

FORTRESS AUSTRALIA

THE SECRET BID FOR THE ATOMIC BOMB

FORTRESS AUSTRALIA uncovers one of the most extraordinary chapters in Australia's history - the brazen attempt by successive Australian governments to fortress the nation with atomic weapons. This groundbreaking film reveals a web of intrigue as it penetrates a murky world of diplomatic double-dealing and atomic espionage. Set against a backdrop of cold war paranoia and fear of Asian aggression, it explores the motives of the politicians, defence chiefs and scientists who set out to buy, then ultimately build, a nuclear arsenal.

FORTRESS AUSTRALIA is a film about choices in history—and specifically about choices that were made in cold-war Australia about nuclear weapons.

Why would Australia have wanted them? Why did it fail to get them? Is this an option that might still exist today? These are among the key questions that the film explores.

In raising these questions, the film reveals much about how nations make choices and shape their destiny. It also reveals how important it is that we understand the context of events and the forces at work in a society if we are to make sense of what happened in the past—and what might happen in our future.

In this guide, there are a number of suggested exercises and activities that teachers can use in the classroom.

- **Activity 1:** Setting the scene
- **Activity 2:** Exploring the film
- **Activity 3:** Analysing the film as a historical source
- **Activity 4:** The 'Cold War' context
- **Activity 5:** What is 'nuclear fission'?

Teachers may choose to go straight to the analysis of the film, or choose the 'context-setting' and 'concept-understanding' activities that have been included here before viewing the film and exploring the story that is told there.

CURRICULUM LINKS

Fortress Australia can be used to ex-

plore aspects of

- History
- Australian Studies
- English
- Science
- Media Studies
- Politics
- Society and Environment,

learning strands include

- Discovering Democracy
- Civics and Citizenship

KEY LEARNING OUTCOMES

Study of the film can help students achieve these key learning outcomes that are commonly set in individual states' and territories' curricula:

- Describe significant events that have shaped Australia.
- Critically analyse the reasons for change or continuity.
- Appreciate the forces promoting and resisting change.
- Explain how causes, motives and consequences may be related.
- Evaluate the consequences for individuals, society and the environment of attempts to change political policies.
- Analyse representations of history.
- Reflect on the 'lessons' of the past and how they may relate to the present and the future.

Teachers will identify which of these are relevant to their own major state or territory curriculum document.

ACTIVITY 1

SETTING THE SCENE

IMAGINE THAT . . .

YOU ARE LIVING IN AN AUSTRALIA THAT HAS RECENTLY GONE THROUGH A WAR. IT IS NOW A FEW YEARS AFTER THAT WAR, BUT THE MEMORIES OF THE EXPERIENCE ARE STRONG.

During the war, northern parts of Australia were bombed, enemy warships and submarines laid mines in Australian coastal waters and there was even a submarine that entered Sydney Harbour and sunk some ships there. Many people believed and feared that Australia might even be invaded.

Australia's full manpower and industrial production had to be used to fight the war. We relied on help from our big and powerful allies, and their troops and military equipment were essential in the ultimate victory.

The war ended when one of our allies developed a new and powerful bomb, and dropped it on the enemy's homeland.

Post-war atomic weapons will become available to a few wealthy and determined nations—some are our allies, but all of them are far away. However, there has been political and social unrest in countries to our north, and one country has even claimed that it expects to have its own super-bomb within a few years, despite the huge cost in money, resources and expertise that its development involves.

You, as part of the Government of Aus-

CHART 1

OPTIONS	ADVANTAGES	DISADVANTAGES
Get the super-bomb from our allies.		
Develop a super-bomb of our own.		
Develop the ability to make it ourselves, but do not actually start making it until it looks as though it might actually be needed.		
Do not even try to get it, but rely upon help from our allies if trouble occurs.		
Do not get it, and actively work through the United Nations to limit its development by any other nations.		



tralia, now have to decide what you will do about this situation.

Here are your main choices (see chart 1):

- 1 Discuss each option, and list the advantages and disadvantages associated with each option.
- 2 Then make your own decision: what will you do?

This was actually the situation facing Australia between the end of the Second World War in 1945, and the

ACTIVITY 2

EXPLORING THE FILM

You are about to watch a film that exposes aspects of the way power and influence were exercised in Australia to make a choice about whether we should have nuclear weapons.

SYNOPSIS TO FILM AUSTRALIA'S FORTRESS AUSTRALIA

Set against a backdrop of Cold War

both allies and enemies treated Australia with mistrust.

