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 fog 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 the expiration of this time, the effective signal for this move­ment is made by the commander-in-chief, and must be in­stantly repeated by the commanders of divisions, and then the movement must be made by each ship, according to the sailing and fighting instructions. This must be done with the utmost attention and precision, because it produces a prodigious change in the relative position of the ships ; and even although the good sense of the commander-in-chief will select such movements for accomplishing bis purpose as produce the smallest alterations, and the least risk of sepa­ration or running foul of each other ; it is still extremely difficult to avoid these misfortunes. To prevent this as much as possible, each ship which has executed the move­ment, or which has come on a course thwarting that of the fleet, intimates this by a signal properly adapted, often add­ing the signal of the tack on which it is now standing, and even its particular signal of recognizance. This is particu­larly incumbent on the flag ships and the leading ships of each division. After a reasonable interval, the command­er-in-chief will make proper signals for bringing the fleet to a knowledge of their reunion in this new position.

This must serve for a general account of the circumstan­ces which must be attended to in framing a code of signals. The arbitrary characters in which the language is written must be left to the sagacity of the gentlemen of the profes­sion. It must be observed, that the stratagems of war make secrecy very’ necessary. It may be of immense hazard if the enemy should understand our signals. In time of battle it might frequently frustrate our attempts to destroy them, and at all times would enable them to escape, or to throw us into disorder. Every commander of a squadron, therefore, issues private signals, suited to his particular destination ; and therefore it is necessary that our code of signals be suscep­tible of endless variations. This is exceedingly easy, with out any increase of their number. The commander needs only intimate that such and such a signal is so and so changed in its meaning during his command.

We cannot leave this article without returning to an ob­servation which we made almost in the beginning, viz. that the system of signals, or, to speak more properly, the man­ner of framing this system, has received much improvement from the gentlemen of the French navy, and particularly from the most ingenious thought of M. de la Bourdonnais,

of making the signals the immediate expressions of num­bers only, which numbers may be afterwards used to indi­cate any order whatever. We shall present our readers with a scheme or two of the manner in which this may be done for all signals, both day, night, and fog. This alone may be considered as a system of signals, and is equally ap­plicable to every kind of information at a distance. With­out detracting in the smallest degree from the praise due to M. de la Bourdonnais, we must observe, that this prin­ciple of notation is of much older date. Bishop Wilkins, in his *Secret and Sιvift Messenger,* expressly recommends it, and gives specimens of the manner of execution ; so does Dr. Hook in some of his proposals to the Royal Society. Gaspar Schottus also mentions it in his *Technica Curiosa;* and Kircher, amongst others of his *curious Projects.*

M. de la Bourdonnais’s method is as follows :—He chooses pendants for his effective signals, because they are the most easily displayed in the proper order. Several pendants, making part of one signal, may be hoisted by one halyard, being stopped on it at the distance of four or six feet from each other. If it be found proper to throw out another signal at the same time and place, they are separated by a red pendant without a point. His colours are chosen with judgment, being very distinctly recognised, and not liable to he confounded with the addressing signals appropriated to the different ships of the fleet. They are, for

No.

1. Red.
2. White.
3. Blue.
4. Yellow.
5. Red, with white tail.
6. Red, with blue tail.
7. White, with blue tail.
8. White, with red tail.
9. Blue, with yellow tail.

10. Yellow, with blue tail.

Three sets of such pendants will express every number under a thousand, by hoisting one above the other, and reckoning the uppermost hundreds, the next below it tens, and the lowest units. Thus the number 643 will be ex­pressed by a pendant red with blue tail, a yellow pendant below it, and a blue one below the last.

This method has great advantages. The signals may be hoisted in any place where best seen, and therefore the sig­nification is not affected by the derangement of the flag­ship’s masts and rigging. And by appropriating the smaller numbers to the battle signals, they are more simple, requir­ing fewer pendants.

As this method requires a particular set of colours, it has its inconveniences. An admiral is often obliged to shift his flag, even in time of action. He cannot easily take the co­lours along with him. It is therefore better to make use of such colours as every private ship is provided with. One set of 11 will do, with the addition of three, or at most of four pendants, of singular make, to mark 100, 200, .300, 400. Two of these flags, one above the other, will express any number under 100, by using the 11th as a substitute for any flag that should be repeated. Thus the 11th flag, along with the flag for eight or for six, will express the number 88 or 66. Thus we are able to express every number below 500, and this is sufficient for a very large code of signals.

And in order to diminish as much as possible the number of these compound signals, it will be proper that a number of single flag signals be preserved, and even varied by cir­cumstances of position, for orders which are of very frequent occurrence, and which can hardly occur in situations where any obstructions are occasioned by loss of masts or other­wise. And farther, to avoid all chance of mistake, a parti­cular signal can be added, intimating that the signals now exhibited are numeracy signals ; or, which is still better, all signals may be considered as numerary signals ; and those which we have just now called single flat signals may be set down opposite to, or as expressing the largest num­bers of the code.