



Date: 21 Nov 2007

EAGOSH Recommendation No 10

Hangar doors

This recommendation shall provide guidance to EAGOSH members regarding the issue of use of hangar doors by their employees. It reflects EAGOSH's co-ordinated opinion on this matter.

A. General

1. The function of the hangar doors is to open and close to allow aircraft, vehicles, equipment and personnel enter and exit.
2. The movement of the doors can produce hazardous situations, which cannot be avoided in the design.
3. These hazardous situations include collisions, impact, crushing, shearing and drawing-in points.
4. Safety devices and operational procedures can be inserted and/or implemented to reduce the risk to the lowest level possible.

B. Risks

1. Collision of moving door with people, vehicles, aircraft, equipment.
2. Personnel riding on doors.
3. Personnel stepping in the path of moving door.
4. Entrapment of people as doors pass by each other.
5. Entrapment of people as doors reach the Hangar end wall.



6. Employees using the personnel door to enter or exit the Hangar while main door is moving.

7. Entrapment of limbs between doors as the move past each other.



8. Entrapment of limbs in wheels and cogs on drive motor.

9. Electric shock from electric door supply and power sources.

10. In manual operation possible misuse of or failure to use the tow bar.



11. In manual operation failure to follow the correct procedure for tow bar use.



C. Causes of Accidents

Man-related factors

1. Failure to comply with procedure
2. Over familiarity with danger through habit
3. Poor grasp of machine design and controls
4. Underestimating the hazards – ignoring safety safeguards
5. Lack of training/awareness

6. Inadequate maintenance

Machine-related factors

1. Inadequate safety guarding
2. Sophisticated nature of controls
3. Inherent machine hazards
 - sudden starting
 - precarious stopping
4. Machine not suitable to the application or environment

Plant-related factors

1. Movement of personnel
2. Machinery using different technologies

Other Factors

1. Possibility of overriding safety measures
 - Slows down production
 - Difficult to implement
 - Many operatives involved
 - Safety measures are not recognised as such
2. Reliability of safety functions
 - Reliability of components and principles used
 - Component failure
 - Power failure or Electrical interference

D. Risk Assessment

Overall evaluation of the risk is a balanced consideration of all the above factors ensuring compliancy with:

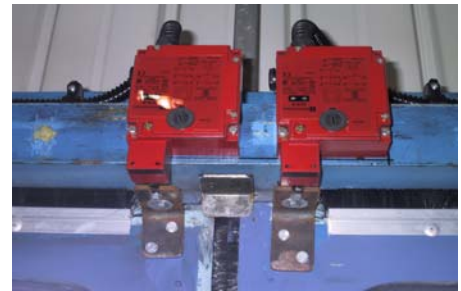
- Current Regulations and Standards
- Industry Best Practice

Typical controls following risk assessment are given below.

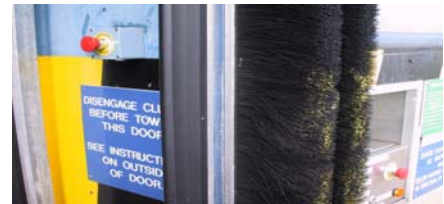
E. Controls

To reduce the risks to the lowest level reasonable practicable the following controls are recommended.

1. Interlocks on each set of personnel doors.



2. Two Safety Edges on the end of each door.



3. Five flashing beacons on each door.



4. Warning sounders on each door, which activate before door movement.

5. Emergency stops at each control switch on each door.



6. Emergency stop buttons at each personnel door and at end of each door.



7. Automatic stops on all doors at close position.

8. Low speed operation (approx. 10 mtrs per min).
9. All wheels and cogs fenced off.
10. Preventative maintenance programme to include a weekly inspection of the safety devices on each door.

11. Fence off the inside of each door to prevent ride on, or other events, which could lead to personnel entering into or on the doors.



12. Install magnetic locks on personnel doors, which are activated by the main door movement to prevent door opening.



13. Installation of Joystick type control rather than push button type control, which will be easier for the operator to activate and understand.



14. Upon installation of the controls give a staff briefing on the operation method.
15. Position the tow bars at a central location.



16. Install signage to outline the essential safety/operating instructions.
17. Paint hi-visibility Chevron stripes inside and outside of each door.
18. Paint the tow bars a distinct hi-visibility colour.
19. Paint the towing hitch a distinct hi-visibility colour.
20. Paint along tracks with yellow/black colouring to highlight area of door tracks.
21. Paint end of each door a Hi-Vis colour.
22. All cogs and wheels on drive motors covered.
23. Electric safety control circuits.
24. Hangar doors should only be operated for the designated purpose, i.e. moving a/c in and out. All other vehicle and equipment traffic should be lead through separate doors/gates.



References

- A. British Health and Safety Executive (HSE) www.hse.gov.uk
- B. German BGR 142, Safety rules for aircraft maintenance www.hvbg.de
- C. European Standard I EN 12453:2000
- D. European Standard EN 954-1

Contact point

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