Mark Laying Seminars

David Frame

RYA

Mark laying Seminars 2013 onwards

outline

- Provide a scheme update
- Regional Seminar improvements.
- Share some technical “new” content
- Gather some of your thoughts on way forward for National ML seminar

RYA ML Seminars

- By the way its not really broken.....

Seminars

Club Mark Laying

Regional Mark Laying

National Mark Laying

These mirror the RO scheme

Club Mark Layer

A syllabus for Clubs to use to deliver “in house” training

entry-level course introducing established good practice of mark laying skills.

The course is run over a short day Much of the time will be spent a float after an initial shorebased session.

Powerboat Level 2 requirement

Club Mark Layer

- Setting up the ground tackle. Importance of a system.
- use of hand bearing compass. Taking wind bearings
- Mark boat preparation. Ropework, stowage of marks
- Understand course axis concept and subsequent positioning of marks.
- Streaming Marks - stream mark for start line. Communication protocols.
- Dropping Marks - Laying a windward leeward course.

Regional Mark laying Seminar

Has been updated for 2013….

So whats new?….

....Two Day Seminar

New RML Ashore – Day 1

- Includes wind tide theory
- Tools of the trade
- GPS workshop
- Mark Laying “System”
- Course Config (trap)
- Mark Laying Tehniques

New RML Afloat – day 2

Streaming in Start Pin marks,

Gates, various techniques

Daisy Chain full Trap set up

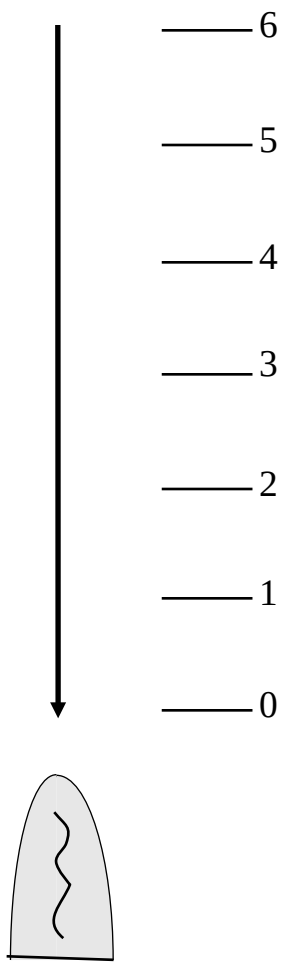
Ref Point full Trap set up

Accuracy and not time important

Wind and Tide

Ground Wind

6 knots



No current

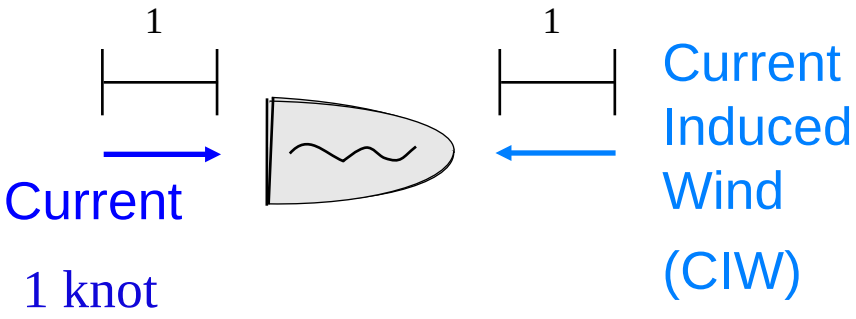
Ground Wind (or Gradient Wind):

Measured from a fixed point on the ground (or anchored committee boat)

No gradient wind at all!

