Mads Christensen

Trimaften
Køge 2019

THE NEXT GENERATION OF SAILS

ONE SAILS

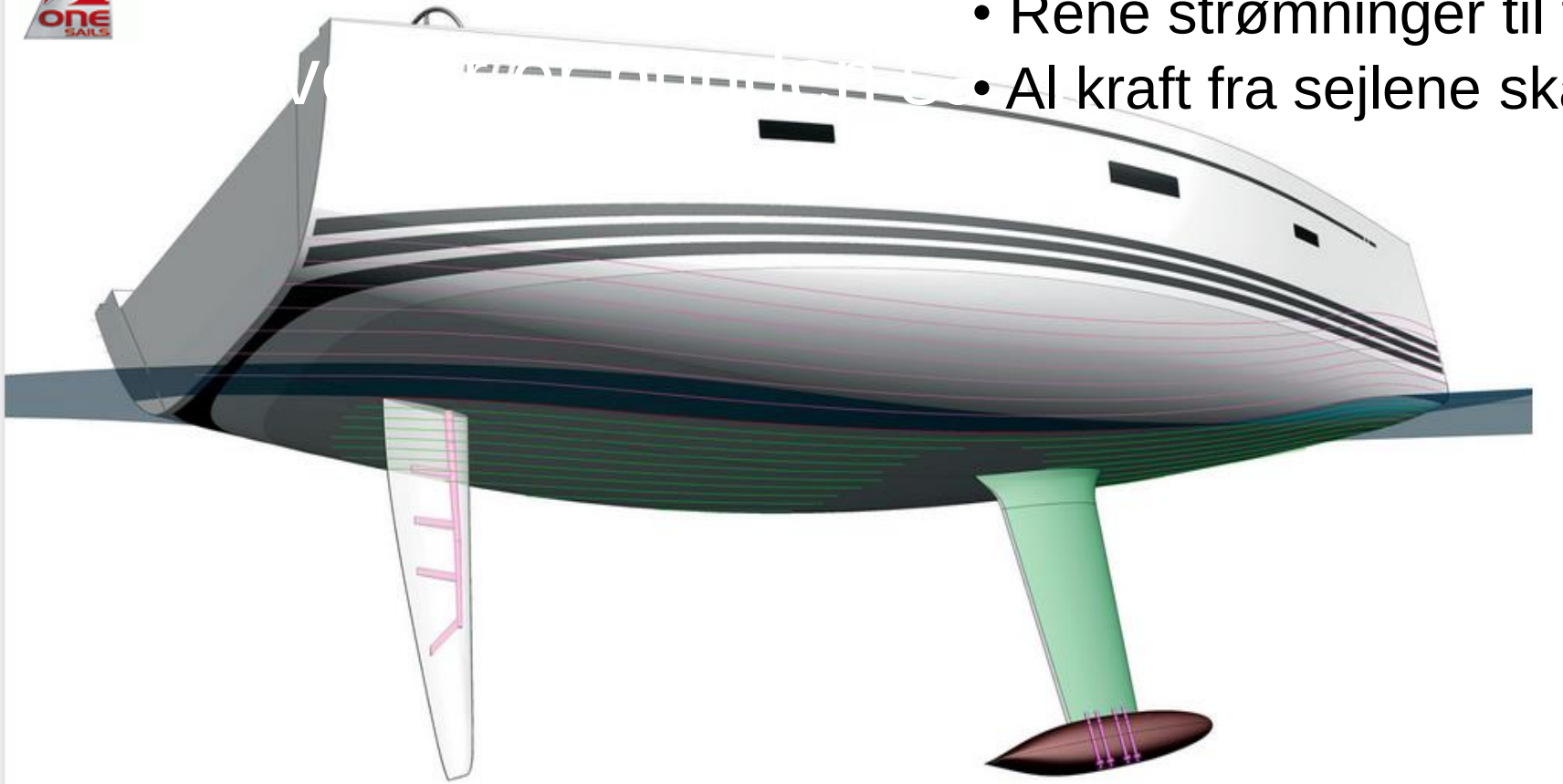
ONESAILS GROUP PORTRAIT 2014 V01

Basis trim Rig
Klargøring af bund og rig

En god start...

holder ikke året ud!

- Vandmodstand
- Rene strømninger til foilerne
- Al kraft fra sejlene skal videre

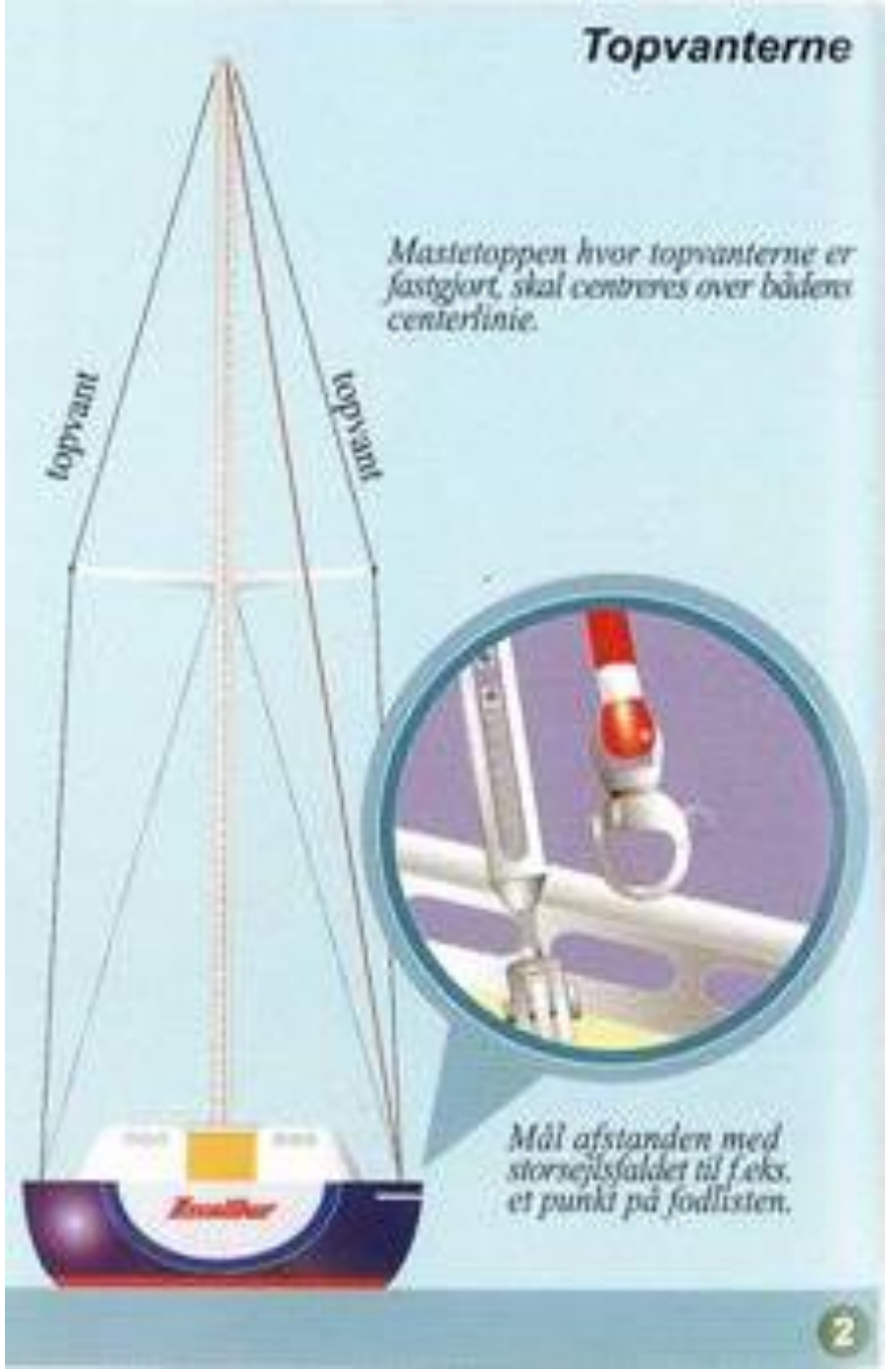


Opsætning af riggen

Klargøring

Inden du sætter masten i:

- Vask og voks masten
- Rens mastens hulkehl
- Rens stående rig
- Rens og smør vantskruer
- Er topvantene lige lange?

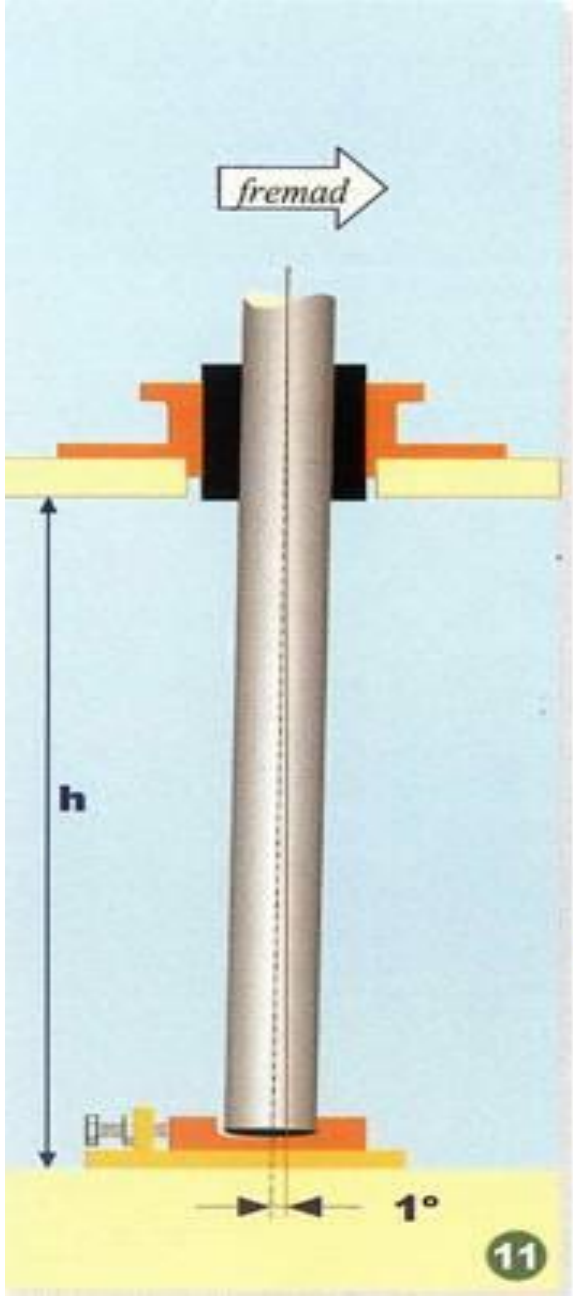


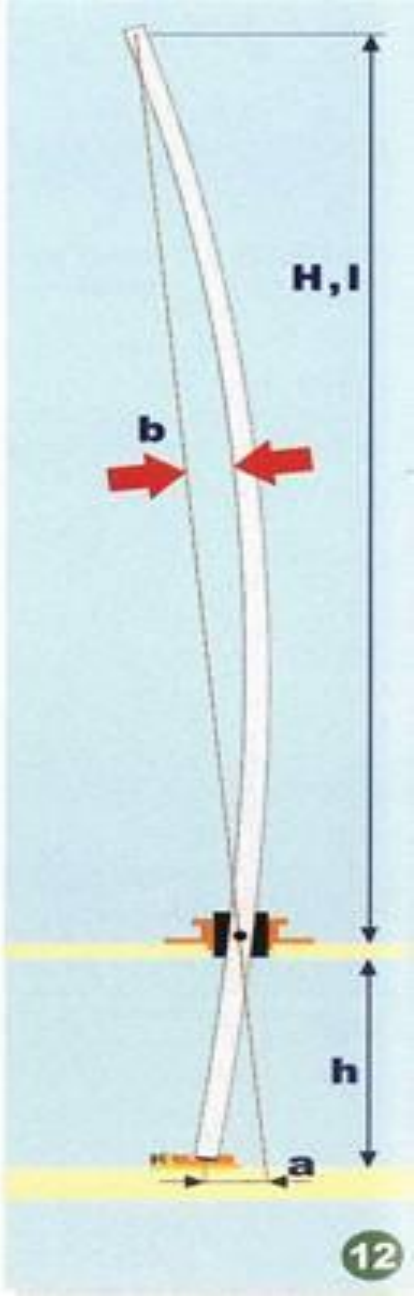
1/Først sættes masten helt lodret i båden med forstag og overvant, og det kan tjekkes ved at hænge lidt vægt i storfaldet og lade det hænge ned bag masten

2/Når masten står helt lodret, sættes undervant og mellemvant i forhold til topvantet, således at masteprofilet er helt ligehele vejen op. Dette kan tjekkes ved at flugte op langs hulkelen eller med et fald i stille vejr.

3/Dernæst sættes overvantene meget hårdt. Husk at de skal spændes lige hårdt og skiftevis i beggesider. Det er en god håndregel,at de skal spændes,indtil man selv synes de er spændt for hårdt. Man kan også måle spændingen på de enkelte vant med en rigspændingsmåler.

4/Derefter spændes undervantene lige knapt så hårdt, således at masteprofilet står med en let forkrumning på en halv til hel profilbredde. Bådens rigtype og især storsejlets mastekurve afgør hvor meget den præcist skal krumme. Mastheadriggede master skal bare have en let krumning, moderne master med bagudrettede salinger skal have en krumning på godt en profilbredde, mens rullemaster skal stå næsten uden krumning. Mellemvant skal sikre at masten står helt lige under sejlads.





Har du mast som er gennemgående så vent hvis muligt at sætte kilerne i til masten har fundet sin naturlige position.
Mastehulet er helt sikkert ikke præcist i midten af båden

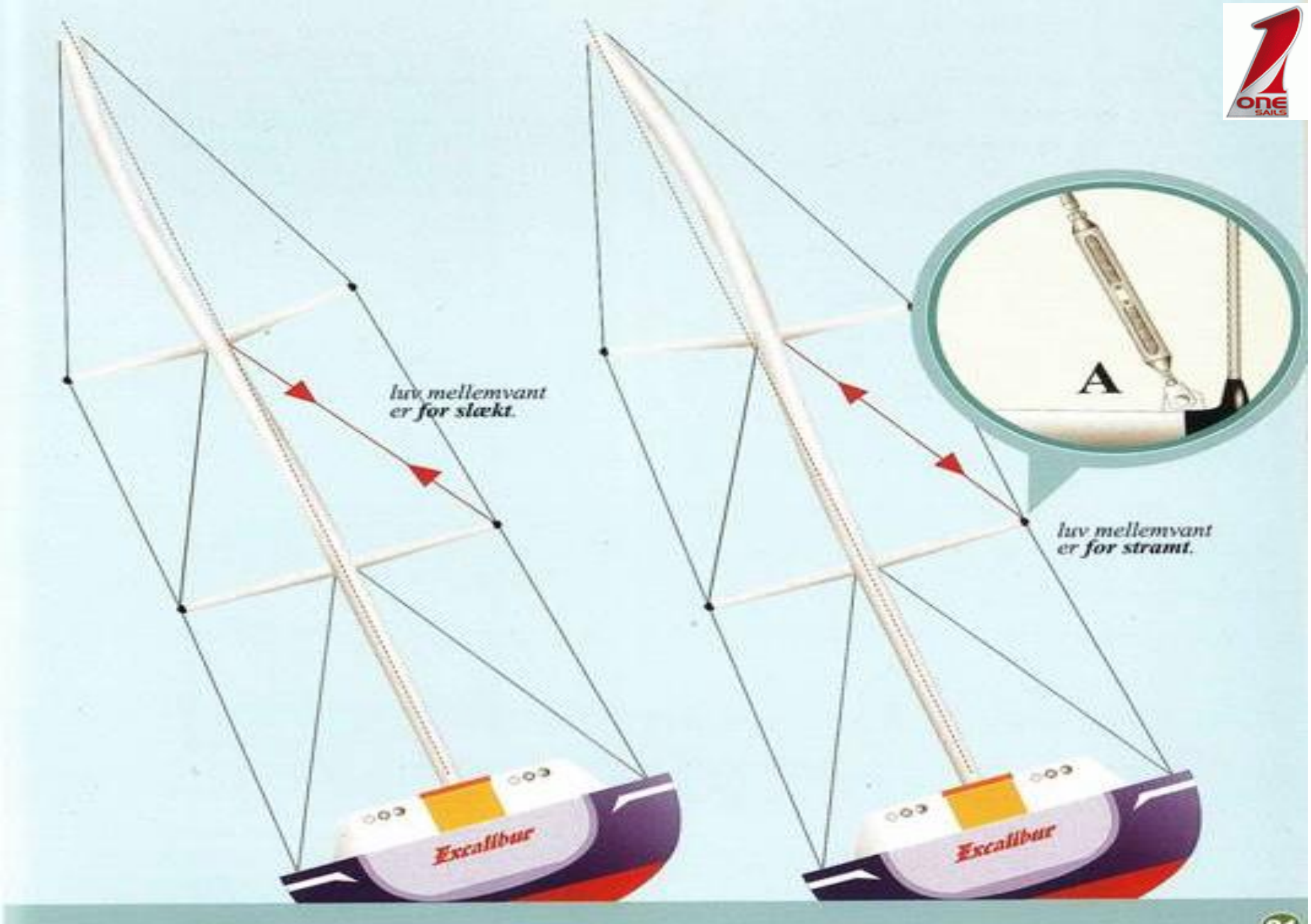
Forsejl når forstaget ’sagger’ for meget...

Første sejlads og ’fine tuning’

Trim af rig

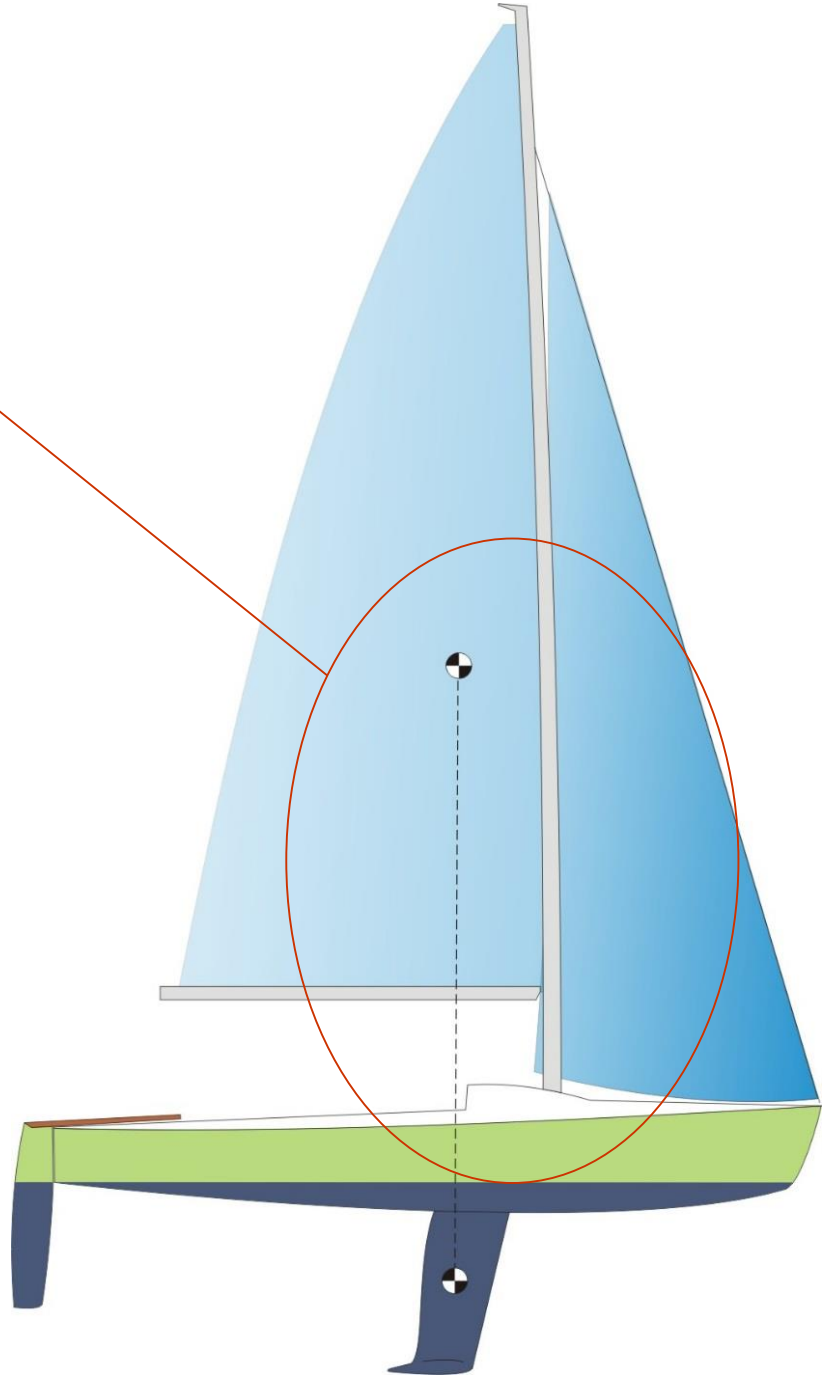
- Masthead Rig (top rig)
- Fractional Rig (brøkdelt rig)
- Vinkelrette- eller vinklede salinger
- Flere salinger

luv undervant
er for slapt.
Excalibur
luv undervant
er for stramt.
Excalibur


luv mellemvant
er for slækt.
Excalibur
A
luv mellemvant
er for stramt.
Excalibur

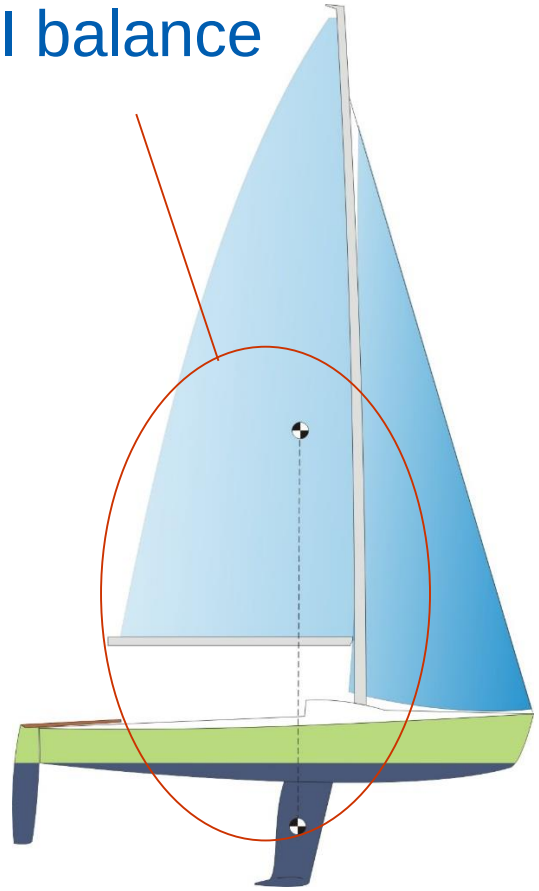
Luv- eller lægirrig?

- Placering i dækket
- Hældning
- Rigspænding
- Mastekrumning
- Sejlenes tilstand

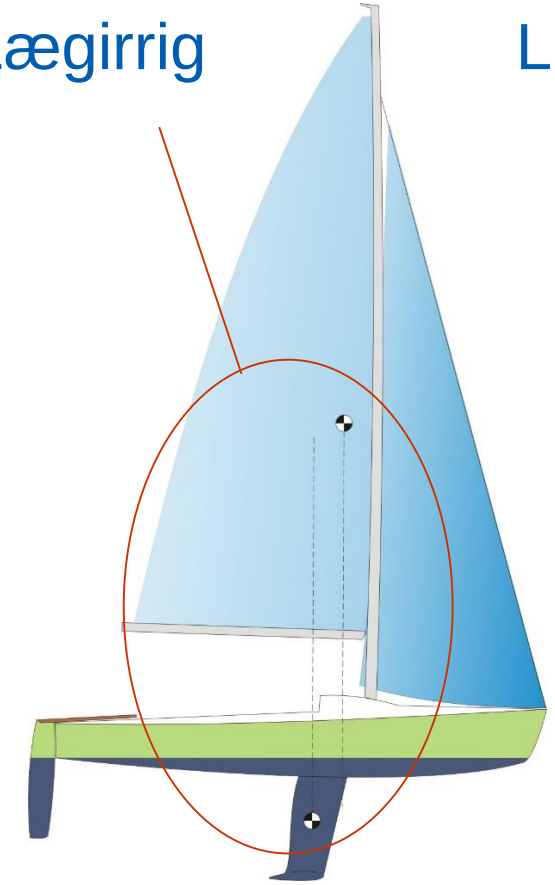


Luv- eller lægirrig?

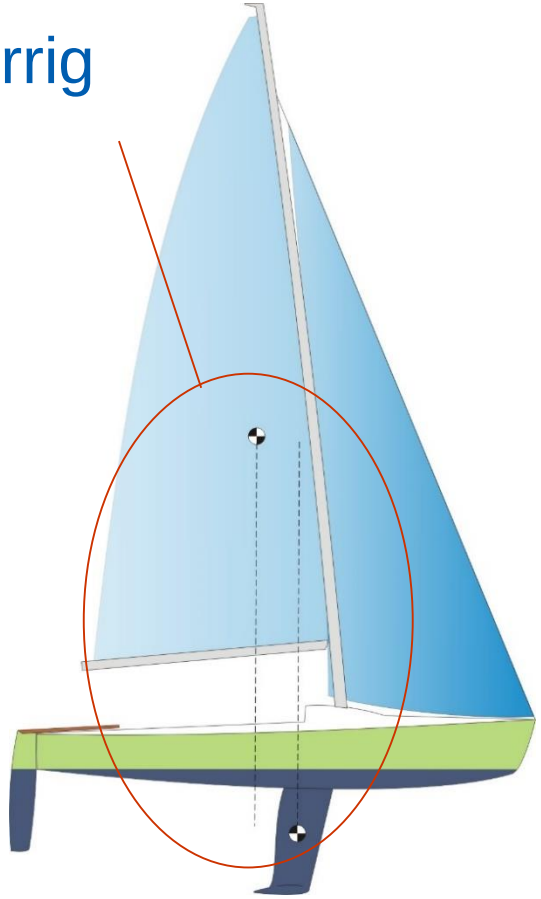
I balance



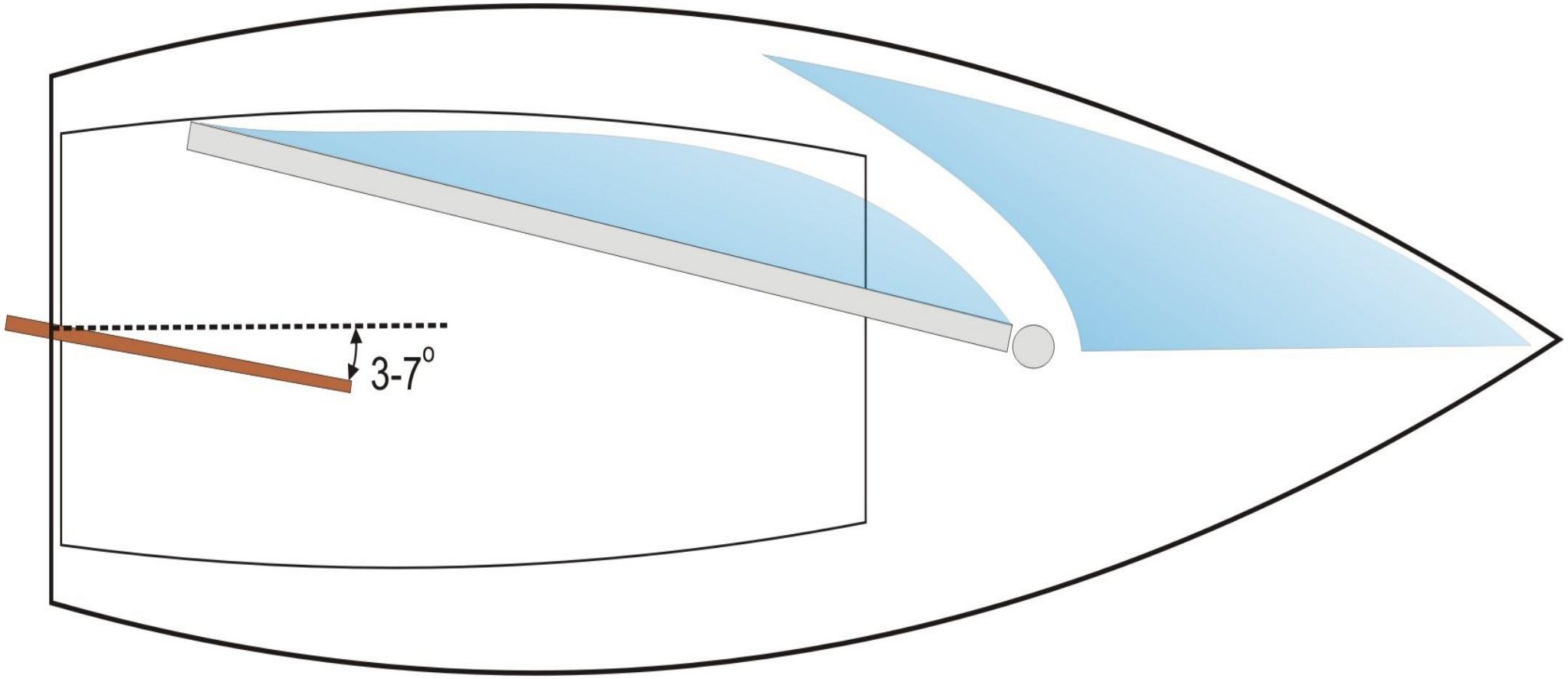
Lægirrig



Luvgirrig



Rorpres og vinkel



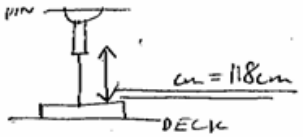
Mastehældning

- Kan variere fra bådtyper
- Et godt udgangspunkt kan være
- B er storsejlsfald i top og målt til bagkant mast ved bom

Masthead	1Grad B=1,75 cm pr meter
Brøkdelsrig	3Grader B=5,25 cm pr meter.

Husk, at notere dit rigtrim!

RIG SETTINGS



MEASURE + MARK BACK OF PLATE

	WIND SPEED	CAP (2nd Hole) RONSTAN Port/Stbd	CAP CHANGE FROM PREVIOUS	CAP PT2	LOWER (4th Hole) RONSTAN Port/Stbd	LOWER Change from Previous	LOWER PT2	MAST STEP (cm)	FORE-STAY TOP OF BLACK BAR (cm)
	0-7	/	Ø	13	/	Ø	—	535	120 (119)
BASE ★	8-12	/	+5	17	/	+4	7	536	118
	13-18	/	+7	23	/	+4	13	537	117
	19+	/	+4	28	/	+3	19	537½	117 (116)
			ALL FULL TURNS			ALL FULL TURNS			

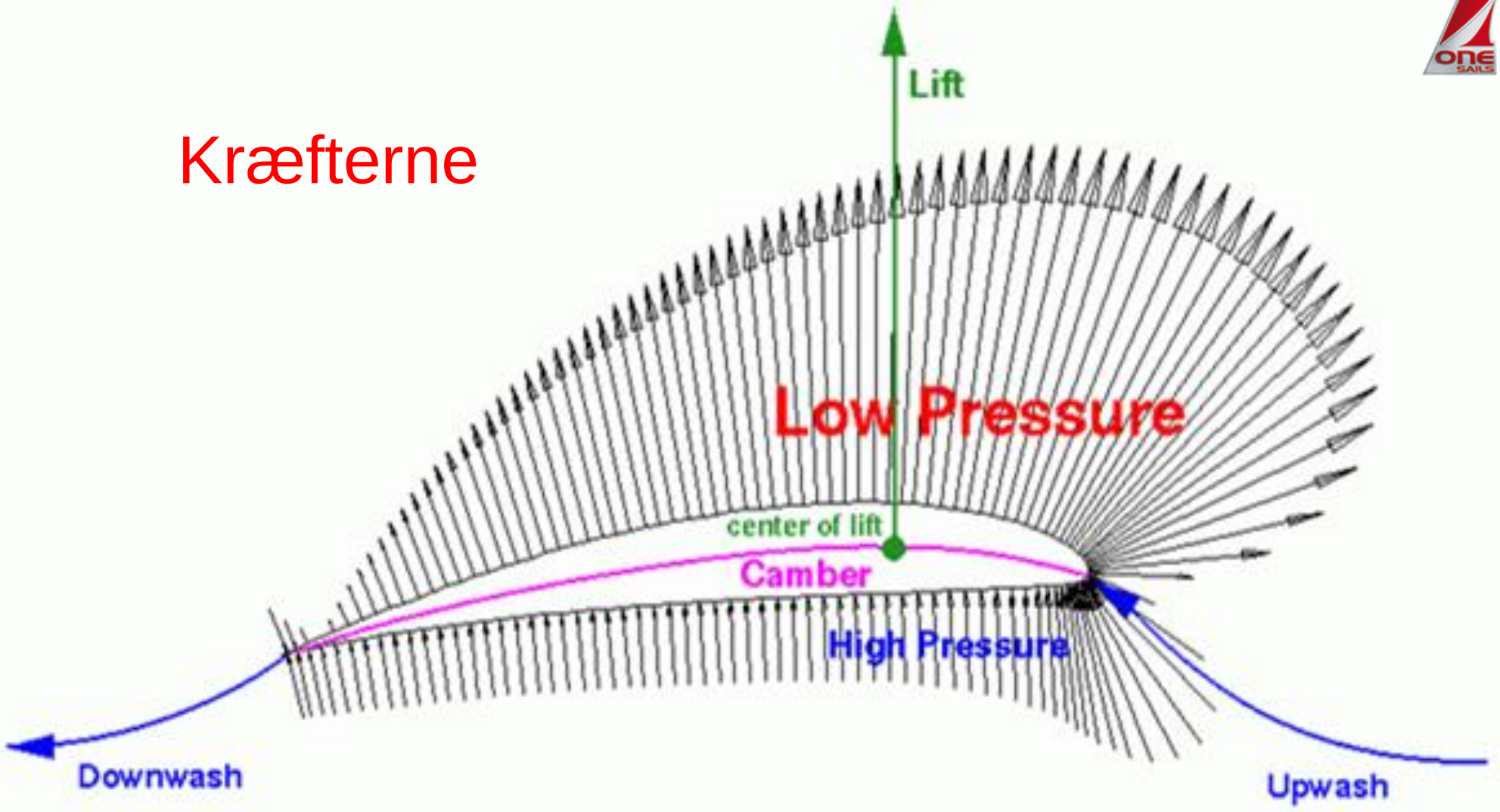
12 NOV '04 16:46 FROM GOLDMAN SACHS TO 975528425 P.01/03

Hvor ordentligt er helt op til dig!

