

Performance Audit

An Analysis on OHSA's Operations - A Case Study on the Construction Industry

Report by the Auditor General

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List of Abbreviations

AF	Administrative Fine
AG	Attorney General
AP	Accident Proportions
AR	Accident Rate
BICC	Building Industry Consultative Council
COMAH	Control of Major Accident Hazards
DSS	Department of Social Security
EPSC	European Process Safety Centre
ETC	Employment and Training Corporation
EU	European Union
GOP	Gainfully Occupied Population
ILO	International Labour Organisation
IQV	Immediately Quantifiable Variables
KPI	Key Performance Indicator
LFS	Labour Force Survey
LN	Legal Notice
MCAST	Malta College for Arts, Science and Technology
MEPA	Malta Environment and Planning Authority
MET	Meteorological Office
MMMT	Monthly Mean Maximum Temperature
MSDC	Ministry for Social Dialogue, Consumer Affairs and Civil Liberties
NA	Number of Accidents
NACE	Nomenclature of Economic Activities
NAO	National Audit Office
NHW	Number of Hours Worked
NIQV	Non-immediately Quantifiable Variables
NSO	National Statistics Office
OHS	Occupational Health and Safety
OHSA	Occupational Health and Safety Authority
PPE	Personal Protective Equipment
PS	Project Supervisor
PSCS	Project Supervisor Construction Stage
PSDS	Project Supervisor Design Stage
SO	Order to Stop Works
SOP	Standard Operating Procedure
STS	Short term Business Statistics

Executive Summary

Workers engaged in the local Construction Industry are at most risk of suffering occupational accidents over those working in any other sector. In explaining the occurrence of such incidents, NAO carried out a statistical exercise in which quantifiable variables were tested for correlation with occurring accidents. More specifically, number of hours worked, weather variables and age of workers were tested in order to explain accident rates. Through its analysis, this Office found that none of these factors are strongly correlated with the occurrence of occupational accidents in the construction industry except heat, which factor explains 31.5% variability in accident rates. By deduction, other factors which cannot be immediately quantified, explain the remaining 68.5% of the variability in accident rates. While these unexplained variations are attributable to predictors the NAO was not in a position to quantify, this Office notes that, apart from random variation, these include disregard to occupational health and safety through cultural predisposition and regulatory slack.

In view of this consideration, NAO carried out a performance audit to assess the effectiveness of the Occupational Health and Safety Authority (OHSA) in this regard. The following are this Office's salient observations and corresponding recommendations on the issue at hand.

Observations

1. NAO concludes that **OHSA's operational philosophy is hindering the latter from comprehensively implementing its role as an autonomous regulator**. This Office is of the opinion that the Authority's mission statement '*Working with others to ensure healthier and safer workplaces in Malta*' into which its operational processes are rooted, does not fully reflect the proper role of an autonomous regulatory authority. NAO further opines that OHSA's target of achieving a 'self-regulating' system, goes against the very nature and role of a regulatory body.
2. NAO draws attention to the **fragmented manner by which OHSA keeps its documentation**, which in this Office's opinion, creates significant hindrance in the Authority's knowledge base with obvious repercussions to its operational processes.
3. NAO deems as completely unacceptable the fact that some **government entities are not providing information to OHSA**, despite the provision within the OHSA Act, and the endorsement by the Office of the Information and Data Protection Commissioner, which entitle the Authority to any information required to fulfil its mandate.

4. OHSA's concern that in spite of the standing legal obligations **clients are still consistently failing to engage a Project Supervisor (PS)** when undertaking a construction project, is acknowledged by NAO.
5. This Office is concerned with the **lack of proper vetting mechanisms that ascertain the competence of all active PSs, leading to risks of anyone assuming this role.** This concern is greatest in the case of clients who may opt to act as PSs for their own construction projects but who would be unknowledgeable in the OHS field. It is NAO's opinion that the current situation only serves as a mere ascertainment that the related responsibility is assumed, rather than ensuring that OHS is safeguarded. This concern is further compounded by OHSA's system of voluntary registration by PSs in its competent persons' register. The lack of proper vetting of all active PSs together with the non-obligation for these to be registered in OHSA's competent persons' list, creates a regulatory vacuum in this very important function within the OHS cycle.
6. NAO notes the Authority's assertion that the latter faces challenges due to its **limited allocated funds and that, consequently, the number of its inspectorate staff fall short of the benchmark established by the International Labour Organisation.**
7. This Office is concerned that the approach adopted by OHSA in determining which construction sites are to be subjected to inspection visits, is largely ad hoc and based on less than complete information. NAO draws particular attention to the fact that through the current construction notification system, **OHSA only has the potential visibility on projects which meet or exceed a set man-hours threshold.** This standard may be further acting as a considerable restriction to OHSA's information base, especially in view of the fact that the local scenario may significantly feature smaller scale projects
8. NAO is significantly concerned by the Authority's **policy of not carrying out exhaustive inspection visits on construction sites,** but rather ascertaining whether OHS structures and mechanisms are in place, while identifying obvious risks. This Office further disagrees with OHSA's decision to not make full use of a comprehensive checklist during inspection visits due to fears that this may be used against the Authority in Court. If inspection visits are carried out in an adequate and comprehensive manner while being exhaustively documented in an official checklist, NAO does not perceive any reason for such documents to be used against the Authority in the Courts of Law.
9. NAO gives particular importance to the **introduction of the skills card** (championed by the Building Industry Consultative Council) which ascertains the competence of a worker. More specifically NAO notes that the implementation of this system presents an excellent opportunity to give additional prominence to OHS through the introduction of relevant modules that would be in part fulfilment to the attainment of this card.
10. This Office draws attention to the fact that **during the summer period OHSA's operational hours are reduced, while statistics show that accidents within the construction industry experience a significant spike.**
11. NAO deems **the level of financial penalties (in the form of administrative fines) as completely incommensurate to the nature of some of the infringements they are intended to deter.** It is this Office's considered opinion that a maximum fine of €450 does not, in any way, reflect the very serious risks posed by certain infringements, such as allowing workers to operate from heights without the necessary preventive measures.

12. NAO notes OHSA's concern on the fact that **the relatively low Court fines handed down to convicted infringers may not be serving as sufficient deterrent**. Such a scenario, this Office opines, may be incentivising further non-compliance to OHS obligations by the various duty holders, given that the risks of being handed out a significantly higher financial penalty when compared to administrative fines is minimal.

Recommendations

1. **NAO urges the Authority to re-align its focus and operating philosophy** by adopting a pro active approach while, rather than aiming for the achievement of a self-regulating system, it further consolidates its primary role as an enforcer and a regulator.
2. **NAO recommends OHSA to engage in a comprehensive revamp of its information system** so that this may better serve the Authority in its operational processes.
3. **NAO urges the Authority to enforce its legal rights and unrelentingly request any information which it would require** to adequately shoulder its responsibilities from other Government bodies. Should such a measure yield unfavourable outcomes, this Office recommends escalation of the matter through the appropriate channels.
4. NAO questions whether the legal requirement to appoint PSs should lie with the client given the high risk that this stakeholder is not conversant with the practices of the construction industry as well as with any OHS related legal requirements. In view of this, **NAO recommends that OHSA should explore the possibility of soliciting, through the appropriate channels, for a shift in the legal responsibility of appointing PSs from the client to other, more technically and legally conversant stakeholders.**
5. **This Office strongly urges OHSA to ascertain that health and safety considerations within construction sites are solely entrusted to PSs with certified competence and qualifications.** This, NAO recommends, is only possible through a system in which individuals wishing to act as PSs subject themselves to vetting by OHSA and, upon approval, be included in the Authority's competent persons' register. Practitioners included in this register should then be the only legally allowable options to be assigned as PSs.
6. **NAO recommends that the Authority should initiate an internal exercise to determine whether its current staff complement and financial allocation are being utilised to their full potential** and address any identified inefficiencies. OHSA could also simultaneously conduct a simplification review intended to determine whether any existing processes could be simplified or automated. NAO also draws attention to the fact that, in adopting a zero-tolerance approach towards enforcement on identified infringements, the Authority could generate additional revenue, thereby putting itself in a better position to fulfil its obligations.
7. **NAO recommends that the Authority endeavours to construct a centralised electronic prioritisation system**, based on comprehensive information, through which it could systematically select the sites to be subjected to inspection visits. This tool should be intended to adequately determine an inspection sample which reflects the current spectrum of ongoing works, while taking into consideration risks such as the duty holders' track records.

8. **NAO strongly urges the Authority to start carrying out exhaustive inspections during on-site visits to ascertain the full implementation of OHS considerations while fully reviewing all required documentation,** rather than merely ascertaining that OHS structures and mechanisms are in place, while identifying obvious risks. This Office further urges OHSA to comprehensively document all identified infringements through a standard checklist.
9. NAO urges OHSA to proactively offer BICC any required assistance so that OHS considerations in the modules leading to the fulfilment of the skills card are comprehensively covered. **This Office also suggests that any worker engaged in this industry should be obliged to carry this skills card on his/her person during works as assurance of the worker's competence and knowledge, including on OHS requirements.** Operating in the construction industry without attaining and carrying this card upon one's person, should subject the infringer to enforcement action.
10. In view of the disparity between OHSA's reduced operating hours and the spike in accidents during the summer period, NAO recommends that the Authority explores its options to thoroughly cover this sensitive seasonal period. **One possible solution may be that OHSA revisits its operational hours** to better reflect the exigencies of the construction industry.
11. **NAO suggests that the Authority exerts the necessary pressures, through the appropriate channels, so that relevant legislation is amended to minimise the disproportionality between the monetary value attached with AFs and the infringements they seek to deter.**
12. In view of the fact that Court fines handed down to convicted infringers may not be acting as sufficient deterrent due to their low monetary value, NAO extends recommendation 11 above. **This Office once again urges the Authority to exert the necessary pressure, through the appropriate channels, so that relevant legislation is amended to better reflect the severity of occurring/potential consequences emanating from identified offences.**

In conclusion, NAO feels that OHSA should tighten and step-up its regulatory function through a thorough change in its operational philosophy, particularly by adopting pro-active and meticulous monitoring as well as unrelenting enforcement with the aim of forcibly changing this deep-rooted local cultural disregard to OHS. This change, NAO opines, is the key to securing a widespread increase in adherence to OHS obligations thereby ascertaining safer workplaces within the local construction industry.

Chapter 1 – Introduction

This Chapter presents a contextual backdrop of the occupational health and safety (OHS) situation in Malta and an insight on occupational accidents across all local industries. It then proceeds to outline the National Audit Office’s (NAO) process in selecting the industry against which the Occupational Health and Safety Authority (OHSA)’s operational considerations were assessed. The audit’s scope, objectives and methodology utilised to complete the required analysis are also laid out, together with a synopsis for each Chapter in this report.

1.1. A Contextual Backdrop on Occupational Accidents

The Occupational Health and Safety Authority

- 1.1.1. The implementation of OHS at the workplace was given its legislative importance through the introduction of the OHSA Act (Chapter 424 of the Laws of Malta). OHSA, which was established through this Act, has the primary responsibility of “...ensuring that the physical, psychological and social well being of all workers in all work places are promoted and to ensure that they are safeguarded by whoever is so obliged to do”.¹
- 1.1.2. The Authority currently falls under the remit of the Ministry for Social Dialogue, Consumer Affairs and Civil Liberties (MSDC), and is financed through central Government funds. The approved estimated recurrent grant allocated to OHSA in 2015 amounted to €900,000, with €980,000 being voted for 2016.
- 1.1.3. OHSA is made up of a Board and an Executive Body. The former is assigned with discussing strategies and policies as well as providing advice to the incumbent Minister. The Board comprises of 9 members, namely: a Chairperson; the Director of Industrial and Employment Relations (*ex officio*) as Deputy Chairperson; a person with OHS competence; a person responsible for health; a person responsible for economic affairs; two members to represent workers’ interests; and two members to represent the employers’ interests. All of the Board Members, with the exception of the Director of Industrial and Employment Relations, are chosen and appointed by the Minister (MSDC).

¹ Source: Chapter 424 of the Laws of Malta: The Occupational Health and Safety Authority Act

1.1.4. On the other hand, the Executive Body's functions mainly consist of the general implementation of the provisions outlined in the OHS Act (and any other related regulations), as well as carrying out any duties and responsibilities as may be prescribed or assigned to them by the Board. More, specifically, the executive branch of the OHS is responsible for²:

- i. applying the provisions of this Act and of any related regulations;*
- ii. establish strategies in consultation with the Chief Executive Officer, by which the general national policy relating to OHS, indicated to it by the Minister, may be implemented;*
- iii. advise the Minister regarding the making of regulations to promote, maintain and protect a high level of OHS;*
- iv. monitor compliance with relevant OHS legislation and to take enforcement action;*
- v. prepare regulations or Codes of Practice required to promote, maintain and protect a high level of OHS: Provided that the Authority may appoint for this purpose, committees or sub-committees and it may coopt on such committees or sub-committees competent persons from outside its membership, who, in the opinion of the Authority, have professional or expert knowledge on any matter dealt with under this Act; so however that the co-opted members shall not have a vote on any matter before a committee or subcommittee;*
- vi. promote the dissemination of information regarding OHS, and the methods required to prevent occupational injury, ill health or death;*
- vii. promote education and training on OHS, and emergency and first aid response at work places;*
- viii. collate and analyse data and statistics on occupational injuries, ill health and deaths, and on matters ancillary to OHS: Provided that the Authority may request data or information on any matter related to OHS, and such data or information shall be provided forthwith: Provided further that any such data or information shall be deemed to have been given and received under the obligation of confidentiality;*
- ix. keep registers of such plant, installations, equipment, machinery, articles, substances, or chemicals and intended for use at work which in the opinion of the Authority provide a serious OHS risk;*
- x. carry out any investigation on any matter concerning OHS, including but not limited to the investigation of any accident, injury, disease or death occurring as a result, or by reason of, any association with work, as well as investigations to ascertain the level of OHS provided at any work place, and the duty of the Authority to secure the enforcement of any provision of this Act shall not be reason to debar the carrying out of such investigations: Provided that the Authority may appoint competent persons as far as possible from the register to assist it in any investigations and to accompany its officials during an investigation;*
- xi. promote and carry out scientific research aimed at better methods of preventing occupational ill health, injury, or death;*
- xii. keep registers of persons competent to give advice on matters related to OHS: Provided that the Authority may determine the minimum qualifications required before the name of a person may be entered into the register.*

Extracted from Chapter 424 of the Laws of Malta: The Occupational Health and Safety Authority Act

² Source: Chapter 424 of the Laws of Malta: The Occupational Health and Safety Authority Act

- 1.1.5. In view of the fact that the Executive Body is responsible for the implementation of the OHS Act as well as to assume the regulatory function in this field, this audit has been scoped solely on the operations of this Body.

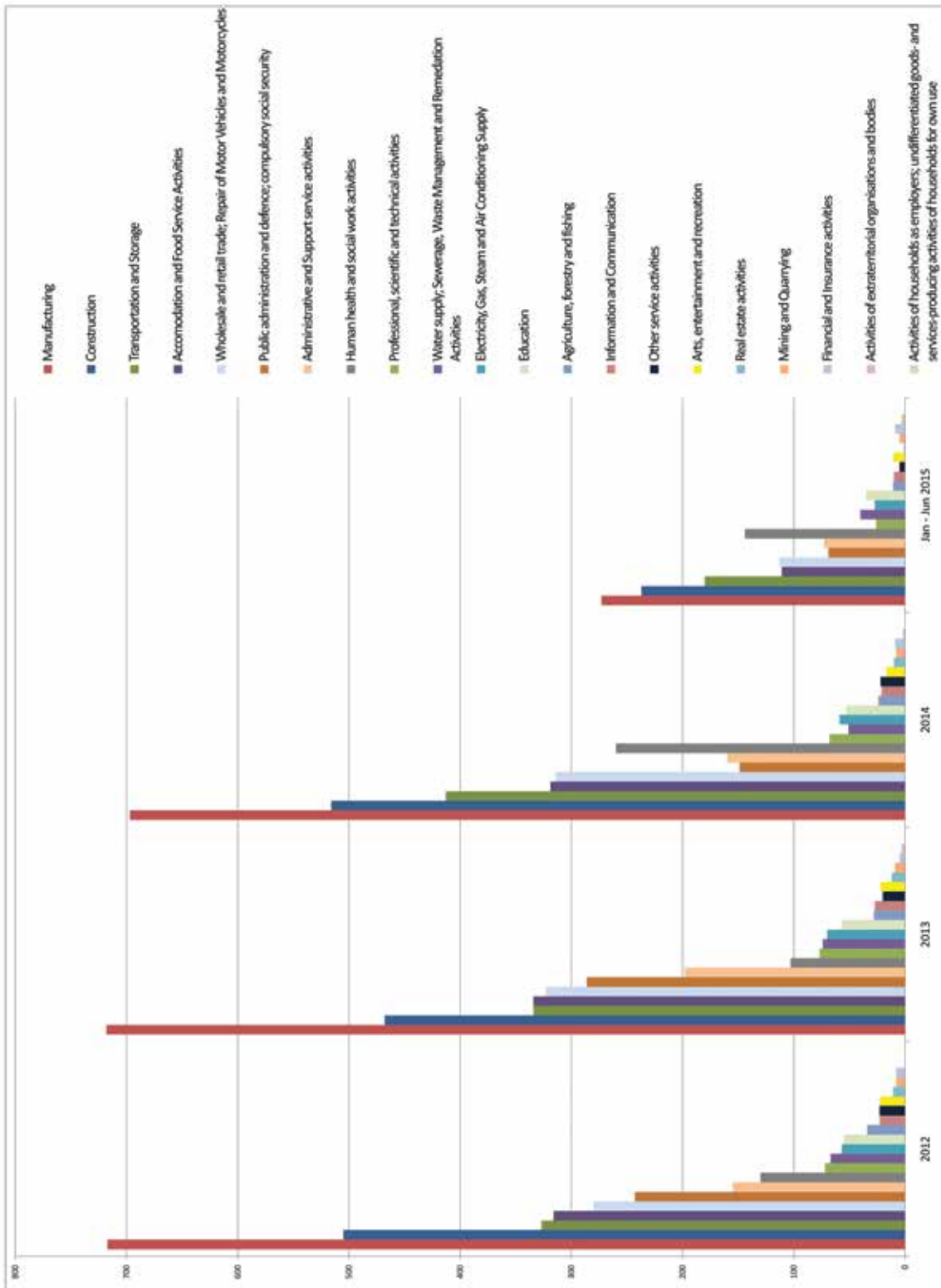
The Local Scenario

- 1.1.6. OHS estimates that the cost of injuries at the place of work and work-related illnesses cost Maltese Society approximately €33 million per annum³. These quoted costs, together with statistical information published by the National Statistics Office (NSO) (more specifically the 'Accident at Work Statistics' News Releases), show that work related accidents are significant⁴.
- 1.1.7. The data compiled by NSO is categorised in two main classifications, namely fatal (which information is sourced from OHS) and non-fatal accidents (sourced from the Department of Social Security(DSS)). Figure 1 presents the total accidents occurring in all local industries between January 2012 and June 2015.
- 1.1.8. As made evident in Figure 1, the Manufacturing and Construction industries are the two sectors which, by a considerable margin, register the highest local total occurring occupational accidents. In order to determine which of these industries, in actuality, presents the highest risks of injury for workers, NAO calculated a per capita rate for these two sectors by pitting the aforementioned accident totals against the respective Gainfully Occupied Population (GOP) figures (published by NSO). This exercise (Table 1 and Figure 2 refer) resulted in the Construction industry registering a higher per capita accident rate (AR) than its Manufacturing counterpart, and consequently the former sector was selected by this Office as its case study.

³ These are 2010 figures which estimate between the region of €32,977,000 to €34,020,000 and are extracted from 'Occupational Health and Safety in Malta – A Snapshot of Prevailing Standards' (2011).

⁴ 'Accidents at Work' Statistics which are issued by the National Statistics Office (NSO) on a quarterly basis.

