

Phase	Ship Status	Serial	People Status	Applicable Quotations	Ship Details	Ship Location
1. Slow flooding	Sinking slowly by the bow	1A	People in lifeboats see it; most people on board feel it	"We watched her gradually sink away. We could see people about on the deck before the lights went out" "Her bow was going down first" "The lowest portholes in the bows were under the sea" "the ship all this while sinking faster and faster, seeming to move forward in the water as it went down by the head."	Five forward compartments flooding at the starboard side. Down by the bow.	Aimed SSW. Moving SSW due to flooding. Drifting SSE with the current at 0.7 knots. Resultant is probably moving 1 knot Southward.
	Forecastle under; stern slowly rising, but still primarily in the water (1st rising of stern); lifeboats being launched	1B	People on board move steadily more aft	"You could see [that] her starboard side, which was still burning, was not so very far from the water, and her stern was still in the air; saw with her stem out; 'You could not see her keel...You could just see the propellers.'" "I saw the masses of people who had backed steadily toward the stern"	Wooden bulkheads break. Propellers coming out of the water.	
	Port list gets bad	1C	People move to starboard side	"The boat listed so much to one side that I felt sure we would be swamped." "There was such a big list to port that it seemed as if she would turn over on her side as she sank" "At this time it was almost impossible to walk on the deck without you [having] caught hold of something owing to the ship heeling right over." "Half an hour, or three quarters of an hour before I left the ship, when it was taking a heavy list...the order was called, I think, by the Chief Officer, 'Everyone on the starboard side to straighten her up!'"	More open portholes on the port side cause quicker flooding than the cracks in the starboard side. Ship's list changes from starboard to port.	
	Ship rights its port list by some unknown amount	1D	People can move more easily again	"There was such a big list to port that it seemed as if she would turn over on her side...in a few minutes she straightened up on an even keel. We hurried back and stood by the rail about even with the second funnel." "She gradually came out of her list to port, and if anything had a slight list to starboard."	Once the flooding fills a region, the weight equalizes. Ship not listing badly anymore. Approaching 10 degrees down by the bow.	
	Boat deck 10' from the water (at bridge end)	1E	Last regular lifeboats launched	"He...returned to where Lightoller was loading the last boat lowered. Lightoller told him there was another boat on the roof of the officers' house if he cared to get it down." "The water by this time was up to the crew's nest and the ship was down at the head substantially. Occasionally we heard the noise of a bulkhead breaking."	More internal bulkheads breaking. Crew's nest is close to the water.	
	Bridge is close to going under	1F	Men readying collapsible lifeboats	"After...[we] had finished with that [collapsible] boat...We turned our attention to another collapsible boat that was up top of the Officers' house on the same side of the ship." "It was about this time, fifteen minutes after the launching of the last lifeboat on the port side, that I heard...the water striking the bridge and gurgling up the hatchway forward. It seemed momentarily as if it would reach the Boat Deck." "We were trying to fix up a collapsible boat when she gave the first signs of going under." "The ship all this while [was] sinking faster and faster, seeming to move forward in the water as it went down by the head."	Forward third of the ship is mostly flooded.	
2. Going under	Bridge goes under; the ship is finally sinking quickly, as compared to the past 2.5 hours; 1st rising of the stern continues	2	Many people get washed off the forward part of the boat deck	"The Titanic gave a lurch downward and we were in the water up to our hips." "she seemed to take a bit of a dive" "The ship took a slight, but definite plunge...and the sea came rolling up in a wave, over the steel-fronted bridge, along the [boat] deck below us." "when...the bridge [went] under water...I found [that] the water [had] come right up to my legs here, and I jumped into the collapsible boat...I cut the ropes, and then I was washed right out." "There was no wreckage, but a lot of people in the water."	All keel rising out of the water and losing buoyancy support. Bending stress increasing. Center of ship is buoyant in the water, keeping the ship on the surface. Best experiencing compressive stress, but it isn't compressing because it is rigid. Upper decks are in tension. Water flows over bridge, hits #1 stack, and parts to each side, washing nearby people straight out from the side of the ship. Massive flooding at the boiler room air intakes/exhausts that were spreading aft in internal decks now run forward until they hit bulkheads or full compartments, causing a "blowhole" effect which sends those moving waters in the only direction possible: up and out the officers' quarters region. Also, this "blowhole" effect may explain how Lightoller and Melors were released from the air intakes that they were pinned to at first by water flooding in.	Ship begins to accelerate in the direction it is pointing SSW due to the rapid sinking.
