

## REVIEW

### Introduction

The Minister received correspondence from three individuals raising concerns about the compliance by the Air Corps at its maintenance facilities with statutory health and safety standards in connection with the use of chemical agents. The three correspondents invoked the Protected Disclosure Act 2014 when making the allegations. It was decided to conduct a review of the allegations and the Department of Defence has set out the task of the reviewer as follows:-

1. Review the allegations as detailed in the written correspondence to the Minister and determine if in the periods covered by the three disclosures did the Air Corps comply with the relevant Health and Safety standards with regard to the safe use of toxic chemicals and if not what action has been taken in the intervening period to ensure compliance
2. In relation to each of the three written disclosures provide considered views and observations in relation to the allegations set out in each
3. Provide such other considered views and observations as are considered necessary

My expertise is in the area of law and in carrying out this review it was my intention to examine compliance by the Air Corps with the relevant law and regulation. I was not in a position to consider the substances in use or any implications for human health arising from such use as these issues are outside my competence. The allegations concern both the current health and safety regime and compliance with that regime in a period stretching back over 20 years.

Having considered the allegations made by the three informants it is my view that a review of the kind envisaged by the terms of reference set out above is impractical and I therefore I can only comment in general terms on the safety regime.

In relation to the current safety regime this is essentially a matter for the Health and Safety Authority which has statutory authority for overseeing safety standards and for their enforcement. The HSA has the same authority in relation to the Air Corps workshops as it has in relation to any other aircraft maintenance facility in the State. As set out later in this document it is not appropriate for me to pass judgment on compliance with legal regime which is a matter for the HSA which has carried out inspections and has issued a report to the Air Corps.

In relation to past events any examination of the allegations would raise questions about the actions and conduct of both serving and retired Defence Force personnel with implications for their reputation and good name and such matters could not in my view be adequately dealt with in this type of informal review. The matter is further complicated by the fact that two of the informants have already issued proceedings for personnel injury resulting from their service in the Air Corps and there are also appear to be four other litigants with similar actions in being. That litigation will no doubt involve the issue of past compliance and the Court is best place to examine that matter.

### **The Protected Disclosure Act**

The long title of the Protected Disclosure Act 2014 provides a summary of that statute's purpose

*An Act to make provision for and in connection with the protection of persons from the taking of action against them in respect of the making of certain disclosures in the public interest and for connected purposes.*

The 2014 Act is an employee protection measure rather than a specific system for processing complaints made by employees or the processing of grievances. The Protected Disclosure Act does not provide for a formal inquiry process and gives no powers to any party appointed to investigate a matter. The 2014 legislation is designed to protect an employee who reports wrongdoing from any form of penalisation, including dismissal, as well as protection from certain other legal consequences which may be visited on the whistleblower. Legal consequences could arise from what the employer might consider to be a breach of the employment contract, or which a third party, who is the subject of an allegation, might seek to categorise as a tort or civil wrong by which the whistleblower has damaged that person's interests. The protections given by the 2014 Act assist a whistleblower who might otherwise feel intimidated or threatened if he or she raised concerns and it provides a means for a whistleblower to escalate his or her concerns where action to remedy a wrong is not taken or is blocked by an employer. The Act provides an employee with the opportunity to seek redress where he or she has suffered penalisation and also provides an effective defence if the whistleblower is sued. In the case of public servants the legal consequences could take the form of prosecution for a criminal offence for the wrongful disclosure of information, which is prohibited under a number of statutes including the Official Secrets Act 1963, but section 15 of the Protected Disclosure Act provides a defence to such offences for a bona fide whistleblower.

The 2014 Act does not prescribe how the recipient of a protected disclosure is to deal with the information or what form of investigation, if any, should take place to examine the allegations; this remains a matter for the recipient/employer to determine. Of particular importance in this instance the Act does not trump or set aside any existing internal procedures for dealing with complaints or disclosures nor does it cut across or set aside the powers of existing statutory bodies which have been given the task of investigating breaches of the law or breaches of statutory codes and standards.

In the present case the essence of the disclosure is that the Air Corps has not properly implemented the Health and Safety regime relating to the use of hazardous chemicals by

its personnel engaged on maintenance work. The relevant requirement within section 5 of the 2014 Act is subsection (2)(d) “*that the health or safety of any individual has been, is being or is likely to be endangered.*” In the present instance it is the alleged failure to implement the statutory health and safety regime which might have exposed persons to the risk of injury.

## The Health and Safety Regime

### Statutory Provisions

The Safety, Health and Welfare at Work Act 2005 is the current legislation in force and is applicable to the Defence Forces except as provided for in section 6(2) of that Act but the exceptions under that section do not apply in the present case.

Section 8(1) of the 2005 Act sets out a key requirement that “*Every employer shall ensure, so far as is reasonably practicable, the safety, health and welfare at work of his or her employees*”. The rest of section 8 sets out in more detail the obligations of the employer and in the current context subsections (h) and (i) are of particular relevance

*(h) determining and implementing the safety, health and welfare measures necessary for the protection of the safety, health and welfare of his or her employees when identifying hazards and carrying out a risk assessment under section 19 or when preparing a safety statement under section 20 and ensuring that the measures take account of changing circumstances and the general principles of prevention specified in Schedule 3 ;*

*(i) having regard to the general principles of prevention in Schedule 3, where risks cannot be eliminated or adequately controlled or in such circumstances as may be prescribed, providing and maintaining such suitable protective clothing*

*and equipment as is necessary to ensure, so far as is reasonably practicable, the safety, health and welfare at work of his or her employees;*

