

Competition Rules for the Nordic ARDF Championship

Current edition: 2.

Status: Approved

Date of issue: December 20th 2013

Preceding rules: 1.

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Reference:

[1] IARU- Reg 1 ARDF RULES - V2.8 B / 2010

[2] Rules for the Nordic ARDF Championship

Contents:

§6.	NRAU ARDF competition rules	2
§7.	Categories	2
§8.	Training event	2
§9.	Starting order	2
§10.	Team officials' meeting	3
§11.	Terrain.....	3
§12.	Courses	3
§13.	Restricted areas and routes.....	3
§14.	Maps	3
§15.	Equipment used by competitors.....	4
§16.	Control cards and registering devices	4
§17.	Start.....	4
§18.	Transmitters	5
§19.	Transmitters arrangement	6
§20.	Finish and time-keeping.....	6
§21.	Results.....	6
§22.	Prizes.....	6
§23.	Fair play	7
APPENDIX 1: TECHNICAL SPECIFICATIONS FOR AMATEUR RADIO DIRECTION FINDING EQUIPMENT.....		8
APPENDIX 2: PRINCIPLES FOR COURSE PLANNING		9
APPENDIX 3: APPROVED CONTROL CARDS AND REGISTERING DEVICES.....		14
APPENDIX 4: NRAU ARDF SPRINT CHAMPIONSHIP NEW		14

§6. NRAU ARDF competition rules

- A. The Nordic ARDF Championship rules are based on IARU- Reg 1 ARDF RULES - V2.8 B / 2010 Updates to [1] shall be incorporated into these rules by the NRAU ARDF WG as described in [2].
- B. The rules are referred to [1] with a description of the difference:
 - No change: All rules apply without modifications.
 - Modified: The rules are adjusted to the NRAU conditions.
 - Recommendations: The rules are not necessarily applicable, but should be used as a reference or best practice for the NRAU ARDF Championship.
- C. Reading the competition rules
 - The intention of these rules is to be a means for the arrangement of the Nordic ARDF Championship. Rules are expressed as shall or should. Shall indicate that this is a mandatory paragraph and should indicate that this is a recommendation.

§7. Categories

Modified: Rules [1] § 14 Categories

- A. Competitors in the NRAU competition are divided into the categories according to their sex and age.

Women (W)	Men (M)	Age
W19	M19	19 and younger
W21	M21	regardless of age
W35	M40	35/40 and older
W50	M50	50 and older
W60	M60	60 and older
	M70	70 and older
Open class	Open class	See par H

Youth classes

Women (W)	Men (M)	Age
W16	M16	16 and younger
W14	M14	14 and younger

- B. Competitors belong to the youth classes, M19 or W19 category up to the end of the calendar year in which they reach the age of 19.
- C. Men competitors aged 40 or older or women competitors aged 35 or older belong to each category from the beginning of the calendar year in which they reach the given age.
- D. To qualify as an NRAU ARDF Championship, a minimum of two societies must have applied to participate.
- E. To establish any official category, a minimum of three participants from a NRAU society must have entered. If there are less than three participants in a class then the organizers shall merge classes in order to form age groups of three or more participants. F. Each society within NRAU may enter an unlimited number of participants.
- G. The hosting society should set the limits for participants outside NRAU.
- H. The hosting society shall establish open class/classes for participants outside NRAU.

§8. Training event

Modified: Rules [1] § 15 Training event:

- A. Training should be organized before the competition in order for the competitors to practice with the transmitters and antennas used in the NRAU competition.
- B. Equal opportunities for training shall be offered to all societies.
- C. Transmitters, antennas, flags and registering devices used in the training event, their installation and setting shall be identical to those used in the competitions.
- D. The organizing society is free to arrange special events for promotional purposes or introduce new competition elements in order to develop the sport.

§9. Starting order

Modified: Rules [1] § 16 Starting order

- A. The making of the starting list shall be supervised by member of the NRAU WG.
- B. The start list shall be published at least three hours before the first start.

- C. The starting order shall be drawn at random after a seeding of participants.
- D. Competitors from the same society and category shall not start at the same starting interval.
- E. Seeding of competitors should prohibit unfair competition of the presumed best runners. The seeding shall be based on previous results of international and national competitions. Each society should provide a numbered and prioritized seeding list of one to three persons.
- F. The seeded competitors with the same prioritized number shall not start in the same start group.

§10. Team officials' meeting

Modified: Rules [1] § 17 Team officials' meeting

These rules are not implemented for the NRAU championship.

§11. Terrain

No Change: Rules [1] § 18 Terrain 18.1-4

- A. The terrain shall be suitable for setting competitive ARDF courses without any serious hazards to competitors and avoiding man-made objects which could interfere with direction finding activities.
- B. The competition area shall not have been used for ARDF for a period of two years - to guarantee fair play.
- C. The competition area shall be placed out-of-bounds to ARDF competitors as soon as it has been selected for the NRAU ARDF Championship.
- D. Any rights of nature conservation, forestry, hunting, etc in the area shall be respected.
- E. The use of the competition area shall comply with the regulations set by the organizing country national orienteering association.

