



AIR FORCE HEADQUARTERS
Office of Chief of Air Force
Department of Defence, R1-6-C001, CANBERRA ACT 2600

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2007/1034036/1 (15)

Committee Secretary
Defence Sub-Committee
Joint Standing Committee on Foreign Affairs, Defence and Trade
Parliament House
CANBERRA ACT 2600

Dear Dr. Kerley,

INQUIRY INTO RAAF F-111 DESEAL-RESEAL WORKERS AND THEIR FAMILIES

I attach responses taken to the 10 questions taken on notice by Defence at the 21 July public hearing on the Deseal/Reseal inquiry. A further question was referred to the Department of Veterans Affairs.

On 28 July 2008, Defence provided members of the JSCFADT Defence Sub-committee with a familiarisation tour of RAAF Amberley. As part of this briefing Warrant Officer Peter Hind delivered a presentation to committee members detailing the procedures and tasks that were involved in F-111 Fuel Tank Maintenance or Deseal/Reseal. As requested by the committee, I have attached a copy of this presentation, including speaking notes, together with a copy of the environmental report *Assessment of SR51 Waste Disposal Activities on Warrill Creek Amberley Air Force Base* also requested by the committee. The Warrill Creek report recommends further investigation as to whether any chemical residues remained in the dam system. Details of further environmental work at RAAF Amberley is has been attached.

In addition, Boeing Australia provided the committee members with a briefing on its F-111 Fuel Tank Refurbishment Program. In accordance with recommendation 7.5 of the 2001 Board of Inquiry, Defence has contracted Boeing Australia to develop revised processes for F-111 fuel tank maintenance. During this briefing, the committee asked Boeing what the cost to date has been of its F-111 Fuel Tank Refurbishment Project. I can advise that the cost to the Commonwealth has been \$17.5m expended over 2005-06 to 2007-08. A final \$0.74m will be spent in 2008-09 for a total of \$17.89m.

Also attached in accordance with a request by the Secretariat, please find enclosed a copy of the Study of Psychological Functioning in Partners and Spouses of Deseal/Reseal Personnel by Leonie Coxon (the Coxon Study).

Should you have any queries in relation to this matter, the point of contact at Air Force Headquarters is Wing Commander Pat Keane, who is contactable on (02) 626 53720.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'H. Ehlers', written in a cursive style.

H. EHLERS
Group Captain
Director Coordination – Air Force

17 Sep 2008

**JSCFADT DEFENCE SUB COMMITTEE
INQUIRY INTO F-111 DESEAL/RESEAL WORKERS AND THEIR
FAMILIES, 21 JULY 2008: QUESTIONS TAKEN ON NOTICE DURING
THE HEARING**

Q1

Number of people involved in the four formal DS/RS programs

Mr Baldwin, Hansard, 21 July 2008, p3-5

Could you please provide the committee with a breakdown of how many Air Force personnel, how many Defence civilians and how many contractors were involved in the four Deseal/Reseal programs together with a breakdown of the type of work they performed?

RESPONSE

The 2004 Study of Health Outcomes in Aircraft Maintenance Personnel (SHOAMP) provides the most accurate analysis of the number of participants. The study used the most thorough and exhaustive screening process and exclusively focused on those personnel who were only involved in the four formal Deseal/Reseal programs. The result was an exhaustive list of 872 personnel identified as possibly exposed:

- RAAF: 785
- Civilian/Contractors: 48
- Unknown: 39¹

The final number of participants deemed to be 'exposed' (i.e. participants in the four core Deseal/Reseal programs) by the Exposure Questionnaire was 561. This figure accounts for the fact that a number of the 872 people identified either refused to take part, were deceased by the time the study began or were not contactable.

A breakdown of each program by the processes they performed is as follows²:

| Program 1 Processes | Program 2 Processes | Program 3 (Wings) Processes | Program 4 (Spray Seal) Processes |
|--|--|--|--|
| <ul style="list-style-type: none"> - Chemical Deseal (SR51/SR51A) - Water pick - Hand clean with Mil-Spec. - Primer Application - Barrier Application - Sealant Application - Chemical Disposal | <ul style="list-style-type: none"> - Water Pick - Hand Clean with Mil-Spec - Barrier Application - Sealant Application | <ul style="list-style-type: none"> - Water Pick - Seed Blasting - Hand Cleaning - Reseal Wing - Refit Plank | <ul style="list-style-type: none"> - Alkali Wash - Spot clean - Primer Application - Sealant Application |

¹ SHOAMP Report on the General Health and Medical Study, Volume 5, Page 54, September 2004 (Unknown includes those people who failed to identify themselves by rank on the original BOI witness list.)

