

Introduction

BAE Air

- Aircraft
- Falcon works

Samlesbury is at the forefront of aircraft manufacturing with the main focus being on the F-35, Typhoon and Tempest programmes.

SHE advisor in the Technology & Future Capability SHE projects team

- Responsible for LEV projects across the air sector
- Improvement programme across the air sector
- Completed the P601, P602 & P604 courses and was awarded the CoC for Control



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Be an Intelligent
Customer!

Problems

- Systems non-compliant to HSG 258
- Vital information not available
- No Commissioning Report
- Poor Competency of the installers
- No Monitoring of the system- filter, airflow,
- No operator or maintenance training
- Incorrect Explosion Vent Design
- Incorrect Explosion Valve
- No Consideration for Duct Velocity
- No Consideration for Mixing of Materials
- No consideration for DSEAR
- Make up air problems
- Incorrect Stack
- No Bench marks
- No system design
- Process / material changes

Focus on the equipment not on the control of the contaminants

Employers over reliance on the supplier and receiving poor advice from suppliers and 3rd Parties.

Design Failings

- Suppliers, employers and employees, are over-optimistic about LEV capabilities.
- Poor Knowledge and competency amongst duty holders
- Employer's don't appreciate the extent of exposure risk from their processes
- Employers are often mislead and mis-sold
- LEV design, often the LEV hood is not matched to the process and source(s) causing exposure
- DSEAR not considered
- LEV commissioning, rarely done thoroughly

TExT inadequate

- Poor Knowledge and competency of examiners
- No consideration for contaminants
- No consideration DSEAR
- Systems not operational at the time of examination
- No Schematics
- No Duct velocity readings
- No capture distance
- No Air Clearance
- No volume figures
- Incorrect Bench Marks
- System 70% below Commissioning / Benchmark

Test date	FAIL
Examiner	

Solutions

- Exposure Assessment- COSHH- DSEAR
- Testing of the material
- Air Monitoring
- Level of control required
- WEL within HSE EH40 – ALARP
- Focus on the Hood Design
- ATEX- Equipment Categories
- Make up air
- Environmental – Emissions
- Energy considerations

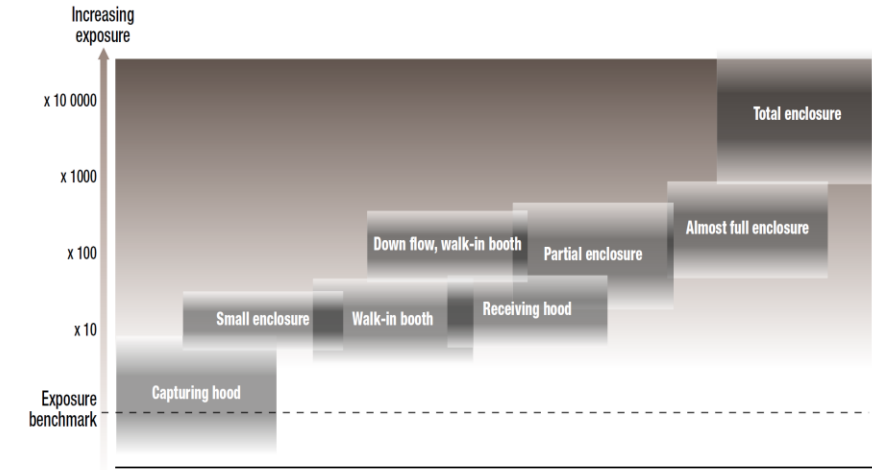
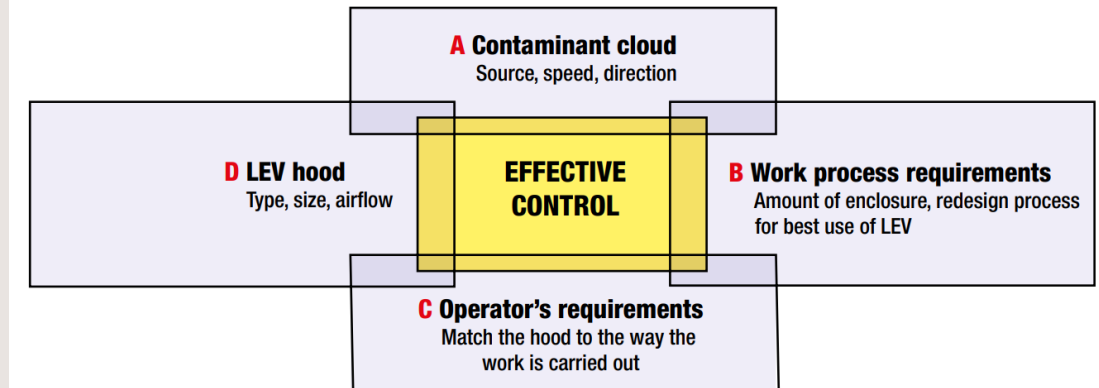


