

JAPANESE STRIKE ON PEARL HARBOR

Vladislav GARGAI*

*Technical University of Moldova, Faculty of Computers, Informatics and Microelectronics,
Department of Software Engineering and Automation, Group FAF-193, Chishinau, Moldova.*

*Autorul corespondent: Vladislav GARGAI, longlance21@gmail.com

Abstract: *This article tells about Imperial Japanese attack on Pearl Harbor – sudden aerial strike which was intended to gain initial superiority over the United States. Article covers historical background and aftermath behind this war – why did Japanese were forced to start it and how the most effective carrier force managed to execute a daring plan.*

Although this topic may seem related to history it almost not. Strike on Pearl Harbor and other historical events can be disassembled by engineers to see level of entropy that is present in any event, including such a lucky event that is described in this article. People call it “luck”, in other words by analyzing historical events we can draw out of them how different events “work together” forming a completely unique situations – map events. Map event allows to analyze how different objects act in this system. Easily speaking, studying entropy through historical events we can better understand it and reduce the level of entropy. By reducing the level of entropy we can gain more control over events that happen around us. This article is devoted to analyze how Japanese managed to reduce the level of entropy around to a degree where they had n chance to conduct a surprise attack against the most powerful country in the world.

Key words: *war, sudden strike, port attack, carrier force, daring plan.*

Introduction

From the start Meiji Restoration in 1868, when Japan were feudal, divided and weak state to 1940s, when Empire of Japan built own industry, army, fleet and air force. Won the Russo-Japanese war, first World War, first Sino-Japanese war. Took Korea, Manchuria, Taiwan, island in the Pacific and finally French Indochina (Vietnam).

It was a very powerful state, the most powerful in the region and a decent one in the world.

The expansion that took place during the 20th century was fast and Imperial Japanese (IJ) industry was expanding at a rate which resource centers could not maintain. In other words, Japan lacked raw materials to keep its industry going. It was primarily oil and fuel that limited Japan, but other raw materials were also a problem.

IJ Army also conducted a war against China, a second one this time. Western powers considered IJ expansion to be very aggressive. This is why they established a trade embargo which practically meant death for Japanese industry, because it was dependent on import.

The Empire of Japan had to make a hard decision and go to war. Go to war against much, much more powerful enemy. Or to say more correct a group of enemies, which were mainly represented by USA with the most power economy in the world, Great Britain and The Netherlands. No need to explain that IJ war machine could not afford such a war for long. And the only way of "winning" would be to fast capture desired objectives and hold. Then hope for a peace treaty on favorable conditions.

It is worth to mention that although Japan had relatively weak industry and could not afford a war on exhaustion it had a decent sized, well trained and modern fleet. Including six very modern fleet carriers, each of them carrying from 50 up to 81 aircraft. Air force very also very capable: IJ Navy had a separated branch for air force and their pilots received an excellent training, though IJ Air force were very good too.

Pearl Harbor

War was going to happen. Plan had to be created. A plan that should be extremely favorable to Japan in order to have at least a small chance of winning. This is where Pearl Harbor which is located on Hawaii Islands came in handy. A large base of the United States which was the most most developed military Navy & Airforce base. It practically hosted the whole Pacific Fleet (with the exception of some in the Philippines).

The plan

Start a war with the United States. Truly an insane idea, but what is the most favorable way of starting such a war? An unexpected strike that will allow to easy destroy enemy ships. And ships themselves are key assets for a successful campaign over pacific. Especially carriers, which could hold aircraft on sea and their presence during offensive operation in the pacific was the only source of air cover & strike force due to ranges of the pacific theatre. So the main plan was to secretly approach Pearl Harbor and deliver a sudden, hard, deliberate and absolutely devastating plan that will conserve enemy force in the pacific for years. This will allow Japan to fastly conquer so much needed territories in the South-East Asia, prepare defence and hope for the best. The alternate scenario assumed that the US states will sign peace treaty following the strike, but it was rather unlikely. Next question is how to deliver such a strike?



Illustration 1: CV Akagi and BB Kirishima

Kido Butai

“Kido Butai” – the mobile force. Naval force which was primarily organized for air combat. It had six fleet carriers and carried about 450 aircraft in total. Four hundred and fifty air assets that were able to launch from carriers decks, fly to enemy and deliver hundreds tons of bombs. It was the most furious and capable naval unit in the world that could sink, destroy and exterminate any naval threat while being at a significant distance itself. It became obvious for the Japanese that aircraft carriers and aircraft itself were leading assets at sea. And ships that have big guns, but no aerial cover would eventually die. Battleships, dreadnoughts with big guns and thick armor were about to give up the role of main naval element. Though not many countries at that time realized it.

