F111 – DESEAL/RESEAL BOARD OF INQUIRY

DRAFT CLOSING ADDRESS OF COUNSEL ASSISTING

Introduction

1. Mr President and Members of the Board, we will now make our closing address. The *Administrative Inquiries Manual* states that it is not our role to present a case to you nor to attempt to influence your findings. [1] The Manual recommends that there should be submissions on the following topics:

(a) The categories of evidence, and any special aspects of particular evidence that the Board must decide;

(b) What facts have been proved by the evidence;

(c) How facts are proved;

(d) Assessing witnesses;

(e) Where appropriate the reliance that may be placed upon a view of the scene of activity;[2]

(f) Inferential reasoning;

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[1] ADFP202 Para 7.36(e)
[2] Not relevant here.

(g)The relevance of Rules of Evidence;

(h)onus of proof;

(i) The treatment of affected persons;

(j) The Terms of Reference;

(k)The Board's Report;

(l) A review of the evidence.

2. We will cover those matters, however, as the categories tend to overlap, the address does not follow the form or order of the matters just mentioned.

The Course of the Inquiry

3. As mentioned in our opening, the genesis of this Inquiry can be traced to the Report made by retired Group Captain Paul Schumak in January 2000 to the Commanding Officer of the Air Maintenance Squadron and to the Officer Commanding 501 Wing at RAAF Base Amberley. The Report related to the health of a number of Airmen who had been engaged in the work of desealing and resealing the lining of fuel tanks in F111 Aircraft. You will recall from the evidence that Doctor Schumak reported that the health of those Airmen might have been adversely effected by the chemicals they used in the Deseal/Reseal process. As a result of this Report there was an initial suspension of the spray

seal, the appointment of an investigating officer and the subsequent appointment, by the Chief of the Air Force, of the Board, on 19 July 2000.

4. As explained in the opening address a considerable amount of work was done prior to the commencement of the public hearings on 19 March 2001. There has been research into approximately 1.5 million documents covering events over the past 27 years, from which research some 100,000 pages of documents have been entered into the Board's Database. It is estimated that over six hundred persons might have been exposed to chemicals used in the Deseal/Reseal process over the past quarter of a century. A considerable amount of time prior to the commencement of public hearings was spent in seeking to identify and locate those persons and take statements from them. In the event some six hundred and fifty witness statements were taken. In our opening we invited members of the public, including concerned former servicemen to come forward and let us, as counsel assisting know of any additional relevant evidence or matters. We note that a number of ex-servicemen have done just that and we have endeavoured to respond appropriately to their expressed concerns.

5. It was, of course, not practicable to call all persons who had given statements. Furthermore, as we said in our opening on 19 March:

> *"Having regard to [the changes to the ADF Organisation and in particular the place of the Fuel Tank Repair Section in it and the Occupational Health and Safety organisations with responsibilities to that Section] it appeared to [us] that little, if any advantage was to be gained from an historical analysis*

of how a now outdated system failed and what as a matter of perfection should have occurred..... in the circumstances the view taken was that the ten paradigm [issues] should be examined and benchmarked against the current Occupational Health and Safety Regime, to enable an assessment to be made of whether the framework and the system currently in place is effective, and if not, where shortcomings can be identified."

6. It will be recalled that the ten paradigm issues were:

   (i) Compliance with procedures;

   (ii) Health monitoring;

   (iii) Training;

   (iv) Occupational Health and Safety Audit and Review;

   (v) Hazardous Substance Management;

   (vi) Workplace Management;

   (vii) Suitability of procedures;

   (viii) Personal Protective Equipment;

   (ix) Facilities; and

   (x) Resources.

   Human events are not so easily categorised, however, and the course of the evidence has shown these categories to have been of diminishing relevance.

7. All of the evidence contained in the witness statements, all of which have been given on oath or affirmation, as well as all of the documents tendered, are now formally before the Board as evidence and, in the manner we will describe later, can be taken into account by the Board in its deliberations. However, as indicated

in the opening, Counsel Assisting considered that a representative sample of the evidence contained in the statements should be given orally and that has occurred. Oral evidence was taken over fifteen days (including 28 February when Group Captain Sergeant's evidence was taken). The Board has heard evidence from a sample of witnesses at three levels: - ground crew, supervisors, and managers in relation to each of the First Deseal/Reseal Program, the Wings Program and the Spray Seal Program, and we will seek to summarise aspects of that evidence shortly. As we will explain, the Board is, in our submission, now in a position to treat the oral evidence as the paradigm from which, together with the other evidence tendered in the Inquiry, conclusions about systemic deficiencies may be drawn, and on the basis of which the topics in the terms of reference may be answered.