A still sunny day

But there is current



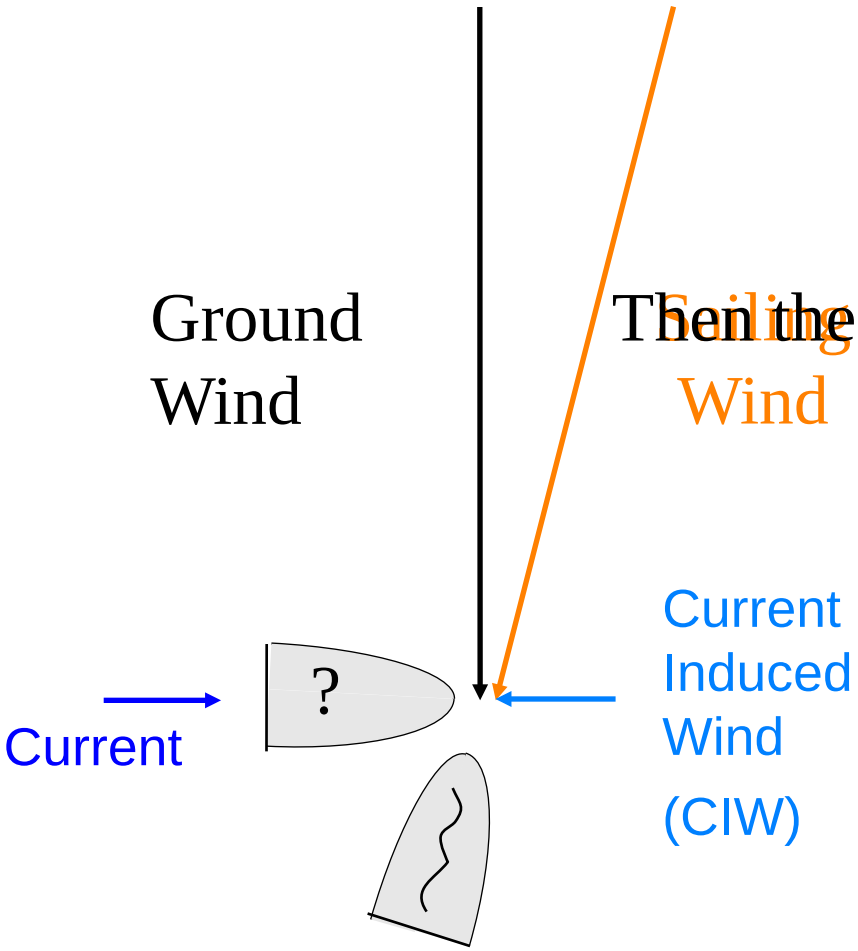
Ground Wind

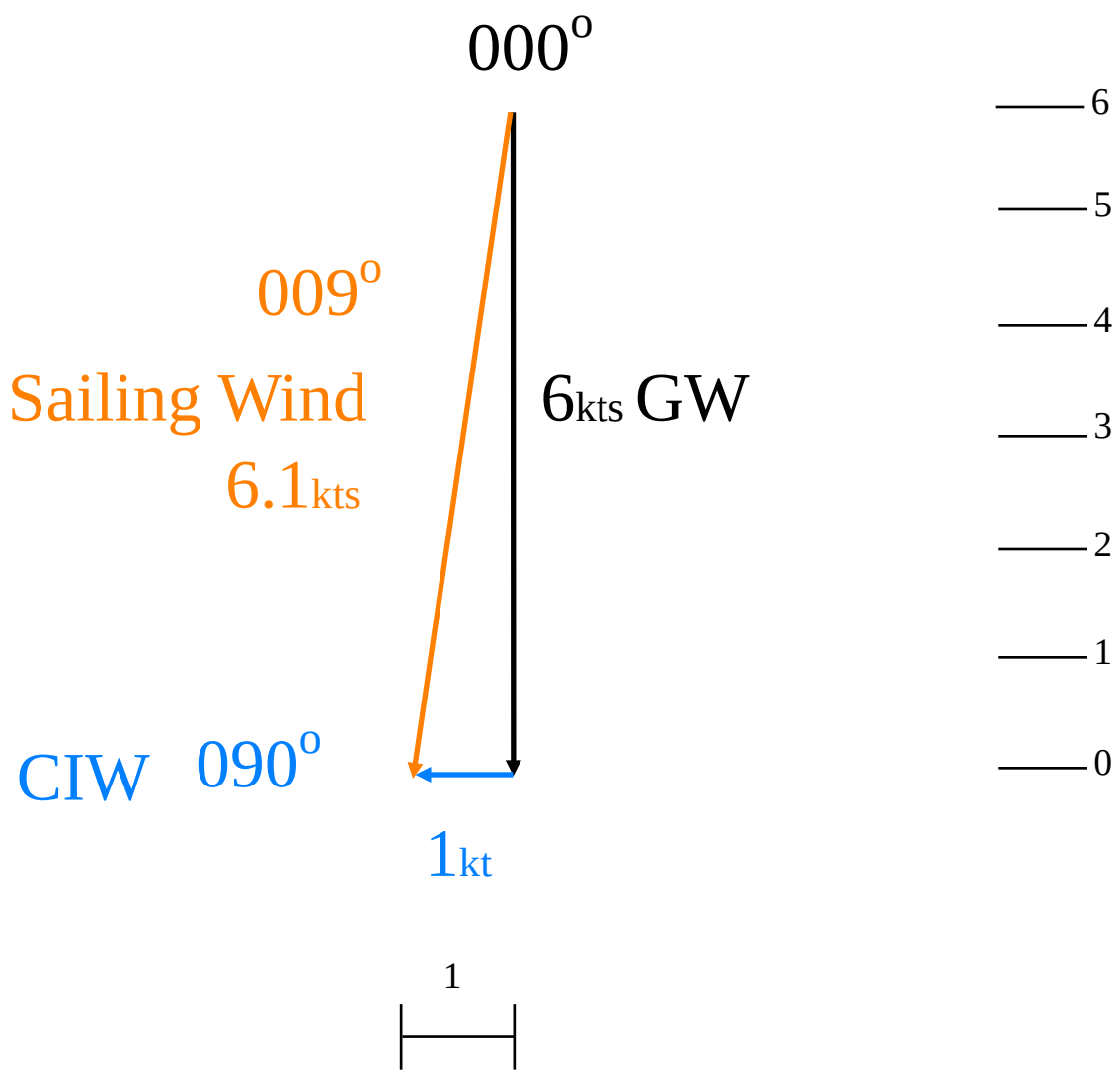
Then the gradient appears

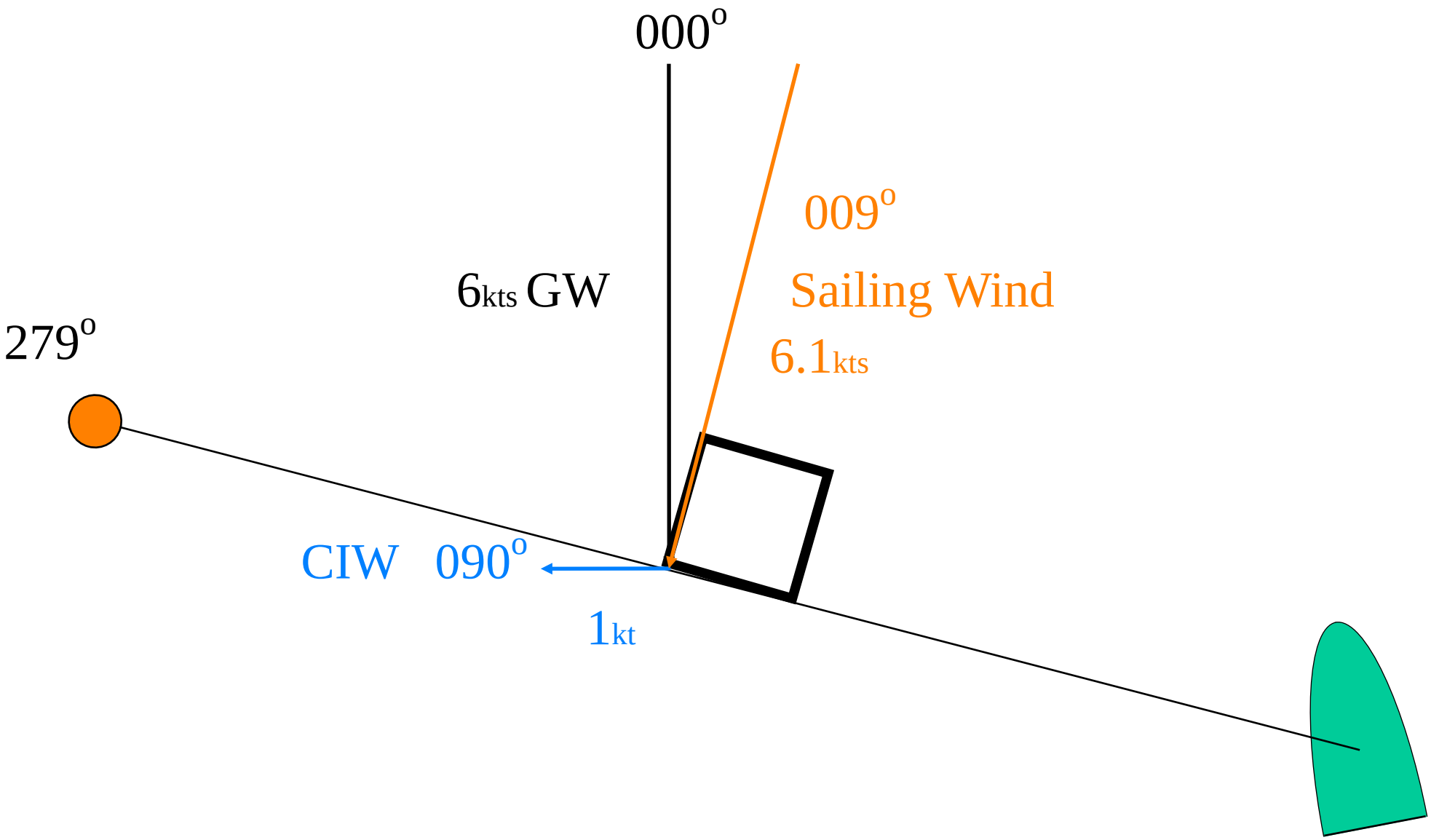
Sailing Wind

Sailing Wind:

Wind experienced by a boat not anchored or under way




000°
009°
Sailing Wind
6.1kts
6kts GW
CIW 090°
1kt
1
6
5
4
3
2
1
0



Line is square to the ‘sailing wind’

