

IMIA 1994

Performance Guarantee insurance

1. Introduction

This is not the first time that the IMIA has been concerned with subjects which fall into the grey area between insurance in the classic sense and the actual entrepreneurial risk, which is widely seen as uninsurable.

In 1976, the subject of "Entrepreneurial risk and Engineering insurance" was treated. Here, the entrepreneurial risk is defined briefly. Then the forms or aspects of Engineering insurance that affect the entrepreneurial risk to a greater or lesser extent are demonstrated. The following examples are listed: the insurance of the consequences of "construction, material and implementation errors" within the framework of EAR, CAR; the insurance of prototypes and the insurance of warranty liability in connection with the manufacture and delivery of machines and technical plant within the framework of Machinery Guarantee insurance and Maintenance insurance. In an initial argument, it is demonstrated that "experience of the cover of the above-listed borderline cases....show that insurers in the Engineering insurance branches have already ventured relatively far into the entrepreneurial risk sectors". A second section of this paper examines the entrepreneurial risks that are not yet (or are only seldom) covered under Engineering insurance. Right at the beginning, the Performance Guarantee is listed, and the Availability Guarantee and Product and Late Completion Guarantees are mentioned. In the closing comments on the insurability of these risks, the most important and most delicate criteria to be considered here are dealt with and finally, the following conclusion is drawn: "... accepting such Performance, Product and related guarantees always conceals the danger that the insurer steps into the place of the entrepreneur. The entrepreneur assumes his specific risk in order to stay in business and make a profit. Basically, there is neither profit without risk nor risk without a chance of profit for him. If the insurer were to help carry the actual entrepreneurial risk, then he would also have to participate in the entrepreneurial profit. He would then no longer be active as an insurer with the actual insurance-entrepreneurial risk entrusted to him, but rather entirely as an industrial entrepreneur. The insurer cannot, however, play this role; he is not equipped to assess guarantee requests as regards the efficiency, productive power and economic success of industrial concerns....". (IMIA Paper 6-20 (76))

Eight years later, in 1984, the theme "Engineering Risks" was treated. Already in the introduction, it was established that "the insurance of technological risks is not really developed...". This paper is, furthermore, based on that of 1976 and indicates some fairly unsuccessful developments in the USA and France in the organisation of "non-damage coverage linked to new projects of a highly technological nature" and concludes that "one may say that the insurance of technological risks will probably never represent a great share of this market....however, we wonder if it would be of interest to look for this type of insurance more often". (IMIA Paper 6-36 (84))

At this point, we do not intend to provide extensive, theoretical foundations for this paper. We refer to the above-mentioned IMIA papers for this, and to literature that the main reinsurers have at their disposal for treating such applications.

On the other hand, we would like to add some of our own observations and conceptual descriptions, partly in a theoretical form, at the end of section 2.

Subsequently, we move on to our questionnaire and the answers we received, which we have defined as the main task of our paper: Do today's market conditions in the individual IMIA countries still correspond to the 1976 and 1984 conclusions? What is the demand situation of the industry like, as regards the insurance of performance guarantees and similar insurance forms? What are the limits of insurability today for direct insurers and reinsurers? Is such insurance offered and concluded? If so, for whom and under what contractual and price conditions? With what prerequisites and provisos?

To this end, we have added the questionnaire that we designed, including a short commentary on the answers we received, as an enclosure for each of the country delegations. The answers that we examined are evaluated in section 3 of this paper.

In section 4, we will then try to draw our conclusions to submit to the IMIA 1994 as regards the insurability of performance guarantees in the wider sense.

2. Foundations

Every entrepreneur, every enterprise bears an enormous quantity of risks of every kind. A distinction can be made here between dangers that threaten from the outside (natural perils, fire, political risks) and risks that pertain directly to

the business itself and to achieving the actual entrepreneurial target, such as market assessment (demand and competition situation), product design and quality or type of marketing. We would like to call the latter **entrepreneurial risks** in the more narrow sense. They are largely linked with the subjective qualities of the actual business/entrepreneur. Managing or solving these will decide directly and with no further influences from the outside whether the business can survive in the market or not.

