



# **THE PABIAC INITIATIVE - THE WHY'S, WHEREFORE'S AND HOW'S**

**AN INTERIM REPORT ON AN INITIATIVE TO REDUCE THE LEVEL  
OF ACCIDENTS IN THE PAPERMAKING INDUSTRY IN THE UK  
BETWEEN 1998 AND 2001**

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## **Introduction**

This report outlines the work undertaken by the Paper and Board Industry Advisory Committee (PABIAC) of the Health and Safety Commission (HSC) to reduce the rate of accidents occurring in the UK papermaking industry - the, so called, "PABIAC Initiative" - up to the summer of 2000. It details the action taken by the partners on PABIAC, including the Trade Unions, particularly the Graphical Paper and Media Trade Union (GPMU), the Industry, in particular the Paper Federation of Great Britain, and the Health and Safety Executive (HSE). The report provides a historical record of the PABIAC Initiative including the reasons why PABIAC set out to reduce accidents in this way, the initial research undertaken into accident causation, and how accident reduction targets have been used by PABIAC.

The PABIAC Initiative was designed to run between April 1998 and March 2001 and has already resulted in a clear reduction in the numbers of accidents occurring in the papermaking industry in Britain. Reversing an upward trend experienced in previous years, increasing awareness and improving safety culture in the industry. As a result of the activities undertaken, and the continuing relatively high rate of accidents in the industry, action is already planned to go beyond the original deadline.

Since PABIAC set its own target to reduce accidents the Health and Safety Commission and the Government have published the "Revitalising Health and Safety Strategy Statement" which specifically sets targets for everyone in the health and safety system. PABIAC hopes that its experience can provide an insight into how targets can be translated into real improvements for others.

One of the main purposes of this report is to chronicle what PABIAC has done, what it has achieved through partnership, what worked well and what did not. In order to get an independent picture of the Initiative PABIAC has decided to invite tenders from organisations willing to review its work and provide a report on the effectiveness of its approach. The final section of this report is designed to be used as an invitation to tender and the complete report will be circulated to likely organisations in late 2000 for this purpose.

The report is dedicated to those people who are injured in the paper making industry in Great Britain, and to the families of those who have died whilst making paper.

## **Executive Summary**

This section summarises the PABIAC Initiative from inception to late 2000. Further detail can be found in the relevant sections of the interim report referred to with each of the headings below.

### **Background and Target setting (Sections 1 - 2)**

The Initiative to reduce accidents in the paper making industry in the UK arose from concerns expressed by the main trade unions represented on the Paper and Board Industry Advisory Committee (PABIAC). In particular the high rate of fatal and major injuries suffered by their members and the high comparative rate of accidents within the paper making industry when compared to other industries, notably the construction industry.

In response to these concerns PABIAC sponsored fundamental research to investigate the relationship of safety culture and safety management systems to accident rates. The research concluded that safety culture within a mill dominated the accident performance - almost  $\frac{3}{4}$  of the reasons "why" a mill had a high or low accident record could be accounted for by the safety culture within it.

In 1997, as a result of this research and the continuing high accident record PABIAC set a target to reduce rates of accidents in the paper industry by 50% over 3 years and to promote a culture of continuous improvement in the industry. This target was supported by six objectives; awareness, commitment, competence, technological risks, accident monitoring and management of contractors. The PABIAC Initiative was to run between April 1998 and March 2001.

When setting the target PABIAC was aware that the accident performance of a particular mill was a "surrogate" for its' overall health and safety performance (it did not, for example, directly cover ill-health) and that 3 years to achieve a 50% reduction was possibly optimistic. The target was nevertheless agreed on the basis that accident performance could be monitored easily by all the partners on PABIAC and the timescale was sufficiently short to keep the Initiative moving forward. In addition, by improving safety management and culture PABIAC believed that there would be related improvements in the management of occupational health.

### **Raising Awareness and Action Plans (Sections 2 - 3)**

Throughout, the PABIAC Initiative has been characterised by cooperation and transparency between the parties involved. The partners concentrated on programmes to raise awareness and levels of competence of the various duty holders in paper mills. Information including accident statistics and material contained in internal HSE instructions relating to paper mills was freely exchanged.

Central to the Initiative was the production of a Health and Safety Action Plan by every mill. The Action Plan would have clear objectives setting out the mill's programme to reduce accidents. The Plan demonstrated a commitment by the senior managers in the mill and the best were drafted with the full participation of employees, notably safety representatives. The Action Plans also allowed senior

managers in the industry to monitor progress and HSE Inspectors were able to use the Plans during their normal contacts with paper mills.

PABIAC (and individual partners) promoted training, and ran a series of roadshows and seminars throughout the Initiative to raise awareness, improve competencies, and to help mills to produce and deliver their Action Plans. The overall message promoted by these activities concentrated on the principles contained in HSG 65 "Successful Health and Safety management". The HSE Sector assessed each Action Plan when first produced and provided feedback via the local Inspector. The Plans were also assessed when new machinery guarding guidance was produced in 2000 by a tripartite team from PABIAC. Lessons learned from the Action Plan assessments were circulated to all stakeholders.

### **Monitoring and Accident Performance** (Sections 4 - 8)

Accurate accident data was essential to the Initiative. First to set a baseline for comparison, and second to help monitor progress and evaluate success. HSE FOCUS data was used throughout to monitor accident statistics and routine reports were prepared for PABIAC and HSE Inspectors. Significant resources were devoted to cleaning and maintaining the database. Confidence in the data prepared grew and allowed HSE and PABIAC to identify both "good" and "poor" performers, targeting further work as required.

HSE Inspectors were allocated 200 days/year (2 days per mill) over the period of the Initiative to concentrate on paper mills. This resulted in a significant increase in the number of contacts with paper mills and a rise in the number of enforcement notices issued over the period. Annual seminars for inspectors involved in the Initiative were run by the Sector, with the participation of both the trade union and industry representatives from PABIAC.

PABIAC carried out a "Mid-Initiative Audit" of a sample of mills based on the principles of HSG 65. This was conducted by a tripartite team led by the Sector. The audit produced confidential reports for each mill and a summary report for the industry as a whole. The summary was widely disseminated and formed the main subject for discussion at the annual meeting of industry Chief Executives in April 2000, which itself had become a feature of the PABIAC Initiative.

### **Value for Money** (Section 9)

One of the features of the PABIAC Initiative has been the business case for health and safety. Paper making is capital intensive, competitive and currently subject to severe economic pressures due to the relative value of the £ against both the Euro and US\$. Although the social case for improving accident performance was overwhelming PABIAC has also been able to demonstrate a clear economic case for the progress it has made.

The value for money demonstrated was based on the average cost of accidents in UK industry calculated by HSE. PABIAC plan further work on this since it believes accidents in papermaking tend to be more serious. Initial calculations assumed that no fatals were prevented by the Initiative so far. PABIAC are convinced if further

calculations are made based on more appropriate costings then the business case for the Initiative would be even stronger. What is clear is that calculations show that even though PABIAC had not yet achieved a 50% reduction by September 2000 it had prevented approximately 139 accidents in the industry when compared to projected rates.

### **Emerging Findings and Effectiveness** (Sections 10 and 11)

The interim report draws a number of conclusions from the Initiative and proposes further research. The research will revisit the original baseline, validate the results achieved, evaluate effectiveness of the various activities undertaken and make recommendations about the application of the PABIAC Initiative or elements of the Initiative to other industries.

Any conclusions drawn by PABIAC at this stage are dependent upon the findings of the proposed research. Nevertheless PABIAC has drawn some interim conclusions based on the work so far, including the following:

- Setting a target for accident reduction focuses attention within an industry and provides a clear objective for individual companies, managers and employees to work towards
- The use of individual Mill Action Plans placed health and safety on the same basis as business planning and allowed senior managers to identify priorities and provide appropriate resources
- The best companies involved their employees in health and safety and found benefits beyond the normal confines of health and safety
- Accurate monitoring of accidents was essential
- The PABIAC Audit process proved a useful tool and has potential for expansion into some form of industry-specific support and accreditation scheme
- Communication throughout the Initiative was important - it must be timely and to the point
- There must be real partnership, involvement and joint ownership at every level in the industry, trade unions and in HSE.

These conclusions are expanded in the interim report. Throughout the Initiative, PABIAC has been struck by the repeated validation of the initial research conclusions, that safety culture of a company or an industry drives health and safety performance.

# 1. Origins, Background and Initial Research

## Summary

This section of the report details the history behind the PABIAC Initiative, the high accident rates in the industry, and the research undertaken on PABIAC's behalf to understand the problems.

## Origins and Background

From its creation in the late 1970's, PABIAC<sup>1</sup> operated in a very traditional manner. Like all Industry Advisory Committees (IACs), PABIAC is set up to provide advice to the Health and Safety Commission (HSC) on the health and safety risks in the paper and board industry. It mainly fulfilled this task through the production of guidance. However, although PABIAC has produced (and continues to produce) some excellent documents, it did not, until the mid-1990's (when there was a two year period with 6 fatal accidents) really begin to take stock of how well the industry was performing in comparison with others. It had not, for example, assessed whether or not the guidance it had produced was having any real effect on standards in the industry. For example, a key document, "Safety in Paper Mills", (the so called "4th Report") was produced in 1979, but had never been evaluated and serious machinery accidents continued to be a feature of the paper making industry. PABIAC was therefore targeting its activities (and hence guidance) solely on the basis of what kind of accident was most common in the industry at the time. - rather than benchmarking the industry and taking steps to improve real performance in the paper mills. It had not, for example, made any attempt to measure the effect of its activities on the industry as a whole and had not compared itself with other industries or shared its experience with other stakeholders in the health and safety system. This focus on priority risks pre-1997 may in hindsight be seen as ineffective compared with the targeted approach adopted during the Initiative.

A complicating factor for PABIAC was that national HSC statistics were produced on the basis of industry sectors and the paper industry had always been combined with the printing industry for reporting purposes. The printing industry, which is considerably larger in both numbers employed and numbers of companies involved, has a significantly lower accident rate. This meant that statistics examined by PABIAC hid the true picture of accidents in the paper making industry.

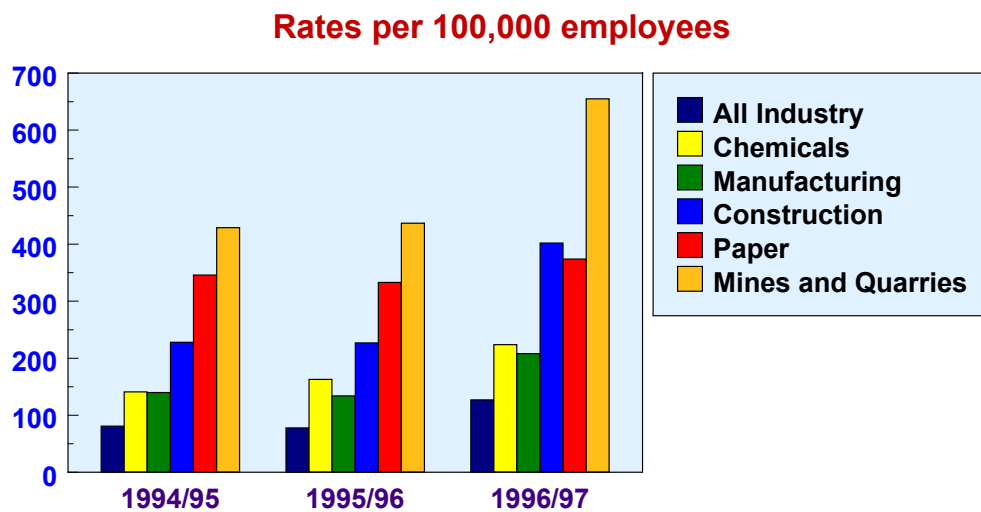
As HSE's computer databases improved through the 1980s and 1990s it began to be possible to obtain up to date accident statistics for the paper industry alone. This meant that PABIAC could see the true performance of the paper making industry and identify which companies were contributing most to accident rates - i.e. which were the "worst performing".

What emerged, to the great concern of PABIAC and particularly the main trade unions on PABIAC, was that the paper industry in Great Britain had a high accident rate, substantially above the manufacturing industry average. The major and fatal accident incidence rate (calculated per hundred thousand employees) in each of the

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<sup>1</sup>See Annex 1 for the relationship between PABIAC, the HSC, HSE and other stakeholders

three years 1994/95, 1995/96 and 1996/97 was at or above the equivalent rate for the construction industry (long recognised as an industry with an unacceptably high rate of accidents). This is illustrated in figure 1.



**FIGURE 1 - COMPARISON OF MAJOR AND FATAL ACCIDENT RATES IN VARIOUS INDUSTRIES 1994 - 1997<sup>2</sup>**

The overall incidence rate for the industry concealed a wide variation between individual mills, with, for example, 10 of the mills accounting for 30% of the accidents reported to HSE over the 3 years in question. The reasons for such variations in the overall rate of accidents reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) can be attributed to a number of factors. Including the disparity in reporting rates for “over 3 day” accidents. The paper industry’s rate for major and fatal accidents was also very high in comparison with other manufacturing industries. This rate is recognised to be more accurate, simply because of the increased likelihood of reporting major and fatal accidents. This was starkly highlighted in 1994 and 1995 in six separate fatal incidents in the 100 or so paper mills in Great Britain.

Against this background a special meeting of PABIAC was held in July 1996 when the issues were discussed in detail with assistance from HSE’s Operations Unit and the Health and Safety Laboratory. It became clear that it was difficult to explain the differences in accident rates on the basis of subjective differences between the technology or relative size of the mills involved. PABIAC thought that safety management and safety culture might be important, but without a more objective investigation of the situation it did not feel able to embark on any sort of campaign or initiative to improve the overall safety performance of the industry. PABIAC concluded that no “off the shelf” solutions were available and realised that a new and different approach was required.

<sup>2</sup>The accident statistics used by HSL were produced prior to the QA work outlined in section 7 and cannot be directly compared to later figures.

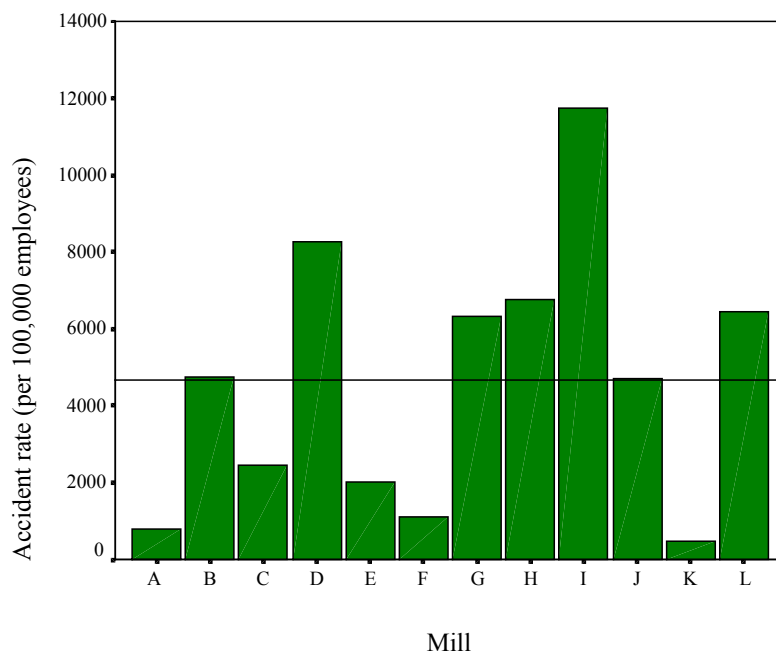
## Research

The Health and Safety Laboratory (HSL - an agency of the Health and Safety Executive) was commissioned by the HSE and the Paper Federation of Great Britain, with the support of the Trades Unions on PABIAC to investigate the variable accident rates within the industry, and in particular to:

- investigate the relationship of both safety culture and safety management systems to accident rates within the paper and board industry, and,
- make recommendations concerning the utilisation of the results with the specific aim of reducing accident rates in the industry as a whole.

The research, which reported in February 1998[1], was based on a sample of 12 mills representing a range of ages, technology and accident incidence rates. Accident data for the 12 mills over a three year period was collected using data reported under RIDDOR to HSE. This covered fatalities, major injuries and over three day accidents. A weighted accident rate was calculated, taking into account the number of employees and the severity of the injuries.

Safety performance, as measured by this weighted accident rate, was found to vary considerably across the mills. Indeed there was a factor of 25 between the best and worst performers. This variation did not appear to be linked to artifacts such as insurance claims or under-reporting of accidents.



