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Framing Sea Storms

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Origin

Six years ago I was doing my master's degree in science and technology at the University of Brest. In order to complete my degree requirements, I had to create a short-length, fictional documentary. Drawn to the sea, to the Brittany weather I love, and feeling that this time spent in Brest would help me situating myself, I threw myself on the trail of an old sailor: one of those perfectly fictional characters able to tell his adventures without needing to say a word; only images to share.

It then seemed plain to me that in the life of every sailor, there is, one day or another, one storm which will forever leave its mark upon his memory.

Although I was a rookie, I made up my mind to make the storm at sea the climax of my film. A sailor first sails as an apprentice seaman aboard one of the schooners of the National Navy. For the occasion, the Navy put their training ship "La Belle Poule" at my disposal for several days. On this same schooner I will finish by setting sail the following summer as one of the sailors. It is not possible to take such a big sailboat out in menacing weather like the one the Iroise Sea got its reputation for, during winter months. For this reason I anticipate filming the storm on board a supplies ship going between Ushant Island and Sein Island. I will integrate these pictures alternately with close-ups shot on the schooner with a great number of water buckets (to the general amusement of the crew!).

The Eunez Eussa, ship of the Penn Ar Bed company accepts my request and we agree that they will call me at the last minute when they feel like there will be some action at sea! It's mid-January, and I don't have to wait long for the phone call. At 5am I embark with a DSR 300 and absolutely no experience at all…

Ten-meter depth waves, a wind force of 8. It's not a nice day. It doesn't seem to bother anyone on board but in reality, this morning, there are not a lot of people lined up for the big ride.

For ten hours I try hard to film the waves without catching the ship in the frame so that the pictures connect with the old rigging. Amazing day: all around the ship, dolphins play in the waves. The storm is beautiful, and the low light of the sun filters through the clouds and displays the lustrous colors of the rainbow on the sea foam. For me this is a feeling of success.

Back to the port and viewing of the pictures shot… not the least sensation of a storm! Some magnificent waves for surfing, but one could not even gauge their size or force. All danger or fear are completely absent from the shots.

Now armed with a few years of experience and some additional reflections, I want to go back to this challenge today while taking the time to consider all the different facets of the problem in order to understand which solutions allow a true visualization of the storm at sea and of the different sensations it opens to mankind.

It is a matter then of being able to transcribe into the cinematographic language. In the first place, the storm is a climatic phenomenon, but it is only interesting from the human standpoint. To film a storm is to film a rough, natural force, at a given moment; it's to film its confrontation with man; it's to film a feeling that goes through excitement, fear, submission, etc.

It is about bringing the viewer within that force, conveying its sensation to him/her. It is a fascinating place and my own personal experiences leads me to believe that it is a rather cinematic one.

I'm going to divide this study into two large parts: the reflection, and the actualisation. In the first part, we will begin by studying the relationship between man and the storm, and what the storm has represented for man over the course of the centuries. Then, we will analyze how the storm has been perceived by painters, photographers and filmmakers through the studies of their works. Thus we will be able to reflect on what would characterize a good approach to the cinematographic representation of the storm at sea while comparing the actual felt effects and those of its pictorial representation.

In the second part, we will go over the different technical methods of the visualization of the storm at sea existing today, from the ones used in studio, to the shooting techniques at sea in actual natural conditions.

In the last part, I will outline the development of my final project, the choices I opted for and their results.

Reflections

Evolution of popular consciousness when faced with the storms at sea

"Many who can bear rough weather do not have a taste for storm."
William Shakespeare

Man has confronted storms since the mists of time given that they are not a recent climatic phenomenon.

The marine encyclopedia defines and explains the storm in the following way:

Storm: Wind, whose average speed lies between 44 and 50 knots, corresponding to a force of 10 on the Beaufort scale. When wind speed reaches force 11 (51 to 57 knots), it is considered a violent storm, and if it is force 12 or more, a hurricane. The storm zones are generally located in the southwestern half of the depressions in the northern hemisphere and more rarely in the northeastern half of the low-pressure zones. At our latitudes, a pressure gradient of 20 millibars is necessary for every 3° of latitude so that the wind can attain force 10. The hurricane is only attained if this pressure gradient rises up to 20 millibars for every 2° of latitude.

Since each depression at sea is associated with a disturbance, storm zones are often found after the cold front has passed, in what is also known as the tail zone. (However, it happens that because of these very active disturbances, one can note winds at a force 10 in the warm zone in front of the cold front.) In fact, the rise of the pressure is very fast in the cold air of the tail zone, which consequently generates a strong pressure gradient.

Huge waves, which can attain a height of 16-18 meters if a force 10-or-more wind blows during a long enough time on a big surface of sea, accompany storms at sea. Considerable swells are generated which spread very far from their place of origin.

Considering the danger that these waves represent for seafaring, these storms are the subject of special meteorological reports and broadcasts.

If it is perfectly accepted today that the storm is but a particular meteorological phenomenon, it is important to note that it was otherwise for a long time, as popular religious beliefs used to consider all scientific reasoning as belonging to esoteric beliefs.

Thus, the storm that can be easily and intrinsically defined today was for a long time associated with human responsibility and divine intervention.

a- The original storm

The Flood: first and remarkable baptismal experience
that made all the sins and all the sinners from the world disappear.
Ambrose Bierce

In man's shared history, the first storm is the Flood: torrential rains and floods without end annihilating the earth. Without a doubt one of the most universal myths, it appears in a number of cultures: Mesopotamian, Greek, Roman, Christian, Islamic, Hindu, Zoroastrian… If the story and the characters differ, the idea that the Flood was brought as a punishment- a divine anger brought against man- and for the means of purification (only a pair of each living species on earth will have the right to salvation) remains the same. God is not always the instigator of this ark.

To the question: does the myth of the Flood stems from a real event, historians, geologists and archaeologists remain skeptical since the event does not impact on the civilizations at the same period.

However, the universality of the myth of the Flood remains disconcerting because the facts are often very similar from one civilization to another (construction of the ark, pairs of each species…). This could be explained, on the one hand by the heritage of the Mesopotamian myth in all the monotheistic religions, and, on the other hand, by the relief that mystification of natural catastrophes can bring to vulnerable societies.

If it is very unlikely that a true, planetary flood took place, the myth could conversely come from the exaggeration of a local event.

Around ten years ago, the American geologists William Ryan and Walter Pitman put forth their findings showing sudden variations in the water level of the Black Sea. Because of repeated backward and forward movements of the sea level, the Black Sea was isolated and then connected again to the Mediterranean Sea. Before it had last reconnected to the Mediterranean, the Black Sea had been a gentle lake of water situated about two hundred meters below sea level. When its water level surpassed the threshold of the Bosporus, the Mediterranean violently discharged its water into the Black Sea, making the latter's water level increase up to 150m in just two years and flooding 100,000 km2 of populated land.

If this hypothesis still doesn't create unanimity in the scientific world, it could explain the origin of the Mesopotamian myth. It is understandable how the populations living on the lake shores at that time and unable to understand the rise of the water as a geological phenomenon would have mystified the event.

b- Middle Age and Renaissance

In the Middle Ages, nature and particularly the sea were a reservoir of symbols for the Catholic religion. The ship is the Church that protects men against the dangers of the sea that are similar to the hazards of an unstable world continually changing. Thus, the influence of the flood is still recognized, and more generally the belief in a mystical aspect of the sea.

The storm at sea can therefore not be anything other than a divine manifestation. It is wrath and punishment, and not at all a natural event.

***Greeks surprised by the storm**, unknown (16th century):*

In January 1219 a violent storm comes down on Zealand and Friesland, marking the beginning of the sea's entry into Flévo Lake. Declaring that he only sees natural reasons for the storm, i. e. the combination of hazardous winds on an already stormy sea, Emon, Abbot of Wittwerum, is quickly corrected by the Saint Augustine's order: the true cause of the storm is the will of God.

In a certain way then, natural catastrophes were better perceived at that time than today because they were only manifestations from providence. They were nothing more than the punishments of personal or collective faults.

Furthermore, if it was already a received idea, the roundness of the earth was not yet completely accepted by all, and for many the ocean still marked the end of the world, where the sun sets, where the day dies, maybe for ever.

Thus, the ocean still presents a perfectly unknown world that the small crafts of that time particularly unsuitable for secure navigation do not help to demystify.

Despite the technical innovations such as the sternpost rudder and the creation of more maneuverable ships like the "caraques" or caravels (which allowed Christopher Columbus to cross the Atlantic Ocean), and even despite the improvement of sea maps

(which remain approximate) and the utilization of the divider, the magnetic compass and astrolabes, maritime navigation remains particularly dangerous, and the captains' chronic incompetence and mutinies do not help matters.

The philosopher Gaston Bachelard wrote: "No usefulness justifies the great risk of setting out to sea. Braving sea navigation should be motivated by powerful interests" These powerful interests are the affirmation of power of Kingdoms and Empires, as well as wealth attained by business.

Faced with unpredictable and always menacing shipwreck, man multiplies his recourses. The diversity of forms of intercession and invocation of the Virgin Mary and the patron saints attest to the strength of hope in fearful situations. The numerous votive offerings in the chapels testify to the fervor of the populations. The reading of these images still clearly shows that natural elements are less responsible for the storm than divine intervention.

Bordeaux's only child (1790):

Furthermore, if the fear of passing away in the event of a shipwreck is so greatly feared, it is also because death at sea seems unnatural since the disappearance of the body in this kingdom of infernal abandonment allows no ulterior trace. The engulfed body does not allow for any memory reclaim. The disappearance of those ship wrecked sailors does not resemble a real death, and the endless, restless wandering of the souls and bodies leaves no hope of resurrection. This feeling of dereliction shared by Christians of all obedience finds itself emphasized in the Catholic confession by the probable deprivation of the last sacraments due to lack of a chaplain and also of time to prepare one's self.

Before going to face the storm or the shipwreck, sea people used to resort to a set of gestures, oftentimes extremely old, which served for calling blessings from heaven more for the ship than for its crew. The shipbuilders did not hesitate to have the bow of the ship depict a totemic animal, a fantastical deity, or even the effigy of a saint. The launching of a ship was very often accompanied by rituals of conjuration: the sacrifice of a white sheep, then the discharge of its blood on the bridge so that the sea wouldn't demand any other sacrifice, and finally the display of the sheep's skin on the bow of the ship are attested to in the Italian ports until at least the 15th century.

The blessing of the sea is surprisingly more recent and less diffused. Such events increased especially from the 19th century, principally around fishing ports.

c- Lights and fate's refusal

It will be necessary to wait for the 18th century in order to observe a change in the man's state of mind when faced with the sea's harassments. Little by little, prayers that were addressed to heaven during storms are replaced by a genuine will to save one's life. This evolution is slow and differs according to the country. While the seamen of nations like France or England firmly refuse death's inevitability and fight it until the end, the Russians and the Spaniards throw themselves on their knees with their hands stretched out towards heaven pleading with God and asking for His forgiveness.

At the time of the 18th century, the Age of Enlightenment, and many scientific discoveries, man and artists begin to step back and distance themselves from religion. Nature itself is now prone to deification.

This feeling is rather well described by Hermann Melville in his novel *Moby Dick*:

"[When] the Pequod had his three masts knocked down in a typhoon in Japan […] didn't you think then of death and of Judgment Day? Listen, cried out Peleg, I remember. To think of Judgment Day, of death? No! There was no time to think about death in those moments. It was life that Captain Achab and I thought of at that moment and how to save us all."

This same idea is found when, after the shipwreck of three small boats on his expedition to Alaska in 1786, La Perouse goes to write down on the cenotaph: "Whoever you are, combine your tears with ours."

The heaven of votive offerings fades little by little; the storm at sea tends toward its demystification. It becomes a natural phenomenon. It will then be necessary to wait until the 19th century when the first scientific, meteorological studies are carried out and then the middle of the 20th century before these studies take the predictive dimension that we know today.

d- Contemporary sea storms

If storms have lost their divine character, the sea world remains populated with believers. Ships continue to be baptized and in the professional sea environment it is rare to enter a ship devoid of a crucifix.

Today modern meteorology and technological advances have changed the relationship between man and the sea. Security conditions have developed considerably, weather forecast alert systems work, ships are more resistant and more powerful, and sea rescue is more organized and efficient.
The sea then seems less deadly, and yet the fisherman trade still has the most casualties annually up to today.
A pernicious effect of the increase of apparent security and easy access is to bring forth recklessness when pleasure boaters face risks and dangers. Indeed the sea has become a space for leisure activity this past century, and numerous men and women get involved with it without appropriate knowledge. If the professionals know how to interpret a weather report, this is certainly not the case for everybody and our society, eager for drama, loves it.

The main seamen today who are confronted with storms at sea are: the long haul cargo ships, industrial fishermen, military ships, rescuers and professional skippers. These people know the sea and if they know its risks, they do not go out with the idea that they might not come back like it was the case a century ago. They fear the storm but know how to anticipate it, lay low, and even stay at port!

"My" storm I lived it alone offshore New Zealand during a race around the world. I had seen it coming thanks to weather forecast warnings, but I was ignoring when it would form and what its intensity would be because there is a considerable difference between 50 and 80 knots of wind. I was consequently preparing myself for the worst, gradually lowering the sail. At a given moment the wind cooled down and I had to get to the deck to trim the sails completely. You have to be firmly fastened, since the slightest thing is enough to make you topple overboard.