Trim

- Kræfterne
- Storsejl og fok
- Spilertrim

Kræfterne



Pressure vectors and flow over a cambered section.

Kræfterne

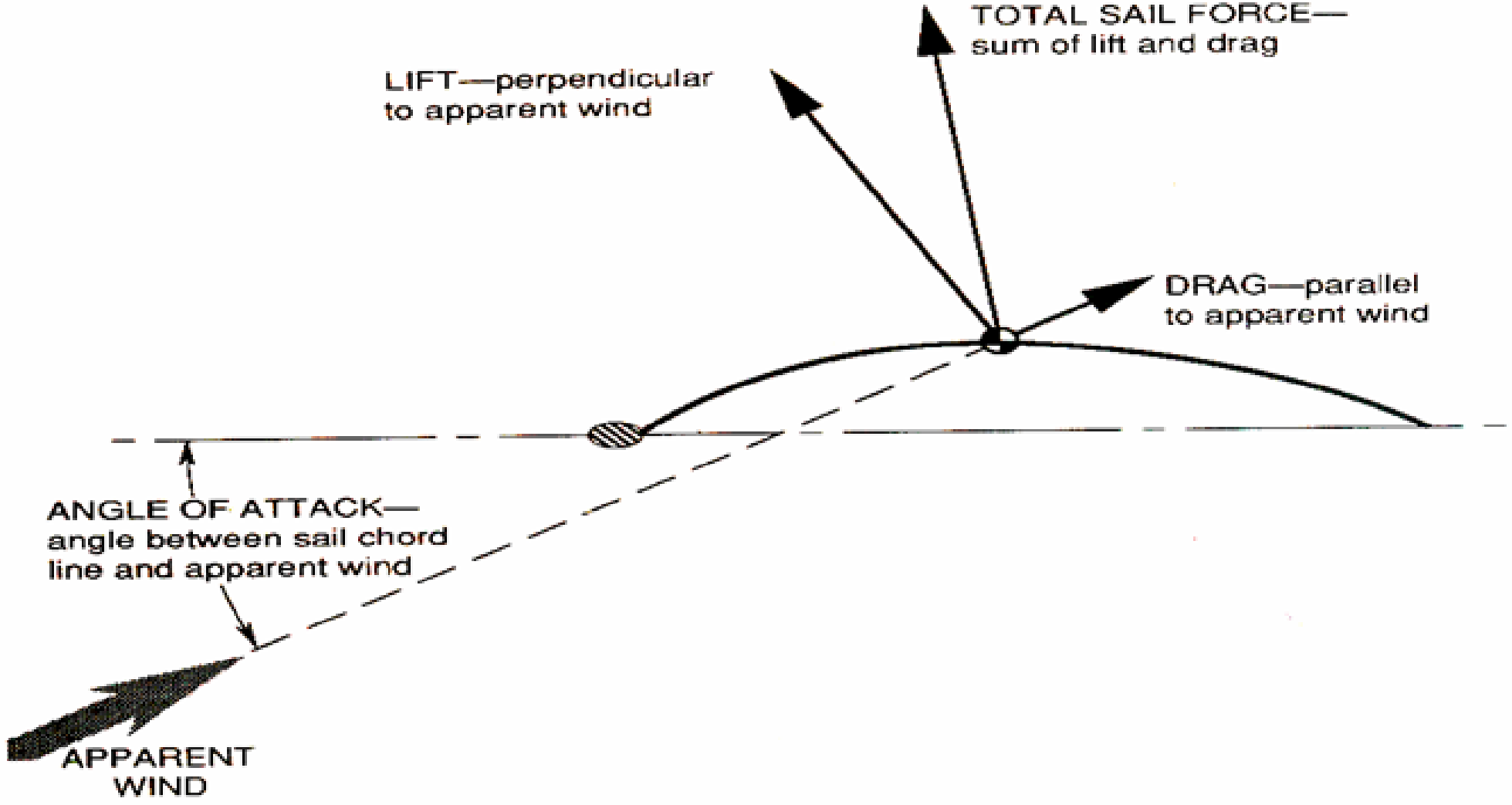
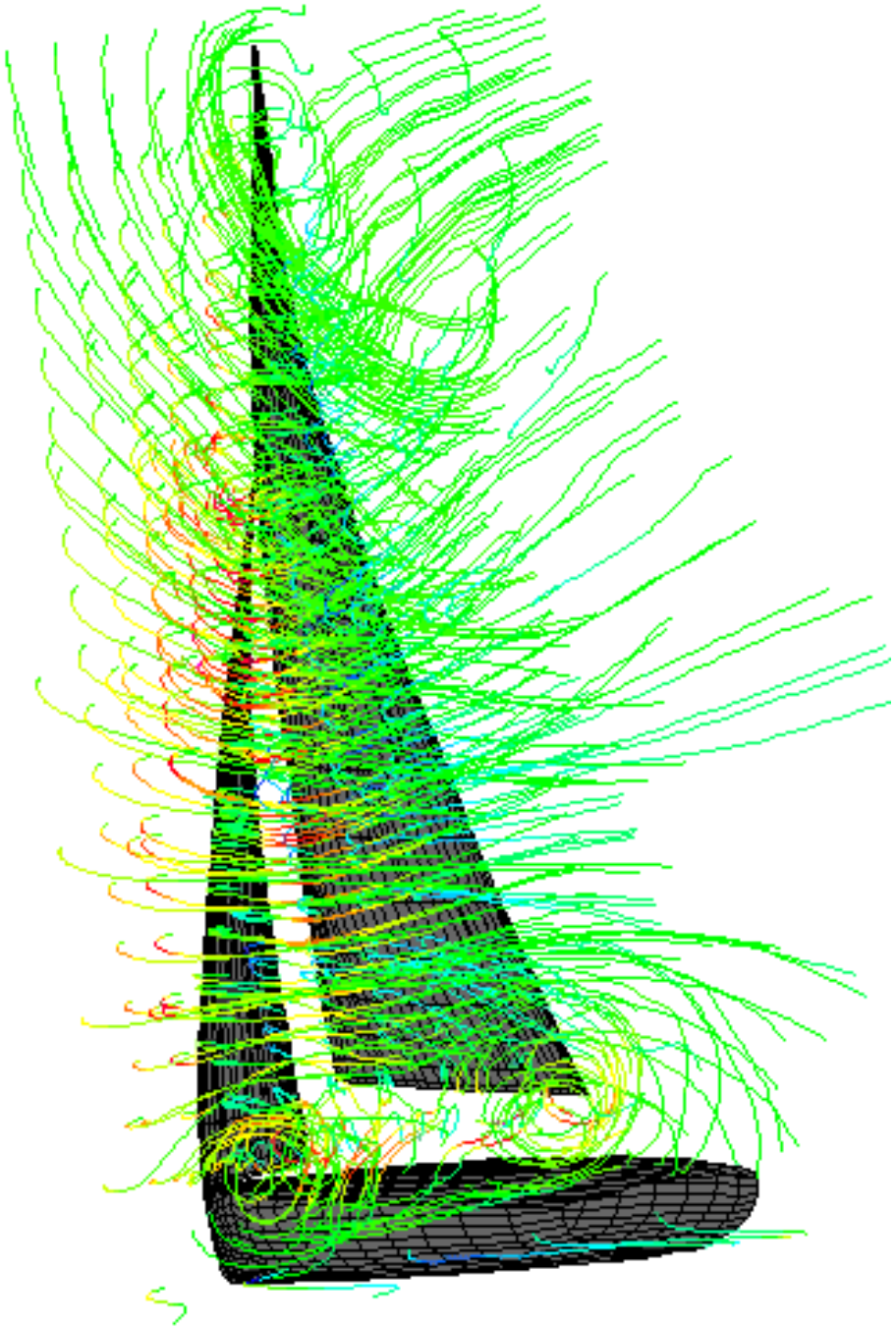
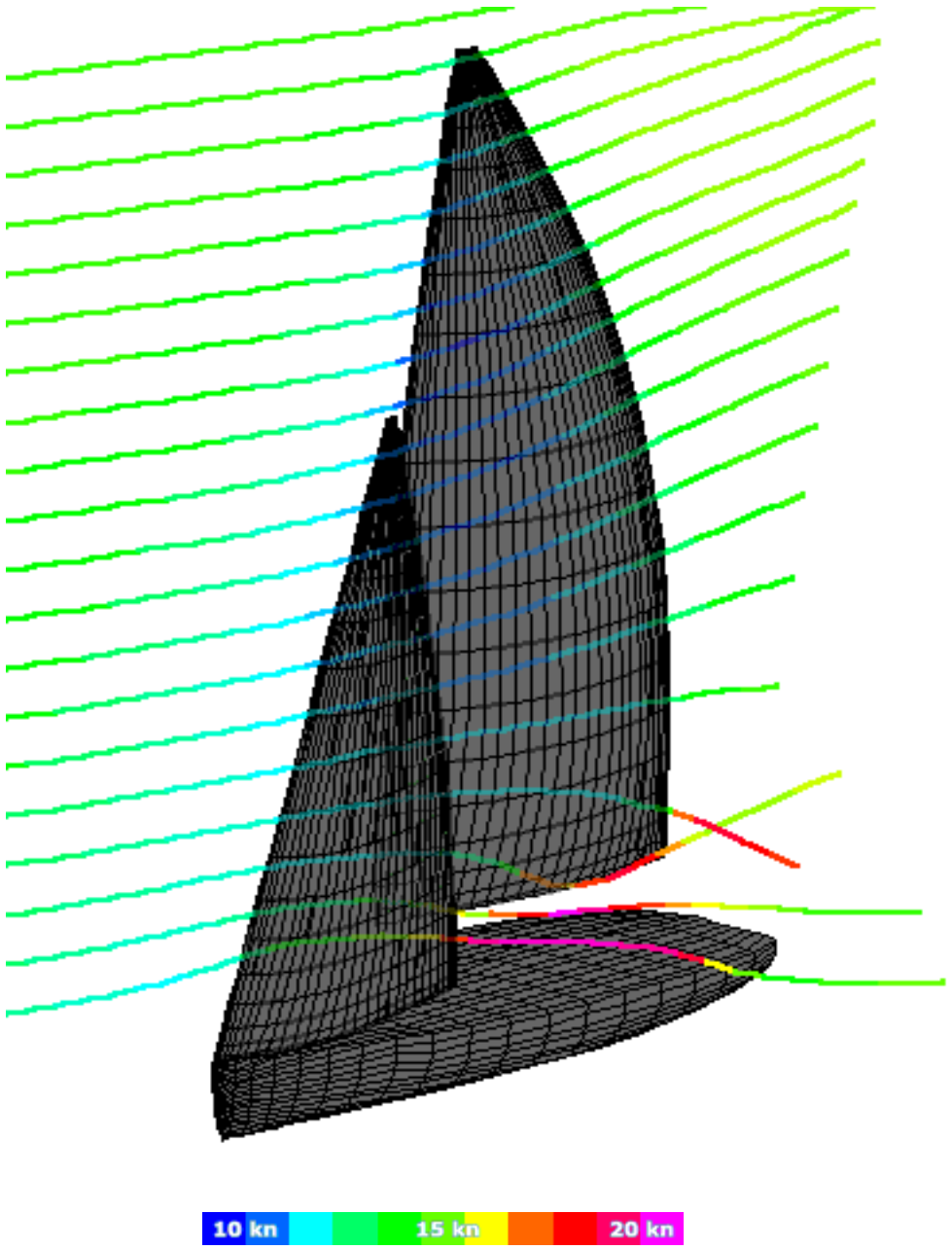


Figure 6.6 Forces of lift and drag



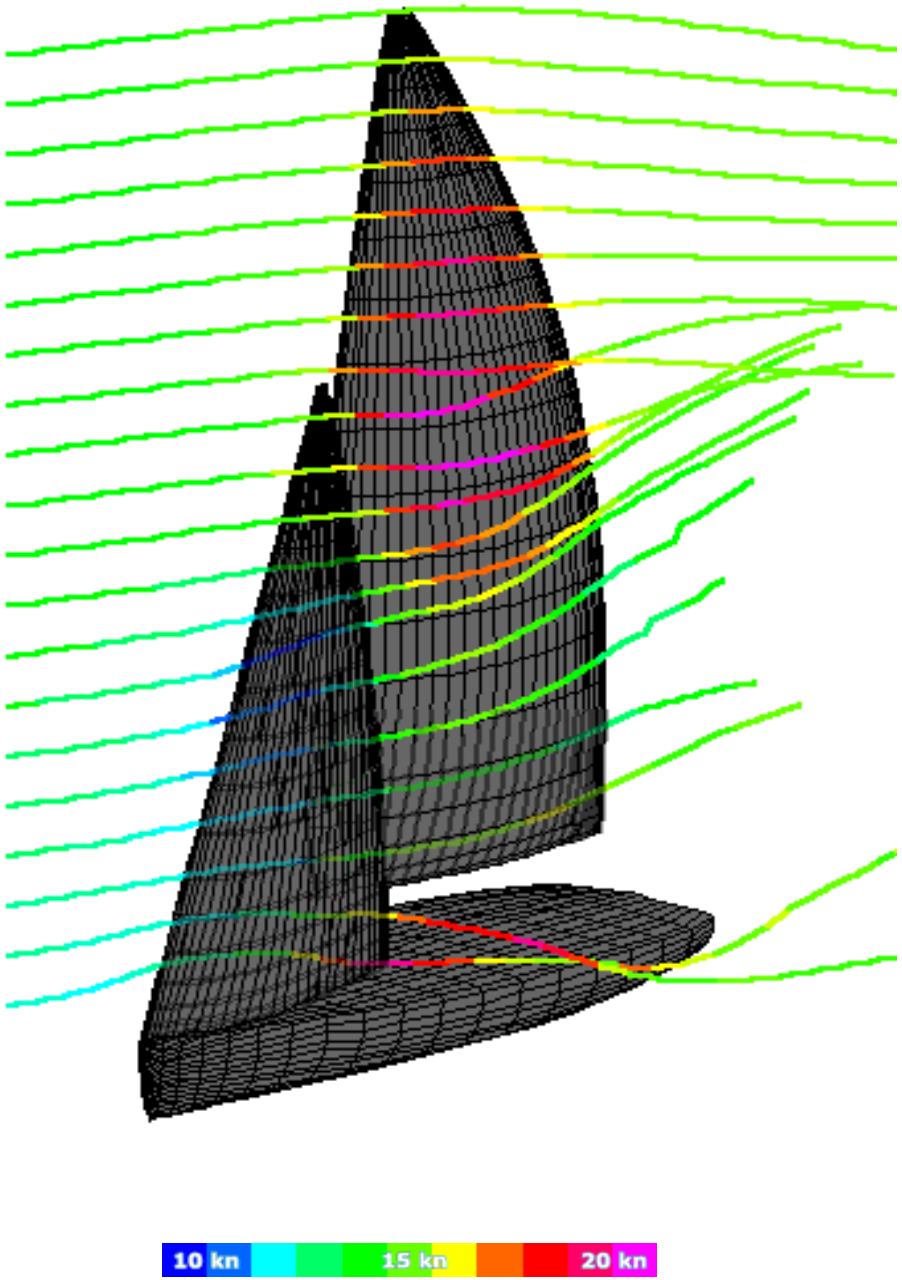
Luftstrømme

Det gælder om at “forstyrre” vinden så lidt som muligt. Men vinden påvirkes af alt eks. skrog, mast, rig etc.



- Windward flow

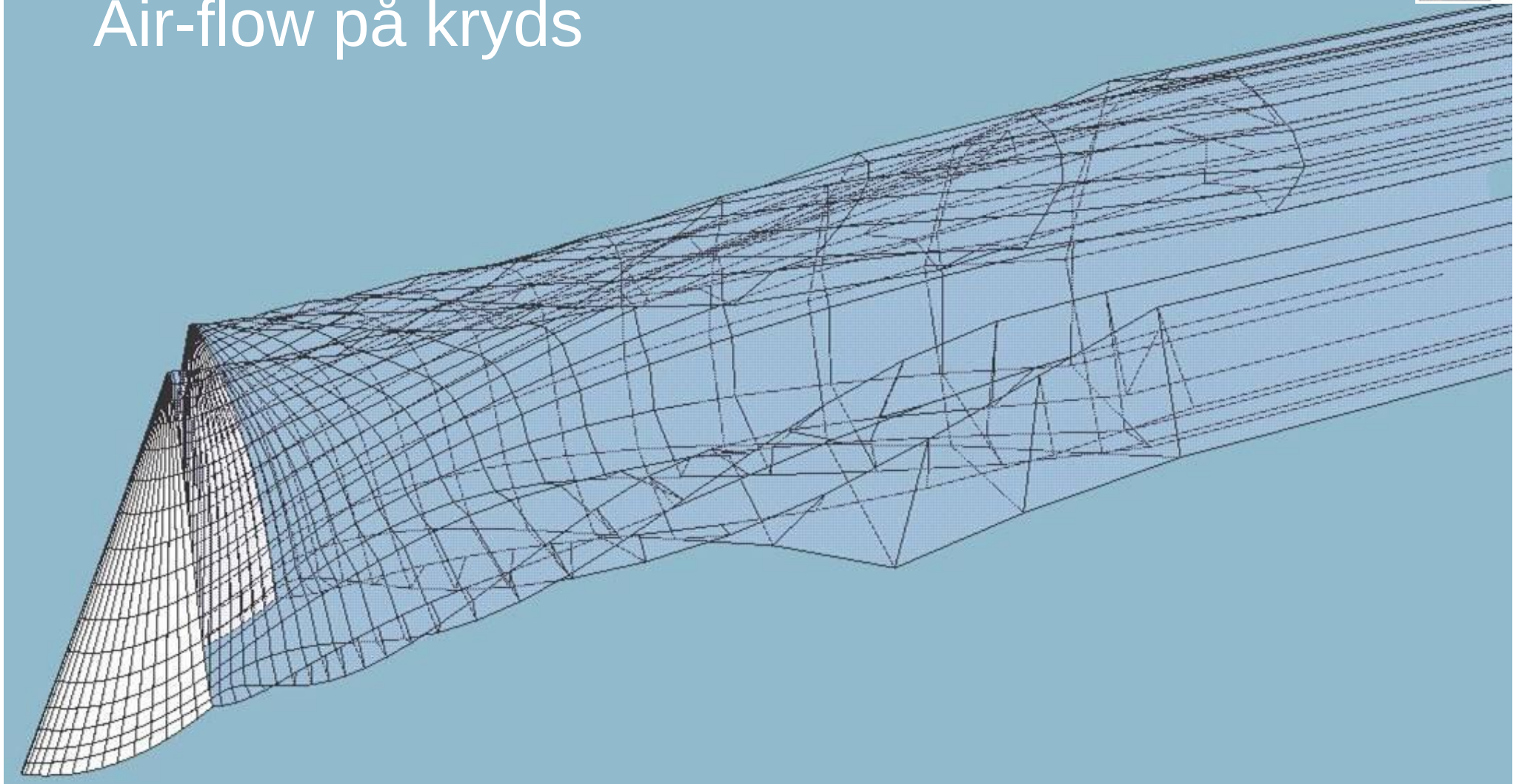
VERTICAL FLOW. STEP 1



- Leeward flow

VERTICAL FLOW. STEP 3

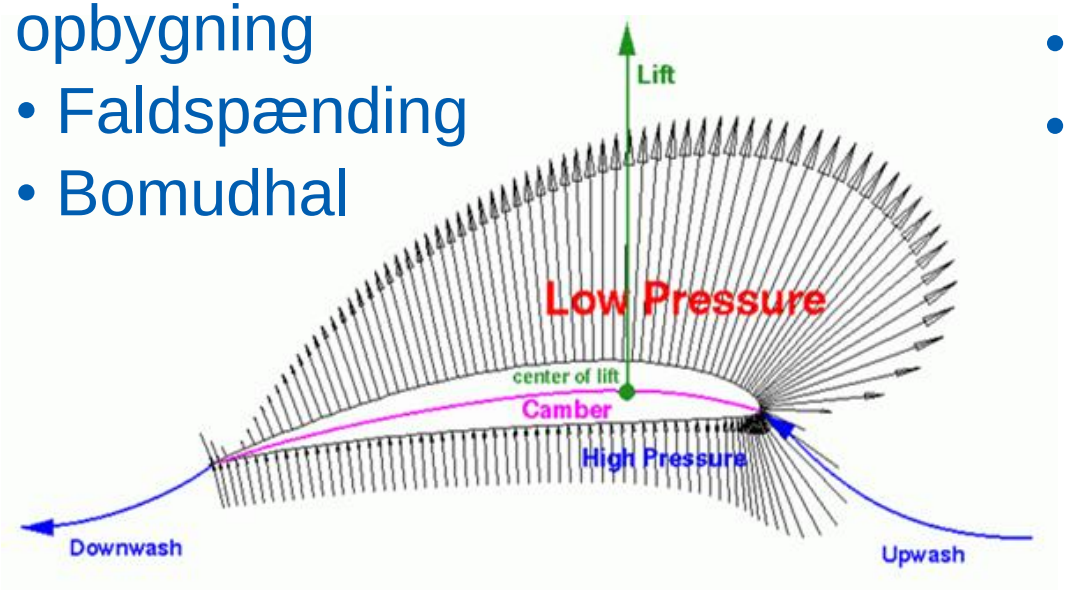
Air-flow på kryds



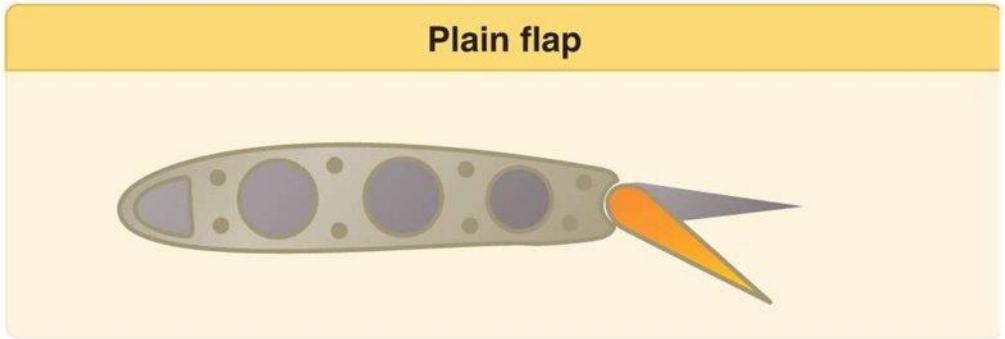
Volvo Ocean Race Start fra
Cape Town i lavtliggende tåge.
Skoleeksempel på vortexes...
WINDFLOW

Vores trimmuligheder omkring sejlfaconen

- Rigspænding
- Mastekrumning/ profil
- Forstagsspænding
- Mastefodens placering/ opbygning
- Faldspænding
- Bomudhal

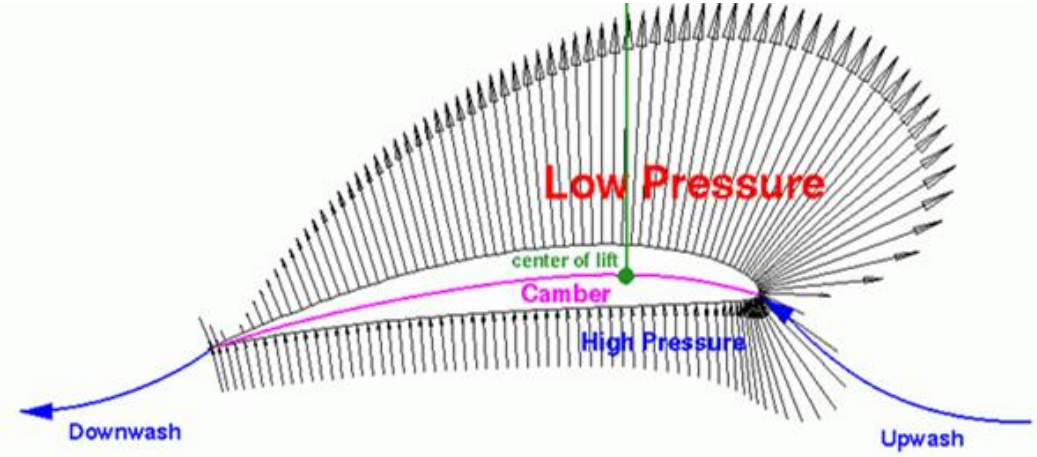


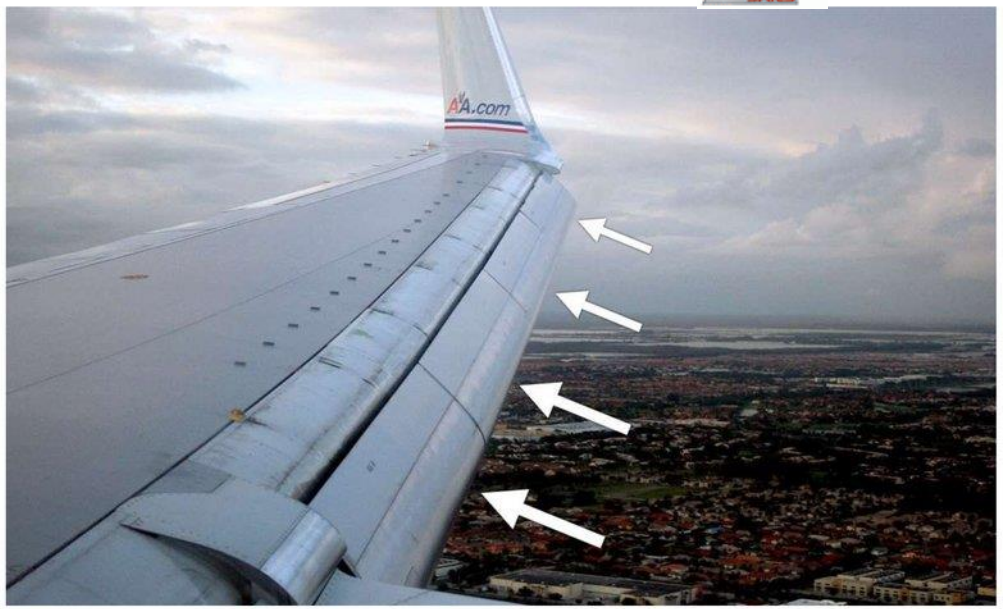
- Cunningham
- Vang/ Kick'er
- Skøde
- Løjgang
- Skødeviser
- Barberhal



PLAIN FLAP

Simple construction, good increase of lift, but high drag.
Mainly used on low speed aircraft.





LEADING EDGE HIGH LIFT DEVICES

There are two forms of leading edge high lift device commonly in use: the leading edge flap and the leading edge slot or slat.

Vores trimmuligheder omkring sejlfaconen

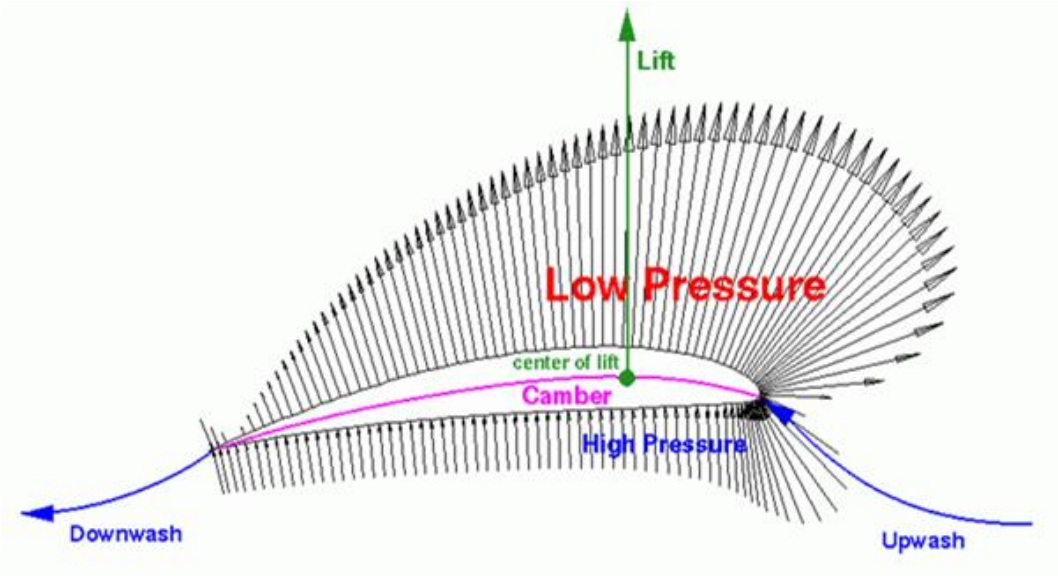
Vi kan ændre faconen i vores sejl

Som tommelfinger regel ligger faconen i de forskellige sejl i:

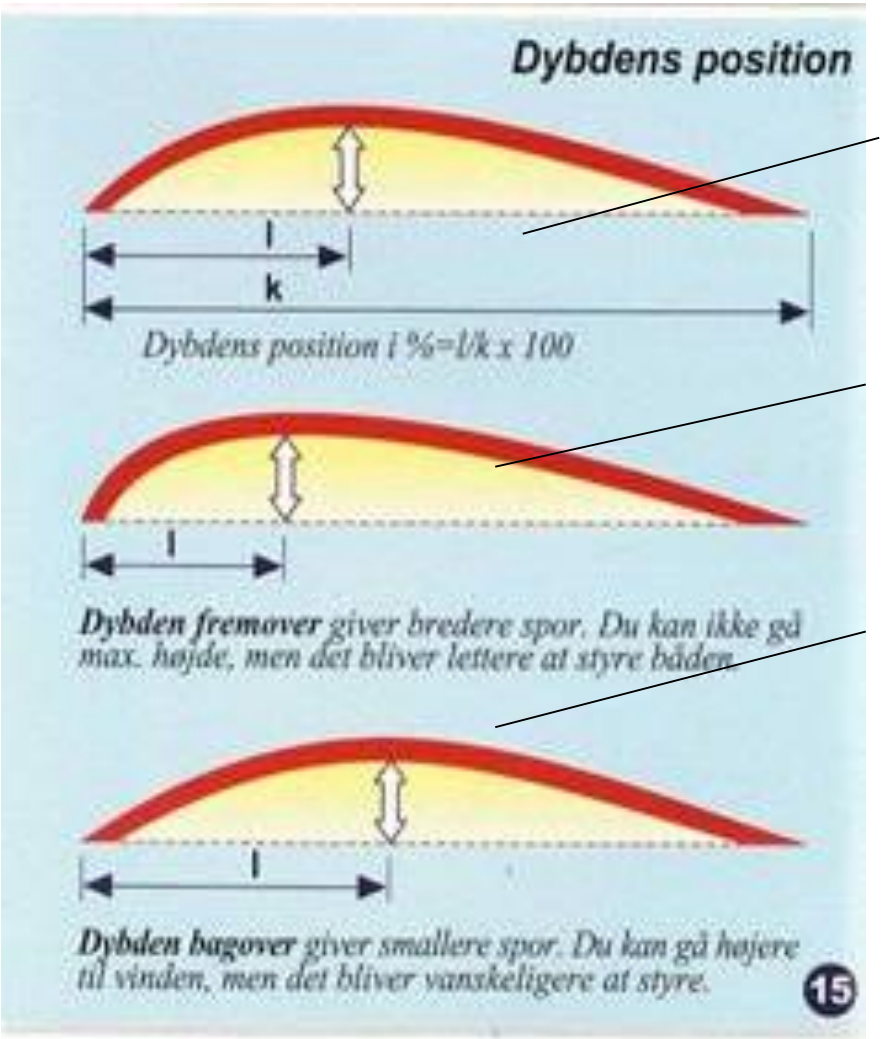
Storsejl: 45% fra forliget

Genua Let 45%, Medium 40% og Hård Genua 38% fra forlig

Genua 3,HA Fok 35% fra forlig



Sejlfaconen, dybdens placering

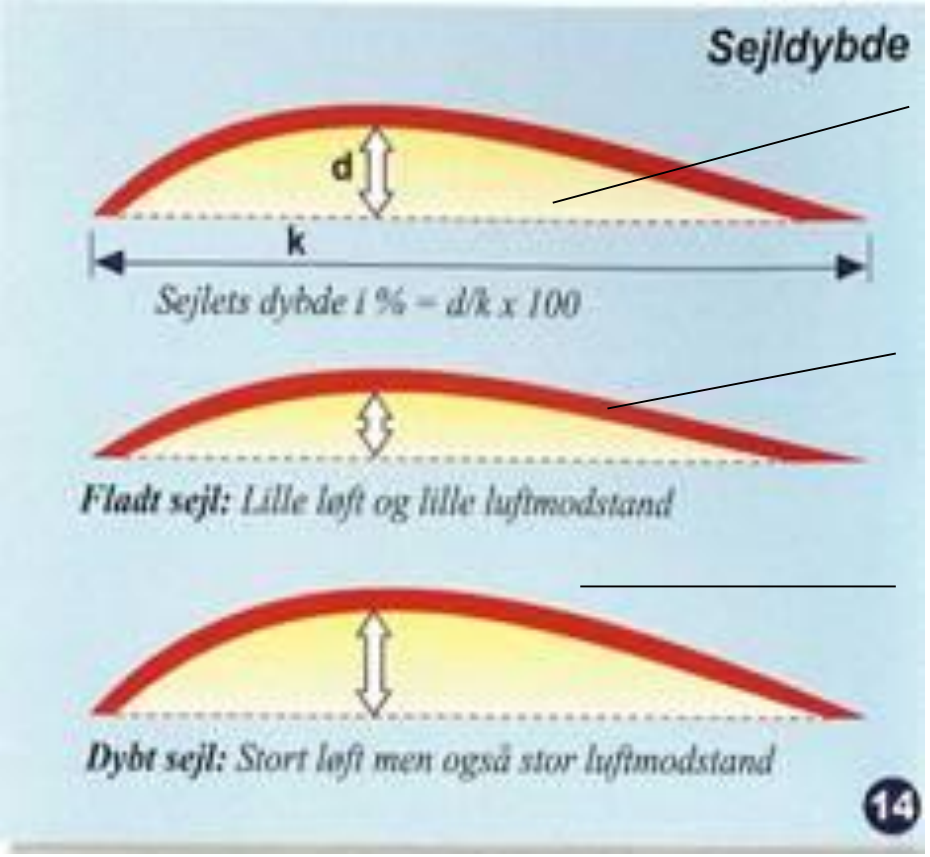


Dybdens placering

Hård luft

Let luft

Sejlfaconer, Dybde

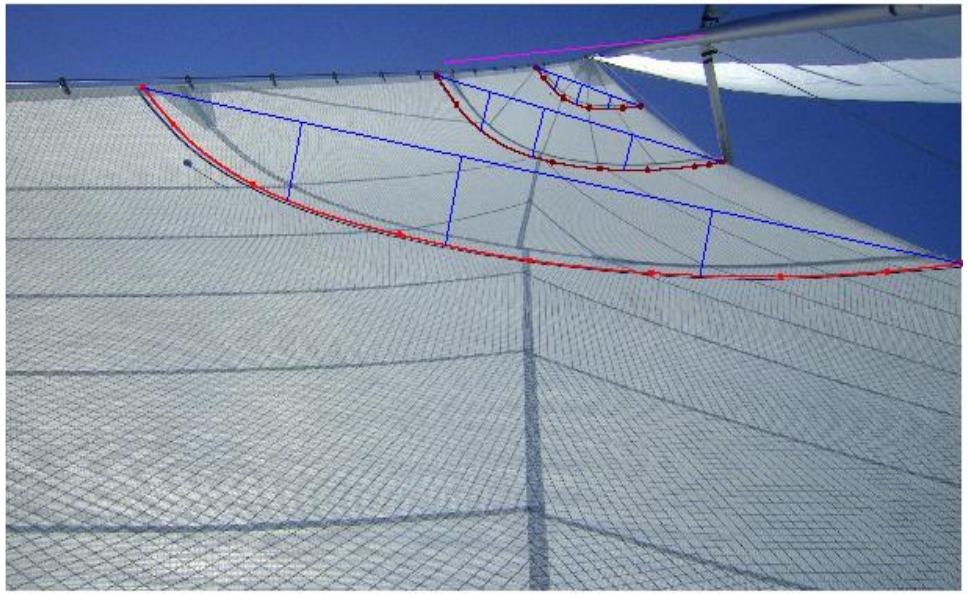


Længden af profilet

Fladt sejl – mindre lift, mindre modstand

Dybt sejl – mere lift, mere modstand

Date: 10/05/2008 Sail code: -0 Category:
OE#: Boat: Class: Test#: 0



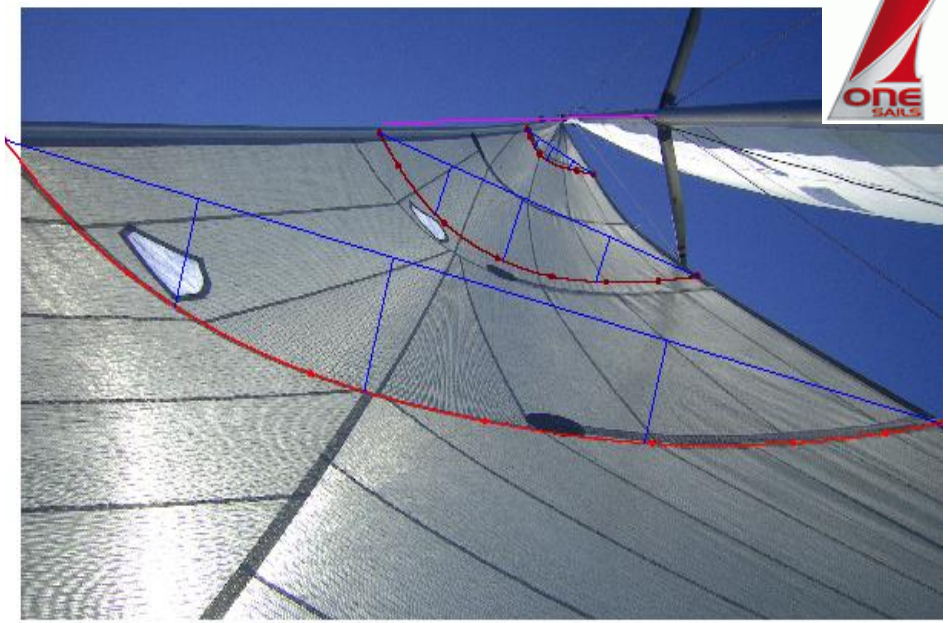
TWS : 0.0 Trav.: +0.0 Cunn.: OutHaul : 0.00
AWA : 0 Sheet: Jump.: 0.0 MastRam : 0.00
InOut: 0 Runn.: 0 UpCk : LowCk :
F.Tac: 0 Mast : Boom :

Battens :

Stripe	Front%	Draft%	Camber%	Back%	Lead	Trail	Twist
1	0.736	0.611	0.099	0.884	16.746	35.879	-163.326
2	0.724	0.622	0.157	0.791	27.092	38.185	4.339
3	0.690	0.559	0.174	0.743	24.506	33.752	3.221

Stripe	Luff	1/8	2/8	3/8	4/8	5/8	6/8	7/8	Leech
1	0.519	0.948	0.646	0.632	1.000	0.547	2.198	4.407	4.650
2	1.579	0.412	0.838	0.776	1.000	2.080	2.796	1.703	2.673
3	0.124	0.181	0.423	0.686	1.000	1.208	0.893	0.521	0.640

Date: 10/05/2008 Sail code: -0 Category:
OE#: Boat: Class: Test#: 0



TWS : 0.0 Trav.: +0.0 Cunn.: OutHaul : 0.00
AWA : 0 Sheet: Jump.: 0.0 MastRam : 0.00
InOut: 0 Runn.: 0 UpCk : LowCk :
F.Tac: 0 Mast : Boom :

Battens :

Stripe	Front%	Draft%	Camber%	Back%	Lead	Trail	Twist
1	0.767	0.584	0.121	0.805	22.977	32.244	-164.247
2	0.709	0.546	0.167	0.781	27.230	35.078	6.517
3	0.630	0.602	0.168	0.746	19.424	36.326	9.155

Stripe	Luff	1/8	2/8	3/8	4/8	5/8	6/8	7/8	Leech
1	0.835	1.058	1.216	0.974	1.000	1.652	2.197	3.556	4.651
2	0.413	0.818	0.266	0.979	1.000	1.195	1.280	1.009	0.760
3	0.009	0.007	0.096	0.507	1.000	1.487	1.256	0.784	0.585

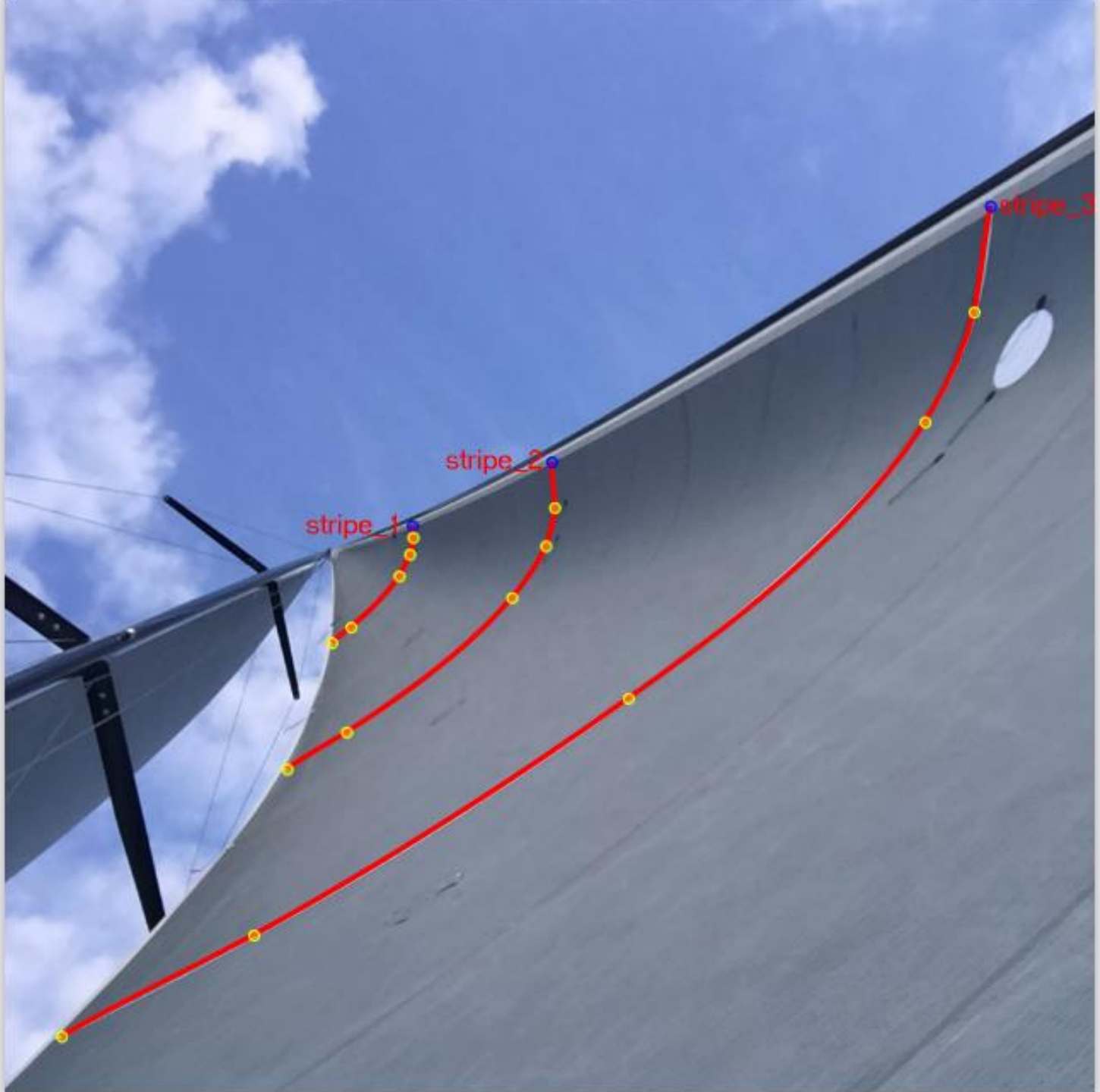
Comments

Parameters

Parameter	Value
TWS	15
TWA	34
BS	7,2

Measurements

Parameter	Value	Export...
stripe_1		
Camber	10.33 %	
Draft	44.00 %	
Twist	-136.60 °	
Front	76.21 %	
Back	64.96 %	
Entry	20.77 °	
Exit	11.96 °	
stripe_2		
Camber	10.68 %	
Draft	41.00 %	
Twist	-141.81 °	
Front	69.88 %	
Back	62.36 %	
Entry	19.05 °	
Exit	10.61 °	
stripe_3		
Camber	8.91 %	
Draft	36.00 %	
Twist	-147.96 °	
Front	81.47 %	
Back	65.03 %	
Entry	24.43 °	
Exit	8.39 °	



Comments

First 40 Jib 2

Parameters

Parameter	Value
TWS	15
TWA	34
BS	7,2

Measurements

Parameter	Value	Export...
stripe_1		
Camber	12.45 %	
Draft	37.00 %	
Twist	-124.58 °	
Front	81.04 %	
Back	68.72 %	
Entry	36.46 °	
Exit	14.13 °	
stripe_2		
Camber	14.41 %	
Draft	33.00 %	
Twist	-130.76 °	
Front	85.49 %	
Back	68.05 %	
Entry	42.58 °	
Exit	14.84 °	
stripe_3		
Camber	11.26 %	
Draft	31.00 %	
Twist	-138.20 °	
Front	83.75 %	
Back	68.31 %	
Entry	38.06 °	
Exit	11.98 °	

www.onesails.com/sailpack-vision/

International Search entire site here...

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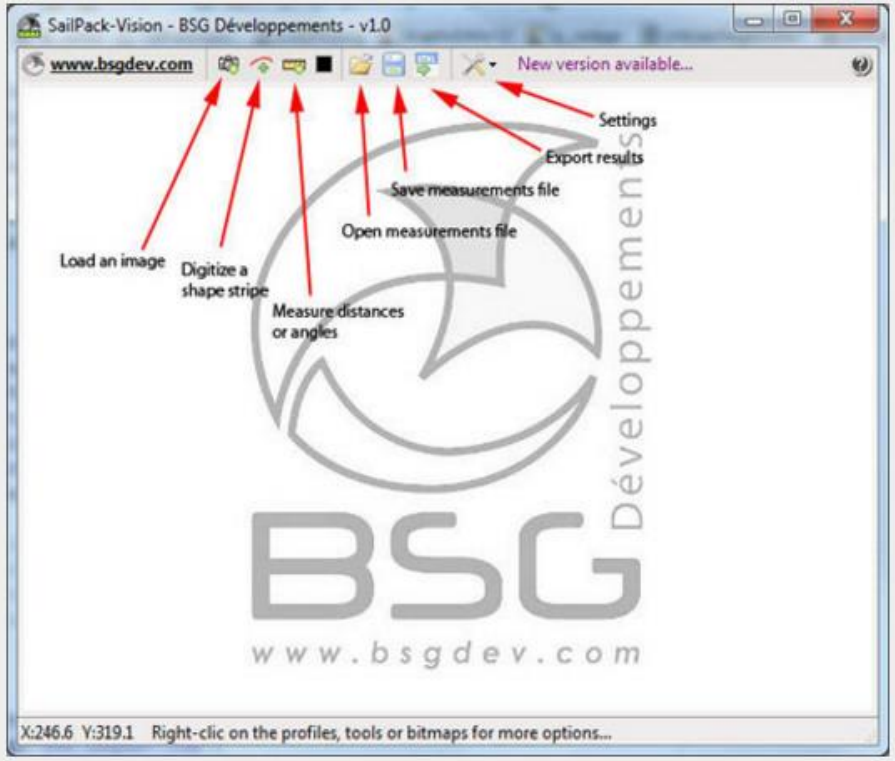
Sailpack Vision

Description

SailPack-Vision is a free tool for image measurements. Just load an image, digitize shape stripes, measure distances and angles, superimpose other images and save measurements.Here are some tips that can help you to use this software.



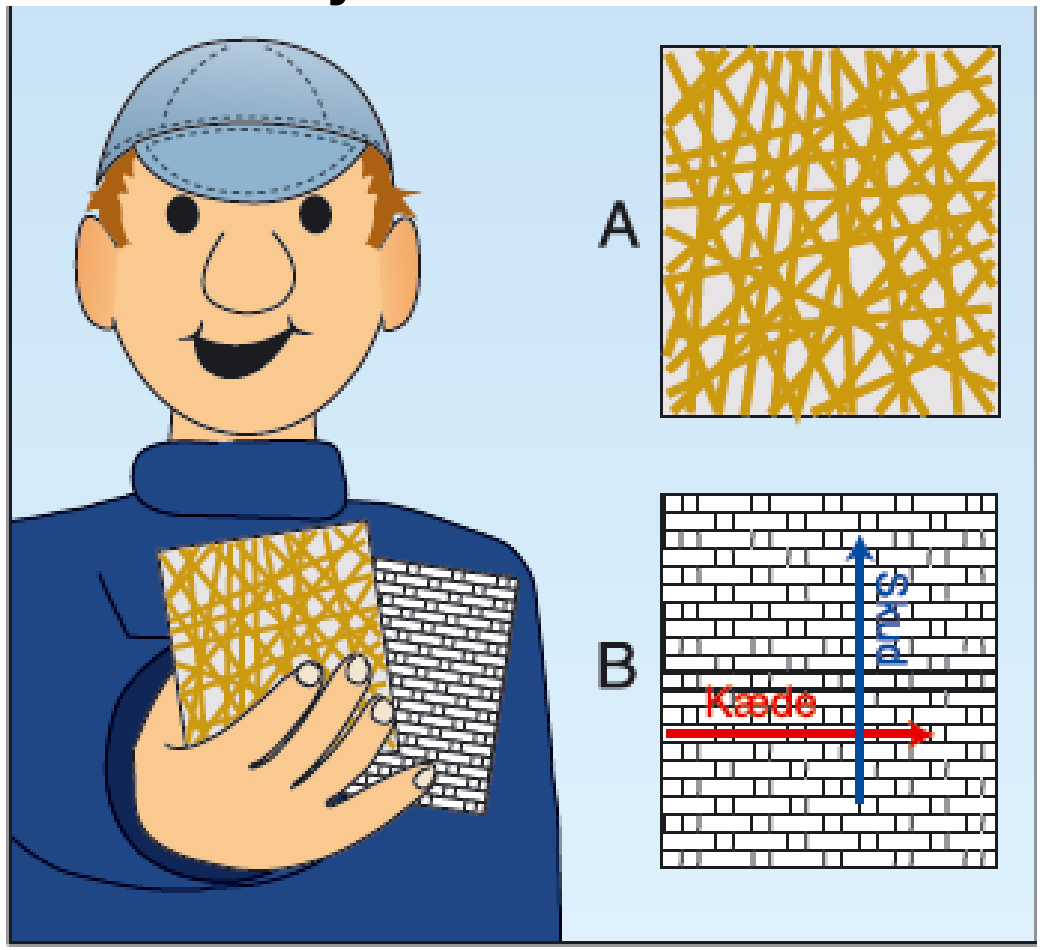
Interface

Zoom: using the mouse wheel
Pan: using the right mouse button
Actions on an element can be accessed right-clicking on it.
How to digitize shape stripes on an image
- Open an image clicking on the 'camera' button in the main toolbar.
- Select an image and press 'ok'
- Click on the 'shape stripe digitizer' button in the main toolbar.

A secondary toolbar appears:
- Click on the image, on the first point (luff side) of the shape stripe.
- Press the 'space-bar' or click on 'Pick mid'.
- Click on the image, on a middle point of the shape stripe.
- Press the 'space-bar' or click on 'Pick end'.
- Click on the image, on the ending point (leech side) of the shape stripe.
- Press the 'space-bar' or click on 'Find stripe'.

The software tries to adjust the digitized shape stripe to the one from the picture. To adjust manually some control points, just drag and drop them at the appropriate position.
To add a control point, keep the 'shift' key pressed and click the image where you want to add the point.
To delete a control point, keep the 'ctrl' key pressed and click on the control point you want to delete.

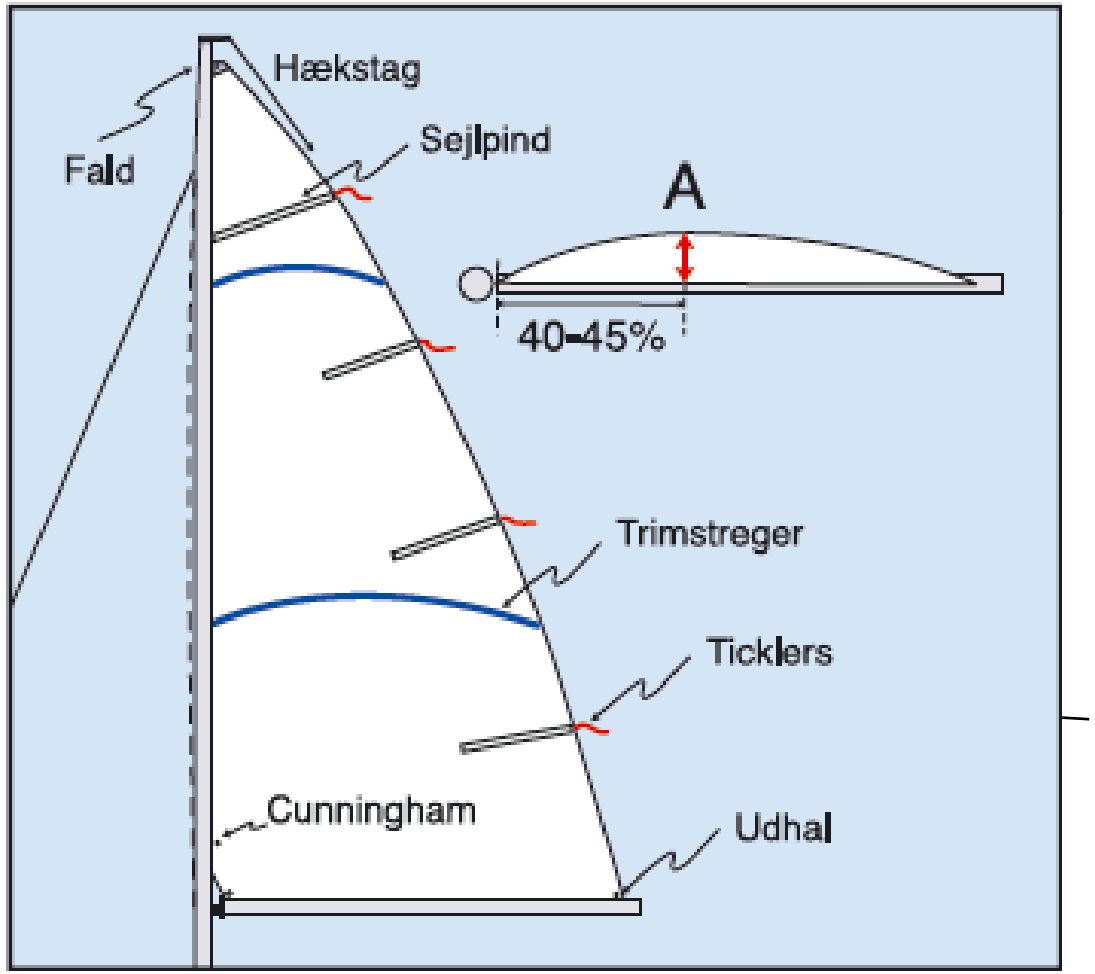
Storsejl



De fleste kapsejladsbåde anvender sejldug med kevlar eller kulfiber forstærket tråde (A). Det er en meget stabil dug, der næsten ikke strækker sig.

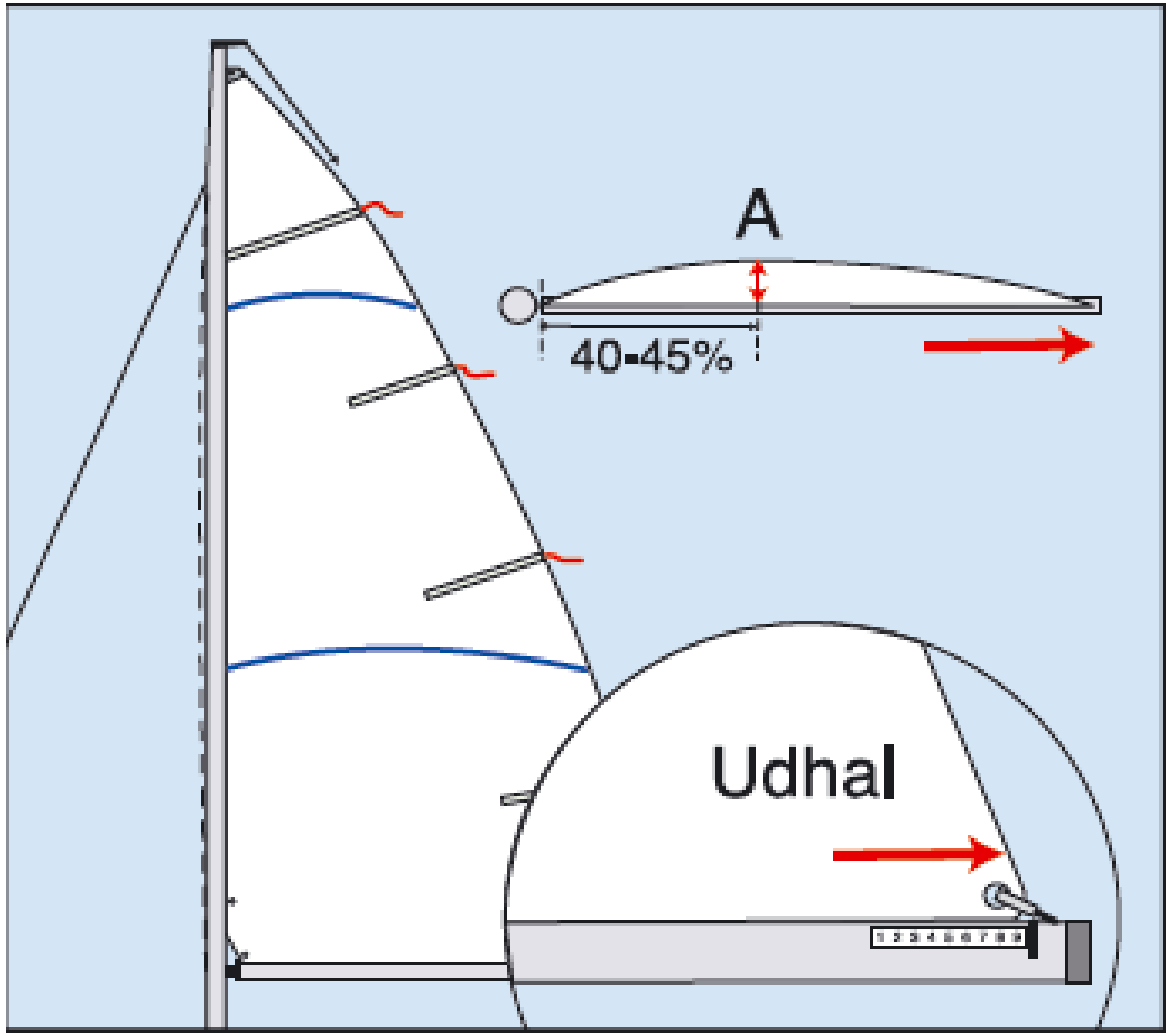
Tursejlerne anvender
Dacron dug B, som strækker sig mere i kæde-retningen og kræver større justeringer på samtlige hal.

Storsejl, dybden og justering

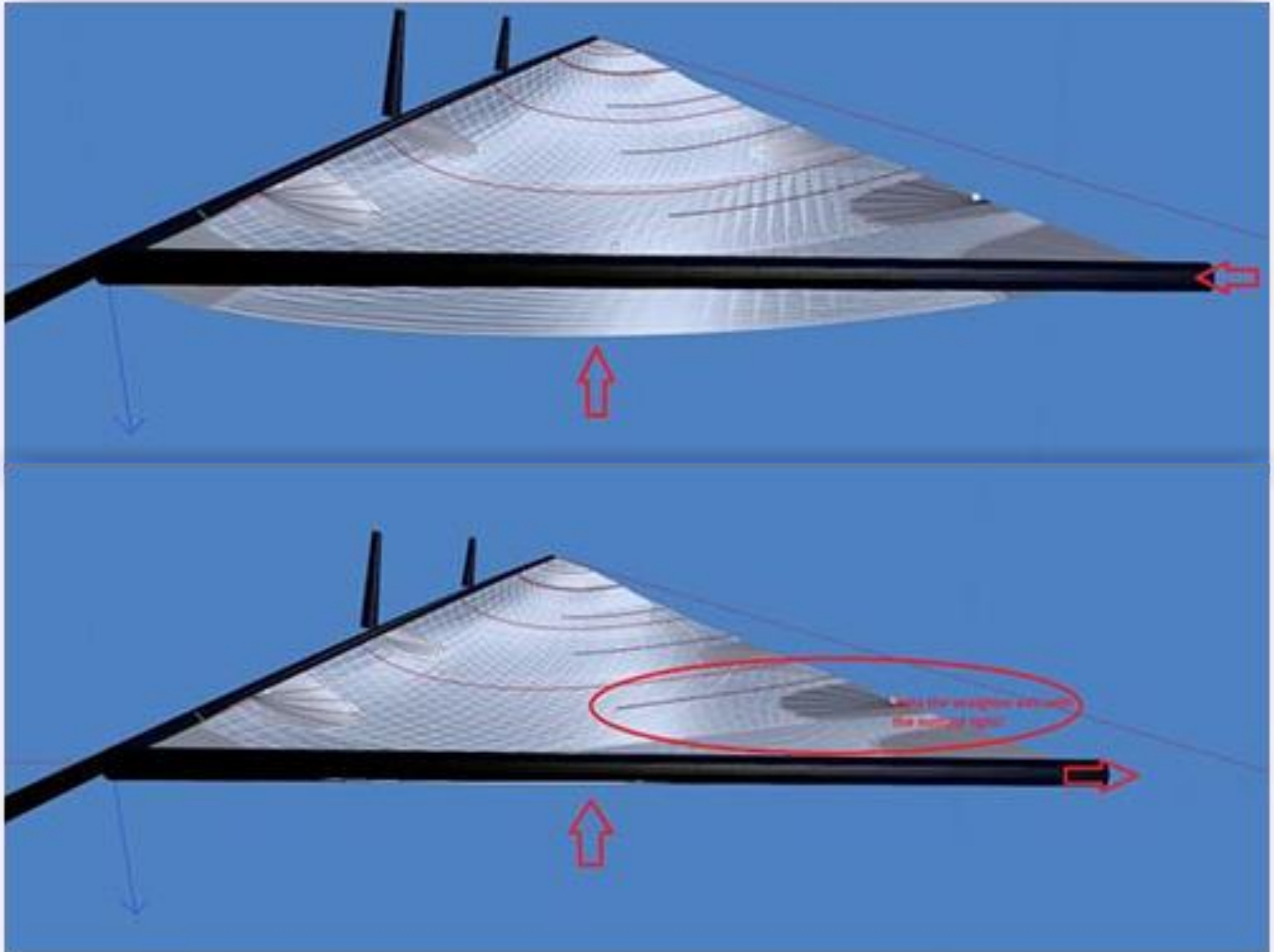


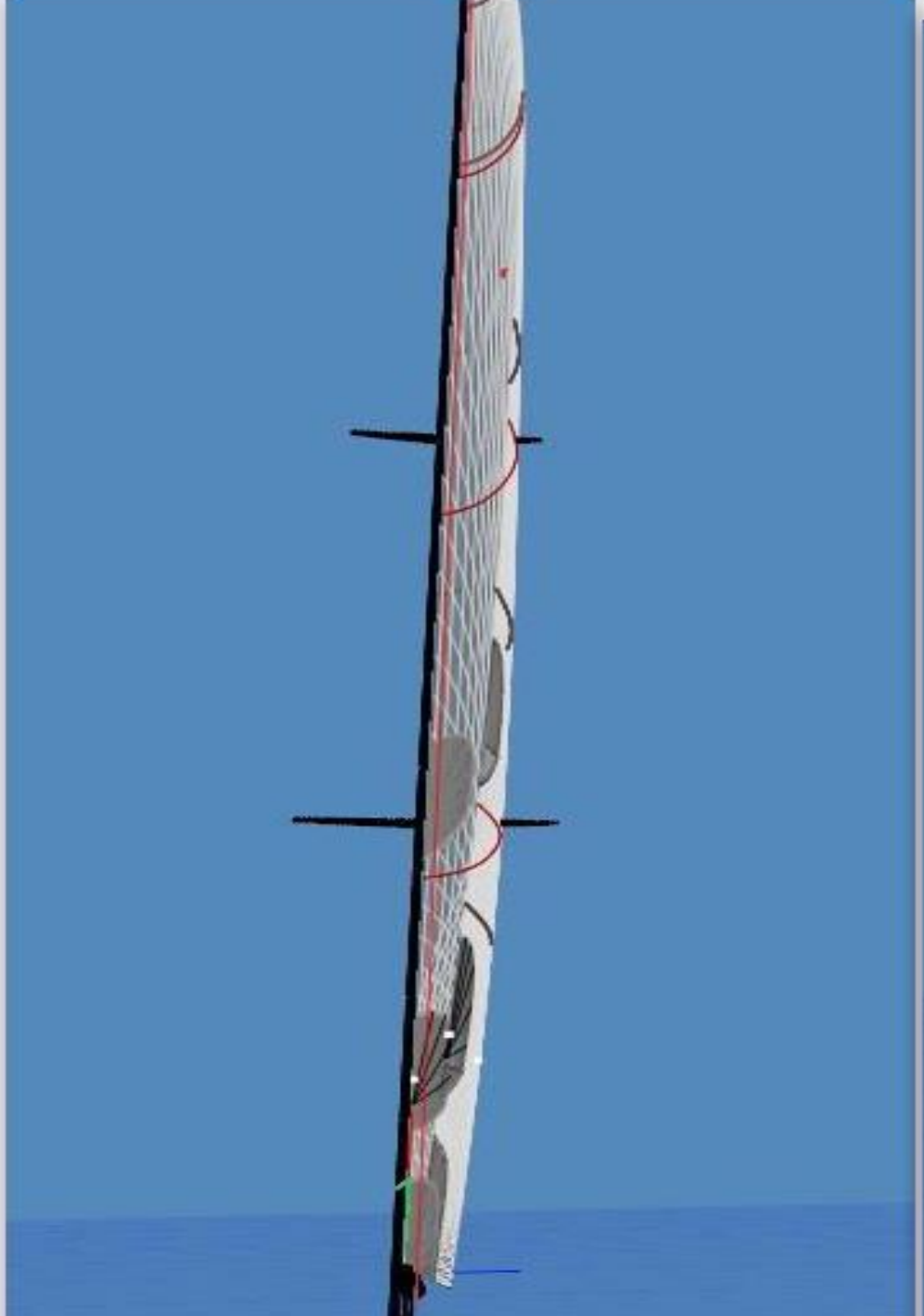
Det dybeste sted A i sejlet skal ligge ca. 40-45%
fra masten. Trimstreger i sejlet er en stor hjælp til at
se faconen i sejlet. Ticklers i agterliget viser om storsejlet
har det rigtige ”tvist”. Sejlet kan justeres med
fald, hækstag (bagstag), cunningham og udhal.