8. As will be noted later, the Board also heard expert evidence both of current and historical interest as well as evidence from civilian officers in the Department of Defence particularly the Defence Safety Management Agency in relation to the current systems used in assessing and then addressing chemical and other hazards of the type which appeared in the Deseal/Reseal Programs and continue to appear in the spray seal program.

The Board's Report

9. We now turn to the Report. The Administrative Inquiries Manual requires you, Mr President, *"to prepare a written Report signed by each member of the Board setting out the Board's finding and its recommendations. The transcript of oral evidence given to the Board and all of the evidence before the Board is to be*

forwarded with the Report." The Manual goes on to say "*where the Members of a Board of Inquiry cannot agree on a Report, the President is to arrange for each member individually to submit a Report setting out their findings and, ...recommendations. The Report...is to be submitted to the appointing authority.*" It is appropriate, then, to mention the possibility of disagreement amongst you. Of course we do not do so to encourage disagreement but to emphasise the importance of the individual views of each member. Each of you is responsible for the Board's ultimate findings and recommendations and each of you must conscientiously develop your own thoughts and come to your own decisions. You will no doubt find, if you have not already found, some differences of opinion amongst you. Those differences should be respected and, if we may say so, calmly and objectively debated, and if possible, resolved.

Fact Finding

10. Mr President and Gentlemen, you are the sole judges of the facts. Accordingly we will say something about the finding of facts. Of course, we are conscious of the knowledge and expertise of the President in this regard, nevertheless it is appropriate to make some brief submissions on this point. First, you must decide on your findings according to all of the evidence. This does not mean that you must accept all of it, but it does mean that you must consider all of it that is of potential relevance. Given the extensive evidence in this case you are entitled to rely on accurate summaries of the evidence prepared for you by staff assisting the Board. Having considered the evidence, you must decide which you accept and act on and which you do not. Now, in making the decision about which evidence

to act on, you will be guided firstly by the relevance of the evidence to the Terms of Reference, which define your task.

11. Next you need to bear in mind that the evidence before you is in different categories. First, there is the oral evidence, where you have been able to see and ask questions of particular witnesses and so assess their demeanour. Pausing here, we have endeavoured to call all those persons whom we thought could give necessary and relevant evidence bearing in mind the approach outlined in the opening, and that expressed from time to time by the Board. Nevertheless, even now, if the Board wishes us to call further witnesses to provide further assistance to the Board in performing its functions, that should be indicated so that the possibility of doing so could be investigated.

12. Next, there is the evidence comprised in the witness statements or expert reports where you have not had the advantage of being able to see and ask questions of particular witnesses.

13. Finally, there is the documentary evidence contained in the exhibits. These fall into various sub-categories. So, for example:

- there are photographs of places, and of things such as personal protective equipment.

- There are government records containing records of decisions or procedures.

- There are medical records.

14. Turning to the oral evidence the following things should be borne in mind. The first is that, in reading the transcript of evidence, it is the answer to a question not the question itself that is evidence. Secondly, where a witness has been invited to speculate, and has given a speculative answer in response, you ought critically to evaluate that speculative response before relying upon it. Having said all of that, the weight, if any, you accord a witness's testimony is entirely a matter for you.

15. Next, when acting upon the evidence you are effectively judges and accordingly you must act only on the evidence, and according to reason, excluding from your mind sympathy or other emotion such as antipathy to an individual or an institution. On the other hand you can take into account your experience and expertise in your assessment or appreciation in the evidence. Common sense will also play an important part.

Methods of Proof

16. In some aspects of this case you may find that the evidence proves something directly, for example where a witness testifies that he or she personally observed something, and you accept that this recollection is accurate. In contrast, you may also find a fact proved by applying inferential reasoning. To give a simple example of this process: if you were to receive evidence from one witness that person X was in Sydney at midday and from another witness that person X was seen at 3.00 pm on the same day in Melbourne, you would be entitled to infer that that person travelled by aeroplane. In the absence of anything further however it

would be pure speculation to find as a fact that person X travelled on Qantas – that is because there is a difference between inferring the fact –which is permissible - and merely speculating that the fact existed –which is not.

