

# ***RADIO SOCIETY***

of Great Britain

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## **PROPAGATION STUDIES COMMITTEE**

Minutes of a meeting of the Propagation Studies Committee held in Leicester on Saturday 31<sup>st</sup> October 2015, commencing at 1300hrs.

### **1. Members Present**

Steve Nichols	G0KYA	Chairman
Dr John Worsnop	G4BAO	Vice Chairman
Chris Deacon	G4IFX	Secretary
Alan Melia	G3NYK	
Ron Smith	G3SVW	
Prof Barry Chambers	G8AGN	

Apologies for absence had been received from Gwyn Williams G4FKH, Alan Messenger G0TLK, Sam Jewell G4DDK, Dr Marcus Walden G0IJZ, Graham Kimbell G3TCT and Jeremy Whitfield G3IMW.

### **2. Minutes of meeting held on 18<sup>th</sup> April 2015**

These minutes had previously been approved via email and posted on the RSGB website.

### **3. Matters arising from the minutes of the previous meeting**

Covered elsewhere in these minutes.

### **4. PSC Membership**

#### **4.1 Full Members**

No changes.

#### **4.2 Corresponding/Associate Members**

It was noted that three corresponding members and two associate members have dropped off the PSC Yahoo group, which means that they no longer receive any PSC communications.

**Action:** G4IFX to politely enquire whether they have intentionally left the group and then update the PSC membership list accordingly.

#### **4.3 RSGB Board Representative**

It was noted that Alan Messenger, G0TLK is now the RSGB board representative to PSC.

#### 4.4 PSC Vice Chairman

John Worsnop, G4BAO was unanimously elected as Vice Chairman of PSC.

#### 4.5 Discussion about attracting new blood to PSC

The RSGB Youth Committee has been charged with getting one of their number onto every RSGB committee by the end of this year. No contact has been received but it was agreed that if an individual was put forward who had a genuine interest in propagation, then that proposal would be positively received.

**Action: G0KYA** to contact the chair of the Youth Committee to discuss how they can work together with PSC on topics of mutual interest.

Gwyn has suggested training suitable individuals, potentially using online courses available from such as [www.hfradio.org](http://www.hfradio.org) (see Gwyn's report, attached).

It was agreed that the right way to involve new people in the work of PSC would be to find someone who already has an active interest in doing simple propagation experiments, rather than necessarily training someone from scratch, although in principle training could be provided/funded.

John G4BAO suggested that a 'citizen science' approach to propagation research could be adopted but it was recognised that it would be necessary to provide the format, facilities and method for such work, as in similar initiatives in other scientific fields e.g. astronomy.

### 5. Topics for Discussion

#### 5.1 PSC Remit

It was agreed that the PSC remit should be re-written to state a maximum number of full members of ten. The quorum for PSC meetings was agreed to be set at five.

#### 5.2 Propagation news via Twitter

PSC has been instructed NOT to use the @RSGBpropnews twitter account to disseminate propagation news and this has now ceased, pending receipt of instructions on how to use the main RSGB twitter account.

**Action: G0KYA** to enquire of RSGB what is the appropriate route for time-sensitive propagation news.

#### 5.3 Presentation for Clubs: "Understanding VHF Propagation"

Following the success of Steve, G0KYA's "Understanding HF Propagation" presentation, it was agreed to use John, G4BAO's VHF propagation presentation as

the basis for a VHF version, with the same approach to presentations for clubs as the HF pack. G0KYA will do the voiceover, using a script to be prepared by G4BAO.

**Action: G4BAO**

## 6. Projects and Potential Projects

### 6.1 ITURHFProp graphical interface (G4FKH)

Gwyn, G4FKH was not present so G0KYA gave a summary report on this and the following item (6.2).

As an intermediate step, Gwyn has developed a format for a tabular colour-coded display which will initially be trialled on his website. Steve showed the group the display and it was agreed to be a significant step forward over the standard output. It was suggested that the time should be on the horizontal axis rather than the vertical axis.

**Action: G4FKH** to consider

Unfortunately it has not been possible to find someone to programme the new graphical interface free of charge, either via the RSGB Youth Group or via RadCom. Gwyn has been asked to produce a specification for the interface and the suggestion was made that money should be requested from RSGB to pay someone to work with Gwyn to produce a specification.