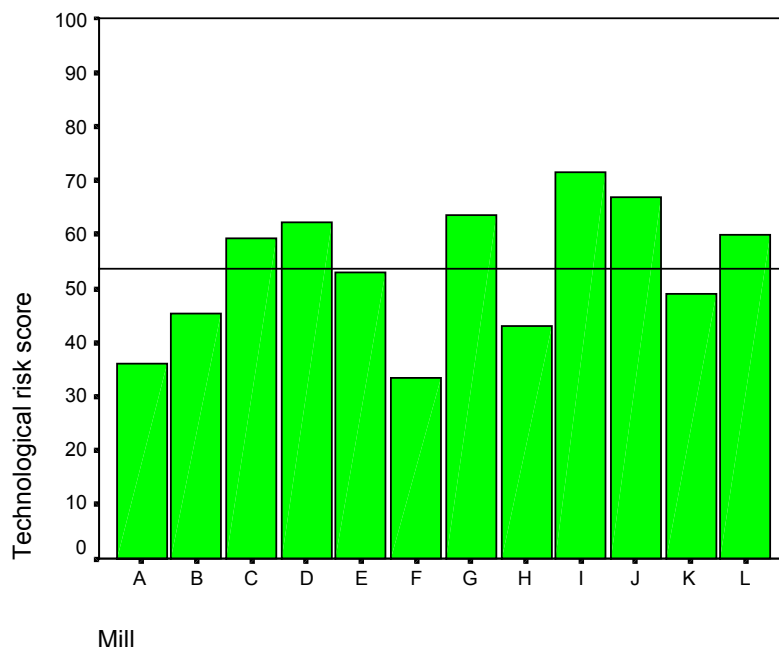
**FIGURE 2 - WEIGHTED ACCIDENT RATES FOR EACH MILL**

Three main dimensions were considered when assessing the mills:

- Technological risk.
- Safety Management Systems, and
- Safety culture

Indices were then constructed for each dimension and measured using a series of interviews and site visits against existing standards. For example the Technological Risk index was constructed by measuring a mill's performance on such things as safeguarding of machinery, relative age of machinery, and standards of housekeeping. The Safety Management index was constructed by assessing management systems like permits to work or maintenance systems, and the Safety Culture index was constructed by assessing such things as communications, empowerment and commitment.

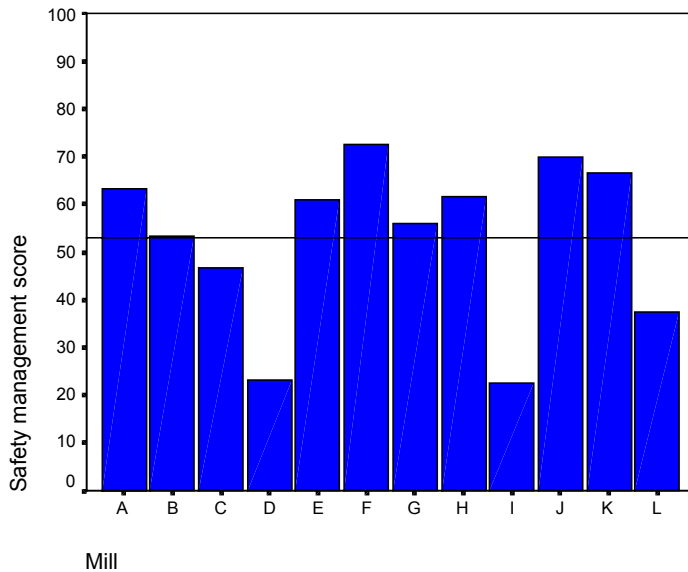
The Technological risk index was compiled on the basis of each mill's performance against eight elements covering process, people and site. The level of Technological risk was found to vary and although no mills were found to have extreme values, there was some degree of variation in the scores. Differences in levels of technological risk were principally due to factors such as standards of housekeeping and type of input materials. Complexity of the manufacturing process was found to have little or no effect on the level of Technological risk.



**FIGURE 3 - TECHNOLOGICAL RISK PER MILL**

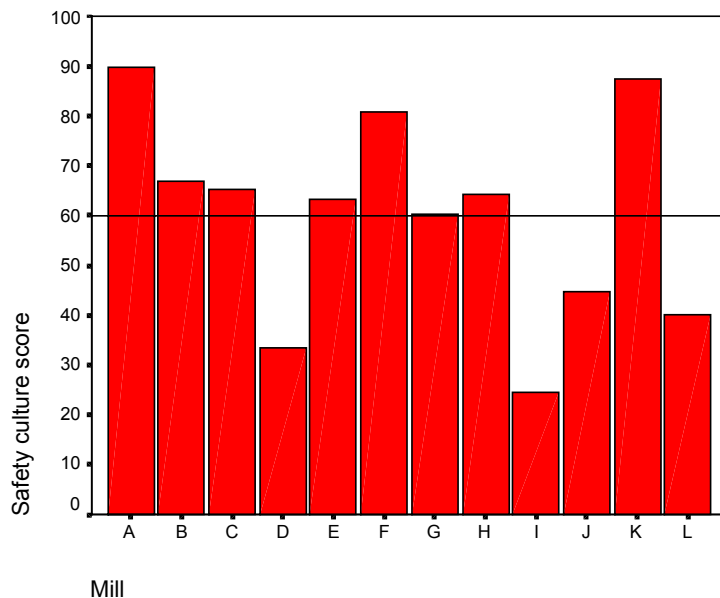
Safety Management Systems throughout the mills studied were weak when compared to other high-risk industries, such as chemical or nuclear. Many had only

recently implemented isolation and "lock-out" systems. Overall control of risks was low. The quality and implementation of safety management systems varied and those mills with better systems tended to have lower accident rates.



**FIGURE 4 - SAFETY MANAGEMENT AND THE MILL**

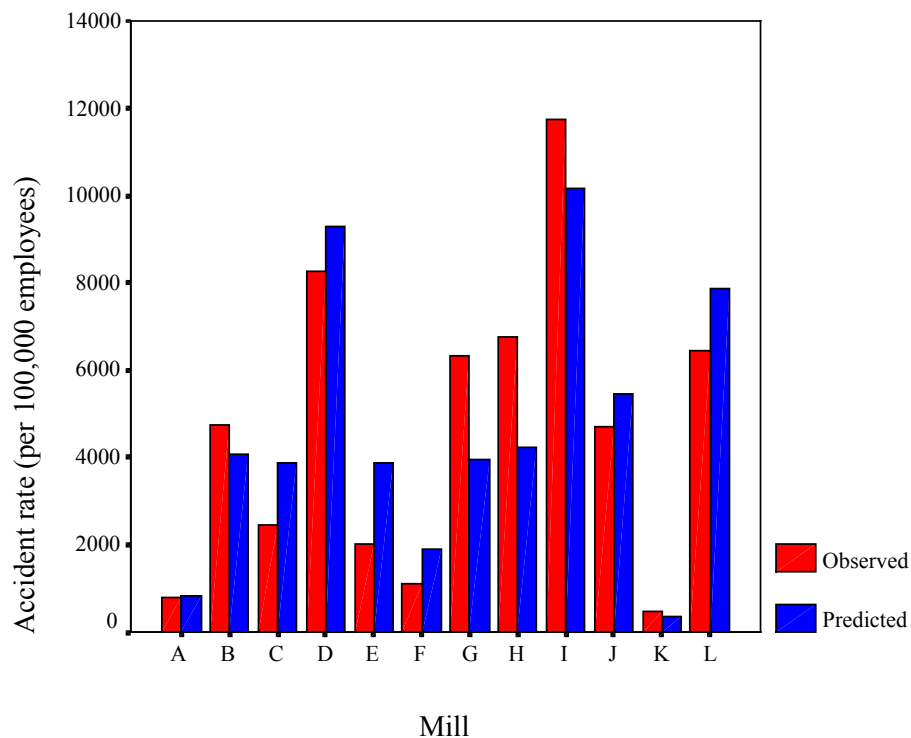
Considerable variation was found in the organisations' safety cultures. For example some mills had better relationships between levels of the organisational hierarchy than others. Overall, however, morale was found to be generally quite low amongst the workforce and communication was poor.



**FIGURE 5 - SAFETY CULTURE AND THE MILL**

The three dimensions were then used to construct an accident rate prediction model. Safety culture dominated the prediction model (the better the safety culture, the lower the accident rate), but the safety management systems dimension could also

be closely linked to the safety culture dimension (those mills with better safety cultures had better safety management systems). In comparison, technological risk proved to be a less accurate predictor of accident rates.



**FIGURE 6 - OBSERVED AND PREDICTED ACCIDENT RATES**

The percentage variance accounted for by the model was found to be 74% - in other words almost  $\frac{3}{4}$  of the reason “why” mills accident rates show variation could be accounted for by the three dimensions studied. Further analysis of the data accumulated by the research indicated that safety culture was the dominant dimension and could be used to predict accident rates fairly accurately. This led to the conclusion that a relatively “safe” mill is one which has a healthy safety culture and, by association, a safe mill will have a good safety management system.

As a result of this research PABIAC decided that a more radical approach was required to improve the accident performance of the whole industry and, in particular, to address the safety culture prevalent within it.

## **2. The Target Setting Process and Stakeholder Involvement - the start of the PABIAC Initiative.**

### **Summary**

This section details the mechanism and thoughts behind setting a target for reducing accidents. It outlines specifically the ways in which PABIAC involved stakeholders and the start of the PABIAC Initiative itself<sup>3</sup>.

### **The Target Setting Process**

Up until the initiation of the HSL research most of the concerns about accident rates and relative performance of the industry had been expressed within PABIAC and HSE. Representatives from the industry and trade unions on PABIAC knew about the high accident rates, but very little had been done to publicise this and to alert the industry to the true picture.

HSE had continued to target its activities in a conventional manner, for example identifying the main technical issues in the "Sector Strategic Plan"[2], and, as an interim measure whilst waiting for the results of the research, had targeted the 10 of worst performing mills for special attention by inspectors in the 1997/98 work year[3].

In the light of the HSL report, PABIAC decided a more radical approach was required to raise awareness, to influence safety culture and to set a target for accident reduction in the industry as a whole. A small working group from PABIAC met in December 1997 and considered several factors, including:

- the accident rate for the industry was twice that of the manufacturing industry average in the country,
- the key drivers identified by the HSL report related to safety culture and safety management, in particular commitment, awareness, and competence,
- technology alone clearly did not drive safety performance but it was important, and
- the industry, like many others in the UK had embraced "new ways of working" and, for example, many of those affected by health and safety programmes in paper mills were not likely to be direct employees. Contractors, customers and others had a significant role to play in improving the overall performance of the industry.

The working group were conscious that they were working in isolation. Most companies and organisations set production targets, but few set health and safety targets. At the time PABIAC could find no other industry which had attempted to set a target for the industry as a whole.

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<sup>3</sup> A simple chronology of the PABIAC Initiative is given in Annex 2

As a result of their deliberations a simple target was proposed to PABIAC:

**To reduce rates of accidents in the paper industry by 50% over 3 years and to promote a culture of continuous improvement in the industry.**

To support this overall aim six high level objectives were also agreed:

- 1. To raise health and safety awareness within the industry, with programmes targeting senior managers, supervisors and workforce by a process of information, consultation and communication.**
- 2. For senior management in the industry to demonstrate commitment to proper risk control and continuous improvement through company safety policies, the application of effective management systems, and implementation of specific mill action plans.**
- 3. To identify the necessary knowledge and skills required to enable managers, supervisors and workforce in the papermaking industry implement these aims and objectives and carry out their duties; providing appropriate information, guidance, tools and training.**
- 4. To ensure that technological risk levels are reduced to as low as is reasonably practicable - using statutory obligations, PABIAC and HSE guidance as a minimum for the industry (standards of machinery guarding and occupational health controls meet all current legislation and are kept under constant review and improvement). The programme of risk control shall be guided by the Sector Strategic plan and individual mill risk assessments.**
- 5. To monitor the implementation of these objectives by means of routine progress reports to PABIAC and to review and update the PABIAC Action Plan and Sector Strategic Plan according to lessons learnt.**
- 6. To ensure all contractors, transport companies, suppliers and other manufacturers servicing the industry adopt similar objectives and high standards when working with the papermaking industry.**

PABIAC agreed the approach, including the overall target and supporting objectives. Their agreement was based on a realisation that the paper industry stood out well above other manufacturing industry and that a reduction in accident rates by 50% would bring the performance level with the average.

PABIAC knew that to have any hope of achieving this target they needed to involve and get commitment from the top - in particular Chief Executives from around the industry. The addition of "continuous improvement" to the main aim was a recognition that accident rates alone were simply one measure of overall health and safety performance and that PABIAC could not concentrate solely on the headline target as a means of measuring success. For example it made no mention of health related targets, although PABIAC considered that an improvement in safety culture

would have a direct influence on health performance as well as accident performance.

Some considered the timescale for the expected improvements to be ambitious. However the overwhelming majority believed that the target agreed could be met. After all if “others can do it why can’t the paper industry?” There was also a recognition that the timescale had to be sufficiently short to keep everyone’s attention firmly on the overall aim.

PABIAC identified the production of “Health and Safety Action Plans” (supporting objective 2) by every mill as key to achieving success and agreed a program of presentations to both sides of the industry.

### **Partnership and the start of the PABIAC Initiative**

*(A chronological description of the PABIAC Initiative is provided in Annex 2 to help readers understand the various stages of the process)*

A “pilot” presentation was made to the 12 mills who had participated in the original study in early 1998. This outlined the HSL research, set out the principles from the HSE booklet HS(G) 65, “Successful Health and Safety Management”[4], and sought comments from those present about the proposed PABIAC Initiative.

The general response from the 12 mills attending the seminar in Sheffield was positive. PABIAC then proceeded with a meeting in London in March 1998 where all industry Chief Executives were invited to hear a similar set of presentations and participate in the discussion.

In particular, CEOs were invited to agree the target set by PABIAC and the need to produce individual mill health and safety Action Plans by the end of August 1998. The main difference between the Sheffield pilot and the CEO event in London was that a Commissioner from HSC, Dr Mike McKiernan, spoke of his experiences in turning around a company’s health and safety performance.

Four regional seminars then took place between April and May 1998, in Scotland, North West England, South West England and South East England. Attendance was widened to include employer and employee representatives from local mills, but otherwise they followed the same pattern as the pilot. One of the main issues discussed at the seminars was the format of the “Action Plan” and a simple guide was produced to help those mills struggling to come to grips with the idea[5].

In September 1997 HSE inspectors were alerted to the likely findings of the HSL research by a simple e-mail and copies of the summary being prepared for the seminars. At a meeting in June 1998 inspectors agreed that the existing “Key National Objective” (KNO) (to target the top 10 worst performing paper mills) should be amended to directly support the PABIAC Initiative. In particular Inspectors were asked to forward copies of the Action Plans submitted by mills to the Sector for a central assessment and then to use those Action Plans in their normal contacts with paper mills throughout 1998/99. In addition, an internal HSE bid was submitted to set up a rolling KNO for the following year, seeking an allocation of 200 staff days to

support the PABIAC Initiative. The details of these and other HSE activities are described in Section 4 of this report.

Ministerial interest in the work of PABIAC was aroused when the then Minister, Angela Eagle, was alerted to the accident rate in the paper industry by the GPMU and wrote expressing her concerns to the Paper Federation of Great Britain. This Ministerial interest has continued with two subsequent Ministers becoming involved directly in the CEO events in 1999 and 2000.

### 3. Health and Safety Action Plans - Some Lessons

#### Summary

This section outlines the use made of individual mill Action Plans. It explains their development and the differences that emerged between the “best” and “worst” plans.

#### The concept of an Action Plan

When PABIAC and the working group discussed how to react to the HSL research it concluded that a conventional technical approach would not work. Previously PABIAC had always functioned on the basis that they could identify a common “cause” of poor health and safety performance and produce guidance to be followed. In addition it was agreed that the concept of safety management systems was a novelty in all but the best mills and safety culture was a subject that had rarely been touched upon by any of the parties involved.

What was clear was that if individual mills and the industry as a whole were to make any real difference to their health and safety performance then the principles of good management practice had to be applied to health and safety just as they are to everyday business. The idea of an individual mill “Action Plan” was adopted as a way for mills to begin to formalise and document their risk assessment and risk control process.

It was recommended from the outset that mill Action Plans should be kept short, concentrating on the top priorities identified by risk assessment with SMART (**S**pecific, **M**easurable, **A**chievable, **R**ealistic, and **T**imely) objectives to support them. It was emphasised that the Action Plan was a management tool for senior managers in the mill to identify what was to be done, by when and by who, and calculate cost. The guidance<sup>[5]</sup> was kept simple to allow mills to adapt the Plan to their own style. PABIAC stressed the importance of cooperation between managers and employees in the development, delivery and monitoring of the Action Plan. This was crucial if a real change to safety culture was to take place.

The starting point for the production of a mill Action Plan was to be a baseline assessment against the PABIAC objectives, industry standards and legal requirements. Covering:

- Company commitment and health and safety policy
- Technical standards of compliance
- Systems for managing health and safety
- Training and competence of all staff, and
- Safety Culture in the mill

It was suggested that mills set up a team to manage the Action Plan (just like any project management team), led by a senior manager and including employees.

PABIAC also recommended that the Plan should be agreed with employees at all levels and updated at least annually.

Although Action Plans are not a requirement of the law, HSE's Paper and Printing Sector Group made it clear that it expected all mills in the country to produce one, and that it would support enforcement action against any mill who failed to do so by the agreed deadline, the end of August 1998. A draft improvement notice was prepared. The basis for this stance was that the law clearly requires mills to ensure, so far as is reasonably practicable, the health and safety of their employees and to carry out a suitable and sufficient risk assessment. To demonstrate that the company were managing effectively, had carried out a risk assessment, and was implementing the appropriate control measures (the Action Plan objectives), the Sector argued that it needed to produce an Action Plan or its equivalent.

All but the one or two self employed hand made paper mills (where the risks are significantly different to and much lower than machined made paper) produced an Action Plan on time.