² Board of Inquiry, Vol. 2, Chapter 12, Part 1

Q2

Breakdown of those 460 people identified by the Board of Inquiry

Mr Trood, Hansard, 21 July 2008, p7

Could you provide the committee with a breakdown of the categories into which the 460 people fall and the basis upon which they were included by the Board of Inquiry?

RESPONSE

The 2001 Board of Inquiry relied on group photographs, squadron records, word of mouth and self reporting to identify those involved. BOI records involve anyone who had approached the Inquiry and therefore included people who were not involved in the four formal Deseal/Reseal Programs.

The Air Force has consistently quoted an estimated number of people involved in the four formal programs at approximately 460. Based on the most recent consultation for the BOI witness list Defence believes that there were 455 people involved in the four formal Deseal/Reseal programs. These people can be categorised as follows:³

| Program | RAAF | Ex-RAAF Civilian/Contractors | Civilian/Contractors | Total |
|------------|------|---------------------------------|----------------------|-------|
| Program 1 | 123 | 0 | 0 | 123 |
| Program 2 | 101 | 42 | 6 | 149 |
| Wing Tank | 106 | 19 | 3 | 128 |
| Spray Seal | 43 | 0 | 0 | 43 |
| Total | | | | 443 |

In addition, the BOI witness list identified a further 12 individuals involved in related activities, such as sealant mixing and chemical disposal, were also involved in one or more of the four core Deseal/Reseal programs.

The figures above only list the first program in which an individual was involved. The 561 identified in the exposed group of the SHOAMP study includes people who may have been involved in more than one program. The difference in figures can also be put down to the fact that as more maintenance staff became aware of the F-111 BOI and SHOAMP more came forward.

³ Board of Inquiry, Vol. 2, Chapter 12, Annex A

Q3

Composition of SHOAMP target group

Mr Robert. Hansard, 21 July 2008, p15

Of the target group for the SHOAMP study, can you tell the committee what percentage were 3AD as opposed to 482 Squadron personnel?

RESPONSE

The SHOAMP did not enlist participants according to their Unit but rather identified them according to whether they were involved in one or more of the four core Deseal/Reseal programs. This means that, unless members of 482 squadron were involved in a formal Deseal/Reseal program while posted to 3AD (and would be therefore accounted for in the SHOAMP study), 482 squadron members were not part of the target ('exposed') group for the SHOAMP.

Q4

Terms of settlement for Common Law Claims settled in QLD Supreme Court

Mr Baldwin, Hansard, 21 July 2008, p16-17

What were the terms of settlement for the two employees of Hawker de Havilland in the Queensland Supreme Court? Please advise whether any provisions were made for ongoing health costs in these settlements.

RESPONSE

The settlements between WorkCover Queensland and the two ex-employees of Hawker de Havilland are subject to confidentiality agreements. Defence has written to the solicitors who acted for the parties in those matters seeking their advice on disclosing the terms of settlement to the Committee (attached). Defence undertakes to provide further information to the Committee after the responses to those letters have been received.



Australian Government
Department of Defence
Defence Support Group

Defence Legal

2008/1008168/2

Ms Alison Langford
McInnes Wilson Lawyers
Level 14 Central Plaza One
345 Queen Street
BRISBANE QLD 4000

By email: alangford@mcw.com.au

Dear Ms Langford

On 21 May 2008, the Hon Alan Griffin MP, Minister for Veterans' Affairs, asked the Joint Standing Committee on Foreign Affairs, Defence and Trade to inquire into and report on issues surrounding former F-111 Deseal-Reseal workers and their families. The Defence Sub-committee is chaired by the Hon Arch Bevis MP and has held three public hearings: on 21 July 2008 in Canberra to take evidence from the Departments of Defence and Veterans' Affairs, and the Ombudsman and on 28 and 29 July 2008 in Brisbane to take evidence from a number of interested persons and organisations.

