

Supervising Safety Management on Ireland's Railways - 'Implementing the European Common Safety Method for Supervision'

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SUMMARY

European Commission Regulation (EU) No.1077/2012 is the latest in the suite of common safety methods (CSM) which mandates all European member state National Safety Authorities (NSA) to undertake supervision activity on Railway Undertakings and Infrastructure Managers to ensure that they are implementing and complying with their Safety Management System (SMS). The author of this paper was a member of the Working Group (WG) that developed this particular CSM.

This paper explains how the Railway Safety Commission (RSC), the NSA in the Republic of Ireland, has implemented this CSM in practice. It explains the background to the development of the CSM and the challenges faced by NSAs.

The author discusses a number of supervision techniques including audit, inspection and evaluation of safety performance, and how they may be used to supervise duty holders' compliance. The paper explains how the RSC has adopted a risk-based approach to its supervision activity and developed a supervision programme incorporating a number of different activities.

The author explains how the RSC identifies and manages supervision activity outcomes that may require duty holders to take remedial or corrective action.

The paper explains how the RSC's supervision programme satisfies the legal requirements of the European regulation and, perhaps more importantly, describes how the supervision activities give confidence that duty holders are correctly applying their SMS.

1 INTRODUCTION

On the 16th November 2012 the CSM for Supervision by NSAs, Commission Regulation (EU) No.1077/2012 [1], came into force. In parallel, the CSM for Monitoring by railway undertakings and infrastructure managers, Commission Regulation (EU) No.1078/2012 [2], came into force. This paper focuses on the role of the NSA and specifically how the Railway Safety Commission (RSC), the Irish NSA, has implemented this regulation in practice.

Supervision, referred to under Article 2 of the CSM, is defined in earlier legislation relating to the conformity assessment by NSAs of SMSs as "the arrangements put in place by the NSA to oversee safety performance after it has granted a safety certificate to a Railway Undertaking or a safety authorisation to an Infrastructure Manager."

Prior to regulation (EU) No.1077/2012 coming into force there were no detailed requirements placed on the NSA to supervise the duty holders operating in their member state. However, Article 16 of Directive 2004/49/EC (the Railway Safety Directive) [3] made reference to 'monitoring, promoting, enforcing and developing the safety regulatory framework', but from the author's involvement in European working groups it is fair to say that many NSAs, in Europe at least, were not engaging in a lot of supervising!

The European Railway Agency (ERA) identified this as an issue and, in 2009, sought to establish a working group (WG) to develop legislation on this most important regulatory activity. The author was selected to be a member of this WG along with 14 representatives from other member state NSAs and participants from the affected stakeholders representative bodies, namely UNIFE, CER and EIM. On the 15th October 2009 the first meeting took place and over the ensuing three years the WG, and subsequent Task Forces developed the regulations that we comply with today.

The initial concept was for a single CSM covering both internal monitoring by duty holders and external supervision by NSAs. Only later, following initial meetings of the WG, did it become apparent that it would be prudent to have two separate CSMs, i.e. one for duty holders (Railway Undertakings and Infrastructure

Managers), and the other for NSAs. ERA then set about establishing two small Task Forces (TFs) to progress the respective regulations.

On the 29th September 2010 the first meeting of the TF on the CSM for NSA Supervision took place on which there were just five NSAs represented, one of which was the RSC, represented by the author.

The purpose of this TF was to work on developing the CSM on supervision of a duty holder's SMS to be applied by the NSA, based on existing practices. ERA clearly stated at the outset that:

- experts working in the TF do not represent their NSA; they provide their own technical expertise
- experts in the TF are expected to be proactive and support the Agency who will draft the recommendation

Thus, over the subsequent months the TF set about reviewing the supervision practices then being undertaken by various NSAs. The five NSAs on the TF presented their current supervision systems and together formed a basis for a template supervision regime. ERA produced a template regulation identifying the necessary articles and draft text. Over the course of a number of months the TF debated and changed much of the initial text but finally came to an agreement. The draft regulation was distributed to the wider WG for review and comment, and subsequently presented to the Railway Interoperability and Safety Committee (RISC) of the European Commission for final agreement by the member state ministries. This was achieved in mid-2012 and on the 16th November 2012 the regulation was published in the Official Journal of the European Union.

Following on from this work, the TF was asked by ERA to develop guidelines to accompany the regulation. Each TF member was tasked with drafting the associated guidance text for an assigned article. The author of this paper was assigned Article 3, 'Supervision Strategy and plan(s)'. Borrowing (hijacking!), and hopefully improving on some already good concepts in Scandinavia and the UK, text was presented at a subsequent TF meeting, and with some subtle re-wording it was finalised and presented to the wider WG for agreement.

