BEGINNERS GUIDE TO COURSE PLANNING

(or "all you ever wanted to know about doing it in the bush....")

1. The principles of course planning
2. What to include
3. What to leave out
4. Degrees of difficulty
5. How to go about it
6. Technical bits

The Principles of Course Planning

What is orienteering?

".....a sport in which competitors visit a number of points, marked on the ground with controls, in the shortest possible time aided only be a map and compass. It may be characterised as running navigation."

- IOF principles of course planning.

What the course planner should keep in mind:

- orienteering is running navigation

- fairness

- enjoyment

- the environment

Running navigation

A good course should test:

- accurate map reading;
- route choice;
- compass work;
- concentration under stress;
- quick decision making;
- running.

At a local club event it is probably not possible, or even possibly desirable, to test all of these.

Fairness

A course should be fair - luck should not play a part.

Enjoyment

If people do not enjoy themselves they do not come back.

Courses must be of appropriate
- length
- physical difficulty
- technical difficulty

The environment

We depend on other people – farmers, city councils, forest owners etc. for access to orienteering areas.

If we do not look after their property and have minimum impact we will not be allowed back.

Course Planning – what to include

What is a control for?

"The main function of a control is to mark the beginning or end of an orienteering leg."

- IOF principles of course planning.

A control site is not an end in itself.

The choice of control sites should not dictate the course planning.

What should a good course contain?

- detailed navigational legs;
- route choice legs;
- a variety of leg lengths;
- changes in direction;
- changes in orienteering technique.
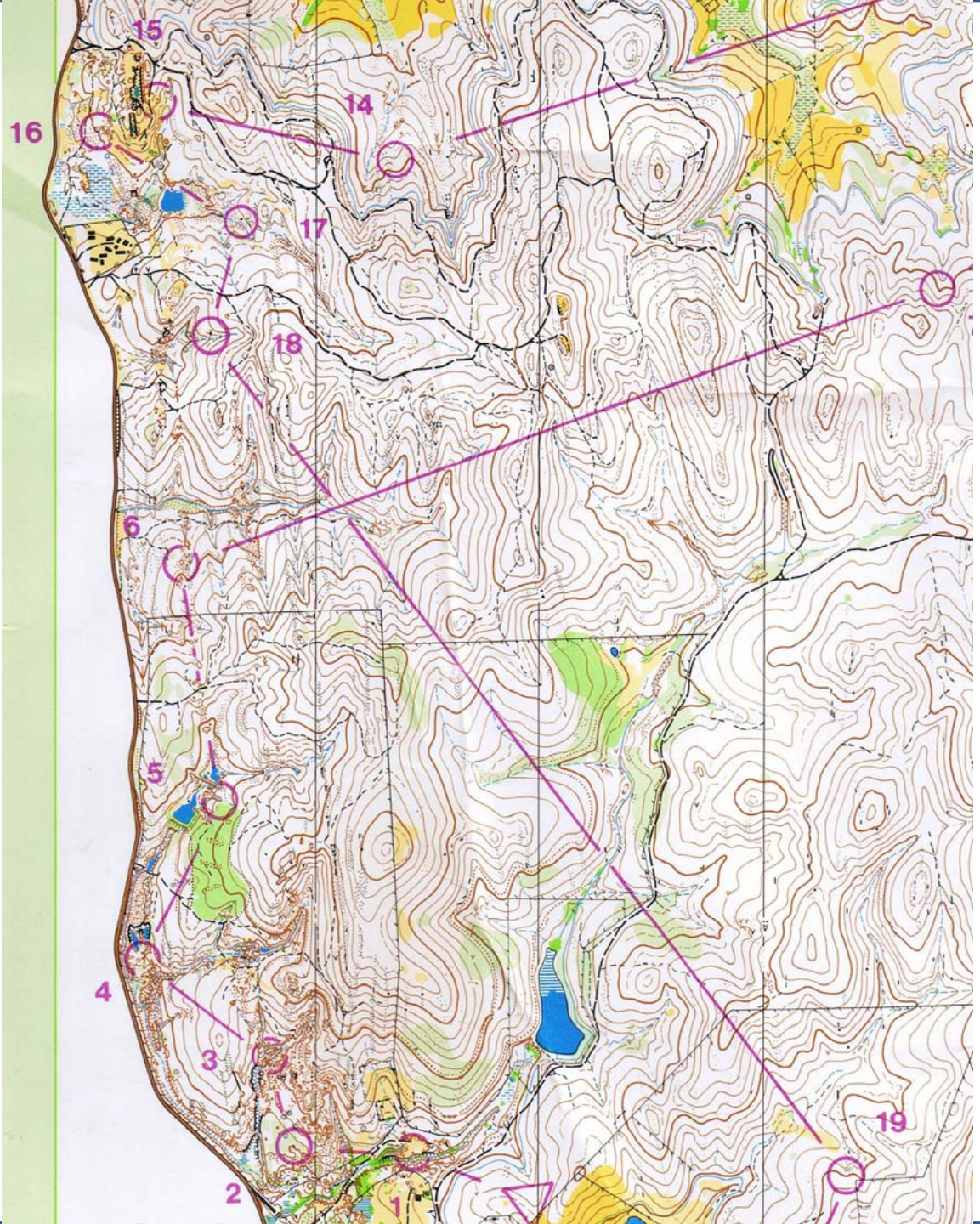
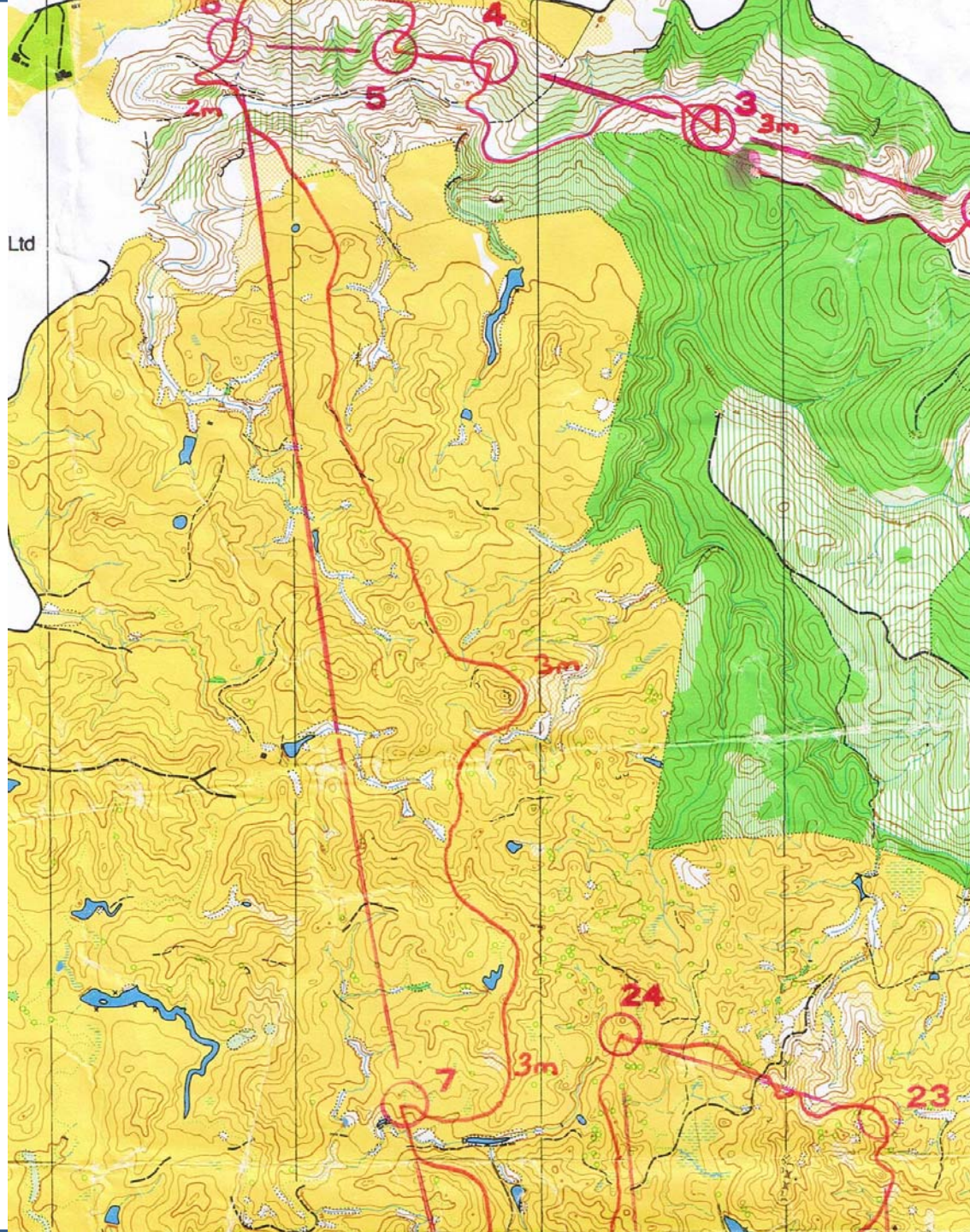Again – on local maps not all are possible.

