THE INTERNATIONAL AMATEUR RADIO UNION, REGION 1
AMATEUR RADIO DIRECTION FINDING WORKING GROUP

Chairman:
Jiří Mareček, OK2BWN
Obřanská 593
CZ-664 01 Bílovice nad Svitavou
CZECH REPUBLIC
phone: +420 602531222
e-mail: marecek@ok2bwn.cz
www.ardf-r1.org

To: all members of the IARU Region1
ARDF Working Group

Cc: IARU Region 1 EC
IARU Region 2 ARDF Coordinator
IARU Region 3 ARDF Committee

Date: September 11th, 2018

MINUTES

41st Plenary Meeting of the IARU Region 1 ARDF Working Group

held at the IARU World ARDF Championship, Sokcho, Korea, September 2nd, 2018, 20:45

The agenda:

1. The meeting was opened by the ARDF WG Chairman on September 2nd, 2018 at 20:45.

2. The WG Chairman welcomed the guests:
   - Ole Garpestad, LA2RR, IARU Vice-President
   - Ken Harker, WM5R, IARU R2 ARDF Coordinator
   - Yoh Hiroshi Izuta, JF1RPZ, IARU R3 ARDF Committee Chairman
   - and number of guests from IARU R2 and R3

3. The present WG members and guests introduced themselves
   - see the list of participants (Appendix A)
   - out of 23 ARDF WG members, 16 were present (in person or by the proxy) which constitutes a quorum.

4. The agenda of the 41st ARDF WG Plenary Meeting was approved unanimously.

5. No applications of new International Class referees were presented.

6. Forthcoming IARU Youth ARDF Championships
   US0VA presented the report about preparations of the 3rd WYAC to be hosted by UARL
   Date and venue: June 30 - July 3, 2019, Vinnitsia, Ukraine
   Estimated fees: 230 EUR total package (accommodation, full board, transportation, starting fees, excursion, service), starting fee 40 EUR per competition, 140 EUR visitors packet (without starts).
   A plan of organizational and practical measures for the preparation and holding of the Championship was developed. Negotiations were held and preliminary agreement was reached

about accommodation of participants and guests of the championship in the hotels of Vinnitsa.

Areas of running races and terms of the drawing (correction) of sports maps were defined.

UARL proposed LZ3NN as the Chairman of the Jury, which was unanimously approved.

The starting fee of 40 EUR/competition was unanimously approved.

7. Forthcoming IARU ARDF Championships

S56SON presented the report about preparations of the 22nd IARU R1 ARDF Championship in 2019 to be hosted by ZRS

Date and venue: September 2 - 8, 2019, Rogla, Slovenia

Estimated fees: full package with accommodation approximately 490 EUR (subject to local sponsorship). Fee includes: starting fee 50 EUR per competition.

We have established at ZRS a working group for the ARDF R1 2019, have a regular monthly meetings. So far, activities are in line with the plan for Championship.

We have a contract with hotels for accommodation.

New IOF maps, for the Championship, are in the process of making.

Official website for the Championship (http://ardf2019.hamradio.si/) will be started at the end of september 2018.

ZRS proposed Dusan Ćeha, YU1EA as the Chairman of the Jury, which was unanimously approved.

The starting fee of 50 EUR/competition was unanimously approved.

8. The hosting society of ARDF Championships in the years 2022+: so far no official offer.

9. Evaluation of the ARDF events

OK2BWN presented the report of the 2nd World Youth Championship 2018 hosted by CRC, Czech Republic (Appendix B).

10. OK2BWN presented the recent cuttings of the IARU R1 ARDF budget and and their negative impact on the WG and on the IARU R1 events. The current budget is insufficient to cover costs as required by the IARU ARDF Rules and IARU R1 Bye-Laws and WG Terms of Reference. No positive adjustment to the budget could be achieved so far, not even support for the youth championships from the significantly increased IARU R1 Youth Projects budget. However, the WG decided in an e-mail voting that the larger share of the ARDF budget shall be used for the youth.

11. ARDF Rules

1. ARDF course definitions (see Appendix C).

OK2BWN shortly presented a proposal to replace the current course length definition (based on effective length) by a purely time-based definition (expected winning time). He asked the WG to discuss this in their countries.