In fact, once one mill produced a Plan it was clearly "reasonably practicable" to expect them all to produce one.

### **Action Plans in Practice**

Although the Action Plan was always seen as a management tool, to be adapted to the needs of particular mills, it was and is also a useful tool for HSE inspectors. It was therefore agreed that all mills should send a copy of their Action Plan to their local HSE Inspector. The Inspector then forwarded a copy of the Action Plan to the Paper and Printing Sector Group for a central analysis.

The complexity and usefulness of each Action Plan has varied - depending on the size, nature and management style of the mill concerned.

In some, where project planning was the norm, a health and safety Action Plan was welcomed. It put health and safety on the same footing as other production issues, allowed the creation of a more structured management system and ensured that the objectives set could be "clinically" delivered. Anecdotal feedback in these mills has been, from the start, positive. Managers and trade unions have been fully involved in the process and real change has resulted.

In other mills the management struggled to create an Action Plan - many gave it to the safety manager to produce and little if any real ownership resulted. Inevitably little real change occurred on the ground and these mills are generally amongst the consistently "poor performers" of the industry.

Most Action Plans were somewhere "in the middle" struggling to reach the achievements of the best but making an effort to promote change. A common comment was that it takes commitment "from the top" to show that the mill's management means business and will provide backing for the Action Plan. Where this has occurred, mills which initially struggled to produce a good Action Plan managed over the period of the Initiative to learn from others and produce a

workable Plan. Even employees who initially felt that the mill was paying lip service to Action Plans and refused or were unwilling to cooperate began to participate in the process.

Throughout, the “trick” has been to identify the good mills with the good Action Plans, and use their expertise and experience to help the rest. PABIAC believed that it could not and did not wish to prescribe the precise format or content of a mill Action Plan. There had to be ownership by the mill and thus an individual Action Plan had to reflect the culture and management systems within the mill itself. Broad guidelines were provided and seminars were run to help mills produce a Plan. When collated and assessed the Action Plans produced gave PABIAC a clear “window” on the industry.

For HSE Inspectors the introduction of a mill Action Plan has been a useful tool. Inspectors could assess whether or not a mill identified the main risks on their site, use it to focus inspection activities and use it to assess how well mills were managing health and safety.

### **Assessment of Action Plans**

The Sector Group, on behalf of PABIAC, assessed all the Action Plans produced by the mills when they were first produced and in late 2000. The initial assessment was based on the criteria circulated by PABIAC in the summer of 1998 including:

- the commitment by the Chief Executive?
- whether or not the safety management objectives are clearly identified?
- whether or not the responsibilities of managers in the delivery of these objectives is clearly defined and how will they be held accountable?
- are the skills and knowledge needed to effectively manage the Action Plan identified and is there training available for those that need it?
- are the resources identified and allocated?
- are there clear and effective means to measure performance against each objective?
- is there a mechanism to involve the workforce in the design and delivery of the Plan(?), and
- is there a mechanism for reviewing progress against the Plan as a whole at a high level within the company?

In addition the assessment covered the principles from “Successful Health and Safety Management” (HSG65) and reported according to those principles<sup>4</sup>.

The initial summary report was sent to all paper industry Chief Executives with a cover letter from the Chairman of PABIAC in late 1998[13]. In the covering letter the Chairman summarised the findings using four key messages:

1. Senior management commitment is essential. Those Plans needing immediate revision were generally deficient in this area. This was a major prerequisite for a successful outcome.
2. Plans generally set out what the mills will do, but failed to identify the resources needed, line management involvement and how management intended to monitor progress
3. The valuable contribution that safety committees could make to the process of developing Action Plans and monitoring progress was often not recognised. The best plans had a clear role for employees and a clear indication that employees were involved in drafting and agreeing the Plan
4. The procedures mills intended to use to review their Action Plans and how senior managers intended to audit their health and safety systems were generally weak or entirely missing.

This overall picture in relation to the principles from HSG 65 - that policy and organisation are generally strong, but planning and implementing, measuring performance and reviewing and auditing fall off rapidly - was to become a repeating pattern throughout the PABIAC Initiative and was echoed strongly by the PABIAC Audit findings in early 2000 (Section 9 refers).

PABIAC also carried out a central assessment of Action Plans in late 2000. This second assessment was conducted by the tripartite PABIAC Audit Team. Individual reports on Action Plans have already been return to mills via HSE Inspectors and a summary report on this second assessment is to be discussed by PABIAC in early 2001. The criteria used were again based upon HSG 65, but also included an assessment of the mill's response to the findings of the PABIAC Audit and the work required by a new PABIAC publication, "Making Paper Safely". This second assessment again gave a clear picture of the industry. It demonstrated that many mills had adopted the principles contained in HSG 65 and most were now working towards measures to improve their safeguarding standards as required by "Making Paper Safely".

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<sup>4</sup> A summary report can be found in Annex 3 .

## **4 HSE Activity in Support of the Initiative**

### **Summary**

This section summarises the work by the Health and Safety Executive (HSE) in support of the PABIAC Initiative. In particular it describes the work of the Polymers and Fibres Sector and operational inspectors around the country to identify risk, bring those risks to the attention of the industry and to enforce the law as required.

### **The Structure of the HSE**

HSE is brigaded into directorates and divisions that cover the various aspects of its work. These include policy making, scientific research and advice, and inspection<sup>5</sup>. Within the Field Operations Directorate ((FOD) – responsible, amongst other things, for operational inspection of manufacturing industry), the responsibility for the paper making industry sits with the Polymers and Fibres Sector, and specifically the Paper and Printing Sector Group (or National Interest Group (NIG)) based in East Grinstead. Other industries for which the Polymers and Fibres Sector is responsible are printing, plastics, rubber and textiles.

Around the country, operational Field Management Units (FMUs) are responsible for day to day inspection and enforcement in premises and in every Division of FOD at least one FMU is allocated responsibility for the industries work covered by the Polymers and Fibres Sector. These FMUs may also be responsible for one or more other sector's work, depending upon the spread of industry in the area covered by the Division concerned.

### **The work of the Polymers and Fibres Sector**

One of the main responsibilities of a sector is to provide support to operational inspectors in their work. This includes providing intelligence on hazards and risks in an industry, providing internal guidance and offering support and advice to inspectors. The latter can include organising training, providing expert evidence to support enforcement or simply answering questions about particular issues on a daily basis. Staff within a sector are likely to be both inspectors and administrators, bringing a range of skills to sector work.

Communication with FMUs is a combination of formal and informal, including written instructions (e.g. Sector Information Minutes (SIMs)), and irregular e-mails to circulate points of interest. The main document to set out a Sector's priorities is known as the Sector Strategic Plan (SSP). This SSP describes the industries for which a sector is responsible, sets out the main risks for those industries and identifies the work being undertaken by the sector to tackle those risks. In addition a sector may circulate the SSP to the industries via the Industry Advisory Committees, such as PABIAC.

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<sup>5</sup>The structure of HSE is shown in Annex 4

In addition to this, sectors also undertake joint consultation with the industries and activities for which they are responsible, e.g. through Industry Advisory or similar Committees such as PABIAC. As well as PABIAC, the Polymers and Fibres Sector supports, the Textiles IAC, the Rubber IAC, the Printing IAC, and a non-IAC committee covering the plastics processing industry. IACs, including PABIAC, have a plan of work, agreed with the HSC<sup>6</sup>. This plan of work is tied very closely to the work outlined in a sector's SSP and they are clearly mutually supportive. A sector group will, for example, be responsible for running the IAC and all sub-committees and will usually carry out much of the drafting and editorial work for IAC publications. Thus the Polymers and Fibres Sector was responsible for organising a working group and much of the drafting involved in developing the new PABIAC publication, "Making Paper Safely".

In addition to the publications produced for PABIAC (and of course running the Committee itself), the sector has:

- helped to organise and give presentations at the seminars for industry CEOs in 1998, 1999 and 2000.
- organised the accident monitoring system used by PABIAC
- bid for and obtained agreement for an FOD Key National Objective for paper making in support of the Initiative
- made presentations at the various roadshows and other events organised by the Paper Federation of Great Britain to disseminate information about the Initiative around the industry
- lectured at various training courses organised by mills, the industry or by trade unions around the country
- attended regional safety groups
- organised and run events for the operational inspectors responsible for paper mills
- produced and distributed SIMs and other informal information to inspectors
- circulated details of fatal and the most serious major injuries around the industry and to inspectors,
- organised and run the series of PABIAC Audits carried out in spring 2000 in collaboration with industry and the GPMU, and
- provided briefing for two meetings with Ministers and drafted speeches.

As a result of the partnership and transparency that has built up during the PABIAC Initiative the Sector has, at least, ensured that both the Trade Unions and the Paper

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<sup>6</sup>See Annex 5 for PABIAC's Plan of Work

Federation have been kept informed of their work. Indeed, wherever possible, the Sector has involved the partners in developing policy lines and checking accuracy and practicability. So, for example, the Sector Information Minutes (SIMs) issued during the period have been fully discussed between the partners and released as “open documents” to the industry. Rather than reduce the effectiveness of the guidance and policy line adopted this sharing of information has helped all sides understand the priorities and needs of the others and has ensured a stronger enforcement line could be followed by inspectors when they encountered under performing mills.

The most recent result of this growing partnership has been the agreement by PABIAC to publish detailed accident statistics for the whole industry - removing previous anonymity - to further the aims of the Initiative and promote greater understanding of accident records and trends. This will begin in early 2001.

### **The Work of Operational Inspectors**

It is important to recognise that operational inspectors in HSE are responsible for enforcing the law within the mills they inspect, but they are not primarily responsible for driving the PABIAC Initiative forward. The responsibility for this lies with the mill management. HSE Inspectors can guide management as to the priorities, offer advice and enforce the law. Nevertheless these activities are crucial to the overall impact of the PABIAC Initiative in mills - without the “iron fist in a velvet glove” of inspection some mills would persistently ignore the help and advice offered by the other partners in the Initiative.

Early in the life of the Initiative work by Inspectors was governed by the attempt to target the “top ten worst performing mills”. This quickly metamorphosed into direct support for the PABIAC Initiative as a result of a successful bid for a FOD “Key National Objective” (KNO) that allowed Inspectors up to 200 staff days per year (i.e. 2 days/mill) for proactive work with paper mills. This resulted in a significantly higher number of contacts being made with mills and a steadily increasing enforcement rate.

<b>Year</b>	<b>Contacts</b>	<b>Improvement Notices</b>	<b>Prohibition Notices</b>	<b>Informations laid</b>
<b>1996/1997</b>	<b>305</b>	<b>2</b>	<b>1</b>	<b>7</b>
<b>1997/1998</b>	<b>387</b>	<b>2</b>	<b>2</b>	<b>6</b>
<b>1998/1999</b>	<b>691</b>	<b>8</b>	<b>3</b>	<b>5</b>
<b>1999/2000</b>	<b>651</b>	<b>10</b>	<b>10</b>	<b>6</b>

**Table 1 - HSE Contacts with paper mills and enforcement 1996 - 2000.**

Both the number of contacts with mills and overall enforcement more than doubled in the first two years of the PABIAC Initiative when compared with the years before. Although within that, the overall rate of prosecution has remained constant, probably because prosecutions are more likely to be linked to accident investigations rather than to proactive visits.

In addition to these headline figures, Inspectors have also, via the central computer system, FOCUS, reported every occasion when they discussed mill Action Plans and commented on the quality of those Plans. Initially there were problems with the way the system saved this information, but Action Plans have been central to the discussions between Inspectors and mills on many occasions and over 150 FOCUS records have accumulated.

For the last year of the Initiative Inspectors have been asked to produce a report on every mill detailing:

- Mill details: name, address, employee and accident totals (3 day, Major and Fatal) for each of 3 years from April 1998
- Developing the Action Plan: method used, involvement of employees, role of risk assessment
- Progress, monitoring and review of Action Plan and effect on Accident rates
- Inspection activity to support PABIAC Initiative: numbers of contacts, time, enforcement etc.
- Mill management activity to support the PABIAC Initiative, including training
- TU and other employee activity to support the PABIAC Initiative: including training

These reports should be available in early 2001. They should provide PABIAC with more detail about the activities of Inspectors and effectiveness of the Initiative beyond the simple accident statistics and information provided by the PABIAC audit process. It has been suggested to Inspectors that they cooperate with both mill managers and trade unions to produce their report. The collated information will be available as a supplement to this report in early 2001.

## **5 Trade Union Activity in Support of the Initiative**

### **Summary**

This section summarises the work of the Trade Unions on PABIAC, mainly the GPMU, in support of the Initiative.

### **Representation and Support**

The trade unions, AEEU, GMB, GPMU, and TGWU, play a very active part on PABIAC. The GPMU, as the major trade union in the industry, has led on the work, but has been endorsed throughout by the other unions represented on the Committee. The trade unions have given their full support to the PABIAC Objective to reduce rates of accidents in the paper industry by 50% over 3 years and to promote a culture of continuous improvement in the industry. The GPMU has strongly supported, and promoted, the Paper and Printing Sector Strategic Plan, and subsequent requirement for all mills to produce and periodically revise mill Health and Safety Action Plans.

The Trade Unions, and notably the GPMU, are maintaining a close scrutiny of health and safety in the industry through branches and safety reps in paper mills. Reducing deaths and serious accidents in the paper industry is the GPMU's number one health and safety priority. To this end, GPMU union officials have visited as many paper mills as possible to address health and safety issues, and have made a huge commitment towards involving themselves in a broad range of activities concerning health and safety in mills.

### **The GPMU Demands to Paper Employers**

In the 1990's the GPMU, and previously SOGAT, had expressed general concern over safety in the paper industry. Then, in the two years to May 1996, there were 6 deaths. As a result, the GPMU sought a meeting with the Council of the Paper Federation and demanded action from the industry to address this appalling accident record. The meeting took place on 20 June 1996.

Subsequently employers were called on, to ensure that:

- Health and Safety was dealt with at Board level and projected to all levels of the company
- Risk assessments were completed in line with Regulation 3 of the Management of Health and Safety at Work Regulations
- Systems of work were reviewed and shown to be safe and operating effectively.
- All staff were trained in the safe systems
- All managers were trained in Health & Safety

- All managers were appraised on their Health & Safety performance
- Safety was on the top of the agenda for every mill meeting at all levels\_
- There was active involvement of FOC/MOCs, Safety Reps and Chapel Members
- Safety Reps were permitted the necessary time off to perform their legal functions within mills, and to be trained in those functions, and
- There was full disclosure of all Health & Safety information to safety reps and Chapels

All of these points were subsequently formally endorsed by the Paper Federation.

In addition, all GPMU members in papermaking were instructed not to do anything that they considered to be dangerous, and not to follow any practices that fall outside agreed safety procedures. GPMU Circulars stated that all failings in Health & Safety procedures and systems of work must be reported in writing to the employer, and that copies of all such reports must be sent to branches.

### **Industry Research**

The Paper Federation also agreed to the GPMU's call for an independent enquiry into the paper industry, with the aim of determining why the industry's accident record is so bad, and why some companies which are doing similar work to others are able to maintain much better safety performance.

This research, which led to the PABIAC Initiative, was conducted by the Health and Safety Laboratory (See Section 1 for details) Funding came from the Health and Safety Executive and the Paper Federation.

### **Training and Information**

During 1996 the GPMU also began an exercise to provide training for senior safety reps in the paper making industry, with the aim that at least one rep from every paper mill would attend one of those courses. Six training course were held during 1996 and 1997.

All papermaking chapels were provided with copies of the PABIAC Guide to Managing Health and Safety In Paper Mills and a copy of the results of the HSL research report.

A further GPMU training programme took place in 1998 to provide information and training to mill reps on the outcome of the HSL research, the HSE Sector Strategic Plan, the PABIAC Aims and Objectives for the Paper Industry, and the development of Mill Action Plans on health and safety.

In 1999, at the GPMU Biennial Delegate Conference, there was a special meeting of paper mill workers and Branch officials to review current activity on health and safety

in paper mills. In addition, during 1999 the GPMU met with the Paper Federation and with representatives of the major mills in an attempt to once again push home its concern at the continuing dismal safety record within the industry.

### **Government Action**

On three separate occasions the GPMU has made formal approaches to successive Government Ministers responsible for health and safety, to draw their attention to the low standards of safety in papermaking.

As a result Ministers have expressed publicly the Government's concern at the continuing high level of fatal and major accidents in the paper industry. Subsequently Ministers approached the Paper Federation seeking clear and specific commitments from the industry to make significant improvements, and agreed to address a meeting of the Chief Executives of the paper industry in early 1999, to review the progress the industry has made towards improving safety.

In addition it was agreed that HSE would provide Ministers with reports of all fatal accidents in the industry, with periodic updates on progress towards the achievement of PABIAC's High Level Statement of Objectives. This has, in the main, been achieved by the Minister attending the annual CEO event.

### **GPMU "Say No" Campaign**

On 23 March 2000, the GPMU held a meeting in London of over 100 FOC and Senior Safety Representative from paper mills, along with the relevant Branch Secretaries. This followed continuing safety problems, and in particular a further two deaths of paper workers. All attendees were given copies of the newly issued final draft off the PABIAC document "Making Paper Safely". The meeting called for a GPMU campaign to stop the continuing unsafe practices that were common place in the industry.

