

**BEFORE THE Waikato District Plan
HEARINGS PANEL**

**IN THE MATTER of the Resource Management
Act 1991**

A N D

**IN THE MATTER of submissions lodged on the
Proposed Waikato District Plan**

REGARDING Amateur Radio Configurations

**STATEMENT OF EVIDENCE OF K. DOUGLAS BIRT ON BEHALF OF
NEW ZEALAND ASSOCIATION OF RADIO TRANSMITTERS INCORPORATED (NZART)
SUBMISSION NUMBER 594**

DATED 28 September 2020

1. SUMMARY

1.1 Hearing Topic “Infrastructure”:

Performance Standards for Amateur Radio Configuration relates to the way that amateurs may experiment with all aspects of Radio Technology within the confines of private properties

1.2 My evidence addresses the submission lodged by the **New Zealand Association of Radio Transmitters Incorporated (“NZART”)** and the **Waikato VHF Group (“Branch 81”)** which seeks provision for Amateur Radio Configurations (“ARCs”) as permitted activities in all Residential, Township and Rural zones in the District Plan.

2. Short form of what NZART wants

2.1 Provision of a basic set of aerials and support structures, to enable experimentation in radio technology to take place in conformance with the intention of the International Telecommunications Union (a subordinate arm of the United Nations) and to enable the avocation of licenced radio amateurs to be pursued.

2.2 In providing this, NZART sought clarification of and/or improvement to several rules which Council had included in it Proposed District Plan.

2.3 The main reasons for seeking permitted activity status for Amateur Radio Configurations are:

- (a) The experimental nature of amateur radio which results in constant reconfiguration and therefore requires ongoing resource consent applications; and
- (b) The international and national need to encourage the radio transmission community; and
- (c) The need to protect the physical resource used by the amateur radio community (the “ether” or radio frequency spectrum).
- (d) Consistency with other district plan provisions throughout New Zealand and in particular Tauranga where the Environment Court approved permitted activity status for a range of ARCs;
- (e) The small number of licensed radio operators in New Zealand generally and in Waikato in particular and the prohibitive cost of obtaining resource consent for ARCs;
- (f) The impossibility of obtaining neighbours’ consent resulting in resource consents for ARCs being notified or limited notified which increases the cost.

3. ATTACHMENTS

3.1 Attachment 1: K D Birt; Expert Credentials

4. INTRODUCTION

4.1 My name is Kenneth Douglas Birt. I am a licensed amateur radio operator ZL1BFS and have held an amateur radio licence since 1963. I am retired and live with my wife Catherine at Whangaparaoa. We moved to the current Whangaparaoa property in 2013. Prior to that we lived in Gulf Harbour for two years, and Gisborne for 14 years. At my Gisborne property I had amateur radio configurations comprising a High Frequency Yagi antenna at 12m height, two wire dipole antennas for the 80m and 40m bands, and vertical co-linear antennas for the 2 metre and 70cm VHF Band.

In Whangaparaoa I currently have a wire dipole antenna for the 80m band attached at the top of an 11m vertical VHF Colinear, a smaller vertical co-linear antenna for the 2 metre and 70 cm VHF bands, a High Frequency multi-band Yagi (and rotator) on top of a 12m stayed pipe mast, and (in amongst trees) a 13m high experimental aluminium vertical antenna usable on all the HF bands. These were installed under what was then the Rodney Provisions of the Auckland City Plan.

4.2 I am an electrical engineer specialised in telecommunications and I hold the qualifications of MBA, BE(Elect), CMEngNZ. (I am a life member of the professional body "Engineers NZ"). I spent the last 14 years of my career as a senior manager in Local Government both at Franklin District Council and Gisborne District Council, and have been responsible for managing many Council Consultation processes. Full details of my qualifications and experience are set out in **Attachment 1** to this evidence. I am currently NZART's Local Government Liaison Officer and the Secretary of Hibiscus Coast Radio Society (Branch 80 of NZART). I am also the Project Coordinator for the launch of a locally made satellite "Kiwisat" containing amateur transponders, and beacons available for experimentation and research into radio propagation.

4.3 **New Zealand Association of Radio Transmitters Incorporated ("NZART")** in conjunction with the **Waikato VHF Group (Inc) ("Branch 81")** lodged submission No.594 on the Proposed Waikato District Plan. Essentially this submission sought permitted activity status for a range of Amateur Radio Configurations (ARCs). NZART was aware of the technical complexity of its submission and filed extensive supporting technical material as part of its submission to assist in understanding the submission. **NZART** was very pleased with the response of Waikato Council in the provisions that were incorporated in the Proposed Plan.