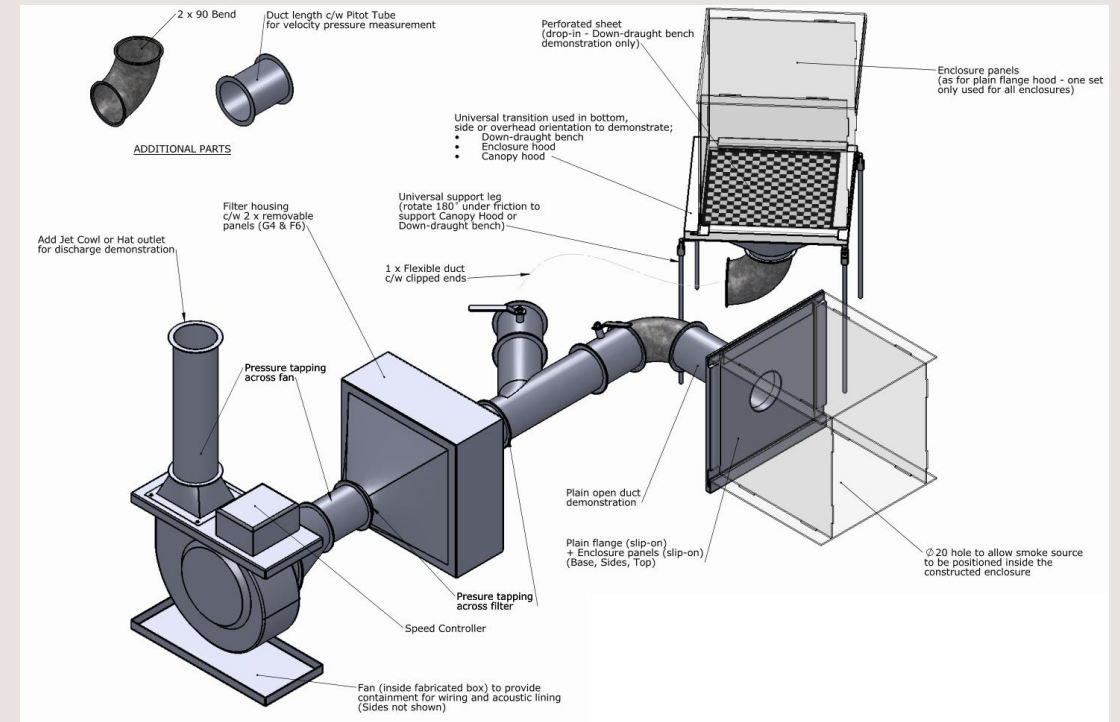
Figure 9 Effectiveness of various types of LEV