17. This brings me to Defence Inquiry Regulation 50 which states that *"the Board is to conduct its Inquiry without regard to legal forms, is not bound by any Rules of Evidence and may inform itself on any matter relevant to its inquiry in such manner as [it] thinks fit."*

Hearsay Evidence

18. While the Board is not bound by the rules of evidence you should be careful about accepting hearsay evidence, that is, evidence of a statement made to a witness by a person who is not called as a witness when the object of the evidence is to establish the truth of what is stated by the person who is not called. A frequent objection to such evidence is that it may be unreliable and that there is no opportunity to cross examine the maker of the relevant statement. Although the hearsay rule has been relaxed somewhat where evidence has a high degree of reliability, or where the evidence is of a representation of the third person's health, feelings, sensations, intentions, knowledge or state of mind (when it may not be hearsay at all), hearsay evidence should be treated with caution.

19. Again, the absence of binding rules of evidence does not mean the Board can make findings based on, for example, assumption or logically self-contradictory facts.

Standard of Proof

20. Next I address the question of onus of proof. In determining whether or not a fact exists the Board should apply the civil standard - the balance of probabilities - that

is to say whether something is more likely than not to have occurred. But there is a gloss on this, and it is that where a finding would affect a person's or an organisation's reputation, or otherwise adversely effect them, you should act only on evidence of sufficient weight and compulsion which is commensurate with the seriousness of the consequences which might follow from the finding. As was said by Sir Owen Dixon in *Briginshaw –v- Briginshaw*:[3]

> *"Reasonable satisfaction is not a state of mind that is attained or established independently of the nature and consequence of the fact or facts to be proved. The seriousness of an allegation made or the gravity of the consequences flowing from a particular finding are consequences which must affect the answer to the question whether the issue has been proved to the reasonable satisfaction of the Tribunal. In such matters, a reasonable satisfaction should not be produced by inexact proofs, indefinite testimony or indirect inferences.*

Rules of Natural Justice

21. A very important legal rule which binds the Board is that of natural justice or procedural fairness. Among other matters, in this context it requires that a person whose interests are likely to be affected prejudicially by a decision of the Board has a right to be heard, at least by being given the opportunity to make submissions in writing, about evidence which might support an adverse finding.

22. To take an extreme example, and one which ought not arise in this Board, if you considered that a witness had deliberately lied in his testimony to you and you

[3] (1938) 60 CLR 336

proposed to make that finding in your Report, It would be a serious legal error for the possibility of that finding being made not to have been squarely put to the witness by the Board or by Counsel Assisting. To take a less dramatic example, if the Board were to conclude that a current or former Defence member had been derelict in his or her duty then similarly that allegation would need to have been put to the person concerned in order for a finding in those terms to be made.

23. The rules of natural justice or procedural fairness, in this case, are to be considered in the light of the President's ruling on 28 February 2001 on an unsuccessful application by Counsel for a potentially affected person to be heard. On that occasion, Mr President, you said this:

> *"The breadth of the Board's inquiries will extend over a range of issues and an extensive period of time. The material made available to the Board so far in the form of a discussion paper points to ongoing failings at a managerial level to implement a safe system of work and co-ordinate processes within a complex organisation. The incidence of reported workplace transgressions are numerous and it appears consistent ....over a period of some 27 years. The Board's investigation has lead to a preliminary view that much of that which requires close scrutiny concerns systemic issues. At this point it is considered that given [that] any transgressions ... have occurred over a period of 27 years there would be little utility in closely examining all of them particularly as many persons have now left the Service. Such detailed examination would not assist the Tribunal as it understands the issues at this*

point in considering remedial action, finding out what happened and meeting the other requirements of the Terms of Reference..."

24. The Board concluded that "*at this stage of the proceedings and in the context ...outlined....none of the applicants is an affected person*". Accordingly those persons were not given leave to be dealt with as affected persons. Later, when an application was made after the opening of the case for another person to be treated as an affected person, the application was deferred by the Board on the basis that it could be renewed at any time (and in relation to any person) by a member of the affected persons team. No such application was ever made.

25. In the result, procedural fairness would require you, if you are proposing to make findings against any person, at a minimum to indicate to them the critical comments on their conduct that you contemplate making together with any relevant evidence on which you would base that possible conclusion, and then give those persons a suitable opportunity to respond, initially at least, in writing.