During the hearing on 21 July 2008, Committee members questioned Defence about the 31 common law claims brought against the Commonwealth by ex-maintenance workers in the F-111 Deseal/Reseal programs. It was noted that two claims brought by ex-Hawker de Havilland employees have been settled and the Deputy Chair, the Hon Bob Baldwin MP, sought information about those settlements. As the Department of Defence is not party to those settlements, I undertook to make inquiries and the Committee asked that the questions be taken on notice.

Following that hearing, Defence has been asked to answer the following questions:

"What were the terms of settlement for the two employees of Hawker de Havilland in the Queensland Supreme Court? Please advise whether any provisions were made for ongoing health costs in these settlements."

You may wish to refer to pages 16 and 17 of Hansard, which is available at:

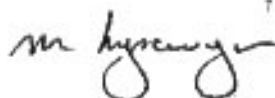
http://www.aph.gov.au/house/committee/ifaft/deseal_rescal/hearings/proof%20hansard%2021%20July.pdf

I understand the terms of settlement in those matters remain confidential between the parties. I therefore seek your advice on whether your client, Workcover Queensland, would agree to provide a response to the Committee's questions. Your client can request that any response to these questions remain confidential. Please see the information available on the Committee website at: <http://www.apb.gov.au/house/committee/documnts/howsub.htm#publication>

I have also written to the solicitors who acted for the plaintiffs in those matters seeking their advice on responding to the Committee's questions.

My contact on this issue is Ms Sandra Bennett, Acting Director Litigation, who can be contacted on 02 6266 4276.

Yours sincerely



Michael Lysewycz
Ag/Assistant Secretary Legal Services

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5 August 2008



2008/1008168/2

Mr Peter Walker
Walker Pender
Solicitors
Level 2, Ipswich City Mall
Ipswich City Square
IPSWICH QLD 4305

By email: pwalker@walkerpende.com.au

Dear Mr Walker

On 21 May 2008, the Hon Alan Griffin MP, Minister for Veterans' Affairs, asked the Joint Standing Committee on Foreign Affairs, Defence and Trade to inquire into and report on issues surrounding former F-111 Deseal-Reseal workers and their families. The Defence Sub-committee is chaired by the Hon Arch Bevis MP and has held three public hearings: on 21 July 2008 in Canberra to take evidence from the Departments of Defence and Veterans' Affairs, and the Ombudsman and on 28 and 29 July 2008 in Brisbane to take evidence from a number of interested persons and organisations.

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http://www.sph.gov.au/house/committee/jfadtdeseal_reseal/hearings/proof%20hansard%2021%20July.pdf

I understand the terms of settlement in those matters remain confidential between the parties. I therefore seek your advice on whether your clients, Mr Ashe and Mr Walker, would agree to provide a response to the Committee's questions. Your clients can request that any response to these questions remain confidential. Please see the information available on the Committee website at: <http://www.apb.gov.au/house/committee/documnts/howsub.htm#publication>

I have also written to the solicitors who acted for WorkCover Queensland in those matters seeking their advice on responding to the Committee's questions.

My contact on this issue is Ms Sandra Bennett, Acting Director Litigation, who can be contacted on 02 6266 4276.

Yours sincerely



Michael Lysewycz
Ag/Assistant Secretary Legal Services

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5 August 2008

Q5

Investigations into alleged breaches of duty of care

Senator Bishop, Hansard, 21 July 2008, p20

Has Comcare ever been requested by Defence to conduct an investigation, or has it ever conducted an own-motion investigation, into alleged breaches of duty of care and consequent harm to affected workers?

RESPONSE

Comcare did conduct an investigation and, as part of that investigation, agreed with and incorporated into its report all 56 of the Defence Board of Inquiry recommendations. As part of the Defence response to the investigation, Defence provided Comcare with periodic reports over the period 2002 to 2007 on progress in implementing the recommendations from the BOI.

Comcare was also provided with a copy of the Hopkins/Nicholls report, which covered an external review mandated by the BOI and completed in October 2004.

In compiling the relevant information in response to this question, Comcare advised Defence on 11 August 2008 that no further action was required on its part.

Q6

Analysis of Defence response to recommendations of the BOI

Mr Bevis, Hansard, 21 July 2008, p27

Please provide the committee with a comprehensive analysis of what action has been taken with respect to each of the BoI recommendations.

