Appendix 1

INTERNATIONAL REGULATORY CONTROLS AGAINST THE USE AND MICRO-PROLIFERATION OF WEAPONS OF MASS DESTRUCTION

International Legislative Controls

Governments and their people often look towards international law as having some apotropaic effect against transnational WMD non-state threats. Yet the reality is most international WMD arms control and regulatory regimes struggle to maintain any real measure of legitimacy and impact in preempting, or even indeed prosecuting, transnational non-state actions. Most saliently, they lack compliance and enforcement capabilities and critically, no judicial process or organ through which to act, severely diminishing any perceived utility the controls may have had. The difficulty throughout enforcement measures within international law is that they generally allow state and non-state actors to violate laws with impunity. Consequently, the only conclusion regarding their influence is that in most cases, that they are ineffective as regulatory mechanisms. Given the focus on individual actions in attempting to identify and personalise acts of terrorism, it is unlikely that any effective measures against terrorism, particularly individual acts, could ever be developed as international customary law. At best, any measures will always remain limited to multi-lateral and bi-lateral norms that establish the universality of laws and agreements, and at worst, are completely ignored by state parties.[1]

Generally, CBR and WMD international controls are comprised of a range of non-specific international laws, regimes, agreements and multi-lateral/bi-lateral treatises that seek to define behavioural, exclusion, protection and technical requirements within norms for states when involved in hostile actions or armed

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[1] A rule of customary international law forms when states exhibit general and consistent state practice accompanied by *opiniojuris*. D. P. Fidler, *International Law and Infectious Diseases*, Oxford Press, London, 1999, pp 108-109.

conflict. These controls seek to define limits, prohibit the use of specific weapons or establish acceptable codes of humane conduct. The macro scope and international nature in the development of these norms, however, has eroded most of any actual application, specificity or utility in the control of non-state activities. Commonly these international norms generally only provide a platform for the conflation of state parties' counter-actions and condemnation for an incident once it has transpired – more often reducing these measures to codes of conduct rather than vehicles for action.

1907 Hague Convention[2]

The Hague Convention was the first real international agreement to attempt to comprehensively codify armed conflict. Article 23 of the Convention is the relevant section and it outlines the prohibitions on the use of 'poisonous weapons'.[3] In terms of the overall utility of the Convention in respect to non-state use and controlling proliferation or the development of chemical weapons, the Convention is not applicable. Theoretically, however, the Convention could be utilised to establish the legitimacy of an act in which a chemical warfare agent had been utilised offensively. However, there has been no precedent for this, it is improbable and it could only be applied in unique circumstances given it is primarily directed at armed conflict or conventional forces. Additionally, the Convention lacks specificity in the application of the use of the term 'poisonous weapons' and provides no indication of what constitutes offensive use, or indeed what is a chemical weapon (as opposed to later regimes such as the Chemical Weapons Convention which distinguishes between toxic gases and warfare agents). Finally, the limited value of the Convention is exacerbated by its inability to define controls prohibiting the development, production or stockpiling of chemical warfare agents. The clear utility, however, as with many of these norms, is in establishing the universality in the abhorrence of the use of

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[2] Hague Convention, Laws and Customs of War on Land (Hague IV); October 18, 1907. (accessed 1 February 2001), http://www.yale.edu/lawweb/avalon/lawofwar/hague04.htm. Due to the Convention's early development, it does not cover biological materials and/or toxins.

[3] ibid., Article 23. (accessed 1 February 2001), http://www.yale.edu/lawweb/avalon/lawofwar/hague04.htm #ar t23 .

these capabilities, yet the actual legal utility of the Convention in controlling or prosecuting use of chemical capabilities is negligible.

1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare[4]

The 1925 Geneva Protocol attempted to further define the ambiguities within the 1907 Hague Convention and is the first agreement which sought to define the use and application of biological methods of warfare. It was primarily established to ban the 'use in war of asphyxiating, poisonous or other gases and of all analogous liquids, materials or devices'. Similarly to the 1907 Hague Convention, the application of the Protocol is directed at state parties, however, reservations on the part of numerous countries have eroded the Protocol's wide ranging original intent. For example, some states had reserved the right to use chemical and biological weapons against non-parties and to retaliate in kind against parties who use chemical or biological weapons first.

The key shortcoming that ultimately reduces the Protocol's utility against non-state actors (and state actors) is similar to the 1907 Hague Convention, that it does not apply to the use of chemical or biological weapons use or development outside of armed conflict. Furthermore, there is no verification or compliance requirement and the lack of technical specificity within the Protocol renders it ineffective in terms of its utility as an international legislative instrument to enforce compliance or prosecute breaches – for state or non-state use. Finally, the Protocol only defines use and fails to control state and non-state activities involving development, production, stockpiling and weaponisation of chemical or biological capabilities, thereby rendering its deterrence value in controlling non-state activities, other than through the universality of the act, as non-existent.

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[4] 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare. (accessed 1 February 2001), http://www.yale.edu/lawweb/avalon/lawofwar/geneva01.htm. (hereafter referred to as the 1925 Geneva Protocol).

Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction 1972[5]

The Biological Weapons Convention was the first treaty to prohibit an entire class of capabilities. While the Convention was specifically developed to address problems within the 1925 Geneva Protocol, its porosity, lack of compliance and enforcement mechanisms and poor definitive scope renders the Convention's utility, other than for defining normative behaviour by state parties, as limited to negligible. As with many of these international regimes, it is aimed primarily at establishing 'laws for wars' and as such, is directed at hostile forces or when biological agents or toxins are used in armed conflict.[6]

Article I of the Convention requires each state party to agree to not produce, stockpile or otherwise acquire:

- Microbial or other biological agents or toxin whatever their origin or method of production of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes; and

- Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict'.[7]

It states that, 'each State Party to this Convention undertakes not to transfer to any recipient whatsoever, directly or indirectly, and not in any way to assist, encourage, or induce any State, group of States or international organisations to manufacture or otherwise acquire any of the agents, toxins, weapons, equipment or means of delivery'.[8] While this section of the Convention does attempt to regulate the proliferation of biological capabilities, it fails to define specific

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[5] Hereafter referred to as the Biological Weapons Convention.

[6] Biological Weapons Convention, Article I. (accessed 1 February 2001), http://www.yale.edu/lawweb/avalon/un/bact.htm

[7] ibid.

[8] ibid., Article III.

compliance or enforcement measures. Additionally, while the Convention does attempt to cover applications outside of activities by state parties through specifying 'any recipient', the application of this in the context of Article I, which refers to qualifying use in cases of 'hostile actions' or 'by armed forces', renders the requirements of the Convention ineffectual in establishing norms for the control of non-state acts which utilise biological materials.[9] Non-state actors fall outside of those criteria applied to armed forces and what is defined as hostile actions as these are conditions specifically aimed at offensive actions by state parties against one another, not individuals.

While there are other sections within the Convention which attempt to specify compliance criteria, such as Article II, which covers the destruction of existing stockpiles, these have little relevance or application to non-state actors. The Convention is easily circumvented and has been by numerous state parties, such as the Former Soviet Union in the conduct of its now reportedly demilitarised offensive biological program. This program, despite being in clear breach of the Convention, was conducted for nearly thirty years under a veil of legitimacy provided for by research and protective biological work.[10] It was as a result of these deficiencies within the Convention that in 1994 an ad hoc group consisting of fifty interested member-states agreed to draft a compliance protocol to the Convention. The compliance protocol was designed to strengthen the Convention and attempt to ensure compliance, however, it has subsequently foundered on a number of issues, most notably the issues of verification and inspection regimes. Even the latest draft protocol, as at late 2001, with over 200 pages, does not address non-state use or enforcement, deferring these issues to national regulatory controls and legislation. The difficulties in the development of the compliance protocol serves as a clear example of the complexity and awkwardness in the regulation of biotechnologies.

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[9] ibid., Article I.

[10] For a complete review of capabilities and proliferation activities throughout the Middle East, Europe and within the former Soviet Union, see Office of Secretary of Defence, *Proliferation: Threat and Response*, pp 53-60.

The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction[11]

The Chemical Weapons Convention remains the most significant and far reaching of the chemical and biological regulatory regimes, going further than other controls in requiring legislative verification, compliance and the adoption of a national regulatory framework to implement the Convention. The Convention not only seeks to regulate proliferation and development activities internationally, but also nationally, which is monitored and enforced through mandatory national reporting criteria to the Organisation for the Prohibition of Chemical Weapons in the Hague. While there is no specific reference within any of the Convention to non-state or terrorist activities, it remains one of the few regimes with at least some potential for application against non-state actors. This relevance is due mainly to the wide ranging scope of the Convention and its requirement for the national adoption within state parties of legislation to enforce the Convention's requirements.

The Convention was implemented to regulate chemical warfare agent use, development, stockpiling, production and weaponisation, yet it fails to comprehensively prohibit the full spectrum of state and non-state activities. It is generally not applicable to those activities not directly relevant or specifically associated with a state sponsored WMD program. Through a lateral interpretation of some of the Convention's Articles its utility and application in the control of non-state chemical development, at least in theory, appears possible. For example, Article VII commits state parties to impose on persons subject to their jurisdiction a system to prevent proliferation which must also encompass a means for accounting and restricting trade in precursors. State parties are required to 'extend their penal legislation to any activity prohibited within the Convention undertaken anywhere by natural persons possessing its nationality'.[12]

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[11] Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction 1994, (accessed 1 February 2001), http://www.opcw.nl/. (Referred to as the Chemical Weapons Convention).

[12] ibid., Article VII.

In terms of regulating development activities, the Convention requires the regulation and enforcement of all chemical warfare agent activity outside of specified agent/production thresholds as defined in the criteria for schedules one, two and three. Specifically, Article I of the Convention prohibits the development, production, acquisition, stockpiling, retention and transfer of chemical weapons and use against anyone, including retaliatory use. Also prohibited is assistance, encouragement or the inducement of anyone who engages in activities defined as prohibited to state parties. In terms of enforcing specific conditions such as security requirements, the Verification Annex, Part III, paragraph ten, defines the potential of the Convention in relation to enforcing the security of stockpiles, weapons or the production of materials or equipment. In theory, there is the capacity within the Convention for the Technical Secretariat to impose further security requirements, such as continuous monitoring instruments, security processes and seals in facilities in order to ensure adequate security, however, this application has yet to be utilised (and is unlikely given the highly volatile and politicised nature of an action of this type). Other measures also include the capacity for on-site inspections, which can be imposed if it was considered that existing measures could be circumvented, but similarly to other security measures, these have never been utilised.

One of the more interesting aspects of the Convention are those elements within its structure which attempt to provide for a more complete coverage of dangerous chemicals while also providing for specificity in the regulation of other hazardous agents (contained within the requirements of the schedules). The Convention attempts, relatively successfully, to incorporate intent and capability within the definitional framework, rather than limiting the scope of the Convention to only those defined higher toxicity chemicals.[13] For example, while the schedules contain extensive lists of agents and their precursors, they

[13] Of particular note in the Convention is the definition of 'toxic chemical' which is defined as any chemical which through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals. This includes all such chemicals, regardless of their origin or of their method of production and regardless of whether they are produced in facilities, in munitions or elsewhere. The definition is further extended when it defines a precursor as any chemical reactant which takes part at any stage in the production by whatever method of a toxic chemicals. This includes any key component of a binary or multi-component chemical system. ibid., Article II, paragraphs 2 and 3.

also qualify coverage by specifying that chemical warfare agents are not limited to just those agents contained within the schedules.[14] Article VI, paragraph two, also includes the statement that 'each state party shall adopt the necessary measures to ensure that toxic chemicals and their precursors are only developed, produced, otherwise acquired, retained, transferred or used within its territory or in any other place and extends to all toxic chemicals.[15]

Despite the potential of the Convention, its weakness and vulnerability remains its verification and compliance measures, even those directed against state parties. As such, its utility, combined with its highly politicised nature, means that it is extremely unlikely to be applied in an international context against non-state use of chemical or toxic gases. The adoption by state parties of national legislation based on the requirements of the Convention could feasibly see it applied against domestic non-state activity, however, it has never been used in this capacity and would be dependent on the specificity and structure of the evidentiary requirements of the legislation. While the adoption into national legislation provides the latitude to deter and prosecute acquisition and development activity, the extent to which this is applied is dependant on the range of punitive measures nationally legislated, the international and national political climate and the nature of the act (for example, the number of casualties that may have resulted). Interestingly, even though state parties ratifying the Convention are required to comply with the implementation of national legislation, as at May 2000 only 35 percent of state parties had notified the Convention Office of their compliance for the implementation of national regulatory legislation to enforce the Convention's requirements.[16] Despite a mandatory requirement for participant states to introduce national implementing legislation, the surprisingly small number of state parties who have fully complied provides in a sense a litmus test of the preparedness by states to act decisively against proliferation.

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[14] ibid., Annex on Chemicals (Section B – Schedules of Chemicals).

[15] ibid., Article II of the Chemical Weapons Convention also refers to the term 'chemical weapon' and states that its meaning should not be limited to the chemicals in the schedules.

[16] D. Feakes, 'Export Controls - Chemical Trade and the Chemical Weapons Convention', in *The Chemical Weapons Convention: Implementation Challenges and Solutions*, ed J. B. Tucker, Monterey Institute Publications, Washington DC, 2001, p 47.

One of the major benefits derived from the Convention is in the restrictions imposed on the scheduled chemicals and precursors and those measures that seek to control the international transshipment of agents and precursors between state and non-state parties. This is the most effective element throughout the regulatory structure. While these controls are not impermeable and are targeted at all forms of chemical WMD proliferation, they also potentially reduce the overall activity in these materials and as a consequence contribute to deterring macro-proliferation activities. This is also facilitated through a heightened security environment for producers, distributors and vendors in the movement of scheduled chemicals. The mandatory obligations to regulate transshipment shifts part of the responsibilities to the producers, providers and distributors of chemicals in ensuring all trade and security processes conform to the requirements of the Convention or national legislation. The result should be an increased national responsibility for the control of international trade and movement of scheduled chemicals and the increased domestic regulation of scheduled (and unscheduled) chemicals.[17]

Despite numerous inadequacies in the utility of the Convention in regulating non-state activity, there is still significant potential within the structure that may better facilitate coordination and arbitration for, or between, state parties. For example, Cecil Hunt argues that the utility of the Convention extends to the possibility of extradition for breaches of the Convention by non-state actors. Specifically, the case of a breach where a state party seeks extradition from another state party and the Convention then establishes legal validity for the request (at least on the basis of what may constitute a 'state' level breach of the Convention which in itself would be nearly impossible to establish for a non-state actor). He argues that 'whether the criminal actor's political motivation or the nexus of the criminal conduct to a political disturbance is looked to in defining the political offence exception, it could reasonably be asserted that the

[17] ibid., State parties are required to subject all scheduled two and three chemicals to export controls in order to meet the Convention's obligations. Schedule two chemicals, for instance, may only be traded between state parties (Verification Annex VII, paragraph 31-32). Schedule three chemicals may be traded with non-state parties, but only with an undertaking from the recipient state declaring that the chemicals would be used for purposes not prohibited under the Convention (Verification Annex VIII, paragraph 26).

exception should not apply when the crime involves activity prohibited pursuant to the Convention'.[18] Hunt states that while this scenario is unlikely, given both state parties' commitment to prohibit chemical weapons and that it is improbable that a 'state party would find it in its own interest to give weight to the motive or context of a person's attempt to acquire weapons which that state party has itself prohibited', it still provides the Convention with wide ranging utility.[19]

Despite the positive nature of the theory, one of the major weaknesses in the Convention remains its lack of application against non-state actors and the inability of the controls to provide for jurisdiction over persons outside of a state party's territory. While the Convention does not address extradition specifically (unless through a sense of moral or international obligation as previously mentioned), ultimately it is dependent on the criminalisation of non-state activity within other regimes and the universality in adoption of the Convention in other countries, to then bring pressure to bear on the sponsoring state party or territory where the offense has occurred.

