

Committee Secretary Senate Standing Committees on Environment and Communications
PO Box 6100 Parliament House Canberra ACT 2600

Re: Australian Broadcasting Corporation Amendment (Restoring Shortwave Radio) Bill 2017

To Whom It May Concern

I wish to submit seven objections to the decision to close shortwave transmissions, domestic and foreign, by Radio Australia and the ABC. These objections are summarised below.

1. It is not in the long-term national interest of Australia to cease shortwave transmissions to Asia or, especially, the Pacific. This leaves a void which China is all too ready to fill.
2. While it is true that shortwave listeners are fewer than previously, there are still areas where shortwave is the only reliable and accessible medium. It is also cheaper than alternatives.
3. Governments hostile to Australian interests can disconnect their citizens from the Internet, or impose a selective firewall, at any time and Radio Australia programming hosted on local radio stations exists only by sufferance of the local government.
4. National infrastructure in the Pacific can be fragile and shortwave broadcasts from outside the area have been, and will continue to be, of great service to the people there.
5. For travel within Australia, shortwave provides efficiencies that do not exist with other technologies.
6. Commercial shortwave providers are unable to become substitutes.
7. Australia may be in breach of an international agreement on disaster relief.

1) It is not in the long-term national interest of Australia to cease shortwave transmissions to Asia or, especially, the Pacific. This leaves a void which China is all too ready to fill.

The photograph below shows my Chinese-made DEGEN 1121 radio receiver. It cost me fifty dollars and I was a little annoyed to learn that I could have bought it cheaper overseas. With it I was always able to receive Radio Australia in the Pacific and ABC shortwave within Australia. It receives AM, FM and Longwave (useful in Europe), but more importantly, shortwave. Shortwave reception is an important feature of this radio, and not just this radio, but many others made in China.



DEGEN are just one of many manufacturers in China producing similar radios which are made in their millions. There is, of course, a large domestic market, but they are also sold internationally. In western countries these radios are marketed as travel radios, but in Africa, Asia and the Pacific, they are marketed as the household radio.

If you look at the upper centre of the radio, you will find a small screen and below it “MP3 Recorder”. This section is detachable, so that you have a knock-off of the iPod. It is also the brains of the radio. Most radios made today are programmable to some extent and this is true of the DEGEN 1121. Instead of searching for a program, you can simply load up a list of the stations you want to listen to, which you can then simply select with a few clicks of the buttons instead of tuning to them. Programming this radio requires only simple clerical skills and a computer with a USB port, but the vast majority of its users will not have these. So, as a convenience, the radio comes pre-programmed. Western shortwave stations get a few spots, but the vast bulk of pre-programmed stations are Chinese – hundreds of them.

Shortwave broadcasters do not have fixed channels, but negotiate frequency allocations under international treaty¹. These allocations are not in constant use, but are used as propagation conditions permit, some in the day, some at night, and some in summer and some in winter. In 2017 China Radio International (CRI) operates 255 frequency allocations in 47 languages. Other Chinese government stations also have shortwave frequencies assigned to them: Beibu Bay Radio (BBR) operates on 2 frequencies in 5 languages; the romantically-named Yunnan Radio – The Voice of Shangri-La, 1 frequency in 3 languages; Xinkiang People's Broadcasting Station (to Central Asia), 8 frequencies in 5 languages. The DEGEN 1121 has them all. You buy a radio from a Chinese factory and, perforce, receive Chinese programs.

CRI broadcasts popular western music and music from the target nation. With business advice, travelogues, film reviews and Chinese lessons, CRI has come a long way from the crude propaganda of Mao's time. The CRI news is modelled on the BBC – a few items critical of the Chinese government so that the news appears unbiased and news that the media of the target nation would not normally cover. The developing nations are particularly critical of Western media which often has a very limited and negative viewpoint, but CRI's shortwave news is more palatable. A good example of how China's “soft power” works.

2) While it is true that shortwave listeners are fewer than previously, there are still areas where shortwave is the only reliable and accessible medium. It is also cheaper than alternatives.

We can dismiss as self-serving the argument from ABC management that shortwave radio is 100 years old. We might well make the same claim about piped water and sewerage; there are alternatives but not satisfactory ones. As of January 2017, 227 nations (including autonomous regions eg: Hong Kong or separate political entities eg: Vatican City) had broadcasting systems, mostly domestic. Of these, 87 nations², often with smaller economies than Australia, still think it worth while to provide shortwave broadcasts³. Sometimes they are maintaining contact with emigres or expatriates, but more often, they are projecting their national interests.

Some governments believe that it is in their interests to broadcast to Australia. Broadcasts received in Australia in February and March 2017 include those from: Afghanistan, Algeria, Angola, Austria, Bangladesh, Brazil, China, Cuba, Ethiopia, France, Germany, India, Indonesia, Italy, Japan,

1 Frequency allocations are coordinated by the International Telecommunications Union (ITU), now a branch of the UN, but which predates even the League of Nations. It is the oldest international body. While it records all official allocations, not every one is used, but might be kept in reserve.