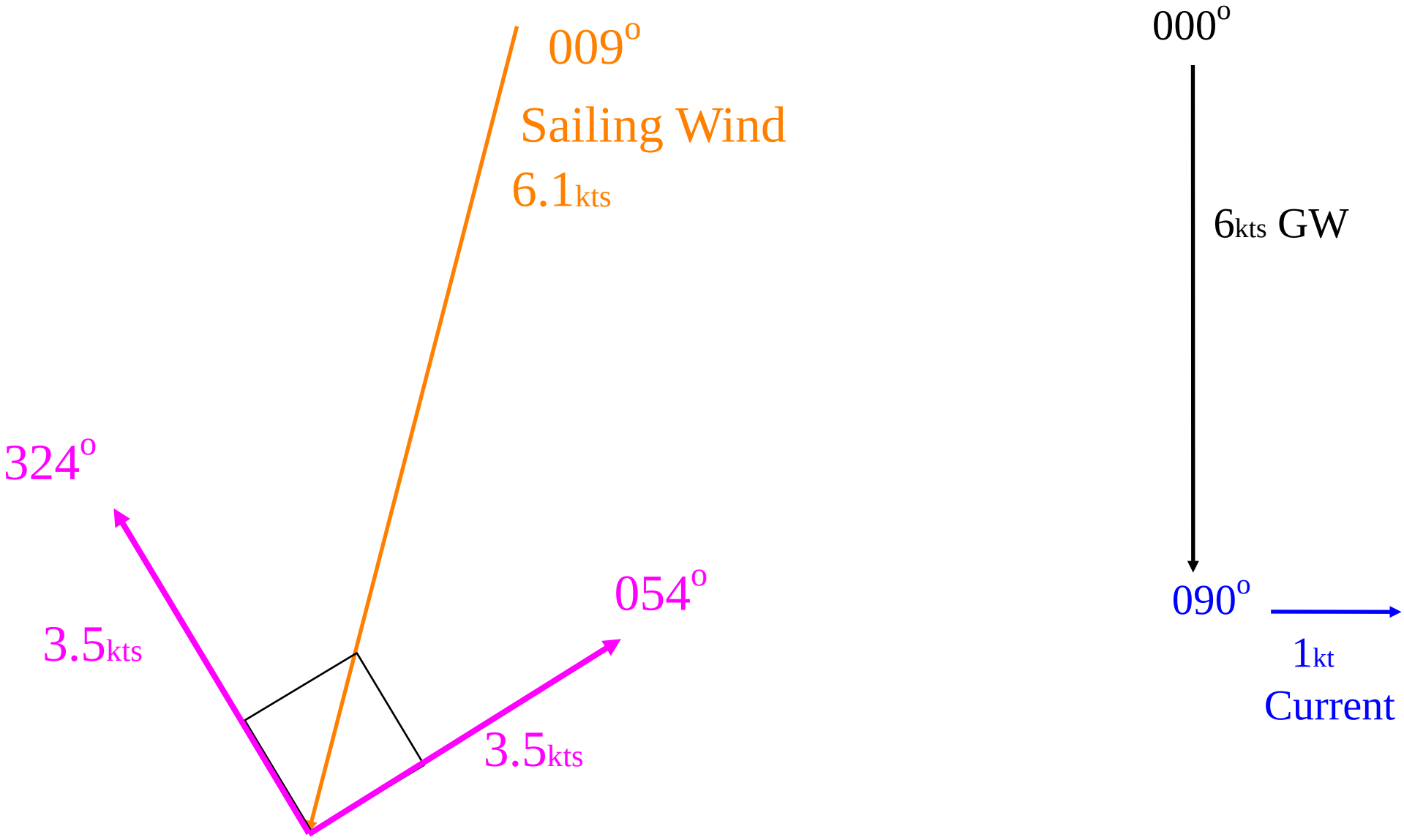
Achieved by setting the line square to the ‘sailing wind’