Primacy within the Convention's structure, however, remains the regulation of exports and as such, national trade and import activity, which at least in the Convention's current form will remain ancillary to the Convention's requirements. The complexity in the Convention's attempts to regulate micro-proliferation activity is highlighted in the protocols that seek to establish threshold limits that still allow production, retention or non-reporting of quantities or applications of agents (where the state party may not have to declare quantities of agent if it is for a specific purpose or outside of volume/weight thresholds). For example, research activities involving quantities of less than 100 grams of a schedule one chemical that is likely to be acquired, retained, used or transferred from the facility, do not require a permit. However, for purposes other than research, medical, protective or pharmaceutical uses, a

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[18] C. Hunt, 'The Potential Contribution of the Chemical Weapons Convention to Combating Terrorism', *Michigan Journal of International Law*, Volume 20, Number 3, Chicago, 1999, p 530.

[19] ibid., p 531.

permit is required.[20] Additionally, for schedule two chemicals a permit is not required for production quantities of less than one ton and for schedule three, it is less than thirty ton.[21] While the application of these quantities would restrict a state WMD program, the relevance of these in mitigating micro-proliferation or use by non-state actors, particularly when some of the scheduled one facilities involve of universities and research complexes, remains limited. Additionally, while there exists some national statutory reporting and compliance requirements for export and production criteria, outside of the stated thresholds these remain discretionary or not required at all.

One major flaw in the structure of the Convention, which is also common throughout most international norms, is the lack of measures to inhibit the transfer and trade of intangible technologies (those technologies that might assist in development of a chemical capability yet are not prescribed within the Convention). While the Office of the Prohibition of Chemical Warfare is due to review this in 2003 in an attempt to develop new strategies, it is unlikely to result in anything far reaching or that specifically applies to micro-proliferation or non-state activities. Dependent on the interpretation and application, Article I attempts to apply some broad 'in-principle' regulatory criteria, where it 'prohibits assistance, encouragement or inducement in any way'. It still, however, fails to further define what constitutes these criteria or specify an outcome.[22] As a consequence, due to the dual-use nature of much of the proliferation activity and the reluctance by state parties to utilise sensitive intelligence reporting or sources in an open public process, actions by state

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[20] Australian Chemical Weapons (Prohibition) Act 1994, (accessed on 12 January), http://www. austlii.edu. au/au/legis/cth/consol_act/cwa1994277/, Permits and Notifications Concerning Certain Facilities, Part 3, Division 1, Section 19 (1-13), pp 17-18.

[21] ibid., Part 3, Division 1, Section 16 (1-5), p 15.

[22] The divisive issue within the Chemical Weapons Convention since its inception has been the use of challenge inspections, verification protocols and the enforcement processes. In regard to the challenge inspections, there has not yet been a challenge inspection and the exact nature, scope and most importantly, the state party to be challenged, has yet to be decided. This in a sense provides a litmus test of the utility and the application of the enforcement mechanisms within the Convention (despite it being clearly defined) and the variation in the interpretation of compliance. The highly politicised nature of the structure of the challenge inspectorate process, combined with the complex issue of what constitutes a breach, indicates that despite numerous provisions within the Convention, its application, outside of very defined guidelines and criteria and even against other state parties, is unlikely. To then juxtapose this with the Convention's overall utility in a non-state context suggests that there is little, if any, prospect of the Convention's application.

parties would generally be constrained to the threat of economic or discriminatory reprisals directed at other state parties, companies or individuals. Despite this, one of the major strengths within the Convention is its wide utility and generalist application to all toxic chemicals, which in theory should incorporate developing technologies, such as those in production processes, combinational chemistry and micro-reactors (which may facilitate small scale or discrete production of key synthesis processes). Additionally, while there is the potential for new novel chemicals and toxins that may not utilise precursors designated or chemicals specified within the schedules, the wide ranging prohibitions against all toxic gases should (at least theoretically), also include these developments and technologies.[23]

One of the exceptions in the Convention is the requirement for ongoing compliance, reporting and the use of the international inspectorate function, which are key elements within the Convention's requirements that attempt to validate and further maintain the confidence of other state parties with the Convention requirements. While there are a range of state party reporting and accounting processes within the scope of the Convention, the compliance requirements for industry at the national level are some of the most pervasive and specific of any regime (with the exception of International Atomic Energy Agency Controls and Nuclear Non-proliferation Treaty regulations for specified isotopes). The statutory compliance mechanism for the Convention is predominantly implemented through a permit and licensing system based on reporting of type, function, quantity produced, distributed, consumed or exported. The reporting and compliance mechanism also places the onus of verification for the movement of materials, at least for exports, directly onto the company or facility.[24] Australia adopted the Convention into national legislation in the form of the Chemical Weapons (Prohibition) Act 1994 with some aspects within the Act going further than the requirements of the Convention. For example, the more stringent control of imports on schedule two and three

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[23] For further information on new technologies and novel chemicals and toxins see G. W. Parshall, 'Scientific and Technical Developments and the CWC', *The Chemical Weapons Convention: Implementing Challenges and Solutions*, ed J. B. Tucker, Monterey Institute, Washington DC, 2001, pp 53-58.

[24] Chemical Weapons Convention, Division 1, Sections 16-27, pp 15-24.

chemicals requiring further licensing and permit protocols is beyond the requirements of the Convention. While frustrations in the past over the import and reconciliation of scheduled chemicals entering Australia and the monitoring and reporting of this as trade activity have resulted in legislation being changed to better facilitate control processes, overall, these measures still fail to go far enough in regulating and controlling national activities.

Other than reporting and transshipment obligations, the Convention attempts to further influence some aspects of national activity, particularly those involving the regulation and production of scheduled chemicals which is primarily exercised through a permit and licensing system. Conditional on a permit being issued are strict obligations to ensure compliance and notification requirements, particularly for changes to the permit's criteria.[25] There are also wide ranging record and information requirements that must be maintained by facilities which require declarations of ownership, production quotas and end-use (for movement as exports). Another aspect of the Convention which critically distinguishes it from other regimes, is that it is administered by a designated office, mandated through the Act, which has responsibility for national obligations and implementation of the Convention – The Australian Safeguards and Non-proliferation Office.[26] It is the function of the Office to provide both the implementation strategies as well as acting as the critical interface between industry and government chemical sectors, thereby ensuring the Act's regulatory requirements are met. This coordination, liaison, collection and enforcement function provided by the Safeguards Office is critical in the national enforcement of the Convention, yet despite its success, is lacking in all other chemical and biological regimes.

Finally, while the Convention provides a key aspect of the national chemical deterrence framework necessary to prohibit and regulate the use of chemicals, it

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[25] ibid., Division 2, Sections 28-29, pp 25-26.

[26] The Safeguards Office is a Directorate within the Australian Department of Foreign Affairs and Trade in Canberra. The key role of the Office, at least in relation to chemical issues, is to enhance Australian and international security through activities which contribute to effective regimes against the proliferation of WMD. The Act provides for specific office bearers to have reporting and enforcement capacities (which are normally appointed from personnel within the Safeguards Office) Department of Foreign Affairs and Trade Media Release, *New Safeguards and Non-Proliferation Office*, D68, 31, Canberra, August 1998.

still remains fundamentally flawed due to its dependence on the adoption of national legislation and the Convention's primary focus being limited to export regulation. As such, there remains a residual and systemic element of risk within the structure of the Convention due to its limited utility in regulating non-state chemical activities.

> Non-state actors contemplating terrorist activity using chemical weapons do not face a significantly greater risk of detection and punishment by reason of enforcement mechanisms established within, or by, the Chemical Weapons Convention.[27]

Wassenaar Agreement[28]

The Wassenaar Agreement regulates export controls on conventional arms and dual-use goods and technologies. Regulation is predominantly based on two lists: dual-use goods and the technology list (Part 3 of the Australian Defence Strategic Goods List is based on Wassenaar dual-use goods and technologies schedules). While this agreement has no basis in international law, the utility and consensus of the list of dual-use goods and technologies, along with its international development, provides the Agreement with a wide ranging regulatory structure (albeit entirely within whatever measures are introduced nationally). The intent of the Agreement is wide ranging, but it is primarily directed at attempting to provide for transparency in the transfer of dual-use goods and technologies, reinforce existing control regimes and prohibit the militarisation of sensitive dual-use goods and technologies.

Australia has adopted and added to the control lists which incorporate a range of other measures, such as those also established within the Australia Group Controls. Similarly to other regimes, the main enforcement mechanism is through the Customs Act 1901, specifically Regulation 13E. As a consequence,

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[27] Hunt, p 534.

[28] Wassenaar Agreement, (accessed 13 February 2001), http://www.wassenaar.org/.

import regulation and trade activity outside of those prescribed items and the regulation of non-state activities remain unaffected by the Agreement.

Missile Technology Control Regime[29]

The utility of the Missile Technology Control Regime against non-state CBR use is extremely limited. In terms of the Regime's application against specific CB capabilities, it is primarily structured to complement the Wassenaar Arrangement control lists and aims to regulate delivery systems, mainly missiles out to 300 kilometres. Similarly to the Wassenaar Agreement, the Regime outlines a regulatory structure covering delivery technologies and materials, including CB warheads, but has little relevance to the non-state development of CB capabilities or micro-proliferation.

The Regime is reflected within national legislation in the structure and requirements of the Defence Strategic Goods List. While the use by non-state organisations of well developed conventional military delivery systems has never been demonstrated, or appears even likely, the need to regulate technologies associated with these weapons is necessary. Hence, micro-proliferation measures must be inclusive of potential and the need to incorporate a wide range of delivery technologies beyond the standard requirements for projectiles, mortars, grenades, mines. Other than through the capacity of nationally introduced regulatory measures (which have been in the past limited to export controls), the Agreement provides for no regulatory enforcement or compliance requirements.

Australia Group Controls[30]

Despite its unusual and amorphous structure, the Australia Group appears to be one of the most proactive and effective WMD regulatory regimes. It is based

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[29] Missile Technology Control Regime, (accessed 12 January 2001), http://projects.sipri.se/expcon/mtcr_documents.html

[30] Australia Group Controls, Paris, 2001, (accessed 12 March 2001), http://projects.sipri.se/cbw/research/AG-mainpage.html.

mainly on the regulation and reporting of specified exports, however, it extends to essentially all chemical and biological activities outside of aligned countries. Similarly to other regulatory regimes, the controls within the Australia Group structure must be implemented into domestic legislation to enforce compliance. Unlike other regulatory structures, the Australia Group maintains an inherent flexibility within its structure that sees not just the regulation of identified equipment and materials, but also those technologies associated with their development, weaponisation, testing and use. The keystone within the regulatory process is that the controls are underpinned by an information exchange program of WMD proliferation activities of non-aligned countries (those not participating in the Australia Group). Aligned countries which participate in the Australia Group meet annually in Paris to coordinate strategies, exchange views and develop watch lists of materials and technologies of likely proliferation risk.

The uniqueness of the Australia Group Controls is in the range and application of the measures which provides for an innovative approach to the regulation of CB risk capabilities. While ultimately counter-proliferation and non-proliferation activities are still the responsibility of the member country, the utility of the Australia Group controls in consolidating, coordinating and targeting regulatory efforts, is unprecedented in most arms control regimes. Due to the vague nature of the regime's structure and function, there remains no international statute or convention to mandate the regulatory processes, particularly in relation to enforcement and control of proliferation activities by non-aligned countries. Despite the benefits of the controls, the Australia Group still remains focused against export proliferation and WMD state program development, hence, it will only ever be as effective as the national legislation that underpins the regulatory controls.

The paradox within the structure of the Australia Group is that the wider the membership of aligned countries, the less the utility of the controls and benefit the group will have in its information exchange function and in the regulation of chemical and biological capabilities. While the enforcement mechanism within Australia Group Controls is exercised mainly through denial notifications on the

export or sale of goods and technologies, the enforcement and application of punitive measures against proliferators is limited and depends on an aligned party's national legislation. The trigger mechanisms utilised, however, where denial notifications are issued by an Australia Group member to assist in identifying possible proliferation activity, is an effective element that complements other national regulatory strategies.[31] Despite the Australia Group's limited application against non-state micro-proliferation, the structural model on which the Group is based has potentially far wider utility through its scope and the flexibility in its nature to extend beyond its state WMD regulatory constraints. In particular, it offers significant potential in terms of its capacity as a regulatory process for integration with other international regimes and national regulatory structures.

United Nations Controls

There are a range of United Nations agreements, codes and memorandums that codify and specify processes for consensus, agreement and protocols that have an indirect relevance in the regulation of chemical and biological capabilities. These include United Nations agreements on the following.

Dangerous Goods Codes.[32] While the Commonwealth, States and Territories have adopted dangerous good legislation (which is examined in Appendix 2), measures are derived from the United Nations Committee of Experts on the Transport of Dangerous Goods. This is a technical sub-committee within the United Nations Economic and Social Council and is responsible for international dangerous goods codes which Australia has implemented within its national legislation. The international codes have no application other than when introduced within national legislation.

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[31] Personal communication Director Strategic Trade, Policy and Operations, Department of Defence, 11 January 2001.

[32] United Nations Dangerous Goods Codes, United States, 2001, (accessed 1 February 2001), http://www.unece.org/trans/danger/danger.htm.

United Nations Convention on the Suppression of Terrorist Bombings.[33] The Convention on the Suppression of Terrorist Bombings seeks to have signatory countries adopt measures to mitigate against the use, *inter alia,* of weapons and bombs.[34] While Australia is not a signatory to the Convention, it complies, in principle, with the requirements set out by the Convention. The Convention, however, is flawed in its criteria, desired outcomes, compliance and enforcement requirements. While Article V of the Convention attempts to compel signatories to adopt measures in their respective national legislation, it makes no attempt to ensure or monitor compliance. Paradoxically, Article XII then states that parties are under 'no imposed obligation to comply with the Convention' if they believe there is no case to answer. Additionally, the Convention has no application if an incident occurred within a single state or to armed forces during armed conflict, potentially vitiating the application of the Convention to most non-state acts.[35]

International Convention for Suppression of Financing of Terrorism.[36] The Convention seeks to establish controls to inhibit or restrict access to funds by terrorist organisations or individuals. Whilst the Convention seeks to prohibit a range of activities which would apply to CBR capability development, it still provides for the primacy by a state party to prosecute the activity and excludes the application of the Convention if the act occurred within one state. Additionally, and more critically, while the Convention applies the criteria to other norms throughout a range of environments, such as sea, hostages and air, it does not integrate the criteria within non-proliferation regimes such as the Chemical and Biological Weapons Conventions. Finally, as with all of the other international norms, the Convention provides no judicial, legislative or other

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[33] United Nations Convention on the Suppression of Terrorist Bombings 1997, (accessed 12 February 2001), http://www.un.org/law/cod/terroris.htm.

[34] ibid., The Convention defines a weapon or device as that which 'is designed, or has the capability, to cause death, serious bodily injury or substantial material damage through the release, dissemination or impact of toxic chemicals, biological agents or toxins or similar substances or radiation or radioactive material'[sic]. Hence, the Convention's relevance to CBR regulation is theoretically through the wide ranging intent within the definition of what defines as a weapon.

[35] ibid., Articles III and IXX.

[36] International Convention for the Suppression of the Financing of Terrorism adopted by the General Assembly of the United Nations on 9 December 1999, (accessed 21 January 2001). http://untreaty.un.org/English/Terrorism.asp.

mechanism through which to enforce the requirements of the Convention other than through imploring state parties to adopt it into national legislation.

International Health Regulations[37]

The structure of international health regulations is derived from a progeny of international efforts aimed primarily at infectious diseases.[38] The Regulations provide for a wide range of health and safety related issues, but in terms of their specific applications towards regulating biological capability development by non-state actors, there is little capacity within the parameters of the legislation. The Regulations, like many law making and technical regulatory norms, are difficult to enforce and maintain few effective compliance mechanisms. The closest provisions within the Regulations that approach monitoring and enforcement, are those that deal with the resolution of disputes. The Regulations are the only international health agreement on communicable diseases that provides for some measure of obligation on the part of Member States. It attempts to provide a unified code for infectious disease control, yet just as most of the national measures, it has many inherent problems.