Slipping on my security harness some way or other and doing my best to hold on, I began to lower the sails with the sea smashing against the boat in an infernal roar. Then I took refuge in the cold and humid cabin. I thus spent thirty six frightening hours sometimes in its obscure underbelly, sometimes hooked on the helm of a hull tossed by a force infinitely superior to that of man, racked by contradictory emotions. On the one hand there was tension, even fear generated by the walls of water, the roar of the wind and the pitch black clouds. On the other hand there was the addiction, the constant habit of doing the same gestures again and again to impose calm on myself: a self control dictated by experience and the certainty of having to count only on one's own means. Thus, while dragging myself along the deck to lower the sails, my only worry was to measure each gesture. And doing so, I was already reflecting on the following action to be taken. The least error, the smallest, unexpected thing could mean the end of the boat and of its captain.

At sea like in life, one never ceases to learn: all that counts are the experiences that accumulate and generate knowledge and new solutions. The storm is the most difficult of all tests and does not provide any make-up session.

Giovanni Soldini

e- Storm and fascination

The storm moves forward man and offers him a wall of absolute. Despite its death causing characteristic, it fascinates him. It fills him with contemplative ecstasy before being able to bring him death. It directs itself first at his senses and not at his consciousness, filling him with a sense of his fragility in relation to the force and the longevity of nature. Fleeing, imploring his God, fighting- all are wiped out before the contemplation of this force that goes completely beyond man. It is physical power and only obeys itself. It is only the end of the one who surged into it. And for him, it is all things from then on, all that surrounds him, what invades his thoughts and paralyzes him. It is almost already what penetrates his body and kills him.

This experience where the sensation of life and of death mix in a vertiginous whirlpool evokes the delightful horror of God's manifestation to man. And it can also be because the forces of the sea and those assumed by God put man in a helpless ecstasy that, in all times, sea and Divine have sailed side by side.

When storms at sea become art...

Storms, as subject of man's fascination, have for ages been portrayed in all forms of art. But *how* has the storm been illustrated in art? And how has its pictorial representation evolved and with what results? If we can extract a work of art from its own time, we can discover what contributes to the formation of a sensation. In studying painting, photography and cinema, we look for the elements that will help us then to understand how to best represent storms visually.

Studying visual representations of the storm

Pictorial art originated long before man set out on his first adventures at sea. Pictorial art interpretations offer a "History" of the relationship between man and the sea. Maritime representations are thus laden with fears and anxieties; they also emphasize man's admiration and enthusiasm for the sea in light of the element's overwhelming power.

a- The Flood, the ideal pretext

There is nothing but the worthlessness of the first flood that prevents God from sending a second.
Sébastien- Roch Nicolas de Chamfort

The representation of the tempest at sea is a subject that has interested artists of all styles and abilities throughout time. The Flood long stood as the principle theme of maritime art (for not until the 17th century in Holland and the 18th century in France did other themes begin to appear), but studying its role in art shows that this theme has evolved.

As previously shown, popular consciousness attributes a divine dimension to the storm at sea, turning ocean and boats into powerful religious symbols. The association of the ocean with ideas of the "infinite" and the "unknown" must be maintained in a strict religious context for its almost mystical presence to be accepted. In the pre- Renaissance period, art did not hold meaning outside of its representation of the Bible (the Old and New Testaments); it is out of question to step out these boundaries. The result was that the Flood became the first and primary maritime theme in art. Artists eventually used this theme as the ideal pretext for portraying passionate emotions in their art while still respecting the implicit rules governing painting at the time. Indeed, beyond pictorial codes, the resulting paintings all depict man's fears, the universal terror induced by this unpredictable catastrophe, controlled or not by God.

"The Academic doctrine established the portrayal of passions as one of the basic qualities of the painter's dignity. In this context, the flood, which arbitrarily unites a group of individuals summarizing man kind, gave the painter an ideal pretext to display his skill in portraying intense emotions. The extreme destitution of the storm's victims finally legitimized the depiction of nudes and draped bodies, allowing for the universal flood to become one of the most recognized theme in pictorial representation," writes Rémi Cariel, director of the Magnin Museum, and art historian Sylvie Wuhrmann in, "Les enjeux artistiques du Deluge," an expository catalogue about the Flood published in Dijon. Now let's focus on the development of this theme up until the Renaissance…

During the Middle Ages, the Flood was depicted in a systemized manner. It is not Painting do not depict sensations but is aiming at describing the events narrated in Genesis in a precise fashion. The artist (who was not yet considered as such at this period) does not pretend to add any type of personal interpretation. Noah's Arc is the central element of the pictorial composition and the artist does not look to dramatize the catastrophic flood. Images are meant to be pious: they adorn the walls and glass windows of churches.

It is not until the Renaissance that this subject gains interpretational and dramatic importance.

In 1447, Paolo Uccello painted a representation of the Flood in the Santa Maria Novella Church in Florence. *"First modern vision of the flood, Paolo Uccello's composition synthesizes the theme's artistic possibilities; and thus, refocusing on man and his punishment, the original cataclysm iconography (paradigm of all nature upheavals), will in turn constitute a special field of experimentation."* Rémi Cariel and Sylvie Wuhrmann.

The flood, *Paolo Uccello:*

Uccello gradually frees himself from the tight ties of the Flood theme with theology. He places the ark off to the side (the ark whose importance will decrease to such an extent that in paintings by Alessando Turchi or Nicolas Poussin in the 17th century, it will have become a mere shadow on the horizon) and does not hesitate to place the men in the foreground, focusing the attention on their distress.

The importance of this evolution initiated by Uccello and continued by artists such as Michelangelo and Raphael is visible in the transfer of interest now directed to the human subject. Neither the flood itself nor the divine act behind the disaster is in the foreground, but the suffering of men. Miserable, naked, and crying out in pain, they provide artists an opportunity to deploy the extent of their skills.

This evolution is thus born from a "double" challenge: to assert oneself as a painter of emotions, skilled in the sketching of human bodies and "drapés"; but also in creating a sensorial interest in the depiction of the event, going beyond simple reproduction of facts. This represents the introduction of empathy into art.

In Michelangelo's representation of the Flood on the ceiling of the Sistine Chapel, the prominent theme is again human emotion; neither nature nor the event of the Flood is actually represented in his work, and the ark has been confined to the background. On the other hand, an array of emotions can be read on the various groups of people, ranging from submission, prayer, compassion, solidarity to struggle and despair. In commenting on Michelangelo, Vasari observes "how [he] had demonstrated great pity for this humanity which Providence's plan has condemned to total destruction."

The flood, *Michel-Ange (Sistine Chapel):*

Thus, it is during the Renaissance that the representation of the storm essentially goes through the depiction of men's suffering that the Flood inflicts upon humanity. The groups of individuals in the painting claim to offer us a representative sample of all of humanity. The main emotions are represented here as a listing of the various human reactions.

Representation of universal destiny goes, from that time forward, through the depiction of individual destinies.

In Da Vinci's works on this subject, the deluge was represented in an almost mathematical manner. Between his scientific understanding of water's movements and his conceptions of pictorial art, Da Vinci reached the ideal formal solution for the depiction of whirlwind, named also vortex. He made an impressive number of drawings. That concept will be later largely incorporated in his depiction of brute force of an uncontrollable nature. This figure is a symbol for infinity, submersion. It confronts men as an unsurpassed and absolute force that cannot be overcome. This figure is also quite noticeably found in pieces by William Turner or John Martin.

b- The Dutch school

In the 17th century, the Dutch were the first to separate the subjects of maritime paintings from religion. This movement was initiated by Hendrick Cornelisz Vroom (1566-1640). The sale to a rich art enthusiast of Lisbon of his first painting, representing his own shipwreck, marked the beginning of Vroom's career as an artist.

The shipwreck became the basic element of Dutch maritime art. The Haarlem school, founded by Vroom, had great influence thanks to his successors: his son Cornelis (1591-1661), Claez (1580-1633), Verbeeck (1590-1637), and Willaertz (1603-1669).

The gap between painting and theology, however, has to be clarified. Hardly free from the obligations of hagiography, artists continued to bring a symbolic dimension to storms.

Storm with five sinking boats, *Hendrick Cornelisz Vroom:*

For the first time, the sea takes on a naturalist interpretation, which can be explained in part by the fact that the artist was himself a former sailor. He had really lived through the events that he takes great care now to put into images. Here, our attention is not absorbed anymore by human feelings, but engrossed in the observation of nature's savageness. In this work, it is not the sailors who are directly confronted by the elements, but the boats. Therefore, the sensation goes to the comparison of the scales between the immense ships submerged by the storm.

The paintings by Ludolph Backhuysen inscribe ships in a quite menacing reality: the sea is rough, and the skies are black and threatening. The land and the coast lines are often represented as additional dangers of destructive reefs and breaking waves.

Beaching of ships during a storm, *by Ludolph Backhuysen:*

Dutch maritime paintings are therefore stunningly based upon reality, and faithful to nature representations. Torment is to be found only in the realistic "productions" of nature. This style gives these paintings definite aesthetic qualities, but offers no sensation of terror and danger.

The Dutch school had great success and Louis XIV brought Van Plattenberg (1608-1660) to Versailles with the title of "King's painter of the seas." France at the time did not have any artists whose depicted maritime winds would be meaner than the crepuscular breeze of Claude Le Lorrain.

Marine, *Matthieu de Plattemontagne:*

c- The “Sublime Romanticism” of storms at sea

It is during the 18th century that the theme of the storm was truly separated from religious connotations. However, the problem that artists faced in secularizing this theme was: how to justify man’s attraction to representations of storm, supernatural forces, godly status of nature without any divine moral backing? How to explain, that it was not a question of erethism nor an unhealthy obsession with unhappiness?

In 1757, Irish politician Edmund Burke (1729-1797) published his *Philosophical Research on the Origin of our Ideas of the Sublime and the Beautiful.* His study of the role of aesthetics gave him rank among other important philosophers and afforded him the attention of Diderot and Kant.

In his study, he admits that there is an aesthetic dimension to catastrophe. In his paper, he posits that although the power of a catastrophe exceeds that of man, a catastrophe is still more than beautiful: it is sublime. Catastrophe is the sensation of beauty *before* actually being beautiful; it appeals to our senses before our cognitive side. Burke explained the supremacy of the sea as a source of the sublime: “Out of the numerous causes that produce such grandeur, the terror that inspires the ocean is the most important.”

Given this new philosophical legitimacy, paintings of storms and other non-biblical catastrophes became very popular. Such works try to show the sublime, the moment of confrontation between man and nature’s overwhelming force, and the notion that the storm, with her strength, authority and immense size, speaks first to our senses before confronting our conscience. The storm fascinates us, whether we believe it to be a mystical or natural manifestation. Her ability to cause destruction only enhances her aesthetic appeal. The storm presents a new artistic challenge: the attempt to illustrate the sublime, that absolute force of the storm that overtakes its beauty. Man plays an important role in understanding the sublime, as it is through him that all sensations much

pass. Here, the viewer takes just a little bit of pleasure in seeing others caught in the torment of the storm. Although the spectator may feel close to the men in the painting, he is far enough removed from the scene to feel out of danger and therefore recognize his own pleasure.

In this, we understand that paintings of storms must speak to our senses.

"Since the Renaissance, the depiction of catastrophe has not only represented the search to express oneself intellectually, but more importantly in a sensible manner. Catastrophe feels, lives and experiments. Before dying, a catastrophe is an experience everyone should live through. Over the centuries, painting and philosophy have come to agree upon the notion: the enthusiasm of man to dream of possessing strength equal to that of nature's power is a common human experience (…). In examining the aesthetic qualities of catastrophe, one must give a paramount importance to the sentimental reactions it produces, as catastrophe is a sensorial beauty. One could say that the uniqueness of catastrophe lies in the notion that it first speaks to the senses and only afterwards addresses our more cognitive forms of analysis. In this manner, catastrophe changes man from an animal who thinks to one who feels."

Victoire Chancel:
"The sublime and the catastrophic: picturesque gifts to Hollywood fiction"

The popularity of the concept of the Sublime quickly enriched the palette with which the artist portrayed emotions in art. Following this trend of growing attraction to shipwrecks and the rough sea, the importance placed on the representation of other human values in art began to decline. Even more important to this era was the idea that storms were not a consequence of God's wrath. The ocean became synonymous with infinity and immortality; a force opposing man's own mortality. It represented a lost battle, one in which man could never overcome the sea's power or "enticing" horror. Since every trace of man's passage across the water was washed away instantaneously by crashing waves, man learned to experience the sea firsthand because there was no trail left by others to follow.

Michel Ribon remarks in his *Aesthetic of Catastrophe:*
"As soon as we describe or paint horror-"horror" being that which repulses us-there is an attraction; our fear becomes delectable, aesthetically and existentially; it tempts us to dream of the magnificent, the sublime (…)"

We can see the evolution of this theme in John Martin's (1789-1854) representation of the Flood. Here we see deformed bodies, fragile and pleading in the foreground of the piece, while the arc has disappeared, implying that salvation is no longer the interest of the painting. It is the heightened emotion of the men that dominates the scene, a sensation compounded by the waters from the heavens joining those on earth. The men find themselves trapped by this force, an issue straight from Da Vinci's research. After viewing this painting, we remember the emotion of the men in the painting just as well as the immense chaos about to befall them.