How Japan did then?

It did not actually. Many admirals were skeptical on that topic and still preferred battleships over aircraft carriers. They considered carriers to play support role: provide naval recon and aerial cover. The construction of “Yamato” class battleships – the biggest battleships ever built in the world also prove that Japan had still to realize that aircraft carrier is the new dominant ship type. And who did realize it is admiral Isoroku Yamamoto – fleet marshal of the Combined Fleet (The whole fleet of Japan). He insisted to use carriers for this attack. And he also created this plan. It is also worth mentioning that British experience in Taranto strike was the first countable success of aircraft carriers in history. And it heavily assisted Japanese in planning.

The risk

The Mobile Force had to travel almost 5000 kilometers and approach Hawaii Islands undetected. Was it difficult? Yes, extremely. Even a small ship, aircraft or radio interception would ruin the surprise effect. Without surprise there could be no significant success. And it is only surprise. Pearl Harbor held a lot of fighter aircraft that could theoretically intercept approaching formation, cause significant casualties to attack formation and therefore save ships and other facilities from part of damage. But Yamamoto could do nothing about it. He was forced to develop this plan and he did his best.

The day that will live in infamy

The mobile force approached Hawaii on December 7th of 1942. It had 414 ready aircraft onboard and was ready to deliver the death strike. Aircraft was launched in two waves. Japanese were primarily targeting battleships, as they were considered the most significant assets on sea. Though it was not actually true (which the strike itself proved). During the strike almost none of ~390 aircraft that the US Air force had present and ready to fly took off to intercept approaching enemy aircraft. During the attack itself Japanese aircraft managed to sink four battleships and damage another four, three cruisers and other less significant assets to mention. 188 aircraft destroyed and another 159 damaged.

2335 men were killed in total. The strike costed Japanese 29 aircraft destroyed and 64 men killed (pilots). It was a complete success, or not?

Aftermath

Yes, the Imperial Japanese Naval Airforce accomplished the plan. It had sneaked to the main fleet base of the US undetected, launched a devastating strike and crippled the whole battleship fleet of the Pacific. But was it really important? First, those battleships were not modern – they were old, build more than 30 years ago battleships that could not move enough fast to keep up with the modern assets that the US had. Second, aircraft carrier was not hit, because they were not in port at that time, both of them. Third, none of any facilities were hit: shipyards, dry docks, fuel reserves, port infrastructure.

Coming back to entropy that was mentioned Japanese were both prepared and lucky. They did their best to approach Pearl Harbor undetected. Technically speaking let variable A be all events that Japanese Mobile Force was able to influence and were influencing Mobile Force. Let subset B of set A be all events that were influencing Mobile Force but not vice-versa. After analyzing all events we can state that set A/B (A without B) was completely controlled by Mobile Force, commanders did their best. And events from set B were not controlled by Mobile Force and therefore this is where they could rely only on pure luck. So the level of control which was mentioned before in abstract terms means that Japanese were capable of some influence on entropy. Let's denote theoretical maximum of control over entropy which a particular being can achieve by x . And this level of influence is obviously incomplete as no human or any other being can control all possible events that occur and influence him. Therefore, there exist an ideal level of influence which we will denote y . And then we have a certain level of control that a particular being practically achieves, let's denote it z . Clearly $y > z \geq x$. If $x = z$ we say being is able to control level of entropy around him at his maximum level. Let $\text{rel}(z, x) = x / z$ be relative entropy of a particular being. We say it is $\text{rel}(z, x) * 100$ percent effective at controlling entropy.

Clearly Japanese had this value at or near maximum. This is why this particular historical event is interesting.

Conclusion

Although the strike was successful it did not accomplish of the main goals – sinking the aircraft carriers. Though Japan still managed in a very short amount of time to capture the planned territories and go even deeper trying to reach India, it was a war that Japanese could not win. They lost their last chance at Pearl Harbor and all that happened next up to September of 1945 was slow

retreat to the mainland. At some point civilians would start to pay for Pearl Harbor. First under conventional bombing campaigns over Japan and then the nukes that were dropped on Hiroshima and Nagasaki.

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