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Exhibit Detailing Program of Research for Part 5 Application

a. The complete program of research and experimentation proposed including description of equipment and theory of operation.

This is a program of research and experimentation of radio at the 2200m wavelength. This program is expected to run for a 5 year period at the end of which an extension may be sought through the FCC.

Research is into the propagation of radio at 2200m, suitability of this band for one- and two-way automatic (narrowband) and aural communication, and the effects of weather, season, time of day, radiated power and antenna height upon this communication.

This communication will be through a radio beacon operated between 135.7 and 137.8 kHz using CW Morse code for aural reception, slow Morse code for automatic reception (QRSS) and slow DFSK for automatic reception. Both one- and two-way communication (two-way with other Part-5 license holders only, as per regulations) will be attempted.

The equipment used for this experimentation is and will be built by me, Eric Smith. I am the applicant for this license and the owner/operator of the beacon.

The transmitter will be one of (up to) 5 designs to be built and operated in turn. These are/will be crystal controlled and operated at LF through division of the crystal frequency or direct digital synthesis. The main differences between the (up to) 5 models will be in the final. I will be starting out with a low power final and over the course of the program will work up to a final approaching the applied for limit of 200 watts input and 1 watt effective radiated power.

Operation will be through automatic or hand keying for CW Morse code and automatic keying for QRSS and DFSK.

b. The specific objectives sought to be accomplished.

Objectives to be accomplished are:

- Study and proof of effective communication in this band using stated techniques.
- Study of propagation and suitability of this band for one- and two-way communication.
- Study of effects of weather, season, time of day, radiated power, and antenna height upon this communication.

c. How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion or utilization of the radio art, or is along line not already investigated.

This program will entail research into a portion of the spectrum previously not available for amateur use. This program will test both aural and automatic signaling techniques, and detail their effectiveness and how these techniques are influenced by weather, season, time of day, radiated power, and antenna height.

The results of this program will be made available to the public (for free) and to the FCC in hopes that the data may be used to further understand operation in this band and might perhaps be used by the FCC in any future consideration of uses for this band.

Thank you for your consideration and I await your decision on this application.

Best regards,

Eric Smith