



THE INTERNATIONAL ASSOCIATION OF ENGINEERING INSURERS

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FAST DEVELOPING TECHNOLOGY UNDERWRITING AND CLAIMS ISSUES

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FAST DEVELOPING TECHNOLOGY UNDERWRITING AND CLAIMS ISSUES

- Fast developing technology
 - The pace of change
 - Industries with high rates of development
 - The drivers of changes
 - Patents
 - Increasing risks
- Industries of interest to engineering insurers
 - Development of some power technology industries
 - (steam turbines, gas turbines, wind turbines, solar)
 - General findings
- Underwriting issues
 - Characterising and quantifying risks
 - Technical expertise and keeping up to date
 - Simulation models
 - Prototypes and fast developing technology
- Underwriting Issues (continued)
 - Experience of the insured
 - Material change in risk, deductibles and exclusions
 - Serial loss, output improvements and repair costs
- Claims
 - Claims problems
- Risk management post underwriting and the future
 - The role of surveys and risk engineering
 - Survey and risk engineering recommendations
 - Changes in risk
 - Innovative solutions
 - The future

FAST DEVELOPING TECHNOLOGY

The first Parsons steam turbine 1884

PACE OF CHANGE

- Obvious changes
- Standards of living
- New ideas and discoveries
- More proficiency
- Science and technology bound together
- Exponential growth

INDUSTRIES WITH HIGH RATES OF DEVELOPMENT

- “High tech”
- Applies to certain sectors
- Penetration can be deceptive

THE DRIVERS OF CHANGE

- Moore's law
- Globalisation, productivity and competition
- Products with shorter life span

PATENTS

- Monopoly
- Cost of repairs
- Competition
- Patents increasing

INCREASING RISKS

- Past innovations without insurer involvement
- Market demand
- Modern design techniques
- Remote monitoring

INDUSTRIES OF INTEREST TO ENGINEERING INSURERS

The first Brown Boveri gas turbine

DEVELOPMENT OF SOME POWER TECHNOLOGY INDUSTRIES

- Steam turbines
- Gas turbines
- Wind turbines
- Solar Panels

GENERAL FINDINGS

- Changes are continuous
- Less advanced - more potential step changes
- Computing power
- Gas and wind turbines - fast developing

UNDERWRITING ISSUES

CHARACTERISING AND QUANTIFYING RISKS

- Claims histories unreliable
- Main underwriting criteria relate to maturity
- Information is vital
- “Only underwrite what you really understand”

SIMULATION MODELS

- Useful in certain technologies
- Probability of success
- Extrapolation

PROTOTYPES

- Defects more likely
- What is prototypical?
- When does it cease to be a prototype?
- Scaling up or down or reconfiguration

MATERIAL CHANGE, DEDUCTIBLES, EXCLUSIONS

- Munich Re definition
- High deductible
- Innovation?
- Design exclusions

SERIAL LOSS, OUTPUT IMPROVEMENTS AND REPAIR COSTS

- Serial loss
- Defect rectification
- Output improvement
- Repair cost
- Contingency plans?
- Sub-limits

CLAIMS

CLAIMS PROBLEMS 1

- Fair price
- Black market
- Patent rights
- Parts difficult to source

CASE HISTORY – SCARCE LIFTING RESOURCES

CLAIMS PROBLEMS 2

- Second hand market problems
- Independent expertise
- Obsolescence
- Replace rather than repair
- Short product cycles

CASE HISTORY – CLAIMS INVOLVING PV PANELS

CAUTION

Solar PV Wiring May Remain Energized
After Disconnection During Daylight Hours.

RISK MANAGEMENT - POST UNDERWRITING AND THE FUTURE

THE ROLE OF SURVEYS AND RISK ENGINEERING

- Opportunity to review progress
- Survey budgets
- Manage technology risk

SURVEY AND RISK ENGINEERING RECOMMENDATIONS

- Spares
- Alternative technological solutions
- Redundancy
- Testing
- Updates
- Early procurement

CHANGES IN RISK

- Underwriting assumptions
- Is a technology change a change in risk?
- Moral hazard

INNOVATIVE SOLUTIONS

Ways to make fast developing or complex technologies insurable

- Tunnelling
- Nuclear
- Photovoltaic

THE FUTURE

- Opportunities and risks
- Limits and discipline
- Insurers need to explore:
 - boundaries
 - horizon scanning
 - earlier engagement
 - the influence of availability

Questions?