IMF-Study into stress prevention
Final Report

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SUMMARY

Aim of the IMF project

In order to further raise awareness on occupational stress among its affiliates, the aim of this IMF project was to carry out, analyse and evaluate intervention projects in six metal companies located in four different countries. The project started in 2002.

Participation and organization

Four national unions participated: IG Metall (Germany), SIF (Sweden), Co-Industri (Denmark), and FNV Bondgenoten (The Netherlands). Six companies were involved: Germany 1 and Germany 2, Volvo Information Technology and ASSA A/B (Sweden), DISA A/S (Denmark) and Corus Group, Cold Mill 2 (The Netherlands). The project was coordinated by IMF-Geneva and by the University of Nijmegen. The latter carried out the scientific work. Both national and local union coordinators were involved. A common five-step framework was chosen for each intervention project.

Project execution and project progress

- Two projects carried out the first step (preparation) and were then discontinued (ASSA/AB and DISA A/S), primarily due to economic problems and reorganizations (see below).
- A third project (Volvo IT) was a bit of an outsider project right from the beginning, as it aimed at the evaluation of an already existing program and not at the development of a new intervention project (as the other cases did). It was extremely difficult to collect detailed information on this project. Only in November 2004 some information was received. Unfortunately, the quality of this report was not high.
- The two German projects had a slow start as it took a long time before it became clear that management had chosen not to be actively involved. The union then decided to carry out the project on its own. In both projects a risk assessment was executed (step 2).
- The Corus project in the Netherlands did not only conduct a risk analysis but also made a start with introducing interventions. However, union influence in this project is limited.

Role of management, role of unions

- A major reason why the projects made slow progress is the unclear starting position of the cases when the IMF project officially started. At that time there was little agreement and much unclarity between the social partners as to the development of a stress intervention project.
- With respect to the role of management, it can be noted that even in cases where management was rather positive at the beginning, later on problems arose (see below, bad eco-

nomic weather). The Corus case is rather special. In this case management was and remained active, but in this intervention project they almost fully took over the project, leaving little room for union participation and university involvement.

- The perseverance of the local coordinator(s) and other union members stimulated project progress.

Research methodology: research in real life and in real companies

- This IMF project illustrates a major paradox in stress research. In companies where occupational stress is a problem, key persons, exactly because of time pressure, have little time and possibilities to attack this stress problem.

Contextual changes: bad economic weather and reorganizations

- An obstructing factor was the bad economic weather in the years of study (2002-2004). The economic recession caused major problems for many of the cases. These problems created uncertainty, which delayed progress (e.g., in the two German cases). But they also meant the end of two projects that at first had started with enthusiasm: ASSA A/B and DISA A/S. In both companies the priorities changed due to major reorganizations. Furthermore, the relationship between the social partners worsened in this hectic situation. As a result, key union players established other priorities, and occasionally their own job or position was changed.

Conclusions

1. Six intervention cases were planned: four of these were executed.
2. These four projects are still in progress.
3. The driving force behind these projects is the union, except in the Corus case where the project is entirely management-driven. Union involvement is also a stimulating factor in the two German cases.
4. Two projects (Volvo and Corus) hired a research bureau for the risk assessment. From a scientific point of view, the quality of this research endeavour is dubious.
5. Progress in the cases was hindered by changes in their context. Especially the economic recession had a negative impact on the companies involved.
6. From the outset of the project there were too optimistic assessments of the possibilities to begin with case studies immediately after the official starting date of the project (June 2002).

CHAPTER 1
THE IMF PROJECT

1.1 Introduction of the IMF project

The globalization of economies has prompted substantial modifications in the nature and organization of work, and has brought workers under growing pressure. It has been argued that the work/life balance has been thrown off by job insecurity, rising unemployment rates, heavier workloads, more intense work demands, increasingly flexible working arrangements, the need to work longer hours coupled with more overtime and using more technology. Workers have to adjust continuously to new working methods and management techniques, they have to deliver faster and make better products, and provide better services at lower prices. They have to work at high speed and often with unrealistic deadlines. Due to these ongoing and profound changes in the work place, workers are increasingly suffering from stress and stress-related symptoms. Occupational stress and stress prevention have therefore become important issues for a number of IMF affiliates. It is felt that these issues should become a topic for trade union policy and enter the field of collective bargaining.

In order to further raise awareness among its affiliates on occupational stress, and to demonstrate the possible impact of stress prevention and interventions in the psychosocial work environment, in 2002 IMF decided to launch an international project on (best) practices in stress prevention. This project was carried out in close cooperation with four member organizations and was accompanied by scientific research. Therefore, the project had a unique character: it was both practical (it was a trade union project) and scientifically grounded (the scientific work was done by a university). One of the project aims was that the findings and recommendations would contribute to IMF's (future) strategy to assist its affiliates in dealing with occupational stress among white collar workers and, eventually, putting this issue on their bargaining agenda.

1.2 Aim of the project

The aim of the present project was to carry out, analyse and evaluate intervention projects which would take place in six metal companies located in four different countries, and to present the outcomes and lessons learnt in a report.

1.3 Common framework

Although the six cases differed on various aspects, it was decided that each intervention project would follow a common stepwise approach, involving five phases:

1) *preparation* (including the project organization);
2) more detailed *stress assessment*, identifying risk factors and risk groups (through risk assessment and risk evaluation, e.g., using checklists and questionnaires);
3) *choice of measures* (e.g., changes in the work organization, work time schedules, leadership style, ergonomics and technology, human resources management and training courses);
4) *implementation*; and
5) *evaluation* (involving both outcomes and process variables, i.e., both 'what has happened' and 'how did that come about' questions).

1.4 The participants

The four participating national unions IG Metall (Germany), SIF (Sweden), Co-Industri (Denmark), FNV Bondgenoten (the Netherlands) selected the following six companies to participate in the project:

Union		Company
Germany (IG Metall)	1	Germany 1 *
	2	Germany 2 *
Sweden (SIF)	3	Volvo Information Technology
	4	ASSA A/B
Denmark (Co-industri)	5	DISA A/S
The Netherlands (FNV Bondgenoten)	6	Corus Group, Cold Mill 2

* These companies did not wish to be mentioned explicitly in this report. Therefore they are referred to as "Germany 1" and "Germany 2" respectively.

CHAPTER 2
ORGANIZATION OF THE IMF PROJECT

2.1 Coordination

IMF-Geneva (Anne-Marie Mureau) and the University of Nijmegen (Professor Michiel Kompier, Department of Work and Organizational Psychology) coordinated the international project. The project work in Nijmegen was carried out by Iepke Jansen. In each country there was a national union-coordinator. This coordinator was responsible for the contacts with the national case study (i.e., the local level). IMF in Geneva and the University of Nijmegen dealt primarily with these coordinators. The national coordinators were:

Siegfried Balduin (Germany - IG Metall);
Carina Lindström (Sweden - SIF);
Peter Dragsbaek (Denmark - Co-Industri); and
Jan Warning (The Netherlands - FNV Bondgenoten).

In addition to the national coordinator, at the local level there was the IMF-company coordinator. The local coordinator represented the local IMF-union and was the 'local in-company' contact for the intervention project. The local coordinators were:

Germany:	1	n.n.1 (Germany 1)
	2	n.n. 2 and n.n. 3 (Germany 2)
Sweden:	3	Leif Rådeström and Arne Nilsson (Volvo IT)
	4	Gösta Johnsson and Marianne Björklund (ASSA A/B)
Denmark:	5	Per L. Soerensen (DISA A/S)
The Netherlands:	6	Klaas Zwart (Corus Group, Cold Mill 2)

2.2 IMF steering committee

The IMF steering committee for the project was the IMF Working Group on Non Manual Workers. This group includes representatives from IG Metall (Germany), CO-Industri (Denmark), T&G (Great Britain), IMF-JC (Japan), FIM-FLM (Italy), SIF (Sweden). The President of the Working Group is Mari-Ann Krantz, SIF's President. This committee followed and stimulated the progress of the project and provided a support forum for the study.

2.3 University

The primary tasks of the university researcher(s) were: scientific coordination, scientific analyses and evaluation of the study, consultation, and taking care of study reports. During project execution the university took, amongst others, the following actions:

- Consultation of the local case studies;
- Development of checklists, questionnaires and evaluation instruments (Germany 1, Germany 2, Volvo);
- Commenting on other surveys (Germany 1, Volvo, DISA, Corus);
- Development of a research plan (Germany 1, Germany 2);
- Scientific coordination (Germany 1, Germany 2);
- Scientific analyses (Germany 1, 2, Corus partly);
- Commenting on reports (Volvo, Corus);
- Case evaluation with the union (Corus);
- Interview with the management (Corus);
- Writing reports (reports on diagnosis Germany 1, Germany 2, various interim reports, final report);
- Consultation of external agents involved (Volvo).

In the course of the IMF-project visits were paid to Germany 2, Volvo, DISA and Corus. The final ‘case’ decisions were made on the local level; the project remained a trade union project.

CHAPTER 3
GERMANY, GERMANY 1

3.1 Step 1: Preparation

3.1.1 Introduction of Germany 1

Germany 1 is a global corporation in electrical engineering and electronics. It is divided in several autonomously operating business units: Automation and Drives, Industrial Solutions and Services, Transportation Systems, Power Transmission and Distribution, and Corporate Technology. The core activities of these units are sales, marketing, engineering, research and development. Germany 1 employs 12,000 workers, 10,000 of which are white-collar workers. It is a hierarchical company in which most employees work in project teams.

3.1.2 The labour system and union

The German trade union participating in the IMF project is IG Metall. IG Metall represents the interests of all workers employed in manufacturing and services of the metal working industry, the textile and clothing industry and the wood and plastic industry. The management of Germany 1 was willing to cooperate with the union (IG Metall) members in the works council, but not with the union (IG Metall) 'as a political institution'. Germany 1 has its own 'in company union', a group of so-called independent employees. This group has a close connection with the management of Germany 1. The unionization rate in the company is low.

3.1.3 Organization of the local IMF study

On the national level, the national coordinator of IG Metall (Siegfried Balduin) was responsible for the contacts with the national case study (i.e., the local level). In addition to the national coordinator, on the local level the local coordinator (n.n. 1) represented the local union. He was the in-company contact for the IMF project. From the local level the information was transferred to the University of Nijmegen.

3.1.4 Motives and signals

According to the local union of Germany 1, new management concepts that resulted in the abolition of time control caused various problems among the employees. According to the union, employees now work more, they try harder to reach their goals and sometimes they seem to work 'without end'. This does not follow from management orders; the employees seem to do it on their own free will. The management is satisfied with their new system. According to management, globalization and international competition were the main reasons for this (specific) development. The union feels that, as a result, the employees work too much overtime. The union has taken several initiatives for solving the overtime problem. These initiatives are:

- On various occasions the union has initiated discussions about the new management concepts;
- The IG Metal project on working time 'Working without end? My time is my life' has been executed; and
- An investigation was conducted concerning (paid) overtime to find out which units worked significantly more than others. The results were discussed with managers and employees and measures against excessive overtime were introduced. (The German legislation restricts daily working hours for employees to a maximum of 10).

So far, the union had concentrated on overtime and on compliance with working time limits. The local union had also identified three divisions with a high and constant amount of overtime. One of these divisions was Transportation Systems. This division is divided in subdivisions; the subdivision "Transportation System Locomotive Engineering" is the target group in the current project.

By participating in this study the local union would like to investigate the workload of the engineers at the Transportation System Locomotive Engineering subdivision. In order to do so, the local union conducted a survey in collaboration with the University of Nijmegen. The purpose of the survey was to identify possible risk factors and risk groups in a reliable and valid way, whilst taking confidentiality of the results into consideration.

3.1.5 Project organization

For a long time it remained unclear whether the project would really take place. In March 2003 the management of Germany 1 considered joining the project. The management advised

the local coordinator to discuss the project with the managers of the personnel department, the medical service and the psychological service. After these consultations, these managers made it clear that they could not support the project. According to them, the questionnaire that the union was going to use included questions addressing issues that they considered 'too private'. The managers argued that such questions could only be asked by a union and not by management. Therefore, management allowed the union to execute the survey but did not want to take part in it (October 2003). The union then decided to execute the project on its own. The local coordinator of IG Metall informed the 'in company' union about the project but did not involve this group in the project. In November 2003, due to deteriorating economic circumstances in Germany that had repercussions on the company, the union had to set other priorities and decided to postpone the IMF project activities. Finally, in March 2004 a restart was made and a project team formed. The local project team consisted of the local coordinator, the chairman of the works council, and a works council member who works at the business unit Transportation System, the target group for this project.

3.1.6 Target group

The target group for the IMF stress project consisted of all 104 engineers of the subdivision Transportation System Locomotive Engineering (TS LM EN). This TS LM EN subdivision is further divided in the following sectors:

- TS LM EN TO: Technical Offer, 8 employees
- TS LM EN SE: System Design, Electrical, 16 employees
- TS LM EN LC: Locomotive Control, 70 employees
- TS LM EN CP: Compartments and Power Supply Lines, 10 employees

The work of these sectors is engineering; they develop and construct hardware and software for electrical components used in trains. Furthermore, commissioning, documentation and training of customers is part of their job.

3.2 Step 2: Diagnosis

3.2.1 Introduction

In order to analyze the work situation and the health and well-being of the employees a survey was conducted (see Annex 1). The questionnaire was largely based on validated instruments,

addressing work content, social relations at work, working conditions, terms of employment and employee health and well-being. Furthermore, several questions that addressed issues specific to this organization were added, dealing with overtime, compensation of overtime, amount of travelling and work-home interference. Finally, some personal data (age, gender, level of education) were asked.

Regarding the work content, questions about workload, job autonomy, mental workload, role clarity and task interruption were included. Concerning the social relations, questions about communication, participation, information flow, feedback and the relationship with colleagues and managers were asked. Regarding terms of employment, overtime and travelling were the main topics. Questions about the working conditions concentrated on the ergonomic design of the workplace. As regards employee health and well-being, questions about satisfaction, emotional exhaustion, interference between work and home, motivation for learning and health complaints were included.

3.2.2 Method and response group

3.2.2.1 Introduction of the survey

The local union informed the so-called 'Vertrauensleute' about the project during a special meeting. These 'Vertrauensleute' are the connection between the employees and the union, without necessarily being union members or work council members. They advised the project team about the introduction of the project to the employees. The employees received the information about the project and the survey in writing.

3.2.2.2 Data collection

The 'Vertrauensleute' handed over the questionnaire to the employees during working time. Employees had to fill out the questionnaire in their own time. After completing the questionnaire, the participants sent the questionnaire directly to the researchers of the University of Nijmegen. The data collection took place anonymously.

3.2.2.3 Analyses

The questionnaire largely consists of various groups of related questions (so-called *scales*). The questions belonging to a particular scale are represented in the tables below. For each question the distribution of answers is given in percentage. Finally the scale mean is reported, which is the average of the answers to all questions belonging to this scale. The interpretation of the results is based on:

- the mean scores on the scale and a measure of the dispersion of this scale (s.d. for standard deviation). If available, these scores are compared to reference scores, i.e. the scores of a comparison group on this scale;
- the percentage response in each answer category;
- the correlation between possible risk factors (e.g. workload) and outcome variables (e.g. satisfaction). The correlation coefficient is a measure that indicates the strength of the relation between two variables (or scales). A score of 0 signifies no relation between these two variables; scores > 0 (with a maximum of 1) indicate positive associations (i.e., low work load is associated with low satisfaction, and high workload is associated with high satisfaction); scores < 0 (with a minimum of -1) indicate negative associations (i.e., low work load is associated with high satisfaction, and high workload is associated with low satisfaction).

3.2.2.4 Response group

Of the 104 engineers of the TS LM EN subdivision who received a questionnaire, 31 returned it (a 30% response). The response of the TS LM EN LC sector was 37% (26 out 70). Twenty five percent (2 out of 8 employees) of the employees of TS LM EN TO returned the questionnaire, 13% (2 out of 15) of the employees of TS LM EN SE and 10% (1 out of 10) of the TS LM EN CP sector did.

Conclusion. The response percentage is low and unevenly distributed among the sectors. The number of respondents in some sectors is too low to present a specification of the results for each sector.

Table 3.1 gives an overview of personnel's background information. Table 3.1 shows that 94% of the respondents are male and 7% female. Regarding age, the table shows that 68% of the respondents are between 35 and 44 years old, 13% is between 45 and 54 and 19% are younger than 34. The level of education of the group is high: 52% holds an academic degree,

and 26% have finished a college of higher education. Seventy-one percent of the respondents work as 'Project-/Versuchsingenieur'.

Table 3.1
Germany 1: The characteristics of the response group and the target group in percentages (frequencies in brackets)

Characteristic	Response group	Target Group	Respons% sector
Total	(31)	(104)	30
Gender			
Men	94 (29)	85 (88)	33
Women	7 (2)	15 (16)	13
Age			
younger 25	3		
25-34	16		
35-44	68		
45-54	13		
55-60			
older 60			
Education (highest grade completed)			
"Berufsausbildung"	3		
"Techniker"	19		
"FH Abschluss"	26		
"Uni Abschluss"	52		
Department			
TS LM EN CP	3 (1)	10 (10)	10
TS LM EN LC	84 (26)	67 (70)	37
TS LM EN SE	6.5 (2)	15 (16)	13
TS LM EN TO and others	6.5 (2)	8 (8)	25
Job title			
"CAD- Spezialist (in)"	3		
"Facharbeiter Prüffeld"	0		
"Project-Versuchsingenieur"	71		
"Technisch Zeichner(-in)"	3		
"Teamleiter(-in)"	6		
"Sachbearbeiter(-in)"	10		
"Vertieb"	0		
"Sontiges"	7		
Years working Germany 1			
Less than 1 year	6		
1-5 year	26		
6-10 year	19		
11-20 year	39		
Longer than 20 year	10		
Years working department			
Less than 1 year	10		
1-5 year	55		
6-10 year	32		
11-20 year	3		
longer than 20 year	0		
Executive position			
Yes	6		
No	94		
Contract hours			
35	42		
40	52		
rest (18,25 hours)	6		

Thirty-nine percent of the respondents had been employed by Germany 1 for 11-20 years, 10% for more than 20 years, 19% between 6 and 10 years, and 32% for less than 6 years. Sixty-five percent of the respondents had worked less than 6 years in the present sector, 32% had worked 6 to 10 years in the present sector, while 3% has worked 11 to 20 years in this sector. Six percent of the respondents hold an executive position. Regarding the contract hours, 42% have a contract of 35 hours, 52% a contract of 40 hours. The remainder has a contract of 18 or 25 hours.

Conclusion: The response group consists mainly of highly educated men. The majority is between 35 and 44 years old. Half of the group has been working for Germany 1 for more than 11 years, whereas two-thirds have worked in the current sector for less than 6 years. The response rate is low and unevenly distributed among the sectors. It is questionable whether the respondents represent the target group well, that is, the subdivision TS LM EN; it seems likely that the response group is not representative of this population. Therefore, the results of the survey study should be interpreted with caution.

3.2.3 Results

3.2.3.1 Work content

Workload

Table 3.2 presents the questions concerning workload. These questions could be answered on a five-point scale (1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always). As Table 3.2 shows, the mean score on workload is 3.4 (s.d. means standard deviation indicating the amount of variation around the average score). In comparison to a group (N = 718) of Dutch white collar workers (mean score is 3.2), the workload of the respondents is not significantly higher. Ninety percent of the respondents report 'always/often' to work under time pressure, 74% report that 'always/often' too much work has to be done and 64% of them experience 'always/often' peaks in the work. On the other hand, according to 39% of the people, work is seldom/never mentally exacting, nor too complicated (32%).

Conclusion: The respondents report that they have to work hard and under time pressure. Three out of every four respondents report that 'too much work has to be done'.

Job autonomy

Table 3.3 represents the questions concerning job autonomy. Again, five answer categories were submitted (1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always). The mean score on autonomy is 3.2. When compared to Dutch white-collar workers (N = 617, mean score is 3.4) the score of the respondents is about the same. Table 3.3 further shows that 58%

can always or often determine their own working method, 39% can always or often determine the order in which the work is carried out, and 71% can 'always/often' determine their own working hours. Furthermore, 47% of the respondents can 'seldom/never' determine their own work goals, 45% 'seldom/never' can determine the amount of work to be done during a certain period, and 55% 'seldom/never' can determine the kind of work for themselves.

Conclusion: The respondents experience on average a reasonable amount of autonomy in their work. The amount of autonomy is lower as regards the determination of their work goals, the amount of work and the kind of work.

Table 3.2
Questions concerning workload (%)

In the unit where I work:	often or always	sometimes	seldom or never
o Work is carried out under time pressure	90	7	3
o There are peaks in the work	64	36	0
o Staff has to work hard	70	20	10
o Too much work has to be done	74	23	3
o There is too little time to finish the work	61	26	13
o The pace of work is too high	35	36	29
o The work is mentally exacting	19	42	39
o The work is too complicated	20	48	32
Scale mean is 3.4; s.d.=.56 (N = 30)			

Table 3.3
Questions concerning job autonomy (%)

	always / often	sometimes	seldom/ never
The opportunity that the work offers:			
o to determine the method of working yourself	58	26	16
o to leave your workplace whenever you want	45	42	13
o to determine the work goals yourself	23	30	47
o to determine the order in which the work is carried out yourself	39	45	16
o to evaluate the work yourself	48	26	26
o to pause in your work whenever you want	37	50	13
o to determine the amount of work to be done during a certain period yourself	16	39	45
o to raise or lower the pace of work yourself	22	52	26
o to determine your own working-hours	71	19	10
o to determine the type of work to be done yourself	16	29	55
Scale mean is 3.2; s.d =.64 (N=29)			

Mental workload

Table 3.4 shows the questions concerning mental load (four answer categories, 1 = never, 2 = sometimes, 3 = often, 4 = always). The mean score on mental load is 3.4. All respondents 'always/often' have to remember many things in their work (100%). The work requires 'always/often' carefulness (100%) and precision (99% 'always/often').

Conclusion: The respondents report that their mental workload is very high.

Table 3.4

Questions concerning mental load (%)

	always/ often	sometimes	never
Do you have to remember many things in your work	100	0	0
Does your work demand a lot of concentration	93	7	0
Do you have to work with a lot of precision	97	3	0
Do you have to be attentive to many things at the same time	97	3	0
Do you have to pay continuous attention to your work	84	13	3
Does your work require a great deal of carefulness	100	0	0
Does your work require continual thought	97	3	0
Scale mean is 3.4; s.d.= .38 (N = 31)			

Table 3.5

Questions concerning role clarity (first five items) and task interruptions (last item) (%)

	always/ often	sometimes	never
Do you know exactly what other people expect from you in your work?	61	39	0
Do you know exactly for what you are responsible and for which areas you are not?	68	32	0
Do you know exactly what your direct boss thinks of your performance?	39	45	16
Is it clear to you what your tasks are	68	32	0
Do you know exactly what you can expect from other people in your department?	71	29	0
Scale mean is 2.8; s.d. = .68 (N = 31)			
Non-scale question:			
Are you disturbed in your work by unexpected situations?	84	16	0

Role clarity and task interruption

Table 3.5 presents the questions concerning role clarity and task interruptions (four answer categories, 1 = never, 2 = sometimes, 3 = often, 4 = always). The mean score on role clarity is 2.8, generally indicating enough clarity concerning their role at work. Task interruptions occur frequently, 84% report that they are 'always/often' disturbed in the work by unexpected situations.