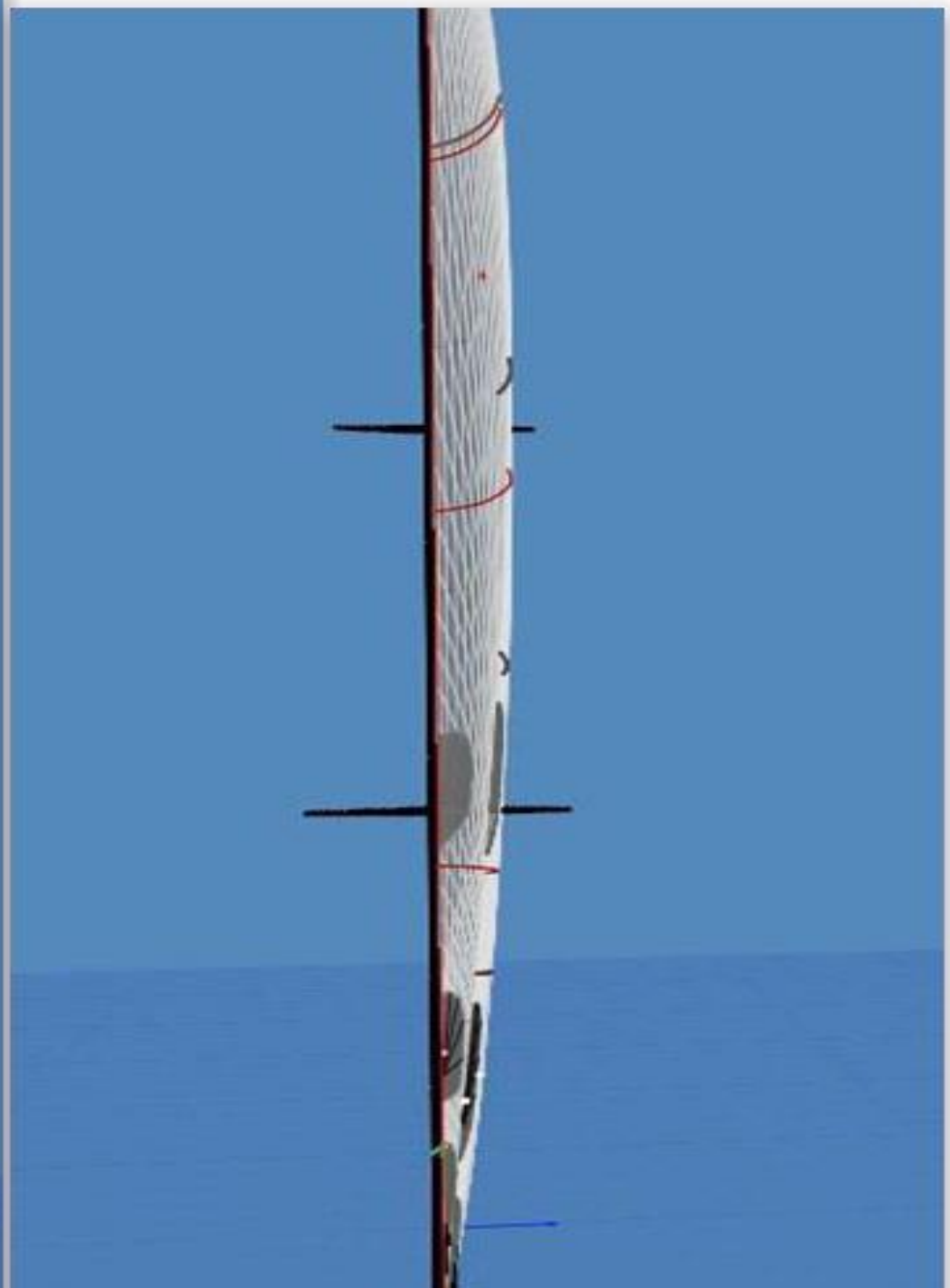
Storsejl udhal



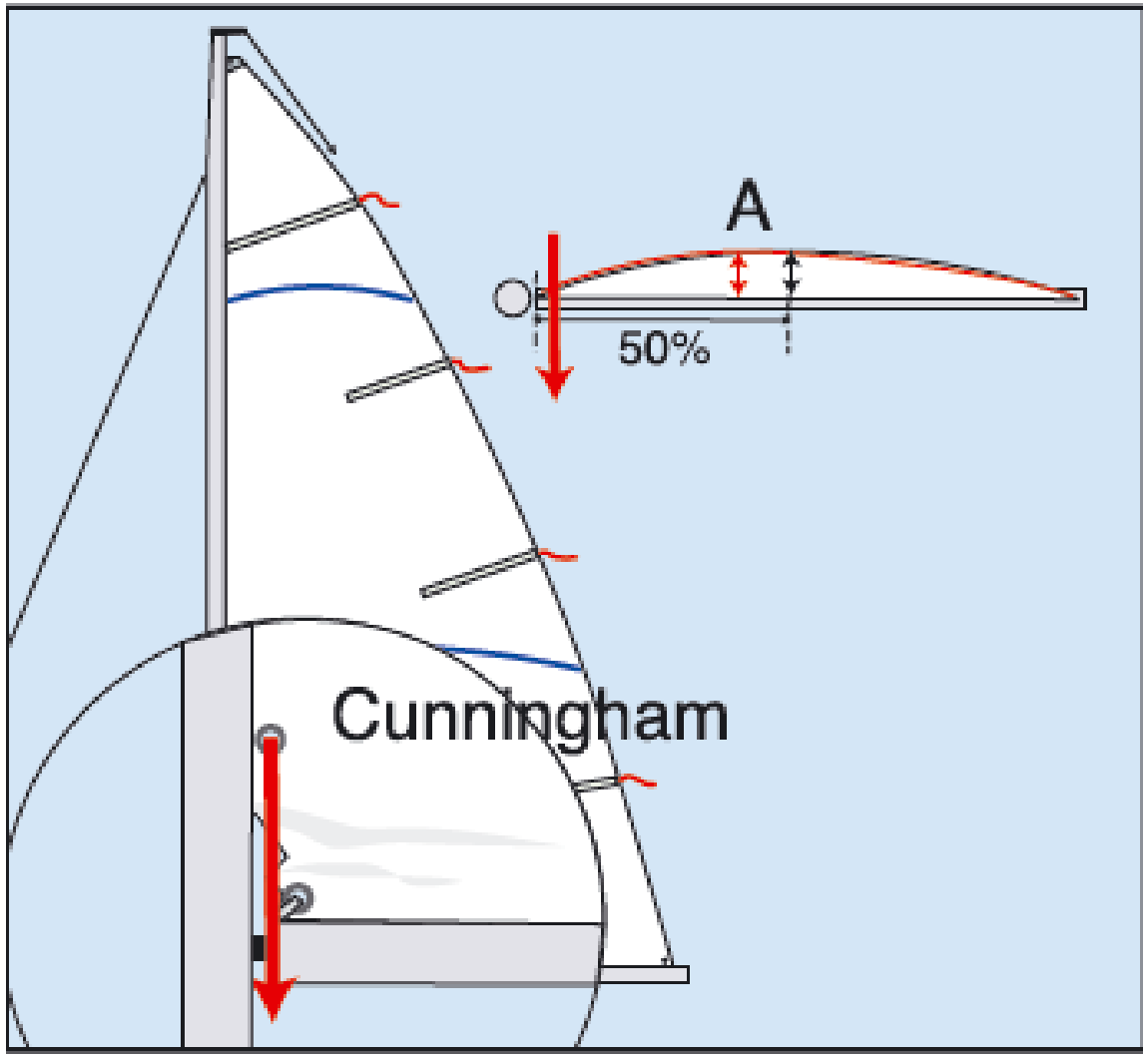
I mellemluft på fladt vand skal sejlet flades, og
dette gøres med udhalet, det er en god ide at have
et målebånd ved bomnokken, så man kan huske sit
trim. Før logbog over hvordan du skøder og trimmer
storsejlet under forskellige vindforhold.



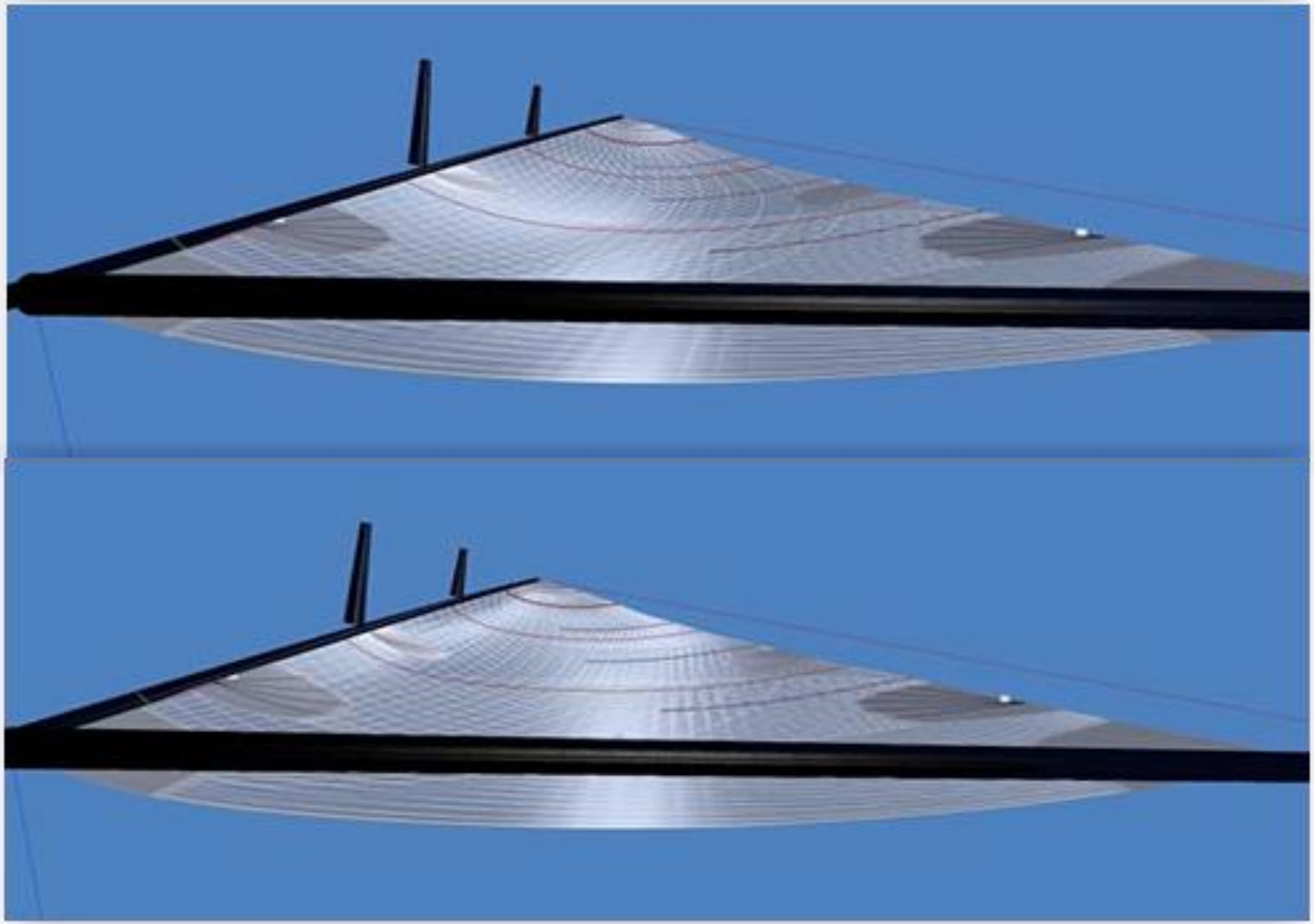




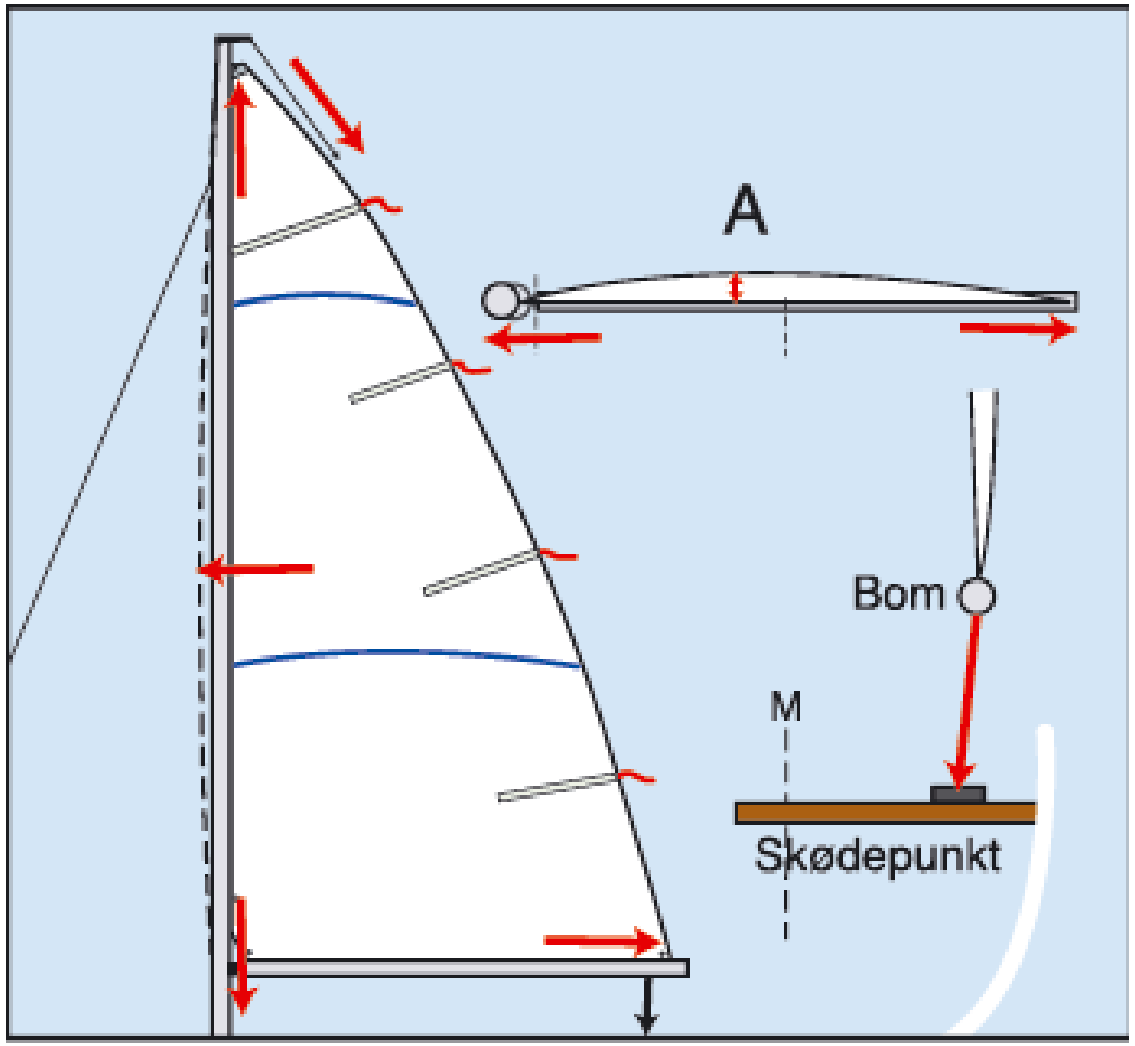
Storsejl, Cunningham



Cunningham-halet strækker forliget og trækker det dybeste sted A fremad igen, når dugen har strukket sig. I let vind og på læns skal cunninghamhalet
været slækket. Faldet skal være halet helt til
tops inden man begynder at hale i cunningham.

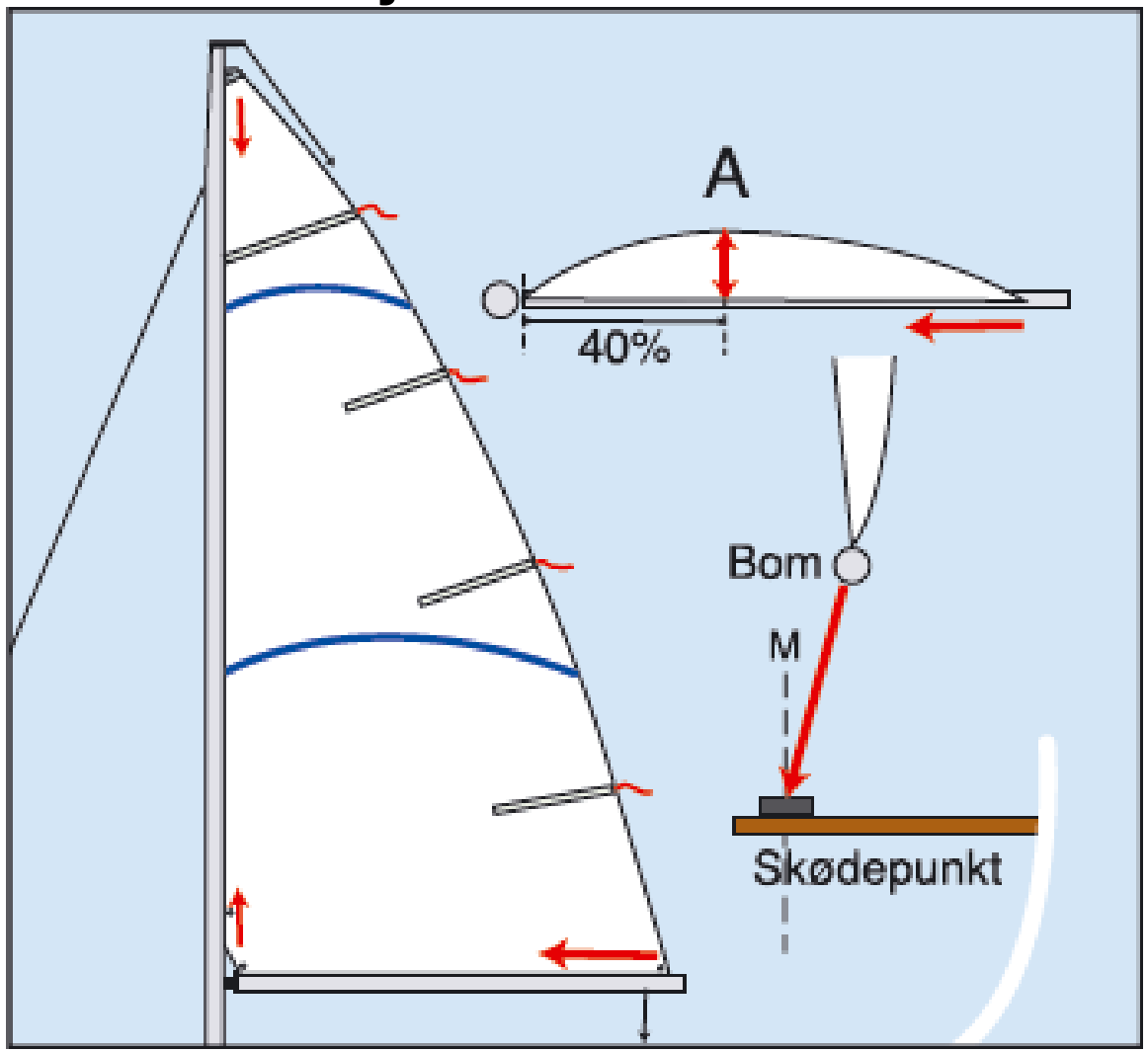


Storsejl hård vind



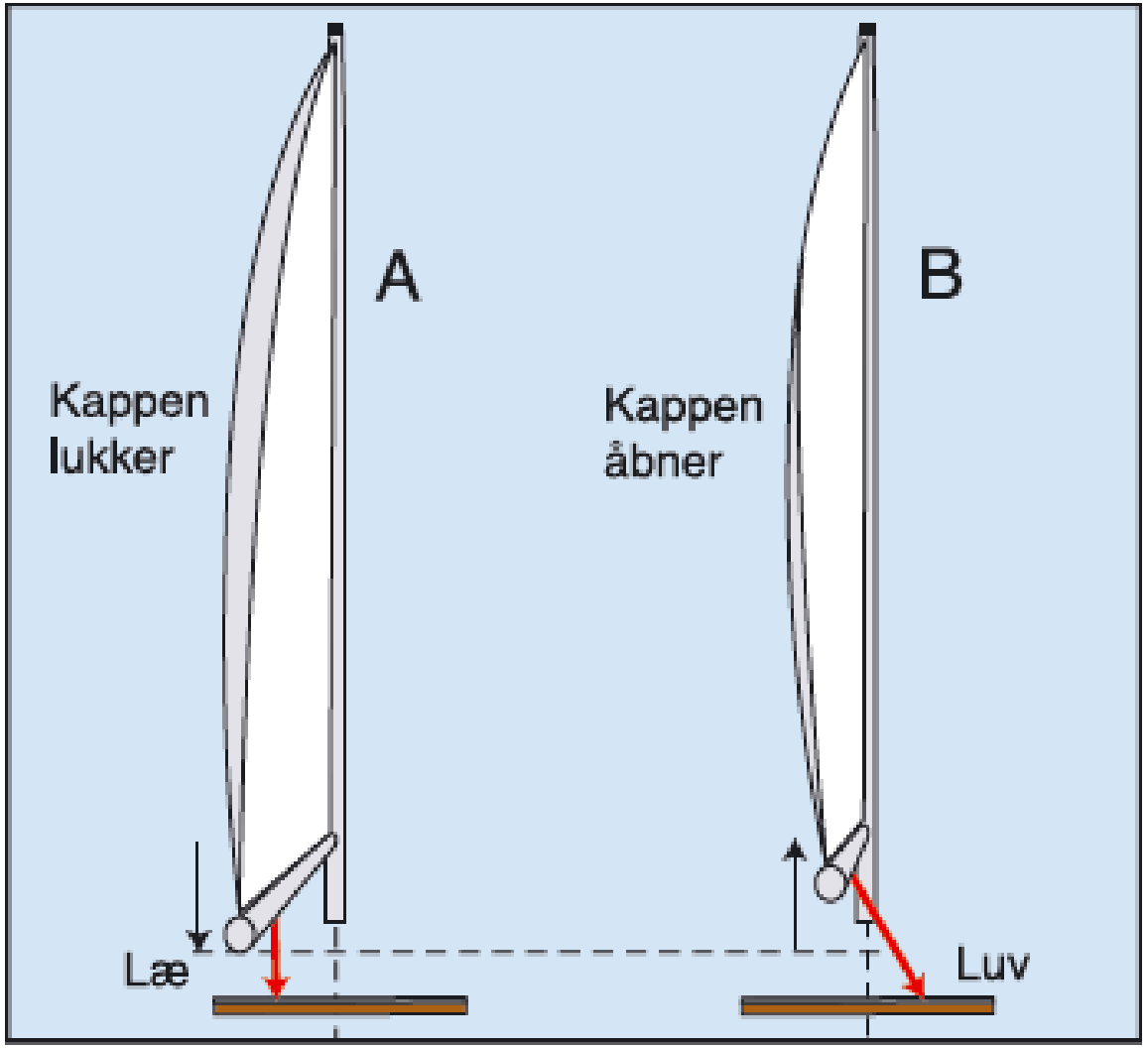
I frisk vind på fladt vand, hvor storsejlet skal flades
trækkes udhalet. Faldet helt til mærke i top og
måske lidt cunningham. Hækstag (bagstag) sættes,
så masten bøjer frem og skødepunktet fl yttes mod
læ, samtidig med at skødet hales hårdt.

Storsejl

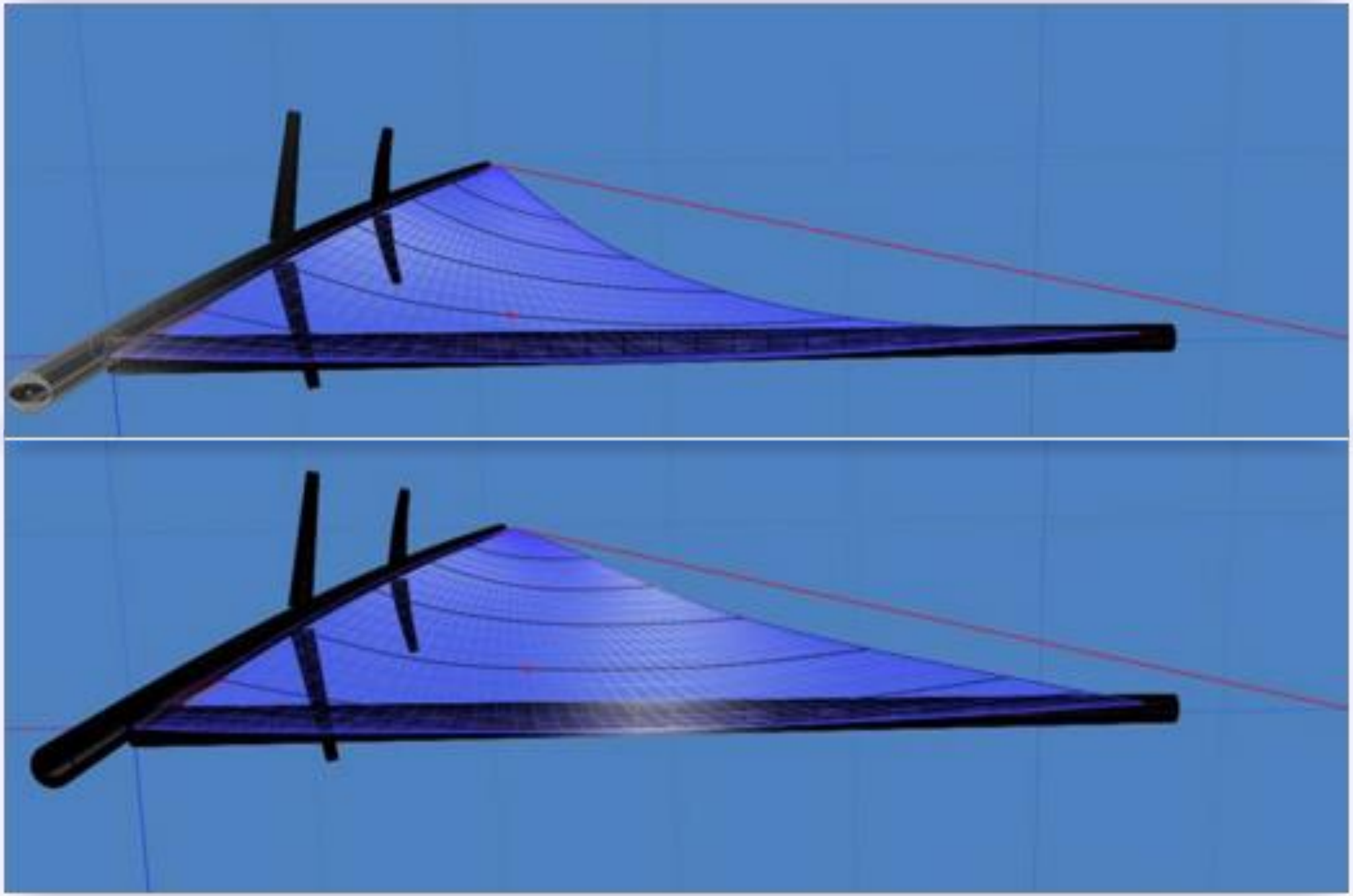


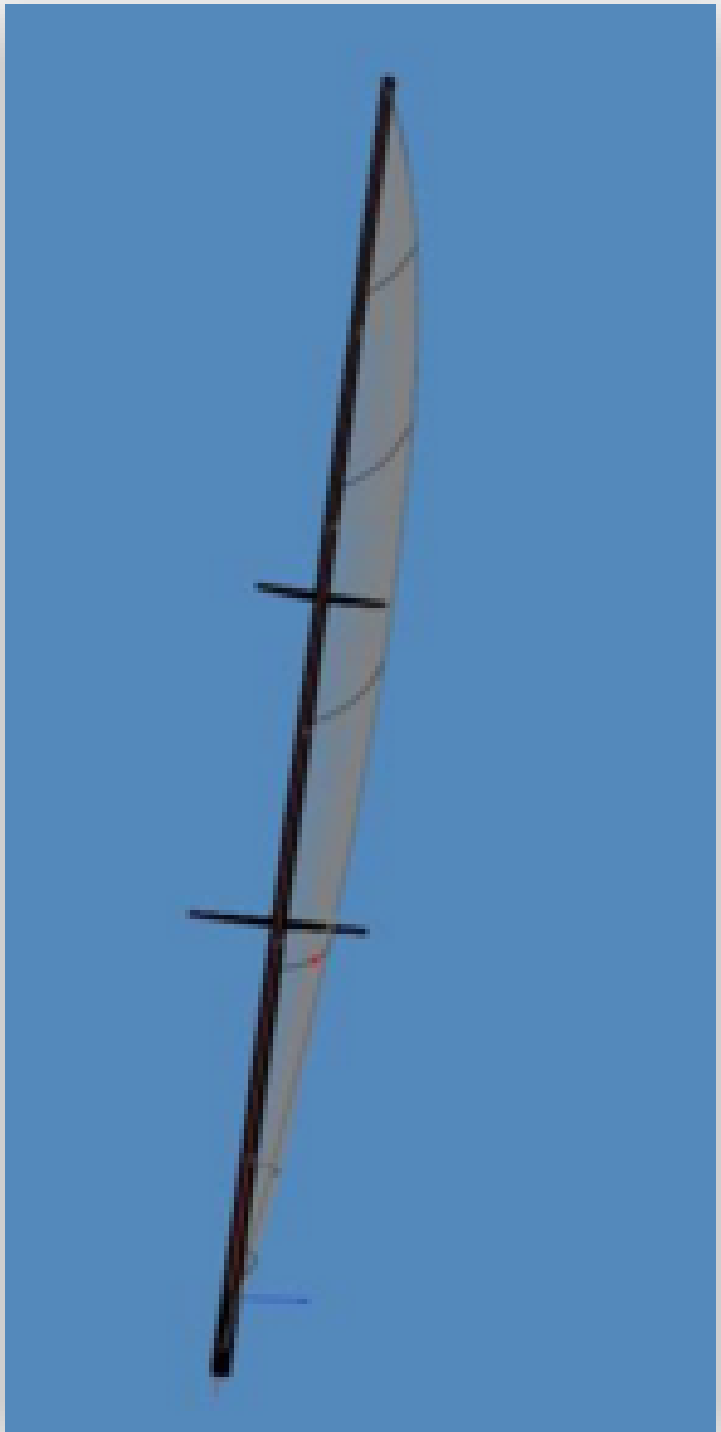
I let vind eller mellemluft med ”stopsø” skal sejlet hules. Slæk på udhal, cunningham og måske lidt på faldet. Skødepunktet flyttes mod midten eller over og skødet slækkes til det rigtige ”tvist” opnås, hvilket kan aflæses på ticklers der alle skal peje bagud.