Figure 1: Total Accidents Per Industry by Year



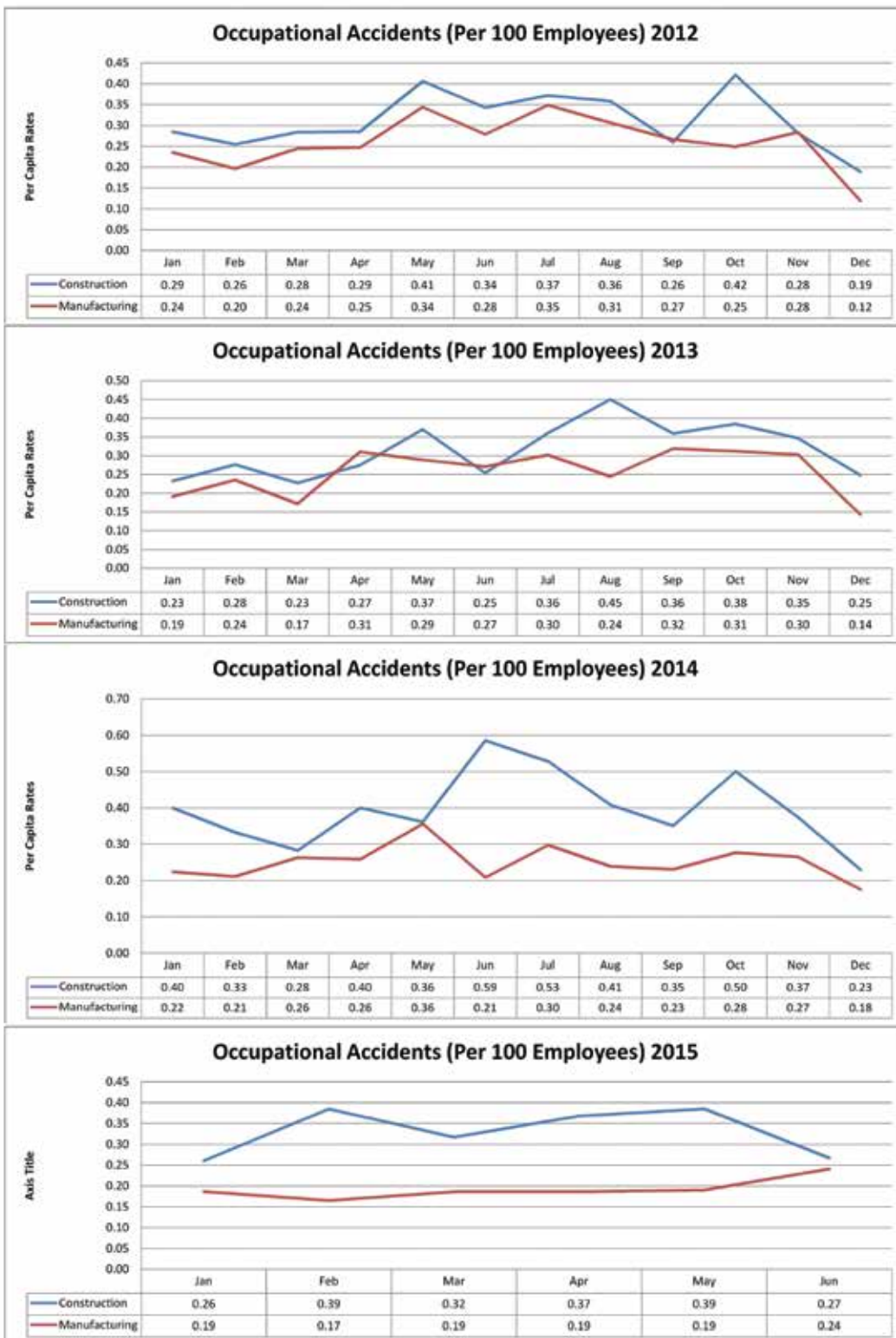
Adapted from NSO – Accidents at Work

Table 1: Accident Per Capita Rates in the Construction and Manufacturing Industries

Month	Construction			Manufacturing		
	Accidents	GOP	Rate	Accident	GOP	Rate
Jan-12	39	13683	0.29	54	22,961	0.24
Feb-12	35	13718	0.26	44	22,399	0.20
Mar-12	39	13735	0.28	56	22,943	0.24
Apr-12	38	13312	0.29	57	23,114	0.25
May-12	57	14021	0.41	79	22,952	0.34
Jun-12	48	13994	0.34	64	22,954	0.28
Jul-12	52	13962	0.37	81	23,230	0.35
Aug-12	50	13947	0.36	71	23,161	0.31
Sep-12	36	13840	0.26	61	22,891	0.27
Oct-12	46	10905	0.42	58	23,284	0.25
Nov-12	39	13843	0.28	65	22,881	0.28
Dec-12	26	13771	0.19	27	22,780	0.12
Jan-13	32	13783	0.23	44	22,994	0.19
Feb-13	38	13761	0.28	55	23,339	0.24
Mar-13	31	13638	0.23	40	23,272	0.17
Apr-13	38	13825	0.27	72	23,163	0.31
May-13	51	13793	0.37	67	23,158	0.29
Jun-13	35	13771	0.25	63	23,245	0.27
Jul-13	50	13882	0.36	71	23,481	0.30
Aug-13	49	10879	0.45	57	23,296	0.24
Sep-13	39	10854	0.36	74	23,180	0.32
Oct-13	41	10656	0.38	72	23,025	0.31
Nov-13	37	10674	0.35	70	23,062	0.30
Dec-13	27	10908	0.25	33	23,154	0.14
Jan-14	43	10748	0.40	52	23,211	0.22
Feb-14	36	10797	0.33	50	23,580	0.21
Mar-14	31	10951	0.28	62	23,544	0.26
Apr-14	44	10976	0.40	61	23,546	0.26
May-14	39	10777	0.36	83	23,277	0.36
Jun-14	63	10757	0.59	49	23,459	0.21
Jul-14	57	10788	0.53	70	23,526	0.30
Aug-14	44	10777	0.41	56	23,372	0.24
Sep-14	38	10811	0.35	54	23,365	0.23
Oct-14	55	10974	0.50	65	23,439	0.28
Nov-14	41	10955	0.37	54	20,352	0.27
Dec-14	25	10891	0.23	41	23,381	0.18
Jan-15	31	11880	0.26	44	23,528	0.19
Feb-15	46	11945	0.39	39	23,533	0.17
Mar-15	38	11976	0.32	44	23,580	0.19
Apr-15	44	11949	0.37	44	23,605	0.19
May-15	46	11930	0.39	45	23,618	0.19
Jun-15	32	11957	0.27	57	23,636	0.24

Adapted from NSO – Gainfully occupied Population
NSO – Accidents at Work

Figure 2: Accident Per Capita Rates in the Construction and Manufacturing Industries



Adapted from NSO – Gainfully occupied Population
NSO – Accidents at Work

1.2. Audit Scope and Objectives

- 1.2.1. As made already clear in preceding parts of this Chapter, this audit was scoped to focus on the Construction industry given that workers engaged in this sector are the most likely to suffer work-related injuries. Through a statistical analysis, the audit team investigated potential causes of accidents in this industry and sought to detect correlations between these factors and the actual occurrence of incidents. In addition, OHSA's allocation of resources, operating procedures, its proactive and reactive measures, as well as its enforcement mechanisms were also examined to determine the Authority's efficiency and effectiveness in mitigating the occurrence of such accidents.
- 1.2.2. This study is purely a performance evaluation of the reviewed operations and consequently, assessment on the financial compliance of the OHSA was scoped out.
- 1.2.3. While analysis on the operational considerations of the audited entity is as at end 2015, information extracted by the audit team for informational and statistical data covers the period between January 2012 up to June 2015.

1.3. Methodology

- 1.3.1. This study is the result of the implementation of various methodologies for the collection and compilation of data as well as subsequent analysis. During the initial stages of the audit, the audit team carried out preliminary research by delving into foreign and local reports pertinent to the subject area, media articles and parliamentary questions, statistical information, as well as relevant legislation and directives.
- 1.3.2. After acquiring a general overview of the issues surrounding the audited area, a detailed issue-analysis exercise was carried out from which the main audit question emerged. Sub-questions were subsequently generated which, when aggregately answered, lead to the address of the primary query. Following this, a comprehensive audit plan was drawn, grounding the audit team's approach to the task at hand.
- 1.3.3. To answer the set questions, the audit team carried out pertinent fieldwork by using various methodologies. One of the principal research tools utilised during the fieldwork stage of this study was a series of in-depth semi-structured interviews with the audited entity. The aim of these meetings was mainly for the audit team to obtain a clear picture of the '*modus operandi*' of the OHSA and its operational environment. More specifically, information was solicited on a number of factors, such as the operational considerations of the Authority, the availability of resources, collaborations with other stakeholders, campaigns carried out to generate awareness as well as any prevailing extraneous challenges acting as an impediment on the quality and level of OHSA's service. These meetings were complimented by numerous requests for related documentation.
- 1.3.4. The audit team also accompanied OHSA Officers during site visits on construction sites and during related Court Sittings to obtain a first-hand account of 'on-the-ground' considerations governing the audit area. In addition, information (mainly in statistical format) was also solicited from the NSO, the Employment and Training Corporation (ETC) as well as from the Meteorological Office (MET) to complement and further substantiate findings generated from meetings and site visits. The analysis and findings emanating from this statistical information can be principally found in Chapter 2 of this audit report. All gathered information was triangulated

and analysed by the audit team to extract the findings presented in subsequent parts of this report.

- 1.3.5. The draft report presenting NAO's findings, conclusions and related recommendations, was forwarded to the respective auditees for their feedback prior to publication of this report.

1.4. Limitations of the Study

- 1.4.1. During the progression of this study, the audit team encountered a number of challenges and limitations which somewhat hindered its analysis of the issue at hand. The first of these challenges was that OHSA does not keep a harmonised database or referencing system that keeps a clear audit trail of the entire process pertaining to its monitoring and enforcement functions. This limitation made it difficult for NAO to extract all the relevant required information during the audited period.
- 1.4.2. NAO acknowledges that apart from OHSA, other entities (both public and private) may impact on OHS within the local construction industry. This Office however, limited its analysis to the operational processes of the OHSA, given that the latter is the primary regulatory stakeholder in this field.
- 1.4.3. This Office also found considerable difficulty in streamlining information provided by NSO and ETC in compiling its statistical exercise presented in Chapter 2. These complications mainly included the fact that information gathered from different entities was not always found to be categorised in same manner (mainly through varying economic activity categorisations and different time reporting formats). The identification and implementation of mitigating measures to address these challenges are explained in detail in Chapter 2.

1.5. Structure of the Report

- 1.5.1. **Chapter 1** – This Chapter presents a contextual backdrop of the OHS situation in Malta and an insight on occupational accidents across all local industries. It then proceeds to outline NAO's process in selecting the industry against which OHSA's operational considerations were assessed. The audit's scope, objectives and methodology utilised to complete the required analysis are also laid out, together with a synopsis for each Chapter in this report.
- 1.5.2. **Chapter 2** – This part of the report presents the audit team's analysis to determine the extent to which various factors affect accidents in the building construction industry. Data sources from which raw information was extracted will be identified together with an explanation of the methodology used to compile this study. Reference is also made to the limitations of this exercise and how NAO mitigated these identified issues.
- 1.5.3. **Chapter 3** – Following the conclusions presented in Chapter 2, this part of the report delineates the audit team's analysis on OHSA's internal working processes and its operational environment. More specifically, this Chapter will delve in considerations related to the Authority's philosophy, operational environment, financial and human resources as well as providing an analysis of the Authority's departmental processes.

Chapter 2
A Statistical Analysis on
Occupational Accidents in the
Building Construction Industry

Chapter 2 - A Statistical Analysis on Occupational Accidents in the Building Construction Industry

This Chapter presents the audit team’s analysis to determine the extent to which various factors affect accidents in the building construction industry. Data sources from which raw information was extracted will be identified together with an explanation of the methodology used to compile this study. Reference is also made to the limitations of this exercise and how NAO mitigated these identified issues.

2.1. Introduction and Scope

- 2.1.1. Preliminary findings in Chapter 1 show that registered local accidents per capita are highest in the Construction Industry. It is to be noted however, that these figures do not show the potential causes of fatal and non-fatal accidents within the different local sectors. With this consideration in mind, the audit team carried out a statistical study with the aim of identifying and quantifying the factors behind occurring accidents in the building construction industry. This was achieved by testing a number of immediately quantifiable variables (IQV) that could have an effect or are associated with the risk of an occupational accident within this industry. The IQVs identified by this Office, which were considered as potential predictors of ARs, included the monthly hours worked, worker age, and monthly weather variables. NAO however also points out that the occurrence of accidents may also be attributable to other, non-immediately quantifiable variables (NIQV), such as negligence, rush to complete works, overpopulated worksites and inadequate OHS provisions, which result from disregard to OHS and regulatory slack. The audit team attempted to indirectly calculate the extent to which NIQVs determine the occurrence of accidents, by adopting a two-stage approach. Firstly, the aforementioned IQVs were tested to determine whether any correlation between these and ARs exists at the 95% confidence level. Secondly, IQVs which were found to be significantly correlated with ARs (at the 95% confidence level) were included as explanatory variables in a linear regression model, so as to allow the NAO to indirectly determine an approximation of the extent to which the NIQVs can explain the variation in ARs.
- 2.1.2. Statistical data presented throughout this Chapter is classified in accordance with Eurostat’s Nomenclature of Economic Activities (NACE) Code F41, which relates solely to Construction of Buildings. This means that all other economic activities delineated under the broader Category F have been omitted from the purpose of this study, thereby focusing solely on the ‘Building Construction Industry’ activity.

2.2. Data Collection and Limitations

- 2.2.1. As explained in Chapter 1, NAO extracted data on occupational accidents (fatal and non-fatal) from the NSO's 'Accident at Work Statistics' News Releases. NAO however noted that this data is presented solely by the main economic activities (such as NACE Category F) with no subsequent breakdown into sub-categories. This meant that the audit team had to liaise with the publishing body of these statistics, so as to obtain the raw data filtered by sub-category NACE F41. NAO additionally requested that this data is classified by age. Data forwarded to this Office was presented by month.
- 2.2.2. When liaising with NSO on which dataset related to the working population in the building construction industry would best serve NAO in carrying out its study, this Office was directed to make use of the GOP statistics. This decision was made due to the fact that these figures are classified in the exact same NACE economic activities as the aforementioned 'Accident at Work Statistics' published by NSO. NAO was however informed that NSO are not in possession of a breakdown by age of these GOP figures. To this end, this Office was referred to the ETC, which is responsible for compiling this raw data. During consultation with ETC, the latter informed this Office that its compilation on the NACE F41 Category only encompasses updated figures on the private sector, whereas figures on the public sector are not collated by the Corporation. To this end, only private sector figures were used in NAO's analysis. This data was forwarded to this Office by month.
- 2.2.3. This Office also sought data from NSO that could provide a quantification on the building activity within NACE F41. In this respect, the latter forwarded the number of hours worked (NHW) in the industry under NAO's review, as this was found to be the most accurate representation of this quantification. It must be noted that two datasets related to hours worked, were provided to NAO namely, one sourced through Short Term Business Statistics (STS) and another from the Labour Force Survey (LFS). Following clarification meetings between NAO and NSO, it was decided that the LFS should be used insofar as hours worked are concerned. This data was presented to this Office by week, quarter and year.
- 2.2.4. NAO also communicated with MET so as to obtain key important weather parameters that are compiled for the perusal of individuals who work outdoors. This information was presented to NAO by month.

2.3. Analysis

- 2.3.1. The following parts of this Chapter present NAO's analysis carried out through the use of a statistical analysis software, that is 'IBM SPSS version 22'. All results can be found in Appendix A. As previously outlined, the analysed variables are as follows:
- i. **Monthly Accidents within the Building Construction Industry**
 - a) Number of Accidents (NA)
 - b) Accidents By Age
 - ii. **Monthly Population of the Building Construction Industry (Private Sector)**
 - a) Total Population
 - b) Population by Age
 - iii. **Monthly NHW in the Building Construction Industry**

In view of the fact that the NHW figures forwarded to NAO were not presented

by month (but rather by week, quarter and year), the audit team edited this information to reflect a monthly representation according to the number of days in each respective quarter. In doing so, this data could be correlated with the NA and establish any trends on a monthly basis.

iv. **Monthly Weather Parameters⁵**

- a) Mean Monthly Maximum Temperatures
- b) Mean Monthly hours of bright sunshine
- c) Highest wind gusts / day
- d) Most frequent wind direction
- e) Mean monthly wind speed
- f) Mean monthly relative humidity
- g) Number of days with thunderstorms
- h) Number of days with hail
- i) Monthly Rainfall Totals in mm

2.3.2. To ensure a fair analysis of the trend in accidents over time, this Office used ARs for its analysis rather than absolute values. This was also necessary to enable the correct analysis of the correlation between accidents and other explanatory variables while controlling the varying risk exposure to a potential accident. NAO notes that varying total accidents per month may simply represent varying risk exposure (for example, the total accidents recorded for one month may be double that of another month, but if in the latter month the total hours worked were half those of the former month, the AR would actually be equal in both months). To this end, this Office sought to identify a metric by which to establish a quantifiable AR within the building construction industry against which the abovementioned variables could be analysed. NAO concluded that, for this reason, NHW were best suited to express the risk exposure to a potential accident. The AR was established by dividing the NA by NHW and multiplied by 1,000, to show the rate per 1000 hours worked. The resulting figure therefore shows accidents per 1000 hours worked.

$$AR = \left(\frac{NA}{NHW} \right) * 1000$$

Correlation with Weather Variables

2.3.3. All the collected weather variables were tested for correlation with ARs by calculating the Bivariate Pearson correlation (see Appendix A.1). The strength of the each respective relationship can range from an absolute value of 1 (signifying the strongest relationship) to 0 (no relationship). In this case, Monthly Mean Maximum Temperature (MMMT) was proven to have the strongest correlation with AR, with a size effect of 0.576 significant at the 95% confidence level.

2.3.4. Other temperature variables were also found to be significantly correlated with ARs, including the monthly mean hours of bright sunshine, the monthly mean relative humidity, the monthly mean wind speed, the monthly days of hail and the monthly days with winds above 34 knots variables at the 95% confidence level, and the monthly rainfall (in mm) at the 90% confidence level. In order to determine whether these other significantly correlated weather variables were not simply proxy measures for MMMT, and that therefore MMMT is directly relevant and truly correlated with ARs, the Bivariate correlations between MMMT and these other

⁵ 'Mean Monthly' figures refer to the mean of the parameter presented by month.

MMMT was found to be significantly correlated with ARs, showing higher ARs for hotter months

significantly correlated weather variables were calculated (see Appendix A.2). The results showed that MMMT was highly correlated with these other weather variables, and these results were significant at the 95% confidence level. In view of these results, a Partial Correlation exercise was carried out, to test the correlation between weather variables and ARs when controlling for the MMMT (see Appendix A.3). This was done in order to find out whether these other weather variables were still significant once controlling for MMMT. Results showed that, at a 95% confidence level, no other weather variable is correlated with monthly ARs once MMMT is controlled for.

2.3.5. This analysis therefore concluded that that MMMT is the only weather variable significantly correlated with ARs. The extent of this significance will be explained at a later stage in this Chapter.