This groundbreaking film penetrates the murky world of atomic espionage and counter-espionage. It exposes KGB infiltration of crucial political offices, which almost thwarted Australia's nuclear ambitions. It also brings to light the secret role of the Australian Atomic Energy Commission in the quest for nuclear weapons—in particular, the ill-fated Jervis Bay Nuclear Reactor Project, which could have enabled Australia to



Australian Government's signing of a United Nations Nuclear Non-Proliferation Treaty in 1973.

What did our Government actually do? Do you think that this was the appropriate decision? Could these decisions be reversed in your lifetime?

These are issues that you need to consider as you watch *Fortress Australia*.

paranoia and fear of Asian aggression, Fortress Australia explores the motives of the politicians, defence chiefs and scientists who set out to buy, then ultimately build, a nuclear arsenal.

From uranium exploration and guided weapons research to A-bomb tests on Australian soil, the film shows how Canberra aided both Britain and the United States in the hope of sharing their nuclear secrets. But it proved to be an extraordinary double game in which

build as many as 30 nuclear weapons a year.

All this happened within living memory—many of you will have grandparents or even parents who remember the Cold War period well.

Chances are, however, that they will not know much about the influences and forces that were at work on this issue, as these were secret. Under the 30 year public access rule, many of the



documents revealing this information have only recently made available for public scrutiny.

To understand the story presented in *Fortress Australia* you may need to first investigate the Cold War context in which the events occurred (Activity 4), and possibly also the meaning of ‘nuclear fission’ (Activity 5).

The film traces the stages by which Australia moved from being a nation that wanted to have nuclear weapons in the 1940s to the 1960s, to one that signed an international treaty guaranteeing not to develop them in the 1970s. After you have watched the film, discuss these questions and ideas (see chart 2).

UNDERSTANDING THE CONTEXT

The film starts by setting up the context at the end of the Second World War in 1945.

- 1 What had happened to Australia during the War that influenced

people’s ideas about the defence of Australia?

- 2 How would having access to atomic weapons help Australia?

SHARING IN BRITISH NUCLEAR ABILITY

Immediately after the war, Australia tried to co-operate with Britain in order to get access to atomic weapons.

- 3 Why did Australia’s security problems make this impossible?
- 4 How did Australia try to use access to uranium as an entry into atomic energy research?

TRANSFER OF NUCLEAR WEAPONS

- 5 How did Australia then try to use British access to Australian test sites as a way of getting access to nuclear weapons?

INSTABILITY IN ASIA

- 6 What developments in Asia increased Australian fears of

isolation and vulnerability?

BUILDING OUR OWN WEAPON

- 7 What was meant by the idea of ‘Fortress Australia’? In 1965, Australia took its first step towards building its own bomb when Prime Minister Menzies requested a report on the costs of producing nuclear weapons from the Atomic Energy Commission.
- 8 How would having a nuclear reactor at Jervis Bay promote our access to nuclear weapons? (That nuclear reactor was never built.)
- 9 Why did Australia sign the Nuclear Non-Proliferation Treaty and stop trying to become a nuclear-armed nation in the end?