2 SUPERVISION STRATEGIES & PLANS

Article 3 of the CSM for Supervision requires NSAs to do three things, viz

1. To develop and implement a supervision strategy and plan(s) outlining how it targets its activities
2. To collect and analyse information to oversee compliance
3. To regularly review the strategy and plan(s) in light of experience

The supervision strategy put forward by the author, and that which was ultimately accepted by the TF and WG, is that of 'firm but fair' using the underlying principles stated in the conformity assessment regulations, namely:

- **Proportionality** in applying legislation and securing compliance;
- **Consistency** of approach;
- **Targeting** of enforcement action and setting priorities for supervision activities;
- **Resources** effectively applied by the NSA;
- **Transparency** about how the NSA operates and what those regulated may expect;
- **Accountability** for the NSA's decisions or actions;
- **Co-operation** with equivalent Competent Authorities such as Labour Inspectorates

The above principles are straightforward and need little further explanation, perhaps with the exception of 'proportionality'. Proportionality not only means relating enforcement action to the risks, but also to the level of scrutiny a duty holder can expect. Thus a supervision strategy may also be risk-based, and this is the approach that has been implemented in Ireland.

At its simplest level, risk is defined as the chance of harm actually being done. Thus the RSC have assigned supervision priorities to all duty holders operating in the country initially based upon this 'chance'. Using train kilometres (train-km) as the initial assigning factor means that those duty holders that do more (train-km), are likely to have a higher frequency of exposure to the hazards involved in their operations, and thus they should be subject to a greater degree of supervision.

In order to assign a duty holder an appropriate degree of supervision, duty holders are assigned an initial risk priority of between 1 and 4, priority 1 being a greater exposure to hazards owing to high train-km, and decreasing down to priority 4, where there is much less exposure. However, this is too crude a benchmark and needs further refining to take into account a duty holder's safety performance record and the particular nature of its activities (inter-city passenger, commuter services, freight, or infrastructure maintenance). Thus three adjustment factors are used to adjust the initial risk prioritisation assigned to each duty holder according to the risks that the particular duty holder presents. These adjustment factors include:

1. The business of the duty holder, taking into account the size, complexity, services offered, and exposure to third party risks;
2. The safety performance indicator data from RSC records; and
3. RSC experience of the performance of the duty holder including experience from previous supervision activities, accident investigations and findings.

Thus, a duty holder's initial risk prioritisation can be increased or reduced depending on these factors. However, due to the dominant factor of train-km, the priority level assigned to a duty holder can never reduce more than one level regardless of their performance.

Having carried out the adjustment exercise a final risk priority is established and, depending on what this is, it will dictate, the degree of supervision that a duty holder will be subject to in a supervision cycle (typically 3-5 years). The next section of this paper considers an example of how this technique has been applied.

2.1 Risk prioritisation for supervision

Although the CSM had not become law, the text was sufficiently developed by mid-2011 to enable a conforming supervision regime to be established. The RSC therefore decided, on a voluntary basis, to implement a supervision regime based on the draft text of the regulation.

Irish Rail is the state Railway Undertaking (RU) and Infrastructure Manager (IM) and in Ireland. The RU business operates circa 15 million train-km a year and the IM business operates an estimated 200,000 train-km. Using these figures the RU is assigned an initial baseline priority of 1 and the IM is assigned an initial baseline priority of 3. However, the IM business is responsible for 1,700 route-km of network and the aforementioned adjustment factors must be taken into account to establish the final risk priority. That is to say the IM might remain a risk priority 3 duty holder. Similarly, the RU might not remain a risk priority 1 organisation. For example, if they (the RU) have a good safety record they may be adjusted to a priority 2 organisation and hence be subject to lower degree of supervision by the RSC.

This risk prioritisation process is carried out by the RSC Supervision Team, and all decisions are documented, with justifications for adjustments (either up or down) clearly recorded. Returning to the example, the IM has been assigned an initial risk priority of 3 based on its limited train-km (yellow plant, engineering trains, etc.). However, it is a large and complex organisation being geographically spread with numerous departments. The IM's safety performance is reasonably good with few significant accidents or incidents, however RSC Inspectors have identified, on more than one occasion, non-compliances during audits. Thus, taking all available information into account, the IM is elevated to a priority 1 duty holder and is thus subject to a particular supervision programme that includes audits, inspections and meetings.

At the start of each year every duty holder is advised of what risk priority they have been assigned. Knowing this they understand what degree of supervision then can expect in a given supervision cycle, e.g., 'risk priority 1' duty holders are subject to a minimum of 4 SMS audits, sample asset inspections and 4 safety performance review meetings per year, while a 'risk priority 2' organisations would essentially be subject to half this. The RSC are satisfied that such a process demonstrates a number of the supervision principles as set out in Annex III of CSM 1058/2010, namely, proportionality, consistency, targeting, and transparency.