Detailed navigation

Make the orienteer keep in constant contact with the map.

Easy to do in
- sand-dunes
- rock

Harder elsewhere.

Route choice legs

Make the orienteer think ahead about the best route to take.

Continue to present choices along the route.

Applicable to farmland and even street events.

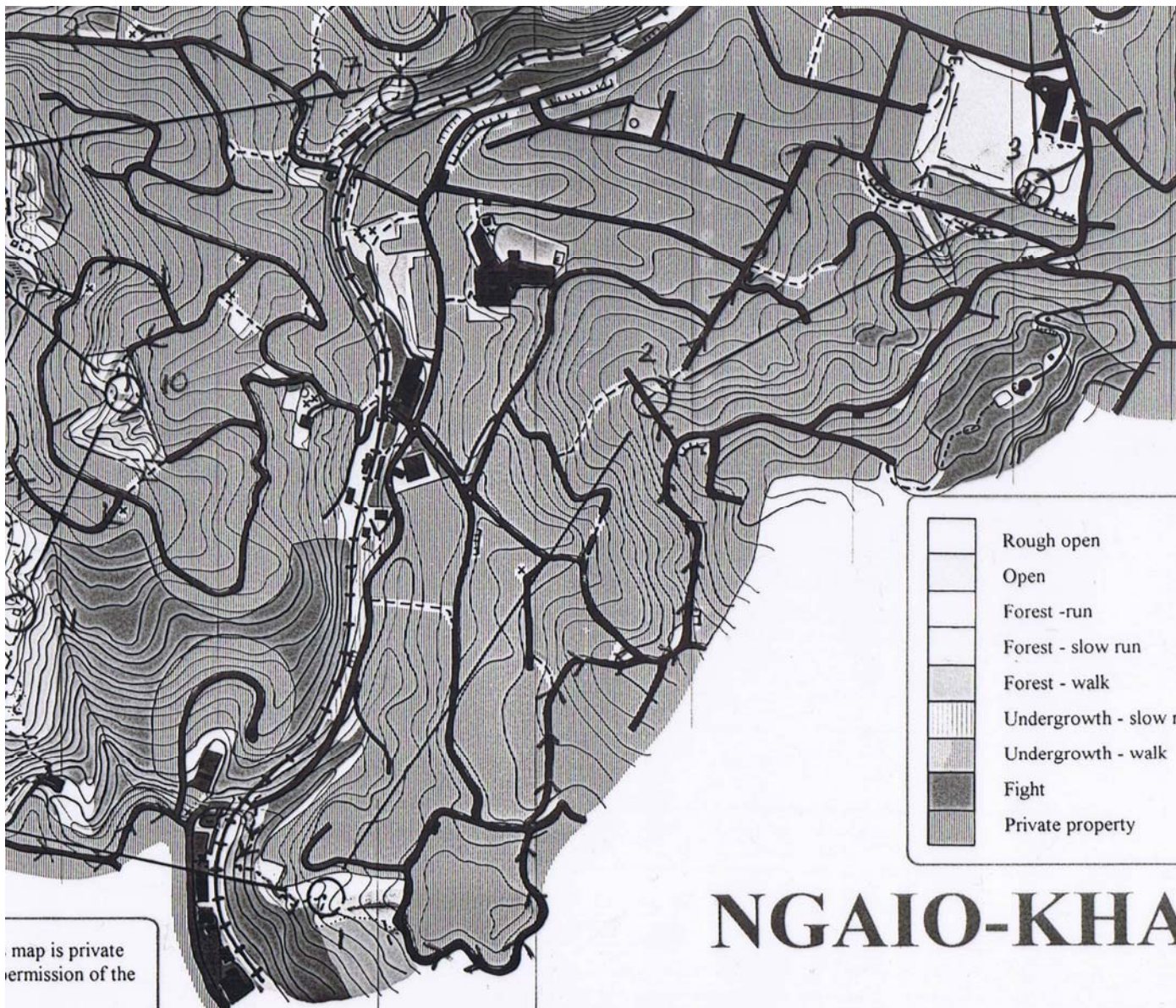Route choice legs do not have to be long legs.