RESPONSE

The Board of Inquiry report contained 53 recommendations. The Chief of Air Force subsequently added 2 supplementary recommendations (S1 and S2) and modified a number of other recommendations to reflect the broader Defence-wide approach required to resolve the issues identified. The BOI terms of reference also included a requirement for the Board to comment on whether any environmental matters should be addressed and, after an external study, a further recommendation (MW1) pertaining to a 'Matter Warranting Further Investigation' was included. The resulting 56 recommendations were accepted by the Secretary and Chief of the Defence Force in late 2001.

The 56 recommendations can be divided into 3 broad categories: those that are Air Force specific, those that deal with systemic issues associated with the corporate management of occupational health and safety (OHS) in Defence and those that required less complex Defence-wide action. Defence has actioned all 56 of these recommendations either through their completion or through their integration into existing activities or scheduled programs. Due to the systemic nature of a number of the recommendations, their anticipated completion dates vary, with some extending to 2012.

The 8 recommendations that were identified as RAAF specific have been completed. These recommendations focused directly on the high risk activities involved in the Deseal/reseal program, and health care and support for affected workers. (2.8, 5.2, 7.5, 9.1, 9.2, 10.2, 10.3, 10.8)

- In accordance with recommendation 2.8, the Air Force commissioned and funded an interim health care scheme for personnel affected by the Deseal/Reseal programs until they had their claims with DVA resolved. The interim health care scheme provided treatment for any health issue reasonably linked to participation in the four formal Deseal/Reseal programs.
- The Air Force has expanded its system of Maintenance Aviation Safety Occurrence Reports to incorporate them into Aviation Safety Occurrence Reports (ASOR) with effect from 29 March 2004. Defence Safety Manual Volume 3 Part 1 Chapter 9 defines an ASOR as "A hazard report notifying required agencies of all Defence aviation safety occurrences, including operations, Air Traffic Control (ATC) / Air Defence, technical and ground-based activities. Comcare has accepted that the ASOR meets its incident notification requirements.(Addresses recommendation 5.2)
- With regard to Deseal/Reseal activities, processes have been changed as a consequence of the BOI and research was undertaken in 2001 to find

alternative methods. The Air Force has contracted Boeing Australia (which is now responsible for F-111 fuel tank maintenance) to develop the current and future F-111 Descal/Reseal processes, subject to approval by DMO. The ongoing maintenance of the aircraft, through contract, is now the responsibility of DMO. (Addresses recommendation 7.5)

- In 2003, the Air Force reviewed the Arduous Conditions Allowance in light of possible changed practices introduced at RAAF Amberley to reduce the hazardous nature of F-111 fuel tank maintenance. In reference to recommendation 9.1, Defence moved to continue to provide the allowance despite significant improvements in the nature of F-111 fuel tank maintenance work. (Addresses recommendation 9.1)
- On 8 September 2001, the Chief of Air Force appointed an Air Force advocate to act as 'an airmen's friend'. The advocate provides assistance to present and past members preparing a claim to DVA and in establishing eligibility for health care or compensation for health conditions related to work on F-111 fuel tank maintenance. (Addresses recommendation 9.2)
- The Air Force has moved to disband the Air Force Ground Safety Agency and replaced it with a combined safety organisation, the Directorate of Air Force Safety (DAFS). DAFS is headed by a Group Captain with flying safety expertise. (Addresses recommendation 10.2).
- The Air Force has moved to place a Wing Commander in the Deputy Director AFS position. Providing the incumbent possesses the appropriate competencies, qualifications and experience across the wider OHS management arena and, where possible, industrial hygiene arena, there is no necessity to specify the skill set as detailed in the recommendation. (Addresses recommendation 10.3)
- The RAAF has acted to implement recommendations from the Maintenance Safety Health Review (MSHR) through a combination of regulation, reinstatement of engineering and maintenance resources in the Air Force command and governance chain, and an injection of resources into the Directorate of Defence Aviation and Airforce Safety. This is expected to provide a more balanced, coordinated and effective capability to identify and address maintenance related issues/risks.
- The Air Force engages with other organisations through a range of mediums in order to learn from other flying organisations and study their experiences in relation to common problems. The RAAF is a member of the Australian Aviation Ground Safety Council, the Australasian Occupational Health and Safety Association, and the International Society of Air Safety Investigators. The RAAF also has a Memorandum of Understanding with the Air Transport Safety Bureau covering their interaction. (Addresses recommendation 10.8)

