number of ſignals may be greatly increaſed. Thus three lights may be in a vertical line, or in a horizon­tal line, or in a triangle, and the point of this triangle may be up, or down, or forward, or aft, and thus may have many significations.

Lights are alſo exhibited by falſe fires or rockets : Theſe can be varied by number, and by ſuch differen­ces of appearance as to make them very diſtinguiſhable. Rockets may be with ſtars, with rain fire, or ſimple ſquibs.

By varying and combining theſe, a very great num­ber of ſignals may be produced, fully ſufficient to direct every general movement or evolution, or any ordinary and important ſervice. The Chevalier de Morogues has given a ſpecimen oſ ſuch a ſyſtem of night ſignals, into which he has even introduced ſignals of addreſs or direction to every ſhip of a large fleet ; and has alſo gi­ven ſignals of number, by which depths of foundings, points of the compaſs, and other things of this kind, may be expreſſed both eaſily and diſtinctly. He has made the ſignals by rockets perfectly ſimilar in point of number to thoſe by lanthorns, ſo that the commander can take either ; a choice which may have its uſe, becauſe the ſignals by rockets may cauſe the preſence of a fleet to be more extenſively known than may be conve­nient.

The commander in chief will inform the fleet by ſignal, that guns, or perhaps rockets, are not to be uſed that night. This ſignal, at the ſame time, directs the fleet to cloſe the line or columns, that the light ſig­nals may be better obſerved.

It is indeed a general rule to ſhow as few lights as poſſible ; and the commander frequently puts out his own poop and top-lights, only ſhowing them from time to time, that his ſhips may keep around him.

The ſignal lanthorns on board the flag ſhip, and a lanthorn kept in readineſs on board of every pri­vate ſhip, to anſwer or acknowledge ſignals from the commander in chief, are all kept in bags, to conceal their lights till the moment they are fixed in their places, and the preparatory or advertiſing ſignal has been made.

The commander in chief sometimes orders by ſignal every ſhip to ſhow a light for a minute or two, that he may judge of the poſition of the fleet ; and the admiral’s ſignal muſt always be acknowledged by thoſe to whom it is addreſſed.

It is of particular importance that the fleet be kept together. Therefore the leading ſhips of the fleet, on ei­ther tack, are enjoined to acknowledge the ſignals of the commander in chief by a ſignal peculiar to their station. Thus the commander in chief learns the poſi­tion of the extremities of his fleet.

In framing a ſet of night ſignals, great attention muſt be given to their poſition, that they be not obſcured by the ſails. The nature of the order to be given will frequently determine this. Thus, an order for the rear ſhips to make more ſail, will naturally direct us to exhibit the ſignal at the mizen peek ; and ſo of other pieces of ſervice. Lanthorns expoſed in groups, ſuch as triangles, lozenges, &c. arc commonly ſuſpended at the corners of large frames of laths, at the diſtance of a fathom at leaſt from each other. Attempts have been made to ſhow lights of different colours; but the risk of miſtake or failure in the composition at the laboratory,

makes this rather hazardous. Coloured lanthorns are more certain ; but when the glaſſes are made of a colour ſufficiently intenſe, the vivacity of the light (which at no time is very great) is too much diminiſhed. Beſides, the very diſtance changes the colour exceedingly and unaccountably.

III. O*f* Signals *in a* Fog.

These can be made only by noiſes, ſuch as the fi­ring oſ cannon and muſkets, the beating of drums and ringing of bells, &c. Fog ſignals are the moſt diffi­cult to contrive of any, and are ſuſceptible of the leaſt variety. The commander in chief is principally con­cerned to keep his fleet together ; and unleſs something very urgent requires it, he will make no change in his courſe or rate of failing. But a ſhift of wind or other cauſes may make this neceſſary. The changes which he will order, it will be prudent to regulate by ſome fixed rule, which is in general convenient. Thus, when a fleet is in the order of sailing upon a wind, and a fog comes on, the fleet will hold on the ſame courſe. If the wind ſhould come a little more on the beam, the fleet will ſtill keep cloſe to the wind. Certain general rules of this kind being agreed on, no ſignals are ne­ceſſary for keeping the fleet together; and the ſhips can ſeparate or run foul of each other only by difference in their rate of sailing, or by inaccurate ſteerage. To prevent this, the commander in chief fires a gun from time to time, and the ſhips of the fleet judge of his ſituation and diſtance by the found. The commanders of diviſions fire guns, with ſome diſtinction from thoſe of the commander in chief. This both informs the commander in chief of the poſition of his ſquadrons, and enables the private ſhips of each diviſion to keep in the neighbourhood of their own flag ſhip. On board of every private ſhip the drum is beaten, or the bell is chimed, every quarter of an hour, according as the ſhip is on the ſtarboard or larboard tack. By ſuch contrivances, it is never difficult to keep a fleet in very good order when sailing on a wind. The wind is almoſt always moderate, and the ſhips keep under a very eaſy ſail. It is much more difficult when going large, and ſeparation can be prevented only by the moſt unwearied attention. The greateſt riſk is the falling in with ſtrange ſhips ſteering another courſe.

But evolutions and other movements are frequently indiſpenſable. The courſe muſt be changed by tack­ing or wearing, and other ſervices muſt be performed. None, however, are admitted but the moſt probable, the moſt ſimple, and the moſt neceſſary.

The commander in chief firſt informs the fleet by the *preparatory fog signal,* that he is about to order an evolution, and that he is to direct it by f*og signals.* This precaution is indiſpenſable to prevent miſtakes. Along with this advertiſing ſignal he makes the ſignal of the movement intended. This not only calls the attention of the fleet, but makes the ſhips prepare for the preciſe execution of that movement. The com­manders of diviſions repeat the advertiſing ſignal, which informs their ſhips of their ſituation, and the private ſhips beat their drums or chime their bells. Thus the whole ſhips of the fleet cloſe a little, and become a little better acquainted with their mutual poſition. It is now underſtood that a movement is to be made preciſely a quarter of an hour after the advertiſement. At