Several months before, the GPMU had submitted to the Paper Federation, as part of the national wage negotiations, a series of proposals for a procedure allowing operators to refuse to do unsafe jobs. It was agreed at the FOC/Safety Rep meeting that this should be pursued further with the Paper Federation, and that the GPMU would issue a poster with the slogans "Say No to Unsafe Jobs" and "We're here to work, not to die".

The resulting Immediate Action Guidelines and GPMU posters were sent out to all paper chapels in July, 2000. The guidelines were drawn up by the Paper Federation, based on the original GPMU submission, and also sent out to all Paper Federation members<sup>7</sup>.

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<sup>7</sup> A copy of the guidelines and poster are reproduced in Annex 9

## **6 Employer Activity in Support of the Initiative**

### **Summary**

This section summarises how the UK Paper Industry has organised itself to deliver the 50% injury reduction target and comments on the actions taken to achieve this goal.

### **The UK Paper Industry**

In December 2000 the UK Paper Industry comprised approximately 90 primary manufacturing mills making paper, tissue or board from fibrous raw materials, 90% of these subscribe for membership services from The Paper Federation of Great Britain. As a minimum these services cover Health & Safety and in most cases full membership is held enabling the Federation to lobby on behalf of its members on such issues as Environment and Competitiveness and to provide a full range of Employment Services activities. The Federation's membership also includes 10 secondary manufacturers, these are companies who use reels of paper or board as their starting raw material and add value by modifying the form and/or properties of the base reel to achieve their end product.

The primary manufacturing mills are owned by 60 different companies, of which half are registered outside of the UK. They manufacture 6.5 million tonnes of paper products per year, accounting for approximately half of the total UK consumption. Total turnover is £3.5 billion with an operating profit of £150 million. Capital expenditure per annum is approximately £300 million.

The industry continues to rationalise its operations and during the period of the PABIAC Initiative 12 paper mills have closed, with an accompanying loss of 2,000 jobs. Others have reduced their manning levels with a further additional loss of 2,000 jobs.

### **The Structure of the Paper Federation of Great Britain**

The Federation is governed by a Council of senior executives representing the broad diversity of the industry. They determine Federation policy and guide the work of its full time staff, based in Swindon. Subject-specific Councils and Committees, comprising industry specialists and Federation staff, ensure that strategy is put into action across the mills, on matters such as Education & Training, Employment Affairs, Business Affairs and Health & Safety.

In September 1998 the inaugural meeting of the Paper Safety Council (PSC) took place, bringing together a wider group of industry senior executives than had been involved with its forerunner, the Safety Policy Group. Members are drawn from a cross-section of the industry both geographically and representing the broad range of companies, products, technologies and cultures. It was established to act as the strategic body for steering H & S improvement and as the principle link with PABIAC.

The industry divides geographically into four areas: Scotland (17 mills), North (42 mills), South East (17 mills) and South West (15 mills). In late '98 each of these

areas established its own Senior Executive Safety Group, chaired by a member of the Paper Safety Council. Each area has its own Safety Adviser Group, chaired by either one of the Safety Advisers or the Federation's Head of Health and Safety.

The PSC takes its lead from The Paper Federation Council and several PSC members sit on the Federation Council. Three members of PSC currently sit on PABIAC plus the Federation's Head of Health & Safety and Director of Employment Services.

Similar structures exist for Education & Training, Employment Affairs and Business Affairs, all tried and tested groupings that permit the industry to manage particular issues, with Federation staff as the common element in all the geographical and specialist groupings.

The Paper Safety Council's Mission is:

*To provide leadership and direction to enable the UK paper Industry to achieve "zero accidents".*

Its key objectives to support this mission are:

- *to ensure that the 50% injury reduction target is delivered and*
- *to assist the industry to identify and develop the culture needed to achieve "zero injury" performance in the longer term*

Its priorities are:

- *commitment to Action Plans*
- *exchange best practice*
- *learn from other industries*
- *meet the safety training needs and*
- *make health and safety instinctive at all levels.*

## **Milestones and Achievements**

The cornerstone for all mills' activities has without doubt been the preparation of Mill Safety Action Plans. Most of the following will have been achieved in individual mills via commitment through their Action Plans and, by association, the involvement of the workforce, in most cases through Mill Safety Committees

The following are brief summary points of what has been achieved since March 1998:

- Three annual CEO Safety Days –'98, '99, '00
- Safety Action Plans prepared by each mill by August 1998 and revised regularly.
- High level participation by mills in regional safety groups at senior executive and practitioner levels.
- Commitment to minimum safety qualification for everyone. This qualification is the Safety unit (A1/B1) from the industry's N/SVQ in paper manufacturing or "equivalent". An open learning safety workbook was devised by the industry's NTO, the Paper Education and Training Council, and this has been adopted by most as the "equivalent". To date over 4000 people have satisfied the standard, with more to come.
- IOSH, Managing Safely, has become the chosen qualification for those with supervisory and management responsibilities.
- Senior Manager Safety Workshops, run in the four regions, on several occasions in each, to reinforce the need to lead the behavioural and culture change activities in their mills.
- Mills encouraging contractor companies to support the Contractor Passport Scheme and secure appropriate training for all their staff.
- Senior management support of GPMU "Say No" campaign.
- Contribution to the development of "Making Paper Safely"
- Safety newsletter – "Countdown", which is issued on quarterly basis.
- Safety has become the first item on all meeting agendas in all mills.
- Monthly accident statistics service.
- Written communications to CEOs, Named Correspondents and Safety Advisers in all mills on serious accidents, dangerous occurrences, Sector Information Minutes, changes to Regulations & Guidance etc.
- Some mills have been using the "Climate Safety Tool" to good effect.
- Cultural change programmes are in use in some mills – SUSA, DuPont STOP, BeSafe, UMIST Behavioural Programme etc. Progress is shared with other mills through the regional network meetings.
- Using the Federation as a repository for good ideas that are distributed across the mills.

- Bi-annual Safety Adviser conference.
- Operations Safety Conferences for each region (Scotland 22 November 2000, North 12 December 2000, South East and South West to follow on 1 March and 10 April 2001 respectively).
- Plans are presently in hand to run a series of workshops for first line supervisors, in the regions, to provide them with the tools to help to change safety behaviours in their mills. These will kick off in Quarter 1, 2001.

The industry continues to increase the energy and commitment being given to this vital area of each mill's activities. There is a strong, shared determination to take the industry out of the "poor performer" spotlight and into an arena where it stands out for its excellence in managing health and safety. Moreover that it becomes a model that other sectors will wish to benchmark themselves against in their drive for safety improvement.

## **7 Accident Monitoring and IT Management**

### **Summary**

This section summarises the work in HSE to monitor accidents in the paper industry, It explains the system used, outlines some of the problems encountered and highlights key issues that need to be borne in mind when monitoring the performance of an industry.

### **The Principles behind PABIAC's Accident Monitoring**

As many others have done before PABIAC needed to provide a "baseline" of its performance before it began the Initiative, and to monitor closely the accidents reported by mills around the country. The baseline was provided by the original HSL research (section 1), but the HSE Sector, on behalf of PABIAC, had to set up a system to monitor accidents and report to the committee, industry and trade unions on a regular basis.

Reported accident performance alone is only one, rather crude, measure of the overall health and safety performance of a company. It does not, for example, take into account ill-health arising out of work activities. In particular, accidents reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) are the tip of a bigger "accident triangle" that includes non-RIDDOR accidents and near misses, together with the myriad of other losses that can be attributed to poor health and safety management. The first lesson learned by PABIAC during the Initiative was therefore that accident performance alone is a surrogate measure for health and safety performance - albeit an immediate and powerful one.

Variation in reporting rates between firms or between industries can severely affect the overall picture. Nevertheless the picture of reported accident rates (taking into account employment) in an industry like paper can be used to compare performance nationally with other industries. Changes in accident rates can also provide a good measure of the trend in overall performance of a company - since short term variation in accident numbers tend to even out over a long period.

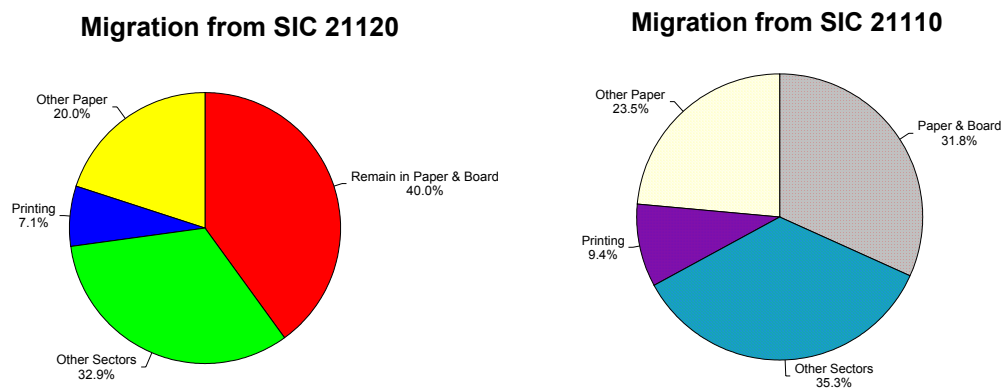
The system used to monitor accidents evolved significantly over the period of the Initiative, to allow quite complex assessment of both the overall performance of the industry - and hence measure the performance against the PABIAC target for reduction of accidents - and to track individual company performance, assess trends and target resources to those who needed them.

### **The Accident Monitoring System**

The initial baseline from HSL was produced using data from 12 mills. For the ongoing monitoring it was clear that accident data would have to be gathered from HSE's live FOCUS database. In order to improve accuracy those FOCUS records allocated to manufacture of Paper & Pulp (using standard industrial classifications (SICs) 21110 (Manufacture of paper pulp) & 21120 (Manufacture of paper and

paperboard)) were quality assured. Following this process the remaining records were cross checked with Paper Federation members and non members. This, so called, definitive list was then maintained for the following years of the Initiative and a report prepared on a quarterly basis for PABIAC.

As a result of the initial quality assurance it was found that a high proportion of the existing records were inaccurate and wrongly assigned to SICs 21110 and 21120. This can be expressed diagrammatically:



**Figs 7 & 8 - Movement of data from relevant SICs at the initiation stage of project**

Two sets of data were produced from the information gathered. Both were produced in spreadsheet format for further analysis<sup>8</sup>.

The first set summarised the performance of the industry as a whole, by financial year and by quarter<sup>9</sup>. The second broke down accidents across the industry by kind within each quarter of the year giving a running total at any point in the year and enabling those interested parties to assess trends in both numbers and kinds of accidents<sup>10</sup>. These figures were available to PABIAC and other stakeholders.

The remaining data was used to produce a crude “league table” relating to actual numbers of accidents occurring on a quarterly basis at each mill site. This table was not initially released outside HSE due to concerns about releasing information of this kind. These concerns centered around the issue of accuracy. For example, one mill may have reported many accidents, just because they were good at reporting accidents. This was to some extent confirmed once the Initiative progressed by a surge of reported accidents across all mills as they became better aware of the requirements of RIDDOR prompted by the Initiative itself. The system was further refined by the addition of employment totals for each company in order to calculate their accident incident rates.

Thus in November 2000 PABIAC felt confident enough with the system to debate targeting of specific mills on the basis of both the total number of accidents occurring

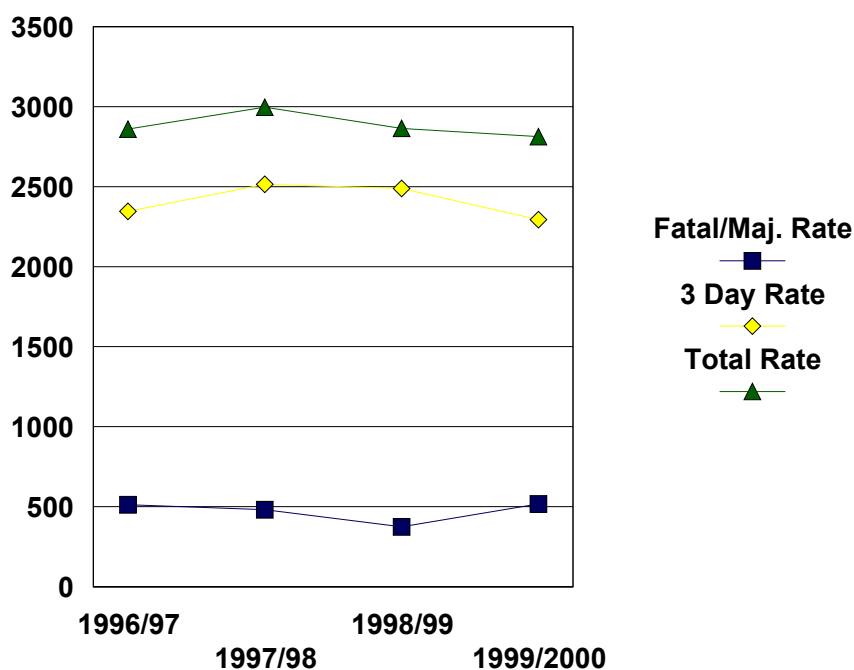
<sup>8</sup>Annex 6 - Paper Industry Accident Statistics

<sup>9</sup>Tables 1 - 6

<sup>10</sup>Table 7

at each mill and accident incident rates. More specifically, the partners on PABIAC argued strongly for the release of data to the industry as a whole. This, they believed, would have significant benefits, including further raising of awareness, increasing peer group pressure on under achievers, and promoting exchange of lessons learned (i.e. promoting good neighborliness).

Over the period of the Initiative more detailed analysis of the data showed an initial surge of 3 day accidents and a leveling off of major injuries. This trend, which PABIAC believes was caused by an increased awareness amongst mills, was then followed by a period in which both categories were stable. Some 15 months into the Initiative the trends were downward for 3 day accidents but upward for major accidents and, unfortunately, the first fatality within the Initiative period occurred.



**FIGURE 9 - RATES OF ACCIDENTS IN PAPERMAKING 1996 - 2000**

PABIAC expected the initial surge in accidents, but were surprised by the subsequent conflicting trends for fatal/major accident rates and 3 day accident rates. Traditional “Accident Triangle” theory led PABIAC to believe initially that the numbers of 3 day accidents were artificially low due to manipulation by certain mills, for example returning some employees to “light duties” or ignoring days lost following the end of a shift, however comparison of the three independently gathered sets of data (HSE, Federation and GPMU) failed to identify any significant underreporting. Various theories might explain this apparent anomaly, particularly the relatively serious hazards found in a paper mill (large fast moving machinery, hot and humid conditions, and frequent vehicle movements). Further data will be used to confirm if this trend continues.

One encouraging fact that emerged from the detailed analysis of individual and regional trends was that many mills had already achieved a 50% reduction in their own accident rates and some had managed to reduce their accidents by 75%. To

offset this of course certain mills remained stubbornly underachieving and PABIAC has therefore agreed to pay particular attention to these mills in their forthcoming programme of work in 2001.

### **The issue of IT and data accuracy**

The key to successful monitoring was a database with a consistent quality from which PABIAC could extract statistical information. In order to achieve this, 'quality' had to be considered at 3 separate levels.

First - "Did the FOCUS records accurately reflect what existed in the industry". This top level in fact required considerable resources to ensure accuracy.

Second - "Did the surviving records accurately reflect what they purported to be". In other words were the companies actually manufacturing paper and was FOCUS Client and Location information accurate. This second level again required significant resource on an ongoing basis to ensure the data remains constant.

Third - "What is the quality of the information held". Were the accident records appropriate i.e. did they involve mill employees or relate to contractors on site. Had the information been coded correctly, had it been input in a timely manner etc. More effort was put into ensuring this third level of quality on an ongoing basis. Liaison was undertaken with Inspectors on relevant teams in order to ensure the quality was maintained. There was however significant deviation either within individual firms or groups (of companies) which from time to time made interpretation of the data difficult.

A significant finding of this work was that management of the dataset had not started early enough in the course of the Initiative. This meant that certain difficulties were not identified until well into the project - including fundamental issues like whether or not the database actually contained every paper mill. Changes thus had to be accommodated either by adjusting the figures in hindsight or by allowing for them when aggregating the figures.

Inspectors attending the Paper Mills seminar(s) received a briefing on these problems and had their awareness and understanding of these issues raised within specific sessions on data quality. Unfortunately turnover of Inspectors within the groups responsible for paper mills during the Initiative meant that the impact of these sessions was not as effective as they should have been - simply because data accuracy depends mainly on the quality of the information entered by Inspectors after their visits.

Issues concerning contractors on site and accident reports relating to these contractors were also of some concern to data accuracy. There was a general lack of awareness as to how to locate this information on FOCUS and many contractor accident reports found their way onto the Paper Mill incumbent record. This meant an additional layer of quality assurance to disaggregate this information.

## **The use of accident data to target resources (inside and outside HSE)**

Within FOD the accident data played an increasingly important part in targeting resources. Initially Inspectors were given the summary tables with the addition of some interpretation by the Sector. After the first year the information generated was used to frame Sector's Key National Objective Programme, enabling Inspectors to direct their efforts towards those mills seen to be performing less well than others. Additional use was made of the data at the annual seminars where Inspectors were able to contribute to the development of the data gathering process.