	Ship thrusts "forward" at/near its current trim angle	3A		"she seemed to start forward, moving forward and into the water at an angle of about 15 degrees." "She gave a kind of sudden lurch forward, and I heard a couple of reports, reports more like a volley of musketry than anything else. You would not exactly call them a heavy explosion. It did not seem to me like an explosion at all."	Ship attains 12 or 13 degrees tilt forward. Keel buckles outward in 2 sections under Boiler Room 1. Weight of displaced keel pieces causes them to tear loose in tension as they fall. Without keel support, hull and decks must take the stern load. Hull plating shatters from the bottom up as the stern pivots down and forward. Decks above C become convex (hog-backed) as the stern begins bending down.	Ship is to the Northeast, somewhere near where the "deckhouse debris" has been found.
3 and 4. First major part of the break-up--all happening within seconds	VERY loud metallic/destructive noise, and other staccato bangs, are heard	3B		"This movement, with the water rushing up toward us, was accompanied by a rumbling roar, mixed with more muffled explosions. It was like standing under a steel railway bridge while an express train passes overhead, mingled with the noise of a pressed steel factory and wholesale brokerage of china." "The ship was shaking very much, part of it being under water." "I heard four reports." "I heard several little explosions, but it was not such explosions as I expected to hear." "There seemed to be a tremble run through the whole of the ship and the next thing we heard were loud reports inside" "It was like as if the iron was parting." "we could see the water coming up the bow of the ship as she was going down, and there was a kind of an explosion" "a deep, loud roar" "sounded like the crashing of millions of dishes of crockery." "The cracking sound, quite audible a quarter of a mile away, was due, in my opinion, to tearing of the ship's plates apart." "The rumble and roar continued, with even louder distinct wrenchings and beatings... Suddenly the whole superstructure of the ship appeared to split, fell forward to midship, and blow or buckle upwards." "she seemed to break in half as if cut with a knife" "It seemed to me that she broke in two just in front of the third funnel."	The stern's potential energy (mass at a height) converting into momentum (mass times velocity) is the power source of the forces working against the bow. The stern pivoting about the intact C-D deck area has a mainly downward component, and a smaller forward component. The downward vector works against the bow going down (the buoyant mid-section of the ship being the fulcrum), and the forward component adds to the ship's forward movement as the stern does crushing work on the bow. Because 2 keel pieces are gone, the hull frames are unattached at their bottoms, except for their sheathing of hull plating. Axiol compressive force buckles, cracks, telescopes, and folds the hull plating, smashes the frames toward one another, and breaks those frames loose from any internal decks (G, F, and E levels). Internal decks and walls buckle and smash in compression. Bow does not get more than 14 or 15 degrees tilted, because the stern's downward-moving mass counterbalances it, stalling its sinking.	Ship's SSW movement is even faster.
	Top decks split open, forward of 3rd funnel	3C	(3. This is the first moment of the break.) People instantly become far more fearful.	"There was a terrific explosion which threw the water in a turmoil, and fragments of the ship were hurled high into the air." "There came a terrible explosion, and I could see men, women, and pieces of the ship blown into the air"	Hog-backed top decks and longitudinal bulkheads above level C snap open in rapid succession like separate gunshots. The ship is split open at its top, forward of the 3rd funnel, and also broken open at its bottom, with a center at the No. 1 Boiler Room. But it is still connected at its middle, so it is still one ship, and not parted.	
	People and pieces of ship thrown into the air	3D		"There was a terrific explosion which threw the water in a turmoil, and fragments of the ship were hurled high into the air." "There came a terrible explosion, and I could see men, women, and pieces of the ship blown into the air"	The breaking of the convex decks and bulkheads allows those decks to snap upward in reaction. Looser objects and people get thrown upward. The "deckhouse debris" piece gets launched overboard. Hull side-plating failures allow some air out of the boiler rooms into the sea, churning the water as it bubbles up.	
	Sparks thrown up and out a funnel	3E		"Something in the very bowels of the Titanic exploded and millions of sparks shot up to the sky...This red spurt was fan-shaped as it went up, but the sparks descended in every direction in the shape of a fountain of fire." "For a few moments we could see everything that was happening, far, as the vessel sank, millions and millions of sparks flew up and lit everything around us." "I saw the ship in a sort of red glare"	Instantaneous flooding at Boiler Room 2 is faster than the air can exit. Slightly pressurized room air roars through the boilers, getting their hot coils out and out the #3 stack the moment before the boiler room is flooded. Similarly, air and some coal within the two local coal rooms might have been forced up and out their loading hatches, spraying coal up into the dark night.	Ship moves downward and forward due to the instant flooding.