Thus carrying out the same exercise for each duty holder one ends up with a picture something like that that shown in Figure 1.

Duty Holder	Permit Type	Train Km / year	Initial Priority	Adjustment factors			Total Adjustment	Final Priority
				1	2	3		
IÉ RU	SC Part A & B	14.95 million	Priority 1	1	0	0	1	Priority 1
IÉ IM	SA	> 100,000	Priority 3	1	0	1	2	Priority 1
RPSI	SC Part A & B	< 100,000	Priority 4	1	0	1	2	Priority 2
Veolia	Safety Case	2.5 million	Priority 2	0	0	-1	-1	Priority 2
BNM	Safety Case	< 100,000	Priority 4	0	1	0	1	Priority 3
C&L	Safety Case	< 100,000	Priority 4	0	0	0	0	Priority 4
Donegal	Safety Case	< 100,000	Priority 4	0	0	0	0	Priority 4
Finntown	Safety Case	< 100,000	Priority 4	0	0	0	0	Priority 4
ISPS	Safety Case	< 100,000	Priority 4	0	0	0	0	Priority 4
T&B	Safety Case	< 100,000	Priority 4	0	0	0	0	Priority 4
WCR	Safety Case	< 100,000	Priority 4	1	0	0	0	Priority 3
WSVR	Safety Case	< 100,000	Priority 4	1	0	0	0	Priority 3

Figure 1: Risk Prioritisation Table

It should be noted that to come down a level a duty holder must score at least -2 in the adjustment analysis, otherwise they remain at the same level. The outcome of this analysis is that each duty holder has a final risk priority that has an associated degree of supervision.

Clearly, resources need to be considered but this is only done after the final risk prioritisation has been defined, i.e. the RSC has taken the position that the supervision regime is **not** based on the available resource. If there is a shortfall in terms of in-house resource then consultants can be engaged to fulfil the annual supervision plans.

Having defined a duty holder's risk priority and corresponding supervision regime, bespoke supervision plans are developed typically across the calendar year. An example might be January-Meeting, March-Audit, April-Meeting, June-Inspection, July-Meeting, August-Audit, October-Meeting, November-Audit, etc. To each of these supervision activities, resource is allocated, and an annual work programme formulated.

The RSC have, over the past 3 years, developed a balanced supervision programme for each duty holder operating within the state that includes a number of supervision activities spread out over the validity period of the safety certificate or safety authorisation. In this way duty holders will be subject to a series of audits that will, over the period of their safety certification or safety authorisation, check that they are not only applying and complying with their SMS, but also that the SMS continues to conform with the requirements of the relevant CSM on Conformity Assessment (Commission Regulations (EU) No.1158/2010 and (EU) No.1169/2010).[4,5]

3 SUPERVISION OF IRELAND'S RAILWAYS

Supervision activities undertaken in Ireland include, audits, inspections and safety meetings with the individual duty holders. This is planned so that the activities are conducted in a similar way to the maintenance of rolling stock, i.e. on a periodic basis over the validity of the certificate/authorisation as opposed to front-end or rear-end loading when a safety certificate or safety authorisation has been granted or is up for renewal.

In early November of each year the RSC Supervision team participate in a full day's workshop to review safety performance and findings from any SMS or Process audits and authorisations for new infrastructure works of vehicles undertaken in the preceding 12 months. The purpose of this meeting is to brainstorm possible supervision activities for the forthcoming year. Using mind-mapping software, topics are initially recorded (Figure 2) and then further developed into an outline supervision activity list (Figure 3). The lists of activities are then 'dropped in' to a calendar, which is then presented to the wider RSC team for review and comment. Having considered all feedback, a final combined supervision activity annual plan is presented to the Commissioner for Railway Safety for formal final sign off.

The duty holders are then briefed on the number of audits, inspections and meetings that will take place in the forthcoming calendar year. However, particular details of the audits that will take place are not revealed until close to an audit initiation.

