# Sinking of the Titanic



*Untergang der Titanic ("Sinking of the Titanic") by Willy Stöwer, 1912.*

## BACKGROUND

At the time of her entry into service on 2 April 1912, RMS Titanic was the largest ship in the world: she and her sister Olympic had almost half again as much gross register tonnage as Cunard's Lusitania and Mauretania, the previous record holders, and were nearly 100 feet (30 m) longer. Titanic could carry 3,547 people in speed and comfort, and was built on a hitherto unprecedented scale.

Her passenger accommodation was said to be "of unrivalled extent and magnificence". First Class accommodation included the most expensive seagoing real estate ever, with promenade suites costing $4,350 ($103,485 at 2012 prices) for a one-way passage. Even Third Class was unusually comfortable by contemporary standards and was supplied with plentiful quantities of good food, providing its passengers with better conditions than many of them had experienced at home.

With a length of approximately 880 feet this yields a maximum speed for RMS Titanic of just below 40 knots. The size of passenger liners grew rapidly in the early part of the 20th century in the years before the launch of the Titanic.

| **Date completed** | **Ship** | **Tonnage** | **Length** |
| --- | --- | --- | --- |
| 11 July 1901 | RMS Celtic | 20,904 | 214 m (701 ft) |
| 31 January 1903 | RMS Cedric | 21,035 | 210 m (700 ft) |
| 23 June 1904 | RMS Baltic | 23,876 | 222 m (729 ft) |
| 10 May 1906 | SS Kaiserin Auguste Victoria | 24,581 | 206.5 m (677.5 ft) |
| 7 September 1907 | RMS Lusitania | 31,550 | 240 m (787 ft) |
| 7 November 1907 | RMS Mauretania | l31,938 | 240 m (790 ft) |
| 31 May 1911 | RMS Olympic | 45,324 | 269.0 m (882.5 ft) |
| 31 March 1912 | RMS Titanic | 46,328 | 269.1 m (882.9 ft) |

## STARTING OUT

Titanic's maiden voyage began shortly after noon on 10 April 1912 when she left Southampton on the first leg of her journey to New York. A few hours later she reached Cherbourg in France, a journey of 80 nautical miles (148 km; 92 mi), where she took on passengers. Her next port of call was Queenstown (now Cobh) in Ireland, which she reached around midday on 11 April. She left in the afternoon after taking on more passengers and stores.

By the time she departed westwards across the Atlantic she was carrying 892 crew members and 1,320 passengers. This was only about half of her full passenger capacity of 2,435, as it was the low season and shipping from the UK had been disrupted by a coal miners' strike. Her passengers were a cross-section of Edwardian society, from millionaires such as John Jacob Astor and Benjamin Guggenheim, to poor emigrants from countries as disparate as Armenia, Ireland, Italy, Sweden, Syria and Russia seeking a new life in America.



*Route of Titanic's maiden voyage from Southampton to New York*

The ship was commanded by 62-year-old Captain Edward John Smith, the most senior of the White Star Line's captains. He had four decades of seafaring experience and had previously served as captain of Titanic's sister ship, RMS Olympic, from which he was transferred to command Titanic.

## 14 APRIL 1912

### Iceberg warnings:



*The iceberg thought to have been hit by Titanic, photographed by the chief steward of the liner Prinz Adalbert on the morning of 15 April 1912. The iceberg was reported to have a streak of red paint from a ship's hull along its waterline on one side.*

During 14 April 1912, Titanic's radio operators received six messages from other ships warning of drifting ice, which passengers on Titanic had begun to notice during the afternoon. The ice conditions in the North Atlantic were the worst for any April in the previous 50 years (which was the reason why the lookouts were unaware that they were about to steam into a line of drifting ice several miles wide and many miles long). Not all of these messages were relayed by the radio operators.

The first warning came at 09:00 from RMS Caronia reporting "bergs, growlers and field ice".

Although the crew was aware of ice in the vicinity, the ship's speed was not reduced, and she continued to steam at 22 knots (41 km/h; 25 mph), only 2 knots (3.7 km/h; 2.3 mph) short of her maximum speed of 24 knots (44 km/h; 28 mph). Titanic's high speed in waters where ice had been reported was later criticised as reckless, but it reflected standard maritime practice at the time.