For every company, legislation lays down **warranty liability** as regards its output. In addition, any company will have a tendency to give contractual guarantees, going beyond the legal liability, in order to assert and develop itself in the market.

Within the framework of his **risk policy**, the entrepreneur will strive to cover the dangers mentioned above with insurance also, to as great an extent as possible. He will then see that his insurer shows great caution where these are concerned. (We would just like to remark in passing that Liability insurers exclude fulfilment of the contract and compensation for this, as well as the acceptance of contractual guarantee liability going beyond legal requirements, from the cover in many places and as a general principle.)

In the Engineering insurance sector, the entrepreneur will have the possibility of concluding **Machinery Guarantee insurance** in this context. In the normal case, this covers unforeseen and sudden property damage to delivered goods, as long as the manufacturer is liable on the basis of a legal and contractual warranty and as long as the damage can be attributed to a design and calculation error or to a construction, material, manufacturing or erection error. Purely material defects are not insured. We all know that this insurance branch is problematic - precisely because it is concerned with the entrepreneurial risk in its true sense - and that it regularly shows unsatisfactory to poor results.

For the insurer, the risk situation in the area of the performance guarantee and similar is obviously still more delicate. This is clearly shown in the evaluation of the questionnaire below. Frequently, these guarantee forms also feature assurances on the part of the manufacturer (or distributor) as regards:

- the period of time for which plant or a machine is available, or the performance or work availability (availability guarantee),
- completion date or delivery date to deadline (late completion guarantee),

- the (maximum or permanent) performance (kW, HP) to be furnished for the purposes of the performance guarantee,
- quality of the manufactured or delivered machine or plant (e.g. resistance, surface quality, chemical composition, corrosion resistance, quality guarantee),
- energy or raw material consumption (consumption guarantee),
- efficiency requirements (e.g. thermal efficiency).

Finally, guarantees regarding natural resources (gas, oil, thermal water) can be included in such developmental projects.

The insurer is expected to provide compensation for the costs of repairs or the replacement of machines or plant delivered and/or acceptance of any additional costs that arise for the manufacturer or the customer, including contractual penalties agreed upon between these two.

3. Results of our survey in the IMIA countries

The performance guarantee has already been written about and discussed to quite a large extent. For this reason, we were amazed that:

- 11 countries reported that no corresponding insurance activities are identifiable on the market;
- only 3 countries reported actual applications, which were indeed examined, but no offers were made, so that there are also no policies;
- only 3 countries and the two reinsurers gave examples on their questionnaires.

This situation already shows that the greatest caution is exercised in general as regards performance guarantee, and that usually this type of insurance is not actively sought and promoted by the insurer.

For what and how often is there demand, and where does it come from?

In evaluating the questionnaire, it was interesting to establish that the most frequently named objects involved power plants and turbo-generators. That is, the same objects that usually also produce the most frequent demand for Erection and Machinery Guarantee insurance in internationally tendered projects.

In second place is production plant in the chemical/petrochemical industry. In addition, waste incineration power stations and UPS plant were also mentioned.

It seems surprising that no raw material resources such as gas, oil or coal were reported.

The description of the guarantee characteristics produced the following demand variants, listed in order of frequency:

- compensation if completion deadline is not met
- inferior performance
- exceeding emissions levels
- increased energy requirement
- availability shortfalls
- design errors
- acts of God.

The variety of the variants mentioned indicates that demand differs greatly from risk to risk.

From this, the following demand for guarantee covers results:

Delays in completion date was most frequently mentioned. This form of performance guarantee is presumably also offered in countries for which no reports were received in our poll. Nevertheless it would appear that this form of Guarantee insurance is offered to a modest degree on an individual case basis in more or less all countries.