Flood, *John Martin:*

The painters of this period attempt to build a bridge between the representation of human emotion and catastrophic phenomenon. The two have nothing in common, and the painters face the problem of having to measure man in relation to the infinite; they must understand and show the "small infinity" of man and the "grand infinity" of forces greater than man simultaneously. To get this purpose of the painting across, artists effectively use Nature as one of their tools. As the lightening and the whirlwinds multiply, the skies become darker and more menacing, and it is through these few men that we understand the emotions the artist is trying to depict.

John Martin also played with colors in his works, an example of this being his painting entitled, "The Destruction of Sodom and Gomorrah." The architectural composition of the painting is similar to that of "The Flood," but the color lights up the canvas and dramatizes the subject at hand; here, the waves become fire.

The destruction of Sodom and Gomorrah, *John Martin*

His painting of the Flood portrays this great force at its peak. The canvas shows the whirlwind within which the drowning men are nothing but a vague silhouette. This aspect of the painting reminds us of the harsh sensations also associated with the sublime. We *are* the men facing their last storm; we are part of this nature that only swallows us in the end. Here, it is hard to fix a scale that measures man to nature: the proposed underwater hell seems infinite in its depiction and brings the spectator right into its dizzying destructive manner. Martin involves the spectator in the painting, offering him a seat beside these men right before the flood.

Works by Victor Hugo, called the "ocean- man," are profoundly marked by details concerning the sea. Beyond his written works, Hugo also painted a number of maritime scenes. While Hugo often used the sea as a metaphor in his poetry, he also knew the importance that the ocean held in painting too.

In his painting, "Gros temps, la Durande," he offers us a sensational vision of a storm. Here, he does not represent mythological, biblical or any other type of doctrine associated with the sea; nor do we see man's emotion, as he is absent from the painting. What Hugo does do is show us forces in opposition. Catastrophe, the idea of infinity, of death and the absolute, are all left behind, and in their place is the simple struggle between a boat and bad weather. The painting echoes the hard work, the difficulty, and the courage of the men who find themselves on this ship, drowning amidst the sea foam and the black clouds. This work recalls the form of the Dutch school of painting, as in the Dutch style, this painting is interested in the vision of a boat in battle. However, here, the sensation of the struggle surpasses its aestheticism.

Gros temps, La Durande, *Victor Hugo:*

In works by Géricault, Vernet and Isabey, we find a different treatment of the "storm" through their focus on the ocean's victims. In these Romantic paintings, conveying suffering and other sensations to the audience relies heavily upon the "boat"

itself as the vector of emotion. We feel more or less as close to the men in “The Raft of Medusa” by Géricault as we are to “The Shipwreck” by Claude Joseph Vernet.

Joseph Mallord William Turner (1175-1851) subscribed to the same school as John Martin: the detailed paintings of ships overtaken by the sea make for an excellent representation of how the storm swallows a ship’s passengers.

Shipwreck, *Turner:*

Snowstorm in the sea, *Turner:*

Ivan Konstantinovitch Aivazovsky (1817-1900) is without a doubt one of the last maritime painters of the Romantic era. A Russian painter, highly esteemed by Delacroix and Turner, he greatly influenced painting in his country during his time. His works symbolize the height of the evolution of the representation of man fighting against storms and the sea. Aivazovsky's paintings essentially rely on the use of light to carefully dramatize the depicted situations. He shows boats confronting the sea, but as opposed to other illustrations, in this painting the boats are full; here, the presence of man is strongly felt and quite visible. The boat is weak, but it is the force of the elements surrounding the boat that tell us this, not the suffering of the victims. This painting shows the men *in* the battle, clinging on to a desperate hope of victory in this dire situation.

The use of light and the portrayal of the sea dramatize the action in the painting, but in different ways than previous works. In "The Ninth Wave," the splendid setting of the sun seems to be tinted with irony. The shipwrecked vessels are in a bad situation: night is about to fall and the iridescent orange waves seem no less vigorous than before, as they are ready to erupt at any moment and destroy the last refuge of the men.

The ninth wave, *Aivazovsky:*

Aivazovsky is considered the last great artist to depict storms.

Storm before Nice, *Aivazovski:*

In the storm, *Aivazovski:*

Naufrage, *Aivazovski:*

We must note that the people represented in the paintings are never volunteers. If the artist is trying to depict suffering and the sublime nature of the confrontation between man and the "infinite," his figures must always be seen as victims. They do not choose their situation; here, the voluntary hero no longer exists.

"Classical art produced the Vanities, Hell, the Last Judgment and the wrath of God. Many ruins and epidemics mock the mortality of man. The idea that man freely chooses to engage the dangerous sea in combat gives paintings of shipwrecks a charged emotion, one of intimacy, despite the ocean's excessive size. This enlightening contradiction is nothing more than one of the many paradoxes between the history of the sea and the history of art."

François Bellec

Capturing Photos

Representing the storm in photography is another problem. If photography was impressionistic in its dimensions, a number of its elements would focus on the *duration* of an event, like the length of time involved in viewing a gusty wind or a breaking wave. If photography, like painting, was able to capture the notion of fixed time, of a single moment, it would still not have the same symbolism or stylization that a painting can achieve. Even with these setbacks, photography does possess the strength (and weakness) of portraying reality. Knowing for a fact that the wave is really breaking gives more validity to the interpretation of the image. In the same manner, the image of a living, breathing human immediately evokes a compassionate response from the audience.

To portray a storm in photography, one must capture the single instant that best represents the moments leading up to the image, as well as suggests the moments that are to follow. You must choose the perfect moment to take your picture.
In a certain way, photography is more uncompromising than cinema. Photos must capture reality and unlike in film, they do not have the chance to recreate reality. But in this, one must also note the advantages of photography: having a plan to capture a vision and the opportunity to be on site where the storm is actually happening. The limitations associated with photography and films represent new considerations for the history of the storm as art, as the technical limits associated with painting we only linked to the boundaries of the artist's own imagination and dexterity.

We find here problems shared by both photography and the cinema, but also problems that are unique to photography. We will come to see that the real problem of photography is that (outside of the use of sequential images) it captures nothing but a single instant.

Here, I am going to focus on two French photographers whose differences in style best represent what we can expect from photography of the storm at sea. These two artists are Phillip Plisson and Jean Gaumy.

a- Philip Plisson

Born on January 17, 1947, Philip was raised in the outskirts of the Loire Valley, between Beauce and Sologne.

It is most certain that his paternal grandmother was the one who triggered Philip's interest in photography, as she gave him an Ultra-fex camera for his communion. In the summer of 1956 in the Trinity River near his flat, the young boy took his first photos of yachts. However, he did not realize the future implications of this situation. It is with pictures of landscapes that Philip would take his first professional steps.

Portraying the storm through photography is yet another problem. If it is to impress the audience with all its forms and dimensions, many of it elements must be felt in their episode such as a gust of wind or the crash of a wave. If photography must portray the storm such as a painting does, as a fixed moment in time, one must resort to symbolism and stylization of its elements. On the other hand, the photograph possesses the strength (and weaknesses) of reality. The fact of knowing that a wave truly breaks gives more power to the interpretation of the image. In the same vein, the human presence in an image immediately receives a compassionate thought for this living, breathing character.

Wanting to represent the storm in photography is then to take one particular moment in time that will better represent the event than any other moment before or after it. One must commit to a point of view.
In a way, photography is less flexible than cinema. It must show the best of reality since it does not have the power to recreate it. One may note an advantage of this, because knowing the shots and the fact that the elements are fixed, one can try to capture the storm just as it is in its location. These considerations are new in the history of representing the storm in the sea, and the limited techniques in painting are only tied to the imagination and skill of the artist.

One will find common problems with regards to cinema, but also different ones with the use of photography, since as we will see, photography (besides the use of the sequences of images) can only capture but one instant.

I will dwell upon two French photographers which, due to their differences and their work on the subject, represent well what one might expect from photographs of a storm in the sea: Philip Plisson and Jean Gaumy.

a- Philip Plisson

Born on January 17, 1947, Philip grew up on the edge of Loire between Beauce and Sologne.

It is undoubtedly Philip's paternal grandmother that triggered this interest by giving him, for his first communion, his first Ultra-fex. During the summer of 1956, in the Trinity river by his flat, the fair-headed boy took his first portraits of yachts. However, Philip did not take to sea soon after. It was on land that he took his first professional steps.

At first, he discovered the way by being a sales representative for women's undergarments. After five years of an enriching commercial experience, Philip set forth in 1974 on a photographic adventure, taking many risks. He had decided to experience photography before the age of 30. In 1980, the Philip Plisson workshops created a studio of public creation, which employed 11 people and brought in sales of 10 million francs.

Between 1982 and 1990, the photographer covered many reports on the world of sailing and specialized press. He covered the Course at Large and the Cup of America and carried out the publicity shots for the grand construction sites and the nautical industry. Located permanently at the Trinite, marine photography first opened its gallery in 1988 on the site of its last auction (11m2). It is in this city that he designed his first "Fisher of Images" in 1990, an 11 meter motorboat, specially equipped for shooting at sea.

Named Painter of the Sea in 1991, the doors of the Chaillot Palace opened wide to present his works to over 51,000 visitors. The notoriety of this photographer can only get bigger.

Philip Plisson has always photographed the sea. It is normal then to see him photographing the storm in the sea. These photos are good examples and surprisingly contrast with the work of Jean Gaumy who we will discuss shortly.

Most people can see that the majority of photos are taken from a helicopter. Human presence is often non-existent. The sea is photographed for itself, the only characters possibly being the lighthouses and the boats. These are the only reference points we have to fully grasp the photographic dimensions.

The end result is that if these images are beautiful, they only offer a minor sensation. The storm would simply appear to us as nice and will possibly impress us by its size but never its force, brutality and danger.

A good sized boat is submerged by a wave. One does not feel any fear regarding the crew's security. In reality, these men, they don't think of it either.

On the other hand, what is interesting is that the different states of the sea speak for themselves. In certain photos, the heaving of the waves presents a dangerous and hostile aspect of the sea. The environment seems unhealthy without the presence of man to suggest it.

But the opposite case is also true: in some photos, the waves are so powerful that they seem perfectly innocent because their force is overshadowed by the aesthetic beauty of the image.

In the end, the gray weather, heavy and menacing in certain photos, seems more hostile than many of the other weather depictions represented by Plisson which seem to fade into their own light.

b – Jean Gaumy

Born in Royan in 1948, Jean Gaumy is a photographer in Gamma and also in Magnum, where he managed the Parisian agency. In 1975-1976, he obtained the authorization to photograph the different services of a French hospital. It was later (1976-1979) that the first photojournalist was admitted in the French prisons. After numerous photographic reports from around the world, he sailed to the marine-fisherman coasts. It was in 1969, in preparation for the National School of Marine Trade that Jean Gaumy boarded a cargo ship for the first time. In 1970, while he was a freelance journalist for a regional daily paper, he discovered Fecamp and the trawler "Wagram" on which he would sail for several weeks. From this first encounter with the world of traditional fishing, a desire was born to pursue this adventure through a project of navigation which combined social and personal photographs. In 2001, he photographed Abeille Flandre, a rescue boat of the high seas, for the whole year.

"To emerge, to settle on the wall, to dress up. To avoid the shock and vibrations, the boxed photos; well settled in the disorder of the large drawers on ground level in the

middle of fuses, light bulbs and packs of beer, magazines, torn comic books, nylon bags that split apart, stained old needlework crumpled up into a ball. To kneel. To pick them up and to place them on one's self."

"The steep and slippery staircase, which one climbs propelled forward when the ship dives, is transformed into a piston when the boat rises to the crest of the wave. The iron lock. The muggy air of diesel vapors. The thick linoleum flooring imitation, blistered, cracked, oily and chestnut colored. Everything flying about. The light from the portholes dance on the screens. Behind their thick glass the colors of the sea distort vision. The grey sky, unlikely, is ravaged by spray and the ocean, raw, full of holes from the white spray. –On board the trawler "Rowanlea". Tuesday, February 25, 1992."

Jean Gaumy hates helicopters. One might doubt this upon viewing his photos but he likes to emphasize this fact. It is a photographic principle that he does not understand.

The first thing that springs to mind from these photos, is the proximity to the sea, the rough weather, and the sailors who confront it. One feels as if they are directly thrown into this brutal world of the seafaring trawl men. The aggression of the natural elements such as the waves and the wind is omnipresent despite the 'immobility' of the photograph. The men, very much present in each photo, quickly show the difference in size of them and the elements. They are particularly exposed (one finds here the idea of casting the boat which allows us to see the men in the closest possible contact with the element of water, an idea which we will return to much later) and one senses if not the danger, the nervous tension that the men must feel during these intense conditions.

It is obvious that having men present in these photos is a fantastic vector for emotions. The tension and fatigue can be read in their faces and it calls for compassion. A rough wave cannot bring about the same results! The alliance of the two is an effective means of transmitting emotions by the images of a storm in the sea.

Jean Gaumy's photographs offer a real point of view, and we are no longer stuck with the aerial view where the point of view only justifies its practicality. I do not think that photography constantly needs to justify its point of view: it is the case for Plisson's images, because of the global scope and large fields of observation they offer of the events and sites they present. On the other hand, when the point of view and the place of the photographer participate in the message, the photo can only be enriched by it. Jean Gaumy is present in these photos. One can feel his presence behind the sailors, on their level, just as exposed as they are. His look is the one of a man who is just as swept away

by the sea as the other people. I think that this is felt when looking at the images. The viewer is in the same position as these sailors and better feels the human emotions that are present at the height of the moment in these snapshots.