**Action: G0KYA/G4FKH**

It was noted that G0KYA already publishes a HamCap-based, hour by hour mercator-projection propagation map which is linked to from the RSGB website and receives a lot of positive feedback. The underlying engine is not as good as ITURHFprop but the feedback does indicate the value to amateur operators of a suitable graphical interface.

### 6.2 Noise Measurement Projects (G4FKH)

The noise measurement project continues and initial results have been reported, with no increase in noise levels observed.

Gwyn will be seeking additional funding to extend the project. The question of the need for calibration to compensate for changes in sensitivity over time was raised again and G4FKH was asked to consider the question.

**Action: G4FKH** to review the need for calibration, using his own station as the test case.

### 6.3 IARU 50MHz Synchronised Beacons (G4IFX)

The UK Six Metre Group has now allocated a budget to fund the installation of an OZ2M-style PI4 beacon at GB3MCB, as a pilot for the 50MHz synchronised beacon chain. The required beacon modules have been ordered from Denmark and it is

hoped that installation will take place in the first half of 2016. At this stage it is not proposed to implement time synchronisation, since there will initially be only one beacon on the chosen frequency. It is anticipated that it will be a simple firmware change to implement time sequencing later.

## **7. Reports**

### **7.1 Chairman's Report (G0KYA)**

It has been agreed in principle that, rather than PSC sponsoring a new RSGB propagation book, G0KYA will update the existing RSGB book (by Ian Poole) under joint authorship. Work will probably start early next year.

**Action: G0KYA** report progress at the next PSC meeting.

The need for PSC succession planning was discussed but it was agreed that, given the considerable efforts to date to recruit new members, it will have to proceed on a short-term basis as and when opportunities arise.

The Chairman reported that GB3SSS (the 2m transatlantic beacon located at the Poldhu club) has not been spotted since July 2014 and is believed to be no longer operational.

It was also reported that there is little interest from the Poldhu club in an online receiver being installed at the club appears to be a non-starter, if only because of the fact that internet access is very poor there. Simon Brown, G4ELI is attempting to make contact with Goonhilly to see if there is any interest in installing a 2m transatlantic SDR there.

The Chairman reported that the Chilton Ionosonde is old and may not be maintainable for much longer. Ruth Bamford of RAL has indicated that a cheaper alternative technical design may be available and that one of the technical staff there is interested to develop it. She has asked whether any help might be available from the amateur radio community in developing/implementing this new design. G0KYA will attempt to make contact with the relevant people to discuss further.

**Action: G0KYA**

**7.2 Chris, G4IFX** reported that he has now installed an Anan 100D SDR with dual synchronised receivers, with the horizontal part of his cross-polarised yagi on one receiver and the vertical part connected to the other. He is now exploring the facilities of the SDR software to configure the receivers and support investigations of the polarisation of 50MHz ionospheric signals.

**7.3 John, G4BAO** reported on the 70cm beacon programme, which was part-funded using the Charlie Newton legacy:

GB3ANG - has moved to its new frequency  
GB3UHF – new antennas installed  
GB3FNY – no progress

GB3MCB – has moved to its new frequency  
GB3NGI – has recently had some technical problems

Other beacons:

GB3WGI on 2m - (also funded from the legacy) is still on the air but no transatlantic reports have been received.

GB3PKT (24GHz) - has been suffering from a noise problem  
GB3CAM – discussions are underway about adding 47GHz capability

John also reported that he gave a talk on meteor scatter at the RSGB Convention and a GHz band talk to the Norfolk club. He has continued to give regular input to the propagation section of the GB2RS news bulletin and feedback has been good, on the basis that it is educational as well as informational.

He also reported that G4BAO and G4DDK have input their sections to the RSGB 'Introduction to Moonbounce' book but no further progress from the main author and/or RSGB has been reported.