Conflicts of Evidence

26. I have said something about conflicts in the evidence. On the approach the Board has taken up to now it may not be necessary to resolve conflicts in the evidence. For example there is a conflict in the evidence on the question of whether personal protective equipment was or was not worn, or was or was not required as a matter of practice to be worn, at particular times during the Deseal/Reseal process. It would be open to the Board to conclude that there is substantial, although not undisputed, evidence that PPE was not always worn and to proceed on the

assumption that this was so assuming that the Board does not consider it necessary to criticise any individual.

The Terms of Reference and the evidence

27. We have prepared a schedule setting out in a summary fashion what the evidence discloses in relation to each term of reference. With that as an aide memoire, I propose to make some remarks on the evidence. Given the large quantity of evidence it is not an exhaustive summary; rather it attempts to draw attention to critical evidence on key issues arising under the Terms of Reference.

Terms of Reference explained and addressed

The four phases

28. The Terms of Reference in paragraph 1 direct the Board to inquire into the four phases of the deseal/reseal and spray seal programs. The first, third and fourth phases were carried out on Commonwealth property by Commonwealth employees. In contrast, the second deseal/reseal program which took place in the late 1980s and early 1990s was conducted by Hawker De Havilland (Victoria) Pty. Ltd., a private corporation, independent of the Commonwealth. The early investigations on behalf of the Board indicated that there were no systemic lessons to be learned from this program alone which were not to be learned from the other programs. Furthermore, Hawker De Havilland used its own workforce to conduct the work, it had its own publications dealing with quality control and occupational health and safety, and it has provided a standard form of indemnity to the Commonwealth. In these circumstances the decision was made to call oral evidence dealing with the three other phases of the deseal/reseal spray seal programs. Furthermore, following liaison with the solicitors for Hawker De Havilland, the company did not seek leave to be treated as an affected person. In the circumstances, in our submission, there is no need to make findings in relation to compliance by Hawker De Havilland with its procedures.

However, in contrast there has been a close focus, both in the investigative work prior to the commencement of oral evidence, and in oral evidence itself, on the remaining three phases which, to recapitulate, are:

a. the first deseal/reseal process in the late 1970s and early 1980s;
b. the wing tank procedures in the late 1980s and early 1990s; and
c. the spray seal process conducted since 1996.'

The Investigating Officer report

29. As was explained in the opening, WCDR Secker was the principal Investigating Officer under the Defence (Inquiry) Regulations investigating the spray sealing practices. Essentially, the Inquiry was overtaken by, and its researches subsumed in, the Board. WGCDR Secker's reports, along with the material he collected, has therefore been made available to the Board. Furthermore, WGCDR Secker chose to give oral evidence shortly before Easter this year before the Board, and the Board then had an opportunity to question him about his recommendations.

What the Terms of Reference require

30. The Terms of Reference require the Board to identify, investigate and report on matters set out under four headings, namely:

a. `general details';
b. 'personnel affected';
c. `primary recommendations'; and
d. `secondary recommendations'.

Although the Terms of Reference generally speak for themselves, we make the following submissions about them.

General details

31. It should first be noted that the Chief of Air Force has ~~or is about to~~ amend paragraph 3A(1) of the Terms of Reference so that it will read that the Board is to identify, investigate and report on "*each of the chemicals used in DR procedures (the chemicals), the chemical management systems and details of manufacturers and/or the suppliers of such chemicals*". What has been deleted is the reference to the acquisition of the chemicals. There are two main reasons for this change. First, there has been little, if any, information uncovered concerning the acquisition of the chemicals, particularly in the earlier programs. Secondly, the view was taken that this aspect of the Inquiry, which had already taken up considerable time and resources to little effect, was of relatively slight utility.

32. The remainder of the topics for inquiry under the heading "General Details" relate to the chemicals used (paragraphs 2 and 4), the personal protective equipment (paragraphs 3 and 5), the regulatory framework under which the work was to be conducted (paragraphs 7, 8 and 9), how the work was done and whether it met those regulatory requirements (paragraphs 6 and 10), the state of medical and scientific knowledge concerning the chemicals and their use (paragraph 1), systemic issues required to be addressed by the Air Force and the Australian Defence Force (paragraph 12) and whether further inquiry for the purposes of administrative action being taken is appropriate in relation to any person.