It was widely believed that ice posed little risk; close calls were not uncommon, and even head-on collisions had not been disastrous.

### "Iceberg, right ahead!" (23:39)

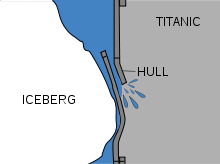
As Titanic approached her fatal crash, most passengers had gone to bed and command of the bridge had passed from Second Officer Charles Lightoller to First Officer William Murdoch. Lookouts Frederick Fleet and Reginald Lee were occupying the crow's nest 29 metres (95 ft) above the deck. The air temperature had fallen to near freezing and the ocean was completely calm.

Although the air was clear, there was no moon, and with the sea so calm, there was nothing to give away the position of the nearby icebergs; had the sea been rougher, waves breaking against the icebergs would have made them more visible.

At 23:39, Fleet spotted an iceberg in Titanic's path. He rang the lookout bell three times and telephoned the bridge to inform Sixth Officer James Moody. Fleet asked "Is there anyone there?" Moody replied, Yes, what do you see?" Fleet replied: "Iceberg, right ahead!" After thanking Fleet, Moody relayed the message to Murdoch, who ordered Quartermaster Robert Hichens to change the ship's course.

In the event, Titanic's heading changed just in time to avoid a head-on collision, but the change in direction caused the ship to strike the iceberg with a glancing blow. An underwater spur of ice scraped along the starboard side of the ship for about seven seconds; chunks of ice dislodged from upper parts of the berg fell onto her forward decks. A few minutes later, all of Titanic's engines were stopped, leaving the ship facing north and drifting in the Labrador Current.

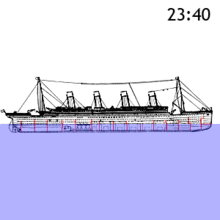
### Effects of the collision



*Illustration showing how the iceberg buckled Titanic's hull, causing the riveted plates to come apart. The iceberg buckled the plates, popping rivets and damaging a sequence of compartments. Contrary to widespread assumption, the iceberg did not slice the hull.*

Above the waterline, there was little evidence of the collision. The stewards in the first class dining room noticed a shudder, which they thought might have been caused by the ship shedding a propeller blade. Many of the passengers felt a bump or shudder but did not know what it was. Those on the lowest decks, nearest the site of the collision, felt it much more directly. Engine Oiler Walter Hurst recalled being "awakened by a grinding crash along the starboard side. No one was very much alarmed but knew we had struck something". Fireman George Kemish heard a "heavy thud and grinding tearing sound" from the starboard hull.

The ship began to flood immediately, with water pouring in at an estimated rate of 7 long tons (7.1 t) per second, fifteen times faster than it could be pumped out. Second Engineer J. H. Hesketh and Leading Stoker Frederick Barrett were hit by a jet of icy water in No. 6 boiler room and escaped just before the room's watertight door closed. This was an extremely dangerous situation for the engineering staff; the boilers were still full of hot high-pressure steam and there was a substantial risk that they would explode if they came into contact with the cold seawater flooding the boiler rooms. The stokers and firemen were ordered to reduce the fires and vent the boilers, sending great quantities of steam up the funnel venting pipes. They were waist-deep in freezing water by the time they finished their work.



*Animation showing the course of Titanic's sinking*

Captain Smith felt the collision in his cabin and came immediately to the bridge. Informed of the situation, he summoned Thomas Andrews, Titanic's builder, who was among a party of engineers from Harland and Wolff observing the ship's first passenger voyage. The ship was listing five degrees to starboard and was two degrees down by the head within only a few minutes of the collision. Smith and Andrews went below and found that the forward cargo holds, the mailroom and the squash court were flooded, while No. 6 boiler room was already filled to a depth of 14 feet (4.3 m). Water was spilling over into No. 5 boiler room, and crewmen there were battling to pump it out.

Within only 45 minutes of the collision, at least 13,500 long tons (13,700 t) of water had entered the ship. This was far too much for Titanic's ballast and bilge pumps to handle; the total pumping capacity of all the pumps combined was only 1,700 long tons (1,700 t) per hour. Seawater was pouring into Titanic 15 times faster than it could be pumped out. Andrews informed the captain that the ship was doomed and that she could remain afloat for no longer than about two hours.