Murphy's Law of Route Choice

"Someone will always choose a route you didn't anticipate."

Rough open
Open
Forest -run
Forest - slow run
Forest - walk
Undergrowth - slow r
Undergrowth - walk
Fight
Private property

NGAIO-KHA

map is private
ermission of the

Leg lengths

Nothing is more boring than a course with all it's legs the same length.

Often a problem on shorter courses and on sand-dune maps where the forest is in rectangular blocks.

Guideline:

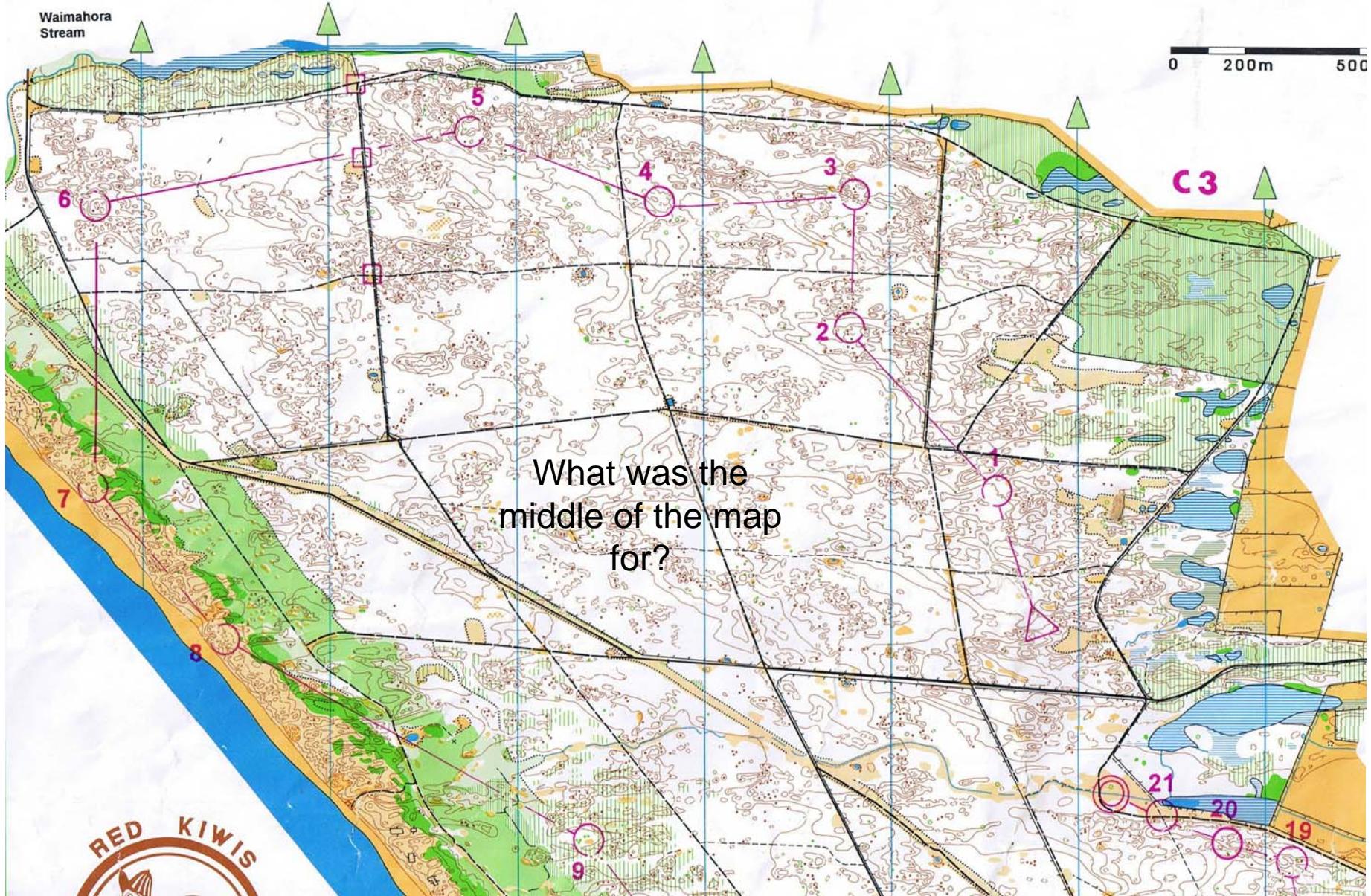The longest 3 legs should make up 30-40% of the total course length.

Direction changes

Force an orienteer to keep thinking about the route out of the control.

Much more likely to induce an error than "straight through" orienteering.

Shipwreck
"Hydrabad"

Changes in technique

Going from detailed to easy terrain and vice-versa, or changes in runnability, forces an orienteer to keep thinking about the appropriate technique.

Course planning – what to avoid
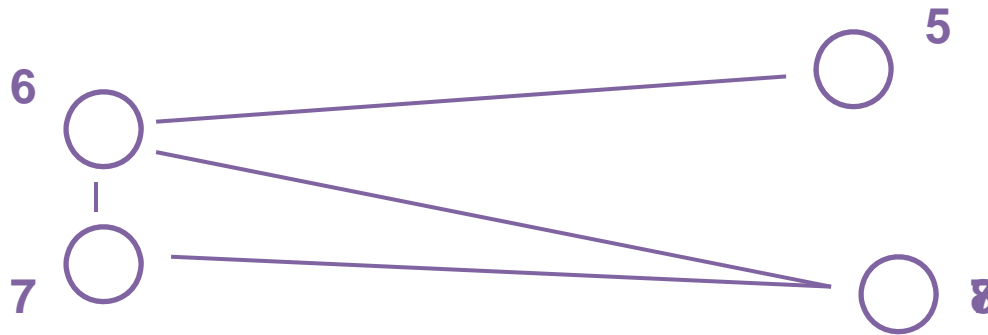
What should a good course avoid?

