the same column must be in the direction of EF. See fig. 50.

Again, let the fleet be in three columns in one oſ the lines of bearing, the ship being cloſe-hauled on the other tack. The ships of each column will be in the direction of one of the diagonals, while the corresponding ſhips of the other columns will be in the direction of the other dia­gonal (fig. 51). It will alſo be the ſame if the columns are in one line of bearing, and going four points large on the same tack. The application of the naval ſquare in other cales will be obvious.

Chap. VII. *To restore or reform the Order of Battle upon Shifts of the Wind.*

I. Let it be intended to reſtore the order of battle on the same tack, the wind coming forward, and ſhifting ahead leſs than six points. In this case, the whole fleet is to bring to except the leader ; who, in order that the ſame diſtances hetween the ſhips may be preſerved when the line is reformed, ſteers a courſe a*b* (fig. 52.), inch as to be at right angles to the middle point be­tween the former and preſent direction of the wind ; hence the courſe he muſt ſteer will be known by adding half the number of points the wind has ſhifted to eight points, and apolying this sum to the former cloſe-hauled courſe. As ſoon as the leader has arrived at the new cloſe-hauled line with reſpect to the second ſhip ahead, that ship immedi­ately fills, and bears away the ſame number of points as the leader ; and when both theſe have reached the cloſe-hauled line with reſpect to the third ſhip, ſhe also fills, and bears away. In like manner the remaining part of the fleet bear away in ſucceſſion ; and when they have got into the cloſe- hauled line bc with the ſternmoſt ſhip, they all haul their wind at the ſame inſtant, and the ſternmoſt ſhip fills and stands on close-hauled.

A very expeditious method of performing this evolution is as follows : The whole fleet having fallen off as ſoon as the wind ſhifted the ſame number of points which it chan­ged, the leader bears away eight points from the middle point between the former and present directions of the wind; or, if the wind has ſhifted near six points, in this caſe the leader muſt bear away eight points from the new direction of the wind ; but then the fleet will be cloſer than before, and the leader hauls his wind as soon as the ſternmoſt ſhip bears on the cloſe-hauled line from him : The second ſhip bears away when ſhe has reached the wake of the leader, and alſo hauls her wind when ſhe has again gained his wake. In like manner the third, fourth, &c. ſhips bear away, and allo haul their wind in ſucceſſion, until the ſternmoſt and the whole line is formed again. See fig. 53.

If the wind ſhiſts exactly four points ahead, the whole fleet is to veer round till the heads of all the ſhips are direc­ted to the point exactly opposite to their former courſe ; and the rear ſhip, which has now become the van, is to run four points large upon her new tack, and the reſt of the fleet to follow her in ſucceſſion ; and when the laſt ſhip, which was the former leader, is got into the wake of the headmoſt in the line, the whole fleet is to veer together, and the order will be reformed on the former tack.

If the wind ſhiſts eight points forward, the ſhips are to veer round altogether till their heads are on the point of the comoaſs oppoſite to their former courſe ; then the rear ſhip, hiving become the van, is to haul cloſe by the wind on the ſame board ; all the other ſhips are to haul up in ſucceſſion, and range in the wake of the leading ſhip ; and when the laſt ſhip is in her ſtation, the order will be reformed on the ſame tack.

If the wind changes 12 points exactly, the fleet muſt veer round together, and haul their wind in ſucceſſion on the firſt tack.

2. The wind coming forward, and the order of battle to be reformed on the other tack.

If the wind ſhifts ahead lets than six points, all the ſhips of the fleet are to veer round, till their heads come to the oppoſite point of the compass with reſpect to their former courſe ; and then the rear ſhip, which is now become the van, is to haul cloſe by the wind on that tack, and the other ſhips follow her in ſucceſſion. From hence the fleet might paſs to the line oſ battle on the former tack by veer­ing in ſucceſſion. If the wind comes ahead more than six points, but leſs than twelve, the fleet is to manœuvre in the same manner as before. If the wind comes ahead exactly twelve points, the tack is to be changed.

3. When the wind ſhiſts aft, and the order of battle to be reformed on the same tack.

If the wind has ſhifted lets than two points, the leader hauls his wind, the fleet stands on as before, and each ſhip hauls her wind in ſucceſſion as ſhe gains the wake of the leader. If it is intended to change the tack, the whole fleet tack together, and the ſternmoſt ſhip, which now be­comes the leader, hauls up, and the reſt bear down and haul 113 in ſuccession.

If the wind changes ſixteen points, all the ſhips brace about for the other tack immediately, by which means the fleet will be going four points large ; then the ships tack­ing or veering inſtantly together, the order of battle will be reſtored or formed again on the ſame tack as they were be­fore the wind changed.

Chap. VIII. *Of the Battle.*

In a naval engagement, the preſent mode, as has already been obſerved, is to draw up the fleet in a ſtraight line upon one of the cloſe-hauled lines under an eaſy sail. The fri­gates, fire-ſhips, tranſports, &c. are placed at proper distances on the other side, with reſpect to the enemy @@(b). The diſtance between two adjacent ſhips in the line is usually about a cable’s length ; but the admiral increaſes or diminiſhes this interval according to circumſtances. The nearer, however, the ſhips are to each other, the ſtronger is the line, and the more difficult to be broken or forced by the enemy ; but ſtill there muſt be a ſufficient interval left, ſo that if a ſhip receive conſiderable damage, ſhe may be got out of the line without becoming foul or falling aboard of the ſhip next aſtern, which would be the means of putting the whole line in confusion.

The ſtrength of a fleet depends alſo more on the largeness of the ſhips, and the weight of the metal, than in their num­ber. The fewer the number of ſhips in a fleet, the more diſtinctly will the signals be perceived and anſwered by thoſe near the extremities of the line ; the better alſo will the or-

@@@(b) Several able officers have been of opinion, that when fleets are ranged in order of battle, inſtead of being cloſe- hauled, they ſhould have the wind two points free, or upon the beam. Some of the reaſons alleged in ſupport of this opinion are, that the ſhips can more easily keep their ſtations ; and if any ſhip ſhould happen to fall to leeward, ſhe may easily regain her ſtation, which would be almoſt impoſſible were the fleet cloſe-hauled.