In the discussion in the WG, members raised various other issues related to courses, such as the number of TX often being very low for veterans, and approaches to mitigate such issues, by using more TX on one band (instead of two bands simultaneously), and by improved information exchange between the siting referee and the chairman of the Jury.

The final work on the new definition shall be coordinated by OK2BWN.

2. Some questions, explanations and formal improvements collected through the year (see Appendix D).

OK2BWN presented a number of minor changes. The changes were not discussed in detail in the WG meeting. DG0YT requested to clarify that only the traditional SPORTident time-keeping system shall be considered approved automatically, in contrast to the new AIR+ system which use a different mode of operation (without backup in the control units).

The final work shall be coordinated by OK2BWN. An e-mail voting was scheduled for end of September, leaving time for feedback and improvement.

12. Any other business, courtesies

Following topics should be dealt with in a wider discussion:

1. New generation communication devices: The importance of the topic was mentioned and the ad-hoc group chaired by DG0YT established.

2. Information given to the competitors, consequences and impact to the fairness of the ARDF: the ad-hoc group chaired by LZ3NN was established

13. The ARDF WG Chairman thanked all WG members and guests for their contributions and closed the meeting at 23:00.

Actions to be taken:

1. to send the approved Minutes to the IARU R1 EC
   Action: OK2BWN, deadline: September 30th, 2018.

2. to ask the IARU R1 EC for final approval of the Chairmen of the Juries for both IARU ARDF Championships 2019
   Action: OK2BWN, deadline: September 30th, 2018.

3. to study the proposed Changes to the Rules (Appendix D:), add comments and/or further proposals, prepare for e-mail voting
   Action: all WG members, deadline: September 30th, 2018.

4. to update the initial paper about the ARDF Courses definiton (agenda point 11.1, Appendix C:) and start the discussion
   Action: OK2BWN, deadline: November 30th, 2018.

5. to prepare the initial paper about the New generation communication devices (agenda point 12.1, Appendix E:) and start the discussion
   Action: DG0YT/LA9NGA, deadline: October 30th, 2018.

6. to prepare the initial paper about the Information flow in ARDF ((agenda point 12.2) and start the discussion
   Action: LZ3NN/UA3BL, deadline: October 30th, 2018.

7. to submit the annual WG membership evaluation together with the update of the contact data, International referees activity report and calendar of the ARDF events in 2019
   Action: all WG members, deadline: December 15th, 2018.

Jiří Mareček, OK2BWN
IARU Region 1 ARDF WG Chairman
Minute taker: Kai Pastor, DG0YT

APPENDIX A:

List of participants of the 41st IARU R1 ARDF WG Plenary Meeting

name, callsign   society

Jiri Marecek, OK2BWN   IARU R1 ARDF WG Chairman

Ole Garpestad, LA2RR   IARU Vice President
Ken Harker, WM5R   IARU R2 ARDF coordinator
Yoh Hiroshi Izuta, JF1RPZ IARU R3 ARDF Committee Chairman

Viktor Tsenkov, LZ3NN   BFRA
Pavel Mokrý, OK2PMA   CRC
Kai Pastor, DG0YT   DARC
Adrian Marcu, YO7LOI   FRR
Hana Sokolović   HRS
Seitkul Assaubay, UN7ZA KFRR
Arunas Maršalka, LY4FOX LRMD
Gábor Szabo   MRáSZ
Jon Sletvold, LA9NGA   NRRL
Marek Kubisiak   PZK
John Marriott, M0OJM   RSGB
Kimmo Lehtosaari, OH2JKU SRAL
Chermen Guliev, UA3BL   SRR
Jan Palmquist, SM5FUG   SSA
Igor Lazarev, US0VA   UARL
Niko Gaberc, S56SON   ZRS

Thida Denpruektham, HS1ASC RAST
Joseph Huberman, K5JGH ARRL
Jack Bramham, VK3WWW WIA

APPENDIX B:

Report from the 2nd IARU World Youth ARDF Championships 2018

The event was organized by the Czech Radio Club, in Doksy (Czech Republic), on June 30 - July 4, 2018. The event center was placed in the accommodation facility Posluv Mlyn in Doksy, in the immediate vicinity of competition areas. Total participation was 117 competitors from 11 countries.