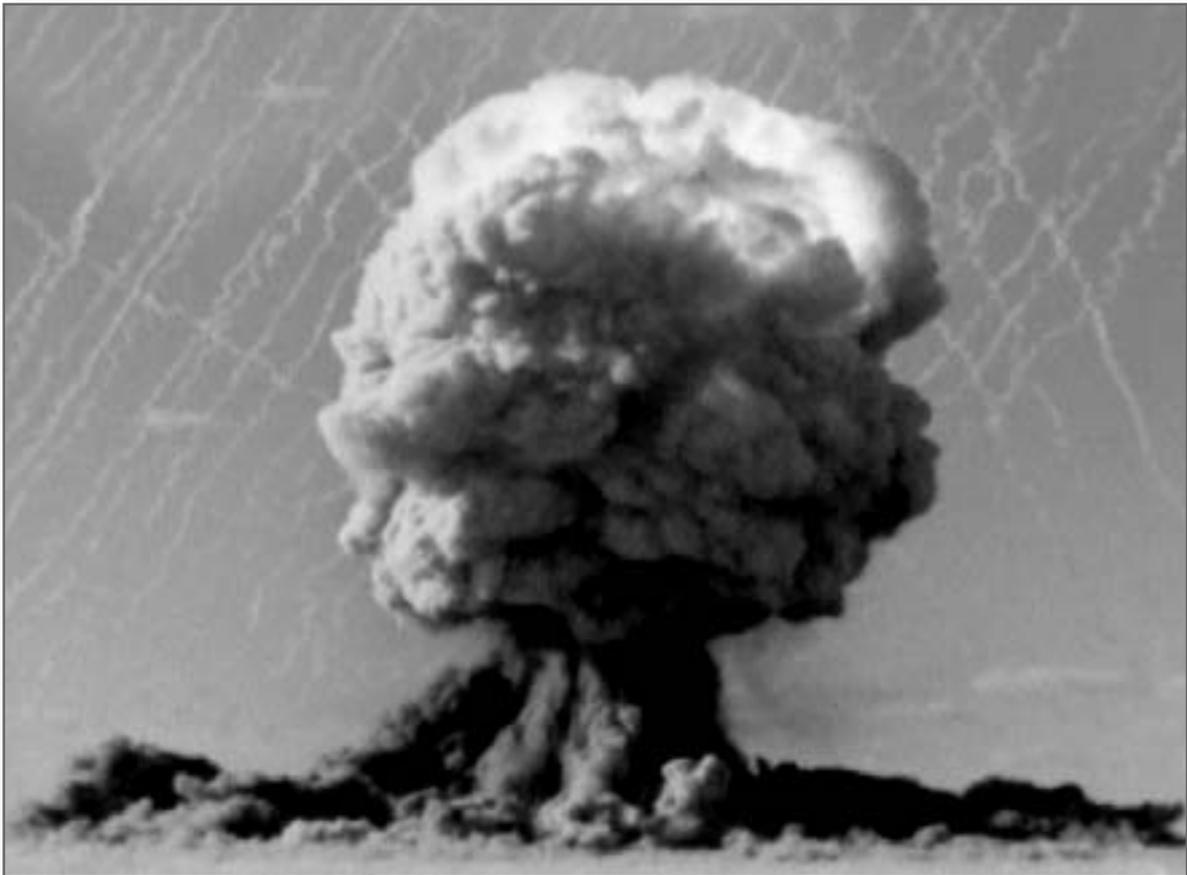
REFLECTING ON KEY IDEAS

THE ROLE OF SCIENTIFIC AND TECHNOLOGICAL EXPERTS IN A DEMOCRACY

In the film, Ann Moyal states that Sir Phillip Baxter did not believe that democratic principles should apply to



FIRE DRILL AT A CHINESE NUCLEAR TEST. A MISSILE IS READIED FOR LAUNCH AT WOOMERA ROCKET RANGE. HIROSHIMA IN DEVASTATION. MISSILE FIRES – WOOMERA ROCKET RANGE



decisions about nuclear technology. Moyal: 'He said, "This is not a matter for the ballot box or for public participation, or even public discussion. Most people know nothing about the technology, therefore the expert must be trusted"'.
 10 Do you agree?
 11 What would be the benefits and the costs for a society in following this belief?

POWER AND INFLUENCE IN POLICY-MAKING

12 What sorts of factors were relevant in the final decision not to develop a nuclear reactor that could produce materials for nuclear weapons? (You might consider such aspects as the influence of individuals, economic considerations, attitudes towards allies, attitudes towards neighbours, political divisions, etc.)

INTERNATIONAL PRESSURES AND GLOBAL 'GOOD CITIZENSHIP'

13 Why did Australia sign the Nuclear Non-Proliferation Treaty in

the end?

- 14 Why do we stay a member?
- 15 Does that make us a good international citizen?

AUSTRALIA—A NUCLEAR FUTURE?

- 16 What certain conditions, according to ANU defence analyst Des Ball, might lead Australia to build a bomb?
- 17 If these conditions occurred, should Australia develop a bomb? Discuss the arguments for and against this proposal.

NATIONAL AND INTERNATIONAL MORALITY

At one stage in the film, Baxter says that because of its size and vulnerability, Australia has a duty to consider any weapon—including nuclear, chemical, biological—to protect its soldiers and civilians. All of these weapons kill civilians as well as military forces.

- 18 Do you think that any weapon is legitimate in war, or are there limits that need to be applied?

ORGANIZATIONS AND CHARACTERS

LIBERAL PARTY OF AUSTRALIA

The conservative party in Australia, it was in opposition from 1941 until 1949, and then in government until 1972. Strongly anti-communist. Strong ties to Britain and the USA.

AUSTRALIAN LABOR PARTY

In government during the Second World War and a strong supporter of the creation of the United Nations in 1945 to regulate international disputes. Many ALP members were sympathetic to the social reformist philosophies of communist parties.

