

ABSTRACT

During several days of the month of November of the 2001 river basin of the Western Mediterranean one was whipped by one of the remembered hardest weathers lately. Between days 10 and 16 forts were registered winds and great surge accompanied by an important ascent of the level of the sea, that caused important damages in the ports and the coasts, as much by the levels reached as about their great persistence.

This weather punished specially Spanish coastal regions, as much of the Peninsula as of the Islands Baleares and Melilla, as well as the Moroccan and Algerian coast, leaving to its step serious and expensive losses as much in human lives as in based material damages in thousands of million pesetas.

The origin of the phenomenon was the entrance of a powerful polar air jet until Algeria, almost never it arrives so far, and its combination with a sea still quite warm. The pressures lowered until the 992 thousand bars, that is a absolutely extraordinary value considering that 998 the lowest depressions usually do not lower of thousand bars in our territory.

The meteorological situation cause of temporary saying is characterized by the existence of an anticyclone located in the northwest of the Iberian Peninsula on the Atlantic that the zonal circulation blocks, originating in the Western Mediterranean a storm or zone of low pressures.

This meteorological situation produced a strong surge during days 10 to 16 of November in all Western Mediterranean, taking place two tips that correspond with the two intensifications of the loss days 11 and 15 of November. Temporary saying presented/displayed very high heights of wave, with peak altitudes of 10 meters and maximum significant heights of more than 7 meters, with a persistence of several days, being reached the highest periods, with periods of tip of up to 13 seconds, absolutely unusual fact in the Mediterranean. In addition, the weather was agravated by forts raised in the level of the sea produced by the action of winds and the atmospheric pressure, with maximum total ascent of the level of the sea around 1 meter.

The impact of temporary sayings was specially important in the harbour scope. The problems that they had were more functional than structural, with the exception of some section of some port in construction that was seen seriously damaged. Thus, in numerous ports problems were experienced of escapes, that is to say, the surge happened over the structure of protection of the port, the dock of shelter, and caused abundant damages in the elements located on inside of the same one. This way, damages in boats, furniture, the premises, the pavement took place, et cetera.

In the scope of coasts, the weathers also caused abundant damages, but not of the order of the importance of which they took place in the ports. Logically, the weathers caused a great erosion of the beach emerged, reducing after their step, in some beaches, wide inferior to the necessary ones. In how much to the changes in the configuration in plant of beaches, the weather caused changes of some of them, with which in some sections reduced wide an inferior one to the necessary one. There were destructions in numerous marine strolls, related generally to fatigue or undermining problems. Also numerous episodes were experienced of exceeds over the stroll causing the breakage of pavement and the flood of adjacent streets. The exits of pluvial waters with the consequent danger that simultaneously were flood of sand an avenue appeared and had to clean to the sand deposited above the stroll and near streets. In addition, the breakage cannot be forgotten the footbridges of the beach, the furniture, facilities, et cetera.

In addition to the damages caused in the scope of ports and coasts, other detrimental effects or damages appeared as the cut of highways, lines of railroad, damages in the agriculture and other indirect effect caused by the action of the wind, like fall of trees, forest fires and cuts of light.