Conclusion: According to the response group roles on the job are clear. Unexpected situations occur frequently.

3.2.3.2 Social context at work

The social context in this survey refers to the information flow, cooperation, communication and the relationship with one's colleagues and manager. The questions have four answer categories (1 = never, 2 = sometimes, 3 = often, 4 = always).

Information flow

Table 3.6 shows the scores on information flow. The mean score on information flow is 2.5, 61% 'always/often' receive sufficient information on the purpose of the job, 42% about the result of the work and 52% 'always/often' has access to sufficient information. The high percentage of participants answering 'sometimes' on almost all questions indicate that feedback and information flow is a problem according to the respondents.

Conclusion: According to the respondents, the information flow and feedback is a problem.

Cooperation and communication

Table 3.7 presents the scores on cooperation and communication, showing that 52% regard their work as well organized, whereas 68% report 'always/often' a good collaboration between sectors and groups. In contrast, 29% are 'always/often' bothered by shortcomings in other people's work. Table 3.7 further shows that the mean score on communication is 2.5. A third of the respondents 'always/often' hear enough about how the company is run. To 32% the decision-making process within the company is 'always/often' clear. According to 77% of the respondents, it is 'always/often' clear whom they should address within the company for specific problems.

Conclusion: The high percentages of participants answering 'sometimes' to our questions indicate that the work organization, cooperation and communication can be improved.

Table 3.6
Questions concerning information flow (%)

	always/ often	sometimes	never
Do you receive sufficient information on the purpose of your work?	61	39	0
Do you receive sufficient information on the results of your work?	42	55	3
Does your direct boss inform you about how well you are doing your work?	22	65	13
Do your colleagues inform you about how well you are doing your work?	19	68	13
In your work, do you have access to sufficient information?	52	45	3
Does your work give you the opportunity to check on how well you are doing your job?	65	32	3
Does your work provide you with direct feedback on how you are doing your work?	22	65	13
Scale mean is 2.5; s.d.= .57 (N = 31)			
Non-scale questions:			
Irrelevant information	77	23	0
More information than needed	55	45	0

Table 3.7
Questions concerning cooperation and communication (%)

	always/ often	sometimes	never
Is the work well organized in your company?	52	45	3
Do the sectors and groups collaborate well?	68	32	0
Are you bothered by shortcomings in other people's work?	29	68	3
Communication:			
Do you hear enough about how the company is run?	35	65	0
Are you kept adequately informed about important issues within the company?	42	55	3
Is the company's decision-making process clear to you?	32	45	23
Is it clear to whom you should address within the company for specific problems?	77	23	0
Scale mean is 2.5, s.d.= .58 (N = 31)			

Relationships with colleagues and manager

Table 3.8 presents the results with respect to relationships with colleagues and manager. Table 3.8 demonstrates that generally the relationship with colleagues is good (mean score 3.2). Almost all the respondents (97%) 'always/often' get on well with their colleagues, 90% can 'always/often' ask colleagues for help. As regards the degree to which the participants feel appreciated by their colleagues the results slightly differ, 64% of the respondents 'always/often' feel appreciated by their colleagues. Although the mean score on the relationship with the manager is somewhat lower (3.0) than the mean score 'relationship with colleagues', the respondents generally get on well with their manager (81% 'always/often').

Conclusion: The respondents consider their relationship with colleagues and manager as good.

Table 3.8

Questions concerning the relationship with colleagues and the manager (%)

	often or always	sometimes	never
Relationship with colleagues:			
Can you count on your colleagues when you come across difficulties in your work?	87	13	0
If necessary, can you ask your colleagues for help?	90	10	0
Do you have conflicts with colleagues?	0	74	26
In your work do you feel appreciated by your colleagues?	64	36	0
Do you get on well with your colleagues?	97	3	0
Scale mean is 3.2; s.d.= .43 (N = 31)			
Relationship with the manager:			
Can you count on your manager when you come across difficulties in your work?	55	42	3
If necessary, can you ask your manager for help?	64	33	3
Do you have conflicts with your manager?	6	39	55
In your work do you feel appreciated by your manager?	45	55	0
Do you get on well with your manager?	81	19	0
Scale mean is 3.0; s.d.= .63 (N = 31)			

3.2.3.3 Terms of employment

Table 3.9 presents the results concerning the terms of employment. From Table 3.9 it follows that 97% of the respondents work overtime, 74% of them do so often. The average number of overtime hours a week is 6 hours, with a minimum of 2 and a maximum of 20 hours. Compensation (time or money) for the overtime is good according to 58%, but 39% find the compensation insufficient.

Table 3.9

Terms of employment

	%yes	%no	mean
Overtime	97	3	
Overtime (hours/week)			5.7
Adequate overtime compensation	60	40	
Amount of travelling (times/month)			1.5
Time travelling (hours/month)			9.7
Burden of travelling *			4.9
Adequate compensation for travelling	52	48	
Take holiday whenever you like	83	17	
Sufficient career opportunities	41	59	

* The report notes 'German way'.

The respondents travel on average one and a half time a month (min. 0, max. 5 times). The average time for travelling is 10 hours per month. The burden of travelling expressed in a report mark is 5 (1 = no burden, 10 = heavy burden), 65% gave travelling ≤ 5 and 35% ≥ 6. Fifty-two per cent of the respondents are satisfied with the compensation (either in terms of time or money) for travelling, whereas 48% find the compensation insufficient. According to 83% of the respondents, they can go on holiday whenever they like, 17% cannot. Finally, 41% of the respondents reported sufficient career opportunities, whereas the remainder considers their career opportunities insufficient.

Conclusion: Almost all respondents work overtime, on average 6 hours a week. Forty percent of the respondents are not satisfied with their overtime compensation. Almost half of the respondents is not satisfied with the compensation they receive for travelling. More than half of the respondents consider their career opportunities as insufficient.

3.2.3.4 Working conditions

Table 3.10 presents the results concerning working conditions. This table shows that 84% of the respondents work with the computer for more than 6 hours a day, 20% alternate computer work with other activities. The working place is generally well designed (94% 'yes'), although one-third is bothered by disturbing reflections and 48% report noise nuisance. Finally, 26% of the respondents report a bad climate control of the working place.

Conclusion: Computer work is very frequent among respondents work. Computer work is seldom alternated by other work. The working place is generally well designed but there are various ergonomic problems: disturbing reflections, disturbing noise and an inadequate climate control of the workplace.

Table 3.10

Working conditions

	%yes	%no
Computer work > 6 hours per day	84	16
Alternation computer work	20	80
Design working place	94	6
Good chair	100	0
Burden of:		
o Bad lighting	10	90
o Disturbing reflections	31	69
o Disturbing noises	48	52
o Other (inadequate climate control)	26	74

3.2.3.5 Health and well-being

Table 3.11 presents results concerning health and well-being. The questions have four answer categories (1 = never, 2 = sometimes, 3 = often, 4 = always), except in case of emotional exhaustion (five answer possibilities 1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always).

Satisfaction

Table 3.11 shows that the employees are generally satisfied with their job (mean = 3.0).

Table 3.11

Questions concerning health and well-being (%)

	always/ often	sometimes	seldom/never
Satisfaction: mean = 3.0; s.d.= .53 (*N* = 31)	84	16	0
Emotional exhaustion:			
I feel emotionally drained by my work	13	32	55
Working all day is really a strain for me	2	23	74
I feel burned out from my work	16	45	39
I feel used up at the end of the workday	16	39	45
I feel fatigued when I get up in the morning and have to face another day on the job	3	20	77
Scale mean: 2.4; .s.d.= .64 (*N* = 31)			
	always/ often	sometimes	never
Motivation for learning:			
In my job I learn new things	71	29	0
In my job I am stimulated to pick up new things	38	55	7
My job offers good opportunities for developing myself	33	48	19
Scale mean: 2.5; s.d.= .67 (N=31)			
Work negatively influences home:			
How often does it happen that:			
You find it difficult to fulfil your domestic obligations because you are constantly thinking about your work	45	39	16
Your work schedule makes it difficult for you to fulfil your domestic obligations	39	48	13
You have to work so hard that you have no time for any of your hobbies	46	61	3
Your work obligations make it difficult to feel relaxed at home	39	42	19
Scale mean: 2.3; s.d.= .64 (*N* = 31)			

Emotional exhaustion

The mean score on emotional exhaustion is 2.4. Compared to a large group of Dutch white-collar workers, the mean score on emotional exhaustion of the respondents does not differ significantly from the mean score of this reference group (mean= 2.1, *N* = 2,393, source: Schaufeli, W. & van Dierendonck, D. *Utrechtse Burnout Schaal.* Utrecht; Utrecht University,

1995). Half of the respondents 'seldom/never' feel emotionally drained by their work, 32% sometimes does and 13% 'always/often' feel emotionally drained by their work. For 74% of the respondents working all day is 'seldom/never' a strain.

Motivation for learning

With regard to the motivation for learning, Table 3.11 presents a mean score of 2.5. About three out of four participants (71%) report that they 'always/often' learn new things on the job. One third of the respondents feel that their job 'always/often' offers good opportunities to develop themselves, whereas 48% reported to have 'sometimes' good opportunities to develop themselves.

Work-home interference

Concerning work-home interference, Table 3.11 presents a mean score of 2.3. Compared to a reference group of 1,857 Dutch employees, the mean score on work-home interference of the respondents is significantly higher than the mean score of the reference group (mean=1.86, s.d.= .48, source: Geurts, S. *Swing: 'Survey Work-Home Interaction-Nijmegen'*. Nijmegen: Radboud University Nijmegen; 2004). Forty-six per cent 'always/often' work so hard that they have no time for their hobbies. More than one third (37% 'always/often') of the respondents find it difficult to fulfil their domestic obligations because of their work schedule.

Conclusion: The respondents are generally satisfied with their job. They report reasonable possibilities to learn. Respondents do not report overly high scores with respect to emotional exhaustion. Work clearly interferes with home: 40-45% report problems in this respect.

Health complaints

Table 3.12 presents the results concerning the occurrence of health complaints. The mean number of health complaints is 4.2. In comparison to a group of Dutch white collar workers, this score is very high (N = 2,430, mean = 2.45, source: Vaas, S. Goudswaard, A., *Haalbaarheidsstudie monitoring arbeidsinhoud en ergonomie.* Den Haag, Ministerie van Sociale Zaken en Werkgelegenheid; 1995). Three quarters (74%) of the respondents feel occasionally listless, almost half of them (48%) feel frequently tired. Moreover, 65% suffer occasionally from back pains and one third of the respondents generally still feel tired after waking up.

Conclusion: The respondents report a high number of health complaints, especially listlessness, back pains and fatigue.

Table 3.12

Health complaints (%)

	yes	no
Health complaints:		
Do you occasionally feel pain in the chest or heart region?	23	77
Are you quickly short of breath?	13	87
Do you occasionally suffer from headache?	26	74
Do you occasionally feel pressure in your stomach or is it ever swollen?	19	81
Do you occasionally feel dizzy?	26	74
Do you frequently feel tired?	48	52
Do you ever suffer from a numbed feeling or a tingling sensation in your limbs?	26	74
Do you occasionally feel listless?	74	26
Do you occasionally suffer from pain in bones and muscles?	39	61
Do you occasionally suffer from back pains?	65	35
Do you occasionally suffer from an upset stomach?	10	90
Do you tire more quickly than you would expect?	29	71
Do you generally wake up still feeling tired?	32	68
Scale mean (= mean number of 'yes'): 4.2 s.d.= 2.8 (N = 31)		

3.2.3.6 Correlations among the scales

Table 3.13 presents the correlations between the variables used in this study. These correlations reflect the strength of the association between two variables and vary from -1 (indicating a perfect negative association; low scores on A always coincide with high scores on B) via 0 (no association at all) to 1 (perfect positive association; low (high) scores on A always coincide with low (high) scores on B). Practically, correlations of .40 and higher indicate a strong relationship between the variables. It is interesting to look at the relationship between the work characteristics (variables 1-8) and the health and well-being scales (variables 9-13). Table 3.13 shows that emotional exhaustion is strongly related to workload (a correlation coefficient of .45). This means that higher workload is usually associated with higher levels of emotional exhaustion. Motivation to learn is positively related to role clarity (.56), information flow (.63), communication (.74), relationship with colleagues (.38) and relationship with the manager (.57). These positive correlations mean that clearer roles, better information flow, better communication, and better relationships with colleagues and manager are related to a higher motivation to learn new behaviour patterns. Work-home interference has a strong relationship with workload (.49). More work–home interference is related to higher workload.

Finally, health complaints are negatively related to communication (-.47), relationship with colleagues (-.37) and relationship with the manager (-.44). Thus, better communication, better relationship with colleagues and manager are related to fewer health complaints.

Table 3.13

Means, standard deviations and correlation among the variables used in this study

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Workload													
2 Job autonomy	- .06												
3 Mental load	**.54**	.15											
4 Role clarity	**- .40**	.28	.17										
5 Information flow	- .27	.30	.25	**.83**									
6 Communication	- .27	**.38**	.30	**.72**	**.81**								
7 Relation colleagues	- .20	**.37**	.18	**.51**	**.43**	**.50**							
8 Relation manager	- .15	.10	.25	**.70**	**.65**	**.66**	**.66**						
9 Satisfaction	- .20	.36	.22	**.62**	**.51**	**.53**	**.54**	**.48**					
10 Emotional exhaustion	**.45**	- .20	.17	- .31	- .31	- .28	- .34	- .21	**- .45**				
11 Motivation	- .31	.32	.18	**.56**	**.63**	**.74**	**.38**	**.57**	**.60**	- .31			
12 Work-home interference	**.49**	- .06	.22	- .14	- .03	- .20	- .27	.04	- .26	**.61**	- .18		
13 Amount yes health scale	.16	- .27	.07	- .23	- .35	**- .47**	**- .37**	**- .44**	**- .49**	**.65**	**- .46**	.32	
Mean	3.44	3.17	3.44	2.82	2.45	2.51	3.23	3.02	3.01	2.40	2.49	2.32	4.29
s.d.	.56	.64	.37	.68	.57	.57	.43	.63	.53	.64	.67	.64	2.76

Correlations printed in bold are significant at $p = .05$.

In sum: workload is strongly related to emotional exhaustion and work-home interference. Role clarity and information flow are both related to motivation. Finally communication, the relationships with colleagues and with the manager are positively related to motivation and are negatively related to health complaints.

Conclusion: Strong relationships are found between the work characteristics and health and well-being, but because of the cross-sectional design of the study no conclusions about the causal direction of these relationships can be drawn. For example, the positive correlation between emotional exhaustion and work load may signify that high work triggers high levels of exhaustion; conversely, it is also possible that emotionally exhausted employees consider their work load heavier than their non-exhausted colleagues.

3.2.4 Conclusions

The response group is generally highly educated and between 35 and 44 years old. Half of the group has been working for Germany 1 for more than 11 years. The group of respondents (N = 31) is not representative of the target group, i.e., the subdivision TS LM EN, and therefore the results should be interpreted with caution.

The results show that the response group is generally satisfied with their job and has reasonable possibilities to learn. The relationship with the colleagues and the manager is good. However, with respect to the work of the respondents there are some aspects that demand attention. The quantity and the intensity of the work of the respondents are high, although not significantly higher than that of a comparison group. Furthermore, the participants' mental workload is high as well. Although the amount of autonomy in the work is reasonable, the quantity and the intensity of the work, in combination with the high mental workload, seem to be a problem among the respondents. Furthermore, the information flow, cooperation, communication and the organization of work can be improved. In their work the respondents are frequently interrupted by unexpected situations.

With respect to terms of employment, the high amount of overtime among the respondents demands attention. Moreover, the respondents feel that the compensation for overtime is inadequate. The same applies to the compensation regarding travelling and the respondents' career opportunities.

With respect to working conditions, there are various ergonomic problems such as disturbing reflections, disturbing noise and an inadequate climate control of the workplace. Finally, work interferes with home and the respondents report many health complaints such as listlessness, back pains and fatigue.

3.3 Evaluation

The Germany 1 project had a difficult start. Negotiations with the management about the project took a long time, and eventually the management refused to actively participate in the project. The union decided to carry out the project on its own. In the meantime the deteriorated economic circumstances in Germany had repercussions on the situation within the company. For these reasons the union had to postpone the activities regarding the project for five months. Because of the late start (Spring 2004), there was little time left to execute the project. As yet the first two steps of the common framework (preparation, diagnosis) have been carried out. The evaluation in this chapter must therefore be restricted to these two steps.

The project execution faced some stimulating and obstructing factors. Stimulating factors were:

- The perseverance (despite some resistance from management and the occurrence of economic problems) of the local coordinator to start and execute the project.
- The support of the chairman of the works council. He discussed the project with key persons within the company. Furthermore he and other union (IG Metall) members supported the local coordinator with the project execution.
- Finally, the project team brought the so-called 'Vertrauensleute' into action. These employees (who were not necessarily union members) were the connection between project team and employees. They informed the employees about the project and supported the data collection.

There were also various obstructing factors:

- Negotiations with management about the project took a long time. The management of Germany 1 at first considered joining the project but waited a long time before it made a final decision. After consultation with the managers of the personnel department, the medical service and the psychological service, it became clear that no support from management would be given. This decision was taken in October 2003.
- The management chose to deal only with the 'in company' union, and only wanted to deal with IG Metall through IG Metall members of the work council. Therefore the position and influence of IG Metall remained limited.
- In this corporation, the organization rate is low. Also among the employees IG Metall's power position was limited.
- Deteriorating economic circumstances in Germany affected the situation within the company negatively (i.e., possible outsourcing of activities to other countries). Due to

these circumstances, the union established other priorities and decided to postpone IMF project activities for five months.

- Related to the previous point, there was little support from employees, due to their heavy workload and to lack of time. According to union spokesmen the employees were afraid of losing their job. They were reported to work hard and to be unable and unwilling to support the project, although the employees admitted that a project like this is in itself valuable.
- Low survey response. The response group does not seem to be representative of the target group. Therefore, it is difficult to specify risk factors and risk groups for the total target group in a valid way.

CHAPTER 4
GERMANY, GERMANY 2

4.1 Step 1: Preparation

4.1.1 Introduction of Germany 2

Germany 2 is a division of Germany 2 - Group. Germany 2- Group is an international company with approximately 55,000 employees worldwide. It develops and produces transmissions, steering systems, clutches, shock absorbers, axles and chassis components as well as complete systems for passenger cars, commercial vehicles, and off-road machinery. The business fields of Germany 2 are chassis systems/components for passenger cars. This project relates to the headquarters of all national and international activities of Germany 2. The headquarters' work-force includes approximately 1,650 employees.

4.1.2 Labour system and union

The German trade union that participates in the IMF project is IG Metall. IG Metall represents the interests of all workers employed in manufacturing and services of the metalworking indus-try, the textile and clothing industry, and the wood and plastic industry. The relation between management of Germany 2 and the participating union is in accordance with collective agree-ments. The works council at the headquarters has 17 members. Another five persons are special representatives of young employees and apprentices. In 2001 a European Works Council was founded.

4.1.3 Organization of the local IMF study

On the national level, the national coordinator of IG Metall, Siegfried Balduin, was responsible for the contacts with this national case study (i.e., the local level). In addition to the national coordinator, on the local level two coordinators (n.n.2 and n.n.3) represented the local union. They were the in-company contacts for the IMF project. From the local level the information was transferred to the University of Nijmegen.

4.1.4 Motives and signals

According to the local union of Germany 2 the workload was high, especially for the designers. The designers were assigned more and more projects and their responsibilities increased. Their projects are located all over the world, so they must travel a lot. Part of the time needed for travelling outside Europe is unpaid working time, because the company pays no overtime for travelling in non-EU countries. Furthermore, it is said that the designers are young and ambitious. It is believed that it is partly this attitude that makes them feel responsible and makes them work so much. According to the union, the designers worked much overtime and did not have enough time for their families. These work factors had not yet led to severe problems within the organization. The absenteeism percentage is low (2,4 % in 2001), but according to the union the health of the designers could be in danger. The following activities in relation to the workload issue had been carried out by the trade union (years 2000-2002):

- Analysis of the current situation. The white-collar shop stewards discussed the work situation with their colleagues;
- The project 'Work without end? My time is my life' has been executed. The aim of this project was to make employees aware of their working attitude; and
- the IG Metall poll 2001 was held (N = 423, 29% response). This poll asked the employees which topics the IG Metall shop steward and works council should forward. Safety and health, adequate pay, protection against work overload, more training and compatibility family/job emerged as the important topics.

Through participation in this study the local union would like to investigate the workload of the designers. As a result of the preceding description of the work situation of the designers, the main question was: Do the designers have a heavy workload? If so, the second question was: What are the determinants of this workload?

To answer these questions the union conducted a survey together with the University of Nijmegen. The purpose of the survey was to define possible risk factors and risk groups in a reliable and valid way, whilst taking into account the confidentiality of results. It was planned that the results of the survey would serve as a basis on which measures (prevention, intervention) could be taken (next steps within the project).

4.1.5 Project organization

The management of Germany 2 agreed to participate in the IMF stress project. During a meeting on August 13, 2002, an agreement about the project was made. The participants in the meeting were: the manager of the personnel department, the chairman of the works council, and the two local coordinators of the union.

In April 2003 further discussion about the project with the manager of the personnel department took place. A problem arose with regard to the survey to be preferred for this study. The manager of the personnel department made it clear that the department wanted to use its own survey for the IMF project. The personnel department had developed this survey and would like to use it for an annual investigation of working conditions. The manager was concerned that the use of another survey in the IMF project would lead employees to 'mix up the two questionnaires'. Because the company survey did not pay attention to all relevant aspects of work and its consequences, the union decided to use the 'university' questionnaire instead of the company survey. The personnel department then decided that it would not support this 'IMF survey' and that it would not actively contribute to the project execution. The union decided to carry out the project on its own. The union set up a support team. The members of this team were: the two local coordinators and four union members who were employed by the F-DP division. This support team carried out the project.

4.1.6 Target group

The target group for the IMF stress project included all (241) product and test designers of the F-PD division. The F-PD division is targeted on passenger cars and is divided into six design departments. These design departments are:

1. Development Systems Modules and Components Europe Design (F-PDC). The teams F-PDC 1, F-PDC 2 and F-PDC 3 are participating (41 employees in total).
2. Components Development Worldwide (F-PDW). The teams F-PDW 1, F-PDW 2, F-PDW 3 and F-PDW 4 are participating (39 employees in all).
3. Components Development Germany (F-PDG 1-3) (31 employees).