International infectious disease control would appear to fit comfortably within the requirements of the International Health Regulations and standards, particularly given the requirements for national implementation by World Health Organisation Member States. However, the World Health Organisation does not possess significant monitoring powers with respect to the Regulations. Its Constitution only requires Member States to communicate 'important laws,

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[37] International health regulations are established throughout a wide and complex range of treaties, regimes and agreements that go as far back as 1851 (the International Sanitary Conference in Paris negotiated a Convention and Regulations on maritime traffic and the control of the plague, cholera and yellow fever, neither of which ever actually entered into force). Essentially the division of regulations was marked by the formation of the World Health Organisation in 1951. Article 21 of the World Health Constitution gave the authority to the organisation to adopt regulations concerning, *inter alia*, 'sanitary and quarantine requirements and other procedures designed to prevent the international spread of disease. In 1951 the International Sanitary Regulations replaced the wide array of regimes and conventions previously established for the Organisation's member states (in 1996 these sanitary regulations were renamed the International Health Regulations). Fidler, op. cit., pp 58-80. Also World Health Organisation, Constitution, (accessed 23 March 2001), http://www.who.int/archives/hfa/history.htm, see Article 21.

[38] World Health Organisation, International Health Regulations, (accessed 21 April 2001), http://www.who.int/emc/IHR/int_regs.html.

regulations, official reports and statistics pertaining to health which have been published in the State concerned'.[39] The Regulations, unlike many other international norms, do attempt to establish reporting structures and mechanisms, yet these largely remain outside of national security considerations. As a consequence, the Regulations are neither directed nor calibrated for non-state activity, either as a function of responsiveness, capability or capacity.

Phytosanitary Agreement[40]

Rather than a specific regulatory regime, the Phytosanitary Agreement establishes a set of principles and criteria that guide human, animal and plant health requirements. Interestingly, the Phytosanitary Agreement provides an insight into regulations that have the potential to impact significantly on aspects which concern the regulation of non-state capabilities, most particularly those that involve the movement and regulation of biological materials. In broad terms, the Agreement applies to measures which protect human, animal, plant life and health. The sanitary (human and animal) and phytosanitary (plant health) measures apply to animal and plant based products produced within a country, as well as imports and exports to other countries. The Agreement applies *to all measures* put into place to protect human, animal and plant life or health, and which directly or indirectly affect international trade.[41]

Implicit in Australia's membership of the World Trade Organisation is compliance with the Phytosanitary Agreement. Unlike other treaties or

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[39] World Health Organisation Constitution, Article 63, as cited in Fidler, op. cit., p 96.

[40]World Trade Organisation Phytosanitary Agreement, (accessed 1 February 2001), http://www.wto.org/english/tratop_e/sps_e/sps_e.htm.

[41] D. Gascoin, D. Wilson, C. McRae, *Quarantine Policy in the WTO Envrionment*, Australian Quarantine and Inspection Service Publication, Australia, 2000. For the purposes of the Phytosanitary Agreement 'measures' are defined as being applied:

- To protect human or animal life or health from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or foodstuffs;
- To protect human life or health from risks arising from diseases carried by animals, plants and their products or from the entry, establishment or spread of pests;
- To protect animal or plant life from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms; and
- To prevent or limit other damage to a country from the entry, establishment or spread of pests.

conventions, this Agreement, at least in theory, establishes the framework on which all other international health agreements should draw on. However, there is a potential conflict in attempting to facilitate increased trade while also maintaining national security. The interesting aspect of the Agreement is that while there is an internationally agreed framework for risk analysis, the imposition or reduction of trade measures must have a clear and direct relationship to assessed risk. What offsets the greater liability from the increased risk given the emphasis on trade, however, remains unclear. While the agreement seeks to standardise and ensure consistency, which appears beneficial, it also seeks to establish an appropriate level of protection, yet ironically this issue remains somewhat discretionary within the framework of the Agreement.

In terms of globalisation of Australian markets, the Phytosanitary Agreement appears advantageous, however, fundamental to its structure is the regulation of trade barriers whereby risk is offset through derived trade benefits from deregulated markets. The difficulty is that deregulated markets, and thereby reduced controls, suggests an increased risk from covert and illegal activity, in this case from the greater potential for CBR micro-proliferation activity. The corollary to this is the potentially significant benefit to Australia and other World Trade Organisation countries through harmonised import and export regulatory processes, which are meant to ensure standardised risk processing -- at least in theory. While Australia is reportedly not relaxing its import protocols as a result of membership in the World Trade Organisation, the pressure for globalisation of market economies ultimately increases the potential security implications through reductions of trade barriers and controls.[42]

[42] ibid.

NATIONAL REGULATORY CONTROLS AGAINST THE USE AND MICRO-PROLIFERATION OF WEAPONS OF MASS DESTRUCTION

Australia's National Regulatory Controls

Australia's framework of national controls is predominantly biased towards human, animal and plant health regulation. These are in the main aimed at quantifying dose rates, dose, protection, release and the acute and chronic physiological effects from any exposure. While many of the regulatory measures incorporate access, storage, handling, packaging and labelling requirements, few go far enough in establishing security measures that actually minimise the risk of micro-proliferation and misuse. The resultant climate is then one which has developed on the basis of low rates of compliance and the perception that the benign threat environment is the result of effective legislation and efficient regulatory processes.[1]

There is little common ground in the different structures that regulate chemical, biological and radiological capabilities and the use of the term CBR really only applies in a colloquial sense. The diversity of effects and physical characteristics of agents, micro-organisms, toxins and radioisotopes means there are vast divergences in the style, structure and pervasiveness of the different regulatory processes. There are few processes and no structure that exists for biological micro-organisms and toxins (with the exception of the Quarantine Act 1908). Chemicals, through their broad applications and defined characteristics, are relatively more effectively regulated, however, the difficulty in this sector is in

defining consumption, processing and production control criteria. National controls for the regulation of chemicals are encompassed in four broad regulatory structures. The first is the National Registration Scheme for Agricultural and Veterinary Chemicals. The second is the National Industrial Chemicals Notification and Assessment Scheme for industrial chemicals. The third is the Therapeutic Goods Administration for pharmaceuticals and the regulation of poisons, and the fourth is the Australian New Zealand Food Authority for food additives and contaminants scheme. The regulation of radioisotopes is relatively more easily defined and controlled and is generally dependant on the type of isotope, activity levels and the international standards derived from organisations such as the International Atomic Energy Agency.

It is not the intent, nor is it within the scope of this research, to present in this limited format all the findings in the analysis of all Commonwealth, State and Territory legislation and regulatory controls that are directly or indirectly relevant in the regulation of CBR capabilities. While most of the directly relevant macro regulatory processes are reviewed and presented, those controls that are ancillary and/or indirectly relevant have been included only in general terms. For example the analysis of the hazardous waste controls incorporates the main themes from the various Commonwealth, State and Territory regulatory frameworks, however, it is presented only as a national overview. Hence, only where it is directly relevant have inconsistencies and irregularities between the Commonwealth, State and Territory measures been mentioned. It is this very issue, however, the lack of uniformity across jurisdictions, that is at the crux of the problem in defining and harmonising a national strategy towards the more effective regulation of CBR capabilities.

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[1] This view that the lack of monitoring and surveillance from States and Territories in their subsumption of dangerous goods regulatory measures once the Commonwealth 1995 Road Transport Reform (Dangerous Goods) Act was introduced is drawn from a personal communication with Ms C. Tulip, Manager Dangerous Goods Policy Unit, 7 May 2001. Also see findings from R. Galbally, Department of Health and Aged Care, *National Competition Review of Drugs, Poisons and Controls Substances Legislation - Options Paper*, Canberra, February 2000. The Review identifies a lack of uniformity and consistency in the application and enforcement of measures throughout State and Territory poisons and drugs legislation within the Therapeutic Goods Act.

Controlling high and low end spectrum use of WMD, both at a criminal and terrorist level, is constitutionally exercised through criminal law within the eight jurisdictions rather than at the federal level. The Commonwealth is interested when there is a need for a national response to an incident and through its political responsibility as the national government. Commonwealth coordination and counter-measures have primarily been defined through four reviews. The first of these was the *Protective Security Review 1979*, by Mr Justice Hope. The Review was primarily in response to the bombing of the Hilton Hotel in February 1978 and was a watershed in acknowledging the need for a coordinated and targeted anti-terrorist strategy against terrorism in Australia.[2] The second of the reviews was the *Review of Counter-Terrorism Capabilities in Australia 1986* by Mr Roger Holdich, which examined counter-terrorism capabilities and their administrative and financial arrangements.[3] The third review, by Mr Michael Codd, was the *Plans and Arrangements In Relation To Counter-Terrorism 1992*, which examined security of foreign diplomatic and consular activities in Australia.[4] The fourth and last review was the *Standing Advisory Committee on Commonwealth/State Cooperation for Protection Against Violence 1993*, which focussed on processes and the coordination of agencies in relation to Commonwealth, State and Territory responsibilities and functions.[5]

All of the reviews, however, struggled to move beyond current threat (mis)perceptions and most significantly, did not address issues of capability and the various deterrence mechanisms required to counter activities by non-state organisations within Australia. While this was largely attributable to the limited terms of reference throughout the reviews, they were all fundamentally deficient in not addressing deterrence mechanisms other than in acknowledging the requirement. Furthermore, as was indicative of Australia's anti-terrorist and

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[2] J. Hope, *Protective Security Review Report (Unclassified Version)*, Parliamentary Paper 397/1979, Australian Government Publishers, Canberra, 15 May 1979.

[3] R. Holdich, *Counter-Terrorism Capabilities in Australia*, Australian Government Publishers, 26 August 1996.

[4] M. Codd, *Review of Plans and Arrangements in Relation to Counter-Terrorism*, Australian Government Publishers, 1992.

[5] F. M. Honan and A. G. Thompson, *Standing Advisory Committee on Commonwealth/State Cooperation for Protection Against Violence 1993 - Review of Counter Terrorism Capabilities in Australia*, Australian Attorney General's, Canberra, 1993.

counter-terrorist measures, they were process driven and response centric in focus. Hence, the resultant cocktail of strategies are dependent on process driven systems and have been derived more from international norms than through effective national analysis.

AUSTRALIAN REGULATORY CONTROLS

Commonwealth Legislation

The categorisation of Commonwealth regulatory legislation can be banded into two distinct areas: legislation that relates to capabilities and specifies technical or threshold criteria, and those measures that are generally relevant to a criminal or terrorist act. Technical legislation, such as the Chemical Weapons (Prohibition) Act 1994 and Crimes Act (Biological Toxins) 1976, is more often adapted directly from international regimes, is predominantly directed at the regulation of exports and is aimed at controlling threshold quantities for industrial or state use. Despite its potential, a large proportion of this legislation is largely irrelevant, or at best limited in its application to non-state activities.

Non-technical legislation applicable to non-state activities tends to be specific to an environment. For example, the taking of hostages, foreign incursion activities or acts against, specific platforms at sea or involving aircraft. The relevancy and application of much of this, at least in the context of non-conventional weapons use by non-state actors, remains limited. It is generally assumed that if an act was deemed a federal crime, that is it involved political violence towards a Commonwealth target, prosecution would generally be effected under the Commonwealth Crimes Act 1914.[6] The Act, however, has only a limited capacity to define the technical nature of an incident and while it has the capacity for substantial punitive measures to be applied, being able to achieve this given the ill-defined nature of micro-proliferation or CBR development, would be complex.[7] The Crimes Act has only a limited capacity for prosecution of acts

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[6] Commonwealth Crimes Act 1914, (accessed 11 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/ca191482/.

[7] Personal communication Mr G. McDougall of Australian Attorney General's Department, 24 April 2001.

involving hoaxes, however, there remains no record of it having been applied to a non-explosive incident, despite the inclusion of a capacity to be applied to deleterious or dangerous substances.[8]

Commonwealth Crimes (Biological Weapons) Act 1976[9]

The implementation of the Crimes Act 1976 highlights the pretence in the nature and structure of many of the regulatory controls, most particularly those directed at the biotechnology sector. The Act prohibits the development, production, stockpiling, acquisition and retention of biological agents or toxins where they are to be utilised as a weapon.[10] The Act was designed primarily to introduce the 1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and their Destruction. Similarly to the Biological Weapons Convention (see Appendix One), the Act restricts coverage to 'hostile purposes or in armed conflict'.[11] As a consequence, the utility of this Act as national legislation when its only application is against other state parties, appears as counter-productive. In limiting the Act to state activities, it then only applies where a terrorist organisation or individual is clearly established as operating on behalf of a state party. The exclusion of non-state activities, unless hostile purposes can be established (hostile purposes in international law is normally interpreted to mean actions by conventional forces as opposed to rogue or non-state activities[12]), greatly reduces the utility and application of the Act.

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[8] Commonwealth Crimes Act 1914, Section 85Y – Hoax Explosives, (accessed 21 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/ca191482/. The Act also has the capacity to be applied to the movement of explosive, deleterious or dangerous materials by post, however, it lacks wider explosives specific legislation evident within most of the State and Territory structures.

[9] Commonwealth Crimes (Biological Weapons) Act 1976, (accessed 21 February 2001), http://www.austlii.edu/legis/cth/consol_act/cwa197624/index.html.

[10] Specifically, the Act states that it is unlawful to develop, produce, stockpile or otherwise acquire or retain the following:

- microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes; or
- weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

[11] Commonwealth Crimes (Biological Weapons) Act 1976, Section 12.

[12] Personal communication Mr G. McDougall of Australian Attorney General's Department, 24 April 2001.

The Act fails to define its actual purpose and application, that is, what is to be regulated. While the Act refers to toxins and bacteriological agents, it does not further define these, the compliance requirements or what enforcement mechanisms are to be used. Interestingly, the capacity within the Act for the Minister to appoint an 'analyst' whose evidence can then be utilised by the Commonwealth to establish toxicity, use, application, sampling requirements and other relevant information, does attempt to provide a qualitative aspect in the assessment of capability that is not evident throughout other legislation. The capacity to include this expert advice within the structure of the Act increases its potential utility in establishing intent, capability and outcome (even if the agent was not utilised as a weapon) – yet the actual process is not further explained.[13]

Although the use of expert advice (or any other section within the Biological Weapons Crimes Act) has never been applied, it does appear to widen the latitude and increase the chance for the Commonwealth to establish a case of intent, capacity and potential outcome, regardless of the perpetrator. Despite this, the earlier restriction of the Act to use by conventional forces or in armed conflict, detracts from any benefits provided by specialist appointees. The corollary to these benefits, however, is that the Act has little utility for incidents outside of those involving actual use as it does not further define possession, nor indeed what constitutes illegal or legal retention. Additionally, it could not be applied to hoaxes, escalatory steps within capability development or proliferation activity that involve dual-use materials or equipment, thereby severely constraining its overall application and utility.

Commonwealth Biological Control Act 1984[14]

Despite its title, the Biological Control Act is only structured to counter the release of organisms for agricultural and research use. The Act is the early predecessor to the Genetic Technology Act 2000 and attempts to provide a

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[13] Commonwealth Crimes (Biological Weapons) Act 1976, Section 12, (1) and (2).

[14] Commonwealth Biological Control Act 1984, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/bca1984186/.

legislative framework for control, monitoring, application and licensing of users, providers and communities in the agricultural and research use of biological materials (including genetically modified organisms). The definitional framework for a biological micro-organism, however, is unclear as there are no specifications or criteria that define what constitutes actual release. The structure of punitive measures is directed at corporations and the lack of any credible definitional framework provides the Act with no utility to regulate any activities involving the release of biological organisms.