The management of BOI recommendations dealing with systemic issues in corporate OHS management is being addressed through their incorporation into the *Defence OH&S Strategy 2007-2012* Implementation Plan. These remaining recommendations necessitate long term solutions that require extensive policy/doctrine changes, shifts in

OHS culture, increased management information capability and a substantial injection of resources (human and financial). These recommendations have been incorporated in targeted work programs, including:

- Development of Personnel Protective Equipment (PPE) Management System aimed at delivering a comprehensive and sustainable system that will improve the provision and management of PPE within Defence. A team of occupational hygienists and OHS specialists are currently conducting a survey to review current policies, systems and procedures for managing PPE (Phase 1), followed by the development of a best practice PPE model (Phase 2). Phase 1 is scheduled for completion in 2008 (Addresses recommendations 4.1 and 7.1);
- Developing a plan to deliver a robust Occupational Medicine and Hygiene capability by 2012 (Addresses recommendations 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 7.3, and 7.4);
- Reviewing the effectiveness of the 2005 Hazardous Substance Management Program by 2010 (Addresses recommendations 6.5, 6.6, 8.3 and 8.4);
- Introduction of a Defence-wide OHS Management Information System capability by 2011 (Addresses recommendations 5.3 and 5.5);
- A comprehensive review of OHS Management Systems against the Corporate OHS Model, for all Groups and Services, by 2008. Implementation of review recommendations by 2012. As part of this the Chief of Air Force introduced a new safety management system known as 'RAAFSafe' in 2004. RAAFSafe has reviewed and incorporated OHS training into officer and airman promotion courses, and into all trade training undertaken at the RAAF School of Technical Training. (Addresses recommendations 3.4, 9.5, 9.6, 10.7, S1);
- A Human Systems Integration Framework Implementation Project which aims to integrate 'safe design' principles within the Defence Capability Lifecycle by 2012 (Addresses recommendations 6.1, 6.2, 6.3, 6.4, 7.2);
- Investigating OHS roles, responsibilities and accountabilities throughout the ADO through the Defence Management Review and the Defence OHS Roles and Responsibilities Governance Framework Project, aiming for initial completion of OHS roles and responsibilities by 2009 (Addresses recommendations 3.3, 4.3, and 10.1); and
- The development of a comprehensive framework and tool to measure and analyse safety culture within Defence by 2009 (Addresses recommendation 4.2).

An additional 17 recommendations have also been completed. These recommendations involved relatively uncomplicated organisational and policy change in the areas of OHS training, recognising and awarding OHS excellence, controlling hazardous substance exposure and reviewing incident reporting mechanisms. (1.1, 2.7, 3.1, 3.2, 3.5, 5.1, 5.4, 8.1, 8.2, 9.3, 9.4, 9.7, 10.4, 10.5, 10.9, MW1, S2)

Q7

Personnel involved in related activities

Ms Grierson, Hansard, 21 July 2008, p27

Does Defence have a list of people who are submitting claims or seeking ex gratia payments because of related activities rather than direct involvement in the Deseal/Reseal programs?

RESPONSE

Formally referred to DVA.

Q8

Age profile of those identified in BOI

Senator Foreshaw, Hansard, 21 July 2008, p28-29

What is the age profile of the 460 people identified in the BOI? Could Defence provide the committee with a breakdown in five or ten year bands?

RESPONSE

An age profile for the estimated 460 people identified by the BOI is not readily available as birth dates for all participants were not tabulated. However, 158 people provided their date of birth in a medical questionnaire for the BOI with the following breakdown. This is representative of the group:

1934 – 1939: 4
1940 – 1944: 0
1945 – 1949: 7
1950 – 1954: 20
1955 – 1959: 31
1960 – 1964: 52
1965 – 1969: 30
1970 – 1974: 13
1975 – 1976: 1

(Oldest, DOB 1934 – now 74; youngest DOB 1976 – now 32)

Q9

International comparisons

Ms Grierson and Mr Bevis, Hansard, 21 July 2008, p30-31

Are there any international comparisons to the F-111 Deseal/Reseal programs or similar situations? If so, what analysis has been done in comparing Australia's performance in terms of the original causes and the management of the subsequent processes, including how claims were handled?