After the second year of the Initiative had been completed a more sophisticated table was produced based on the original accident tables but introducing other factors. These factors included movement in league position, accident weighting scores, contact time and comments extracted from FOCUS over the previous planning year. This provided an indicative trend as to whether the mill was getting better or worse or not not moving either way.

The accident data was used within PABIAC to illustrate trends and highlight particular problems. This initiated decision-making on the part of PABIAC and influenced certain parts of the Initiative - notably in the various communications with the industry and the content of regional seminars. For example, risk assessment was clearly a problem for many mills. They did not understand it and some saw it as a tool to justify the status quo or as an end in itself, rather than a management tool to direct action towards risk control.

The data was also used to underpin the CEO events, for example, to illustrate the problems of safety management within the industry. At the second CEO event in 1999 the information extracted from the accident data was an integral part of the Minister's speech. The data was also used to help target the PABIAC Audits (Section 8 refers), ensuring that the audit team covered a range of mills in terms of size, product produced and relative accident performance.

### **Further developments**

The Sector will maintain the data held on paper mills past the 3 year life of the Initiative to help PABIAC target further efforts and in particular to target HSE resources to those mills who consistently contribute significant numbers of accidents or have high absolute incident rates. The Sector also plan a number of enhancements to the system which will be put in place with the cooperation of PABIAC members. Following discussion at the November 2000 meeting this includes jointly targeting those companies that need to improve their performance - offering help and encouragement where appropriate.

These developments will tie into the forthcoming national accident Call Center which will commence operations on 1 April 2001. It is hoped that this will enhance the information on accidents received within HSE and enable closer and earlier monitoring of mill accident information.

In 1999/2000 HSE has developed a programme to meet the increased level of accident investigations requested by government. This is significant for the paper industry as a high percentage of accidents reported meet the criteria for

investigation. This will certainly result in a general increase in contacts from Inspectors, and because of the natural relationship between investigations and enforcement should also result in an increase in Notices and Prosecutions. For example, in the first quarter of 2000/2001 accidents marked for investigation were 40% up on the same quarter in the previous year. The Sector and PABIAC fully support this stance.

## **Conclusions**

Whilst accident performance alone might be considered a crude method of measuring how well a company is performing, it is also very immediate. It is a useful tool for Inspectors to address deficiencies in a particular company and nationally accident statistics allow HSE to measure the change in performance of an industry as a whole. Accurate accident monitoring enables specific trends (for example in kind of accident) to be identified and allows Inspectors to home into that area whilst pulling the company/group along with them. Where this has occurred the feedback from the companies involved has always been positive.

Accident performance, particularly when data is shared can also allow industry associations, like the Paper Federation, or Trade Unions to develop packages of help. For example specific training programmes. More specifically it can also help these organisations target regions or specific companies that may otherwise struggle to improve.

To ensure this can happen with any degree of confidence, data must be managed during the life of Initiatives like PABIAC's. The data needs of any similar programme need to be assessed and audited at the earliest opportunity and action taken to resource the QA procedures.

On those occasions that HSE FOCUS data (post Quality Assurance) has been matched up with similar data from external sources it was found that FOCUS data was generally more reliable and accurate than data from other sources.

Within the accident monitoring and IT management segment of this project lessons have been learnt many with an incredibly steep curve. These lessons should be applied to future projects where managing through data and in particular FOCUS is involved.

## 8 The PABIAC Audit Process

### Summary

This section summarises the report of the PABIAC mid-Initiative audit into the management of health and safety in UK paper industry. The results were derived from audits in a sample of nine UK paper mills. The audits were carried out by a team from PABIAC against the principles contained in *Successful Health and Safety Management (HS(G) 65)*[4]. The recommendations in the report deal with specific issues relevant to the whole industry, and were reported to a meeting of industry Chief Executives on 12 April 2000. Individual mills participating in the study received their own specific reports.

### The Audit Process

Any audit process can only be a snapshot of management arrangements. However, the process does provide a reasonably accurate picture of the health and safety management structure within the company visited and, if combined, within an industry. The CEOs attending the meeting in April 2000 were encouraged, whether or not they came from mills participating in the audit process itself, to consider the recommendations made. It was agreed by the CEOs that these would be considered by Regional Senior Management Groups run by the Paper Federation of Great Britain and incorporated, as appropriate, into revisions of mill Action Plans.

### Methodology

The Audit team used the management model described in *Successful Health and Safety Management* to structure the audits and the presentation of the findings. Membership of the team was drawn from the HSE Sector Inspectors (2), Industry (1), Paper Federation (1) and GPMU (1). Members of the team guaranteed that information obtained during the audit process would not be made available to their respective organisations. The mills participating in the process were given the assurance that they would not be identified, unless they chose to make others aware of their participation.

The team did not carry out a full compliance audit, rather it sampled activities in every mill, obtained information from nominated managers about the management systems used and validated the answers given by means of a paperwork review and physical evaluation on the ground - interviewing staff at all levels where necessary. The issues chosen by the team were:

- 0Accident Investigation
- 1Housekeeping
- 2Transport - particularly the segregation of people and vehicles, and
- 3Permit to Work.

These four issues were chosen as they were not dependent upon the type, size of mill or product produced and were likely to be common to all mills visited by the team. An "aide memoire" was produced by the team before the visits based on the

principles contained in HS(G) 65<sup>11</sup>. Questions posed by the audit team were designed to obtain information against every one of the 5 elements within the HS(G) 65 model (i.e. of Policy, Organisation, Planning and Implementation, Performance Monitoring, and Review and Auditing). A standard format for each visit was used for the majority of mills - apart from the first mill visited. This visit plan was sent to the participating mill prior to each audit.

The audit team compared the systems found against the baseline of HS(G) 65 and defined its level of confidence in the management system according to a 4 point scale, where:

*Full assurance*                    There is a sound system of control designed to achieve the system objectives.

*Substantial assurance* While there are no major weaknesses in the system some action is required to ensure all of the system objectives are fully achieved.

*Limited assurance*                Weaknesses in the system of control are such as to put the system objectives at risk.

*No assurance*                        Control is generally very weak, leaving the system open to significant error or abuse.

As a result of the audit, the team also made a number of recommendations and rated these according to a three point scale of priority, where:

*Category A*                            Recommendations arising from serious control weaknesses which subject the mill to a significant risk of loss or exposure.

*Category B*                            Recommendations arising from weaknesses which subject individual systems or managers or Departments to significant risk of loss or exposure.

*Category C*                            Recommendations arising from weaknesses which, although not critical to a system, Manager or Department, are of sufficient importance to require remedial action by management.

However the overall summary report<sup>[23]</sup> presented to CEOs did not categorise the recommendations made, as most recommendations were equally applicable across the industry.

## **Findings**

**The level of confidence found for each of the five elements from HS(G) 65 were:**

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<sup>11</sup>Annex 7 - The PABIAC Audit Aide memoire

Policy	Organisation	Planning and Implementation	Measuring performance	Review and Auditing
Substantial (Full - Limited)	Substantial (Full - Limited)	Limited (Substantial - Limited)	Limited (Substantial - No)	No (Limited - No)

(NB. The range found is shown in brackets)

Overall the audit team detected an improvement in the commitment given to health and safety and was convinced that there was a clear foundation to build upon. However, the team were disappointed by the lack of a structured, businesslike approach to the control of risk<sup>12</sup>

### **Conclusions of the Audit Process**

The CEOs attending the event in April 2000 were overwhelmingly positive about the results of the Audit process. Mills who participated indicated they had found the process stimulating, welcoming the joint, positive approach adopted by the team. There were calls amongst the industry to repeat the process, perhaps annually, or to consider how PABIAC or the Paper Federation might continue to offer this sort of service to the paper mills.

Subsequent discussions in Regional Senior Management groups have continued the debate, challenging the recommendations made, but generally accepting that the report provides a useful source of information, particularly for those mills who have yet to come to grips with the principles contained in HS(G) 65.

The evaluation of the Initiative planned by PABIAC will specifically be asked to assess the effectiveness of the audit approach adopted.

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<sup>12</sup>Annex 8 - Recommendations of PABIAC mid-Initiative Audit

## **9 The Factors Influencing the Initiative, and Value for Money**

### **Summary**

This section discusses some of the main drivers on the health and safety system in the UK paper industry. The additional research planned by PABIAC should fill many of the gaps identified by this section, in particular it will provide information about the effectiveness of the contributions by the various parties involved in the Initiative and hence their impact on the overall outcome.

### **Drivers**

There are many drivers influencing the overall performance of the paper industry - which, in turn, influence health and safety performance. For the purposes of this report these may be categorised into economic, social, and legal.

Of these, the main driver is probably economic, notably the phase of the economic cycle and related price of pulp, including the relative strength of the £ against the Euro and \$. It has long been recognised that as production activity increases, health and safety will suffer, and equally as production decreases, particularly when it decreases sharply in times of economic hardship, health and safety also suffers. This can be summarised in simple terms - rapid economic change in either direction reduces health and safety performance.

The main social driver to influence health and safety performance in the paper industry is closely linked to the perception by senior managers of the social “good” involved - i.e. should they “bother” about health and safety. The initial research by HSL demonstrated that the safety culture of a mill is influenced by the leadership given by senior managers and the participation and communication that is encouraged amongst the workforce. Regular, annual meetings of industry Chief Executives has been a feature of the PABIAC Initiative to engage these CEOs in the agreement of the overall aim, to demonstrate their influence and to share experiences. Publication of information on fatal and near fatal accidents and overall accident rates has also driven home to many managers how they and the paper industry compare with others. However trade union activity, notably the pressure exerted by key individuals within the trades unions on individual managers, has probably been the main influencing factor on senior managers perception of the social need for health and safety.

Legal drivers can be described as a mixture of economic and social drivers. They include criminal and civil cases and for the purposes of this Initiative the work of HSE operational inspectors. Enforcement activity, including both informal (contacts etc.) and formal (Notices and Prosecutions) by HSE inspectors during the PABIAC Initiative has more than doubled when compared to activity in previous years. Encouraged by the PABIAC Initiative, HSE Inspectors have concentrated on certain key management areas and required every mill to produce a Health and Safety Action Plan, using that Plan to aid further contacts with mills. The effectiveness of this approach will be evaluated during the research proposed for the end of the Initiative.

Despite some comments to the contrary, it is unlikely that the activity of HSE has directly influenced the economic performance of any company in the paper industry (and hence its “survival” within the market). However, HSE may have helped managers cope with economic change by encouraging management stability, and HSE activity almost certainly has influenced the perception of senior managers - if nothing else to raise their awareness and alert them to their legal duties.

The PABIAC Initiative has no information on civil action during the period, notably no information regarding the influence of the insurance market on the industry. Retrospective analysis would enable this information to be gathered.

### **What Influences Drivers?**

The partners in the industry have a direct interest in the outcome of the PABIAC Initiative. They also have an influence on that outcome - that is they may influence (directly or indirectly) one of the drivers outlined above. In addition, events, notably major accidents or fatalities and rapid changes within the market, influence drivers and thus the outcome of the Initiative. The “trick” that PABIAC set out to find was what event or action had the most positive effect on the main health and safety drivers in the industry, what worked well and what didn't?

Work throughout the PABIAC Initiative was designed in stages:

1. To raise awareness of the “problem” within the paper industry - including the work by HSE to initially target the top 10 worst performers and the HSL research
2. To gain acceptance of the overall PABIAC Initiative approach - including agreement of the PABIAC High Level Aim and associated objectives
3. To provide information, advice and support to those people in the industry who need it - including the various training activities and “PABIAC Roadshows”
4. To set SMART objectives and clear standards of performance - including individual mill Action Plans and production of guidance, including “Making Paper Safely” and CEN “C” standards
5. To provide a “level playing field” within the UK - including industrial or enforcement action to introduce and maintain the agreed standards.

Stages 1 and 2 were completed early in the first year of the Initiative and Stage 4 was broadly complete by the end of September 2000 - including publication of Part 1 of BS EN 1034 - relating to Common Requirements. Stage 3 was an adaptation of existing work and will continue.

Stage 5 has been growing throughout the Initiative and will also continue - using the publication of clear standards (including BS EN 1034) to provide the baseline against which individual mill performance may be measured. Concern has already been voiced at PABIAC regarding the comparison between the health and safety standards applied within the UK when compared to those applied to paper mills

within the rest of the European Union, where apparently lesser standards and significantly poorer performance are “acceptable”. Further work is planned to investigate these concerns.

All of the PABIAC partners have been active in every stage (see sections 4, 5 and 6 for details) of the Initiative, with both joint and individual activities contributing to the overall aim set by PABIAC. The overriding characteristic of the PABIAC Initiative has been one of cooperation - albeit cooperation on the basis of an understanding of each other’s relative priorities. This is particularly true given that the Initiative has been occurring against a varying economic background within the paper market which would normally have resulted in a significant destabilising of health and safety management within the industry.

### **Benefits**

PABIAC has monitored the accident performance of the industry (see section 7 and Annex 6) and has, from time to time, used questionnaires to assess the attitudes of senior managers - notably prior to the annual meetings of CEOs. PABIAC has not imposed the use of tools such as the HSE “Climate” survey to assess mill culture, but many mills have used the tool as part of their own internal programme to improve safety culture. Feedback from employees via the trade unions on PABIAC has also been used to subjectively assess relative performance - particularly between mills.

Pending the results of the planned research, PABIAC is fairly confident that those mills that have embraced the Initiative have achieved a reduction in their individual accident rates, introduced good management systems and improved their safety culture. For example, the PABIAC Audit gave a very good correlation between those mills that achieved a high level of confidence in their management systems and those achieving a real improvement in their accident rates. These “good performers” are now (mid 2000) being identified and the data being used to help target poorer performers for appropriate attention by the partners on PABIAC.

However, for the first two years the overall performance of the whole industry remained stubbornly resistant to significant change. When fatal and major accident rates for other industries are compared with those of the paper industry up to the end of March 2000 it is clear that the paper industry was continuing to perform poorly. In particular the significant increase in the rate of fatal and major accidents in papermaking was in stark contrast to the experiences of other industries:



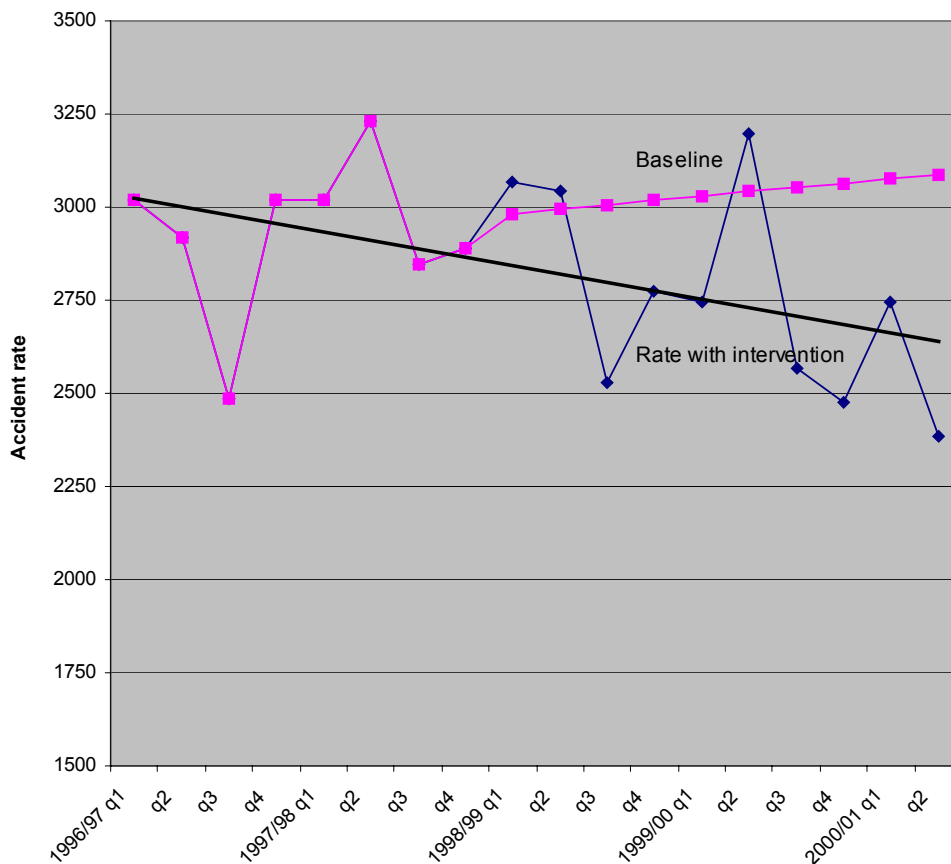
**FIGURE 10 - COMPARISON OF FATAL AND MAJOR ACCIDENTS IN VARIOUS INDUSTRIES 1996 - 2000**

More detailed analysis of the data and inclusion of data for the half year up to the end of September 2000 provided a more positive picture. This was especially true when the comparison was made between trends prior to the PABIAC Initiative and the trend experienced between 1998 and mid 2000.

