Centralised European Hand-arm database on the Internet

Introduction

Among others, officials from social insurance offices, company health services, clinics in occupational medicine, research departments in the field of occupational health, labour inspectorates, buying departments, engineering industry often asks for information regarding vibration levels measured on handles of specific hand-held power tools. Some reasons for this are a need;

- for health risk assessment due to past and/or present vibration exposure
- to constitute a basis for decisions in worker compensation cases
- to procure ”user friendly” tools in order to prevent vibration-induced disorders
- for data in research and development projects.

A long-felt want has therefore been that reported measurement results should be put together in a database. The format for such a database should fulfil at least the following requirements;

- data must be presented in a clear, understandable and useful way,
- the database should be easily accessible for a large number of interested users,
- measurement data must pass through a quality control before insertion,
- included data must be based on measurements conducted in accordance with a generally accepted standard, such as an ISO or a CEN standard,
- new data inserted in the database should be accessible for users as quickly as possible,
- corrections and additions must be easy to carry out,
- the database must be easy to manage and maintain and not involve to heavy expenditures.

After considering different alternatives, it was concluded that a database accessible through Internet would most efficiently comply with the above stated requirements.

Data base content

At present the database contains vibration data for more than 2500 hand-held power tools, either CE-declared (1) values, i.e. vibration measured in accordance with corresponding parts of the ISO 8662 standard (3), or measured according to ISO 5349 (2, 4) during normal operation at a work site. CE-declared noise data is also included for many tools of the former category. The database is available in Swedish and English.

Procedure for search and presentation of search results

The search is done by a step by step procedure.

Step 1. Open the database "Home page"
The database home page (Figure 1), reach by using a suitable web browser (e.g. Netscape Navigator, Internet Explorer), contains some general information for instance about database content, people responsible for administration and maintenance, collaborating organisations and some links to other informative pages. On this page there is also a link to a page which provide important information which should be considered entering the hand-arm vibration database. The next step is to open the "Search page".

Step 2. Open the "Search page"
A search for vibration data, CE-declared and/or measured during normal work, for a specific tool or for a category of tools is done by choosing or typing search arguments according to instructions given on this page (Figure 2). The result of this request is then presented on a separate "Search result" page.

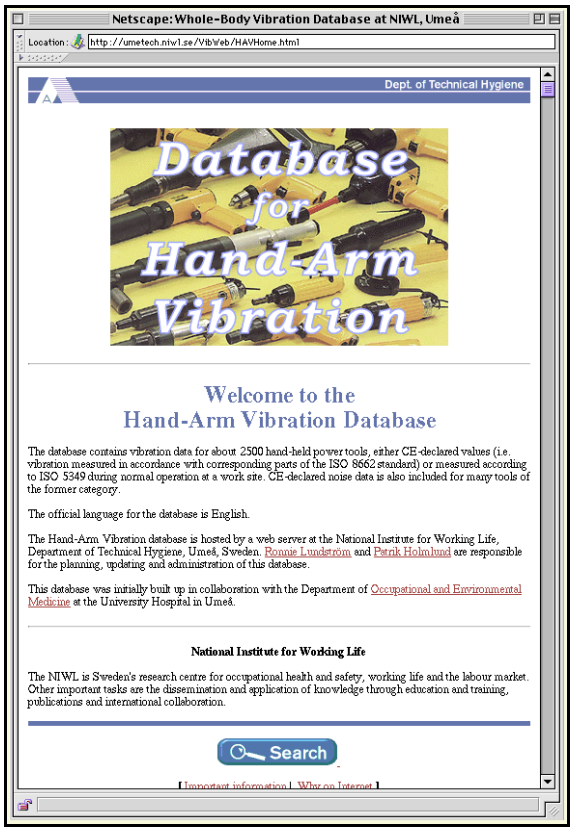

Figure 1. Home page.

