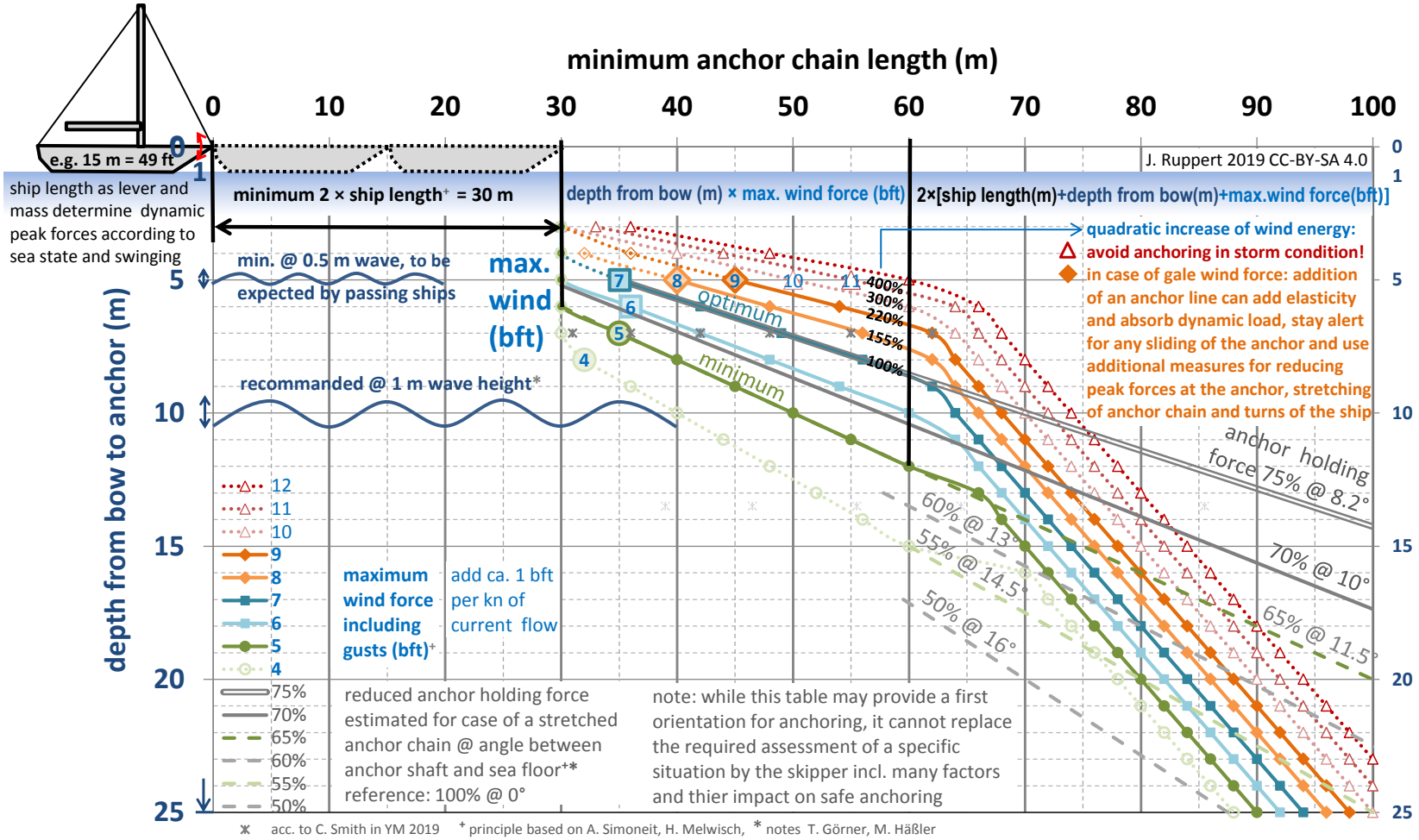
minimum anchor chain length (m)
0 10 20 30 40 50 60 70 80 90 100
e.g. 15 m = 49 ft
ship length as lever and mass determine dynamic peak forces according to sea state and swinging
minimum 2 × ship length+ = 30 m
depth from bow (m) × max. wind force (bft)
2×[ship length(m)+depth from bow(m)+max.wind force(bft)]
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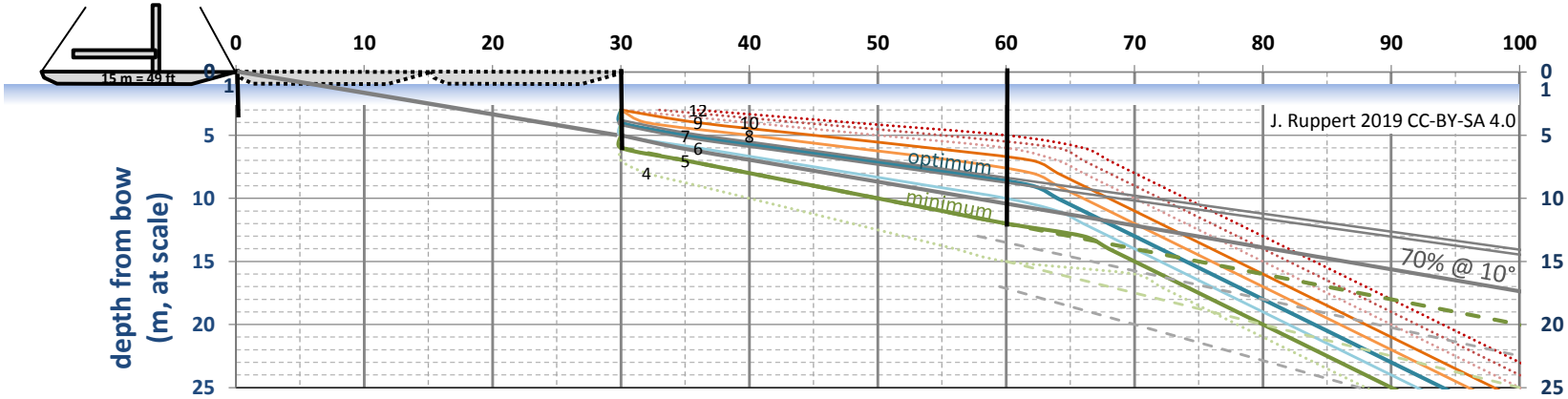
quadratic increase of wind energy:
avoid anchoring in storm condition!
in case of gale wind force: addition of an anchor line can add elasticity and absorb dynamic load, stay alert for any sliding of the anchor and use additional measures for reducing peak forces at the anchor, stretching of anchor chain and turns of the ship
min. @ 0.5 m wave, to be expected by passing ships
max. wind (bft)
recommanded @ 1 m wave height*
depth from bow to anchor (m)
optimum
minimum
400%
300%
220%
155%
100%
anchor holding force 75% @ 8.2°
70% @ 10°
65% @ 11.5°
60% @ 13°
55% @ 14.5°
50% @ 16°
12
11
10
9
8
7
6
5
4
maximum wind force including gusts (bft)+
add ca. 1 bft per kn of current flow
75%
70%
65%
60%
55%
50%
reduced anchor holding force estimated for case of a stretched anchor chain @ angle between anchor shaft and sea floor+*
reference: 100% @ 0°
note: while this table may provide a first orientation for anchoring, it cannot replace the required assessment of a specific situation by the skipper incl. many factors and thier impact on safe anchoring
acc. to C. Smith in YM 2019
+ principle based on A. Simoneit, H. Melwisch,
* notes T. Görner, M. Häßler


0 10 20 30 40 50 60 70 80 90 100
15 m = 49 ft
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depth from bow (m, at scale)
optimum
minimum
70% @ 10°