The current always influences the Sailing Wind

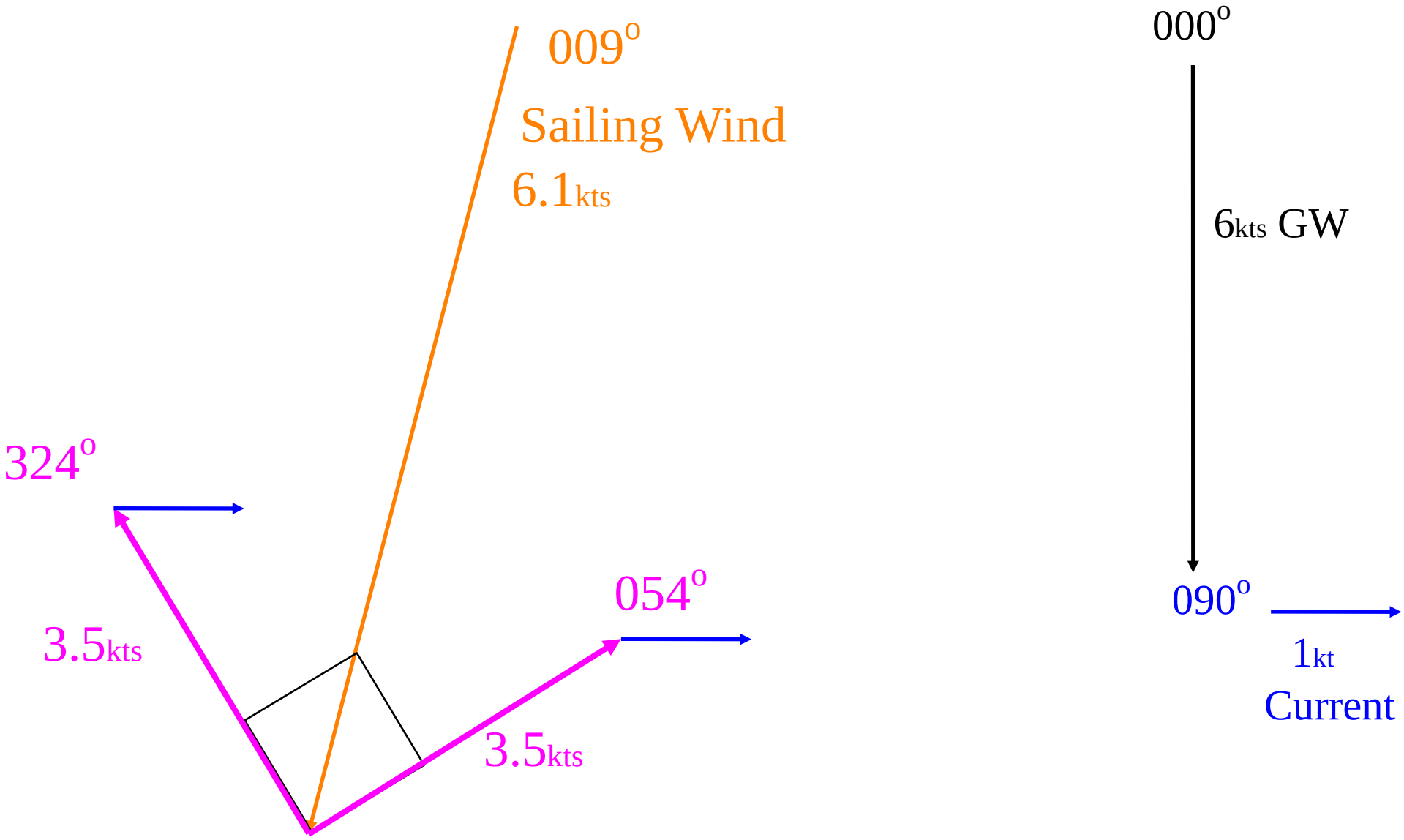
ALSO

The current always influences the boat's COG

Heading & Speed in water

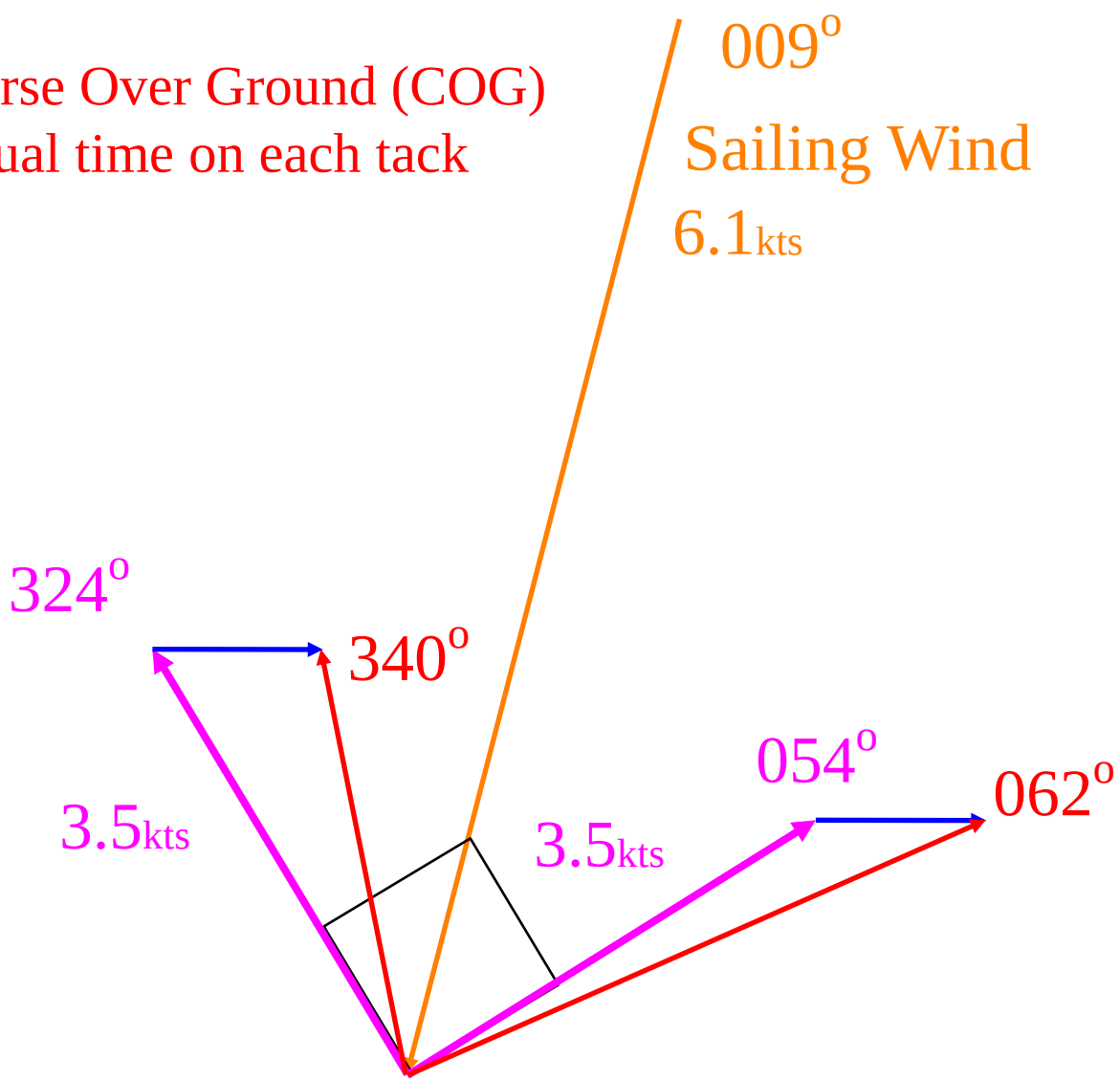


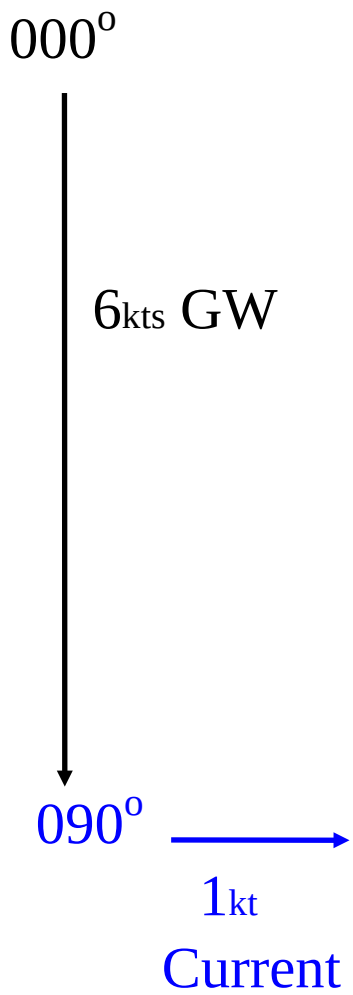
Heading & Speed in water



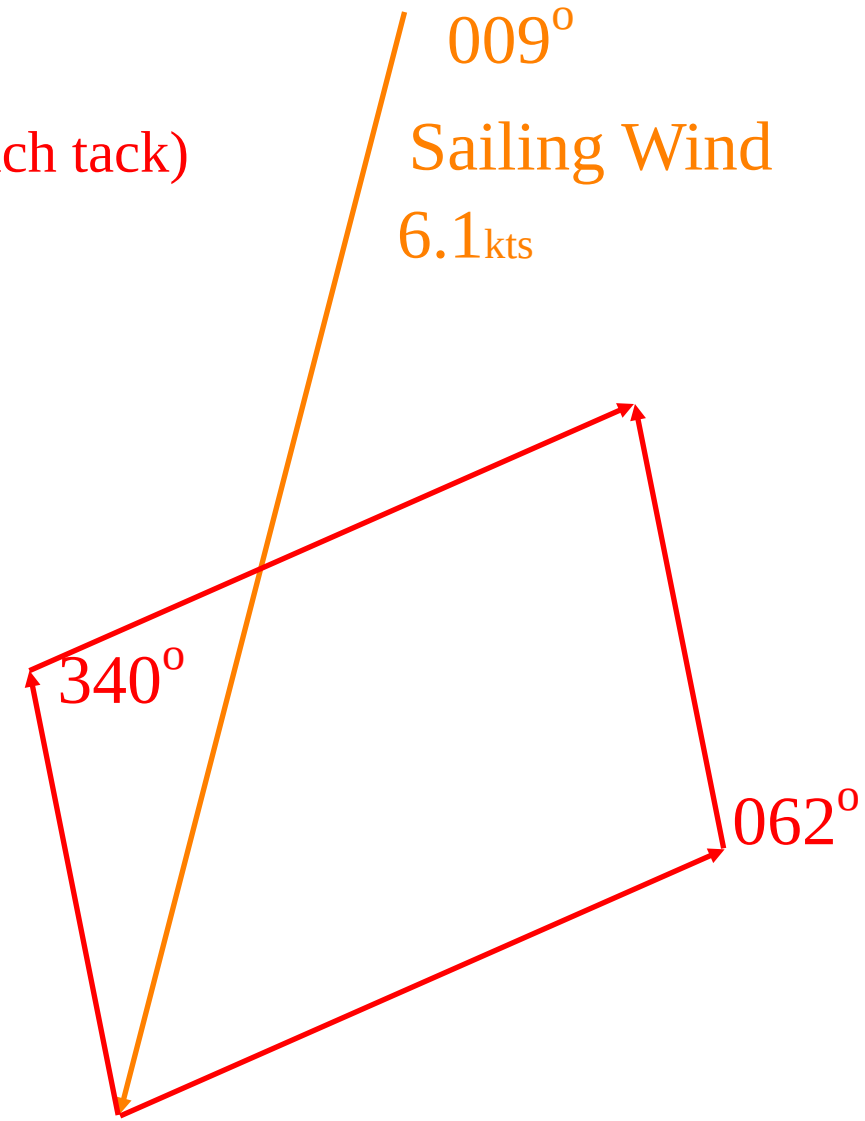
Heading & Speed in water

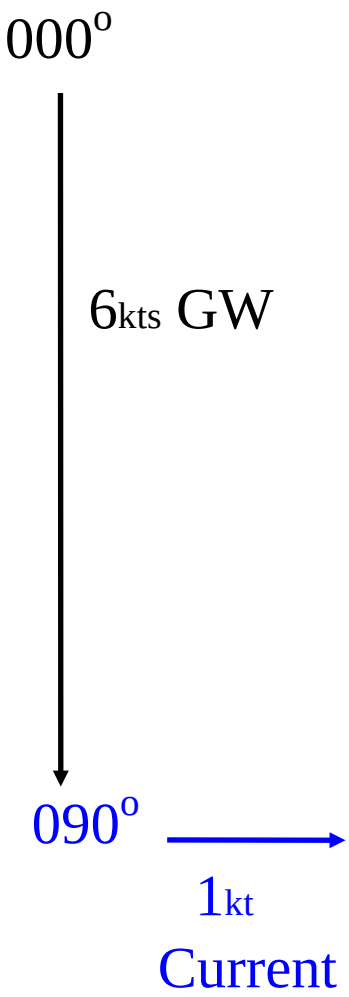
Course Over Ground (COG)
- equal time on each tack





COG
(equal time on each tack)





