

Stress and New Technology

Postal and Telecommunications Sectors

(Case Studies of Postal Code and Sorting)

Consolidated Report



**EUROPEAN FOUNDATION
FOR THE IMPROVEMENT OF LIVING AND WORKING CONDITIONS**
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PREFACE

In pursuance of the priority theme of exploring physical and psychological constraints at work laid down in the European Foundation's first four-year programme 1977-80, it was decided for 1980 to prepare a "state of the art" study on research into physical and psychological stress at work. From this report and the subsequent evaluation reports of the employer, union and government groups it appeared there was an evident need for research into the effects of new technology on physical and psychological stress at work, and in this context the European Foundation commenced work in 1982, during its second four-year programme, on the effects of the introduction of new technology in certain postal and telecommunication sectors.

This study included, as an introduction, a literature-based consideration of developments in new technology in posts and telecommunications. The field studies concentrated on the introduction of postal coding and sorting equipment and examined the task and its performance, qualifications, and the organisation of work, in order to present a picture of possible physical and psychological stress factors related to the introduction of new technology in this area, together with suggestions for the reduction of any negative effects and the promotion of positive effects.

The research was carried out in Belgium by the Centre d'Etudes et de Recherches Industrielles, in France by the Conservatoire National des Arts et Métiers, in Germany by the Forschungsgruppe Stress of the Ruprecht-Karls Universität, and in the United Kingdom by the University of Wales Institute of Science and Technology. A consolidated report was prepared by the Irish Productivity Centre.

The research was evaluated by representatives of governments, employers and trade unions. Each of the three representative groups weighed the findings of the analyses contained in the report against the respective experience of its members and, if appropriate, put forward proposals aimed at improving the situation. The opinion of each group has been set down in a document entitled "evaluation report".

This volume consists of the following:

1. the evaluation reports drawn up by representatives of governments, employers and trade unions, based on working group meetings held during the seminar which took place in Dublin on 21 and 22 February 1985;
2. the consolidated report.

The European Foundation wishes to stress that the analyses and opinions contained in the study are the sole responsibility of the researchers who compiled it.

EVALUATION REPORTS

EUROPEAN FOUNDATION FOR THE IMPROVEMENT OF LIVING AND WORKING CONDITIONS

EVALUATION COLLOQUIUM ON PHYSICAL
AND PSYCHOLOGICAL STRESS IN THE
INTRODUCTION OF NEW TECHNOLOGY IN CERTAIN
POSTAL AND TELECOMMUNICATIONS SECTORS

Held in Dublin on 21/22 February 1985

EVALUATION REPORT OF THE UNIONS' GROUP

COLLOQUIUM ON PHYSICAL AND PSYCHOLOGICAL STRESS IN THE
INTRODUCTION OF NEW TECHNOLOGY IN CERTAIN POSTAL AND
TELECOMMUNICATIONS SECTORS

Held in Dublin on 21/22 February 1985

Evaluation report of the Unions' group

The group of trade union representatives considers that the different national reports, like the summary report, which have been drawn up are good and useful documents and that most of the consequences of automation on workers at sorting centres have been identified and examined, in particular those constituting stress factors.

However, the group regrets that, in the final analysis, the study is concerned only with relatively insignificant centres. In this respect, it deplors the lack of collaboration by some of the postal and telecommunications offices which, even on such a subject, have not always provided the information or facilities required for the study.

It holds the view that, under these conditions, it should be kept in mind that, if the study had related to larger offices, where larger work-forces are concentrated and where the organisation of departments has to be different, the results would undeniably have revealed stress factors which were probably greater in number, but undeniably of a higher level.

The group of trade union representatives also thinks that a certain number of basic data have perhaps not been taken sufficiently into consideration or that they have not been granted sufficient priority.

The recent report by the Foundation on "the consequences of the introduction of VDU terminals on the health of workers in an automated office" stresses: "as an examination of the research on the consequences of computerisation has shown, the effects of work are reflected in the overall life of the individual and, as a result, orient his behaviour in his social and family life".

The group shares this point of view fully but believes that the opposite is also true and that the general living

conditions of the worker are also reflected in his behaviour at work and, in particular, in his greater or lesser resistance to stress.

