

REFLECTIONS IN
WOOD
SURFBOARDS & SHAPERS



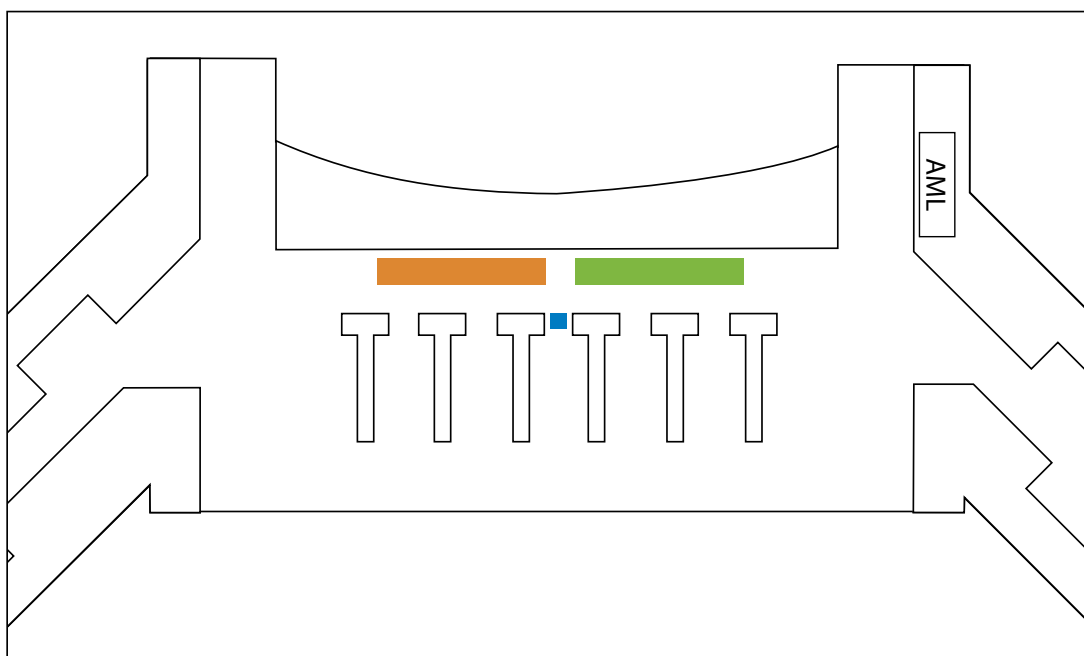
REFLECTIONS IN WOOD

SURFBOARDS & SHAPERS

Self-Guided Tour and Supplemental Teaching Materials for K-12 Teachers

Thank you for visiting our exhibition, *Reflections in Wood: Surfboards and Shapers*. This PDF provides parents and teachers with a self-guided tour of the exhibition and is comprised of four sections:

- **INTRODUCTION:** A brief background and summary of the exhibit. This is the large text that appears along with the video in each of the galleries.
- **CENTRAL VITRINE:** Items and text are found in the tall exhibition case located at the center of the long galleries.
- **IT-G:** This is the long gallery located in the center of the International Terminal Main Hall, adjacent to G-side departures and the BART station entrance. The text for this section begins at the far-left of the gallery and continues right towards the Central Vitrine.
- **IT-A:** This is the long gallery located in the center of the International Terminal Main Hall, adjacent to A-side departures and the Aviation Museum and Library (AML). The text for this section begins at the far-left of the gallery and continues right towards the Aviation Museum and Library (AML).



Introduction: Surfboards and Shapers

Shapers are artisans who make surfboards from shaping materials such as foam and wood. By combining famous shapers with sources of rare wood, Larry Fuller (b. 1954) has assembled a collection of boards that show the progression of surfboard design. Fuller crafted his first wooden board from agave and redwood close to three decades ago while working for surfer-shaper Jim Phillips (b. 1946). Over the next few years, Fuller made connections to surfer-shapers including George Downing (1930–2018), Dick “RB” Brewer (b. 1936), and Donald Takayama (1943–2012).