COG
(equal time on each tack)

030°

009°

Sailing Wind
6.1kts

340°

062°

000°

6kts GW

090°

1kt
Current

The current always influences the Sailing Wind

ALSO

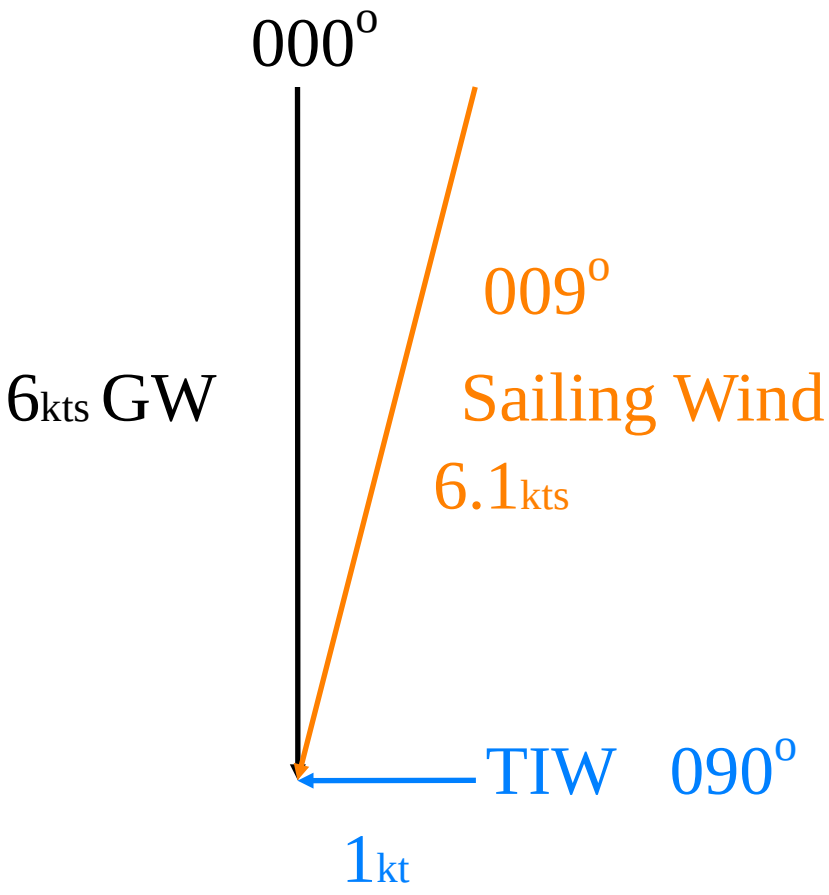
The current always influences the boat's COG

Ground Wind	000°	6kts
Cross Tide	**090°**	**1kt**
Sailing Wind	009°	

Pin End Moves 009° Upwind (when current is left to right)

Windward Mark Moves 030° Downtide (current effects are cumulative)