## 15 APRIL 1912

### Preparing to evacuate



*Edward J. Smith, Captain of Titanic, photographed in 1911*

At 00:05 on 15 April, Captain Smith ordered the ship's lifeboats uncovered and the passengers mustered. He also ordered the radio operators to begin sending distress calls, which wrongly placed the ship on the west side of the ice belt and directed rescuers to a position that turned out to be inaccurate by about 13.5 nautical miles (15.5 mi / 25 km). Below decks, water was pouring into the lowest levels of the ship. As the mail room flooded, the mail sorters made an ultimately futile attempt to save the 400,000 items of mail being carried aboard Titanic. Elsewhere, air could be heard being forced out by inrushing water. Above them, stewards went door to door, rousing sleeping passengers and crew – Titanic did not have a public address system – and told them to go to the Boat Deck.

Captain Smith was faced with the fact that there were too few lifeboats to save everyone on board. Titanic had a total of 20 lifeboats, comprising 16 wooden boats on davits, 8 on either side of the ship, and 4 collapsible boats with wooden bottoms and canvas sides. The collapsibles were stored upside down with the sides folded in, and would have to be erected and moved to the davits for launching. Two were stored under the wooden boats and the other two were lashed atop the officers' quarters. The position of the latter would make them extremely difficult to launch, as they weighed several tons each and had to be manhandled down to the boat deck.

On average, the lifeboats could take up to 68 people each, and collectively they could accommodate 1,178 – barely half the number of people on board and only a third of the number the ship was licensed to carry. The shortage of lifeboats was not because of a lack of space nor because of cost. Titanic had been designed to accommodate up to 68 lifeboats– enough for everyone on board – and the price of an extra 32 lifeboats would only have been some $16,000, a tiny fraction of the $7.5 million that the company had spent on Titanic. The White Star Line had, rather, wished to have a wide promenade deck with uninterrupted views of the sea, which would have been obstructed by a continuous row of lifeboats.

The company never envisaged that all of the crew and passengers would have to be evacuated at once, as Titanic was considered almost unsinkable. The lifeboats were instead intended to be used in the event of an emergency to transfer passengers off the ship and onto a nearby vessel providing assistance. It was commonplace for liners to have far fewer lifeboats than needed to accommodate all their passengers and crew, and Titanic had more lifeboats than the outdated British regulations required. Out of 39 British liners of the time of over 10,000 long tons (10,000 t), 33 had too few lifeboat places to accommodate everyone on board.

Captain Smith was an experienced sailor who had served for 40 years at sea, with 27 years in command. He would certainly have known that even if all of the boats were fully occupied, a thousand people would remain on the ship as she went down. As Smith began to grasp the enormity of what was about to happen, he appeared to have become paralysed by indecision. He did not issue a general call for evacuation, failed to order his officers to load the lifeboats, did not adequately organise the crew, withheld crucial information from his officers and crewmen, and gave sometimes ambiguous and impractical orders. Even some of his bridge officers were unaware for some time after the collision that the ship was sinking; Fourth Officer Joseph Boxhall did not find out until 01:15, barely an hour before the ship went down, while Quartermaster George Rowe was so unaware of the emergency that after the evacuation had started, he phoned the bridge from his watch station to ask why he had just seen a lifeboat go past. Smith did not advise his officers that the ship did not have enough lifeboats to save everyone. He did not supervise the loading of the lifeboats and seemingly made no effort to find out if his orders were being followed. 87

By about 00:20, 40 minutes after the collision, the loading of the lifeboats was under way, though it was perhaps symptomatic of Captain Smith's apparent indecisiveness that it was at the suggestion of Second Officer Lightoller. As the latter recalled afterwards, "I yelled at the top of my voice, 'Hadn't we better get the women and children into the boats, sir?' He heard me and nodded reply." Smith ordered Lightoller to put the "women and children in and lower away".Lightoller took charge of the boats on the port side while Murdoch took those on the starboard side. The two officers interpreted the evacuation order differently; Murdoch took it to mean women and children first while Lightoller took it to mean women and children only. Lightoller lowered lifeboats with empty seats if there were no women and children waiting to board, while Murdoch allowed a limited number of men to board if all the nearby women and children had embarked. Neither officer knew how many people could safely be carried in the boats as they were lowered and erred on the side of caution by not filling them. They could have been lowered quite safely with their full complement of 68 people. Had this been done, an extra 500 people could have been saved; instead, hundreds of people, predominantly men, were left on board as lifeboats were launched with many seats vacant. 90

Few passengers at first were willing to board the lifeboats and the officers in charge of the evacuation found it difficult to persuade them. The millionaire John Jacob Astor declared: "We are safer here than in that little boat." Some passengers refused flatly to embark. J. Bruce Ismay, realising the need for urgency, roamed the starboard deck and urged passengers and crew to evacuate. A trickle of women, couples and single men were persuaded to board starboard lifeboat No. 7, which became the first lifeboat to be lowered.