BEN CHIFLEY

Labor Prime Minister from 1945 to 1949.

HERBERT EVATT

A brilliant lawyer, one of the founders of the United Nations after the Second World War, and leader of the Australian Labor Party in opposition between 1951 and 1960. An erratic character, suspected by conservative opponents of having strong sympathies with communism.



ROBERT MENZIES

Pro-British leader of the Australian Liberal Party and Prime Minister between 1949 and 1966.

WILLIAM MCMAHON

Liberal politician, Government Treasurer and Prime Minister between 1971 and 1972.

GOUGH WHITLAM

Reformist Labor Party leader, he was Prime Minister from 1972 until dismissed by Governor-General Sir John Kerr in 1975.

HAROLD HOLT

Liberal Prime Minister between 1966 and 1967. Famous for his pro-American stance during the Vietnam War that Australia would go 'all the way with LBJ'—the American President Lyndon Baines Johnson.

JOHN GORTON

Ex-Second World War pilot, Liberal Government Defence Minister, then Prime Minister from 1967 to 1971.

SIR PHILLIP BAXTER

British scientist who worked on the development of the original US atomic bomb, then migrated to Australia and headed the Australian Atomic Energy Commission. Firm

believer in the value of nuclear weapons and nuclear power for civilian uses.

ARTHUR CALWELL

Leader of the ALP from 1960 to 1967. A strongly anti-communist Catholic. Opposed Australian involvement in the Vietnam War, which he saw as a civil war, not one that would spread communism.

AAEC

Australian Atomic Energy Commission. The organization responsible for the research, planning and implementation of Australian atomic energy and weapons involvement.

ASIO

Australian Security Intelligence Organization set up to defeat spying, particularly by pro-USSR sympathisers and agents, within Australia.

ACTIVITY 3

ANALYSING THE FILM AS A HISTORICAL SOURCE

Film-makers make documentaries for a variety of reasons. They may wish to create an audio-visual record of events, to present ideas, interpret aspects of



TOP: SIR ROBERT MENZIES AND FORMER BRITISH PRIME MINISTER, MR HAROLD MACMILLAN, FEBRUARY 1968. (PHOTO: HANK BRUSSE)
 BOTTOM: SIR PHILLIP BAXTER, CHAIRMAN OF THE AUSTRALIAN ATOMIC ENERGY COMMISSION.

CLOCKWISE FROM TOP: PRIME MINISTER JOHN GORTON ON A TOUR OF VIETNAM JOKING WITH AUSTRALIAN SOLDIERS AT NUI DAT, 1968; THE SECOND MINISTRY CHOSEN BY PRIME MINISTER JOHN GORTON IN THE CABINET ROOM, PARLIAMENT HOUSE, CANBERRA, SHORTLY AFTER BEING SWORN IN BY THE GOVERNOR-GENERAL LORD CASEY ON 28 FEBRUARY 1968; MR JOHN GORTON ADDRESSES THE NATIONAL PRESS CLUB IN CANBERRA, OCTOBER 1969.

CHART 2

KEY CRITERIA TO CONSIDER	AN EXAMPLE FROM THE FILM	YOUR DISCUSSION AND CONCLUSION
<p>(a) Does the film present accurate information?</p> <p>(b) Does it present authoritative information?</p> <p>(c) Does it present a variety of points of view?</p> <p>(d) Is its own bias or position clear?</p>		



CHART 3

ELEMENT	EXAMPLE FROM THE FILM
<p>Narration – What does the narrator say? How does he or she say it? What is the argument being put forward? What is the tone adopted?</p>	
<p>Language – Is it emotive? Are certain words used to influence your responses?</p>	
<p>Music – How is it used? What ‘messages’ are created or reinforced by its use?</p>	
<p>Sound effects – When and how are they used? What impressions do they create?</p>	
<p>Images – What variety of images is used? Are certain images selected for their special impact? Are certain images repeated for impact?</p>	
<p>Editing – How are images sequenced? Are there messages in the choice of footage used, or the order or frequency of their use?</p>	
<p>Special effects – What impressions do the special effects create?</p>	



CHART 4

COLD WAR TIMELINE

During the Cold War period, there was great rivalry and hostility between the democratic capitalist world, led by USA, and the communist world, led by the USSR and including China.

During the Second World War, both the USA and its allies, and both Russia and China, were fighting Germany and Japan. At the end of the War, the victors occupied previously German- and Japanese-controlled territories. Each then supported and encouraged those areas in their economic and social recovery, but in doing so each provided its own system as the model. So the democratic and capitalist system was restored in western Europe, South Korea, South Vietnam and Japan; the communist system was supported in eastern Europe, North Korea, North Vietnam and China after 1949.