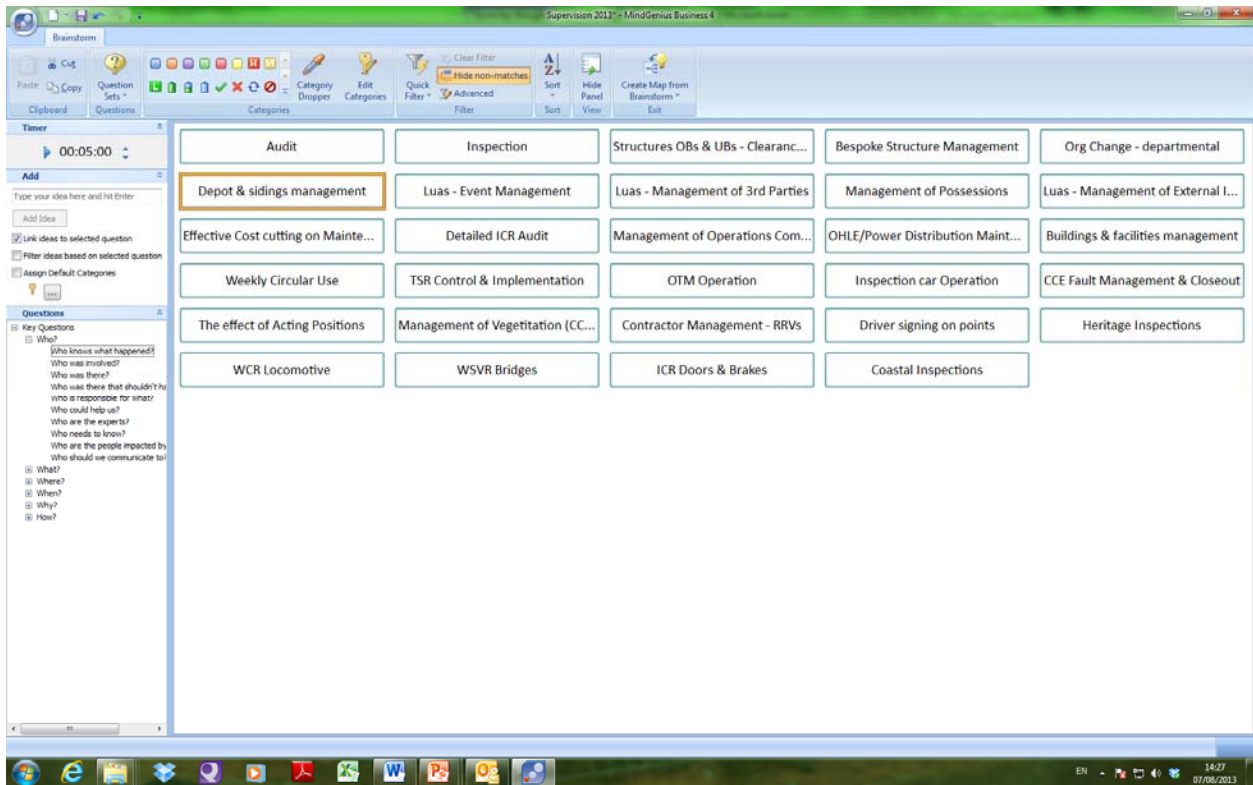


Figure 2: Initial Supervision Team Brainstorm

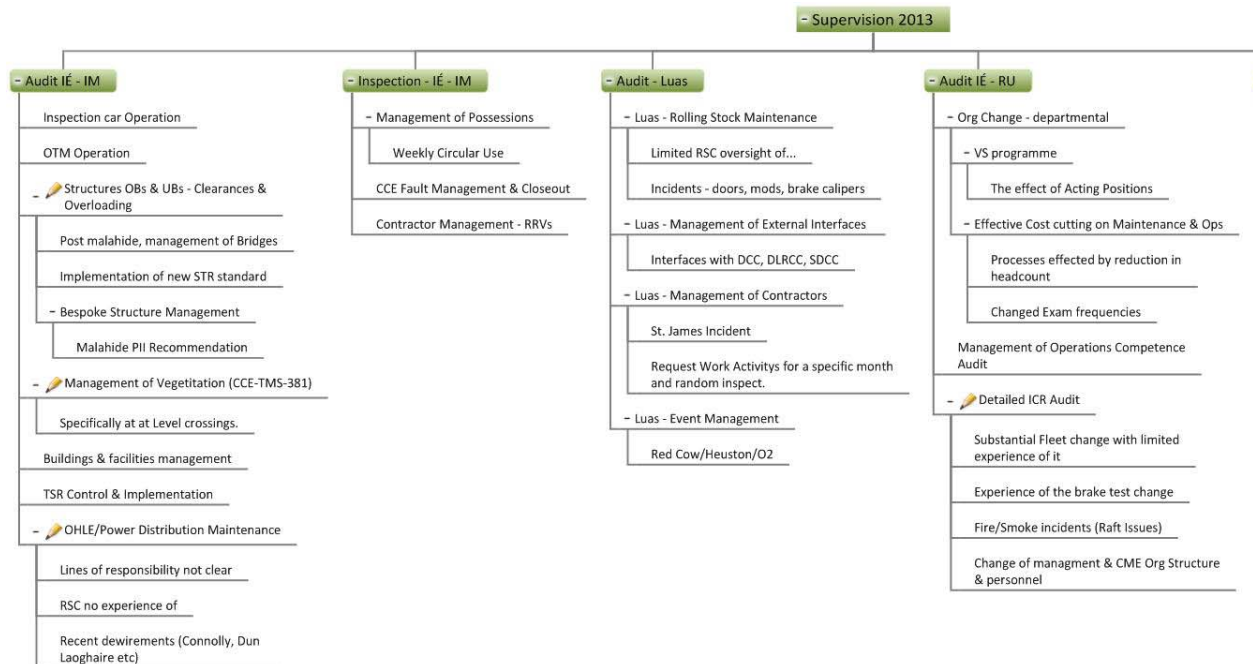


Figure 3: Final supervision activity mind-map (extract)

3.1 RSC supervision activities

The method by which the RSC supervises a duty holder's compliance with the applicable legislation, i.e. the Railway Safety Act and Directive 2004/49/EC is through its supervision activities. As previously explained, the RSC has developed a supervision strategy and plans that are in line with the current European model developed by the European Railway Agency (ERA). These plans include all of the activities necessary to effectively oversee the duty holder's compliance, and include:

- SMS Audits - RSC Inspectors auditing a duty holder's compliance with their approved SMS,
- Process Audits - RSC Inspectors auditing a duty holder's compliance with processes, i.e. their standards and procedures,
- Asset Inspections - RSC Inspectors undertaking sample asset inspections,
- Supervision Meetings - RSC Principal Inspector for Supervision meeting duty holders to review safety performance
- Post incident inspections - RSC Inspectors undertaking reactive activity following an incident, accident, or complaint (representation).
- High level Safety Meetings - Commissioner for Railway Safety meets with Chief Executives and Board Chairman

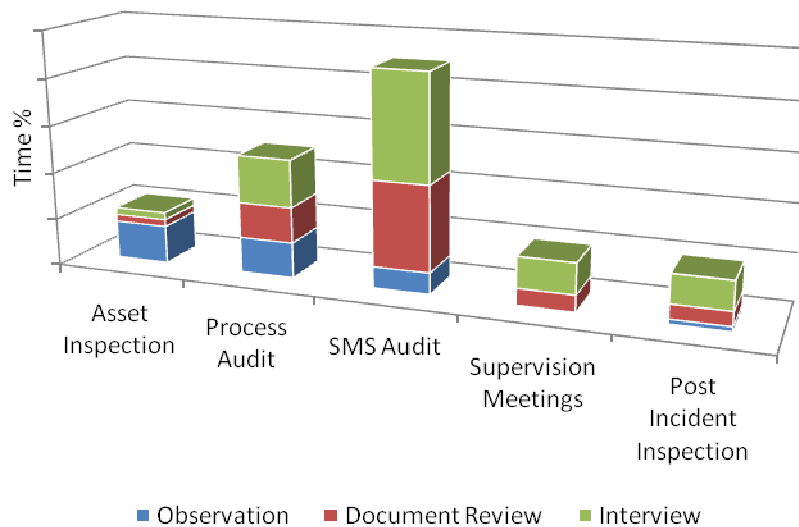


Figure 4: RSC Supervision activities and techniques by proportion of time spent on these activities

