IMIA – WGP 11 (00) E

# RISK CONTROL AND CLAIMS HANDLING IN ADVANCE LOSS OF PROFITS INSURANCE (ALOP)

A Presentation by Reinsurers at the IMIA Conference 2000 in Munich



## Executive Summary:

In the much-celebrated year 2000, the reinsurers' presentation is again concerned with the subject of Advance Loss of Profits.

This may prompt some ironically disposed readers to enquire whether we are running out of subjects and have consequently raised ALoP to the status of a conversation piece. This is certainly untrue. There are also many other new, unresolved issues on which it would naturally have been interesting to expound. But the factor which has compelled us to put pen to paper once again, four years after the publication of our presentation entitled "New Developments in Advance Loss of Profits" (IMIA 6 – 53 (96)) is the disturbing volatility of this class of business.

The risk statistics, which were continued until the beginning of 2000 and are presented in the next chapter, reveal a pronounced rise in the number of risks and in the premium volume. The loss ratio, on the other hand has fallen to such an extent that the break-even point was reached for expired risks. This was partly the result of more thorough risk control and professionally implemented settlements. However, it would be entirely misplaced to see this as a cause for rejoicing: the high exposure of this class of business means that a single major loss pending could consume more than half the overall premium received up to now.

It is thus absolutely essential in ALoP in particular that reserves for major losses are given due attention and increased. The competition, which has at times been ruinous in recent years, has not exactly promoted this. However, it is unfortunately the case that unsatisfactory results have also often stemmed from inadequate underwriting as well as errors and omissions in claims handling.

For this reason, in the following, we would like to provide a systematic presentation of principles for and experiences with risk control and claims handling, elucidating this with examples taken from practice.

top of the main document

## Analysis of insured risks:



1. General information

The statistics on a reinsurance portfolio extrapolated to 100%, which were first published in 1996 as part of reinsurers' ALoP presentation have been continued over the last few years. It remains difficult to assess figures from combined risks separately. Nonetheless, it has been possible to analyse 539 reinsured and expired risks with 49 claims over the period from January 1980 to May 2000 (Fig. 1-5). This produced a noticeable increase in transparency, making trends clearer. The informational value is increased by the presentation of the changes since the last statistical analysis in 1996 (values in parenthesis), which provides insights into the development of the insured risks and sums insured as well as the losses in preceding years.

top of Analysis of insured risks

top of the main document

2. Number of risks

Over the last four years there has been a marked global rise in the demand for ALoP cover. The number of reinsured risks rose by 60% to a current total of 539 risks. This increase in the number of risks is at its most pronounced in civil engineering (+105%) and the power plant sector (+75%).

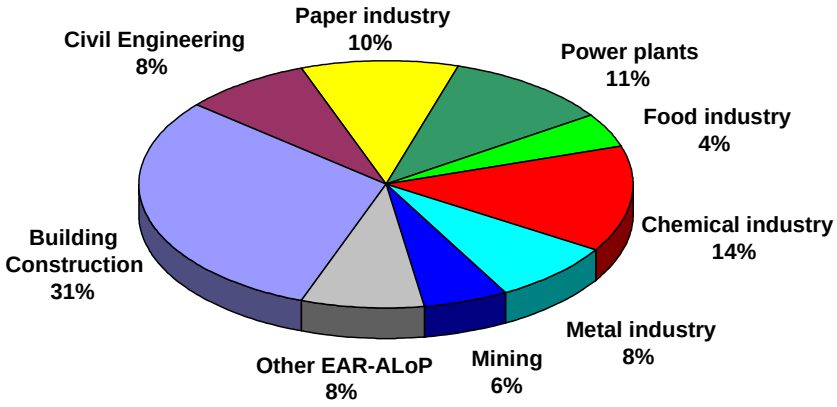



Fig. 1: Distribution of Risks
(100 % corresponding to 539 risks)

top of Analysis of insured risks

top of the main document

## 3. Sums insured

The entire sum insured for ALoP rose to € 33,23 billion (+86%). CAR risks account for one quarter of the total sum insured and EAR/ALoP risks for the other three quarters. About half of the total of the sums insured can be allocated to the chemical industry (28%) and power plants (21%). The disproportionate increase in the total sum insured in relation to the number of risks produces a current average sum insured of € 61,36 million per risk (+ 15%). The average sums insured within the portfolio vary between € 39,88 million for construction projects and € 127,82 million for chemical plants. Power plant risks experienced the greatest growth in this context with an average sum insured per risk of € 115,08 million (+100%).

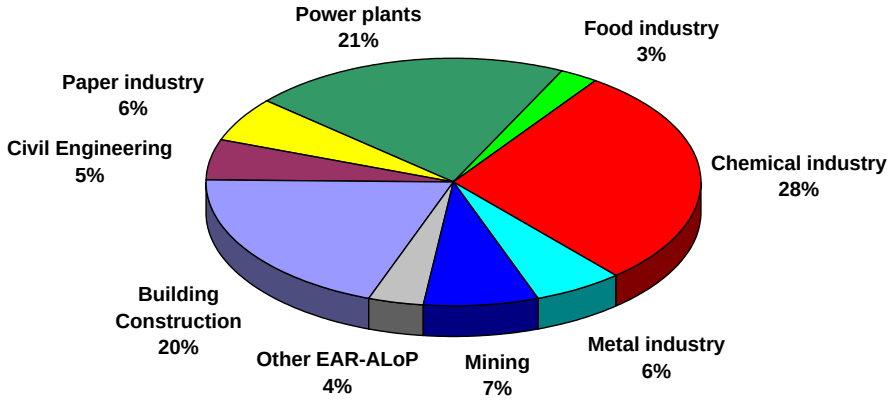



Fig 2: Distribution of Sums Insured
(100 % corresponding to € 33,23 billion)

top of Analysis of insured risks

top of the main document

## 4. Number of claims

Only amounts in excess of € 150.000 were included for claims. However, as the average claims amounts were high, this had no influence on the overall result. The increase in risks led to the doubling of the number of losses to 49 (+100%). The power plant sector and risks in the chemical and metal industries were hardest hit by this increase in losses.

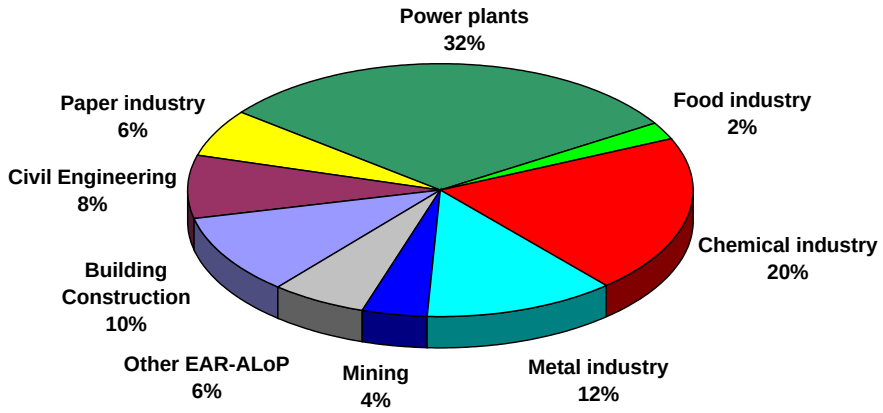



Fig 3: Distribution of claims
(100 % corresponding to 49 claims)

top of Analysis of insured risks

top of the main document

## 5. Claims amounts

As far as not yet fully settled losses involving expired risks were concerned, the current loss reserve was taken into account in the preparation of the analysis. The claims amount rose by only 5% despite the doubling of the number of losses, on account of a series of claims settlements which were favourable from the insurer's point of view. Taking reserves into account, the figure comes to € 157,47 million. The reduction in settlements had a particularly positive impact on claims in the building construction sector and in the metal and paper industry. However, the results in the building construction sector have remained adverse. The vulnerability of the ALoP portfolio is apparent from the fact that the results of some branches of industry can be significantly impaired by one major loss.

The average overall loss is currently € 3.43 million (-50%), the highest average amounts being € 7,16 million in the field of building construction and € 4.3 million each in civil engineering and the chemical industry.

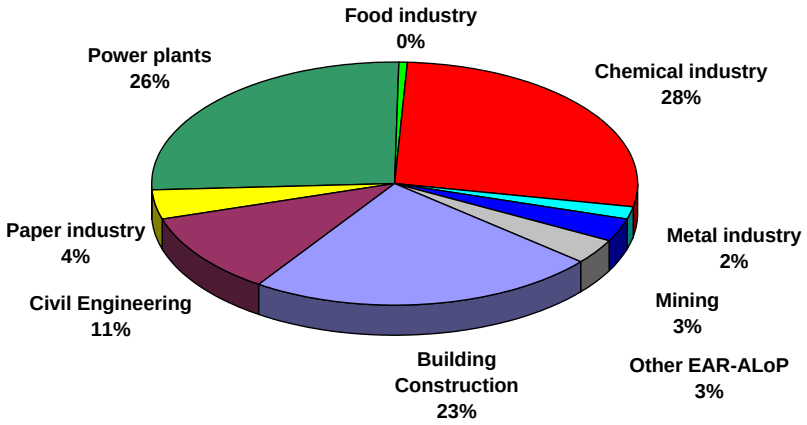



Fig 4: Distribution of Claim Amounts
(100 % corresponding to € 157,47 million)

top of Analysis of insured risks

top of the main document

## 6. Analysis

The development in ALoP is subject to very strong fluctuations and the impact of major individual losses because of the comparatively low premium volume and the high exposure of the portfolio. Losses due to natural hazards and fire risks, in particular, have a considerable influence on the overall result for ALoP. When calculating ALoP premiums, it is therefore expedient to include larger loadings for major losses and fluctuations than in other classes of insurance.