Rosanne


000°
009°
6kts GW
Sailing Wind
6.1kts
TIW 090°
1kt

Leeward Mark

009°

Sailing Wind

6.1kts

189°

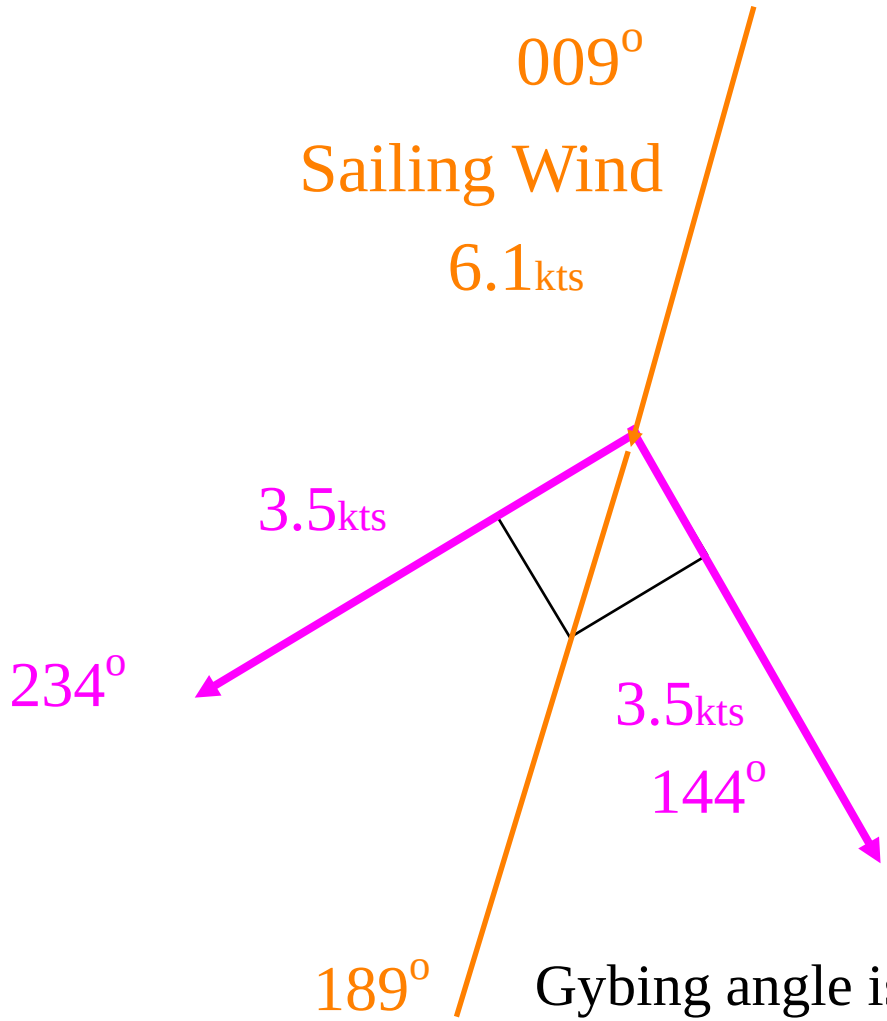
000°

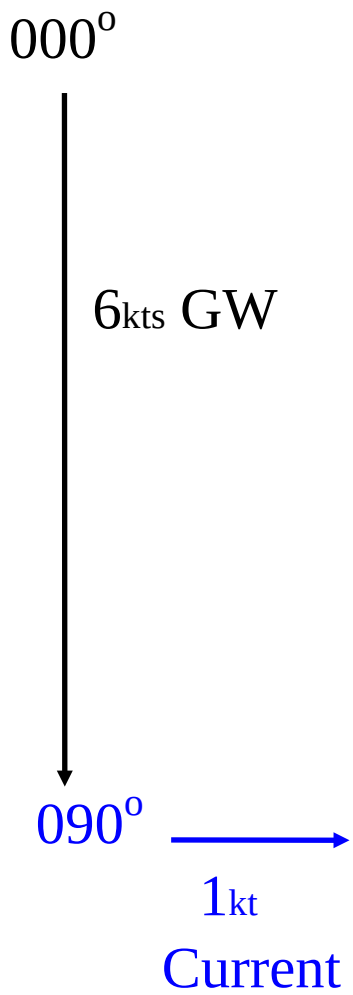
6kts GW

090°

1kt

Current



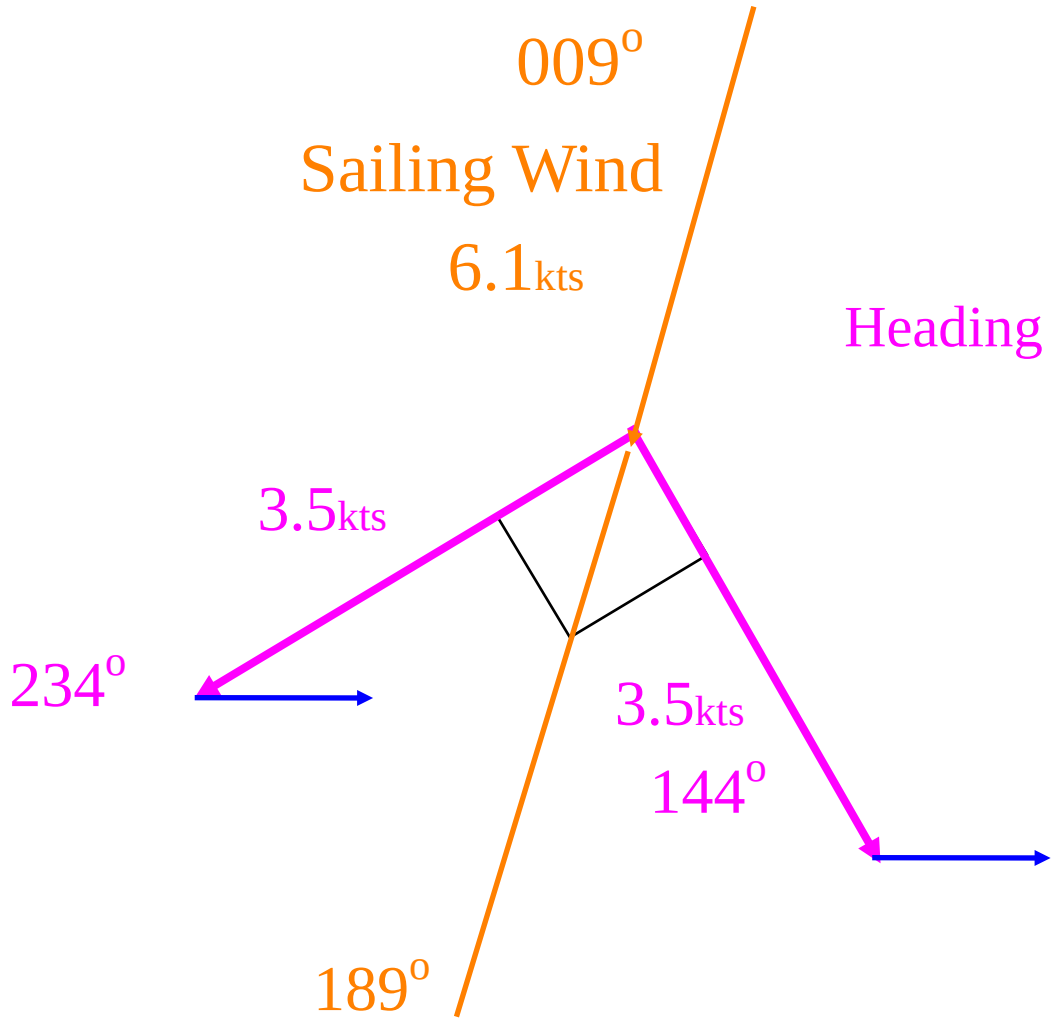


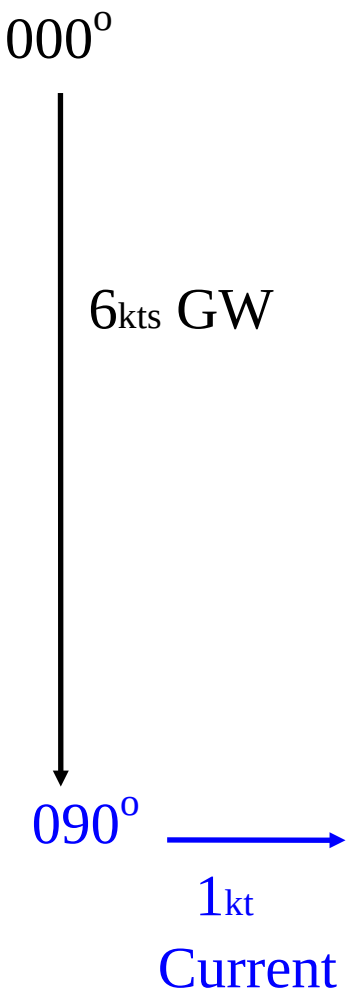
Gybing angle is say 90°

Speed in water is say 3.5kts

Direction through water (Heading) = sailing wind +/- 135°


Rosanne


009°
Sailing Wind
6.1kts
Heading & Speed in water
3.5kts
234°
3.5kts
144°
189°


000°
6kts GW
090°
1kt
Current

009°

Sailing Wind

6.1kts

Heading & Speed in water

COG (equal time on each gybe)

3.5kts

234°

222°

3.5kts

144°

133°

189°

000°

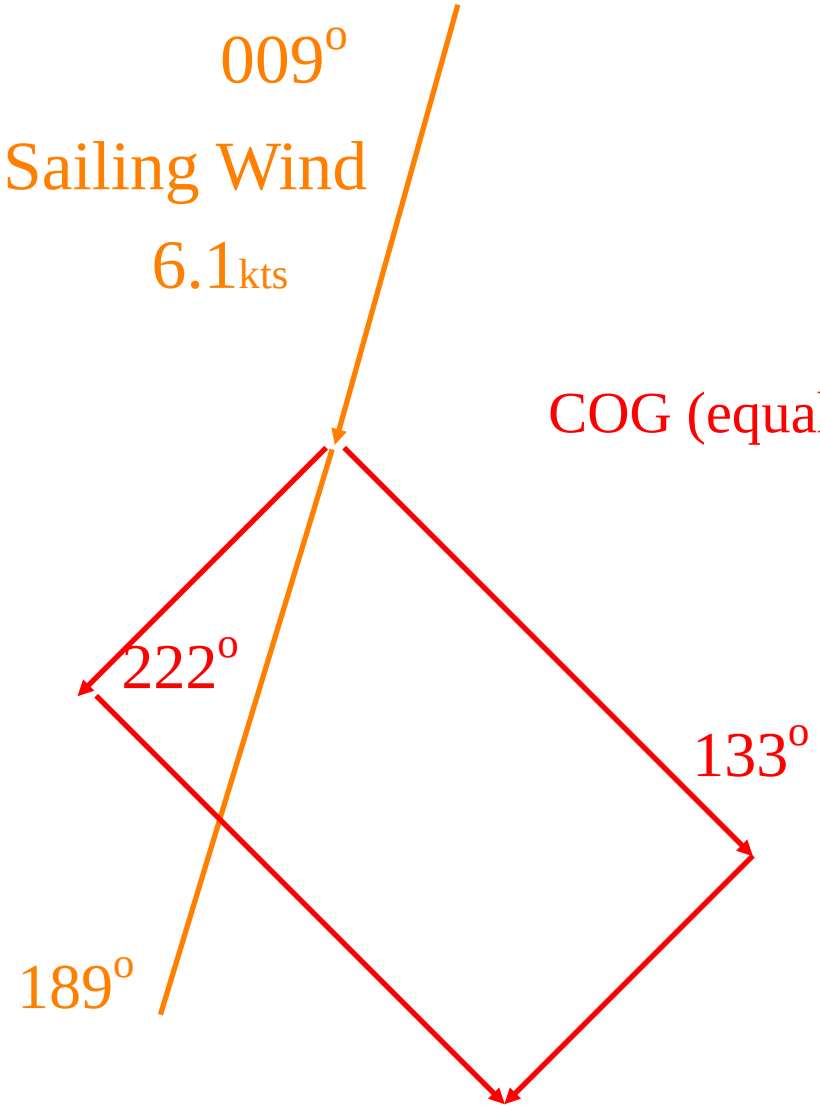
6kts GW

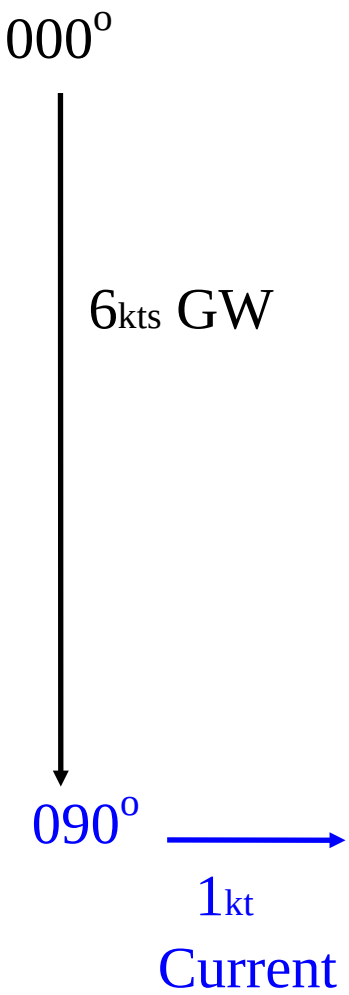
090°

1kt

Current

Leeward Mark





009°

Sailing Wind

6.1kts

COG (equal time on each gybe)

222°

133°

189°

166°

000°

6kts GW

090°

1kt

Current