- dog-legs;
- conflicting directions;
- "bingo" and hidden controls;
- unnecessary/excessive climb;
- overuse of green/physical areas;
- crossing out of bounds areas/edge of the map;
- too many controls;
- too close controls.

Dog-legs

Siting a control so that competitors approach and leave it the same way.

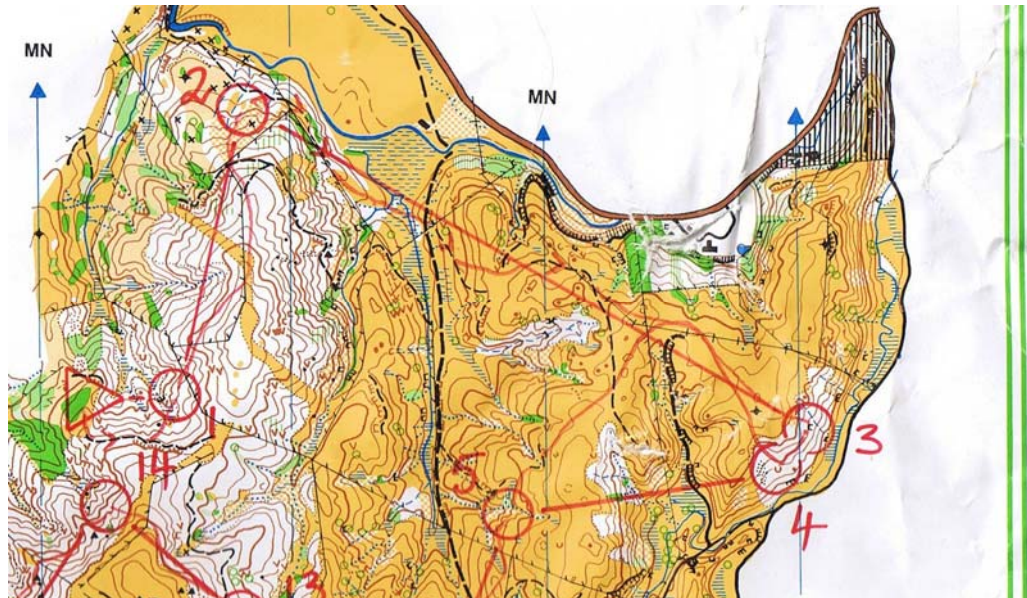Result $\Rightarrow$ unfair - exiting competitors may inadvertently show inward competitors where the control is.

How to avoid it $\Rightarrow$
insert an extra control as a short "turning leg".

Note:

Not all dog-legs look like dog-legs on the map.

Controls that look like dog-legs on the map are not always dog-legs on the ground.
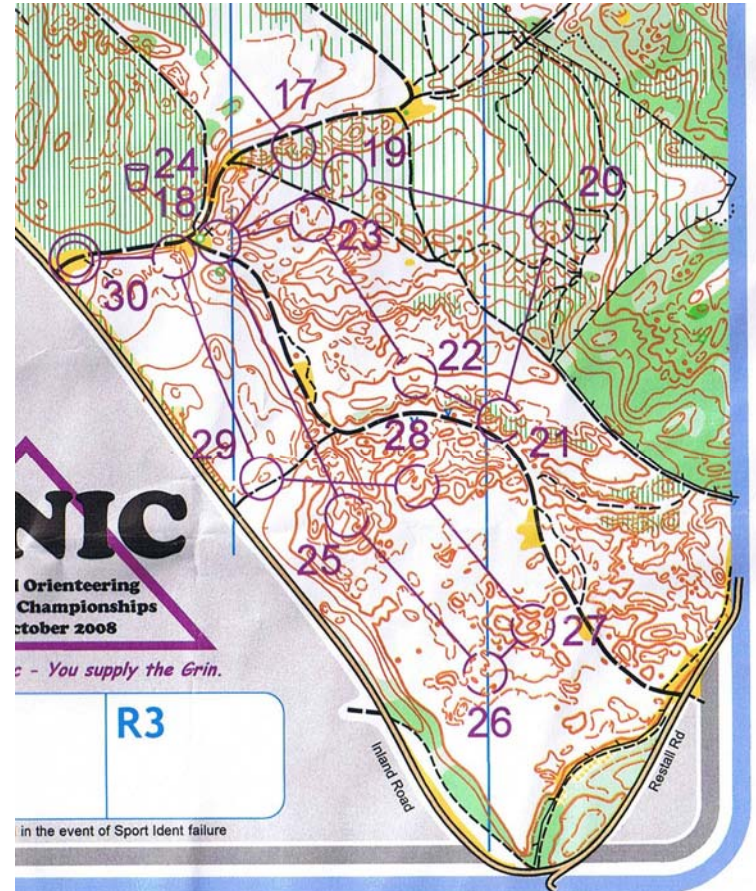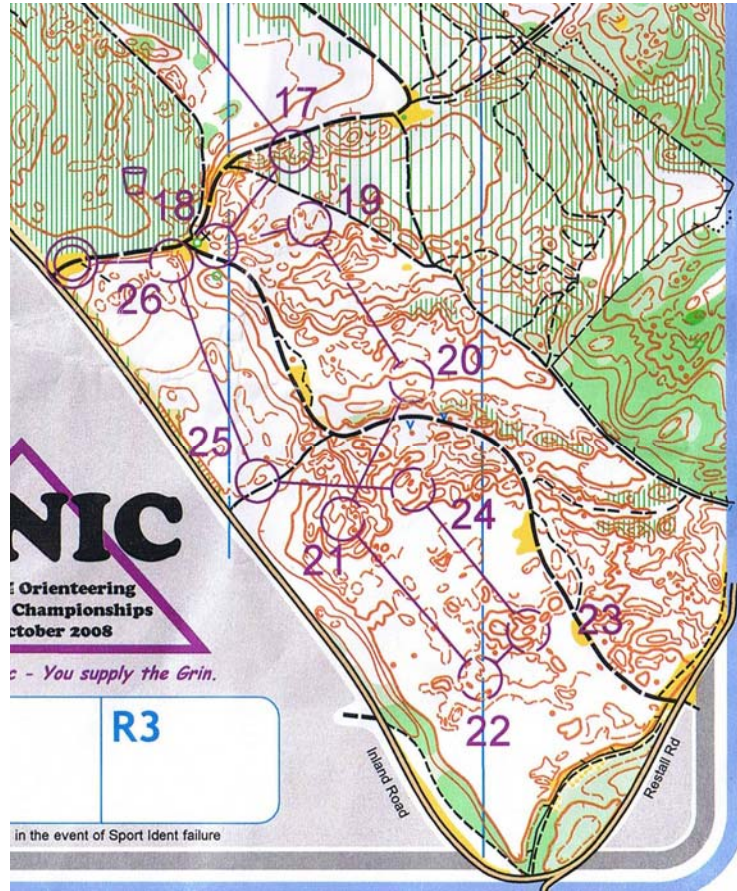
Conflicting directions

Different courses going through controls in opposite directions.

