

## DETAILS OF INTERESTING CLAIM

(From Human Factors in Engineering Risk - IMIA Paper WGP8 (00)E)

No: DOIC38 (M)

### Type of Insurance:

M

### Description of damaged item:

The failed guide roll destroyed 5 steam cylinders and other guide rolls of the paper machine.

### Cause of Loss:

(4) Other internal causes

### Claim Cost

### Description of Incident and Loss Prevention Measures initiated:

A Scandinavian paper mill suffered a catastrophic failure of a guide roll, one of a number the purpose of which is to guide the 'felt' over which the paper is laid over some 50 steam drying cylinders. These drying cylinders are pressure vessels operating at a pressure of approximately 3.5 bar. The failed guide roll destroyed 5 of the steam cylinders and a number of other guide rolls. The machine could operate without 1 or 2 drying cylinders, but with 5 out of use the paper could not be dried to the required degree. No spares were immediately available, but within 5 days the plant was back in operation despite a replacement time for new rolls expected to be 6 to 9 months. Although there were no definitive contingency plans for such an event the whereabouts of spares was known, and as an excellent example of the Scandinavian 'femininity' combined with 'collectivism' on the Hofstede scales the industry had a system of assistance to deal with such eventualities. Such failures were unknown locally. The cause was established as a fatigue crack originating at an internal strengthening arrangement fixed to the roll during manufacture prior to it being welded in 2 sections circumferentially.

### Outline the interesting or unusual aspects of this claim or problems experienced during settlement:

Since the failure further vibration analysis and non-destructive testing has been implemented. Previously the larger rolls in the press section of the paper machine had permanent vibration monitoring, extension of this system to the drying section would provide early warning of imbalance which the failed roll may have exhibited prior to the failure. Non-destructive testing to the welded sections of not only the type of roll that failed but also rolls elsewhere in the machine would provide indication of a number of incipient defects. In effect a FMECA study has been conducted, although perhaps not as prescriptively as laid down in Standards, but the results of the investigations conducted internally have identified where more sophistication in both maintenance and operational equipment would clearly enhance the risk.

## **CODES**

### 1. Type of Insurance

M - Machinery Breakdown

BE - Boiler Explosion

LP (M) M - Loss of Profits

ALOP (DSU) - Advance Loss of Profits

EAR - Erection All Risks

CAR - Contractors All Risks (Civil)

G - Guarantee

EE - Electronic Equipment

O - Other Classes

## 2. Cause of Loss

(1) Faulty operation

(2) Faulty material or workmanship

(3) Faulty design

(4) Other internal causes

(5) Fire

(6) Explosion

(7) Storm

(8) Earthquake

(9) Other external causes

(10) Other causes or unknown