C – The case of Abeille Flandre

The Abeille Flandre is a rescue tugboat of the high seas. Based in Brest, it watches over the security of the Iroise sea. It is without a doubt the most weathered French boat that goes into storms all year round. I will come back to the cinematic qualities of this boat later so that I can focus on discussing photography.

Philip Plisson and Jean Gaumy have both photographed this boat during a storm. Thus, it is interesting to see how each method produces such different results.

One can see here the most common approaches of the two photographers – helicopter for Plisson and the embarkation on the ship for Gaumy.

Philip Plisson: *Jean Gaumy:*






Both series of photos are magnificent, but portray completely different sentiments.

On one hand we have the triumph of a machine against the elements and on another hand there is the labor intensive work of the men under harsh conditions who are trying to tow away damaged ships.

To compare these two works is a concrete way of emphasizing the importance of choice with regards to the camera angle. The two methods are undoubtedly on opposite ends of the spectrum, but so are the results. I think that when trying to discover the sensation felt from facing a storm in the sea, the results are stark.

Without directly adapting these results to cinema, I feel it is good to have this in mind for the following research, the photographic suggestions within Gaumy's settings being more than interesting in the execution of sensations.

Cinema the way the wind blows

"*The dreadful storm that we live through gives us our common sense, this is to say the taste of clarity in thoughts, of sobriety and purity in form, and a large sense of disdain"*

Gabriel Urbain Fauré

Cinema possesses an extra dimension when compared to paintings: it is an art of time. As it unwinds, cinema allows it to coexist in a coherent unity made up of different instances, places, and scales. This type of art thus solves the numerous problems that one must confront with paintings, limited by their still frame.

It actually must be confronted in the case of representing man and the storm depending on the scale: whether it be conveying the image of human suffering, representing it on a small scale, or whether it be to reconstruct the infinite fury of the sea, representing it on a large scale. If the mastery of symbols and the organization of space on the canvas allow the paintings of the storm to express both things, it is almost impossible for them to offer the two issues the same importance in this duel.

If fantasies, symbols and purely stylistic effects are generally absent in classic cinema, which gives priority to realistic representation, its mimetic ability and capacity to move the weather offers new possibilities of representation.

This idea about the storm can from then on emphasize the smallness of men in the struggle against the elements as well as the power of the storm that keeps raging against them.

a – First Hollywood storm, first drama

In 1935 came a film that can be considered the first film to have a scene of a storm in the sea: *Mutiny on the Bounty*, produced by Frank Lloyd. The film tells a story about an actual mutiny orchestrated by Fletcher Christian which took place in 1790 aboard the Bounty. Captain Bligh demonstrated cruelty towards his crew and the majority of the officers.

The scenes of the storm are stunning and work very well today for good reason: it is comprised of many real shots. The scenes were actually set up alternatively where the Bounty was reconstructed at the MGM studio identical to scale 1 with real shots of the same boats at sea on a windy day. These images are certainly not perfect but they are so

impressive that one forgets the hazards and the flaws of the shooting. The real shots of the boats are connected with those of the studio thanks to the technique of transparency perfected by the Americans. **Les pelures** are also actual images of storms that are undoubtedly from the same sequence as the medium long shots. This wonderfully combines the two shots.

When one realizes the size of a storm, and the difficulty of operating the cameras during that time, the adventure of representing a real shot is not taken for granted.

Real shots:

But these shots are not harmless because if the storm in the sea is dangerous for the characters in the film, it is just as much so for the film crew. The shipwreck of one of the boats in the shooting caused the disappearance of the second camera assistant Glenn Strong.

Since then, it would take several decades before men would venture out to sea again to obtain real shots of the storm at sea.

B – First French storm on a stormy subject

This first French film on storms in the sea is a painful and complex page in the world of the sea: the towing of wreckage. Indeed until the shipwreck of Amaco Cadix, in 1978, rescuing cargos was possible because of private towboats. The contracts of towing were established in the worst possible moment, in conditions where the different people were not capable of making the best decisions. Due to their inability of coming to an agreement, what followed was a series of dramas that took place and the rescuers were wrongly, or for good reason, accused of being predatory.

Today, due to the fact that the “rail de sein” (maritime zone in the Iroise sea) remains one of the most frequented and dangerous passages in the world, the French government has put in place an assistance system and mandatory aid by powerful towboats charted by the National Marines to prevent ecological and human disasters.

Remorques, a film produced by Gremillon, was released in 1941. It was filmed in a studio in Brest.

The captain of the towboat, the Cyclone, Andre Laurent (Jean Gabin), leaves the wedding party of one of the sailors to rescue the towboat Mirva, abandoning his wife in the process. In the morning, the Cyclone tows the Mirva which carries on board with it

the wife of another captain who will become Laurent's mistress, Catherine (Michele Morgan). Andre must choose between his gravely sick wife and the one that he loves…

The first storm of the film happens when the character played by Gabin tows the Mirva and meets Michele Morgan. This long sequence alternates shots of scaled-models with grand shots from the studio where the actors are sprayed by water and the camera is enlivened by a strange heaving movement. With hindsight, the realistic effects are rather poor, and the scaled models of the boats are not believable due to the contrasting dimensions of the waves that they are in. (I will return to this problem of the scaling of the water in the technical part of the essay). In the early hours of the morning, the film advances with real shots, cruelly emphasizing the lack of reality in the last scene. We are far from the Hollywood rendition seen in *Mutiny on the Bounty*…

The end of the film compensates for its faults. Jean Gabin, tortured by the death of his wife, returns again to the port to bring aid to a ship in distress. The storm is in his head. It rains, he descends the stairs that lead him to the port and gets on board of his towboat. In the wide shot, it rains, the wind blows, the music is frenzied, and the man is exhausted and gets ready to confront the storm once more. The weight that he bears is understandable because he is immobile under the mist and spray of the water.

c-Hollywood releases its rowboats

In the middle of the 50s, three important Americans released films depicting storms in the sea: *The Caine Mutiny* by Edward Dmytryk for Columbia studios in 1954, *20,000 Leagues Under the Sea* by Richard Fleischer for Disney in 1954 and lastly *Moby Dick* by John Huston for Warner in 1956. In the same period these three films proposed three different worlds that showed despite their similar technical shooting styles, the interpretations were distinct from one another.

20,000 Leagues Under the Sea and *Moby Dick* both present a world of storytelling by adapting two old classics of naval literature. They have the same usage of music in the two films indicating the same conception of man heroically combating nature and its elements. We dive into epic adventures where man is always, inevitably, victorious.

For the first of these two films, Disney constructed a new studio because they needed to film in a large basin. This was not sufficient for the medium long shots and production had to use a 20th Century Fox set.

For this film, just like all others in this time period, it largely used scaled models of more or less big resolutions. Furthermore, the different parts of the ship were constructed in real-life sizes to integrate them into the acting scenes.

Towards the end of the film, the Nautilus is attacked by a giant squid. Captain Nemo decides to go up to the surface to fight the sea-monster. As an anecdote,

this scene was originally shot in calm weather as the sun was setting. However, the effects that allowed the animal to move were very visible, and Walt Disney had the idea to re-shoot the scene at night during a storm, the waves and spray of the water thus masking the subterfuge. This scene is considered today as the great moment in the film especially due to the tension that was heightened by the typhoon.

There is no medium long shot in this sequence. The shot is focused on the attacked ship. There are no real waves or swells but the men are regularly swept away by the strong sea sprays. The camera moves quietly on the ship and on the water. The feeling of danger due to the weather conditions is pretty lousy. It relies only on the monster. The men splash about in a vast pool with powerful fans…

Filmed two years later *Moby Dick* contained a real storm scene in its script. If 80% of the film was shot in the studio; it should be noted that the sea scenes have an amazing realistic quality to them. The painted skies are perfectly believable and fit in well with the shots filmed at sea. The whale hunting scenes are amazing, the distinction between real and fictional elements are not really visible. The viewer is absorbed in the film, and the whales themselves are proof of certain truthfulness.

The storm scene on the other hand, was filmed entirely in the studio with models and ends of the boat in life-size. For this reason, Warner used the Shepperton studio in England.

The staging of this storm is very different from the ones we just saw. The frame sizes are the same: some medium-long shots used on a reduced model boat placed in a wave basin and some interior shots of the boat helped by shots of a reproduction dunk into the basin and splashed by vast quantity of water. The scene is particularly dark which certainly helps with the realism and the continuity.

What revolutionizes the feeling is the camera, which is rarely stationary. It moves a great deal, as if it itself is troubled by the storm. It seems to be subjected to the breaker and the movements at the heel of the boat. It is hit by the currents of the sea and struggles

to correctly view the action, fogged up or lost behind the spray. Thus the viewer is brilliantly a part of the action. He or she is pushed, struggles and hangs on. The production puts him or her in the middle of the storm. Without the camera to project feelings

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the storyline and the actors are sufficient to prevent the viewer from realizing this and the camera gives a subjective point of view from right in the middle of the storm.

This sequence is relatively powerful since the camera produces a dramatic sequence necessary to a true staged act.

In 1954 Edward Dmytryk produced *The Caine Mutiny*.

In the vast ocean, the captain of a destroyer-minesweeper Caine (Humphrey Bogart) has a worrying behavior. During a typhoon, he goes crazy and puts his boat and crew in danger. Lieutenant Maryk (Van Johnson) discharges him. He will nevertheless be court marshaled, despite the fact that he saved the crew.

The story of sailors does not please the US Navy, without whom the filming would be impossible, and this slowed it down enormously. It finishes by obliging the production to write into the beginning of the film that the sailor had never known of any mutiny.

Worrying about the realism and to best capture the excitement caused by the storm, the director and producer originally hoped to film the scenes in a real-life wind storm with a replica of the USS Caine. After one experience filming in these conditions, they finally decided that it would be much wiser to recreate the typhoon in a studio…

On the other hand, apart from this famous sequence, almost all the film was shot at sea on board the USS Thompson. A process elsewhere was used remarkably for the exterior shots of the boat: they were subtly made faster. This is detected if one is accustomed to seeing this type of ship afloat but it remains rather discrete for the majority of viewers. It is for the effect of speeding up the drills and gives a sensation of dealing with a fast and responsive ship. If the sailors are to be pleased, I find it a bit embarrassing that it undermines the tonnage of the destroyer-minesweeper and passes it off as lighter than its size suggests. It results in, one might say, a comic effect that is unsuitable for the film.

On the other hand, the sensation felt by the shots of the boat better enables the scenes of the storm shot in the studio to connect with the model. The shots are this time slowed down so as not to misrepresent the size of the water in relation to the scaled-down model. This however does not seem too bad as it is of good size and performance in the simulated waves. The camera angle is under the water and thus accentuates the size of the waves and the sense of danger. It is a way of keeping the viewer in the heat of the moment in refusing to distance itself and look at the big picture.

Once again the storm takes place at night. The waves submerge the ship, overtaking it and violently rocking it from side to side and removing its water propeller. It should be noted that this propeller by itself tends to betray the reality of the model.

This sequence is for the most part well put together. The shots of the threatening sky follow real shots of crashing waves on the coast disrupting the passé of some sailors. A small ellipsis to fade into night and one finds the same emphasis on the gangway where the sailors struggle against the breaker. What follows is an alternation of long medium shots of the boat in distress with shots of the interior of the gangway where the most important dramatic scene of film history plays out: the mutiny.

Montage preceding the storm:





On the inside it is mainly the camera that mishandles itself by moving from top to bottom, on the side and in the face of the actors. The dramatic tension is therefore strong enough to forget the lack of dynamic reactions by the comedians themselves during the swaying of the boat, which is suggested by the camera movements. In the same way, the violence endured by the ship in the medium long shots are not in the same proportion of the sudden movements in the gangway.



If one can easily detect the tricks of the angle, the result is all the same surprising and perhaps the most impressive of all the films made until this day.

d- Drummer-Crab: a new wave?

In 1976, Pierre Shoendoerffer and Raoul Coutard directed Drummer-Crab based on Shoendoerff's eponymous novel.

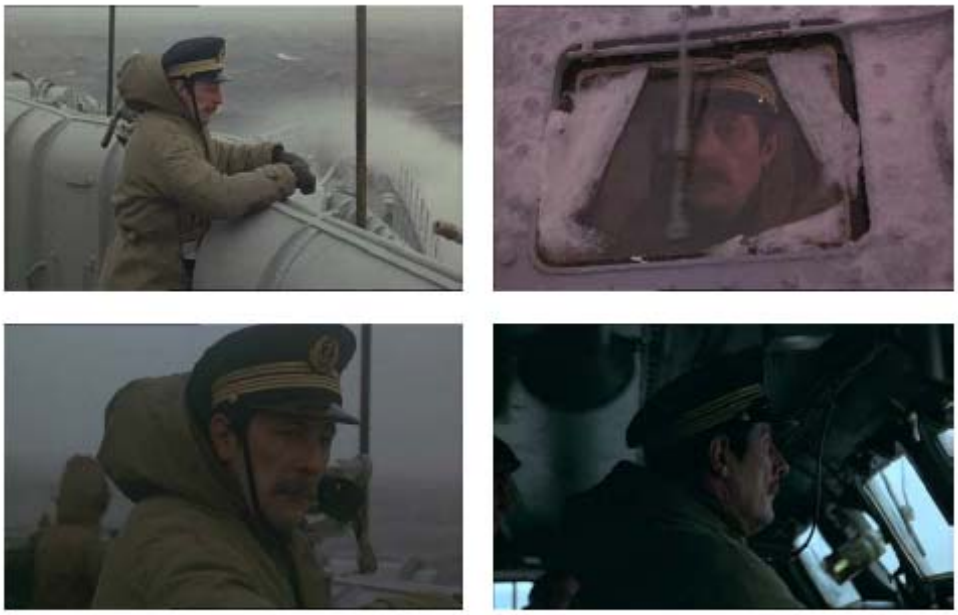
Suffering from lung cancer, the captain (Jean Rochefort) is entrusted with a final mission on board the warship escort, Jauréguiberry (for which this is also the last journey). He is ordered to rejoin the fishermen on the banks of Newfoundland in order to bring them mail and assistance. However, the captain has an other quest, namely imbedded within the French colonial wars.