In effect, much of the world came to be dominated by one of the two systems, and each wanted to spread its influence over the other.

Various conflicts and clashes developed during this period, with the opposing powers often engaged in other people's wars and conflicts in their attempt to spread their own influence, and to counter the other system's expansion.

These conflicts sometimes led to war—most notably with the United States and associated troops under the United Nations banner fighting Chinese troops in North Korea during the Korean War. At times, also, the world has seemed close to nuclear war—most memorably when the United States and the Soviet Union seemed about to go to war over the nuclear arming of Cuba in 1962.

Various countries gained nuclear weapons after the USA—Russia in 1949, the UK in 1952, France in 1960 and China in 1964.

Since then India and Pakistan have also developed nuclear weapons; Israel does not admit to having them, but is generally considered to have nuclear weapons capability; while South Africa used to have nuclear weapons capability but has dismantled its structures. Several countries are strongly suspected of still trying to develop a nuclear capacity—including North Korea and Iraq.

However, no nuclear weapon has been used in a conflict since 1945.

1939	Outbreak of WWII
1941	Japanese entry into WWII
1942	Japanese attacks on Australian soil—popular fears of an invasion
1945	First (and, so far, only) atomic bombs dropped on Hiroshima and Nagasaki, Japan
1945	Start of the Cold War, with the division of much of the world into American and Soviet spheres of influence
1949	USSR gets its own atomic bomb
1949	Chinese Communist Revolution
1950-1953	Korean War to stop communist North Korea taking over pro-Western South Korea
1950-1960	War against communist guerrillas in Malaya
1952	USA develops a hydrogen bomb
1952	UK gets an atomic bomb
1953	USSR develops its own hydrogen bomb
1962	Cuban missile crisis
1963	Partial Test-Ban Treaty
1964	Chinese atomic bomb
1964-1966	Australian conflict with Indonesia over the creation of the new state of Malaysia
1965	Indonesia says it is getting atomic weapons
1965-1973	Australian involvement in the Vietnam War to stop communist North Vietnam taking over pro-Western South Vietnam
1967	Chinese hydrogen bomb
1968	First 38 nations sign the Nuclear Non-Proliferation Treaty—guaranteeing that they will not develop nuclear weapons
1973	Australia signs the Nuclear Non-Proliferation Treaty
1989	Fall of the Berlin Wall and start of the disintegration of the USSR and its eastern Europe satellite governments
1991	USSR officially ceases to exist under international law (31 December)—the end of the Cold War period
1996	Australia signs the Comprehensive Nuclear-Test-Ban Treaty, banning all nuclear test explosions

life and/or to persuade others to agree with their ideas. A documentary may have an approach that is...

- **Neutral**—that is, presenting facts and arguments fairly, and letting people draw their own conclusions
- **Partisan**—presenting facts and arguments fairly, but supporting and promoting a particular interpretation of those facts and arguments

- **Propagandist**—presenting facts and arguments while promoting a particular interpretation

Into which of these categories do you think *Fortress Australia* fits?

- 1 There are various 'tests' that you can apply to make a decision. Use this table to help you analyse the film and decide (see chart 2).
- 2 To explore the bias/position you need to look carefully at the ele-

ments that are used to construct the film (see chart 3). How are these elements designed to influence your response to the film? Find and discuss examples from the film, then discuss your opinion about the film's bias or position. What is your conclusion—would you say *Fortress Australia* is a neutral, partisan or propagandist documentary?

CHART 5

About Uranium The basis of nuclear fission is the ore, uranium. Uranium is very dense, being the heaviest of all naturally-occurring elements. This means it contains large amounts of stored energy. There are 16 different forms (called 'isotopes') of uranium, with U235 being the one most suitable for the release of nuclear energy.

All matter is made up of atoms. An atom is made up of a nucleus and surrounding electrons. The nucleus is made up of protons and neutrons. In 'atomic' or 'nuclear' weapons, the explosive power comes from the changing of the atom or nucleus by an atomic reaction.

In this atomic reaction, an atom of uranium is bombarded with a neutron. This causes the uranium atom to split (called 'fission'), giving off heat and radiation. It also releases two or three more neutrons, which in turn may cause other atoms to split, releasing more heat and radiation. Each of these releases neutrons, which split more atoms—and so the process goes on, with a massive amount of energy able to be released in a split second. This is called a 'chain reaction'.