On examining the report, the group has noted that the introduction of automation in sorting centres had not substantially improved working conditions, which confirms the trade union position, taken up and adopted by the recent equal representation committee of the ILO on the services of the postal and telecommunications offices (Nov./Dec. 1984) that "the introduction of new technology in the services has reduced certain physical risks for some categories of workers. However, this reduction is, to a large extent, offset by the emergence of certain new physical and psychosocial risks arising from the use of the new technologies and the changes imposed thereby".

The report reveals particularly clearly that automation of sorting has not eliminated several of the harmful effects which existed previously, such as dust. It has had only a minimal effect on handling services, which are still physically arduous, and there are still problems relating in particular to lighting and temperature. Furthermore, automation, and the new organisation of work which results, has created new physical and psychological stress factors. Workers are more isolated, have less contact with one another, and must maintain a set posture for long periods, which causes physical and psychological damage to the well-being of the workers; the same applies to the movements needed for encoding; serious problems of tension and eye disorders have come to light, etc.. Sometimes, preoccupation with eliminating one harmful effect has created new ones; as for example, the transfer from encoding to videocoding where the numerous risks related to working with a VDU have replaced the effects of noise.

The report lays particular stress on the difficulty experienced by older sorters in transferring from manual sorting to automated sorting. The group can only confirm this statement and accept the reasons indicated; it is so true that encoding can only be felt to be a demotion. Previously, with manual sorting, priority was given to intellectual capa-

city (knowledge) over physical capacity (speed). The report clearly reveals that precisely the opposite results from automatic sorting.

In the view of the group, the same is true with respect to young people. Obviously, they did not experience manual sorting but, in general, they are leaving an educational system which provides an essentially intellectual training; they are often recruited on the basis of a diploma (or, at least, knowledge); sometimes they have to take an examination or a competitive examination to obtain employment. Besides, this education is extremely useful, both for the development of the worker and to aid subsequent retraining. Nevertheless, when they take up their employment, the first, and virtually the only, requirement is that of speed of sorting. Are they too not justified in a feeling approaching demotion even though, because of their age, they can adapt more quickly to the new technology.

All this illustrates the idea at the outset - the new technologies have merely replaced certain physical risks by others, added to which there are psychological and social consequences. The difference is that the physical risks are known, defined and recognised as occupational risks. The psychosocial risks are newer, study of these is only just beginning and, in most cases, their occupational origin is not easily accepted. Also it is true that, in such an area, the occupational aspect can constitute only one factor of the illness and, thus, it is difficult to separate working life from the more general context. Upstream one may mention: the general organisation of the administration, the manner and level of recruitment, the training of officials, salaries and promotion prospects, training and retraining received, etc...; and downstream: the consequences of occupational stress on family and social life.

In fact, the automation of sorting has virtually settled none of the human problems which arose previously and rather has the tendency to accentuate the executant role of the worker and has increased the feeling of dependency and loss of independence of workers, to the benefit of the machine. It is regrettable to note that at a time when new

working systems are being introduced, giving initiative and greater responsibility to employees, the sorting centres, on the other hand, are experiencing a return to a type of taylorism.

The group of trade union representatives holds the view that a large number of the stress factors mentioned in the report could have been - and can still be - avoided or moderated taking into account the positions of the trade unions with respect to the introduction of new technologies.

In fact, the trade unions have always declared themselves in favour of the introduction of new technology as long as they are kept informed and consulted from the planning stage and as long as the conditions of introducing the technology are negotiated with them, such that the workers can - for the same reason as the employer and the user - benefit, particularly by an improvement in working conditions.

Consultations must primarily relate to the objectives of introducing new techniques. The objectives must be clear and the workers must be informed of them. It is obvious that at the present time the main motivation for the automation of sorting has been the desire to reduce staff costs (between 75 and 85% in Europe's postal services), considerations relating to improvements in the quality of service and working conditions only constituting secondary elements and not having, or hardly having, played a part, in fact.

Consultation must thereafter relate to the design and choice of equipment to achieve the objectives defined. The workers must be involved in the design and testing of equipment. In fact, the report clearly reveals that the majority of equipment is unsuitable, which forces workers, in order to obtain the efficiency they require from it, to use a different operating method from that which was initially planned.

Finally, a social strategy relating to the introduction of new technologies must be negotiated with the trade unions. Such negotiations must be based on a certain number of aspects. The problem of employment cannot be brushed aside. The policies currently pursued by a certain number of governments aim at reducing public protection and, as a result, restricting recruitment of workers to the postal and

telecommunications offices, including the postal services. It should be remembered that automation, in these services, relates to only one of the links in the chain of despatching post.