Detailed information and result list are contained in the WYAC2018 Final Report issued by the organizer and published at the event website www.wyac2018.com, where all further information can be found as well.

All information were given sufficiently in advance, completely and precisely. The timetable was perfectly followed and the whole organisation went smoothly. A special bulletin was issued every day.

Team leaders meetings were organized on the day before every competition. At these meetings, starting lists were approved, some detailed information about the forthcoming competition were given and questions, if any, was answered.

The International Jury (consisting of all team leaders, siting referee, organizing committee chairman and the Jury chairman) met at the beginning of the event and then after every competition at the finish area. At these meetings, observations from the competitions were discussed and result lists were approved. There were no disputes, minor problems were solved easily. The decisions of all Jury meetings can be found in the Final Report. All results were approved immediately with no objections.

There were no technical problems during the competitions. There were also no serious injuries except for two injured ankles, small bruises were treated on the spot.

The chosen terrain (technically demanding but without inappropriate physical difficulties) and perfect maps allow to set very good courses. The winning times around 40 minutes for classics and 15 minutes for sprint prove excellent sense for demands of courses for youth categories.

Start and finish areas at all competitions were excellent, well arranged and very well organized.

The IARU Region 1 Child Protection Principles were followed throughout the whole event. Actually, there was no reason to apply "protection" as the event took place in a fun and friendly atmosphere.

It was a great pleasure to work with this experienced organizing team. Every organizer made a perfect job and thanks to them the whole event took place smoothly with no problems.

Jiří Mareček, OK2BWN

IARU R1 International Class Referee

WYAC 2018 International Jury Chairman

APPENDIX C:

Some considerations about the course definitions

Jiří Mareček, OK2BWN

One of the most important duties of the ARDF event organizer, namely Siting Referee, is to prepare courses adequate to the capabilities (especially physical) of the particular categories. From the beginning of ARDF history, some limits are defined by the Rules. As ARDF developed to a more objective sport, these definitions needed to be more precise, which, at a certain level, brings stricter limits for the Siting Referee.

The difficulty of the ARDF course has two aspects:

- technical difficulty
- physical difficulty

The technical difficulty itself is determined mainly by the number of controls, their locations and installations. As there are only small number of controls in ARDF, most of them shared by several categories, we can say that the average technical difficulty of the competition (per control) is shared for all categories and cannot be set separately for particular categories. This can only be done by setting a different number of controls - which simultaneously affects the physical difficulty of the courses.

Therefore, the differences between courses for particular categories result mainly from the physical parameters of the courses.

The physical difficulty of the course is determined by the length of the course, altitude profile and terrain difficulty. Let us look in detail at those parameters:

- **Course length:** From the beginning of the ARDF, the difficulty of ARDF courses were defined just by the course length. Original definition was just "4-7 km" for all categories, ultimately defined for particular categories and extended by the course climb effect.

- **Course altitude profile:** Originally included just as the limit of level difference (maximum 600 m, maximum 6% of the course length etc.), ultimately replaced by the 10 times of total climb added to the course length ("effective course length") which is much more precise and equivalent to the actual influence on the result.

- **Terrain difficulty** determined by the factors such as vegetation, undergrowth, ground surface quality and the density of paths in the competition area significantly affects the running speed of competitors (easily 1:4 or so, especially for older categories). It is strange that it is still NOT INCLUDED IN the course difficulty.

Course definition development history

At the beginning, the courses were defined just by the rough limits of the length and altitude range. Simple limits relied on the skills and responsibility of the Siting Referee - which was sometimes not enough - we have already experienced winning times between 30 and 100 minutes, which is definitely too big a range. In addition, although this system could be enough for the four original categories in the age range 16-40+, it definitely is not enough for the current 15 categories in the age range 13-70+.

Over the years, more precise and detailed definitions have been demanded by SEVERAL societies and resulted from their proposals (not from some SGR fabrications, as claimed recently!). Now we have quite precise definitions for every category and (except for some rare excesses) most courses in recent years have given acceptable winning times.