In the years prior to the start of the Initiative there was a 2.25% annual increase in overall accident rates - following an upward trend set in previous years. Assuming this trend remained constant, the overall rate after three years of the Initiative (i.e. by the end of March 2001) would be 3112 accidents per 100,000 employees. In fact the rate at the end of March 2000 was 2785 - a relative decrease of 10.5%. Accident data for the first two quarters of 2000/2001 is even more encouraging showing a further decrease in the accident rate and an improvement over the baseline of 23.4%. This can be translated into a cost saving of between £960,000 and £1,500,000. This figure is based on the average cost<sup>13</sup> of an accident in the UK and does not include any consideration of savings as a result of fatal accidents prevented. In their initial reaction to this calculation in November 2000 PABIAC argued that the true figure was likely to be significantly higher than this, simply because of the relatively severity of accidents in the papermaking industry. They also believed that at least one fatal accident had been prevented by their work. This can be explored further in the proposed post Initiative research.

Despite the degree of uncertainty surrounding the calculation of cost, a clear message emerges that the PABIAC Initiative had prevented approximately 139 accidents to employees in the papermaking industry in Great Britain between April 1998 and September 2000.

<sup>13</sup>The cost to Britain of Workplace accidents and work-related ill health (1999)



**FIGURE 11 - PROGRESS OF THE PABIAC INITIATIVE AGAINST BASELINE**

Complicating the picture is the fact that the economic climate under which the paper industry operated between 1998 and 2000 declined significantly - resulting in a 5% reduction in the numbers employed over the first two years. For the reasons set out above, this factor alone should normally have resulted in an increase in the overall accident rate - simply as a result of the management instability caused by the change.

One of the main aims of the PABIAC Initiative is to influence the culture of the paper industry (or “the way we do things”) and introduce a culture of continuous improvement. Many of the activities within the Initiative are thus designed to provide cultural and management stability within health and safety - whatever external pressures prevail. This has collateral benefits and the PABIAC Initiative has thus been quoted by one mill as being responsible for an almost total lack of industrial relations problems despite the fact that the company itself was being sold and jobs were likely to be lost as a result.

This leads to a conclusion that the PABIAC Initiative has had a positive effect on the overall rate of accidents and a significant effect in certain mills. PABIAC’s work also confirms that although accident rates are an important headline measure of health and safety performance they are themselves influenced by other factors and can

only therefore be a surrogate measure of the total effort being put into health and safety by an individual company or an industry as a whole. The further research planned should investigate this uncertainty and provide a clearer idea of what influences health and safety performance and what provides the most “value for money” in terms of effort expended for result achieved. The continuing monitoring of accident figures within the industry will also allow PABIAC to assess whether or not any improvements are sustained in the long term.

## Costs

PABIAC did not set out to measure the costs of its Initiative. Retrospective analysis has identified some simple costs, as set out below:

Type of Cost	1998/99	1999/2000	2000/2001	+
Internal to HSE:				
Staff time	B1 - 10% B2 - 50% B3 - 50% B4 - 10% B6 - 20%	B1 - 5% B2 - 75% B3 - 10% B4 - 5% B6 - 20%	Not yet available	
GAE	Records not kept for this work alone	See 1998/99	See 1998/99	
Research	HSL Contract - £80k	-	Est £100k	
Information and publicity	No additional costs			
External to HSE:				
Gov.	Ministerial briefing and attendance at 1 event	Ministerial briefing and attendance at 1 event	Ministerial briefing and attendance at 1 event	
External to HSE:				
Private	Industry: CEO seminar, 4x regional roadshows  Preparation of Individual Mill Action Plans  NVQ training  1 staff year at trade assn. (est.)	Industry: CEO seminar, 4x regional roadshows  Maintenance of Action Plans of £X Delivery?  NVQ training  1 staff year at trade assn. (est.)	Industry: CEO seminar, 4x regional roadshows  Maintenance of Action Plans of £X Delivery?  NVQ training  1 staff year at trade assn. (est.)	Industry: CEO seminar, 4x regional roadshows  Maintenance of Action Plans of £X Delivery  NVQ training  1 staff year at trade assn. (est.)

Type of Cost	1998/99	1999/2000	2000/2001	+
	TUs: ½ staff year (est)	TUs: ½ staff year (est)	TUs: ½ staff year (est)	TUs: ½ staff year (est)

Certain companies have done work to identify the costs of accidents and near misses, but no detail was available at the time of writing about this or the cost of “compliance” with the Initiative by the industry as a whole. PABIAC may wish to consider if this should be investigated during the further research planned.

## **10 Interim Conclusions**

### **Summary**

This section outlines some interim conclusions discussed by PABIAC at its meeting in November 2000. They will need adaptation in the light of the further research planned for the end of the Initiative.

### **Draft Conclusions**

1. Setting a target for accident reduction focuses attention within an industry and provides a clear objective for individual companies, managers and employees to work towards.
2. A more realistic timescale for the sort of accident reduction target set by PABIAC would probably 5 years.
3. The target setting process must be based on accurate information about accident rates and the underlying causes of accidents.
4. Accidents alone are only one facet of health and safety performance and if real improvements are to be made to overall health and safety management then any high level targets must be supported by additional SMART objectives. These objectives could be extended to include occupational health issues and be informed by targets and actions laid down in the "Revitalising Health and Safety Strategy Statement".
5. The research by HSL to identify underlying causes of accidents has been validated throughout the Initiative.
6. Working in partnership and involving all parties in the Initiative has been an essential element of PABIAC's work and has significantly increased the chances of success.
7. The use of individual mill Action Plans places health and safety on the same basis as business planning and allows senior managers to demonstrate their commitment, identify priorities and provide appropriate resources.
8. The best companies involved their employees in health and safety and find benefits beyond the normal confines of health and safety. This was repeatedly confirmed throughout the Initiative, by HSL, the Action Plan Assessments and the PABIAC audit.
9. Accurate monitoring of accidents is essential.
10. The PABIAC Audit process proved a useful tool and has potential for expansion into some form of industry specific support and accreditation scheme.
11. Stability within the management systems of a company leads to an ability to withstand external pressures that would otherwise lead to a reduction in health and

safety performance. The stability can be improved by the adoption of the principles of “Successful Health and Safety Management” HSG 65.

12. Risk Assessment is a difficult concept for many companies and individuals. Many managers do not understand that action to control risk should result from a risk assessment, and continue to see it as an exercise to confirm the status quo or as an end in itself. PABIAC believe education to “demystify” risk assessment is essential and that the Initiative has enabled companies to do more.

13. A clear benchmark or standard to be achieved is an important element in health and safety - risk assessment alone is insufficient to provide this. PABIAC believes that Making Paper Safely establishes a clear standard and is a natural adjunct to the improvements seen in culture and management systems.

14. Communication throughout the Initiative is important - it must be timely and to the point. The messages about the PABIAC Initiative had to be driven into all levels of the industry before any real progress could be achieved - particular attention must be paid to middle managers - “the heartland of safety culture”..

15. There must be real partnership, involvement and joint ownership at every level in the industry, trade unions and in HSE. The raised profile adopted by PABIAC helped this process.

16. Messages to industry and inspectors must be clear and consistent. Issuing information in an open and transparent way has been a major benefit to all partners.

## **11 Additional Research Proposals**

### **Summary**

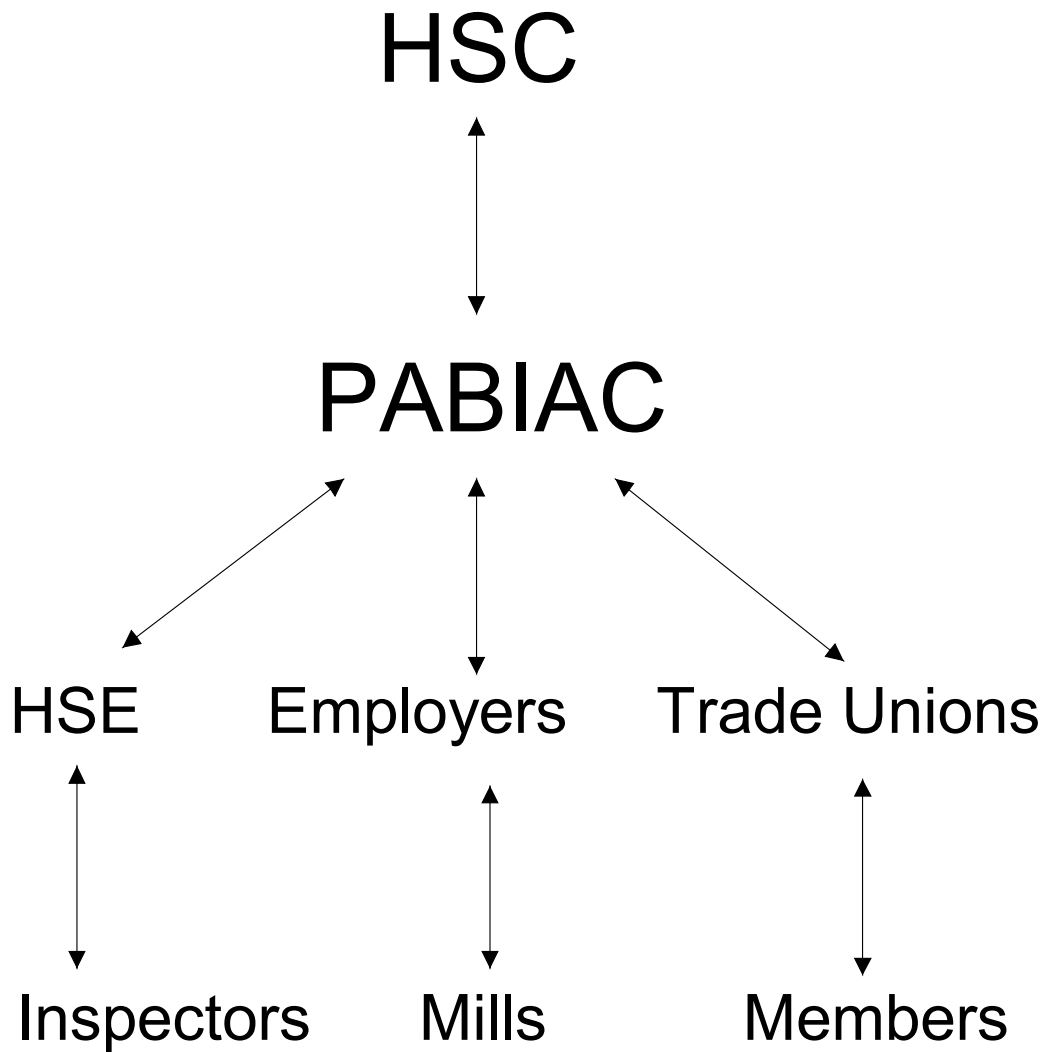
This section outlines the requirements for further research based on the gaps identified in the preceding sections of this report.

### **Purpose of the Proposed Research**

The research should:

1. Revisit the original work by HSL and establish, using a representative sample of mills, industry accident data and other sources, whether or not the PABIAC Initiative has influenced performance in the industry, in particular technological risk, safety management and safety culture.
2. Validate the improvement in accident rates observed and make appropriate recommendations for further accident reduction targets based on the results achieved, the opinions of stakeholders in the industry, trade unions and HSE, and the effectiveness of the various tools and techniques available to PABIAC.
3. Assess the effectiveness (Value for money) of the PABIAC Initiative, in particular the contributions of the various stakeholders, industry, trade unions and HSE and the various activities and techniques adopted - notably the PABIAC Audit.
4. Make recommendations to PABIAC about their work and proposals for further work - in particular it should make recommendations about the application of the PABIAC Initiative or elements of the Initiative to other industries.

**Annex 1 - The relationship between PABIAC, the HSC, HSE and other Stakeholders**



## Annex 2 - The PABIAC Initiative - A Chronology

### Summary

This annex details the chronology of the PABIAC Initiative which began officially on 1 April 1998. However the chronology has been extended back to the special meeting between the GPMU and Paper federation in June 1996 to illustrate the origins and history of the work and to place the Initiative in context.

### Chronology

Event/Activity	Date	Content
Meeting between the GPMU and Council of Paper Federation	June 1996	Meeting to discuss accident record and express concern regarding growing number of fatal accidents.
PABIAC special meeting	Jul 1996	Extraordinary meeting of PABIAC to discuss concerns about high accident rates, to evaluate activities in other industries to tackle this sort of issue and to agree proposals for research. Targeting of "top Ten" worst performing mills. Identified HSL to carry out research work.
Publication of Interim report by HSL[6]	Feb 1997	Interim report produced detailing initial finding on accident rates in six paper mills and outlining proposals for completion of the work. Six more mills were added to sample to validate the emerging findings.
PABIAC[7]	Jul 1997	Routine PABIAC meeting discusses emerging findings
HSE Inspector Conference	Sep 1997	Meeting to alert HSE Inspectors to emerging findings and discuss possible ways forward. Agreement to continue to

Event/Activity	Date	Content
		target "top ten" worst performers and review situation once HSL study complete
PABIAC[8]	Nov 1997	Routine PABIAC meeting discusses final report and agrees to set up working group to plan next steps
Working Group	Dec 1997	<p>PABIAC working group meet to discuss and outline proposals for PABIAC Initiative - proposals circulated to PABIAC Members for agreement</p> <p>Following this a presentation was given to the Paper Federation Council by the PABIAC Chair and Secretary</p>
HSL Report Published[1]	Feb 1998	Report published following agreement by PABIAC - copies issued to all mills participating in the research and made available to others - summary report also available.
"Pilot" Seminar[9]	Feb 1998	Participating mills receive details of the HSL research, HS(G) 65 and proposals for PABIAC Initiative.
PABIAC[10]	Feb 1998	Routine PABIAC discusses pilot seminar and agrees format for further work, including CEO event and regional seminars
CEO Event[11]	Mar 1998	Industry CEOs invited to attend seminar in London to hear results of HSL

Event/Activity	Date	Content
		research, details of HS(G) 65 and agree PABIAC Initiative.
Regional Safety Culture Events	Apr/May 1998	Regional seminars repeating pilot seminar. Managers and employee representatives attend.
HSE Inspector Conference	Jun 1998	Inspectors responsible for paper mills receive information relating to PABIAC Initiative and agree to extend the scope of current KNO to cover all mills and to change the objective to support the Initiative.
PABIAC [12]	Jul 1998	Routine PABIAC discusses CEO and Regional events - agrees to Action Plan assessment and accident monitoring proposals
Submission of Mill Health and Safety Action Plans	Aug 1998	Mills prepare and submit their Health and Safety Action Plans to their local HSE Inspector. Copies of plans forwarded to Sector for assessment.
Central assessment of Action Plans[13]	Sep/Oct 1998	Central assessment of Action Plans against principles of HS(G) 65 - report prepared for PABIAC and HSE Inspectors
PABIAC[14]	Nov 1998	Routine PABIAC meeting discusses feedback on Action Plans, accident performance and regional seminars - agrees to circulate a summary report on Action Plan assessment to all mills.

Event/Activity	Date	Content
Circulation of Action Plan Assessment	Jan 1999	Circulation of PABIAC report summarising the central assessment of mill Action Plans and detailing lessons learnt.
PABIAC [15]	Feb 1999	Routine meeting of PABIAC discusses progress and agrees proposals for CEO event. PABIAC also identifies that risk assessment is an area of difficulty for most mills and agrees to organise regional seminars to explain this and the approach by HSE Inspectors
CEO Event[16]	Apr 1999	Meeting of industry CEOs to discuss progress with PABIAC Initiative - presentations included experience by South West Water to improve their accident performance and examples of activities by four paper mills. The then minister, Alan Meale, provided the key note address.
HSE Inspector meeting[17]	Jun 1999	Meeting of HSE inspectors responsible for paper mills to discuss progress with Initiative, feedback of mill Action Plans, monitoring of accidents and further use of Action Plans during inspection contacts.
Regional Seminars[18]	Jul 1999	Regional seminars in Scotland, North West England, South West England and South East

Event/Activity	Date	Content
		England to explain approach used by HSE Inspectors when assessing progress with mill Action Plans and outlining the principles of risk assessment for attendees following model being developed by rubber industry.
PABIAC[19]	Jul 1999	Routine meeting of PABIAC - discussed accident monitoring and progress with Initiative - notes apparent down turn in reported accidents%
Fatal Accident[20]	Oct 1999	Fatal Accident at Donside Paper Mill, Scotland. First fatal accident in 16 months
HSE SIM[21]	Nov 1999	Release of HSE "Sector Information Minute" (SIM) on "Cleaning paper making Machinery" to the wider industry.
PABIAC [22]	Nov 1999	Routine meeting of PABIAC - notes recent fatal accident and apparent increase in reported accidents overall. Agrees to carry out "PABIAC Audit " of a representative sample of UK mills to assess progress against the principles of HS(G) 65. CEO questionnaire also agreed as part of the preparation for CEO event in 2000. Agrees the final draft of new guidance, "Making Paper Safely", to replace the "4th Report".