With the current overall ALoP loss ratio of 58%, the break-even point on the way to a positive overall result has been reached due to 49% loss ratio in EAR-ALoP. However, this is solely due to the favourable claims settlements over the last four years. In the CAR/ALoP class the trend has continued on a negative course with a loss ratio of 92%.

To our – the reporting reinsurers' – satisfaction, the loss ratio we were able to achieve for our share in the portfolio was better than the market ratio. This was certainly due not only to very low participations in poorly performing risks, pinpointed risk analyses, in-depth risk management and active claims processing, but also to a great deal of luck.

The high exposure of the portfolio to individual occurrences has remained unchanged, however. The following example clearly highlights how quickly already a single major ALoP loss can completely reverse the previous trend: a risk which is currently still covered by an extension of the policy period has already been affected by a delay. Should this loss become indemnifiable, this circumstance

alone would suffice to raise the loss ratio of the entire portfolio from the commencement of the ALoP business to above 100%.

The fact that the aggregate and the class-related portfolios are so highly influenced by individual major loss occurrences makes it extremely difficult to calculate a burning cost. That is why the greatest of caution should be exercised when taking data derived from statistics as a basis for rating.

In order to determine the overall risk, particularly for the PML estimate, it is not only necessary to consider the accumulation situation with the basic covers, such as marine, EAR/CAR and TPL, but also to take into account possible accumulations of insured risks located within one area as a result of losses caused by natural hazards.

The disproportionate increase in risks over the last few years is reflected in the continuously growing demand from insureds and the increasing pressure from lending institutions for cover by ALoP policies. Despite the apparently balanced relationship between the risk premium rate and the premium actually charged, it is important not to overlook the fact that both the sums insured and the exposure have undergone a drastic increase in some cases due to increasingly extensive forms of cover, thus putting the whole portfolio at a greater risk.

An analysis of the premium development over recent years shows that higher rates could only be achieved in exceptional cases and that in some classes the average actual rate has fallen, in some cases substantially. In our opinion this is attributable to the large amount of insurance and reinsurance capacity available at present which caused a sometimes ruinous competition in the insurance industry.

| Industry | Sum insured (cumulative) million € | Premium (cumulative) million € | Claims (cumulative) million € | Gross rate * %o | Actual rate %o | Loss ratio % | Number of risks | Number of claims |
|---|---|---|---|---|---|---|---|---|
| Building Construction | 6.580 | 17,83 | 36,51 | 9,25 | 2,71 | 205 | 164 | 5 |
| Civil Engineering | 1.754 | 40,70 | 17,34 | 16,48 | 23,21 | 43 | 45 | 4 |
| **CAR-ALoP** | **8.334** | **58,53** | **53,84** | **10,77** | **7,02** | **92** | **209** | **9** |
| Paper industry | 1.938 | 8,33 | 6,20 | 5,33 | 4,30 | 74 | 56 | 3 |
| Power plants | 6.877 | 84,87 | 41,09 | 9,96 | 12,34 | 48 | 59 | 15 |
| Chemical industry | 9.638 | 71,84 | 42,74 | 7,39 | 7,45 | 60 | 75 | 10 |
| Metal industry | 1.922 | 14,36 | 2,88 | 2,50 | 7,47 | 20 | 43 | 6 |
| Mining | 2.464 | 23,24 | 4,65 | 3,15 | 9,43 | 20 | 30 | 2 |
| Food industry | 885 | 1,57 | 0,59 | 1,11 | 1,77 | 37 | 23 | 1 |
| Other EAR-ALoP | 1.207 | 6,55 | 5,28 | 7,30 | 5,43 | 81 | 44 | 3 |
| **EAR-ALoP** | **24.931** | **210,76** | **103,43** | **6,92** | **8,45** | **49** | **330** | **40** |
| **Total ALoP** | **33.265** | **269,29** | **157,28** | **7,88** | **8,10** | **58** | **539** | **49** |

*Gross rate (%o) = claims x 1.667 / sum insured

Factor 1.667 corresponding to
30 % costs including commission
\+ 5 % calculated profit
\+ 5 % loading for major losses and fluctuation

Fig. 5 ALoP statistics 1980 – 2000
Analysis of 539 risks and 49 claims

top of Analysis of insured risks

top of the main document

## Risk Control:



The best kind of loss is one which has been avoided or at least reduced in extent by effective risk control. In this field especially, undreamt-of possibilities emerge for the ALoP underwriter.

In ALoP insurance, the range of material damage which triggers the insurer's liability is by far the broadest, compared with all the other types of LOP insurance. If we were to coin the term "all-risks LOP", then this would most accurately describe ALoP insurance.

The professional evaluation of the ALoP risks which are exposed to this great number of perils is therefore even more significant than in other engineering classes.

Risk control must be exercised in the wake of risk assessments before insurance is taken out, in order to investigate whether an object can be insured and to render it insurable, if necessary, by means of special conditions. Risk monitoring activities carried out during the policy period include the progress of work, deviations from the original plans and safety standards, and the updating of the scheduled date of commencement of the insured business. This places the insurer in a position to recognize changes in the risk and to react accordingly.


top of Risk control

top of the main document


Prior to conclusion of the insurance

1.1 Correct risk assessment

A comprehensive assessment of an ALoP risk being offered is not only crucial to adequate pricing, but also has a very great influence on the policy's chances of producing a profit. As the success or failure of ALoP is often very much decided at this stage, we would like to go into this matter in greater detail.


top of Risk control

top of the main document

The main points are as follows:

### 1.1.1 Full co-operation of all parties

The willingness of the parties concerned to co-operate is a prerequisite for successful risk control and claims handling. Although only the principal is cited as the policyholder, the full willingness of the contractor and any consultants to act towards the insurer in a spirit of partnership is also essential even at the stage of the risk assessment. If an unwillingness (or inability) to co-operate becomes apparent as early as during the risk assessment, this can certainly be expected to persist during any inspections of the site required, not to mention during the handling of a claim. In such a case, it is advisable for the underwriter to save himself the trouble and to decline the cover.

top of Risk control

top of the main document

### 1.1.2 Checking of underwriting information

The documentation which accompanies requests for proposals of cover is often very sparse. If it is not possible to obtain satisfactory information, it is better to refrain from providing insurance. On the other hand, potential policyholders or brokers often proudly submit entire files full of "underwriting information", which include little more than photocopies of general process descriptions, which could actually have just been borrowed from the local library, if necessary.

For this reason, the ALoP underwriter must be experienced enough to selectively request the precise technical information required on the risk to be insured and to assess this information in an expert manner.

An ultimate risk assessment is only possible once the contractors involved are known. The quality of a project is drastically altered if a contractor who has already satisfactorily completed similar or identical systems (on many occasions), including the construction scheduling, is replaced with a newcomer in the field. In some branches of industry, reputable consultants are now well-established. The risk is certainly improved by the influence of these companies on the planning, implementation and commissioning of insured projects.

The assessment of the bar charts involves determining whether the planned commissioning date can realistically be achieved. Very condensed construction or erection sequences are often scheduled, in order to start operation as early as possible and thus quickly earn back the high investments made in the plants (which often involve a great deal of financing from external sources). In extreme cases, we have witnessed "world record" erection schedules imposed by ambitious principals, in which three-shift operation was planned, seven days a week. Schedules like this leave absolutely no leeway for making up for even the slightest delay.

The geographic location of a project plays an important role, above all in connection with the influence of natural hazards and the means of transportation available for heavy and bulky systems and machinery. In flood-prone regions, major damage to plants has often resulted from insufficient safety measures, even when the flooding was of medium severity, and unfortunately, this has not been confined to a few isolated cases. When evaluating the earthquake risk, underwriters should not only ensure that the construction is in accordance with earthquake codes, but also consider the possibility of capacity shortages in cases involving an accumulation of several risks within one earthquake zone.

The assessment of the buildings and machines to be insured involves determining whether the risk is particularly hazardous due to its prototype nature. By definition, a prototype is a plant of a design and/or size never before constructed, about which there is (as yet) an insufficient statistical basis for statements on the claims behaviour. Only limited cover is possible for such risks; mostly against external influences. With reference to the influence of the insured items on the insured

interest, i.e. on the calculation of the factor of relative importance, it must be borne in mind that more than one risk can be affected by a fire or natural hazard occurrence. As spare capacities and stand-by equipment can be destroyed in such events, the exposure is higher under ALoP than under MLOP. This is also reflected in the ALoP PML, which is often equivalent to the annual sum insured (or even a correspondingly higher value in the case of maximum indemnity periods extending over more than one year).

The plausibility of the insured interest must at least be examined and its composition checked. Normally the insured interest is the loss of gross profit. We will not be going into this well-known system in detail, with the exception of the following features:
The insured interest must be clearly defined and Insurers can only indemnify the actual loss sustained by the principal, at most. It may not, therefore, be degenerated into mere protection for the company result expected by the principal. One of the nicest requests for cover defined the sum insured as "the amount representing the internal rate of return used by investors in their financial modelling, irrespective of actual loss".

As a rule, the annual gross profit is cited as the sum insured. However, if the amount for the maximum indemnity period is taken as the sum insured and the premium is calculated on this basis, this can produce serious distortions in the calculation of the premium.