Handling has been mechanised only to a very small extent, and likewise distribution; this should mean, taking into account in particular the constant increase in postal charges and the creation of new services, the maintenance of existing staff levels, and the permanent appointment of staff presently working on a temporary or non-permanent basis and used only to meet peak conditions. Any transfers made necessary by the new technologies should also be negotiated with the trade unions.

Negotiations should also relate to initial and permanent training of staff, the necessity and importance of which have increased as a result of the new technologies. This does not relate merely to operating staff, but also to executive staff, whose training in human relations must be increased. The report stresses several times the beneficial role that can be played by the flexibility of executive staff towards acceptance of the new technologies by workers.

The negotiations must also aim to improve working conditions, with respect both to ergonomics and the organisation of services, working hours, breaks, and facilities granted to trade union organisations to enable them to be more involved in the process of introducing new technologies. In order to palliate certain stress factors mentioned in the report, work should be organised so as to enable a rotational arrangement, in which each worker would be called upon to carry out different tasks successively, including manual sorting, which would diminish the feeling of demotion arising from automation.

The group of trade union representatives is anxious to stress that such negotiations would ensure effective utilisation of investments required for the new technologies and their installation. By enabling their introduction to be more flexible and better accepted, they would allow a substantial improvement in the quality of services rendered to the user.

On the same subject, the group of trade union repre-

representatives considers that the postal administrations should equip themselves with the means required to analyse and take into account the diverse and changing requirements of users, so as to provide a better public service within the context of a monopoly, which should be maintained, and even extended.

To conclude, the group notes that the overall conclusions of the report are negative. To prevent further negative assessments when new technologies are introduced in other services, the group hopes that a more human approach, which conforms more with trade union positions as detailed above, will be chosen in the future.

Finally, the group of trade union representatives would like the report to be sent to the European postal administrations; it would also like the study to be supplemented by a further enquiry, based this time on larger sorting centres. It holds the view that it would also be worthwhile to carry out new studies of other important services of the postal and telecommunications administration, where new technologies have also been introduced and which, as a result, are experiencing difficulties comparable with those experienced by the sorting centres.

In view of these comments, the group of trade union representatives supports the report which has been submitted.

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Held in Dublin on 21 and 22 February 1985

EVALUATION REPORT OF THE EMPLOYERS' GROUP

Colloquium on 'Physical and Psychological Stress in the Introduction of New Technology in Certain Postal and Telecommunications Sectors'.

Held in Dublin on 21 and 22 February 1985.

Evaluation Report of the Employers' Group.

In general terms the employers' group accepts the consolidated report but has some reservations of detail.

We offer the following comments.

1. The report attaches significance to noise and congestion caused by the automation of letter handling processes. The employers' group asks what degree of noise and congestion existed before automation.
2. Questionnaires were used by one group of experts. The employers' group is concerned that such questionnaires invite the subjects to respond in negative ways and hopes that the experts were able to verify that the results were properly objective.
3. Absenteeism is attributed to new technology. The employers' group invites the experts to consider whether this factor has a relationship to shift working as well as to technology.
4. The report makes a number of references to job satisfaction. This is a factor which we are told is difficult to define and impossible to measure with any real confidence. By definition any index of job satisfaction incorporates the attitudes of the employer, the supervisor and the worker. The employers' group asks whether in the light of the difficulties of defining job satisfaction the inferences in the consolidated report about a bad management style are soundly based.
5. The report suggests that prior participation and consultation with the unions about innovation should be the norm. It is an inevitable part of new technology that those affected will be suspicious and even afraid of the development. Any rejection risks failure to innovate and possible longer term consequences in job losses greater

than any caused by new technology. The employers' group concludes that the initiative has to be taken by employers. Subsequently we support the need for the earliest and fullest disclosure, participation and consultation in the application of new technology.