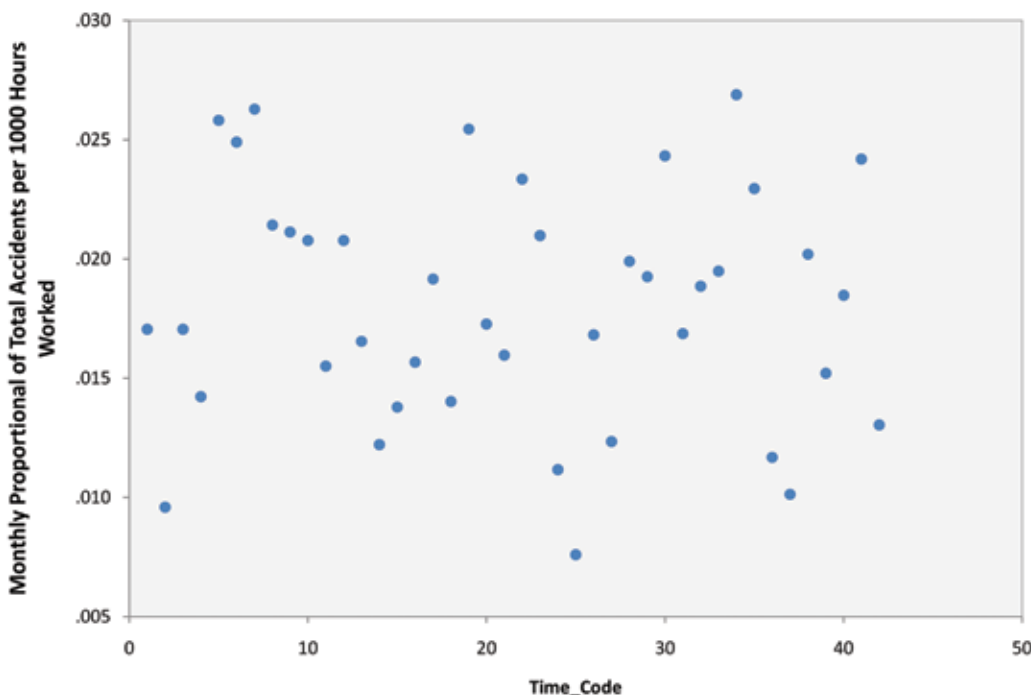
Accident Rates over Time

2.3.6. A series of exercises were also carried out in order to establish patterns or trends in relation to ARs over time. The time-points utilised for these exercises were between January 2012 and June 2015, hence a period of 42 months.

2.3.7. The first exercise carried out was a Bivariate Pearson Correlation between the monthly AR and time (considered as a continuous variable and including 42 time codes - one code for each month under review) in order to establish whether there is any linear trend in ARs over time (see Appendix A.4). This test showed that time (as a continuous variable) and AR, are not correlated. This result is also substantiated by the visual representation of data shown in the scatter plots in Figure 3. This scatter plot shows that no such trend exists, thereby implying that no assertion can be made on whether accidents have increased or decreased over time.

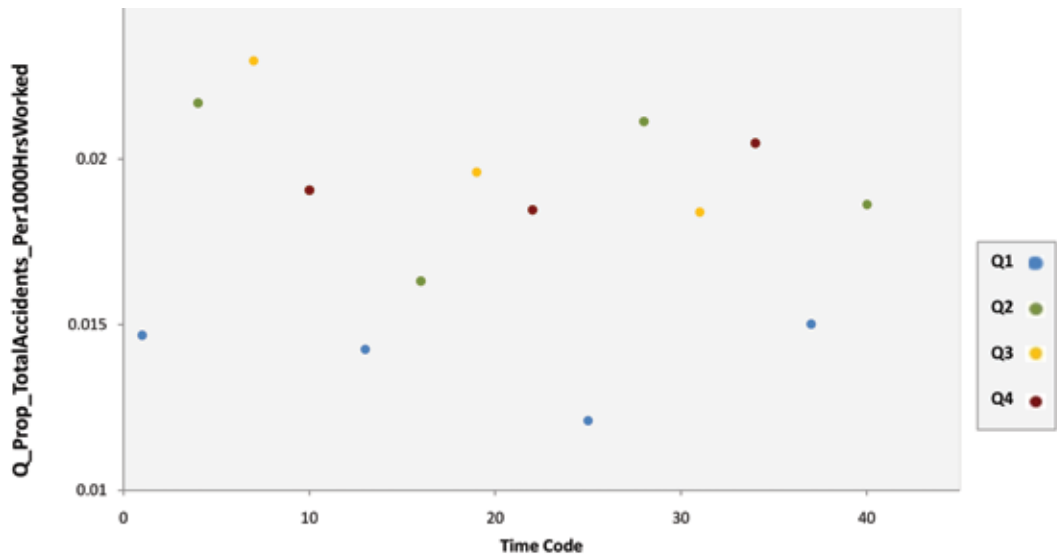
There is no correlation between ARs and time as a continuous variable. However, a seasonal trend is evident with the ARs peaking in the warmer Quarters.

Figure 3: Scatter plot showing Accident Rates against Time (Monthly)



- 2.3.8. NAO however noted that, when the scatter plot is reproduced for quarterly data (as illustrated in the Figure 4) rather than on a monthly basis, a seasonal trend can be identified. More specifically, this Office notes lower ARs in the first quarter of each year.

Figure 4: Scatter plot showing Accident Rates against Time (Quarterly)



- 2.3.9. For further reassurance, NAO carried out a Linear Regression using monthly ARs as a dependent variable (see Appendix A.5). This exercise reconfirmed that time as a continuous variable and ARs are not correlated.
- 2.3.10. Another regression analysis was carried out, in this instance including time as a categorical variable, indicating quarters (see Appendix A.6). Explanatory dummy variables for quarters 2, 3 and 4 were included in the regression equation. All three dummy variables resulted significant at the 95% confidence level. This analysis therefore confirmed that a seasonal trend is present, showing higher probabilities of accidents occurring in quarters 2, 3 and 4 when compared to quarter 1. For example, the likelihood of an accident is 0.005 higher per 1000 monthly hours worked in quarter 2 than in quarter 1. The results also indicate that differences between quarter 2 and quarter 3, quarter 2 and quarter 4, and quarter 3 and quarter 4 are not significant, since the 95% confidence interval for the standardised coefficient overlap.
- 2.3.11. Finally, a linear regression analysis was carried out, including the significant categorical time variable and the MMMT (see Appendix A.7). The introduction of MMMT into the equation, rendered the time dummy variables insignificant, which further indicates that the seasonal trend as observed in Figure 4 is determined through MMMT.

Age is not a significant predictor of Accident Proportions.

Accident Proportions and Age

- 2.3.12. This Office calculated Accident Proportions (AP) showing the NA corresponding to a particular age group as a proportion of the total workers within that same age group. This Office once again highlights the limitation of the data available, in that the working population data comprises only of the private sector. Unlike other data sets the available data related to this test covers the period between January 2012 and May 2015. The age groups for the accidents and the working population (private sector) of NACE F41 were categorised as follows: 15-24; 25-34; 35-44; 45-54; and 55+.

- 2.3.13. For the purpose of identifying whether age is a significant predictor of APs, the APs for all combinations of two age groups sets, matched on time point, were compared using a paired t-test (see Appendix A.8). The analysis shows that there are no differences in the APs between age group pairs, when APs are matched on time point, except for the comparison between 25-34 and 45-54 age groups as well as the 25-34 and the 55+ age groups, with the 25-34 age group resulting in a lower AP than the other two. When considering all the combinations of paired t-tests, NAO could conclude that overall age is not an important predictor of APs.
- 2.3.14. This result was confirmed by an ANOVA test, which compared the mean APs across the five age groups (see Appendix A.9). The overall test resulted non-significant, even at the 90% confidence level, showing that there are no overall significant differences in the APs across age groups.

Number of Hours in relation to Number of Accidents

- 2.3.15. A Bivariate Pearson correlation was calculated to analyse the relationship between the total NA and NHW (see Appendix A.10). This test produced a low correlation coefficient result of 0.261, which was significant only at the 90% confidence level, implying that there is only a weak positive relationship between NHW and NA, showing higher recorded total ARs during months with greater NHW.

Quantifying MMMT's impact on AR

- 2.3.16. Given that, apart from MMMT, all the tested IQVs resulted as not significantly correlated with ARs (once controlling for MMMT), a final exercise was carried out to determine the extent of MMMT's effect on the variability in the ARs under study. A regression analysis, including MMMT as the only predictor variable, was carried out (see Appendix A.11). The R-Squared Statistic used for this purpose indicated that MMMT could explain 31.5% of the variability of occurring accidents.

2.4. Conclusion

- 2.4.1. This Chapter presented the findings resulting from a comprehensive series of statistical analyses intended to identify the determinants of ARs. Through these, NAO identified MMMT as the sole significant variable and determined (through the adjusted R-Squared Statistic) that this can only explain a variability of 31.5% in the ARs. This observation is further substantiated with the observed seasonal trend, whereby ARs were shown to peak during warmer periods.
- 2.4.2. Owing to the determination of MMMT as the sole significant predictor of ARs, explaining 31.5% of the variability in the observed ARs, NAO concludes that, by deduction, NIQVs explain the remaining 68.5% of the variability in ARs. These unexplained variations are attributable to predictors the NAO could not measure but which, apart from random variation, include disregard to OHS through cultural predisposition and regulatory slack. This Office however also perceives the possibility that the higher ARs observed during hotter months may be partially due to inadequate measures being taken by the local industry to protect against the higher risk faced in warmer temperatures, which consideration further compounds the OHS related concerns in the local scenario.
- 2.4.3. NAO's considerations on OHS's operations presented in Chapter 3 draw strength from these results and therefore need to be taken in this context.

The number of hours worked is only weakly correlated to the number of accidents.

MMMT, as the only significant explanatory variable of AR's identified in the study, explains 31.5% of the variability of occurring accidents in the building construction industry.

Through the determination of MMMT explaining 31.5% variability of occurring ARs, NAO concludes that, by deduction and apart from random variation, NIQVs (such as cultural disregard to OHS and regulatory slack) explain 68.5% variability of occurring ARs.

Chapter 3
An Analysis of OHSA's
Operations and Operating
Environment

Chapter 3 - An Analysis of OHSA's Operations and Operating Environment

Following the conclusions presented in Chapter 2, this part of the report delineates the audit team's analysis on OHSA's internal working processes and its operational environment. More specifically, this Chapter will delve in considerations related to the Authority's philosophy, operational environment, financial and human resources as well as providing an analysis of the Authority's departmental processes.

OHSA believes that 'the only way by which health and safety in the workplace will improve is if the process is self-regulating'.

3.1. OHSA's Operational Philosophy

3.1.1. OHSA believes that *'the only way by which health and safety in the workplace will improve is if the process is self-regulating'* (OHSA Report of Activities 2014). During meetings with NAO, the Authority further substantiated this belief by stating that through a self-regulating process the different duty holders involved in the execution of a construction project should be aware of the benefits of achieving adequate levels of health and safety, while complying with OHS legislative requirements. In so doing, OHSA asserts, a self-regulating enterprise does not take the necessary measures only if required to do so by law and the enforcing agency (OHSA) but rather because it values its employees and understands the basic notion that sustainability of operations can be ensured by, amongst other things, protecting the health and safety of the workers. The OHSA Report of Activities further delineates OHSA's objective as not wanting to be seen strictly as a controlling, regulatory body, but rather as a collaborative component in this system. This philosophy reverberates the Authority's mission statement, which reads *'Working with others to ensure healthier and safer workplaces in Malta'*.

3.1.2. In gauging the current situation within the local construction industry, NAO enquired whether this vision is being adopted by the relevant stakeholders. In reply, OHSA stated that while evident efforts can be identified in some, there are others who, although aware of their legal obligations, still do not classify OHS as a primary priority and only take action following a visit by OHSA Officers. The Authority opines that it is due to such non-compliant individuals that the system remains cumbersome and therefore requiring physical visits by its Officers. OHSA also stated that, due to prevailing local cultural disregard to OHS, the related expenditure is generally the first cost to be foregone. The Authority further opines that the solution to these challenges is to mainstream OHS into all aspects of, amongst others, public policy, procurement, tendering and planning. This view, OHSA states, resonates with the general philosophy applied at European Union (EU) level, that OHS is a subject that

requires tripartite involvement (that is, Government together with employers' and employees' representation) rather than the sole responsibility of the enforcing agency.

3.2. Challenges within OHSA's Operational Environment

- 3.2.1. Stakeholders externally effecting (directly or indirectly) the Authority's operations can be classified into two main categories, namely other Central Government bodies and those entities which are directly and specifically related to the construction project. In order for OHSA to adequately carry out its mandate, a healthy working relationship has to be established with both.

Coordination with Central Government Entities

- 3.2.2. The Authority informed this Office that a challenge presents itself in the form of duty holders not being adequately informed of their legal OHS obligations (which concern will be discussed in greater detail later in this Chapter). In addressing this issue, OHSA opines that an effective communication of OHS responsibilities to pertinent stakeholders may be through the introduction of such references within the construction permits issued by the Malta Environment and Planning Authority (MEPA). During meetings with OHSA, NAO was informed that the Authority had communicated with MEPA and forwarded a number of standard conditions which, in its opinion, would do well to feature in the construction permit applications. OHSA however informed NAO that MEPA are still considering this proposal and, as at time of writing of this report, these provisions still do not feature on neither development applications nor approved permits. The Authority further asserted that in its opinion, MEPA could be a focal point through which the different obligations emanating from the various areas (such as OHS) could be mainstreamed. OHSA however also informed this Office that a Memorandum Of Understanding has been recently proposed to MEPA and, if signed, this would serve so that standard conditions could be inserted in relevant documentation.
- 3.2.3. NAO was additionally informed that OHSA also finds barriers in obtaining critical information from other government entities, with which it could strengthen its knowledge on the areas it is assigned to regulate. While the Authority stated that it has an information management system (which will be discussed in greater detail in subsequent parts of this Chapter), it pointed out that, at present, there is a lack of a harmonised database with other key stakeholders. Such a situation, OHSA opines, hinders it from accessing data that might ease the execution of its responsibilities.
- 3.2.4. The Authority asserts that the primary reason given by other government departments for not providing such information, generally cites data protection. It is however important to point out that the OHSA Act exempts the Authority from such restrictions, giving it the power and legal right to obtain any data it deems necessary for the proper execution of its duties.

'It shall be the function of the Authority to (...) collate and analyse data and statistics on occupational injuries, ill health and deaths, and on matters ancillary to occupational health and safety: Provided that the Authority may request data or information on any matter related to occupational health and safety, and such data or information shall be provided forthwith: Provided further that any such data or information shall be deemed to have been given and received under the obligation of confidentiality'.

Chapter 424 of the Laws of Malta 'OHSA Act' Article 9 (2)(h).

OHSA faces major operational challenges due to lack of cooperation by other Central Government entities.

- 3.2.5. OHSa further informed NAO that it also has written endorsement by the Office of the Information and Data Protection Commissioner, further substantiating its right for the information in question. Nonetheless, even if so furnished with these privileges, the Authority asserts it still finds itself barred by other government departments in accessing information which would assist it in carrying out its responsibilities.

Stakeholders directly related to the Construction Project

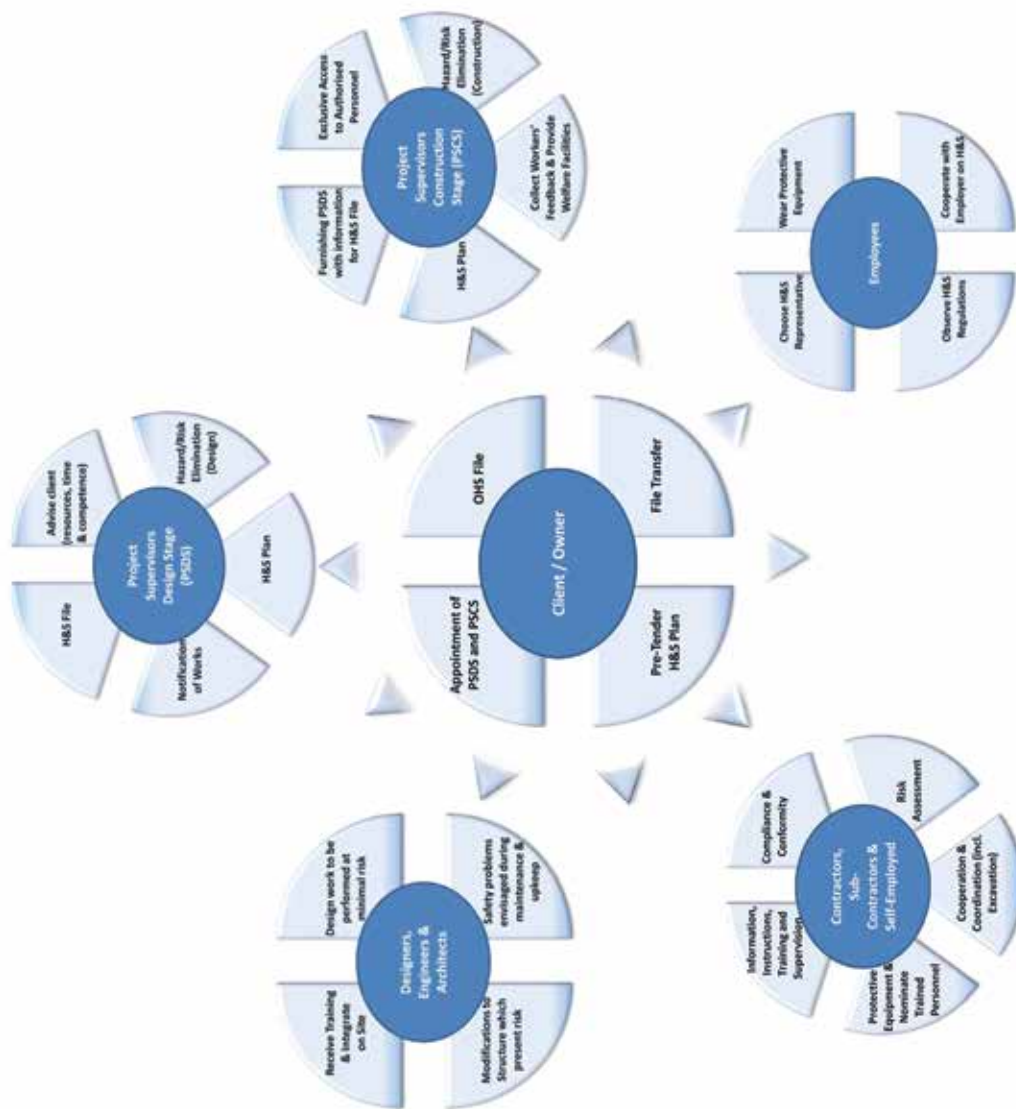
- 3.2.6. As cited in the *'Code of Practice for the Construction Industry'* issued by OHSa in 2006, the main stakeholders of OHS in this sector (Figure 5 and Appendix B refer) are the following: the client; the project supervisor (PS) at the design stage and construction stage; the architect; the contractors; and the employees. In the subsequent parts of this section, NAO presents the salient findings related to the more prominent of these stakeholders in terms of OHS and discusses the implications of the observations made.

The Client

- 3.2.7. Legal Notice (LN) 281 of 2004 stipulates that, while every client (that is, the owner of a construction project) has to assign particular responsibilities to third parties, the former still retains certain legal obligations (Figure 5 and Appendix B refer). Amongst others, LN 281 of 2004 states that one of the primary responsibilities that a client retains throughout the execution of a construction project is the appointment of a PS. This assignment of responsibility to the PS still does not however relinquish the Client from all OHS related obligations. More specifically this LN states that: *'Where a client has appointed any project supervisor to perform the duties (...) this does not relieve the client (from) his responsibilities in that respect'*. During meetings with NAO, OHSa however expressed its concern on the fact that, although considerable legal obligations still lie with the client, a significant part of the population is not aware of these responsibilities. NAO notes that this concern could be most pressing in the case of minor clients (such as one-time developers) rather than the larger entrepreneurs.
- 3.2.8. The PS is responsible to perform the duties as outlined in LN 281 of 2004 and the duties cited in the *'OHSa Code of Practice for the Construction Industry'*, during both the Design and Construction stages of a construction project. It must also be noted that the client may opt to refrain from engaging a PS and therefore assume the latter's responsibilities him/herself. During meetings with NAO, OHSa however has also indicated that the foremost fault perpetrated by clients is that of not engaging a PS, primarily due to lack of awareness.

Most Clients are unaware of their OHS legal responsibilities.

Figure 5: Stakeholder Involvement in OHS



Adapted from OHSA 'Code of Practice for the Construction Industry'

Some Project Supervisors may be taking advantage of Clients' lack of awareness on OHS.