Particularly in the case of ALoP cover for newly established companies (grass-root plants), some companies do not even manage to cover their costs in full, let alone make a profit. In the standard cover for "full gross profit" the operating loss is automatically taken into account, as the gross profit is, by definition, calculated by deducting the specified working expenses from the turnover. However, should a (rather too clever) policyholder request "restricted coverage for full standing charges only" and succeed in pushing through their indemnification in case of a claim, this would constitute unjust enrichment, as not only would the costs earned be paid by insurers, but also costs that he had not managed to earn.

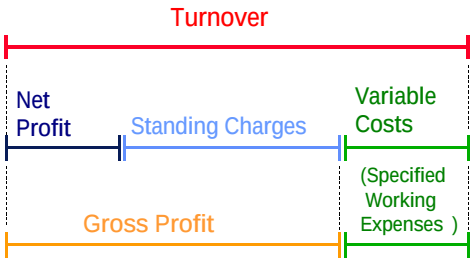



Fig. 6: Gross Profit of enterprises working with Net Profit

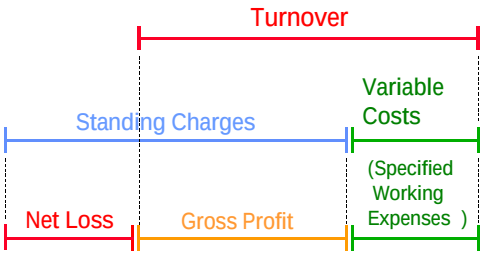



Fig. 7: Gross Profit of enterprises working with Net Loss

The indemnification of specified standing charges, particularly interest, will be dealt with in greater detail in Section 4.2.1.2.

Insofar as one-off costs are to be indemnified (e.g. state-guaranteed subsidies to be paid upon the achievement of a certain completion date or the deterioration of goods resulting from the delayed start of operation), a particularly thorough assessment needs to be carried out to ascertain whether and at what price one wishes to cover these costs which become payable on the occurrence of the loss due to delay.

top of Risk control

top of the main document

## 1.2 Prerequisites and conditions regarding the insurability of risks

### 1.2.1 Use of adequate wording

Even engineering insurers should not presume to think they know better than the contractors, imposing conditions in an attempt to influence the technical conditions on a site. It may be assumed that the work will be carried out in accordance with the recognized state of the art. If any doubt is cast on this in the course of the risk assessment, a careful underwriter will, in any case, decline the risk.
For this reason, the following details are more concerned with underwriting considerations on how to control and limit the risk more effectively.

Generally applicable standards, such as the "Recommendations on Construction Work in Winter" ("Hinweise für das Bauen im Winter"), in Germany, the "Special Conditions Concerning Fire Fighting Facilities" in international business or the recommendations "Fires on Construction Sites" otherwise known as the "Joint Code of Practice on the Protection from Fires on Construction Sites and Buildings Undergoing Renovation" are stipulated as obligations in endorsements of some policies.

Adaptation to special circumstances can be agreed, using suitable endorsements, for example on the maximum length of open trenches or cover for used machinery.

One of the most important points in this context is the use of recognized policy wordings. Above all, conditions bases on the standard wordings of the reporting reinsurers, which have been well-tested in practice, should be given priority here. It is sometimes tempting to knock up specially created wordings, whose "simplicity" or apparently broad scope of cover appeal. However, wordings of this nature have often caused a great deal of confusion, especially when it comes to claims handling.

The submission of construction progress reports at fixed intervals should also be stipulated when the policy is concluded.

The underwriting of larger projects often takes the form of co-insurance due to capacity shortages. It is important to ensure that the parties involved each have identical percentage shares in material damage and ALoP insurance, to avoid conflicts of interests.

top of Risk control

top of the main document

### 1.2.2 Adequate duration of time excess

A time excess of a sufficient length must be agreed, if ALoP claims handling is to be controlled at all. This saves the insurer from indemnifying short, almost inevitable delays in the start-up, the financial impact of which are difficult to quantify. We recommend a single time excess per policy, which takes the duration and nature of the project reasonably into account. Even projects of short duration need a substantial time excess. This is appropriate, as largely pre-fabricated equipment is often used in such cases, and the time required to procure replacements if they are damaged or destroyed is much longer than the time required for installation on site. For instance, modules for a medium-sized printing press which are delivered pre-assembled can be installed and tested within the space of a few weeks. However, the time required to procure replacements for these modules following a fire or other severe damage often exceeds a year. The situation is similar when construction work is carried out with pre-fabricated parts. It is important to mention in this context that the project duration is not the only aspect to be taken into account when determining the maximum indemnity period. The time required for redelivery of replacements must also be considered. Our reasons for recommending a single time excess per policy have already been set out in the IMIA Paper 1996. It makes effective claims handling possible – or at least much easier.

top of Risk control

top of the main document

1.3 Examination of possibilities for contingency planning

The heightened form of Murphy's Law, "If anything can go wrong, it will", is Murphy's Law of Thermodynamics: "Things get worse under pressure". This certainly applies to underwriters who have not on conclusion or during the term of the policy considered possibilities for the minimization or, better still, prevention of ALoP losses following the occurrence of material damage. It is often the knowledge of potential repair, loss prevention or loss minimization options on conclusion of the policy that makes the assumption of a risk at all possible. This involves both organizational measures (e.g. the relocation of production activities, the exploitation of existing stocks, the agreement to appoint recognized loss adjusters without delay in case of a loss) and/or technical aspects (e.g. availability of important spare parts, use of unusual repair methods, guaranteed access to leased equipment, location of repair companies in the vicinity). The infrastructure of the area (existence of airports or ports, condition of the road system, accessibility of the site) also plays a role in emergency planning. We will be describing these aspects in more detail in Section 4.1.3.

top of Risk control

top of the main document

During the policy period

Risk control measures must be carried out by the insurer during the policy period even if there has been no material damage and there is thus (as yet) no potential for delays which may be indemnifiable. The main activities involved are as follows:

top of Risk control

top of the main document

2.1 Examination of construction progress

Almost all ALoP policies contain the following obligation: "The Insured shall provide the Insurer with updated progress reports at the intervals stated in the Schedule. The progress report shall show the progress of the work on the Insured Contract(s) in relation to any contractual programme of work prepared by any contractor. The progress report shall identify any delays in the progress of work and the effect of such delays in terms of a potential claim."

This enables the insurer to compare the original schedule upon conclusion of the policy and the actual circumstances on site. Deviations from the planned construction or erection sequences or even replanning thus become apparent.

Specifically, the insurer should check whether the time buffer has altered and whether contract sections on the critical path have been shifted, as this increases insurers' exposure, even if material damage has not occurred prior to this.

One of the most important details which the reports must include is the updated "scheduled date of commencement of the business insured". This is defined as "the date specified as such in the Schedule or any revised date upon which the Business Insured would have commenced had the Delay in Start-Up not occurred".

Insureds must provide statements about the causes of non-indemnifiable delays and confirm that no indemnifiable delays have occurred prior to the time of preparing the report. The procedures described in paragraph 4 are to be applied as soon as losses occur.

In our experience, progress reports should be submitted on a quarterly basis at least.

top of Risk control

top of the main document

## 2.2 Site inspections

### 2.2.1 General Information

With most risks, the checking of the progress reports in the office must be supplemented with site inspections. This gives underwriters the best picture of the quality of the site, enables them to compare the details in the progress plans with the actual situation and permits them to intervene and regulate the situation by offering suitable suggestions or imposing conditions. Particular attention is to be paid to preventive measures against fire, storm and flood, as these forces, which can cause major damage, can be influenced on site. (Fig. 4 and 5). After the inspection, the status of the construction progress should be documented in a protocol which is to be confirmed by the insured.

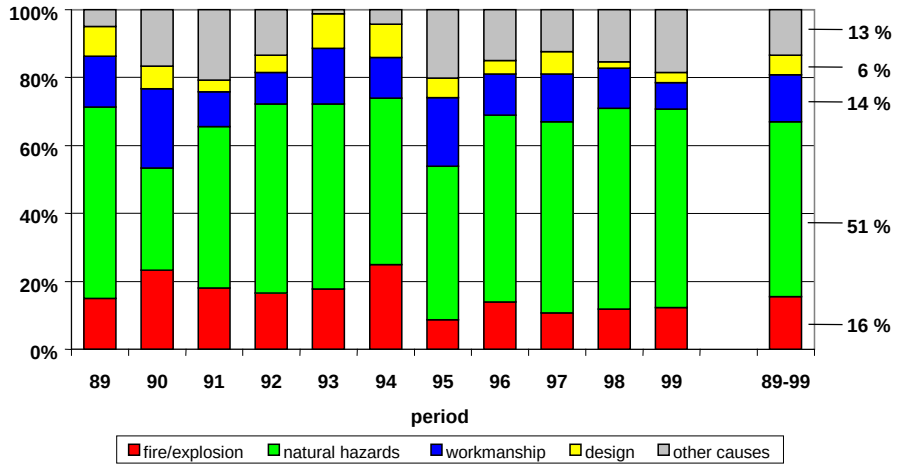



Fig. 8: Percentage of number of CAR claims 1989-1999 according to causes

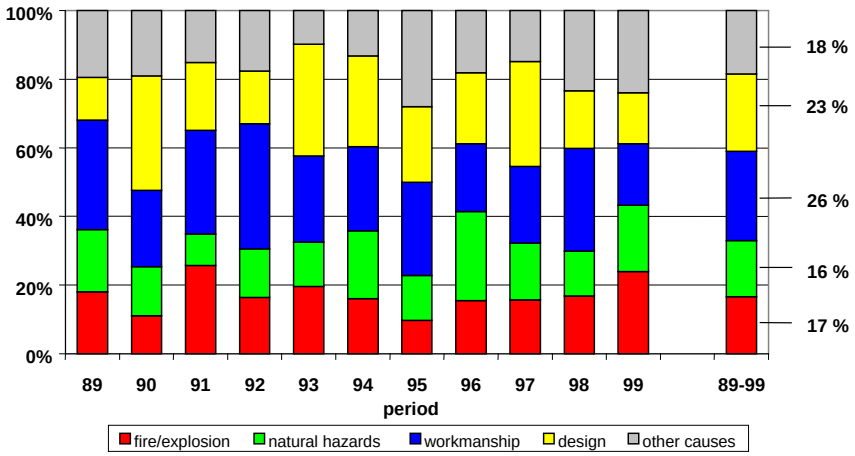



Fig. 9: Percentage of number of EAR claims 1989-1999 according to causes

Inspections should take place at six-monthly intervals and, in any event, immediately before the commencement of the tests run. This is important, as a disproportionate amount of material damage occurs during this relatively brief time due to the high exposure during testing. Furthermore, material damage accidents which occur shortly before the hand-over date mostly lead to ALoP claims because there is no longer any possibility of making up the lost time.