2 The industry reference *2017 World Radio Television Handbook* (WRTH) is the source used here. Unlike the ITU, it only records those frequencies which broadcasters have advertised as being in use.

3 These numbers are supported by the *2017 Shortwave Frequency Guide* published by Joerg Klingenfuss who maintains a team of radio observers and interceptors. His publication only lists those stations heard by his team.

Kuwait, Laos, Madagascar, Mongolia, Myanmar, Nigeria, N Korea, New Zealand, Oman, Peru, Phillipines, Romania, Russia, Solomon Islands, S Korea, Sri Lanka, Tajikistan, Thailand, Turkey, UK, USA, Vanuatu, Vietnam, Zambia. Zanzibar and Zimbabwe⁴.

Non-state entities also use shortwave as it provides a reach to an audience that do not have Internet access, either because it is not available, or their listeners cannot afford it. In some cases the local government is hostile. Religious broadcasters are well-represented, mostly protestant evangelicals with a home base in the USA. Examples include WTWW (Tennessee), WWCR (Nashville), the Overcomer Ministry (various foreign outlets) and Reach Beyond (the last having a transmitter in Australia). Vatican Radio has operated several transmitters since the 1920s, and last year had planned to cease all shortwave broadcasts, but they have since reinstated their service to Africa with the realisation that internet streaming will not reach their audience.

In 2015 the BBC justified its decision to minimise shortwave transmissions, saying that the “decision makers” whom it wished to influence no longer used shortwave to gain another perspective, instead using the Internet. In many parts of Africa, Asia and the Pacific, there is no Internet, or else it is beyond the reach of most citizens. In West Africa, where there is Internet connection, typically it comes via a mobile phone, which has limitations in presentation.

Shortwave radio is cheap for the listener, and getting cheaper with modern technology. Where once only those in senior government service, or the well-off, could afford a receiver, now the growing middle-class, and even those with just a few days of work a week, can afford a receiver. These are the people the Chinese are targeting. They may not be “decision makers” but there are a lot of them and they have growing economic and political influence. They are mostly young, and some will occupy positions of influence in time.

At any one time up to a million Australians are travelling overseas on holiday and working. While most will have internet access, there will always be some who do not – Australians are well-known for pursuing adventure well off the beaten track. Overseas media outlets usually make no mention of Australia.

3) Governments hostile to Australian interests can disconnect their citizens from the Internet, or impose a selective firewall, at any time and Radio Australia programming hosted on local FM stations exist only by sufferance of the local government.

The “Great Firewall” of China is notorious. In recent years the governments of Egypt, Syria and Libya have completely disconnected from the Internet for a period and almost every government on Earth actively blocks individual websites and monitors searches for specific information. Software to locate dissident postings is readily for sale to authoritarian governments from commercial sources.

Western governments that have minimised or abandoned shortwave have taken to buying program time on local broadcast stations, but this is always subject to local laws. For example, Fiji has become hostile to Australian broadcasters using local facilities.

Shortwave cannot be stopped at a border. While radio transmissions can be jammed, to some extent, there are always techniques that can be used to minimise the effects of deliberate interference. Speak with older immigrants from the USSR or Eastern Europe and they will tell you how much they relied on the BBC and the Voice of America, even when they were heavily jammed.

⁴ As recorded by the Australian Radio DX Club (ARDXC). DX clubs are enthusiast organisations which monitor the radio spectrum. Members will typically have some technical background and operate high-end radio receiving equipment. Historically reception reports were provided to broadcasters and coordinated efforts made to identify unknown transmissions. There are 139 clubs currently operating worldwide.

Shortwave radio is the natural choice to evade censorship and an unsympathetic government. Tuning across the shortwave bands you can always hear broadcasts from stations representing dissidents or separatists within some nation. They can be openly or covertly sponsored by another nation. Some examples monitored recently in Australia (with their target audience) are: Eye Radio (S Sudan), Radio Publique Africaine (Rwanda), Voice of the Straits (China), Voice of Zhanghua (Taiwan), Voice of Hope (N Korea) and Radio Liberty (Afghanistan, China, N Korea and others)⁵.

4) National infrastructure in the Pacific can be fragile and shortwave broadcasts from outside the area have been, and will continue to be, of great service to the people there.

Vanuatu is an excellent example. It has fifteen low-power FM stations, but in most cases the station building is a one-room breeze-block construction with a corrugated iron roof. The transmitter tower is a metal pole stabilised by guy wires. Power comes from a generator. Any Force 2 or stronger cyclone will put it out of operation. Vanuatu has two AM stations and two shortwave transmitters, but these are also vulnerable. In fact, one is still out of operation from the 2015 cyclone. When the local station goes off-air, local people have tuned to Radio Australia for news. You could repeat that story across the Pacific. In low income countries the digital divide is stark and access to low cost technology is vitally important.