Schedule 3 of the Act sets out the general principle of prevention

- 1. The avoidance of risks.*
- 2. The evaluation of unavoidable risks.*
- 3. The combating of risks at source.*
- 4. The adaptation of work to the individual, especially as regards the design of places of work, the choice of work equipment and the choice of systems of work, with a view, in particular, to alleviating monotonous work and work at a predetermined work rate and to reducing the effect of this work on health.*
- 5. The adaptation of the place of work to technical progress.*
- 6. The replacement of dangerous articles, substances or systems of work by safe or less dangerous articles, substances or systems of work.*
- 7. The giving of priority to collective protective measures over individual protective measures.*
- 8. The development of an adequate prevention policy in relation to safety, health and welfare at work, which takes account of technology, organisation of work, working conditions, social factors and the influence of factors related to the working environment.*
- 9. The giving of appropriate training and instructions to employees.*

The Act also imposes obligations on employees and of particular significance is section 13(1)(h) requiring workers themselves to be alert to risks and to report them promptly to the employer. An employee should

*(h) report to his or her employer or to any other appropriate person, as soon as practicable—*

*(i) any work being carried on, or likely to be carried on, in a manner which may endanger the safety, health or welfare at work of the employee or that of any other person,*

*(ii) any defect in the place of work, the systems of work, any article or substance which might endanger the safety, health or welfare at work of the employee or that of any other person, or*

*(iii) any contravention of the relevant statutory provisions which may endanger the safety, health and welfare at work of the employee or that of any other person,*

*of which he or she is aware.*

In the context of a work environment subject to military discipline where obedience to the instructions of a superior is a key requirement there are obvious difficulties for a worker to raise safety concerns and the view of the informants in this matter is that they were not able adequately to raise safety concerns and when they did raise concerns these were ignored. The Defence Forces need to be able to demonstrate that it has an adequate system in place to ensure that safety concerns can be raised by a member of any rank and to show that it has an ethos which makes safety the concern and responsibility of all.

An employer has a duty to ensure a proper risk assessment is undertaken in relation to the workplace and this is set out in section 19

*Every employer shall identify the hazards in the place of work under his or her control, assess the risks presented by those hazards and be in possession of a written assessment (to be known and referred to in this Act as a "risk assessment") of the risks to the safety, health and welfare at work of his or her employees, including the safety, health and welfare of any single employee or group or groups of employees who may be exposed to any unusual or other risks under the relevant statutory provisions.*

The risk assessment is a matter which under the terms of the statute must be kept under review. The section is further underpinned by requirements for health surveillance in section 22

*Every employer shall ensure that health surveillance appropriate to the risks to safety, health and welfare that may be incurred at the place of work identified by the risk assessment under section 19 is made available to his or her employees.*

These provisions were not introduced by the 2005 as new legal requirements but were based on pre-existing provisions in the Safety, Health and Welfare Act Work Act 1989 and were restated in sections 19 and 22 of the 2005 statute.

One of the important features of the 2005 Act is section 27 which provides a protection for employees against penalisation and dismissal. In effect the 2005 Act contains its own whistleblower protection applicable in particular to safety representatives and employees who raise issues concerning safety in the workplace. In the current context a complaint that the Air Corps did not have an adequate safety regime when dealing with hazardous chemicals was a matter which could have been raised prior to the enactment of the 2014 Act and could have been referred to the Health and Safety Authority by an employee and such an employee had and still has similar protections to those under the 2014 Act when raising safety concerns. Referring a complaint to the HSA would have been an entirely appropriate means of raising concerns as it provides access to a body with the relevant expertise and with effective powers of inspection and enforcement. Rather than take the protected disclosure route an appropriate and perhaps more efficient course would have been if the complainants had contacted the Health and Safety Authority. The military authorities need to ensure that the role of the HSA in relation to workplace safety is understood and that there is an effective system in place to enable workers to raise safety concerns. Where documentation and records detailing the compliance with the safety regime exist and are readily accessible to staff this should provide the necessary on-going assurance to staff and third parties that all is in order.

In 2015 a complaint or complaints about the use of chemicals in the Air Corps were made to the HSA and it carried out inspections in 2016 and on the 21 October 2016 it sent a detailed letter to the Air Corps setting out a list of safety matters which required attention to improve the standards in place. Effectively the complaints about the current safety regime at the Casement Airbase have been made to the agency with the appropriate authority and expertise to deal with them. The Air Corps regime is currently under scrutiny by the HSA and the Air Corps has indicated that it will take corrective action which in turn will be subject to HSA oversight.

### Regulations

S.I. No. 619/2001 the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001 (originally made under the 1989 Act) established a safety framework for chemical agents in the workplace in conformity with the principles set out in the parent statute. These regulations were continued in force by the 2005 Act and were amended in 2015 by SI 323/2015. Regulation 4 sets out the duty of the employer to determine the risk from the use of chemicals and the text (in its amended form) is:-

4. (1) *Without prejudice to section 19 of the Act of 2005 it shall be the duty of every employer to determine whether any hazardous chemical agents are present at the workplace and to assess any risk to the safety and health of employees arising from the presence of those chemical agents, taking into consideration the following -*
- (a) *their hazardous properties,*
  - (b) *information on safety and health that shall be provided by the supplier and which shall include the relevant safety data sheet provided in accordance with Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006, referred to in Article 4(2) of the Directive,*
  - (c) *the level, type and duration of exposure,*



- (d) the circumstances of work involving such agents and the quantities stored and in use in the workplace,*
- (e) any occupational exposure limit value or biological limit value contained in an approved code of practice,*
- (f) the effect of preventative measures taken,*
- (g) where available, the conclusions from health surveillance already undertaken, and*
- (h) any activity including maintenance and accidental release in respect of which it is foreseeable that there is a potential for significant exposures.*

*(2) In the case of activities involving exposure to several hazardous chemical agents, the risk shall be assessed on the basis of the risk presented by all such chemical agents in combination.*

*(3) Any risk assessment made under this Regulation shall be recorded in writing.*

*(4) Where, as a result of such risk assessment, a further detailed risk assessment is deemed to be unnecessary the employer may include a justification for this decision.*

