

Information gateway for improving human factors design

Sue Leveritt

Senior Research Officer
Minerals Industry Safety & Health Centre (MISHC)

Abstract

The Earth Moving Equipment Safety Round Table (EMESRT) is a recent initiative that supports the industry's overall drive for a 'step change' to a safer future. Seven of the major global mining companies have aligned their goals to accelerate the development and adoption of leading practice designs for surface earth moving equipment to minimise Health and Safety risks.

EMESRT has identified 15 separate issues as priority areas for improvement in the human factors design of earth moving equipment. Design philosophies with clearly identified objectives and general outcomes are being developed for each of these issues. These objectives and outcomes provide the focus for risk mitigation related to each issue.

EMESRT members have elected to disseminate information about these design philosophies primarily through the use of an existing information portal - the Minerals Industry Risk Management Gateway (MIRMGate). This paper will outline the various approaches being taken to make this information publicly available.

It will discuss the utilisation of existing MIRMGate information resources and the dissemination of emerging EMESRT design philosophy information using a variety of communication mechanisms. The purpose and functionality of the EMESRT Alert Service will also be discussed.

Utilisation of existing information

MIRMGate (www.mirmgate.com) was released as a freely available information portal of mining related information in 2004. This searchable, web based system allows users to find information related to the management of health and safety risks associated with mining. MIRMGate also functions as a communication tool through its Alert Service.

A large portion of existing MIRMGate information has some relevance for people seeking information about equipment design issues. Site users, particularly in Australia, would be familiar with the Mine Design Guidelines (MDGs) produced by the NSW Department of Primary Industries (DPI Mine Safety) that provide information about human factors issues related to equipment design. A MIRMGate search for design guidelines will reveal a list of MDGs, a number of which have recently been made freely downloadable from the NSW site.

Additional information about the risks associated with people operating and maintaining equipment can be gleaned from incident reports published by the various regulatory bodies in Australia and other countries. Furthermore, information about design modifications that have successfully eliminated or reduced these risks is commonly disseminated via the state innovations awards events conducted annually in Australia.

Design philosophies for eight of the fifteen priority areas of improvement in human factors design are being developed by EMESRT members in 2007, with development of the remaining seven design philosophies scheduled for 2008. The fifteen issues are listed below.

2007

Access & Egress
Working at Heights
Vibration
Fire
Isolation
Visibility / collision detection
Tyres & Rims
Manual materials handling

2008

Noise
Dust
Machine stability / slope indication
Guarding
Displays, controls, including labelling
Work postures
Confined space

Existing MIRMgate information is being progressively reviewed and “tagged” for identification if relevant to the design philosophies. The MIRMgate system has been customised to recognise any identified document as an EMESRT type, which allows users to restrict their search for information to documents relevant to the EMESRT design philosophies. Selecting “EMESRT” from the Type dropdown menu as shown below will facilitate this type of search.

The screenshot shows a web browser window displaying the MIRMgate website. The browser's address bar shows the URL http://www.mirmgate.com/basic_search.asp. The website header features the MIRMgate logo and the tagline "Your Gateway to Minerals Industry Risk Management". Below the header is a navigation menu with buttons for "Basic Search", "Browse By Hazard", "Browse By Task", "Browse By Subject", "Advanced Search", and "Alert Service". The main content area is titled "Basic Search" and includes a search input field, a "Search" button, and a "Type" dropdown menu. The dropdown menu is open, showing options: "Any", "Good Practice", "Lessons Learned", "Innovation", and "EMESRT". The footer of the page contains copyright information: "© 2006 MISHC | Maintained by: MIRMgate Team" and "Powered By Hot Meta | Design based on Daymedia".

MIRMgate will continue to be updated with new information relevant to the design philosophies. Existing sources of information will be maintained and new opportunities explored. Designers, manufacturers, suppliers, contractors, users and owners of mobile earth moving equipment are encouraged to contribute factual information about incidents where human factors design issues have contributed to these events. Research organisations, government bodies and mining chambers and councils are other potential sources of information.

Emerging EMESRT design philosophy information

The EMESRT strategy for dissemination of information about the emerging design philosophies (DP) includes a range of mechanisms commonly used by the minerals industry. The primary focus is to produce web based resources that are supported by an educational package on CD and hard copy materials, as well as by presentations made at industry forums such as the current Queensland Mining Industry Health and Safety Conference. EMESRT

members are actively involved in promoting this information to site users on an international basis.

As each DP matures, summary sheets will become available as interactive web pages accessible via MIRMgate. The primary aim of the DP summary sheets is to help site and OEM users with decision making associated with the purchase of earth moving equipment.

Summary sheets will be presented in a generic format that offers a snapshot of the objective, general outcome, risks to be mitigated and attempts to mitigate risks for each priority issue. The use of mining specific images to illustrate the risks to be mitigated and attempts to mitigate risks is designed to maximise assimilation of the message. This approach should also help users to recognise the relevance of the information for their own application. Hyperlinks associated with these images will lead users to lists of information resources found on MIRMgate that further explain or clarify the situation.

Informing the Global Minerals Industry

Customisation of the MIRMgate Alert Service is one strategy that has been implemented to keep the Global Minerals Industry informed about new EMESRT related information. The MIRMgate Alert Service is a key feature of the system that was introduced in June 2006. This is a free service offered for the benefit of busy minerals industry personnel that notifies MIRMgate users of new information about their selected topics. The Alert Service was modified in June 2007 to accommodate the notification of EMESRT related information as it is added to MIRMgate.

Existing Alert Service users who are interested in being notified about EMESRT related information simply need to update their alert profile with these new EMESRT options. The registration process for new Alert Service users is unchanged, with the exception that it now offers the opportunity to select EMESRT alerts as well as alerts for other types of information. Access to the registration process is shown in the image below at https://www.mirmgate.com/alertservice/alert_service.asp.

The screenshot shows a web browser window titled "MIRMgate Alert Service - Microsoft Internet Explorer". The address bar shows the URL "https://www.mirmgate.com/alertservice/alert_service.asp". The page header features the MIRMgate logo and the tagline "Your Gateway to Minerals Industry Risk Management". Below the header is a navigation menu with buttons for "Basic Search", "Browse By Hazard", "Browse By Task", "Browse By Subject", "Advanced Search", and "Alert Service". The main content area is titled "Alert Service" and includes a "Print version" link. The text describes the alert service as an automated notification system and lists two types of alerts: "Standard Alert" and "EMESRT Alert". A three-step registration process is outlined: 1. Register for free, 2. Activate your account, and 3. Select additional alert categories. A "REGISTER NOW" link is provided at the bottom. The footer contains copyright information for MISHC and MIRMgate Team, and mentions the site is powered by Hot Meta and designed by Daymedia.

MIRMGate News is an electronic newsletter that is sent to MIRMGate subscribers to alert them to new developments. News items about the progress of the EMESRT design philosophies and the engagement process with the OEMs will form part of MIRMGate News for the time being, although it is likely that a separate EMESRT News publication will be published regularly in the future.

How to contact EMESRT

The Earth Moving Equipment Safety Round Table welcomes specific enquiries and provision of information relevant to the EMESRT design philosophies. The contact details below may be used for this purpose.

Contact Information

Email: emesrt@mishc.uq.edu.au

Tel: +61 7 3346 4082

Fax: +61 7 3346 4067