Figure 4 illustrates the RSC supervision activities and techniques used by proportion of time spent on these activities. As the graphic illustrates, in terms of time allocation the RSC focus is on auditing and specifically SMS auditing. The RSC, like every regulator, needs to consider where its resources, which anecdotally always appear to be scarce, are best utilised thereby satisfying one of the principles for supervision as stipulated in the European regulations on conformity assessment, namely (EU) No 1158/2010 and (EU) No 1169/2010.

The following sections of this paper describe each RSC supervision activity in turn.

3.1.1 RSC Audits

The RSC undertake essentially two types of audits, SMS audits and Topic Audits. The SMS audits are the principal supervision activity undertaken by the RSC and can be either a horizontal slice across a business, for example training and competency, or a vertical slice audit through a particular department, for example the rolling stock department. In these audits the RSC is not only checking that the duty holder is complying with their SMS but also checking that their SMS continues to satisfy the CSM on Conformity Assessment Annex II criteria.

There may appear to be an element of duplication here, insofar as the SMS conformity is checked by the RSC Conformity Assessment Team prior to the granting of safety certificates or safety authorisations. However, it must be recognised that there may be 'drift' as the SMS is adjusted to take account of emerging issues. Furthermore, the conformity assessment is at a 'system management' level, whereas it is possible for the RSC Supervision Team to delve right down into the lower level details of a duty holders SMS during supervision activities.