Result $\Rightarrow$ unfair – competitors leaving may show inward competitors the control location.
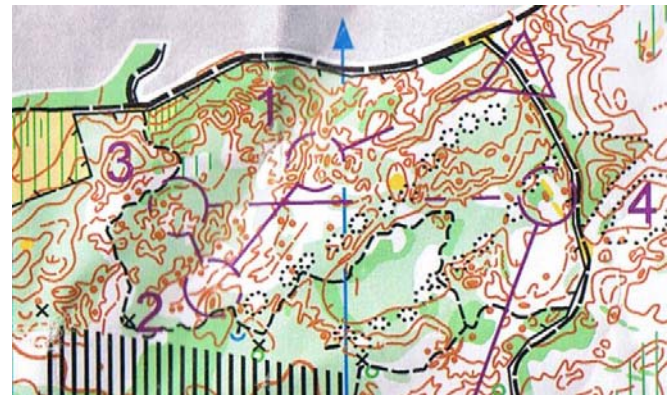
How to avoid it $\Rightarrow$
Don't be tempted to use it as a way of reducing the number of controls you use.

Bingo/hidden controls

Arise from:

– insufficient map detail to navigate accurately into a control;

– too much detail on the ground to be able to navigate accurately into a control;

– control hidden to "make it more difficult";

– putting controls in areas where the map is not accurate.

How to avoid it $\Rightarrow$
Good guideline is that a control (or the feature it is on) should be visible from 10% of the distance from the attack point.

Avoid poorly mapped areas.

Never, ever, put a control down a pit!

Unnecessary climb

Taking competitors straight up a steep hill – particularly if they come straight back down again!.

Result $\Rightarrow$ *!?:!*z&%

How to avoid it $\Rightarrow$
Don't do it. If the course must go up the hill do it in stages.

PHOTOGRAMMETRY - CHRIS WILMOT (AUST)
FIELD WORK - M ASHLEY. B DRYDEN.
L MANNING. C WAKELING.

CARTOGRAPHY - COLIN GREEDUS, (FEB 85).
PHOTOENGRAVING - THOMSON PHOTOENGRAVERS LTD.
PRINTING - LUCAS PRINT

Green/physical areas

Too many controls in areas in which progress is very difficult.

Result $\Rightarrow$ same as unnecessary climb! Especially if coupled with it!

How to avoid it $\Rightarrow$
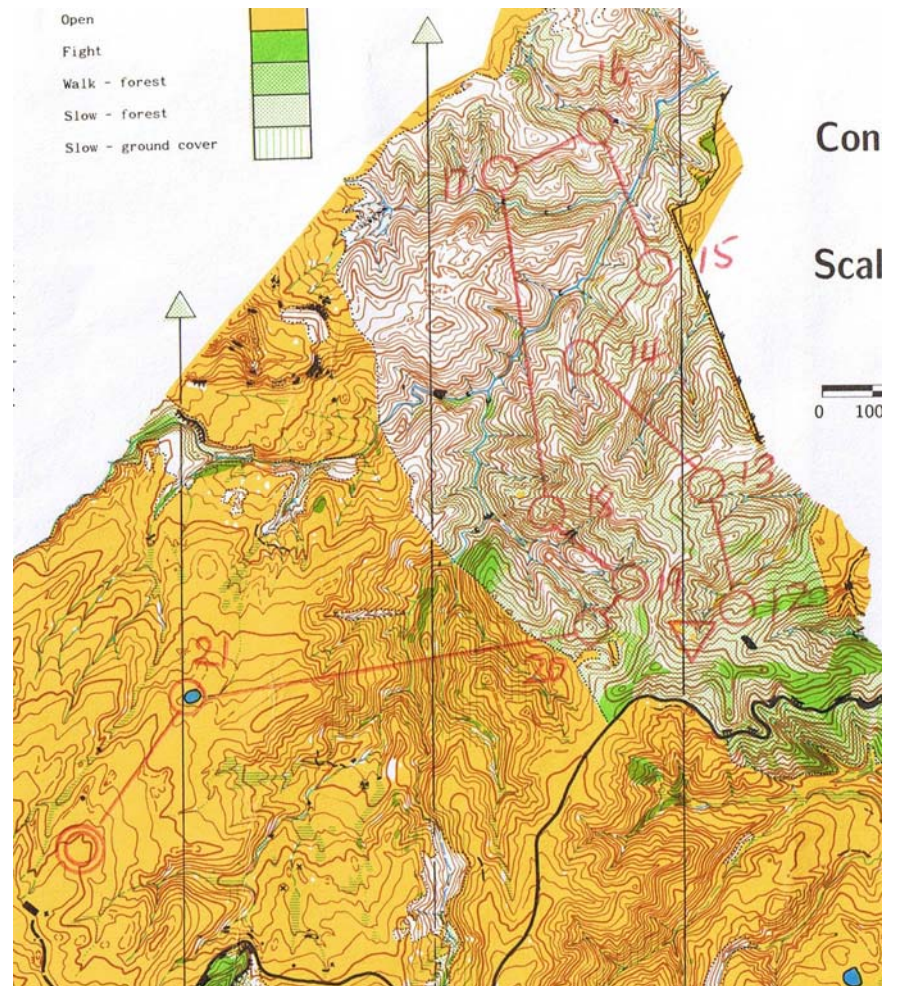If you must use green/physical areas do it in small doses!

KA

Cont

Scale

0   100

Open
Fight
Walk - forest
Slow - forest
Slow - ground cover

Con

Scal

0   100

Crossing OOB/edge of the map

Setting a leg in which the optimum route appears to be through OOB or off the map.

Murphy's 2nd Law of Route Choice

If it looks best – someone will do it, even if it means going through OOB/off the map..

Cororally
If they do we are potentially in trouble!

Too many controls

A course can become a "control picking" exercise with
- no route choice;
- no long legs.

Can be a problem in areas where it is necessary to "guide" competitors around poor mapping, dangerous areas etc.