However, I must admit that a too detailed definition may limit the work of the Siting Referee.

So, how to give the Siting Referee all the freedom he/she needs and guarantee the appropriate course for every category?

Please note that the courses have always been defined by the length (although the length itself does not tell much about the course), not by the running time (which would be much better). If we evaluate the running performance, run time is much more accurate than just the run length.

Proposal for a new approach to the course difficulty definition

I would like to present a new look into the topic which simplifies a lot the wording in the Rules, gives enough freedom to the Siting Referee and guarantees the proper courses for all categories. (Actually, this is nothing new and I have tried to suggest it several times).

The main idea is given by this simple sentence:

20.4   **The courses shall be set to give the winning times of 60 minutes.**   (for the classics)

This definition embraces all aspects of the ARDF course difficulty: the course length, total climb, terrain difficulty and also technical demands, giving the Siting Referee all the freedom to create courses according to his/her intentions.

It just requires the Siting Referee to think carefully about the layout of the course, taking into account the control positions, route profile and terrain between them, as weel as the vegetation in the forest. Simply put, he/she should consider everything affecting the result - which is certainly his/her duty anyway.

Of course, neither is it possible nor necessary to perform the 60 minutes winning time exactly. If the Siting Referee does his/her best to prepare courses for this time and the result is close to 60 minutes, everything is perfect.

If we look at the result lists of recent years, we can see that 60 + - 10 minutes was the winning time at most of the ARDF Championships in most of the categories. This time is also accepted as the proper length for classic ARDF course by many experienced competitors and trainers.

The guide for calculating the time from the distance, climb, terrain difficulty etc will be included into the Principles of Course planning together with some examples.

Proposed implementation of the above principles into the Rules:

20.   Courses

20.1   The Principles for ARDF Course Planning (see Appendix 2) shall be followed.

20.2   The standard of the courses shall be worthy of international ARDF events. The technical and navigational skill, concentration and running ability of the competitors shall be tested. All courses shall call upon a range of different ARDF techniques.

20.3   Transmitters including the finish beacon shall be located not less than 400 meters apart. The transmitter nearest to the start shall be located not less than 750 meters from the start. Transmitters on different bands shall be located not less than 200 m apart. Both finish beacons are at the same location.

20.4   The courses shall be set to give the winning times 60 minutes. *(classics)*

S20.4 The courses shall be set to give the winning times 15 minutes. *(sprint)*

F20.4 The courses shall be set to give the winning times 45 minutes. *(foxoring)*

Y20.4 The courses shall be set to give the winning times 40 minutes. *(Youth classics)*

20.7   Number of transmitters shall be 4-6 (including the beacon). *(classics, Youth)*

S20.7 Number of transmitters shall be 7-12 (including the beacon and spectator's control). *(sprint)*

F20.7 Number of transmitters shall be 7-11 (including the beacon). *(foxoring)*

20.4   Course lengths shall be given as the length of the shortest viable route from the start line via the transmitters in optimum order to the finish line.

20.5   Total climb along the shortest viable route shall not exceed 6% of the course length.

20.6   The effective course length is defined as the course length (see 20.4) + 10 times the total climb along it.

Note: points 20.4-20.7 are to be moved to the guide Principles of course planning for help with calculating running times

20.7   Number of transmitters and course lengths assigned to particular categories:

Category	number of transmitters	effective course length
W19	4 + finish beacon	6…8 km
W21	4 + finish beacon	7…9 km
W35	4…5 + finish beacon	6…8 km
W50	3…4 + finish beacon	5…7 km
W60	3…4 + finish beacon	4…6 km
M19	4 + finish beacon	8…10 km
M21	5 + finish beacon	9…12 km
M40	4 + finish beacon	8…10 km
M50	4…5 + finish beacon	6…8 km
M60	3…4 + finish beacon	5…7 km
M70	3…4 + finish beacon	4…6 km

20.8   The composition of the courses (transmitter numbers assigned to particular categories) shall be defined by the siting referee and published in Bulletin 4.