Adequate performance was listed in second place and temporal availability, finally, was mentioned third most frequently.

If we examine the frequency with which such Guarantee insurance is offered, the evaluation results in a very small number.

Usually, the frequency was given as "seldom" to "occasionally", i.e. the offers were only made 1 - 4 times per year. In no case, however, were such offers made more often and then still more seldom concluded.

To which clients are offers being made?

Here, all reports are in agreement. The performance guarantee is only offered to clients that have relevant experience in setting up such objects. Usually, offers are only made to companies that already have an insurance portfolio and as additional cover to classic insurance such as, for example, Erection insurance.

The underwriting is usually done by the insurer's own personnel, who also write the Engineering insurance. Experts are brought in quite rarely; in only one case was the broker mentioned.

There are no **standard conditions**; all reports agree on this. In individual countries, there are at least standard exclusions, in particular for:

- additional events that do not fall under the contract,
- claims that can be met in another way,
- lack of construction and operating permission,
- undertakings made by the policyholder which, in accordance with the technical situation, were not achievable,
- damage and defects that had already occurred in the supplier's workshops and had been recognised there,
- war, acts of God, strikes, lockouts, nuclear energy,
- costs due to reduced demand,
- loss containment costs.

It is thus also not surprising that there is no **rating data**. The following quotations were given as approximate values:

- | | | |
|----------------------|-------|-----|
| - only 1 x | 2- | 10% |
| - otherwise, usually | 5- | 10% |
| - or entirely | up to | 20% |

Statements made on the **duration** of a guarantee hardly agree with one another at all. All variants up to 5 years were reported. Obviously, the duration of the guarantee depends very much on the object insured and the demands of the client.

Minimum retention

The minimum retention agreed upon or offered varies very greatly. Most frequently, a minimum retention of between 5 - 10% was mentioned. Under 5% is hardly offered; on the other hand, minimum retentions of 10 - 20% and above are not rare. Depending on the performance guarantee, a temporal minimum retention is evidently also applied.

Little can be stated as regards **loss experience**. Often, there is no loss experience, or it is above 100%.

Only in one individual case was a good loss experience reported. This was in the case of few policies and it had been decided nevertheless not to continue any more with this type of business any more.

In determining the **MPL**, it was clearly stated that this should tend towards 100%, not least because the policyholder's estimated requirement limit is usually concerned here and it must therefore be expected that the estimated requirement would be used up to the limit in a loss event.

As regards the proportion of the number of policies to the offers made, all variants - from very few to 100% - were reported.

Statements on the subject of estimated annual premium volume were very diplomatic. The short answer was unknown or very low. If we had asked for profit figures, the answer would probably have been just as diplomatic.

4. Conclusion

There would certainly be demand on the part of industry, either because:

- the client calls for it
- the manufacturer has too little experience, or
- the financing company wants security.

Since every case is different and touches on the limit of insurability, or exceeds the possibilities of the insurer, extreme caution is exercised by the insurer and reinsurer. Thus there are no statements backed up by statistics and, because of the wide spread, no standard conditions either. A typical form of performance guarantee - late completion because of damage to property - can be much better covered meanwhile by Construction or Erection BI insurance (Advance Loss of Profits, ALOP). The main advantage here is that it is not the contractor but the principal (or plant operator) who is the policyholder, since he is the person who really suffers the loss due to the late completion. The sum insured is thus no longer confined to a largely fictitious limit, but corresponds to the pecuniary loss actually incurred. For these reasons, the ALOP insurance has developed well in recent years and, from an underwriting point of view also, is becoming more and more manageable.

We regret that we cannot pass on any patented formulae to you. However, while working on this subject, we have come to the conclusion that it is also better, where possible, for the entrepreneur or client to be responsible for his purely entrepreneurial risk or promises himself.