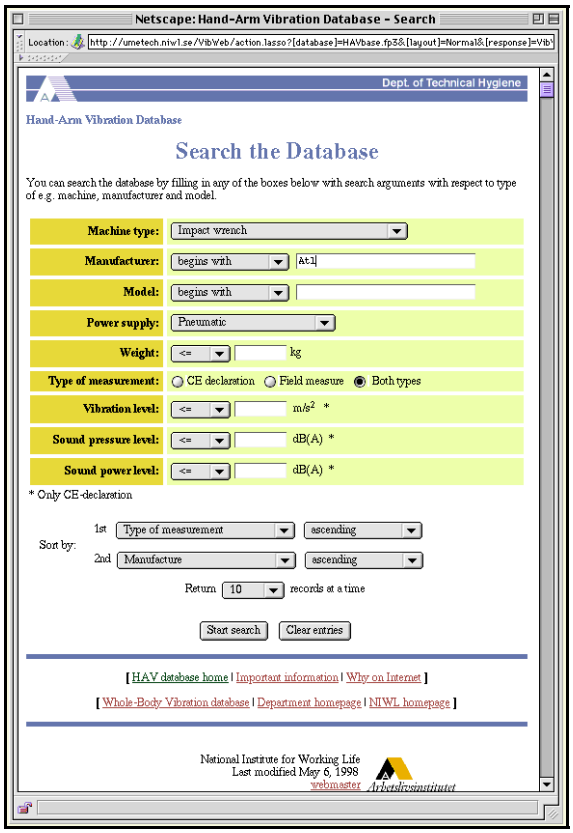

Figure 2. Search page.

Step 3. Viewing the "Search result page"

Each row on the Search result page (Figure 3) indicates type of tool (e.g. grinder, nut runner, drill), name of the manufacturer (e.g. Atlas Copco, Fuji, Bacho) and model. Further information and data for an individual tool on this list is then presented by activating corre-sponding link to a "Tool data" page.

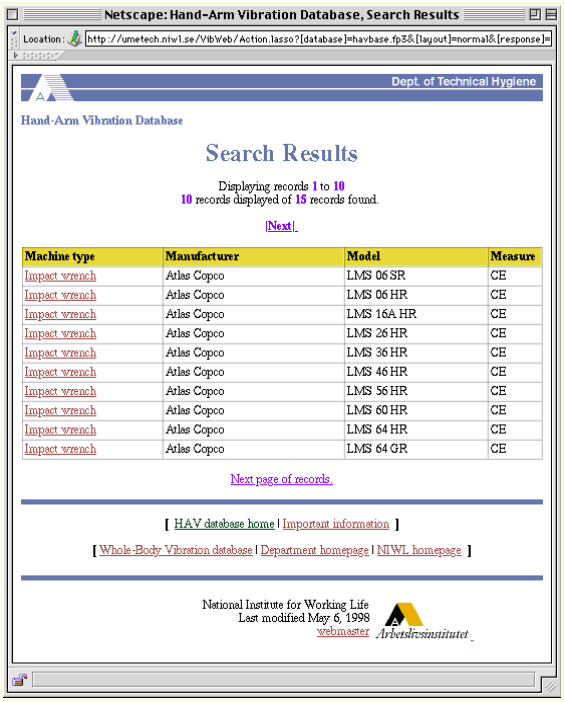

Figure 3. Example of a "Search result" page.

Step 4. Viewing "Tool data pages"

A "*Tool data page*" (Figures 4 and 5) show some general information about the tool (e.g. model, manufacturer, weight, power), photograph, and vibration data. Noise data is in most cases also given for CE-declared tools. A reference to the source of information will also be showed.