RESPONSE

Systems, processes and products used in the US maintenance of the aircraft were adopted by Australia and there was considerable exchange of knowledge to deal with maintenance issues. The original Deseal/Reseal program in 1977 used US developed processes, but the RAAF further developed systems relating to confined space entry methods, exposure times and Personal Protective Equipment. Unlike the US, Australia used mainly Air Force personnel, while the USAF appears to have used contract labour. The Spray Seal program was also developed by the US and, after trials, adopted by the RAAF. There has been no exchange of information about handling of claims.

Q10

Health studies for Bougainville and 1991 Gulf War

Mr Robert, Hansard, 21 July 2008, p33

In relation to health studies on service personnel involved in Bougainville and the 1991 Gulf War, are they only sample studies or is everyone filling out the questionnaires and going through the study?

RESPONSE

Health Studies such as the Bougainville study, the Gulf War study and SHOAMP cannot compel people to participate or answer questions, they rely on self reporting. Therefore, all 4,775 ADF personnel who deployed to Bougainville between November 1997 and June 2003 as part of Operations BEL ISI I and II have been invited to participate in the Bougainville Health Study. A comparison group of 2,363 individuals, who were eligible to deploy to Bougainville but did not, has also been invited to participate.

Similarly, all 1991 Gulf War veterans were eligible to participate in the health study and 80.5 per cent of the eligible veterans responded. The comparison group was a random selection of ADF members who were eligible to deploy to the Gulf War but did not deploy.

Q11

Operation of incinerators for disposal of chemicals

Mr Bevis, Hansard, 21 July 2008, p34

Could Defence provide the committee with any information about the operation of the incinerators, how they were constructed, their design and their physical location? To what extent did they comply with occupational health and safety requirements for the disposal of chemicals?

RESPONSE

In July 1977, the Air Force purchased a waste oil combustor and garbage incinerator from Major Furnaces and Combustion Engineers Pty Ltd for use at RAAF Amberley.