In the case of very large and/or very hazardous risks, it is advisable for the insurer to commission an expert who is permanently stationed on the site.

As all risk monitoring activities involve considerable costs, the (re)insurer carrying out these tasks is often paid a handling fee amounting to around 1.5 to 2.5% of the premium.

top of Risk control

top of the main document

### 2.2.2 Main points of the site inspections:

We refer in the following to several problem areas, which should best be checked during an inspection and which can be influenced at this point if necessary:

For security purposes, even extensive sites should be fenced off and guarded. It should only be possible to gain access via clearly defined entrances with gate controls.

The larger the quantity of required material which is already on site, the greater the flexibility and speed with which the construction sequence can progress. On the other hand, there is also a greater risk of losses through theft, climatic influences, fire and natural hazards. This being so, the necessity of checking storage conditions during an inspection should not be underestimated. The contractor must carry out an incoming inspection of the goods on arrival to ensure that they are intact. Sensitive material must be stored under roofing. In extreme cases and in certain regions (in the tropics, for example), air-conditioned halls are required for some parts,. The storage areas should be divided into fire areas which are not too large and should be adequately equipped with fire detectors and extinguishing equipment from the moment they go into use.

Underwriters should pay particular attention to the existence (or lack) of fire protection measures of any kind. Stationary fire-extinguishing equipment such as pipe systems, pump stations and ponds or tanks for fire-fighting water should be installed and operative at as early a stage of the construction or erection sequence as possible. The risk can be reduced considerably by operating an in-house fire brigade with the appropriate equipment and trained staff and by co-operating with the public fire brigade, if one exists. Work which constitutes a fire hazard (welding, grinding, etc.) may only be carried out in accordance with the regulations of the "hot works permit". The removal of inflammable material (packaging, bushes, weeds) from the site on a regular basis is just as important as the controlled storage of explosives and fuel. Sometimes, domestic activities in workers' living quarters can increase the risk of fire. Codes of practice such as "Fire Protection on Construction Sites" are intended to improve the risk quality.

Special precautions also have to be taken in erection work involving heavy loads – particularly if two cranes are required to install one component.

The preparation and implementation of the test run represent the moment of truth for the project insured and also demand a great deal of the underwriter. The following are prerequisites of the successful completion of the hot test

The availability of the necessary specialist staff of the contractors, machinery manufacturers, consultants and the principal's operating personnel – who will hopefully have received adequate training by this time
The availability of safety systems in good working order

Fully installed, perfectly functioning fire protection systems, at this stage, at latest
Completed pressure tests and functional tests
Availability of spare parts required for operation, if at all possible

top of Risk control

top of the main document

## Claims handling:



The handling of ALoP claims is more complex than in any other line of engineering insurance. As a rule, there is a long interval between the initiating event and the occurrence of the ALoP loss. More often than not, there are delays in the completion of projects due to causes which are not covered. Furthermore, the principles for calculating the extent of the loss are very unreliable – after all, it is not possible to fall back on past experiences in the market or with the product in the case of investments in new systems or products. One can only work with the assumptions on which the decision to make the investment were based. As many examples can confirm, the genuine situation at the time of commissioning does not always correspond with previous assumptions. It is even more difficult to determine the lost gross profit, if damage prevented a project from starting up at the time planned.

Claims can be handled much more effectively if, at the beginning of the construction or erection work, all parties involved work together on the preparation of a claims manual, in which the procedure in the event of a loss occurrence is clearly presented and which contains the names, telephone numbers, addresses and areas of responsibility of all concerned. This manual should also stipulate that the insurer or its representative are to be involved in the ongoing progress of the construction work, including for example, participation in meetings, risk inspections, inspection of documents, the definition of events which must be reported, etc.

top of Claims Handling

top of main document

### Procedure in case of material damage

In the insurance of business interruption losses, time really is money. That is why the immediate involvement of the insurers and the fastest possible assignment of a suitable surveyor have a decisive influence on the quality of the insurer's claims handling. Before the event occurs, the insurer should already know which surveyors have the necessary expertise to handle a claim of the nature involved, in a professional manner. This expertise must comprise both the necessary basic technical knowledge to keep the repair period as short as possible and the necessary familiarity with erection and production methods and the conditions on

the market to keep the economic impact of a loss-induced delay down to a minimum.

top of Claims Handling

top of main document

### 1.1 Examination of indemnifiability

The assessment of whether the insurer is obliged to indemnify the loss at all is always the basic requirement for the further handling of a claim. As the material damage occurred long before the delay in the start-up, this assessment must first be concerned with the occurrence of this material damage, itself. The following questions in particular should be answered:

- Is the policy in force?
- Have the premiums been paid?
- Is the date of the loss occurrence within the agreed policy period?
- Was the damaged equipment located on the insured site at the time of the loss occurrence?
- Does the damaged equipment come under the insured part of the project?
- Was the loss caused by an excluded peril? Note that exclusions may be more extensive in ALoP insurance than in material damage insurance.
- Is the loss covered by another policy (marine, fire)?

Insurers should also remember to check whether there are any possibilities of recourse against a third party.

Even if the loss is not classed as indemnifiable after answering these questions, it is still important to ascertain the consequences on the critical path, in order to ensure that insured and uninsured portions of the delay can be differentiated should indemnifiable losses occur at a later point.

top of Claims Handling

top of main document

### 1.2. Estimation of loss potential

If the answers to the above questions lead to the conclusion that the loss is indemnifiable, insurers and surveyors must work together with all parties concerned, to assess immediately the impact of the material damage on the further progress of the erection work, the scheduled commissioning date and the business operations which follow this. As a rule, the insured and the insurer have the same interests here, i.e. to start up operations in the planned scope on the scheduled date.

The crucial question here is whether the material damage has affected the critical path of the erection or construction work. It must also be ascertained whether the work was still within the scheduled time frame at the time of the loss occurrence, or whether the start-up date had already been postponed for other reasons which were not covered.

The estimated loss potential determines the further loss minimization measures. The expense incurred for this must be less than the loss of gross profit which these measures are intended to prevent.

top of Claims Handling

top of main document

1.3 Appointment of experts

As already mentioned above, the appointment of experts is indispensable, in view of the complexity of ALoP losses. In the case of major losses, it may very well be necessary to form a team to deal with the following areas, for example:

- Accounting (e.g. cost accounting),
- Construction or erection planning (schedule!) specifically for the industry concerned,
- Repair of the damaged plant parts (duration, any possibilities for provisional repair)
- Production processes (e.g. reorganization, in order to enable production to commence despite the loss, possibly only at partial capacity)
- International and national market situation (e.g. loss minimization by buying in items, changing products or similar measures)

When selecting the surveyor, particular attention should be paid to the question of whether he has the necessary contacts with suitable specialists and is also prepared to involve these specialists in good time.

top of Claims Handling

top of main document

**1.4 Loss minimization measures**

The fact that there is a more or less lengthy interval between the date of the loss occurrence and the beginning of the delay in start-up also offers some good opportunities: there is time to take measures to minimize the loss caused by the delayed start-up. Measures of this kind should be introduced at the earliest possible stage, in view of the long lead time sometimes required for the manufacture of spare parts or materials.

There are two possible approaches to loss minimization: reduction of the length of the delay and reduction of the financial loss per unit of time.

The loss minimization possibilities for ALoP losses are as varied as the number of branches of industry, erection and production processes insured. The following measures serve as examples:

- Schedule revisions, e.g. bringing erection/construction work on other undamaged parts of the plant forward, to ensure that more capacity is available later for the repair of the damage, once the spare parts arrive
- Use of additional personnel, working in several shifts and over the weekends
- Transport of spare parts by air, wherever possible
- Modification of the design of the plant in order to cut down the construction and erection times
- Provisional repairs
- Speeded-up manufacture of spare parts for a higher price
- Relocation of production to other parts of the plant
- Continued operation of old plants, if available. If the old, used plants have been sold, the payment of a contractual penalty for delayed delivery to the buyer may be preferable to the complete discontinuation of production due to delayed start-up of the new plants
- Sale or buying-in of semi-finished products such as cellulose for paper production
- Use of leased machinery

The co-operation of the insured as well as the construction and erection companies involved is an essential prerequisite.

top of Claims Handling

top of main document

### 1.5 The separation of indemnifiable from non-indemnifiable delays

The significance of examining the construction progress reports was discussed in the previous section on risk control. After the occurrence of insured material damage at the latest, stringent control of the progress of the construction work becomes imperative if fair claims handling is to be achieved.