The other type of audits the RSC Supervision Team undertakes are Topic Audits and these audits focus on processes. For example, these might focus on a duty holder's regime for inspection and maintenance of bridges, or on the management of wheelsets from procurement to scrap.

The RSC Supervision Team consider it necessary to not only look at a duty holders SMS, but to widen audits to take into account the duty holder's Quality and Technical Management Systems, i.e. to consider the totality of Management System as they are all intertwined in many respects.

3.1.2 RSC Inspections

In preparation for this paper the author discussed aspects of an Inspector's duties with colleagues and a frequent response to "what should we be doing as Inspectors?" was "we need to be seen more, not to be just doing paper based audits but getting out on the railway". This 'boots on ballast' type inspection can be a valuable exercise providing vital intelligence, particularly where there is engagement with front line staff. To that end the RSC Supervision Team undertake various inspections including both assets and activities. In terms of asset inspections, e.g. structures, level crossings, rolling stock, etc., Inspectors are in general checking fitness for purpose criteria. In terms of processes, Inspectors have checked engineering possession arrangements and safety critical communications. These inspections offer a real-time 'health status' of the duty holder's processes, and can often inform further supervision activities.

To assist Inspectors in the field a number of quasi checklists have been developed. These checklists include guidance criteria for observation. It is the author's opinion that a simple closed checklist, of the tick box variety, offers little added value and that it is more beneficial if Inspectors are encouraged to not simply tick a box, but rather write something down about what they observe, witness, or identify.

All inspections are uniquely numbered and recorded with actions identified and assigned to the relevant duty holder. These are, more often than not, tracked to a satisfactory point, but can be simply for the duty holder's attention.

3.1.3 Safety Performance Review Meetings

Depending on the duty holders risk prioritisation they will have between 1 and 4 meetings per year with the RSC to review their on-going safety performance. Typically these meetings are with the CEO of the business or their equivalent, the head of safety for the business and a number of senior managers. At these meetings, duty holders present at a minimum, details of their own internal monitoring activity and findings, safety performance data, and other details including status of all internal accident/incident investigations and findings. Other more specific agenda items can be added by either party. Meeting minutes are taken with any actions assigned, recorded, and subsequently distributed to all relevant managers.

Such a forum provides the RSC with an accurate picture of the duty holders' activities and enables the RSC to raise any issues or concerns directly with senior management. Equally, it provides the duty holder with an opportunity to question the RSC directly about its activities or other items as necessary.

3.2 Supervision activity outcomes

Following any supervision activity, an Inspector may be of the opinion that corrective or preventative action is necessary to remedy specific issues that have been identified throughout the course of the supervision activity. In keeping, somewhat with the principles of ISO 19011 'Guidelines for quality and/or environmental management systems auditing', an RSC inspector may identify:

Major Non Compliance (MaNC): an area of non-compliance with a duty holder's internal, an applicable external standard, or legislation that is evidence of a system failure.

minor Non Compliance (miNC): an area of non-compliance with a duty holder's internal, an applicable external standard, or legislation that is evidence of a sporadic lapse in implementation of a system or deviation from a system.

Action Required (AR): an area where potential exists for a non-compliance to occur unless remedial action is taken or improvement is made, an isolated error that requires correction, or some other action arising from the audit.

Scope for Improvement (Sfl): an area highlighted where, in the opinion of the Auditor, system or business improvement can be achieved by the company. Typically this is phrased as a recommendation, the merits and implementation of which should be decided by audited organisation.

Audit Trail (AT): an area that the auditor feels should have further attention, either by inclusion in the programme for future audits (but not necessarily an external audit item) or by some other means.

Good Practice (GP): an area highlighted which, in the opinion of the Auditor, is good practice within the industry.

Depending on the supervision activity findings and subsequent outcome a duty holder may be requested to submit an 'Improvement Plan' (Plan), as per section 76 of the Railway Safety Act, 2005. Typically this is if a non-compliance has been identified. Once a plan has been submitted and reviewed the RSC will, in accordance with section 76, subsection 2, write to the duty holder or person concerned indicating if they are satisfied with the Improvement Plan or not. If the latter is the case the RSC will direct that the Improvement Plan be revised and re-submitted within a specified time period.

More often than not the RSC identify 'Action Required' items and these are made if, for example, anomalies are found with standards, or standards are vague and clarity is needed, etc.

In any event, if the RSC requires action(s) to be taken, SMART principles are applied, i.e. the action required is Specific, Measureable, Achievable, Realistic and Time-bound. All 'Action Required' outcomes are assigned a Planned Completion Date (PCD) and this is set depending upon the identified risk. The implementation of these 'recommendations' is then monitored by the RSC until a suitable closure point is achieved.