The Project Supervisor

- 3.2.9. As made clear in the preceding part of this section, a construction project cannot be legally initiated or conducted without the appointment of a PS during both the design and construction stages, who in turn liaises with the contractor and the respective employees to ascertain that adequate OHS measures are taken. During meetings with NAO, OHSA pointed out that it has identified numerous instances in which PSs were taking advantage of the lack of awareness or knowledge by the client. An example cited by the Authority includes PSs deceiving clients in believing that the said supervisors will be involved in both the design and construction stages, while the contract signed between the two parties would, in actuality, only cover the design stage. This problem is especially found in situations where the clients (especially those without prior construction experience) are non-technical or, at times, even illiterate. OHSA however further elaborated that there are a number of experienced construction firms which have their own health and safety department, or an in-house PS, thereby mitigating the possibility of such abuse.
- 3.2.10. The lack of awareness by the general public with respect to the engagement of a PS, is further exhibited by a particular instance in which an individual was personally visiting construction sites and identifying clients who had not engaged PSs during their construction project. This individual would then threaten the respective clients that, unless they engage him as their PS, they will be reported to OHSA. The Authority also informed NAO that this individual would (apart from reporting observed infringements to the Authority) send photographic evidence to the media as well as post such images on social networks. This practice, OHSA contends, served to cultivate a negative public perception of the Authority being a weak enforcer. In view of this, a press release was issued by the Authority in September 2015, thereby attempting to expose this individual's practice to the general public while appealing to the media to be "extra careful" in moderating and publishing information fed to it, as this could be driven by an "agenda".
- 3.2.11. OHSA also highlighted cases in which PSs would charge their clients for the provision of documentation which is already freely and publicly available online. As an example, the Authority informed NAO that even the material uploaded on its own website (which is also free for public use) is sometimes sold by PSs to clients who would not be aware of the availability of such documentation.

Architects

- 3.2.12. During meetings with NAO, OHSA affirmed that, in its opinion, the Architects assigned by the client to design and oversee a construction project, have an important role insofar as OHS is concerned. This is especially the case during the design and planning stages of the project. The Authority stated that it perceives significant benefits in having the architects (being the technical persons with whom clients inevitably make contact) informing their respective clients of the necessary processes, precautions and obligations that need to be undertaken throughout the project. OHSA believes that Architects would be the ideal option to assume the responsibility of PS at the design stage of a construction project. NAO was however informed that, when the Authority attempted to communicate with the Chamber of Architects to discuss these issues, the latter was not accommodating, citing that such a task does not fall within an architect's remit.

Contractor/Employer and Employee

3.2.13. The challenges posed by contractors and employees (whose roles and responsibilities are highlighted in Figure 5 and Appendix B) on the Authority's operations are, unfortunately, all too obvious. As established in Chapter 2 of this report, the widespread cultural disregard to OHS (such as the contractor/employer not providing adequate safety equipment to the employees, and the latter not following established safety procedures), greatly augments the probability of the occurrence of an accident. This audit report, in its entirety, is aimed to analyse and suggest possible avenues through which OHSA can address such challenges.

3.3. Public Perception, Awareness Raising and Training

3.3.1. During meetings with NAO, OHSA contended that the local public perception on OHS and on the Authority's operations tends to be negative. The Authority opines that this perception is made evident in various media reports, readers' comments posted on online news portals and social networks. This outlook on the issue, OHSA opines, is further sustained by a local mentality that such accidents only occur in Malta. The Authority however contends that, while a cultural disregard to OHS does prevail in the local construction industry, the "Only in Malta syndrome" is incorrect and is not backed by statistical data. Rather, OHSA argues that the aggregate figures (of all industries combined) are showing a decrease in OHS related accidents in Malta. NAO however notes that, as presented in Chapter 1, the number of occurring accidents in local sectors have remained relatively constant since 2012.

3.3.2. The Authority also drew NAO's attention that it is often singled out and unfairly blamed by the general public with the occurrence of every accident. OHSA argues that this situation implies that it is expected to be physically and continuously present in each and every construction site, which practice is obviously impossible to implement.

3.3.3. In an attempt to mitigate the challenges presented above, the Authority carries out awareness raising campaigns, (which are either industry or hazard specific) intended at educating the public. Apart from these campaigns, OHSA also organises 'good practice awards' which are aimed at promoting OHS across various industries. OHSA however also highlighted the fact that training seminars organised by itself are generally poorly attended.

3.3.4. The Authority believes that ideally, OHS measures are instilled at a young age and, to this end, it proposes that OHS considerations should be mainstreamed within the vocational qualifications delivered by the Malta College for Arts, Science and Technology (MCAST) and kept abreast with ongoing developments.

3.3.5. OHSA brought to NAO's attention an initiative which is being championed by the Building Industry Consultative Council (BICC). This project intends to introduce a system by which construction workers attain a Skills Card which serves as certification of competence in their respective skill. This initiative aims to identify skill gaps in the workforce, and encourage workers to continue their education by attending training programmes. This, OHSA opines, would ensure that the workforce across all trades would be knowledgeable and competent to the required levels. The Authority however informed NAO that it has a limited role in the implementation of the Skills Card.

OHSA wants to be perceived as a point of reference, yet its awareness campaigns are not effectively reaching the general public.

The Authority believes that OHS considerations need to be ingrained in the education system and formalised through accreditation.

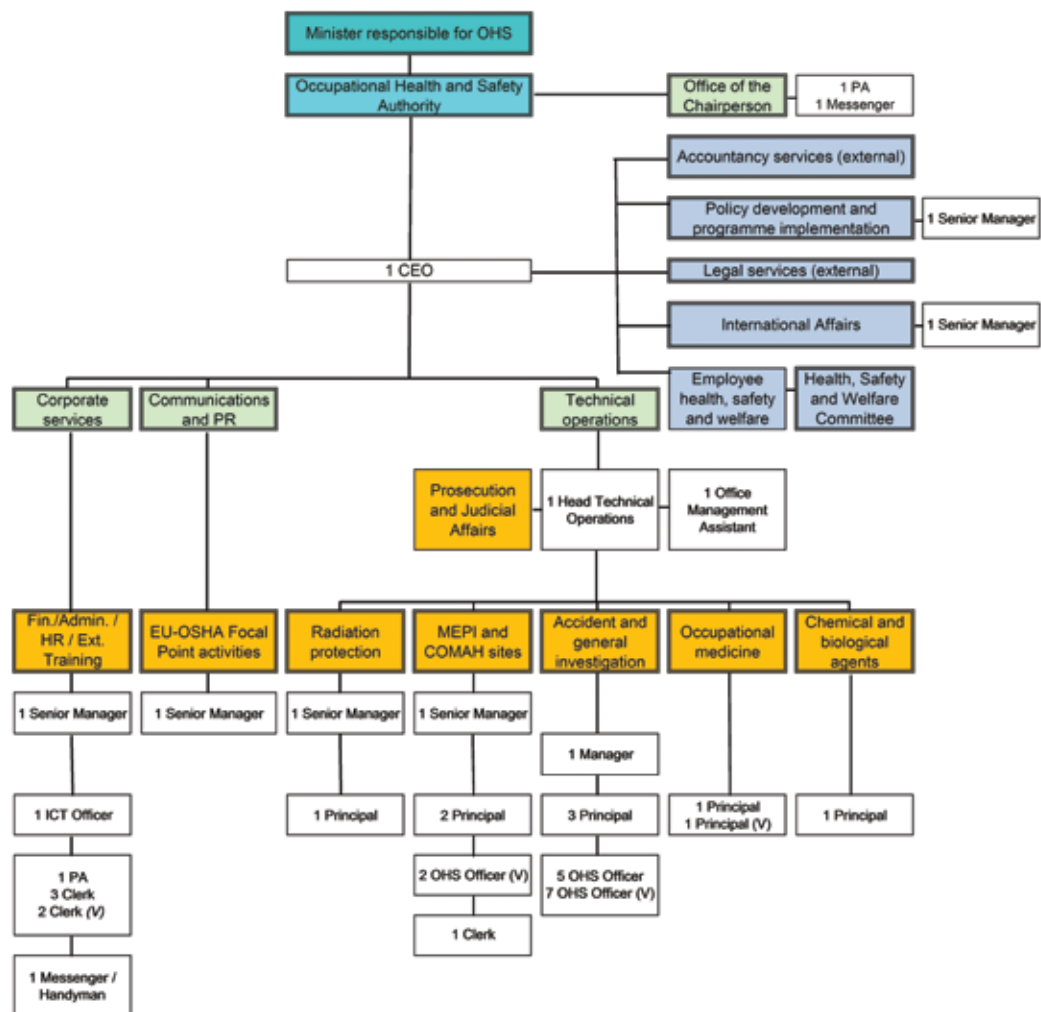
3.4. OHSa's Resources

Allocation of Staff

3.4.1. As at time of writing of this report, the Authority's total human resource complement stood at 30 employees. The organisational chart is reproduced in Figure 6.

3.4.2. When queried by NAO, OHSa explained that it allocates its resources according to the different requirements and identified risks across all industries. Considerations within the construction sector itself are further categorised into two, namely generalised (normal construction work) and non-generalised (construction projects with specific exigencies). During meetings with this Office, the Authority pointed out that, with their current complement, covering all assigned areas consistently and effectively is an impossibility. This concern is further compounded by that fact that, apart from its primary functions, the Authority must also see to other roles, statutory or otherwise, such as land-use planning (in terms of the EU Seveso Directive) and Engineering; International Affairs and Communications; as well as Legal Drafting.

Figure 6: OHSa Organisation Chart as at end 2015



Source: OHSa

The number of OHSa inspectors falls short of the benchmark set by the International Labour Organisation.

- 3.4.3. Benchmarks set by the International Labour Organisation (ILO), cite a ratio of 1 inspector per 10,000 employees. To this end, according to OHSA, this implies that it requires 18 generalist and 8 specialist inspectors to adequately cover all industries. These quantities are in stark contrast with the 9 generalist (including 1 manager) and 5 specialist inspectors employed with the Authority as at time of writing of this report. NAO was further informed that, out of this total complement of 14 inspectors, only 6 are assigned to monitor the construction industry, with the rest being designated to focus on other sectors. OHSA further expressed that it is facing significant challenges in adequately resourcing itself to meet this benchmark.
- 3.4.4. It was also pointed out that due to a shortage of human resources, incumbent staff are being tasked with further designations over and above their primary responsibilities. As an example, NAO was informed that OHSA's current CEO and Occupational Physician are also assuming the role of Occupational Psychologists.

Training

- 3.4.5. During meetings with NAO, OHSA explained that entry-requirements for inspectorate staff include the possession of at least an MQF Level 5 Diploma in OHS or equivalent. OHSA stated that this position also requires that the individual is innately predisposed to exercise enforcement whenever required, which skill can only be nurtured through long years of experience. OHSA further informed NAO that, in addition to the individual's qualifications and predisposition, continuous in-house training is also provided by the Authority. In fact, upon engagement, an officer has to work under direct supervision for 6 months in order to acquire the appropriate training and experience. It is only after this period that the new recruit is entrusted with the responsibility to carry out inspections.
- 3.4.6. The Authority further explained to NAO that it takes advantage of its small size and adopts a system of feedback from its employees in identifying any training gaps. Training is also carried out following new developments in the field of OHS.
- 3.4.7. During meetings with NAO, the Authority expressed its concern that after investing significant effort and resources in developing the skills of its inspectors, these are sometimes headhunted by the private sector, particularly due to their knowledge of the internal operations of the Authority.
- 3.4.8. This Office was informed that OHSA had tried to introduce to its employees a system of Key Performance Indicators (KPIs) against which their on-the-job performance is assessed. The Trade Union representing OHSA's employees however rejected this KPI framework, with no official reason, and consequently the Authority is finding it challenging to assess its staff performance due to gaps in the documented trail of their processes, such as the lack of logs for telephone queries and/or reports. OHSA stated that its employees consider such logging of processes as an extra administrative burden.

Additional Concerns

- 3.4.9. OHSA stated that, the recurrent grant mentioned in Chapter 1, together with the revenue generated through enforcement measures are generally insufficient for it to adopt a comprehensively effective system of monitoring, enforcement and internal training. The Authority however also reported to NAO that, to date, it has never operated against a deficit.

OHSA affirmed that, after investing significantly in its inspectors' skills, this staff is headhunted by the private sector.

OHSA tried introducing a system of Key Performance Indicators for its employees which was not accepted by the respective Trade Union.

OHSA asserts that it is facing a number of challenges due to its limited financial and human resources.

- 3.4.10. OHSa explained that its limited financial resources create significant challenges in attracting new inspectorate staff and retaining the ones already in its employ. The Authority pointed out that these personnel are paid €16,000 at entry-level, with the possibility of advancement to scales of Officer 1, Officer 2, and Principal. OHSa however pointed out that this package does not fairly remunerate the responsibility that comes with the job. The Authority further opines that this relatively low salary further compounds the aforementioned issue of headhunting by the private sector, which often offers more favourable remuneration packages. In addition, NAO was informed that OHSa inspectors are bound not to carry out any work of a private nature while employed with the Authority. This, OHSa opines, creates a further incentive to use the Authority merely as a springboard towards a better-paid career with the private sector.
- 3.4.11. OHSa also informed NAO that, due to lack of funds, it is missing out from participating in EU technical working groups (such as those related to the formulation of relevant EU policy), thereby forfeiting the opportunity to enhance its technical expertise.

3.5. OHSa's Operations

- 3.5.1. The following parts of this Chapter present the different aspects of OHSa's operational processes. More specifically, these sections will impart the audit team's findings on OHSa's record keeping, site inspections, enforcement measures, and follow-up action.

Information Management System and Record Keeping

Occupational Accidents

- 3.5.2. With respect to data kept on occupational accidents, OHSa distinguishes between three types of accidents, namely fatal, non-fatal and near misses (the latter will be discussed in greater detail in the next part of this section). NAO was informed that the Authority keeps an information management system that comprises of a series of individual databases. These include data related to complaints, inspections, notifications as well as fines imposed by the Authority.
- 3.5.3. OHSa however pointed-out that there is a significant element of under-reporting of accidents by the employer and consequently, this collection of information does not feature the full spectrum of all occurring occupational accidents. The Authority referred NAO to its 'Occupational Health and Safety in Malta – A Snapshot of Prevailing Standards (2011)' report which, in substantiating its claim, states:

Comparing like with like, if one compares the extrapolated total number of cases of 'certified' occupational injuries and ill-health cases sustained by workers in 2010, based on the research findings, against the number of similar cases reported by NSO (based on the injury benefit claim submitted to DSS) for the same year, one observes a significant under-reporting of 9,792 cases. According to the study, in 2010, the number of occupational injuries/ill-health cases stood at 13,106 cases, against NSO's 3,314 reported cases, resulting in a significant under-reporting of 75% of occupational injuries and ill-health cases during the course of just 12 months.

OHSa has significant gaps in its information base, putting it in a weak position to set the most effective monitoring course of action.

There exists a significant problem of under-reporting of occupational accidents.

The high level of under-reporting is a common factor across various countries which undermines the ability to present accurate data on accidents at work. When evaluating the difference in reported cases, the findings from the research have shown that a substantial percentage of workers who sustained an injury or ill-health at work, did not resort to injury leave in the first place and therefore did not complete an NI-30 form registering this injury. The variance therefore arises due to the fact that, rather than resorting to injury leave, workers resorted to sick leave, vacation leave, or returned to work despite the injury.

- 3.5.4. OHSa elaborated that, whenever the employer does not report an accident, the Authority is faced with obvious, otherwise avoidable, obstacles insofar as its monitoring and enforcement is concerned, thereby greatly limiting its operational options. The Authority further informed NAO that, there have been instances in which it has instituted legal action against employers who would have failed to report occurring incidents, only to have such cases dismissed by the Courts of Law as the latter would perceive them as immaterial.

Near Misses

- 3.5.5. OHSa, through its 'Occupational Health and Safety in Malta – A Snapshot of Prevailing Standards (2011)' report, defines a 'Near Miss' as *"any unplanned event that results in: damage or loss to property, plant, materials, the environment", and/or a loss of business opportunity, but does not result in an injury*". The Authority further states that, although *"a number of injuries are sometimes avoided for some reason or another, the occurrence of non-injury accidents could still be the result of poor health and safety at work, and nevertheless, the existing hazard could still have resulted in damages to the company"*.
- 3.5.6. During meetings with NAO, the Authority affirmed that employers have no legal obligation to report near misses to OHSa, and consequently, the latter does not keep any records of such instances. OHSa Officials however added that the responsibility of investigating these cases lies with the employer.
- 3.5.7. When queried by NAO as to why the Authority does not seek to obtain information on such incidents, OHSa contended that, there are too many occurring near misses (both within and outside the construction industry), which makes it impossible for the Authority to keep track of. The Authority further asserted that compiling a full population of near miss incidents would require significant additional resources, both human and financial.
- 3.5.8. In addition, OHSa firmly believes that the reporting of near misses should not be obligatory as this will lead to an excessive bureaucratic burden, while also leading to a reverse shift of responsibility from the employer on to the Authority. OHSa Officials further highlighted the fact that their EU counterparts are basing near miss statistics solely on academic indicative research, since no member states have introduced the system of the obligatory reporting of near misses. Notwithstanding the above however, OHSa informed this Office that it investigates all near misses which are reported directly to itself.

OHSa firmly believes that the reporting of near misses should not be obligatory as this will lead to a reverse shift of responsibility from the employer on to the Authority.

Not all construction works fall under the obligation of forwarding a notification to OHSA, leaving the Authority with an incomplete database of all ongoing works.

Notification of Works

- 3.5.9. As explained in OHSA's 'Code of Practice for the Construction Industry', a notification (which can be found on the Authority's website) is to be forwarded by the PS (at design stage) to OHSA when construction 'work is scheduled to last longer than 30 working days and on which more than 20 workers are occupied simultaneously' or 'on which the volume of work is scheduled to exceed 500 person-days'. It must however be noted that, construction works that neither meet nor exceed this threshold, are not subject to this notification.
- 3.5.10. When queried by NAO whether the Authority is in possession of a comprehensive list of all ongoing construction works, the latter replied in the negative as the notification system (with the applicable threshold) is the main mechanism by which OHSA gathers information on ongoing works. This means that smaller scale projects which do not satisfy the above mentioned threshold, essentially remain largely undetected. When queried whether the Authority would consider extending the notification requirement to all works, irrespective of their size, the latter asserted that such an initiative would put an overwhelming burden on its already stretched resources.
- 3.5.11. When examining reasons for which construction works were ordered to stop by the Authority (which process will be discussed in greater detail later in this Chapter), NAO noted (from a sample of Orders to Stop Works (SO) forwarded by OHSA) a recurring incidence of notifications not being submitted to the Authority.

Complaints by the General Public and Reports by the Media

- 3.5.12. OHSA informed NAO that a primary source of identification of OHS infringements are complaints received by the general public and reports generated by the local media. The Authority further stated that every reported incident is re-actively assessed, prioritised and, if necessary, investigated.

Employers' Dossier

- 3.5.13. OHSA informed NAO that its Officers keep a record of all site inspections, irrespective of whether infringements are noted or not. This inspection file (referred by OHSA as an Employer's Dossier) is opened for every construction project that the Authority would be aware of. In the case of construction site activities where no infringements worthy of further action are identified, a note is inserted so that the file is brought up to the Officer's attention within a period of six (6) months for potential follow-up. It goes without saying that any identified infringements are also filed in the respective dossier.

Competent Persons Register

- 3.5.14. During meetings with OHSA, NAO was informed that the Authority keeps a Competent Persons Register which comprises of a list of PSs who are approved by itself. This list is made available on the Authority's website.
- 3.5.15. Apart from forwarding their names, contact numbers and competence, PSs wishing to be included in this register need to meet set minimum requirements. More specifically, prospective entrees must have:
- An academic qualification at MQRIC Level 5 in Health and Safety, or equivalent;
 - Experience and competence in the field;
 - Continued professional development since obtaining the qualification.

3.5.16. It must however be noted that the registration of PSs into this register is completely on a voluntary basis and is not subject to any legal obligation. This, NAO notes, means that this list does not feature the full population of active PSs. When queried about the value of this initiative (in view of the fact that not all PSs are included in this list), OHSA asserted that, clients appointing PSs from this register will have added assurance insofar as the PS's competence is concerned. The Authority however further stated that, as cited in the acceptance letter affirming a PS's inclusion in its register, OHSA does not assume any responsibility with anything made, provided or carried out by any person enlisted in the register.