Competency

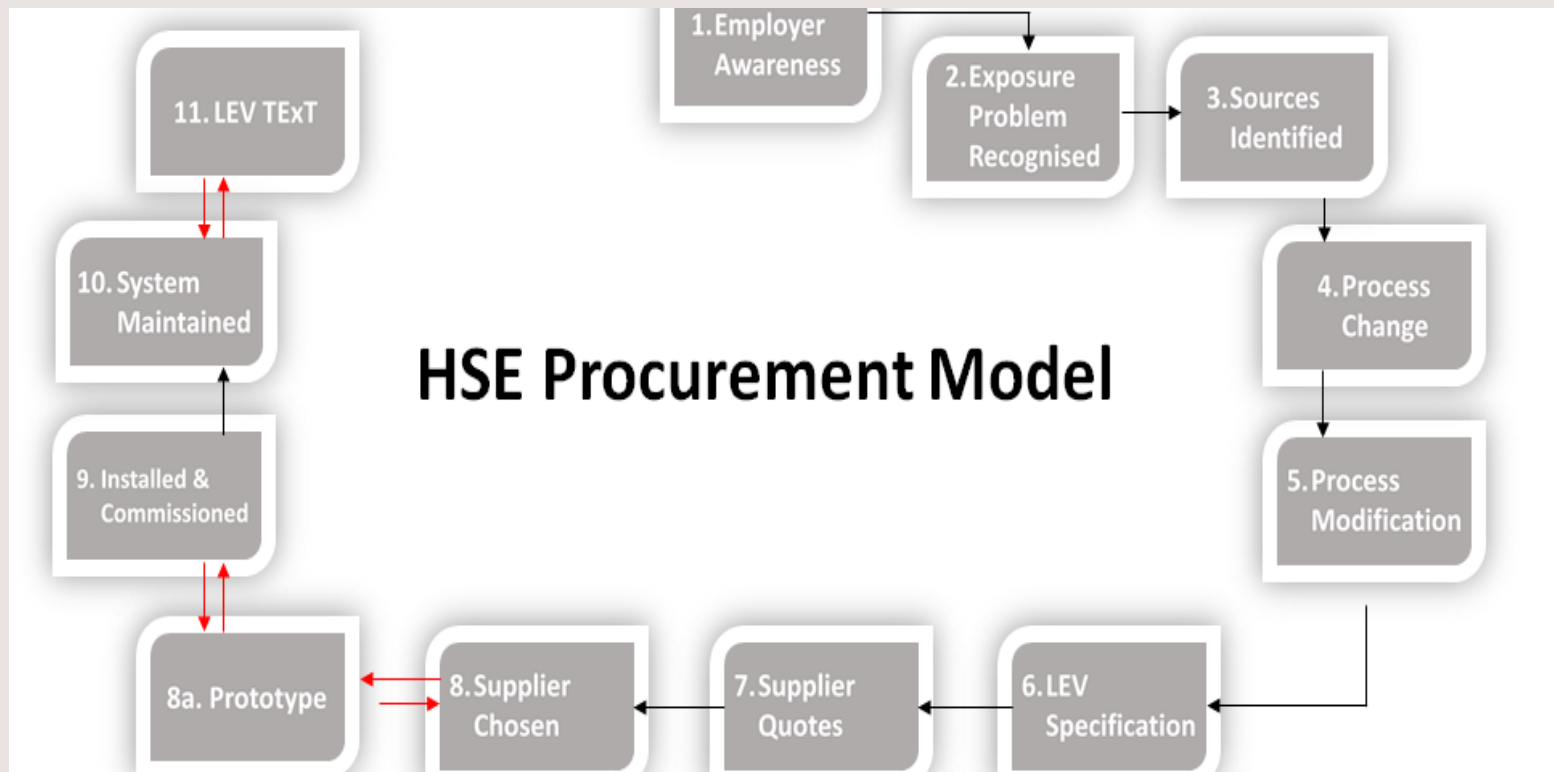
- Safety department attended a 1 day LEV awareness course
- Maintenance team attended 1 day course, understanding principles, COSHH, DSEAR, fault finding, testing.
- Project Engineers attended 1 day course understanding design requirements and key components
- Safety team attended BOHS W505 course
- Involvement of the SHE department in the LEV project has develop knowledge and awareness.
- LEV specialist attending P601 – Thorough Examination and testing qualification
- SHE projects team attending P602 – Basic Design principles of LEV systems qualification

Do you have a responsible person?