   In these three design departments the engineers and technical drawers design products that are either sold directly to the customer, or that will be fitted to the axles that Germany 2 produces. The departments differ by market, i.e., the place where the customer of Germany 2 sells the cars (Europe, world wide, Germany), but the type of work is well comparable.

The departments are divided in teams. These teams are responsible for the different plants and/or different customers.

4. Advanced (Pre-) Development and Electronic Systems (F-PDP). This is the predevelopment department. This department takes care of the virtual testing and simulation and the electronic system. The liaison with the customer is not as close as at the 3 departments above. The employees are 'the scientists' of Germany 2. The teams F-PDP2, F-PDP3, F-PDP4, F-PDP5 and F-PDP6 are participating (in total 40 employees).
5. Axle Systems Development Worldwide (F-PDA 1-5). At this department the engineers and technical drawers design (on paper) axles at which the components, designed at other departments, are assembled. Their work is comparable to that of the first 3 departments (42 employees).
6. Test Department Worldwide (F-PDT). This is the test department. The samples made according to the drawing are tested here. Only the 48 test engineers of this department participate in the project. These test engineers design tests, no products.

4.2 Step 2: Diagnosis

The diagnostic step (step 2) consisted of two parts, a preliminary study (Section 4.2.1) and a survey study (Section 4.2.2).

4.2.1 Preliminary study

Prior to the survey, a preliminary study was carried out. The purpose of this study was to obtain a general impression of the work situation of the target group. One of the local coordinators asked 8 members of the target group to fill in four checklists concerning a) their job content, b) their working conditions, c) their terms of employment and d) their social relations at work (source: Kompier, M.A.J. & Marcelissen, F.H.G., *Handboek Werkstress.* NIA Amsterdam (1990); German translation by the European Foundation for the Improvement of Living and Working Conditions) (see also Annex 5, and section 9.5).

Concerning the *job content,* the designers reported that they had to work under time pressure and that their jobs demanded intense concentration. According to the respondents, the preparation of the work of other departments and the organization of the work could be improved. Regarding the *working conditions*, disturbing reflections were mentioned. Concerning the *terms of employment* the designers reported insufficient career opportunities, frequent use of temporary workers and problems with overtime (high amount and insufficient compensation).

With respect to the *social relations at work*, the designers reported that, generally, the atmosphere at work was "good". On the other hand, insufficient appreciation for the performed work and insufficient information about developments within the company were mentioned. As a result of this preliminary study the following topics were included in the main survey: workload, cognitive demands, communication, collaboration, appreciation, overtime, promotion, and quality of the working conditions.

4.2.2 Survey

4.2.2.1 Introduction

In order to analyse the work situation and the health and well-being of the employees, a detailed questionnaire study was conducted as a follow-up to the preliminary study. This questionnaire was largely based on validated instruments, measuring the work content, social relations at work, working conditions, terms of employment, and employee health and well-being. Furthermore, organization-specific questions were added concerning issues such as overtime work, compensation for overtime, amount of travelling and work-home interference. Furthermore, some personal data (e.g., gender and age) were asked. The questionnaire used is included in Annex 1.

Regarding the work content, questions about workload, job autonomy, mental workload, role clarity and task interruption were asked. Concerning the social relations, questions about communication, participation, information flow and feedback and the relationship with colleagues and managers were included. Regarding terms of employment, overtime and travelling were the main topics. Questions about the working conditions concentrated on the ergonomic design of the workplace. Concerning employee health and well-being, questions about work satisfaction, emotional exhaustion, interference between work and home, motivation for learning and health complaints were included. The survey was conducted among the designers of the F-PD division.

4.2.2.2 Method and response group

Introduction of the survey

The local coordinators sent an e-mail to all employees of the F-DP division, informing them about the project and the survey. They also did it informally during working hours. No special meeting was arranged.

Data collection

The members of the project team handed out the questionnaires to the employees during their breaks. The employees completed the questionnaire 'off-work', i.e. during their 'leisure' time. Responding took place on an anonymous basis. After completing the questionnaire, the respondents could either hand it over (in a closed envelope) to the local coordinator of the local union, send it by internal mail to the local coordinator, or send it directly to the researchers of the university.

Analyses

The questionnaire is largely based on various groups of related questions (scales). The questions belonging to a scale are represented in the tables below. For each question the answers are given in percentages. Finally the scale mean is reported. The interpretation of the results is based on:

- the mean (averaged) scores on the scale, as well as a measure of the dispersion of this scale (s.d., for standard deviation); if possible, the mean scores are compared to reference scores (i.e., the scores of a comparison group on that scale);
- the response percentage for each answer category; and
- the correlations between possible risk factors (e.g. workload) and the outcome variables (e.g., satisfaction). The correlation coefficient is a measure that indicates the strength of the relation between two variables. A score of 0 indicates no relation; score > 0 indicate positive associations (maximum score is 1.00); score < 0 indicates negative associations (minimum score is -1).

Finally, the results of the departments are discussed and compared (section 4.2.4).

Response group

Of the 241 designers of the F-PD division who received a questionnaire, 176 completed and returned the questionnaire (73% response). The response rates of the F-PDC and F-PDP departments were excellent (93% and 90%, respectively). The response of F-PDW, F-PDG and F-PDT was lower than the previous two, but with 72%, 74% and 60% respectively these percentages are still considered to be sufficient. The response of the F-PDA (48%) was low, compared to the other departments.

Table 4.1 presents an overview of the personal data. As this table shows, 86% of the respondents is male. This figure is equal to that of the target group. Regarding age, 90% of the respondents is younger than 45, whereas 48% is younger than 35 years. This reflects the age segmentation of the target group. The education level of the group is high: 51% has finished

college or higher education and 24% holds an academic degree. More than half (54%) of the respondents work as 'Project-/Versuchsingenieur'.

Fifty-six percent of the respondents has been employed for less than 5 years by Germany 2, 23% between 6 and 10 years, and 11% has been employed for more than 11 years by Germany 2. As to the number of years the respondents had worked at their current *department,* 74% had been working less than 6 year at this department; 15% 6 to 10 years; 11% for more than 11 years. Fifteen percent of the respondents held an executive position. Regarding contract hours, 71% had a contract of 40 hours, 23% had a contract of 35 hours, whereas the remaining 6% had contracts between 7 and 37 hours.

Conclusion: The response group is young and consists mainly of highly educated men. Most of them have not been employed by the organization for a very long time. The respondents (N = 176) may be regarded as representative for the total group (N = 241).

4.2.3 Results

4.2.3.1 Work content

Workload

Table 4.2 shows the results concerning workload. Five answer alternatives were given (1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always). The mean score of the participants on workload is 3.3. In comparison to a group (N = 718) of Dutch white-collar workers (mean score 3.2), the workload of the respondents is not significantly higher. Table 4.2 shows that 69% of the respondents 'always/often' have to work under time pressure, 60% report that they 'always/often' have to work hard and 58% 'always/often' experience peaks in the work. On the other hand, 45% reports that their work is 'seldom/never' mentally exacting, nor too complicated (48%).

Conclusion: The respondents report that they have to work hard and under time pressure. Half of the respondents report that 'too much work has to be done'. One third finds the pace of work 'always/often' too high. The task complexity is seldom too high. It is rather the quantity and the intensity of work that seem to be the problem.

Table 4.1
Germany 2: Characteristics of the response group and the target group in percentages, (numbers in brackets)

Characteristic	Response group	Target Group	Response % department
Total	(176)	(241)	73
Gender			
Men	86 (151)	88	
Women	14 (25)	12	
Age			
Younger 25	3	4	
25-34	45	44	
35-44	42	40	
45-54	8	9	
55-60	2	2	
Older 60	0	0	
Education (highest grade completed)			
"Berufsausbildung"	14		
"Meister"	3		
"Techniker"	8		
"FH Abschluss"	51		
"Uni Abschluss"	24		
Department			
F-PDC	22 (39)	17 (42)	93
F-PDW	16 (28)	16 (39)	72
F-PDP	21 (36)	17 (40)	90
F-PDG	13 (23)	13 (31)	74
F-PDA	11 (20)	17 (42)	48
F-PDT	17 (29)	20 (48)	60
Job title			
"CAD- Spezialist (in)"	6		
"Facharbeiter Prüffeld"	3		
"Project-Versuchsingenieur"	54		
"Technisch Zeichner(-in)"	7		
"Teamleiter(-in)"	10		
"Sachbearbeiter(-in)"	6		
"Sontiges"	14		
Years working for Germany 2			
Less than 1 year	1		
1-5 year	55		
6-10 year	23		
11-20 year	15		
Longer than 20 year	6		
Years working department			
Less than 1 year	5		
1-5 year	69		
6-10 year	15		
11-20 year	9		
Longer than 20 year	2		
Executive position			
Yes	15		
No	85		
Contract hours			
35	23		
40	71		
Rest (7-34, 37 hours)	6		

Table 4.2

Questions concerning workload (%)

	always / often	sometimes	seldom/ never
In the unit where I work:			
o Work is carried out under time pressure	69	30	1
o There are peaks in the work	58	35	7
o Staff has to work hard	60	31	9
o Too much work has to be done	53	35	11
o There is too little time to finish the work	52	35	13
o The pace of work is too high	31	44	25
o The work is mentally exacting	17	38	45
o The work is too complicated	11	41	48
Scale mean is 3.3; s.d. = .56 (*N* = 171)			

Job autonomy

Table 4.3 presents the questions concerning job autonomy. Again, the participants were given five answer possibilities (1= never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always). The mean score on autonomy is 3.4. The comparison group involving 617 Dutch white-collar workers (source Jonge, J. de, *MAL: Maastrichtse Autonomie Lijst,* 1994) had the same mean score of 3.4. The table shows that 63% can 'always/often' determine their own working method, 56% the order in which the work is carried out and 66% can 'always/often' determine their own working hours. When it comes to the determination of the work goal or the kind of work, the score 'always/often' is much lower, 37% and 31 % respectively reported they 'seldom/never' can do it.

Conclusion: The respondents experience on average a reasonable amount of autonomy in their work. Regarding the determination of the work goals and the kind of work, their autonomy is lower.

Mental workload

Table 4.4 shows the questions concerning mental load (four answer categories, 1= never, 2 = sometimes, 3 = often, 4 = always). The mean score with respect to mental load is 3.5. The work 'always/often' requires carefulness (100%), demands a lot of concentration (98% 'always/often') and they 'always/often' must work with a lot of precision (99%).

Conclusion: The respondents report that the mental load of their work is high.

Table 4.3

Questions concerning job autonomy (%)

	always / often	sometimes	seldom/ never
The opportunity that the work offers:			
○ to determine the method of the working yourself	63	26	11
○ to leave your workplace whenever you want	59	27	14
○ to determine the work goals yourself	24	39	37
○ to determine the order in which the work is carried out yourself	56	33	11
○ to evaluate the work yourself	48	40	12
○ to pause in your work whenever you want	50	36	14
○ to determine the amount of work to be done during a certain period yourself	40	33	27
○ to raise or lower the pace of work yourself	42	39	19
○ to determine your own working hours	66	27	7
○ to determine the kind of work to be done yourself	29	40	31

Scale mean is 3.4; s.d.=.56 (*N* = 168)

Table 4.4

Questions concerning mental load (%)

	always/ often	sometimes	never
Do you have to remember many things in your work?	91	8	1
Does your work demand a lot of concentration?	98	2	0
Do you have to work with a lot of precision?	99	1	0
Do you have to be attentive to many things at the same time?	94	6	0
Do you have to pay continuous attention to your work?	94	5	1
Does your work require a great deal of carefulness?	100	0	0
Does your work require continual thought?	95	5	0

Scale mean is 3.5; s.d.=.36 (*N* = 176)

Role clarity and task interruption

Table 4.5 presents the questions concerning role clarity and task interruptions (four answer categories, 1= never, 2 = sometimes, 3 = often, 4 = always). The mean score on role clarity is 2.9; the respondents often experience clarity concerning their role on the job. Compared to the results of a group of Dutch white-collar workers (mean score is 3.1, *N* = 617) the score of Germany 2 is nearly the same. Table 4.5 shows that 78% of the respondents 'always/often' know what they are responsible for, and 81% 'always/often' know what they can expect from each other. About half of the participants (49%) report that they 'always/often' know what their direct boss thinks of their performance. Finally, 74% of the respondents report that they were 'always/often' disturbed in the work by unexpected situations.

Conclusion: The respondent's roles are generally clear. Half of the respondents report that they always get feedback from their boss about their performance. Seventy-four per cent of the respondents are 'always/often' disturbed in the work by unexpected situations.

Table 4.5

Questions concerning role clarity (first five items) and task interruptions (last item) (%)

	always/ often	sometimes	never
Do you know exactly what other people expect from you in your work?	74	26	0
Do you know exactly for what you are responsible and for which areas not<?	78	21	1
Do you know exactly what your direct boss thinks of your performance?	49	43	8
Is it clear to you what your tasks are?	77	23	0
Do you know exactly what you can expect from other people in your department?	81	19	0
Scale mean is 2.9; s.d.=.50 (*N* = 173)			
Non-scale question:			
Are you disturbed in your work by unexpected situations?	74	26	0

4.2.3.2 Social context at work

The social context in this survey refers to the information flow, cooperation, communication and the relationship with the colleagues and the manager. The questions have four answer categories, 1= never, 2 = sometimes, 3 = often, 4 = always.

Information flow

Table 4.6 shows that the mean score on information flow is 2.4. Sixty-eight per cent of the respondents 'always/often' receive sufficient information on the purpose of the job; 50% 'always/often' receive sufficient information about the result of their work. Less than half of the respondents (38%) have 'always/often' access to sufficient information. Concerning feedback from colleagues, their boss and the work itself, the percentages are 'always/often' even lower (27%, 28%, and 25%, respectively). Finally, 51% of the respondents receive 'always/often' information that is irrelevant to their job performance, whereas 43% get *more* information than needed in order to do their job properly.

Conclusion: The large percentages 'sometimes' suggest that generally the information flow is problematic.

Table 4.6

Questions concerning information flow (%)

	always/ often	sometimes	never
Do you receive sufficient information on the purpose of your work?	68	31	1
Do you receive sufficient information on the results of your work?	50	47	3
Does your direct boss inform you about how well you do in your work?	27	59	14
Do your colleagues inform you about how well you do in your work?	28	57	15
In your work, do you have access to sufficient information?	38	59	3
Does your work give you the opportunity to check on how well you are doing your job?	51	46	3
Does your work provide you with direct feedback on how you are doing your work?	25	61	14
Scale mean is 2.4; s.d.= .43 (N = 171)			
Non-scale questions:			
Irrelevant information	51	47	2
More information than needed	43	46	11

Cooperation and communication

Table 4.7 presents the scores with respect to cooperation and communication. This table shows that 53% of the respondents find their work well organized and 44% reported 'always/often' a good collaboration between departments and groups. Nevertheless, 32% is 'always/often'

bothered by shortcomings in other people's work. The mean score on communication is 2.4. One third of the respondents 'always/often' hear enough about how the company is run, and are adequately informed about important issues within the company. Only 15% of the respondents report that the decision-making process is 'always/often' clear to them. Finally, for 72% it is 'always/often' clear whom they should address to within the company for specific problems.

Conclusion: Again, the high percentages of participants choosing the 'sometimes'-category in our questions indicate that the quality of communication in Germany 2 is open to improvement. Only one third of the respondents report that they are adequately informed about important issues within the company. For the majority of the respondents the company's decision-making process is not always clear. Finally, half of the respondents consider their work well organized and collaborate well with other departments.

Table 4.7

Questions concerning cooperation and communication (%)

	always/ often	sometimes	never
Is the work well organized in your company?	53	44	3
Do the departments and groups collaborate well?	44	53	3
Are you bothered by shortcomings in other people's work?	32	65	3
Communication:			
Do you hear enough about how the company is run?	34	60	6
Are you kept adequately informed about important issues within the company?	36	54	10
Is the company's decision-making process clear to you?	15	68	17
Is it clear whom you should address to within the company for specific problems?	72	26	2

Scale mean is 2.4; s.d.= .49 (N = 174)

Relationships with colleagues and the manager

Table 4.8 presents the results concerning the relationship with colleagues and manager. These relationships are often good (mean scores 3.2, and 3.1 respectively). The respondents can 'always/often' count on their colleagues and their manager when they come across difficulties (89% and 75%, respectively). They can 'always/often' ask for help to their colleagues (90%) and their manager (76%). Ninety-six percent 'always/often' get on well with their colleagues and 83% with their manager. However, only 50% of the respondents feel 'always/often' appreciated in the work by their colleagues and 62% by their manager.

Conclusion: The relationship between colleagues and the manager is good but only 50 to 60% of the respondents feel 'always/often' appreciated in their work by their colleagues and manager.

Table 4.8

Questions concerning relationship with colleagues and manager (%)

	always/ often	sometimes	never
Relationship colleagues:			
Can you count on your colleagues when you come across difficulties in your work?	89	11	0
If necessary, can you ask your colleagues for help?	90	9	1
Do you have conflicts with colleagues?	1	62	37
In your work do you feel appreciated by your colleagues?	50	46	4
Do you get on well with your colleagues?	96	4	0
Scale mean is 3.2; s.d.= .43 (N = 174)			
	always/ often	sometimes	never
Relationship manager:			
Can you count on your manager when you come across difficulties in your work?	75	22	3
If necessary, can you ask your manager for help?	76	22	2
Do you have conflicts with manager?	6	51	43
In your work do you feel appreciated by your manager?	62	33	5
Do you get on well with your manager?	83	16	1
Scale mean is 3.1; s.d.= .59 (N = 172)			

4.2.3.3 Terms of employment

Table 4.9 presents the results with respect to the terms of employment. This table shows that 96 % of the respondents work overtime, whereas 54% of them often do. The average amount of overtime worked per week is 5 hours, with a minimum of 1.5 hours and a maximum of 20 hours. The compensation (time or money) for overtime is 'good' according to 79%; the remaining 21% find the compensation insufficient. On average, the respondents travel twice a month (minimum 0.1, maximum 10 times a month). This travelling takes on average 9 hours per month. The burden of travelling expressed as a report mark is 5 (1= no burden, 10= heavy burden). The majority of the participants (61%) gave a lower report mark (≤ 5), while 39%

gave travelling a higher mark (≥ 6). Sixty-three per cent are satisfied with the compensation for travelling (either in time or money), whereas 37% consider the compensation insufficient. According to 88% of the respondents, they can plan holiday whenever they like, whereas 12% takes the opposite view. Finally, 56% reported that their job provides no career opportunities, while 44% reported to have such opportunities.

Conclusion: Almost all the employees work overtime, on average 5 hours a week. Taking into account that the majority of the respondents has a work contract of 40 hours a week, the majority of them works on average 45 hours a week. The compensation for overtime is generally good (79%). On average twice a month the respondents have to travel for their work. For more than one third of the respondents this travelling causes a burden (report mark ≥ 6). Also more than one third of the respondents are not satisfied with the compensation (in time or money) they receive for travelling. Finally most employees may go on holiday whenever they choose. For almost half of the employees career opportunities are insufficient.

Table 4.9

Terms of employment

	%yes	%no	mean
Overtime	96	4	
Overtime (hours/week)			4.9
Adequate compensation for overtime	79	21	
Amount of travelling (times/month)			1.7
Time spent for travelling (hours/month)			9.1
Travelling			4.8
Adequate compensation for travelling	63	37	
Take holiday whenever you like	88	12	
Sufficient career opportunities	44	56	

4.2.3.4 Working conditions

Table 4.10 shows the results regarding working conditions. This table shows that 77% of the respondents perform computer work more than 6 hours a day; 43% reported that computer work is regularly alternated with another piece of work. In most cases the work place is well designed (90% 'yes'). Nevertheless, one third is bothered by disturbing reflections and 44% reported noise nuisance, mainly caused by telephone conversations and conversations of their colleagues. Furthermore, 15% of the respondents reported a bad climate control of the work place.

Conclusion: The respondents work very frequently with the computer. For almost half of the employees the 'computer work' is alternated with other work. The working place is generally well designed, but still one third is bothered by disturbing reflections and more than 40% of the employees are bothered by noise, mainly caused by telephone conversations and conversations of their colleagues.

Table 4.10

Working conditions

	%yes	%no
Computer work > 6 hours	77	23
Regular alternation computer work	43	57
Well designed workplace	90	10
Good chair	90	10
Nuisance of:		
o bad lighting	14	86
o disturbing reflections	30	70
o disturbing noises	44	56
o other	15	85

4.2.3.5 Health and wellbeing

Table 4.11 presents the questions concerning health and wellbeing. All questions have four answer categories (1= never, 2 = sometimes, 3 = often, 4 = always), except for emotional exhaustion that has five answer possibilities (1= never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always).

Satisfaction

Table 4.11 shows that the employees are generally satisfied with their job (mean score = 2.9).

Emotional exhaustion

Table 4.11 also demonstrates that the mean emotional exhaustion score is 2.5. Compared to a large group of Dutch white-collar workers, the mean score on emotional exhaustion of the Germany 2 respondents is higher (mean = 2.1, *N* = 2,393, source: Schaufeli, W.& van Dierendonck, D. *Utrechtse Burnout Schaal,* Utrecht; 1995). Forty-three per cent of the respondents 'seldom/never' feel emotionally drained by their work, 39% sometimes do and 18% 'always/often' feel emotionally drained by their work. Furthermore, 43% 'seldom/never' feel used up by the end of the day, 38% sometimes feel and 19% 'always/ often' feel used up by the end of a working day. Thus, 1 out of 5 employees reports serious burnout symptoms.

Table 4.11

Questions concerning health and well-being (%)

	always/ often	sometimes	seldom/never
Satisfaction: mean =2.9; s.d.=.57 (*N* = 162)	83	15	2
Emotional exhaustion:			
I feel emotionally drained by my work	18	39	43
Working all day is really a strain for me	6	23	71
I feel burned out by my work	18	51	31
I feel used up at the end of the workday	19	38	43
I feel fatigued when I get up in the morning and have to face another day on the job	9	24	67
Scale mean: 2.5; s.d.=.65 (*N* = 176)			
	always/ often	sometimes	never
Motivation for learning:			
On my job I learn new things	76	23	1
On my job I am stimulated to pick up new things	41	50	9
My job offers good opportunities for developing myself	44	54	2
Scale mean: 2.6; s.d. =.53 (*N* = 175)			
Work negatively influences home:			
How often does it happen that:			
o You find it difficult to fulfil your domestic obligations because you are constantly thinking about your work	31	60	9
o Your work schedule makes it difficult for you to fulfil your domestic obligations	37	53	10
o You have to work so hard that you have no time for any of your hobbies	32	45	23
o Your work obligations make it difficult to feel relaxed at home	28	59	13
Scale mean: 2.2; s.d. =.57 (*N* = 175)			

Motivation for learning

With respect to motivation for learning, Table 4.11 presents a mean score of 2.6. Fifty-four per cent of the respondents reported that their job 'sometimes' offers good opportunities to develop themselves, 44% ‘always/often’ have good opportunities. No less than 76% reported they ‘always/often’ learn new things on the job.

