

by

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ABSTRACT

Weather events through time have affected military operations and military decisions and some have altered the course of history. This fact has been clearly shown by numerous historical examples, a few of which will be related to the reader in this article.

1. IN THE BEGINNING

The earliest recorded instance of weather having a direct effect on the outcome of a battle is found in the Old Testament.

"And it came to pass, as they fled from before Israel, while they were at the descent of Beth-horon, that the Lord cast down great stones from heaven upon them unto Azekah and they died; they were more who died with the hailstones than they who the children of Israel slew with the sword." (Joshua 10:11)

The story involves the ancient people of Canaan known as Amorites. Five Amorite kings combined their armies for a united attack on the Israelites in Gibeon, a city near Jerusalem. The people of Gibeon hurriedly sent a message to Joshua, "Come and help your servants." So Joshua and his small army went to rescue Gibeon. "Don't be afraid of them," the Lord said to Joshua. With total surprise Joshua attacked the Amorite armies; but more of the enemy were destroyed by a hailstorm than by the sword of Joshua's army (2).

2. THE ROMAN EMPIRE

The ancient Romans always felt their northern flank was secure during the winter seasons because of harsh winter weather in the Alps. In 218 B.C., however, General Hannibal correctly analyzed the weather and the chances of his forces coping with the weather, crossed the Alps and surprisingly and successfully attacked the Roman army (3).

In 54 B.C., Julius Caesar readied his 800 vessels with the entire Roman army for an assault on England. The weather was uncooperative as he waited a month for favorable winds in order to embark from the Normandy coast. Soon after embarking the wind died down so dramatically that his forces drifted slowly into the North Sea. The assault force finally rowed their way to the eastern British shore. Caesar was so behind schedule in his campaign, he hurriedly tried to attack the enemy without taking time to properly beach his ships, thus safeguarding them from the weather and seas. The next day a severe storm damaged practically all the vessels. This aided the British immensely as Caesar and his men were expending a massive effort to repair the vessels. He and his army finally did escape to safe home territory (4).

3. CLIMATOLOGICAL WEATHER EVENTS

About a thousand years ago, a climatological warming of the earth and the Scandinavian climate helped launch the Vikings westward across the Atlantic and south at the throats of Europe; a later climatic reversal literally cooled off their ardor for exploration and conquest (5).

Climatic variations during the past thousand years also appear to have had a serious effect on the agricultural economy of China and this in turn affected the military history of China itself (6). Good weather periods led to abundant crop production which led to an expansionist philosophy of their neighbors who tried to conquer Chinese territory. The abundance of food was ideal for invading forces since armies in those days did not have the luxury of having supplies flown or shipped in; invaders had to eat off the invaded land. It is also interesting that Chinese history has shown the bad weather periods over the past thousand years, which led to poor crop production, led to internal problems and militaristic rebellions. In either case, the Chinese people seemed to have lost out.

Climatologists also argue that a climatic shift from 1200-1400 A.D. led to the Hitler era. The relationship is complexly linked, but began with a northern European cooling trend which led to the loss of the herring industry which led to religious wars and foreign intervention. The disunity which resulted brought forth militarism and the compulsion for discipline and order which led to Bismarck and ultimately Hitler and his acceptance by the people (5).

4. SPECIFIC METEOROLOGICAL EVENTS

Although climatology does affect history, specific meteorological events are clearer and easier to see. One of the most dramatic examples concerns two typhoons that saved Japan (7). Kublai Khan, the great Mongol ruler of the 13th century, wanted to expand his domain. In doing so the Mongols took over Korea with Japan as the next target. Kublai Khan sent numerous envoys to Japan asking them to give in without bloodshed, but to no avail. In 1274, Kublai Khan invaded Japan with some 40,000 men, 300 large ships and 500 smaller vessels. Just as they landed on the shores of Japan, a typhoon approached. The pilots of the vessels told the generals that if the storm hit and the ships were put aground there would be no evasion option should the need arise. With that in mind the generals ordered the armada back to sea. The tail end of the armada was caught by the typhoon and 13,000 men were lost. Seven years later, Kublai Khan tried again with a larger force, 140,000 men. As luck would have it, just as they landed, another typhoon approached. The armada went back to sea again as they did seven years prior. Some 50,000 of Kublai Khan's men were drowned in the escape from this typhoon and a number were left on shore only to be executed by the Japanese. The remaining fleet sailed

back discouragingly to the Mongol rule never to bother Japan again. The winds of this typhoon blew on Japan and the armada for two days and became known in Japanese annals as the "Kamakaze" or "divine wind," for it blew the enemy fleet to destruction.

In the 16th century, the mighty Spanish Armada appeared to be an invincible floating task force. However, in July 1588 England's Sir Francis Drake won a brilliant victory over the Naval forces of Spain's Philip II. If the Spaniards had not been tormented by unfavorable violent gales in the North Sea, the smaller English vessels would not have been able to outmaneuver and outshoot them (8). The victory not only saved England from invasion, but it broke the overseas Spanish-Portuguese monopoly and opened the way for colonial expansion for England, France and Holland.