§12. Courses

Modified: Rules [1] § 19 Courses

- A. The Principles for ARDF Course Planning (see Appendix 2) shall be followed. NRAU Sprint competition is described in Appendix 4
- B. The course shall be planned in order to make as fair a competition as possible.
- C. 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.
- D. 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.
- E. Transmitters on different bands shall be located not less than **200** meters apart. Both finish beacons are at the same location.
- F. 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.
- G. Total climb along the shortest viable route shall not exceed 6% of the course length.
- H. The effective course length is defined as the course length + 10 times the total climb along it.
- H. Effective course length shall be **5 to 7 km** for all courses.
- I. All runners shall search for all hidden transmitters.

§13. Restricted areas and routes

No change: Rules [1] § 20 Restricted areas and routes

- A. Rules set by the organising society to protect the environment and any related instructions from the organiser shall be strictly observed by all persons connected with the event.
- B. Out-of-bounds or dangerous areas, forbidden routes, line features that shall not be crossed etc. shall be described in the information or marked on the map. If necessary, they shall also be marked on the ground.
- C. Competitors may not enter, follow or cross such areas, routes or features.
- D. Compulsory routes and crossing points shall be marked clearly on the map and on the ground. Competitors shall follow the entire length of any marked section of their course.
- E. The use of official transport during the Championship may be declared mandatory by the organiser.

§14. Maps

Modified: Rules [1] § 21 Maps

- A. Maps and additional overprinting shall be drawn and printed according to the IOF International Specification for IOF Maps. The map scale shall be within 1:5000 to 1:15000. Deviations shall request approval by the NRAU ARDF WG.
- B. Errors on the map and changes which have occurred in the terrain since the map was printed shall be overprinted on the map if they have a bearing on the event.
- C. The competition map shall cover the whole competition area including start, finish beacon and all transmitters. The starting point and the point of the finish beacon shall be clearly marked on the map.
- D. Unless otherwise noted, the area covered by the map issued by the organiser shall be considered as the competition area.
- E. The map competition area should not be larger than A4 and the area shall either be overprinted on the map or identified at the starting area where the maps are prepared.
- F. Approved maps by the national orienteering societies should be used for the NRAU ARDF Championship. The age of the map should not be older than 4 years.
- G. The size of the map competition area shall be notified to the competitors the day before the competition.

§15. Equipment used by competitors

Modified: Equipment used by competitors

- A. Every competitor shall have a direction finding receiver for the relevant band. The receivers shall meet the Technical Specifications for ARDF Equipment (see Appendix 1).
- B. Clothing shall follow the rules of the organizing country national orienteering association. This information shall be part of the invitation to the NRAU ARDF Championship.
- C. On the day of the competition, the use of any technical equipment that can give the competitor an advantage that is not in the spirit of equal competition, are prohibited. The penalty for this shall be disqualification. If the team official breaks this rule, the whole team shall be disqualified.

§16. Control cards and registering devices

Modified: Rules [1] § 23 Control cards and registering devices

- A. The organizing society decides which type of registration system to be used. Approved electronic punching devices shall be equipment frequently used in orienteering or ARDF competitions. Example of this type of equipment is Emit or Sport Ident.
- B. The organizing society shall be responsible for providing electronic punching devices for the competition.
- C. When non-electronic or combined systems are used, competitors are allowed to prepare the control card, eg. by writing on it, by reinforcing it or by putting it into a bag, but not by cutting-off parts of the control card.
- D. When electronic systems are used, competitors must have the opportunity to practice at the model event.
- E. 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.
- F. 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.
- G. Competitors who lose their control cards shall be disqualified.

§17. Start

Modified: Rules [1] § 24 Start

- A. On arrival at the competition area, competitors shall place their receivers at the point indicated to them by the organizing committee. Spare receivers and components, clearly marked as property of a particular team or competitor, shall be placed at an indicated point just beyond the starting line beside the starting corridor. Transmitters shall remain silent until collection of the receivers is completed, alternative a jamming transmitter can be used (see §18).
- B. All competitors shall have at least 45 minutes for undisturbed preparation and warm-up at the start area. Only competitors who have not started and team officials shall be allowed to enter the warm-up area.
- C. The following information shall be shown on a special board at the start area:
time limit

transmitter frequencies
list of transmitter and band assignments for each category.
start list
first start time (in local time)
sample of the flag and registering device
clock showing the official time of the competition

- D. The start shall be organised with a pre-start before the time start, situated at one edge of the warm-up area. The competitors' names shall be called or displayed. Beyond the pre-start, only competitors who are starting, referees and media representatives guided by the organiser are allowed.
- E. Competitors shall enter the pre-start area not less than 10 minutes before their own start. At the same time, they shall be given their receivers and maps.
- F. The start shall be organised so that later competitors and other persons cannot see the maps and the route choices of the starters.
- G. When the starting signal is given, competitors may switch on their receivers and shall run along the starting corridor. Reaching the end, they shall start searching for the hidden transmitters. Competitors shall not stop in the starting corridor except for a receiver malfunction.
- H. Competitors, whose receivers fail, may return within their own running time to the start line and take their spare receiver or parts from the referee. It is strictly forbidden to give or take any assistance to or from any person except referees.
- I. There shall be only one start corridor with a maximum length of 250 meters. The terrain at the end of the starting corridors shall offer normal runnability.
- J. The end of the start corridor shall be clearly marked, and optional electronic punching device can be used to verify that the competitor has completed the start corridor.
- K. Competitors who are late for their start time through their own fault shall be permitted to start. The starting referee shall determine at which time they may start which shall be as soon as possible but taking into consideration possible influence on other competitors. These late competitors shall be timed, however, as if they had started at their original start time.
- L. Competitors who are late for their start time because of a fault of the organiser shall be given a new start time.