Personnel affected

33. This aspect of the terms of reference essentially required identification of :

- those RAAF or ADF personnel (or individuals contracted by those organizations, or their surviving next-of-kin) affected;
- their reported health complaints in so far as they are thought to arise out of the deseal/reseal program,
- any resulting preventative action.

Finally, the nature and details of compensation claims resulting are to be listed.

Recommendations

34. First, and perhaps most importantly, the Board is to recommend what action, if any, should be taken to prevent a recurrence of the apparent incidence of adverse effects on ADF and contracted personnel arising out of the deseal/reseal process. Next, any other matters deserving investigation are to be identified and, as secondary matters, what systemic inadequacies which, albeit perhaps not causative of any injury to ADF personnel, ought nevertheless to be improved, and, finally, whether any environmental matters arising ought be further examined by appropriate authorities.

35. Before turning to the Terms of Reference in detail and what the evidence discloses in relation to those terms, we now seek to answer, in a necessarily generally way, the question "what happened?"

What happened?

36. You heard in the opening in some detail a description of the nature of the deseal/reseal process. We then described the work as "dirty, mundane and, when coupled with the confined space activity associated with executing the works……a generally undesirable task and one for which volunteers were not readily available". The oral evidence the Board has heard allows it confidently to come to those conclusions.

37. There is also considerable, although not unchallenged evidence, that personal protective equipment was not always used, sometimes because it was too uncomfortable in the climatic conditions, and sometimes because it was too constricting to be worn in the confined spaces where the work was done. While people were admonished on occasions for not wearing appropriate PPE and, in very rare cases, were charged, it seems quite clear that there were many, many, instances of failure to wear the prescribed PPE.

38. Furthermore, you now know that the PPE was often unsuitable; for example, the protective suits were not impervious to all of the toxic chemicals.

39. Again, quite often the degree of risk was not known to the ground crew or, indeed, their supervisors and on occasions ground crew were given false reassurances that the chemicals were not toxic or unsafe at all or were not unsafe when used with the PPE provided.

40. Furthermore, when the ground crew and other workers presented to the medical wing at Amberley with symptoms of ill-health, or indeed discernible signs of ill-health, they were told that the medical conditions were not caused by the deseal/reseal process or the chemicals there used.

41. Plainly enough, however, there are many former, and indeed some current, ground crew and other workers who believe their health has been badly

affected by the deseal/reseal process, and certainly there is some powerful circumstantial evidence that former ground crew and other workers involved in the deseal/reseal process suffer from a high incidence of conditions known to be caused by the toxic chemicals. The link, however, is not yet conclusively proved. That, of course, is the province of the Department of Veterans' Affairs study which ought to provide the answer to the question.

42. Certainly, however, the evidence seems to have amply justified the appointment of the Investigating Officer, this Inquiry and, indeed, the DVA inquiry.

43. Another notable fact is that the complaints made by the ground crew and other workers over the years seem not to have got to the attention of senior officers when they should have.

44. In summary, there have been many systemic failures in the RAAF organization over a period of a quarter of a century. .

45. A significant aspect of the Board's function is to make recommendations which, if acted on, ought to prevent a recurrence of these failures. Accordingly, we now turn to the individual terms of reference and seek to summarise the evidence in relation to each term.

Summary of the evidence by reference to the Terms of Reference

(1) **The chemicals used in the DR procedures....the chemical management systems and details of manufacturers and/or the suppliers of such chemicals.**

46. Annexure A sets out in detail the chemicals used in programs. [Overhead to be displayed]. It will be observed that some of the chemicals were common

to all RAAF programs, notably MEK (a cleaner/solvent), PR148 (a primer) and PR1750 (a sealant). In summary, for the first deseal/reseal program the desealants SR51 and SR51A and the cleaner/solvent ED500 were acquired directly from El Dorado Chemical Company, whereas the remainder of the chemicals were acquired through the normal RAAF acquisition system. All of the chemicals bar those supplied by El Dorado were managed by the RAAF Chemicals Management System, and all of the chemicals used had a material safety data sheet (MSDS) with manufacturers' instructions. .