Wood collectors provided the materials and momentum. After Fuller met sawyer and craftsman Charles “Chuck” Pyle (b. 1945), they created a series of surfboards with Takayama (1943–2012) from old-growth redwood that Pyle had salvaged from the 1854 Mirassou Winery in Northern California. In 2009, Fuller found Jan Petersen (b. 1951), the steward of a 2,700-year-old, 284-foot-tall giant sequoia tree that had fallen during a 1964 winter storm in Whitaker’s Forest, California. Working with

surfer-shaper Reynolds “Renny” Yater (b. 1932), they crafted four Baby Spoon longboards from solid, milled slabs of sequoia redwood.

This exhibition features twenty-seven wooden surfboards selected from more than 100 examples constructed by Fuller and his team over the past decade. Native Hawaiian surfboards by Tom “Pohaku” Stone (b. 1951) are examples of wooden boards from surfing’s ancient past. Other surfboards are shapes that were originally made from polyurethane foam and fiberglass. A classic longboard by Dudley “Hap” Jacobs (b. 1930) shows early 1960s design. Big-wave guns by George Downing and Wayne Lynch (b. 1952) are examples of the boards that are necessary to paddle into large waves. Finally, tow boards by Bill Hamilton (b. 1948) recreate the balsa wood surfboards that Laird Hamilton (b. 1964) and Darrick Doerner (b. 1957) first rode at Teahupo’o in Tahiti.

Discussion question #1

What is a shaper?

- Shapers are artisans who make surfboards from shaping materials such as foam and wood.



Native Hawaiian Surfing

Native Hawaiian surfing originated approximately one thousand years ago. Surfing was imported from Tahiti by the Polynesian people who settled the Hawaiian Islands. *He'e nalu* means “wave sliding” in Hawaiian and is a culturally distinct form of surfing. *He'e nalu* grew into a popular pastime for men and women of all ages in Hawai'i and was also the sport of ancient Hawaiian royals. King Kamehameha I (1758–1819) and Queen Ka'ahumanu (1772–1832) surfed together on long *olo* surfboards that were reserved for chiefs and royalty. Made from koa or wiliwili wood, these large *olo* surfboards could exceed twenty feet in length and weighed more than 150 pounds.

Common Hawaiians enjoyed surfing on many types of ancient surfboards. Short *paipo* belly boards such as the *uma* were for smaller surf. Omo boards could be ridden while lying down or standing up. Sleek and maneuverable, stand-up *alaia* boards were preferred for higher speeds and larger surf.

Ancient Hawaiian surfboard construction began with the selection of a breadfruit, koa, or wiliwili tree. A red *kūmū* fish was buried at the tree's base and a prayer was offered for the surfboard to be constructed. The trunk was whittled with a stone adze into the desired form, and the shaper transferred the board to a *hālau wa'a*, or canoe house, located at the beach for finishing work. Coral and pumice stones smoothed the board, while *'ōahi*, or stone rubbers, polished the surface in preparation for staining and sealing. After surfing, boards were carefully dried and oiled to preserve them for the next outing.

Discussion question #2

What does the Hawaiian word *he'e nalu* mean in English?

- *He'e nalu*, which means “wave sliding” in Hawaiian, is a native word for surfing.



Sandwich Island Surf-riders 1831

F. Howard, etching by W. Finden

Polynesian Researches, During a Residence of Nearly Eighty

Years in the Society and Sandwich Islands, Volumes I to IV

Rev. William Ellis

Collection of Hawai'i State Archives, Honolulu, Hawai'i

R2018.2817.001



Pūua 2013
Tom "Pohaku" Stone (b. 1951)
curly redwood
Courtesy of Charles Pyle
L2018.2803.014

Surfing's Renaissance

In the early 1900s, there was a renewed interest in the ancient royal sport of surfing. Approximately one-quarter of the population of Hawai'i lived in Honolulu on the island of O'ahu, where many of the few remaining native surfers rode traditional *alaia* boards along the break at Waikiki beach.