The current always influences the Sailing Wind
ALSO
The current always influences the boat's COG

Ground Wind	000°	6kts
Cross Tide	**090°**	**1kt**
Sailing Wind	009°	

Pin End Moves 009° Upwind (when current is left to right)

Windward Mark Moves 30° Downtide (effects of current are cumulative)

Leeward Mark Moves 14° Downtide (effects of current are subtractive)

Wind & Current

Upwind

COG and SOG are *always* influenced by the current

The two effects are *additive*

Downwind

COG and SOG are *always* influenced by the current

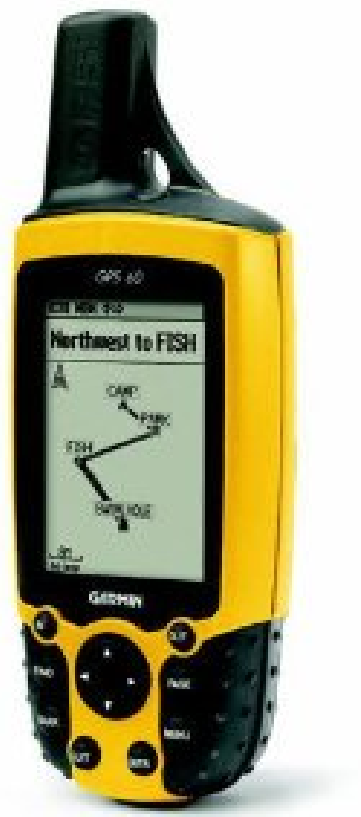
The two effects are *subtractive* & so much less than upwind effect

Compromise for W/L with only Two Marks

Set up on the Sailing Wind


Q so far.... ?
Rosanne
skandia
skandia

Tools of the trade



GPS Workshop

Also added into Regional Ml Seminar

Available as stand alone workshop for Club Seminar

methods of Course Setting

"**Daisy Chain**" position of mark related only to previous mark.

