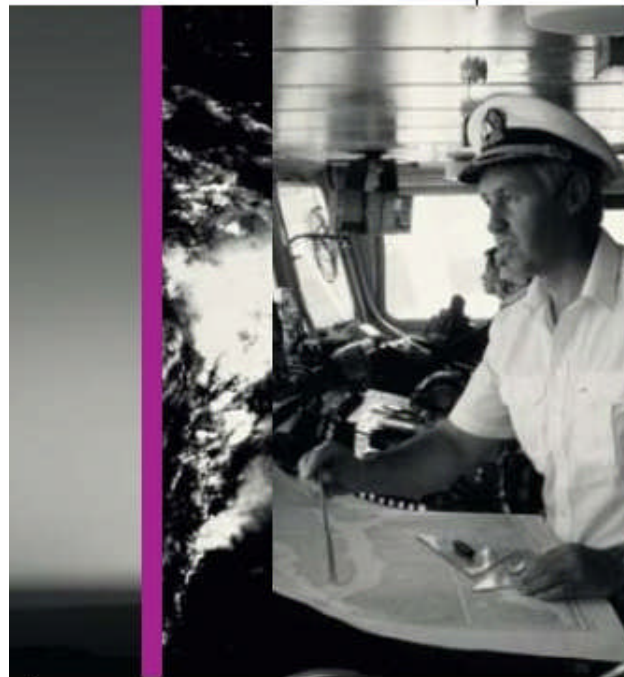
□ 300 year heritage



RSA

2008

We help rebuild port facilities at Galveston in Texas, after Hurricane Ike



2009

We take part in the reconstruction of the Italian city of L'Aquila following an earthquake



2001

MORE TH>N launches in the UK

2008

Royal & Sun Alliance becomes RSA Insurance Group plc

RSA

- Trygg-Hansa/Codan is Scandinavia's third-largest non-life insurance company
- The Codan group has 4,000 employees in Denmark, Sweden and Norway
- Local brands in Scandinavia, in Swedish market as Trygg-Hansa, Aktsam and Sveland



RSA



- One of the world's largest non-life insurance companies
- 23,000 employees and offices in 33 countries
- More than 17 million customers in 140 countries
- HQ in London
- Listed on London Stock Exchange

- Operations in four countries
- Acquired Trygg-Hansa from SEB in 1999
- Head quarter in Copenhagen

- Dates back from 1828
- The life buoy was created in 1954
- Trygg-Hansa was formed in 1971 after a number of mergers
- Acquired Folksam's commercial business in 2001
- Acquired the majority of Sveland P&C in 2010

GLOBAL CONSULTING

- RSA international engineeringg team having access to over 70 highly qualified Risk Consultants located around the world, providing our clients with tailored professional guidance on risk control management across:
 - Property
 - Liability
 - Construction
 - Machinery & Equipment
 - Business Interruption
 - Motor Fleet and Logistics

- Our consultants are risk engineering and risk control specialists, with expertise across a wide-spectrum of industries. We offer a broad package - from risk surveys to services e g,
 - Business-interruption reviews
 - Business-continuity-planning consulting
 - Customer seminars
 - Assistance with corporate standards

- Global Consulting Account Consultants co-ordinate the delivery of advice, ensuring consistency and partnership



Water Mist – Our perspective

Our Work

- ❑ In general, part of our work is to provide our underwriters with risk assessments in order to set a premium which is as relevant as possible in relation to the risk. The risk assessments are usually the result of surveys at our clients facilities.
- ❑ We also assist our clients to find the best suitable risk mitigation actions through our advice and risk improvement recommendations.



Water Mist – Our perspective

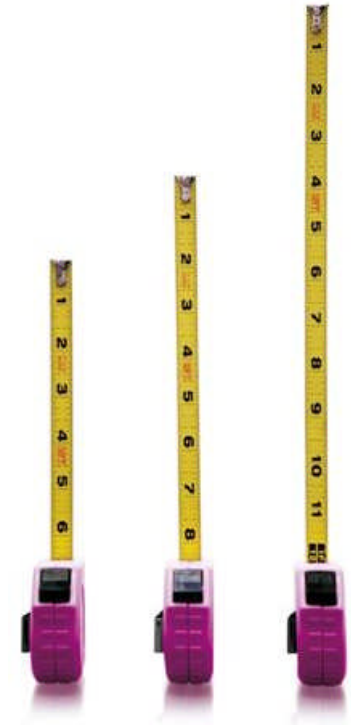
- From a traditional perspective **Fire** has the greatest impact on insured businesses.
 - Hence focus on property damage.

- Therefore credit is given if risk mitigation actions are in place as for example, but not limited to;
 - Passive fire protection, i.e. compartmentation, segregation, building construction etc.

 - Active fire protection, i.e. automatic water sprinklers, point protection systems, automatic fire/smoke/heat detection systems.

