Building a Safety Culture in Ireland

Patrick Griffin
Senior Inspector
Health and Safety Authority
Health & Safety Authority

Promote, Encourage and Foster

Monitor, Evaluate and Make Recommendations

Provide Legislation and Information

Enforce Legislation and Standards
## Role within the Authority

<table>
<thead>
<tr>
<th>Level</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Agriculture Quarries</td>
</tr>
<tr>
<td>Level 2</td>
<td>Mines Explosives Forestry</td>
</tr>
<tr>
<td>Level 3</td>
<td>Signage – Signs Directive</td>
</tr>
</tbody>
</table>

### Staffing
- **Anthony Morahan** – Agriculture Specialist (Part – time 66%)
- **Tom Browne** – Research
- Clerical (one- shared with 6 others)

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**Pat Griffin**
Extent of the Problem

- Deaths
- Injury
- Ill-health
- Costs to Individual
- Costs to Companies
- Costs to Society
Sector Performance

- EU average is 7 FA per 100,000 workers per year
- In the EU a Worker has an accident every 5 seconds
- In the EU a Worker suffers a FA every 2 hours

Irish Fatal Accident Rates- (3 year rolling average)
- General Workforce 3 FA per 100,000 workers
- Construction 6 FA per 100,000 workers
- Agriculture 16 FA per 100,000 workers
- Quarrying 26 FA per 100,000 workers
- Fishing 86 FA per 100,000 workers

Sector Target must be Zero Incidents
Ireland's FA Rate Performance

Fatality rates 2000-2007: Agriculture and fishing / Quarrying / Construction

Rate per 100,000 workers

2000 2001 2002 2003 2004 2005 2006 2007

Agriculture and fishing
Construction
Quarrying
• 60% of those at work have suffered an illness (30% MSD; 12% Stress)

• 300,000 report a chronic health problem (110,000 of these at work)

• Illness rate increasing - some sectors significant (agric; fishing; health and social work)
Irish Exchequer Income – approx €40 - €45bn
Costs of Incidents and ill health at work - €3.6bn (Indecon; 2006)
Absenteeism - €1.5bn cost (IBEC 2004)
Small business - €692m per annum
Indirect costs - lost output, quality, lost customers
Data shortcomings – Lack of consensus on Data
H.S.A. Budget – €22m per annum
Other Areas Impacting Health & Wellbeing

- Noise Induced Hearing Loss
- Level of exposure to breathing in vapours, fumes, dust etc higher in Ireland than EU15.
- Exposure to handling dangerous substances is higher for Irish workers than EU15.
- Occupational exposure to carcinogens – e.g. solar radiation
- Occupations at risk of asbestos exposure
Psychosocial

- Stress - the second most reported work related health problem
- 7% report being bullied at work (140,000)
- Physical violence at work higher in Ireland than other EU15
Zero Incidents and Zero Fatalities Through-

- Employer and Employee Commitment
- Enforcement Activity of Compliance Inspectors
- Prevention Services
The Problem
- Extent of Death/injury, Root Causes, Costs to individuals and economy, High Risk Sectors, High Risk activities

Solution
- Commitment from CEO’s & Senior Mgt, Visible Leadership, Live Risk Assessments, SME, Training, Family Dimension, Key Issues,
Building a Safety Culture

- Modern Appropriate Legislation
- User-friendly Guidance
- Shared Industry Responsibility
- Effective Training regime
Rationalisation of Legislation

Up to date Legislation

- 2005 Act
- 2007 General Application Regulations
- 2007 Construction Regulations
- 2008 Quarry Regulations
Previous Quarries Legislation

Mines & Quarries Act 1965
Quarries (General) Regulations 1974
Quarries (Explosives) Regulations 1971
Quarries (Electricity) Regulations 1972
M&Q (Reference) Rules 1970
M&Q (Dangerous Occurrence) Regulations 1970
M&Q (Notification of Diseases) Regulations 1971
M&Q (General Register) Regulations 1974
Quarries (Explosives)(Amendment) Regulations 1976
Safety, Health & Welfare at Work (Extractive Industries) Regulations 1997

ALL THESE IN RELATION TO QUARRIES ARE NOW REVOKED.
Guidance Includes

1. All the text of the Regulations,
2. Detailed explanations,
3. Sample notification and inspection sheets,
4. Extensive use of pictures and diagrams
5. Attractive layout to ensure user-friendly
6. Links on H.S.A. web to the document and other sources of information including Atlantic Alliance
### Guidance

#### Part 3 - General Safety Provisions

**Figure 3: Sample Daily Inspection Record for a Quarry**

<table>
<thead>
<tr>
<th>Area</th>
<th>Condition of Face</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Face</td>
<td>Some loose clay at upper part of face</td>
<td>Foundation works (01:45:00), to pull down with excavator today</td>
</tr>
<tr>
<td>East Face</td>
<td>Good - No Loose</td>
<td>Have worked for 2 months</td>
</tr>
<tr>
<td>South Face</td>
<td>OK</td>
<td>Drilling to commence today, holes position marked up</td>
</tr>
</tbody>
</table>

**Condition of Haul Road**

<table>
<thead>
<tr>
<th>West Haul Road</th>
<th>Requires improvement on Ramp</th>
<th>Height of edge protection to be raised with scalps - Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Haul Road</td>
<td>OK</td>
<td>Direction arrows signs to be installed, on Order</td>
</tr>
<tr>
<td>South Haul Road</td>
<td>Some potholes to be filled</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