§18. Transmitters

Modified: Rules [1] § 25 Transmitters

- A. Transmitters used at NRAU ARDF Championships shall meet the Technical Specifications for ARDF Equipment (see Appendix 1, section 2).
- B. The antenna installation shall not be changed during the competition.
- C. All transmitters including the beacon(s) shall be clearly audible during the whole competition from the start point, using a receiver of average sensitivity. All transmissions shall be monitored by the organiser.
- D. Transmitters shall begin to operate after all receivers have been collected at the start. Transmitters shall remain operating until the end of the time limit of the last competitor. The beacon transmitter(s) shall remain operating until all competitors have finished. An optional noise transmitter can be used at the starting area instead of switching off transmitters.
- E. If the authorities of the organising society make any transmitter identification compulsory, such identification can only be transmitted during the active minute.
- F. The order in which competitors search for and discover the transmitters is entirely at their discretion.
- G. The finish beacons if used shall be placed at the entrance of the finish corridor. They shall be registered in the same way as other transmitters.
- H. All transmitters shall be marked by a flag consisting of three squares 15 x 15 cm arranged in a triangular form. Each square shall be divided diagonally, one half being white and the other orange.
- I. The flag shall be close to the transmitter antenna and not more than 3 meters away.
- J. It shall be possible to run and find a transmitter from all directions.
- K. To prove that competitors have visited each transmitter, there shall be at least one or more registering devices in the immediate vicinity of each flag.
- L. Each transmitter shall be easily recognizable by its code number, which shall be fixed to the flag or to the registering device for easy identification by the competitors.

§19. Transmitters arrangement

Modified: Rules [1] § 26 Transmitters arrangement

- A. The NRAU ARDF Championship shall be organized on the 3.5 MHz on one day and 144 MHz band at the other day.
- B. There shall be 5 hidden transmitters in the competition area and optional finish beacon. Transmitters shall operate on each band in the following sequence:

transmitter	code	frequency	operating period min
transmitter No.1	MOE	B	0-1, 5-6
transmitter No.2	MOI	B	1-2, 6-7
transmitter No.3	MOS	B	2-3, 7-8
transmitter No.4	MOH	B	3-4, 8-9
transmitter No.5	MO5	B	4-5, 9-0
finish beacon MO continuously	MO	A	

Operating period of the 5-minute cycle, starting at 0:00.

§20. Finish and time-keeping

Modified: Rules [1] § 27 Finish and time-keeping

- A. The competition ends for a competitor when the finish line is crossed. When using an electronic registration system, the competition ends for a competitor by the registration at the finish line.
- B. The finish corridor begins at the finish beacon and ends at the finish line. It shall be clearly marked on both sides. The exact position of the finish line shall be obvious to approaching competitors.
- C. The finish time shall be measured when the competitor's chest crosses the finish line. When using an electronic registration system, the finish time is given by the registration at the finish line. Times shall be rounded down to whole seconds. Times shall be given in hours, minutes and seconds or in minutes and seconds only.
- D. After a competitor has crossed the finish line, the control card and, if so required, the competition map has to be handed over to the organiser.
- E. Having completed the competition, a competitor may not re-enter the competition terrain without the permission of the organiser. A competitor who retires shall announce this at the finish immediately and hand in the map and control card. That competitor shall in no way influence the competition nor help other competitors.
- F. There shall be medical facilities or personnel at the finish.

§21. Results

Modified: Rules [1] § 28 Results

- A. The place of an individual competitor depends on (first) the number of transmitters found and (second) his or her running time. Competitors who have failed either to find any transmitter other than the finish beacon or who have exceeded the time limit, shall not be classified.
- B. The place of a team depends on (first) the sum of transmitters found and (second) the sum of times reached by the two classified team members possessing the best results.
- C. Two or more competitors or teams having the same result shall be given the same placing in the results list. The position(s) following the tie shall remain vacant.
- D. Provisional results shall be announced and displayed in the finish area during the competition. The official results shall be published not more than 2 hours after final approval of the provisional results by the Jury. They shall be handed out on the day of the competition to each team manager and to accredited media representatives.
- E. The official results shall include all participating competitors and teams.
- F. At the end of the championship the results and maps with the location of the transmitters shall be published on the event website and sent in electronic format to the NRAU ARDF managers.

§22. Prizes

Modified: Rules [1] § 29 Prizes

- A. The title of NRAU ARDF Champion shall be awarded for the 3.5 and 144 MHz competitions and for each official category separately. See [2] for details. See Appendix 4 for NRAU ARDF Sprint Champion.