	People at and aft of the 3rd funnel begin hurrying aft and screaming in fear; people forward of the break could not go aft.	3F		"I heard a kind of a crash as if something had buckled, as if part of the ship had buckled, and then I heard a rush [of people] overhead" [on the boat deck, ahead of the third funnel, rushing aft]. "The mass of people on board were surging back, always back." "Clinch Smith made the proposition that we should leave and go toward the stern...[but] there arose before us from the forward part of the ship a mass of sparks and steam coming down, covering the Boat Deck...when they saw us and the water on deck chugging us from behind, they turned in the opposite direction towards the stern [but did not move aft]...Clinch Smith and I instantly saw that we could make no progress ahead"	The ship was not tilted so much that people couldn't move; they could still go aft if they were aft of the stern. People forward of the split couldn't go aft, but were still able to stand...until they were washed off a moment later. The water was described as "coming up," but actually the ship was going forward and down into the water, so that the water appeared to come up and knock everyone down. When the sun deck bobbed back toward, that water immediately receded, sweeping those people forward toward the forecastle, and probably off the sides of the forward half of the ship as well.	
	Destructive sounds continue; the stern sags down, making the ship hog-backed in shape, and making a wave.	4A		"It was partly a roar, 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 or twenty" "a fearful roar." "we noticed that she was hog-backed, showing she was already breaking in two." "I was clear of the ship, went down, and as I came up I was pushed away from the ship by some force." "The explosion blew me along with a wall of water toward the dark object I was swimming to"	All of the work done by the stern crushing into the bow results in the stern moving downward more slowly, and not with the free-fall that a complete parting would allow. So a smaller-than-expected wave of water forms and travels away from each side of the ship, pushing away floating people.	
	Deck at collapsible lifeboats rises above sea level briefly	4B	(4. These are the next seconds of the break.) Lots of people are now in the water all around the forward half of the ship. All people are desperately trying to survive.	"when suddenly her nose, on which I was, seemed to suddenly rise from underneath the water and I a few more that were close by cut the ropes that held the boat to the falls [diverts]." "I went down with the bow, but when she rebounded..." "The stern rose again slightly, and I succeeded in cutting the second rope...Another lurch threw this [collapsible] boat and myself off and away from the ship into the water." "The next thing I remember was the ship suddenly dipping, and the waves rushing up and engulfing me. After ten seconds the Titanic again righted herself, but then I saw that everyone... except myself, had been swept into the forecastle bulk."	The sun deck at #1 funnel rises above sea level for some seconds--long enough for people to see things and do things that, just a few seconds beforehand, they couldn't.	The ship is still on the surface, so it is still more buoyant than after, so the bow reacts to the stern's movements.
	Lights forward of the break go out; stern still lit; #2 funnel falls to starboard side	4C		"We saw all the lights going out on the forward part of her and still burning on the after part" "The lights were still on in the after end of the ship" "I was pushed away from the ship by some force. I came up facing the ship, and one of her funnels seemed to be lifted off and fell towards me about ten yards away." "The sun deck and the [collapsible] boat did not stand on their feet on the deck. So they fell down and slid on the deck into the water right on the ship." "we could see [that] the people were jumping over." "There was water coming onto the deck, and they were jumping over then"	The sun deck at #1 funnel drops under water the 2nd time. Collapsible A, now cut loose, washes out to starboard; boat B is swamped and washes to port. Once again, the bow's flat top and keel, along with the sharp prow, make it accelerate forward as it goes down. It pulls on the stern via the intact stern strakes at decks C and D and what remains of the internal decking. #2 funnel falls due to the bow's down/up/down action. (#1 funnel falls at that time?) Electrical generators are running out of steam, not that the last hot boilers are flooded. With keel pieces missing, and broken hull plating, the keel cannot lift the stern in cantilever as it did the first time, and, in conjunction with the top decks split open, the ship is now flexible enough to bend up or down about its primary connection at the C/D decks. So the mechanism for raising the stern must be that the diving bow is pulling the mostly buoyant stern down behind it. The bow is also sinking (pivoting) toward a steeper angle under water, so the stern rises to maybe a 45-degree angle. The engine room and last two boiler rooms are now flooded, removing much buoyancy from that middle region of the ship. But other water-tight doors in the stern are still shut, slowing the flooding process above and aft of the engine rooms. With the ship tilted so much, it can move easily roll/turn/rotate about a longitudinal axis. It rotates to starboard (clockwise as viewed from stern), slowly orienting its decks to face more toward the North, while the stern is rising.	Ship is still being forced SSW due to the bow sinking and the stern rising. It is also rotating toward the NW. The ship's speed forward creates a current that pulls Collapsible A lifeboat in the same direction. Ship gets to the NE region of the "heavy debris" field, and is about to create that field.