Commonwealth Gene Technology Act 2000[15]

The object of this Act is to protect the health and safety of humans and the environment by identifying risks posed as a result of the uses of gene technology. It also provides for the management of risk through the establishment of regulatory processes for any activities involving the use of genetically modified organisms. Like many other Commonwealth acts, it is established in conjunction with State and Territory food, agriculture, livestock and environmental legislation. In broad terms, it is meant to provide for the control of unwarranted, unnecessary and unproven research or the commercial application of genetically modified organisms. The application of the Act is directed at agricultural research and crop programs, however, while it is predominantly focussed at corporations, there appears to be scope within the Act to prosecute individuals. Specifically, the Act when attempting to cover misuse, includes it as 'to things done, or omitted to be done, by a person that may cause the spread of diseases or pests'.[16]

The majority of the Act, however, is focused on licensing, registration, compliance and the revocation of accreditation by regulatory bodies responsible for enforcing of the Act. It also establishes criteria for monitoring and reporting, along with the application of procedures for remuneration or compensation in the event of deliberate release or if damages are incurred. It maintains a strong

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[15] Commonwealth Gene Technology Act 2000, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/gta2000162/.

[16] Commonwealth Gene Technology Act 2000, Section 13, Paragraph (1), Sub-Paragraph (c).

enforcement capacity for inspectors which provides for health monitoring and surveillance functions similar to those within the Quarantine Act, which involves denial, search, seizure and the restriction of materials. The specifications for genetically modified organisms are wide ranging (which includes any proteins produced, cloning or invitro processes) but given the primary focus of the Act is directed at the regulation of controlled or accidental release of organisms, it remains extremely limited in any application to non-state activities.

Commonwealth Quarantine Act 1908[17]

The Quarantine Act is one of the most powerful and pervasive national regulatory mechanisms, at least in terms of the control of health risks to humans, animals and plants. There are a range of Commonwealth, State and Territory laws that regulate quarantine, however, the principal legislation is the Commonwealth Quarantine Act 1908. The Quarantine Act provides for two sets of Regulations: Quarantine Regulations 2000 and the Quarantine (Cocos Islands) Regulations. The Act, at least in terms of the regulation of CBR capabilities, is surprisingly narrow in its focus where coverage is defined, *inter alia*, as:

> For, or in relation to, the examination, exclusion, exclusion, detention, observation, segregation, isolation, protection, treatment and regulation of vessels, installations, human beings, animals, plants or other goods or things; and
>
> Having as their object the prevention or control of the introduction, establishment or spread of diseases or pests that will or could cause significant damage to human beings, animals, plants, other aspects of the environment or economic activities.[18]

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[17] Commonwealth Quarantine Act 1908, (accessed 11 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/qa1908131/.

[18] Commonwealth Quarantine Proclamation 1998 (Consolidation) Number 2 dated 17 October 2000, Sections 3 and 4, p 7, (accessed 11 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/qa1908131/.

The Quarantine Act and subordinate regulations are executed through a range of agencies, however, the main effort is directed through the Department of Fisheries, Forestry and Agriculture (in which the Australian Quarantine and Inspection Service is the main enforcement body) and the Department of Health and Aged Care. Responsibility for the overall coordination of national policy and health emergencies for animal and plants rests with the Department of Agriculture, Fisheries and Forestry, and for human health issues it is the Department of Health and Aged Care. There are separate memorandums of understanding for certain agents during national emergencies, most specifically for zoonotic diseases. Ultimately the capacity within the Quarantine Act for human health controls is executed through the Commonwealth Chief Medical Officer in the Department of Health and Aged Care. The Act provides the Chief Medical Officer with a wide range of discretionary powers that allow for quarantine and national controls to be established in the event of a national health emergency.

The general inspectorate function within the Act is predominantly executed through the Quarantine and Inspection Service. Inspections are also exercised by health care providers in the form of reporting of notifiable diseases requiring quarantine, along with further frontline barrier controls being provided through quarantine processes at entry and exit nodes in Australia. The Act provides for the enforcement of measures that may check, seize, control, regulate, deny or ignore prohibited or restricted materials, thus providing the inspection service with a wide ranging legislative mandate to control prohibited imports, exports and notifiable/quarantine diseases. The Act has only a minor relevance to chemicals, applying mainly to the regulation of food safety and chemical residues.[19] Additionally, the Act has no application in the control or regulation of equipment (apart from that which might be subject to a transfer hazard due to

[19] Section One of the thesis established that issues relevant to the regulation and control of animal and plant diseases would not be examined within the scope of the research. While the the Quarantine Act seeks to regulate human diseases, the majority of effort is directed at the controls of infectious plant and animal diseases along with the regulation of introduced pests.

previous exposure to contamination) or intangible technologies that could be utilised in the development of CBR capabilities.

There are a wide range of Commonwealth, State and Territory agencies also involved in the management of disease control, however, the relevance and application of these agencies, beyond enforcing discriminatory barrier control processes, is relatively minor (unless the material is an identified agricultural or animal risk agent or the material was known to have been introduced illegally or covertly). Specifically identified risk pathogenic and infectious agents (as established in the Quarantine Act and Proclamation) which are legally introduced, are normally only done so with a permit or license. The process of distribution and accounting for use outside of the quarantine cycle, however, remains generally 'hands free'.[20] There are national monitoring, surveillance and interdiction systems that provide mechanisms for reporting, but once outside the quarantine cycle these are generally based on passive sentinel reporting systems or State and Territory legislative requirements, such as stock, foodstuffs and health legislation.[21] There are inspections of biological materials which assess aspects of containment and control (key criteria for import or handling permits and licensing), however, the volume, range and applications of materials prohibits anything other than superficial inventory checks of those materials in and outside of the quarantine cycle.

The Act's definitional framework provides for the pervasive regulation of all risk biological materials. It is this critical aspect which gives the Act its wide utility and strengthened enforcement characteristics (at least in relation to the other legislation). Its structure provides a potential model for other legislation (such as

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[20] This is a term that is utilised by the Australian Quarantine and Inspection Service to describe a process where materials that are introduced into Australia are not checked, or clearance can only be broadly applied due to containment, packaging or the sensitivity of the materials. For example, the clearance and certification of blood products. While imports must satisfy broad criteria, the capacity and capability to analyse even random samples of most shipments and consignments of materials is neither practical or achievable. Personal communication with Director, Biological Services, Australian Quarantine and Inspection Service, 30 May 2001.

[21] Risk analysis for the import of all infectious and pathogenic materials is conducted by Biosecurity Australia (a function within the Australian Agriculture, Fisheries and Forestry) as defined in the Quarantine and Inspection Service, *Risk Analysis Handbook*, Australian Government Publishers, Canberra, 1998.

the WMD Act), specifically in the area of the Act's overall structure and coverage. It defines the process rather than providing for compliance through a prescriptive listing of prohibited items (which it also provides) and looks wider than restrictive agent, micro-organism or toxin criteria, including all products such as cell lines, animal tissues, extracts, blood components, enzymes, secretions and sera.[22] The strength of the Act is that it establishes clear criteria for the various prohibitions, it has a network of agencies responsible for enforcement and it is actually enforced.

Finally, the Quarantine Act empowers health control monitoring and surveillance measures to be established for reportable diseases. The collection of which is facilitated through the establishment and operation of national health and disease reporting chains with the most notable of these being the National Notifiable Diseases Surveillance System. [23] This surveillance system is conducted under the auspices of the Communicable Diseases Network Australia New Zealand, and is one of a number of Commonwealth, State and Territory sentinel health schemes.[24] The health reporting structure that supports the surveillance system is, however, critically dependent on State and Territory public health legislation. This legislation becomes important in facilitating the reporting of outbreaks and notification of diseases through trigger mechanisms established for designated notifiable diseases. Albeit, they will only be notified under certain conditions and are not an automated notification system from the point of outbreak (as opposed to the first point of analysis).

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[22] See the Commonwealth Quarantine Proclamation Act, Part 4, Division 1 and Division 2, pp 42-46.

[23] Department of Health and Aged Care, *Communicable Diseases Intelligence: Communicable Diseases Surveillance* (Presentation of NNDSS data), Volume 24, Number 12, Canberra, December 2000, pp 391-405.

[24] The other key surveillance schemes are not directly related to risk biological agents (at least in a non-state context) and relate to specific transmissible or infectious diseases. The systems are as follows:

- *Australian Sentinel Practice Research Network* – this includes a network of approximately one hundred medical doctors nationally who report weekly on specific conditions.
- *Virology and Serology Laboratory Reporting Scheme* – a laboratory based sentinel scheme.
- *National sureveillance for HIV and AIDS* – Notification of AIDS and HIV.
- *National Neisseria Network* – a gonococcal surveillance system.
- *Australian Childhood Immunisation Register* – a record of childhood vaccinations.
- *Acute Flaccid Paralysis Surveillance* – a marker for monitoring poliovirus nationally.

Importantly, the collection networks all operate as passive surveillance systems. The capacity to report, notify and respond to information provided through these sentinel networks provides significant national, state and local security deterrence benefits. In a situation involving the deliberate release of biological infectious or pathogenic materials, the sentinel systems may facilitate response, containment or verification processes to be initiated more expeditiously than otherwise possible (which could also involve the verification of hoax incidents).[25] Current systems, however, are nearly entirely structured on a reactive basis and the administration of deterrence measures for most vaccine or immunisation programs would be based on a footprint of reporting activity derived from these sentinel networks.[26] A limitation in the structure of these information networks is that they are generally focussed at a band of only approximately fifty nominated communicable diseases.[27] While the lists broadly complement those agents assessed as of risk for non-state development, they are

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[25] The Public Health Laboratory Networks operate through laboratories located throughout each of the states and territories. These facilities had a crucial role in the analysis and the determination of findings from the spate of national anthrax hoaxes in Australia that were widely reported in the period following the 11 September 2001 terrorist attacks in the United States. The limitation in the laboratory networks, however, is that they are passive and rely on samples being delivered to them rather than operating through active and mandated collection mechanisms.

[26] The definitive diagnosis of communicable disease is now almost always achieved by laboratory testing in epidemiological investigations. Australia, with the exception of Western Australia, requires all laboratories to notify diagnosis of communicable diseases under the various public health legislation. There are networks of diagnostic and public health laboratories across Australia that provide surveillance and investigation functions. These systems are increasingly developed as predominantly laboratory based surveillance systems, such as those throughout the United Kingdom Public Health Laboratory Service. The difficulty is that these systems are passive and rely on information being provided to the reporting system. Additionally, the systems are not integrated across national security and deterrence structures. Responses and counter-measures are then shaped more by what is known or predicted at that time, potentially limiting consequence management processes and reducing the overall capacity of any immunisation or vaccination counter-measures. Department of Health and Aged Care, Disaster Medicine Section Internal Briefing Paper – Australia's National Surveillance System, Canberra, 24 July 2001.

[27] There is a wide range of openly available literature on those agents of potential interest, yet as with most statistical data, these can reflect any outcome dependent on the factors considered and weighting applied. Two of the more credible assessments of threat agents are those based on the assessments in, M. G. Kortepeter and G. W. Parker, 'Potential Biological Weapons Threats', *Emerging Infectious Diseases: Tracking trends and analyzing new and reemerging infectious disease issues around the world*, Department of Health and Human Services, Centers for Disease Control and Prevention, Volume 5, Number 4, July-August 1999, pp 523-527. Also see Armour, op. cit., pp 6-15.

not developed as complementary to national security processes and hence, do not include all of the risk agents.[28]

Customs Act 1901[29]

Australia's controls on the export and import of defence goods (which includes dual-use goods) are enforced through the Customs Act 1901. The Act operates in two distinct areas: exports and imports. The control of imports is underpinned by the Customs (Prohibited Imports) Regulations 1956 and the regulation of exports by the Customs (Prohibited Exports) Regulations 1958.[30] In broad terms, the regulation of exports incorporates various chemical and biological convention requirements and is primarily based on the measures as defined in the Defence Strategic Goods List Part 3 Category 1. Surprisingly, it is also constrained by these same regulatory mechanisms through a lack of specificity and a disproportionate focus on exports, at least when compared to the porosity and amorphous nature of the import structure. Export clearance is predominantly structured, at least in the area of CBR controls, to assist Australia in its compliance of international non-proliferation and arms control obligations. Imports, however, are structured towards the control of plant, animal and human health risks, along with the collection of duties. The pervasiveness and effectiveness of the import processes, at least in respect to CBR and/or WMD capabilities, are weak when contrasted with export requirements.

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[28] The list of diseases reportable to the National Diseases Surveillance System is developed by the Strategic Steering Committee of the Communicable Diseases Network Australia New Zealand. As a medical management tool it is directed primarily at issues of public health, but also includes many agents of potential lethality, pathogenicity and infectiousness for non-state use. One interesting omission from the list is Tularemia which was utilised by the United States in their early offensive biological warfare program. Hence, the list is not as closely correlated to potential risk agents as it should be, nevertheless it still provides an effective and invaluable mechanism for the detection and notification of disease outbreaks or occurrences. Department of Health and Aged Care, Reportable National Diseases Surveillance Diseases, (accessed 12 August 2001), http://www.health.gov.au/pubhlth/cdi/cdi2000.Htm #august.

[29] Customs Act 1901, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/ ca1 901124/.

[30] Customs (Prohibited Exports) Regulations 1958, (accessed 1 February 2001), http://www. austlii. edu.au/au/legis/cth/consol_reg/cer1958439/ and Customs (Prohibited Imports) Regulations 1956, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_reg/ cir195 6432/.

The Customs Regulation for prohibited imports is broad in scope and lacking in definition and specificity of CBR capabilities (with the exception of Regulation 4R which prohibits all radioisotopes and substances). Import criteria for CBR materials for example, is structured on proof that the 'appliance or equipment was designed or adapted for warfare or like purposes, being any combination of, gases or liquids designed for the purpose of killing or incapacitating persons, and devices or apparatus designed or adapted for use with those goods'.[31] Schedule 2 of the Regulation goes on to further define prohibitions on 'ammunition or substances, equipment designed or adapted for making of smoke screens, incendiary materials and parts and accessories designed or adapted for, or for use with, any of the goods in the preceding sections'. This prohibition could be applied to control specific items of dissemination equipment, such as aerosolisation systems, but it relies on recognition of the equipment or it is identified as specifically for WMD use. Unless specifically identified in the prohibited imports regulations, or if duty is due (and only if declared on entry), interdiction of dual-use or WMD specific items of equipment by Customs appears improbable.[32]

Further difficulty in the definitional framework for import criteria lies in establishing that the capability was intended to be utilised as part of weapon – which the regulations define as a system consisting of ammunition and loading capacities.[33] While the Prohibited Imports Regulations depend on the Chemical Weapons Convention (only the Prohibited Exports Regulations includes the criteria which cover the Biological Weapons Convention) to increase its utility, overall import controls still remain indiscriminate and inconsistent in structure, particularly when compared to export processes.

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[31] Customs (Prohibited Imports) Regulations, Schedule 2, Item 8, Sub-Paragraphs (a) - (g).

[32] Personal communication with Australian Customs Director of Export Policy and Director of Import Policy, 1 September 2000.

[33] Customs (Prohibited Imports) Regulations, Schedule 6 and Schedule 2, Item 8 There are other criteria specified for certain categories or replica weapons, however, the utility of the definition still does not include dual-use equipment that could be utilised in conjunction with CBR agents, micro-organisms, toxins or radioisotopes.