- B. 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
- C. If two or more competitors or teams have the same placing, they shall each receive the appropriate medal and/or certificate.
- D. In the team classification, each classified member of the team shall receive the appropriate medal and/or certificate. The team classification is determined by the two best competitors from each NRAU society having the best overall ranking regardless of category.
- E. The organiser shall arrange a dignified prize-giving ceremony.
- F. The prize-giving ceremonies shall be performed by the representatives of the organising society.
- G. It is recommended that the prizes for the age M19 and above shall be adjusted to the number of participants in each age class.

Less than 10 participants: Gold medal

More than 10 participants: Gold, silver and bronze medals

Youth participants under M19 are awarded with gold, silver and bronze regardless of the number of participants in youth classes.

§23. Fair play

Modified: Rules [1] § 30 Fair play

- A. All persons taking part in an ARDF event shall behave with fairness and honesty. They shall have a sporting attitude and a spirit of friendship. Competitors shall show respect for each other, for officials, journalists, spectators and the inhabitants of the competition area. The competitors shall be as quiet as possible in the terrain.
- B. It is absolutely forbidden to give or take any assistance to or from any person, including competitors, or to utilize any means of transport, except:
 - assistance provided by referees within the scope of their defined duties, as long as that assistance is equally available to all competitors
 - it is the duty of all competitors to help injured runners. No competitor will be disqualified for giving or receiving such assistance, as long as he or she does not gain competitive advantage by doing so.
- C. Doping is forbidden according to the regulations of the organizing country.
- D. The organiser, with the consent of the NRAU ARDF WG, may decide to publish the venue of the competition in advance. If the venue is not made public, all officials shall maintain strict secrecy about the competition area and terrain. In any case, strict secrecy shall be maintained regarding the courses.
- E. Surveying or training in the area declared out-of-bounds by the organiser is not allowed. Attempts to gain any information related to the courses, beyond that provided by the organiser, are not permitted before and during the competition.
- F. A competitor who breaks any rule, or who benefits from the breaking of any rule, shall be disqualified.

Appendix 1: Technical Specifications for Amateur Radio Direction Finding Equipment

T1. Receivers

- T1.1 Receivers and antennas of any type may be used by the competitors.
- T1.2 Any receiver producing audible interference in the 3.5 MHz or 144 MHz band at a distance of 10 meters or more shall not be used in the competitions.

T2. Transmitters

- T2.1 It is the responsibility of the organising society to ensure that all transmitters in use comply with the relevant radio regulations in force in the country of operation with regard to their electric parameters, identification and to their being operated only by duly authorised operators.
- T2.2 All transmitters within one competition shall have the same parameters and the same antenna installation.
- T2.3 The frequency of the beacon transmitter shall be significantly different from the frequency of the other five transmitters.
- T2.4 When not scheduled to be transmitting, neither the transmitter nor its antenna may radiate RF energy that is possible to use as direction signal at a range of more than 3m from the transmitter.
- T2.5 Antennas shall provide omnidirectional horizontal radiation patterns.
- T2.6 Specifications for the 3.5 MHz transmitters:
 - Carrier frequency * 3510 ... 3600 kHz
 - Frequency stability better than 50 ppm
 - Channel spacing between simultaneously working transmitters more than 30 kHz
 - Undesired products level conforming to the national regulations
 - Output RF power 1 ... 5 W
 - Mode A1A (keyed unmodulated carrier)
 - Keying speed 8 ... 15 WPM
 - Antenna vertical
- T2.7 Specifications for the 144 MHz transmitters:
 - Carrier frequency * 144.50 ... 144.90 MHz
 - Frequency stability better than 50 ppm
 - Channel spacing between simultaneously working transmitters more than 200 kHz
 - Undesired products level conforming to the national regulations
 - Effective Radiated Power (ERP) 0.25 ... 1 W
 - Mode A2A (keyed carrier modulated by AF tone or continuous carrier modulated by keyed AF tone)
 - Modulation depth 70 ... 80 %
 - Keying speed 8 ... 15 WPM
 - Antenna polarisation horizontal
 - Antenna height 1.5 to 3 meters above ground level

T3. Time-keeping system

- T3.1 The official competition time shall correspond to the official local time.
- T3.2 Two independent time-keeping systems, a primary and a secondary, shall be used.
- T3.3 The maximum deviation of the clocks at the start and finish line is ONE SECOND against the official time during the whole competition.
- T3.4 The maximum deviation of the transmitting periods is FIVE SECONDS against the official time during the whole competition. The maximum transmitting overlap of two transmitters is FIVE SECONDS.

T4. Other equipment

- T4.1 Any other equipment used by the organiser (service radio net, time-keeping system, computers, electronic marking devices etc.) shall not cause audible interference to competitors' receivers.

Appendix 2: Principles for course planning

P1. Introduction

P1.1 Purpose

These principles aim at establishing common standards for the planning of ARDF courses in order to ensure fair competitions and to safeguard the unique character of ARDF.

P1.2 Application of these principles

Courses in all international ARDF events shall be planned in accordance with these principles. They should also serve as general guidelines for the planning of other competitive ARDF events.