### Departure of the lifeboats (00:45–02:05)



*"The Sad Parting", unattributed illustration dated to 1912.*

At 00:45 lifeboat No. 7 was rowed away from Titanic with 28 passengers on board (despite a capacity of 65). Lifeboat No. 6, on the port side, was the next to be lowered at 00:55. It also had 28 people on board, among them the "unsinkable" Margaret "Molly" Brown. Lightoller realised there was only one seaman on board and called for volunteers. Major Arthur Godfrey Peuchen of the Royal Canadian Yacht Club stepped forward and climbed down a rope into the lifeboat; he was the only male passenger whom Lightoller allowed to board during the port side evacuation. Peuchen's role highlighted a key problem during the evacuation: there were hardly any seamen to man the boats. Some had been sent below to open gangway doors to allow more passengers to be evacuated, but they never returned. They were presumably trapped and drowned by the rising water below decks.

The lifeboats were lowered every few minutes on each side, but most of the boats were greatly under-filled. No. 5 left with 41 aboard, No. 3 had 32 aboard, No. 8 left with 39and No. 1 left with just 12 out of a capacity of 40. The evacuation did not go smoothly and passengers suffered accidents and injuries as it progressed. One woman fell between lifeboat No. 10 and the side of the ship but someone caught her by the ankle and hauled her back onto the promenade deck, where she made a second successful attempt at boarding. First-class passenger Annie Stengel broke several ribs when an overweight German-American doctor and his brother jumped into No. 5, squashing her and knocking her unconscious. 105 The lifeboats' descent was likewise risky. No. 6 was nearly flooded during the descent by water discharging out of the ship's side, but successfully made it away from the ship. 106 No. 3 came close to disaster when, for a time, one of the davits jammed, threatening to pitch the passengers out of the lifeboat and into the sea.

By 01:20, the seriousness of the situation was now apparent to the passengers above decks, who began saying their goodbyes, with husbands escorting their wives and children to the lifeboats. Distress rockets were fired every few minutes to attract the attention of any ships nearby and the radio operators repeatedly sent the distress signal CQD. Radio operator Harold Bride suggested to his colleague Jack Phillips that he should use the new SOS signal, as it "may be your last chance to send it". The two radio operators contacted other ships to ask for assistance. Several responded, of which RMS Carpathia was the closest, at 58 miles (93 km) away. She was a much slower vessel than Titanic and, even driven at her maximum speed of 17 kn (20 mph; 31 km/h), would have taken four hours to reach the sinking ship.

Much nearer was the SS Californian, which had warned Titanic of ice a few hours earlier. Apprehensive at his ship being caught in a large field of drift ice, the Californian's captain, Stanley Lord, had decided at about 22:00 to halt for the night and wait for daylight to find a way through the ice field. At 23:30, only 10 minutes before Titanic hit the iceberg, Californian's sole radio operator, Cyril Evans, shut his set down for the night and went to bed. On the bridge her Third Officer, Charles Groves, saw a large vessel to starboard around 10 to 12 mi (16 to 19 km) away. It made a sudden turn to port and stopped. If the radio operator of the Californian had stayed at his post fifteen minutes longer, hundreds of lives might have been saved. A little over an hour later, Second Officer Herbert Stone saw five white rockets exploding above the stopped ship. Unsure what the rockets meant, he called Captain Lord, who was resting in the chartroom, and reported the sighting. Lord did not act on the report, but Stone was perturbed: "A ship is not going to fire rockets at sea for nothing," he told a colleague.