	Bow sinking for 2nd time; stern rising, more than the 1st time, at its aft end (2nd rising) but lowering at its forward end, because it is flooding and still somehow connected to the flooded bow	5	People are falling or jumping off	"The ship started breaking up, and her stern went up in the air." "There was a good bit of the stern part of water...it seemed all clear right from amidships to aft." "The stern of the ship, fully lighted, stood up in the sky." "Now you could only see half of what you saw before: the forward of the ship was under water, the back part was somewhat more raised from the water than before." "The sun deck and the [collapsible] boat were still on their feet on the deck. So they fell down and slid on the deck into the water right on the ship." "we could see [that] the people were jumping over." "There was water coming onto the deck, and they were jumping over then"	The stern half gets pulled down by the bow half (not by gravity) which causes an increasing number of air-filled compartments in the stern to go under, so buoyancy increases, resisting the dive. The bow is dead weight, and does not want to stop, so stress in the shear strakes is high. The whole ship stops its descent, and begins to bob upward with that buoyancy. If it hasn't happened already, #3 funnel falls off below sea level. As tension lessens, the stern easily bends, so the combination of bending and tensile stress breaks the strong shear strakes to pieces with much noise. ("The big piece" breaks loose, for example.) The stern lowers back toward the sea connected by only a few remaining internal decks crushing down onto one another as they are kept in tension and the ship bends in the middle. (No. 4 funnel falls aft due to the upward bobbing and then the lowering motion). The decks crushing down cause the two forward engine cylinders to break loose; one may have fallen through the water-tight bulkhead at the #1 boilers, and lodged in the coal bunkers. A lot of debris is now beginning to come from the stern.	Ship's clockwise turning has ceased because the stern is back in the water. Ship is now aimed and moving NNW. The motive power is the bow finally pulling free, dragging the stern along the surface for 200-500 feet as the last bits of the decks pull apart.
	Bow breaks further loose; ship moves a lot; stern's lights go out; now breaking between 3rd and 4th funnels	6A	More loud noise heard	"I heard a second explosion" "The lights went out after the second explosion" "She went down as far as the after funnel, and then there was a little roar as though the engines had rushed forward, and she snapped in two" "The [junkies] bow seemed to bob up and then break off." "She parted between the third and fourth funnels" "It seemed to writhe, breaking into the three parts into which it was divided." "The front portion of her was pointing downwards and she appeared to be breaking in halves. Then with a mighty and tearing sound...the front portion of her diverged into the sea"	Ship now slowing in the SSW direction due to water friction, and is still drifting with the current in the SSE direction, so the resultant movement is Southward. Ship has still been pivoting clockwise during this time, its decks turning to become pointed NNW.	
Stern coming back down as bow is breaking loose more and more	6B	Some people in lifeboats see it	"She seemed to raise once as though she was going to take a violent dive, but sort of checked...and...leveled herself" "She seemed to go up on end; you know, and then she came down about half way, and then the afterpart righted itself again and the forepart had disappeared"	The stern is beyond hog-backed--more like dog-legged now. The bow is angled more than 50 degrees down from the surface. The stern lowers toward the surface, further breaking the ship as it does so. Asymmetrical breaking and collapsing of internal columns causes some twisting, back-and-forth motions.	Ship's clockwise turning has ceased because the stern is back in the water. Ship is now aimed and moving NNW. The motive power is the bow finally pulling free, dragging the stern along the surface for 200-500 feet as the last bits of the decks pull apart.	