Even the erection of small plants is a complex organizational process, and many influences jeopardize compliance with the scheduled completion dates at risk. Such influences can include:

- Climatic influences
- Strikes on site, at manufacturing companies or in the transport industry
- Holding back (non-delivery) of material due to payment problems (foreign exchange)
- Difficulties with supply as a result of circumstances concerning the manufacturer
- Insured material damage
- Official requirements
- Lack of capital.

The problem with ALoP insurance is that all these causes lead to a single delay in the start-up. It is therefore necessary to ascertain the influence of each of these events on the delay. Under an ALoP policy, only delays resulting from the covered material damage can be indemnified.

Even if the insurer and the insured probably both have the same main objective – to minimize the delay in the start-up – viewed in more detail, their interests conflict: no contractor is prepared to take responsibility for delays. Anyone who has worked on a construction site will be familiar with the prevailing "mores", the typical attempts by parties to blame each other in disputes about compliance with deadlines. In the event of insured material damage, it can certainly be assumed that the entire delay of the start-up will be attributed to this cause, unless the surveyor checks up on the matter.

It is therefore crucial that the insurer and surveyor are informed of all events which influence the construction progress – at the very latest, after the occurrence of indemnifiable material damage – and that they are involved in the assessment of the consequences. This means that the surveyor should be present at all meetings on this subject. Studying quarterly construction progress reports will definitely not suffice.

top of Claims Handling

top of main document

### 1.6 Documentation

A precise knowledge of all the relevant details will be required to determine the scope of indemnity, for example of:

- Insured and uninsured influences on the critical path
- The current stage of the construction progress at the time each of the events occurred
- The costs of loss minimization measures and their effects on the insured portion of the delay
- Any portion of the repair costs which are to be allotted to ALoP
- The further progress of the construction and erection work

The surveyor must be able to inspect all relevant documents and must insist on receiving copies of all documents relevant to the loss.

If the possibility of asserting rights of recourse against third parties is being considered, all documents required for legal processing must also be requested.

top of Claims Handling

top of main document

**After the beginning of the delay period**

The insurer and the surveyor must continue to perform the tasks referred to above, until commercial business operations actually commence.

However, an additional task must also be performed once the originally planned start-up date has passed: the actual financial loss caused by the delayed start-up must then be determined.

top of Claims Handling

top of main document

## 2.1 Determination of actual ALoP loss sustained

### 2.1.1 On the basis of the gross profit

Up to this time, only the planning data (feasibility study) on which the decision to make the investment was based, is available. In most cases, the circumstances change in the course of what is often a very long period from the preparation of the study to the commencement of business operations. There can be changes in the market for the goods which are to be produced (price fluctuations, demand), or changes in the costs (prices of raw materials, wages and salaries).

If the indemnity is to be fair, the situation must be observed during the delay period:

- What market price can actually be achieved?
- What level of acceptance do the goods produced enjoy on the market? Would it have been at all possible to sell the intended quantity of the goods at the price planned?
- Would there have been any obstructions to business operations which were not connected with the loss (restrictions imposed by authorities, scarcity of foreign exchange, weather, transport problems, etc.)?
- Would the raw material or the required operating material have been available at all (e.g. water regime in the case of river power plants)

Possible sources for this data differ from country to country. The following are examples: ministry of economics, trade organizations, manufacturers' associations. The experts involved by the surveyor should be familiar with these sources and be able to judge their reliability.

In some projects it is agreed that the general contractor or suppliers of large components, such as turbo-generator sets must pay a contractual penalty (liquidated damages) to the principal in the case of delays for which they are responsible. In ALOP insurance policies, the principal receiving these payments is also the policyholder and thus the recipient of the indemnity on the basis of the policy. Payments of this nature, which after all constitute income from the material damage loss, must therefore be set off against the amount of indemnity which is to be paid, in order to prevent the unjust enrichment of the policyholder out of the loss occurrence. Naturally, expenses which the principal must bear as a result of the loss and which are not insured, are also to be taken into account in this calculation.

top of Claims Handling

top of main document

### 2.1.2 On the basis of fixed costs or bank interest

In recent times, there have been an increasing amount of policies on the market which only cover fixed costs or financing costs (bank interest, capital redemption).

In such cases, it should be taken into account that the actual income after the commissioning of projects is frequently much lower than planned and does not suffice to cover the fixed costs or bank interest. The Eurotunnel is a good example of this: in 1994 the interest paid amounted to DM 1,680 million whereas the earnings only came to DM 70 million. The operating company was forced to discontinue the interest payments on 14th September 1995.

Of course, if there were to be a delay in the start-up of such a unique project as the Eurotunnel, it would be virtually impossible to ascertain what the situation would have been if the start-up had taken place on schedule. However, it is quite obvious that in the event of a loss occurrence, fixed cost or financing cost indemnification would result in unfair payments to the policyholder in cases of this kind.

That is why it is necessary with policies of this type to check whether the actual situation in the market still corresponds with the assumptions taken as a basis for the conclusion of the policy. This means that all the points mentioned in the previous section must also be applied to policies of this nature. The following condition should be included in the policy regarding the calculation of the indemnity:

"... The insurer shall pay the amount obtained by multiplying the percentage by which the actual turnover during the indemnity period fall short of the turnover, which would have been achieved, had the delay in start-up not occurred, by the amount of Specified Standing Charges incurred during the indemnity period."

top of Claims Handling

top of main document

## 2.2 Payments on account

Another point which arises above all in connection with new production processes is the question of whether the process would otherwise have worked out as planned, particularly with regard to the efficiency and product quality. The same applies to the acceptance on the market of new products. Should this be in doubt, the final adjustment of the loss must be postponed until these questions can be clarified after actual commissioning.

A situation like this can cause financial problems for the insured if full indemnification is only possible after clarification of these issues.

It can therefore be necessary to make a payment on account to an amount which is acceptable to both parties. In most policies, this is stipulated as follows:

"The Insurer may, one month after the Insurer has been duly notified of the loss of Interest Insured and has acknowledged its liability, claim as an advance payment(s) the minimum amount(s) the Insurer agrees are payable."

In practice, the amount fixed for the payment on account should neither result in the unjust enrichment of the insured, nor should it place the insured in an unacceptable financial position as a result of the loss.

top of Claims Handling

top of main document

### 2.3 Underinsurance

The assessment of whether the sum insured is high enough to cover the loss of gross profit actually sustained is purely an underwriting concern. If this is not the case, the indemnity should be reduced accordingly.

top of Claims Handling

top of main document

## Interesting Losses:



1. Copper Mine

General Background

This example relates to two losses which occurred during the establishment of an open pit copper mining project in the Andean highlands of Northern Chile at an elevation of 4.400 metres above sea level.

A Contract Works All Risks Insurance followed by an Advance Loss of Profits Insurance were issued for all permanent and temporary works related to the construction, erection and testing of all mining facilities including the mine, process plant (consisting of two mill lines of production), infra-structure, concentrate pipeline and filter plant.

The original insurance period of the policy was from 20th June 1996 to 31st December 1998 inclusive of two months of testing and commissioning any one unit or section of the plant and two months for works in commercial operation.

The Advance Loss of Profits Insurance was subject to one time excess of 30 days and a 9 months maximum indemnity period from the scheduled dates of commencement of commercial operation of the plant. Commercial operation was defined as the date on which each of the two production lines reaches 60% of its design capacity.

The two material damage losses reported under the Material Damage Section of the Policy occurred in the process plant where Sulphide Ore is treated at a rate of 60.000 tons per day in two parallel grinding circuits, each comprising a 32 foot semi- autogenous- grinding (SAG) mill and a ball mill. The SAG mills are driven by two 3.550 kW motors sharing a single cooling system, which consists of a pair of ventilation fans, one for operation and one for standby, connected to a single duct, which then splits to feed the two motors through their bases. Each of the motors is fitted with a cycle converter system, which is used to align the motor rotor poles with the stator poles. The cycle converter system, which is important to maintain the maximum efficiency of the motors, includes a tachometer, a resolver and a solid state circuitry. The operation of the mills is normally controlled by the Mill Unit Controller (MUC).

Circumstances and Causes of Loss

The first loss under consideration was the result of the overheating of the two motors, which drive the mill on Line 1. The damage occurred as a result of incorrect operation during tests carried out on the SAG mills on the 10th September 1998. The overheating occurred because the ventilation system of the motors were not operating at the time of the tests, as a result of which the motors ran unvented for approximately one hour. During the tests carried out prior to the loss, the mill drive had been run disconnected from the MUC, to allow work to be carried out in parallel, to tune the drive and complete the checks to the control system. Accordingly, communications between the MUC and the drive, that would normally be active in the production configuration, were not active during the tests.

Immediately after the loss, the contractor disassembled the motors and air freighted the poles to the manufacturer´s plant in Canada. Each of the poles required a complete copper rewinding, followed by epoxy coating and final baking, drying and testing.

Mechanical completion of mill Line 1 was achieved on the 27th October 1998 and mineral loads commenced the same day.

Following the initial 30 hours testing with an approximate load of 400 tons per hour, the line was stopped in order to carry out programmed maintenance which triggered a sequence of events which for the purpose of this example can be summarised as the second loss event.

On the 4th November 1998 an attempt was made to commence production on Line 1, but the mill tripped as a result of pole misalignment of the "A" drive motor. Following initial tests, it was found that the problem was due to to the failure of the tachometer. The unit had to be replaced yet there were no spares at the mine and a replacement tachometer was immediately ordered at the manufacturer`s plant in USA. The faulty tachometer (Tach 1) was sent back to the manufacturer for repairs.