3.3 Supervision activity management

Supervision Activity scheduling and outcome (recommendation) tracking is a time consuming activity. The duty holders are not yet at a point where they can be left to implement recommendations and simply provide feedback; thus RSC follow up is required. In 2012 the RSC purchased software to assist in this activity and, while it is not fully rolled out, are committed to implementing it. This software (Q-Pulse, from Gael Ltd) has been in use for many years in other high hazard environments, such as the aviation sector, and the RSC are confident it will assist in this task.

3.3.1 Enforcement

The ultimate purpose of the RSC's enforcement of legislation relating to railway safety is to ensure that duty holders recognise, manage, and control risks effectively, thus preventing harm. The term 'enforcement' has a wide meaning and applies, here, to all dealings between the RSC and those on whom the law places safety duties (duty holder's and others). The purpose of enforcement is to:

- ensure that duty holders or others take action to deal immediately with intolerable or unacceptable risks;
- promote and achieve sustained compliance with applicable legislation; and
- ensure that duty holders or others who breach legislation, and directors or managers who fail in their responsibilities, may be held to account. This may include bringing forward proceedings against alleged offenders.

To achieve this RSC Inspectors have a range of tools at their disposal to secure legislative compliance. Inspectors may offer duty holders and others information and explanation, both face-to-face and in writing. However, if in the opinion of the Inspector, an activity is being or is likely to be carried out by any party, and this poses a risk to passengers, staff or the public, then the Inspector can request an Improvement Plan. This plan must satisfy the RSC that adequate corrective action has been or will be taken.

Following on from the Improvement Plan, Inspectors may also serve Improvement and Prohibition Notices. An improvement notice will be issued if a duty holder or other party are failing to comply, or have failed to comply with legislation, or have failed to comply with an Improvement Plan. In such instances the RSC will write to the duty holder and direct some form of action within a specified timescale.



Figure 5: the RSC's enforcement hierarchy

In general terms the RSC use the principle of 'escalation', i.e. we would rarely have the need to immediately prohibit an activity and would rather offer a duty holder the opportunity to put things right. This is the purpose of the Improvement Plan. A duty holder can formally advise the RSC of the action(s) it has taken or proposes to take to address the issue. Providing this submission satisfies the Inspector then the issue does not need to go any further.

Taking a critical look at ourselves, it is fair to say that the RSC have limited experience in its enforcement role, being a relatively young organisation, and have, heretofore, secured compliance without the need for court action or financial penalties. This is clearly an area of business risk for the RSC, as colleagues from other member state NSAs have advised that prosecutions are lengthy activities that often put a strain on their resources.

4 SUPERVISION CHALLENGES

NSAs encounter many challenges in their day to day activities and are exposed to many business risks. When there are limited resources, as is the case in the RSC, and a small number of duty holders, it is highly likely that in undertaking supervision activities the regulator will develop close relationships with the duty holders they regulate. While this can be positive, it also has its drawbacks. There is a possibility that Inspectors will be influenced by those they regulate and this is what is referred to as regulatory capture. It is when the Inspector has become too close to the regulated company and this is impairing their judgement.

Small safety authorities, such as the RSC, need to be extra vigilant in this context as there is a risk that Inspectors, while professional in the exercise of their duties, may lack the confidence to enforce and take the softer option of guiding duty holders when deficiencies are found. Gunningham (2012)[6], refers to this as 'good bloke syndrome', where Inspectors 'help' rather than 'enforce' as they can consider staff of the duty holder as friends. The author would be of the opinion that regulators need to strike a balance between guiding and enforcing. But perhaps the key issue for the regulator is to recognise *regulatory capture* as a business risk and have controls in place.

To that end the RSC always ensures that all correspondence relating to supervision and enforcement is reviewed by another Inspector who has not been directly involved in the activity, thereby providing some objectivity. This also comes down to a safety authority's maturity and, in Europe at least this is a relatively new concept.

Another challenge for the RSC, at least, is managing audit and investigation recommendations. Since the commencement of the RSC's more rigorous supervision regime, we have been focused on carrying out supervision activities (audits and inspections), thereby generating recommendations. Where we have been

not so good is in tracking the implementation of these. There is now a sizeable backlog going back three to four years and it is now taking a concerted effort and time to get this back to a manageable level. Thus it is vital to factor in to annual programmes sufficient time to track duty holder progress.