Fig. 1 Structure of the atom

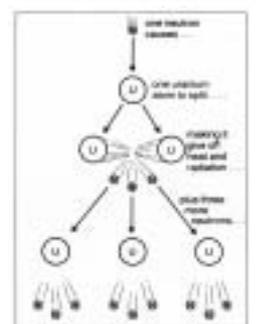


Fig. 2 Nuclear reaction: Fission

- 4 Look back at the Film Australia synopsis of the film on page 4. Do you think it is a fair and accurate synopsis? If so, give your reasons. If not, suggest what changes might be made to it.

ACTIVITY 4

THE 'COLD WAR' CONTEXT

The 'Cold War' refers to the period from the end of the Second World War in 1945 to the collapse of the Berlin Wall in 1989 and the subsequent disintegration of the USSR (see chart 4).

ACTIVITY 5

WHAT IS 'NUCLEAR FISSION'?

What does a nuclear weapon do?

Nuclear weapons kill people, destroy property and contaminate the environment.

Damage caused by nuclear explosions can vary greatly, depending on the weapon's yield (measured in kilotons or megatons); the type of nuclear fuel used; the design of the device; whether it's exploded in the air or at earth's surface; the geography surrounding the target; and whether it's winter or summer, hazy or clear, night or day, windy or calm.

Look at this description of the effects of a small nuclear explosion (one megaton, or the equivalent of one million tonnes of the traditional explosive TNT) on a major city.

Within three seconds, a fireball would be formed with the intensity of heat of the inside of the sun. People in the open beneath the fireball would be vaporized—that is, simply disappear. Even seven miles away, fires would rage and people's flesh would be charred with third-degree burns.

Within twelve seconds the blast waves, creating winds twice the speed of a hurricane, would smash buildings over a five-mile radius. Fires would be fanned by the wind and cars tossed about.

Within ten minutes, a great mushroom cloud about six miles in radius would be formed which would then shower radioactive dust. Some of this would be scattered over a wide area, depending on the wind.

(Derek Heater, *Our World Today*, Oxford University Press, Oxford, 1985, p.13)

The three major elements described above are the blast, heat, and spread of radioactivity.

- 1 Find a map of where you live. Photocopy or draw it within a 12

kilometre radius. Colour in on the map the areas that would be affected by a one-megaton nuclear bomb exploding at ground level, showing these approximate outer limits of different types of damage and destruction:

ZONE A—RADIUS: 2.5 KILOMETRES

At the centre of the ring lies a crater 6100 cm deep and 3,500 cm in diameter. The rim of this crater is 3,500 cm wide and is composed of highly radioactive soil and debris. Nothing recognizable remains within about 97,600 cm from the centre, except, perhaps, the remains of some buildings' foundations. At 2.73 km, only some of the strongest buildings—those made of reinforced, poured concrete—are still standing. Ninety-eight per cent of the population in this area are dead.

ZONE B—RADIUS: 4.5 KILOMETRES

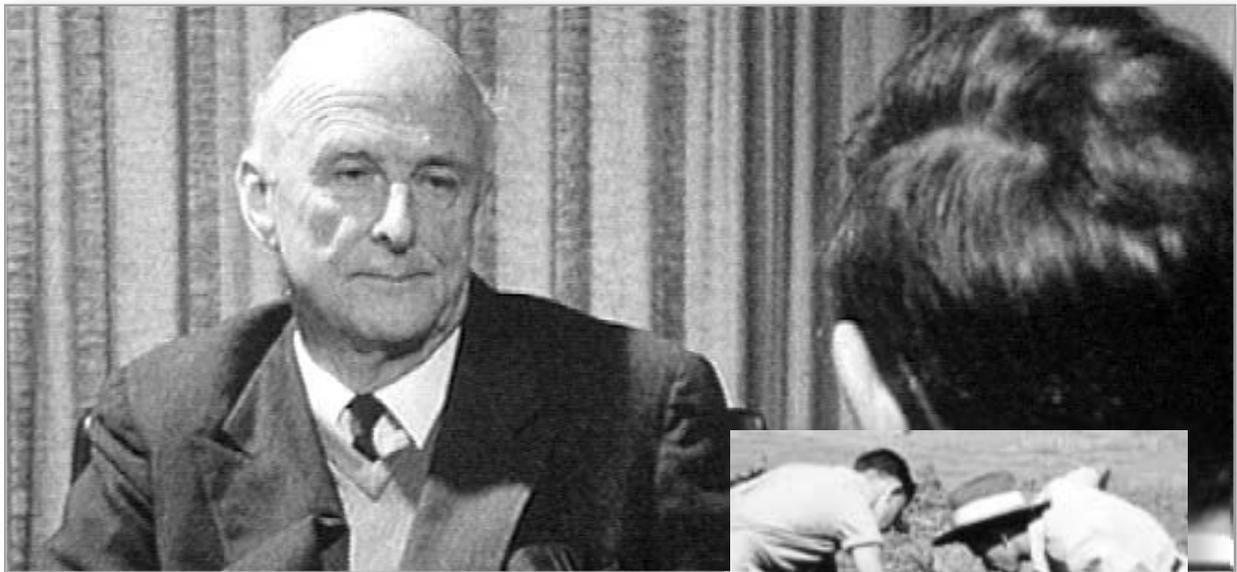
Virtually everything is destroyed between the 12 and 5 psi rings. The walls of typical multi-storey buildings, including apartment buildings, have been completely blown out. The bare, structural skeletons of more and more buildings rise above the debris as you approach the 5 psi ring. Single-family residences within this area have been completely blown away—only their foundations remain. Fifty per cent of the population between the 12 and 5 psi rings are dead. Forty per cent are injured.