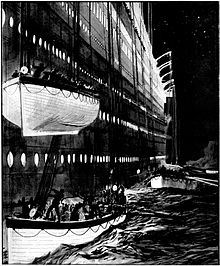
By this time, it was clear to those on Titanic that the ship was indeed sinking and there would not be enough lifeboat places for everyone. Some still clung to the hope that the worst would not happen: Lucien Smith told his wife, "It is only a matter of form to have women and children first. The ship is thoroughly equipped and everyone on her will be saved." Charlotte Colyer's husband Harvey called to his wife as she was put in a lifeboat, "Go, Lottie! For God's sake, be brave and go! I'll get a seat in another boat!"

Other couples refused to be separated. Ida Straus, the wife of Macy's department store co-owner Isidor Straus, told her husband: "We have been living together for many years. Where you go, I go." They sat down in a pair of deck chairs and waited for the end. The industrialist Benjamin Guggenheim changed out of his life vest and sweater into top hat and evening dress, and declared his wish to go down with the ship like a gentleman.

Some, perhaps overwhelmed by it all, made no attempt to escape and stayed in their cabins or congregated in prayer in the third-class dining room. Leading Fireman Charles Hendrickson saw crowds of third-class passengers below decks with their trunks and possessions, as if waiting for someone to direct them. Psychologist Wynn Craig Wade attributes this to "stoic passivity" produced by generations of being told what to do by social superiors. August Wennerström, one of the male steerage passengers to survive, commented later that many of his companions had made no effort to save themselves. He wrote:

Hundreds were in a circle [in the third-class dining saloon] with a preacher in the middle, praying, crying, asking God and Mary to help them. They lay there and yelled, never lifting a hand to help themselves. They had lost their own will power and expected God to do all the work for them.

### Launching of the last lifeboats



*Lifeboat No. 15 was nearly lowered onto Lifeboat No. 13, depicted by Charles Dixon.*

The last boat to be launched was collapsible D, which left at 02:05 with only 25 people aboard; two more men jumped on the boat as it was being lowered. The sea had reached the boat deck and the forecastle was deep underwater. First class passenger Edith Evans gave up her place in the boat, and ultimately died in the disaster. She was one of only four women in first class to perish in the sinking. Captain Smith carried out a final tour of the deck, telling the radio operators and other crew members: "Now it's every man for himself."

### Last minutes of sinking (02:15–02:20)

Eyewitnesses saw Titanic's stern lifting high into the air as the ship tilted down in the water. It was said to have reached an angle of 30–45 degrees, "revolving apparently around a centre of gravity just astern of midships," as Lawrence Beesley later put it. Many survivors described a great noise, which some attributed to the boilers exploding. Beesley described it as "partly a groan, partly a rattle, and partly a smash, and it was not a sudden roar as an explosion would be: it went on successively for some seconds, possibly fifteen to twenty". He attributed it to "the engines and machinery coming loose from their bolts and bearings, and falling through the compartments, smashing everything in their way".

After another minute, the ship's lights flickered once and then permanently went out, plunging Titanic into darkness. Jack Thayer recalled seeing "groups of the fifteen hundred people still aboard, clinging in clusters or bunches, like swarming bees; only to fall in masses, pairs or singly as the great afterpart of the ship, two hundred fifty feet of it, rose into the sky."

### Passengers and crew in the water (02:20–04:10

In the immediate aftermath of the sinking, hundreds of passengers and crew were left dying in the icy sea, surrounded by debris from the ship. Titanic's disintegration during her descent to the seabed caused buoyant chunks of debris – timber beams, wooden doors, furniture, panelling and chunks of cork from the bulkheads – to rocket to the surface. These injured and possibly killed some of the swimmers; others used the debris to try to keep themselves afloat.

The noise of the people in the water screaming, yelling, and crying was a tremendous shock to the occupants of the lifeboats, many of whom had up to that moment believed that everyone had escaped before the ship sank. As Beesley later wrote, the cries "came as a thunderbolt, unexpected, inconceivable, incredible. No one in any of the boats standing off a few hundred yards away can have escaped the paralysing shock of knowing that so short a distance away a tragedy, unbelievable in its magnitude, was being enacted, which we, helpless, could in no way avert or diminish." Only a few of those in the water survived.

After about twenty minutes, the cries began to fade as the swimmers lapsed into unconsciousness and death

### Rescue and departure (04:10–09:15)



*Collapsible lifeboat photographed from the deck of Carpathia on the morning of 15 April 1912*

Titanic's survivors were finally rescued around 04:00 on 15 April by the RMS Carpathia, which had steamed through the night at high speed and at considerable risk, as the ship had to dodge numerous icebergs en route. Carpathia's lights were first spotted around 03:30, which greatly cheered the survivors, though it took several more hours for everyone to be brought aboard.