P2. Basic principles

P2.1 Aim of good course planning

The aim of course planning is to offer competitors courses correctly designed for their expected abilities. Results shall reflect the competitors' technical and physical ability.

P2.2.1 Unique character

Every sport has its own character. The unique character of ARDF is to find a number of transmitters hidden in unknown terrain against the clock. This demands special skills: handling of the direction finding receiver and interpreting measurements, accurate map reading, route choice evaluation, concentration under stress, quick decision making, running in natural terrain, etc.

P2.2.2 Fairness

Fairness is a basic requirement in competitive sport. Unless the greatest care is taken at each step of course planning and transmitter placing, luck can easily become significant in ARDF competitions. The course planner shall consider all such factors to ensure that the contest is fair and that all competitors face the same conditions.

P2.2.3 Competitors enjoyment

The popularity of ARDF can only be enhanced if competitors are satisfied with the courses they are given. Careful course planning is therefore necessary to ensure that courses are appropriate in terms of length, physical and technical difficulty, location of transmitter, etc. In this respect it is particularly important that each course is suitable for the competitors doing that course.

P2.2.4 Wildlife and the environment

The environment is sensitive: wildlife may be disturbed and the ground as well as the vegetation may suffer from overuse. The environment also includes people living in the competition area, walls, fences, cultivated land, buildings and other constructions, etc. It is usually possible to find ways to avoid interference with the most sensitive areas without damage. Experience and research have shown that even large events can be organised in sensitive areas without permanent damage if the correct precautions are taken and the courses are well planned. It is very important that the siting referee ensures that there is access to the chosen terrain and that any sensitive areas in the terrain are discovered in advance.

P3. ARDF course

P3.1 Terrain

The terrain shall be chosen so that a fair competition is offered to all competitors. To safeguard the character of the sport, the terrain should be runnable and suitable for testing the ARDF skills of the competitors. On a good ARDF course, competitors are forced to concentrate on navigation throughout the race. Sections requiring no attention to navigation should be avoided (if possible).

Alternative routes force competitors to use the map to assess the terrain and to draw conclusions from it. Route choices make competitors think independently and will split up the field, thus minimising following. A good course shall disperse the competitors throughout the competition area and not bring them together.

Courses should not contain routes or transmitter order choices resulting in any advantage or disadvantage which cannot be foreseen from the receiver or the map by a competitor under competitive conditions.

Course sections which encourage competitors to cross the start or finish area, or beyond the map area or forbidden or dangerous areas must be avoided.

P3.2 Start

The start area should be so situated and organised that:

- There is a warm up area and shelter sufficient for all competitors
- Waiting competitors cannot see the bearings taken or route choices made by those who have already started.

The start corridor shall have normal runnability and shall be clearly marked.

P3.3 Transmitters

Transmitter sites are the most important element of an ARDF course and will largely determine its quality. It is particularly important that the map portrays the ground accurately in the vicinity of the transmitters. There shall be no objects disturbing the electro-magnetic field which might upset the bearings taken in the vicinity of the transmitters.

It is necessary to choose transmitter sites with the greatest care. Especially the 'acute angle' effect must be avoided meaning that incoming competitors will be led into the transmitter site by outgoing runners.

The mechanical performance of the transmitter, antenna and registering device with a flag shall be rugged. The transmitter and its accessories shall continue to operate for about eight hours under ANY circumstances.

The antenna of the transmitter shall be properly installed and the transmitter final stage shall be properly tuned into the antenna. The counterpoises shall be installed in a way that they do not obstruct or trip competitors running over them, and also be secured in such way that a competitor is not accidentally breaking or disrupting the antenna.

Flags should be positioned such that competitors may see them when they are within three meters of the transmitter. For fairness, the visibility of the flag should be the same whether or not there is a competitor near it.

The transmitter shall not be located close to an obstacle that will

- have great influence of the signal, typical issue is a 2m transmitter located close to a high cliff
- inhibit the competitor to determine which side of an obstacle the transmitter is located, typical issue can be at an edge of a lake or at one side of a not passable cliff or trench.