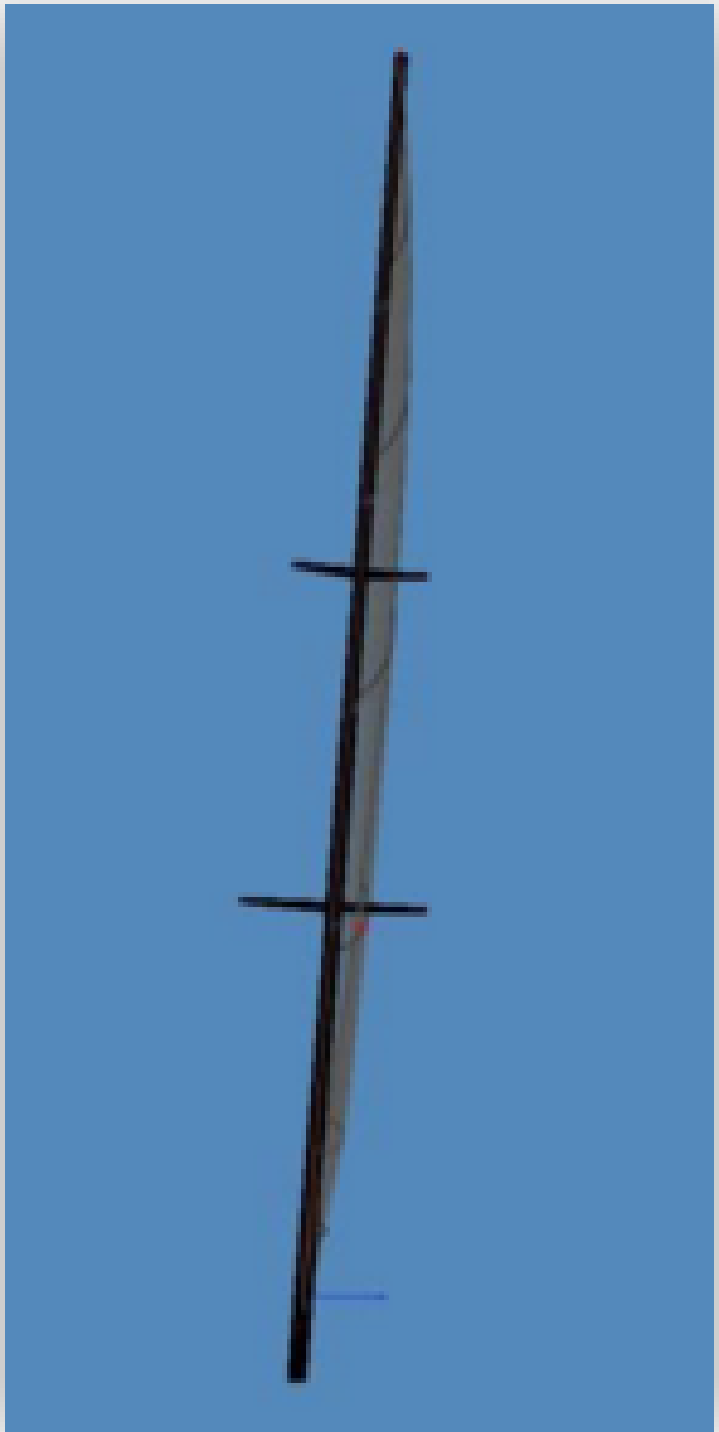
Storsejl løjgang samt skødetryk



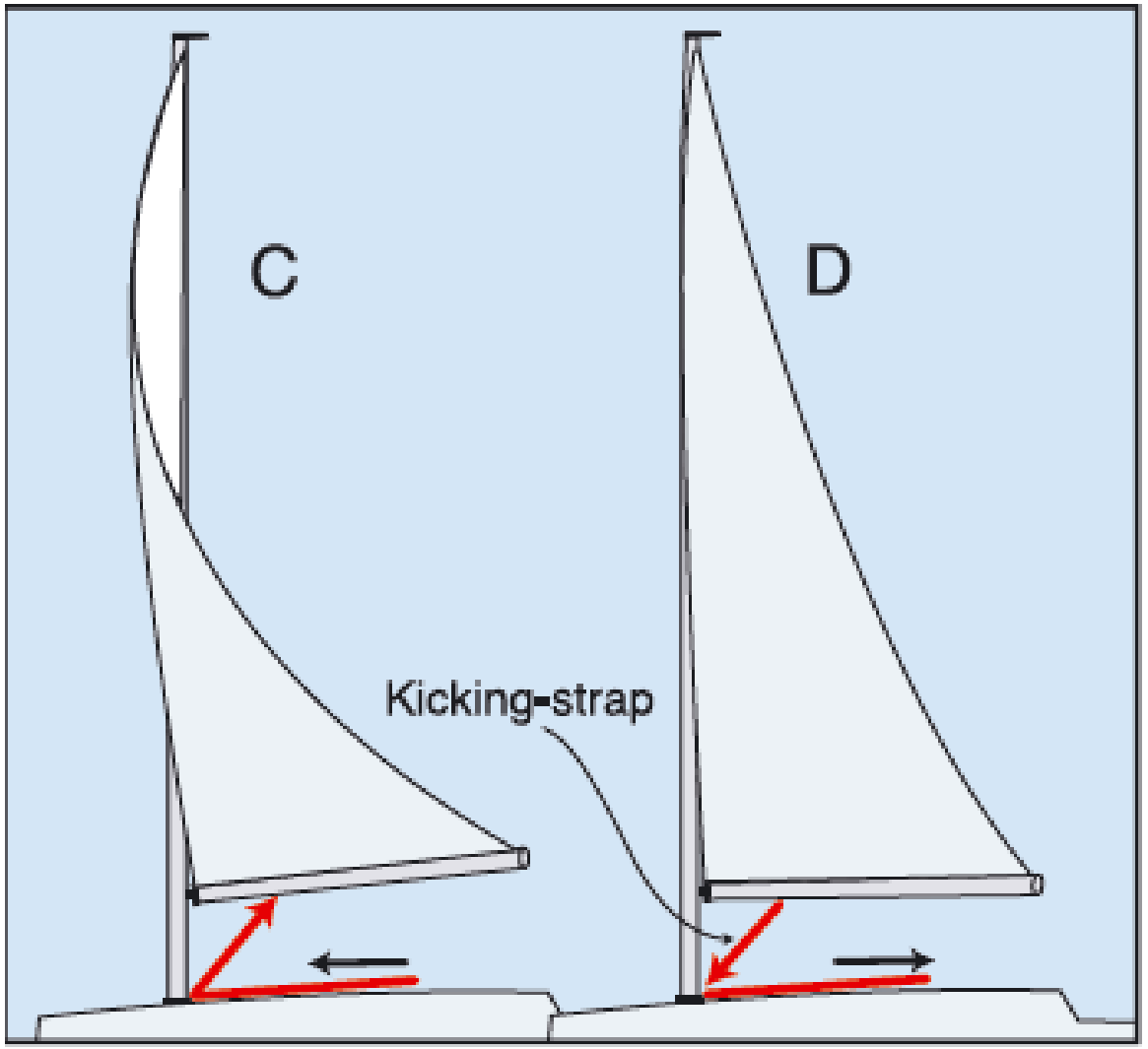
På kryds skal der trimmes meget med skødevognen,
men kommer den for langt mod læ kan kappen
lukke som på A, når skødetrækket også er for hårdt.
På B er der skødet til luv og storsejlet ”tvister” og
kappen åbner som den skal.





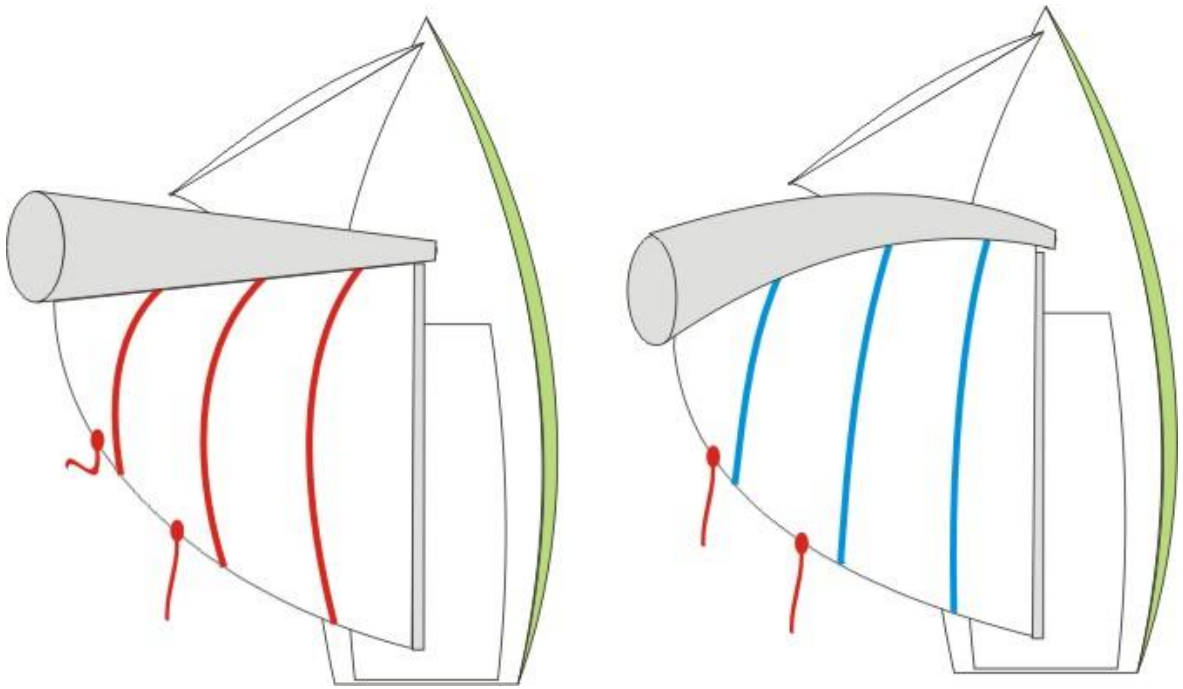


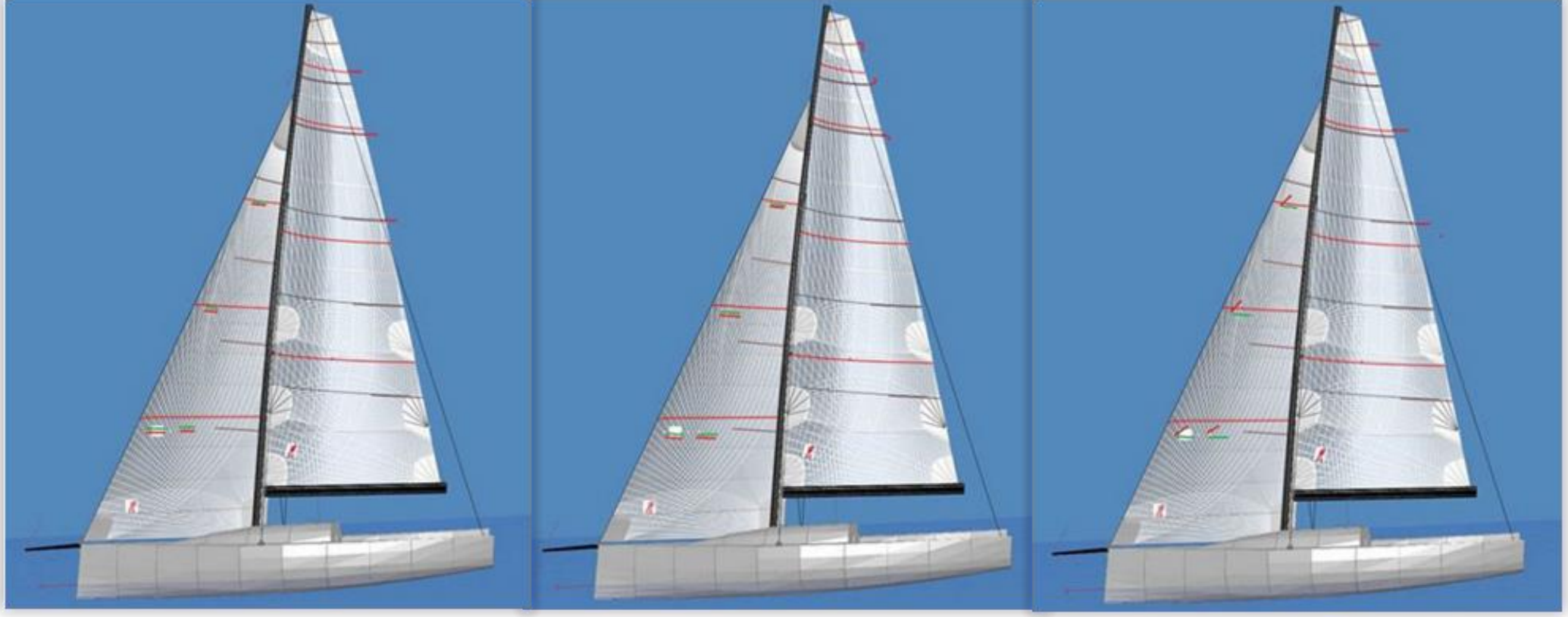
Storsejl Kick



Kicking-strappen skal sættes, når der sejles med
slæk på skøderne. Hvis den er for løs C, vil sejlet åbne
for meget i toppen. På D er den sat korrekt. På
nogle bådtyper bruges kicking-strappen også på
kryds, men det gemmer vi til en anden gang.

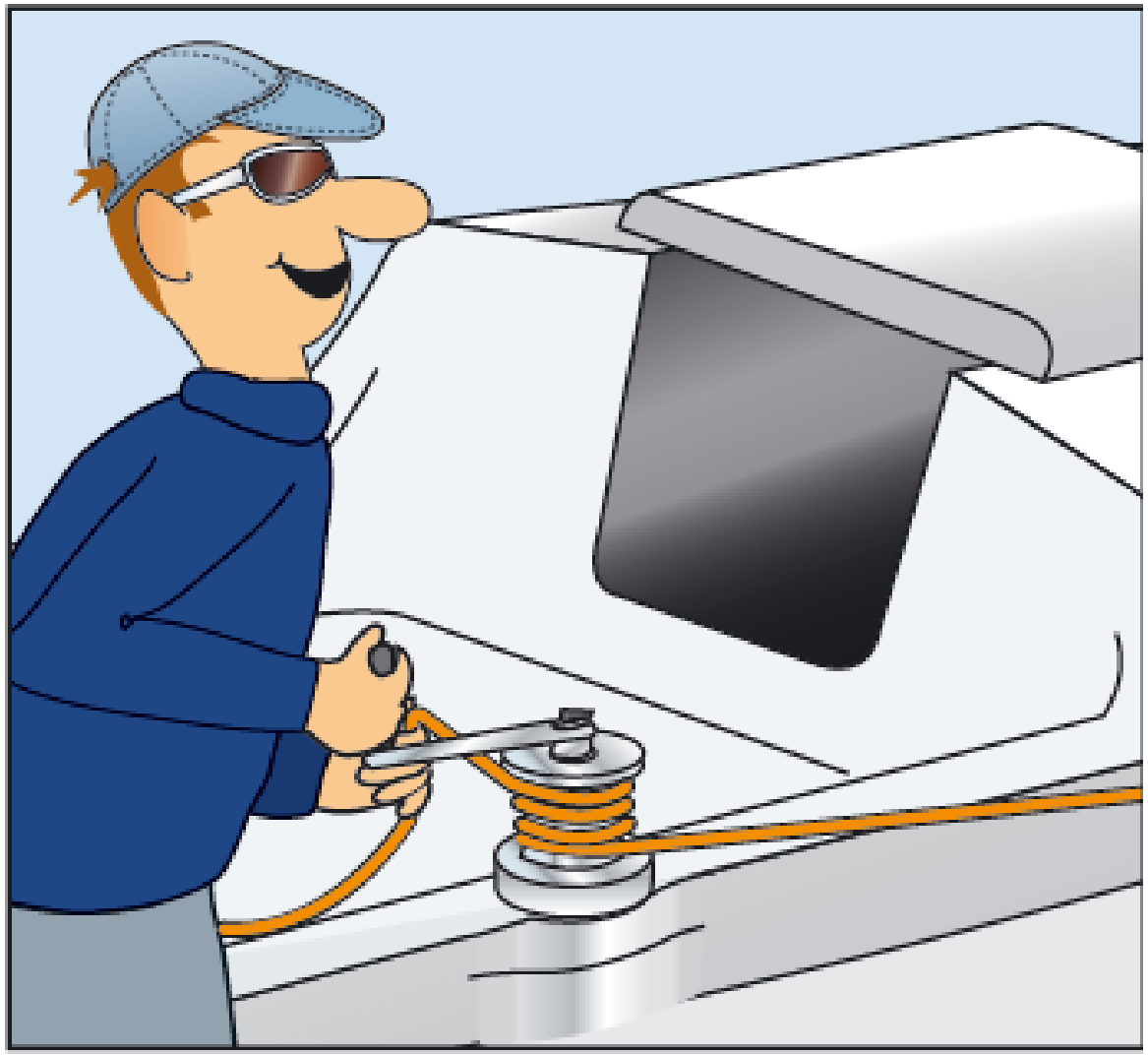
Telltales eller ticklers





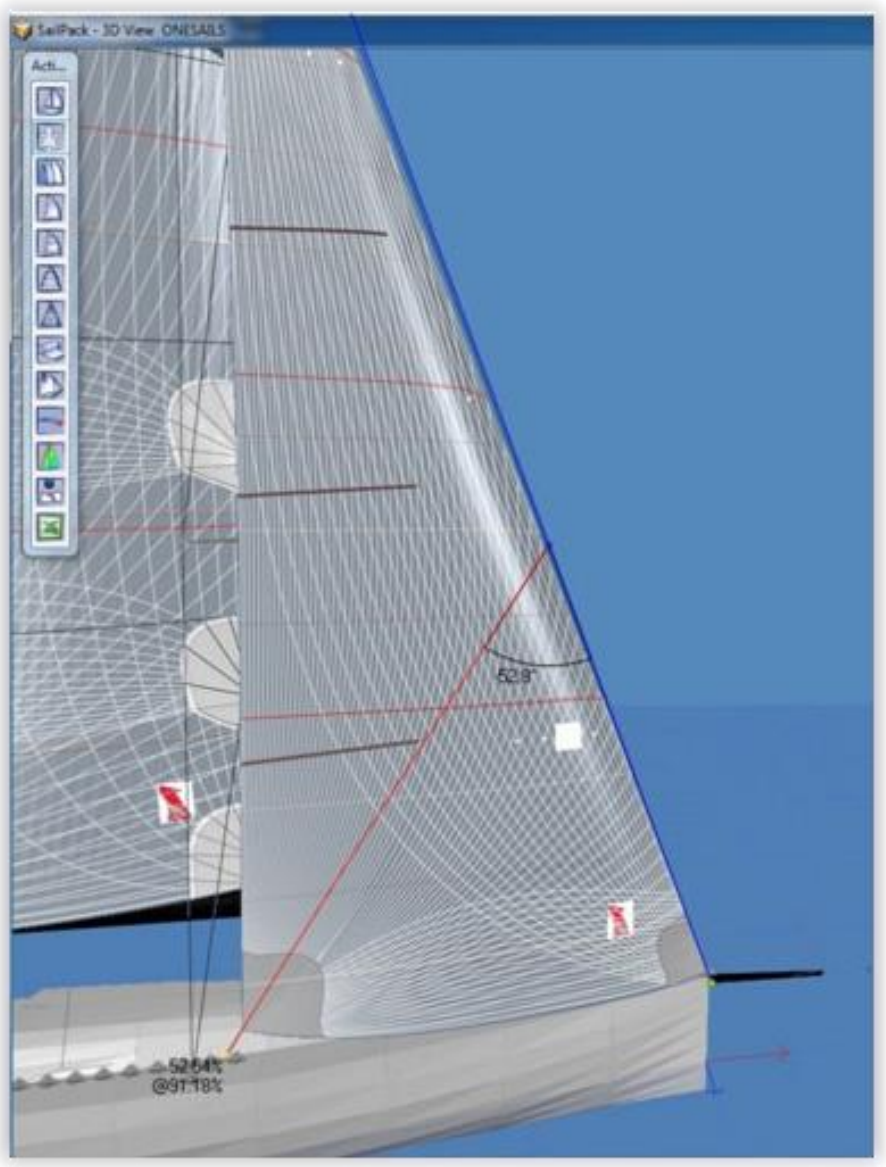
Let vind Mellem vind Hård vind

Forsejl



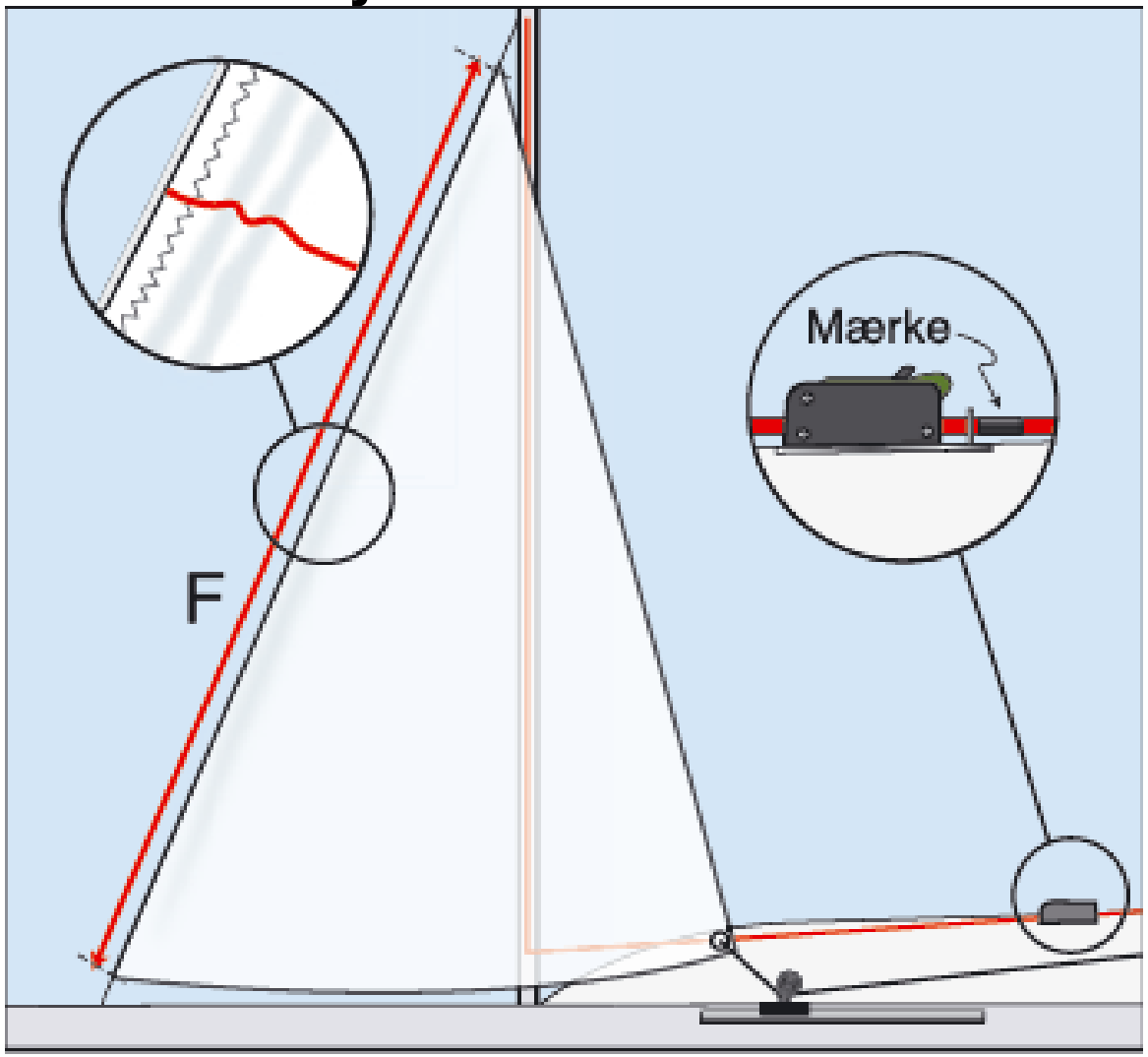
Genua trimmeren er en af de vigtigste gaster om
bord. Han skal have god føling med og øje for, hvor
meget genuaen skal hales, om dybden passer og
kunne se på agterliget, hvor meget tvist der er i sejlet.
Solbriller gør det nemmere at se faconen i sejlet.

Forsejl Fok



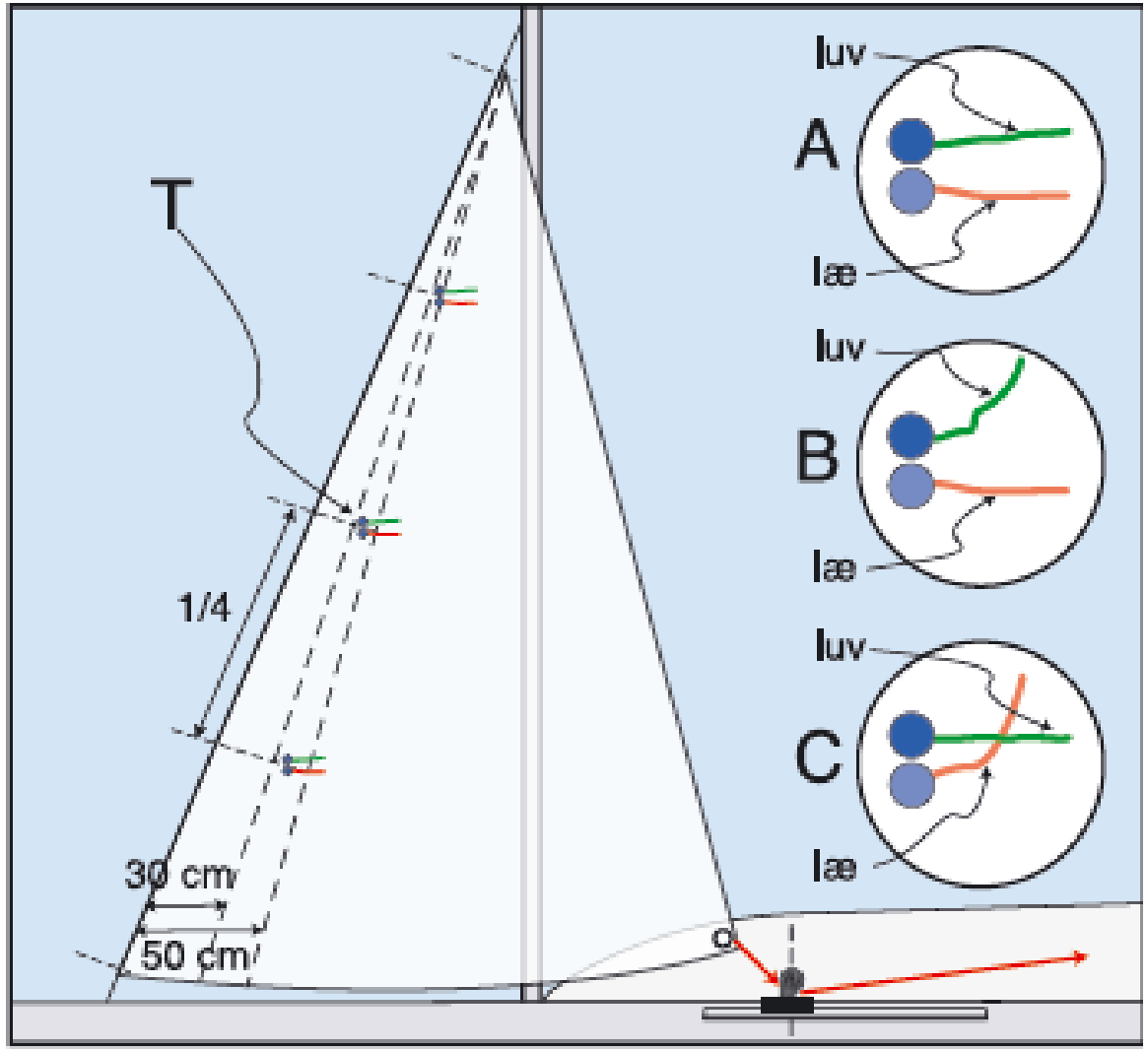
Som udgangspunkt skal skødepunktet S være i
et punkt på skødeskinnen, hvor en tænkt linje fra
midten M af forliget skærer gennem skødebarmen.
På en gennemsnitsbåd i mellem luft, skal dybden D
være ca. 14% og ligge ca. 38% fra forliget.

Forsejl



Forliget F på genuaen eller fokken må aldrig tottes
så meget, at dugen i forliget danner folder – det
overstrækker dugen og den bliver beskadiget. Sæt
mærker på faldet ved spilaflasteren, så du i forskellige
vindstyrker ved, hvor meget faldet skal tottes.

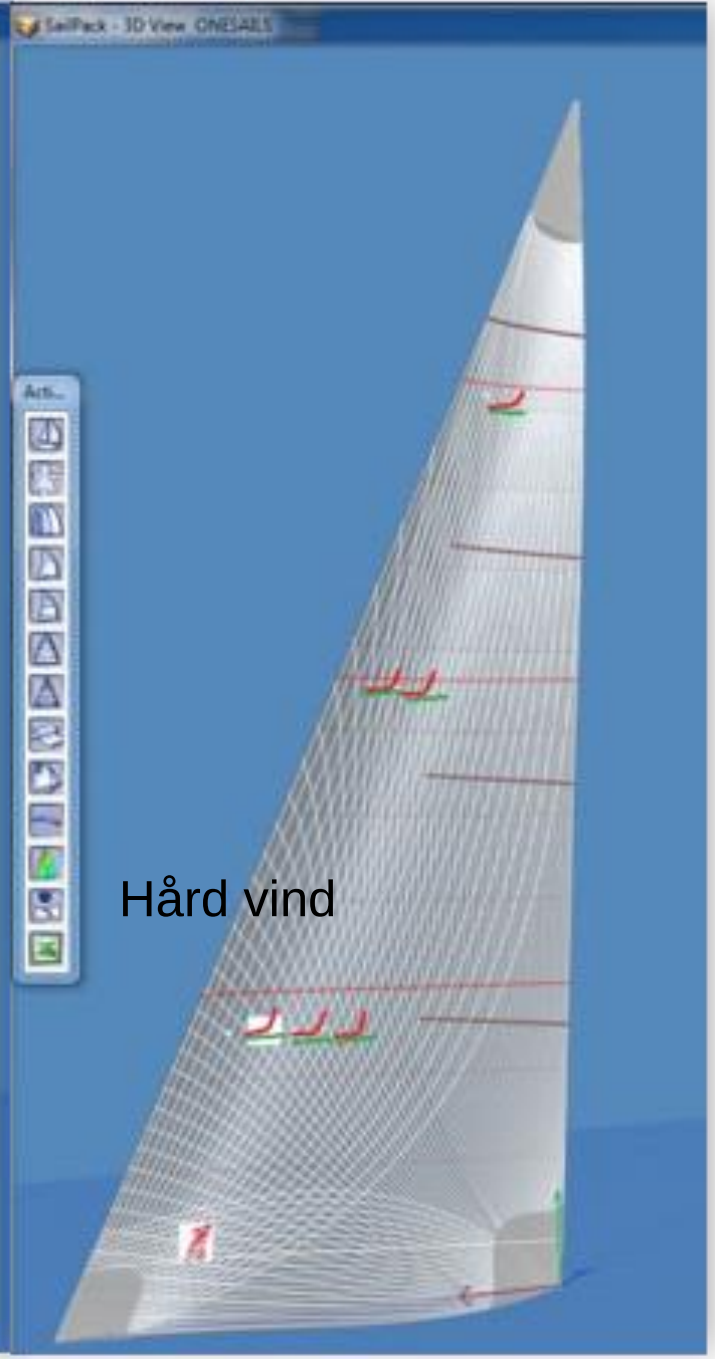
Forsejl



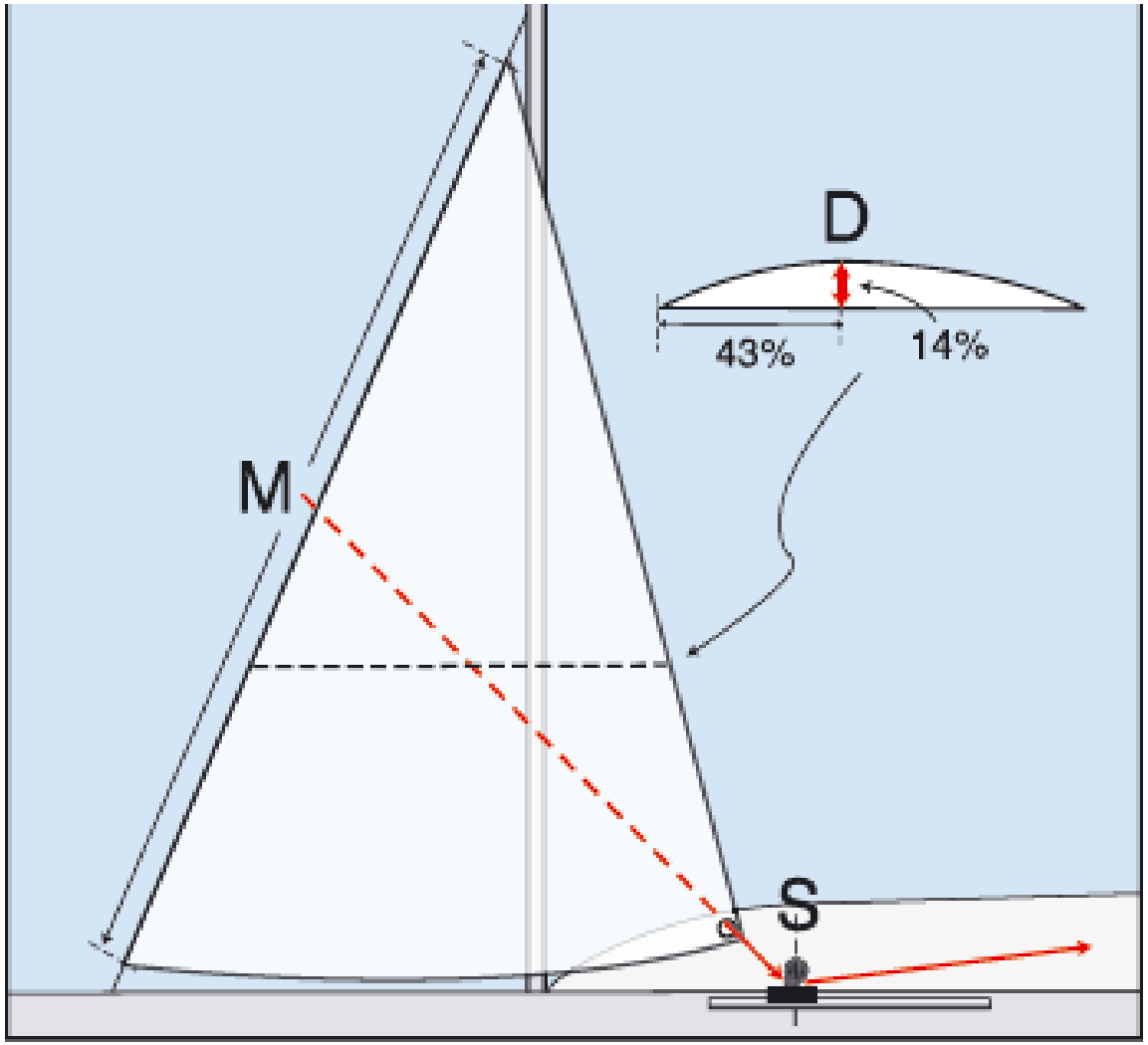
Ticklers T (uldtråde) i sejlet hjælper gasten med
at trimme genuaen og rorsmanden til styre den rigtige
højde. På A står ticklers korrekt, den luv løfter lidt.
På B sejles der lidt for højt, luv ticklers blafrer opad.
På C sejles der for lavt, læ blafrer opad.