3.5.17. NAO notes that there is no rigid system of pro-actively ascertaining whether a client opting to serve as PS for his/her own construction project is competent to do so or otherwise. OHSA confirms that there are various instances in which unknowledgeable and non-competent clients still assume this responsibility with obvious negative repercussions.

Site Inspections

3.5.18. OHSA's regulatory function is heavily dependent on site visits. This central responsibility is carried out by the Authority's inspectors to determine whether there are any OHS related shortcomings which may negatively affect the health and safety of both workers or passers-by. In order to get a better insight on how these inspections are carried out, the NAO audit team accompanied one of OHSA's inspection teams during five of such visits.

The Process

3.5.19. During meetings with OHSA, NAO was informed that no systematic approach is adopted in the selection of other sites but rather inspectors are given a free hand to exercise their professional judgement in determining which sites would merit their attention. In choosing the sites to be inspected, OHSA Officers would select a region and extract a random sample from the construction sites it is aware of within that area. NAO was however also informed that OHSA's inspectorate staff are not strictly obliged to limit themselves to this selected sample, but are directed to visit other sites if (through their discretion and during the course of their planned inspections) they are led to believe that such action is warranted.

3.5.20. OHSA informed NAO that it has a non all-inclusive checklist to assess OHS compliance during site inspections. The Authority directs its inspectorate staff to use this document as a guideline rather than a formal compliance tool. Further elaborating on this point, OHSA asserted that, in rigidly applying this checklist, the Authority would be adopting a 'prescriptive method' which, in its opinion, would be best avoided. To this end, the Authority fully entrusts this function 'to the professional judgement of the Officials inspecting the site'.

3.5.21. The Authority stated that its policy to refrain from making use of a rigid checklist also stems from its belief that, in making use of such a system, it would be assuming OHS responsibilities which in actual fact lie with the respective duty holders. This situation, OHSA asserts, could potentially lead to itself being held accountable (possibly even in the Courts of Law) for any undetected infringements. To this end, while carrying out site inspections, OHSA Officials do not carry out an exhaustive check on all OHS related considerations, but rather evaluate whether all responsibilities are duly assigned, and that the site in question is safeguarded with the necessary OHS structures and mechanisms. The Authority also stated that inspectors are directed to limit themselves to the identification of obvious risks.

The registration of a PS into OHSA's Competent Persons Register is not obligatory.

Clients may assume the role of a PS for their own construction projects, on condition that there is competence. It is however unclear to NAO how this competence is ascertained.

No systematic approach is adopted by the Authority when selecting construction sites to be inspected.

OHSA makes use of a non all-inclusive checklist during inspection visits.

Challenges Encountered

- 3.5.22. The Authority made reference to a number of challenges its inspectorate staff face while carrying out site visits. The first of these is the barrier to its power-of-entry in the case of a private dwelling. OHSA explained that in these cases, the occupier of a private dwelling may refuse entry to OHSA Officials, which implies that the Authority does not enjoy the same investigative authority that it is entitled to in a development construction site. In such cases, should OHSA's officials deem it essential to carry out an inspection, they face significant legal barriers.
- 3.5.23. While accompanying OHSA Officers during site visits, the NAO audit team noted that the OHSA Inspectors sought to record the personal information of all workers being present on site. This Office however observed that a significant number of construction workers (mainly foreigners) did not carry valid identification upon their person. In such instances, OHSA's Officials relied on, and subsequently recorded, the verbally given information without verifying against identification documents. When queried on whether this information is verified by the Authority at some other stage, OHSA Officials replied that this does not fall under the Authority's remit.
- 3.5.24. During one site visit on a large scale private construction project, the NAO audit team further observed how, upon the arrival of OHSA Inspectors, a number of employees fled the location as they were not initially sure which Government Authority these Officers represented. Particular reference is made to one individual who vaulted from one roof to another when noticing the presence of Public Officials, creating risks to his own life and a dangerous situation to others. NAO, however further observed that when the OHSA Inspectors identified themselves as health and safety officials, the worker returned on site and cooperated fully with them. In this particular instance, this Office further noted that the Inspectors did not ask for the reason for the individual's actions but rather solicited for his personal information. When queried by NAO whether any investigative action would be taken to determine the cause of this incident, OHSA's Officers stated that they are directed to solely focus on OHS considerations and once again asserted that any other matters do not fall under their remit.
- 3.5.25. OHSA further informed NAO that there are instances in which its inspectors face verbal and physical abuse by employers or employees while conducting a site visit. Although not a frequent occurrence, this Office was informed that there were instances in which OHSA Officials required Police protection, which assistance was always promptly provided.
- 3.5.26. Finally, the Authority also pointed out that, although acting in the best interest of construction employees, these do not always cooperate with OHSA's inspectors. This, the Authority asserts, is mainly due to the fact that a significant number of such individuals believe that if OHSA orders the works to desist, their employers would not pay their wages or could even lay them off.

Other Considerations

- 3.5.27. The Authority's operating hours are between 7.30am to 4.45pm between 1st October to 15th June, and 7.30am to 1.30pm between 16th June and 30th September. Referring once again to Chapter 2 of this report, NAO notes that the summer period, in which OHSA operates on seasonal reduced hours, is the most substantial insofar as accidents within the construction industry are concerned. NAO notes that although the Authority's inspectorate staff works on a half day basis

during this period, a duty officer can always be contacted by the general public in case of emergencies, after office hours.

3.6. Enforcement Measures

- 3.6.1. OHSa's enforcement framework comprises of three main tools, namely SOs, Administrative Fines (AF), and Prosecution. The following part of this report will discuss the first two tools in greater detail and presents NAO's related observations. The element of prosecution will be delved into later on in this Chapter.

Order To Stop Works

- 3.6.2. In the event of identification of major OHS infringements which would pose immediate and significant risks to workers engaged on a construction project and/or to the general public, OHSa Inspectors are empowered to issue a SO. If issued, this measure would force duty holders to desist all operations with immediate effect. A SO is usually verbally communicated to the relevant parties engaged on the respective site during an inspection visit, and is followed by a documented order within three days. This written notification would detail the observed infringements and orders the recipients that no further work is to be carried out until adequate remedial action is carried. It is only after such action is taken by the infringer that the order is revoked by the Authority.
- 3.6.3. Out of the five sites which the NAO audit team visited with OHSa's inspectors, four were subjected to a verbal SO. Works on the remaining site were found already completed and consequently no further action could be taken. The reasons for the enforcement of these four issued SOs included: failure to ensure that access to the site is adequately closed to passers-by; no form of protection to prevent falls from height and; unstable barriers to protect from falls.
- 3.6.4. In testing the effectiveness of this enforcement system, NAO Officers took the initiative to revisit, on the following day, the four sites which were subjected to SOs, so as to verify whether works were discontinued or otherwise. This Office is in a position to report that, at that time, three of these sites were respecting the Authority's orders to discontinue all works. The NAO audit team however noted that works were still being carried out on the remaining construction site (which was, by far, the largest). NAO informed OHSa of its findings and the Authority took action accordingly.

The Authority's SOs are not always respected by infringers.

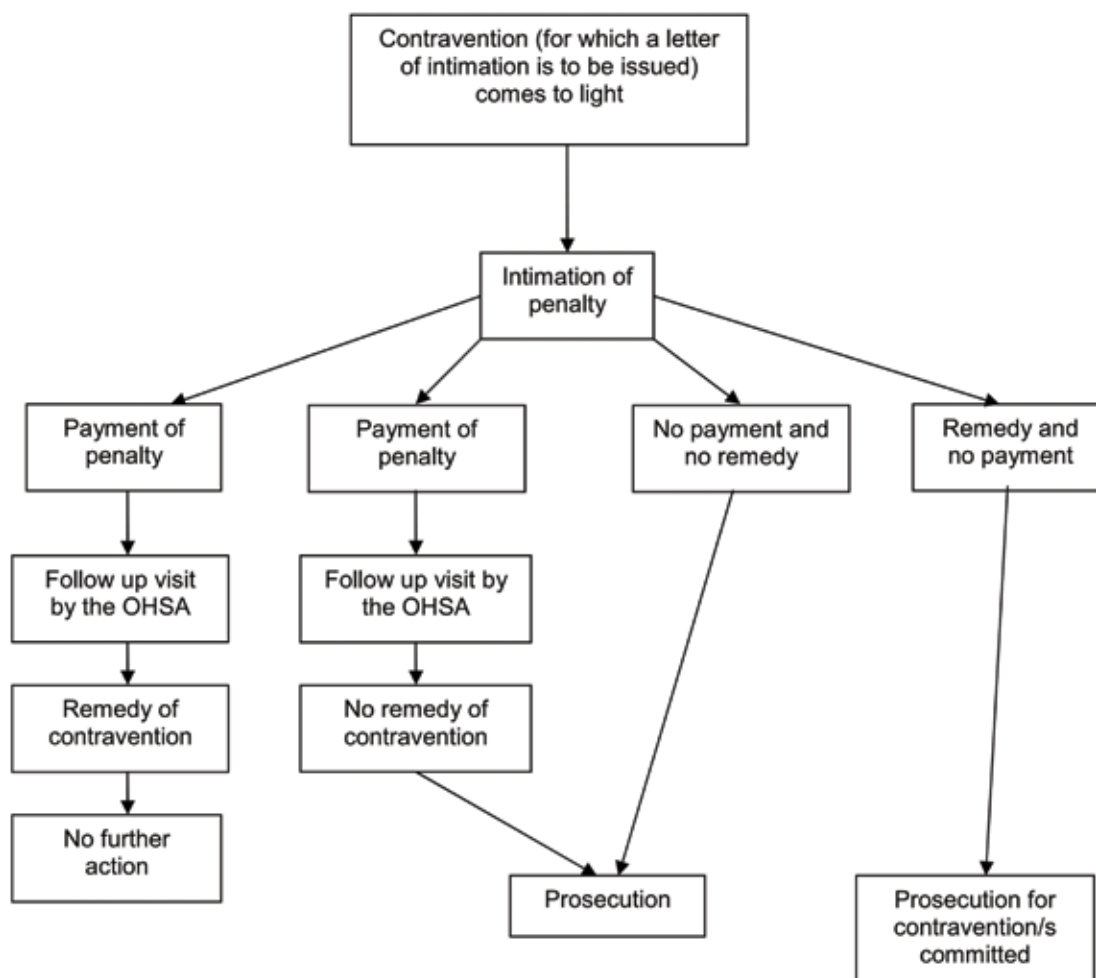
Administrative Fines

- 3.6.5. Once a SO is issued, OHSa Officials then analyse the situation and determine whether this should be supplemented with financial penalties. Should any identified OHS infringements merit such penalties, the Authority issues AFs in terms of LN36/2012. As can be seen in Appendix C, different infringements are subject to either a €250 or €450 fine. Worth of note is the fact that, failure to engage a PS (who is the central figure in the implementation of an OHS system during a construction project) only subjects the infringer to a €250 AF.
- 3.6.6. The amount of AFs issued between 2012 and 2014 (according to the OHSa's Report of Activities for each respective year) is as follows: 232 letters in 2012, 160 letters in 2013 and 152 letters in 2014. In monetary terms, the total value of the letters of intimation issued amount to €97,000 (2012), €64,900 (2013), and €72,500 (2014). In 2015, a total of €128,290 worth of fines were issued.

In some instances, Administrative Fines are formally issued years after the identification of an infringement.

- 3.6.7. Apart from being regulated through local legislation, the process by which OHSA's inspectorate staff administer such fines is detailed in a Standard Operating Procedure (SOP) entitled 'The introduction of pecuniary penalties within a broader enforcement framework', hereinafter referred to as SOP-AF. During meetings with NAO, OHSA explained that the AF process requires rigorous checks at different levels and stages by various OHSA Officials. In fact, during its analysis and meetings with OHSA, NAO noted that AFs do not automatically follow SOs. More specifically, OHSA explained that when an OHSA Inspector takes note of an identified infringement and orders works to be stopped, the Authority's Senior Management then reviews the legal correctness of the Officials' judgement. Should it be decided that the inspectors did not have sufficient legal ground to impose the quoted penalties subsequent to the administration of a SO, the Authority informed NAO that no AFs would be issued and any enforced verbal SO may also be revoked.
- 3.6.8. From the review of AFs, NAO observed that in some instances there was a time-gap (on occasions extending to years) between the date of identified infringement and the day of issuance of the AF. This Office notes that in certain instances, these AFs were the only documentation received by the infringers (that is, these were not preceded by a SO) which directed them on how to rectify the observed shortcomings.
- 3.6.9. By way of procedure, two copies of the letter detailing the imposed AFs are sent to the respective infringer by OHSA (one by registered mail and one by normal post). NAO noted that in the SOP-AF, the Authority outlines four different scenarios which may follow after the issuance of an AF (Figure 7 refers):
- i. The imposed penalty is paid by the offender within 15 days. This is followed-up by a site visit by OHSA Inspectors to ensure that adequate remedial action is taken to address the identified infringements. In the event of a satisfactory result, no further action is taken by the Authority;
 - ii. In a similar scenario as point (i.), whereby payment is effected, however no remedial action to address identified infringements is taken by the offender, the Authority proceeds with prosecution;
 - iii. In instances in which the offender neither pays the imposed fine, nor undertakes any remedial action, OHSA proceeds with prosecution; and
 - iv. In cases in which the offender carries out adequate remedial action however defaults on the fine payment, the Authority proceeds with prosecution.
- 3.6.10. During meetings with OHSA, NAO was informed that the former faces significant challenges in imposing AFs when it comes to tracing unregistered workers or irregular migrants who would be illegally engaged on a construction project. Details provided by such individuals during site inspections cannot always be verified and may at times lead to dead ends, forcing the Authority to forego enforcement action.

Figure 7: Intimation Letter Process Flowchart



Extracted from OHSA SOP 'The Introduction of pecuniary penalties within a broader enforcement framework'

3.6.11. Table 2 shows the number of AFs issued by OHSA between the years 2012 and 2015 as well as those which were contested in Court. In addition, this table presents the number of withdrawn cases due to complications in the judicial process (such as the accused not being successfully traced and summoned to Court).

Table 2: Administrative Fines issued and those contested at Court⁶

Year	Issued AFs	AFs not paid/ Initiation of Court Proceedings	Withdrawn Cases
2012	232	11	5
2013	160	6	7
2014	152	13	37
2015	187	5	1

Data provided by OHSA

⁶ Figures show the number of Administrative Fines issued in each year and the number of cases in which these were not paid and subsequently taken to Court. It must be noted that these figures only show the number of initiated cases per year, and not the total number of active cases. This means that, in any given year, the number of active cases (some of which would be accrued from previous years while others would not be preceded with the issuance of an AF) would be larger than the presented figures.

3.7. Follow-Ups

- 3.7.1. During the progress of this audit, NAO noted three main functions by which OHSA follows up on its inspection visits, namely through: a meeting with infringers immediately after an inspection; following up on SOs for revocation purposes; and a follow-up after six months of an identified infringement.

Meeting with infringers after an inspection

- 3.7.2. While accompanying OHSA's inspectors during site visits, NAO noted that, on occasions, the Authority schedules follow-up meetings with duty holders who would have defaulted on OHS considerations. The purpose for such meetings, OHSA asserts, is for duty holders to be better informed on the reason why they are subjected to enforcement action. NAO attended one of such meetings in which it noted that the Client and the Contractor summoned to attend, were both experienced in carrying out large scale construction projects. It also resulted that the contractor was well known to the Authority, having been subjected to enforcement measures a number of times before this particular incident. Nevertheless, it is this Office's considered opinion that this contractor did not, in any way, exhibit any sign of willingness to improve OHS standards within his operations. In fact, NAO observed that, upon meeting with OHSA's inspectors, this contractor immediately asked to pay the fine so that he could resume with works at the earliest. Even when informed that no fine will be imposed, but the matter will rather be directly taken to Court (given his overall negative track record), the contractor persisted in settling a fine instead, once again with the aim of resuming works without delay. NAO however also noted that the threat of Court action did not seem to faze the offender.

Following up on SOs for revocation purposes

- 3.7.3. An enforced SO is followed-up by the Authority to determine whether adequate remedial action is taken to the identified infringements. Should the action taken by the infringer be deemed sufficient, and that no further risks are identified by OHSA's inspectorate staff, a revocation to the same order is issued so that works can be resumed. During meetings with OHSA, NAO was informed that its Officials either carry out a follow-up inspection themselves, or ask for photographic evidence to ascertain that the identified risks were actually addressed.

Follow-up after six months of an identified infringement

- 3.7.4. OHSA further informed NAO that once a site inspection is carried out, a reminder is inserted in the relevant employer's dossier (which document was discussed previously in this Chapter) so that, irrespective of whether OHS infringements were identified or not, a follow-up inspection is carried out within a six month period to re-evaluate compliance to OHS standards.
- 3.7.5. Attention is once again drawn to the one follow-up site visit (which the audit team attended together with OHSA's Inspectors) on a construction project which was already completed upon inspection. Given that this project was of a relatively small-scale, the period of execution of works took less than OHSA's established six month follow-up period, and consequently the Authority's inspectorate staff had nothing to inspect when arriving on site.

3.8. Prosecution and Legal Affairs

3.8.1. The Authority's participation during legal proceedings in Court varies according to both the nature of the case, and the legal remit of the respective Court of Law processing the case. During meetings with OHSa, NAO was informed that the Authority is mainly involved in two types of Court cases, that is, Criminal and Appeals. OHSa's role in these scenarios is discussed in detail in the following part of this Chapter.

OHSa as a Prosecutor in Criminal Court

3.8.2. The Authority may opt to initiate Court proceedings (within a prescription period of six years) immediately after an infringement is identified, rather than administer AFs. During meetings with NAO, OHSa however once again made reference to its SOP-AF which states that such course of action is generally taken as a last resort and reserved to either serious infringements or repeat offenders.

3.8.3. The Authority further explained that it takes the role of a prosecutor in OHS related cases brought before the Criminal Court. It must be noted that, as cited in Article 38(5) of the OHSa Act, the Authority prosecutes these cases on behalf of the Police. More specifically this Article states that:

In any proceedings (...) it shall be lawful for the Chief Executive, or any officer delegated by the said Chief Executive, to examine or cross-examine witnesses, produce evidence, make submissions in support of the charge and generally conduct the prosecution on behalf of the Police, and the sworn statement of the officer that such officer has been duly delegated for that purpose shall be conclusive evidence of that fact.

Chapter 424 of the Laws of Malta 'OHSa Act' Article 38(5)

3.8.4. Communication between the Authority and the Police Force on the details of such Court cases is not without its problems, OHSa asserts. More specifically, NAO was informed that difficulties are encountered, among others, in: the accuracy of witness citation; the chronological order of testimony and; the possibility of omission of vital evidence. These problems, OHSa noted, may lead to the case being significantly delayed or the accused being altogether acquitted due to legal technicalities.

3.8.5. OHSa informed this Office that, in order for the Authority to initiate criminal proceedings in the Courts of Law, any one of the following circumstances has to be met:

- i. There would be repeated breaches of the law, which give rise to significant risk, especially when a duty holder ignores previous enforcement action or when there exists a bad record of poor OHS standards;
- ii. There is a severe and reckless disregard of OHS requirements;
- iii. OHSa's Officers are intentionally obstructed in the lawful course of their duties, wilfully given false information and when a person refuses to give information as requested;
- iv. AFs are not paid and no remedial action to the identified infringements is carried out;
- v. AFs are paid but no remedial action to the identified infringements is carried out; and
- vi. Remedial action to the identified infringements is carried out but AFs are not settled.