Work-home interference

Concerning work-home interference, Table 4.11 presents a mean score of 2.2. Compared to a reference group of 1,857 Dutch employees, the mean score on work-home interference of the respondents is significantly higher (mean = 1.86, s.d. = .48; source: Geurts, S. *Swing: ’Survey Work-Home Interaction-Nijmegen’.* Radboud University Nijmegen; 2004). Thirty-seven percent of the respondents ‘always/often’ find it difficult to fulfil domestic obligations because of their work schedule and 32% ‘always/often’ have no time for any of their hobbies because they must work hard.

Conclusion: The respondents are generally satisfied with their job. The possibilities for learning on the job are quite acceptable. Emotional exhaustion (extreme fatigue, a burnout indicator) is surely a problem: one out of five respondents reports clear symptoms of emotional exhaustion. Also work clearly interferes with home, approximately 30-40% of the employees report problems in this respect.

Health complaints

Table 4.12 shows the results concerning health complaints, showing that the mean score on health complaints is 5.1. In comparison to a large group of Dutch white collar workers, this score is very high (reference N = 2,430, mean = 2.45, source: Vaas, S. & Goudswaard, A. *Haalbaarheidsstudie monitoring arbeidsinhoud en ergonomie.* Den Haag, Ministerie van Sociale Zaken en Werkgelegenheid; 1995). Especially notable are the scores on feelings of listlessness and tiredness: 71% of the respondents occasionally feel listless, 61% frequently feel tired. Moreover, 57% occasionally suffer from back pains and 47% occasionally have a headache.

Conclusion: The number of health complaints is very high. Seventy percent of the respondents occasionally feel listless, and more than half of the employees frequently feel tired.

Table 4.12

Health complaints (%)

	yes	no
Health complaints:		
o Do you occasionally feel pain in the chest or heart region?	20	80
o Are you quickly short of breath?	23	77
o Do you occasionally suffer from headache?	47	53
o Do you occasionally feel pressure in your stomach or is it ever swollen?	40	60
o Do you occasionally feel dizzy?	27	73
o Do you frequently feel tired?	61	39
o Do you ever suffer from a numbed feeling or a tingling sensation in your limbs?	26	74
o Do you occasionally feel listless?	71	29
o Do you occasionally suffer from pain in bones and muscles?	30	70
o Do you occasionally suffer from back pain?	57	43
o Do you occasionally suffer from an upset stomach?	28	72
o Do you tire more quickly than you would expect?	33	67
o Do you generally wake up still feeling tired?	44	56

Scale mean (average number of 'yes'-answers) is 5.1; s.d. = 3.04 (*N* = 176)

4.2.3.6 Correlations among the scales

Table 4.13 presents the correlations among the study variables. These correlations reflect the strength of the association between two variables and vary from -1 (indicating a perfect negative association; low scores on A always coincide with high scores on B) via 0 (no association at all) to 1 (perfect positive association; low (high) scores on A always coincide with low (high) scores on B). Practically, correlations of .40 and higher indicate a strong relationship between the variables. It is interesting to look at the relationships between the work characteristics (variables 1-8) and the scales measuring health and wellbeing (variables 9-13). Table 4.13 shows that emotional exhaustion is positively related to workload (a correlation of .41) and negatively to role clarity (. 41) and information flow (-.34). Thus, higher workload is related to higher levels of emotional exhaustion. Conversely, having clear roles and a sufficient information flow are associated with low levels of emotional exhaustion.

Table 4.13

Means, standard deviations and correlations among the variables used in this study

variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Workload													
2 Job autonomy	- .24												
3 Mental load	**.36**	.06											
4 Role clarity	- .19	.20	.23										
5 Information flow	- .15	.25	.18	**.62**									
6 Communication	- .17	.11	.11	**.50**	**.38**								
7 Relation colleagues	- .23	.24	- .00	**.41**	.23	**.34**							
8 Relation manager	**- .31**	.16	- .10	**.40**	**.38**	**.30**	**.49**						
9 Satisfaction	**- .36**	.22	.03	.23	.26	.23	.18	**.42**					
10 Emotional exhaustion	**.41**	**- .30**	.02	**- .41**	**- .34**	**- .30**	**- .32**	**- .32**	**- .32**				
11 Motivation	- .16	.19	.10	.27	**.39**	.17	.27	**.45**	.26	**- .37**			
12 Work-home interference	**.54**	- .19	.14	**- .31**	- .23	- .28	- .24	**- .31**	**- .32**	**.56**	- .23		
13 number of 'yes' answers on health scale	.20	**- .32**	.05	- 24	**- .34**	- .22	- .27	- .22	- .24	**.53**	**- .31**	.27	
Mean	3.27	3.38	3.51	2.91	2.40	2.35	3.19	3.10	2.92	2.50	2.58	2.22	5.10
SD	.56	.56	.36	.50	.43	.49	.43	.59	.57	.65	.53	.57	3.04

Correlations over .20 are significant at $p < .01$. Correlations over (-) .30 are printed in bold.

Regarding motivation, Table 4.13 shows that this is strongly related to information flow (.39) and the relationship with the supervisor (.45). A better information flow and a better relationship with the manager are thus associated with a higher motivation for learning new behaviour patterns. With respect to work-home interference, Table 4.13 shows strong relationships with workload (.54) and role clarity (-.31). Higher levels of work–home interference are related to higher workload and less role clarity. The health scale is negatively related to autonomy (-.32) and information flow (-.34): more autonomy and better information flow are associated with less health complaints.

Conclusion: Strong and consistent relationships are found between the work characteristics and health and well-being. In sum, emotional exhaustion is related to workload, role clarity and information flow. Motivation is associated with information flow and the relationship with the manager. Work-home interference is related to workload and role clarity. Finally, health complains are related to autonomy and information flow. Note, however, that due to the cross-sectional design of the study no causal inferences can be made.

4.2.4 Differences in scores among departments

Table 4.14 presents the differences in work content and social context among the different departments. Only statistically significant differences will be discussed, i.e., only those differences that have a low probability (less than 5%) to be due to chance.

4.2.4.1 Differences in work content

Table 4.14 demonstrates that there are differences between departments with respect to workload, job autonomy and the frequency of task interruptions. There are no differences as to mental load and role clarity. The F-PDW department reports the highest workload (3.5), which is significantly higher than the workload reported by employees from the F-PDP department. The F-PDP department has the lowest score of workload. Note that this relative difference does not imply that the workload in the latter department is low in *absolute* terms; still 41% of the employees of this department report that they ‘always/often’ have to work under time pressure. Regarding autonomy, the F-PDP department scores best, and significantly higher than especially the F-PDG and F-PDW departments. The employees from F-PDW and F-PDA (both obtain a score of 3.1) are more often interrupted in their work by unexpected situations than the employees of F-PDP (mean score is 2.5).

Conclusion: There are some differences between departments. These differences refer to workload, autonomy and task interruption. Relatively, F-PDW scores worst and F-PDP scores best.

Table 4.14

Differences among departments on work content and social context. The mean scores are given. The mean scores in bold indicate a significant score difference; superscripts refer to the department(s) with which these difference occur.

Department	F-DP	F-PDC	F-PDW	F-PDP	F-PDG	F-PDA	F-PDT
N (1 missing)	176	39	28	36	23	20	29
		1	2	3	4	5	6
Work content:							
o Workload	**3.3**	3.3	**3.5**^{3}	**3.0**^{2}	3.3	3.4	3.3
o Job autonomy	**3.4**	3.3	**3.2**^{3}	**3.7**^{4}	**3.2**^{3}	3.4	3.4
o Mental load	3.5	3.5	3.5	3.4	3.6	3.5	3.6
o Role clarity	2.9	3.0	2.8	3.0	2.8	2.8	3.0
o Task interruption	**2.9**	2.9	**3.1**^{3}	**2.5**^{2,5}	2.8	**3.1**^{3}	2.9
Social context:							
o Information flow	**2.4**	2.4	**2.2**^{3}	**2.6**^{2,5}	2.3	**2.3**^{3}	2.4
o Irrelevant information	2.6	2.7	2.8	2.5	2.4	2.6	2.5
o Too much information	**2.4**	**2.6**^{3}	2.5	**2.1**^{1}	2.3	2.4	2.3
o Organization work	**2.5**	**2.8**^{2}	**2.2**^{1}	2.5	2.7	2.4	2.6
o Collaboration	2.4	2.5	2.3	2.5	2.5	2.3	2.4
o Shortcomings others	2.3	2.4	2.4	2.1	2.3	2.2	2.5
o Communication	2.3	2.5	2.1	2.3	2.3	2.3	2.4
o Relation with colleagues	3.2	3.3	3.1	3.2	3.2	3.2	3.2
o Relation with leader	3.1	3.3	3.0	3.1	3.2	2.9	3.0

4.2.4.2 Differences in social context

Table 4.14 shows that there are differences among departments with respect to information flow and the organization of work. Concerning collaboration, communication and the relationship with colleagues and manager there are no differences. The information flow at the F-PDP department is reported as the best (2.6). The employees at this department feel that they

are relatively better informed about the purpose and the result of the work than the employees of the F-PDW (2.2) and F-PDA (2.3) departments. Concerning the amount of information, employees of the F-PDC department report that they receive much more information than they need to do their job properly. Employees working at the F-PDP department report the least complaints in this respect. Employees of the F-PDC department report few problems with the organization of their work (average score is 2.8); this score is significantly better than that of the F-PDW department (mean score is 2.2) that has the lowest score.

Conclusion: In comparison to the other departments, employees of the F-PDW receive less information and the organization of work is less adequate.

4.2.4.3 Differences in terms of employment

Table 4.15 presents the differences between the departments with respect to the terms of employment. Notable differences refer to the amount of overtime, the burden regarding travelling, compensation for travelling and taking holiday whenever the employee wants. There are no significant differences among departments as to the percentage of participants working overtime, the compensation for working overtime, frequency of travelling, duration of travelling and career opportunities.

Table 4.15

Differences between departments with respect to terms of employment. The mean score or % yes are given. The scores in bold represent a significant difference in score, the small number refers to the department(s) with which the difference occurs.

Department	F-DP	F-PDC	F-PDW	F-PDP	F-PDG	F-PDA	F-PDT
N (1 missing)	176	39	28	36	23	20	29
		1	2	3	4	5	6
Terms of employment:							
Overtime % yes	96	95	96	97	96	90	100
Overtime (hours/week)	**4.9**	**4.2**^{5}	5.4	4.7	**4.0**^{5}	**7.2**^{1,4}	4.8
Compensation for overtime % yes	79	84	71	74	95	70	83
Amount of travelling (times/week)	1.7	1.2	1.1	2.3	2.2	1.9	1.3
Time spent for travelling (hours/month)	9.1	7.6	10.3	11.2	7.9	8.9	8.7
Burden of travelling (report mark 'German way')	**4.8**	5.5	**6.5**^{3,5,6}	**4.1**^{2}	4.7	**3.9**^{2}	**3.8**^{2}
Compensation for travelling % yes	**63**	68	**40**	68	**89**	58	55
Holiday uptake % yes	**88**	95	**59**	91	**100**	95	89
Career opportunities	44	43	40	39	55	63	32

Table 4.15 shows that the employees of F-PDA spend significantly more hours working overtime than employees of the F-PDC and F- PDG departments (mean scores are 7.2, 4.2 and 4.0 hours a week, respectively). The F-PDW department reported the heaviest burden regarding travelling (6.5 hours per week), which is significantly higher than the F-PDP, F-PDA, F-PDT departments (4.1, 3.9, and 3.8 hours per week, respectively).

Conclusion: Compared to the other departments, the F-PDW department reported the heaviest burden with respect to travelling, the lowest satisfaction with compensation for travelling and the least freedom in taking holiday whenever they plan to. The employees of F-PDA reported the highest number of overtime hours.

4.2.4.4 Differences in working conditions

Table 4.16 presents the differences between the departments with respect to working conditions. This table shows that 89% of the employees of F-PDW reported that they work for more than 6 hours a day with the computer, which is significantly more than the 55% of the employees of the F-PDA department. Three quarters of the employees of the F-PDA department feel that they can alternate their computer work sufficiently with other tasks, whereas only 28% of the F-PDC department arrives at the same conclusion. Table 4.16 further demonstrates that 32% of the employees of F-PDC reported that the illumination of their workplace is insufficient, whereas 47% of the employees of the F-PDC department are bothered by disturbing reflections. Moreover, 61% of the employees of F-PDW and 56% of the employees of F-PDC are bothered by noise.

Conclusion: With 89% of the employees working for more than 6 hours a day with the computer, computer work is especially common at the F-PDW department. It is also very common in most other departments. The employees of F-PDC reported that their work is less frequently alternated with other tasks than employees of the other departments. There are ergonomic problems as well: the employees of F-PDC reported more problems with illumination at the workplace. Moreover, the employees of F-PDC are relatively often disturbed by reflections at the workplace. The employees of F-PDW are often disturbed by noise.

Table 4.16

Differences between departments with respect to working conditions. The % of 'yes' are given. The scores in bold represent the highest or lowest score

Department	F-DP	F-PDC	F-PDW	F-PDP	F-PDG	F-PDA	F-PDT
N (1 missing)	176	39	28	36	23	20	29
		1	2	3	4	5	6
Working conditions: (%yes)							
Computer work > 6 hours	77	85	**89**	86	74	65	**55**
Regular alternation computer work	43	**28**	43	34	44	40	**75**
Well designed workplace	90	**77**	93	94	**96**	85	94
Good chair	90	92	85	**100**	87	90	**83**
Insufficient light	14	**32**	18	11	4	**0**	8
Disturbing reflections	30	**47**	32	29	**13**	16	31
Noise	44	56	**61**	**34**	35	40	37

4.2.4.5 Differences in health and wellbeing

Table 4.17 presents the differences between the departments with respect to health and well-being. The employees of the F-PDW department have on average the highest score on emotional exhaustion (2.9), which is significantly higher than the average score of the employees at the F-PDP department. Compared to the other departments, employees of the F-PDW department feel more used up at the end of the workday and burned out by their work. Furthermore, they report that their job does hardly motivate them to learn (average score is 2.4); in comparison, employees of the F-PDP department report considerably higher levels of motivation to learn (mean score is 2.8). The F-PDW employees thus learn less new things on the job than employees of other departments, and they feel that the job offers them fewer opportunities for developing themselves. Members of the F-PDW department also reported the highest level of work–home interference (2.5). Thus, they find it relatively difficult to fulfil their domestic obligations due to their work schedule, and they have relatively little time for their hobbies because they have to work hard. The F-PDT, F-PDC and F-PDP departments obtained the lowest scores on work-home interference (mean scores are all 2.1) in this respect. Concerning health problems, again the score of the F-PDW department (6.2) is significantly higher than that of the F-PDP department (3.9). The F-PDG department reported the highest score in this respect (6.3).

Table 4.17

Differences between departments on health and well-being. Mean scores are given. The scores in bold indicate a significant difference in score, the small number refers to the department(s) with which the difference occurs.

Department	F-DP	F-PDC	F-PDW	F-PDP	F-PDG	F-PDA	F-PDT
N (1 missing)	176	39	28	36	23	20	29
		1	2	3	4	5	6
Health and wellbeing:							
Satisfaction	2.9	3.0	2.7	3.1	2.8	2.9	2.9
Emotional exhaustion	**2.5**	2.5	**2.9**^{3}	**2.3**^{2}	2.7	2.4	2.4
Motivation	**2.6**	2.6	**2.4**^{3}	**2.8**^{2}	2.5	2.5	2.5
Work-home interference	**2.2**	2.1	**2.5**^{6}	2.1	2.3	2.4	**2.1**^{2}
Health complaints	**5.1**	4.9	**6.2**^{3}	**3.9**^{2,4}	**6.3**^{3}	4.4	5.3

Conclusion: The employees of F-PDW have the highest score (i.e. report the most problems) as to emotional exhaustion and work-home interference. Compared to the other departments the employees of F-PDW also reported, together with F-PDG, a higher number of health complaints. When compared to other departments, the employees of F-PDP report the highest learning possibilities.

4.2.5 Conclusions

The response group is generally young and highly educated. The respondents (N = 176) seem a representative reflection of the total group (N = 241). Therefore, our conclusions may be generalised to the target group as a whole.

4.2.5.1 Conclusions with respect to the designers of F-PD

The designers are generally satisfied with their job and have reasonable possibilities to learn new skills. Furthermore, the relationships with their colleagues and manager are generally good. With respect to the content of the designers' jobs there are some aspects that demand attention. The quantity and the intensity of the work of the designers are high, and the same applies to their mental workload. Although they have a reasonable amount of autonomy in their work, this high quantity and intensity of work, together with the high mental workload,

may be regarded problematic. Furthermore, the information flow, feedback, and communication can be improved. In their work the designers are frequently interrupted by unexpected situations. With respect to the terms of employment, the high amount of overtime demands attention. Furthermore, the respondents feel that the compensation for travelling is insufficient. They also consider their career opportunities insufficient. As regards the working conditions, there are ergonomic problems such as disturbing reflections and disturbing noise. With respect to their health and well-being, emotional exhaustion (extreme fatigue, an indicator of burnout) is a problem. Moreover, work clearly interferes with home. Finally, the designers report many health complaints such as listlessness and fatigue.

4.2.5.2 Conclusions with respect to differences among the departments

The conclusions presented above apply to the F-PD division as a whole, but there are several differences among the departments as well.

- *F-PDC.* The F-PDC department faces some specific ergonomic problems. The illumination of the workplace causes problems. Moreover, many employees report disturbing reflections at their workplace.

- *F-PDW.* At the F-PDW department several aspects of the work content and the social context deserve attention. Employees of this department have a relatively high workload, low autonomy and high levels of task interruptions. Furthermore, the information flow and the organization of the work are relatively inadequate. The employees of F-PDW also reported relatively many problems regarding their health and well-being, including high levels of emotional exhaustion, work-home interference and health complaints. Traveling is a relatively heavy burden for members of this department.

- *F-PDP.* The F-PDP department scores relatively favourably on most work aspects. There are no specific points that need to be mentioned here.

- *F-PDG.* The amount of work autonomy at the F-PDG department is relatively low. This department also has the highest score with respect to health complaints.

- *F-PDA.* At the F-PDA department the amount of overtime demands attention. The employees of this department report the highest number of hours worked overtime.

- *F-PDT*. Compared to the other departments, there are no specific issues that must be addressed here.

4.3 Evaluation

Although an agreement in writing had been reached at a relatively early stage (August 2002), further project negotiations with management took a long time. Only in April 2003 it became clear that the personnel department would neither support the survey developed by the university, nor actively contribute to the execution of the project. The union decided to carry out the project on its own and set up a support team (including union members only).

In the meantime, the economic 'bad weather' in Germany had repercussions for the company. The union therefore had to postpone their activities regarding the project for five months. Due to this delay the project actually started in the spring of 2004. Because of the limited time left, only two steps of the common framework (i.e. preparation and diagnosis) were executed. Consequently, the evaluation in this chapter is restricted to these two phases.

The project execution faced some stimulating and obstructing factors. Stimulating factors included:

- The enthusiasm of the two local coordinators and their firmness in the execution of the project;
- The support of the works council: The chairman of the works council together with the support team was responsible for the execution of the survey; and
- The high response to the survey. A proper risk assessment for the whole target group could be made. Moreover, a risk assessment for each participating department could be made.

During the execution of the project also some obstructing factors emerged, namely:

- The negotiations with management took a long time;
- Although an agreement in writing had been made, the personnel department later decided not to actively contribute to the execution of the project. The union thus had to carry out the project on its own;
- Unfavourable economic circumstances in Germany. These impacted the company negatively. Due to these circumstances the union decided to postpone their activities regarding the IMF project for five months; and

- Heavy workload of the local coordinators. In addition to their other union activities, they had to carry out the present project as well. The deteriorated economic climate in Germany led to changes in union priorities and other activities came first (extra meetings, seminars, and even strikes).

CHAPTER 5
SWEDEN, VOLVO INFORMATION TECHNOLOGY

5.1 Step 1: Preparation

5.1.1 Introduction

Volvo Information Technology is one of the business units of the Volvo Group, which is a global supplier of transport solutions for commercial use. In 1976, the Volvo Group combined its IT operations in a new separate company, and in 1998 the current global Volvo Information Technology was created. In 2001 the IT staffs at Renault trucks and Mack trucks were integrated with Volvo IT as well. Volvo IT provides IT solutions and services for the entire industrial process, from product development to manufacture, sales, aftermarket and administration. The customers of Volvo IT include the Volvo group but also external customers. Volvo IT has offices in Europe, North and South America and Asia, and its headquarter is situated in Gothenburg, Sweden. In 2003, Volvo IT had 4,700 employees around the world. In Gothenburg there are approximately 2,600 non-manual workers.

5.1.2 Labour relation system

The Swedish trade union that participated in the IMF project was SIF. SIF organizes white-collar employees in the technology and knowledge-based sectors of the labour market. This means that SIF's members work in the private sector, in companies that operate in areas such as information technology, telecom, construction, manufacturing and Research & Development. At Volvo IT approximately twenty per cent of the employees are members of SIF. The relation between the union (SIF) and management of Volvo IT conforms with Swedish laws and collective agreements. This means that there is employee representation within the Boards of Directors of the local Volvo companies. The management of Volvo IT and the union work together in several committees and projects concerning health and safety.

Each local company has its own special committee (‘skyddskommitté’) that deals with issues concerning health and safety. These committees consist of r
epresentatives from management, the local unions and the occupational health service. Furthermore, Volvo group has a special department called HR Partner. HR Partner has a special responsibility for issues concerning the work environment and health and safety within all Volvo companies. HR Partner has created educational programs for managers and staff on topics like ‘how to prevent stress and burnout’. Moreover, different kinds of written policies

concerning stress prevention were created. In each company there are so-called 'cultural ambassadors' who inform the employees about these policies. Currently there are 120 cultural ambassadors at Volvo IT. Finally, a committee working on rehabilitation programs is present. This committee includes representatives from management, unions and the occupational health service.

5.1.3 Organization of the local IMF study

On the national level, the national coordinator of SIF (Carina Lindström) was responsible for the contacts with the Volvo IT case. Furthermore, on the local level the local coordinator represented the union, being the in-company contact for the IMF project. At the start of the project there were two local coordinators: Leif Rådeström and Arne Nilsson. During project execution, Arne Nilsson withdrew as a coordinator for the local IMF study.

5.1.4 Motivation to participate

According to the union there were many programs and policies concerning stress prevention ongoing within the company, but in spite of these programs the employees were still suffering from stress. The union suggested that major stress factors were related to the work content such as unclear work roles, unclear and incomprehensible goals and too little influence on operational development. Furthermore, the information flow and communication were reported to be of low quality (slow and extensive administrative routines, high volume of e-mail, complex and incomprehensible organization). The union was concerned about the fact that apparently the current stress prevention programs did not sufficiently address these stress factors. Therefore, the union wanted to participate in the IMF study. The union assumed that the IMF study could offer a way to evaluate the ongoing projects and programs at Volvo.