Until the mid 1980s Customs maintained wide discretionary powers in the regulation of prohibited goods, particularly for imports, which was exercised through the Minister of Justice and Customs. As a result of an incident involving an importer of goods (that were not originally identified as prohibited) challenging the Minister's decision, any discretionary powers previously available were revoked and there is now no retrospective capacity within the structure of the Customs legislation. While the Governor-General can still exercise wide powers through the Customs Act, these cannot be exercised retrospectively. As a result, if an item is not prohibited within the Customs Act, then regardless of assessed risk, the import or export is legal and cannot be denied.[34]

Despite the intent and widely held perceptions in the capability of the Customs Service in their capacity to control CBR materials, the Act is still only as effective as the interpretation applied and criteria specified. The inconsistencies and inadequacies throughout the export and import processes are largely attributable to the poor definitional framework, a lack of targeting indicators and only a limited knowledge of identified risk materials, capabilities and technologies. While there exist discriminatory processing systems which draw on permit, licensing and threshold/volume/weight/ratio considerations (which are derived from regulatory requirements established within regimes such as the Chemical Weapons Convention – directed at WMD state programs), these can be circumvented. The key issue, however, is that the likelihood of interdiction as a result of actions enforced through the Customs Act, remains very low.[35]

Hazardous Waste Controls

Hazardous waste controls are the responsibility of the states and territories with the Commonwealth only extending controls to the export and import of wastes as defined in the Hazardous Waste (Regulation of Exports and Imports) Act

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[34] Customs (Prohibited Imports) Regulations, Schedule 6. While there are other regulations, such as those within the Quarantine Act which cover pathogenic and infectious micro-organisms, this assessment, however, refers to specific items of dual-use CBR or WMD equipment which are not prohibited.

[35] Personal communication with Australian Customs Director of Export Policy and Director of Import Policy, 1 September 2000.

1989.[36] Regulation of hazardous wastes throughout the different jurisdictions is directed primarily at public safety and mitigating environmental damage. While hazardous waste generally does not constitute a risk in terms of non-state access and use, the structure itself offers the potential to increase the capacity of the regulatory process, in particular those aspects involving the management and control of key consumption processes. Unlike other regulatory processes, hazardous waste controls (in most circumstances) account for end-use and disposal of agents, which potentially provides a structure or model that can monitor and regulate phases in the production, distribution and disposal cycles of waste.[37]

Current waste regulatory controls focus on attempting to provide increased transparency and accountability to disposal processes, yet despite wide ranging environmental controls and punitive measures throughout the legislation, compliance is largely self-regulatory (or at best in some circumstances co-regulatory), at least in respect to the assessment of hazards and risk. In general terms, waste management is dependent on the processing systems and toxicity of the chemical inputs where waste is analysed and classified on the basis of criteria such as dangerous goods codes for transport, handling and storage. Hazardous waste disposal for radioisotopes is a complex arrangement and while it is dependent on activity levels and the type of isotope, it is rather capricious due to its politicised nature (particularly as radioisotopes must be moved offshore for disposal or reprocessing). Interestingly, the accountability process required of industry in the management of hazardous wastes throughout the various Commonwealth, State and Territory legislation, highlights the potential, with further enhancement in reporting, monitoring and analysis processes, to increase

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[36] Commonwealth Hazardous Waste (Regulation of Exports and Imports) Act 1989, (accessed 1 February 2001). http://www.austlii.edu.au/au/legis/cth/consol_act/hwoeaia1989548/.

[37] For example, requirements set out in the recently introduced WMD legislation by the United Kingdom following the 11 September 2001 terrorist attacks in the United States, establish mandatory criteria for the disposal of pathogens and toxins. The Act imposes specific responsibilities on handlers, owners and occupiers of premises, the manner of disposal and reporting criteria, all set within the Anti-terrorism, Crime and Security Bill. United Kingdom Parliament, *Anti-Terrorism, Crime and Security Bill 49*, Part 7, Section 63, (accessed 12 November 2001), http://www.homeoffice.gov.uk/oicd/antiterrorism/ bill_ summary_v9.1.pdf.

the controls of specific activities that involve use, consumption or production processes across the spectrum (but most particularly for chemical risk agents).

Agriculture and Veterinary Chemicals (Code) Act 1994[38]

In the early 1990s the Commonwealth, State and Territory governments established a single National Registration Scheme for agricultural and veterinary chemicals and products.[39] From this, it is the Agriculture and Veterinary Chemicals (Administration) Act 1992 that establishes the National Registration Authority.[40] What this now means is that prior to an agricultural, veterinary or chemical product being supplied or sold, the National Registration Scheme requires that it be registered by the National Registration Authority for Agricultural and Veterinary Chemicals. State and Territory powers are then exercised through the Agriculture and Veterinary Chemicals (Code) Act 1994 which establishes that prior to supply or sale, these chemicals must be registered with the National Registration Authority. The key distinction within the whole process is that the registration scheme controls products and chemicals up to, and including, the point of sale, but beyond this, it is the responsibility of the State or Territory.

As the Act and the various regulatory bodies it is responsible for are focussed at production, distribution and sale processes, the regulatory system fails to provide for an effective enforcement mechanism or escalatory range of punitive measures. The Act itself does provide for punitive measures, however, these are predominantly directed at corporations and not the regulation of individual activities (although there remains some limited scope within the Act for this). The States and Territories also provide within their agricultural and veterinary

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[38] Commonwealth Agriculture and Veterinary Chemicals (Code) Act 1994, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/aavca1994359/.

[39] It is important to note that 'agricultural and veterinary chemicals' refers to the active constituent (which might appear in more than one product), whereas the agricultural and veterinary product refers to the shelf product, such as in a can of fly spray. There are approximately 600 chemicals compared to approximately 5000 products. Environment Australia, Section 3.1.1, p 18.

chemicals legislation for breaches and prohibitions of the licensing of commercial pest, ground and aerial spray operators, investigation of inadvertent release and monitoring programs directed at compliance and detection of residues. This also includes a wide range of legislation throughout the jurisdictions governing various pesticide acts that cover storage, disposal and enforcement of worker protection requirements.[41]

The utility of this legislation is in the process and functions of the National Registration Authority and its exercise of the control of chemicals through the assessment processes and subsequent monitoring and reporting functions it imposes for contamination and residues. There are numerous agricultural and veterinary chemicals that pose high risks through their toxicity, availability and overall utility, so the enabling mechanisms that facilitate effective regulation are important in controlling aspects of access. This legislation, in conjunction with the mandated functions of the National Registration Authority, has the capacity and capability to control a wide range of risk materials, yet as with much of these types of measures, controls beyond the point of sale still remain relatively porous and largely unregulated. Controls for agricultural and veterinary chemicals beyond the point of sale, however, are more defined than for industrial chemicals which are mainly regulated as a function of environmental exposure and disposal requirements. There remains wide ranging potential within the surveillance functions of the legislation, particularly when applied in conjunction with other State and Territory legislation, such as environmental protection legislation and foodstuffs controls, to provide for stronger enforcement against misuse and availability, for some specified chemicals, most particularly organophosphorus pesticides.

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[40] Two important processes, *inter alia*, within the National Registration Authority are exercised through the Registration Liaison Committee which coordinates the registration functions of the Authority and the control of use and functions for the States and Territories controls. A second important process relates to the Residues Advisory Committee which provides advice throughout the Commonwealth, State and Territory on residues.

[41] Environment Australia, op. cit., Section 3.2.4, p 21.

Industrial Chemicals (Notification and Assessment) Act 1989[42]

Industrial chemicals refers to a wide range of chemicals such as dyes, solvents, plastics, laboratory chemicals, paints, cleaning agents and cosmetics.[43] The Industrial Chemicals Act establishes the mandate for a national regulatory process for the notification and assessment of industrial chemicals where they are assessed on the basis of their potential risk to workers and the environment. Under the Act, the National Industrial Chemicals Notification and Assessment Scheme is administered by the National Occupational Health and Safety Commission. The Assessment Scheme assesses new chemicals prior to importation or manufacture in Australia, although the Scheme also addresses priority existing chemicals.[44]

The mechanisms which establish industrial chemical use in Australia and whether they can be used commercially (and also distinguishes *new* from *existing* industrial chemicals) are based on a database known as the Australian Inventory of Chemical Substances. All chemicals on the Inventory are defined as existing, while those not included are defined as new, so that any new chemicals being introduced to Australia must be notified or assessed under the Notification and Assessment Scheme. Assessment looks at such issues as public safety, hazards, access, availability and toxicity and there are strong trade and commercial penalties for non-compliance, which are also enforced through an industry surveillance program, which attempts to ensure compliance.[45]

There are more than 40,000 chemical substances in the Inventory of Chemical Substances that have yet to be assessed. The National Chemical Notification

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[42] Commonwealth Industrial Chemicals (Notification and Assessment) Act 1989, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/icaaa1989465/.

[43] Environment Australian, op. cit., Section 3.3, p 22. While the term industrial chemicals is defined within the processes for the National Industrial Chemicals Notification and Assessment Scheme, this only applies to Australian usage. Within the international forum, the use of the term industrial chemicals also includes reference to agricultural and veterinary chemicals. There remains long standing contention over the differentiation between chemical warfare agents and industrial chemicals, with most models proposing delineation on the basis of toxicity, quantity produced or a combination of these factors.

[44] Environment Australia, op. cit., Section 3.3, pp 22 – 23.

[45] Environment Australia, op. cit., Sections 3.3.1 and 3.3.2, pp 22-24.

Scheme, however, has established a system where existing chemicals of greatest concern, due mainly to issues of public safety, can be nominated for inclusion. Nomination is a process where a chemical is proposed for inclusion in the Priority Existing Chemicals list, which as a result of specific concerns, may be accorded special consideration or have restrictions imposed. Nominated chemicals are then ranked and screened against predetermined criteria and a Priority Existing Chemical is then declared by the Minister for Workplace Relations and Small Business. While this process appears bureaucratic and cumbersome, it offers significant potential in the regulation of identified risk chemical materials that might be of non-state utility.

The inclusion of a specific chemical, or family of products in the Priority Existing Chemicals, in itself confers no specific mandate. However, it does provide a vehicle to establish further criteria that may include reporting, disposal, end-use, security or availability requirements. While it is acknowledged that the criteria in the past has generally been confined to those issues dealing with health, environment, exposure, labelling and markings, there is no reason that additional criteria, such as those which might cover heightened security requirements, could not be further imposed (although there is no precedent for this).[46] The difficulty is that while this is within the mandate of the Act, it is only issued in the form of advice and it is still discretionary whether the States and Territories choose to adopt the advice within their own legislative framework. Nevertheless, it provides a strong obligation on the part of producers, distributors, vendors and regulators to comply with the set standards or criteria issued.

Interestingly, there is no clear correlation between high risk industrial chemicals, those in the Australian Inventory of Chemical Substances and the Priority Existing Chemicals, at least in terms of standardisation and regulatory requirements for hazardous substances. For example, none of the chemicals identified in the Defence Strategic Goods List (which includes all the Chemical Weapons Convention Scheduled chemicals and Australia Group lists) are

[46] Personal communication Dr S. Zaluzny, National Industrial Chemicals Notification and Assessment Scheme, 10 July 2001.

identified as Priority Existing Chemicals within the Australian Inventory of Chemical Substances. Additionally, while the Notification and Assessment Scheme does attempt to enforce compliance, this is more as a pecuniary exercise where the use of chemicals in Australia (generally as an import) are regulated and charged as a function of the volume authorised for the license. As such, enforcement and the subsequent application of punitive measures is limited to pecuniary penalties and predominantly directed at holdings or corporations. Penalties against use, misuse or breaches, such as incorrect licensing, then default to the States and Territories to legislate against and are similarly limited to financial penalties.

Chemical Weapons (Prohibition) Act 1994[47]

Similarly to the implementation of the Biological Weapons Convention within Australian legislation, the Chemical Weapons Convention is enforced in national legislation through the Chemical Weapons (Prohibition) Act 1994. Unlike its counterpart, however, the Chemical Weapons Convention is better structured, more specific in its intent and maintains a limited capacity to recognise and adopt measures against other state parties for breaches of the Convention, albeit these are still generally considered relatively ineffective. Although, as demonstrated in Appendix one, the utility of the Chemical Weapons Convention against non-state actors is limited, it provides a better regulatory framework than other similar chemical legislation. However, as with most other international regimes it is primarily directed at state WMD programs (as opposed to non-state activity). While there are areas of mutual benefit, ultimately it fails to adequately regulate national activity, other than through export controls.

[47] Commonwealth Chemical Weapons (Prohibition) Act 1994, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/cwa1994277/.

Weapons of Mass Destruction (Prevention of Proliferation) Act 1995[48]

The Weapons of Mass Destruction Act is one of the most interesting parodies in Australia's legislative framework. It is directed at the mitigation and prosecution of activities that contribute to the development of state WMD programs, yet its capacity to define and regulate WMD or associated activities is extremely limited. It is dependent on the Chemical Weapons (Prohibition) Act and Crimes (Biological Weapons) Act 1976 for the specificity in its structure. The use of the term WMD throughout the Act is unclear and ambiguous, which ultimately reduces the overall effectiveness of the legislation. Critically, the Act is predicated on evidence of WMD materials, equipment or technologies being utilised in support of another state party's WMD program. The evidentiary processes and requirements within the Act, however, are non-existent and difficult to define against other requirements, specifically those that establish aspects of what constitutes proliferation.

The criteria in the application of the Act is predicated on establishing that there is unequivocal evidence that the knowledge and capabilities involved are relevant to a WMD program and that they are to be utilised directly within another state parties WMD program. Unless declared by the state party, however, it is difficult to establish beyond doubt that any WMD capability is actually maintained, particularly given the dual-use nature of most chemical and biological capabilities and the ambiguity in the nature of services provided (the case is more easily established for nuclear equipment and services).[49] This also requires establishing with a strong certainty that a WMD state program actually exists and the specific facilities involved in the program can be identified both by location, function and association with the equipment or services being provided – clearly an improbable proposition.[50]

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[48] Commonwealth Weapons of Mass Destruction (Prevention of Proliferation) Act 1995, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/womdopa1995603/.

[49] Weapons of Mass Destruction Act, Prohibition on supplying goods for WMD program (Section 9) & Prohibition on exporting goods for WMD program (Section 10).

[50] Weapons of Mass Destruction Act, Prohibition on providing services for WMD program (Section 11).

The Act also attempts to regulate services and establishes this as the basis of working as an 'employee, consultant or adviser, providing training, providing technological information or know-how and procuring another to supply or export goods or services'.[51] The Act covers the mechanism that facilitates the provision of services but not what constitutes or establishes what is illegal WMD proliferation or development. The Act also qualifies the criteria by expressing that services also involves anything that 'confers a benefit on, grants a right of privilege to, provides a facility for or otherwise assists', thus shifting the emphasis to the provision of proof that the service was in fact a benefit.[52] While this is one of only a few attempts within the national regulatory framework to control services, it remains mostly unusable as it must be predicated on clear evidence of a WMD program and establishing an unambiguous relationship with the claimed WMD activities within the program.

One of the critical distinctions within the Act, which ultimately detracts from its utility and effectiveness, is in the definition of WMD. It is not that it isn't clearly defined, it is more that it is not defined at all, apart from reference to a 'WMD program' and to a statement indicating development, production, acquisition and stockpiling of chemical, biological or nuclear weapons.[53] As has been established in Section Three of the thesis, the distinction between a WMD capability and that involving a range of capabilities utilising CBR materials, can be significant. Reference to WMD and CBR capabilities, however, tends to too often focus at one narrow aspect, that is, the catastrophic end of the CBR activity spectrum. Additionally, the use of the term WMD as it is utilised within the Act restricts coverage to the use of nuclear, chemical or biological weapons. This then excludes radiological capabilities and conventional/unconventional weapon systems that could also result in a WMD outcome. For example, the common use by terrorists of the explosive composition ammonium nitrate fuel oil explosive which has resulted in numerous fatalities and catastrophic outcomes,

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[51] ibid., Section 3.

[52] ibid., Section 4, Sub-Sections (1) and (2).

[53] ibid., Section 3.

would not be covered within the Act, despite it apparent application to the control of WMD technologies.

Structural problems from the definitional criteria concerning generic and ambiguous references to prohibitions on 'chemical and biological weapons', detracts from the overall effectiveness of the Act. As established in the earlier example, prosecution is dependent on defining and establishing that the chemical and biological materials were 'weapons'. Section Three of the thesis examined the differentiation in the weaponisation and delivery processes between state and non-state capabilities noting the disjuncture in the two very different development capabilities. This is possibly one of the most critical elements in any legislation and establishing criteria on the basis of procurement activity, organisational structure and/or potential, simply based on previous associations or assessments of the groups proclivity towards violence, is extremely unlikely. This is particularly so in its capacity to prosecute given the parameters of the Act and the onus of proof necessary within the Australian judicial system.