- 3.8.6. It must also be noted that, in certain cases that normally merit prosecution, OHSA's 'SOP-AFs' gives the Authority the opportunity to, at its own discretion, apply the concept of 'mitigating circumstances'. In so doing, the Authority would resort to issue an AF thereby avoiding Court proceedings if this is deemed to be in the best interest of both parties. OHSA however confirmed that, as at the time of writing of this report, this provision has never been applied.
- 3.8.7. OHSA further informed NAO that it makes use of an outsourcing agreement for legal consultation services. More specifically, a lawyer is engaged so that, apart from representing OHSA in Civil Cases, he assists the Authority with the preparation of charges prior to the initiation of Court proceedings, with the aim of preventing cases being shot down due to technicalities.
- 3.8.8. During proceedings, OHSA inspectors (who would themselves have identified the infringements in question) are called in as witnesses, while OHSA's incumbent Head of Technical Operations appears in his capacity as prosecuting officer for OHSA. Prior to appearing in Court, these OHSA officers prepare a compilation of charges (including any criminal charges as contemplated in local legislation) and forward them to the Police who, in turn, officially file these charges in Court.
- 3.8.9. During 2014 and 2015, 17 and 18 cases were respectively instituted by OHSA at the Criminal Courts. These figures, OHSA asserts, are significantly lower than what was experienced prior to the introduction of the AF system, which result attests to the success of this measure in reducing the burden on the Courts of Law.
- 3.8.10. NAO was informed that, apart from instances which merit instantaneous initiation of criminal proceedings, OHSA may commence Court action against anyone who does not settle AFs within the stipulated time parameters. The Authority estimates that approximately half of the number of persons or companies who are in receipt of the AF, settle their dues within the stipulated time-period. The Authority however also informed this Office that some will only pay this fine once the stipulated timeframe is expired and receiving the Police charges summoning them to Court. In such cases, OHSA withdraws charges and desists in proceeding with the criminal case if such payment is accompanied by relevant remedial action. The Authority further informed NAO that the remaining number of alleged offenders opt to proceed with the case instituted against them by OHSA, thereby contesting the charges brought against them in an attempt to gain acquittal. It must be noted that, in the case of individuals contesting such charges and found guilty, the Court is bound to hand down a pecuniary penalty of not less than €465.87 which, as can be seen in Appendix C, is only marginally higher than the most substantial AF (which stands at €450). More specifically, the OHSA states that:

. . . (any) person who commits an offence against this Act or regulations made by virtue of this Act, shall, on conviction, be liable to imprisonment for a period of not more than two years or to a fine (multa) of not less than four hundred and sixty-five euro and eighty-seven cents (465.87) but not exceeding eleven thousand and six hundred and forty-six euro and eighty-seven cents (11,646.87), or to both such fine and imprisonment.

Chapter 424 of the Laws of Malta 'OHSA Act' Article 38(3)

- 3.8.11. During meetings with NAO, OHSA stated that criminal cases initiated due to unpaid AFs, create a significant administrative burden both on the Authority itself and on the Courts of Law. The Authority however further affirmed that the Courts of Justice are handing down fines which are generally on the lower end of the permissible penalty range. According to OHSA, such a situation encourages the alleged perpetrators to take their chances in Court rather than settling the AF with the Authority, given that the risks of a significantly larger fine being handed down by the Courts is minimal.
- 3.8.12. The Authority further informed this Office that it is currently involved in discussions with the Office of the Attorney General (AG) and the respective Ministry to revise the applicable penalty ranges. As at time of writing of this report, this process is still ongoing and at a draft bill stage.
- 3.8.13. OHSA additionally informed NAO that another challenge presents itself in insufficient sittings being allocated by the Courts of Law to process OHS related cases. By means of an example, the Authority highlighted that, while in the year 2004, 10 sittings were dedicated to OHS related cases (with 12 cases being normally heard in each sitting), only one sitting was held in 2014 by the Court of Magistrates, and this was solely limited to minor OHS related issues. As a result, there is currently a considerable backlog of OHS related Court cases.
- 3.8.14. One further problem faced by the Authority is that it is quite common for the Police to be unable to trace foreign individuals who would be arraigned in Court due to OHS related infringements. As already mentioned in previous parts of this Chapter, incorrect personal details (including address) furnished to OHSA's inspectorate staff during inspection visits, cause significant hindrance also to the judicial process. OHSA also pointed out that some foreigners even abscond these islands, leaving pending active cases before the Court.

OHSA as a Witness in a Court of Appeal

- 3.8.15. During meetings with NAO, OHSA explained that the Authority can file for an appeal on judgements that it would either feel were based on an erroneous interpretation of local legislation, or which would feature penalties which would be less than that prescribed by Law. Between the years 2012 and 2015, OHSA filed for 1, 2, 2 and 2 appeals for each year respectively.
- 3.8.16. The prosecution function during appealed cases is assigned to the Office of the AG while OHSA takes on the role of a witness. OHSA stated that the lawyer representing the AG's Office (who is responsible for the drafting and filing of the appeal following discussions with OHSA) would not necessarily be the same official who would be representing the State in the Court of Appeal. This may lead to a situation in which this latter lawyer would not necessarily be fully conversant with the case facts.

3.9. Reconciliation Exercise

- 3.9.1. This Office requested OHSA to forward documented evidence and data related to the monitoring and enforcement functions of the Authority, with the primary objective to carry out an exercise to establish a process trail. Through this analysis, the audit team endeavoured to determine OHSA's operational efficiency and effectiveness (on a case by case basis) by reviewing, amongst others, timeliness, record keeping, frequency of inspections, and follow-up action. This exercise was intended to cover the period between January 2012 and June 2015. After soliciting for this information, NAO was forwarded with the following:

Court fines handed down are generally on the lower end of the permissible penalty range, thereby diluting the deterrent effect and possibly incentivising more contestations of the administrative fines.

OHSA contends that insufficient sittings are allocated by the Courts of Law to process OHS related cases.

The manner by which OHSA keeps its documentation, prevented NAO from successfully carrying out a reconciliation exercise to verify the operational use and audit trail of the Authority's monitoring and enforcement tools.

- i. The Construction Notifications Received (full database was provided);
 - ii. The Complaints Register (database provided for years 2014 and 2015. OHSA stated that information on previous years was lost due to damages to the Authority's data servers);
 - iii. The SO issued and subsequent revocations (only a sample was provided);
 - iv. The Letters of Intimation (the full population was provided); and
 - v. The AF Monitoring Tool (full database was provided).
- 3.9.2. While endeavouring to reconcile the abovementioned information, NAO's audit team was hindered in establishing a full process trail due to an inconsistent, and at times absent referencing system. This meant that the audit team could not fully reconcile entries from separate data sources and adequately follow the Authority's processes.
- 3.9.3. Furthermore, NAO also encountered unclear information particularly in the SO and subsequent revocation documentation system. Further compounding to this concern was the fact that this Office was only provided with a sample of SOs and relevant revocations by the Authority. When queried why the full population of this documentation was not forwarded to NAO, OHSA made reference to the *'magnitude of the task required, which is impossible to carry out.'* OHSA Officials further stated that such a *'task would require physically going through all inspection files, seeing which inspections resulted in an order and making copies of same'*. To this end NAO notes that the Authority does not have an all-encompassing electronic database system in place.

3.10. Conclusions

- 3.10.1. One of the main functions of a regulator is to keep autonomous authoritative powers and place itself in a position of strength from which it could exert the necessary controls wherever required. To this end, this Office is of the opinion that the Authority's mission statement *'Working with others to ensure healthier and safer workplaces in Malta'* into which its operational processes are rooted, does not fully reflect the proper role of an autonomous regulatory authority. NAO further opines that OHSA's target of achieving a 'self-regulating' system, apart from being somewhat utopian and unrealistic, goes against the very nature and role of a regulatory body. NAO also notes the largely reactive manner by which the Authority carries out its main functions. In view of these considerations, NAO concludes that **OHSA's operational philosophy is hindering the latter from comprehensively implementing its role as an autonomous regulator.**
- 3.10.2. NAO draws attention to the **fragmented manner by which OHSA keeps its documentation**, which prevented this Office from successfully carrying out a reconciliation exercise to verify the operational use and audit trail of the Authority's monitoring and enforcement tools. The lack of a comprehensive electronic database and an adequate referencing system, creates significant hindrance in the Authority's knowledge base with obvious repercussions to its operational processes.
- 3.10.3. **This Office fully agrees with OHSA's thrust in attempting to coordinate with MEPA** so that references to the OHSA Act and related legislations (and consequently references to the obligations assigned to duty holders) are made in either the development applications or approved permits. In so doing health and safety provisions are given more prominence, and can serve as guidance to what measures need to be taken by the applicant, thereby significantly increasing the propensity of compliance. To this end, NAO shares the Authority's concern that its suggestion has, as yet, not been taken on board by MEPA.

- 3.10.4. NAO deems as completely unacceptable the fact that some **government entities are not providing information to OHSA**, despite the provision within the OHSA Act, and the endorsement by the Office of the Information and Data Protection Commissioner, which entitle the Authority to any information required to fulfil its mandate. Such a situation may be leading the Authority to not be able to adequately shoulder all its regulatory responsibilities, with obvious negative repercussions.
- 3.10.5. This Office acknowledges OHSA's concern that, in spite of the standing legal obligations, **clients are still consistently failing to engage a PS** for the design and construction stages when undertaking a construction project, which situation leads to obvious risks in the ascertainment of adherence to OHS requirements.
- 3.10.6. NAO furthermore shares OHSA's concern on the situation of having **some PSs deceptively entering into contracts with clients** with the impression that the former would assume responsibility for both the design and construction stages of a project, but only citing the design stage in the actual contract text. This leaves the client exposed to added responsibility (to which he/she may not be competent) and risk. This Office also notes OHSA's concern that, due to lack of awareness by the general public, some PSs are charging for what is freely and publicly available documentation, including information which can be found on the Authority's own website. This, NAO opines, is clear abuse on the general public by a segment of PSs who are acting unprofessionally and unethically.
- 3.10.7. This Office is concerned with the **lack of proper vetting mechanisms that ascertain the competence of all active PSs**, leading to risks of anyone assuming this role. This concern is greatest in the case of clients who may opt to act as PSs for their own construction projects but who would be unknowledgeable in the OHS field. NAO opines that this pivotal role should indubitably be assigned to individuals who, through their qualifications and competence, can comprehensively ascertain that the required OHS considerations are respected in each construction site. It is NAO's opinion that the current situation only serves as a mere ascertainment that the related responsibility is assumed, rather than ensuring that OHS is safeguarded. This concern is further compounded by OHSA's system of voluntary registration by PSs in its competent persons' register. These considerations, NAO opines, leave the Authority with largely incomplete information on all active individuals operating as PSs, and whether these are all qualified and competent to assume this central role. The lack of proper vetting of all active PSs together with the non-obligation for these to be registered in OHSA's competent persons' list, creates a regulatory vacuum in this very important function within the OHS cycle.
- 3.10.8. NAO notes the Authority's assertion that the latter faces challenges due to its **limited allocated funds and that, consequently, the number of its inspectorate staff fall short of the benchmark established by the ILO**. NAO opines that this creates risks of the Authority not being in a suitable position to recruit, develop and retain sufficient high-quality staff due to the relatively low remuneration packages and restrictive conditions. NAO concludes that this situation hinders OHSA from comprehensively addressing its monitoring and enforcement functions, which consequently detracts the effectiveness of its role as a regulator.
- 3.10.9. This Office further acknowledges the Authority's concern that **the proposed KPI framework against which OHSA's staff performance was to be assessed, was rejected by the respective Union**. This, NAO opines, is a highly undesirable situation as it implies that the Authority has no documented measures to officially assess its employees' performance against set targets.

- 3.10.10. NAO acknowledges the obvious and significant risks to the overall ascertainment of OHS standards which emanate from accidents being under-reported to the Authority by the duty holders. Apart from this external challenge, this Office opines that the **Authority is further foregoing valuable information by not deeming it important to have easy access to documentation on near misses**. Given that the factors leading to a near miss and an actual occurring accident are essentially the same, with the difference in the result being purely incidental, NAO is of the opinion that such a situation may be putting the Authority in a position from which it cannot take a better informed decision in formulating its operational strategy.
- 3.10.11. NAO is concerned that, through the current construction notification system, **OHSA only has the potential visibility on projects which meet or exceed the required man-hours threshold** outlined in 3.5.9. Apart from the problematic circumstance that compliance to the current notification obligation is not fully registered by the local industry, this standard may be further acting as a considerable restriction to OHSA's information base, in view of the fact that the local scenario may significantly feature smaller scale projects. Referring to Chapter 2 of this audit report, this Office notes that the number of man-hours involved in a construction project, does not, in isolation, statistically correlate to the number of occurring accidents. Consequently, NAO opines that the practice of subjecting the obligation of notification to such a high threshold does not hold water, and creates an unfavourable situation in which the Authority cannot comprehensively shoulder its responsibilities as a regulator as it would not be representatively aware of all works in progress.
- 3.10.12. This Office is concerned that the approach adopted by OHSA in **determining which construction sites are to be subjected to inspection visits, is largely ad hoc** and, due to concerns already highlighted above, is based on less than complete information. Through this shortcoming, NAO perceives risks of the Authority not being in a position to select an inspection sample which adequately represents the full spectrum of ongoing works.
- 3.10.13. This Office is significantly concerned by **the Authority's policy of not carrying out exhaustive inspection visits on construction sites**, but rather ascertaining whether OHS structures and mechanisms are in place, while identifying obvious risks. NAO considers this approach as completely unacceptable and one which may be leading to infringements going either undetected and/or unreported by OHSA's inspectors. This Office further disagrees with OHSA's decision to not make full use of a comprehensive checklist during inspection visits. NAO asserts that such a document does not, in any way, assign any additional legal responsibility to the Authority, but rather merely assists the latter in fully shouldering its already assigned obligations as a regulatory body. To this end, NAO does not agree with OHSA's position of not using its checklist as an official document due to risks of this being used against it in the case of Court proceedings. If inspection visits are carried out in an adequate and comprehensive manner while being exhaustively documented in an official checklist, NAO does not perceive any reason for such documents to be used against the Authority in the Courts of Law.
- 3.10.14. Given that an unqualified person working on a construction site can prove to be a significant hazard to himself and to others, NAO gives particular importance to the **introduction of the skills card** which ascertains the competence of a worker. NAO further agrees with OHSA that the implementation of this system presents an excellent opportunity to give additional prominence to OHS through the introduction of relevant modules that would be in part fulfilment to the attainment of this card.

- 3.10.15. NAO acknowledges OHSA's concern on **the challenges the latter faces when workers operating within an inspected site do not produce valid identification documentation** to OHSA's Officers. This Office however, has reservations on the fact that the Authority does not actively pursue to verify such information through follow-up action, citing that this is not within its operational remit. This lack of verification, in NAO's opinion, poses the risk of OHSA not adequately ascertaining that all workers on site are legally operating, which consideration may have a direct influence on OHS. NAO additionally notes that, having different Government bodies operating in complete isolation from each other may lead to otherwise avoidable duplication of work. This consideration is particularly true with the information gathered by OHSA which may be of benefit to, among other stakeholders, the ETC, such as whether all workers on a construction site would be operating legally or otherwise. Likewise, ETC, through its own on-site inspections, may be in possession of information which would enhance the Authority's knowledge base, such as whether workers would be operating in a visibly safe manner or otherwise.
- 3.10.16. This Office draws attention to the fact that **during the summer period OHSA's operational hours are reduced, while statistics show that accidents within the construction industry experience a significant spike**. This situation, NAO opines, creates a significant lacuna in the monitoring system as OHSA's inspectorate staff would be spending less time on the ground during a season in which their physical presence would be heavily required.
- 3.10.17. NAO acknowledges the fact that three out of four sites which were visited by the audit team and subjected to a SO, complied with the Authority's order to desist from carrying out works due to identified OHS shortcomings. This Office is however concerned with the fact that in the remaining one instance (which was, by far, the largest project visited by the audit team) **works were still being carried out during the effective period of an SO**. This observation is perceived by NAO as a symptom of a potentially recurring occurrence, and which identifies a distinct possibility that similar breaches occur on other sites. Such a situation raises concerns on the effectiveness of this enforcement measure, with obvious implications on OHS.
- 3.10.18. **NAO deems the level of financial penalties (in the form of AFs) as completely incommensurate to the nature of some of the infringements they are intended to deter**. It is this Office's considered opinion that a maximum fine of €450 does not, in any way, reflect the very serious risks posed by certain infringements (such as allowing workers to operate from heights without the necessary preventive measures). The exceptionally low monetary value featured in these fines is made more apparent when compared to the value of the works being carried out in what is considered to be a very lucrative industry. This element of disproportionality also exists when comparing these fines to the significantly higher costs attributed with the implementation of adequate OHS measures. More specifically, NAO opines that **this vast difference between the enforceable fines and OHS related costs, may be incentivising duty holders to forego the implementation of adequate OHS measures** and 'risking' a relatively minimal fine if detected by OHSA's inspectorate staff, thereby minimising costs while forcing workers to work in an unsafe manner. NAO's observation during the follow-up meeting between OHSA inspectors and an infringing contractor, once again enforces this Office's opinion in this regard, as the fact that this particular individual was completely unfazed by the prospect of paying a fine. This stands testament to the aforementioned disproportionality and to the fact that this, in no way, serves as a disincentive.

- 3.10.19. This Office is also significantly concerned with the fact that, **on occasions, AFs are issued years after an OHS infringement is identified** by the Authority. This practice, NAO opines, is not conducive to good administrative practice and may significantly impact the integrity of the Authority's record keeping and cash flow.
- 3.10.20. **NAO questions the value of the follow-up meetings held by OHSA with infringers** after identifying OHS shortcomings to clearly explain why enforcement action was taken against them. This consideration especially holds water in the instances of identified repeat infringers (who would be well aware of their OHS responsibilities) who would be completely unreceptive to education and dialogue. This Office contends that tying up resources (especially its already limited inspectorate staff) in such a manner, may be leading to these Officials spending less time on the ground and carrying out their central function, that is, ensuring OHS compliance through site visits.
- 3.10.21. This Office also draws attention to the system whereby **inspectorate staff are directed to carry out follow-up action within a six month period** from the date of first inspection. NAO opines that this period could be too long especially in view of small scale projects which, by nature, could have a much shorter period of execution. Such a situation could result in resource inefficiencies, whereby OHSA's inspectorate staff would carry out visits in vain (since the project would have already been completed), thereby putting additional strain on the already stretched resources as they would be redirected from other areas on which they could be more effective.
- 3.10.22. Reference is made to OHSA's statement that it encounters challenges during the initiation of criminal Court proceedings while communicating with the Police Department for the former to perform the prosecution function. This situation may be leading to **infringers being let off by the Courts due to legal technicalities**. The same applies when the prosecution function is taken over by the AG's Office in the case of Appeals.
- 3.10.23. NAO notes OHSA's concern on the fact that the relatively low **Court fines handed down to convicted infringers may not be serving as sufficient deterrent**. Such a scenario, this Office opines, may be incentivising further non-compliance to OHS obligations by the various duty holders, given that the risks of being handed out a significantly higher financial penalty when compared to AFs is minimal. As a result, the administrative burden on the Courts of Law could be increasing, as could the necessity to allocate OHSA resources to participate in legal forums, thereby redirecting the latter from other work.
- 3.10.24. While this Office commends OHSA for organising **awareness campaigns** intended to promote OHS and educate the public, it is concerned with the very poor level of interest and uptake. Such a situation may imply that the channels opted for by OHSA to deliver and disseminate such information may be inadequate and consequently insufficiently appealing to the target audience. This Office however commends initiatives such as the 'good practice awards' which incentivise duty-holders to give due importance to OHS.
- 3.10.25. NAO acknowledges and agrees with OHSA that **MCAST should mainstream OHS consideration into its academic material in a manner which is constantly kept abreast of ongoing developments**. This measure could ascertain that OHS related practices would be ingrained at a young age so that students, who are the future workforce, will understand that OHS is not just a legal obligation, but a measure that safeguards the best interests of all.