4.4 The joint submission to the Proposed District Plan was very comprehensive, and comprised:

- (a) **Part A** which provided an Introduction, Background, and Requested amendments to the proposed Waikato Plan.
- (b) **Part B** which contained justification for the submission and technical supporting documents. This document contained 8 attachments as follows:
 - (i) **Attachment 1:** General User License – Amateur Radio.pdf (Issued by NZ Radio Spectrum Management).
 - (ii) **Attachment 2:** A summary of the contributions by amateur radio operators (HAMS) during the cyclone Katrina response.
 - (iii) **Attachment 3:** Photographs of amateur radio configurations.
 - (iv) **Attachment 4:** A document entitled “**Antenna Height and Communications Effectiveness**” Second Edition, prepared as a *Guide for City Planners and Amateur Radio Operators* by the *American Radio Relay League Inc.*
 - (v) **Attachment 5:** The decision of the Environment Court in *Tauranga Emergency Communications Group Incorporated and New Zealand Association of Radio Transmitters Incorporated v Tauranga City Council* Decision Number [2012] NZEnvC 193.
 - (vi) **Attachment 6:** The oral interim decision of the Environment Court [2012] NZEnvC 107 in the same case as Attachment 5 which gives the reasoning that resulted in permitted activity provisions being included in the Tauranga City District Plan.
 - (vii) **Attachment 7:** Article by *Louise Smith* in the *Science and Environment* section of the *House of Commons Library: Enforcement of Planning Law*, Standard Note – SN/SC/1579.
 - (viii) **Attachment 8:** Article by Dr Siwiak entitled “**An Optimum Height for an Elevated HF Antenna**” QEX May/June 2011.

4.5 All these attachments to the NZART submission provide the technical and planning justification for NZART seeking permitted activity status for amateur radio configurations.

5. CODE OF CONDUCT

- 5.1 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

6. SCOPE

- 6.1 At this Hearing, we wish to deal again with the requirement for a Definition of Amateur Radio Configurations.
- 6.2 We wish to support all the other planner's recommendations as documented in the S.42A report.

7. WHAT IS AMATEUR RADIO?

- 7.1 On Page 2 of Part B of our original submission, we introduced the International Telecommunications Union (ITU) which is a major function of the United Nations organisation. Every five years the ITU holds a World Radio Conference (WRC)
- 7.2 At the WRC just about every Government, every large commercial enterprise, most military establishments, all telecommunications authorities, plus academic institutions and space administrations, attend and vie for frequencies and bandwidth.
- 7.3 The commercial operators are willing to lay out billions of dollars for the frequencies they want, because they can use them to provide commercial services which will provide billions of dollars of revenue.
- 7.4 In the face of all that commercial and military pressure, the participants of the WRC say "Yes, but we must set aside some frequencies for independent, unbiased, experimentation and development. It has to be available to groups who are independent of the commercial imperatives". It is in the interests of International Development that these frequencies be provided to unpaid amateurs. I believe there is a large degree of consensus in these WRC allocations.
- 7.5 In all there are approximately 36 different wave-bands allocated to Amateurs in NZ. These are listed on pages 3 & 4 of the General User Licence in **Part B, Attachment 4** of our original submission. Each of these wave-bands has its own peculiarities, and needs its own specific aerials (with the exception that it is sometimes possible to have electrical traps in the aerial elements which allow them to work on several wavebands).

7.6 In practice, no amateur is ever going to have the time or resources to experiment with all 36 wavebands – but reasonable provision has been included in Waikato’s Plan for amateurs to work with whatever minimal selection they may choose at any given

8. WAKATO DISTRICT COUNCIL’S RESPONSE.

8.1 Many Local Authorities appear to ignore the fact that the technological world sees great value in the experimentation and developments provided by radio amateurs, and as a result they have been known to blindly set rules which place pristine urban streetscapes above the Amenity Values of amateur radio.

8.2 Waikato Council is to be commended on its very balanced approach to this issue. Just about everything that NZART raised in the submission to the Draft Plan has been addressed in the Proposed Plan, and most remaining discrepancies have been addressed in the subsequent S.42A report.

9. ASSESSMENT OF ENVIRONMENTAL EFFECTS

9.1 It is very unfortunate that in judging the merits of Amateur Radio Configurations in a residential area, the decision in many Councils frequently rests on a judgement of adverse visual effects versus what they see as nothing more than someone’s “hobby”.

9.2 Amateur radio should not be thought of as a “hobby” but rather as an internationally controlled experimental science, in which the people who are involved in that science do not seek remuneration. Quoting from the book “Radio Science for the Radio Amateur” the author Dr Eric P Nichols makes the point:

*A big difference between Big Science and amateur science is that most of the “official” participants in the former do it as a full time job. Radio Amateurs who do radio science, for the most part, do it in their free time. That is why it is called **amateur**, which means the work is done without pay, **not** that it is done without expertise.*

9.3 Amateur Radio has many Amenity Values, which should be kept in mind whenever an environmental assessment is undertaken.