6. The employers' group accepts the need to aim for quality as well as quantity. However, we submit that the experts' emphasis on speed at the expense of quality is a reflection of the perception of operatives. Postal administrations are fully aware that poor quality leads to adverse judgements by the customer and consequential loss of volume.
7. We react with sympathy to the comment about the effect on workers of the concentration of mail processing onto larger centres. As in other industries the capital investment required by new technology carries with it pressure for economies of scale. The Foundation might well give further attention to this factor in its researches into living conditions.
8. The employers' group note the points made about the effect on older workers of the transition to new technology. Younger people are more familiar with technology in other aspects of their lives and can adapt more readily. This reinforces our view of the need for effort in explanation and training for all workers.
9. We support the comment that workers do have a genuine interest in the affairs of their company and we would agree that there is benefit in giving explanations of developments and decisions.
10. We do not object to the definitions of stress factors in manual and mechanised mail processing. We would however wish to point out that such factors occur in many working systems.
11. The consolidated report suggests that job satisfaction is good amongst supervisors. We note that this conclusion occurs in one expert's report only and we would not expect the conclusion to be drawn generally without further verification. We suggest that further research into this aspect be considered.

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EVALUATION REPORT OF THE GOVERNMENTS' GROUP

Colloquium on physical and psychological stress
in the introduction of new technology in certain
postal and telecommunications sectors

Held in Dublin on 21 and 22 February 1985

Evaluation report of the governments' group

The group of government representatives has discussed and evaluated the report submitted, primarily from the point of view of the social effects of new technology. From this viewpoint, the Post Office constitutes only one, albeit important, field of application of the technology.

The application of new technology has given rise to highly intensive and, in some cases, controversial discussion in all the participating countries. Hopes and fears relate to

1. the quantitative effects on jobs and
2. the qualitative effects on stress and health risks from work.

Where such controversies are based more on feelings and opinions rather than on facts, the worst that can happen is damaging obstructions for all those involved and possibly also missed opportunities. The government representatives therefore welcome the fact that the research work commissioned by the Foundation has contributed towards elucidating the discussion on new technology in concrete form. The reports submitted show that new technology involves risks as well as opportunities, both for employers and workers. In this respect, they join a whole range of other research work and practical experiences. The government representatives thank the researchers involved for having made an interesting and informative contribution under relatively difficult conditions.

Stress is a phenomenon which as yet has not been ad-

equately understood scientifically. It was all the more difficult, in the given confines, to produce reports which were satisfactory as regards method and content. In our opinion, this has not been fully achieved. Different starting points in the research give rise to reports of limited comparability. There is also the impression, in some parts of the reports, that the interpretations by the scientists of the results also contain their preconceptions of the problems treated. There was also criticism of the scientific tenability of some aspects of some reports. It was also regretted that there were no physiological investigations to support the psychological and sociological statements. However, the governments' group is aware that such an addition was not possible in the scope of these projects.

All in all, the governments' group accepts the research reports, although it holds the view that the papers submitted have hardly contributed towards getting stress research off the ground. However, the papers have made accessible interesting empirical material from an area hitherto given little attention. The governments' group also sees this function as an important area of possible activity for the Foundation.

On the basis of the reports on this subject, the governments' group has arrived at the following views:

1. Discussions on new technology must be conducted constructively. As, for example, the German report shows, new technology can be applied in conjunction with measures relating to work organisation and ergonomics in such a way that it produces beneficial working conditions, "beneficial" in the sense of satisfactory conditions with low stress.
2. New technology should not be introduced without prior notification, involvement and instruction and training of workers. Otherwise, unnecessary barriers to new technology arise and opportunities will be missed to optimise working conditions

jointly with workers and their representatives. This must in no way be to the detriment of efficiency and productive capacity.

3. The planning of new technical installations, in respect of the organisation of working conditions, should be based on a comprehensive approach taking in the whole system. Ad hoc measures for work organisation carry the risk that they may be made ineffective by defects in the overriding system as a whole.

4. The Foundation should endeavour

- to collect examples from the present research work of beneficial applications of new technology, that is to say those of low stress, to evaluate them critically and to propagate them. It should also endeavour
- to have guidelines developed for work organisation with low stress as an aid to industry. Reference is made to the present organisational approaches.

The governments' group regrets that the position of employers has not been sufficiently taken into account in the studies. It would have been of great interest if the conclusions and recommendations in the studies could have been supplemented and discussed in this respect. In particular, the governments' group would also have liked to receive the opinion of the Post Office authorities on the view expressed by the workers according to which the quality of services deteriorates when machine coding is introduced. In the view of the workers, when less effort was expended on accuracy, there was a general reduction in efficiency. Is this view shared by the employers?

All in all, co-operation between employers and workers and their organisations should be increased at all levels, in order to solve the qualitative and quantitative problems brought about by new technology.

The governments' group is entirely of the view that the Foundation should continue to observe the problems of "working conditions/stress/new technology" and should make contributions towards objective discussion.