Close controls

"Controls should not be placed on similar features within 100 m of each other"

- IOF rule

Result $\Rightarrow$ be regarded as a deliberate attempt to fool the competitor.

Compounded if control codes are similar e.g. 121 and 122.

How to avoid it $\Rightarrow$

Use a generous interpretation of similar.

<u>What to set – degrees of difficulty</u>

-Technical (navigational) difficulty comes in 4 levels:

- hard (red);
- medium (orange);
- easy (yellow);
- very easy (white).

Red

- Controls on point features;

- no obvious attack points or catching features close to controls;

- requires detailed map-reading, route choice, compass skills;

- not easy to relocate.

Who is it for?

-all grades from M/W-16A upwards.

Orange

 - Controls on prominent point features, prominent contour features, line features;

- obvious attack points and catching features within reasonable distance;

- requires reasonable map-reading and route choice;

- easy relocation.

Who is it for?

- M/W-14A and all B grades.

Yellow

- Controls on or near (< 50 m) drawn linear man-made or water features;

- controls preferably not at turning/decision points;

- controls visible from the approach side by any reasonable route;

- follows line features but allows limited route choice ("corner cutting");

- obvious catching features essential.

Who is it for?

- M/W-12A and M/W-14B grades.

White

 - Controls on drawn linear features (e.g. tracks, fences etc.);

- controls at every turning/decision point;

(i.e. Wherever there is a change from one linear feature to another or wherever a decision has to made e.g. Track junction.)

- all controls clearly visible from the approach side;

- no route choice.

IT IS IMPOSSIBLE FOR A WHITE COURSE TO BE TOO EASY.

Who is it for?

- M/W-10A and M/W-12B grades.

Other aspects

• internal fences often not shown on map for Red courses
• Yellow and White course maps usually produced at an enlarged scale

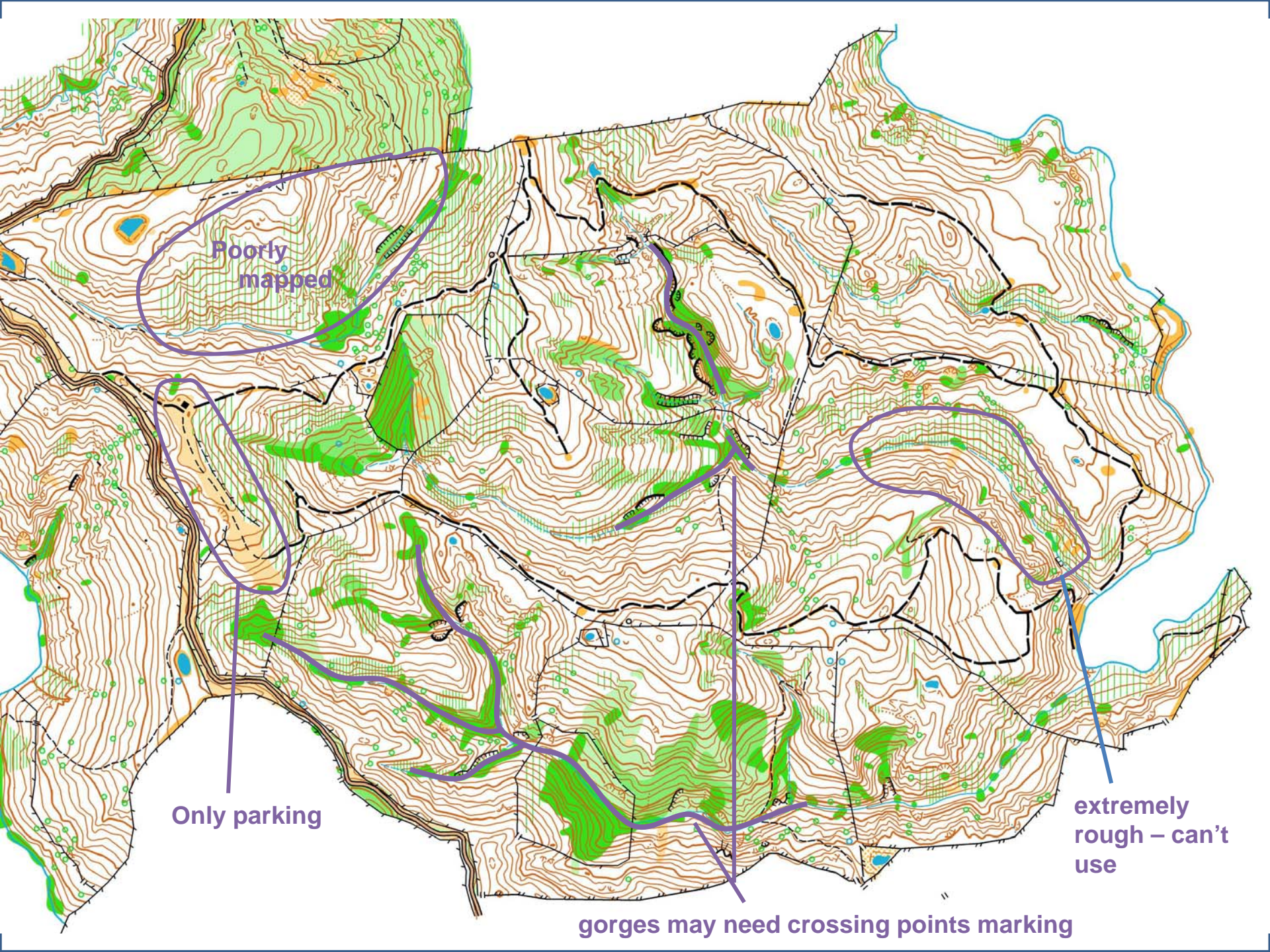# Course planning – how to go about it

Setting the courses

- Make sure you are familiar with the area

  Know the restrictions
  - out of bounds areas;
  - poorly mapped areas;
  - possible car parking;
  - landowners requests;
  - unsuitable parts of the map.

 Even for a new map and in the days of OCAD, you will need to compile map corrections. These may effect your planning.