Strangely, the WMD Act provides for the exoneration of persons if they supplied goods to another person and the goods supplied were in compliance with specific conditions set out within the Act.[54] In essence, this means that if a permit or license was granted, then other than proof that the vendor, distributor or producer actually knew that the chemical or biological materials were to be utilised within a weapon, they could not be held liable. Extending this to national trade and research activity, if goods or services where provided to a non-state actor while having been granted a Commonwealth, State or Territory license, permit or accreditation, then no action could be taken against the supplier. Additionally, as most trade in CB materials does not involve character, background or bona fides checks, there is a clear disincentive for producers, distributors and vendors to seek further information due to the financial and resource liabilities imposed (particularly as it is unlikely the legislation could be applied). While the Act does attempt to specify a 'state of mind' in relation to a person who has 'the

[54] ibid., Section 9(1) and 14(2).

knowledge, intention, opinion, belief or purpose'.[55] However, these are qualitative and amorphous concepts and difficult to establish with any degree of certainty.

Despite expectations in the capacity of the Act, it is primarily directed at mitigating and stopping international proliferation and while it does not distinguish specifically between this in a national or international environment, its focus remains towards the regulation of exports. The criteria used in the Act to define a WMD program (amongst other definitions), precludes its application nationally to control potential or further proliferation activities. While the Act specifies it applies to 'acts and omissions done in Australia or an external territory', the failure to adequately define what acts, such as the scope of the materials, services or outcomes that are prohibited, reduces its utility given the potential transnational nature of most micro-proliferation.[56] Additionally, it also fails to cover proliferation outside of Australian jurisdiction (or its interests) whereby there is no established process for issues such as extradition or the prosecution of third parties involved in proliferation activities that involve Australian interests or its nationals. This last issue is a major failure in the scope of the Act as transnational terrorism involves the movement of people and materials through, or from, other state parties – potentially against Australian targets or in utilising the services provided in Australia.

In attempting to regulate and prosecute proliferation activity, the WMD Act all but excludes activities other than those for state parties. While there appears to be the latitude within the legislation's parameters to incorporate non-state activities, the overall failure to specify what is to be regulated, what activities it is applicable to and to provide for commensurate punitive measures for non-state actors, all but renders the Act's value a pretence. Despite these systemic problems within the WMD legislation, there is some limited potential, with further major development and amendment, to increase the capacity and utility of the Act and to more comprehensively cover CBR, WMD and non-state

[55] ibid., Section 3.

[56] ibid., Section 6.

activity. However, given the structure of the Act, this would always be as a function of proliferation rather than the capacity to control non-state activities nationally. WMD legislation should be the keystone in an Australian CBR WMD regulatory framework to control all non-state activities, yet as it currently stands, the legislation is extremely limited in its utility and application against micro-proliferation and use throughout the entire WMD and CBR activity spectrum.

Commonwealth Therapeutic Goods Act 1989[57]

The Therapeutic Goods Act is administered by the Therapeutic Goods Administration which is responsible for pharmaceutical chemicals and therapeutic goods. This covers a wide range of products and includes prescription medicines, therapeutic devices, and non-prescription medicines. The Therapeutic Goods Administration operates within the Commonwealth Department of Health and Aged Care and is responsible for regulating the supply in Australia of therapeutic goods.[58] The Act and its regulations provide the basis for a uniform national regulatory system for poisons and drugs, with control being exercised primarily through two mechanisms: entry of products on the Australian Register of Therapeutic Goods and the licensing of manufacturers.[59]

Prior to the release of a drug product or medicine, it must be assessed on the basis of risk. It is then listed within the Australian Register of Therapeutic Goods. There are basically two types of entries: one is where the product is listed and the other is when it is registered. Registration, at least in theory, is meant to involve a thorough evaluation of safety, quality and efficacy. However, it is generally only applicable to prescription medicines and some non-prescription medicines. Therapeutic goods are listed if they do not contain scheduled poisons and are known to be relatively safe when used as directed. Those substances which are likely to be abused (that is, illicit and dependent

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[57] Commonwealth Therapeutic Goods Act 1989, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/tga1989191/.

[58] Environment Australia, op. cit., Section 3.4 and 3.4.1, p 26.

[59] The Act also regulates clinical trials, advertising and post marketing surveillance. Environment Australia, op. cit., Section 3.4.1, p 27.

drugs) as well as essential chemicals used in their manufacture, have additional controls imposed on them in relation to export, import and manufacture criteria.

Licensing, surveillance and monitoring are critical elements within the Act. Manufacturers of goods are licensed and inspected by auditors to ensure compliance and for some categories of imported products, this includes inspection of overseas manufacturing plants which are required to operate at specified standards.[60] Post-marketing surveillance is also conducted under a mandate provided for in the Act and it remains one of the few established control mechanisms that provides closure within a regulatory process.[61] Ultimately, however, the Act has little direct relevance to the regulation of chemical capabilities and even less so for biological or radiological materials. The fundamental aim of the Act, however, still remains one of health surveillance, public safety and the safe handling of poisons. The only foreseeable application for the Act against misuse of materials, at least by non-state actors, is when the materials may be utilised for poisoning or assassination purposes. The flaw, however, in the structure of the Act, is that the application of punitive measures is limited and its application is generally restricted to corporations rather than individuals. As with other types of Commonwealth administered legislation, such as the dangerous goods codes, it is the States and Territories that are in the end responsible for the adoption of legislation for enforcement and prosecution.

Standard for Uniform Scheduling of Drugs and Poisons[62]

Poisons regulations are administered through the Therapeutic Goods Administration, however, unlike the Act itself, poisons are regulated through a framework of defined schedules. The schedules provide one of the most interesting regulatory process models and offer significant potential and utility in the control of non-state micro-proliferation and the use of chemical capabilities.

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[60] Environment Australia, op. cit., Section 3.4.1, p 27.

[61] As part of the program of post-marketing surveillance, the Administration receives and collates reports of suspected adverse reactions from health professionals and sponsors as part of the Adverse Drug Reactions Advisory Committee (which is a sub-committee of the Australian Drug Evaluation Committee); ibid., Section 3.4.1, pp 28.

[62] Australian Health Ministers' Advisory Council, *Standard for the Uniform Scheduling of Drugs and Poisons Number 13*, 22 September 1998.

The system is already nationally established, albeit with numerous problems, the most notable being the uniformity in application and the enforcement of the schedules. While the model appears straightforward, its actual application is far from axiomatic. Essentially the schedules are applied in the form of the Standard for Uniform Scheduling for Drugs and Poisons which is decided on by the National Drugs and Poisons Schedule Committee (which is mandated through the Therapeutic Goods Act 1989). Table 17 is a list of schedules used to regulate poisons and drugs nationally. While this process should provide for uniformity, there are significant inconsistencies in aspects of licensing, storage and permits throughout the States and Territories adoption and application of the legislation.

Table 17 – Standard for the Uniform Scheduling of Drugs and Poisons

Schedule 1 – Nil

Schedule 2 – Poisons for therapeutic use that should be available to the public only from pharmacies.

Schedule 3 – Poisons for therapeutic use that are dangerous or so liable to abuse as to warrant their availability to the public being restricted to supply by pharmacists, medical or veterinary practitioners.

Schedule 4 – Poisons that should in the public interest be restricted to medical, dental or veterinary prescription or supply.

Schedule 5 – Poisons of a hazardous nature that must be readily available to the public but require caution in handling, storage and use.

Schedule 6 Poisons that must be available to the public but are of a more hazardous or poisonous nature than those classified in Schedule 5.

Schedule 7 – Poisons which require special precautions in manufacturing, handling, storage or use or specific individual regulations regarding labelling or availability.

Schedule 8 – Poisons to which the restrictions recommended for drugs of dependence should apply.

Schedule 9 – Poisons which are drugs of abuse, the manufacture, possession, sale or use of which should be prohibited by law.

The categorisations throughout the poison schedules are based on defining aspects of mammalian toxicity, access and potential. The schedules range from one to nine, however, those areas of most relevance, and hence greatest risk for non-state use, are those poisons categorised within the schedules four, five, six and seven. Many of the poisons in these schedules are subject to access, distribution, sale and production regulation, but are generally available within the public domain through direct purchase, licensing or the granting of a permit. While some of the chemicals are listed throughout each of the schedules, this generally controls the scale, quantity or aspects of increased toxicity (often due to a change in the physical characteristics of the materials). The chemicals of greatest risk potential (which may still be of limited to negligible utility when incorporated in, or used as a weapon) are those listed as schedule seven poisons.

Schedules five and six also contain numerous risk chemicals and even though these categories contain agricultural, industrial and household poisons, unlike scheduled seven poisons, most of the schedule five and six poisons are not subject to controls on access. Permits and licensing criteria, however, still apply in some circumstances (this tends to apply more to production and distribution rather than individual acquisition). Scheduled eight and nine poisons, which are concerned with illicit drugs and substances of abuse and addiction, while clearly still potentially hazardous, have only limited (to negligible in most cases) non-state utility, yet may still retain a high enough toxicity that when ingested or applied percutaneously, could be utilised as poisons or agents for assassination purposes.

The regulation of poisons is complex and while it draws on Commonwealth schedules for its structure, its reliance on the States and Territories to adopt the standards and schedules within their own legislation is a major shortcoming towards its effectiveness. The schedules are also dependent on the Therapeutic Goods Act 1989 and Agricultural and Veterinary Chemicals Code Act 1994, most particularly in the area of administration and coordination of regulatory requirements for risk materials and substances. Interestingly, it is through this other legislation, particularly in the regulation of schedules five and six chemicals, that there is the potential for harmonisation of industry and government wide integration, for many other hazardous chemicals.

Due to long standing contention over various aspects of the Act, mainly in relation to perceptions that the current measures were stifling natural competition, the Therapeutic Goods Administration undertook a major review of the drugs, poisons and controlled substances legislation in February 2000. While the Review identified major shortfalls in the structure and processes involved in controlling drugs and poisons, most notably uniformity, it also sought to deregulate many areas and reduce barriers to trade, therefore in theory increasing national competitive practices. The fundamental philosophy within the trade of scheduled chemicals is driven by cost and amortised by the needs of other factors such as work cover and occupational, health and safety legislation. The Review has yet to be adopted and while it has not proposed significant changes

to the actual poisons in the schedules, it has sought to rationalise reporting, monitoring and uniformity of the administration of the Code. Of particular note, the Review identified a range of systemic problems and concluded:

- Issues of jurisdictional sovereignty in relation to greater uniformity throughout the controls could be overcome.[63]

- The introduction of the Agricultural and Veterinary Chemicals Code Act 1994 in offering alternative mechanisms for managing these substances may have diminished public health and safety protection afforded by the current regulatory system through placing greater emphasis on agricultural and veterinary industry concerns.[64]

- While there should be few changes to restrictions on schedule seven chemicals, there is a need for comparable legislation for schedules five and six chemicals (also noting the need to rationalise the schedules);[65] and

- While there are storage and handling requirements, greater emphasis should be on the outcome, therefore reducing the potential risk of diversion.[66]

The structural model and its processes for drugs and poisons offers significant potential in the harmonisation of current industry regulatory standards with the requirements for national security, specifically through increases in the control of identified risk chemicals. There are approximately twenty chemicals throughout the schedules that are of potential utility as agents or critical precursors. These are generally included across schedules five, six and seven and would be considered as having desirable characteristics such as toxicity, capacity for aerosolisation, desirable volatility or the ability to cause numerous (but probably not mass) casualties if utilised with an effective delivery system. An example of

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[63] Galbally, op. cit., p xi.

[64] ibid., p x.

[65] ibid., p xiii.

[66] ibid.

these includes the numerous cyanides, arsenicals and particularly the poison Amiton (which was developed in the 1950s as an actual chemical warfare agent and has since been used as a pesticide). Interestingly, while the requirements for schedule seven chemicals tends to necessitate tighter reporting, storage and access obligations within some of the States and Territories, corporate and research procurement is not subject to the same criteria as it is for single or personal acquisition. For example, while controls are imposed on access to Amiton as a schedule seven poison, there are fewer controls on its key precursors that when combined or processed, can actually make the agent. This in effect means that there is little consideration in the structure of the schedules regulating capabilities other than through identifying the end process or agent – a potentially significant vulnerability.

The requirements for possession of identified risk chemicals is generally consistent across jurisdictions, however, in areas of storage and access there remains major inconsistencies. For example, while schedule seven poisons have restricted availability, there are numerous 'riders' (Appendix J of the Standard for Uniform Scheduling of Drugs and Poisons) within the different States and Territories legislation in areas on the prohibition of possession and sale to unauthorised persons. Some jurisdictions do not specify existing riders explicitly, but have authorised industries to purchase and possess certain chemicals due to the requirements in other related legislation, such as occupational health and safety.[67] Most restrictions for storage apply only up to the point of sale and there is a significant divergence throughout the standards applied within this area. Storage of most agricultural and veterinarian chemicals is not prescribed within the standard, apart from provisions where scheduled poisons are stored when in retail premises, that is, for access to the public or sale to minors.

Interestingly, schedule seven chemicals can only be supplied by a licensed seller to a prescribed person, but control beyond the point of sale is generally lacking. This is a systemic risk throughout the entire process and particularly applies to

[67] ibid., Section 4.6.4, pp 63-64.

agricultural and veterinarian chemicals (with the exception of criteria established in dangerous goods legislation). Additionally, in all jurisdictions that enforce licensing and permit requirements, criteria for some schedule five and six and all schedule seven poisons is based on data provided by the person who is seeking to be prescribed. Checks are cursory and broadly consist of brief statements of intent, application, background (including qualifications and experience) in order to establish the legitimacy and the requirement for the granting of the permit or license. Additionally, in most cases the permit or license is allocated against a specific facility, function or person. Financial limitations, resource constraints and a lack of any identified need, all combine to limit checks to the most rudimentary of processes requiring only the most basic of data. In terms of increasing the security throughout the process, control measures for high risk chemicals could include checks of criminal and credit histories (as opposed to very specific and detailed prescribed requirements for illicit and addictive substances within the Standard) and the requirement for more declared data, such as information on qualifications, experience and a compliance statement.[68] In terms of an overall assessment, the standard does not provide the regulation or scope within the controls to effectively restrict access, impose security or reduce the likelihood of misuse by non-state actors.

Australian New Zealand Food Authority Act 1991[69]

The Australian New Zealand Food Authority Act establishes a regulatory framework for the food industry and the provision of information to consumers. One of the more salient functions within the Act is that it establishes the Australian New Zealand Food Authority as a statutory body, making it responsible for the control of food additives and contaminants, along with administering the Food Standards Code. The Act provides the legislation to

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[68] While the proposal to examine credit history appears irrelevant, background checks of established associations and employment records have a key role in establishing the veracity of the request and stability of the claimant. While this data can always be falsified, as can passports, indicators and consistency of requests may potentially provide critical details in any national alert database or strategy.

[69] Australian New Zealand Food Authority Act 1991, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/anzfaa1991373/.

cover the regulation of national activities which may involve sampling for chemical residues, licensing and permit processes.

While it defines prohibited activities, it does not, however, adequately provide for a process through which to prosecute offenders for acts involving deliberate contamination of foodstuffs. Criminal acts involving the contamination of foodstuffs are more likely to be dealt with under Commonwealth, state and territory criminal codes (this would be dependent on that nature and scope of the criminal act). Finally, the Act has only a limited range of punitive measures, mainly directed at financial or trading penalties (as a function of the application of the Food Standards Code which covers licensing, permits etc.). As with numerous other Commonwealth acts, these measures are primarily directed at corporations rather than individuals. As a consequence, the overall deterrence value, at least in terms of non-state activity, remains negligible.