Three-time Olympic gold medalist Duke Kahanamoku (1890–1968) was the most famous early twentieth-century surfer. Kahanamoku was a native Hawaiian and accomplished waterman who excelled in surfing, swimming, and outrigger canoeing. After winning his first gold medal in

swimming at the 1912 Olympic games in Sweden, Kahanamoku became a celebrity and introduced surfing to Europe, Australia, and the East Coast of the United States.

Discussion question #3

Where did many people surf during the early 1900s?

- Many of the native Hawaiian surfers rode traditional *alaia* boards at Waikiki beach on the island of O'ahu.



Duke Kahanamoku riding his hollow *olo* in Waikiki c. 1930s

Thomas Edward "Tom" Blake (1902–94)

Tom Blake/Croul Family Collection

Surfing Heritage and Culture Center, San Clemente, California

R2018.2812.001

The Hot Curl

Hot curl surfboards allowed surfers to ride sideways across the surf and in the curl of a wave. The hot curl design began in 1934 on O’ahu. When Fran Heath (1917–2006) and John Kelly (1919–2007) attempted to ride the large waves at Brown’s Beach, the wide tails of their conventional, redwood plank boards slid out and sent them towards the shore. During a break for lunch, Kelly and Heath reshaped one of their boards with an axe, narrowing the tail and giving the lower surface a v-shaped profile that resembled a boat’s hull. Kelly recalled, “by mid-afternoon we were back out there with this board.

I caught a wave and the tail just dug in and I went right across, and we figured something had happened.”

Discussion question #4

What did hot curl surfboards allow surfers to do?

- Hot curl surfboards allowed surfers to ride sideways across the surf and in the curl of a wave.



© Clarence Maki/SHACC

Hawaiian Hot Curl—Eugene Kaupiko in full trim mode 1955

Clarence “Mac” Maki (1924–2010)

Collection of Surfing Heritage and Culture Center, San Clemente, California

R2018.2812.002



Hot Curl c. 2006
Donald Takayama (1943–2012)
tiger stripe redwood, fiberglass, resin
Courtesy of Charles Pyle
L2018.2803.002

Longboards

Fiberglass is a waterproof material that added strength to surfboards and simplified the installation of surfboard fins. Southern California surfer-shapers Bob Simmons (1919–54), Joe Quigg (b. 1925), and Matt Kivlin (1929–2014) were some of the first to cover wooden boards with fiberglass and resin. By the early 1950s, many shapers were creating thin, rounded boards with side profiles that were curved upward at the nose and tail. These easy-riding Malibu Chip boards were perfectly suited for the smaller surf at places like San Onofre and Malibu. In the 1960s, lightweight polyurethane foam surfboards covered with fiberglass were introduced and changed the surfing industry. Hermosa Beach surfer-shaper Dudley “Hap” Jacobs (b. 1930) was

one of the most famous makers of foam and fiberglass surfboards. In 1965, Santa Barbara surfer-shaper Reynolds “Renny” Yater (b. 1932) introduced the Spoon, a foam and fiberglass surfboard with a scooped-out, lightweight nose that made the board easier to turn.

Discussion question #5

Why did shapers cover surfboards with fiberglass?

- Fiberglass is waterproof and added strength to surfboards. Fiberglass also simplified the addition of surfboard fins.