7. Dark stern moving freely	Stern settles fully down to the water at its aft end; bow finally pulls away, affecting the stern for the last time	7A	People in lifeboats wonder if stern will stay afloat	"The forward end of the ship went underneath and seemed to break off; the after part came back on a level keel." "stern righted itself without the bow, in my estimation she must have broken in half." "She snapped in two, and the bow part went down and the after part came up and staid up five minutes before it went down." "The poop is going to float" "the afterpart righted itself" "She broke, and the after part floated back" "the afterpart of her settled out of the water horizontally after the other part went down" "She then seemed to settle very, very quiet, until the last, when she rose up"	As the ship pulls apart toward the NNW, five boilers and one engine cylinder drop out. The last decks and hull pull apart in pieces; the "lift tower" is among that wreckage. The "forward tower" and the loosened engine cylinder are going down with the steeply angled bow. The bow half pulls loose, but its down angle steadily decreases as it sinks away, and as its sinking speed increases, the "forward tower" portion and the other broken engine cylinder drop out behind it.	Bow is traveling down and NNW. Stern floats in the area of "heavy debris".
	Stern's wrecked fore end goes under, and fantail rises (3rd rising), while pivoting around the other direction; it gets up to a steep angle and pauses	7B	Because the stern was dark, rotating, tipping up, and sinking down, peoples' descriptions vary	"The stern reared straight on end and stood poised on the ocean for many seconds." "The stern stood up for several minutes, black against the stars, and then that...plunged down" "The lights went out entirely and then the stern seemed to rise perpendicularly in the air" "The Titanic in the meanwhile seemed to hang, and with the rear [of internal breakage sounds]...the ship, pivoting and moving in an almost perpendicular position, was sticking up in the air almost 300 feet. The ship then corkscrewed around so that the propeller, rudder, and all seemed to go right over the heads of us on the upturned boat. Of course the lights now were all out. The ship seemed to hang in this position for minutes."	The stern has never been this steep or this broken before, so now the contents within it break through the bulkheads that had previously held. All engines stay in place on the stern, intact, but lots of other internals are tearing loose. The noises are heard more distinctly if the ship's decks are facing a lifeboat; but if the hull is toward a lifeboat, the internal sounds are more damped.	Bow is traveling North and down.
	Stern goes down with much noise	7C	Some people in lifeboats hear it--but others say that it sank quietly	"The roar had lessened, when once again a fearsome thundering and roaring accompanied its disappearance into the depth of the sea." "and she seemed to stand 20 seconds...and then she went down with an awful grating" "a sound like thunder and soon she disappeared from view." "I heard reports like big guns in the distance" "everyone watching in the lifeboats saw silhouetted against the stark sky the stern of the ship rise perpendicularly into the air from about midship." "She uprighted herself for about five minutes, and then tipped over and disappeared." "Then, with a dive and final plunge, the Titanic went under the water with very little apparent suction or noise."	The stern has never been this steep or this broken before, so now the contents within it break through the bulkheads that had previously held. All engines stay in place on the stern, intact, but lots of other internals are tearing loose. The noises are heard more distinctly if the ship's decks are facing a lifeboat; but if the hull is toward a lifeboat, the internal sounds are more damped.	Bow is traveling NE and down. Stern has just made half to three quarters of a loop on the surface, and is now aimed approximately SE as it slips beneath the surface.

### Things that this scenario attempts to explain better than some other theories

- An initial break at both the top and bottom explains the proximity of the "deckhouse debris" to the two keel pieces, all sitting separately to the Northeast, and explains all of the other metal debris that is Northeast of the heavy debris field.
- The keel failure mode matches the as-found condition of the keel pieces. Although buckling happens due to compression, buckled pieces would look primarily like failure in tension, and that is what is seen.
- The ship was not stationary, but traveled a couple of ship lengths during the breakup, which would explain the debris pattern.
- There were 4 states of the ship's lighting during the sinking: all lighted; bow's lower-deck lights going under / going out; stern lighted; and all dark, silhouetted against the stars.
- There were 3 rises of the stern, here distinguished by their lighting: (1) bow's lower-deck lights going under / going out; (2) stern lighted; and (3) all dark. Most theories deal with one, or at most two rises.
- The bow's momentary rise is explained. It seems as if nobody else dealt with it adequately.
- Three stern rises, a bow rise, and buoyancy action explain the "bobbing" types of observations, and the huge variation among all of the testimonies. People were often speaking of different events in the sinking process, and not being clear as to which event. So everyone hearing/reading the testimonies has difficulty interpreting them.
- The ejected sparks are explained. The only other way for enough suddenness to eject hot coals would be instant, massive hull plate failure. Cracks could not do it.
- The water pouring out of the top doors and windows as the bow was going under is explained.