This quest merged with the memories of the ship's doctor and mechanical officer of a lieutenant on board a vessel called the Drummer-Crab. The men exchange memories and stories marked with nostalgia and regret. They recall this legendary lieutenant, who left a mark on all who knew him, and make them reflect upon their own lives.

Major American film companies will not be discussed since no shot was filmed in studio. On board the Jauréguiberry, the storm is an omnipresent and constant environment

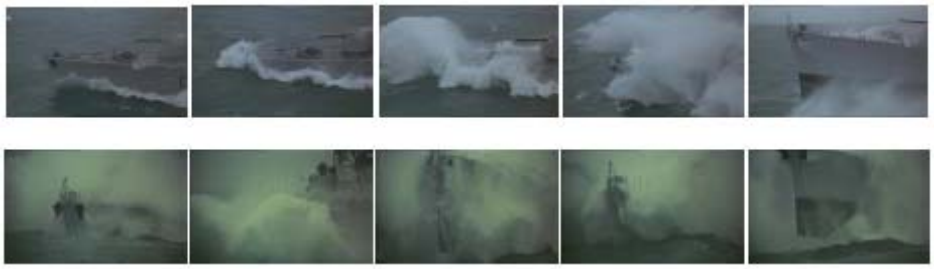
throughout the film. Near the Great Banks of Newfoundland, the weather is terrible

The film alternates between flash-backs and the present on the escort. Jean Rochefort is seen here as a stunning bearer of emotion. Filmed during the day, the ship moves forward, plunges, and takes the waves one by one. The cold weather is felt. The men are heavily dressed and the contrasts with the flash-backs support this feeling. The sea is omnipresent, through the portholes, in the fruit bowls which roll from side to side, in the drinking glasses of the officers in the quarters…And if for a moment the sea appears to be calm, it is but a short respite where the gray skies rest not. The forecast is simply bad. The details of the special effects are too great to explain. The men and the ships manage to pull through, they are not in danger but they suffer. Silently, they push along without complaining. The audience feels the cold, the rain, the swell of the sea and fatigue through the weakening body of Jean Rochefort.



The multiplication of the ships helps spectators to feel the storm. This not only grants observation of ships of various lengths in the waves and thus rendering a sense of scope, but this also increases the points of view, most notably on the Jauréguiberry. The boat is thus regularly and conveniently filmed form afar. Furthermore, the length and incessant nature of the bad weather helps spectators to leave the boat without ever leaving the storm. The shots are very still, very stable, and fixed on the boat or on the horizon as can be seen on board the warship escort or another boat. The image explores the majestic quality of human movement as well as that of ships: simple and incessant, like infinity. The battle between these two giants seeks not defeat but only to progress forever.

In the film, there are also regular shots of breaking the waves. The forecastle of the ship is fully submerged by water yet it manages to recover and take the plunge once again.



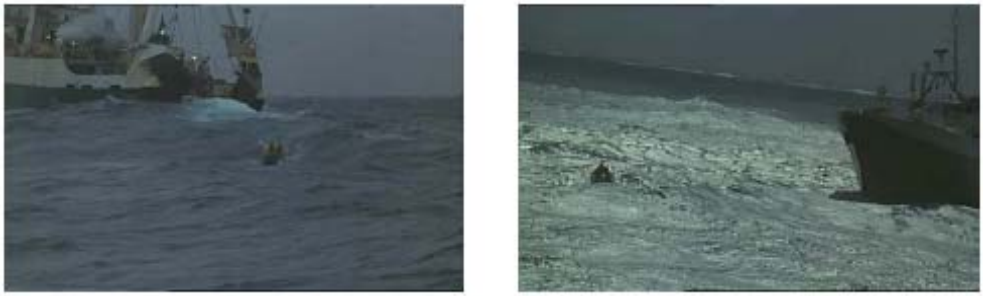
There is a sense of sadness on the set of the storm. This sobering reality is unique to this film. Jean Rochefort and his ship suffer together, as if they are but one body.

Even in the calm, the weather remains threatening:

The different points of view skillfully follow one another. We, the spectators, are at times on the deck with the men enduring the cold, at other times far away from the ship watching them brave the seas. Still at other times we are on the bridge of the ship watching the ocean with the captain through the windows gently brushed by the sea. The movement from shot to shot is well carried out allowing the spectators to remain in the ambiance with the men in battle.

There are moments in the film where certain shots successfully highlight the content of the scene. An inflatable life raft abandoned by a trawler ship meets up with the warship escort at sea. The raft is tossed around by the waves and appears tiny. The sizes of the surrounding ships as well as the accompanying waves are thus highlighted.

Tossing life raft:



Later in the film, the Jauréguberry finally meets the Shamrock, the trawler ship of the Drummer-Crab. These two boats pass one another closely and disappear one after the other due to a sea swell. The spectators are left to imagine the size of the waves that slowly tread these waters…

The Shamrock disappears in the trough of a swell:

The methods and techniques used in this film will be further discussed in the technical chapter.

This storm is a reference for me. It is to my liking and is in my opinion the best storm filmed to date. The effects of screenplay and staging cannot be ignored, but this illustration works superbly even in it temperance.

e- Hollywood and storms today

Bounty

In 1984, Roger Donaldson directed the remake of the mutiny of Bounty. Surprisingly, 50 yrs later similar techniques were used in filming storms. Once again a replica of the ship, Bounty, was built at its original dimensions for shots at sea. In the succession of the plot, the mounting tension is further provoked by the long rise in strength of the strain on the sailors. A number of shots of the inside of the cabins indirectly show how the men and the ship suffer: things fly, the sailors fall, everything is topsy-turvy. This type of shot was present in the original version, one of the few staged Hollywood storms at the time. Despite this, many flashes of lightening regularly light the images affording the sound the opportunity to rumble and roar as it should!

The froth and the spray of the water flying fill the surrounding space and serve as a background enabling filming to occur right at the dock!

The storm works despite all or rather because of the realistic view of the ship in the storm. Indeed such a ship is impressive when it lies on the waves and rises upright again. The size and the weight of the ship can be sensed and so seeing it manhandled by the elements further suggests the violence of the moment experienced by the sailors on board.

In height of the storm

Today in discussing storms at sea in cinema, Wolfgang Petersen's, *The Perfect Storm* immediately comes to mind.

The screenplay is based on a true story: in October of 1991, a huge storm down poured on Gloucester Massachusetts, an important fishing town. This storm registered waves of 25-30meters in height. Notably one ship did not return: the "Andrea Gail." The film retraces the final days of the ships last journey and its crew who braved this storm at sea.

From the beginning of the film, Petersen is lead by the challenge of realism. The reunion of the survivors of the storm and the fishing community of Gloucester all but push him towards this path.

"I grew up in the port-city of Hambourg and I was always attracted to the sea. It was like an unknown world to me, constantly changing: the ultimate frontier for adventures.
The fishing business is the most dangerous in the world. If we include the violent machinery relied upon daily at sea and in the air, industrial fishing is the cause of death for more people than all other at-risk jobs: policemen, firemen, etc. Each outing at sea is a voyage into the unknown? A thrilling adventure which can in several minutes turn into a nightmare."

Wolfgang Petersen

The scenes of the port were filmed right in Gloucester at the consent of the local professional fishermen.
The scenes of the actual storm were filmed in a studio. This point will be revisited later.

The film came out in 2000; during this time digital picture was at the edge of technology. It made huge contributions to the actual possibilities of recreating a storm at sea in a big-budget action movie.

Even though the film clearly self-ascribes to the Hollywood-thriller aesthetic, it is meant to be to be realistic. Beyond the difficulties of portraying the hard life of the sailors and fisherman, the film attempts to impress, bring the spectators to the scene, where they will probably never go. The film wages on the appeal of its beautiful images.

In this respect, the film is fairly successful. Even though the 3-D effects may already appear dated, they still work rather well. The storm scenes are impressive leaving the viewers informed or not asking how theses scenes could be created.

Practically all of the storm scenes happen at night using a dramatic force that I found to be a bit boring.

The Andrea Gail

It is obvious that the choice of vessel cannot be neglected in a film of this genre. There are numerous types of fishing boats each affording different shooting possibilities. In this respect, one of the most important factors in selecting a ship is its exposure of the men to the waves, the rise in tide, and the rain… In fact, if the sailors are perfectly covered by the carcass and architecture of the boat (which is unfortunately the case now in modern boats) not only will it be more difficult to communicate the brutality of the weather conditions, but the sea, waves, and skies also risk appearing out of their element, thus loosing their threatening power.

In this regard, the Andrea Gail is an excellent choice since the sailors are perfectly exposed to all climatic rushes.

The following example well illustrates how the choice of ship can allow more or less impressive dramatic scenes.

The ship also renders it easier to shoot the men facing the elements throughout the film.

It is quite nice as spectators to see the characters so manhandled. They take on loads of water, fly off gusts of wind, fall into the water, and drown. Without a doubt their situation is dire.

Parallel to the story of the fishing boat, the rescue of a sailboat and its crew also occurs. These shots are interesting because a sailboat is a common object of known size

to all. Seeing such a boat in the middle of 15 meter waves gives us a real sense of the state of the ocean. The shots filmed on board are also interesting: they offer a terrible sense of captivity. The storyline also calls for the intervention of a helicopter, another occasion to multiply the points of view surrounding the sailboat without digital effects.

The characters are seen at sea for quite some time. Thus, the point of view can be but so close to the surface. This increases the gigantic sense of the waves.

In my opinion these shots are the most effective of the film. They stage the storm a bit more plainly than elsewhere.

But there is one particularly impeding point in the film: the point of view is overall way too ‘comfortable’. Petersen uses a multitude of positions and movements of the camera that are complicated and unrealistic. At the height of the storm, the camera continues to flyover the aft deck with perfect fluidity. It is completely estranged to the torments of the weather. Obviously, I do not think that the shots should be as affected by the inclement weather, as the characters but I cannot comprehend why points of view close to the characters would be passed over for zenithal shots comfortably above the water.

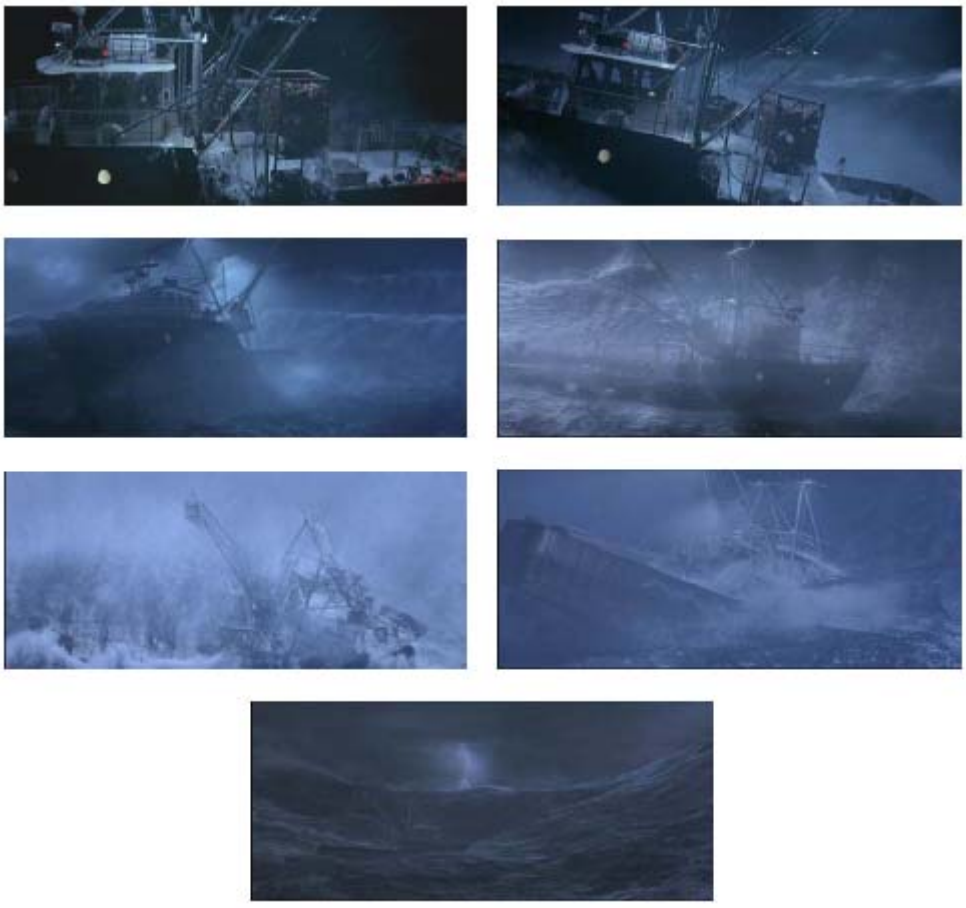
This point of view makes the story feel fictitious. If the camera can so freely gallivant, the situation appears to be under control. I, the spectator (like the camera),

remain comfortably situated on my couch passively watching the torment of the characters.