Procurement

This is what good looks like



Specification

- Ideally use a knowledge expert to develop the concept and technical design
- Understand capture zones, working zones and breathing zones
- The detailed design may be developed by the system supplier (yet using the expert to validate)
- Any specification should set out the operational, functional and performance requirements of the system
- The specification should detail the process, exposure sources and operator requirements
- The specification should cover relevant standards, quality of workmanship, manuals , log books and commissioning requirements
- Electronic airflow monitoring and its implementation
- Stack design
- ATEX requirements
- Explosion Protection
- Energy considerations

Specifications- Tender Review

- Tender Pack
- Cost estimates
- Performance measures- Adherence, Quality, Relationships
- Previous Customer Concerns
- Approved Suppliers
- SSIP
- 3rd Party assessments
- Review Experience
- Risk Assessments and Method Statements
- Safety Performance
- Qualifications
- CDM Regulations- Principle Designer- Principal Contractor
- Scoring / Weighting

Supplier Quotes and Selection

- Invite potential suppliers to site
- Invite 3 tenders- proposals
- Provide a drawing of the area and the processes to be controlled
- Provide a specification for the work to be done
- Inform potential suppliers about the materials , processes
- Environmental or fire and explosion requirements.

Commissioning

- Ensure that all components within the system are supplied and installed (including airflow monitors and filter monitoring)
- Verify that all plant is assembled correctly
- Check that any fans are rotating in the right direction
- Ensure that all setting dampers are locked in position (tamper-free)
- Does commissioning demonstrate that the system adequately control all process sources?
- Witness the commissioning.
- Sufficient makeup air.
- Smoke tests
- Ensure that you always receive an LEV commissioning document
- Benchmarking – providing info to the Statutory examiner
- Complete Validation – Acceptance testing

TEXT

- Have a service level agreement with a specification of the service required
- Evaluate inspection procedures and what checks are being done
- Ensure that the examiner is able to test and examine the system when it is in operation and when the process is active
- Ensure that procedures are in place to review inspection reports and implement service and repair works based recommendations by the examiner
- Audit the reports and systems
- Outline a comprehensive checklist for thorough examination and testing including appropriate frequency for statutory testing
- Guidance on conducting and interpreting smoke visualisation tests

Maintenance

- Registering the LEV on the PPM system
- Review to determine requirements are specialist service or in-house
- Ensure that you have a user manual for the system
- Ensure that all operatives are trained in the use of the system
- A logbook is required for the operative to record weekly visual inspections
- A log book for all inspections
- Ensure that only competent persons carry out service and maintenance work
- The system is to be retested against the original commissioning data and after any remedial or rectification works
- Ensure that any airflow indicators remain calibrated

Suppliers

Designers/Suppliers need to provide LEV which matches and controls all the processes and sources causing exposure, comes with adequate instructions and instrumentation and is effectively commissioned.

- Request the information on substances and DSEAR
- Help the employer to get the right type of LEV system- hood, filter etc
- Provide a clear quotation that covers what the employer (client) needs
- Match the LEV hoods to control the processes and sources
- Provide a Commissioning Report
- Provide a User Manual and Log Book
- Provide monitoring including air-flow indicators

Top- tips

- Involve your employees in LEV design or selection
- COSHH and DSEAR assessments
- Make sure the LEV is installed properly and works effectively- Validation
- Make sure the LEV has airflow indicators, system fault alarms
- Make sure the supplier provides commissioning report, User Manual and Log Book
- End users to ensure you have detailed specifications
- HSG 258 on your desk
- Competency
- Maintaining comprehensive system documentation

Thankyou