The new tachometer (Tach 2) was received at the mine on the 12th November 1998 and was immediately installed onto the "A" motor of SAG mill 1. During the final motor pole alignment and motor testing the tachometer problem reappeared with Tach 2. In order to locate the source of the problem, on the 23rd November 1998 Tach 2 was exchanged with the unit on motor "B" and the mill was tested. The alignment problem reoccurred, but on this occasion it affected motor "B". This was the final proof that the replacement tachometer (Tach 2) was faulty as well and was immediately sent back to the supplier for further imvestigations.

In the meantime, the original supplier of the tachometers, had disassembled the first tachometer (Tach 1) at their premises in USA and had found that internal mechanical parts had moved on the shaft of the tachometer, partially disengaging the gears. In addition, metal shavings thoughout the tachometer were found. Finally, the unit´s output circuit board had short circuited, as a result of coming into contact with the metal shavings. This prevented the unit from sending accurate output signals to the circuitry. At Tach 2 a similar internal problem was discovered.

Both tachometers were repaired and returned to the site in Chile and SAG mill Line 1 was returned to service operating at an average throughput of 1.400 tons per day on the 6th December 1998.

It was reported by the main contractor that the first sign of damage to the tachometer installed on motor "A" of SAG mill Line 1 was observed when the rotors were reinstalled on the motor, following the loss dated 10th September 1998. It has therefore been indicated that the cause of the damage to Tach 1 was a impact on the end of the tachometer shaft. The result of this impact was the dislodging of the lock ring which holds the mechanical gearing together, within the tachometer housing. Once dislodged, the gears within the unit will have lost their alignment and become disengaged. The damage to Tach 2 appeared to be the same as the damage to Tach 1.

<u>Cause Review and Policy Liability</u>

Invesigations into the circumstances of the first loss have revealed that the overheating of the SAG mill motors was covered in terms of the Material Damage Section of the Policy. As far as the second loss (damage to tachometers) is concerned Insurers were initially of the view that the tachometer loss had been caused by an inherent design or manufacturing defect which remained latent until being put into service. Furthermore, the second loss was reported to Insurers only on 18th December 98 despite the fact that the problem with the tachometer had already been experienced on the 4th November. At the time of the notification of the loss the damaged tachometers had been sent already to the manufacturer and were not longer available for inspection. Thus, the Insured was in fact not able to proof that an indemnifiable material loss did occur on site. Nevertheless, in the absence of any proof for a latent defect and also because the possibility of damage to the tachometers during shipping could not be proven it was finally accepted by the Insurers that the most likely cause for the tachometer loss was faulty handling during the dismantling/reassembly of the damaged SAG mill motors. Thus, both of

the physical losses qualified for potential delays in terms of the Advance Loss of Profits cover.

Whilst repairs were being undertaken on Mill No. 1`s damaged motors, the Insured began already testing and commissioning work on SAG mill Line 2. Despite the fact that the Loss of Gross Profit Insurance was according to the Policy independantly applied to both SAG mill lines, it was recognized that the testing and commissioning of Line No.1 benefitted from the experience made with Line No. 2 .

Calculation of Loss

The financial loss was calculated on the basis that the period of delay was the period between the anticipated date of commencement of operation for Line 1 and the actual date of the commencement of operation, i.e. the date when Line 1 reached 60 % of its design capacity which is the output of 18,000 t/day of the installed capacity of 30,000 t/day for Line 1.

However, the date on which commercial operations was achieved was affected also by other (not indemnifiable) events, unrelated to the damage to the SAG mill motor and the tachometer problem. Bearing this in mind, a way to net out the delay resulting from the motor and tachometer losses, from the other, unrelated problems had to be found. Furthermore, the policy was unclear to the effect over which period the 60 % design capacity had to be achieved. Whilst Insurers were of the opinion that the date on which Line 1 reaches the output of 18,000 t/day for the first time should be the date of commencement of commercial operation the Insured believed - but this was not documented in the policy - that the achievement of the 60% design capacity should be over a period of 15 days. The parties finally agreed that a fair and reasonable way to determine when commercial operations were achieved would be to use a polynominal projection.

In consideration of the points above the delay period and the equivalent period were agreed at 48 days for both captioned losses. As per policy conditions one waiting period was applied to the delay arising from the SAG mill motor and tachometer losses. Considering the Rate of Gross Profit and the Turnover achieved during the equivalent period the net settlement under the Advance Loss of Profits Section of the Policy was calculated at USD 4,668,000. The Insured´s own original loss calculation and expectation corresponded to USD 12,000,000.

After the first loss (damage to the motors) an extension of the policy was asked for by the Insured. The extension was granted, however, without Insurers having requested the application of a new time excess, despite the fact that the original time excess had been absorbed already as the result of the first loss . Would there have been a new time excess applied at the prolongation of the policy the net settlement in terms of the Advance Loss of Profits Section of the policy would have been nil. In this respect it should be noted that if as a result of a delay in start - up as a consequence of an indemnifiable loss under the material damage section the period of insurance is to be extended, a new time excess is to be fixed and agreed upon in writing.

The agreed net settlement under the Material Damage Section of the policy for the SAG mill motor loss was USD 132,056. There was no physical damage payable in terms of the policy in respect of the tachometer loss since the repair costs fell within the deductible.

top of Interesting Claims

top of main document

## 2. Explosion of an electrostatic precipitator during testing of a steam boiler

The following example of an EAR loss involving a small power plant component gives a striking impression of the impact which the delivery date and loss minimizing measures can have on the duration of the delay after an EAR loss. It

also highlights just how critical testing can be for business interruption losses. This is because of the increased risk potential and the reduced possibility of making up for delays. The example also demonstrates the problems surrounding indemnification on agreed fixed value.

A small steam power plant including an oil-fired steam boiler with an output of 60 – 80 t/h was to be erected in a South American forestation area to utilise waste wood from the local cellulose production industry. The erection period was estimated at 12 months including a three-month trial run. The risk was insured by means of combined EAR/ALOP cover.

During testing of the burner open-loop control system of the steam boiler, there was a flue gas explosion in the electrostatic precipitator, which is connected to the boiler by a flue gas duct. Different types of oil of varying viscosity had been used to fire the boiler for a period of three weeks in the course of testing. This led to incomplete combustion following a change in the type of oil and an accumulation of explosive gases in the precipitator. Drifting sparks from the boiler and sufficient oxygenation caused the gases to ignite. The explosion totally destroyed the 20-m-high electrostatic precipitator weighing 150 t. However, the boiler itself was only slightly damaged by the ensuing blast wave thanks to the lifting of the safety valve, which had a positive effect.

After contacting the manufacturer, the time required for the procurement of a new precipitator from Europe to replace the original was estimated at about 6 months. The insured arranged for the ordering of the new precipitator without delay, after consulting the insurer. The 12-month Maximum Indemnity Period agreed in the policy was of adequate duration in this case. The manufacturer had promised to give top priority to the manufacture. This just goes to show that not only well-known key equipment such as the steam boiler can involve long delivery periods, but that some plant components and modules must also be regarded as key items with long delivery periods, particularly if overseas transport and difficult transport routes are involved.

This applies to a greater extent if testing is already underway, because there is practically no feasible way to make up for the delay in the course of the erection work.

Swift and close co-operation between all parties concerned, from the insured and the broker to the insurer and the reinsurer, meant that loss-minimizing measures were implemented quickly. Arrangements were thus made to produce a steam boiler bypass for flue gas so that testing of the boiler could at least be concluded. This measure ultimately cut the duration of the delay by about two weeks. In addition, consideration was given to the possibility of temporarily installing a cyclone separator, a measure which might have enabled small quantities of waste wood to be burned even at this stage. However, this plan to operate the plant at partial load could not be put into action due to strict flue gas and emission regulations.

Once all the cost elements had been weighed up by the insurers, the following procedure was agreed on: the new precipitator would be transported as air freight, the manufacturer's specialist staff would be used and would work overtime to complete the manufacture and installation. This permitted the delay in commissioning to be cut down by about another month. The amount in excess of the agreed limit for air freight as well as the costs for the boiler supplier's specialist staff and the overtime were borne under ALoP as loss-minimization costs.

In the end, the effective delay up to final commissioning before deduction of the 30-day time excess came to just 126 days, thus totalling just over four months.

An awareness of the possibilities of loss minimization measures in risk management studies and in the run up to taking out insurance has proven useful, time and again. Another important aspect in this context is the fast and intensive involvement of specialists from the parties concerned following a loss occurrence which can be expected to delay commissioning.

On the basis of the policy, the indemnification had been set at an agreed fixed value of US$ 215,000 per month. However, the loss actually incurred once the effective steam capacity had been available for the first few months following commissioning, came to US$ 249,300. The differential amount was composed in the main of the following elements:

a) the duration of the delay led to a higher moisture content of the wood shavings in storage due to the prevalent weather conditions. The boiler could only be fired with diesel in this condition, which led in turn to increased costs due to the more expensive diesel oil required. The increased costs were estimated at US$ 150,000 – around 20% of the costs of the delay.

b) additional personnel costs of US$ 22,000, which were not covered by the EAR insurance.

In principle, the sum insured should be calculated on the basis of the planned annual gross profit plus a certain safety margin in order to prevent underinsurance. The indemnification should be based on the actual loss sustained in order to avoid the unjustified enrichment of the insured or, as in this case, its unfavourable treatment.