Up until then various stress prevention activities were or had been carried out. In 1998, the Volvo management and the union had been working together on the project 'Prevent Burnout'. The aim of this project was to change the attitudes of Volvo managers and employees to stress, to increase their ability to prevent burnout, and to propose and create realistic solutions to support daily work within Volvo. In the autumn of 2002, a health conference was arranged in Gothenburg. Approximately 600 managers attended this conference and took part in lectures and workshops on how Volvo could improve health and prevent burnout. At that conference an intranet health site was launched.

As a result of the Volvo 'Prevent Burnout' project at the IT department, a local project started in 2003. This 'Work Spirit' project had been developed by a working group. Repre-

sentatives of Volvo IT management, the Human Resource department of Volvo IT and the local union (represented by Arne Nilson, former local coordinator) were members of this group. The aim of this program was to create awareness of the negative stress development within Volvo IT and to create an understanding of the importance of a proactive approach towards this development. Moreover, the program had to result in an action plan as to how to attack this negative development. The Volvo IT department 9600 was chosen as pilot department for this Work Spirit program. Participation in the IMF study should give the local union the opportunity to evaluate the results of the Work Spirit program. By joining the IMF study the union hoped to answer the following questions:

- What are the risk factors and risk groups at this department?
- Which measures are appropriate for addressing these risk factors and groups?, and
- Does the Work Spirit program provide these measures?

5.1.5 Project organization

The local coordinator Leif Rådeström carried out the local IMF project. The national coordinator Carina Lindström supported him.

5.1.6 Target group

The target group of the IMF project was the same as the target group of the Work Spirit program, i.e., all 500 employees of Volvo IT department 9600.

5.1.7 Project execution

In the Work Spirit program the 'Docco AB's stress service' was used, which is an interactive internet-based instrument. By using this 'stress service' and filling out the stress survey, respondents can immediately receive information whether and how they are affected by stress. Moreover, they can receive advice and suggestions as to how to reduce their stress levels. It is said that results can also be combined at group level and for the entire company. The instrument was developed by researchers of the Karolinska Institute in Stockholm. This institute was also involved in the Volvo Burnout program. Within the framework of the IMF project, the university tried to assess whether the previous application of this instrument had resulted in a proper stress assessment; i.e., an overview of risk factors and risk groups.

On June 13, 2003, the local and national coordinators and the university met in Gothenburg for a discussion of the Volvo case. The Work Spirit program was clarified, and the potential usefulness of the Docco instrument for the IMF project was discussed. Furthermore, a communication network was established; copies of all e-mails concerning the IMF project would from now on be sent to the national coordinator as well. She would coordinate, and send overviews to all project participants in the Volvo case. In order to get more information about the Docco instrument and to examine whether the Docco instrument could be useful to the IMF project, the university and the national coordinator consulted the Karolinska institute about the questionnaire. It appeared that the Docco instrument does pay attention to both work and person-related issues in the work environment. Data on the individual level were unavailable but group-level data should be available. The Docco institute was not authorized to make these data and related reports available to the IMF project; only management of Volvo IT was. It was agreed that the local coordinator would attempt to contact the management of Volvo IT concerning the availability of the data and reports.

On December 18, 2003, the national and the local coordinator of Volvo IT met to discuss the progress of the IMF project at Volvo IT. It was decided that the local coordinator would discuss Volvo IT's own Work Spirit program with the personnel manager of Volvo IT in order to get more information about:

- The possible use of the data of the two 'Docco surveys' that had been conducted at the time on behalf of the Work Spirit program for the IMF project; and
- The report concerning the results of these two surveys.

In March 2004 the university had not received information about the possible results of the meeting between the local coordinator and the personnel manager of Volvo IT. Consequently, on March 5, 2004, the university suggested to arrange a telephone conference involving the university, the national coordinator and the local coordinator to discuss, in consideration of the available time left, a more practical project execution. A telephone conference was held on May 15, 2004, during which the local coordinator reported that the management of Volvo IT was interested in an evaluation of their Work Spirit program. Therefore, the university made a proposal in order to evaluate that program (May 2004). This proposal consisted of two parts:

1. A study of documents/reports/data concerning the project; and
2. Interviews with key persons about the program on location (i.e., at Volvo IT).

In July 2004 it became clear that the personnel manager of Volvo IT did not want to take part in this evaluation. The university then proposed to evaluate the Work Spirit program through

a questionnaire. The university developed questions addressing the content and the process of this program (see Annex 2). The union would ask several key persons to answer these questions. The university would then report on these data. In order to provide the local coordinator with extra time to collect the data, the university decided that the information should be sent to the university before November 1, 2004, instead of October 1, as was originally agreed upon in the last report.

On November 5, 2004, the university received an information package from the local coordinator, containing the answers to the questions of the evaluation questionnaire from the consultancy agency Docco. In addition, several members of the local SIF-union gave a joint statement to the questionnaire. The information in the package seems to report on the results of a pilot study at Volvo (it seems likely that the pilot department is the Volvo IT department). Regrettably, the report is not always clear and it does not explicitly refer to the Volvo Work Spirit program; however, it does contain information on the Docco instrument. Unfortunately, much of this information is unclear and, in fact, raises many questions.

Based on our reading of the report of November 5, we can state that the scientific basis of the instrument remains somewhat vague. It is unclear what is being measured and how (risk assessment). It is also unclear how risk factors and risk groups are identified (risk evaluation). There is no comprehensible overview of study results, the report presents no tables or figures in this respect. Two waves of data collection seem to have been executed, but why this is the case is not stated. All in all, it is difficult - if not impossible - for the university to assess the quality of the Docco instrument and the way this instrument is used at Volvo. The report leads us to express some doubts in this respect. It is also impossible to assess the value of the Work Spirit program.

5.2 Evaluation

Within Volvo there are many current programs and policies concerning stress prevention. These programs and policies are mainly aimed at increasing the awareness of stress by management and the employee, and were developed and executed by management in close collaboration with the local union. The Work Spirit program at Volvo IT was embedded within these ongoing stress prevention efforts. The content and execution of this program did not correspond well with the original plan as proposed by the IMF: a new stepwise intervention project was not planned. Instead, by joining the IMF project, the local union primarily wanted to evaluate the existing Work Spirit program.

The union was also involved in the project execution (as a project team member) of the Work Spirit program. Despite this union involvement, negotiations with management about making information on the project available took a long time and did not result in the

type of information needed to evaluate the program. Ultimately, in order to obtain information about the program, a checklist/questionnaire was used. The late response to this checklist/questionnaire arrived in the form of a not optimally informative report on the usefulness of the Docco stress service, an intranet-based stress questionnaire. It appears that this stress service focuses on individual-level rather than on organizational-level risk factors for stress and health complaints, and that the responsibility of dealing with possible risk factors lies primarily with the individual worker. It would seem that this instrument may also be used for assessing work-related risk factors for specific departments or the organization as a whole, but - due to lack of information - it is unclear how this instrument is actually used in practice.

All in all, the lack of information concerning what has actually happened within the framework of the Work Spirit program at the Volvo IT department made it difficult for the university to evaluate this program. Stated differently, by joining the IMF project the union had hoped to receive answers to the questions formulated in Section 5.1.4. Due to a lack of relevant information, at this point these answers cannot be given.

CHAPTER 6
SWEDEN, ASSA AB

6.1 Step 1: Preparation

6.1.1 Introduction

ASSA AB was founded in 1881 by August Stenman. At that time the company produced mainly hinges and screws. In 1946 the first lock system based on 5-pin cylinders was delivered; one year later the production of a 7-pin cylinder started. In 1951 the license production of ASSA Keys started, and locks became ASSA's main product. In 1990 the company was divided in two separate companies; ASSA AB and ASSA Industri AB. In 1994 ASSA ABLOY Group was founded. ASSA ABLOY Group develops, produces and markets mechanical, industrial, electromechanical and electronic locks as well as hotel locks, fittings, exit devices and accessories. The Group comprises 100 companies in 40 countries and employs more than 30,000 persons. ASSA AB develops, manufactures and markets locks and security systems for doors and windows for construction projects and the residential market. The production takes place in Eskilstuna and Lycksele in Sweden. In Eskilstuna, the place of business where the IMF project was planned to take place, 390 employees are working. About 150 of them are white-collar workers.

6.1.2 Labour relation system

The Swedish trade union that participates in the IMF project is SIF. SIF organizes white-collar employees in the technology and knowledge-based sectors of the labour market. SIF's members work in the private sector in companies that operate in areas such as information technology, telecom, construction, manufacturing and research & development.

The relation between the union (SIF) and management of ASSA AB agrees with Swedish laws and collective agreements. There is employee representation within the Board of Directors of the local companies of ASSA ABLOY Sweden and employee representation within the ASSA ABLOY Board of Directors. Within ASSA ABLOY a European Works Council exists; shop stewards from the ASSA ABLOY companies in Europe exchange experience and information. Each local company within the ASSA ABLOY Sweden has its own local working environmental organizations. Within ASSA AB three committees deal with the work environment:

- The *Working environment committee*. This committee includes representatives from the management, the local unions and the occupational health service. The committee meets every second month. In between these meetings a smaller group consisting of three persons meets once a week. It deals with the everyday issues that occur between meetings. Furthermore, this small group is an open meeting point for anyone in the company with a problem or ideas regarding the work environment. The small group reports to the working environment committee;
- The *Working Committee*. This committee includes representatives from the management and white- and blue-collar workers; and
- A committee working on *rehabilitation programs*. This committee includes representatives from the management, unions and industrial health service.

6.1.3 Organization of the local IMF study

On the national level, the national coordinator of SIF, Carina Lindström, was responsible for the contacts with this national case study. In addition to the national coordinator, on the local level two local coordinators (Gösta Johnsson and Marianne Björklund) represented the union. They were the in-company contacts for the IMF project.

6.1.4 Motivation to participate

According to the local coordinators, the work situation at ASSA could be described as follows. Due to reorganisations towards a slim organization, the employees had to work under pressure and worked many hours of overtime. Employees got more and more responsibilities and received much - sometimes irrelevant - information. According to union spokesmen, leadership was poor and the need for participation and control by the employees was growing. As a result of this situation the work atmosphere was irritated and conflicts arose. The union observed common dissatisfaction among the employees and a negative attitude towards their employer. Furthermore, the employees seemed to feel a lack of power and initiative.

According to the local union many employees were suffering from stress. When employees got sick as a result of stress, the management was reported to handle this as an individual-level problem, and did not seem to know how to prevent stress-related problems. By joining the IMF stress intervention project, the union aimed at getting useful measures or tools (such as questionnaires) to be used within the company for annual investigations concerning the work environment, the work situation, the psychosocial work environment, and so forth. These tools would give the union the opportunity to detect the ‘real problem areas’ in

the company. Furthermore, the IMF project could follow up another project, the 'AMBIV' project, which had been carried out at this company in 1988. The AMBIV project was a national project that was conducted in several companies in Sweden. It was a joint project between the blue-collar union, the company and the University of Linköping, Sweden. The main focus of the AMBIV project was the blue-collar workers and their physical work environment. The motives for the project were the increasing number of workload injuries and the increasing absenteeism in the engineering industry. Recommendations of the AMBIV project concerned mainly technical and ergonomic solutions and the increase in efficiency in the company. In addition to the physical focus of the AMBIV project, the union now wanted to focus on the psychosocial work environment as well.

By joining the IMF project the union hoped to get an opportunity to compare the results of the IMF project with the results of the local AMBIV project at ASSA. In order to do so, the local union selected the departments that also participated in the AMBIV project to join the IMF project. These departments were:

- R & D Department;
- Production Managers;
- Marketing Department;
- Lock System Administration; and
- Technicians in Production.

The potential target group consisted of approximately 150 employees, mainly engineers and administrative workers.

6.1.5 Project execution

At the start of the project (June 2002) the attitude of management towards the project was positive. In fact, the managing director, the staff group and the local coordinators agreed to participate in the IMF stress project. However, no written agreement was made at that moment. At the same time, the management expressed some concerns about the workload that execution of the project would bring along in addition to the already high workload and the work situation of the local coordinators. The two local coordinators were interested in the project and were positive towards participation. On the other hand, the employees had a negative attitude towards the employer. According to the union there was dissatisfaction and a lack of initiative.

In September 2002 a reorganization took place at ASSA. As a result, the position of one of the local coordinators at the company changed. This local coordinator became very busy in his new job and could hardly find the time to execute the IMF project. In addition this local coordinator resigned from his position as SIF chairman at ASSA. A new chairman was chosen and new members joined in the local union. In the meantime the two local coordinators tried to find other trade union members that were able and willing to work for the local IMF project. At the beginning of February 2003 another reorganization took place, 11 white-collar workers and 25 blue-collar workers were dismissed. Furthermore, there were changes at the top management, including the appointment of a new president at ASSA. According to the local union, this change of management did not affect the attitude of management with respect to the IMF project. However, the local coordinators could still hardly find the time to work on the project. Other trade union members that were able and willing to work for the project could not be found either. Thus, no project team to support and coordinate the execution of the IMF project could be set up. In February 2003 the local union decided to withdraw from the IMF project.

6.2 Evaluation

Due to reorganizations and the heavy workload of the local coordinators, hardly any time was left to execute the IMF project. No other union members were able and willing to work for the project either. Therefore, the project had to be cancelled.

CHAPTER 7
DENMARK, DISA INDUSTRIES A/S

7.1 Step 1: Preparation

7.1.1 Introduction

DISA Industries was founded in 1900 as Madsen Riffel Syndikat and produced weapons. In 1950 new international legislation and restrictions caused a decline in the weapon industry and in 1956 the weapon production at DISA was ended. New products were developed and in 1961 DISA acquired a Danish patent for a device for vertically parted sand moulds. In 1995 a merger between DISA and one of its competitors, Georg Fischer, took place; the Georg Fischer DISA Holding was created. In 2000 DISA bought out Georg Fischer and the new companies name became DISA Industries A/S. DISA industries A/S Denmark is part of DISA Group. DISA Group has 24 companies worldwide and employs around 2,600 people. The Disa Group itself belongs to A.P. Møller Maersk Group. DISA Industries A/S is domiciled in Herlev, Denmark and produces foundry systems, moulding machines, core systems and shot blast systems. DISA industries A/S employs 473 workers, 115 of which are engineers.

7.1.2 Labour relation system

The Danish trade union that participated in the IMF project is the Central Organization of Industrial Employees (Co-Industri). Co-Industri unites 12 Danish unions. The relation between the DISA management and Co-Industri is in accordance with collective agreements. Every two months the union and the local company board meet to exchange information. Each local company has its own health and safety organization. At DISA Group level a European Works Council is present and meets once a year. During this meeting, shop stewards from all European DISA companies exchange experiences and information. Only the blue-collar workers are represented in the European Works Council because of the low organization rate of the white-collar workers. An employee representative is a member of the company board, at the local as well as the Group level. Finally, at DISA industries A/S 90% of the technicians and 30% of the office staff are organized. The blue-collar workers are all organized.

7.1.3 Organization of the local IMF study

On the national level, the national coordinator of Co-Industri, Peter Dragsbaek, was responsible for the contacts with the national case study (i.e., the local level). IMF-Geneva and the University of Nijmegen dealt primarily with the national coordinator. In addition to the national coordinator, the local coordinator, Per L. Soerensen, represented the local union, forming the in-company contact for the IMF project. From the local level, information was transferred to the university.

7.1.4 Motivation to participate

According to the local union the work pressure was high. Work had to be done faster and cheaper. Many employees worked overtime, part of the group (mainly engineers and supervisors) worked on average 50 hours a week. In addition to the heavy workload, employees were reported to receive more and more responsibilities. Furthermore, the management was focusing on the technical and administrative positions in the company, with an eye to outsourcing this work to low-cost countries. This could have serious consequences for the respective white-collar workers: they might lose their job as a result of this action.

By participating in this study the local union wanted to investigate the work pressure at DISA industries A/S and compare it internationally. In addition, the union wanted to develop new ideas to reduce and prevent stress consequences such as health complaints. For a start, the union expected support from their colleagues in order to stimulate the internal discussion about stress. It was also expected that the management would participate in such discussions and cooperate in finding solutions. At the start of the project (June 2002), the attitude of management towards the project was passive because it was unaware of the problem. The absenteeism percentage was low (2.2% for white-collar workers and 3% for blue-collar workers).

As potential target group for this project the union selected the employees of three departments. These departments were:

- the Research and development department;
- the Project department; and
- the Production department.

The members of the target group were engineers (60) and technicians and draftsmen (45). Ninety percent of the target group were male. These departments were chosen because of the

high organization rate of the employees. In Annex 3 an organization chart is given in which the target group departments are marked.

7.1.5 Project execution

On October 15, 2002, the works council and management met to discuss the IMF stress intervention project. The management was enthusiastic about the project. In fact, the management wanted to involve *all* employees (i.e., both white and blue-collar employees), but at that time no final decision was taken concerning the project. The next meeting was planned for December 19, 2002, and then the decision about the IMF project would be made. In December 2002 a reorganization took place, one third of the factory was closed down and 85 employees were dismissed, 40 of them were white-collar workers. Several departments were merged into one new department, including the three departments of the target group. This decision was taken by the management, failing to inform the union properly.

Due to this reorganization, the management had other priorities and the decision concerning the IMF project was postponed. The next meeting of the works council and the management was planned for the 27th of February 2003. In the meantime the union had other priorities too; protection of the interests of the dismissed colleagues came first. The union organized strikes among the blue-collar workers and the relationship with management deteriorated. The shop stewards were excluded from the monthly meeting sessions between management, leaders and foremen because the leaders and foremen did not want to discuss confidential managing problems with the shop stewards. From that moment on, the shop stewards only received the minutes of the meeting, without confidential information.

On February 27, 2003, it became clear that management would not support the IMF project. The management had lost interest in the project and preferred a quicker and cheaper investigation using its own internal questionnaire. (This questionnaire was developed by the A.P. Møller Company itself and has been used in other companies around the world. This questionnaire has not been presented to the union and still has not been distributed.) As of that moment, the union decided to carry out the IMF project on its own because it was not satisfied with the investigation of the working conditions as management then planned it. By joining the IMF project the union expected to get tools to show the management that this investigation could be done in a better way. On the 2nd of April, 2003, the national coordinator of Co-Industri, the local coordinator of DISA and the researcher of University of Nijmegen (IJ) met in Copenhagen to discuss further steps concerning the execution of the IMF project without the support of management. It was decided that the Copenhagen Psychosocial Questionnaire (middle version) would be used as diagnostic instrument. This questionnaire had been developed at the Danish national institute of occupational health (AMI). Further-

more, it was decided that the coordinators would complete the preparation phase (i.e., introducing the project to the employees and trying to get their support; formation of an internal project team). Finally, the first steps of the diagnostic phase were briefly discussed.

After the meeting in April 2003 in Copenhagen, the local coordinator tried to set up a project team to carry out the project. In addition, the local coordinator tried to find white-collar employees who would like to participate in the project. However, according to the union the spirit and hope among all employees were (and still are) very low, because of the reorganization and the dismissal of employees. In this atmosphere, the local coordinator could not get enough local union members to support the IMF project. He did not succeed in the formation of a project team. He could not find enough white-collar workers willing to participate in the project. Thus, at the beginning of September 2003 the local union decided to withdraw from the project.

7.2 Evaluation

Due to reorganization, which led to the dismissal of employees, the climate and priorities within the company changed. The management that had been enthusiastic at the beginning no longer showed interest in the IMF project; the employees lost their interest too. The local coordinator could not get support for the project, neither from management nor from the employees. Finally, the union decided to cancel the project.

CHAPTER 8
THE NETHERLANDS, CORUS GROUP, COLD MILL 2

8.1 Step 1: Preparation

8.1.1 Introduction

Corus group resulted from a merger between British Steel and Koninklijke Hoogovens (October 6, 1999). Its headquarter is situated in London and has 24 business units worldwide. The business unit system is a cross-border structure that is strongly focused on product-market combinations. Sixty-two thousand employees are working at Corus. The Corus Group produces steel, stainless steel and aluminium for the construction industry, the packaging industry, the transport sector and other industries (furniture, optics). There have been several reorganizations since the merger, due to a poor market and poor operational performance in the UK in particular, but also temporarily in the Netherlands.

In this study a part of Corus Group is involved, i.e., the Cold Mill plant 2 at IJmuiden, the Netherlands. Cold Mill 2 started production at 1971 and is part of the business unit Corus Strip Products. Cold Mill 2 produces sheets of steel mainly for cars, covers for domestic equipment and oil drums. There are two production units that work continuously within a 5-shift schedule. At the Cold Mill 2 approximately 750 employees are working. Among them there are approximately 140 white-collar workers; only 5 of these are women (see organizational chart, Annex 4).

8.1.2 Labour relation system

The Dutch trade union that participated in the IMF Project is FNV Bondgenoten. FNV Bondgenoten organizes employees and people entitled to social benefits in the industry, service industry, transport business and food industry. A central aim of the union is the general protection of interests of their members. With management, a collective agreement on working conditions for the 2002-2004 period for the Social Unit Corus IJmuiden had been decided upon. Part of this agreement was the renewal of a previous agreement (April 1999) in which it had already been decided to carry out a stress assessment.

Since the 1999 merger, a new European works council has been set up. It is a combination of two different systems (UK and European system). A trade union official (UK) is a member of the Corus European work council's executive committee. Within Corus Group there is a system of works councils but the Cold Mill plant 2 has no works council. At the

Cold Mill plant 2 about 40% of the employees are organized in FNV Bondgenoten (10 shop stewards). Cold Mill 2 has its own Health and Safety committee.

8.1.3 Organization of the local IMF study

On the national level, the national coordinators of FNV Bondgenoten (Jan Warning and Jos Duynhoven) were responsible for the contacts with the national case study (the local level). IMF Geneva and the University of Nijmegen dealt primarily with these national coordinators. In addition to the national level, the local coordinator (Klaas Zwart) represented the union. He was the in-company contact for the IMF project.

8.1.4 Motivation to participate

In 2002 a collective agreement on working conditions 2002-2004 for the Social Unit Corus IJmuiden, including Cold Mill 2, has been made. Part of this agreement was the renewal of the agreement to carry out a stress assessment, first included in the general agreement of April 1999. In June 2002 this assessment had not yet taken place. By joining the stress project, the union wanted to materialize the previous agreement and carry out a stress assessment. Cold Mill 2 had never been involved in a stress prevention project. By joining the IMF project the union hoped to stimulate research on the causes of stress at Cold Mill 2, which could potentially lead to a reduction of stress.

Due to reorganizations many improvement projects and changes had been implemented at the Cold Mill 2 in a short time. According to the union, the high rate of change was a major stress factor for the employees. Furthermore, the 'just in time' production philosophy was said to cause extra time pressure, especially for the Cold Mill 2 employees because these are positioned at the end of the production line. According to the union, the attitude of management had changed; since the merger the employees felt less supported by management. Finally, the employees had to work hard because less personnel was available due to the reorganizations, whilst the production had to increase.