ZONE C—RADIUS: 7.5 KILOMETRES

Any single-family residences that have not been completely destroyed are heavily damaged. The windows of office buildings have been blown away, as have some of their walls. Everything on these buildings' upper floors, including the people who were working there, is thrown onto the street. Substantial debris clutters the entire area. Five per cent of the population between the 5 and 2 psi rings are dead. Forty-five per cent are injured.

ZONE D—RADIUS: 12 KILOMETRES

Residences are moderately damaged. Commercial buildings have sustained minimal damage. Twenty-five per cent of the population between the 2 and 1 psi rings have been injured, mainly by flying glass and debris. Many others have been injured from thermal radiation—the heat generated by the blast. The remaining seventy-five per cent are unharmed.



2 Photocopy a map that shows a 400 km radius around the place where you live. Mark your place with an X. Draw a 400 km long pencil-shaped oblong (called a 'plume'), with the x marking your home at the right-hand edge of the shape.

Assuming a wind speed of 25 kilometres per hour due east, and an impact point of a nuclear explosion at X, colour the plume to show which areas would be affected in the following ways:

DISTANCE: 50 KILOMETRES

Much more than a lethal dose of radiation. Death can occur within hours of exposure. About 10 years will need to pass before levels of radioactivity in this area drop low enough to be considered safe by US peacetime standards.

DISTANCE: 150 KILOMETRES

A lethal dose of radiation. Death occurs from two to 14 days.

DISTANCE: 250 KILOMETRES

Causes extensive internal damage, including harm to nerve cells and the cells that line the digestive tract. Also results in a loss of white blood cells and temporary hair loss.

DISTANCE: 400 KILOMETRES

No immediate harmful effects, but does result in a temporary decrease in white blood cells. Two to three years will need to pass before radioactivity levels in this area drop

low enough to be considered safe by US peacetime standards.

(Source: www.hotstuffworks.com Go to 'how nuclear bombs work'.)

3. Comment on the effects the explosion would have on the area where you live.

The explosion described above would be the result of 'nuclear fission'.

Nuclear fission is the process that splits a uranium atom, releasing enormous energy. This energy may be controlled to produce electricity, or it may be uncontrolled to produce heat and an explosion (see chart 5).

In nuclear energy, this release is controlled and the heat is used to create steam. This drives a turbine which in turn drives a generator to create electricity.

There were 435 nuclear power reactors in operation worldwide and 38 more under construction in 1998. About 16 per cent of the world's electricity is generated in this way.

Nuclear-generated electricity plants are far more 'greenhouse friendly' than coal-fired equivalents, but their big disadvantage is that they produce



dangerous wastes, particularly plutonium. Plutonium is highly poisonous until it breaks down—after 10,000 years! Until that time, it needs to be stored in geologically stable conditions.

Nuclear reactors also produce radioactive materials or isotopes that are used in

- medicine—in diagnosis and therapy, and for the sterilization of medical instruments,
- food preservation,
- industry,
- smoke detectors,
- measuring underground water supplies,
- archaeological dating, and many other uses.

The process of creating nuclear fission and nuclear materials occurs in a reactor. All nuclear reactors produce waste, including plutonium, the basic product needed to produce a nuclear weapon.