Let vind

Mellem vind

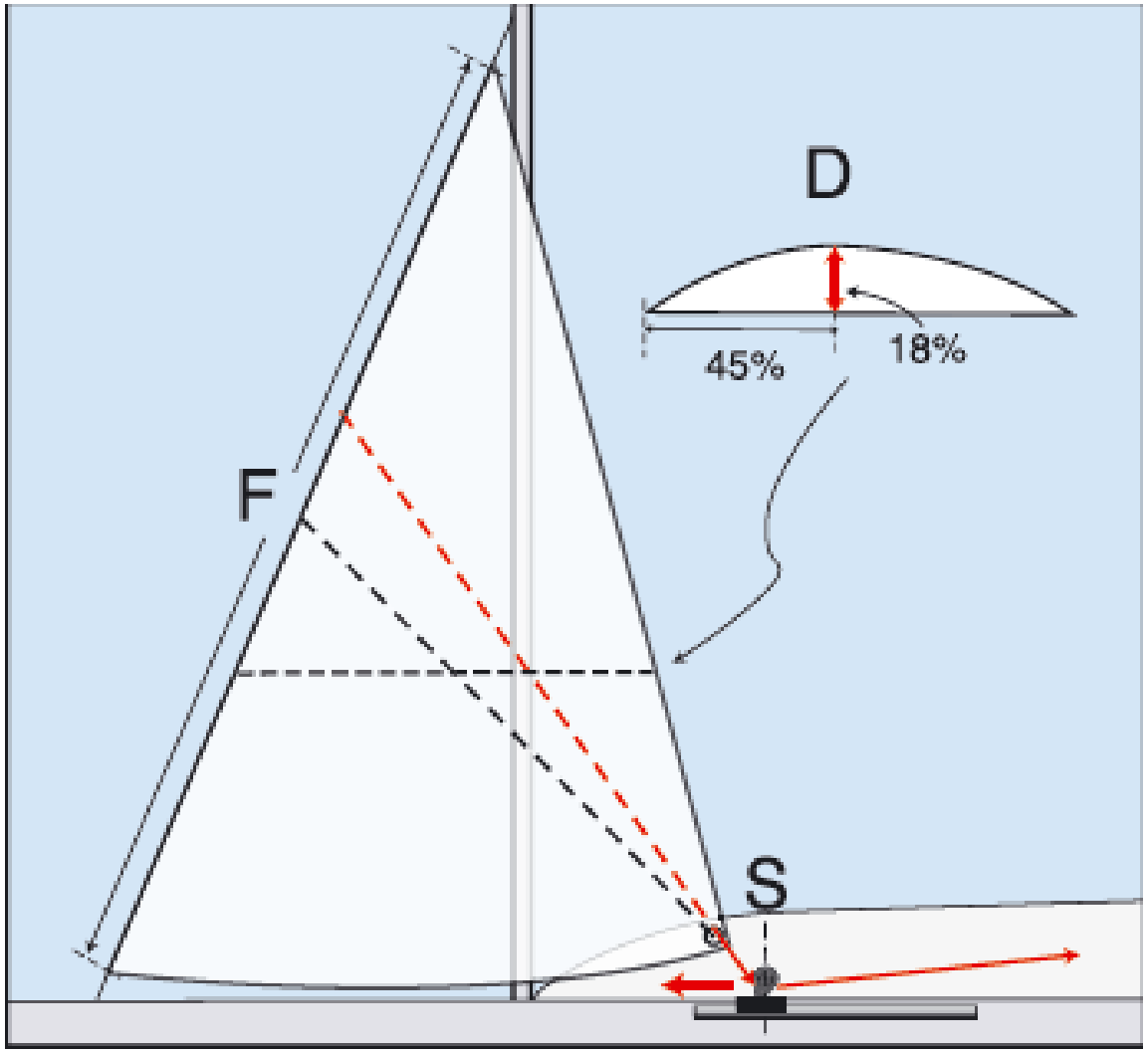

Hård vind

Forsejl Genua



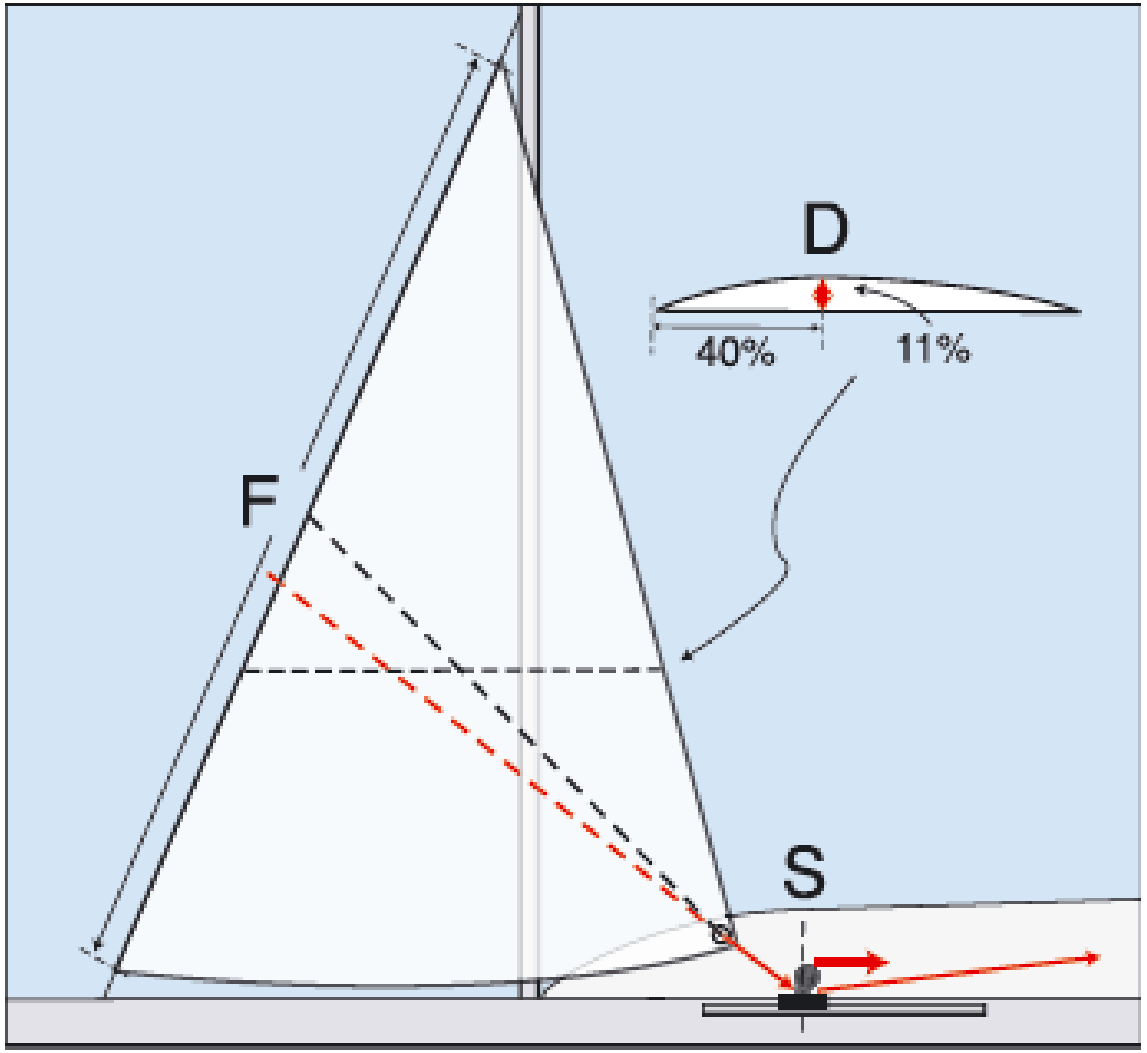
Som udgangspunkt skal skødepunktet S være i
et punkt på skødeskinnen, hvor en tænkt linje fra
midten M af forliget skærer gennem skødebarmen.
På en gennemsnitsbåd i mellem luft, skal dybden D
være ca. 14% og ligge ca. 43% fra forliget.

Forsejl



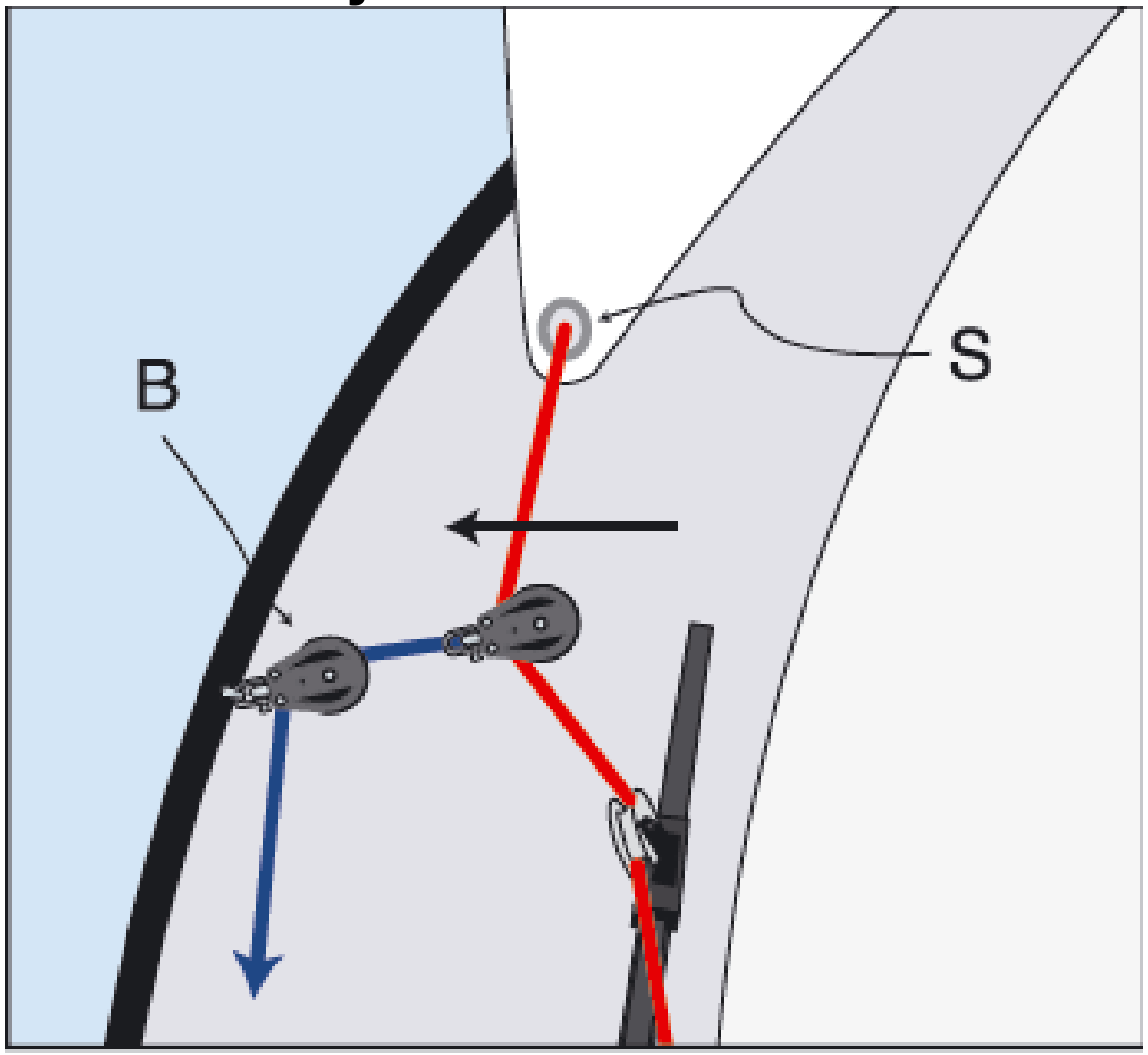
I let vind eller mellemluft med forholdsvis høje
bølger skal forsejlet trimmes hult. Dette gøres ved
at flytte skødepunktet S fremad og slække lidt på
skødet. Dybden D er ca. 18% og 45% fra forliget.
Faldet F skal også sættes en anelse løst.

Forsejl



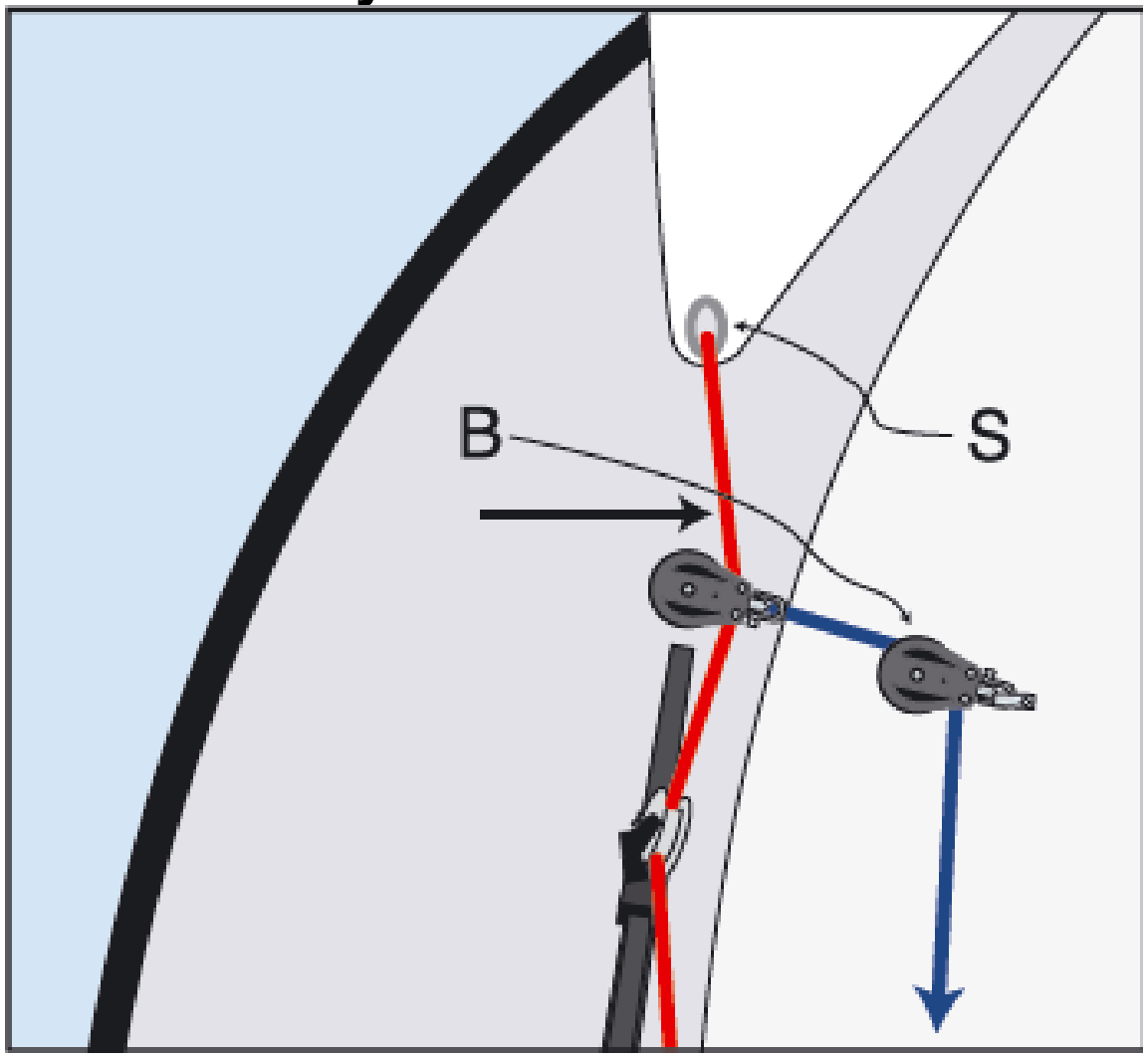
I frisk til hård vind skal forsejlet trimmes fladt. Dette
gøres ved at flytte skædepunktet S agterover. Skødet
skal tottes meget så genuaen bliver flad i bunden.
Dybden D er ca. 11% og ca. 40% fra forliget.

Forsejl

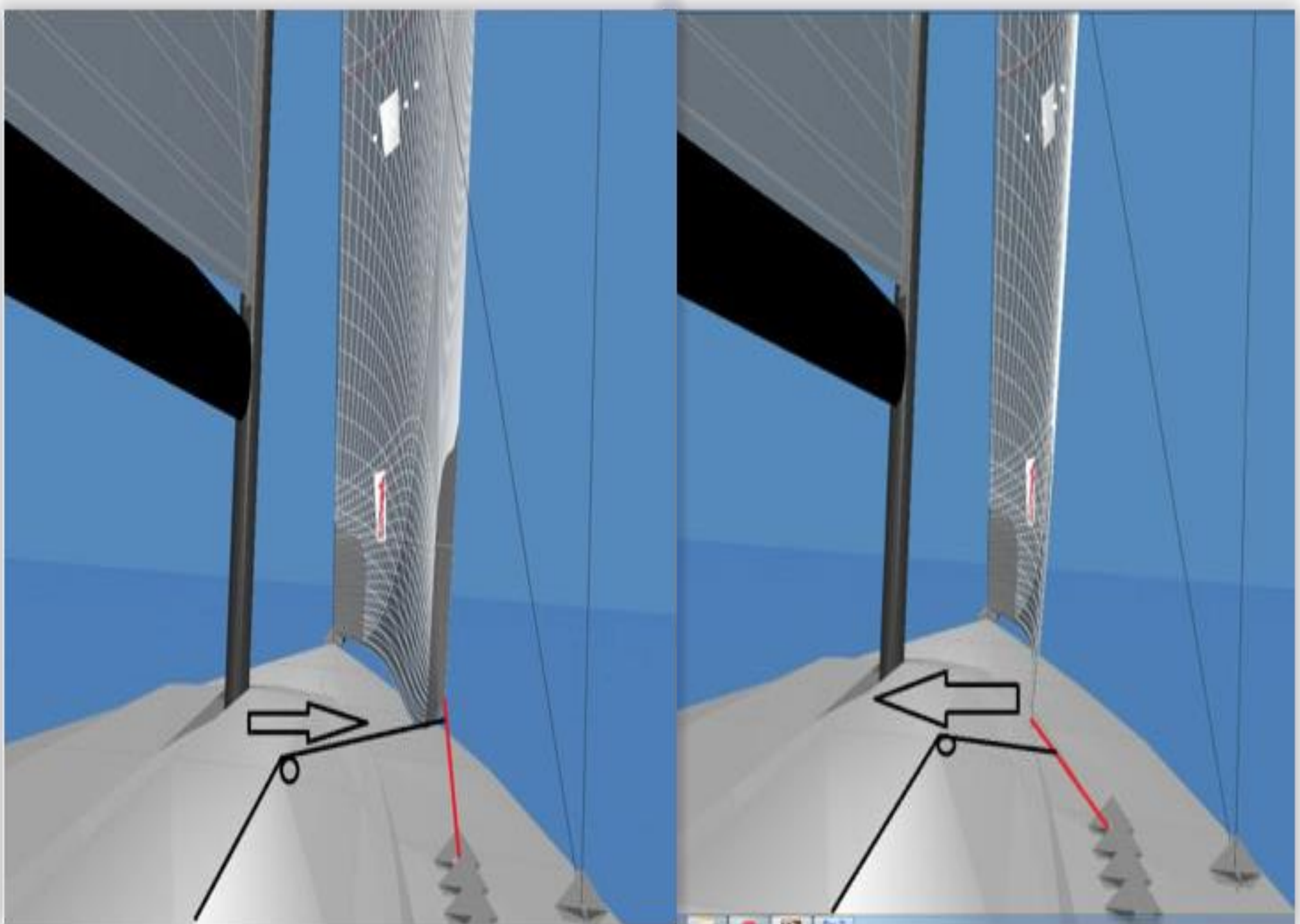


På halvvind eller foran for tværs får man et bedre
trim på genuaen, hvis man bruger et barber-hal B.
Det betyder at der bliver et andet træk i skødet S,
som får genuaen til at trække bedre i toppen, og man
får mere åbning i genuaen forneden.

Forsejl



På både med fok har man specielt glæde af et barber-
hal B, der haler skødebarmen S længere ind. Det
kan give lidt bedre høje i mellemluft og i let vind kan
man trimme sejlet med mere ”tvist”. Et tvistet sejl er
også godt på kryds i bølger.

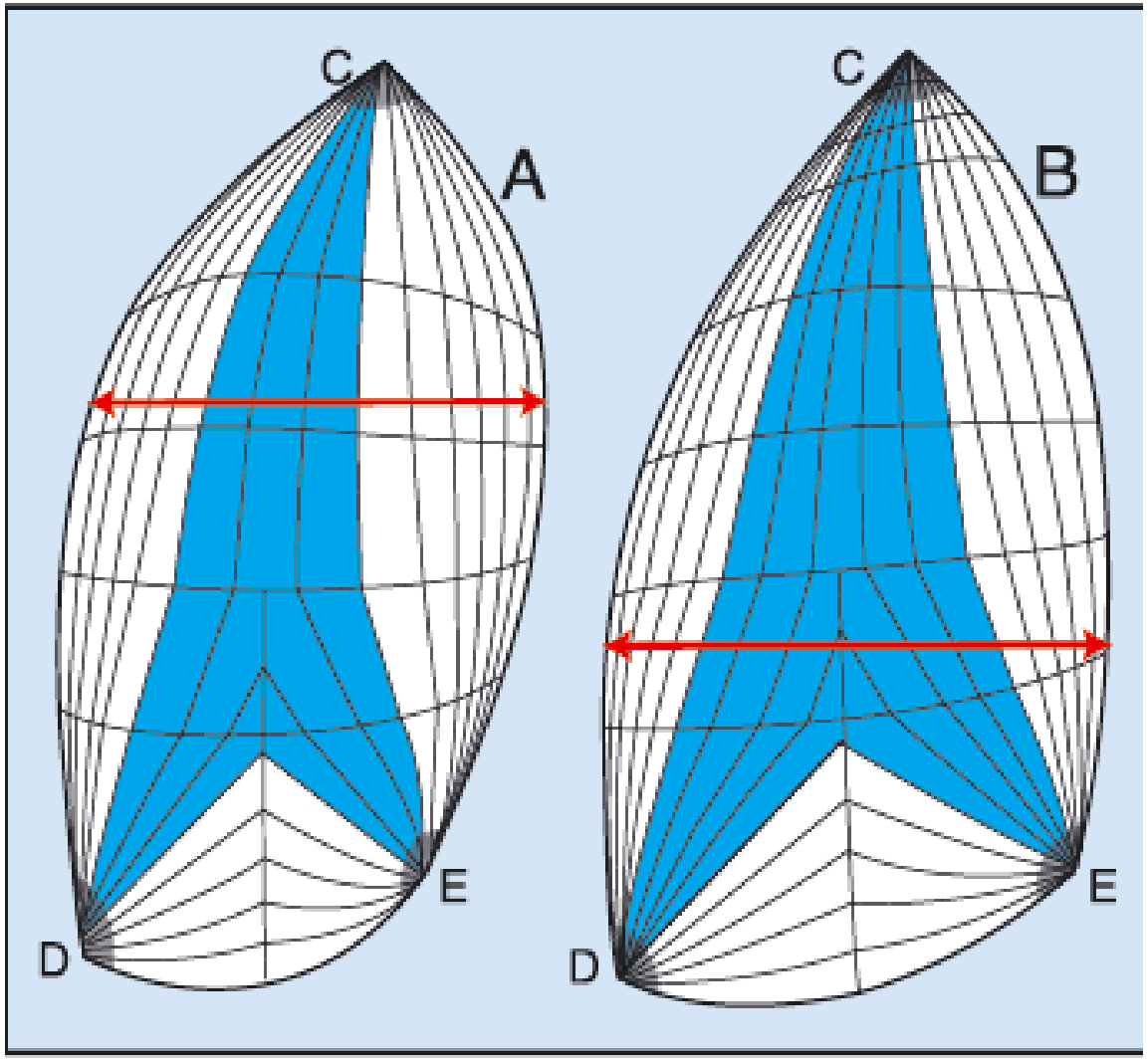


Rul vognen frem med sejlet

Skødevognen skal køres lidt fremad,
når man ruller genuaen lidt ind for at mindske sejl i opfriskende vind. Hvis man ikke kører skødevognen frem, når genuaen rulles lidt ind, så vil sejlet blive for åbent i toppen. Det vil blafre i toppen og og ødelægge sejlet.

Spilere og gennakere

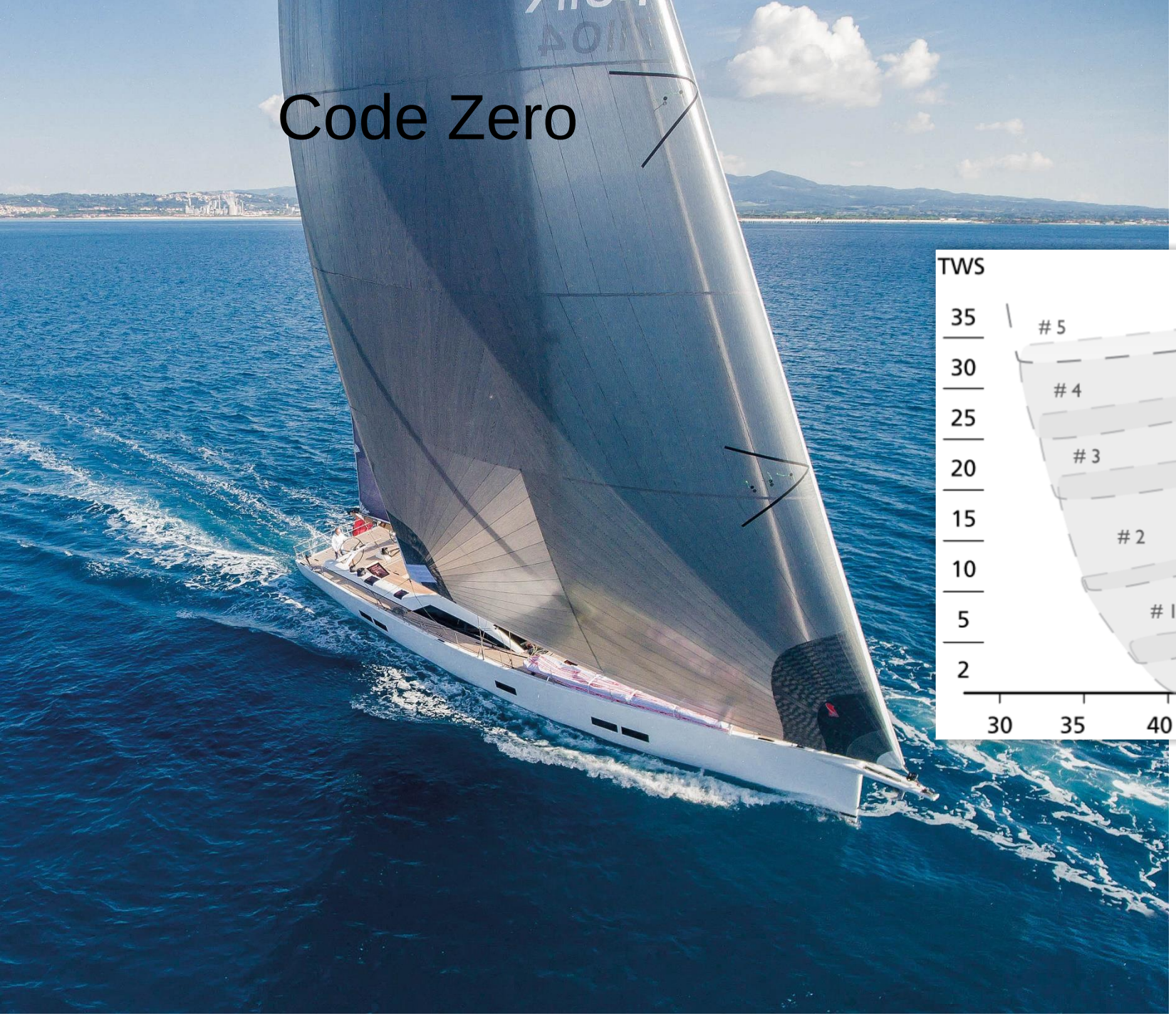
Gennaker

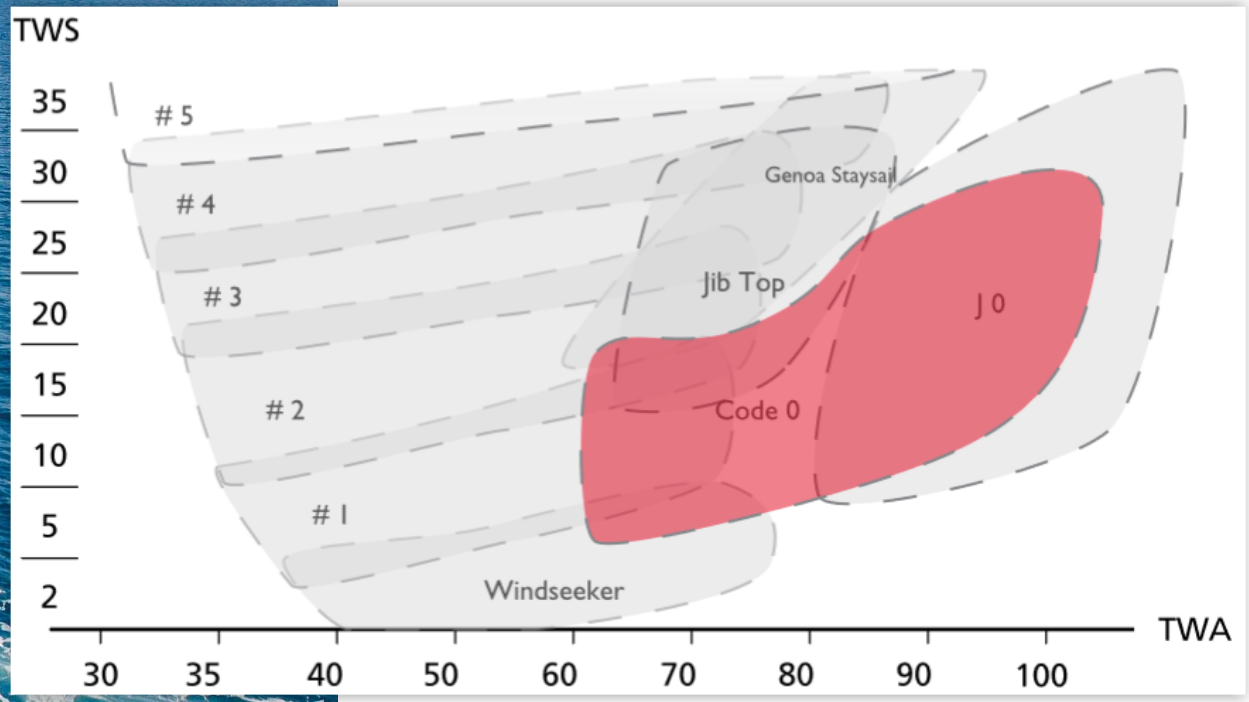


Gennaker **A** er hul og bredest foroven og er velegnet til de dybere vind-vinkler. Gennaker **B** er mere fl at skåret og breddest forneden, den kan skære til halvvind (foran for tværs).