8.1.5 Project organization

The management of Cold Mill 2 agreed to conduct a stress intervention project but would like to involve all employees of Cold Mill 2 (673 white and blue-collar workers) and not only the white-collar workers, as proposed in the IMF project. In fact, the management seemed little

interested in the white-collar workers. Furthermore, the manager of Personnel and Organization (P&O) of Cold Mill 2 (the intended project leader) insisted on one focal point concerning project execution. He did not want two contact persons, e.g., the university/union regarding the white–collars and someone else for the other employees. Therefore he decided to contract an external bureau (named "Castor Fiber") for the overall project execution. According to this P&O manager, the national coordinator of the union would be a member of the project team, and he would also be the contact person for the university regarding the IMF project.

In December 2002, a project team was installed. The project team included a member of the central Human Resource department of Corus, the manager of the Personnel and Organization department of Cold Mill 2, two consultants of the external bureau and a representative of the union (FNV Bondgenoten), who was also the national coordinator of the Corus case in the IMF project. The manager of the Personnel and Organization department of Cold Mill 2 was the project leader. The team was an advisory board that would advise the project leader about the contents, progress and possible adaptations of the project. In December 2002 an agreement in writing about the project was submitted by the project leader. In this agreement it was stated that:

- The team would be an advisory board;
- Meetings would not be arranged following a particular scheme, but according to the need for a meeting. Meetings would be initiated exclusively by the project leader;
- The aim of the project had been described to each participant separately:
- The aim of the management of Cold Mill 2 was to investigate the factors that directly affected the workload of the employees, and to formulate recommendations regarding control of work pressure;
- The aim of the union had been described as: execution of a survey regarding work pressure as agreed in the collective agreement, with the so-called ‘Quick Scan Werkdruk’ as instrument (‘Werkdruk’ is Dutch for work pressure);
- The aim of the university was described as: to obtain the data of the Quick Scan Werkdruk for the IMF project.

Further agreements about the reports and the results were not detailed in this agreement. During the first meeting of the project team this agreement was discussed. According to the union the results of the first meeting were:

- Corus and the union would receive a dataset of the survey. The union would send it to the university;
- The project leader would send data about sickness absence to the union. The union would send these to the university as well;

- The project leader emphasised the fact that Corus had commissioned the external bureau (Castor Fiber). If the union would observe problems concerning the project execution, the feedback group (see below) was authorized to comment;
- The national coordinator underlined the fact that the project did not only consist of a survey study. Implementation of measures and evaluation were also part of the project. The project team members agreed in this respect;
- All employees would receive a questionnaire (not only a sample of the employees); and
- The national coordinator would inform the university about the developments of the project (e.g., by sending reports, data, minutes of meetings).

The national coordinators informed the university about the agreement and the results of the first meeting in January 2003.

In addition to the project team, a so-called feedback group was set up. A former 'study group' engaged in issues concerning work pressure became the feedback group for this project. The eight members of this group were representatives of the employees, the unions (FNV, CNV, Unie) and the employer, a member of the central Human Resource department of Corus and the manager of the Personnel and Organization department of Cold Mill 2. The local coordinator was a member of this group. The member of the central Human Resource department of Corus chaired the feedback group. He was also a member of the project team. This feedback group would see to the execution of the project. The members of this group would inform the employees about the contents and the progress of the project.

The employees were informed about the project by an article in the staff magazine (March 2003). Besides that, the project team decided to launch a special magazine 'De Werkdrukkrant' ('Work pressure journal'). This magazine would keep the employees informed about the project and its progress. The magazine was sent to the home address of all employees of the Cold Mill 2.

8.1.6 Target group

The target group in the IMF project consisted of all 673 employees of Cold Mill 2.
The employees were working at the following departments:

- Quality management, safety environment (22);
- Local production scheduling (10);
- Technology Development and Product Release (24);
- Administration and controlling (10);

- Personnel and organization (10);
- Production unit 1 (250); and
- Production unit 2 (347).

Each production unit consisted of five production teams that worked in a 5-shift schedule.

8.2 Step 2: Diagnosis

In order to get a clear impression of the work situation of the employees of Cold Mill 2 and the possible consequences of this work situation, a study was conducted. This study was carried out by the external bureau involved in the project (Castor Fiber). It consisted of two parts: a preliminary study and a survey study.

8.2.1 Preliminary study

The external bureau, Castor Fiber, carried out a preliminary study that preceded the main survey. This study consisted of interviews and an analysis of sickness absence statistics.

The interviews
In January 2003 the interviews were conducted. The consultants of Castor Fiber interviewed 21 key persons from different levels within the organization (2 team coordinators, 4 chefs, 1 rayon manager, 3 unit managers, 1 union member, 1 works council member, 1 employee of the personnel department, 1 'coordinator' sick leave, 1 psychologist, 1 occupational health physician, 3 healthy and 2 sick employees). The purpose of the interviews was to collect information on the perceived workload, possible risk factors and the possible consequences of workload. Furthermore, by interviewing the employees, the researchers tried to raise commitment to the project and to increase motivation for the implementation of measures in a later phase of the project. Main topics of the interview were the general and personnel policy of the organization, working conditions, work organization, work motivation and satisfaction.

Results of the interviews
On January 26, 2003, Castor Fiber presented the results of the preliminary study in a report to the project team. Based on the same results a draft questionnaire was presented. The national coordinator sent the report and the draft questionnaire to the university in February 2003. The results mentioned below are based on the results of the preliminary study, as reported by Castor Fiber (January 2003). As the university was neither involved in this study nor in the

report, the university cannot guarantee the quality or correctness of the results. The results of the interviews as presented in Castor Fiber's report were:

General and personnel policy

- Personnel policy is not well integrated in the operational management (inadequate replacement of sick employees, understaffing, policy regarding aging);
- Education: Employees are getting over-educated. There are few promotion prospects and employees cannot use their newly acquired knowledge and skills in their current job;
- Remuneration policy: Employees are dissatisfied with their remuneration; and
- Safety policy: According to the employees, this policy is sometimes dysfunctional.

Situation at the place of work

- Understaffing: The teams have become smaller and have reached the bottom limit;
- Physical workload is heavy, there are peaks at work;
- Self-regulation in the teams is not clear, roles are sometimes ambiguous;
- Many decisions are taken top-down;
- Leadership in the production teams is poor;
- Poor communication; and
- Team spirit is good.

Work motivation and satisfaction

- Decreasing employee motivation, due to growing dissatisfaction with management;
- There is a culture of 'learned helplessness' at Cold Mill 2: the employees take little responsibility and are very passive;
- There is dissatisfaction and low commitment among employees.

Conclusion: According to the report the personnel management concerning sick leave, aging, safety, remuneration and staffing could be improved. With respect to their work, the respondents reported physical workload, ambiguities of roles within the self-regulating teams, poor leadership, and poor communication. Finally, the respondents reported dissatisfaction, low motivation and low commitment.

Analysis of sick leave statistics

Castor Fiber also studied sickness absence statistics to examine whether there was a connection between certain types of sick leave and workload and whether there were differences between subgroups. These results were also presented in their report on the preliminary study.

Again, the university can not guarantee the quality of the outcomes. The most notable findings of the Castor Fiber report were:

- In 2002 the percentage of absenteeism at the Cold Mill 2 was 6.8%;
- There are major differences between subgroups and departments in absenteeism (varying from 0% to 19%);
- Of all absence days, 69% concerns long-term sickness (> 41 days), whereas 74% of all cases last less than 8 days;
- In 2001 2% of absenteeism was registered as work related absence;
- The absence percentage among white-collar workers was 2% (2002); and
- According to Castor Fiber, there was no relation between certain types of sick leave and workload.

Conclusion: According to the report there are large differences in absenteeism rates among subgroups and departments. The absence percentage among white collar-workers is low.

8.2.2 Survey

Introduction

In order to further analyse the relations between the employees' work situation and their health and wellbeing, Castor Fiber carried out a more detailed survey study as a follow-up to their preliminary study. In the collective agreement on working conditions 2002-2004 for the Social Unit Corus IJmuiden it had been agreed that the questionnaire to be used in the survey would be the 'Quick Scan Werkdruk', which had been developed by the national union FNV Bondgenoten. Based on the preliminary study, Castor Fiber developed additional questions.

In January 2003 a draft questionnaire was constructed. After comments on this draft version by the project team and (via FNV Bondgenoten) the University of Nijmegen, the final questionnaire was developed. This questionnaire consisted of the 'Quick scan Werkdruk' and included 100 additional questions developed by Castor Fiber. The questionnaire is largely based on various groups of related questions (scales). The questionnaire paid attention to work aspects such as job content (workload, autonomy, physical, mental and emotional workload, organization of the work), social context (leadership, communication, and cooperation), working conditions and terms of employment. With respect to employee health and well-being, questions about satisfaction, fatigue, health, commitment, motivation, coping style, work-home interaction, home-work interaction and private circumstances were included. Unfortunately, to date the university has not received a copy of the final questionnaire used in the survey.

Data collection and analyses

All employees received a letter in which the project was introduced, and in which they were invited to fill out the questionnaire. In April-May 2003 the employees completed the questionnaires. Right before or after working time, they were asked to come to the congress centre (IJmuiden) where they -- if necessary -- were assisted in completing the questionnaire by two researchers of Castor Fiber. The completed questionnaires were collected by these researchers. Employees who did not show up the first time received a second invitation letter. Since one of the objectives of the study was to combine self report and absence data, taking part in the survey study did not take place anonymously.

Analyses

Castor Fiber took care of the analyses. The data of the Quick Scan Werkdruk was also analysed by a second external bureau that administers the Quick Scan Werkdruk (Humatix). The University of Nijmegen received the data pertaining to the Quick Scan Werkdruk from Humatix in November 2003. Unfortunately, these data could not be analysed due to lack of information. The other bureau (Castor Fiber) claimed ownership of all data and was unwilling to share their data with the university. Thus, the university did not receive the full data set.

8.2.3 Results

8.2.3.1 Introduction

In October 2003 Castor Fiber wrote a draft report on the results of their analyses of the data. This report was discussed in the project team. According to both the union and the university, the report included a poorly organized description of the results. Consequently, verification and interpretation of the results was virtually impossible. Furthermore, the report presented no less than 51 recommendations. After discussion about the interpretation of these results, the project team decided to continue the project on the basis of the results presented in the draft report. In January 2004, the final report on the diagnosis was handed over to the project team, the management team of Cold Mill 2 and the feedback group. The feedback group also complained about what they considered to be the poor quality of the report. The group demanded a clearer overview of the results and the recommendations, which was given by the project leader in cooperation with Castor Fiber.

After the report had been discussed in both teams and in the feedback group, the project leader (manager personnel and organization Cold Mill 2) dissolved the project team,

arguing that the study had been completed. The project leader also sent the unit managers the results of the survey concerning their unit.

8.2.3.2 Results as described in the Castor Fiber report

The findings mentioned below are based on the results in the report on the survey study made by the external bureau (January 2004). As noted above, the university did not execute the study and was not involved in writing the report. According to the university the results in this report were poorly described and organized. Verification and interpretation of these results were not possible, meaning that the university cannot guarantee the quality of the study outcomes.

Response group

Ninety one percent of the employees ($N = 611$) completed the questionnaire. According to the report, the respondents were well distributed among the participating departments and subgroups. The distribution concerning the personal data (age, gender, education etc.) of the response group is reported to be comparable to that of the target group. Therefore, the response group seems representative of the target group. Sixty five per cent of the respondents are older than 40 years, 30% of them are older than 50, 26% is between 30 and 40, whereas 9% is younger than 30. As regards the level of education, 67% has a lower education, 21% has a medium level of education and 12% holds an academic degree.

Conclusion of the report: The response to the questionnaire is high (91%) The mean age of the response group is relatively high and the respondents are mainly low educated. The response group seems to be representative of the total group.

Work content

According to the report, the workload of the employees was relatively low whereas the mental load was rather high. The employees must work with much precision and the work demands continuous attention. Perceived autonomy is low: the employees report that they have hardly any influence on the planning of their work and can hardly participate in decisions concerning the execution of their work. Physical and emotional workload are low. Finally, the employees reported that the work is not evenly distributed over the day and over the working week.

Social context

The employees reported that their relationship with their manager is bad; they feel hardly appreciated by their manager. Sometimes they feel that their manager does not treat them fairly. Feedback is sometimes given but in a rather ‘negative way’. Leadership styles are

described as being mainly task-oriented. Furthermore, the communication and information flow are inadequate. The commitment of the employees towards the company is low, whereas relationships with colleagues are good.

Terms of employment
The report indicates that the employees are dissatisfied with their remuneration and career possibilities. Furthermore, the employees are dissatisfied with the policy concerning older workers and the replacement of sick employees.

Working conditions
The report does not mention specific problems regarding the working conditions. The safety policy is considered to be adequate.

Health and well-being
In general the employees are satisfied with their job. They seldom reported any health complaints and, generally, they are not fatigued. The interference from home to work is low, as is the interference from work to home.

Differences between departments and subgroups
Analyses of the results of the different departments and different groups were conducted. There are differences in the quality of leadership, motivation, satisfaction and health among departments. With respect to the different groups, an unclear role of the team coordinator has been reported. Furthermore, the direct leaders (team coordinators, 'chef van wacht') reported a relatively high number of health problems. Finally, some groups (i.e., the higher management) reported to do a lot of overtime.

8.3 Step 3: Choice of measures

Castor Fiber's report included a long list of recommendations. However, due to the poor quality of the report it was hard for the university to see on which results these recommendations were grounded. Therefore, the university could neither evaluate the relevance of these recommendations nor establish their relative priorities.

Based on this report, the project leader made a choice of measures and established priorities among them. Neither the union nor the works council was consulted in this process. The project leader together with Castor Fiber presented the chosen measures to the Social Unit IJmuiden in February 2004. On June 8, 2004, Castor Fiber showed the survey results and the chosen measures to the so-called 'Top 50' of the Cold Mill 2 (including all managers of

Cold Mill 2 and some advisors of the personnel and finance departments). Leadership was the main topic of this presentation. This presentation identified the three most important negative results of the survey as leadership-related (i.e., poor leadership; appreciation was hardly given and poor communication; and the leadership style was task orientated). The main positive results mentioned were: low work pressure, general satisfaction, low fatigue levels, and low level of work related health complaints. Finally some differences between groups were presented (related to units, gender, ethnicity, and age). The measures concerned mainly leadership and the policy regarding personnel and absence.

A copy of this presentation was sent to the members of the feedback group, together with an overview of all recommendations. The union members and employee representatives of the feedback group wrote a comment on this information, in which all recommendations were evaluated with respect to relevance and priority. Furthermore, an implementation plan was proposed. On June 24, 2004, this comment was discussed during a meeting of the feedback group. On September 30, 2004, a further discussion was scheduled. This meeting had been postponed due to the deteriorated relationship between management and union as a result of union actions against certain plans of the Dutch government.

The *short-term measures* chosen by the project leader were:

- Improvement of leadership style;
- Improvement of communication of the managers;
- Further analysis of absence figures;
- Analysis of overtime; and
- Improvement of policy regarding remuneration.

Long-term measures were:

- Investigation of the amount of autonomy at work;
- Improvement of policy concerning personnel (job evaluation, seniority, education, replacement of workers in case of illness);
- Analysis of mental workload; and
- Improvement in personnel selection procedures (regarding coping styles and locus of control of new employees).

Furthermore, some measures with respect to particular groups of leaders were chosen. With respect to the position of ‘team coordinator’ a redefinition of task and role would be made.

Regarding the position of 'Chef van Wacht', further analysis of their health and well-being would be conducted.

8.4 Step 4: Implementation of measures

The project leader was responsible for the implementation of the measures. The union was not consulted about the method of their implementation. Similarly, the project leader did inform the feedback group about his plans concerning the implementation of measures, but at that time it had already started. Implementation of the following measures started before October 2004.

- *Overtime.* Employees of the personnel department discussed the results of the 'overtime monitoring' with the direct managers;
- *Sickness absence.* The project leader asked the direct managers to further analyse the sickness absence rates of their department. The employees of the personnel department would support these managers during the implementation of their absenteeism policy; and
- *Leadership.* Workshops are being given to the management team. These workshops aim at describing competences regarding leadership. An external advisor is responsible for the workshops.

The unit managers received an overview of the results of their department on the survey. These results are being/will be discussed with the unit manager during a workshop on leadership (currently scheduled for late 2004). This workshop will be conducted by an external advisor as well.

8.5 Evaluation

The project is still in progress and has not yet reached Step 5 (the evaluation phase). Therefore, at present a final evaluation cannot be given. The project leader described his plans for his evaluation of the content and process of the project during an interview with the university (July 1, 2004). According to the project leader, this evaluation will take place at the management level, i.e., the action plan of each manager will be evaluated with the manager in question. These action plans have as yet not been made. The project leader will not carry out a second measurement (a second survey among the employees). However, the union is currently planning to do it.

Although the project has not been finished yet and therefore cannot be evaluated in full, we believe that project execution faced some stimulating and obstructing factors. According to the university, stimulating factors were

- The collective agreement on working conditions 2002-2004 included an agreement to carry out a stress assessment. As a consequence, the company had to fulfil its obligations with respect to execution of a stress assessment;
- Sustained support from management. The manager of the personnel department of the Cold Mill 2 was strongly committed to the execution of the project. This manager is the project leader for the stress intervention project and chairman of the project team; and
- To some extent: the installation of a feedback group. This group commented on the quality of the report on the results, which provided a better overview of the poorly presented report on the survey results. This group also discussed the chosen measures. The outcome of this action is not clear yet. Notwithstanding this positive point, the university believes that the influence of this feedback group was very limited.

There were also some factors that we consider more or less obstructive for the project execution and for the union. These include

- The coverage of the agreement about the project made by the project team. The original agreement did not cover the whole project, but only the second step (the diagnosis phase). Adjustments of the agreement had been discussed during the first project team meeting, but were never put down in writing. As a result, the project team did not support the project as a whole (including choice of measures, their implementation and the evaluation);
- The quality of the survey. The questions that Caster Fiber added to the final questionnaire mainly addressed leadership (17) and policy (15), and included 'person oriented' questions such as motivation (4), coping (8), private circumstances (20), and commitment (18). Although the results of the preliminary study had revealed possible problems regarding the work content and working conditions, hardly any additional questions concerning these topics were included. The 'Quick Scan Werkdruk' provided these questions in a rather general way, i.e., not specific to this target group. Risk factors concerning the work content and working conditions were underrepresented in the survey;

- The quality of the report on the results of the survey made by the external bureau. This report presented a poorly organized description of the results. As a consequence, verification and interpretation of the results was hardly possible;
- The report on the survey listed many recommendations. Again, due to the poor quality of the report it was hard to infer on which results the recommendations were based. Therefore it was impossible to evaluate the relevance of each recommendation or to establish the priority of these measures;
- Early dissolution of the project team. After the second step (diagnosis) the project team was disbanded. Because of this, the union lost direct influence on further project execution;
- No participative approach. The project leader made the decisions concerning the choice of measures and the implementation of the measures on his own. Neither the union nor the employees were consulted;
- A bias with respect to the results and recommendations: measures mainly addressed leadership style and not so much the job content and/or working conditions;
- The project leader did not timely inform the feedback group. As a result, the feedback group could not react adequately on the developments of the content and process of the project; and
- Although the university repeatedly and persistently tried to collect relevant information, this information was not or hardly provided. Therefore, the university could not carry out its task properly.

8.6 Conclusion

An intervention project has been (and still is being) carried out at Cold Mill 2, but the content and the execution of the project did not correspond with the original plan as proposed by the IMF.

One difference was that in the project at Cold Mill 2 all employees were included and not just the white-collar workers, which was the target group in the IMF proposal. However, this did not need to be a problem.

More importantly, an external bureau was responsible for the execution of the diagnosis phase. Unfortunately, the quality of this diagnosis was low and did not result in a proper overview of risk factors and risk groups.

Moreover, the project was management driven. The project leader rarely consulted other parties about the project execution. The project leader did not assign a role to the union or the university; these were hardly, if at all, involved in the project. As a consequence, the union could hardly influence the project; similarly, its striving to have it otherwise notwithstanding, the university was kept almost fully out of play.

CHAPTER 9
SUMMARY OF SIX CASES, DISCUSSION, CONCLUSIONS

9.1 Introduction

The aim of the IMF-project was to carry out, analyse and evaluate intervention projects in six metal companies located in four different countries, and to present the outcomes and the lessons drawn on these intervention projects in a report. First each case will be systematically summarized (9.2). Next, various critical issues will be discussed (9.3). In Section 9.4 we will formulate some conclusions. Finally, in Section 9.5 we will introduce some practical instruments that may be used by IMF-affiliates who want to address and assess occupational stress (see Annexes 5-7).

9.2 Summary of the six cases

9.2.1 Germany 1

Step 1: Preparation

Motive:

To investigate the workload and to identify stressors.

Organization:

No management support. The local union set up a project team (union members only) and started the project.

Union-management relationship:

Management's starting point was to deal only with union members who were also members of the works council, not with the participating union itself. Difficult start. It took a long time before it became clear that there would be no management support.

Target group:

Engineers

Step 2: Diagnosis

Responsibility:

Project team supported by University of Nijmegen

Instruments:

Questionnaire addressing work content, social relations at work, terms of employment, working conditions and employee health and well-being.

Risk factors:

Heavy workload, high mental workload, poor information flow, poor communication and feedback, poor cooperation and organization of the work. Much overtime, various ergonomic problems, high levels of health complaints and work–home interference. However, due to low response rates, these results can most probably not be generalized to the target group as a whole.

Risk group:

Respondent group, i.e., engineers (however, response rates were low; results probably do not present a representative picture).

Evaluation of the project until now

Stimulating factors:

- Perseverance of the local coordinator;
- Sustained support from the works council and other union members;
- Support from the so-called 'Verbindungsleute'.

Obstructing factors:

- No agreement with management at the start of the project (June 2002);
- Negotiations with management took a long time;
- No management support;
- Relatively weak power position of union within the company;
- Low organization rate at IG Metall;
- Deteriorated economic circumstances had repercussions on the situation in the company;
- Little support from employees, due to changing economic circumstances, heavy workload, and lack of time; and
- Low response to the survey.

Step 3, 4, and 5: Unknown (not yet carried out).

9.2.2 Germany 2

Step1: Preparation

Motive:

To investigate the workload and to identify stressors.

Organization:

Management at first agreed to participate but did not actively contribute to the project. The local union set up a project team (union members only) and carried out the project.

Union-management relationship:

Management initially agreed to participate. Further negotiations then took a long time. Finally, the personnel department did not want to support the project. The local union decided to carry out the project on its own, set up a project team (union members only) and started the project.

Target group:

Designers

Step 2: Diagnosis

Responsibility:

Project team, supported by University of Nijmegen

Instruments:

Checklists and questionnaire on work content, social relations at work, terms of employment, working conditions and employees' health and well-being.

Risk factors:

Heavy workload, high mental workload, poor information flow, poor communication and feedback. Much overtime, various ergonomic problems, emotional exhaustion, work–home interference and health complaints.