This, without even accounting for the lighting which painfully exposes the studio…is not usually impeding, but the film attempts to be realistic and one cannot believe in the storm, no matter how digitally perfect it is if at any moment one can feel the presence of the studio.

While doing some research, I could see certain traces of the spotting that ILM (George Lucas' special effects firm who directed the special effects of *The Perfect Storm*) had used as a reference.

These images were much more 'hectic.' They are certainly less impressive but they reflect something real that is more poignant than the actual shots in the film. The danger and the reality of the conditions of a hard life are better communicated. Certainly the presence of a cameraman can be annoying but it should be considered that a realistic situation, if less shocking, can be more dramatic.



In stopping to consider which type of shot would be more effective for other viewers, I reflected on the ideas of sensation, of feeling drama. This implies my perspective but my film like my nautical knowledge can skew my evaluation.

Despite this, *The Perfect Storm* remains undoubtedly a beautiful display of shooting storms at sea and its aesthetic choice is probably the most effective for a majority of viewers. I will return later on the techniques employed by Peterson and his crew.

The same type of images from the texture to the movement of the shots and their framing can be seen all Hollywood movies featuring storms (*Masters and Commanders* by Peter Weir, *Pirates of the Caribbean* by Gore Verbinski…)

However, the superb scene from *Masters and Commanders* where the production is not deprived of large shots of the vessel grappling with the waves is noted. The climatic moment is the drowning of one of the sailors. The camera, at sea level, observes the ship moving away. The shots of the man who disappears slowly in the breadth of the waves communicates the helplessness that the crew feels as they do what they can.

f- Documentaries marginalized?

Numerous documentaries feature storms at sea and it is difficult and undoubtedly pointless to single them out. The principal is almost always the same: camera in hand for the majority of the time; the cameraman holds a horizontal angle as best as his own balance can. The movements are well tolerated because the presence of the cameraman accepted and put into play. These films and reports strangely play with the emotions of the spectators. On one end they are thrust into the heart of the storm: watching the men (subjects of the documentary) who live there, they feel along with the men the real conditions. However, on the other end, the often cold nature apathetic to the filming is too often positioned simply as an observer. They can judge, compare, and be impressed but the films often inhibits internalizing the sensation.

One of the images of a storm at sea that has impressed me the most were taken by a skipper during the round-the-world-single-handed yacht race of 1992. He left with a small camera from which he could send images via satellite. In the Antarctic Ocean, the navigator suffered multiple storms and could not sleep because of the icebergs adrift. The camera was on the roof and the film at the helm. The skipper could not be seen until he put on his jacket. The waves came from behind. Again and again the waves seem to threaten the boat and push it as if surfing, breaking at times at the rear. The navigator is

almost immobile, submitting to the gusts of wind and the loads of water. To me this image is very strong since it expresses the power of the storm through the singular passive resistance of this man who appears to stop at nothing.

Here we find that the idea of the image cannot abandon its context. Knowing that this man has already been alone for many weeks and is too far away from any possible help adds a strong dramatic dimension to the interpretation of the scene.

Capturing an image of a storm at sea also consists of integrating it into an environment that is both factual and emotional to aid in its interpretation.

Conclusions about the representation of storms at sea in frame art

If, like we saw earlier in the introduction, film through its essence and its temporal nature is very different than other pictorial arts, we will find all the same that some notions are identical.

Film solves the problems of representing scale. Very large shots seen as if by satellite allow the reproduction of the storm gigantically while the men fit neatly within the frame of close ups. These shots can follow one another and alternate casually but the sensation remains its strongest if multiple abusive and thoughtless changes in frame scale are avoided.

One given principal that can be found in all of these mediums is the necessary presence of man (unless for some reason one wishes to film only the storm purely for aesthetic purposes). This relieves the spectator's point of view and integrates them in the action. It is through man's emotion that the spectators feel the storm. The infinite human emotions also allow the execution of the feelings to be played with.

No matter the phenomenon, the feelings communicated will be felt differently if the people who experience them express fear or passivity.

The strength of a storm can thus be increased by only a play in the emotions of the people present!

In addition, the human reference is the most trusted measure for the spectators. The height of a wave without a reference is very difficult to guess. The presence of a boat helps but it is the comparison with people that allows the size to at best be remembered. This idea is indispensable if emotions are to be communicated through a series of shots.

Because of the regular absence of this idea in paintings where often only the boat is depicted (cf. Dutch school of though), the paintings have are more aesthetic rather than an emotional. Storms do not represent danger, enemy, place of the sublime, they are

simply beautiful because of their shapes, colors, and eventually their energy. Such will be the case in film representations of storms.

Thus the storm through its sublime dimension is in its representation, at the limit of estheticism and emotion. It is dangerous and easy then to pass this thin boundary. In fact filming a storm “too beautifully”, in its play on lighting, and perfect and hypnotizing form, or in another esthetic system risks the suppression of the danger that the storm is supposed to carry. This could provoke the passivity seen through the disengagement of the spectators who are no longer interested in the characters but in the only the beauty of the image. “The Ninth Wave” by Aivazovsky in its genius is perfectly situated at that boundary and succeeds in creating both estheticism and emotion.

Where on board should the spectators be placed? If the spectators are to travel with the characters, they will not be protected from the elements.

The spectators should be integrated, feeling the emotions of the people present. In achieving this, the position and the movement of the camera are essential components. It appears that a camera subjected to some of the conditions of the sea favors total immersion. However, the limitations are again present and difficult to address since the presence of the cameraman should not be felt and the camera cannot toss about. In addition the camera should be sufficiently clear as not to complicate the interpretation of the images; even though a spray of water or mist (as in *Moby Dick*) is sometimes present on the on the lens leading to a feeling of precariousness that can be appreciated in this instance. A camera too fluid in its movement comforts the spectators communicating that the situation is at least in part under control and that the characters will survive.

The vivacious and turbulent movements of the camera in *Moby Dick* are much more effective than the fluid ones which falsely translate the movement of the sea swells in *The Caine Mutiny*. It requires closer attention from the spectator and subconsciously evokes a stronger emotion.

The position of the camera is subject to the same ideas mentioned above and is also dependent on other given aspects of the film. It is responsible for filming the other dimension: that of the storm. Thus the integration of large shots and of the location is a double edged sword. They offer a vision of the power of the events and give a glimpse of their size. It also allows the spectators to notice even from the exterior how the ship of the heroes is manhandled, how it battles, and eventually suffers. It renders awareness from outside the ship and reinforces the imprisonment of the people in the storm. In addition it reviews once again a comparison of the scale between the ship and the waves allowing the best visualization of the problem! On the other hand these viewpoints are for the most part fairly arbitrary and are not justified by another observatory presence. As a result the spectator temporarily leaves the unhealthy and dangerous environment of the ship to stand back from the events, and if not well carried out, come out of the emotion. They find with ease the role of the passive observer comfortably situated, dry and warm. It will be difficult to re-integrate them a new. At best they will feel nothing more than empathy but will loose all feelings terror. The presence of helicopters or other neighboring boats

can solve this problem, but it is often “God’s point of view” like Hitchcook says that is in charge!

These viewpoints have become necessary and are often best placed at the beginning or end of a sequence of shots to communicate the coming peril or to observe the damages incurred.

Filming from a far or at least from outside of the ship of the protagonists is quite interesting but poses once again several questions. It is agreed that the set, the screenplay, and other processes answer questions regarding the subjectivity of points of view, one question remains: what is the effect of the different types of shots. In this case it is better that the camera remains as still as possible and perfectly insensitive to the heave of the sea when in bad weather so that the cameras mode of transportation and hence the presence of additional people capable of rescuing the ship being filmed cannot be sensed. The closer the camera is to the water the more important the waves and the more threatening the skies appear. But a raised camera capturing the entire enormity of the sea heave increases the spatial dimensions of the storm and encloses the ship within the storm. Meanwhile it has been shown that the more the camera is elevated the, the more artificial the point of view appears assuming the risks described earlier.

Originally, cinema is capturing the real, weather it be an artificial reproduction or not. The storm thus poses a problem completely ignored in paintings: the presence of the artist at sea. To everyone the storm represents a powerful climatic phenomenon which submerges man. It is an event that should be deeply moving, and its emotion is limitless. Including a storm at sea in a film is often promising to impress the audience. Thus the subject to be filmed naturally lends itself to kind of violence. Most of the time these conditions surpass those necessary to control the shooting and the staging and works with a minimum amount of security.

In order to deal with this problem, most filmmakers resolve to work in studio to recreate, by cinematographic means, the violence of the storm (scaled models, chroma key, 3D effects…) As the history of cinema progresses, the reconstructions become more credible. Today spectators are used to the grand spectacle of cinema. The size of cinematographic storms surpasses that of most real storms and perhaps prevents the return of real shooting in this genre.

The waves have grown, the winds, in Dolby, blow louder, the night is omnipresent, and the plots are even more disastrous.

One essential thing remains: the storm must be staged. There is no good way to film a storm and it must be closely tied to the plot. *Drummer-crab* is without a doubt the best example. Applying most of the points set out above correctly (the fixed camera, the incessant back and forth movement from different points of view, daytime, the real

storm) this film is a magnificent representation due to the successful integration of the storm into the plot.

In a different genre, for example a documentary, the same theories are still fundamentally relevant. Only the viewpoints deviate more freely. The presence of the cameraman is accepted and the instability of the camera is perfectly justified so that the spectator can identify with the cameraman: a person in an unhealthy environment who is doing the best he can to capture the surrounding events. Likewise, a point of view from outside of the boat is also perfectly accepted since it will be immediately associated with the cameras mode of transportation. An escorting ship, helicopter, or other mode of transport can not be removed; the presence of the cameraman is a part of the film.

The question of fixing the camera on the horizon in the images is not as trivial as it may appear at first glance. Already, the effects will be completely different depending on the axis on which the boat is filmed. The answer to this question is often derived from all of the other decisions taken in the other factors previously mentioned and remains lastly a subjective matter of the moment. The ocean presents too many unpredictable elements to have a specific idea regarding this question. If the swell overtakes the ship it is difficult to think about the horizon.

It remains evident that in the case of still shots, the camera is fixated forcibly either on the horizon or on the pivot center of the ship.

Cinema is an art of time. The storm has the leisure of growing stronger, pausing, and toying with the characters. The screenplay, editing and sound are other vectors that cannot be separated or ignored. The successful cohesion of all of these factors is more important than the simple achievement of the shooting.

Making good use of the studio…or the art of making a storm within four walls…

"Glasses of water have the same passions as oceans"
Victor Hugo

In cinema, it is necessary to artificially recreate the storm at sea. Over the course of the cinema's long history, filmmakers have come up with several solutions to this problem of recreation, with each attempt having a varying degree of success. The latest technological advancements in digital capabilities allow filmmakers more than ever before to make artificial storms realistic.

a- Miniaturization

Before seriously considering the consequences of different techniques used to recreate the intensity of the ocean in a studio, the method of miniaturization quickly came to the minds of filmmakers. One excellent example of this is found in the film *Remorques* (Stormy Waters) by Jean Grémillon. The scene of the tugboat towing during the storm was actually recreated in a studio with the use of models. It is hard to imagine that at the time such special effects could have any credibility. Today, however, this method is very

dated and often accepted by viewers as “period” effects. In reality, the film, the storyline, and the actors were strong enough to bring a sense of danger and tension to audience, but in retrospect, the sequence shot is not at all believable. The main reason for which these scenes are not believable is simple: you can not miniaturize water!

To start with, water’s basic properties are unchangeable. By changing its size and weight, a boat’s entire interaction with the water becomes considerably modified. The movements of the model boat are faster and more disorganized than in reality. With this use of models, it is therefore easier to imagine a plastic duck in a bath tub than a tugboat having difficulty in a storm!

It is also valuable to into account the appearance of the waves. For the same principle reasons, the waves move much too quickly and lack coherence. The waves never break nor do they foam or throw off an oceanic spray.

In the film, *The Caine Mutiny,* this problem associated with miniaturization was addressed by increasing the size of the models and by filming in slow motion. Here, the waves are slower and seem to be heavier. This cinematic process changes the characteristics of the sea in an interesting, yet simplistic manner.

On the open sea, the waves succeed each other more or less on a regular basis. Their texture is not smooth: they are made up of wavelets whose peaks often crash and whiten with foam. These elements move in an independent manner and can not be miniaturized. One cubic meter of water can not react the same way that a million cubic meters of water would react to external stimulations because of the differences in weight between models and real boats.

When trying to solve the problem of how to produce a realistic oceanic spray in relation to the scale of the models, classical ventilation techniques were not very helpful. With the typical ventilation system being an unviable option, it is now common to use a method of fragmentation caused by ultra- sonic sounds produces better effects.

In *Remorques*, Grémillon skillfully incorporates the shots of the boat models with a medium close-up shot of Jean Gabin at his commanding post, filmed through a window of the ship which is regularly washed over by the water. This type of shot was easy enough to direct because it simply entails a balance between the crashing of the water on the glass in relation to the actors. The effect is pretty realistic, and it allows the filmmaker to better integrate the layout of the models into the scene.

b- Full- Scale Reproduction

Now let’s take up the case that the filmmaker is ambitious enough to take on shooting in a studio, but on a life- size set. Although extremely expensive, filming on a full- scale set allows the filmmaker to avoid the problems of working with water described above, and to incorporate the actors into the shots as well. And I will not repeat here the importance of having man present in shots of the storm at sea.