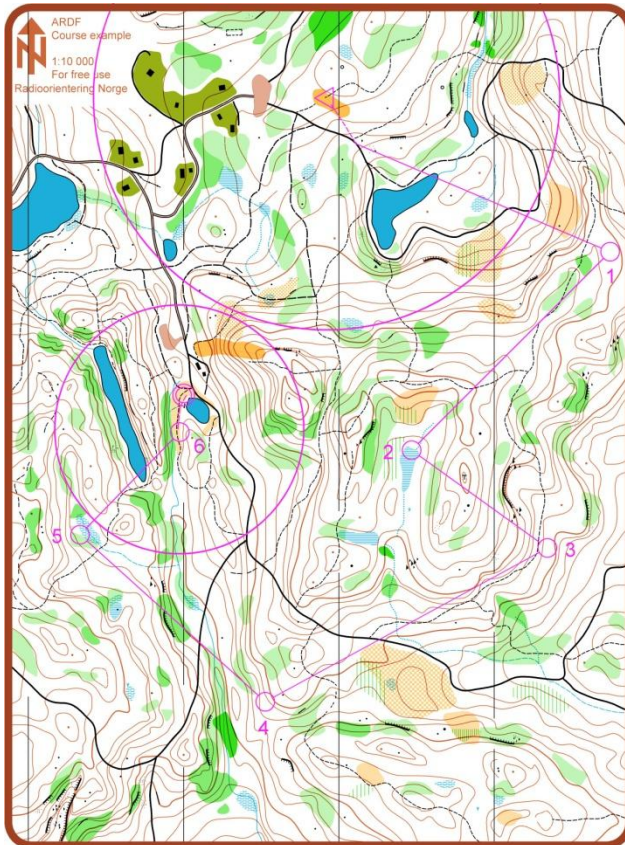
P3.4 Finish

The arrangement of the finish beacon, finish corridor and the whole finish area shall be distinct, clear and not confusing.

The finish corridor shall be easy-to-run, as straight as possible and at least 3 m wide. Two protective zones along both sides of the finishing corridor are recommended for better visibility and to prevent spectators from getting in the competitors' way.

P3.5 Map and course example

This is an example of an A4 map in scale 1:10 000. The print has reduced the map 50%, ie scale is approximately 1:20 000.



Track length: 4.9 km
Total climb: 100 m
Effective length: 6 km

The start and finish is marked with 750m and 400m radius circles, and marking on the maps shows the start and finish corridors.

Note: Numbers are not transmitter numbers, but reference only.

The map allows track length of 7km, with steep hillsides and effective course length of 10 km, thus this map could be used for a world championship at the 1: 10 000 scale and A4 format.

Evaluation of the course:

After start the competitor will be guided south east or east along the road or footpath that gives a fast running speed. Cross bearings should be possible to achieve within the first 5min of control 1 and 2.

First object is to decide which control to take first, this will be a choice of 1, 2 or even 3.

Control 4 should be an obvious control, while control 5 is located in a not to easy area to run.

Figure 1 A4 map example

Finish corridor is marked from control 6 along the footpath.

One option to improve the course challenge is to move 4 and 5 closer and make the decisions of order to find the controls more difficult.

P3.6 Competition map

The next page shows an example of a competition map in full size with markings for a Nordic ARDF Championship.

Overprint map information:

Start and start corridor is shown as marked lines with a mandatory control at the end of the corridor.

Start is marked with a 750m radius ring from start (not end of corridor) to indicate the area without transmitters.

Dangerous areas are marked with cross hatch.

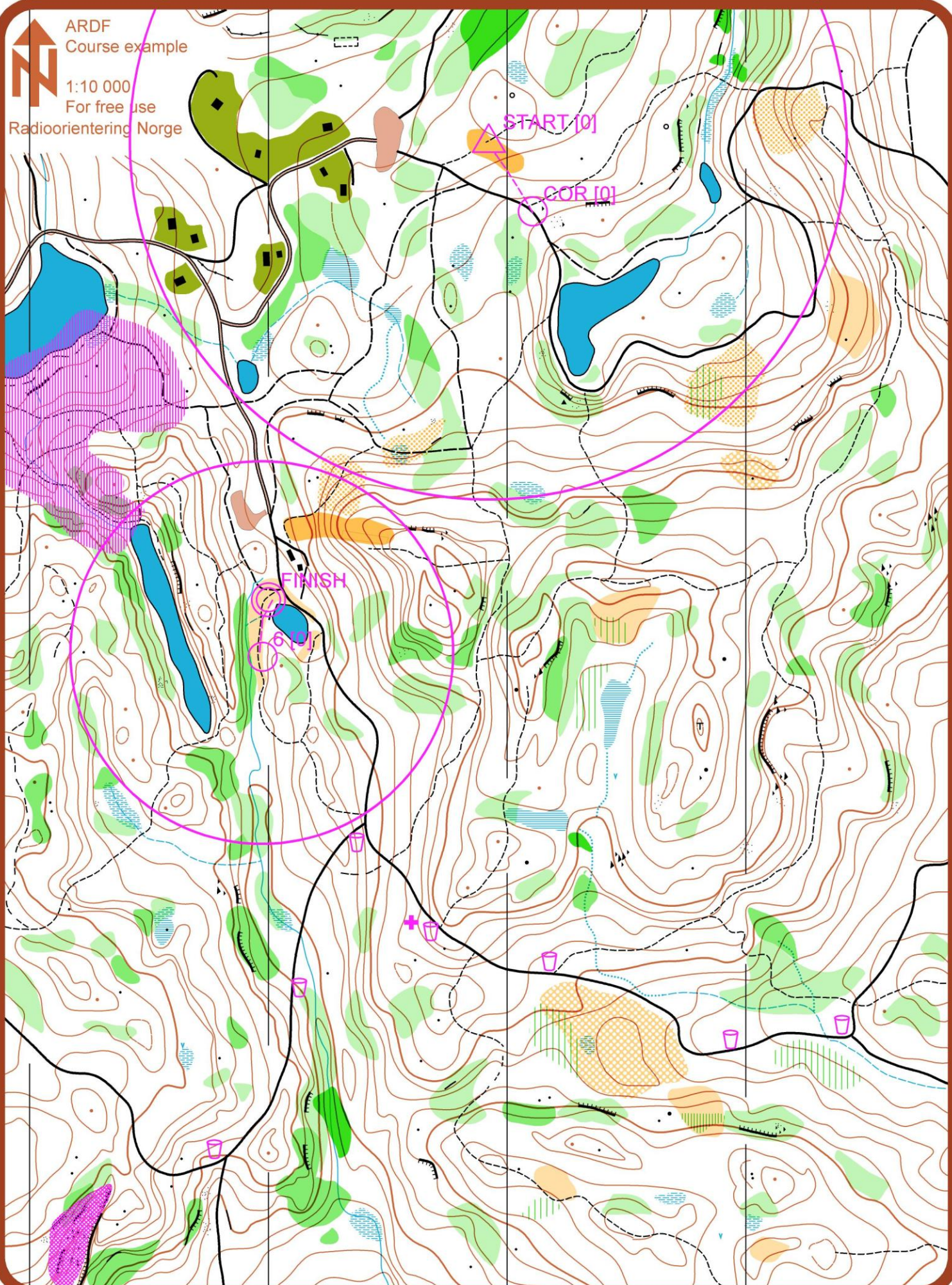
Area not to be entered is cross lined area.