Risk groups:

Designers. Subgroup analyses have been made: some departments face more problems than others.

Evaluation of the project until now

Stimulating factors:

- Enthusiasm of local coordinators;
- Sustained support from the works council and the members of the support team;
- High response to survey; and
- Risk assessment for the whole group as well as for the subgroups.

Obstructing factors:

- Negotiations with management took much time;
- No active contribution from management;
- Deteriorated economic circumstances had repercussions on the situation within the company;
- Other priorities of the union emerged, due to (economic) situation at the company;
- Heavy workload of local coordinators.

Step 3, 4, and 5: Unknown (not yet carried out).

9.2.3 Volvo Information Technology

Step1: Preparation

Motive:

To evaluate an ongoing stress intervention program ('Work Spirit' program), and to have more attention paid to stress factors in the work environment. This project differs from others because a new stepwise intervention project was not planned. Instead, through this project the union wanted to evaluate an existing program.

Organization:

Execution by the local coordinator with support of the national coordinator

Union-management relationship:

The general relationship is in accordance with collective agreements. Management and union work closely together in several projects concerning employee health, but not in this IMF-case.

Step 2: Diagnosis

Instruments:

No new data was collected. In the Work Spirit program the Docco's stress service (an internet stress survey) was used.

Evaluation of the project until now

The project proposed by the IMF did not take off, despite the efforts of the union and the university. The quality of the stress assessment with the Docco instrument is unclear and at least doubtful.

Stimulating factors:

- The organization's awareness of and attention to possible stress-related problems among its personnel.

Obstructing factors:

- Laborious negotiations about the project; and
- Chronic lack of information.

9.2.4 ASSA A/B

Step 1: Preparation

Motive:

To investigate stress factors at work (heavy workload, much overtime, poor leadership, irritating atmosphere), and to get useful tools for an annual investigation of the psychosocial work environment.

Organization:

Initially management's support and local coordinators planning to execute the project. After several reorganizations (in which employees were dismissed and managerial and union positions changed), the union could not find a member that could execute/bear the project.

Union-management relationship:

The general relationship is in accordance with collective agreements. Union and management had a history of cooperation in several projects concerning employees' health, but this project was never really started.

Evaluation

Stimulating factors:

- Enthusiasm of management and local union at the start.

Obstructing factors:

- Reorganizations; and
- (Partly related to this) Heavy workload and lack of time (local coordinators, other union members, employees).

9.2.5 DISA Industries A/S

Step I: Preparation

Motive:

To investigate work pressure and to get new ideas to reduce and prevent stress outcomes.

Organization:

Initially management support, and the local union was responsible for the project execution. After a major reorganization (many employees lost their job, merger of departments), there was no longer support for the project, neither from management nor from employees.

Union-management relationship:

The general relationship is in accordance with collective agreements. Due to the reorganizations and their consequences, union-management relationship and atmosphere deteriorated.

Evaluation of the project until now

The project never really started, due to the obstructing factors that are reported below.

Stimulating factors:

- Management support in the beginning; and
- Enthusiasm among union.

Obstructing factors:

- Occurrence of a major reorganization, leading to establishment of other priorities; and
- Dismissal of employees.

9.2.6 Corus Group, Cold Mill 2

Step 1: Preparation

Motive:

To carry out an agreement to conduct a stress assessment, as part of a collective agreement on working conditions in April 1999.

Organization:

Both a project team and a feedback group were set up by management.

Management's support and 'purely' management driven. Focus on all employees (blue collar and white collar). The union's influence became very limited and the university was put out of play. An external bureau was made responsible for the stress assessment (diagnosis).

Union-management relationship:

Generally in accordance with collective agreements.

Step 2: Diagnosis

Responsibility:

External bureau

Instruments:

Interviews, analyses of absenteeism, extensive questionnaire

Risk factors (as are reported in the 'low quality' report of the external bureau):

Low autonomy, high mental load, poor leadership, poor communication, low commitment and insufficient policy concerning aging, career opportunities and remuneration.

Risk groups:

On the one hand all employees, on the other hand specific subgroups

Step 3: Choice of measures

Responsibility:

Manager Personnel and Organization of Cold Mill 2

(Planned) Measures were:

- Improvement of leadership style;
- Analysis of absenteeism and overtime at each department, by department manager;
- Improvement of policy regarding personnel (job evaluation, seniority, education, replacement by illness, remuneration, selection procedures);
- Investigation of amount of autonomy at work;
- Analyses of mental workload; and
- With respect to certain groups: redefinition of task and role of the position of 'team coordinator' and further analysis of health and well-being of the position of 'Chef van Wacht'.

Step 4: Implementation

Responsibility and coordination:

Manager personnel and organization at Cold Mill 2

Implemented measures are being/were:

- Monitoring of overtime and improvement of absenteeism policy by direct managers supported by the personnel department; and
- Workshops regarding leadership for management team and direct managers executed by external consultants.

Evaluation of the project until now

Step 4 and step 5 have not been carried out yet.

Stimulating factors:

- The collective agreement on working conditions 2002-2004 included an agreement to carry out a stress assessment;
- Sustained support from management; and
- To some extent: Installation of a feedback group (although its influence was very limited).

Obstructing factors:

- Agreement about the project made by a project team. The original agreement did not cover the whole project but only the second step (diagnosis);
- Task, responsibilities and aims of the project (group) were not properly documented in the project agreement;
- Early disconnection of the project team;
- Low quality of diagnosis by the external bureau: No proper overview of risk factors and risk groups;
- Purely management driven, hardly any participation by other parties;
- Hardly any influence on project execution by union;
- Biased interpretation of results and recommendations; and
- University was kept out of play.

9.3 Discussion

9.3.1 Project execution and progress

None of these cases has already completed the five steps that constitute the original common framework for this project (see Section 1.3).

- Although there was enthusiasm among both the management and the (local) union at the start, two projects (ASSA/AB and DISA A/S) did not really pass the first hurdle: The preparation phase. This was mainly due to economic problems and reorganizations.
- A third project (Volvo IT) was a bit of an outsider project right from the beginning, as it aimed at the evaluation of an already existing program and not at the development of a new intervention project (as the other cases did). It was difficult to collect detailed information on the actual content and development of this project. Only in November 2004 some information was received. Unfortunately, this information did not shed much light on the issues at stake.
- The two German projects had a slow start as it took a long time before it became clear that management would not be actively involved. The union then decided to carry out the project on its own. Both projects conducted a risk assessment (step 2).
- The Corus project in the Netherlands did not only carry out a risk analysis but also made a start with introducing interventions (steps 3 and 4). In this project the union's influence is limited.

All this illustrates that founding these projects in the six organizations was not easy. Although at the official start of the IMF-project (June 2002) there appeared agreement (e.g., between the social partners) and clarity as to the start of the six cases in the various countries, in hindsight it may be stated that this assessment proved to be too optimistic. At that early stage there was little agreement between social partners concerning the development of a stress intervention project. Therefore much talking, clarifying and negotiating were necessary, and of course this takes time.

With respect to the role of the management, it can be noted that even in cases where management was initially rather positive, later on problems arose (see below, Section 9.3.3). The two German cases are exemplary in this respect. The Corus case is quite special. In this case management was and remained quite active, almost fully taking over the project, thus leaving little room for union participation and hardly any room for university involvement.

As regards the role of the local union coordinator(s), inspection of the stimulating factors in the six cases (i.e., factors that stimulated project progress) in Section 9.2 makes it clear that the perseverance of the local coordinator(s) and other union members stimulated the project progress.

9.3.2 Research methodology: research in real life and in real companies

This project illustrates that it is not easy to carry out intervention research in companies. By definition, the researcher is not in a position to decide upon what is happening. Decisions in companies are primarily taken by management, and depending on the type of social relations, unions and other fora that represent employees (e.g. through work councils) try to influence these decisions.

In this project the university tried to stimulate project progress as much as possible. In this connection it should be mentioned that the project structure ('Long distance research': six cases, four countries, national and local coordinators, central coordination in Geneva, university in Nijmegen) and also, occasionally, differences in language (e.g., many texts and reports were not written in English) have made this project not only challenging, but occasionally also complicated.

A peculiarity in various projects (e.g., Corus) was that an external (research) bureau was hired by the company to carry out research tasks (e.g., make a risk assessment). Unfortunately, the quality of this research work was doubtful.

This IMF project also illustrates a paradox in stress research: In companies where occupational stress is a problem, key persons have little time and possibilities to attack this stress problem, exactly because of their high time pressure.

9.3.3 Contextual changes: bad economic weather and reorganizations

An important obstructing factor in many cases was the bad economic weather in the years of study (2002-2004). The economic recession caused major problems for the cases. At the least these problems caused uncertainty, which delayed case progress (e.g., in the two German cases). But they also meant the end of two projects that had started with enthusiasm: ASSA A/B and DISA A/S. In both companies priorities changed due to major reorganizations. In addition the relationship between the social partners became worse in this hectic situation. Due to these problems the key union players established other priorities and, occasionally, their job or position was changed.

9.4 Conclusions

Based on description and evaluation of these six cases, we believe that the main conclusions that follow from this study are

1. Six intervention cases were planned: four were executed.
2. These projects are still underway.
3. The driving force underneath these projects is the union, except in the Corus case where the project is basically management driven. Union involvement is also a stimulating factor in the two German cases.
4. Two projects (Volvo and Corus) hired a research bureau for the risk assessment. From a scientific point of view the quality of this research endeavour is questionable.
5. Progress in the cases was hindered by changes in the context, especially by the economic recession that had an impact on the companies involved.
6. In hindsight it may be stated that at the start of the IMF project there were too optimistic images of the possibilities to start case studies immediately after the official start date of the project (June 2002).

9.5 Practical aids for addressing and assessing stress factors

In order to assist IMF-affiliates who want to address occupational stress in companies, in this final section we will introduce some practical instruments that they can use. These instruments are borrowed from the publication: *Stress at work: causes, effects and prevention*, which is authored by Michiel Kompier and Lennart Levi (1994), and is published by the European Foundation for the Improvement of Living and Working Conditions in Dublin.

In Annex 5 four checklists are presented that have been used in the case Germany 2 (see 4.2.1.): the checklist Job Content, the checklist Working Conditions, the Checklist Terms of Employment, and the Checklist Social Relations at Work. No specialised knowledge is needed for applying them. They are also highly suitable for use by the employees themselves in order to 'check' their own workplace. For further details we refer to Annex 5.

In Annex 6 a 'Questionnaire Stress at the Work Site' is presented, and in Annex 7 a Questionnaire Health Complaints. In larger companies, these questionnaires can provide insight into problems on the level of the department, position or company; comparisons can then be made within the company and with other companies. Before having the questionnaires filled in, it is important that the following points are dealt with:

- What are the objectives of filling in the questionnaire?
- How will the results be reported, and to whom?
- Who will be asked to fill in the lists?
- Is the report to be made public?
- Who will collect the data, analyse them and process them into a report?
- Are the lists anonymous or named; if named, for what reason?
- Are there guarantees against premature and/or unauthorised disclosure, or infringements on employee's privacy?
- How long will the data be stored?

For further details with respect to these two questionnaires we refer to Annex 6 and 7.

The current Annex 2 (Volvo) may be used to answer quality-questions (with respect to content, context and methodology) regarding stress interventions, i.e. in order to evaluate a stress intervention project.

ANNEXES

Annex 1: Germany: Questionnaire Germany 1 and 2

ANGABEN ZU IHRER PERSON UND FUNKTION

1. Geschlecht	□ männlich □ weiblich
2. Zu welcher Altersgruppe gehören Sie?	□ jünger als 25 □ 25-34 □ 35-44 □ 45-54 □ 55-60 □ 60 und älter
3. Was ist Ihre höchste abgeschlossene Ausbildung?	□ Berufsausbildung □ Meister □ Techniker □ FH Abschluss □ Uni Abschluss
4. In welcher Abteilung arbeiten Sie?	□ F-PDC □ F-PDW □ F-PDP □ F-PDG □ F-PDA □ F-PDT
5. Welche Tätigkeit üben Sie aus?	□ CAD-Spezialist(-in) □ Facharbeiter Prüffeld □ Projekt- / Versuchsingenieur (-in) □ Technische Zeichner(-in) □ Teamleiter(-in) □ Sachbearbeiter(-in) □ Sonstiges
6. Wie lange sind Sie in dieser Firma tätig?	□ kürzer als 1 Jahr □ 1-5 Jahre □ 6-10 Jahre □ 11-20 Jahre □ 21 Jahre oder länger
7. Wie lange sind Sie in dieser Abteilung tätig?	□ kürzer als 1 Jahr □ 1-5 Jahre □ 6-10 Jahre □ 11-20 Jahre □ 21 Jahre oder länger
8. Haben Sie Personalverantwortung?	□ Ja □ Nein
9. Wie viel Wochenstunden umfasst Ihr Arbeitsvertrag?	.....Wochenstunden

DIE TÄTIGKEIT

[redacted]

Wie häufig kommt es vor, dass an Ihrem Arbeitsplatz.....	nie	sel-ten	manch-mal	häufig	immer
1. unter Zeitdruck gearbeitet wird?	1	2	3	4	5
2. Stoßzeiten vorkommen?	1	2	3	4	5
3. hart gearbeitet werden muss?	1	2	3	4	5
4. zu viel Arbeit verrichtet werden muss?	1	2	3	4	5
5. zu wenig Zeit ist um die Arbeit abzuschließen?	1	2	3	4	5
6. das Arbeitstempo zu hoch ist?	1	2	3	4	5
7. die Arbeit geistig zu belastend ist?	1	2	3	4	5
8. die Arbeit zu komplex ist?	1	2	3	4	5
9. selbst die Art und Weise zu wählen, wie sie arbeiten?	1	2	3	4	5
10. den Ort, an dem Sie arbeiten, zu verlassen, wenn Sie das wollen?	1	2	3	4	5
11. die Ziele Ihrer Arbeit selbst zu bestimmen?	1	2	3	4	5
12. die Reihenfolge der Arbeitstätigkeiten selbst zu bestimmen?	1	2	3	4	5
13. selbst zu beurteilen, ob Sie die Arbeit gut oder schlecht erledigt haben?	1	2	3	4	5
14. die Arbeit zu unterbrechen, wenn Sie das wollen?	1	2	3	4	5
15. selbst zu bestimmen, wie viel Arbeit Sie während eines bestimmten Zeitraums verrichten?	1	2	3	4	5
16. selbst das Arbeitstempo zu erhöhen oder zu reduzieren?	1	2	3	4	5
17. selbst die Arbeitszeiten zu bestimmen?	1	2	3	4	5
18. selbst zu bestimmen, welche Tätigkeiten Sie verrichten?	1	2	3	4	5

[redacted]

	nie	manch mal	häufig	immer
19. Erfordert Ihre Tätigkeit, dass Sie sich an viele Dinge erinnern müssen?	1	2	3	4
20. Erfordert Ihre Tätigkeit erhöhte Konzentration?	1	2	3	4
21. Müssen Sie genau arbeiten?	1	2	3	4
22. Müssen Sie während Ihrer Arbeit auf mehrere Dinge zugleich achten?	1	2	3	4
23. Erfordert Ihre Arbeit andauernde Aufmerksamkeit?	1	2	3	4
24. Erfordert Ihre Arbeit große Sorgfalt?	1	2	3	4
25. Erfordert Ihre Tätigkeit, dass Sie ständig nachdenken müssen?	1	2	3	4

[redacted]

	nie	manch mal	häufig	immer
26. Wissen Sie genau was Ihre Kollegen in Ihrer Firma von Ihnen erwarten?	1	2	3	4
27. Wissen Sie genau wofür Sie verantwortlich oder nicht verantwortlich sind?	1	2	3	4
28. Wissen Sie genau was Ihr direkter Vorgesetzter von Ihren Leistungen hält?	1	2	3	4
29. Steht für Sie deutlich fest, was Ihre genaue Aufgabe ist?	1	2	3	4
30. Wissen Sie genau was Sie von Ihren Kollegen in Ihrer Abteilung erwarten können?	1	2	3	4
31. Werden Sie in Ihren Aufgaben unterbrochen, um andere unvorhergesehene Aufgaben zu erfüllen?	1	2	3	4

MENSCHLICHE BEZIEHUNGEN AM ARBEITSPLATZ

[redacted]

	nie	manch mal	häufig	immer
Information				
32. Werden Sie ausreichend über den Zweck Ihrer Arbeit informiert?	1	2	3	4
33. Werden Sie über das Ergebnis Ihrer Arbeit ausreichend informiert?	1	2	3	4
34. Informiert Sie Ihr/e direkte/r Vorgesetzte/r darüber, wie gut Sie arbeiten?	1	2	3	4
35. Informieren Ihre Kollegen Sie darüber, wie gut Sie arbeiten?	1	2	3	4
36. Verfügen Sie rechtzeitig über ausreichende Informationen, um Ihre Arbeit gut zu erledigen?	1	2	3	4
37. Gibt Ihnen Ihre Arbeit die Möglichkeit, heraus zu finden, wie gut Sie arbeiten?	1	2	3	4
38. Bekommen Sie direkte Informationen darüber, wie gut Sie arbeiten?	1	2	3	4
39. Erhalten Sie Informationen, die für die Erledigung Ihrer Tätigkeit nicht relevant sind? (z.B.: Email)	1	2	3	4
40. Erhalten Sie mehr Informationen als Sie für die Ausübung Ihrer Tätigkeit benötigen? (z.B.: Email)	1	2	3	4

Zusammenarbeit

	nie	manch mal	häufig	immer
41. Ist die Arbeit in Ihrem Betrieb normalerweise gut organisiert?	1	2	3	4
42. Läuft die Zusammenarbeit mit anderen Abteilungen und Gruppen innerhalb des Betriebs gut?	1	2	3	4
43. Werden Sie durch Fehler anderer in Ihrer Arbeit behindert?	1	2	3	4

Kommunikation

44. Erfahren Sie genug über den Lauf der Dinge im Betrieb?	1	2	3	4
45. Werden Sie über die wichtigen Dinge im Betrieb gut auf dem Laufenden gehalten?	1	2	3	4
46. Ist die Art und Weise wie Beschlussfassungen in Ihrem Betrieb verlaufen deutlich?	1	2	3	4
47. Wissen Sie, an wen Sie sich mit bestimmten Problemen im Betrieb wenden können?	1	2	3	4

Beziehungen zu den Kollegen

	nie	manch mal	häufig	immer
48. Können Sie sich auf Ihre Kollegen verlassen, wenn Sie Schwierigkeiten bei der Arbeit haben?	1	2	3	4
49. Können Sie, soweit nötig, Ihre Kollegen gegebenenfalls um Hilfe bitten?	1	2	3	4
50. Haben Sie Konflikte mit Ihren Kollegen?	1	2	3	4
51. Wird Ihre Arbeit von Ihren Kollegen gewürdigt?	1	2	3	4
52. Verstehen Sie sich gut mit Ihren Kollegen?	1	2	3	4

Beziehungen zu der/dem direkten Vorgesetzten

53. Können Sie sich auf Ihre/n direkte/n Vorgesetzte/n verlassen, wenn Sie Schwierigkeiten bei der Arbeit haben?	1	2	3	4
54. Können Sie gegebenenfalls Ihre/n direkte/n Vorgesetzte/n um Hilfe bitten?	1	2	3	4
55. Haben Sie Konflikte mit Ihrer/m direkten Vorgesetzten?	1	2	3	4
56. Werden Sie bei Ihrer Arbeit von Ihrer/m direkten Vorgesetzten anerkannt?	1	2	3	4
57. Verstehen Sie sich gut mit Ihrer/m direkten Vorgesetzten?	1	2	3	4

ARBEITSBEDINGUNGEN

1. Machen Sie Überstunden, dass heißt mehr Stunden als im Arbeitsvertrag festgelegt sind?
   □ Ja, regelmäßig
   □ Ja, gelegentlich
   □ Nein, nie (dann zur Frage 3)
2. Wenn ja, wie viele Überstunden (mehr Stunden als im Arbeitsvertrag festgelegt sind) machen Sie durchschnittlich pro Woche?
   .....Stunden pro Woche
3. Ist die Kompensation der Überstunden (in Zeit oder Geld) als gut zu bezeichnen?
   □ Ja □ Nein
4. Wie häufig müssen Sie auf Dienstreisen (zu Tätigkeiten außerhalb ihres eigentlichen Dienstortes)?
   ..... x pro Monat
5. Wie viel Reisezeit haben Sie im Monat durchschnittlich?
   Achtung !!! Reisezeit ist dann nicht Arbeitszeit an einem anderen Ort !!!
   ..... Stunden pro Monat
6. Können Sie mit einer Note (1 bis10) angeben wie belastend Sie diese Reisen empfinden (1= keine Belastung, 10= große Belastung)
   ..... Belastungsnote
7. Ist die Kompensation der Reisezeiten (in Zeit oder Geld) als gut zu bezeichnen?
   □ Ja □ Nein
8. Können Sie nach Bedarf Ihren Urlaub oder freie Tage nehmen? □ Ja □ Nein
9. Bietet Ihr Job Ihnen Aufstiegsmöglichkeiten? □ Ja □ Nein

ARBEITSUMSTÄNDE

[redacted]

10. Arbeiten Sie an einem achtstündigen Arbeitstag länger als sechs Stunden an einem Bildschirm? □ Ja □ Nein
11. Wird die Bildschirmarbeit regelmäßig durch eine andere bildschirmfreie Tätigkeit abgewechselt? □ Ja □ Nein
12. Ist Ihr Arbeitsplatz gut eingerichtet? □ Ja □ Nein
13. Haben Sie einen gut einstellbaren Bürostuhl? □ Ja □ Nein
14. Behindert Sie.....
    - unzureichende Beleuchtung? □ Ja □ Nein
    - störende Reflexe? □ Ja □ Nein
    - Lärm? □ Ja □ Nein
    - Sonstiges ? nämlich.....