*(5) Any risk assessment made under this Regulation shall be reviewed regularly and shall be reviewed immediately if -*

- (a) there is reason to suspect that the assessment is no longer valid,*
- (b) there has been a significant change in the work to which the assessment relates,*
- (c) where the results of health surveillance show it to be necessary, or*
- (d) where as a result of exposure monitoring an occupational exposure limit value is found to have been exceeded.*

*(6) A risk assessment made pursuant to this Regulation must identify the measures that have been taken or that are to be taken in relation to the requirements of these Regulations.*

*(7) In the case of a new activity involving hazardous chemical agents, work shall not commence until after an assessment of the risk of that activity has been made and the preventive measures identified in the risk assessment have been implemented.*

Regulation 5 requires an employer to respond to risks arising from the use of hazardous chemical agents which have been identified. A risk which cannot be eliminated should be reduced to a minimum. If there is more than a minimal risk to the health and safety of employees then the protection and prevention measures in regulation 6 must be applied as well as the health surveillance measures in regulation 10.

The specific protection and prevention measures in regulation 6 are

*(1) It shall be the duty of every employer:*

*(a) to ensure that the risk to the safety and health of employees from hazardous chemical agents is eliminated so far as is reasonably practicable or reduced to a minimum by application of the following measures -*

*(i) avoidance of the use of a hazardous chemical agent or process by replacing it by one which under its condition of use is not hazardous or less hazardous than the hazardous chemical agent or process in use at the time of the risk assessment,*

*(ii) design of work processes, engineering control measures and the use of adequate equipment and materials so as to avoid or minimise the release of hazardous chemical agents into the place of work,*

*(iii) the use of appropriate systems for the extraction of hazardous chemical agents at source,*

(iv) *where exposure cannot be prevented by other means, application of individual protective measures including personal protective equipment in addition to the measures required by subparagraphs (i), (ii) and (iii);*

(b) *to ensure that any engineering control measure, personal protective equipment or other means or facility provided pursuant to these Regulations is properly maintained and used or applied, as the case may be;*

(c) *to carry out on a regular basis, and when any change occurs in the conditions which may affect employees' exposure to hazardous chemical agents, measurements of hazardous chemical agents in accordance with an internationally validated procedure and in particular in relation to any occupational exposure limit values listed in an approved code of practice, unless it can be demonstrated that, in accordance with this Regulation, adequate prevention and protection measures have been taken to prevent risk;*

(d) *to ensure that an occupational exposure limit value set out in a relevant code of practice shall not be exceeded when measured or calculated in relation to a reference period listed in the relevant code of practice;*

(e) *where as a result of any measurement an occupational exposure limit value is found to be exceeded, to take immediate steps to remedy the situation in accordance with paragraph (a);*

(f) *to ensure that health surveillance is made available to his or her employees in accordance with Regulation 10 when appropriate to the nature of the risk;*

(g) *to maintain a record of exposure in a suitable form taking into account any confidentiality obligations under Regulation 10.*

(2) *It shall also be the duty of every employer:*

(a) *to ensure that the risk from hazardous chemical agents to the safety and health of employees arising from the physico-chemical properties of such agents is eliminated so far as is reasonably practicable or reduced to a minimum by the design and organisation of the workplace to ensure their safe storage, handling and segregation, taking account of the incompatibility of certain hazardous chemical agents;*

(b) *to take the following measures -*

(i) *prevent the presence of hazardous concentrations of flammable substances or hazardous quantities of chemically unstable substances, or where the nature of the work does not allow that,*

(ii) *avoid the presence of ignition sources which could give rise to fires and explosions or adverse conditions which could cause chemically unstable substances or mixtures of substances to give rise to harmful physical effects, and*

(iii) *mitigate the detrimental effects to the safety and health of employees in the event of fire or explosion due to the ignition of flammable substances or harmful physical effects arising from chemically unstable substances or mixtures of substances;*

(c) *to ensure that work equipment and protective systems comply with the relevant provisions laid down in the European Communities (Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres) Regulations, 1999 (S.I. No. 83 of 1999);*

(d) *to ensure that the technical measures or organisational measures or both put in place to eliminate the risk from hazardous chemical agents to the safety*

*and health of employees arising from their physico-chemical properties take account of and are consistent with the equipment group categorisation specified in the European Communities (Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres) Regulations, 1999 ( S.I. No. 83 of 1999);*

*(e) to provide sufficient control of plant, equipment and machinery or provision of explosion suppression equipment or explosion pressure relief arrangements.*

Regulation 10 sets out detailed requirements on when health surveillance is required and how it is to be carried out

*(1) Without prejudice to section 22 of the Act of 2005, it shall be the duty of every employer to make provision for appropriate health surveillance to be made available, under the responsibility of an occupational healthcare professional, to those employees for whom a risk assessment specified under Regulation 4 reveals a risk to their safety and health.*

*(2) Health surveillance shall be regarded as being appropriate when -*

*(a) the exposure of an employee to a hazardous chemical agent is such that an identifiable disease or adverse health effect may be related to the exposure,*

*(b) there is a reasonable likelihood that the disease or effect may occur under the particular conditions of his or her work, and*

*(c) there are valid low risk techniques to the employee for detecting indications of the disease or the effect.*

(3) *Health surveillance shall be mandatory for employees when a biological limit value for a hazardous chemical agent is listed in Schedule 2 or in an approved code of practice and it shall be the duty of the employer to ensure that employees are informed of this requirement before being assigned to a task involving risk of exposure to a hazardous chemical agent for which a biological limit value is listed.*

(4) *It shall be the duty of the employer to ensure that an individual health record containing particulars approved by the Authority is made and maintained in respect of every employee to which this Regulation relates.*

(5) *It shall be the duty of any occupational healthcare professional under whose responsibility an employee receives health surveillance under this Regulation -*