Additional safety devices such as an additional fuel pre-heater, a viscosimeter, additional temperature and pressure indicators and an interlock control system were installed in the boiler system during the repair work in order to rule out a repetition of the loss. These plant optimization measures had no effect on the duration of the delay and were therefore not taken into account in the indemnification. Had the plant optimization measures led to further delays resulting from longer manufacturing, delivery or installation periods, it would have been necessary to calculate the portion of these additional delays in the overall period and deduct this from the total loss sustained due to interruption of business.

After deduction of the 30-day time excess (US$ 215,000) the indemnity for the loss due to delay came to US$ 688,000 for the remaining 96 days. In other words, it had been possible to reduce the loss originally estimated by a third through loss minimization measures. However, the loss ratio for the ALoP- section of the policy share comes to 1750% and, taking into account the accumulation with the EAR-section, there is even a loss ratio of over 2000%.

top of Interesting Claims

top of main document

## 3. Damage to Construction of a Hydro Power Plant due to Flood

Project Description

Three hydro power plants were being built on a river within a distance of several kilometres. Each of the plants (PP-1, PP-2 and PP-3) had two turbines with a capacity of about 4 MW together with generators. All three contracts by an independent power producer went to one and the same contractor. Scheduled start-up dates varied but followed within only a few months.

Circumstances of loss

Severe winters are observed at the location of construction. After a cold period in November with heavy snowfall and freezing of lakes in the area a warm period with two days of torrential rains followed and caused severe flooding of the river.
The cofferdams of PP-1 and PP-3 were overtopped and broke. Damage occurred to already advanced concrete works and to formwork of the dam and spillway. Mechanical and electrical installation of the turbines and electrical generators was very advanced despite the fact that the water intake or draft tube gates were not yet installed. Consequently water, mud and gravel entered the power house and submerged turbines and generators.
No serious damage occurred at PP-2.

Repair works

Investigations showed that repair of civil works would not endanger the scheduled start-up dates if expedited by means of previously not scheduled winter work.
Turbines and generators were dismantled and shipped to the manufacturer. Only minor damage had occurred to turbines and generators, but disassembly, checking, testing, drying-out and reassembling, especially of the generators were time consuming.
Eventually PP-1 and PP-3 started producing power with a four months delay.

Adjustment of delay-in–start-up-loss, loss control and expediting of repair

Civil works were expedited and extra costs for heating and housing-in of work sites incurred. Expediting was also required in order to have the site safe for the next spring flood season.

Turbines and generators were the critical items. A dispute occurred whether to repair/dry-out or to replace the generators. This dispute was costing time and good will. Replacement would have been more costly and would have caused additional delays. So insurers elected to repair. Extensive electrical tests and expert opinions, however, were using up some of the originally projected time savings. The manufacturer declined full warranty and insurers had to take over the warranty shortfall.

Spring thaw delayed the access of heavy installation equipment to the construction site causing additional delays.

Poor co-operation of the insured parties with the adjuster and between each other contributed to the delay. Complicated contractual relations added to these problems. Some of this not inevitable delay was successfully deducted in the adjustment.

The production of hydroelectric power is a function of seasonal river flow rates. Compromises had to be made in finding mutually agreeable assumptions with regard to lost power production.

Conclusions and lessons learned

- strong claims management (time, cost, engineering, adjuster, experts, control) right from the start is not necessarily a key to success but it will help to prevent disasters.
- “weather windows” may substantially increase a ALoP-loss. Either due to extra costs for winter work – if insurers are lucky enough that winter work is feasible at all, or, in extreme circumstances due to several months of “extra” delay if seasonal circumstances do not allow construction or transport of materials at all (construction in arctic regions).
- know your experts. Having to change an expert or adjuster on a ALoP-claim may not only increase fees but also delay time.

Time pressure may force insurers into accepting more expensive solutions for repair/replacement than they would have accepted without ALoP-cover. The ALoP-premium should make allowance for this.

top of Interesting Claims

top of main document

## 4. Hotel construction

The project:
Construction of a hotel complex in a holiday resort:

Total contract value: US$ 80 million

| | | |
|---|---|---|
| ALoP sum insured: | US$ 7,067,000 | gross profit (annual) |
| | 200,000 | lease of restaurant |
| | 50,000 | claims preparation costs |

Period: 1st June 1992 to 30th June 1995
PI: 24 months
TE: 30 days

The project fell behind schedule, and cover had to be extended. The revised completion date was estimated at 1st September 1995 except for the east wing, for which full completion was estimated at 1st October 1995, and thus the trigger date for DSU was anticipated as 1st October 1995.

Factual circumstances

In early July a fire occurred causing severe damage to the main wing of the hotel complex.

In November the area was subject to an earthquake, although this did not cause physical damage to the insured works. However, worldwide news about the earthquake caused reservations to be cancelled. The turnover achieved for January to March was considerably lower than predicted.

The desire for an early opening of the hotel for commercial use, even if partial, was the declared priority of the work to be performed. Thus work on the undamaged part of the complex was slowed down. However, fitting-out work was too optimistically planned and the revised schedule could hardly have been met, even without the fire damage. The furnisher and fitter completed their work at the end of March.

Staff were recruited prior to the accident, as they were needed for the run-in period of the hotel. These staff assisted in the repair work (cleaning up, debris removal, etc.).

Establishing the "would have been" turnover for a hotel is a rather complex issue.

In the hotel industry it is a common practice to sign annual agreements with travel agencies, in which more rooms are allocated than are available. The practice is that the travel agencies have to advise the hotel of the actual number of rooms they need at least two weeks ahead of the arrival of the guests.

Obviously these circumstances make a fair and technically just loss settlement rather difficult.

Loss settlement

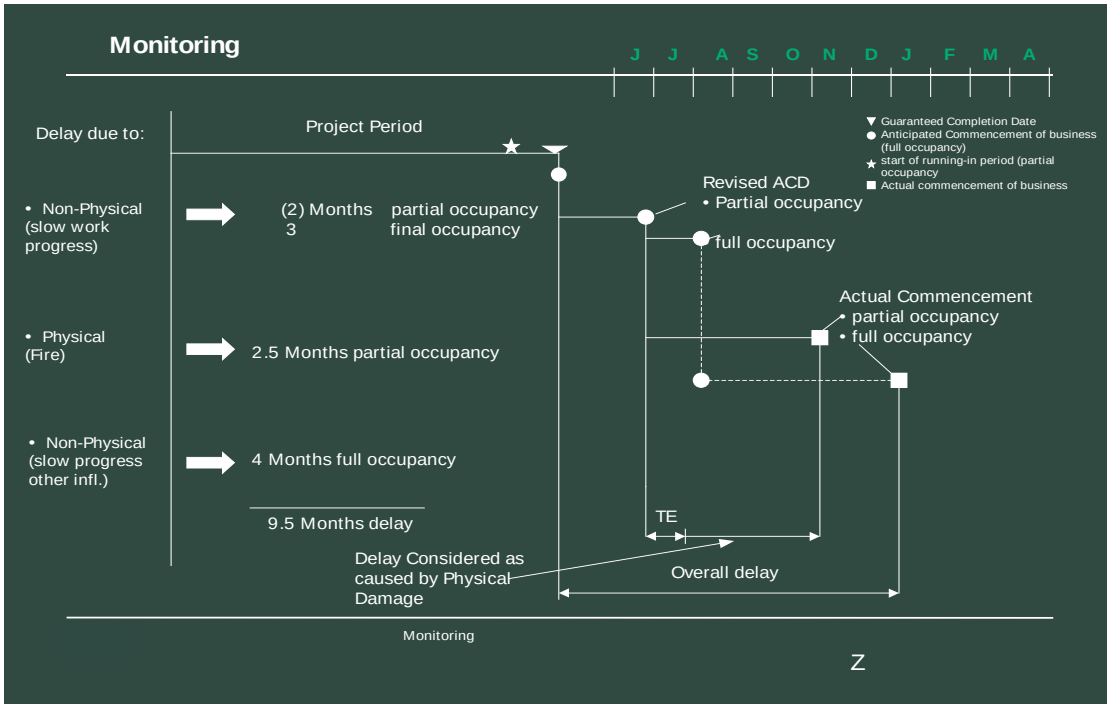
1. Delay period
   - But for the fire damage, the hotel could have opened for commercial use on 1st September, excluding one wing.

   - All fire damage repairs were regarded as having been completed by 15th December.

     This was agreed on the basis that the date of 1st September for partial opening dictated a very tight schedule, which was theoretically possible to accomplish but had not been fully adhered to. To complete repair work by 15th December also necessitated a tight schedule, but if 1st September could have been met, 15th December should also have been met and vice versa. The policy stipulates that the period of indemnity commences as of the date the entire project would have been completed but for the delay caused by physical damage, i.e. as of 1st October. The end of the indemnity period would be the date on which the entire project was actually completed or taken into commercial use.

The earthquake and political unrest which occurred in late November had some impact on the business and also contributed to some extent to the delay in the completion of the entire project.

- In deviation from a strict policy interpretation, it was agreed to fix the revised anticipated commencement date as 1st September and the actual completion date as 15th December.




2. Actual loss sustained

"Would have been" turnover was estimated by independent accountants on the basis of the insured's budget figures, which were adjusted on the basis of figures obtained from a hotel of the same category in the same holiday resort.

The figures established were eventually accepted by all parties involved as representing the best estimate of "would have been" turnover.

