

Submission to the DCA Review of Australian Broadcasting Services in the Asia Pacific

By Peter Parker July 30, 2018

About the author

Peter Parker has had a life-long involvement in high frequency (HF) radio transmitting and short wave listening from various locations around Australia and has written extensively on the topic. While I lack formal broadcast engineering qualifications, my practical experience has provided an understanding of the capabilities of HF communication and broadcasting.

Introduction

I thank the department for this opportunity to make this submission.

I support the restoration of both the ABC's Northern Territory and Radio Australia transmissions on short wave (HF) frequencies for technical and social reasons elaborated below. This submission will concentrate on services to the Asia-Pacific.

Capabilities of HF (short wave) radio frequencies

High frequencies (or short wave) occupy the radio spectrum between approximately 2 and 30 megahertz. Unlike the medium frequency AM (around 1 MHz) and very high frequency FM (around 100 MHz) broadcast bands used in populated areas, high frequencies have unique characteristics suitable for medium and long distance transmissions.

High frequency transmissions bounce off the ionosphere to allow reception in areas distant from the transmitter site. A single HF transmitter in mainland Australia can offer good coverage throughout much of the Pacific. This avoids reliance on overseas relay stations to relay Radio Australia's transmissions. Such relay stations can break down or be shut down by hostile governments or military forces. Consequently it is unwise to rely on them in politically sensitive areas.

Another advantage of shortwave is the modest receiver and simple antenna required. Basic shortwave receivers cost \$100 or less. They are small, compact and can run off common AA batteries. Because current consumption is a small fraction of an amp a radio can go for many hours on one set of batteries. Solar power is also effective.

Antennas for shortwave are very simple. Signals are often strong enough to be heard on a short telescopic whip most radios come with. Failing that, adding a few metres of wire can improve reception.

Shortwave signal propagation is affected by the sunspot cycle. There can also be times when solar flares reduce reception quality. However single-hop shortwave signals, such as would be heard in the Pacific from Australia are both strong and reliable. Also broadcasters have a choice of frequencies that can be changed to assure optimum reception in target areas.

To summarise shortwave transmission allows effective long-range reception on cheap and portable receivers that can readily be taken and used by travellers, outback workers or villagers.

Weaknesses of alternative transmission methods

Prior to the closure of shortwave transmissions the ABC's website included advice on some alternative ways of receiving its programs.

These included internet, satellite delivery and local FM retransmissions. All these have their limitations in remote and overseas areas. For instance reliable internet may be expensive unavailable. Satellite delivery requires expensive receivers and dishes. Local low power FM transmissions typically peter out a few kilometres from the major settlements. And if in other countries the latter can be switched off by governments that may not wish its people to hear outside news from sources such as Radio Australia.

While they have benefits, none of these media in their current state of development provides the sort of blanket Pacific area coverage on low-cost receivers that shortwave can.

Community and social importance of shortwave radio broadcasting

Shortwave radio may be the only contact people have with the outside world. As well as providing information and entertainment (as radio does in the major cities) the ability to transmit storm, flood and cyclone warnings is an important safety facility. Having such capabilities is an important low-cost contribution Australia can make to the region as a precursor to the aid we normally provide following significant disasters.

Conclusion

Despite advances in communications technology, a shortwave capability remains essential to allow Australia to broadcast to the Pacific.

With a potentially shrinking US influence, the emergence of China as a superpower and growth of regional powers such as India and Indonesia, international relationships are in a state of flux. Aspirant emerging powers are seeking closer diplomatic, trade and potentially military ties with Pacific nations. Australia's historically strong position as the first and nearest provider of education, trade, expertise and even security to smaller Pacific nations may come under challenge.

As a western-aligned middle power seeking greater engagement in Asia, Australia can ill afford to neglect its long-standing relationships with Pacific nations. Whether through education, trade, defence or media, such relationships must be both broad and deep.

Shortwave broadcasting should be part of Australia's voice. As recognised by New Zealand and China, shortwave offers a unique medium that allows reception on low-cost equipment and cannot be shut down by potentially hostile domestic governments. I recommend the department examine ways that funding could be found to allow the resumption of shortwave broadcasting services to the Asia-Pacific.