*(a) to keep an individual confidential medical record containing the results of the health surveillance carried out and of any biological monitoring or other available exposure monitoring,*

*(b) to ensure that such record or a copy thereof is kept in a suitable form for an appropriate time from the date of the last entry made in it,*

*(c) to propose any protective or preventative measures necessary in respect of any individual employee,*

*(d) to give access to an employee, upon request by that employee, to his or her own health surveillance records,*

*(e) to allow access to individual confidential medical records to an occupational medical advisor who is designated under section 34(4)(a) of the Act,*

*(f) to take account of the recommendations of an approved code of practice.*

(6) *Where as a result of health surveillance in accordance with this Regulation an employee is found to have an identifiable disease or adverse health effect*

*which is considered by an occupational healthcare professional or occupational medical advisor to be the result of exposure at work to a hazardous chemical agent, or a biological limit value is found to be exceeded, the occupational healthcare professional or occupational medical advisor shall inform the employee of the result which relates to him or her personally, including information and advice regarding such health surveillance which he or she should undergo following the end of the exposure, and shall inform the employer of the outcome of the health surveillance.*

*(7) It shall be the duty of the employer -*

*(a) to ensure that an employee or his or her representatives receives the results of any health surveillance that employee may undergo,*

*(b) to ensure, when measurements of hazardous chemical agents are carried out under Regulation 6(1)(c), that a record of exposure to the relevant hazardous chemical agents is maintained in respect of every employee to which this Regulation relates -*

*(i) to ensure that such record or a copy thereof is kept in a suitable form for an appropriate time from the date of the last entry made in it,*

*(ii) to ensure that the collective results of measurements of hazardous chemical agents carried out pursuant to Regulation 6(1)(c) are made available to workers or their representatives or both,*

*(iii) to give an employee access to his or her own such record,*

*(iv) to make such records available to the Authority on request.*

*(8) Where an undertaking ceases to trade, it shall be the duty of an employer to ensure that any health records or records of exposure are made available to the Authority.*

(9) *It shall be the duty of the employer to ensure that, where an employee is subject to health surveillance in accordance with this Regulation and an occupational healthcare professional or occupational medical advisor has made an entry in the individual's health record and has certified to the employer that, in his or her professional opinion, that employee should not be engaged in work which exposes him or her to that substance or that he or she should only be engaged under conditions specified in the record, that the employee is not engaged in such work except in compliance with the conditions, if any, specified in the health record, unless that entry has been cancelled by the responsible health care professional or occupational medical advisor.*

(10) *Where as a result of health surveillance in accordance with this Regulation an employee is found to have an identifiable disease or adverse health effect which is considered by an occupational healthcare professional or occupational medical advisor to be the result of exposure at work to a hazardous chemical agent or a biological limit value is found to be exceeded, the employer shall:*

- (a) review the risk assessment made under Regulation 4,*
- (b) review the measures provided to eliminate or reduce the risk under Regulations 5 and 6,*
- (c) take account of the advice of the occupational healthcare professional or an Inspector in implementing any measures required to eliminate or reduce risk in accordance with Regulation 6, including the possibility of assigning the affected employee to alternative work where there is no risk of further exposure, and*
- (d) arrange continued health surveillance and provide for a review of the health status of any worker who has been similarly exposed and take account of the recommendations of the occupational healthcare professional or an occupational medical advisor regarding further medical examination.*



It is important to note that the 2001 Regulation states that the requirements of regulations 6 and 10 do not apply in every instance where hazardous chemicals may be present and may be used, there is a threshold level of risk required, regulation 4(2) provides:-

*Where the results of the assessment referred to in Regulation 4 show that, because of the quantities of a hazardous chemical agent present in the workplace there is a minimal risk to the safety and health of employees, the provisions of Regulations 6, 8 and 10 need not apply.*

### Guidelines

The Health and Safety Authority has issued guidelines on the application of the 2001 Regulation and it contains the following comment on risk assessment

*The purpose of a risk assessment is to enable the employer to make a valid decision about the measures necessary to prevent or control the exposure of his or her employees to chemical agents, or hazardous chemical agents, arising from the work activity. It also enables the employer to demonstrate readily, both to themselves and to others who may have an interest, e.g. safety representatives, the Authority's inspectors, etc. that he or she has:*

- (a) considered all the factors pertinent to the work;*
- (b) reached an informed and valid judgment about the risks;*
- (c) considered the practicability of preventing exposure to hazardous chemical agents;*
- (d) considered the steps which need to be taken to achieve and maintain control of exposure where prevention is not reasonably practicable in accordance with Regulations 5 and 6;*
- (e) considered the need for monitoring exposure at the workplace and for*

*health surveillance; and*

*(f) identified other action necessary to comply with the Regulations.*

The person carrying out the assessment should identify chemical agents or hazardous chemical agents in the workplace which do or may present a risk to health and safety. This includes material brought into the workplace and also covers substances such as fumes and dust produced as the result of activities in the workplace. The assessment must cover matters listed in regulation 4. The guidelines also state that the assessment should include consideration of

- “(a) the substances or types of substance to which employees are liable to be exposed;*
- (b) the properties, i.e. physical, chemical or biological of the substances and the effects they can have on the body;*
- (c) where those substances are likely to be present and in what form, i.e. whether they are used or produced and in what amounts;*
- (d) the level and duration of exposure;*
- (e) the ways in which, and the extent to which, any groups of people could be exposed, including maintenance workers, office staff, night cleaners, security guards, members of the public such as visitors, patients etc., taking into account the type of work and process, and any reasonable foreseeable deterioration in, or failure of, any control measure provided;*
- (f) the need to protect particular groups of employees who may be at an increased risk: e.g. inexperienced trainees and young persons; pregnant workers; disabled workers; maintenance workers; workers who, for other reasons, may be compromised or vulnerable should exposure to certain chemical agents occur; workers who may work in circumstances where exposure is foreseeable higher than normal; and workers known to be susceptible to certain illnesses such as dermatitis, asthma or other diseases which may be caused by exposure to chemical agents or hazardous chemical agents;*
- (g) an estimate of exposure, taking into account any information that may be available about:*