## AFTERMATH

### Grief and outrage

Carpathia arrived at Pier 34 in New York on the evening of 18 April after a difficult voyage through pack ice, fog, thunderstorms and rough seas. Some 40,000 people stood on the waterfront, alerted to the disaster by a stream of radio messages from Carpathia and other ships. Due to communications difficulties, it was only after Carpathia docked – a full three days after Titanic's sinking – that the full scope of the disaster became public knowledge.

The prevailing public reaction to the disaster was one of shock and outrage, directed against a number of issues and people: why were there so few lifeboats? Why had Ismay saved his own life when so many others died? Why did Titanic proceed into the icefield at full speed? Ismay himself later said

"What do you think I am? Do you believe that I'm the sort that would have left that ship as long as there were any women and children on board? That's the thing that hurts, and it hurts all the more because it is so false and baseless. I have searched my mind with deepest care, I have thought long over each single incident that I could recall of that wreck. I'm sure that nothing wrong was done; that I did nothing that I should not have done. My conscience is clear and I have not been a lenient judge of my own acts." -J. Bruce Ismay, Director of the White Star Line

The disaster led to major changes in maritime regulations to implement new safety measures, such as ensuring that more lifeboats were provided, that lifeboat drills were properly carried out and that radio equipment on passenger ships was manned around the clock.

Titanic's sinking became a cultural phenomenon, commemorated by numerous artists, film-makers, writers, composers, musicians and dancers from the time immediately after the sinking to the present day. On 1 September 1985 a joint US-French expedition led by Robert Ballard found the wreck of Titanic, and the ship's rediscovery led to an explosion of interest in Titanic's story. In 1997, James Cameron's eponymous film became the first movie ever to take $1 billion at the box office, and the film's soundtrack became the best selling soundtrack recording of all time. Numerous expeditions have been launched to film the wreck and, controversially, to salvage objects from the debris field.

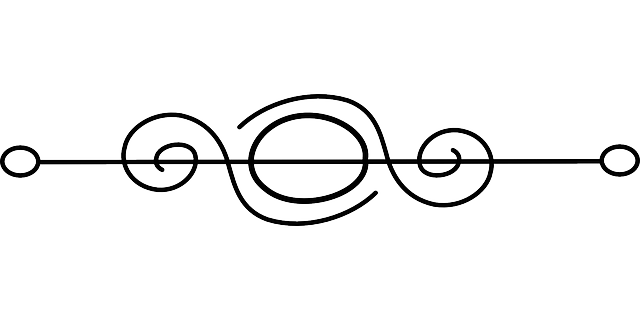
### CASUALTIES AND SURVIVORS

The number of casualties of the sinking is unclear, due to a number of factors, including confusion over the passenger list, which included some names of people who cancelled their trip at the last minute, and the fact that several passengers travelled under aliases for various reasons and were double-counted on the casualty lists. The death toll has been put at between 1,490 and 1,635 people.

* Less than a third of those aboard Titanic survived the disaster
* Some survivors died shortly afterwards
* Injuries and the effects of exposure caused the deaths of several of those brought aboard Carpathia.

Of the groups shown in the table, 49% of the children, 26% of the female passengers, 82% of the male passengers and 78% of the crew died.

Source: <http://en.wikipedia.org/wiki/Sinking_of_the_RMS_Titanic#cite_ref-shiptime_1-0>



**EXTERNAL LINKS**

[Wikipedia article on the sinking of the Titanic](https://en.wikipedia.org/wiki/Sinking_of_the_Titanic)

[Encyclopedia Titanica](https://www.encyclopedia-titanica.org/)

[Explanation of the watertight compartment system on the Titanic](http://www.titanicology.com/FloodingByCompartment.html)

*[The New York Times](https://timesmachine.nytimes.com/timesmachine/1912/04/16/issue.html" \o "The New York Times)*[, Tuesday, 16 April 1912](https://timesmachine.nytimes.com/timesmachine/1912/04/16/issue.html" \o "The New York Times)

[Animated film of the Titanic sinking in real time](https://www.youtube.com/watch?v=rs9w5bgtJC8)