

Proposed amateur class licence and considerations for higher power operation

Consultation paper

This personal submission contains my answers to selected questions from Mr Ralph Klimek a licensed amateur radio operator of long standing, holding the callsign VK3ZZC and a general observation relating to the economic development of the nation. I have no commercial interests in this matter.

I give my thanks and appreciation to the ACMA for this opportunity to comment on this matter of proposed policy changes to the license conditions determination for the amateur service.

My General Observations with respect to high power operations.

I would like to echo and endorse the response of the Wireless Institute of Australia in this matter. I would like to add the following opinion.

The primary role of the Amateur Service is one of education. It is this reason alone that Amateur Radio is permitted by most nations, even the repressive police states and dictatorships. The service encourages and empowers citizens to self educate in the electronic arts and sciences and serves as a gateway into the electrical engineering and allied professions, as it has done for me. The cost savings to the state can be substantial if one considers the extraordinary cost of graduating just one electrical engineer.

There will exist, in the near term, a national need for engineering proficiency of multi-kilowatt solid state radio frequency electronics. There will shortly appear large quantities of high power inverters in every available engineering niche. We now have high frequency industrial and domestic motor drives, industrial and domestic induction heaters. We have already very high power electrical traction in domestic automobiles. Every domestic and commercial premises will have multi-kilowatt solar energy harvesters. All of these things utilize, at their core, high power solid state electronics running at radio frequencies. There exists a present and future need for engineering personnel that can engage proficiently in the specification, correct operation, design, construction, installation and maintenance of this equipment. Technicians, and engineering management also need awareness that these equipments require EMC compliance. There will shortly appear a tsunami of these devices and non compliant EMC behavior threatens to damage not only the Amateur service but also essential emergency, commercial and government radio communications services.

Easing the high power restrictions on the Amateur service could go a long way in getting engineering management to understand the need for EMC compliance by allowing amateur licensees the practice

of correctly managing high power emissions and their necessary EMC compliance. The amateur radio service is a gateway to the ranks of engineering and engineering management.

My responses to specific questions from the consultation paper follow.

My response to Question 8

What are your views on the proposal to allow Advanced amateurs to apply for assigned scientific licences for certain experimentation uses, such as reflecting signals from a celestial body as well as inter-continental ionospheric and trans-equatorial propagation experiments? (See section 6.)

The unit and recurring costs of the scientific license is an insurmountable hurdle for myself. The ACMA is seeking to reduce the administrative workload of the authority and this would become yet another burden of doubtful value.

My response to Question 9

Noting the proposal mentioned in 8, are there other amateur experimentation uses that require higher power that you think should also be considered under assigned scientific licensing arrangements? (See section 6.)

- Wireless power transfer
- Tropospheric and meteor scatter
- Design, construction, management and operation of high power kilowatt class radio equipment. I cannot build that which I may not legally use. The Amateur service is meant to, and, does fulfill an educational role. I believe there exists a national need for people, technicians and engineers knowledgeable in the arts and sciences of high powered radio frequency equipment now and for the future economic development of the nation.

My response to Question 10

What are your views on the medium-term proposal to allow Advanced amateurs to apply for authorization for other higher power use-cases under certain conditions? Please provide brief

information to help us understand your view. (See section 6.)

Notwithstanding the long standing permission given by American and other national authorities to amateur licensees to set the routine limit at 1KW, the cautious and conservative approach of the ACMA and its predecessors was well placed at the time, at the close of world war two and subsequent years when external international telecommunications was carried by radio short wave services. There was also the valid caution with respect to potential interference to commercial broadcasting services. Such caution is no longer required due to the vacation of demand for international shortwave radio telecommunication and the inherent resistance to interference of digital radio and television. The current state of the regulation is excessively conservative and the proposal is onerous to the point of suppressing interest in higher power operation given the high cost of equipment. The caution about EMC is well placed and needs to have a place in the regulatory framework.

My response to Question 11

Is a 1kW power limit appropriate? Why or why not? If not, what alternative do you propose and why? (See section 6.)

The proposed 1KW limit is largely a matter of tradition and desire for parity with other international authorities. The current 100 Watt average power is at best conservative and at worst, parsimonious. Whatever limit is determined, it has to be a function of the spectrum band. As the number is arbitrary, I suggest 200 Watt continuous average carrier power to at least bring the advanced license to parity with the lower American license classes. License holders are currently aggrieved by the rising radio background noise which government authorities have been unable to police in practice. A power limit increase (of whatever magnitude) might be seen as a just redress. A 200 Watt limit would still allow for failures of EMC self policing to satisfy the public safety requirement.

My response to Question 12

Are there particular bands that you consider should or should not be able to be accessed for Advanced amateur higher power operations? Which band(s) and why? (See section 6.)

All long and medium bands should be allowed higher power once it can be shown that power line carrier systems and aviation non directional beacons have been vacated.

All shortwave bands 160meter to 6 meters should allow the higher powers.

The two VHF/UHF bands, 2 meters and 70cm, conservative power limits should apply to terrestrial operators, to protect commercial and government services from potential harm.

The two lower microwave bands require terrestrial usage limits to protect third parties from potential physiological harm.

Celestial UHF and microwave advanced operators should be permitted higher power without further regulatory impediments. In any case, high power operation is severely limited by equipment availability and economic restraints.

My response to Question 13

What use-cases would require stations to operate at power limits for Advanced amateurs higher than the 400W currently permitted? (See section 6.)

Ans.

I would like to educate myself in the design , construction and compliant operation of high power solid state electronics of the 500 watt average power class.

My responses to Question 14

For each use-case mentioned in 13, please briefly answer:

Why is a higher power limit needed?

I would like to educate myself in the design , construction and compliant operation of high power solid state electronics of the 500 watt average power class.

What are the specific limitations of the current power limit?

Current rules effectively prevent my endeavor.

What power level is required?

500 watt average power

What is the technical description of this power level requirements (for example, transmitter output power, emission mode)?

Transmitter output power, modes with a high duty cycle.

What amateur service frequency bands would be used?

None specified as I am putting the general case, however, the HF bands are currently within my competence and interest.

How often will a higher power level be required?

When commissioning new equipment and during periods of adverse propagation. Intermittently, given the high cost of electrical power !

What is the location of the station?

Domestic, large suburban block.

End of submission