"**Reference System**" position of marks are relative to a fixed reference point (gate 4)

GPS waypoints

Waypoints are the key to all the “games”

A waypoint is a saved position

“User Waypoints”….that us folks!

Two main ways to save waypoints

Save your current position “Pinging”

eg alongside buoy, committee boat etc.

Inputting a given Lat / long as a waypoint

input Ref point or previous mark

Inputting a given Lat / long as a waypoint

- Humans cause the most errors!
- Write down and repeat back any transmitted waypoints.
- Best to “Ping” current position and then correct figures in the menu
- Used with Ref point system

- Practical Exercise on the Car Park

- Set out a course

Trapezoid Course 70°, 110° interior angles

Course Axis	*Trapezoid Course 70, 110 interior angles*								
4 - 1	1 - 4			4 - 3	3 - 4	Signal	Pin -	3 -	Finish
3 - 2	2 - 3	4 - 2	2 - 4	1 - 2	2 - 1	- Pin	Signal	Finish	- 3
000	180	321	141	250	070	270	090	110	290
005	185	326	146	255	075	275	095	115	295
010	190	331	151	260	080	280	100	120	300
015	195	336	156	265	085	285	105	125	305
020	200	341	161	270	090	290	110	130	310
025	205	346	166	275	095	295	115	135	315
030	210	351	171	280	100	300	120	140	320
035	215	356	176	285	105	305	125	145	325
040	220	001	181	290	110	310	130	150	330
045	225	006	186	295	115	315	135	155	335
050	230	011	191	300	120	320	140	160	340
055	235	016	196	305	125	325	145	165	345
060	240	021	201	310	130	330	150	170	350
065	245	026	206	315	135	335	155	175	355
070	250	031	211	320	140	340	160	180	000
075	255	036	216	325	145	345	165	185	005
080	260	041	221	330	150	350	170	190	010
085	265	046	226	335	155	355	175	195	015
090	270	051	231	340	160	000	180	200	020
095	275	056	236	345	165	005	185	205	025
100	280	061	241	350	170	010	190	210	030
105	285	066	246	355	175	015	195	215	035
110	290	071	251	000	180	020	200	220	040
115	295	076	256	005	185	025	205	225	045
120	300	081	261	010	190	030	210	230	050
125	305	086	266	015	195	035	215	235	055
130	310	091	271	020	200	040	220	240	060
135	315	096	276	025	205	045	225	245	065
140	320	101	281	030	210	050	230	250	070
145	325	106	286	035	215	055	235	255	075
150	330	111	291	040	220	060	240	260	080
155	335	116	296	045	225	065	245	265	085
160	340	121	301	050	230	070	250	270	090
165	345	126	306	055	235	075	255	275	095
170	350	131	311	060	240	080	260	280	100
175	355	136	316	065	245	085	265	285	105

Course Axis									
4 - 1	1 - 4			4 - 3	3 - 4	Signal	Pin -	3 -	Finish
3 - 2	2 - 3	4 - 2	2 - 4	1 - 2	2 - 1	- Pin	Signal	Finish	- 3
180	360	141	321	070	250	090	270	290	110
185	005	146	326	075	255	095	275	295	115
190	010	151	331	080	260	100	280	300	120
195	015	156	336	085	265	105	285	305	125
200	020	161	341	090	270	110	290	310	130
205	025	166	346	095	275	115	295	315	135
210	030	171	351	100	280	120	300	320	140
215	035	176	356	105	285	125	305	325	145
220	040	181	001	110	290	130	310	330	150
225	045	186	006	115	295	135	315	335	155
230	050	191	011	120	300	140	320	340	160
235	055	196	016	125	305	145	325	345	165
240	060	201	021	130	310	150	330	350	170
245	065	206	026	135	315	155	335	355	175
250	070	211	031	140	320	160	340	000	180
255	075	216	036	145	325	165	345	005	185
260	080	221	041	150	330	170	350	010	190
265	085	226	046	155	335	175	355	015	195
270	090	231	051	160	340	180	000	020	200
275	095	236	056	165	345	185	005	025	205
280	100	241	061	170	350	190	010	030	210
285	105	246	066	175	355	195	015	035	215
290	110	251	071	180	000	200	020	040	220
295	115	256	076	185	005	205	025	045	225
300	120	261	081	190	010	210	030	050	230
305	125	266	086	195	015	215	035	055	235
310	130	271	091	200	020	220	040	060	240
315	135	276	096	205	025	225	045	065	245
320	140	281	101	210	030	230	050	070	250
325	145	286	106	215	035	235	055	075	255
330	150	291	111	220	040	240	060	080	260
335	155	296	116	225	045	245	065	085	265
340	160	301	121	230	050	250	070	090	270
345	165	306	126	235	055	255	075	095	275
350	170	311	131	240	060	260	080	100	280
355	175	316	136	245	065	265	085	105	285


Rosanne
13

Two Day National Mark Laying Seminar

Currently under review.....

NML Seminar shorebased

- Exam 70% pass mark
- Flags and Signalling
- Communication
- System developments best practice

NML Seminar Afloat

- Dasiy chain trap
- Ref Trap
- Team working and problem solving scenarios
- Moving and signalling
- Performance as Senior ML
- Accuracy and Time pressures applied

Any Ideas...??

What to add ?

What to drop ?

Whats important ?

Some thoughts.....

Pre course study to create more seminar time

(ISAF manual, signalling and flags)?

Tide measurement ?

Teamworking

daisy chaining V Ref point

Ref point very good and widely used for course set up

Not for 2nd gate marks finish boats and start pin (>50% of marks)

Not as quick as you would think !

Alternative Gate Techniques

1. Drop 1 bounce in 2nd
2. Drop 1 Stream in 2nd
3. Stream both, 2 ribs up Axis
4. Stream Both, 1 rib cross Axis
5. Forget the marks think Anchors

- Resources
- Scenarios from real life
- Specific Video footage
  - Streaming
  - Gate setting
  - Tidal measurement
  - Signalling
  - Handling dropping marks

Scenario situation

We have two different fleets racing on a Trapezoid course Currently one fleet is racing on the downwind leg of the outer loop. Due to general recalls in the other fleet we are still trying to get them started. There has been a lot of bunching at the pin end and two general recalls.

race times for the previous race are a bit under time. The increasing wind and faster boats mean that the course is too short. With so much bunching at the starboard end (two general recall)s we are struggling to get the next fleet started on the inner loop.


ANY Q
?
NED
SLO
WESTERHOF
BERKHOUT
MRAK
CERNE
London 2012
London 2012

NML Seminar, Largs, 29th 30th March (pre Youths)

David Frame
david.frame@sportscotland.org.uk