Australia has one nuclear reactor at Lucas Heights in Sydney. This is a small reactor, suitable for creating

TOP-BOTTOM: SIR PHILIP BAXTER; URANIUM PROSPECTORS

L-R: A SIGN AT THE WOOMERA ROCKET RANGE IN SOUTH AUSTRALIA. THE ANGLO/AUSTRALIAN JOINT MISSILE PROJECT FACILITY THAT BEGAN AFTER WWII. AUSTRALIA HOPED THE FACILITY WOULD SUPPLY WEAPONS FOR AUSTRALIA'S DEFENCE IN THE NUCLEAR AGE – EVEN MISSILES THAT COULD BE NUCLEAR ARMED. • IN 1963, AUSTRALIAN SCIENTISTS DEvised OPERATION BLOWDOWN IN WHICH 50 TONS OF TNT SIMULATED A NUCLEAR EXPLOSION IN THE QUEENSLAND RAINFORESTS • PRODUCER/DIRECTOR PETER BUTT BESIDE A GUIDED MISSILE AT WOOMERA TOWNSHIP. AUSTRALIA ORDERED A VERSION OF THIS MISSILE THAT COULD BE ARMED WITH NUCLEAR WARHEADS BUT THE BRITISH CANCELLED THE PROJECT. AFTER SPENDING HUNDREDS OF MILLIONS OF POUNDS (BILLIONS OF DOLLARS IN TODAY'S TERMS) ON THE JOINT PROJECT, AUSTRALIA GAINED NO NUCLEAR AGE WEAPONRY.

small quantities of medical and industrial isotopes, but not for generating sufficient plutonium for nuclear weapons. A reactor that was used to generate electricity in commercial quantities would be able to produce such materials.

1. There are plans to build a new nuclear reactor at Lucas Heights to replace the existing one. Research this and develop an argument for or against the location of this nuclear reactor at this place.

**SUBJECTS
(IN ORDER OF APPEARANCE)**

SIR PHILIP BAXTER

Chairman, Australian Energy Commission, 1957 – 1972 and Vice Chancellor, University of NSW, 1953 - 1969

SIR LENOX HEWITT

Permanent Head of Prime Minister's Department, Gorton Government, 1968 - 1971

WAYNE REYNOLDS

Author, *Australia's Bid for the Atomic Bomb*

JIM WALSH

Political Scientist, Harvard University

PROFESSOR MARCUS (MARK)

OLIPHANT

Nuttfield Laboratory, Birmingham, 1945 - 1950

PETER MORTON

Author, *Fire Across the Desert*

DES BALL

Defence Analyst, Australian National University

FRANK CAIN

Historian, Australian Defence Force Academy

ALICE CAWTE

Author, *Atomic Australia*

BRIAN MARTIN

Author, *Nuclear Knights*

HAROLD MACMILLAN

British Prime Minister, 1957 - 1963

ALAN PARKINSON

Commonwealth Representative, 1993 - 1997, Maralinga Rehabilitation Project

ARTHUR CALWELL

Member of Parliament (ALP), 1940-1972. Leader of the Opposition, 1960-1967, and Deputy Leader of the Opposition, 1951-1960.

ANDREW ROSS

Cabinet Secretary, Gorton Government, 1968 - 1971 and Military Analyst

ANN MOYAL

Historian of Australian Science

WILLIAM WENTWORTH

Member of Parliament (LIB), 1949-1977 (IND LIB, Oct. - Nov. 1977) including Gorton Government 1968 - 1971. Member of the Joint Parliamentary Committee on Foreign Affairs, 1952-1961.

ARCHIVE SOURCES

ABC Radio Archives

ANSTO

Australian Broadcasting Corporation

Australian Labor Party

Australian War Memorial

Department of Defence

Department of Industry, Science and Resources

Film Australia (NFSA)

FilmWorld

Herald and Weekly Times Ltd

John Fairfax Holding Limited

National Archives of Australia

National Library of Australia

Rob McAuley Productions

ScreenSound Australia

UKAEA

United Nations

US Department of Defense

US National Archives

US National Security Agency

FORTRESS AUSTRALIA

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NARRATOR: Robin Williams

WRITER/DIRECTOR: Peter Butt

PRODUCERS: Peter Butt, Rob McAuley

EXECUTIVE PRODUCER: Stefan Moore

YEAR OF PRODUCTION: 2001

DURATION: 55 minutes

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National Film and Sound Archive of Australia

Sales and Distribution | PO Box 397 Pymont NSW 2009

T +61 2 8202 0144 | F +61 2 8202 0101

E: sales@nfsa.gov.au | www.nfsa.gov.au

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