- (i) the concentration likely to be produced by the work concerned;*
- (ii) the effort needed to do the work and how this may affect the rate and volume of air employees breathe – (for some work activities, employees might breathe three or four times the volume of air that they would breathe at rest); and*
- (iii) the effect of any engineering measures and systems of work currently used for controlling potential exposure; and*
- (h) how the estimate of exposure compares with any existing, valid standards which represent adequate control, e.g. an Occupational Exposure Limit Value or Biological Limit Value.*

*Employers should give particular consideration to activities which give rise to, or have the potential to give rise to, the highest exposures e.g. cleaning of equipment, work in confined spaces, or non-routine or end-of-shift tasks. An understanding of the factors that contribute to employees' exposure will help employers decide on the best way to control such exposure.*

*If comparison with the estimate of exposure ((g) above) shows that control is likely to be inadequate, the risk assessment should also describe the extra steps needed to obtain and maintain adequate control, e.g. better enclosure and extraction etc.*

Personal protective clothing (PPE) is categorised as something that is to be used after all other preventative measure have been taken but this is without prejudice to circumstances where an employer considers it prudent to use protective clothing, not because other controls are inadequate for safety purposes on their own, but to give additional protection to employees.

The risk assessment should be kept in a written form or a format which is readily retrievable

- (a) to show the enforcing authorities that the employer has carried out risk assessment in accordance with Regulation 4;
- (b) to demonstrate that the employer has systematically considered all the factors

relevant to the work, and put in place measures either to prevent exposure or to achieve and maintain adequate control of exposure; and  
(c) to inform workers regarding the control measures adopted based on the risk assessment.

The significant findings of the risk assessment should represent an effective statement of hazards, risks and actions taken to protect the health and safety of employees and anyone else that may be affected by the work. Employers should record sufficient detail of the risk assessment itself so that they can demonstrate to a safety representative or inspector that they have carried out an adequate risk assessment. The record may refer to and rely on other documents and records describing procedures and safeguards, and these should be cross-referenced in the risk assessment. The record may be in writing or recorded by other means so long as it is readily accessible and retrievable at any reasonable time for use by employers in a review or for examination by a safety representative or an inspector.

The amount of information employers should record will be proportionate to the risks posed by the chemical agents present and or the work activity. Where a number of different chemical agents or hazardous chemical agents pose a minimal risk to the safety and health of employees, the employer may group together the results of the risk assessments for all the individual substances concerned. Where the work concerned presents a more significant risk the findings of the assessment should be a more comprehensive record and

*It should include at least the appropriate items from the following non-exhaustive list:*

- (a) the substances to which the employees are liable to be exposed and the form in which they occur, e.g. liquid, gas, vapour, powder;*
- (b) the processes or activities in which the substances are used or produced and how employees may be exposed to them, including the quantities stored and used in the workplace;*
- (c) the hazards and risks the substances present under normal conditions of use, and in circumstances of an unforeseen incident, accident or emergency which*

*could result in an uncontrolled release of the substance concerned into the workplace;*

*(d) the extent to which prevention and substitution of a substance or process was considered (Regulation 5);*

*(e) identification of the employees or groups of employees liable to be exposed;*

*(f) the preventive measures already in place to achieve adequate control of exposure, including the use of any personal and respiratory protective equipment (RPE). (These need not duplicate details of measures more fully described in other documents such as standard operating procedures but could refer to them);*

*(g) the commissioning, monitoring and testing required as part of the process of validating the effectiveness of, and refining of, controls measures;*

*(h) whether it is necessary to carry out exposure monitoring and measurement and the frequency with which any further air monitoring will be carried out;*

*(i) where appropriate, the reasons for selecting particular types of personal protective equipment including respiratory protective equipment to secure adequate control;*

*(j) the conclusions reached on the risks to the health and safety of employees and to any other people who may be affected by the work concerned, taking account of preventive measures already being used;*

*(k) whether it is appropriate to place any identified groups of employees under health surveillance (Regulation 10) and, where available, the results of health surveillance already undertaken; and*

*(l) when the risk assessment will be reviewed or the period between successive reviews.*

This record of the significant findings will also form the basis for a revision of the risk assessment. The risk assessment must clearly identify the measures that have been taken or that must be put in place in relation to the requirements of the Regulations, including the dates for such actions or measures to be put in place and made operational.

## Defence Forces Current Policy on Health and Safety

General Routine Order 05 of 2015 “Defence Forces Health and Safety Policy” sets out the policy and processes for the Defence Forces in order to comply with the Safety Health and Welfare at Work Act 2005. In the document “risk assessment” is described as the process of evaluating the risk from occupational hazards taking into account the adequacy of existing controls, deciding whether or not the risks are acceptable and if not selecting further controls. The policy contains a commitment to comply with statutory provisions

A risk assessment methodology is set out in section 6.2 of the Policy and a risk hierarchy presented in the following order of preference

- Elimination
- Substitution
- Risk transfer
- Engineering
- Administration
- Personal Protective Equipment

Risk assessment is delegated to an appropriate person within each unit or sub-unit and the OIC of training. A number of template documents are provided. Any non-compliance with risk assessment including periodic review of the assessments is to be monitored within the Defence Forces systems.