In most films, for obvious reasons dealing with the dimensions of the sets and budget, only one part of the boat is built to scale.

One can find one of the most ambitious and accomplished cases of reproductions in a film by Peterson: *The Perfect Storm*

The first problem Peterson faced was creating a basin with large enough dimensions to hold the desired boat. The second problem: how to enliven such a large volume of water in a realistic manner. And the last, but not least important, problem: was: What should be in the background?

Peterson, taking care in keeping his film realistic, was interested in addressing these three problems by studying various filming methods.

As far as the basin goes, there were not a lot of compromises that could be made. The boat had to be able to be filmed from every angle. Thus, it was necessary to construct a boat that was identical to a real boat, and then build a basin large enough to hold the boat. The "Andrea Gail" (the name of the boat in the film) was 24 meters long. The basin was 30 meters wide, 33 meters long and 7 meters deep. This represents an entire volume of 6300 cubic meters and 6300 tons of water. And that was not all that much, considering the size of the boat.

To simulate waves and movements of the boat, wave machines were installed on the edges of the basin. Furthermore, the boat was mounted upon an impressive system of hydraulic cylinders that allowed the filmmaker to control the swaying and tossing of the boat in relation his desired effects, as well as choose the angles from which he wanted the scene to be shot. In addition to this, there were a number of powerful jets capable of instantaneously propelling several cubic meters of water on the boat while tanks holding several cubic meters of water were emptied on to the boat in order to simulate a wave submerging the boat's main deck. Now add to this a powerful ventilation system and the scene is complete, at least for the boat and the 2-3 meters of "ocean" that surrounded it.

Thanks to this imposing system, the image of the storm and its interaction with the boat becomes controllable. The lightening, crashing waves and the swaying of the boat are all take place at the precise moments chosen by the director, and are all filmed from the desired camera angles. In this regard, the action could be recreated time and time again in an identical manner, allowing more efficient and effective work from the

actors. Filmmakers had found a way to master the universe, while ensuring safe and secure conditions for all of those involved (noting that all of the technicians were harnessed and protected). The continuity of a shot no longer posed a problem…

We can also easily imagine that the use of a crane would be helpful in filming complicated movements. The filming of this scene, carried out with impressive, perfected, plans for fluidity in filming conditions, gives the audience more powerful images to work with. The shots are impressive and the movements of the camera add a certain dynamic to the film. “We are able to see everything in sight.”

(budget of the film *The Perfect Storm:* $120,000,000)

Other inconveniences: The director had to get himself on the boat with a zodiac, the actors got sea sick, the technicians had to maintain their oilskin jackets and trousers…

While the question of how to shoot the actors and the boat during a storm seems to have been resolved, the aforementioned methods do not account for the background.

Certainly one can argue that for the most part (the totality?), storms in films take place at night: this dramatizes the action of the scene, but also allows the filmmaker to the plunge the background into darkness without any further complication!

c- Digital capabilities to the aid of the background and wide shots

During the last 30 years, digital special effects have penetrated the art of the cinema. Today this is the method most- widely utilized for filming storms at sea. Digital technology allows for the reproduction of wide shots, and the completion of studio shots by recreating their missing backgrounds. In *The Perfect Storm*, the basin was surrounded entirely by blue screens allowing for the inlaying of background images. The film is thus a mix of real shots and digitally created shots. .

Actually, for the most part, films containing scenes of storms at sea leave a very large “opening” for digital enhancement, to help detract from the expensive exercise of filming a storm in the studio.

Special effects have had a long, difficult history of representing storms at sea, particularly because water has many dynamic elements that are hard to imitate. Researchers spent a long time trying to find models that satisfy water’s different qualities and took up a very information- based analysis of the subject.

The storm needed to be more than just the imitation of waves, but of oceanic spray, wind and a realistic interaction between all these elements; in particular the interaction between the water and the boat had to make sense, specifically in relation to the boat’s response to the water…

For Peterson’s film, it was the ILM, the society created by George Lucas for Star Wars, which drove ahead technological advancements of digital special effects.

The principle difficulty in this exercise is connecting the filmed image of the water in the basin and digital enhancements in a seamless manner.

The creation of such an image must be corrected and evaluated on many levels. The boat must be remodeled in a 3 dimensional manner to recalculate its interaction with the water. The image of the boat swaying and tossing is captured in the filming done in the studio, but the scene must also undergo the following calculations and digital modifications:

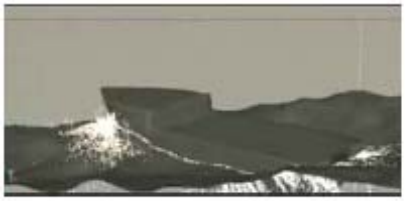
- reaction of the boat to the waves
- reaction and movement of the boat's internal elements, like the chains and cords
- interaction of the hull of the boat with the water, including the spray and foam that it generates
- calculation and imitation of the waves that pass beneath the boat
- making the digitally added water light up in response to the spotlight of the boat
- imitation and recreation of the ocean in a more comprehensive lighting
- assemblage

Captures with different digital layers:

Reaction hull/wave:

Reaction cordes, chains:

Interaction hull/frothing particles:



Boat/breakers:

Particles brought into play together:

Rendering of particles:

Lighting of the boat and the

fog: *Digital rendering of water with the boat:*


Model and digital rendering of the ocean: *Final image:*


With action taking place at night, scenes can pass as real and credible without the integration of thousands of digital effects. However, with even the brief presence of a digitally added background scene that appears in the light of a lightening bolt, the sensation of the storm becomes greatly reinforced for the audience.

Filming at sea or the choice of authenticity…

It is evident that filming at sea *during* a storm comes with a certain number of constraints. It includes the notion that before going out to film, one must know exactly what he or she wants to capture on camera and must have a good idea of how to proceed in getting it.

Dealing with either documentaries or fictional films, there are many filming methods to choose from that all obtain different shots and all very greatly from one another.

Filming a fictional scene in a real setting with actors is something that is particularly ambitious, but not impossible; it is all a question of preparation. The main problem that one encounters when filming such a scene is associated with *time*, and specifically the actual duration and strength of the storm.

Crabe tambour (Drummer- Crab)

Being one of the few films actually shot in real conditions, it is interesting to examine the techniques that were used to create *Crabe tambour* (Drummer- Crab). The film takes place on board an old destroyer escort called the “Jauréguiberry.” This boat measured 128 meters long and 12 meters wide. In the film the boat faces its last voyage (along with the character of pasha in the film), as after its final return to shore, there are plans for its disarmament and use as a target for an Exocet missile. Shoendoerffer and Coutard chose to set their cameras at fixed angles to film the desired shots. They chose their camera angles of the boat in relation to the horizon, and picked out different locations from which to shoot.

Given the fact that her end is very near, the female sailor accepts to weld some Elemack base plates to an agreed upon point. These will be very practical in order to rapidly and safely fix the cameras to the agreed upon points. They thus leave with 5 cameras: a BL and 4 cameflexes as well as two watertight box beams with swiveling portholes. One of the box beams is set before the boat towards the gangway on the boat's stabilized teleprompt. The second one is on the rigid arm designed to be set before in order to film the stern. All these plans have been tried and validated before the departure.

The outer shots of the ship are carried out from a Super Frelon helicopter belonging to the female marine and her quick escort vessel. On this latest addition the camera will also be set on the Telepointer.

A last detail: in the north Atlantic during winter it's less than 30°C. The camera grease has been changed before leaving to prevent them from freezing…

The fiction sequence production is therefore perfectly possible. It simply asks for great preparation that puts systems in place that one will not need to come back to often.

Choice of boat

If it presents itself, the choice of boat to film is essential. As it was previously seen, it can determine the impact of the storm on the men on board. But beyond this fact, a ship's behavior faced with bad weather is very different from one boat to another.

For example a sailboat adopts a wave's form when a motor boat takes a blow one by one. And the bigger the boat is, the less it will be subjected to the swell.
Of course, the worse the weather the more interest one has from a security point of view that the boat be large, but the smaller the boat the bigger the storm will seem… This last point infers that a storm on an inflatable dinghy does not necessarily need a force 10 wind…

To point out that the screenplay or the documentary's subject often mentions the type and size of the boat precisely enough…

a- Outer point of view of the filmed ship

In order to film a boat (whatever the weather) there are two solutions: Another boat and the helicopter. So that the shooting is feasible, this new "point of view holder's" presence cannot be felt. In another boat's case, the shot of the swell that the camera takes cannot be felt. In fact, if the camera's floating in the air somewhere is tolerated in order to offer us long shots or a situation, the system that transports it doesn't accept it well while feeling so.

- Point of view from another boat

There the question of the type of boat still presents itself. A big boat will offer us more stability but without a doubt will maneuver less easily around the subject to be filmed. That being said, if the shooting axis are well prepared in advance (that in such conditions should be the case), it is better to turn towards the biggest possible boat so that it can take the maximum swell. The camera will not be interdependent of this, and it's

absolutely necessary that the point of view appears fixed and independent of the state of the sea so as to not feel its fixation mode. It's even more necessary to make sure that the axis is not too low so that the waves of the foreground do not cross the field, betraying the position and the presence of the camera.
The camera will maintain the level of the horizon at the horizontal.

For these reasons several technical solutions exist that utilize some principles of gravity or of gyrostabilization.

Marine Base

Today the base that without a doubt constitutes the most simple system has already fallen into disuse. It was made up of a free bowl in its cupola from which a weight was hung underneath that allowed both to work like a pendulum and maintain the level of the horizon. From a disconcerting simplicity this method was unfailing in a certain angle limit (beyond the thirtieth degree, the head came to come up against the edge of the bowl) if the movements weren't too sudden; therefore there was no problem when it was simply a matter of making up for the swell.

Telepointer

This system is initially used on war ships and it allows a canon to maintain accurate aim despite the ship's movements. This system is comprised of two parts: a kind of pair of binoculars that have to point the lens and a deck (bearing the cannons but on which a camera can be set) from which the plate is adjusted by some motors controlled by the binoculars' movements. The timekeeper sets the lens and thus leaves an imprint of the binoculars' movements. These movements are then analyzed and broadcast in negative to the deck so that the cannon or that camera follows the same objective. If it's difficult to find apart from military ships, this system works perfectly in the limits of 30°.

Telepointer on a French frigate

Gyrostabilized head

There are two families of gyrostabilizer heads: the supposed “passive” ones and the “active” ones. The first works on a gyroscope principle and the second on that of the gyro meter. This second technique is more recent and dates to the beginning of the 90’s.

Passive gyro stabilization

Like a lot of cinematographic techniques, passive gyro stabilization results from military technology. It came around by the beginning of the 1980’s.

Principle: the electro mechanic system uses the inertia of a mass set in electrically rotary movement to stabilize the axis on which it is placed. Today the heads of this type possess a gyroscope on each axis. This system has revolutionized aerial shooting and has allowed the focal distance to extend considerably all while stabilizing the images even more.

Boule Wescam:

The first to see the day of light is the Wescam head perfected by the Canadian society Westinghouse. The camera is placed on the inside of a spherical enclosure with a porthole. If the first models only accepted a little of the camera, the Wecam has quickly been declining in several models in order to receive different types and sizes of cameras. All the same, it is necessary to know that this system is particularly heavy and cumbersome. The ball itself without the gyroscopes already weighs 100kg… (An alleged “active” version came out since: the Wescam XR.)

This head principally designed for shooting from a helicopter is also adaptable on boat and will be very successful until active gyro stabilization comes to the market.

The Spacecam system, perfected by the designer of Wescam offers two interesting evolutions:
-The Roll axle can be automatically controlled in order to keep the horizon
-There is no porthole before the lens thus dodging numerous flare problems.

Active gyro stabilization

This technique relies on the utilization of “gyrometres”, electronic measure devices borrowed again from military aeronautics. These take the place of heavy gyroscopes and measure all the variations of movements on each of the three axles to a frequency of 16000 hertz. The measured information is then transmitted by optical fibers to electronic motors that are passed in negative the movement on the head, thus correcting the vibrations and shocks transmitted by the support of the head (helicopter, boats, car, etc.) in real time.

In addition to increased efficiency compared with passive gyrostabilisation, the heads that result from such technology find themselves extremely lightened.

Here one finds several heads that are all able to be piloted to distance by handles or joysticks

The Flight Head:

The Libra IV:

The Scorpio Stab

The C Stab:

All these heads sensibly have the same results even if the cradle conceptions differ from one constructor to another. The parameters that differ and that are necessary to take into account are: the weight of the head, the type of accepted camera (even if practically all the cameras mount all the heads currently), the admissible load, the angle of the liberty of movement on each axle, the presence of a control motion and of the automatic bubble function that allows it to maintain the level of the horizon.

-Helicopter Shooting

Helicopter shooting is quite interesting here since it can react to and make large movements. It also can capture large shots fairly well. It can be used for traveling shots, still shots and can change viewpoints very quickly. The primary inconvenience is that it can descend as low as the boast itself which implies that the shots are always at least in a slight high angle.