3.11. Recommendations

- 3.11.1. **NAO urges the Authority to re-align its focus and operating philosophy** by adopting a pro-active approach while, rather than aiming for the achievement of a self-regulating system, it further consolidates its primary role as an enforcer and a regulator. This Office further recommends that OHSA reviews its mission statement so that it better reflects the role of an autonomous regulatory authority. These recommendations become especially pivotal in view of the widespread cultural disregard and lack of adherence to OHS standards within the local construction industry.
- 3.11.2. **NAO urges OHSA to engage in a comprehensive revamp of its information system** so that this may better serve the Authority in its operational processes. A central holistic database with clear auditable trails, is a necessity to ensure proper monitoring and consistent enforcement which form the backbone of a solid regulatory function.
- 3.11.3. Given the obvious and significant benefits that could emanate from including reference to the OHS Act and related legislation (and consequently to the obligations of the duty holder) in either MEPA's development applications or approved permits, **NAO recommends that OHSA does its utmost to bring MEPA on board** on this initiative.
- 3.11.4. With respect to the challenges OHSA faces when attempting to obtain pivotal information from other government entities, **NAO urges the Authority to enforce its legal rights and unrelentingly request any information which it would require** to adequately shoulder its responsibilities. Once again, should such measures yield unfavourable outcomes, this Office recommends escalation of the matter through the appropriate channels.
- 3.11.5. Given the widespread problem of clients not engaging PSs to ascertain OHS requirements adherence during a construction project, NAO questions whether the legal requirement to appoint PSs should lie with this duty holder given the high risk that this stakeholder is not conversant with the practices of the construction industry as well as with any OHS related legal requirements. In view of this, **NAO recommends that OHSA should explore the possibility of soliciting, through the appropriate channels, for a shift in the legal responsibility of appointing PSs from the client to other, more technically and legally conversant stakeholders.** More specifically, NAO opines that the legal responsibility of appointing a Project Supervisor Design Stage (PSDS) should lie with the designers, engineers and/or architects, while the obligation of engaging a Project Supervisor Construction Stage (PSCS) should be assigned to the contractor. If OHSA does not manage to implement this recommendation, NAO extends the recommendation in 3.11.3 so that, as a bare minimum, the negative effects of this situation would be diluted.
- 3.11.6. NAO also notes that by shifting the legal responsibility of appointing PSs from the client to more technically and legally conversant stakeholders (as outlined in recommendation 3.11.5), risks of PSs deceptively binding themselves to only one of the two stages due to lack of knowledge by clients, would be mitigated. However, should recommendation 3.11.5 not be taken on board, **NAO recommends that OHSA devises a basic contractual template for the engagement of a PS (to be signed by the client and the assigned PS).** This document would better furnish the client in ascertaining that the PS is contractually binding him/herself to shoulder responsibility for both the design and construction stages, thereby minimising to previously mentioned risks. While this template itself should be made freely available to the public, it could also include reference to other material that is also publically

available so that abuse of PSs charging for this free documentation is minimised. For the sake of effective control and enforceability, the onus and legal responsibility of using this template in forming a contractual agreement, should fall on the PS and failure to do so should put the latter liable to an AF. NAO further opines that this measure can only be successfully implemented if followed by effective monitoring by OHSA.

- 3.11.7. Enforcing OHS should be the primary focus of the Authority, and therefore this **Office strongly urges OHSA to ascertain that health and safety considerations within construction sites are solely entrusted to PSs with certified competence and qualifications.** This, NAO recommends, is only possible through a system in which individuals wishing to act as PSs, subject themselves to vetting by OHSA and, upon approval, be included in the Authority's competent persons' register. Practitioners included in this register should then be the only legally allowable option to be assigned as PSs. This proposed system could greatly reduce the incidence of unqualified PSs, and significantly mitigate risks of having non-competent individuals assume this important role, thereby reducing the overall risk of preventable accidents. Given the benefits which could emanate from this system, NAO urges the Authority to exert the necessary pressure, through the appropriate channels, to amend relevant legislation so as to effectuate and legitimise this recommendation. This Office further suggests that OHSA could explore the possibility of proposing an amendment to local legislation so that chargeable prices for project supervision services are regulated, thereby greatly mitigating the potential for abuse in that regard.
- 3.11.8. In view of the fact that OHSA may not have sufficient human and financial resources to adequately execute its monitoring function, **this Office recommends that the Authority should initiate an internal exercise to determine whether its current staff complement and financial allocation are being utilised to their full potential** and address any identified inefficiencies. OHSA could also simultaneously conduct a simplification review intended to determine whether any existing processes could be simplified or automated (such as inspectorate staff making use of portable electronic devices during site inspections to maximise time efficiency on data inputting processes). Any man-hours alleviated through such processes could be assigned to additional on-the-ground monitoring thereby further strengthening the Authority's regulatory function. OHSA could also explore the possibility to **tap further into EU funding**, especially insofar as training and collaboration with European counterparts are concerned, thereby enhancing its personnel's expertise and capabilities. Furthermore, NAO also draws attention to the fact that, in **adopting a zero-tolerance approach towards enforcement on identified infringements**, the Authority could generate additional revenue, thereby putting itself in a better position to fulfil its obligations. This Office however further recommends that, should the Authority determine that even after the above suggestions are fully implemented it is still not adequately resourced to comprehensively address its responsibilities, the latter would do well to solicit for additional resources through the appropriate channels.
- 3.11.9. Given that measuring staff performance (through KPIs) is an obvious and fundamental organisational function for any entity, **NAO urges OHSA to reinstate negotiations with the respective Union** as well as directly with its employees, and assert the need for such a measure to be implemented.
- 3.11.10. Given the significant problem of under-reporting of actual occurring accidents, **NAO recommends that the Authority revisits its position on its visibility of near misses.** To this end, NAO recommends that OHSA solicits, through the appropriate channels,

a change in local legislation to bind the relevant duty holders to comprehensively document near misses. Following this, this Office urges the Authority to actively extract samples of this documentation so that it enhances its own information base, thereby putting itself in a better position to take a more pro-active and effective approach to its monitoring system. NAO draws attention to the Seveso Directive which recommends the reporting of near misses, even though such reporting is, as yet, not compulsory. This recommendation draws further strength from a study published by the European Process Safety Centre (EPSC), entitled '*Benchmarking on EPSC Member Company – Incident Reporting System*', which recognised that 'near-miss reporting was key to improving safety performance'. This EPSC study further affirms that, '*companies can learn from their near-misses without having to suffer the consequences of a full accident. Focusing on the reduction of near-miss occurrences, through stimulating near-miss reporting, has been shown to reduce frequency of accidents.*'

- 3.11.11. A two-pronged approach is recommended to address concerns emanating from the facts that: the notification system is, in itself, selective in terms of project size; and that the legal obligation of forwarding this notification document to OHS is not being consistently adhered to by the duty holders. To begin with, **NAO recommends that the notification requirement should not only be limited to the larger projects** but rather take a broader dimension, thereby providing the Authority with increased visibility of all ongoing construction projects. This suggestion becomes especially important due to the potentially significant number of smaller scale local construction sites, and the fact that the amount of man-hours required for any project does not, in isolation, statistically correlate to the number of occurring accidents. Secondly, **NAO recommends that OHS explores possibilities by which this notification is made more easily available to the general public.** In so doing, the Authority would ensure greater awareness among duty holders of their legal obligation to forward this document to OHS and consequently, ascertain greater compliance to this same requirement. One possibility by which this notification document could be made more easily available to the duty holders, is through the automation of its dissemination, possibly by including it in already existing government mechanisms (for instance, through the MEPA permit application process). The amalgamation of these two recommendations would ascertain that the Authority has better visibility of ongoing works (and consequently be in a better position to fulfil its regulatory function) without having to endure any significant increase in administrative burden.
- 3.11.12. **NAO recommends that the Authority endeavours to construct a centralised electronic prioritisation system** through which it could systematically select the sites to be subjected to inspection visits. This tool should be intended to adequately determine an inspection sample which reflects the current spectrum of ongoing works, while taking into consideration risks such as the duty holders' track records. NAO notes that the strength of this system would partially emanate from the possession of a broader visibility on ongoing works, which could be addressed through 3.11.11 above.
- 3.11.13. **NAO strongly urges the Authority to start carrying out exhaustive inspections during on-site visits to ascertain the full implementation of OHS considerations while fully reviewing all required documentation** (such as risk assessments and health and safety plans), rather than only ascertaining that OHS structures and mechanisms are in place, while identifying obvious risks. This Office further urges OHS to comprehensively document all identified infringements through a standard, all-inclusive checklist. This practice, NAO opines, is a fundamental part of the Authority's regulatory function as through such a rigorous check, OHS may send a strong message across all duty holders engaged in the construction industry

that infringements to OHS requirements will be comprehensively detected and met with enforcement action.

- 3.11.14. **NAO urges OHSA to proactively offer BICC any required assistance so that OHS considerations in the modules leading to the fulfilment of the skills card are comprehensively covered.** NAO additionally recommends that all prospective workers should fulfil the requirements to obtain this card as part of their development programme. Furthermore, all current workers should be obliged to obtain this certification within a stipulated time-period. This Office also suggests that any worker engaged in this industry should be obliged to carry this skills card on his/her person during works as assurance of the worker's competence and knowledge, including on OHS requirements. Operating in the construction industry without attaining and carrying this card upon one's person, should subject the infringer to enforcement action.
- 3.11.15. **This Office feels that OHSA should more actively pursue to determine and verify the identification of all individuals operating on an inspected site,** thereby mitigating any otherwise avoidable OHS related risks which may emanate from the illegal engagement of workers. NAO notes that the introduction of the skills card, together with the obligation of all workers to carry this upon their person while engaged in works, may be a significant asset in this regard, as this would serve as a certification of both identification and competence. To this end, this Office once again urges the Authority to cooperate and assist BICC so that this scheme is introduced and streamlined at the very earliest. Additionally, NAO recommends that the Authority extends its cooperation with other government entities, such as ETC, by sharing information gathered in site visits, thereby maximising mutual efficiency and reducing duplication of work.
- 3.11.16. In view of the disparity between OHSA's reduced operating hours and the spike in accidents during the summer period, NAO recommends that the Authority explores its options to thoroughly cover this sensitive seasonal period. One possible solution may be that **OHSA revisits its operational hours** so that they better reflect the exigencies of the construction industry. In so doing the Authority would be ascertaining a constant level of OHS monitoring during the year.
- 3.11.17. Given the possibility that infringers may be disregarding SOs by proceeding with the works during the effective period of this enforcement measure, NAO recommends that the Authority creates a system by which this phenomenon may be addressed. More specifically, **this Office opines that a documented profiling system could assist its Officials in identifying individuals who, depending on track records, would be more predisposed to ignore the Authority's orders.** Once this system is in place, OHSA's inspectorate staff could guide themselves accordingly and carry out follow-up inspection visits, in a timely manner, on high risk individuals.
- 3.11.18. NAO suggests that the Authority exerts the necessary pressures, through the appropriate channels, so that **relevant legislation is amended to minimise the disproportionality between the monetary value attached with AFs and the infringements they seek to deter.**
- 3.11.19. Given that **AFs are sometimes issued years after an OHS infringement is identified,** NAO urges the Authority to remedy this situation at the very earliest so that good practice is preserved and in order for infringers to regulate themselves in a timely manner.
- 3.11.20. **This Office recommends that, especially in the case of repeat offenders, the Authority does away with the follow-up meetings which are held between OHSA's**

inspectorate staff and the former after the identification OHS shortcomings. NAO opines that the same value emanating from such meetings can easily be reproduced through other communication channels, such via email or over the phone. This Office further asserts that relinquishing inspectorate staff from this time consuming task, and assigning them to carry out additional on the ground inspections, would ensure better use of the Authority's resources.

- 3.11.21. The six-month period between the original inspection and a follow-up on site visit (especially in the case of small scale construction projects), may prove to be too long. To this end, **NAO recommends that OHS revisits its current policy so that it takes into account factors such as project size as well as risk, and consequently schedule follow-up inspections accordingly.** This measure could minimise the risk of OHS's inspectorate staff going on site in vain as works would have already been completed.
- 3.11.22. **NAO suggests that OHS engages in communication with the Police Force and the AG's Office to explore possibilities of inter-departmental training** opportunities for better coordination in the preparation leading up to, and during the actual Court proceedings.
- 3.11.23. In view of the fact that Court fines handed down to convicted infringers may not be acting as sufficient deterrent due to their low monetary value, NAO extends the recommendation highlighted in 3.11.18. **This Office once again urges the Authority to exert the necessary pressure, through the appropriate channels, so that relevant legislation is amended in this regard to better reflect the severity of occurring/potential consequences** emanating from identified offences. NAO opines that this measure will also have a deterring effect insofar as contestation to AFs is concerned due to raised minimum enforceable penalties at the Courts of Law.
- 3.11.24. **This Office recommends that, should OHS decide to embark on awareness campaign projects, it reconsiders the communication channels it makes use of** in view of the very poor level of interest and uptake by the general public. This Office suggests that the Authority takes due note of current trends in communication so that it utilises media channels and measures which are currently more appealing to the public, thereby ensuring a more effective outreach.
- 3.11.25. While agreeing with the Authority that the modules delivered by MCAST should be kept constantly abreast with ongoing OHS developments considerations, **NAO suggests that OHS explores the possibility of being more actively involved in the design, planning and possibly the delivery of these modules' curricula.** To this end, NAO recommends that the Authority liaises with MCAST, thereby lending its expertise to ensure that comprehensive and streamlined OHS standards are included across all vocational programmes. Furthermore, the Authority could keep an open channel of communication with this College so as to provide any emerging new material and information.

Concluding Remark

During the progression of this audit, NAO observed an evident and constant effort by OHSA to clearly identify the responsibilities assigned to the various duty holders involved in the construction industry. While NAO joins the Authority in appealing for all duty holders to be comprehensively knowledgeable on, and rigorously adhere to their legal obligations, it is however concerned that OHSA's publicly projected main thrust is primarily on this identification of responsibilities assigned to the duty holders and recurrently stressing on what is not within its own responsibility. In NAO's opinion, by adopting such an approach, OHSA may not be clearly transmitting its regulatory role to the public, which situation may be shadowing the actual work carried out by the Authority. This, NAO opines, serves to further fuel the negative public perception, which existence the Authority itself acknowledges. Given that in the regulatory field, public perception is essential to the success of the respective entity, this Office believes that, if the Authority clearly promotes its regulatory and enforcing functions rather than holding back and focusing on what is not within its remit, public perception may significantly improve due to an enhanced reputation, with a potential ripple effect of increased adherence to OHS obligations.

This Office further asserts that an enhanced reputation has to be sustained with an increased and consistent presence on the ground. While the benefits of OHSA adopting the role of an educator are uncontested, NAO opines that the former should focus more on its regulatory and enforcement roles. To this end, NAO contends that OHSA's main thrust should be to increasingly deploy its Officers on the ground while widening, as much as possible, its visibility and overall reach. NAO also strongly maintains that inspections carried out by the Authority should not take the form of basic verifications. Rather, this Office opines that such vetting by OHSA's inspectorate staff should take the form of a comprehensive check of all OHS considerations related to each site, thereby thoroughly ascertaining full compliance and, consequently, adequate OHS standards. This consideration draws strength from the generally unsuccessful past attempts at educating stakeholders engaged in the construction industry, mainly due to a prevailing cultural predisposition of disregarding OHS requirements by perceiving these as an unnecessary expense. NAO is of the considered opinion that, in adopting a pro-active approach while focusing on and strengthening its monitoring and enforcement functions, OHSA may create an industry-wide deterring domino effect, forcing duty holders to regulate themselves so as not to be subjected to a heavy handed approach should they be inspected by the Authority.

NAO feels that it should also draw attention to OHSA's outlook on the local AR situation. Reference is made to a recurrent assertion made by the Authority (both during meetings with this Office and on local media) that the general public believes that accidents only

occur in Malta (with OHSa going as far as calling this as the 'Only in Malta Syndrome') when in fact, occupational accidents are a widespread phenomenon. While not contending the fact that occupational accidents are not restricted to the local scenario, NAO disagrees with the Authority using this argument as a response to the public's concerns. This Office opines that the Authority's publicly projected sense of comfort with the current local accident rates contrasts with the fact that the number of local occurring accidents has remained largely constant since 2012 and therefore, are not on the decline.

Notwithstanding the above, this Office however also acknowledges that OHSa does face a significant challenge in regulating this particular sector. Innate local cultural disregard to OHS considerations, legal constraints (such as barriers to the power of entry in domiciles and the relatively low penalties imposed by the Courts of Law) and other compounding factors, such as the considerable presence of irregular workers within this industry, create a regulatory conundrum which is not easily overcome. The very significant shortage in the quantity of inspectorate staff at OHSa's disposal, further adds unwarranted pressure on the Authority's operations and creates gaps in the latter's potential coverage, with obvious negative results. With these considerations in mind, this Office once again recommends that OHSa should seek to open collaboration channels with other government bodies, with the aim of detecting and eliminating duplication of work (especially insofar as inspection visits are concerned). This should be accompanied by an evident effort in the identification of efficient, effective and mutually beneficial measures by which different government bodies could share data amongst themselves and disseminate valuable information to the general public.

In conclusion, NAO recommends that the Authority maximises the efficiency and effectiveness of its existing resources and exert the necessary pressure, through the appropriate channels, should it feel that additional resources are required for it to adequately shoulder its assigned responsibilities. In parallel, OHSa should tighten and step-up its regulatory function through pro-active and thorough monitoring as well as unrelenting enforcement, with the aim of forcibly changing this deep-rooted local cultural disregard to OHS. This change, NAO opines, is the key to securing a widespread increase in adherence to OHS obligations thereby ascertaining safer workplaces within the local construction industry.

Appendix A: NAO's Statistical Study – Results

Appendix A.1

Bivariate Correlation between Accident Rates and Weather Variables

Dataset	Statistical Test	Variables	Statistic	P-Value (p-values <0.05 indicate a significant result at the 95% confidence level)	N
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	0.576	0.000	42
		Monthly Mean Maximum Temperature			
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	0.464	0.002	42
		Monthly Mean Hours of Bright Sunshine			
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	-0.454	0.003	42
		Monthly Mean Relative Humidity			
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	-0.482	0.001	42
		Monthly Mean Wind Speed			
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	-0.110	0.489	42
		Monthly Most Frequent Wind Direction			

January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	-0.449	0.003	42
		Monthly Days of Hail			
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	-0.211	0.181	42
		Monthly Days of Thunderstorm			
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	-0.260	0.096	42
		Monthly Rainfall Totals in mm			
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	-0.394	0.010	42
		Monthly Days with Winds Above 34Knots			

Significant results at the 95% confidence level are being presented in red.

Significant results at the 90% level are being presented in green.

Appendix A.2

Bivariate Correlation between MMTT and other weather variables

Dataset	Statistical Test	Variables	Statistic	P-Value (p-values <0.05 indicate a significant result at the 95% confidence level)	N
January 2012 - June 2015	Bivariate Correlation	Monthly Mean Maximum Temperature	0.786	0.000	42
		Monthly Mean Hours of Bright Sunshine			
January 2012 - June 2015	Bivariate Correlation	Monthly Mean Maximum Temperature	-0.657	0.000	42
		Monthly Mean Relative Humidity			
January 2012 - June 2015	Bivariate Correlation	Monthly Mean Maximum Temperature	-0.732	0.000	42
		Monthly Mean Wind Speed			
January 2012 - June 2015	Bivariate Correlation	Monthly Mean Maximum Temperature	-0.598	0.000	42
		Monthly Days of Hail			
January 2012 - June 2015	Bivariate Correlation	Monthly Mean Maximum Temperature	-0.578	0.000	42
		Monthly Rainfall Totals in mm			
January 2012 - June 2015	Bivariate Correlation	Monthly Mean Maximum Temperature	-0.678	0.000	42
		Monthly Days with Winds Above 34Knots			

Significant results at the 95% confidence level are being presented in red.