Bruce Brown, Mike Hynson, and Robert August at Salt Creek Beach, California
[Image for *The Endless Summer* poster] c. 1963
Robert “Bob” Bagley (active mid- to late-20th century)
Courtesy of Bruce Brown Films, LLC
R2018.2813.001



Longboard c. 2015
Dudley "Hap" Jacobs (b. 1930)
western red cedar, redwood, basswood, fiberglass, resin
Courtesy of Tom Albright
L2018.2805.001

The Process

Over the past decade, Larry Fuller (b. 1954) has made surfboards with famous shapers from rare wood. Some of this wood includes redwood used to make wine tanks in the 1850s, and wood salvaged from a 2,700-year-old giant sequoia tree that fell during a winter storm in the 1960s. To make one of these unique surfboards, wood is carefully selected, sawed to shape, arranged into matching strips, and glued together to make surfboard blanks. After a computer numerically controlled (CNC) machine cuts each blank into the outline of a surfboard, a person known as a shaper sands the surfboard to its final shape. The boards are then covered with fiberglass and fins are installed.

Other boards are crafted completely by hand. Shapers Donald Takayama (1943–2012) and Tom “Pōhaku” Stone (b. 1951) hand-carved native Hawaiian surfboards from solid redwood. Reynolds “Renny” Yater (b. 1932) hand-shaped four Baby Spoon longboards from milled slabs of sequoia redwood. The process of handcrafting surfboards from solid wood requires great care and exceptional craftsmanship.

Discussion question #6

What is one type of wood that Larry Fuller uses to make surfboards?

- Types of wood include redwood used to make wine tanks in the 1850s, and wood salvaged from a 2,700-year-old giant sequoia tree.



Surfboards and Shapers 2018

Footage courtesy of Richard Newman

Addicted to Joy: Surfers and Shapers—The Larry Fuller Project



Wooden strips are glued together to make a surfboard blank.



CNC machine cuts a blank into the outline of a surfboard.



Surfer-shaper Simon Anderson shapes a surfboard.



Surfer-shaper Juan Rodriguez installs surfboard fins.

Donald Takayama

Donald Takayama (1943–2012) began surfing and shaping as a young boy in Hawai'i. During the summer of 1955, when Takayama was eleven years old, he traveled to San Clemente, California, to shape surfboards for Dale Velzy (1927–2005). Although Takayama enjoyed the waves at Ala Moana near his home in Waikīkī, after working for Velzy, the young surfer relocated to Southern California to shape and surf. In 1965, he created the signature Donald Takayama model for Dudley "Hap" Jacobs (b. 1930), and at Bing Surfboards he designed a signature model for championship surfer David Nuuhiwa (b. 1948).

Takayama was also a championship surfer, winning the United States Masters Division title from 1971–73. During the mid-1970s, he founded his own company, Hawaiian Pro Designs in Oceanside, California, to design and manufacture surfboards. Takayama helped revive an interest in longboarding in the 1990s and was inducted into the International Surfing Hall of Fame in 1991.

Discussion question #7

How old was Donald Takayama when he first visited California?

- Takayama was eleven years old in 1955 when he traveled to San Clemente, California, to shape surfboards for Dale Velzy.



Donald Takayama at Ala Moana, O'ahu, Hawai'i 1960

John Severson (1933–2017)

Courtesy of Puka Puka

www.pukapuka.tv

R2018.2814.001

Big-Wave Pioneers

During the 1950s, surfers explored the north and west shores of O‘ahu in search of bigger waves. Hawaiian-born George Downing (1930–2018) was an expert shaper and big wave surfer. In the 1940s, Downing was one of the few hot curl surfers to ride at Mākaha, a big-wave surfing spot on the west side of O‘ahu. The largest waves at Mākaha proved too powerful for the finless hot curl surfboards popular during the era, and in 1949, Downing created the Rocket. This ten-foot-long balsa wood board was covered with fiberglass and had a fin box that allowed Downing to experiment with different fin designs.

In 1950, Murray “Buzzy” Trent (1929–2006) traveled from California to Hawai‘i. While surfing at Mākaha, Trent rode a narrow, twelve-foot-long balsa and

fiberglass board that was purpose-built for big waves by surfer-shaper Joe Quigg (b. 1925). Trent referred to the board as a gun, and over the next few years, other riders surfed even larger spots such as Waimea Bay. Today, these specialized big-wave surfboards are still referred to as guns. The George Downing gun on display was created in the same shape as the board that Downing’s son, Keone Downing (b. 1953), used to win the 1990 Eddie Aikau Big Wave Invitational at Waimea Bay.