Poorly mapped

Only parking

gorges may need crossing points marking

extremely rough – can't use

- Choose the start and finish

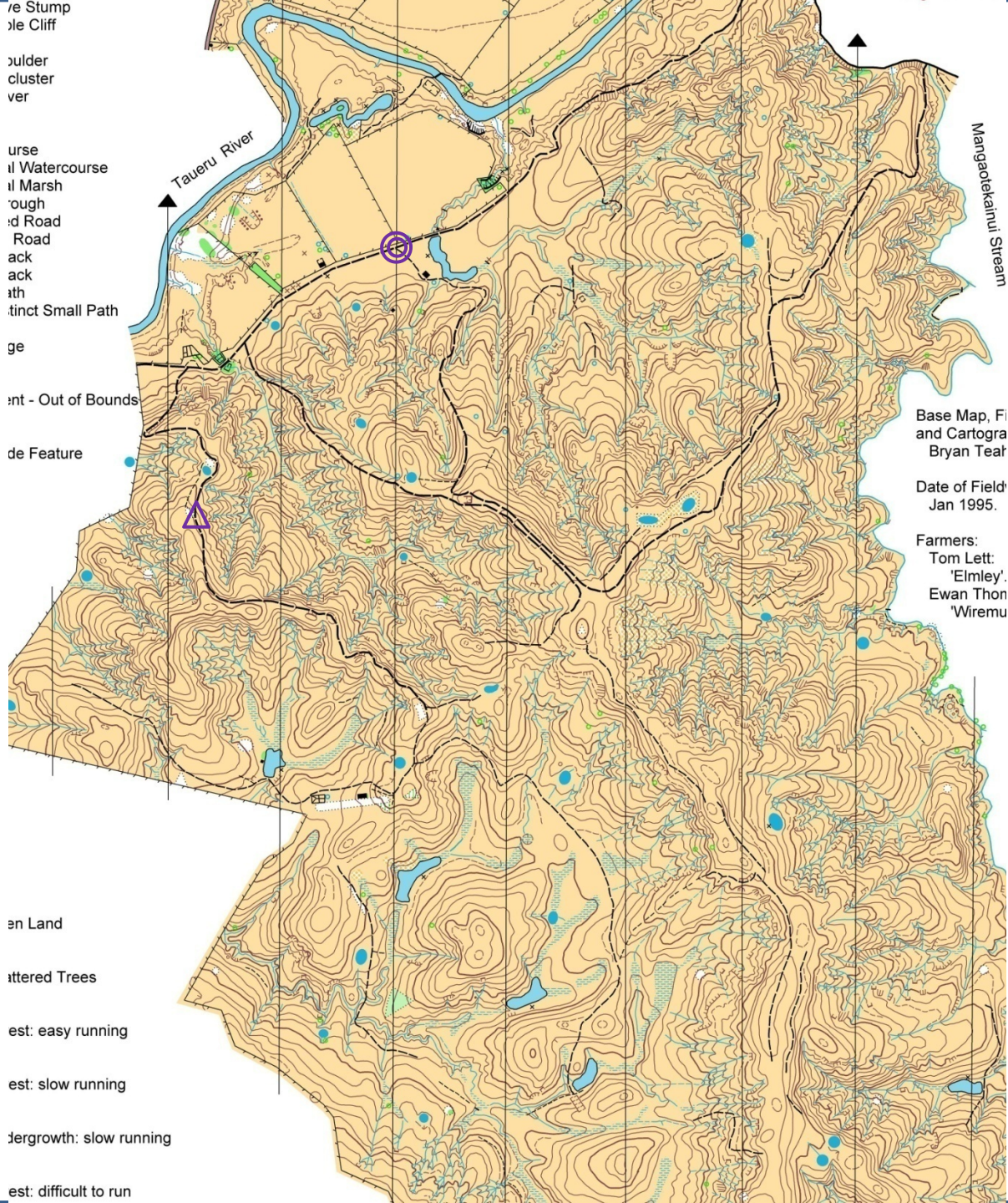Finish $\Rightarrow$ as close to car parking and assembly/registration as possible

Start $\Rightarrow$ for club events also as close to car parking as possible.

For OY/major events – choose the start to get the best possible courses; don't be afraid to walk people to the start to achieve this.

For a club event remember that with SportIdent you can put the start box a long way away from registration.

The relative positions of the start and finish are often controlled by the need to set the shortest, easiest course.

At a major event if this is not possible with the preferred start for long courses - use two starts.

Taueru River

Mangaotekainui Stream

Base Map, Fi
and Cartogra
Bryan Teah

Date of Field
Jan 1995.

Farmers:
Tom Lett:
'Elmley'.
Ewan Thom
'Wiremu

- Look for good long legs with route choice, technical difficulty etc.

  The rest of the course can be built around the long legs.

  Some long legs only work one way.

Note: some people like to immediately use computer programs such as CONDES or OCAD in their planning. To visualise/pick good long legs you need to have good resolution, and an overview, of the whole area. In my opinion this can only be achieved by planning on a paper copy of the map. CONDES/OCAD9 can be used later.

e Stump
le Cliff

oulder
cluster
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urse
l Watercourse
l Marsh
ough
d Road
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ack
th
tinct Small Path

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nt - Out of Bounds

de Feature

Taueru River

Mangaotekainui Stream

Base Map, Fi
and Cartogra
Bryan Teah

Date of Field
Jan 1995.