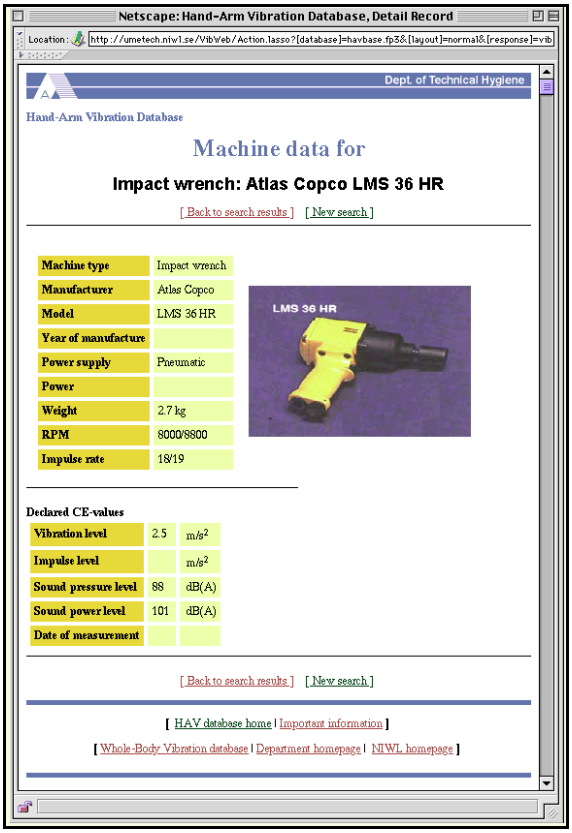

Figure 4. Example of a Tool data page for a CE-declared impact wrench.

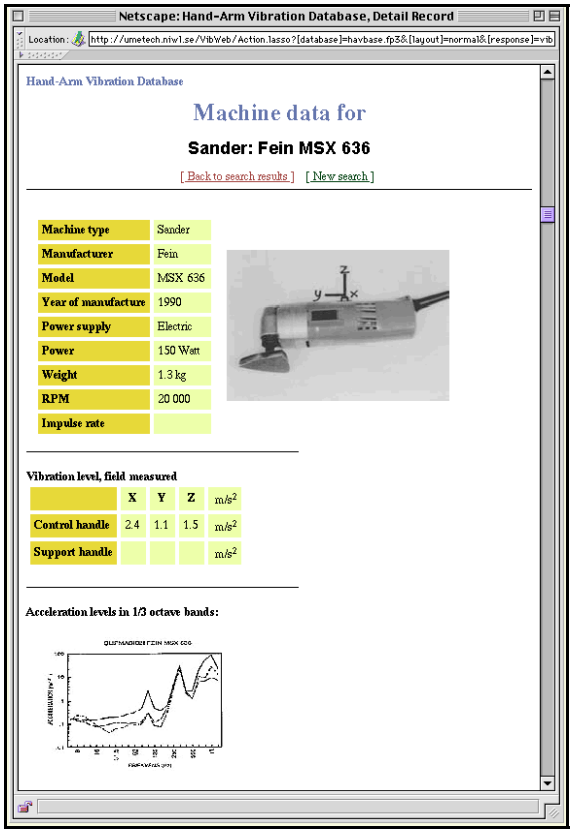

Figure 5. Example of a Tool data page for a field measured sander.

End notes

This hand-arm vibration database on Internet has become a centralised European hand-arm vibration database with support from the EU project "Network on Detection and Prevention of Injuries due to Occupational Vibration Exposures (VINET)" (Contract No. BMH4-CT98-3251 (DG12-SSMI)). Support has also been received from the Swedish Council for Work Life Research.
The database is still in a stage of development. Changes with respect to content and format will therefore most be conducted in the future. An important input to this is viewpoints from different categories of users. A routine has also been activated which enables VINET partners to submit data to the database administrator, directly from there own terminals through Internet. This data is first stored on the database server as a temporary database. After inspection and approval from the database administrator this data is thereafter transferred to the main database.
A corresponding whole-body vibration database, covering earth-moving vehicles, has also been established which is available at the same Internet location as the hand-arm vibration database.

Internet location

The hand-arm vibration database is hosted by a web server at the National Institute for Working Life, Technical Risk Factors, Umeå, Sweden.

The Internet location is: **http://umetech.niwl.se/**.

References

1. EG (1989) Council directive of 14 June 1989 on the approximation of the laws of the member states relating to machinery (89/392 EEC). Official Journal of the European Committies No. L183/9.
2. ISO 5349 (1986) Mechanical vibration - Guidelines for the measurement and the assessment of human exposure to hand-transmitted vibration. International Organization for Standardization.
3. ISO 8662-1 (1988) Handheld portable power tools - Measurement of vibration at handle - Part 1: General. International Organization for Standardization.
4. ISO/DIS 5349-1 (1999) Mechanical vibration - Measurement and assessment of human exposure to hand-transmitted vibration - Part 1: General guidelines. International Organization for Standardization.