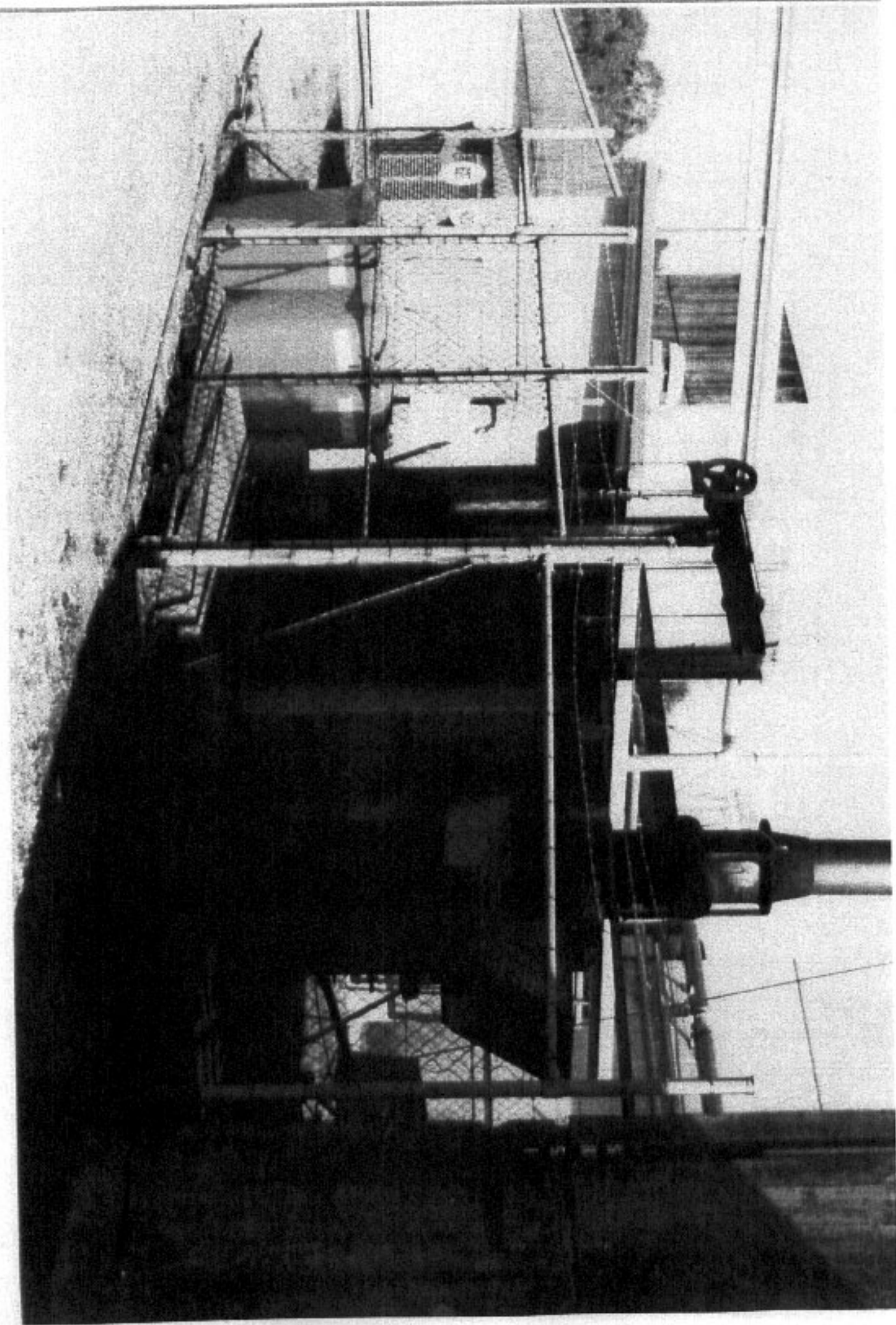
The operation of the incinerators was the result of a procedure recommended to the RAAF by the Materials Research Laboratory within the Defence Science and Technology Organisation for the disposal of SR51, alkali rinse and water rinse solutions. A Notice of Intention was submitted for consideration to the then Federal Department of Environment, Housing and Community Development. The Department consulted Queensland environmental authorities, including the Queensland Water Quality Council and approval was granted to operate the incinerator.

The multi chamber incinerator was operated in accordance with the manufacturer's instructions and proceeded in two stages: primary or solid fuel combustion in the ignition chamber, followed by secondary or gaseous phase combustion in the secondary chamber⁴. Concise operating instructions are attached.

The incinerator stood approximately six metres above ground and was located to the immediate west of the southern end of the runway (see attached diagrams). Waste was pumped from drums into header tanks for feeding into the incineration. The incinerator involved the following key features:

- I. A refractory steel casing 5mm in thickness and insulated by a 25mm layer of asbestos free calcium silicate.
- II. A multi chamber design. The primary or ignition chamber dealt with the combustion of primary or solid fuel and was fitted with a charging door at the front. The secondary chamber dealt with the combustion of gaseous products and settling the particulate products given off by the ignition chamber.
- III. Both chambers ran off oil fired burners that have air and oil valves internally coupled allowing constant burning conditions by the operation of one lever only.
- IV. The incinerator was also fitted with a number of vents. The above mentioned Charging Door, located at the front of the primary chamber, is made from mild steel and is suitable lined and insulated. A clean out door is located at the front of the incinerator and combustion air vents are located throughout the incinerator to allow access of the waste combustion air.
- V. A water proof sheet metal control cabinet to the side of the incinerator to house control instruments and fuses.

⁴ Instruction Manual for 100kg/hr Incinerator, Major Furnace and Combustion Engineers, Page 8



(11)

4 Concise Operating Instructions.

- i) Load incinerator with initial charge.
- ii) Select operation mode either "manual" or "process".
- iii) Light afterburner -
 - Insert flame into burner port and open solenoid valve by pressing knee switch.
 - If burner fails to ignite after 15 seconds, wait 60 seconds until next attempt.
- iv) When afterburner chamber reaches operating temperature of 760°C , light primary burner as for afterburner.
- v) For timed shut down -
 - Turn selector switch to "process" position.
 - Select required time.
- vii) For manual shut down -
 - Turn burner selector switch to "off" position.
 - Turn off combustion air blower.