9.4 Amateur Radio provides to the community

- (a) The amenity of telecommunications expertise in the community
- (b) The amenity of having a reliable system of communications during civil or environmental emergencies

- (c) The social amenity of having competent communications during search and rescue events.
- (d) The amenity of having a widely dispersed source of experimental researchers
- (e) The amenity of keeping New Zealand as a significant player on the international technological stage.

And Amateur Radio provides to the individual operator

- (f) the amenity of self-education in technology
- (g) the amenity of an interest that can be pursued throughout life
- (h) the amenity of a network of friendships linked by radio communications

9.5 One of the most comprehensive Environmental Assessments ever applied to Amateur Radio Configurations was presented in the oral decision given by Judge J Smith in the Environmental Court case in Tauranga in 2012. [ENVIRONMENT COURT DECISION NUMBER [2012] NZEnvC 107 – This was provided in our original submission, Part B, Attachment 6].

10. OUR SUBMISSION TO THE HEARINGS PANEL

10.1 Submission Point 594.1: DEFINITION: Amateur Radio Configurations (ARCs)

- (a) Our original submission requested a definition of Amateur Radio Configurations as being ***Aerials, antennas and associated support structures which are owned and operated by licensed amateur radio operators.***
- (b) The section 42A response was “I do not agree that a definition is needed for “amateur radio configurations” as the common meaning is sufficient”, and “I recommend rejecting NZART [594.1]”
- (c) On reading subsequent parts of the S.42A report, we accept that from the context, the common meaning regarding the technical aspects of what aerials and support structures are (i.e. the physical components) is quite clear, but what has been overlooked is the most significant part of the definition: being “*which are owned and operated by licensed amateur radio operators*”
- (d) The amateur licence examination does not restrict itself just to technological aspects, but also ensures that radio amateur applicants have a sound knowledge of the appropriate legislation, both international and national. Furthermore, amateurs are also expected to abide by a code of ethics. It follows that radio amateurs want to distance themselves from the increasing incidence of “cow-boys” in many aspects of modern society.

- (e) In my past capacity of a senior Local Government Manager one of my portfolios was management of council's legal department. In my mind, a definition is required for every aspects of Council's functions if there is any possibility of misrepresentation, or any possible need for legal redress. Radio amateurs are licensed under both International Law, and New Zealand Law, but we amateurs are quite conscious of the large number of cases of flagrant disregard for the law by miscreants. Some examples:
- (i) The Ministry of Business, Innovation, and Employment has recently had to introduce a regulation which redresses the practice of individuals and businesses marketing and selling what is ostensibly amateur radio equipment. Anyone was able to obtain this equipment, and the owners could well desire to put up aerials to extend the transmission range (illegally).
 - (ii) My own radio club (The Hibiscus Coast Radio Society – Branch 80) has recently acquired a very elaborate tower and log-periodic beam antenna which had been built and owned by a previous Citizen Band operator. It's use was quite illegal, but significantly it had probably been built/erected without any council consents. And without that clause in the definition, what recourse would council have if the owner claimed it was an amateur radio aerial?
- (f) To NZART, these issues could be described as "Don't Care" issues – they are the problem of Council, not NZART. But personally, I would counsel Council to reconsider the rejection of that definition.

10.2 Submission Point 549.2: Clarification of the difference between aerials and antennas.

- (a) NZART accepts the explanation given. No further action or changes are requested.

10.3 Submission Point 549.3: Inconsistency between heights given in the different rules.

- (a) The explanation given is accepted, and NZART does not seek any further changes.
- (b) However, the council terminology used is very subjective, and we feel that to avoid less experienced planners misinterpreting the rules at some future date, an explanatory paragraph should accompany the rules in question.

10.4 Submission Point 549.4: Antennas not being located in Identified Areas.

- (a) NZART accepts the recommended decision, and requests no further action.

- 10.5 Submission Point 549.5: Correction of references.
- (a) NZART accepts the corrections proposed.
- 10.6 Submission Point 549.6: : An additional pole structure.
- (a) NZART thanks Council for agreeing to this request.
 - (b) Just by way of further justification, the submitter has on his property a vertical antenna called "A 43 foot Monopole" (which is a vertical antenna 13.1m high, positioned inconspicuously among trees). In a storm recently, the two primary HF aerials (a wire dipole and a Yagi aerial) were both damaged and needed repair before they could be used, but the standby 43' monopole was able to be brought into service and enabled scheduled communications to take place.
- 10.7 Submission Point 549.7: Correction of Numbering error.
- (a) NZART agrees with the corrections proposed.
- 10.8 Submission Point 549.8: Simplification of Clauses and Format.
- (a) NZART appreciates the changes proposed by the S.42A report. We believe it is a great improvement. No further action is requested.
- 10.9 Submission point 549.9: Use of aerial structures at clubrooms.
- (a) NZART appreciates the explanation given.

DATED this 28th day of September 2020



K Douglas Birt, MBA, BE (Elect) CEngNZ
(Local Government Liaison Officer - NZART)