Code Zero

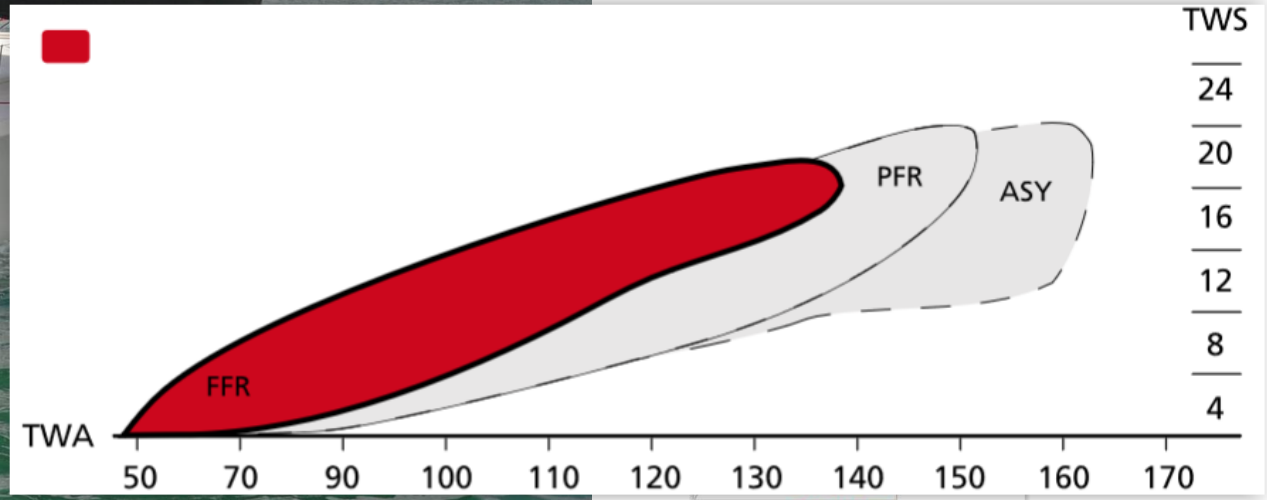
Code Zero er flad og beregnet til spidse vinkler 60-110 grader sand vind





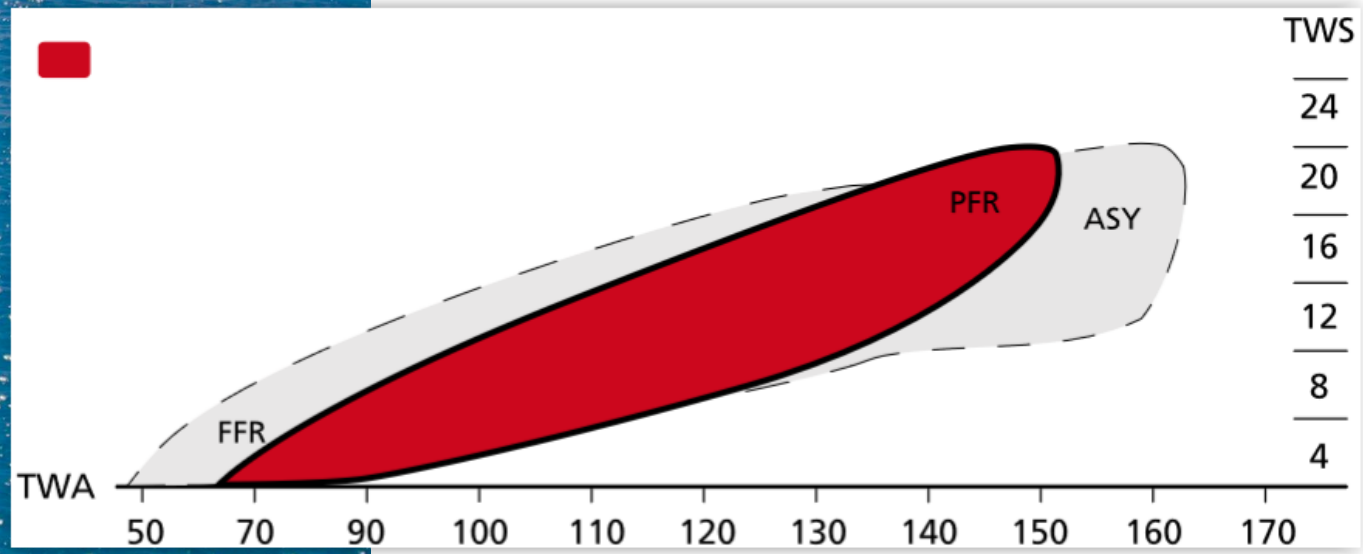
FFR Flad rulle gennaker

FFR er flad og beregnet til spidse vinkler 50-140 grader sand vind



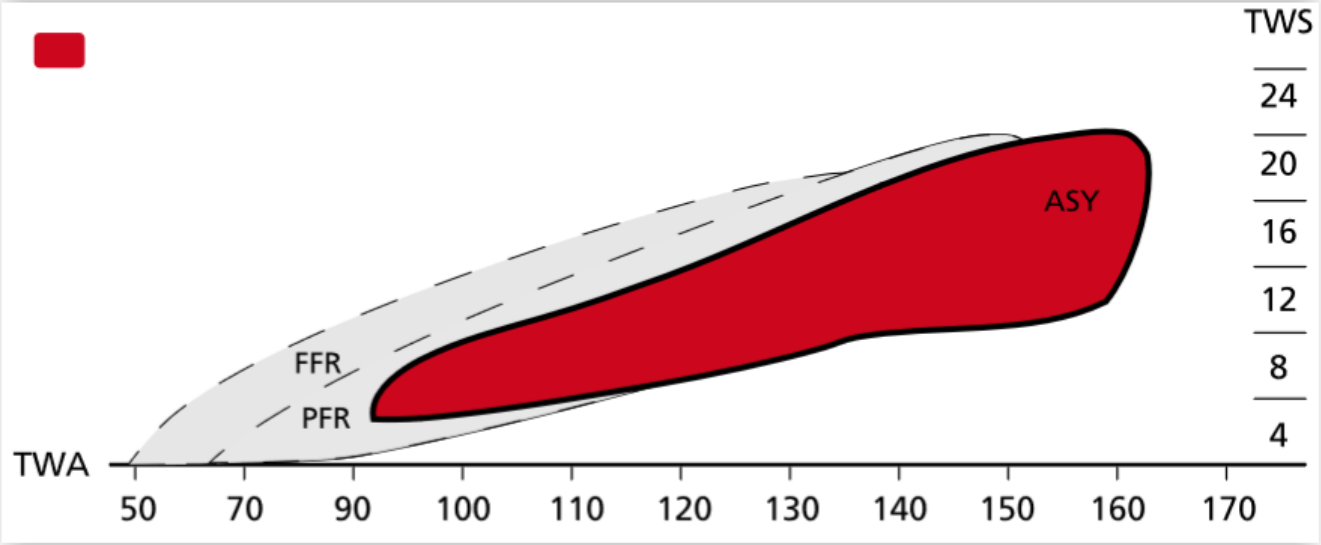
PFR Power furling reacher

PFR er Dybere og beregnet til vinkler 65-150 grader sand vind



Gennaker med snuffer

Gennaker er Dybere og beregnet til vinkler 90-165 grader sand vind



NYHED IFS Integrated Furling system

Sails Code
Integrated Furling System

INTEGRATED FURLING SYSTEM
IFS™

Code 0

Definition	Code	TWS		TWA		Material
		From (Knots)	To (Knots)	From (°)	To (°)	
	C0 IFS	2	18	55	120	Membrane or laminate
Code 0 Upwind	C0 IFS Upwind	2	15	50	110	Membrane or laminate
Code 0 ORC/IRC	C0 IFS IRC	2	20	60	125	Membrane or laminate

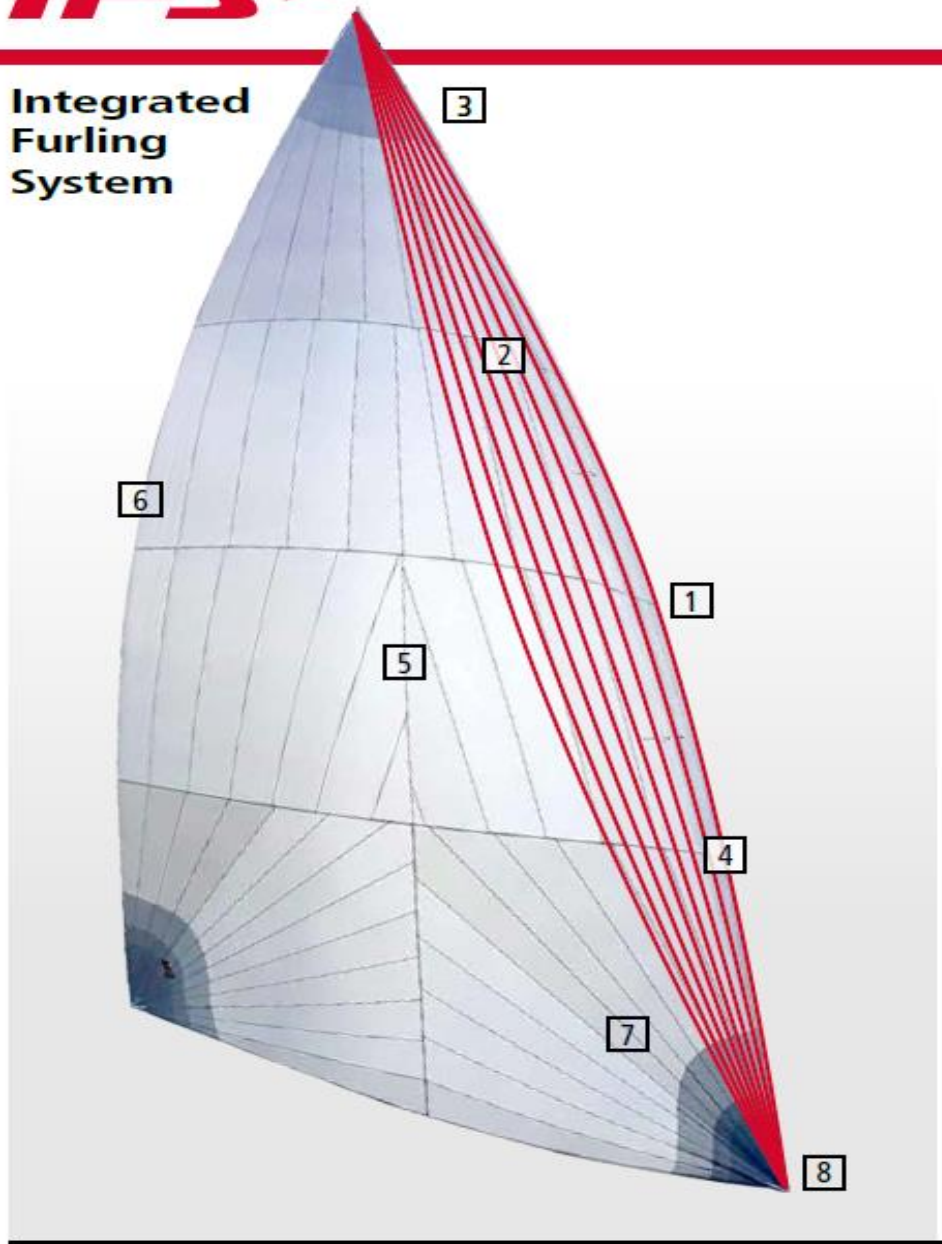
Asymmetric spi

Definition	Code	TWS		TWA		Material
		From (Knots)	To (Knots)	From (°)	To (°)	
	AF0	3	18	65	130	Laminate or nylon
	AF1	0	10	75	135	Nylon
	AF3	10	25	95	140	Nylon
	AF5	14	28	100	145	Nylon
Cruising asy	IFS Cruising Asy	5	25	95	155	Nylon

IFS™ Tips & Tricks

- The sail doesn't need too much luff tension for proper effective furling, just tight enough to make it straight.
- The best furling is achieved when sailing dead downwind, reducing the apparent wind to a minimum.
- When furling, the sheet should not be completely eased, it is better to keep a slight tension on it, accompanying the furl.
- It is advisable to always furl the sail in the same direction, as the top will furl more smoothly and tightly.
- Before hoisting again, make sure the top hasn't unfurled, which can happen during the dropping and stowage.
- Once the sail is unfurled, halyard tension can be adjusted according to the sailing angle (tighter for reaching, looser for wider angles).
- Although the sail doesn't require a lot of halyard tension, the integrated IFSTM structure can withstand heavy loads so care should be taken not to over tighten the halyard in order to prevent damage to the furler and other fittings.
- The sail should not be left hoisted when furled with the apparent wind exceeding around 12 knots.

Integrated Furling System

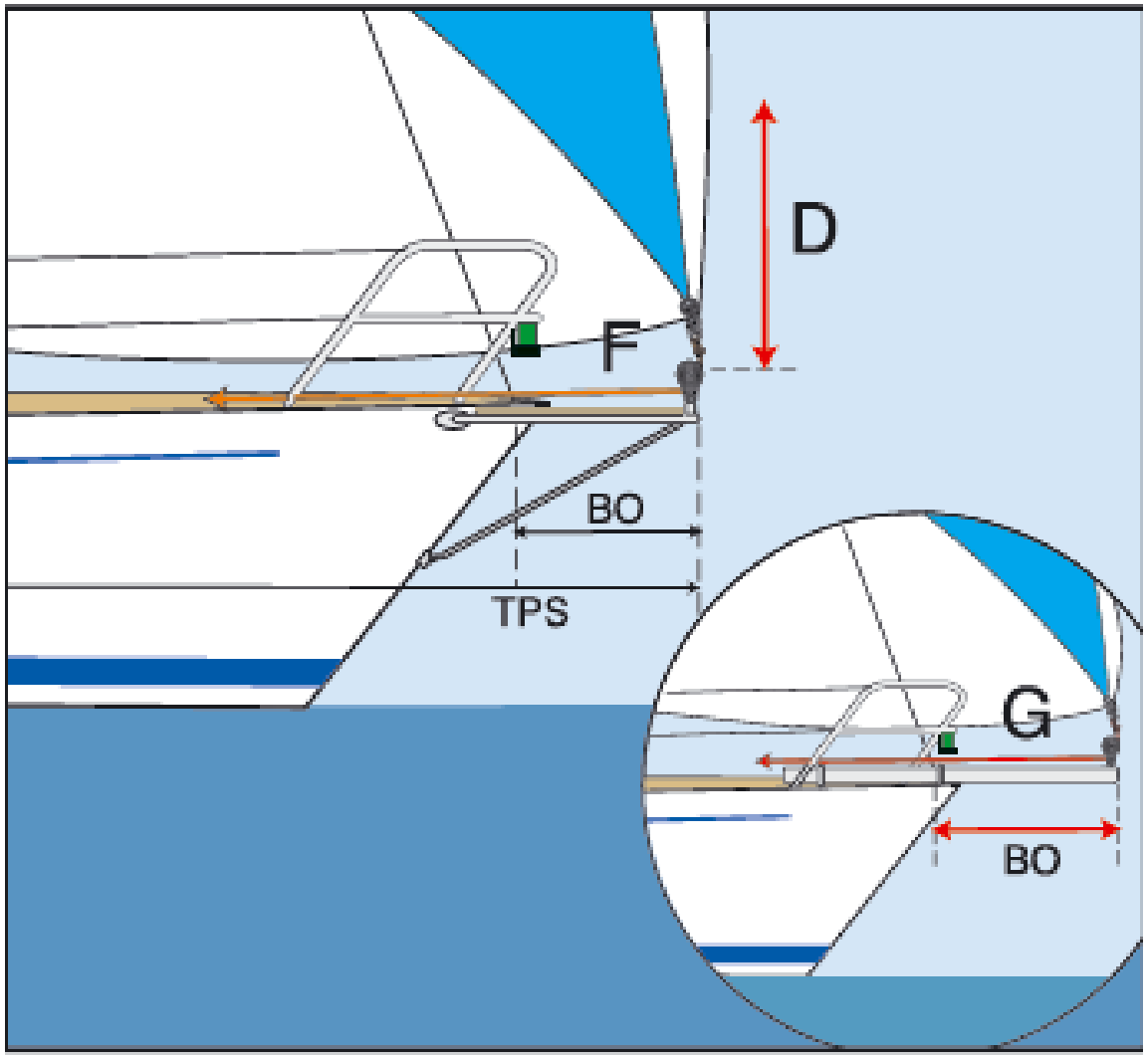


Main Features

The IFS™ is a new sail concept with important advantages noticeable both when racing and cruising.

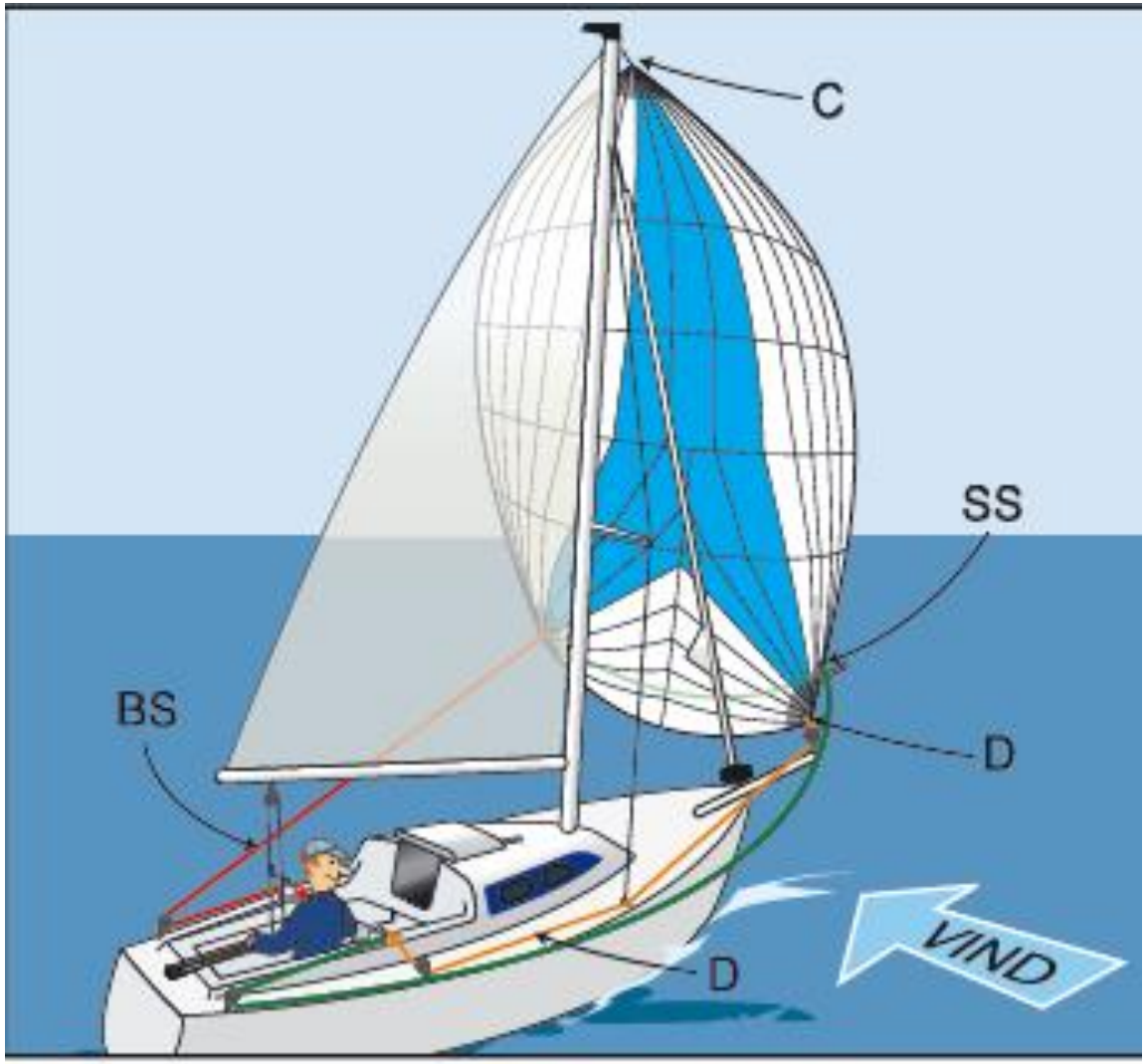
1. **Improved aerodynamic performance**
2. **Structure integrated within the sail** which allows furling without an anti-torsion cable
3. **Lower halyard tension** by 35% when compared to a traditional sail with cable
4. **Without a cable** the sail's luff can be designed to project forward and to windward, improving performance at wider angles.
5. **Easy to handle** because the furled sail is light and can easily be folded to fit in its bag
6. **Stable leech profile** even if measured as a gennaker according to ORC and IRC rules
7. **Lighter sail** (without anti-torsion cable)
8. **Bespoke finishing and accessories**

Gennaker

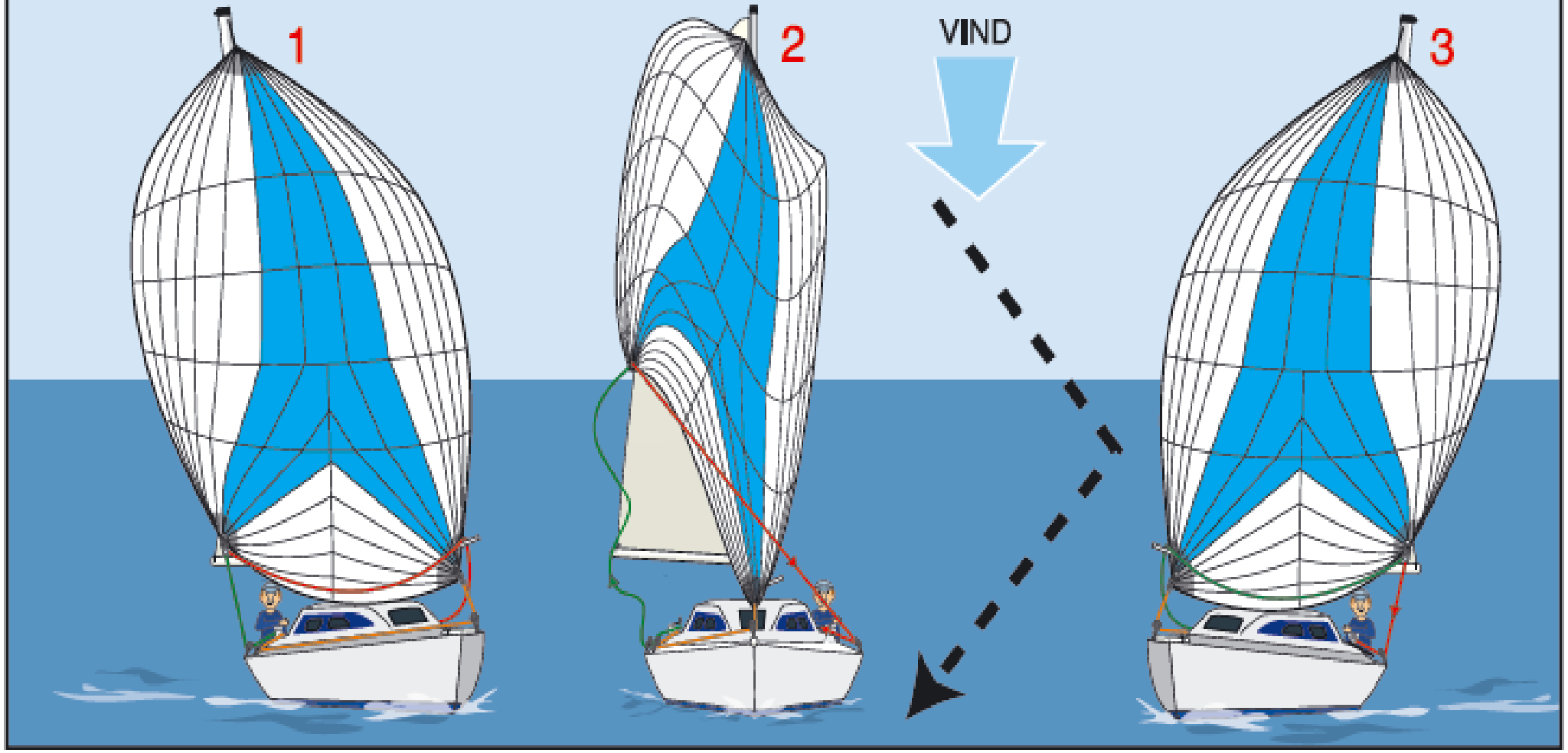


Halsbarmen skal være foran stævnen, enten på
et fast bovspryd **F** eller en stage til at skyde frem **G**.
Længden **BO** læggges til **TPS** på et DH-målebrev,
som ”straffer” gennakeren lidt.
Halsbarmen **D** kan reguleres
med en line fra cockpittet.

Gennaker

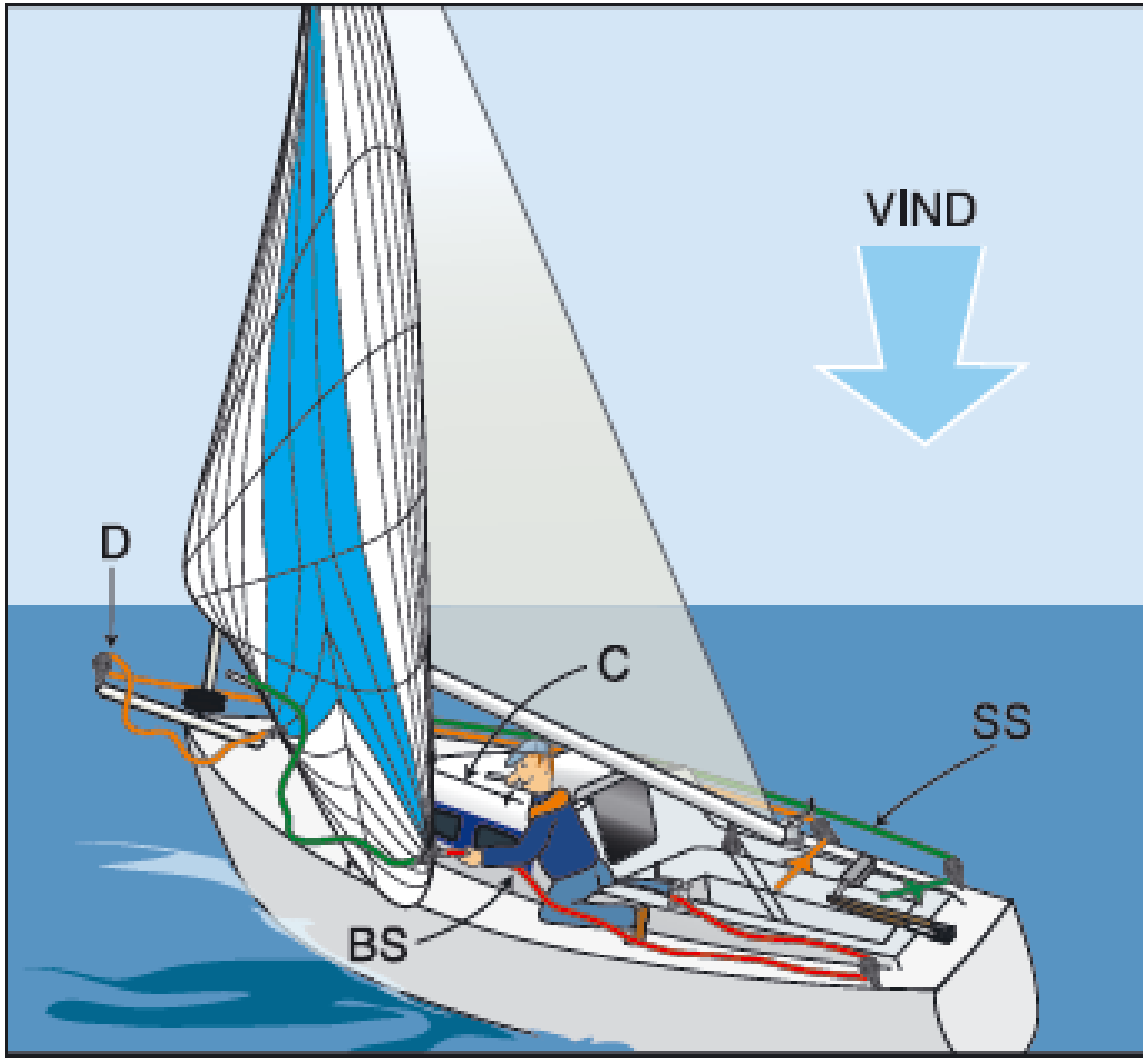


Faldbarmen **C** skal hales helt op.
Dybden i gennakeren
reguleres med linen **D** der går fra cockpittet
til halsbarmen. Skødet **BS** trimmer gennakeren, og
styrbords skøde **SS** sider løst i halsbarmen, så det er
i klar til at blive halet i en bomning.



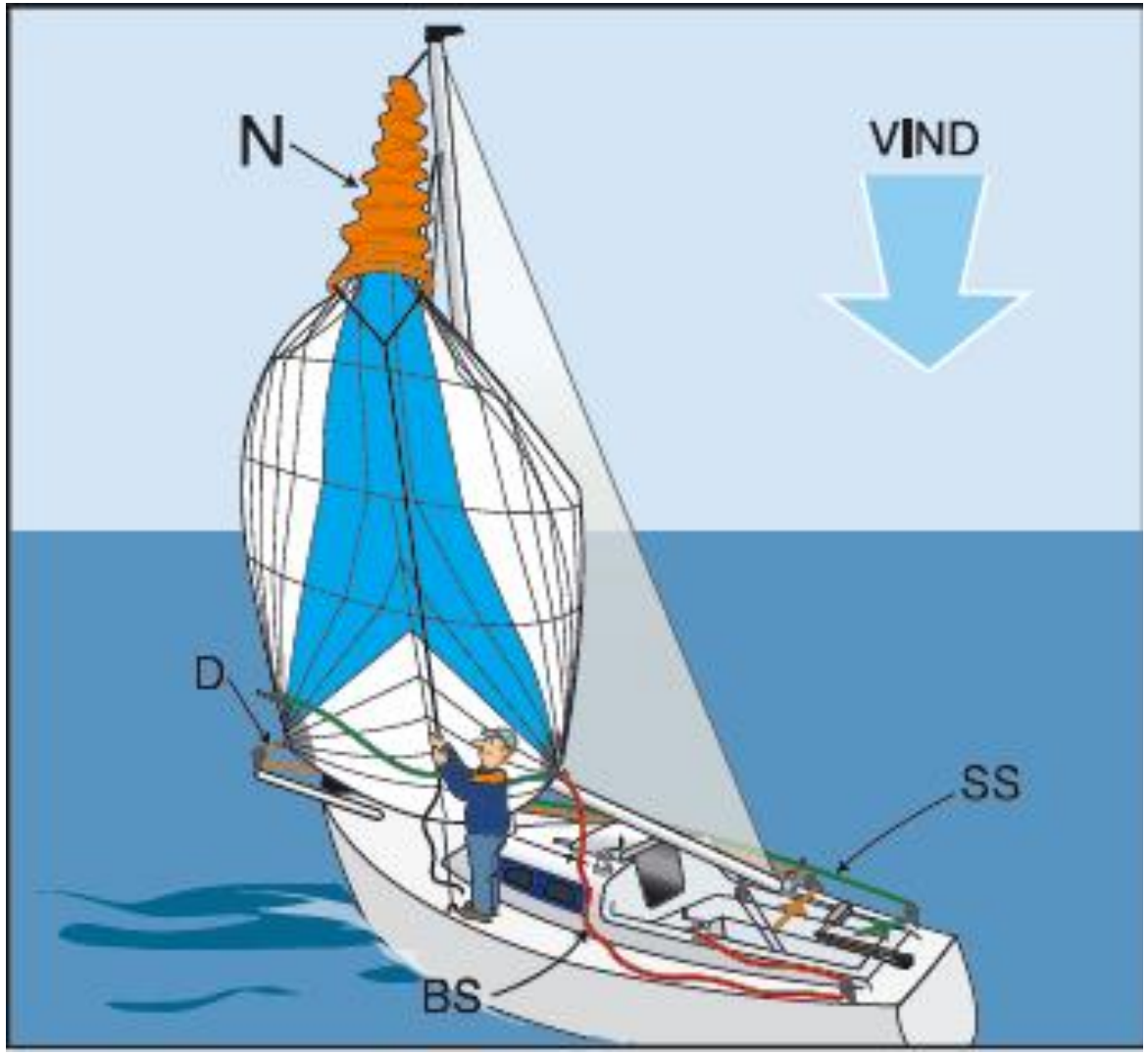
5-6. Ved **1** er båden klar til en bomning fra bagbord- til styrbord halse. Spileren er trimmet med det styrbord skøde (grøn) og det bagbord skøde (rød) er løst lagt i en strop, så det ikke falder ned foran stævnen. Rorsmanden falder af til plat læns **2**, og styrbord skøde slækkes helt af og man begynder at trække hjem i bagbord skøde. Når storsejlet er bommet over halses der hjem på bagbord skøde og gennakeren trimmes **3**. Hvis bomningen er rigtigt udført, vil det styrbord skøde ligge klar i stroppen til en ny bomning.