(2) **Whether or not the chemicals are toxic and, if so, the toxicity of the chemicals used in the DR procedures and their general effect upon personnel exposed to the chemicals and the extent of exposure necessary to have any adverse health effect.**

47. A number of reports on this topic were commissioned by the Board and in turn these were summarised by Mr. Stefan Danek from the Defence Science & Technology Organisation in his oral evidence given on 28 March this year. We will not now repeat the very detailed evidence he gave on that occasion. In his evidence, however, Dr. Danek identified a number of chemicals used in the D/R process which were both toxic and which produced a significant health risk for ground crew who may have inhaled some of the chemicals, or absorbed it through their skin, either because no, or no adequate, PPE was worn. Mr Danek noted that the risks were significantly exacerbated, in relation to inhalation, in confined spaces such as fuel tanks. Dr. Danek also indicated possible adverse health effects which ranged from:

- the acute such as irritation, respiratory distress, nausea and nervous disorder, to
- the chronic, such as dermatitis and possible ulceration, to
- the systemic, such as serious effects on the liver, kidneys, respiratory, nervous or cardiovascular systems.

47. A final report from Mr. Danek dealing with additional matters raised with him by the Board during the hearings on 28 March has been provided.

(3) All items of personal protective equipment used in the deseal/reseal procedures, the PPE management systems, the manufacturers and the suppliers of such PPE.

48. Annexure B summarises the PPE used in the spray seal and the first deseal/reseal program and lists the suppliers in relation to the spray seal.[Overhead] For the earlier programs, it was more difficult comprehensively to identify all of the PPE used and often not possible to identify the manufacturers or suppliers – so it may not be possible to make a

finding under this term, at least for all periods of the D/R process. The PPE management systems topic is dealt with shortly.

(4) The nature, extent and adequacy of work methods, instructions and training, including technical instructions provided by the manufacturers and/or suppliers relevant to the application of the chemicals used in the DR procedures together with the nature, extent and adequacy of instructions, instruments and orders provided by the RAAF, if any, concurrent with or further to the suppliers' and/or manufacturers' instructions from time to time.

49. The evidence on this topic has been analysed in two expert reports in particular, namely the report on the toxicology of deseal and reseal chemicals by Professor Connell and Dr. Miller, and also in the reports by Mr. Danek. Broadly speaking, the extent and adequacy of instructions and technical instructions relevant to the application of chemicals in the deseal/reseal process improved over time.

50. Certainly, it came to be understood that the chemicals used in the deseal/reseal and later the spray seal processes were considerably more toxic to those using them than had initially been thought. This later understanding is to be contrasted with, for example, the advice given to ground crew in relation to SR51 – the desealing fluid using in the first deseal/reseal programs. It appears that the material safety data sheet provided by the manufacturer of SR51 understated the toxicity of SR51 and understated considerably the necessary PPE. The United States Air Force was more cautious in its approach to handling the SR51.

51. The Materials Research Laboratory within the Defence Science & Technology Organisation was then asked to provide an opinion on the appropriateness of SR51 and, in this regard, the safety measures needed to be taken when in

proximity to SR51 solution or its vapour. Dr. Brenton Paul – then and now a senior scientist in the DSTO – headed up the MRL task group in this regard. He provided a statement and gave oral evidence on 2 April in this Inquiry. His evidence was that, as a chemist, he was not giving an opinion on the appropriate PPE (at transcript page 384.7) but, nevertheless, he advised the Air Force to err on the side of caution and follow the US Air Force recommendation.

52. As already noted, over time the extent and adequacy of instructions provided by the manufacturers and suppliers of the chemicals urged greater and, in the light of subsequent scientific knowledge, more appropriate use of PPE. The Air Force did not add to those instructions, although, by the use of Air Force Publications, it adopted those instructions.

(5) The nature, extent and adequacy of work methods, instructions and training , including technical instructions provided by the manufacturers and/or suppliers relevant to PPE used in the DR procedures, together with the nature, extent and adequacy of instructions, instruments and orders provided by the RAAF, if any, concurrent with or further to the suppliers' and/or manufacturers' instructions from time to time

52. Again, the RAAF did not supplement what was provided by the manufacturers in this regard. Furthermore, the PPE was not tailor-made for the specific work environment, so that the instructions were generic only. Very little has been discovered of ad hoc instructions from manufacturers or suppliers about the use of PPE and, similarly, very little has been discovered in relation to the involvement of manufacturers in work methods, instructions or training in the use of PPE specifically focused on the deseal/reseal processes. It may, therefore, be that the Board is unable to make any findings under this term.