Part 2 of Routine Order 05/2015 deals specifically with Health and Safety Risk Assessment. In the relevant unit or sub-unit the designated safety officer or competent person is required, with key personnel, to consider and to identify hazards in a work zone and to assess the hazards using a template (or a generic format) to record the information. The existing controls in place are to be identified with the current risk rating. Any

additional controls required should be identified and the standard hierarchy as set out above applied. After this the safety officer/competent person is to assess the residual risk rating, that is the risk after additional controls have been applied. The risk rating score is arrived at by multiplying the rating for likelihood of an incident (on a five point scale) with the rating for severity (on a five point scale) to arrive at a final figure. The risk rating then falls into one of three categories, high, medium or low. The safety officer/competent person then completes a Garrison Risk Assessment which goes to the unit/sub-unit commander who is to review and sign off on the assessment. The only risk a unit commander may accept without higher authority is a risk rated as "low". Any more significant risk requires immediate action as set out in the document and referral to the Formation Commander.

The unit/sub-unit commander must ensure that all personnel are briefed on the risk assessment but in most instances this task will be undertaken by the unit/sub-unit safety officer/ competent person.

A review is to be carried out at least an annual basis and a log kept of all assessments. The unit/sub-unit commander is also required to ensure that a health and safety risk register is prepared and maintained by a competent person and all risks rated above low are entered on it. The register is forwarded to the relevant formation commander and amalgamated into a formation risk register which is then forwarded to the Defence Forces Risk Manager.

Part 6 of General Order 05/2015 sets out safety policies in the Defence Forces including a policy for hazardous substances. The policy includes requirements for training, for ensuring that the Safety Data Sheets for chemicals are accessible and a chemical register is to be kept for each workplace. The policy also states that in relation to the statutory occupational exposure limit values for chemical agents "*Unit/Sub-Unit Commanders shall ensure that exposure levels are monitored and maintained below the OELV and as low as reasonably achievable*". In the context of health surveillance the policy states

*“Where risk assessment identify that exposure to a hazardous substance can cause an identifiable disease or illness and there is a reasonable likelihood of illness occurring, Unit/Sub-Unit Commanders shall ensure that regular health surveillance is arranged by the Central Medical Unit of the Defence Forces”*

Routine Order 05 appears to have issued on the 25<sup>th</sup> March 2015. Template 003, annexed to Part 2, the Garrison Risk Assessment, is relevant for the purpose of this review. In relation to the issue of the hazards of chemical agents I have been given a copy of DF-RA-04 which appears to be the template 003 with indicative text specifically related to controls for chemical hazards. The necessity for the controls depends on the type of tasks being carried out in a work area but in the context of the allegations made in the protected disclosures, that personnel were exposed to toxic substances, some of the suggested controls appear to be of particular relevance. For example

- A list (inventory of all chemicals used in the workplace) is provided
- Chemical Labels and Safety Data Sheets are available for each chemical and the associated hazards of each chemical have been identified
- Employees are trained in the safe use of chemical and provided with all relevant information- only qualified competent personnel work with chemicals
- The working area is properly ventilated
- A washhand basin soap and disposable towels /had dryer are available
- Appropriate PPE is provided and worn (varies) (in accordance with the relevant safety data sheets): Safety gloves, eye/face protections, respiratory protective equipment, protective clothing, and safety footwear.
- Exposure levels are monitored and maintained below the OELV (occupational exposure limit values). OELVS are set out for approximately 700 chemicals in the Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2002.

I have received a copy of DF-RA-04 for assessments which has been completed for two work zones in the Air Corps. One of these document includes what appears to be the



chemical register for the work place listing the products used by mechanics in the unit and setting out the hazard information on each (presumably from the Safety Data Sheets), stating that staff have been briefed on the risk and setting out the personnel protective equipment to be used with each product and the relevant occupational exposure limit values. The chemical register in that instance appears to provide a comprehensive list of possible chemical hazards in a format which should be available to all personnel and the persons responsible for safety.

I have also been given a number of "Risk Control Data Sheets" completed in 2014 and 2015 which were in use before General Order 05 of 2015 was issued and before DF-RA-04 appears to have been in use. The hazard identification and the controls in place listed are broadly similar to those on the completed DF-RA-04. The chemicals registers with these earlier documents however do not have the comprehensive information set out in the later version of the chemicals register mentioned above.

The systems and procedures set out in General Routine Order 05/2015 appear to be capable of meeting the statutory requirements under the Health and Safety Act 2005 and the Chemical Agents Regulations in SI 619/2001 if properly applied. The records now required to be kept should also allow the Health and Safety Authority, internal audit and other interest parties to establish if the Defence Forces are complying with the rules.

## Complaints

### Correspondent A

In summary this correspondent alleges that personnel were required to undertake maintenance work in the Air Corps with dangerous chemical agents some of which were potentially carcinogenic, mutagenic or could result in illness. It is also alleged that no health surveillance was provided for staff.

The correspondent is not a current member of the Defence Forces and hence the allegations based on personal experience refer to a period prior to 2010. The requirements of the Safety, Health and Welfare at Work Act 1989 and 2005 as well as the Chemical Agents Regulations 619/2001 applied at the relevant timeline covered by the allegations.

Based on the information in the chemicals register currently in use in the Air Corps there appear to be products in use which could pose be a potential risk to health if they are not subject to appropriate controls and protections. It is therefore logical to assume that a number of hazardous chemical substances were in use in the maintenance facilities at the Air Corps premises at the time of the allegations. Whether there is now or was at the relevant time an actual level of exposure which was in fact potentially harmful I am not in a position to judge. I also have no information on what if any health surveillance was carried out but the relevance of that depends on whether in fact surveillance was required. The regulations do not require health surveillance if there is "a minimal risk to the safety and health of employees." All defence personnel are supposed to receive a routine medical at regular intervals but there appears to have been no special provision for personnel involved in maintenance work or any special alert in relation to persons who may have handled toxic chemicals.