Gennaker

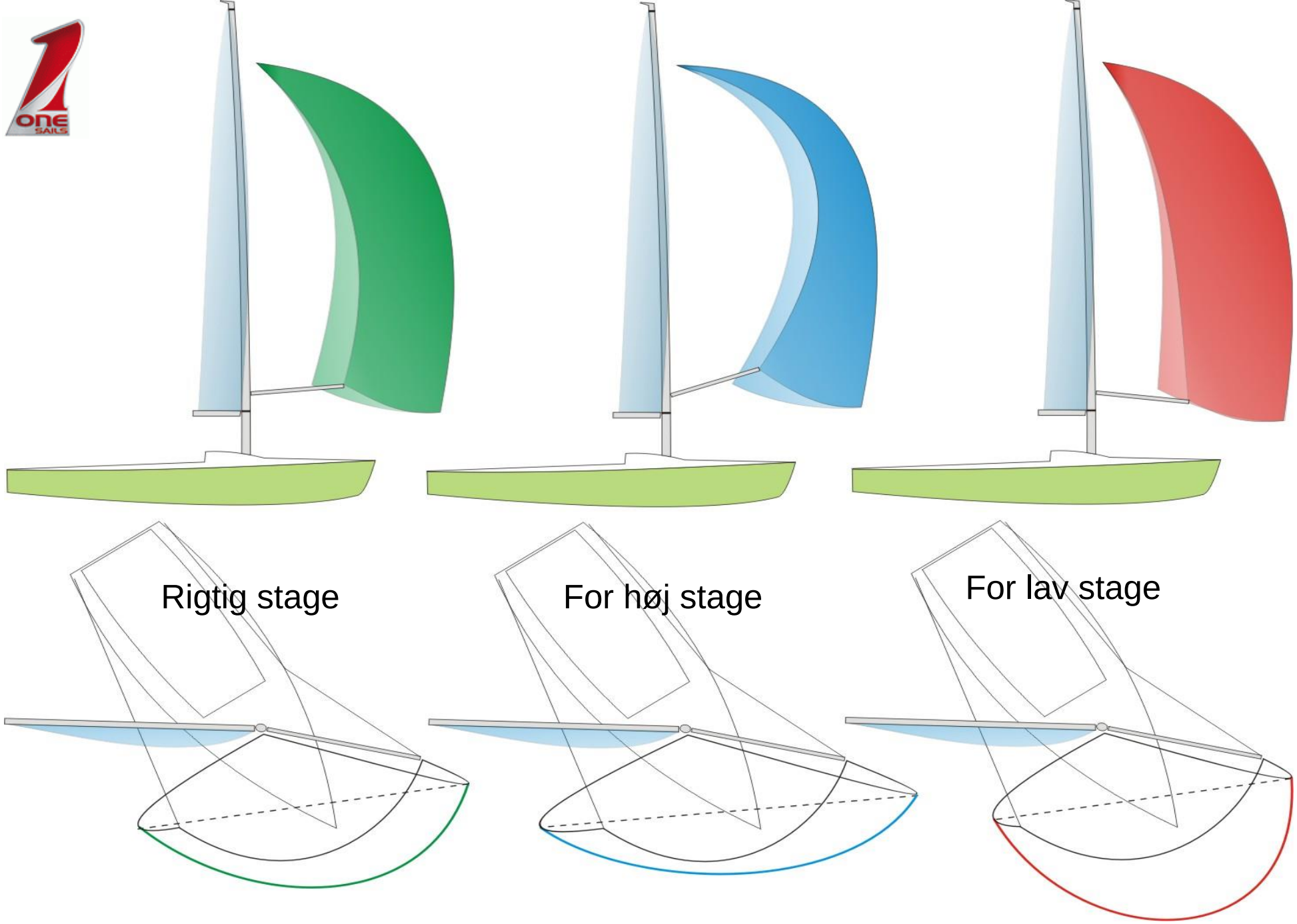


Gennakeren tages ned ved først at tage fat i skødet
BS og derefter slække på linen til halsbarmen **D**, og
underliget holdes samlet, hvorefter gennakeren falder
sammen og uden problemer kan tages ned i læ af storsejlet,
når faldet **C** slækkes.

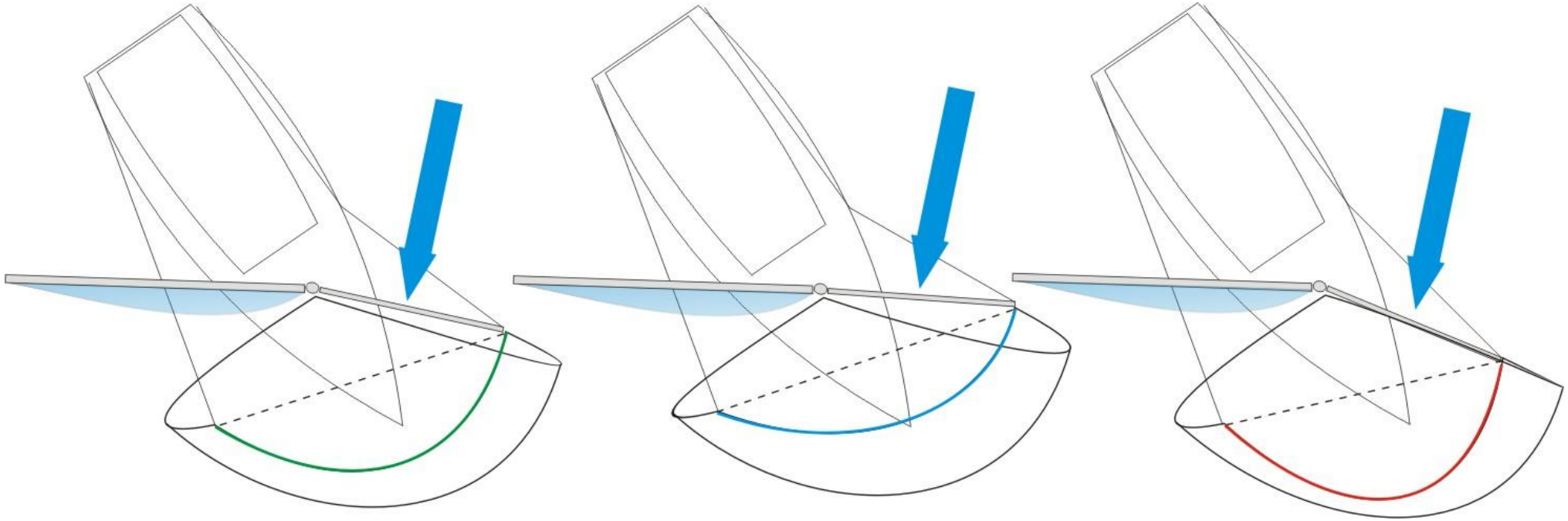
Gennaker



Som ekstra tilbehør kan man få en ”spiler strømpe”
N, som på især store gennakere gør det meresikkert at sætte og bjærge gennakeren. Dog skal
man være opmærksom på, at de ekstra liner i urolig
søgang kan vikle sig omkring salingshorn og lign.


Rigtig stage
For høj stage
For lav stage

Stagevinkel

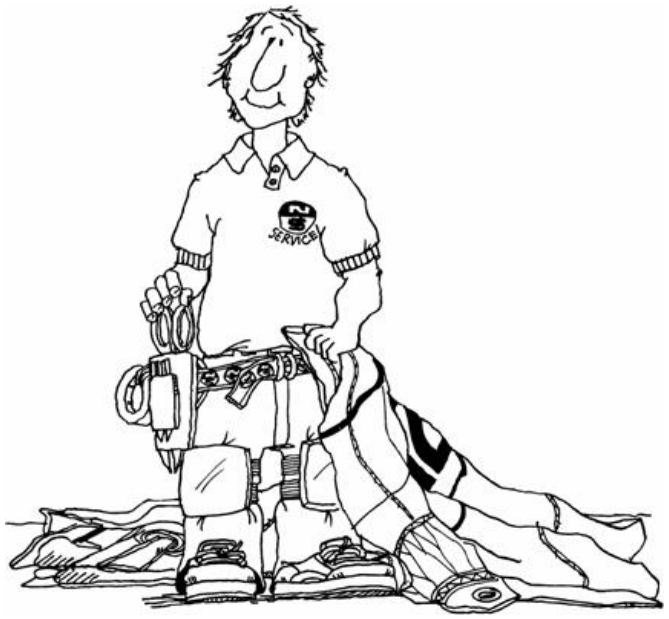


Vedligehold

11 gode råd fra sejlmageren…

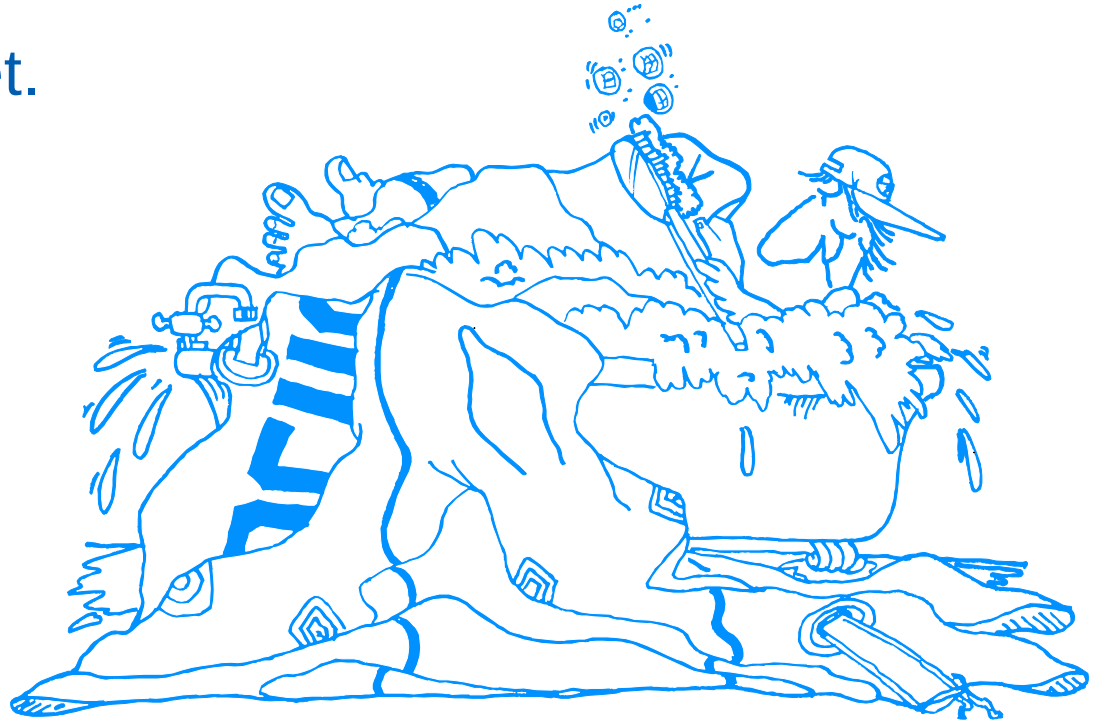
10 gode råd...

- Tape altid splitter, kanter og andet I berøring med sejlet
- Hav altid reparationsgrej ombord. Eks. Nummerdug, nål & tråd…
- Huske at slække løbende liner som eks. Bomudhal og cunningham efter brug
- Fold sejlet om bommen og sur med sejsinger. Check om sejlpindende ligger rigtigt…



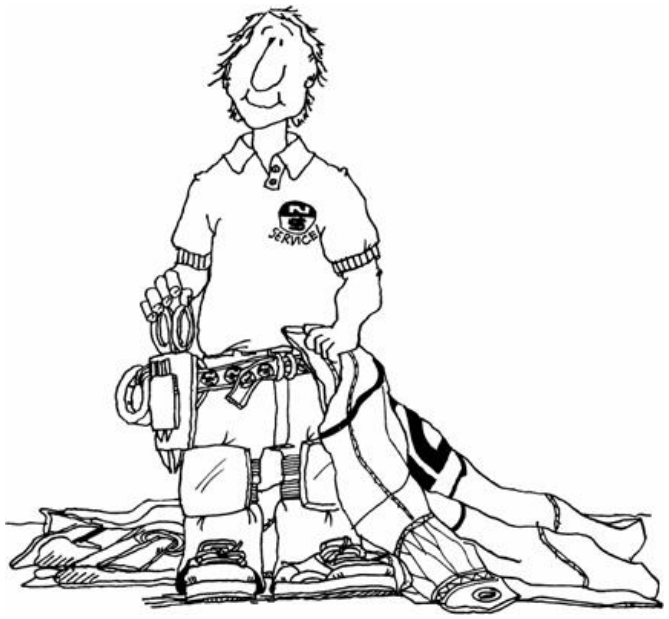
10 gode råd...

- Rul sejlene frem for at folde hvis det er muligt
- Beskyt dug mod sollyset. Læg I pose eller læg presenning over.
- Tørre sejl holder længere. Undgå at de bliver jordslåede. Specielt Mylar har let ved det.
- Vask sejlene mindst én gang om året.



10 gode råd...

- Gå jævnligt sejlet efter for bla. Slidtage. Kig særligt hvor liner og rig vandrer tæt på sejlet.
- Send sejlet til service efter sæsonen. Helst ikke før sæsonen, for så har du måske glemt dine bemærkninger fra sidste år…

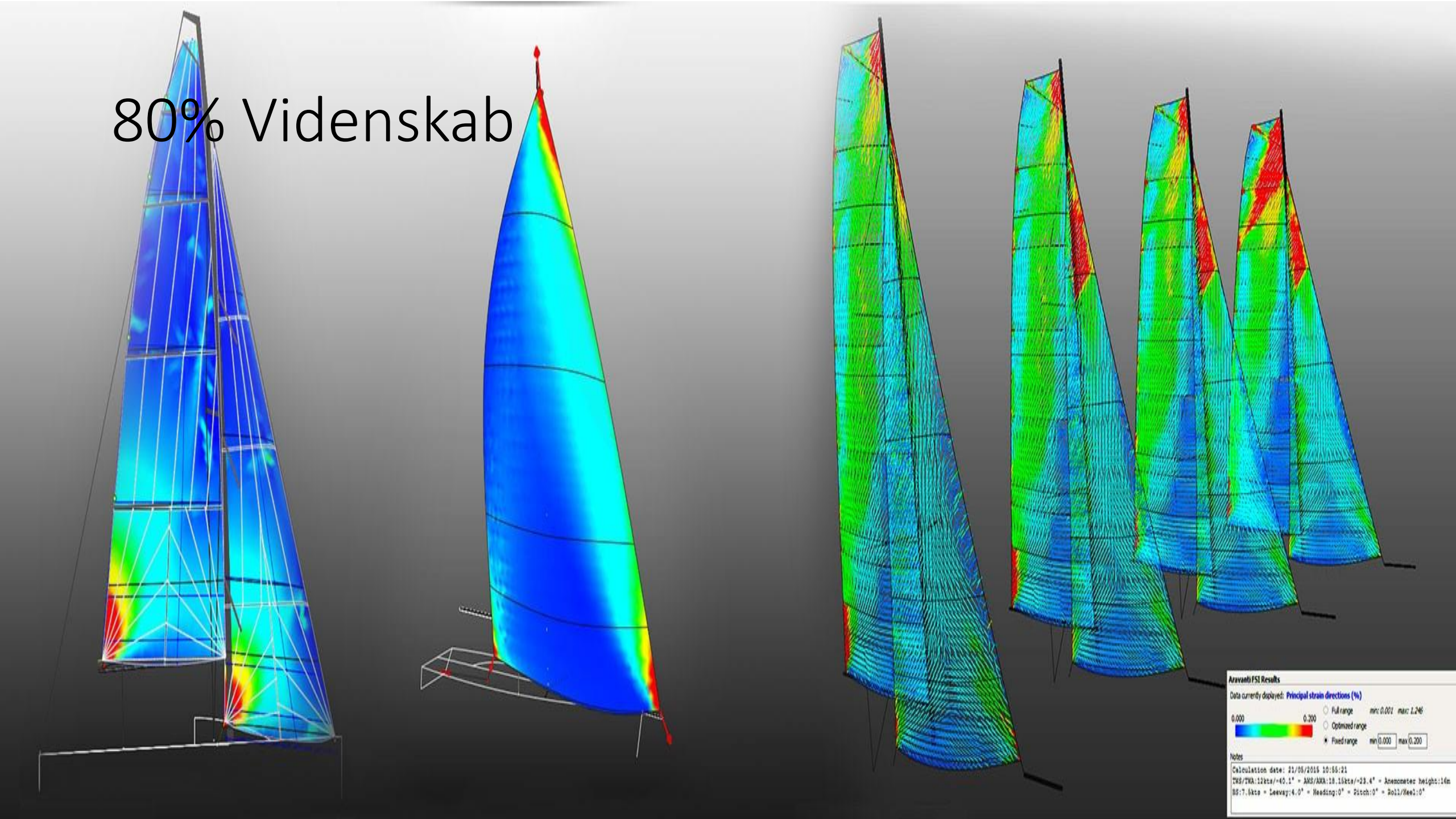


Sejlloft
TOP SECRET

Sejlmager 80% Kunst

20% videnskab

80% Videnskab



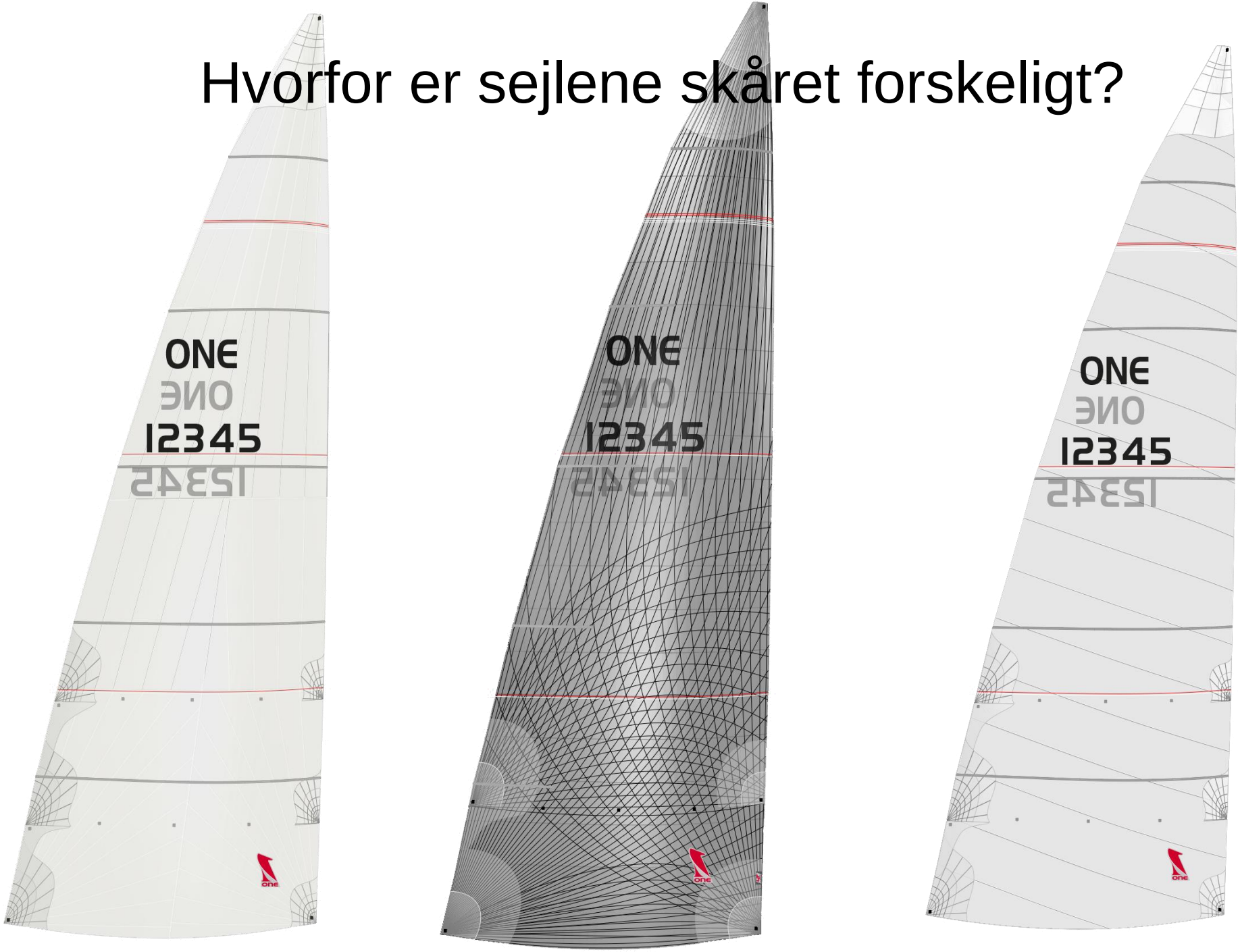
80% Videnskab

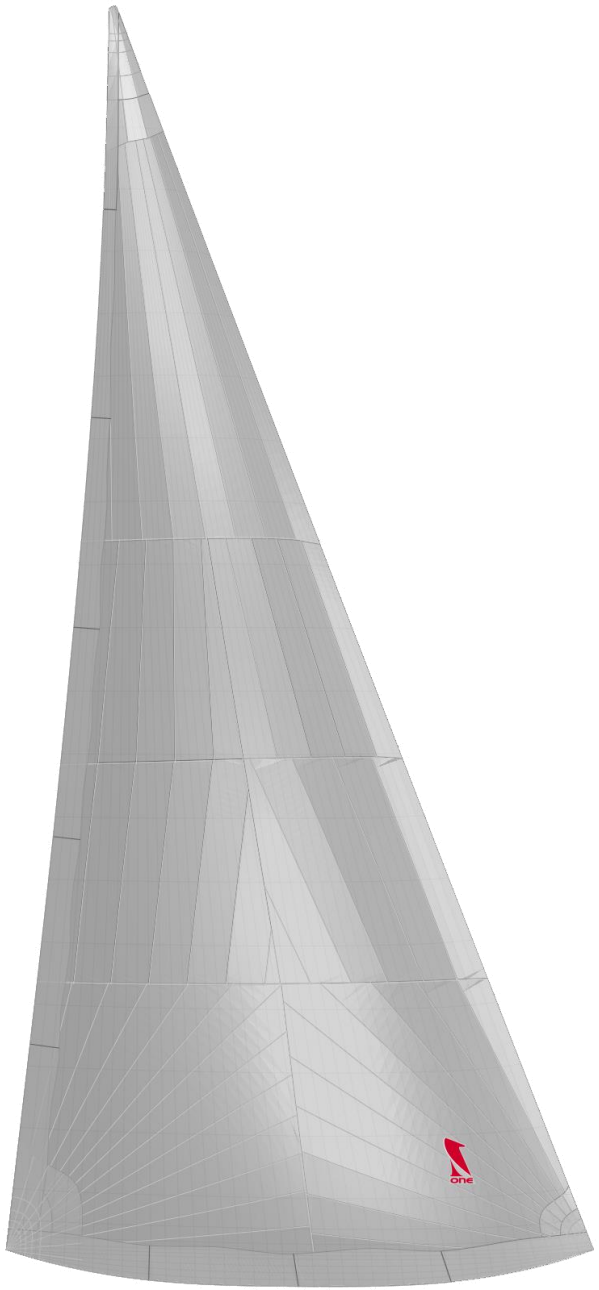
20% Kunst

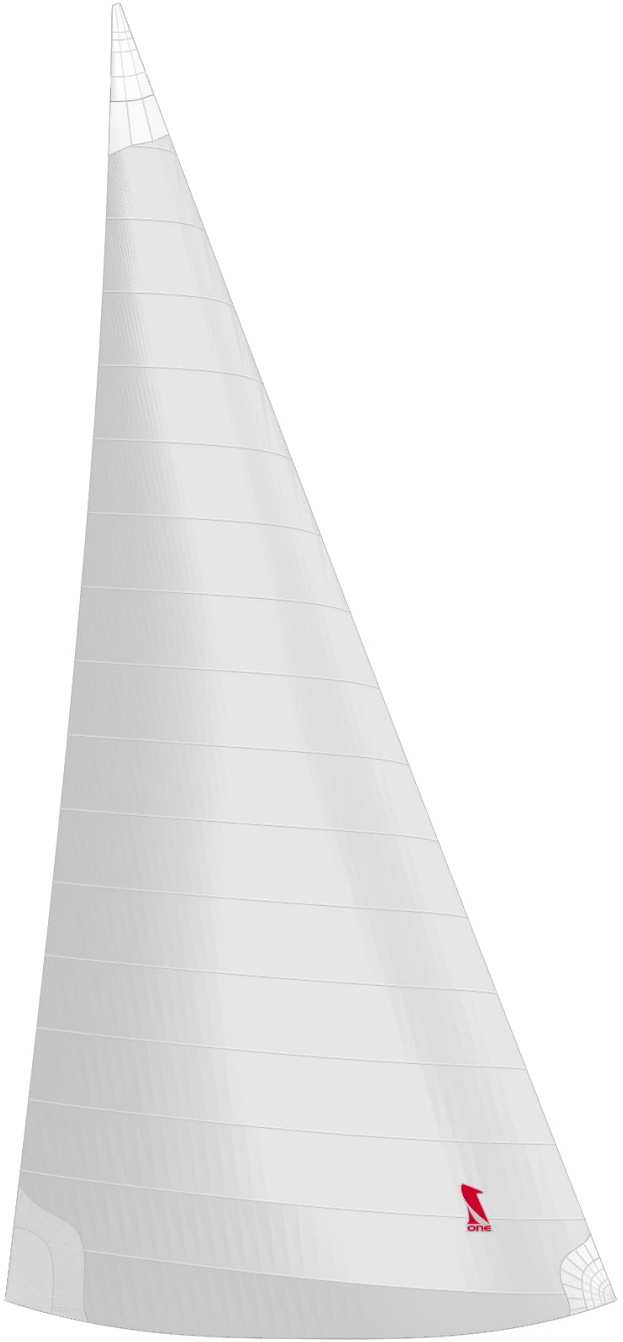
Valg af sejldug

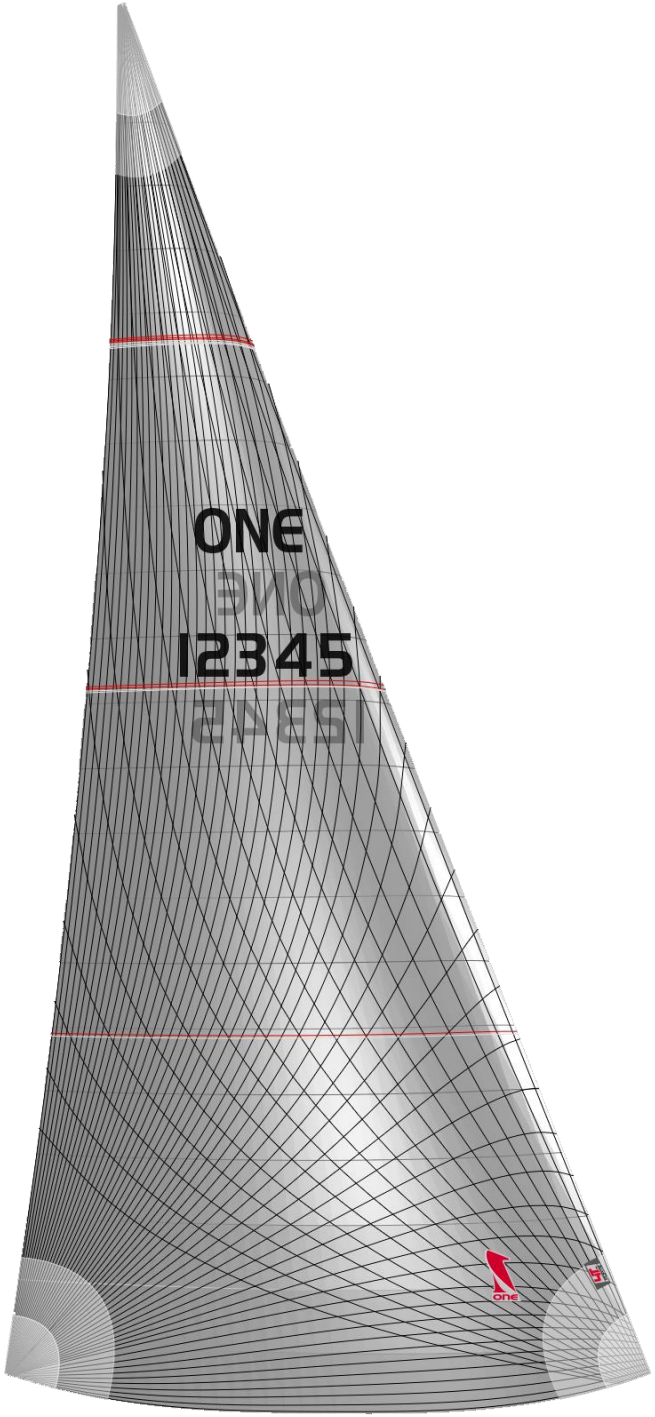
Dugens desing
og konstuktion er
afgørende
hvordan sejlet er
skåret

Hvorfor er sejlene skåret forskeligt?








ONE
12345

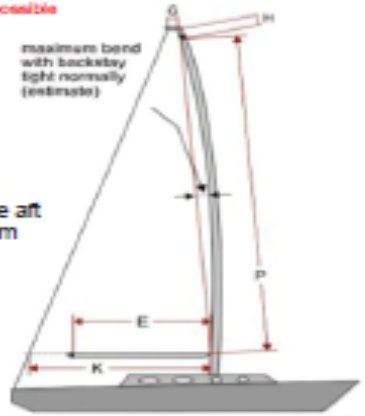
ONE
SAILS
1 UV protection
2 Abrasion
3 Infusion
4 Compression loads
5 Secondary loads structure
6 Melting matrix
7 Ripstop
8 Melting matrix
9 Vertical structure
10 Melting matrix
11 Horizontal structure
12 Melting matrix
13 Honeycomb
14 Melting matrix
15 Secondary loads structure
16 Compression loads
17 Infusion
18 Abrasion
19 UV protection
CONTINUOUS STRUCTURAL
FRAME COMPOSITE
GO FILMLESS!
FORTE
4T

Mainsail measurement form

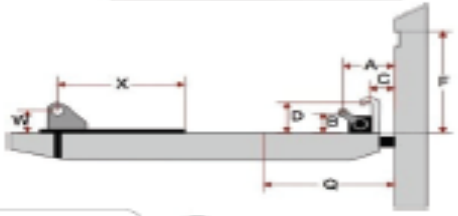
Date | Owner | E-mail

Boat type/name | Sail number | Harbour

IMPORTANT: this symbol means that a picture should accompany the measurement whenever possible



P		Mainsail luff, from rating certificate or measured with halyard under the black band
E		Mainsail foot, from rating certificate or measured from the aft face of the mast to the black band on the boom
P max		Maximum luff of the mainsail, to be measured with full up halyard
E max		Maximum foot of the mainsail, to be measured from the aft face of the mast to the outhaul tightened at its maximum
K		Distance from the backstay to the back face of the mast measured with the boom horizontal
A		From the tack point to the aft face of the mast
B		From the tack point to the upper face of the boom
C		From the mast to the reef tack point
D		From the upper face of the boom to the reef tack point



Mast & boom grooves entry from tack Q | F

These measurements can be estimated:

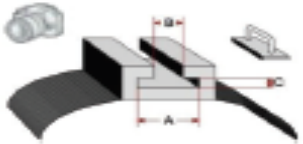
G Vertical distance between the backstay attachment in the crane to the maximum mainsail hoist position

H Length of the crane from the back face of the mast to the backstay attachment

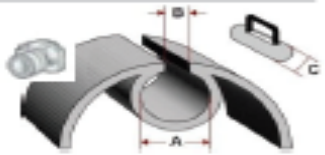
Tighten the backstay at its upwind condition and estimate the maximum bend of the mast. Use the mainsail halyard to have straightline reference

Max mast bend:

Flat Track A	
Flat Track B	
Flat Track C	



Round track A	
Round track B	
Round track C	



(diameter of slider or boltrope)

Clew attachment:

W | Height of the clew slider from the upper face of the boom

X | Length of the track

Boom ⌀ | If a clew strap is to be used, measure the diameter of the boom

Tack attachment: | (type of tack finishing)

Notes:

A

THE NEXT
GENERATION
OF SAILS
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OneSails worldwide / 24 countries – 28 lofts

Palmares

- **2015 World Championship 1st**
- 2015 World Girl Championship 2nd
- 2015 Italian Championship 1st
- 2014 European Championship 1st
- 2014 Italian Championship 1st
- 2014 Austrian Championship 1st, 2nd, 3rd
- 2014 Hungarian Championship 1st, 2nd, 3rd
- 2014 Romanian Championship 1st, 2nd, 3rd
- 2014 Slovenian Championship 1st, 2nd, 3rd
- 2013 World Championship 2nd
- 2013 European Girl Championship 1st
- 2012 European Championship 3rd
- 2012 European Girl Champ. 1st, 2nd
- 2011 European Championship 1st
- 2011 Italian Championship 1st
- 2011 Slovenian Championship 1st
- 2010 Austrian Championship 1st
- 2009 Austrian Championship 1st
- 2008 Austrian / Croatian Champ. 1st
- 2007 World Championship 2nd
- 2007 European Championship 3rd
- 2007 Austrian Championship 1st

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WALLY 130 - THE RECORD MAINSAIL

- MAINSAIL SPECS
  - Luff 46.6 m
  - Area 479 sqm
  - Weight 235 kg
- Biggest one piece mainsail ever built

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  - Area 448 sqm
  - Weight 197 kg
- Biggest one piece jib ever built in the world

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