(6) The work methods and practices applied by personnel (ADF or otherwise) and training undertaken from time to time in executing the DR procedures

(8) All Defence instructions, instructions, instruments and orders with respect to the use of the chemical and PPE in the DR procedures.

53. In the opening we identified in some detail the RAAF hierarchy of instructions and we do not repeat them now. Generally speaking, the high level documents such as the Air Force publications or the Defence Instructions (Air Force) deal with what was to be achieved, whereas Bench Level Instructions described how the particular processes were to be performed – often attaching detailed work instructions.

54. There has been detailed evidence summarising all of these documents in the discussion paper and oral evidence of the work methods and practices. The nature of the task was, similarly, summarised in the discussion paper, as were the general work practices. What is controversial, and this is dealt with later, is the extent to which required procedures were followed.

55. As far as training goes, there was a clear training requirement that personnel working on deseal/reseal operations were to be instructed as to the toxicity and pollution hazards particularly in relation to SR51. After the conclusion of the first program, as late as 1986, manuals dealing with safe work in a confined space were produced for the first time. Later still a confined space entry course was introduced by the RAAF as a prerequisite for FTRS ground crew – this now takes five days to complete.

56. The Defence instructions, instruments and relevant orders concerning use of chemicals and PPE are comprehensively listed in the discussion paper, ~~and in the written final submission~~, and we do not repeat them here.

(7) **The occupational health and safety approvals, processes, management structures, procedures, training, equipment, personal protective equipment and workplace environment in force or implemented concerning the DR procedures from time to time, including any hazard identification, risk assessment and consideration of appropriate control measures.**

57. The regulatory regime for safety management in the Australian Defence Organisation has progressed considerably in the period of concern to the Board. For example, the current position is set out in the attached table 21 [Overhead] which makes reference to the statutory requirements of the *Occupational Health & Safety (Commonwealth Employment) Act*, the Australian Defence Organisation Safety Policy Manual known as "DOHSMAN" and the relevant Defence instructions and lower level instructions designed to implement the ADO policy. Apart from these ADO specific requirements, there are a number of State or Territory regulations and relevant Australian Standards.

58. Turning from the regulatory framework to the OH& S management framework, this too has become more sophisticated over the years. Evidence in relation to this topic has been given by the EMOHSO and the EMOHSA. What is notable about that evidence, in our submission, is that personnel who were part of an OH & S structure were often unaware of their role in the structure, and the OH & S structure indeed often existed only on paper, with meetings not being held as required and co-ordination not occurring as required. Similarly, the safety surveys and audits appear not to have operated as they should. .

(9) **The Commonwealth compensation legislation that applied during relevant periods.**

59 A detailed written submission has been provided on this topic. Furthermore, on 10 April this year, there was a helpful oral presentation by the Regular Defence Force Welfare Association ("the RDFWA"), whose representatives then provided a brief summary of the various compensation schemes that might be applicable to RAAF personnel who worked on any of the programs. In essence, the statutes are the *Compensation (Commonwealth Employees) Act,* the *Veterans' Entitlements Act,* the *Military Compensation Act,* the *Safety, Rehabilitation & Compensation Act.* The *Safety, Rehabilitation & Compensation Act* also has an effect on any common law claims such as negligence claims which might be brought against the Commonwealth, although not claims which might be brought against third parties.

60 The RDFWA also made submissions seeking legislative reform in this area.

(10) **The extent to which personnel (ADF or otherwise) performed their duties (supervisory or otherwise) in accordance with procedures and policies in force from time to time, concerning the DR procedures including, if applicable, the extent to which such personnel failed to perform their duties (supervisory or otherwise) and the reasons (if any) for such failure.**

(13) **Whether the performance or actions of any person (ADF or otherwise) whose performance or actions are directly related to the DR procedures might warrant further inquiry for administrative action.**

61. Although there is some contest in the evidence between ground crew and their supervisors, there seems little doubt that there was fairly widespread non-compliance with procedures and policies required to be complied with, notably in the wearing of suitable personal protective equipment. The evidence is that, in all but a very few cases, no formal action was taken under the *Defence Force Discipline Act* or its predecessors against those involved and, of course, such action under the DFDA is, certainly for three out of the four programs, now time-barred in any event.

62. The Board made it very clear at the outset that it did not wish to identify individual failings but rather systemic failings, and in those circumstances, and also given the previously mentioned rulings of the Board on the unsuccessful applications for possibly affected persons to be joined, it is not now appropriate to make individual findings of fault against any person.