Note: first part of the sentence is obvious and unnecessary and the last part is already contained in 13.8.

20.9   The Siting Referee shall ~~calculate the parameters defined in rules 20.5 and 20.7 for each of the age categories in each course that is set, and forward the results~~ set the courses and time limits for all competitions and all categories and send them (maps with locations of all controls, start, finish and fixed corridors) to the Chairman of the Jury at least one ~~calendar~~ month prior to the event. The approval of the Chairman of the Jury shall be obtained prior to the overprinting of the maps with course information such as the locations of the start and finish.

21.2   The time limit for each competition and each category shall be decided by the siting referee and approved by the Chairman of the Jury. The time limit shall be announced in Bulletin 4.
Note: this change generally allows to have different time limits for particular categories. However, as the winning time is to be set to equal value, the time limit should be the same for all categories unless there is a good reason not to.

APPENDIX D:

Some questions, explanations and changes of the particular points of Rules

from several IARU societies, comments Jiří Mareček, OK2BWN

Following questions and remarks are explained. Some ideas led to changes in the Rules - this will be decided by the ARDF WG by the e-mail voting. Changes in the Part A of the Rules shall be approved by the IARU R1 General Conference. Most of the changes are just formal.

change:

4.2   Applications of interested societies are to be presented to the ARDF WG ~~on official application sheets provided by the ARDF WG.~~ following the instructions in the Call for hosting paper published at the ARDF WG website.

4.3   Application~~s~~ signed by the Member society President or Secretary ~~sheets~~ are to be received by the Chairman of the ARDF WG not later than January 31st three years prior to the year of the Championships .

Note: this wording describes better the reality and reflects the recent EC demands.

change:

5.5   One additional team may be entered by the organising society. This team shall participate unofficially.

5.6   Competitors from outside the relevant Region may take part in IARU ARDF Regional Championships. However, they shall ~~be classified~~ participate unofficially.

6.4   The organising society may allow Member Societies with outstanding fees to Region 1 to ~~take part in such a Championships outside of competition (i.e. not to be ranked and not to be awarded medals).~~ participate unofficially.

Note: the change unifies three different wordings used for the same thing.

change:

7.2   Entries giving the expected number of competitors of each category, the number of team officials and the team manager's name, address, phone~~/fax~~ number~~s~~ and e-mail address shall reach the organiser not later than TWO MONTHS before the event.

Note: this is usually not used nowadays

change:

11.2   As a minimum, the organiser shall make available to media representatives the following:
*   hotel accommodation to be paid for by the users
*   start lists, programme booklets and other information on the day prior to the competition
*   opportunity to take part in the model event
*   weather-protected working space ~~for media representatives' typewriters or computers~~ in the finish area
*   result lists and maps with courses immediately after the competition
*   Internet connection, preferably in the finish area

Note: this makes no sense nowadays

change:

13.7   Bulletin 3 (Additional event information) shall include the following information:
*   detailed programme of the event
*   details of the terrain
*   summary of entries received
*   ~~sample or 100% size picture of the starting ticket, if used~~
*   electronic marking system description, if ~~used~~ not SportIdent classic system
*   size of the maps (not the paper on which it is printed), scales and vertical contour intervals of the maps for each competition
*   address, ~~and tele~~phone~~/fax~~ number and e-mail address of the competition office
*   details of accommodation and food
*   the exact location of each competition area and its finish
*   transport schedule
*   team officials' meetings

Note: changes reflect the recent development

change:

20.   Courses

Note: proposed changes in this paragraph are subject of other paper.

change:

24.4   On the day of the competition, the use of any telecommunication device by competitors or team officials in the starting and/or competition area is prohibited until permitted by the organiser. The penalty for this shall be disqualification. If the team official breaks this rule, the whole team shall be disqualified.

Note: this change is just for better understanding. The starting area may or may not be a part of the competition area (=map). However, in any case, the point is always valid for both starting and competition areas.

change:

25.	Control cards and registering devices

25.1   Only ARDF WG approved control cards and registering devices may be used – see Appendix 2.

~~25.2   The control card shall be supplied to the competitor 10 minutes prior to his/her start at the latest.~~

~~25.3   When non-electronic or combined systems are used, competitors are allowed to prepare the control card, e.g. by writing on it, by reinforcing it or by putting it into a bag, but not by cutting-off parts of the control card.~~

25.4   ~~When electronic systems are used,~~ competitors must have the opportunity to practise the~~m control cards~~ at the model event.