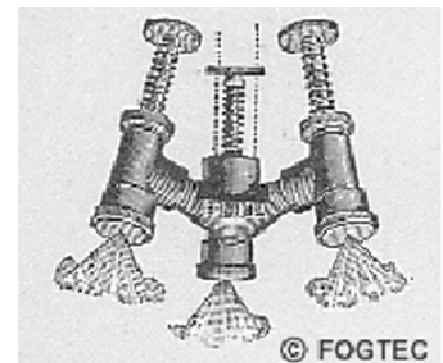
- However,
 - Design must be according to acknowledged codes and regulations.

 - Good standards of maintenance, testing and controls must be in place.



Water Mist – Our perspective

- ❑ As early as 1870 Fogtec® patented a mist nozzle
- ❑ Late 1970's and early 1980's - first commercially available water mist systems - Sweden
- ❑ They are always used in closely defined locations with incombustible boundaries



Mist nozzle(1870)

Water Mist – Our perspective

NFPA 750: Standard on Water Mist Fire Protection Systems.

“This standard does not provide definitive fire performance criteria, nor does it offer specific guidance on how to design a system to control, suppress, or extinguish a fire.”

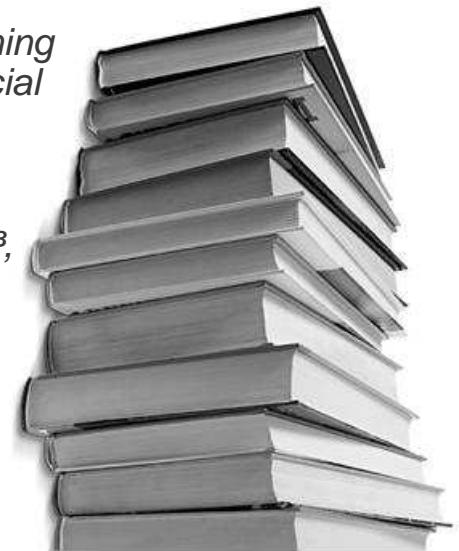
FM 5560 Approval Standard for Water Mist Systems.

“Approval Standards are intended to verify that the product described will meet stated conditions of performance, safety and quality useful to the ends of property conservation.”

BSI DD 8489: Fixed fire protection systems – Commercial and industrial watermist systems – Parts 1, 4, 5, 6 & 7

“This part of DD 8489 gives recommendations for the design, installation, commissioning and maintenance of fixed water mist systems for the following industrial and commercial hazards:

- ✓ *local applications involving flammable liquid fires, as detailed in DD 8489-4;*
- ✓ *combustion turbines and machinery spaces with volumes up to and including 80 m³, as detailed in DD 8489-5;*
- ✓ *industrial oil cookers, as detailed in DD 8489-6;*
- ✓ *low hazard occupancies, as detailed in DD 8489-7.*



Water Mist – Our perspective

From the three previously shown documents

R&A - GC **Pros & Cons** End Discussion


Water Mist – Our perspective

NFPA 750: Standard on Water Mist Fire Protection Systems.
"This standard does not provide definitive fire performance criteria, nor does it offer specific guidance on how to design a system to control, suppress, or extinguish a fire."

FM 5560 Approval Standard for Water Mist Systems.
"Approval Standards are intended to verify that the product described will meet stated conditions of performance, safety and quality useful to the ends of property conservation."

BSI DD 8489: Fixed fire protection systems – Commercial and industrial watermist systems – Parts 1, 4, 5, 6 & 7
"This part of DD 8489 gives recommendations for the design, installation, commissioning and maintenance of fixed water mist systems for the following industrial and commercial hazards:

- ✓ local applications involving flammable liquid fires, as detailed in DD 8489-4;
- ✓ combustion turbines and machinery spaces with volumes up to and including 80 m³ as detailed in DD 8489-5;
- ✓ industrial oil cookers, as detailed in DD 8489-6;
- ✓ low hazard occupancies, as detailed in DD 8489-7.



RSA

May 2013 – Water Mist Seminar – RSA GC Scandinavia

Water mist systems are seen by all standards institutes as risk and fire test specific and stepping outside these “controls” would be at the designers own risk.



Water Mist – Our perspective

Pros

- These systems can be used when there is a limited water supply
- The extinguishing agent is environmentally friendly
- The water mist “scrubs” smoke and soot out of the air



Cons

- The systems are proprietary
- Difficulty to perform regular testing
- Reduced reliability
- Layout fixed systems
- Difficulty to extinguish a fire in shielded areas (similar to conventional sprinklers)

Water Mist – Our perspective



Conclusion

If there is no full scale tests data available for a specific water mist system we may encounter – we will acknowledge the system but will give limited credit to it in our assessment .

However, credit has been given in unusual cases where full scale testing has been witnessed by us;

- **Tunnels**
- **Hydraulic pump basements in steel mills**
- **Etc.**

End Discussion



Final Discussion

What is the Future?

Thank You!



Daniel Maria
Account Consultant
Global Consulting Scandinavia - RSA Group

Dir. phone: +45 30 37 78 73
dme@codan.dk