The systems under General Order 05/2015 and the documentation it requires could provide a basis to establish whether the Air Corps workplaces are now compliant with the applicable statutory obligations. I have seen some risk assessment material which

predates General Order 05/2015 but they are not comprehensive enough to provide a clear view of the basis for the assessment made. I have no material which would provide a record of any assessment or procedures at the time relevant to the allegations made . In the absence of such records, proof of compliance is problematic and establishing the actual situation at the time in question would be a complex task requiring the gathering of evidence and probably taking oral testimony; in effect a forensic exercise which it is not possible for me to carry out.

Establishing compliance with the safety regime prior to 2010 and the accuracy of the allegations made by the correspondent may now only be possible in the context of the pending legal proceedings.

## Correspondent B

Correspondent B in summary alleges that in the 1990s in the Air Corps the mechanics were required to handle a number of hazardous chemicals and that:-

1. No health surveillance was provided contrary to regulation 15 of SI 44 of 1993
2. There was an incident where the correspondent was covered in aeroshell turbine oil
3. That risk assessment was not used
4. Inadequate training was provided to personnel
5. No personal protective equipment was provided to personnel
6. There was no proper disposal of hazardous chemical substances
7. Spillage and exposure was not reported
8. The Dichloromethane limit in the relevant regulation was exceeded

The correspondent is not a current member of the Defence Forces and hence the allegations based on the personal experience of the correspondent refer to periods prior to 2000. The requirements of the Safety, Health and Welfare at Work Act 1989 applied at the relevant time covered by the allegations.

Based on the information in the current risk assessments in the Air Corps and the chemical registers there is potential for exposure to a number of chemical substances in the maintenance facilities at the Air Corps premises, whether there is now or was at the relevant time an exposure which was in fact harmful and caused injury I am not in a position to comment. I also have no information on what if any health surveillance was carried out but the relevance of that depends on whether in fact surveillance was required. The Chemical Agents Regulations 619/2001 did not apply at the time this correspondent

worked in the Air Corps facility and he has instead invoked regulation 15 of the Safety, Health and Welfare at Work (General Application) Regulations SI 44/1993. Regulation 15(1)(a) states that it is the duty of an employer

*( a ) to ensure that health surveillance is made available for every employee appropriate to the health and safety risks that may be incurred at the place of work and taking into account any entitlement to health surveillance provided by the State,*

The 2001 Chemical Agents Regulation when it was made did not reduce the scope of the existing provisions in Regulation 44/1993 and the word “appropriate” in the 1993 SI in my view indicates that health surveillance would not be necessary if there was “a minimal risk”. Whether there was more than such a minimal risk at the time is the issue in question.

The systems now in place under General Order 05/2015 could provide a basis on which to establish whether the Air Corps workplaces are currently compliant with statutory obligations but I have no material which would provide a record of any assessment or procedures prior to 2000. In the absence of such records, proof of compliance would be a matter of gathering evidence and testimony. In this instance the complainant has stated that he has issued legal proceedings which I assume set out in detail the alleged failures to comply with the statutory regime. It is therefore for the relevant Court which tries the case to explore the issues and make a determination of the facts, the applicable law and any non-compliance with the law.

### Correspondent C

Correspondent C is a current member of the Defence Forces and in relation to the obligations under the Safety, Health and Welfare at Work (Chemical Agents) Regulation 2001 SI the following is alleged

1. Contrary to regulation 4 the Air Corps did not carry out a proper risk assessment
2. Contrary to regulation 5(a) personal protective equipment was not provided, there was no action to minimise the number of personnel exposed to chemicals and washing facilities were not provided
3. Contrary to regulation 5(b) there was no health surveillance
4. Contrary to regulation 6 there was a failure to carry out checks on exposure to chemical agents
5. Failed to provide personnel with the data used for risk assessment

According to the documentation I have seen and the limited number of risk assessments available to me the Defence Forces appear to have a risk assessment process in place which could potentially meet the requirements of the regulations and there is evidence on paper from the risk assessments that personal protective equipment in the form of gloves, goggles and face protection is available. Information on the risk assessment and the chemical register should also be available to personnel, although the earlier versions of the chemical register prior to 2015 do not appear as comprehensive as would be desirable. Safety Data Sheets should also be available to personnel. It also appears from the assessment that washing facilities are available to personnel. If the information in the records is correct it should have been possible for the military authorities to answer the allegations made under 1, 2 and 5 above.

In relation to the allegation at number 4 above there is an issue which needs to be addressed. Either there should have been checks carried out and the resulting data should

be available or in the alternative there should have been an assessment that it was unnecessary to measure levels of possible contamination in the relevant workshops. In relation to the allegation at number 3 this depends in part on number 4 and what evidence there is that any risk was insignificant and that health surveillance and any checks on exposure limits were unnecessary.

It came to my attention in December that this complainant had made a formal complaint to the HSA in late 2015. There was an inspection by the HSA in 2016 and correspondence issued from the HSA to the Defence Forces in October 2016 on the actions which the HSA considered were required. As I have indicated this route is in my view the appropriate means to process the concerns of this complainant.

### Observations on the Safety Regime

From the information available the workplaces carrying out maintenance use products for which the Safety Data Sheets indicate contain toxic substances and the Safety Data Sheets also contain warnings in relation to use and human health. That information must feed into the safety process and be taken into account in assessing risk and deciding on controls. While the information on the Safety Data Sheet is not determinative on its own to establish that there is exposure to toxins it is necessary to ensure that documentation should be available to demonstrate how the potential risks have been reduced or minimised. Personal Protective Equipment and some other precautions during use are indicated and required in the documentation I have seen but there are other issues which require elaboration. Once there are products in use which carry health warnings the question arises what evidence can the Defence Forces produce to prove that there is adequate provision to prevent any damage to human health? One of the purposes of the system of risk assessment is to be able to establish in a clear and transparent fashion that the requirements in the safety legislation have been considered and the protection of human health covered.