25.5   Competitors shall be responsible for registering at each transmitter using the registering device provided. They are responsible for correct markings which must be clearly identifiable.

25.6   Missing or unidentifiable control marks shall not be considered, unless it can be established with certainty that the competitor visited the transmitter and that the mark missing or unidentifiable is not the competitor's fault.

~~25.7   When systems with visible punch marks are used, at least a part of the marking must be in the appropriate box for this transmitter or in an empty reserve box. One mistake per competitor is acceptable, e.g. marking outside the correct box or jumping one box, provided all markings can be identified clearly. A competitor who attempts to gain advantage by inaccurate marking may be disqualified.~~

25.8   Competitors who lose their control cards shall be disqualified.

Note: as the SportIdent system is automatically approved and normally used, it is unnecessary to describe in detail operations for pin punch.

changes:

31.2   The following prizes shall be awarded in all competitions:
- 1st place   Gold medal and certificate
- 2nd place   Silver medal and certificate
- 3rd place   Bronze medal and certificate
- ~~4th–6th place   Certificate~~

Note: actually, no reason to do so.

31.3   If two or more competitors or teams have the same placing, they shall each receive the appropriate medal and/or certificate. The position(s) following the tie shall remain vacant.

Note: although this may seem obvious, there were some misunderstandings recently.The standard ranking is generally used.

~~31.6   The prize-giving ceremonies shall be performed by the representatives of the organising society and the IARU Regional organisation.~~

~~31.7   During the prize-giving ceremony, the national flags of the first three competitors/teams should be flown and the national anthem of the winner may be played.~~

Note: the above principles are defined in the Protocol Guide.

change:

~~T3.2   Two independent time-keeping systems, a primary and a secondary, shall be used.~~

Note: as the GPS watches as the reference time source are generally widespread, this makes no sense any more.

change:

C1.   The only automatically approved control registering system is the SportIdent classic system (it means NOT the Sportident AIR+ system).

Note: the recent problems with AIR+ and no data backup in SI stations call for further examining and considerations.

APPENDIX E:

Some considerations about the new generation communication devices

Jiri, OK2BWN:

I received few proposals about the electronic devices - watches, GPS etc. witch communication capabilities (see below). As this problem appears to be more important, it certainly deserves a wider discussion. Although the time for the ARDF WG Plenary meeting is limited, we can agree on the meeting/workshop some other day. This may result even in setting an ad-hoc group which would study the problem, evaluate the impact to the objectivity and fairness of the ARDF and create some recommendations.

Any further comments, observations and/or suggestions are highly appreciated.

Kai, DG0YT:

Nowadays it is hard to buy cameras or GPS watches without communication features or even navigation aids. Juries are more and more under pressure to make ad-hoc decisions on banning and/or controlling these devices in the start area and in the competition area. I wonder if we shouldn't use the WC for scheduling additional workshop at this topic.

Jon, LA9NGA:
The option to get a GPS watch without a low power Bluetooth is getting more and more difficult, and most runners don't want to buy an extra watch just for the championship.

There are a few options to be considered to solve this in order to comply wiht the regulations, just some thoughts:
   1. Allow watches with Bluetooth low power/range radio to be used by the runners provided that the radio is switched off before the runner enters the start quarantine zone.
   2. These watches shall be delivered whit the receivers, thus the athletes can pick up both watch and radio when they start.
   3. These watches are not considered as a problem as the range i limited to less than 50m, and considered as low risk compared to other hidden communication methods. To days modern technology with digital controlled receivers has the required technology to get information from the outside with information of control locations and preferred sequence to be shown to the runner as soon as he or she starts to run. The rules will always struggle to follow the possibilities whit technology. Perhaps could the rules stop cheaters from trying by increasing the penalty as disqualification and permanent ban to attend the competitions in the future.