National Occupational Health and Safety Commission Act 1985[70]

The National Occupational Health and Safety Commission Act does no more than establish the National Occupational Health and Safety Commission, however, the Commission's function has an important role in establishing codes of practice and standards that are directly relevant in the regulation of CB materials. These standards and codes of practice are widely accepted and enforced throughout industry as best practice. They are then adopted under various state and territory legislation, principally within occupational health and safety controls. The State and Territory legislation then specifies the duties of particular groups in controlling risks associated with defined hazards where compliance is required by law. Codes of practice, however, only provide advice on how to meet regulatory requirements and as such, are not legally enforceable. They can, however, be used in courts as evidence that legal requirements have,

[70] National Occupational Health and Safety Commission Act. 1985, (accessed 1 February 2001). http://www.austlii.edu.au/au/legis/cth/consol_act/nohasca1985470/.

or have not, been met – yet the application of these measures within a non-state context is improbable.[71]

In terms of the utility of the codes, they provide specific criteria for management, handling, exposure, storage, competencies and classification criteria. They are wide ranging, structured separately, but are also complementary to legislation such as dangerous goods codes and the poisons and drugs regulatory measures. Importantly, the standards and codes also establish and define industry practices which are then adopted throughout different industry stewardship and conduct programs, such as the Responsible Care Initiative for the Plastics and Chemicals Institute of Australia.

In theory, while the application of the standards and codes appears sound, compliance, licensing and its application is predominantly based on a self-assessment system set within a self-regulatory environment. The role of the Commonwealth is also generally limited to an administrative role where the States and Territories have the responsibility for the enforcement and compliance requirements to support the standards and codes. As a consequence, wide variation and inconsistency exists throughout the various jurisdictions. While there are a range of systemic problems in the uniformity and application of the current National Health and Safety framework, it offers a convenient and widely accepted regulatory vehicle to facilitate the adoption of further controls beyond the point of sale (which is currently a largely vacuous environment). That is, increased security requirements, limitations on access, reporting parameters, licensing criteria and mandatory compliance. With the exception of improving worker safety, however, the regulatory structure as it stands, contributes very little to the control and regulation of CBR capabilities.

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[71] National Occupational Health and Safety Commission Website, (accessed 1 February 2001), http://www.nohsc.gov.au/OHSLegalObligations/RegulatoryFramework/regulatoryframework.htm.

Road Transport Reform (Dangerous Goods) Act 1995[72]

Dangerous goods legislation essentially provides the regulation for transport, handling and containment of all CBR materials. It generally targets windows of activity in the life cycle of materials, which include storage, distribution and handling processes. The management, control and enforcement of dangerous goods requirements is a complex and confusing process which is set throughout a myriad of Commonwealth, State and Territory legislative controls. Table 18 is an outline of the classification system and range of goods regulated within the dangerous goods codes and drawn from the Act.

There are separate dangerous goods codes for sea and air, however, the largest proportion of activity is by road and generally between storage facilities, manufacturing sites and retail outlets. Responsibility for road transport generally rests with private organisations such as petroleum and chemical companies or specialist transport firms. Dangerous goods, primarily in the form of petroleum products or liquid chemicals, are more widely transported on the State's rail network, however, land transport is where the majority of dangerous goods activity occurs, at least in terms of production and distribution of materials.[73]

Table 18 – Dangerous Goods Classification System

Class		Dangerous Goods
1		Explosives
2		Gases: compressed, liquefied or dissolved under pressure
	2.1	Non-flammable non-toxic gases
	2.2	Oxidizing gases
	2.3	Poisonous gases
3		Flammable liquids
4		Flammable solid substances liable to spontaneous combustion and which in contact with water, emit flammable gases
	4.1	Flammable solids
	4.2	Spontaneously flammable substances
	4.3	Flammable substances if wetted
5		Oxidizing agents and organic peroxides
	5.1	Oxidizing substances
	5.2	Organic peroxides
6		Poisonous (toxic) and infectious substances
	6.1(a)	Poisonous substances
	6.1(b)	Harmful substances
	6.2	Infectious substances
7		Radioactive substances
8		Corrosive substances
9		Miscellaneous dangerous goods

Packaging Groups
I - Great danger
II – Medium
III - Minor

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[72] Commonwealth Road Transport Reform (Dangerous Goods) Act 1995, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/rtrga1995406/.

[73] Victorian Auditor-General's Office, Special Report 33 – Handle with Care: Dangerous Goods Management, State Government Publishers, 11 May 1995.

Similarly to the regulation of poisons and drugs, the Commonwealth only administers dangerous goods legislation, which is exercised through secretarial support to the Advisory Committee on the Transport of dangerous Goods and the Competent Authorities Panel. The main functions for compliance and enforcement are executed through the jurisdictions adoption of acts and regulations along with the Commonwealth's own Road Transport Reform (Dangerous Goods) Regulations 1997. While the standards adopted are based on international safety requirements drawn from the United Nations Committee of Experts on the Transport of Dangerous Goods, each country will often maintain its own specific interests based on industry, trade and economic conditions and pressures.

Dangerous goods legislation generally only encompasses aspects of hazard containment, transport and contamination. In terms of the capacity of the legislation to regulate the activities of non-state actors, it is only relevant to issues of public accessibility and exposure hazards. Security measures in the codes refers to aspects of incompatibility, separation of goods, fire risks, bulk fills and stowage, rather than requirements for the hardening of facilities and reductions in the potential for theft of materials.[74] While the vast majority of materials do not require measures more than controlled access or secure containment, many others in fact do, such as those throughout schedules six and seven.

In a similar regulatory structure to the poisons and drugs schedules, dangerous goods are controlled on the basis of nine classes of goods. Classification is generally on the basis of physical state and mammalian toxicity, with classes 6 and 2.3 possibly of greatest risk, at least in the context of the utility for non-state use (although there are numerous other hazardous and risk substances within the other dangerous goods classifications). These two classes include chemicals with likely beneficial physical characteristics, such as toxicity and volatility, that may provide an increased potential and utility for limited use and delivery. The

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[74] Australian Transport Council, Australian Code for Transport of Dangerous Goods by Road and Rail Sixth Edition – Volume One Requirements and Recommendations. Canberra, 1 October 1999, p 273.

code then further defines the classes of goods into three packaging groups, which designates specific nomenclature for marking, labelling and handling, with Packaging Group I being the most dangerous.

In terms of a state model which looks at the relative effectiveness of dangerous goods, the Victorian system provides an interesting case study, particularly as it is estimated by the Victorian Department of Business and Employment that around 50 percent of the Australian chemical industry is located in Victoria. The Victorian model, simply by volume alone, provides an insight into the systemic problems and issues with the deregulation of Commonwealth involvement and State management of dangerous goods codes and processes. The Victorian legislation for dangerous goods regulation is enforced through the Dangerous Goods Act 1985, Dangerous Goods (Storage and Handling) Regulations 1989 and the Road Transport Reform (Dangerous Goods) Regulations 1997.[75] The complexity and porosity of the regulation of dangerous goods is exacerbated by the fact that there are approximately 60 Victorian acts, 60 Victorian regulations, 44 Commonwealth acts and over 20 Victorian management, coordination and response agencies involved.[76] For example, 17 acts were in place in relation to dangerous goods controls for pesticides, with even more legislation applicable in the areas of pest control, agriculture, aerial spraying and mining.[77]

Increasing regulatory requirements and the strengthening of controls for greater public safety are not new concepts, however, historically there has always been strong opposition from industry, opposing increases because of the possible resource and financial liabilities that would likely be imposed. In the early 1990s (prior to Commonwealth consolidation of the Dangerous Goods Act 1995), the Victorian Government did attempt to tighten and consolidate the regulation of chemicals but major opposition, particularly from chemical industry groups, derailed all initiatives to further regulate industry.[78] The

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[75] In the Victorian model the Dangerous Goods (Explosives) Regulations 2000, Road Transport (Dangerous Goods) (License Fees) Regulations 1988 and Dangerous Goods (Transport by Rail) Regulations 1998 also apply, however, they are not directly relevant to the regulation of CBR materials.

[76] Victorian Auditor-General's Office, Section 4.1.

[77] ibid., Section 4.7.

[78] ibid., Section 4.9.

identified need for increased regulation was as a result of erratic and non-uniform controls applied indiscriminately throughout Victoria. The result was significantly different standards for inspection, prosecution and reporting.[79] The Victorian and state regulatory environment was not conducive to efficient regulation and the control of hazardous substances with the resultant high costs ultimately providing a strong disincentive for any further industry compliance.

Table 19 – Information Requirements for Victorian Dangerous Goods Licensing

- The name of the occupier and address of the premises
- A plan of the premises showing key information about the site
- Information on the dangerous goods kept or intended to be kept at the site
- Details of manufacturing areas and processes undertaken at the site
- The maximum number of people likely to be on the site during its operation
- Information on the potential hazards and steps to prevent emergency incidents together with staff training, inspection and maintenance arrangements; and
- A written emergency management plan detailing steps to be taken and responsibilities of personnel during an emergency.

The Victorian model is also of interest as it is the only one of the eight jurisdictions in which a complete audit of the dangerous goods legislation has been conducted by an independent body – the Victorian Auditor General's Office, throughout the last decade. Of greatest interest in the findings of the Auditor General's report was the identification of a conflict of interest involving the regulatory body which was responsible for managing, controlling, regulating and securing hazards and for ensuring public safety. The regulatory body adhered to the fundamental philosophy that any measures they adopted, imposed or enforced, would not create any financial burden, liability or impact on industry operations – clearly a paradoxical, counter-productive and potentially dangerous public safety policy, that is, that commercialism overtakes any obligation for safety or enforcement of the law.[80]

Licensing and storage are two areas in particular that are processes which are relatively easily circumvented and have a higher potential propensity for misappropriation, diversion or the theft of materials for covert or illegal uses. In the case of the Victorian model, the Auditor General's report concluded that it was possible within the current processes for storage and handling operators to

[79] ibid., Section 4.13. Derived from Victorian Auditor General's Office, op. cit., and Commonwealth Dangerous Goods Legislation 1995, op. cit.

[80] ibid., Section 4.21.

continue to operate for considerable periods without a license or without meeting all regulatory requirements.[81] Routine inspections were not undertaken to detect unlicensed operators or to ensure that operators met license conditions.

Table 19 defines the extent of the criteria required for a Victorian dangerous goods license.[82] It is based on the risk assessment process (which determines whether an occupier needs a license) as defined in the Victorian Dangerous Goods (Storage and Handling) Regulations 1989. However, there is little veracity or integrity in the process as no security, background or criminal checks are required. While there are different licensing criteria for various functions, such as bulk carrier transport, and there is some variation throughout State and Territory jurisdictions, it generally conforms to the same information requirements and standards. Of particular concern, the Victorian Auditor General's report found that inspection activity was limited to only those personnel recorded within the Victorian Occupational Health and Safety Authority's information systems. There were no processes to facilitate the identification of non-licensed operators, persons or organisations, that were not in compliance with storage, distribution or licensing criteria.[83]

One of the most significant and fundamental inadequacies in the management and control of hazardous substances in the Victorian model was in the application of a flawed risk analysis and assessment system. While in its simplest form those facilities that have the highest risk goods should have been subject to the tightest regulatory requirements, the Victorian Auditor General identified the model utilised as grossly inadequate. It was concluded that it had failed to take into account facility safety systems, security, locality, records, past incidents and did not consider transport to and from locations.[84] The Victorian model and findings of the Auditor General's report highlight the potential of the

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[81] ibid.

[82] Victorian Auditor General's Office, op. cit.

[83] The audit also identified numerous examples which highlight the issue of operators not complying with regulatory requirements. One example notes substantial quantities of dangerous goods being handled at a corporation's major city freight terminals outside of the regulatory criteria for licensing and storage for at least a period of four years. ibid., Section 6.18 – 6.22 and 6.28 – 6.31.

[84] ibid., Section 5.11 – 55.15.

system, or lack thereof, to regulate risk materials, yet also the pretence on which it had been operating. While Victoria is the only state within the last decade to have undergone a major audit of its dangerous good legislation and processes, it is not averred that the other States and Territories are significantly different in their ability to comply with, or improve, Commonwealth legislative requirements.

In terms of the overall national regulatory processes for dangerous goods and the control of higher risk CBR materials, the various Commonwealth, State and Territory codes are some of the most potentially important regulatory structures already in place. While the Victorian case study has examined only one of eight national jurisdictions, it does serve to highlight systemic problems, false expectations and a lack of compliance within a largely self regulatory environment – albeit one with unnecessary risks and vulnerabilities due to poor enforcement.[85] The administration of dangerous goods legislation at the Commonwealth, State or Territory level, however, becomes a somewhat irrelevant issue. What is critical is the application of the compliance and enforcement measures necessary to ensure security and safety. Based on extant processes, however, the codes currently fail to control CBR capabilities, requiring major regulatory reform before they could be considered as effective.

Immigration Act 1958[86]

The Immigration Act 1958 is directed at the control, management, enforcement and compliance requirements for people entering and exiting Australia or its territories. The relevance of the Act in terms of CBR capabilities is that it is directed not at aspects of equipment or material control, but indirectly at CBR and WMD knowledge and services provided, held or obtained by non-nationals that might influence Australian interests or its security. The Act provides for a

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[85] These conclusions, attributed largely to States and Territories lack of enforcement, also appear to have contributed to reduced dangerous goods code requirements for reporting, licensing and storage. Personal communication Ms C. Tulip Manager, Dangerous Goods Policy Unit, Land Division, Department of Transport and Regional Services, 7 May 2001.

[86] Immigration Act 1958, (accessed 1 February 2001), http://scaleplus.law.gov.au/.

wide range of pervasive measures which extend to search, seizure, arrest, detention and deportation of those in breach of the Act.

While the control of the proliferation of sensitive dual-use information within or beyond Australian barrier controls is a nearly impossible task, the Immigration Act has a legislative mandate (combined with other national security legislation such as the Australian Security Intelligence Act 1979 and the Weapons of Mass Destruction Act 1995) to restrict access or deny activities involving non-nationals, such as foreign students and researchers, to specified technologies, research or information. Increased sensitivity on immigration issues, particularly for refugees, appears to have provided the impetus for a 'Joint Standing Committee on Foreign Affairs, Defence and Trade 2001 Report' to review and develop immigration issues that may impact on national security, specifically, potential vulnerabilities throughout the clearance processes. Interestingly, one of the key recommendations was the need for the Australian Security Intelligence Organisation to develop appropriate risk profiles for immigrants – legal and illegal, to assist in more efficient targeting of national interdiction and enforcement processes.[87]

The Act is enforced by the Department of Immigration and has a wide range of compliance, regulation, inspection and advocacy functions. The Immigration Department also depends on other services for assistance in these compliance and enforcement processes. These range from Commonwealth, State and Territory police services, through to the Australian Security Intelligence Organisation which assists the Immigration Department in the clearance and vetting of non-citizens who may present a threat to security as defined in Section 4 of the Australian Intelligence Organisation Act 1979. The result of this is that Australian Security Intelligence Organisation officers are now involved in initial processing of detainees, which in theory should provide for a more efficient mechanism to identify those individuals or groups that have demonstrated a

[87] Joint Standing Committee on Foreign Affairs, Defence and Trade, *A Report on Visits to Immigration Detention Centres*, The Parliament of the Commonwealth of Australia, Canberra, June 2001, p xii.

proclivity towards non-state activities, espionage or micro-proliferation activities.[88]

The main processing system that assists in identifying people risks is the Movement Alert List, which is sponsored and operated by the Department of Immigration. This system stores details about people and travel documents that may be of possible immigration concern to Australia. The system is at an inchoate stage of development and its potential will increase as the database is more widely populated. As it stands, however, current hardware and software limitations and its interaction with other national and international systems limits the existing potential and utility of the system.[89] The profiling and identification of people who would be categorised as risks is a key capability and is critical in the regulation of non-nationals, such as students and researchers working under special entry status provisions. The concern is not just limited to ensuring compliance within the conditions of the visa, but also in the potential for proliferation of dual-use and sensitive technologies by these non-nationals, particularly when working in areas that might facilitate the release of WMD or dual-use technologies – thus possibly putting Australia in breach of its international obligations under the various export and arms control regimes.