5) For travel within Australia, shortwave provides efficiencies that do not exist with other technologies.

As of January 2017, 40 nations used shortwave transmissions for domestic broadcasting⁶. These were nations with a large, sparsely populated, geographical area for whom other methods, such as satellite, would be too expensive. Conventional shortwave radio is cheap for the listener and newer transmitter technology has improved operation costs. It provides wide coverage with a suitable antenna. There are no problems with reception in a moving vehicle. No expertise is need to tune a signal.

The alternatives all present serious issues. FM broadcasting can be dismissed immediately. It is strictly a line-of-sight transmission mode and even then will drop out at carrier-to-noise levels that do not affect AM.

Digital modes (DAB+ and DRM) can provide excellent quality, but they have the problem of the “digital cliff”. Whereas an AM signal will vanish slowly into the static, a digital signal is either there or not. DAB+ is transmitted at about 200MHz making it unsuitable for long-range broadcasting. DRM is a possible choice because it is used by some shortwave broadcasters – it is a shortwave mode – but DRM receivers are expensive and in short supply; they do not perform well at high noise levels. DRM chips are power-hungry and they quickly exhaust batteries.

Using existing AM stations to provide coverage of isolated areas, particularly in the Northern Territory, would be a possible solution if power was increased to 10 kiloWatts or more to provide a more extensive ground-wave coverage and night-time skywave coverage. Skywave transmission on the AM band can be important but has its issues.

Committee members might like to make the experiment of attaching a long wire to a good quality AM receiver and tuning around the band at night. As an example Adelaide stations (but not Wollongong stations) can be received in Sydney at night . Sometimes these signals interfere with one another. Night-time skywave interference is a well-known problem in North America and Europe. Increasing the transmit power of Northern Territory stations would also raise night-time

5 ARDXC monthly reports.

6 WRTH

interference issues. For example, 8DR Darwin on 657kHz might interfere with 2BY Byrock. 8KN Katherine is on the same frequency as 2CO Corowa. 8TC Tennant Creek shares a frequency with 2KP Kempsey. 8HA Alice Springs shares a frequency with 2LM Lismore, 7AD Devonport and 6BY Bridgetown.

Satellite solutions are expensive and there is no satellite coverage in many parts of our continent. US experience with direct satellite broadcast to vehicles has not been encouraging. Going to satellite broadcasting would also impose a high cost on low income listeners.

6) Commercial shortwave providers are unable to become substitutes.

Australia has four commercial shortwave broadcasters, most of which are offshoots of other commercial AM or FM stations – Ozy Radio (Newcastle), Radio Symban (Sydney), Station X (Brisbane) and Unique Radio (Tamworth/Gunnedah) – but they are low-powered and struggle financially, often being off air. The recent promise of a shortwave service by 4KZ Innisfail is welcome, but will only cover Cape York, and again will be low-powered.

7) Australia may be in breach of an international agreement on disaster relief.

The High Frequency Coordinating Conference (HFCC)⁷, in accordance with Article 12 of the ITU Radio Regulations, is preparing the International Radio for Disaster Relief (IRDR) project. The IRDR is a projected system of on-line coordination of shortwave radio frequencies. In the event of a widespread disaster when local or even regional information networks are overloaded or even destroyed, shortwave transmitters outside the region would be used to provide information to local authorities and the population, easily received on simple equipment. Australia's contribution would come from the Broadcasting Australia⁸ transmitter at Shepparton. The 2013 World Disaster Report⁹ supports the idea that shortwave radio is the preferred platform when other platforms such as FM, satellite or the Internet are unavailable because of loss of infrastructure, remote geography or high cost.

Conclusion

I hope the committee will consider the arguments presented. A text search of Pacific-centred on-line forums for business interests, cruising yachts, expatriates, and activists working for greater political freedoms have convinced me that many hundreds of users of the shortwave spectrum are critical of the decision to cease shortwave broadcasts. I do not subscribe to the theory that the decision to cease shortwave broadcasts is part of a deal to ensure exports to China; but it does reflect a growing number of voters who believe that decisions of governments have ulterior motivations and are made away from parliament. I hope that the decision is simply misguided and that it will be reversed.

About the writer

John Alexander Faulkner (no relation to the ex-senator). I have no commercial interest in, and am not employed in, the industry. My interest with radio began listening to the propaganda broadcasts of the Cold War. I have been involved with community radio and was a witness before the old Broadcasting Tribunal at one hearing. I am a member of the Australian Radio DX Club and a licensed radio amateur. I frequently travel within inland Australia for recreation and hold an Outpost Radio (flying doctor service) licence. Federal electorate: Barton.

⁷ <http://www.hfcc.org/humanitarian/>

⁸ Broadcasting Australia owns and operates both Radio Australia's & the ABC's transmitters, copying BBC practice.

⁹ <http://www.ifrc.org/PageFiles/134658/WDR%202013%20complete.pdf>