Appendix A.3

Partial Correlations between Monthly ARs and Weather Variables when controlling for MMT

Dataset	Statistical Test	Variables	Statistic	P-Value (p-values <0.05 indicate a significant result at the 95% confidence level)	N
Full (January 2012 - June 2015)	Partial Correlation (Controlling for MMT)	Monthly Accidents Rate per 1000 Hours Worked	0.023	0.886	42
		Monthly Mean Hours of Bright Sunshine			
Full (January 2012 - June 2015)	Partial Correlation (Controlling for MMT)	Monthly Accidents Rate per 1000 Hours Worked	-0.123	0.445	42
		Monthly Mean Relative Humidity			
Full (January 2012 - June 2015)	Partial Correlation (Controlling for MMT)	Monthly Accidents Rate per 1000 Hours Worked	-0.108	0.500	42
		Monthly Mean Wind Speed			
Full (January 2012 - June 2015)	Partial Correlation (Controlling for MMT)	Monthly Accidents Rate per 1000 Hours Worked	-0.160	0.316	42
		Monthly Days of Hail			
Full (January 2012 - June 2015)	Partial Correlation (Controlling for MMT)	Monthly Accidents Rate per 1000 Hours Worked	0.108	0.501	42
		Monthly Rainfall Totals in mm			
Full (January 2012 - June 2015)	Partial Correlation (Controlling for MMT)	Monthly Accidents Rate per 1000 Hours Worked	-0.005	0.973	42
		Monthly Days with Winds Above 34Knots			

Appendix A.4

Bivariate Correlation between ARs and Time Code (Months)

Dataset	Statistical Test	Variables	Statistic	P- Value	N
January 2012 - June 2015	Bivariate Correlation	Monthly Accidents Rate per 1000 Hours Worked	-0.053	0.740	42
		Time code (months)			

Appendix A.5

Regression analysis, including time (as a continuous variable) as a predictor of ARs

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Time_code ^b		Enter

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.053 ^a	.003	-.022	.0049910

- a. Predictors: (Constant), Time_code

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	.111	.740 ^b
	Residual	.001	40	.000		
	Total	.001	41			

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked
 b. Predictors: (Constant), Time_code

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	.019	.002		11.806	.000	.015	.022
Time_code	-2.119E-5	.000	-.053	-.334	.740	.000	.000

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked

Appendix A.6

Regression analysis, including time (as a categorical variable indicating quarters) as a predictor of ARs

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Quarter_4_Dummy, Quarter_3_Dummy, Quarter_2_Dummy ^b		Enter

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.525a	.276	.218	.0043644

- a. Predictors: (Constant), Quarter_4_Dummy, Quarter_3_Dummy, Quarter_2_Dummy

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.000	3	.000	4.819	.006 ^b
	Residual	.001	38	.000		
	Total	.001	41			

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked
 b. Predictors: (Constant), Quarter_4_Dummy, Quarter_3_Dummy, Quarter_2_Dummy

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.014	.001	.497	11.151	.000	.011	.017
	Quarter_2_Dummy	.005	.002	.527	3.012	.005	.002	.009
	Quarter_3_Dummy	.006	.002	.445	3.252	.002	.002	.010
	Quarter_4_Dummy	.005	.002		2.751	.009	.001	.009

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked

Appendix A.7

Regression analysis, including the categorical time variables and MMT as predictors of ARs

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Mean_Monthly_Max_Temp, Quarter_4_Dummy, Quarter_2_Dummy, Quarter_3_Dummy ^b	.	Enter

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635a	.403	.339	.0040147

- a. Predictors: (Constant), Mean_Monthly_Max_Temp, Quarter_4_Dummy, Quarter_2_Dummy, Quarter_3_Dummy

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.000	4	.000	6.249	.001 ^b
Residual	.001	37	.000		
Total	.001	41			

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked
b. Predictors: (Constant), Mean_Monthly_Max_Temp, Quarter_4_Dummy, Quarter_2_Dummy, Quarter_3_Dummy

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta	t		Lower Bound	Upper Bound
1 (Constant)	.004	.004		1.129	.266	-.003	.012
Quarter_2_Dummy	-5.157E-5	.003	-.005	-.020	.984	-.005	.005
Quarter_3_Dummy	-.003	.004	-.270	-.843	.404	-.011	.004
Quarter_4_Dummy	.002	.002	.143	.778	.442	-.003	.006
Mean_Monthly_Max_Temp	.001	.000	.781	2.812	.008	.000	.001

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked

Appendix A.8

Paired samples t-test for the accident proportions for all age groups pairs

Paired Samples Test

		Paired Differences					t	df	Sig. 2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	M_ProportionAccidents_15_24 M_ProportionAccidents_25_34	.00107	.00507	.00079	-.00053	.00267	1.350	40	.185
Pair 2	M_ProportionAccidents_15_24 M_ProportionAccidents_35_44	.00044	.00598	.00093	-.00145	.00232	.468	40	.642
Pair 3	M_ProportionAccidents_15_24 M_ProportionAccidents_45_54	-.00042	.00530	.00083	-.00210	.00125	-.513	40	.611
Pair 4	M_ProportionAccidents_15_24 M_ProportionAccidents_55Plus	-.00073	.00644	.00101	-.00276	.00130	-.725	40	.473
Pair 5	M_ProportionAccidents_25_34 M_ProportionAccidents_35_44	-.00063	.00378	.00059	-.00182	.00056	-1.068	40	.292
Pair 6	M_ProportionAccidents_25_34 M_ProportionAccidents_45_54	-.00149	.00452	.00071	-.00292	-.00007	-2.113	40	.041
Pair 7	M_ProportionAccidents_25_34 M_ProportionAccidents_55Plus	-.00180	.00508	.00079	-.00340	-.00019	-2.264	40	.029
Pair 8	M_ProportionAccidents_35_44 M_ProportionAccidents_45_54	-.00086	.00465	.00073	-.00233	.00061	-1.187	40	.242
Pair 9	M_ProportionAccidents_35_44 M_ProportionAccidents_55Plus	-.00117	.00599	.00094	-.00306	.00072	-1.247	40	.220
Pair 10	M_ProportionAccidents_45_54 M_ProportionAccidents_55Plus	-.00030	.00634	.00099	-.00231	.00170	-.308	40	.760

Appendix A.9

ANOVA test of accident proportions by age group.

ANOVA

Proportion_Total_Accidents_WorkingPopAgeGroup

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.000	4	.000	1.464	.214
Within Groups	.003	200	.000		
Total	.003	204			

Appendix A.10

Pearson Correlation between Hours Worked and Total Accidents

Correlations

		M_Total_Accidents	No_Hours_Worked_Month
M_Total_Accidents	Pearson Correlation	1	.261
	Sig. (2-tailed)		.096
	N	45	42
No_Hours_Worked_Month	Pearson Correlation	.261	1
	Sig. (2-tailed)	.096	
	N	42	42

Appendix A.11

Regression Analysis, including MMT as the only predictor variable

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Mean_Monthly_Max_Temp ^b	.	Enter

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.576a	.331	.315	.0040870

- a. Predictors: (Constant), Mean_Monthly_Max_Temp

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	19.819	.000 ^b
	Residual	.001	40	.000		
	Total	.001	41			

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked
 b. Predictors: (Constant), Mean_Monthly_Max_Temp

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.008	.002		3.106	.003	.003	.013
	Mean_Monthly_Max_Temp	.000	.000	.576	4.452	.000	.000	.001

- a. Dependent Variable: Monthly Proportion of Total Accidents per 1000 Hours Worked

Appendix B: OHS Stakeholders

OHS Stakeholders in accordance with the 'OHS Code of Practice for the Construction Industry'

Source: OHS Code of Practice for the Construction Industry'

A. The Client / Owner

General Duties

- Appointment of the PSDS and PSCS as per LN281 of 2004 3.(1);
- Ensure Competence of Duty Holders;
- Ensure that those tendering also submit costings pertaining to health and safety;
- Ensure that a pre-tender Health and Safety Plan have been proposed before works commence;
- Make available a health and safety file to be utilised in consultation with PSDS and PSCS, as per LN281 of 2004 3.(2);
- When the client does no longer have ownership of the project, the Health and Safety File must be transferred to the new owner (as per LN281 of 2004 3.(3);
- The appointment of PS does not relieve the client from their duties and responsibilities (as per LN 281 of 2004 6.(1)(2).

B. Designers, Engineers & Architects

General Duties

- To receive training on Health & Safety and integrate such measures in the design and planning process of the project;
- Pre-empting by designing modifications to structure materials which can be hazardous to health;
- Take into account safety problems which are associated with maintenance and upkeep;
- Facilities shall be included in the design for such work to be performed with minimum risk.

C. Project Supervisor for the Design Stage (PSDS)

General Provisions

- Advise client or contractor on competence and allocation of resources, time and health and safety;
- Hazard elimination and / or risk control addressed at design stage with the designers/ engineers/ architects. Any remaining hazards must be communicated to the contractor by the PSDS during the pre-tender and the Construction Health and Safety Plans;
- Ensure that the H&S File is kept in accordance with LN 281 of 2004.

Notification

- Depending on the size of the project, the PSDS must furnish OHS with advance notification on the construction works. The notification is to be placed in a prominent place on site;
- This notification must be posted in a prominent position.

H&S Plan

- PSDS must prepare H&S Plan prior to the setting up of a construction site. PSDS must also ensure that a pre-tender H&S Plan is available as per LN281 of 2004 4.(2);
- The H&S Plan must ensure the necessary measures for protection on OHS on and around the construction site.

General Principles of Prevention (GPP)

- PSDS must take into account GPP as per Act XXVII of 2000 as guided by LN281 of 2004 4. (3)(a)(b).

D. Project Supervisor for the Construction Stage (PSCS)

General Provisions

- Advise client or contractor on competence and allocation of resources, time and health and safety;
- Ensure that there are effective procedures to identify and control those hazards representing potential risks to the health and safety of workers and to any other person that could be affected by the construction work;
- Measures to ensure that only authorised persons enter site (as per LN281 of 2004 5.(f));
- Ensure that notification is displayed on-site;
- Provide PSDS with information to be included in H&S file;
- Collect feedback from people at work with respect to health & safety on site;
- Ensure that welfare facilities are provided to all workers.

General Principles of Prevention (GPP)

- PSCS must take into account GPP as per Act XXVII of 2000 as guided by LN281 of 2004 5. (a)(i-ii).

H&S Plan

- PSCS must follow pre-tender and H&S Plan as prepared by PSDS. These must be set up by the former for the construction stage whilst also taking into account of the progress and significant changes which result in adjustments to the H&S Plan (as per LN281 of 2004) 5.(c);
- PSCS must furnish contractors with rules in the H&S Plan;
- The PSCS must coordinate the implementation of the relevant provisions in the Plan (as per LN281 of 2004 5.(b)(i,ii).

Coordination and Cooperation

- PSCS to organise cooperation with contractors sharing the same site on OHS provisions (as per LN281 of 2004 5.(d));
- Coordinate the necessary arrangements such as the organisation of frequent site inspections (as per LN 36 of 2003 7.);
- Coordination of Schedule IV of LN281 of 2004.

E. Contractors, Sub-Contractors, Self-Employed Persons

Shared Responsibilities

- Retention of shared responsibilities in the case of multiple contractors.

General Provisions

- Ensure compliance with Code of Practice and Regulations;
- Precautions on OHS to all persons that can be affected by the work (as per ACT 27 of 2000);
- Ensure that plant and machinery is suitable for the use of work and poise of risk and in line with standards (as per LN 281 of 2004 3.(1)(a);
- Ensure 'risk free' use of equipment;
- Maintenance of workplace to ensure continuous levels of H&S (as per LN282 of 2004 6.(a)(b). and ACT 27 of 2000);
- Ensuring that drivers are over 21 and competent;
- Ensure good housekeeping on site (as per LN 281 of 2004 7).;
- Provide PSCS with Health and Safety information which could be included in the H&S File;
- Provide PSCS with information on injuries, deaths and near misses;
- Comply with OHSA and any related regulations (as per LN 36 of 2003 7, 8 and 9).

Cooperation and Coordination

- Contractors must cooperate with Project Supervisors;
- Contractors must also take into account the directions of the Project Supervisors.

General Principles of Prevention (GPP)

- PSDS must take into account GPP as per Act XXVII of 2000.

Risk Assessments

- As per LN 36 of 2003 10.(1); 5.(i-iii); and 6(1)(2).

Obligations of LN 281 of 2004

- Ensure that relevant obligations are adhered to on site.

Information, Instruction, Training and Supervision

- Unless contractor is provided with the names of PSDS and PSCS and also an H&S Plan, works on site cannot initiate;
- Contractors are to provide OHS procedures and nominate designated persons responsible for health and safety (as per LN 36 of 2003 11(1) and ACT 27 of 2000);
- Provide information instructions and training to employees (as per LN 36 of 2003 and ACT 27 of 2000);
- Provide necessary supervision;
- Timing of provision of instruction, training and information given by contractor shall be commensurate with level of risk of H&S (as per LN36 of 2003 12. (1) (i-iii);
- Assign tasks which employees are able to execute safely.

Duties of Self-Employed

- Unless contractor is provided with the names of PSDS and PSCS and also an H&S Plan, works on site cannot initiate;
- Contractors are to provide OHS procedures and nominate designated persons responsible for health and safety (as per LN 36 of 2003 11(1) and ACT 27 of 2000);
- Ensure correct use of equipment, devices, protective equipment;
Inform owners on H&S hazards and risks;
- Cooperate with all workers;
- Equipment is to be kept in good working condition;
- Employees must be provided with free protective equipment.

F. The Employees - Duties and Rights

Duties

- Employees must take care of themselves and also their co-workers' health and safety at the workplace;
- Wear protective equipment;
- Cooperate with employers, take necessary steps to ensure H&S, make use of protective equipment, report on OHS risks and comply with safety measures (as per LN36 of 2003);
- Employees should not interfere with, remove guards, protective equipment and measures, or interfere with methods aimed at ensuring health and safety. Furthermore, employees are not to rest in dangerous places (as per LN36 of 2003).

Rights

- To choose H&S Representative (as per LN281 of 2004 11. and LN36 of 2003 13.(1-2));
- To obtain information on risks and hazards (as per LN281 of 2004 10.(1-2));
- To be heard by all duty holders on H&S risks as well as a right to safe facilities and equipment (as per LN121 of 2003 10.(1)(2)).

Appendix C: List of Enforceable Administrative Fines

Contravention	Penalty (€)	Comments
Workplace equipment or machinery in use not inspected, examined, tested and, or certified according to OHS legislation.	250	The stipulated penalty shall apply for each item of equipment or machinery which has not been examined, tested and, or certified within the prescribed time from when the obligation falls due, and, or in cases where (i) no certificate required to be sent has been sent, or (ii) no entry in a register is made, or (iii) no register is kept.
Not carrying out a suitable, sufficient and systematic assessment of all OHS hazards and the resultant risks involved.	250	LN 36 / 2003
Employer not performing suitable and sufficient assessments of the health and safety risks to which workers are exposed in consequence of VDU use.	250	LN 43 / 2002
Employer not carrying out an assessment of the OHS hazards which may be involved at the place of work, before engaging or offering work to any young person.	250	LN 91 / 2000
Employer not carrying out an assessment of the OHS hazards which may be involved at the place of work, before assigning work to any pregnant or breastfeeding worker or to a mother.	250	LN 92 / 2000
Levying or permitting to be levied a charge or deduction of wages of any worker in respect of anything done or provided in the interests of occupational health, safety, hygiene or welfare pursuant to the regulations.	250	LN 36/2003. The penalty shall be applied to an organisation, irrespective of the number of employees affected.
Not ensuring the appointment of workers health and safety representatives.	250	LN 36 / 2003
The commencement of work which requires prior notification, authorization or submission of plan of work to the OHSA without such an obligation being fulfilled.	250	LN 281 / 2004 (construction), LN 37 / 2003, as amended by L.N. 6 / 2005 (Control of Major Accident Hazards, (COMAH)), LN 323 / 2006 (Asbestos)
Non notification of any accident which results in either the death of or a major injury to any person or, in the case of an employee at work, in that employee being incapacitated for work for more than three consecutive days.	250	LN 52 / 1986. The penalty applies for each injury not notified.
Not complying with obligations laid down in Schedule IV to LN 281/2004.	250	LN 281/2004 - Schedule IV

Requesting workers to handle a load, which by reason of its characteristics or because of unfavourable ergonomic conditions, involves a risk particularly of back injury to workers, without first having taken appropriate organisational measures, or provided appropriate mechanical means in order to avoid the need for manual handling.	250	LN 35/2003
A client not appointing a PS/s.	250	LN 281/2004
A person intentionally or recklessly interferes with or misuses anything provided in the interests of OHS.	250	LN 36/2003
Not keeping a written or retrievable electronic copy of a risk assessment when 5 or more workers are employed.	250	LN 36/2003
Not providing workers and their representatives with comprehensible and relevant information.	250	LN 36/2003
Worker not taking care of his/other persons' health and safety in accordance with the training and the instructions given by an employer.	250	LN 36/2003
Temporary workers are not afforded adequate health and safety protection.	250	LN 36/2003
A project supervisor not ensuring the preparation of a health and safety plan.	250	LN 281/2004
Workers not cooperating with employer and / or appointed WHS representatives and / or workers having a specific responsibility for the safety and health of workers.	250	Cap. 424, LN 36 / 2003
Employer fails to ensure that where there is a risk of mechanical contact with moving parts of work equipment which could lead to accidents, those parts must be provided with guards or devices to prevent access to danger zones or to halt movements of dangerous parts before the danger zones are reached.	250	LN 282/2004 LN 52/1986
Employer not providing Personal Protection Equipment or Clothing (PPE / C) and / or not ensuring that workers make full and correct use of that PPE / C.	250	LN 36/2003
Self-employed person not taking measures to safeguard one's own health and safety and that of other persons who can be affected by reason of the work which is carried out.	250	Cap 424.

A person breaks or tampers with any seal made, or with any monitoring equipment installed, put up or left by an OHS Officer in a work place, or in the case of personal monitoring equipment, on a worker.	250	Cap. 424
Mobile crane operated with outriggers on inadequate supports or unstable ground.	250	Cap. 424
Tower crane not certified after installation and before being put into service on a site.	250	LN 282/2004
Lifting equipment with suspended loads left without surveillance.	250	LN 282/2004
Person/s lifted without adequate safety measures or cage which has not been certified.	250	LN 282/2004
Person/s lifted on forklift truck without certified attachments.	250	LN 282/2004
An operator of a COMAH establishment not preparing a major accident prevention policy.	450	LN 37/2003 as amended by LN 6/2005
An operator of a COMAH establishment not producing a safety report.	450	LN 37/2003 as amended by LN 6/2005
An operator of a COMAH establishment not reviewing and revising a safety report.	450	LN 37/2003 as amended by LN 6/2005
An operator of a COMAH establishment not preparing an internal emergency plan.	450	LN 37/2003 as amended by LN 6/2005
An operator of a COMAH establishment not providing information to the competent authority.	450	LN 37/2003 as amended by LN 6/2005
No person/s designated by an employer to assist him in undertaking the measures relating to OHS.	450	LN 36/2003
Workers who are entitled to undergo health surveillance not provided with such health surveillance.	450	LN 36/2003
An operator of a COMAH establishment not supplying information on safety measures and on the requisite behaviour in the event of a major accident.	450	LN 37/2003 as amended by LN 6/2005
Employer not taking measures to prevent risks: - Failure to prevent risks of falls from heights; - Failure to ensure that all open edges are effectively fenced / guarded; - Failure to ensure that work equipment is operated correctly.	450	Cap. 424 and LN 36/2003

Employer not providing adequate first aid equipment and facilities as are adequate and appropriate for enabling first aid to be rendered to whosoever becomes injured or ill inside the workplace.	250	L.N. 11 of 2002
Employer not ensuring the presence at all times of such a number of first aiders as is adequate and appropriate in the circumstances for rendering first aid to employees if they are injured or become ill at work.	250	L.N. 11 of 2002
Employer not providing and maintaining a suitably equipped first-aid room where two hundred or more employees are at work in a place of work, or where the type of activity or the frequency of accidents so dictate.	250	L.N. 11 of 2002
A self - employed person not providing or ensuring that there is provided, adequate first aid equipment to enable him to render first aid to himself while he is at work, or for others to give him first aid.	250	L.N. 11 of 2002
Blocked, inaccessible and / or locked emergency exits.	250	L.N. 44 of 2002
Employer not taking the necessary measures for fire-fighting and evacuation of workers in the event of serious and imminent danger as contemplated by LN 44 / 2002.	250	L.N. 44 of 2002
Employer not ensuring the structure and solidity of any building or structure.	250	L.N. 44 of 2002
Employer not making effective and suitable provisions to ensure that every workplace, particularly if enclosed, is ventilated by a sufficient quantity of fresh or purified air, and for rendering harmless by the use of extraction systems, so far as reasonably practicable, all fumes, dust and other impurities that may be injurious to health generated in the course of any process of work carried out in the workplace.	250	L.N. 44 of 2002
Inadequate or no health and / or safety signage.	250	LN 45 of 2002

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