It has been said by many that a company's most valuable asset are its people, and the RSC is no different. We have a very small cohort of staff that are expected to do much. Thus it is imperative that they are of high calibre and well-rounded railway professionals. Fortunately, the RSC is very much pro 'continuous professional development' both formally and informally and, while this can be and is costly, it is necessary to develop confident Inspectors capable of working in an industry that is complex and varied. Moreover, having competent staff, perhaps with one or two specialisms, enables the RSC to carry out more activities in-house as opposed to relying on external resources.

4.1 Management maturity

The Office of Rail Regulation (ORR), the UK NSA, has established themselves as a leader, in Europe at least, in the concept of management maturity within the rail industry. They have developed a 'rail management maturity model' or RM3 [7] for short (on which a paper was presented at IRSC 2011 in Melbourne). This is used to assess and arguably benchmark the UK rail industry's safety management. The model considers the 5 stages of management maturity development, i.e., from 'ad hoc' to 'excellent' and ORR scores its duty holders against various SMS criteria, e.g., leadership, emergency management, staff training & competence, etc. Many other NSAs are now looking at this model to determine if it has merit implementing in their own jurisdictions, the RSC included. Similarly, ERA have studied ORR's RM3 and, using it as a template, have developed and commenced a cross-audit programme to effectively benchmark NSAs. This cross audit programme will ensure that every European member state NSA is audited every 5 years. Thus the regulator is now being regulated!

Similar to the RM3, ERA have developed protocols (questions and guidance material), trained cross auditors from member state NSAs (author included) and undertaken a pilot phase of audits. This pilot phase commenced in late 2011 with six NSAs volunteering to be audited. The RSC was one of the six NSAs who put themselves forward for cross audit. The first on-site audit took place in February 2012 on Trafi, the Finnish NSA. The audit team comprised three auditors from member state NSAs, one of which was the author, and a lead auditor from ERA. Using the audit protocols the audit team interviewed numerous managerial and front line Trafi staff with the purpose of checking how well they are implementing legislative requirements in terms of SMS assessment, Authorisation for Placing in Service infrastructure and rolling stock (APIS) and Supervision. During the pilot phase it was envisaged that an NSA would be scored in a similar way to the RM3 method, but this was later dropped in favour of a detailed report outlining areas where there is scope for improvement. So while an NSA is no longer 'scored', ERA can obtain a picture of how mature an NSA is and this is now available for the six NSAs in the pilot phase.

While this initiative has to be welcomed and it is only right that regulators are audited, a lot can go wrong in the 5 years between ERA visits and the periodicity of the cross audit may need reviewing in the future. Nonetheless, it is very beneficial to hold a mirror up to oneself and obtain an independent view on how we, the regulators are doing. Clearly, if we expect industry organisations to be striving for excellence we should be doing the same. Perhaps the principle of 'cross auditing' could be considered in other parts of the world, Asia, the Americas and Australasia. The aviation sector spreads best practice globally so why can't the railway industry do the same!

CONCLUSION

Railway safety regulators recognise that society expects their train journey be pretty much on time, provide reasonable levels of comfortable and obviously safe. Unfortunately, from time to time things do go wrong and accidents occur. At times like this it can often be trial by media for both the duty holder involved and the safety regulator. Regardless of the circumstances involved society expects companies and individuals to be held responsible. Thus it is vital that NSAs can robustly defend their actions but more importantly sleep well knowing they have been active in supervising duty holders!

To that end the RSC has learnt a great deal over the past 18 months in how we supervise duty holders. Planning activities, now takes a shorter timescale as we have developed audit plan templates and questions sets. Similarly, we have opening and closing meeting proforma presentations available and report templates ready, all with the goal of reducing the amount of time spent in the office. The Supervision Team, since January 2013, has also started meeting monthly (well almost monthly!) to essentially do a PDCA (Plan-Do-Check-Act) cycle. We look back at what was done and identify audit or inspection trails, and discuss imminent supervision activity. The meeting acts as a forum for discussion and learning and the team is more

focused. Our control room board is updated, and any member of the RSC team can see what we are doing and obtain a picture of current duty holder safety performance.

There is still work to be done on tracking safety recommendations, however, we are confident that within 12 months we will be back to more manageable numbers. Similarly, many of the team will have concluded their targeted training which will also free up time get out on the railway!

July 2013 was a particularly bad month for the rail industry globally with the tragic accidents in Lac-Mégantic in Canada, Brétigny-sur-Orge in France, Santiago de Compostela in Northern Spain and Granges-pres-Marnand in Switzerland. They act as a reminder, not that one is needed, that it is vitally important to learn from these events and that we as regulators and duty holders cannot rest on our successes but must become preoccupied with failure and always ask ourselves, where are we weak or exposed? It is then for the regulator to foster, encourage, promote and sometimes enforce railway safety through diligent and continuous supervision of duty holders.

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