63. There is, however, another aspect to it and it is this. There is considerable evidence that persons who failed to wear personal protective equipment were admonished verbally but not formally charged. One consequence of formally charging individuals for breaches of this type would have been to bring to the attention of senior officers at 501 Wing the extent of the problems at 501 Wing caused by failure to wear personal protective equipment when dealing with toxic chemicals. It may well be that the Air Force wishes to reconsider its approach to discipline in this context.

(11) The state of domestic and international medical and scientific knowledge from time to time concerning the hazards, health risks and best practice related to the chemicals and their use in the DR procedures.

64. The principal evidence on this topic is contained in the Envirotest Report - *The State of Medical and Scientific Knowledge – Deseal/Reseal Chemicals F111 Fuel Tanks*. In summary, the knowledge of the extent of toxic effects or longer term risks from repeated exposures to the chemicals used in the first deseal/reseal program was limited and inadequate and this may also have been the case in relation to the wings tank program.

65. By 1995 scientific and medical knowledge on the toxicity of almost all of the chemicals used in the spray seal process had improved considerably. At the same time, there was by then a more general appreciation of the risk in the use

of toxic chemicals and this found expression in national models of safety, and relevant State legislation for the control of hazardous substances.

66. Over the same period health surveillance practices in the general community had developed. Unfortunately, however, there is little evidence to demonstrate a rigorous and appropriate occupational health monitoring program having been undertaken by the Air Force 'on the ground'. Indeed, there seemed to be a general recognition from all medical witnesses that, for at least the past decade, there has been no record-keeping system which has permitted trends in health across a group, such as the Fuel Tank Repair Section, to be monitored over time. It is understood that the Defence Health Organisation is developing such a system and this would seem to be urgently needed.

(12) Whether there were or are any systemic issues arising from.....any matters identified which should be addressed by the RAAF or ADF.

67. As earlier noted, it is not the role of counsel assisting to "make a case". However, systemic issues which might be addressed, having regard to the evidence before the Board, include the following:

- The suitability of the ADF's hazardous substance management systems including identification, evaluation, risk assessment and control measures.
- The adequacy of ADF health management systems, including for biological monitoring, and in this regard the availability of specialist occupational medicine, policy and advice.
- Procurement of hazardous substances and personal protective equipment.
- Lack of comprehensive management oversight.
- Suitability of, and compliance with, workplace procedures.

- The design and implementation of correct facility requirements for the undertaking of procedures.
- Training in OH & S matters.

(B) Personnel affected. (1) The identity of personnel who may have been exposed to chemicals used in the DR procedures and the details of their duties, including duration of those duties while so exposed.

68 WE understand that all relevant personnel have been ascertained. We have also produced a number of tables which seek to summarise in relation to each process and then each sub-aspect of the process, the details of the process and the individual duties of personnel in that process. [Overheads].

(2) The nature and extent of health complaints reported as resulting from exposure to chemicals used in the DR procedures of those personnel identified above and the treatment provided, if there was any health monitoring of those personnel, details of preventative action taken as a result of health monitoring.

69. There are a number of aspects to the evidence here. First, there was a report by Dr. Dai Lewis, who examined the RAAF's health monitoring system over the period of the D/R programs. While he noted many positive matters, he found that much documentation appeared to be incomplete, that not all medical monitoring requirements appeared to have been followed, and that there had been little regular, multi-departmental reviews of the overall programs. There was also a lack of continuity and multi-disciplinary audit by the command and control structure. Dr. Lewis, however, also noted that the current document dealing with health monitoring met all Australian

regulatory requirements and, in the main, exceeded best practice standards internationally.

70. An audit was conducted by Dr. Eric Donaldson, a medical aviation/occupational medicine expert. He examined the medical records for 110 of the 662 persons identified as being possibly exposed to chemicals in the deseal/reseal program, together with some additional information provided as a result of this inquiry. He gave evidence on this topic.

(3) The nature and details of all claims for compensation arising from the DR procedures that have been received or notified.

71. This is provided in an appendix.

Recommendations

72 This topic is the province of the Board and we say nothing about it.

Subject to any other matters the Board now wishes to raise with us, these are the submissions of Counsel Assisting the Board. May it please the Board.

28 May 2001

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