



A Brief History of Surfing

For Engineers

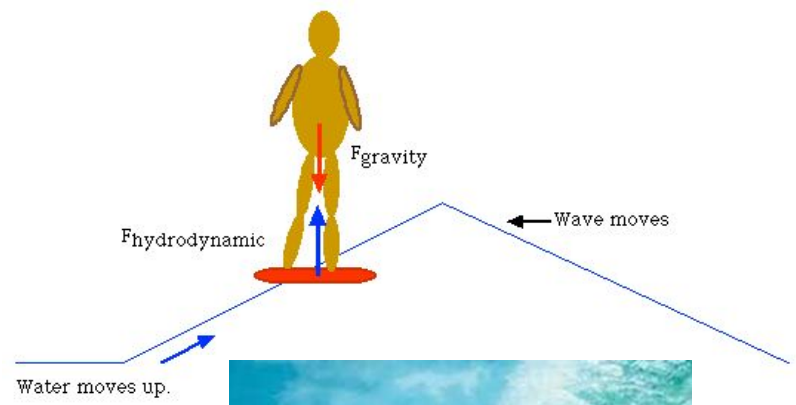


What is surfing?

- Sport/activity
- Uses physics to ride waves
- Different materials/shapes



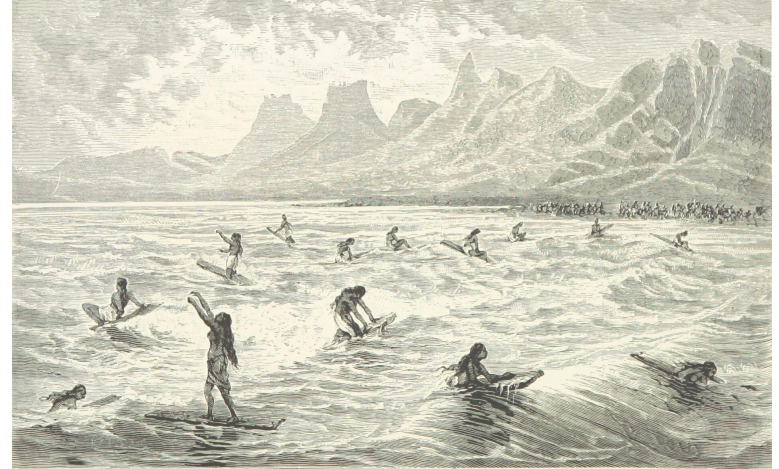
Equal and opposite forces in action



Gravity vs Normal forces

What was the problem?

- Religious practice
 - Social classification
 - Training for warriors
 - fishing
-
- At least 12th century Polynesian



Where did it come from and where did it go?



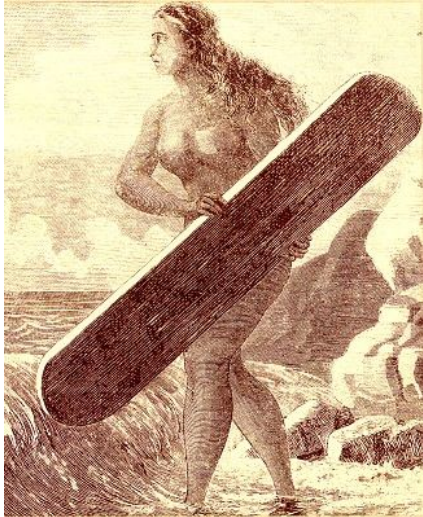
- 12-24 feet long
- Redwood
- Solid
- Very heavy ~ 125 lbs
- No fin
- One way to ride

- 4-10 feet
- Wood, foam, fiberglass
- Light ~ 10-20 lbs
- 1-5 fins
- Many ways to ride different waves

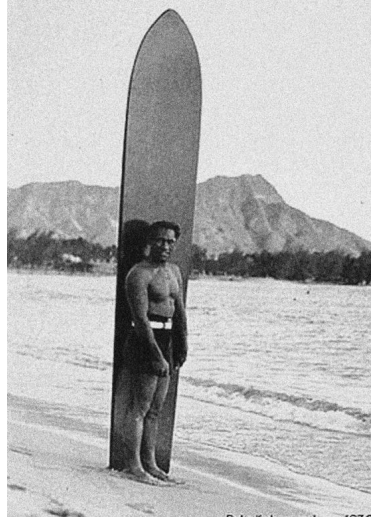
How did we get there?

- Long heavy boards
- Only in Hawaii
- Unpopular

Late 1800's



- Duke Kahanamoku increases the popularity of the sport
- Same design



1900's

- Tom Blake (1930/1940)
 - Hollow boards
 - First to attach a fin
- Steve Lis (1970)
 - Added two fins
 - responsible for the popularity of fins
- Simon Anderson (1980)
 - Three fins
- Campbell twins (1990)
 - Five fin design
- Jack O'Neil (1971)
 - Created the leash



What was changed and how did it happen?

Reminder:

- Adding fins
- Lighter materials
- Stronger materials
- Smaller boards

Experimentation, experimentation, experimentation!

- Tom Blake took 10 years to develop the fin
- Steve Lis wanted to fix the issue of stability and turning
- Simon Anderson wanted more control on big waves
- The Campbell twins weren't even surfers
- O'Neils invention was seen as unnecessary and dangerous

****Most designs took years to catch on****



Improvements?

- Some surfers are trying to add a “computer” to the board
 - Track speed
 - Movement
 - Waves
- New material science can improve the board
 - Buoyancy
 - Speed
 - Cutting the waves
- Fin shape
 - New waves to carve

The genius of the board

- The simplicity of the design
 - Board + fin
 - Simple materials
- Utilizes simple physics
 - Equal and opposite reactions
 - Object in motion, object at rest
 - Gravity
- The easiest solution
 - Does not over complicate matters
 - le. the space pen

[The History of Surfing and Its Origin | Collections of Waikiki](#)

[The Physics of Surfing | Let's Talk Science \(letstalkscience.ca\)](#)

[Surfboard Fin History - The Surfing Handbook](#)

[How Has Surfing Changed Over The Years? - HT's Mentawai Surf Resort \(htsresort.com\)](#)