- 7.4 Alan, G3NYK** reported that he has been looking at trying to get information out of RBN/WSPR/Opera data for LF but unfortunately there is relatively little LF data at the moment. Night-time LF propagation is via the E layer. There is a correlation of poor propagation with magnetic disturbances but there are some other nights where propagation is poor but there is no magnetic disturbance. There may be other data sources to look at for correlations e.g. the auroral electrojet data available for Japan.
- 7.5 Ron, G3SVW** reported that he has given talks at South Manchester Radio about solar effects on propagation and has another talk booked in North Wales. He has also been promoting propagation interests with members of SMRC e.g. using RBN to collect data.
- 7.6 Barry, G8AGN** reported that at the moment his activities are unavoidably curtailed and nanowave work has been quiet, but he is currently working on millimetre-wave propagation and correlating that with nanowaves.
- 7.7 Gwyn, G4FKH's** report is attached.
- 7.8 Marcus, G0IJZ** reported (by email) that he will be giving a presentation to the Chelmsford Amateur Radio Society on Tuesday 3<sup>rd</sup> November. Subject matter is to be the 5 MHz beacon network and NVIS propagation: "5 MHz Beacon Measurements, NVIS Maximum Operating Frequency and NVIS Propagation Predictions". He also gave input for the discussion about broadening PSC membership.
- 7.9 Jeremy, G3IMW** reported (by email) that he is taking up again his interest in Multi-hop Es openings UK to W /VE and the apparent lack of them this year. He has have listed the number of days reported in the years 1993 to 2004 in June and July for comparison. There could be a correlation with changes in position of Jet Stream.
- 7.10 Jim, G3YLA** reported (by email) that this year he has given propagation-related talks at Norfolk ARC, Shefford ARC and Huntingdon & DARS.

From a research point of view, in an attempt to explore the linkage between the jet stream winds in the troposphere at about 10km and Sporadic-E caused by the wind shear mechanism in the E region at 110km, Jim carried out a survey of forecast jet stream winds from the GFS atmospheric model in relation to Es reports. From 1st May to 31st August he provided daily commentary on RSGB Radio Propagation Forums about Sporadic E prospects related to the forecast jet stream winds. These charts will continue to be uploaded outside the main Es season, but without the commentary. He reported in excess of 6000 hits so far.

Jim's winter project is to analyse the charts and band reports to glean a closer linkage to the type of jet stream patterns which are the most productive for Es. The initial thoughts are that there is a very good relationship between Es and the position of the jet streams; subjectively it's probably getting on towards a 90% link between the two. However, it's not obvious, at the moment, which part of the jet stream, or if any particular mountain ranges are more likely to produce Es when the jet stream interacts with them.

**7.11 Graham, G3TCT** reported (by email) that this year he presented the G0KYA HF video on Understanding HF Propagation to Mid Somerset club in May 2015 with supporting material, and also presented a talk on 50MHz diversity reception at the G3WOS 50MHz BBQ in August.

## **8. Date of Next Meeting**

The date of the next meeting was agreed to be Saturday 18<sup>th</sup> April 2016.

## **9. Close**

The meeting closed at 16.20.

**Chris Deacon G4IFX**  
**PSC Secretary**

## APPENDIX:

### G4FKH report for PSC Meeting 31st October

John Gould informed me at the Newark Hamfest that the University part of the HF Noise Floor study is to be abandoned! He said that the EMC committee may take it over, but of course they will need to re-apply for funding. He also said that with the demise of any University participation he would like to see my part of the study to continue beyond the current further 2 years! I explained that I have already considered that and will be seeking funding in the last year of the current term.

As discussed with Steve and Chris at Newark, it is becoming apparent that we are running out of volunteers with the requisite knowledge to participate in the PSC, especially at HF. I have been considering this and perhaps a way to alleviate this shortage is to educate those who seek the requisite propagation knowledge. This will require a lot of study time by those wishing to learn and also some money. There are currently a couple of good courses available on the Internet, (i) from IPS Australia, URL <http://www.ips.gov.au/Educational/5/2> this is a very good introduction to HF Radio Propagation and should be read as a first stage introduction. There is also a HF Radio Propagation Manual available for AUD 18, see URL [http://www.ips.gov.au/Products\\_and\\_Services/2/3](http://www.ips.gov.au/Products_and_Services/2/3). Both cover more or less the same ground but the manual is more comprehensive.

Following the students study and understanding of the above the next logical step would be to purchase the (ii) STD course "Space Weather Forecasting Course" available not from the STD but from URL [http://hfradio.org/swp\\_course/](http://hfradio.org/swp_course/) this costs USD 95.00 which includes the necessary PropLab Pro-3 program. This could take 4 years of study and although there are questions at the end of each section, STD no longer administer the course and answers are no longer checked. I would be willing to attempt to answer questions that those studying the course may have, but I do not have the where-with-all to teach the course.

Following those two courses there are plenty of good books out there, I can provide a short list, but they are necessarily expensive.

If the committee considers this is a way forward and worth the effort necessary to get it off the ground, then perhaps the committee could discuss possible ways in which to do this!

Gwyn – G4FKH