Some two centuries later, the winds became unfavorable for the British as General William Howe, in the summer of 1776, assembled the greatest expeditionary force ever to be sent from England. The goal of the expeditionary force was to eliminate the rebellious Americans at New York harbor. At the height of the Battle of Long Island, the British, with some 500 ships and 32,000 well-trained soldiers, were held back by strong northerly winds and an ebbing tide, from sealing off the only escape route across the East River to New York that General Washington and the surrounded Americans had. If the wind had let the British ships seize control of the East River, the Revolution would have probably ended there and then (9).

In the spring of 1788, a severe drought struck France, followed by a severe hailstorm in the summer and a particularly harsh winter. These events all led to a very poor grain harvest and the approaching threat of famine (10). The poorer classes, encompassing 90% of the population whose diet was 95% bread and cereals, were spending almost all of their income on these staples. The severity of all these conditions was a primary factor leading to the French Revolution in the summer of 1789.

Consider the Battle of Waterloo in 1812 and the role the weather played on the outcome. A torrential rainstorm hampered Napoleon's forces and he postponed the French attack on the British. This meteorologically related delay allowed the Prussian army to catch up to the French army and combine with the British forces to rout Napoleon's army (11). In fact it was a weather event, a hurricane, which struck the island of Martinique in the French West Indies that wiped out a wealthy planter who, in turn, sent his daughter back to France because of this disaster. She met an ambitious young army lieutenant, fell in love, married, and was to become the Empress Josephine (12).

There is also the story of the hurricane that averted a war. As German and American interests tried to gain control of the island of Samoa in the South Pacific, the famous Samoan hurricane of 1889 struck and drove three U.S. warships and two German gunboats out of the water and sank another German gunboat. With that storm, interest was lost in fighting and gaining control of the island (13).

5. WORLD WAR II AND VIETNAM

In the summer of 1941, Hitler's "blitzkrieg" forces had

planned to take over Russia within five months or prior to the onset of the winter season. As the German offensive, with over three million men, encountered the earliest and coldest winter in 50 years, the German armies and vehicles were literally frozen in their tracks. The momentum was lost and Hitler was never able to successfully achieve victory on the eastern front (14).

Perhaps the most difficult weather forecast ever made was in early June 1944, as the stage was being set for Project Overlord or D-Day. As the Allied Forces were readying the greatest sea and airborne invasion that has ever been executed, the weather forecasters predicted poor enough conditions over the English Channel for the 5th of June to make the Supreme Allied Commander, General Eisenhower, decide to hold off the invasion. It turned out to be a good prediction. The forecast was for better weather for a short time the next day and this was good enough for Eisenhower to send 500 warships and 3,000 landing craft toward the beaches of Normandy. The stormy weather in early June was interpreted by the German commanders as too difficult a period for an assault and in addition prevented German aircraft reconnaissance from spotting our advancing armada. The weather gave General Eisenhower his opportunity to gain his first foothold in Europe (15).

On the other side of the globe, the weather was not as tolerant. In December 1944 as Admiral William F. Halsey's Third Fleet was operating in support of General MacArthur's invasion of the Philippines, the Third Fleet encountered a tropical cyclone more powerful than any western Pacific encounter with the Japanese. The result was three destroyers (the USS HULL, USS MONAGHAN, and USS SPENCE) sunk with 800 men lost, 26 other vessels seriously damaged, and 146 aircraft destroyed (16). The Commander in Chief, U.S. Pacific Fleet, Admiral Nimitz said, "It was the greatest loss that we have taken in the Pacific without compensatory return since the First Battle of Savo." Halsey himself described it best. "No one who has not been through a typhoon can conceive its fury," he wrote in his autobiography. "The 70 foot seas smash you. The rain blinds you. The battleship NEW JERSEY once was hit by a 5-inch shell and I did not even feel the impact. The MISSOURI had a kamakaze crash on her main deck and repaired the only damage with a paint brush. But the typhoon tossed our enormous ship the MISSOURI as if she were only a canoe."

Weather has also been used as a weapon of war. The Department of Defense had a \$22 million, seven year program to cloud seed and induce rainfall over the trails of Laos, North Vietnam, South Vietnam and Cambodia during the Vietnam conflict in order to reduce enemy supply replenishment. It was also during this conflict that the military took tactical advantage of knowledge of the weather. It was known that the area one to two days prior to a tropical cyclone is extremely clear and cloud free as air subsides in the outer sections of the storm. The carriers in the South China Sea would take advantage of this fact and then quickly head south to avoid the approaching tropical cyclone.

6. CONCLUSION

Military history has certainly been influenced by weather events, and weather will undoubtedly impact our future. The ability to forecast the weather and to understand the meteorological effects on weapons systems can

provide a distinct tactical advantage. The advantage could mean the difference between mission success and failure, whether it be weather induced sand particles in the air aborting a helicopter rescue mission over the deserts of Iran or a hailstorm in this same area of the globe destroying Amorite armies.

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FOOTNOTE

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