Event/Activity	Date	Content
PABIAC Audit	Dec 1999	First meeting of PABIAC Audit team to agree principles and methodology of proposed audits and identify mills for inclusion in the process.
PABIAC Audits[23]	Jan - Mar 2000	Nine audits of paper mills across the country - individual and overall reports produced.
Fatal Accident[24]	Jan 2000	Fatal Accident at Smurfit Burnley.
PABIAC[25]	Feb 2000	Routine meeting of PABIAC - discussed fatal accidents, SIM and progress with audits and emerging finding. Agreed outline program for CEO event.
HSC	Mar 2000	HSC visit a paper mill to appraise themselves of the situation in a typical mill. Minister (Lord Whitty) accompanies an inspector on a routine visit to a mill.
CEO Event[26]	Apr 2000	CEO event discusses progress with the Initiative, results of PABIAC Audit and introduction of Making Paper Safely. Agrees to review mill action plans in the light of their discussions and resubmit them for assessment. Presentations include Minister and Chair of HSC.Ü
HSE Inspector meeting[27]	May 2000	Meeting to discuss progress with PABIAC Initiative and proposals

Event/Activity	Date	Content
		for introduction of Making Paper Safely. Meeting agreed enforcement strategy for final year of Initiative, use of revised Action Plans by inspectors and production of mill reports
HSE SIM[28]	Jun 2000	Release of HSE SIM detailing issues agreed by Inspectors and covering the introduction of Making Paper Safely and response to the PABIAC Audit.
PABIAC[29]	Jul 2000	Routine meeting of PABIAC - discussed accident performance - noting in particular the variation in performance between the SE region (where rates were already showing a 50% improvement) and Scotland (where rates were increasing). Agree creation of new sub-committee covering safety and human factors. Paper Federation announced regional events to help mills implement Making Paper Safely and agreed to provide photographs to support the publication.
Revision of Mill Action Plans	Aug 2000	As a result of Making Paper Safely every mill is charged with revising their current Action Plan
PABIAC [30]	Nov 2000	Routine meeting of PABIAC
Review of Action Plans	Nov 2000	PABIAC Audit Team meet to review revised Action

Event/Activity	Date	Content
		Plans
PABIAC Safety and Human Factors Sub-Committee	Nov 2000	First meeting of Safety and Human Factor Sub-Committee

## Annex 3 - Initial Assessment of Mill Action Plans - Summary Report

### Summary of Main Findings

The following assessment summarises how the mill Action Plans shaped up against the "key elements" of policy, organisation, planning and implementing, measuring performance and auditing as described in HSG 65. A summary of how HSG 65 addresses these "key elements" can be found in the appendix to this report

#### A. Policy

*Does the Plan give a clear direction for the organisation to follow, supported by commitment at the highest level in the company?*

- **most plans** gave a clear commitment from senior management
- **only the best plans** recognised that health and safety contributes to good business
- **only the best plans** made a commitment to monitor and audit performance
- **most plans** demonstrated management awareness, however,
- **only the best plans** gave any significant commitment of resources

#### B. Organisation

*Is there an effective management structure and arrangements for delivering the Plan?*

- **most plans** outline management responsibilities in broad terms
- **some plans** made the role of safety advisors clear - but they were overloaded in others
- **the best plans** set out routine systems for planning and monitoring, but standards to be achieved were not always clear - making monitoring difficult
- **many plans** showed that individual responsibilities were vague - who does what and how?
- **some plans** continued with a "blame culture" - words like "offenders" rather than victims of accidents were used

- **many plans** failed to clarify the role of safety committees - a powerful resource is thus under-utilised, under-resourced and has little power to deliver what is expected of them
- **many plans** indicated that many Mills remain unconvinced of the *organisational* causes of the majority of accidents - the best plans analyse underlying causes - others do not use this data
- **many plans** clearly demonstrated that Action Plans tend to be poorer where there is little or no employee involvement - **the best plans** have a clear role for employees and have a clear indication that employees were involved in drafting and agreeing the Plan
- **most plans** suggested that Mills had tried to be "self sufficient" - some lessons can be learnt by all mills from the best (and from other industries)
- **most plans** indicated health and safety training is beginning and was included as a specific objective, however **most plans** also gave little indication that a minimum requirement for **manager's** competencies has been addressed in the industry - there was clear commitment to NVQs level 2 for all staff, HSE presumes this includes managers?

### C. Planning and Implementation

*Is there a planned and systematic approach to implementing the health and safety policy, and assessing and minimising risks through an effective health and safety management system?*

- **many plans** show a variable understanding of the legal and practical implications of Risk Assessment - in some cases it has clearly not been carried out or, where completed, the results had not been translated into action. Risk assessment was perceived as a goal in itself, rather than a tool.
- **many plans** demonstrate that senior managers do not understand what to do with Risk Assessments once completed and the implications of the results had not been followed through.
- **many plans** failed to address the issue of resources
- **most plans** failed to clarify the part played by managers in the delivery of specific objectives - in **the best plans** individual managers are named and Board members take specific responsibility for planning and implementing

### D. Measuring Performance

*Is performance measured against agreed standards to reveal when and where improvement is needed?*

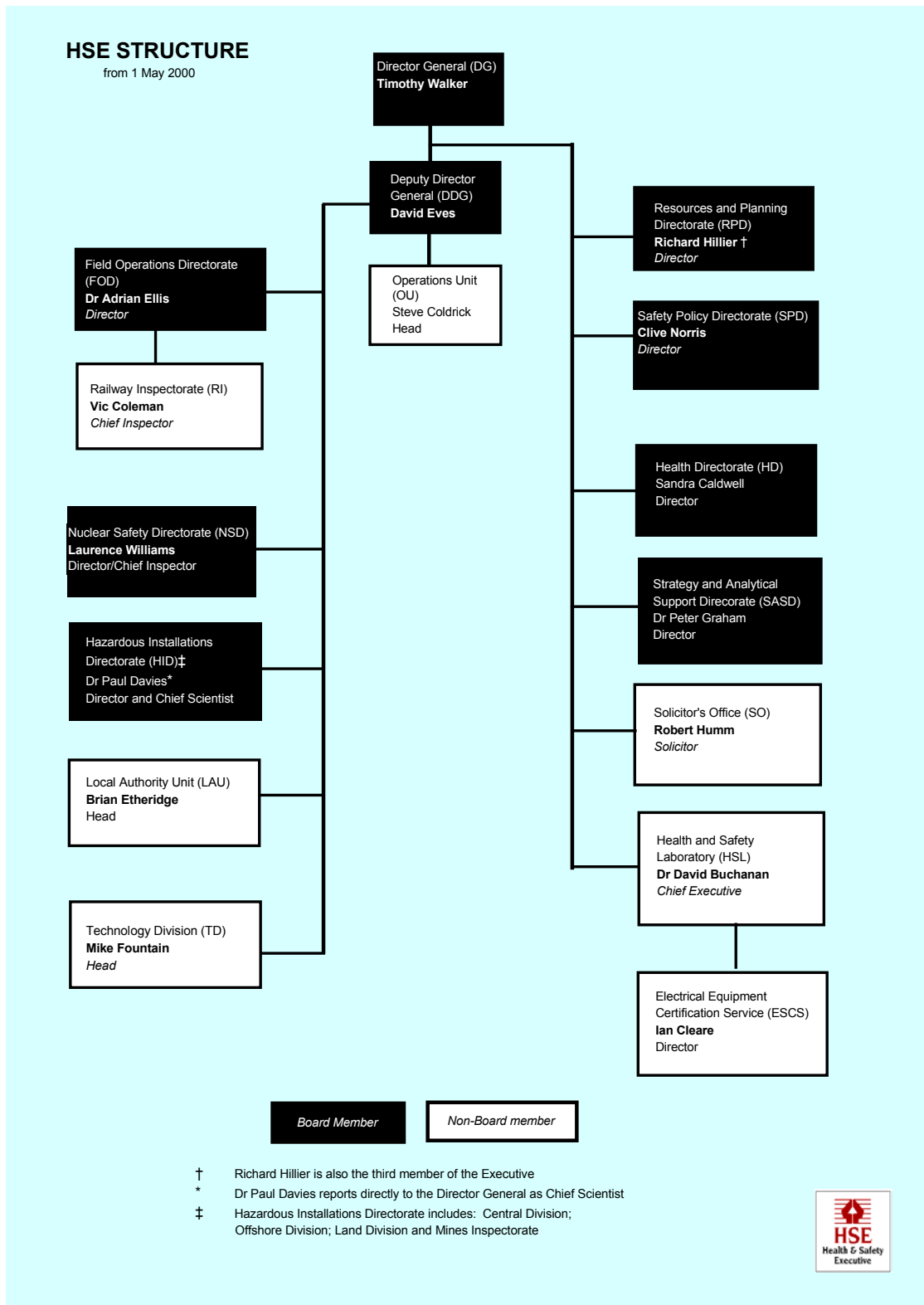
- **most plans** failed to make the most of safety committees or other workforce involvement when monitoring performance - a very powerful resource under used
- **most plans** failed to follow up on the underlying causes of accidents - **the best plans** have analysed accidents, talked to employees and set priorities
- **most plans** were generally weak in this area.

### **E. Audit and Review**

*Does the Plan show that the organisation learns from all relevant experience and applies the lessons?*

- **most plans** failed to include this - except in a few exceptional cases,
- **most plans** failed to set out any sort of system to review and revise progress against their own Plan or the PABIAC objectives,
- **most plans** failed to set out a system for the revision of Action Plans.

## Annex 4 - The Structure of HSE



## **Annex 5 - PAPER AND BOARD INDUSTRY ADVISORY COMMITTEE (PABIAC) - PLAN OF WORK FOR 1999 TO 2001**

### **INTRODUCTION**

The fatal and major accident incident rate in papermaking is twice that of manufacturing industry in general and there is a wide variation between the rates achieved by the best and worst performing mills. Research, promoted by PABIAC during 1997/98, has clearly identified both Safety Culture and Safety Management Systems as major factors associated with good safety performance.

In the light of the continuing high rate of injuries and using the research results, PABIAC therefore decided that the industry as a whole needs to take prompt, effective and sustainable action to reduce accidents in every mill in Great Britain. In support of this PABIAC has therefore adopted a high level aim and a series of objectives to address the problems of the industry. The priority in this Work Plan is therefore to support this initiative and the overall aim.

### **STRATEGY**

PABIAC's strategy is focused on two main areas of work:

- a) Promotion of the High Level Aim and Objectives, and
- b) Provision of relevant, quality guidance to the industry to help them achieve the overall aim.

Specific projects are proposed to support both elements of the strategy, although, by the very nature of the cultural change needed in the industry, it is difficult to outline exactly every activity that is likely to be necessary over the period of this Plan.

### **PROJECTS TO SUPPORT THE STRATEGY**

#### **1. Promotion and evaluation of the PABIAC High Level Aim and Objectives.**

*Overall objective:* To reduce rates of accidents in the paper industry by 50% over 3 years and to promote a culture of continuous improvement in the industry.

*Reason for priority:* The fatal and major accident incident rate in papermaking is twice that of manufacturing industry in general and there is a wide variation between the rates achieved by the best and worst performing mills.

*Timetable:* Ongoing to April 2001.

*Method and Achievement:* Every paper mill is required to produce an adequate and effective Action Plan detailing what action it intends to take to reduce accidents. PABIAC will monitor the response to the initiative and the effect on accident rates for the industry as a whole. Where required additional seminars and training will be organised to provide support for mill management and workers. Annually, PABIAC intends to hold a meeting for all Chief Executives to review progress and learn

lessons. Feedback from seminars and information from HSE inspectors will be used to adapt the activities as necessary and provide additional information if required.

## **2. To Update and Promote Appropriate Industry Guidance on Paper making Machinery Safety**

*Overall Objective:* To provide up to date and appropriate guidance to replace the Fourth Report on Safety in Paper Mills in the light of progress on new European Standards.

*Reason for Priority:* The industry continues to have a significant number of machinery related accidents. During the last Work Plan PABIAC began the complete revision of the Fourth Report on Safety in Paper Mills, particularly in the light of impending adoption of a harmonised European C-Standard for papermaking machines (prEN 1034). It is hoped that the revised guidance will be finalised in Autumn 1998 and published in early 1999.

*Timetable:* Ongoing throughout the period

*Method and Achievement:* The new Guidance will be published as a loose leaf supplement to the PABIAC "Guide to Managing Health and Safety in Paper Mills". It is an important addition to the Guide and will set out the industry standards for safeguarding machines. The new guidance will be promoted at various training events organised by industry and the Trades Unions and by suitable press releases. Initially the success of the guidance will be assessed on the basis of sales, but ultimately the physical standards in the mills will determine the success of the document. Feedback from inspections, reaction at industry training events and feedback from readers will also be used to assess the document's success.

## **3. To Promote Better Standards of Management of Contractors in Paper Mills**

*Overall Objective:* To reduce the overall rate of accidents amongst contractors working in paper mills and to publish and promote the new guidance on Contractor Safety in Paper Mills

*Reason for Priority:* Several fatal and major accidents occur to contractors working in the industry every year. As a result, contractor safety was specifically included in the PABIAC high level objectives supporting the overall aim to reduce the accident rate in the industry. During 1998 PABIAC will agree the publication of new guidance (begun during the last Work Plan) aimed at promoting contractor safety. The new guidance is designed to help mills improve the management of contractors.

*Timetable:* Ongoing throughout the period

*Method and Achievement:* The new Guidance will be published as a loose leaf supplement to the PABIAC "Guide to Managing Health and Safety in Paper Mills". The guidance will be promoted by a press release and other appropriate promotional activities. The guidance will also be used during the various events planned to promote the ongoing PABIAC initiative given the inclusion and importance of contractor safety in the PABIAC high level objectives. Initially the success of the guidance will be assessed on the basis of sales, but ultimately the standard of

contractor safety, including the rate of accidents amongst contractors in mills, will also be used to assess the document's success.

#### **4. To Promote High Standards of Health Management in the Industry.**

*Overall Objective:* To obtain intelligence on health within the industry and promote high standards of health management as part of the overall initiative.

*Reason for Priority:* Although the overall reduction of the rate of accidents is the priority for PABIAC, effective management of health issues remains an important part of PABIAC's work plan. Specific ongoing problems include high levels of noise, paper dust, and heat stress. In addition PABIAC produced new guidance on manual handling during 1998 and this needs to be promoted within the industry.

*Timetable:* Ongoing throughout the period

*Method and Achievement:* The action required to improve the management of health in the industry centers on the gathering of intelligence, development of standards and guidance, promotion of the guidance and evaluation of success. In each of the areas identified by PABIAC specific action is proposed, as follows:

**Noise:** The existing guidance is under revision and new guidance should be published in late 1998 or early 1999. This will be promoted within the industry and evaluated.

**Paper Dust:** Although paper dust is thought to be a nuisance dust, rather than posing any specific health risks, high levels are known to exist in some mills, particularly tissue mills. Further research is required to determine levels and suitable control measures. PABIAC will then develop appropriate guidance to help mills control and reduce exposure to paper dust.

**Heat Stress:** The temperature and humidity in many mills can be very high. PABIAC has, with the help of HSE specialists, carried out an investigation to determine the sort of conditions that exist and develop appropriate management standards to reduce the risk to workers asked to work under these conditions. Guidance should be produced in 1998 and will be promoted and evaluated within the industry over the period of this plan.

**Manual Handling:** The newly published guidance on manual handling will be promoted within the industry and evaluated. How?

#### **5. To promote high standards in the control of vehicles, particularly Lift Trucks, within Paper Mills.**

*Overall Objective:* To reduce the number of accidents associated with vehicle movements on mills sites, particularly in relation to Lift Trucks.

*Reason for Priority:* Vehicle movements of all sorts in and around paper mills have increased exponentially over the past few years. In many cases the location, layout

or age of the mill makes it very difficult for the company to respond quickly to this increase. Partly as a result, the number of accidents involving vehicles has been increasing and effective action must be taken within the industry.

*Timetable:* Ongoing throughout the period

*Method and Achievement:* PABIAC has recently agreed to produce a bulletin on lift truck safety - following a fatal accident. This will be promoted and evaluated. In addition PABIAC would like to promote improved vehicle safety within the industry and proposes to examine ways in which existing guidance may be adapted to the needs of the industry with a view to improving management of vehicles in general.

## **6. To reduce the number of Accidents at Large Horizontal Baling Machines**

*Overall Objective:* To ensure that adequate standards in terms of guarding, systems of work, training, maintenance and supervision are provided and maintained at large horizontal baling machines.

*Reason for Priority:* Large Horizontal Baling Machines continue to kill or seriously injure workers in the paper and allied industries. Since 1994 nine people have died as a result of accidents on these machines. Appropriate standards for guarding and safe systems of work have been developed and these need to be promoted in all parts of the industry to eliminate the chances of further deaths.

*Timetable:* Ongoing throughout the period

*Method and Achievement:* PABIAC will promote the standards of guarding and safe systems of work recently published by PIAC by the adoption of the PIAC information sheet and its promotion in the paper industry.