Finish corridor is marked with position of control and the corridor to finish line

Medical and water post are positioned along the road as shows with cross and symbol of a glass.



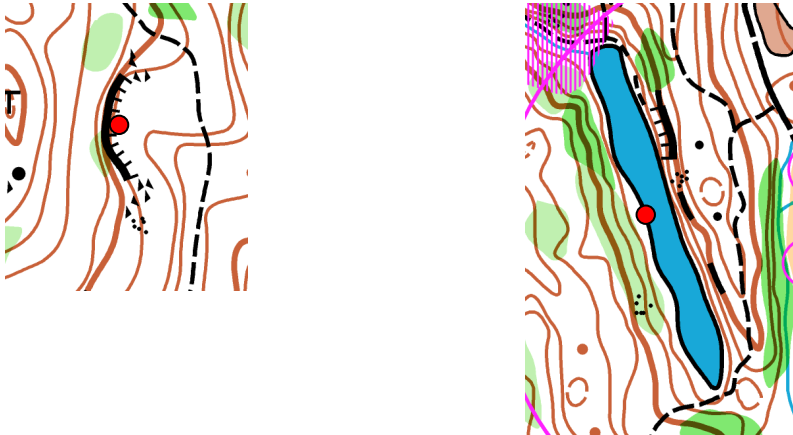
ARDF
Course example
1:10 000
For free use
Radioorientering Norge



P3.7 Examples of avoidances

The presentation of examples that shows how not to do things is not always a good thing to illustrate, but there are a few mistakes are often repeated in the competition and they should be avoided in future competition.

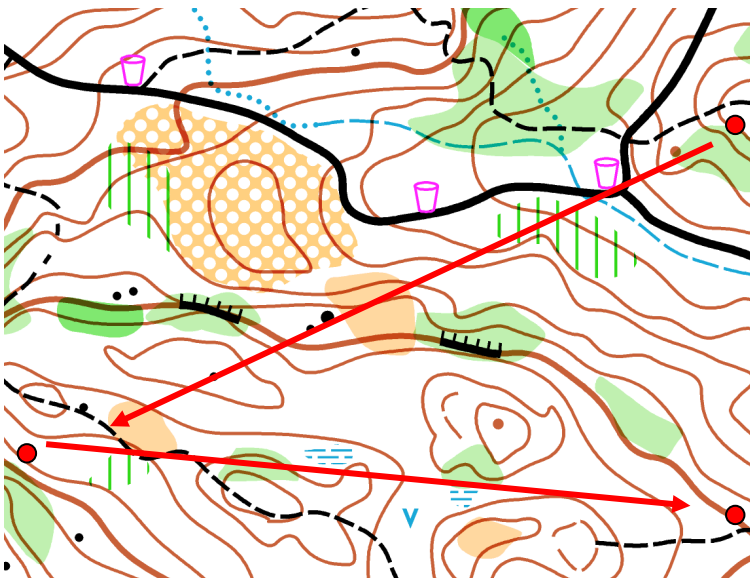
Not passable obstacles



Don't locate controls close to obstacles. At close range ($>10\text{m}$) the receiver is often saturated and the runner must search for the control. An obstacle doesn't allow the runner to go around the control and the competitor is not able to decide which side of the obstacle the control is located, and it's not a fair competition when the choice of direction is based on guessing.

A general rule is that the runner should be able to find the control from all directions.

Angles to narrow



Narrow angles will guide incoming competitors from outgoing competitors.

This will be even more of a problem when the competitor returns to the footpath for better running speed to the next control.

Appendix 3: Approved control cards and registering devices

- C1 Both electronic and punch card can be used for the NRAU ARDF Championship.
- C2 With respect to the electronic system, a backup unit must be present at each transmitter - either a second electronic unit or a pin punch. It is the competitor's responsibility to ensure that the electronic chip is held correctly in the electronic registering device. The backup registration shall be used in case the runner is not able to register using the electronic punching device.
- C4. When using the pin punch backup, the competitor can punch either his/her map or start number bib. He/she is still responsible for the correct mark which must be clearly identifiable at the finish.
- C5 The use of any other registering system requires prior approval of the NRAU ARDF WG.