Farmers:
Tom Lett:
'Elmley'.
Ewan Thon
'Wiremu

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ttered Trees

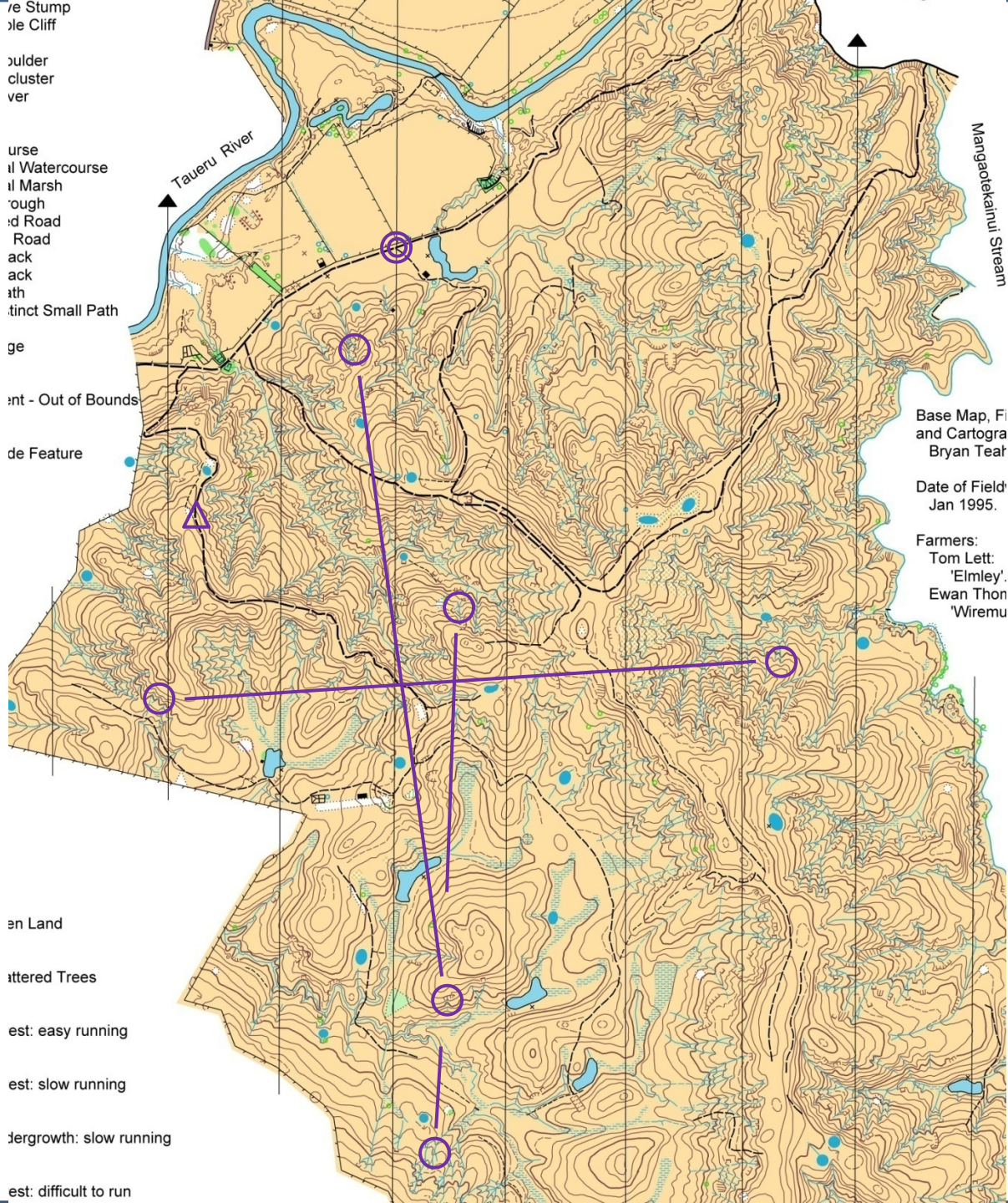est: easy running

est: slow running

dergrowth: slow running

est: difficult to run

- Set one course of each difficulty

  Try out (at least) critical routes on the ground – don't assume that what is good on the map is good on the ground.

  Remember Murphy's Law of Route Choice – don't just try out routes you "expect" people to take.

  Don't be afraid to use taped routes.

• When you are happy your courses will work – set all the other courses.

• Check on the ground that all your control sites are fair and correct.

IF IN DOUBT – LEAVE IT OUT

Tape control sites for checking by the controller.

The controller is in overall charge.

If he/she wants something changed you must change it.

Timescales

- Setting a club event should be achievable with 2 visits to the map – 1 to try out ideas, 1 to check control sites.

- OY/Major events will require more time and effort.

- Work closely with the controller. Many tasks can be shared.

Getting the correct lengths

- Look at previous events on the area to gauge km rates.

- Use these as a guide to appropriate lengths.

Beware $\Rightarrow$ different courses on the same area may
- traverse different terrain;
- have vastly different climb;
- be run by vastly different people.

- Test run a course of appropriate length and difficulty for your experience and fitness.

  Scale the lengths from this

Remember $\Rightarrow$

- there is no point in a W50 test running an M21 course;;
- you will have a slight advantage as you have prior knowledge.

There is no substitute for test running a course. Km rates alone are not enough.

- Length is measured on a direct line.

Counting the climb

- Climb is counted along the optimum route.

- Only climb up is counted.

- Climb is often expressed as a % of distance along the optimum route.

IOF guideline $\Rightarrow$ climb should not exceed 4%

Wellington guideline $\Rightarrow$ aim for $\leq 5\%$

The technical bits

Producing the maps

The details of what is required here depends if you are producing master maps or pre-printed maps. In general most WOC events now use pre-printed maps with an up-dated map. There may still be occasions when map corrections are used, however.

Assuming maps are to be pre-printed, the following points need remembering :

• for controls on point objects e.g. boulder, knoll, the feature is at the exact centre of the circle – even if the control is on, say, the N side;

- if the feature is extended the control circle should be centred on where on the feature the control is e.g. W side of a clearing;

- control circles and joining lines need to be broken so that detail is not obscured – in OCAD purple will always print on top of any other colour so that knolls, small depressions etc. may be obscured;

- where there is a cross-over the line joining the later leg should be broken e.g. if legs 4-5 and 12-13 cross-over, break the line for 12-13;

Map correction maps

If map correction maps are being used:

• never/ever put a control on a map correction.

Master maps

If master maps are being used:

• make sure there are enough for each course;

• make sure the pens are red or purple;

• make sure control descriptions are on the front of the master maps.

Control descriptions

Control descriptions are now almost always done in a software package e.g. Condes or OCAD9.

These will generally produce the descriptions as IOF symbols, although for a Club Event using English descriptions is OK. Control descriptions for Yellow and White courses should always be in English, and English descriptions should be available for Orange courses.

Points to remember are:

• if there is more than one feature in the control circle you need to specify which one the control is on e.g. N, W, upper, middle etc.;

- if the feature is large you need to specify where on it/in it the control is e.g. upper part, foot, W edge etc.;

- if the feature is a knoll, a cliff, a boulder or an earthbank, ideally you should indicate how big it is;

- for any major event the control descriptions must be printed on the front of the map. If you can do this for other events it is nice – but space on the front of the map is sometimes a problem.

Summary

- Remember, orienteering is "running navigation".

- Try and include as many desirable aspects of course setting as possible.

- Avoid all the no-nos!

- Be prepared to compromise.
  Setting a club event should not be an onerous task – don't make it into one.

- Many things that are necessary for a major event, or even an OY, are not absolutely necessary for a club event.

- Concentrate on good quality courses without the frills e.g. don't bother with IOF control descriptions.

- Course setting is fun.....ENJOY IT!!