**ANNEX 6 - PAPER INDUSTRY ACCIDENT STATISTICS**

**TABLE 1 - REPORTED ACCIDENTS TO EMPLOYEES IN PAPER MILLS 1996 - 2000\*.**

<b>Year</b>	<b>Fatals</b>	<b>Major</b>	<b>3 Day</b>	<b>Total</b>	<b>Emp.</b>	<b>Fatal/Maj. Rate</b>	<b>3 Day Rate</b>	<b>Total Rate</b>
<b>1996/97</b>	<b>1</b>	<b>99</b>	<b>457</b>	<b>557</b>	<b>19478</b>	<b>513</b>	<b>2346</b>	<b>2860</b>
<b>1997/98</b>	<b>3</b>	<b>87</b>	<b>470</b>	<b>560</b>	<b>18684</b>	<b>482</b>	<b>2516</b>	<b>2997</b>
<b>1998/99</b>	<b>1</b>	<b>66</b>	<b>445</b>	<b>512</b>	<b>17869</b>	<b>375</b>	<b>2490</b>	<b>2865</b>
<b>1999/2000</b>	<b>2</b>	<b>90</b>	<b>408</b>	<b>500</b>	<b>17776</b>	<b>518</b>	<b>2295</b>	<b>2813</b>

**TABLE 2 - REPORTED ACCIDENTS TO EMPLOYEES IN PAPER MILLS BY QUARTER 1996/1997 (EMP. 19478)\*.**

<b>Quarter</b>	<b>Fatals</b>	<b>Major</b>	<b>3 Day</b>	<b>Total</b>	<b>Fatal/Maj. Rate</b>	<b>3 Day Rate</b>	<b>Total Rate</b>
<b>1</b>	<b>1</b>	<b>25</b>	<b>121</b>	<b>147</b>	<b>533</b>	<b>2485</b>	<b>3019</b>
<b>2</b>	<b>0</b>	<b>20</b>	<b>122</b>	<b>142</b>	<b>411</b>	<b>2505</b>	<b>2916</b>
<b>3</b>	<b>0</b>	<b>25</b>	<b>96</b>	<b>121</b>	<b>513</b>	<b>1971</b>	<b>2485</b>
<b>4</b>	<b>0</b>	<b>29</b>	<b>118</b>	<b>147</b>	<b>596</b>	<b>2423</b>	<b>3019</b>
<b>Total</b>	<b>1</b>	<b>99</b>	<b>457</b>	<b>557</b>	<b>513</b>	<b>2346</b>	<b>2860</b>

**TABLE 3 - REPORTED ACCIDENTS TO EMPLOYEES IN PAPER MILLS BY QUARTER 1997/1998 (EMP. 18684)\*.**

<b>Quarter</b>	<b>Fatals</b>	<b>Major</b>	<b>3 Day</b>	<b>Total</b>	<b>Fatal/Maj. Rate</b>	<b>3 Day Rate</b>	<b>Total Rate</b>
<b>1</b>	<b>1</b>	<b>24</b>	<b>116</b>	<b>141</b>	<b>535</b>	<b>2483</b>	<b>3019</b>
<b>2</b>	<b>0</b>	<b>20</b>	<b>131</b>	<b>151</b>	<b>428</b>	<b>2805</b>	<b>3233</b>
<b>3</b>	<b>0</b>	<b>17</b>	<b>116</b>	<b>133</b>	<b>364</b>	<b>2483</b>	<b>2847</b>
<b>4</b>	<b>2</b>	<b>26</b>	<b>107</b>	<b>135</b>	<b>599</b>	<b>2291</b>	<b>2890</b>
<b>Total</b>	<b>3</b>	<b>87</b>	<b>470</b>	<b>560</b>	<b>482</b>	<b>2516</b>	<b>2997</b>

**TABLE 4 - REPORTED ACCIDENTS TO EMPLOYEES IN PAPER MILLS BY QUARTER 1998/1999 (EMP. 17869)\*.**

<b>Quarter</b>	<b>Fatals</b>	<b>Major</b>	<b>3 Day</b>	<b>Total</b>	<b>Fatal/Maj. Rate</b>	<b>3 Day Rate</b>	<b>Total Rate</b>
<b>1</b>	<b>1</b>	<b>13</b>	<b>123</b>	<b>137</b>	<b>313</b>	<b>2753</b>	<b>3067</b>
<b>2</b>	<b>0</b>	<b>18</b>	<b>119</b>	<b>137</b>	<b>403</b>	<b>2664</b>	<b>3067</b>
<b>3</b>	<b>0</b>	<b>18</b>	<b>96</b>	<b>114</b>	<b>403</b>	<b>2149</b>	<b>2552</b>
<b>4</b>	<b>0</b>	<b>17</b>	<b>107</b>	<b>124</b>	<b>381</b>	<b>2395</b>	<b>2776</b>
<b>Total</b>	<b>1</b>	<b>66</b>	<b>445</b>	<b>512</b>	<b>375</b>	<b>2490</b>	<b>2865</b>

**TABLE 5 - REPORTED ACCIDENTS TO EMPLOYEES IN PAPER MILLS BY QUARTER 1999/2000 (EMP. 17776)\*.**

<b>Quarter</b>	<b>Fatal</b>	<b>Major</b>	<b>3 day</b>	<b>Total</b>	<b>Fatal/Maj. Rate</b>	<b>3 Day Rate</b>	<b>Total Rate</b>
<b>1</b>	-	<b>21</b>	<b>101</b>	<b>122</b>	<b>473</b>	<b>2273</b>	<b>2745</b>
<b>2</b>	-	<b>28</b>	<b>114</b>	<b>142</b>	<b>630</b>	<b>2565</b>	<b>3195</b>
<b>3</b>	<b>1</b>	<b>21</b>	<b>97</b>	<b>119</b>	<b>495</b>	<b>2183</b>	<b>2678</b>
<b>4</b>	<b>1</b>	<b>20</b>	<b>96</b>	<b>117</b>	<b>473</b>	<b>2160</b>	<b>2633</b>
<b>Total</b>	<b>2</b>	<b>90</b>	<b>408</b>	<b>500</b>	<b>518</b>	<b>2295</b>	<b>2813</b>

**TABLE 6 - REPORTED ACCIDENTS TO EMPLOYEES IN PAPER MILLS BY QUARTER 2000/2001 (EMP. XXXX)\*\*.**

<b>Quarter</b>	<b>Fatal</b>	<b>Major</b>	<b>3 day</b>	<b>Total</b>	<b>Fatal/Maj. Rate</b>	<b>3 Day Rate</b>	<b>Total Rate</b>
<b>1</b>	-	<b>18</b>	<b>104</b>	<b>122</b>			
<b>2</b>	-	<b>14</b>	<b>92</b>	<b>106</b>			
<b>3</b>							
<b>4</b>							
<b>Total</b>							

\* Accident Rates based on Federation members employment totals throughout - accurate figures for non-federated mills not available

\*\* Not yet available

	Fatals				Majors				Over 3 day				Total				Investigated			
	96	97	98	99	96	97	98	99	96	97	98	99	96	97	98	99	96	97	98	99
Machinery	1	0	0	2	9	12	7	19	48	44	44	26	58	56	51	47	17	16	15	19
Struck by	0	1	1	0	27	16	18	12	66	75	62	73	93	92	81	85	8	8	7	15
Transport	0	0	0	0	0	6	0	4	8	18	9	8	8	24	9	12	1	1	0	2
Strike/Step on	0	0	0	0	8	4	6	3	29	31	43	29	37	35	49	32	0	1	2	3
Handling/Sprains	0	0	0	0	10	3	6	7	157	135	128	122	167	138	134	129	2	2	2	2
Trip	0	0	0	0	15	18	15	27	80	108	109	92	95	126	124	119	3	0	2	2
High Fall	0	1	0	0	5	4	2	4	3	4	3	2	8	9	5	6	2	2	0	2
Low Fall	0	0	0	0	9	13	8	8	26	31	20	23	35	44	28	31	0	1	1	2
Fall Height N/K	0	0	0	0	3	2	0	1	7	5	2	6	10	7	2	7	0	2	0	0
Collapse/Overtrn	0	1	0	0	3	1	0	0	1	0	2	0	4	2	2	0	1	1	2	0
Drowning/Asphyx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exposure/Hot Sub	0	0	0	0	8	3	4	4	21	14	15	19	29	17	19	23	5	5	4	9
Fire	0	0	0	0	0	1	0	0	2	0	0	0	2	1	0	0	1	1	0	0
Explosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volt	0	0	0	0	0	2	0	0	2	0	1	2	2	2	1	2	0	1	1	1
Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Kind	0	0	0	0	2	1	0	0	5	5	7	4	7	6	7	4	0	0	0	0
Assault/Violence	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
Not Known	0	0	0	0	0	1	0	1	1	0	0	2	1	1	0	3	0	1	1	0
<b>TOTAL</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>99</b>	<b>87</b>	<b>66</b>	<b>90</b>	<b>457</b>	<b>470</b>	<b>445</b>	<b>403</b>	<b>557</b>	<b>560</b>	<b>512</b>	<b>495</b>	<b>40</b>	<b>42</b>	<b>37</b>	<b>57</b>

## Annex 7 - The PABIAC Audit Aide memoire

**A. POLICY:** Does the Plan give a clear direction for the organisation to follow, supported by commitment at the highest level in the company?

1 What arrangements do you have for the preparation of a Policy statement?	
2 Do you have a current policy (all parts and forms etc)?	
3 What arrangements do you have for the review of Policy in relation to health and safety?	
4 How has the policy been distributed and communicated?	
5 Does health and Safety feature in company annual report and 'mission' statements?	

**B. ORGANISATION:** Is there an effective management structure and arrangements for delivering the Plan? The 4 C's: Control, Co-operation, Communication and Competence.

<p>6 What arrangements do you have for the allocation of responsibilities for health and safety; for example line management, safety adviser, occupational hygienist, medical staff etc.?</p>	
<p>7 How are health and safety responsibilities included within job descriptions?</p>	
<p>8 What arrangements do you have for setting health and safety objectives for individuals (if any!)?</p>	
<p>9 What arrangements do you have for review staff performance and how does your appraisal systems cover health and safety?</p>	
<p>10 What arrangements are there to consider health and safety within disciplinary or disputes procedures?</p>	
<p>11 What arrangements are there for involving employees in the health and safety effort both at site level and local level?</p>	
<p>12 What arrangements do you have to ensure competence of people at all levels including:</p>	

<p>competence requirements for jobs  recruitment arrangements  training policy  arrangements for training  arrangements for supervision</p>	
<p>13 What arrangements do you have for health surveillance and health promotion?</p>	
<p>14 What arrangements do you have to ensure relevant health and safety information is available to the site, communicated within the site and disseminated from the site as necessary?</p>	
<p>15 How do you ensure visible management involvement in the health and safety programme, for example safety tours, investigation of accidents and incidents etc?</p>	
<p>16 What arrangements do you have to control documentation including preparation of safety rules, operating procedures etc?</p>	
<p>17 How do you use of safety posters and newsletters etc?</p>	
<p>18 How do you record details of meetings at which health and safety forms a specific part of the agenda, for example management meetings, team briefings,</p>	

'tool-box' talks?	
19 Do you have any safety incentive schemes?	

**C. PLANNING AND IMPLEMENTATION:** Is there a planned and systematic approach to implementing the health and safety policy, and assessing and minimising risks through an effective health and safety management system? Planning describes the process by which the objectives and methods of implementing the health and safety policy are decided. It is concerned with allocating resources (money time and effort) to achieve objectives and decide priorities. It ranges from general topics dealing with the direction of the whole organisation to detailed issues concerned with setting standards and the control of specific risks - it is closely linked to Action Plans

20 Do you have a health and safety Action Plan for the organisation and for individual sites?	
21 What hazard identification and risk assessment procedures/mechanisms do you have?	
22 What arrangements do you have for the selection of contractors?	
23 Does health and safety feature in your procurement processes - including of plant, equipment and materials?.	
24 How do you control of process risks throughout the mill including inception, design, construction, 'steady state' operations, maintenance, and decommissioning?	
25 What arrangements do you have to manage and control of change?	

26 What arrangements do you have for emergencies?	
27 How do you ensure compliance with legal requirements?	
28 How do you carry out and use risk assessments?	

**D. MEASURING PERFORMANCE:** Is performance measured against agreed standards to reveal when and where improvement is needed? The collection of information about the implementation and effectiveness of plans and standards. This involves a variety of checking or 'monitoring' activities. Is there adequate and sufficient measurement of performance both before and after accidents or incidents?

29 What arrangements do you have for workplace inspections?	
30 What arrangements do you have for the inspection of critical plant items and equipment - e.g. pulpers?	
31 What arrangements do you have for the inspection of critical procedures - e.g. PTW?	
32 How do you inspect behaviour?	
33 What arrangements do you have for accident/incident reporting?	
34 How do you investigate accidents and incidents?	
35 How do you analyse accident investigation data?	

**E. AUDIT AND REVIEW:** Reviewing describes the activities involving judgements about performance, and decisions about improving performance. Reviewing is based on information from 'measuring' and 'auditing' activities. Is there adequate and sufficient performance review to ensure that lessons learned are effectively put into practice to improve performance throughout the organisation? Auditing is the structured process of collecting independent information on the efficiency, effectiveness and reliability of the total health and safety management system and drawing up plans for corrective action. Is there adequate auditing of the health and safety management system?

36 What arrangements do you have to review of performance?	
37 Do they include the arrangements for health and safety management?	
38 How does information from reviews and audits feedback into the mill Action Plan?	
40 Who does the review and audit, and who is told about the results?	

**ANNEX 8 - RECOMMENDATIONS OF PABIAC MID-INITIATIVE AUDIT  
(reproduced directly from the summary report)**

1. We recommend that mills set priorities based on risk assessment and produce clear policies and standards to be achieved
2. We recommend that Mill Action Plans become a living document - by a process of review and revision - “closing the loop” on key priorities and moving on to set further targets
3. We recommend that employees and safety committees are fully involved in formulating, progressing and reviewing Action Plans and Policies - that these plans are communicated effectively and that employees are kept fully up to date with progress
4. We recommend that individual managers have both clear technical and personal standards and objectives to work towards. This should apply to everyone in the line management chain - from CEO to team leader .
5. We recommend that the industry make special efforts to train all managers in the risk assessment process, to share best practice and to ensure risk assessment is seen as a process that challenges the status quo.
6. We recommend that mills investigate further the use of performance appraisal in relation to health and safety - particularly for managers and supervisors - “praise where praise is due”.
7. We recommend that all mills avoid “shopping list committees” - Safety Committees should be structured and have ownership of policies and Plans. They should be capable of driving the monitoring and review process
8. We recommend that managers consider safety representatives as much a part of their resources as a voice of their staff - using the competencies available to them to promote policies and practices and to monitor performance within an effective review process
9. We recommend that mills ensure consistency of controls across all their operations - that managers in all areas work to similar standards and where necessary a Group or Divisional policy is used to achieve common approaches
10. We recommend that mills provide support and training to managers to enhance their communication skills, and promote two-way communication
11. We recommend that mills examine ways to use all available tools to communicate with their staff - including IT as appropriate
12. We recommend that mills identify clear standards of competence (skills and knowledge) for jobs - matching safety training to the job carried out and monitoring the implementation and effectiveness of that training

13. We recommend that mills increase everyone's understanding of the principles underlying a hierarchy of control. Where necessary challenging the results of older risk assessments that have resulted in a use of the lower end of the control hierarchy - "the hierarchy reflects the fact that eliminating and controlling risk by using physical engineering controls and safeguards is more reliable than relying solely on people"
14. We recommend mills concentrate on "closing the loop" on their highest safety priorities - completing them and setting up systems to monitor and review them
15. We re-emphasise the need for everyone to see risk assessment as an integral part of a management process to challenge the way you do things - involving task analysis, risk assessment and risk control.
16. We recommend that "Making Paper Safely" is used as a benchmark within the risk assessment process to challenge existing practices and the conclusions from older risk assessments
17. We recommend that all mills consider active performance monitoring - as well as reactive monitoring - as an integral part of their management process. This will involve actively testing compliance with existing systems of work and ensuring staff are working as expected at all times - rather than reacting to problems as they occur - " it takes 4 hours on days but 2 on nights"
18. We recommend that those mills without clear standards and performance monitoring systems examine urgently systems in use elsewhere in the industry and introduce them as required - "what gets measured gets done"
19. We recommend that mills concentrate on learning from accidents and near-misses rather than just counting them
20. We recommend that the Federation examines best audit practices around the industry and elsewhere to help mills develop their auditing skills and techniques
21. We recommend that the industry considers introducing a scheme of independent auditing based on the principles of "*Successful Health and Safety Management*" - HS(G) 65

## References and Further Reading

- I. HSL Final Report
- II. Sector Strategic Plan
- III. NIGM on TOP 10 performing mills
- IV. Successful Health and Safety Management (HS(G) 65- ISBN 0 7176 0412 X)
- V. Guidance on Action Plans
- VI. Interim HSL report
- VII. PABIAC Minutes - July 1997
- VIII. PABIAC Minutes - November 1997
- IX. Sheffield Seminar agenda
- X. PABIAC Minutes - February 1998
- XI. CEO Agenda - April 1998
- XII. PABIAC Minutes - July 1998
- XIII. Assessment report on Mill Action Plans
- XIV. PABIAC Minutes - November 1998
- XV. PABIAC Minutes - February 1999
- XVI. CEO Agenda - April 1999
- XVII. Inspector Meeting agenda - June 1999
- XVIII. Countdown - Issue 10
- XIX. PABIAC minutes - July 1999
- XX. Statement fatal Donside
- XXI. SIM Cleaning
- XXII. PABIAC Minutes - November 1999
- XXIII. PABIAC Audit Report
- XXIV. Statement fatal Smurfit
- XXV. PABIAC Minutes - February 2000
- XXVI. CEO Agenda - April 2000
- XXVII. Inspector Meeting Agenda - May 2000
- XXVIII. SIM - Making Paper Safely - June 2000
- XXIX. PABIAC Minutes - July 2000
- XXX. PABIAC Minutes - November 2000

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