The camera may be fixed under the helicopter in a stabilized head. The operator is on the inside and films using a remote control. The head protects the camera from all of the helicopters vibrations but also corrects the changes in balance of the helicopter in real time. Thus the shot remains perfectly fluid conserving the balance. There is another fixation mechanism that is not stabilized with a helicopter:
-helivision where the cameraman and his camera is suspended on the side with a device to prevent vibrations.
-Tyler Middle Mount and Major Mount: two systems comprising of an extended arm fit on a counterweight and isolated from the rest of the cockpit by mechanical shock absorbers.
-Tyler Nose Mount and Super Nose Mount: the cameraman is separated from the camera which is fixed in the front of the streamlining of the helicopter. Only the tilt remains controllable.

b-Viewpoint from inside of the boat

-Fixed camera aboard the ship

Apart from the ideal but rarely possible method used on the set of the Drummer Crab, remain other solutions to fix a camera on a boat. One leg can be strapped to the ground and other structures can be made from the ship rail or other safety ramps. It should be noted that it is impossible to secure a leg to the floor. In fact, when a boat falls in the crest of a wave all the weights are susceptible to being flipped over, including the camera operator who will no longer be able to control the camera…

When the camera is fixed, the ship no longer moves in the image. The feeling of movement comes from the changing horizon, waves, actions and postures of the characters against the swell of the non-fixed objects aboard.

-Camera fixed on the horizon

This type of shot projects more of the ships movement in reference to the sea, only the horizon remains fixed in the image. One of the many theories of seasickness implies that it is better to be fixed on the horizon to avoid nausea. This is where this system originates but the increase of surface movements in the field of the camera is not exactly adequate to this theory! Technically the systems listed above can be referenced.

-Free camera

Neither the ship nor the horizon is set. This principle is often the documentary camera's. The shots are made with the camera on the shoulder. The stability of the cameraman contributes to that of the shot. His feelings of the moment and eventually the decisions he made prior to the shooting will let him to decide on setting either one or the other in the frame.

It goes without saying that this type of shooting implies a good control of balance by the cameraman and being in shape! For the same reasons the camera cannot exceed a certain weight. Depending on the conditions, this type of shooting can be dangerous. Because of limited space and freedom movement it is often complicated to assign an assistant to the cameraman and the latter who is often concentrating through the frame can have a tendency too loose his watch and forget the coming waves. Meanwhile this type of frame does fairly well close to the characters and to the action.

The results obtained are often of great impact, the instability if the shot from the difficult position of the cameraman supports the idea of danger and tension present in the midst of the storm at sea.

c-Protection of the camera

These conditions are not ideal for a camera.

First of all, while this is obvious the solution is not as apparent; the camera is violently exposed and should be sturdily tied down or secured. A wave is often stronger than it appears and it can easily flip over anything that is not foxed.

During shooting the camera is constantly exposed to incoming water from all angles (including the lens). It is thus necessary to protect the camera while also considering the effect of water getting on the lens.
Do we want the water to remain on the lens revealing the presence of the camera or do we want it to disappear as soon as it touches the lens. In the first case, other than the protection of the camera itself, a clear filter in the sunshield will suffice in protecting the camera from the saltwater.

The second instance is complicated. It is quite interesting to see a splash of water hitting the camera in a shot because of the feeling of proximity it brings. But this shouldn't leave any traced behind. There should therefore be a system in front of the objective which pushes away the water.
Many systems exist with each their own set of advantages and inconveniences:

Revolving porthole

Using a porthole turning rapidly in front of the lens makes the droplets pushed aside by centrifugation. There are two types of porthole filming.

- One in which the filming axe is merged with that of the lens. The advantage is a slight obstruction; the inconvenience is that the droplets do not evaporate immediately. (*Spintec*)
- One in which the filming axe is off centered from the lens. Here there are no stagnant droplets but the system is much more cumbersome and the filming weight which is heavier acts like a gyroscope. If this allows the camera to be stabilized, this would also inhibit all rapid movements. (*Fromm*)

Compressed Air

- The air jet directed on the lens creates a billow of air blocking the water from arriving all the way at the lens. This system is more effective than the porthole up until a certain amount of water is received. It also caries the disadvantage of being linked to a cylinder of compressed air which needs to be replaced regularly.

Certain systems include a protection for the whole camera like the Spintec. In other instances it should be weatherproof. A splash of water jeopardizes all water-proof covers, without going all the way to the camera case; it would be a good idea to protect the camera in a splash bag like Hydroflex.
Other than the shooting problems, the humidity in the boat is really important and penetrates all compartments. The *Silicagel* is not bad. For extended shooting sequences, it is necessary to use long and laborious sessions of drying material.
Another problem for the shooting aboard a motorboat: the vibrations caused by the motor can effect all of the screws on all of the mechanisms…If the material is not stored in the in boxes and cases then it is necessary to regularly check the screws one by one…

One last important thing on this subject: all materials that have touches the saltwater should be imperatively and immediately rinsed with fresh water. The salt destroys most the materials.

d- Safety of the operator

There is not much to say on this topic if it is not about watching equipment which should always be well stored to guard their safety. It should be noted that being tied to a boat is not always a good idea. The ties can bruise ones back if one is caught up in a wave. Anyhow there are no universal safety standards at sea other than setting sail in great shape!

As said aboard, in order to avoid seasickness, it is agreed that one should avoid these five things: cold, fatigue, hunger, fear.

Project: "Net Catches"

If I chose to pursue a cinema career, it was not to make the magic of recreating a world in the huge black box of a studio but rather because of the possibilities of discovery and encounters that can be filmed. These adventures nourish the soul and imagination and contribute intangibly to all forms of creativity.

To this end my choice was thus made quickly since it followed a specific idea that I had been entertaining for several years already. I want to film a storm, a real one with men who are characters only to their own lives. We have already seen that their gaze is without a doubt the best carrier of feelings and representations of the storm. The size of a man is ideally effective in measuring the waves.

Possessing some knowledge of the sea through familial culture, I quickly found what I thought was the ideal subject for my studies as well as for an interesting documentary.

I refer to the rescue ship "Abeille Bourbon". Truly a stronghold armed against storms, this boat is ordered the task of the overall safety of the Brest offshore. This zone is particularly dangerous since it is associated with all too frequent terrible weather conditions. In fact it encompasses one of the most used costal routes of the world: The Ushant Shipping lane.

This boat is thus designed to support at minimum any type of ship of all tonnage, in any condition.

The political situation is quite complicated: it belongs to a private group but is chartered by the national navy. After many months of negotiation and despite the acceptance pf the crew and the National Navy, the acquisition of my authorization to film was not successful.

With that said, the ship remains an ideal subject to be filmed and renders an account of a storm at sea, here I quickly go over the reasons that have pushed me towards this subject in the first place.

1 - Meeting with the Storm

This boat withstands absolutely all weather conditions.
In order to as fast as possible (avoiding all human losses and also all natural disasters) arrive on the scene, the ship comes out of the Brest Roadstead as soon as the wind cools downs and passes the bar of the Beaufort 6 wind scale. It orients itself with wind force sheltered from the Ushant, moored or offshore, facing the wind, at the cape. The ship can thus stay many days, waiting, off shore.

The accidents and damages of course occur more often in bad weather, this ship and its crew is regularly confronted with a storm.

2 - Architecture of the boat

The configuration of the boat allows the men to work partially at the height of the water and the open skies. These characteristics are an obligation owed to the system of towing but it also puts the men in dangerous situation. Firstly, the bridge is vulnerable to all breakers, rendering the work quite perilous.

Jean Gaumy

On the other hand, shooting wise (if the safety of the operator is excluded) this configuration is ideal since the waves are easily and quickly in the field of the camera. And the human body as an element of comparison is quickly in play.

This is all the while more real since the towing brings into play a supplementary element of setting: the damaged ship… Behind the ship, it appears between the waves like mountains that cannot be trusted.

Christine's part: pgs. 76-80

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Jean Gaumy

The Human Subject

The boat should be ready to cast off in 40 minutes. The crew (12 people) live in constant suspense which violently contrasts with the 45 minutes of violent action that towing requires in terrible conditions. They can remain in utterly boring suspense for several days in this prison on the sea before possibly seeing any action. This often taking place as the norms of security is relative…

These conditions of life seem extreme and devious when there are consequences for the human character…

The Frigate

I will therefore put myself back into my research. The principal sailors confronted by the storm in the sea are for the most part professionals and for numerous reasons I choose to direct myself towards the world of fishing. This profession is still the most

dangerous and undoubtedly the hardest in France. It seems to me to be a documentary subject that is sufficiently strong and as far as I am concerned, rather rewarding.

As predicted, I will start with the casting of the boat. Knowing nothing of this world, I leave in the direction of Boulogne-sur-mer, the largest French fishing port, so as to better understand the problems, the techniques, and the habits. I spend a week in the port and learn a lot. There are many different types of fishing boats. They differ by technology, and fishing areas. I will not write here a detailed report on the architecture of these different ships but will only note that if they are better protection for the fisherman, they ruin it a little for the camera shots... The boats that seem ideal to me did not go out in rough weather or refused my project. A Dutch trawler was scared of industrial spying! He believed that he fished better than the French and hoped nothing would be revealed...

Thus, I left on board of a rather new trawler from Etaples. As can be seen in the photos, the men that work below are protected overhead and on the sides. The only direct contact with the sea is from the back, a good 50 meters above water. No way for the breakers to reach the fishermen...

The crew is composed of 5 people. To optimize my integration among them, I decide to go alone and prepare my material accordingly. After this analysis of the cinematic account of the storm at sea, I opt for the hand framing technique: the most stable possibility, but at the mercy of climactic events.

This therefore requires that I save the use of one hand to keep my balance, and the other for the camera. There is not a lot of cameras with which you can frame with one hand....

I decide then to film in s16mm with the Aaton camera A-minima. (This choice became apparent to me very quickly.)

For these same reasons, I choose a fixed collection of Zeiss GO optics. I do not have the slightest idea of the f-stop that I will have on board in the night, so for reasons of

necessary simplicity, I take the vision 3, 7219, 500T (that I will not filter) with a series of neutrals and one focusing.

Jacques Perrin having raided the Paris camera material renters of all their camera protection devices, I will not be able to embark with the revolving porthole that I wanted, i. e. the Spinctec. To make up for this missing tool, I made Clear filters and used Rain-X on them. This water repellent product made it so that the drops of water did not rest on the lens. If one sees them settled there, they roll down much faster than it would have without this process. While shooting, I remembered that the product becomes greasy fast, and it is difficult to clean. It turned into a diffusing filter and I quickly stopped using it. With regards to protecting the camera, I opted for a simple but effective method: cellophane. I also put a leash on the upper handle so that the camera could not fall in the water or anywhere else. The electrical feeding is coming from the battery fixed around my waist under my sailor jacket, the cable passing through my sleeve.

To assure the capture of sound, I attached the camera underneath a magic arm where I linked a Neumann KM 150 microphone in its protective cap. I had previously done a certain number of tests to find the best arrangement with the caps that assured the capturing of sound in rough wind. The chosen solution was thus the KM 150 in two capsules B20 W20, adding an anti-wind supplementary cap protected by a first sock, made of bristles, and an anti-rain protection loaned by the DCA.

If this solution is satisfactory in the results, the microphone due to being light is from then on just as troublesome as the camera. On ground, the system does not bother me, but on board, it will turn out that it does not go horizontally through the doors and the microphone offset taking the wind makes the system quite heavy. I will finish by detaching the magic arm to set it on the boat in the direction where I hope to film in the coming minutes. If this system that also carries the sound recording (which was in the shoulder strap under my vest, the cables also passing through my sleeve) is less bulky, the resulting sound is lacking terribly in relief and I cannot regularly control the sound levels.

Another irritating detail with regards to the synchronization: outside of the clapperboard, there is no other way than the original-C by Aaton to assure the synchronization with a camera s16. And if the A-minima could receive it, as for sound, it would be necessary to foresee a Cantar! The sound material therefore becomes a little disproportionate. Consequently, I did do synchronization during the shooting and this took me six days to re-synchronize the rushes...

On board, the architecture of the boat brought the inconveniences that I feared: it is difficult to include the sea and men in the same frame, along with waves, even if the rough weather never reached the sailors. There is no contact, no apparent danger.
The work conditions are tiresome but there are only the worn faces to show for it.

The fishermen, as well as I, are perfectly protected and I will quickly remove the anti-rain protection off the camera, as it is very annoying and noisy.

If at the end, the film does not entail any storm scene, it nevertheless results in a beautiful human adventure and the encounter of this crew has undoubtedly marked me. Their life is a harshness that is difficult to imagine but measures up to their kindness and their self-sacrifice.

I will not write about all that I can take from this life lesson but on the technical side, I keep some valuable lessons.

The first relates to the design of the boat. If I knew of the importance of this parameter, I think today that it is more of a necessary condition in obtaining the desired images. The strength of the acquired images depend on the casting of the ship, the crew not to be ignored either. It is their contact and their cinegenic qualities that command, or not, emotion.

I will not leave without the Spintec, in my opinion the most practical and lightest of anti-rain protection.

If the size of the boat permits it, I will employ a sound engineer!
I certainly have not ignored the importance of the physical fitness before this type of shooting but I believe today that it is a true key element. It does not only affect the stability of images but actually the creation of the images themselves. If one is not capable of standing on one’s two feet on the boat, there is no reason to even talk about choices of cameras...And the weight of these must be as light as possible, that of the operator is not subtracted from the strength of the swell. In these conditions, all effort is much more tiring than it is on land. It should not be taken lightly; a shooting can be a complete failure solely because of this fact.

One thing is sure: storm will not cease to fascinate me and if it escaped me once more, it will not be eternally the case.