Assuming that the products in question are necessary and that suitable less hazardous substitutes are not available, two matters seem to me to require further explanation

1. Occupational exposure limit values (OELVs) are set out in secondary legislation and in practice any exposure should be below those values as far as possible. Given that there are chemicals in use the workshops, how is it possible to establish with confidence that the legal limits have not been breached? The indicative list on form DF-RA-04 refers to the exposure limits for substances subject to an OELV level "being monitored" and there is a need to ensure this issue has been addressed in the risk assessment. According to the informants some air tests were carried out in the 1990s but there was no indication of tests being conducted more recently or any system which would monitor the situation.



I note that one of the measures the HSA is proposing is the establishment of a programme to monitor the actual exposure of workers to particular hazardous substances, either via personal air monitoring or biological monitoring. In 2017 the Air Corps did commission tests in four work areas which indicated that exposure within those areas within permitted safety limits. I assume that such tests will be repeated at intervals and will cover all the relevant areas where potential exposure might occur

2. A related issue arises with health surveillance. Health surveillance of staff who may be handling toxic substances is needed unless the risk to those individuals is insignificant and the basis for taking the view that it is insignificant would need to be expressly recorded. Even if a risk assessment does indicate a low risk rating in a workplace as a whole this may not equate to an insignificant risk to all personnel and it is necessary to consider possible risks to individuals who may be at a greater risk of contact with products containing toxins. As there is provision for regular medical checkups in the Defence Forces it should not be difficult to ensure that any person who might be using products containing toxic substances is identified in order to alert the examining doctor and to highlight any changes in health or fitness status which might indicate an underlying problem. This would seem to be a simple measure to put in place. I understand that the medical services for the Defence Forces are under pressure but there would seem to be a basis to give priority to the limited number of personnel in the workshops. The use of outside specialist services may also be necessary in order to provide assurance that risks have been fully addressed.

Allegations of the nature raised by the three correspondents need to be progressed speedily and efficiently. Setting up special procedures because the correspondents have invoked (unnecessarily in my view) the Protected Disclosure Act is counterproductive where there are or should be adequate internal procedures to deal with the issues raised by those actually carrying out the work. In addition where there is an external agency with powers of inspection and enforcement it is inappropriate to attempt to duplicate its

functions. The Oireachtas has established the HSA and given it a statutory remit to enforce the safety regime for workplaces. Employees have a duty under the 2005 Act (as under the 1998 Act) to bring safety issues to the attention of their employer and this needs to be taken into account in workplace arrangements by all employers including the Defence Forces

At a minimum the allegations of the type made in this instance should give rise to an immediate review of the risk assessment to ensure that the existing protections and processes can address and provide answers to any safety concerns raised. The HSA in October 2016 indicated that the existing risk assessment should be reviewed in relation to exposure to hazardous substances. There is a need to ensure that the procedures in place are subject to regular audit and this may require using appropriate external professional services.

### Conclusion

In relation to the terms of reference

1. (a) Current compliance with the legal requirements for health and safety is a matter for the Health and Safety Authority which is currently engaged with the Air Corps in relation to a number of compliance issues. The HSA is the appropriate body to refer any compliance issue to if concerns about safety are not adequately addressed in the workplace.  
  
(b) The allegations of failure to comply with proper safety standards in the past are matters which I suggest will have to await the outcome of pending legal proceedings.
2. The current health and safety policy and procedures provide a mechanism to manage workplace safety in the Air Corps and in light of the concerns raised by the three informants provide a means to monitor compliance in order to give

assurance to personnel and to the authorities that the correct standards are being applied, monitored and kept under review. A problem has arisen in relation to the issues raised by the three informants because appropriate records to demonstrate compliance are not readily available.

3. I have made some observations of a general nature in the text above which are based on a limited examination of the issues. In summary I would suggest health and safety is the concern and responsibility of all involved in a workplace, workers as well as management and in relation to the regulatory regime the Air Corps is in the same position as any civilian employer and must ensure that these issues are owned by all those working at a location.

Christopher O'Toole

15/06/2017

## Material used for the purpose of the Review

### Primary Legislation

Defence Act 1954

Safety, Health and Welfare at Work Act 1989

Safety Health and Welfare at Work Act 2005

Chemicals Act 2008

Protected Disclosures Act 2014

### Secondary Legislation

Safety, Health and Welfare at Work (General Application) Regulations, 1993

Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 SI 619/2001

Safety, Health and Welfare at Work (Carcinogens) Regulations 2001 SI 78/2001

Safety, Health and Welfare at Work (Chemical Agents) Regulations 2015. SI 623/2015

Safety, Health and Welfare at Work (Carcinogens) Regulations 2015.SI 622/2015

### Publications

Guidelines to the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001 (HSA)

Short Guide to the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001 (HSA)

Chemical Risk Assessment (HSA)

Your Steps to Chemical Safety (HSA)

2016 Code of Practice for the Chemical Agents Regulations (HSA)

Tips for users of Chemicals in the work place (European Chemicals Agency)

Chemical Exposure of Air Force Maintenance Workers. Report of the Board of Inquiry into F111 (Fuel Tank) Deseal/Reseal and Spray Seal Programs. Royal Australian Air Force 2002

Correspondence and other material

Protected Disclosure made by informants A, B and C together with further information supplied by them. In addition I met the three informants

Specimen and examples of completed templates from the Air Corp including Risk Control Data Sheets, Safety Organisation Charts, Chemical Registers and Risk Assessment. [I also interviewed the Air Corp Formation Safety Advisor

Defence Forces General Routine Order 05/2015 Defence Forces Health and Safety Risk Management Parts 1, 2, 5 and 6

Letter from the Health and Safety Authority in relation to its inspection listing actions required by the Air Corp dated 21/10/2016

Air Corps Response to the HSA Letter of 21/10/2016 dated 20/12/2016

AXIS Occupational Air Survey issued on the 23/03/2017