Appendix 4: NRAU ARDF Sprint championship NEW

- C1.1 The NRAU championship should arrange a sprint event as a regular part of the NRAU ARDF Championships. Its aim is to bring ARDF nearer to the public and to attract potential sponsors and new athletes to ARDF. The organizer shall declare in the Bulletin 1 at the latest whether the NRAU ARDF Sprint Championship will be organized or not.
- C1.2 The sprint event if arranged, shall be organized on a separate day or at the same day as the 3.5MHz or 144MHz competition. The title of NRAU ARDF Sprint Champion shall be awarded for each official category separately.
- C1.3 The sprint event shall be organized on the 3.5 MHz band.
- C1.4 The sprint event shall be organized in a forest or city park easily accessible by the public.

C2. Categories

- C2.1 See §7.

C3. Starting order

- C3.1 Competitors start at 2 minute-intervals in all categories.
- C3.2 Competitors from the same society and category may not start consecutively.

C4. Race system

- C4.1 The competition shall be run as two loops with a spectator control, preferably through the finish area between them.
- C4.2 Each competitor runs through the start corridor, which leads to the area with transmitters No.1 to No.5 (slow keying). After finding all the required transmitters from this loop, he/she runs to the spectator control and through the spectator corridor to the area with transmitters No.1F to No.5F (fast keying). After finding all the required transmitters from this loop, the competitor runs to the finish beacon and through the finishing corridor to the finish line.
- S4.3 The transmitters hunted on each of the loops are defined in advance but may be visited in any order. All transmitters hunted on each loop shall be on the same frequency.
- C4.4 The finish beacon and the spectator control may be at the same place. In this case, there is no spectator control transmitter.

C5. Courses

- C5.1 The transmitters shall be located not less than 100 meters apart and not less than 100 meters from the start.
- C5.2 The beacon (B) and the spectator control (S), if this differs from the beacon, could be located less than 100 meters from the start.
- C5.3 The course shall be planned for an expected winning time of 15 minutes.

C6. Maps (modified)

- C6.1 The map for the sprint event shall be made at the scale 1:5000 or 1:4000, and shall not be more than 5 years old. The map shall be approved by the national orienteering federation.
- C6.2 The competitor receives the map along with the receiver in the pre-start area 2 minutes before the start. Start point (triangle), beacon (double circle) and spectator control, if this differs from the beacon, are drawn on the map.

- C6.3 The organization of the finish area shall be explained to the competitors in advance along with the symbols on the map

C7. Transmitters

- C7.1 Transmitters with a lower output power (0.3...1W) shall be used in the sprint competitions.
C7.2 The beacon (B) and the spectator control (S), if this differs from the beacon, shall operate continuously on the frequencies different from the other transmitters and from each other.
C7.3 Two sets of five transmitters shall be used in the sprint event. Transmitters groups 1 to 5 and 1F to 5F shall operate on different frequencies and with different keying speeds. Example of frequency and keying speed assignment: frequency function code speed

3510kHz tx	1...5 MOE...MO5	50 PARIS
3540kHz	spectator control S	70 PARIS
3570 kHz tx	1F (fast)...5F MOE...MO5	70 PARIS
3600 kHz	finish beacon MO	50 PARIS

- C7.4 Transmitters operate in the following sequence:
No. 1 and 1F sending code MOE in seconds 0 to 12
No. 2 and 2F sending code MOI in seconds 12 to 24
No. 3 and 3F sending code MOS in seconds 24 to 36
No. 4 and 4F sending code MOH in seconds 36 to 48
No. 5 and 5F sending code MO5 in seconds 48 to 60 - of a 1-minute cycle starting at 0:00
- C7.5 Transmitters are equipped with registering devices with 15 x 15cm orienteering flags. The finish beacon is equipped with at least two registering devices, especially if acting as the spectators control as well. It's recommended that the orienteering flag is put 30 to 50cm above the ground and has a good visibility within a radius of 5m and not visible outside a radius of 10m.
- C7.6 The beacon (B) and the spectator control (S), if this differs from the beacon, are registered as any other transmitter.
- C7.7 The number of transmitters assigned to each age category will normally be twice the number given in 12. There shall be an equal number of transmitters assigned on the fast and slow keyed frequencies.

C8. Corridors

- S8.1 The start corridor is the corridor that runs away from the start. The end shall be clearly marked and only after this point can the competitor start searching for the transmitters. The start corridor shall not be longer than 400 metres.
- C8.2 When leaving the spectator control, competitors shall run along the spectator corridor. The spectator corridor shall not be longer than 300 meters. The spectator control shall be placed at the entrance to the spectator corridor.
- C8.3 The finish corridor is the corridor that shall be run from the beacon to the finish line. The finish beacon shall be placed at the entrance to the finish corridor. The finish corridor shall not be longer than 400 metres.

C9. General arrangements

- C9.1 Competitors waiting for the start shall be well separated from any other people (spectators and competitors who already finished their races) once the first competitor has started.