WOHLBEFINDEN UND GESUNDHEIT

[redacted]

1. Wenn Sie alle Aspekte Ihrer Arbeit in Betracht ziehen, sind Sie dann mit Ihrer heutigen Tätigkeit zufrieden?

1	2	3	4
sehr unzufrieden	unzufrieden	zufrieden	sehr zufrieden

[redacted]

		nie	selten	manch-mal	häufig	immer
2.	Ich fühle mich seelisch ausgelaugt.	1	2	3	4	5
3.	Ganztägige Arbeit stellt eine schwere Belastung für mich da.	1	2	3	4	5
4.	Ich fühle mich durch meine Arbeit erschöpft.	1	2	3	4	5
5.	Am Ende des Arbeitstages fühle ich mich leer.	1	2	3	4	5
6.	Morgens zu Beginn eines neuen Arbeitstages fühle ich mich abgespannt	1	2	3	4	5

Motivation um zu lernen. (1=nie, 2= manchmal, 3= häufig, 4=immer)

	nie	manch mal	häufig	immer
7. lerne ich stetig Neues.	1	2	3	4
8. werde ich motiviert, um mir neue Kenntnisse und Fertigkeiten anzueignen.	1	2	3	4
9. kann ich mich gut entwickeln.	1	2	3	4

[redacted]

	nie	manch mal	häufig	immer
10. Sie in minderem Maße Ihre privaten Verpflichtungen erfüllen, da Sie in Gedanken noch stets mit Ihrer Arbeit beschäftigt sind?	1	2	3	4
11. Ihre Arbeitszeit es erschwert, zuhause Ihren Verpflichtungen nachzukommen?	1	2	3	4
12. Sie soviel Arbeit zu erledigen haben, dass Sie keine Zeit mehr für Ihre Hobbys haben?	1	2	3	4
13. die Anforderungen , die Ihre Arbeit an Sie stellt, es erschweren, sich zuhause zu entspannen?	1	2	3	4

[redacted]

14. Fühlen Sie gelegentlich Schmerzen in der Brust oder im Bereich des Herzens?	□ Ja	□ Nein
15. Geraten Sie schnell außer Atem?	□ Ja	□ Nein
16. Leiden Sie gelegentlich an Kopfschmerzen?	□ Ja	□ Nein
17. Haben Sie gelegentlich ein drückendes oder aufgeblähtes Gefühl in der Magengegend?	□ Ja	□ Nein
18. Fühlen Sie sich gelegentlich schwindelig?	□ Ja	□ Nein
19. Fühlen Sie sich häufig müde?	□ Ja	□ Nein
20. Haben Sie jemals ein Gefühl der Taubheit oder ein Kribbeln in den Gliedern?	□ Ja	□ Nein
21. Fühlen Sie sich gelegentlich lustlos?	□ Ja	□ Nein
22. Leiden Sie gelegentlich an Gelenk- oder Muskelschmerzen?	□ Ja	□ Nein
23. Haben Sie gelegentlich Rückenschmerzen?	□ Ja	□ Nein
24. Leiden Sie gelegentlich an Magenverstimmung?	□ Ja	□ Nein
25. Ermüden Sie schneller, als Sie es normalerweise erwarten würden?	□ Ja	□ Nein
26. Erwachen Sie morgens müde und unausgeruht?	□ Ja	□ Nein

Annex 2: Sweden: Volvo Information Technology, Questionnaire concerning content and process of the stress intervention project

What has happened and how did it happen?

Step 1: Preparation

- What were the motives for the project?
- How was the project organized?
- What kind of intervention style (approach) was chosen: top-down, bottom up or mixed approach?
- Were external agents involved? (consultancy, research activities)
- What was the duration of the project?
- What is the target group?
- Why this target group?

Step 2: Problem Analysis

- What instruments were used to identify risk factors and risk groups?
- What risk factors and risk groups were identified?

Step 3: Choice of Measures

- What measures were selected?
- Why were these measures selected?

Step 4: Implementation

7. How were the measures implemented?
- Who was responsible for the implementation?

Step 5: Evaluation

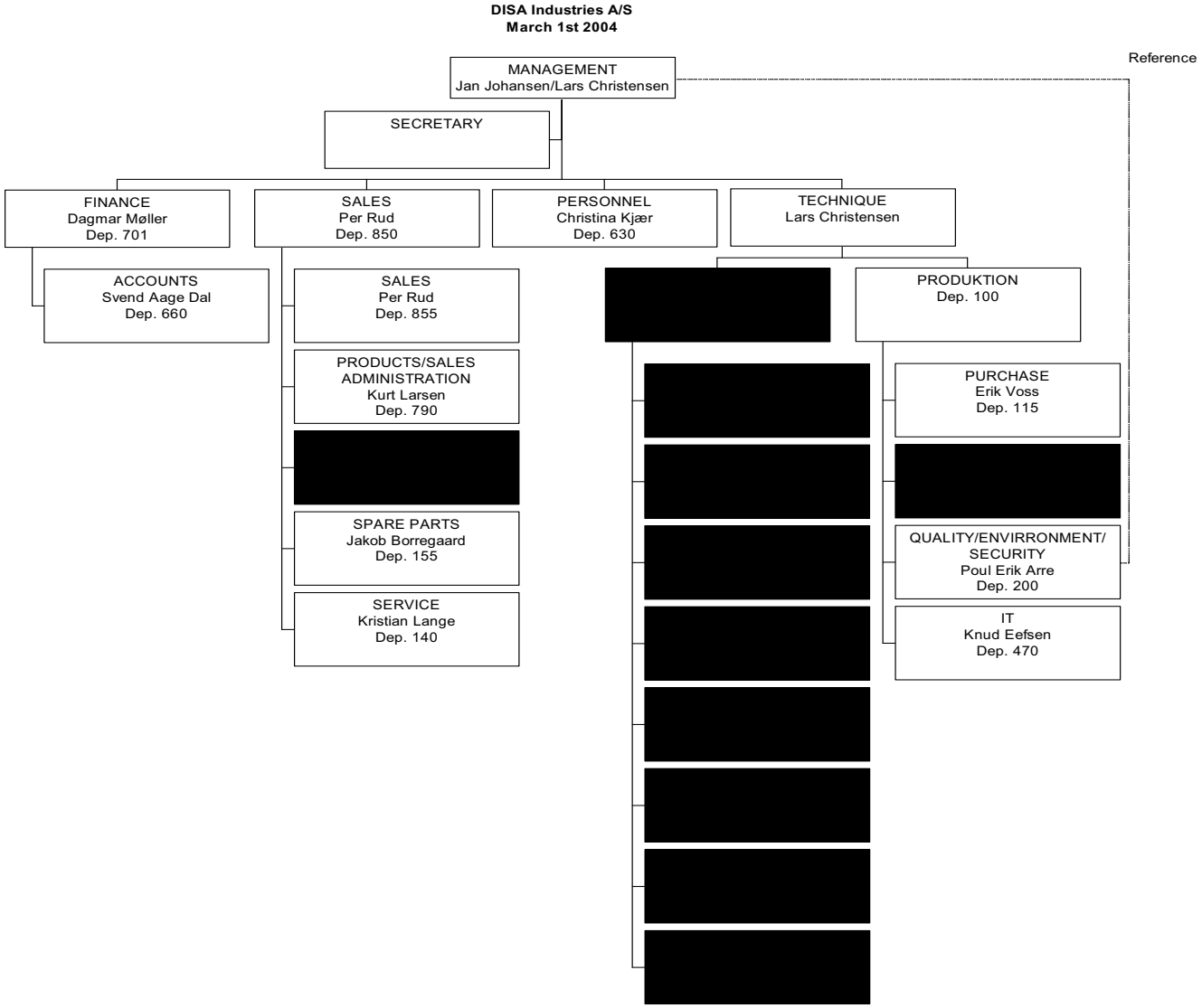
7. What were (subjective, objective) effects of the program?
8. What were cost and benefits of the project (in terms of finance, productivity)?
9. Which were obstructing factors?
10. Which were stimulating factors?
11. Was there a follow-up?

REGARDING THE UNION

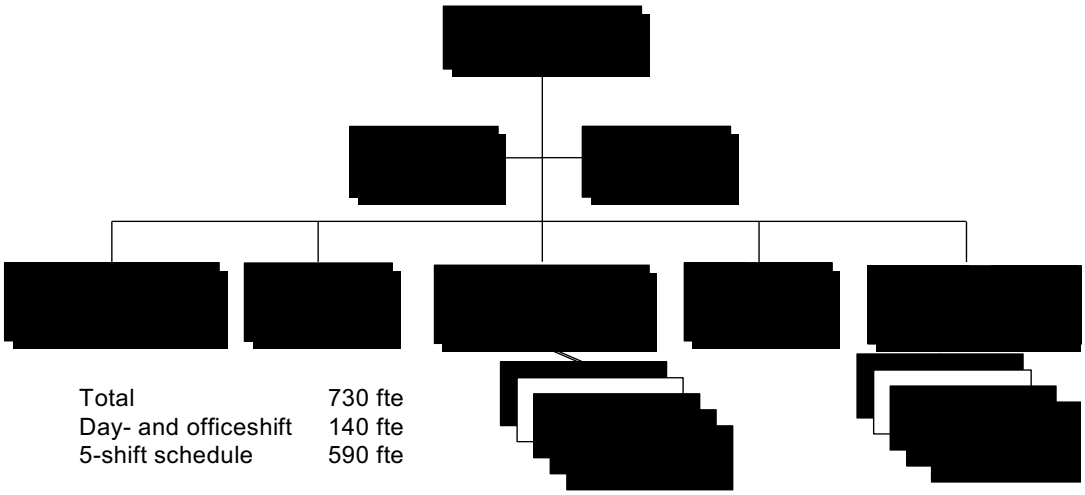
For each step (1-5):

- In what way was the union involved?
- What were the actions the union took?
- What was the outcome of the action on the project?

Annex 3: Denmark: DISA Industries A/S, Organization chart



[redacted]


Total 730 fte
Day- and officeshift 140 fte
5-shift schedule 590 fte

Annex 5. *Checklists Job Content, Working Conditions, Terms of Employment, and Social Relations at Work*

A. Checklist Job Content

The Checklist Job Content contains 19 questions which can be answered by every department. With a little editorial adaptation, the questions can also be applied to every position.
Fill in 'yes' if you agree with the question. Subsequently, a total score can be calculated by adding up the 'yes' scores. The total score must be as low as possible. The higher the number of 'yes' answers, the greater the number of problems in the area of job content and the organization of work. Every 'yes' answer deserves separate attention.

	Yes	No
1. Short cyclical work is common. A task is short cyclical if the same task repeatedly has to be started within 1.5 minutes of the last task; that is when the cycle is shorter than one and a half minutes.	☐	☐
2. Dull or monotonous tasks are common (these are tasks which quickly become routine).	☐	☐
3. Tasks which require intense concentration (from which one cannot withdraw oneself) are common.	☐	☐
4. The work in the department is strongly segmented. Every individual makes a small contribution to the 'product' of the department.	☐	☐
5. The work is emotionally demanding, for example, because of contacts with patients, customers, pupils and the like.	☐	☐
6. Work frequently takes place under the pressure of time, deadlines have to be met, or the production standards are difficult to achieve.	☐	☐
7. There are lonely jobs in the department.	☐	☐
8. It frequently occurs that the organization of the work and/or the work schedules are incorrect.	☐	☐
9. It frequently occurs that the other departments do not prepare the work sufficiently.	☐	☐
10. It frequently occurs that the other departments do not provide sufficient support.	☐	☐
11. It frequently occurs that there are problems (malfunctions, defects, breakdowns) with the equipments, the machines, the instruments or the software.	☐	☐
12. There is no regular work consultation, or there are work consultations but they generally do not allow discussion of work problems.	☐	☐

13. It is not, or hardly, possible for employees to determine their own work rate.	☐	☐
14. Within certain broadly defined rules, it is not, or hardly, possible for employees to determine their own working method.	☐	☐
15. There is insufficient opportunity for employees to help one another, should that be required.	☐	☐
16. The employees receive insufficient information about the results of their work.	☐	☐
17. During working hours, there is insufficient time for a brief chat with colleagues.	☐	☐
18. Frequently, it is not possible to contact the supervisor directly in the event of a problem.	☐	☐
19. Generally, the employees can not directly contact a colleague or supervisor from another department in order to discuss problems.	☐	☐

Total score 'yes' answers: ☐

B. Checklist Working Conditions

The Checklist Working Conditions contains 16 questions which can be answered by every department or position. In every case, the answer is either ‘yes’ or ‘no’. The accompanying scores are added up for each position or department.
The higher the total score, the greater the number of problems in the area of working conditions. Every question which results in a ‘1’ indicates an area in which improvements are urgently required.

1	Does the employee spend more than four hours working in a seated position?	yes=0	no=1
	If yes, is a good chair provided? If no, is a standing support available?	yes=0	no=1
2	Can the employee regularly leave his workplace?	yes=0	no=1
3	Does the employee’s job require him to work with a continuously bent or twisted posture?	yes=1	no=0
4	Must the employee frequently pick up heavy objects or exert a great deal of force?	yes=1	no=0
5	Is there sufficient light to perform the work well?	yes=0	no=1
6	Are there instances of disturbing reflection or dazzling during the performance of work?	yes=1	no=0
7	Are there instances of high or disturbing noise levels in the workplace?	yes=1	no=0
8	Is the temperature at the workplace too high or too low?	yes=1	no=0
9	Is there an annoying draught in the workplace?	yes=1	no=0
10	Are the information points (instruments, lights, sound signals, etc.) easily signalled and understood?	yes= 0	no=1
11	Are the means of control (buttons, handles, etc.) easily accessible and logically placed?	yes=0	no=1
12	Are there dangerous situations in the workplace?	yes= 1	no=0
13	Are disturbing vibrations experienced in the hand, arm or body during work?	yes=1	no=0
14	Are there health risks following exposure to chemical substances?	yes=1	no=0
15	Are there risks of infection?	yes=1	no=0
16	Are there risks of radiation (for example, radioactive materials, processes)?	yes=1	no=0

Total score: ☐

C. Checklist Terms of Employment

The Checklist Terms of Employment contains 13 questions which can best be answered by each individual department or position. The checklist can also be used to acquire an image of the terms of employment for the company as a whole. The answers in the right-hand column are added up. The more crosses there are in the right-hand column, the more criticism is directed at the social policy within the company and the bigger the chance that the terms of employment will result in stress. The company should give individual attention to every cross in the right-hand column.

		Yes	No
1	Are there sufficient career opportunities?	☐	☐
2	Are there sufficient education and training opportunities?	☐	☐
3	Are the jobs in the company under threat, as a result of reorganizations, for example?	☐	☐
4	Is the remuneration (in money or otherwise) good, compared to similar positions elsewhere?	☐	☐
5	Can employees determine when their days off are to be taken?	☐	☐
6	Are the working and resting periods (starting times, finishing times, breaks) well planned?	☐	☐
7	Are temporary contracts frequently used?	☐	☐
8	Are temporary workers frequently used?	☐	☐
9	Are vacancies quickly filled?	☐	☐
10	Can people be replaced during illness?	☐	☐
11	Are there problems with overtime (too much, announced too late, insufficient compensation in time or money, etc.)?	☐	☐
12	Are standard wages or piece rates applied?	☐	☐
13	Are the canteen facilities good?	☐	☐

Total score right-hand column: ☐

D. Checklist Social Relations at work

The Checklist Social Relations at Work contains 10 questions which can best be answered by each individual department (or position). The checklist can also be used to acquire an image of the company as a whole. A total score for the checklist can be calculated by adding the 'no' answers to the questions 1, 2, 3, 4, 5, 7 and 10, and adding these to the 'yes' answers to the questions 6, 8 and 9. The higher the total score, the greater the number of problems in the area of cooperation, participation problems and within working atmosphere.
Individual attention should be given to every 'no' answer to the questions 1, 2, 3, 4, 5, 7 and 10, and every 'yes' answer to the questions 6, 8 and 9.

		Yes	No
1	Does the daily management give enough consideration to the opinion of the employees?	☐	☐
2	Does the daily management provide sufficient support in the work?	☐	☐
3	Are the employees sufficiently informed of the developments within the company?	☐	☐
4	Is there generally a good atmosphere at the workplace?	☐	☐
5	If necessary, can employees request help from one or more colleagues?	☐	☐
6	Are colleagues monitored too closely in their work?	☐	☐
7	Is there a work consultation system which positions well?	☐	☐
8	Are there instances of discrimination (according to gender, race, etc.)?	☐	☐
9	Are there instances of sexual harassment?	☐	☐
10	Is there sufficient appreciation for the work that is performed?	☐	☐

Total score: ☐

Annex 6. *Questionnaire Stress at the Work Site*

Instructions:
Please answer each question by checking off the one answer which best fits your job situation. Sometimes neither answer fits exactly. Please choose the answer which comes closest.

1	Are you male or female?	Male ☐	Female ☐
2	What is your age?		.....year
3	How long have you been working for this company?		.....year
4	What is the highest level of education that you have completed? - no formal schooling or primary school - completed secondary or high school - college or university		☐ ☐ ☐
5	What type of shift do you work? - day shift only - two shift - three shift - four/five shift - other		☐ ☐ ☐ ☐ ☐
6	What is your job title? Be specific.....		
7	What business is your company in (i.e. shipbuilding, insurance, etc.)? Be specific.....		
Job Demands		**Yes**	**No**
8	My job requires working very fast.	☐	☐
9	My job requires working very hard.	☐	☐
10	I am not asked to do an excessive amount of work	☐	☐
11	I have enough time to get the job done.	☐	☐
12	I am free from conflicting demands that others make.	☐	☐
13	My job requires long periods of intense concentration.	☐	☐
14	My tasks are often interrupted before they can be completed, requiring attention at a later time.	☐	☐

		Yes	No
15	My job is very hectic.	☐	☐
16	Waiting on work from other people or departments often slows me down in my job.	☐	☐
Decision Authority			
17	My job allows me to make a lot of decisions on my own.	☐	☐
18	On my job, I have very little freedom to decide how I do my work.	☐	☐
19	I have a lot of say about what happens on my job.	☐	☐
20	I can determine the order in which my work is to be done.	☐	☐
21	I can determine when a task is to be done.	☐	☐
22	I can easily leave the workplace for a brief period.	☐	☐
23	I can interrupt my work if I so require.	☐	☐
24	I can determine my own work rate.	☐	☐
Skill Descretion			
25	My job requires that I learn new things.	☐	☐
26	My job involves a lot of repetitive work.	☐	☐
27	My job requires me to be creative.	☐	☐
28	My job requires a high level of skill.	☐	☐
29	I get to do a variety of different things in my job.	☐	☐
30	I have an opportunity to develop my own special abilities.	☐	☐
Terms of Employment			
31	I can determine the moment when I start and stop work.	☐	☐
32	I can determine when I need a break	☐	☐
33	I am familiar with my work schedule more than a month in advance.	☐	☐
34	I can determine when I wish to take my days off.	☐	☐
35	My job security is good.	☐	☐
36	My prospects for career development and promotions are good.	☐	☐

		Yes	No
37	In five years, my skills will still be valuable.	☐	☐
Supervisor and Co-worker support			
38	The atmosphere at the workplace is good.	☐	☐
39	People at work frequently irritate me.	☐	☐
40	If I so require, I can call in the assistance of one or more colleagues.	☐	☐
41	The daily management under which I work is good.	☐	☐
42	My opinion is sufficiently taken into consideration by the daily management.	☐	☐
43	The daily management has an accurate impression of how I work.	☐	☐
44	The daily management gives me enough support in my work.	☐	☐
45	I am sufficiently informed of the developments within the company.	☐	☐

Scoring and interpretation:

A total score is calculated for each of the modules. If required, these can be divided according to department or position. These groups must include more than 15 respondents, otherwise the averages will become too unreliable and confidentiality can come under threat.

In this manner, it is possible to compare various departments or positions with one another and with the company average.

It is also possible to compare:

▪ men and women	(question 1);
▪ age groups, e.g. younger and older workers	(question 2);
▪ employees with more or less years of experience in the company	(question 3);
▪ employees with different levels of education/training	(question 4);
▪ employees who work different schedules	(question 5)

This is how the total scores are calculated:		
Total score Job Demands: ▪ Questions: 8, 9, 13, 14, 15, 16: ▪ Questions: 10,11,12: ▪ Total score: count all the 'ones' (minimum: 0, maximum: 9). The higher the total score, the higher the risk of stress.	yes=1 no=1	no=0 yes=0
Total score Decision Authority: ▪ Questions: 17,19, 20,21, 22, 23, 24: ▪ Question: 18 ▪ Total score: count all the 'ones' (minimum:0, maximum:8). The lower the total score, the higher the risk of stress.	yes=1 yes=0	no=0 no=1
Total score Skill Discretion: ▪ questions: 25, 27, 28, 29, 30: ▪ question: 26 ▪ Total score: count all the 'ones' (minimum: 0, maximum: 6). The lower the total score, the higher the risk of stress.	yes=1 no=1	no=0 yes=0
Total score Terms of Employment: Questions: 31, 32, 33, 34, 35, 36, 37 (all) Total score: count all the 'ones' (minimum: 0, maximum: 7) The lower the total score, the higher the risk of stress.	yes=1	no=0
Total score Supervisor and Co-worker support: Questions: 38, 40, 41, 42, 43, 44, 45: Question: 39 Total score: count all the 'ones'(minimum: 0, maximum: 8). The lower the total score, the higher the risk of stress.	yes=1 no=1	no=0 yes=0

Source:

- **R. Karasek:** *Job Content Questionnaire and Users Guide* (1985).
- **P.G.W. Smulders, C.R. de Winter & R.W.M. Gründemann**: *The Dutch Work and Health Questionnaire (1992)*, TNO Institute for Preventive Health, Leiden (1992).
- **S. Dhondt & I.L.D. Houtman**: *NOVA-WEBA (in Dutch)*, TNO Institute for Preventive Health, Leiden (1992).
- **I.L.D. Houtman, A. Bloemhoff, S., Dhondt, & C. Terwee**: *WEBA and NOVA-WEBA related to health and well-being of employees (in Dutch)*. Den Haag (1994)

The scales of Job Demands, Decision Authority (partly), Skill Discretion, and Terms of Employment (partly), are from the Job Content Questionnaire (Karasek 1985). There is no cost for use. However, permission for use of these scales in large studies (studies with over 500 subjects, or over 150 subjects in a single occupational category) requires that a copy of these data and the demographic data (questions 1-5) be provided to the JCQ Center. Large studies and other interested users are encouraged to contact the JCQ Center for additional information or assistance: JCQ Center, c/o Professor Robert Karasek, Department of Work Environment, University of Massachusetts Lowell, Lowell MA, USA 01854.

Annex 7. *Questionnaire Health Complaints*

		Yes	No
1	Do you occasionally feel pressure in your stomach or is it ever swollen?	☐	☐
2	Are you quickly short of breath?	☐	☐
3	Do you occasionally feel pain in the chest or heart region?	☐	☐
4	Do you occasionally suffer pain in bones and muscles?	☐	☐
5	Do you frequently feel tired?	☐	☐
6	Do you occasionally suffer a headache?	☐	☐
7	Do you occasionally suffer back complaints?	☐	☐
8	Do you occasionally suffer an upset stomach?	☐	☐
9	Do you ever suffer from a numbed feeling or a tingling sensation in your limbs?	☐	☐
10	Do you tire more quickly than you would expect?	☐	☐
11	Do you occasionally feel dizzy?	☐	☐
12	Do you occasionally feel listless?	☐	☐
13	Do you generally wake up still feeling tired?	☐	☐

Scoring:

The complaints (every yes score) are added up. The minimum score is 0 and the maximum score is 13.

The average complaints level of a company, department or position can easily be calculated. The average can then be compared with that of other positions or departments in the company and/or with external reference groups.

If the questions 1-7 from Annex 6 are combined with the Questionnaire Health Complaints it is also possible to compare men and women, older and younger employees etc.

Source: **J.M. Dirken:** *Dutch Questionnaire VOEG* (in Dutch), TNO-Institute of Preventive Health Care/Wolters Noordhoff, Groningen (1969).