In response to difficulties in visa regulation and control, the Department of Immigration introduced the Migration Legislation Amendment (Overseas Students) Bill 2000 and Education Services for Overseas Students Bill 2000. The legislation attempts to ensure that the Department can maintain satisfactory

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[88] Department of Immigration and Multicultural Affairs, Report on Protecting the Border: Immigration Compliance, Canberra, 2000, pp 22-23.

[89] The Movement Alert System (MAL) operates on similar principles to watchlists which are utilised by most customs and immigration agencies worldwide. The use of these lists to assist in the profiling of people and their classification as a risk is complex and operates on a judicial precipice. The population of the database draws on a range of sources which are often based on second and third party reporting, often from other countries, and more often involving compartmented or fragmented sections of generally sensitive information or reporting. As a consequence, the veracity and wider utility of information in the database is limited in determining how information is derived, or its origin (particularly if provided from a second or third party). These aspects are critical in establishing the information's authenticity and its application, such as in a legal case to prosecute an individual. The system as it currently operates does not involve the profiling of personnel associated with WMD or CBR use, technologies or applications (it does, however, identify personnel known or those suspected to have been involved with illegal non-state activities, hence it still retains some limited utility). Personal communication Mr T. Pollock, Director Immigration Intelligence Analysis Services, Department of Immigration, 26 June 2001 and Department of Immigration and Multicultural Affairs Report, pp 52-53.

attendance and academic performance within the requirements of the visa (and the Act), however, it also provides greater legislative powers for compliance and, more critically, enforcement. While initially these legislative controls may appear to have little relevance to the regulation of CBR capabilities, the volume of students alone, (120,564 student visas granted in 1999-2000 of which 3046 were cancelled), and hence potential risk, is significant. In addition to the clearance vetting requirements for student visas, there is also difficulty in ensuring courses of study granted or undertaken are actually the same as those commenced, or indeed, that the conditions in which the visa was granted still apply.[90] For example, when a researcher applies for a visa, unless it is assessed or identified as a WMD risk by the Department of Immigration, the visa will generally be granted (there are of course other general criteria which must be satisfied regarding the purpose and nature of the activity, etc).

In the structure of the legislation there are reporting obligations that allow for the Immigration Department to be notified of changes by the service provider in the content, structure or scope of the visa, particularly for students. This reporting, however, has historically proven hard to capture and anecdotal indications are that reliance on the education or research provider to report on changes is intermittent, and in most cases, unlikely.[91] Despite reporting obligations on the part of the student or research provider, there is also little prospect of detection or interdiction outside of direct reporting by the service provider that may indicate the subject or person may now pose a potential security risk. That is, the area of research or activities associated with the study or research may now have changed and has a relevance to WMD or CBR capability development. If the nationality of the person was associated with a WMD country that also was suspected of maintaining a covert WMD program, or was associated with known elements of a WMD program, and the Department of Immigration knowingly allowed specific services to be provided or obtained, Australia would then be in

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[90] ibid., pp 81-82.

[91] There are now compliance sections from the Department of Immigration operating in each of the States and Territories, however, these are more focused at broader compliance issues, such as attendance or misrepresentation of conditions. Personal communication Mr T. Pollock, Director Immigration Intelligence Analysis Services, Department of Immigration, 26 June 2001.

breach of its international and national chemical and/or biological arms control regime and domestic legislative obligations.

The strength of the Immigration Act, unlike nearly all other legislation, is not just in its enforcement and compliance mechanisms, but in the services provided by the Department to administer the legislation. Despite this, however, the volume of people traffic, the diffuse and dual-use nature of the research and the finite resources available, reduce the potential for interdiction to only those incidents involving significant breaches or those subject to notifiable or declared compliance irregularities. The salient point in the analysis of the immigration legislation is that even with effective legislation, without adequate resources, effective targeting strategies or the capacity to enforce compliance, there remains a systemic risk associated with the process.

Radiation Regulatory Controls.

The regulation of radioisotopes and radiation exposure standards in Australia is established within a wide range of regulatory legislative structures, however, measures can generally be categorised into two areas: controls over nuclear materials and technologies, and all others. Nuclear controls are predominantly concerned with safeguarding nuclear materials and technologies along with the enforcement of measures that ensure Australia's compliance with international nuclear regulatory obligations. The Australian Radiation Protection and Nuclear Safety Agency undertakes the radiation regulatory activity on behalf of the Commonwealth Government. It also provides the country's largest radiation measurement and assessment capacity and takes the lead in preparing the range of standards, codes and guidance used by the regulatory authorities and by industry in ensuring radiation protection. The regulation of nuclear materials is established within the following national legislation:

- Nuclear Non-Proliferation (Safeguards) Act 1998,

- Nuclear Non-Proliferation (Safeguards) (Consequential Amendments) Act 1988,

- Nuclear Safeguards (Producers of Uranium Ore Concentrates) Charge Act 1993,

- South Pacific Nuclear Free Zone Treaty Act 1986; and

- Comprehensive Nuclear Test-Ban Act 1988.

All other regulatory requirements which define the controls of radioisotopes are broadly based on two separate legislative structures. The first is legislation defining the Australian Radiation Protection and Nuclear Safety Act 1998 and the other is the Australian Nuclear Sciences and Technology Act 1987, which establishes the administrative processes and establishment for regulatory bodies (specifically the Radiation Health and Safety Advisory Council). This legislation also defines licensing, facility accreditation, evidential material criteria, specific appointments, classifications of facilities and definitions criteria.[92] While there are punitive measures enabled within the legislation that provide for fines of up to five million dollars, there is not the capacity to prosecute misuse or misapplication by individuals, as the legislation is structured to regulate designated facilities or organisations, such as the Australian Nuclear Science and Technology Organisation. As with numerous other legislative structures, the prosecution of criminal or terrorist acts would also be reliant on the Commonwealth, State and Territory criminal codes.

The second legislative structure employed to regulate radioisotopes are those measures swept up within the dangerous goods codes established throughout the Commonwealth, States and Territories. Radioisotopes are regulated on the basis of activity levels which denote storage, packaging, handling and the relative hazard of materials. Radioactive material is defined as any material for which

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[92] Australian Radiation Protection and Nuclear Safety Act 1998, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/arpansa1998487/.

specific activity is greater than 70 kBq/kg (0.002 uCi/g) and it is controlled as a class seven dangerous goods.[93] From the classifications derived from the dangerous goods codes, the packaging, handling, labelling, transport and security requirements are specified for each type of activity level (security refers to public access and occupational health and safety criteria).

The criteria established for the control of radioisotopes throughout the relevant legislative controls, while similar in many respects to other hazardous substance measures, specifies more stringent criteria for licensing and handling (along with a different regulatory body). For example, the Customs (Prohibited Imports) Regulations 4R does not allow any radioactive material to be imported into Australia without the correct permits or licensing. The legislation's capacity (excluding those controls applicable to nuclear materials or technologies) in controlling non-state micro-proliferation or use of radioisotopes is, however, more effective than within other comparable chemical and biological regulatory structures. This could mainly be attributed to heightened reporting, monitoring, surveillance, reduced volumes (compared to the chemical industry) and more easily quantified hazards. As most radioactive materials are regulated under the same dangerous goods controls as for most chemicals, the range of punitive measures and enforcement mechanisms are similar.

Australia has both national legislation for radiation protection and separate legislation for each of the eight States and Territories. Each jurisdiction operates a 'radiation control branch', which in most cases is a part of the Department of Health (in New South Wales it is a part of that State's Environmental Protection Agency). The majority of the jurisdictions have some form of associated 'radiation advisory council' made up of independent people and in two of the jurisdictions, these councils form the authorities for licensing and registration. For others, the formal decision-making authorities may be nominated statutory officers such as the chief executive officer of the various health departments or the Minister.

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[93] Australian Transport Council, op. cit., p 23.

Each jurisdiction in Australia has requirements for the notification, registration, licensing, inspection and enforcement for users of radioactive sources and radioactive materials. The requirements in each jurisdiction do vary ensuring a wide range of non-uniform regulatory requirements. The radiation protection standards and system is in the main derived from the International Atomic Energy Agency 'Categorisation of Radiation Protection' and the 'Basic Safety Standards', which were adopted in Australia in 1995. The standards and system were endorsed by the National Health and Medical Research Council and were incorporated into license conditions and have been adopted throughout the various jurisdictional acts and regulations.

There are national codes of practice and guidelines established for the proper handling of a range of sources. The Australian Radiation Protection and Nuclear Safety Agency, however, is in the process of reviewing these codes. It is anticipated that the finalisation of this review should result in an updated series of the 'Codes of Practice', even with this, however, there still remains the requirement to amend the various acts and regulations within each of the jurisdictions for this to have any influence. This will involve a form of regulatory impact assessment and further public consultation, which will ultimately lead to further non-uniformity in the requirements of the final legislation.[94]

Australian and New Zealand Standards

The Australian and New Zealand Standards, while not statutory requirements, are utilised to define compliance requirements and outcomes through systems involving recognised accreditation and licensing.[95] There are numerous standards that apply to a wide range of industry and government activities, however, in the area relevant to CBR controls they are generally applied to storage, handling and construction of laboratories and facilities for chemical and biological materials. While the standards set the minimum criteria for specific

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[94] ibid.

[95] Standards Australia provides a complete list of all AS/NZ Standards (on subscription) at the following URL (accessed 1 June 2001), http://www.standards.com.au/catalogue/script/search.asp.

functions and processes, their utility in regulation, enforcement and ultimately compliance, is entirely discretionary. This is not to detract from the intent of the standards, which are fundamentally health and safety focussed, however, their overall value in legislating and regulating against use and micro-proliferation of CBR capabilities by non-state actors, is minimal.

State and Territory Criminal Legislation

In terms of legislation that controls and regulates wider criminal or terrorist activities that might be associated with micro-proliferation and/or use, all of the jurisdictions lack specificity and the capacity within their legislative structures to control and prosecute crimes involving the use of ultra-violence, or the use of CBR capabilities. As a consequence, most middle to lower end spectrum activities such as those involving public nuisance activities resulting from hoaxes, would be prosecuted as criminal acts.[96]

Similarly to the two separate regulatory processes established within the Commonwealth legislative structure, there are two categories within the State and Territory regulatory legislation: technical regulations and those with a more generic application. Commonly, however, all lack uniformity and vary widely in their applications, utility and capacities between jurisdictions. In terms of the general regulatory legislation, these are mostly applied through the various States and Territories criminal codes and acts. Only Victoria, Queensland and the Northern Territory have legislation specifically enacted for bomb making (which includes explosive and deleterious substances) and hoax activity. Most of the legislation throughout all the jurisdictions (with the exception of South Australia) is directed at explosive substances. However, many also include some

[96] In late 2001 and early 2002, in response to dramatic increases in the incident of CBR nuisance activity and reporting, the Commonwealth, States and Territories proposed the idea of introducing harsher measures in the penalties for criminal acts involving a hoax or threat to use an explosive, deleterious or CBR material. As at January 2002, no new legislation had been introduced throughout any of the jurisdictions in relation to this issue. As throughout most of the national regulatory legislation, however, the problem is not in introducing the legislation but in ensuring there is an adequate definitional framework in which to provide any breach or action with an appropriate context.

limited capacity for noxious or deleterious substances.[97] Interestingly, the Northern Territory remains the only state to effect legislation directly aimed at terrorist activity, specifically, the participation in, funding of, or the contribution to terrorism.[98] The Australian Capital Territory and New South Wales are the only jurisdictions that specify what constitutes a weapon and/or harmful effects (outside of those referring to explosive substances).[99] It is this lack of uniformity and measured approach which is not just limited to the regulation of explosives and prosecution of hoaxes, but includes dangerous goods codes, industrial chemicals, agricultural and veterinary chemicals and the biotechnology sector (at both the Commonwealth and State and Territory levels) that ultimately detracts from the capability of the legislation and its overall deterrence value within the national security framework.

Miscellaneous

The regulation of CBR agents spans a wide range of acts, regulations, bills and self-regulatory agreements. While much of the focus in the thesis has been directed at the regulation and application of punitive measures, legislation that is directed at responding to, or empowering, coordinating agencies with the authority to act, or implement controls, is also as relevant (yet ironically it is also

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[97] In terms of the breadth of application and utility of the legislation related to devices, explosive or otherwise, the South Australian Criminal Law Consolidation Act 1935 Section 29 , (Acts Endangering Life or Creating Risk of Grievous Bodily Harm), or Section 31, (Possession of Object with Intent to Kill or Cause Grievous Bodily Injury), appear as the only relevant sections within the State's legislation. Compared to the other states, the South Australian legislative structure appears ill-defined, ambiguous and unlikely to have the utility required for an effective application beyond minor criminal activity, particularly when contrasted against the more comprehensive Victorian regulatory legislative structure contained within the Victorian Crimes Act 1958 Section 317, (Offences Connected with Explosive Substances) and Section 317A, (Bomb Hoaxes).

[98] The Northern Territory legislation is some of the most comprehensive nationally and is the only jurisdiction to include aspects of hoax, devices (explosive or deleterious) and terrorist activity. While theoretically this appears sound, it has never been applied and the definition of terrorism is inconsistent with the Commonwealth's, suggesting the circumstances in which it might apply are unclear. The Criminal Code Sections 50-55, applies to terrorist sponsorship or contributions and Sections 154, 177 and 182 cover hoaxes, threats and the use of explosive, dangerous or noxious substances.

[99] This specifically refers to the Australian Capital Territory Prohibited Weapons Act 1996 and the New South Wales Weapons Prohibition Act 1998. These acts cover a wide range of conventional and improvised weapons, specifically devices that expel or contain hazards that are explosive, incendiary, irritant or gas (whether or not live or deactivated). Both Acts specify prohibitions on lachrymatory agents chloroacetophenone (CN), ortho-chlorobenzylidenemalononitrile (CS), dypenylaminechloroarsone (DM) and oleoresin capsicum (OC). While these agents are unlikely to have application for non-state use, the criteria specifying defence or anti-personnel applications limits the utility of the Acts to the prohibition of the carriage of 'personal weapons'. Finally, the punitive measures available within the Acts only allow for minor punitive sentences and small pecuniary penalties.

similarly deficient). The Australian National Audit Office in 1999/2000 identified this as a key vulnerability in a report on emergency management procedures within Australia. The report noted that rather than umbrella legislation, the regulation and establishment of national emergency management processes was predominantly structured on the basis of a series of agreements and principles setting out administrative Commonwealth processes, rather than operational or legislative structures. The report critically identified that while this has worked reasonably in the past, Australia's benign threat environment provides few salient lessons, principles or structures on which current services and legislation could be definitively and efficiently developed. The consequence is that for likely future crisis, particularly those at the catastrophic end of the spectrum, it is likely that current processes will be found deficient.[100]

Finally, while a common theme throughout much of the regulatory processes is the failure to control or regulate beyond the point of sale, one of the most powerful mechanisms that provides a potential legislative vehicle, at least for aspects of public safety and risk, is the Trade Practices Act 1974.[101] There are currently few mechanisms within the Commonwealth Act or its various permutations throughout the State and Territory jurisdictions that specifically regulate the availability and sale of CBR materials (apart from those measures that already complement existing dangerous goods and poisons schedules). There does, however, remain potential through the Act to enhance aspects of responsibility and security on the part of producers, distributors and vendors, thereby ensuring more responsible handling and distribution of high risk, hazardous or sensitive goods. The current focus, however, is predominantly directed at labelling, advertising and placement, and as a consequence, remains irrelevant in the regulation of CBR capabilities.

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[100] Australian National Audit Office, *Report 41 on Commonwealth Emergency Management Arrangements 1999/2000*, Government Publishers, Canberra, 2000, Chapter 2, Paragraph 12, p 14.

[101] Commonwealth Trade Practices Act 1974, (accessed 1 February 2001), http://www.austlii.edu.au/au/legis/cth/consol_act/tpa1974149/.