**Observations**

- Mobile Plant: Removing Silencer, working on Anti-Jamming Drum truck
- Man rider guard missing on Mobile Drum cuber
- Fixed Plant: Checked all Pull wires OK
- All Guards in place

**Other Matters**

- John Smith attending Excavator Driver Training Today

**Person making this report & position:** A Foreman - Plant Safety Manager

**Signature:** A Foreman

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**10.1 Inesent Risks**

If an imminent risk of serious injury is discovered during an inspection, the scheme must require immediate action to safeguard those at risk. This may include, for example, suspension of work in the area or the taking of an item of plant out of use. Situations where such action is likely to be appropriate include:

- loose ground or overhanging rocks above a loading point, roadway or workplace
- a vehicle with inefficient brakes or faulty steering
- missing edge protection on roads, benches, ramps and tipping points
- machinery with missing guards or faulty safety devices, etc.

**Figure 4: Crushed by Face Collapse**

**10.2 Records of Inspection and Maintenance**

Records, which may be computerised with digital signatures, should be kept for all inspections unless this would involve disproportionate effort, for example, where small tools are inspected by their user before use and then taken to carry out the inspections. In such cases, the owner of the equipment should be informed of any defects found.

Anyone who notices a hazard related to the condition of the plant or its equipment should bring it to the attention of the supervisor or manager without unreasonable delay.

A sample checklist and report form is shown overlaid at Figure 5. It is a model which should be tailored to the needs of a particular quarry; it is not intended to be used exclusively as is presented.
PART 3 GENERAL SAFETY PROVISIONS

Danger areas at a quarry where access is required and there is a significant risk should be treated as hazardous areas and appropriate precautions taken.

Consideration needs to be given to:
- sections of the excavation, particularly where there are significant overhangs, which are liable to collapse;
- edges of excavations, particularly water-filled excavations, which are liable to collapse;
- places from which persons can fall from height;
- places where falling objects such as stones may fall from faces or sides.

Figure 27: Signage, bunding and rescue equipment at a sand & gravel lagoon

Figure 28: Installing quarry face edge protection

Figure 29: Installing quarry face edge protection

Figure 30: Installing quarry face edge protection

22. TRAFFIC ROUTES
(Regulation 25)

The operator shall ensure that:
(a) traffic routes, including stairs, fixed ladders, loading bays and ramps, are designed, located, laid out and made negotiable to ensure easy, safe and appropriate access in such a way as not to endanger persons working in the vicinity of these traffic routes.
(b) routes used for pedestrian or goods traffic, or both, including those used for loading and unloading, are dimensioned in accordance with the number of potential users and the type of activity concerned.
(c) if means of transport are used on traffic routes, an efficient safety clearance for adequate protective devices are provided for other quarry users, and the routes are clearly marked, regularly checked and properly maintained.
(d) sufficient clearance is allowed between vehicle traffic routes and doors, gates, passages for pedestrians, and stairways.
(e) traffic routes are clearly identified for the protection of persons at work.

The consequences of objects falling on workers, or persons falling from a height over quarry edges or through catwalk or floor openings or into excavations or fissures or fissures or into lagoons, or settling pools are to stress that high standards of protection are required.

Secure fencing should normally be provided to prevent people falling from edges, and the fencing should also be adequate to prevent objects falling onto people. Where fencing cannot be provided or has to be removed temporarily, other measures should be taken to prevent falls.

The stacking or storage of materials or objects at levels from which, if they fall, they could injure employees should be secure. Warning signs should be provided to prevent unauthorized employees entering such areas, unless under direct supervision.

The vehicles normally present at quarries include, loading shovels, diggers & articulated trucks, delivery trucks, fork lift trucks, mobile lifting equipment, commercial vans and boxes and private vehicles. Traffic routes: haul roads and pathways should be wide enough and the surfaces suited for the safe movement of the largest vehicle liable to use them. Allowance should be made for the size of vehicles coming into the premises from outside.

Sharp bends and blind corners should be eliminated as far as possible and, where this is not possible, warning signs and mirrors should be used to reduce the risk of accidents. Traffic routes for heavy traffic should be designated, where possible, to avoid the areas mainly used by pedestrians.

Traffic routes should be suitably designed and maintained for the traffic to be carried:
- roads or floor surfaces should be constructed and surfaced with suitable material surfaces should be even and properly drained;
- excessive gradients should be avoided;
- routes for pedestrian and goods traffic, or both, are dimensioned and used in accordance with the number of potential users and the type of activity concerned;
- traffic routes are clearly identified for the protection of persons at work.
Shared Industry Responsibility

- Quarries Safety Steering Committee
- Strategic Alliance with Irish Concrete Federation - ICF
- Visible Leadership – CEO/Managers
- Co-operation on Events – QSW/Conf
National Conference – 2008
QSW – Industry Initiatives
Training

Statutory Training Requirements;

- **Induction** training & instruction is immediate,

- Persons competent to carry out work assigned.

- Schedule 1 gives the list of Tasks requiring **Skills Card**, (1st Nov 2009)

- Working with Training Authority
A Lot Done – More To Do

Thanks for your Attention