**Schedule 1**
**Estimate of Annual Gross Profit Rooms only – September '95 – August '96**

| Description | Sep' 95 | Oct. | Nov. | Dec. | Jan.' 96 | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Totals US$ '000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | US$ '000 | US$ '000 | US$ '000 | US$ '000 | US$ '000 | US$ '000 | US$ '000 | US$ '000 | US$ '000 | US$ '000 | US$ '000 | US$ '000 | |
| **Forecast Sales (1)** | 309 | 639 | 587 | 791 | 434 | 594 | 868 | 1.492 | 1.150 | 1.214 | 1.418 | 1.826 | 1.322 |
| **Variable Depart-mental Cost (2)** | (54) | (66) | (50) | (54) | (92) | (98) | (115) | (130) | (134) | (147) | (172) | (288) | 1.399) |
| **Heat Light and power (3)** | (17) | (26) | (22) | (23) | (26) | (26) | (28) | (29) | (32) | (32) | (34) | (36) | (331) |
| **Monthly Gross Profit** | 238 | 547 | 515 | 714 | 316 | 470 | 726 | 1.333 | 984 | 1.035 | 1.212 | 1.503 | 9.592 |

**Notes:**
**(1) Actual for January, February and March 1996.**
**(2) Includes commission and variable proportion of other expenses.**
**(3) Estimated at 40% variable in respect of rooms.**

**Schedule 2**
**Estimate of Loss of Profit Rooms only**

| Discription | Note | Sep. '95 US$ '000 | Oct. '95 US$ '000 | Nov. '95 US$ '000 | 1-15 Dec. '95 US$ '000 | Totals US$ 000 |
|---|---|---|---|---|---|---|
| Total Forecast Turnover | 1 | 309 | 639 | 639 | 305 | 1.889 |
| Less: | | | | | | |
| Actual Turnover | 2 | 0 | 0 | (97) | (62) | (159) |
| Shortage due to earthquake | 3 | 0 | 0 | (49) | (81) | (130) |
| Loss of Turnover | | 309 | 639 | 490 | 162 | 1.600 |
| Savings in deptmental payroll | 4 | (19) | (19) | (10) | (6) | (54) |
| Labour included in P.D. claim | 5 | (35) | (35) | (35) | (12) | (117) |
| Savings in heat light and power | 6 | (17) | (26) | (17) | (6) | (66) |
| Variable cost savings | 7 | (54) | (66) | (39) | (9) | (168) |
| Total Estimated Savings | | (125) | (147) | (100) | (33) | (405) |
| | | | | | | |
| Forecast Loss of Profit | | 184 | 492 | 390 | 129 | 1.195 |
| Deductible (30/106 x 1.195) | | | | | | (338) |
| Loss of profit net of deductible | | | | | | 857 |

The annual gross profit insured was less than the annual 'would have been gross profit and consequently according to the policy wording indemnity amount was reduced accordingly:

| | |
|---|---|
| US$ 857.000 * 7067 / 9592 = US$ | 631.000 |
| consultant fees | 15.000 |
| Total amount paid US$ | 646.000 |

top of Interesting Claims

top of main document

## 5. Fire during the construction of an office block

A construction project for a high-rise office block in Great Britain not only involved high-tech building installations for telecommunications, air conditioning, surveillance etc. but also a very complex facade design. A red marble from Brazil was used. This was cut and ground in Carrara, Italy, before being inserted into the corresponding aluminium mounts at a specialist facade company in Germany ready for fitting on site.

During the very labour-intensive interior finishing stage, involving large numbers of personnel, a fire broke out in the atrium, which rapidly spread through all nine floors of the approximately 55 m-high building. The large number of vertical and horizontal openings in the building during the installation work facilitated the spread of a great deal of smoke and conflagration gases throughout the building. A number of facade elements which had already been fully mounted were thus soiled to such an extent by soot, smoke and conflagration gases, that they had to be replaced.
Unexpected problems arose in connection with the exchange of these facade elements, which not only increased the property damage but also prolonged the period required for repair work:

- the colour of the marble being excavated from the Brazilian quarry had altered in colour in the course of the further exploitation of the quarry. Only after laborious searching could a sufficient quantity of material in the original colour range be excavated;
- according to the usual construction schedules, facade work is generally carried out towards the end of the construction phase, thus leaving enough time even for very time-consuming facade construction work such as this. However, this situation was completely altered with the procurement of replacement facade elements following the fire. The excessive amount of time required for facade construction began to have a negative effect on the fire damage repair work, due to the search for material, its shipment to Italy and overland transport to the manufacturing plant;
- at the manufacturing plant itself, series production of the marble facade elements had long since come to an end, making it necessary to rearrange production sequences before the replacement elements could be manufactured.

The conclusion to be drawn and noted in this case is the fact that imported components and materials, made-to-order items, prototypes and complex construction sequences have a general tendency to aggravate the risk in the case of ALoP cover. It is therefore essential to recognize such circumstances at an early stage, whether through an in-depth study of the risk documents or through pin-pointed enquiries, in order to ensure that this is adequately taken into account in the underwriting phase.

top of Interesting Claims

top of main document

## 6. Construction of a hydroelectric power plant

During the construction of a hydroelectric power plant in South America, several large-scale losses were incurred, which could be assigned both to force majeure and to faulty workmanship and faulty design. This led to difficulties in correctly delimiting the indemnifiable loss.

Apart from the partial destruction of the cofferdam, land slides followed by side slope failures occurred at the headrace. Moreover, as a result of faulty work, parts of the concrete joints in the headrace lining were defective and had to be replaced.

The determination of the indemnifiable ALoP loss was an even more complicated affair:

- it was very difficult to differentiate between the delays which were actually caused by the repair work on the headrace side slopes and those caused purely by the rectification of defects, as both jobs were carried out together;
- furthermore, the work was brought to a complete halt in July/August, by the rainy season;
- there had been numerous revisions of the construction schedule;
- the date for the completion of the construction work in the revised construction schedule had been set at a date prior to the final completion date named in the policy, in order to obtain premiums for early commissioning;
- the delayed completion of the penstocks and turbines meant that the emergency draining of the headrace after the contractually stipulated hydraulic test could only be carried out by breaking open part of the spillway;
- this leads to the conclusion that the delay in the completion of the EAR part was not caused by the property damage;
- the operation of the hydroelectric plant and hence also the amount of the indemnifiable ALoP due to the delayed generation of electricity was definitively dependent on the upstream reservoirs and the quantity of water available during the period of indemnification (rainy season or drought), which was not necessarily comparable with the water quantity taken as a basis at the original commissioning;
- moreover, contractual penalties (not covered) had been agreed for the delayed supply of promised quantities of electricity.

The time-consuming settlement of this ALoP claim has shown that a satisfactory indemnification solution can only be achieved if the right steps are taken in all three decisive risk phases, if at all possible:

a) Underwriting phase
   - Examination of the contractual agreements between the owner and the contractor with regard to contractual penalties, supply agreements, the buying in of electricity in the case of delays etc.
   - Examination of the impact on the respective risk of property damage to which it is typically prone (collapse of tunnels, overtopping of coffer dams, land slides) regarding the relevance of this damage to ALoP. The taking of appropriate precautions with the rating or conditions where applicable.
   - The clear exclusion in the policy of contractual agreements which are not suitable for ALoP insurance.

b) Construction phase

- Regular site inspections, above all during critical phases of construction and close contact with the site management can provide important details on delays in the construction work, which have already occurred and emerging bottlenecks which may be of relevance to a subsequent loss occurrence.
- Inspections of this type also provide an opportunity to question the responsible persons on site as to whether emergency scenarios/repair strategies have already been considered for commonly occurring damage and losses such as the collapse of tunnels and their possible duration.

c) Exertion of influence after property damage
   - Examination even of insignificant property damage as to its impact on possible delays in construction work (delivery dates, import restrictions etc.);
   - Close contact with, and if possible accompaniment of the surveyor, as many details of the damage are underestimated or overlooked by surveyors due to a lack of experience with regard to their effect on ALoP;
   - Checking of existing delays, which are not caused by loss occurrences but can have a decisive influence on punctual commissioning (e.g. delayed supply of turbines, transformers etc).

top of Interesting Claims

top of main document

## Conclusions:

The significant increase in the number of insured risks and in the premium volume during the last 4 years demonstrates the continued demand in this line of insurance.
A strong interest comes from lenders who aim at comprehensive insurance protection with new investments. We expect this trend even to grow.

The experience of the past is not disastrous, but it is not satisfactory either.
CAR-ALoP shows a loss ratio of 92%, EAR-ALoP, with a loss ratio of 49% appears to be more agreeable, but one single loss will change the picture completely. The are open claims that will shift the loss ratio over 100% for EAR-ALoP if they are finally payable. It is obvious, that the premiums charged for both types of ALoP are not sufficient. Projects in areas exposed to catastrophes require significant ALoP premiums if natural perils are covered. According to our observation this is often ignored and cat cover is given almost for free.

Risk control is essential in ALoP insurance. It begins already in the underwriting phase, especially with a detailed review of the stated sum insured. It should not happen, as it has happened, that in the claims handling process it is found out, that a large sum of delay penalties has been included in the sum insured and the insurer has accepted the declared amount without any questions.

Monitoring of site activities is an obligatory part of risk control. In the interest of loss prevention but also to observe works progress in relation to the time schedule. In case of a loss, this information is critical. Most projects run behind schedule and this must be documented at the time of the incident.

Loss adjustment has to be done on basis of the policy wording. A poor, imprecise wording is a deprived basis from the beginning. Loss adjusters complain about wordings.

The claims handling of ALoP losses is complex and each case represents a unique situation that must be correctly assessed in terms of the policy. It requires experienced underwriters, claims experts, loss adjusters and consultants.

The reward is the involvement in one of the most interesting lines of insurance.

top of Conclusions

top of main document