Alfred Bünzli

Dr. Ivo Zoller

Encl.: Questionnaire

St-Gall, 23th March 1994

IMIA Meeting 1994
Topic "Performance Guarantee"

Gentlemen

The working party preparing the IMIA paper "Performance Guarantee" would like to elaborate on the actual market situation in respect of this particular type of coverage for which we depend on your assistance. Therefore, we would very much appreciate it if you could complete and return the enclosed questionnaire by April 15th, 1994.

The term "Performance Guarantee" means: Cover designed to protect the contractor for its liability assumed under contract for payment of liquidated damages to the owner for late completion and/or performance shortfalls following errors and omissions on the part of the contractors with the work to be performed under the construction agreement. Such work could cover the Engineering, design procurement, construction and commissioning of the project.

Typical forms of guarantees:

- A) Availability
- B) Performance shortfall
- C) Yield of resources
- D) Late completion
- E)
- F)

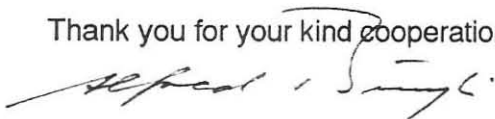
In case there are any other forms of guarantees granted in your country please add them to the above list.

For each form A to F .. you are kindly requested to complete a separate questionnaire.

If the local insurers in your country do not write this type of coverage please mark this here with a cross

and answer the questionnaire in respect of covers offered by foreign competitors in your country.

Thank you for your kind cooperation.



Questionnaire

The answers hereunder refer to coverage

.....

1) How often is this type of cover requested:

- rarely
- occasionally
- often
- times per annum (estimated number of requests)

2) Type of projects for which this coverage was offered/granted

General description of machinery/installation:.....

.....
.....
.....
.....

Description of Guarantee criteria:.....

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.....
.....
.....

3) To whom do you offer/grant this cover ?

- to everybody without any limitation
- to clients experienced in the construction of such projects
- to clients with whom you have substantial other business, i.e. if premium volume for other lines is at least \$
-

4) Who is responsible for the underwriting?

- own staff responsible for technical lines
- own staff together with neutral experts
- external specialists, risk engineers
- Brokers
-

5) Do you have standard policy forms?

- yes; if yes please forward copy
- no; if no are there any

standard exclusions? yes no

standard obligations to comply with yes no

(if yes please attach)

6) Have you any rating manuals?

- yes; if yes please attach
- no

7) What is the average range of premium rate?

		% of quotations
Under	1 % %
1.1 -	5 % %
5.1 -	10 % %
10.1 -	20 % %
20.1 -	33 % %
above	33 % %

Remarks:

.....

.....

.....

8) Duration of the Guarantee

% of quotations

- | | | |
|--------------------------|---------------|---------|
| <input type="checkbox"/> | 1 year | % |
| <input type="checkbox"/> | 2 years | % |
| <input type="checkbox"/> | up to 5 years | % |
| <input type="checkbox"/> | above 5 years | % |

Remarks:

.....

.....

.....

9) What is the average range of the deductible?

% of quotations

- | | | |
|------------|-------------|---------|
| Under | 5 % | % |
| | 5.1 - 10 % | % |
| | 10.1 - 20 % | % |
| above | 20 % | % |
| fix amount | | % |

Remarks:

.....

.....

.....

10) Loss experience

% of quotations

- | | | | |
|------------|-------|-------|---------|
| Loss ratio | 1 - | 49 % | % |
| Loss ratio | 50 - | 99 % | % |
| Loss ratio | above | 100 % | % |

Remarks:

.....

.....

.....

11) Estimation of maximum probable loss

		% of quotations
up to	49 % of the Performance Guarantee %
50 -	74 % of the Performance Guarantee %
75 -	99 % of the Performance Guarantee %
	100 % of the Performance Guarantee %

Remarks:

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12) Hit ratio policies/quotations %

13) Estimated annual premium in your country \$

14) Remarks:

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