Discussion question #8

Name one of the big-wave surfing spots on the Hawaiian island of O‘ahu.

- Mākaha and Waimea Bay are two of the big-wave surfing spots on O‘ahu.



Six Pack, Waimea, O‘ahu, Hawai‘i 1963

John Severson (1933–2017)

Courtesy of Puka Puka

www.pukapuka.tv

R2018.2814.002



Big-Wave Gun c. 2005
George Downing (1930–2018)
wine-tank redwood, fiberglass, resin
Courtesy of Charles Pyle
L2018.2803.001

The Shortboard Revolution

In the late 1960s, surfers started to ride smaller surfboards known as shortboards. Shortboards made sharper turns than longboards and rode closer to the breaking section of waves. These nimble shortboards allowed surfers to experiment with different tricks and maneuvers. In the late 1960s, Australian surfer-shaper Wayne Lynch (b. 1952) introduced a style of vertical surfing that inspired a new generation of shortboard surfers. For the first time, surfers were riding up the face of a wave and then back down and away from the breaking section of the surf. Rell Sunn (1950–98) was the most famous

female Hawaiian surfer during the early shortboard era. Nicknamed the “Queen of Mākaha,” she was an ambassador of the native Hawaiian style of surfing and rode shortboards and longboards with ease.

Discussion question #9

What did shortboards allow surfers to do?

- Shortboards made sharper turns than longboards and rode closer to the breaking section of waves. Shortboards also allowed surfers to experiment with different tricks and maneuvers.



Rell Sunn, Huahine, Tahiti 1981
 Jeff Divine (b. 1950)
 Courtesy of the artist
 R2018.2815.001

Pipeline

Located on the North Shore of O‘ahu in Hawai‘i, Pipeline produces some of the world’s most powerful hollow waves. Pipeline is famous for the short and spectacular “tube rides” that cover surfers in the curl of the wave before they are shot out of the tube in a dramatic burst of water and mist. In big surf conditions, a successful ride at Pipeline requires a quick takeoff to avoid being thrown over the top of the wave, followed by a careful line and a precise turn at the bottom across the wave. Pipeline is a very shallow surf break. Waves that exceed ten feet in height break in water that is only six feet above a black-lava reef, making wipeouts very dangerous.

Surfer-shaper Phil Edwards (b. 1938) was the first modern surfer to be filmed while riding a large wave at Pipeline. On a December afternoon in 1961, surfer and filmmaker Bruce Brown (1937–2017) filmed

Edwards on an eight-foot wave—proving to the surfing community that with the right skill and equipment, Pipeline could be ridden safely in big surf. Surfer-shaper Gerry Lopez (b. 1948) perfected tube riding at Pipeline. Born in Hawai‘i and raised in Honolulu, Lopez spent much of his youth surfing at Waikīkī. By the early 1970s, Lopez rode Pipeline with a relaxed style that made surfing one of the world’s most dangerous waves appear easy.

Discussion question #10

Why is Pipeline in Hawai‘i famous?

- Pipeline is famous for the short and spectacular “tube rides” that cover surfers in the curl of the wave before they are shot out of the tube in a burst of water and mist.



Gerry Lopez in the Tube, Pipeline, O‘ahu, Hawai‘i 1971
Jeff Divine (b. 1950)
Courtesy of the artist
R2018.2815.002

Big-Wave Guns

Big-wave guns are specialized boards that are made for surfing large waves. These surfboards are designed to paddle quickly and provide enough control to safely surf waves that range from ten to thirty feet in height. Guns have narrow noses and tails and are made for specific types of waves and surfing locations. Length and thickness are maximized to provide the high paddling speeds that are needed to catch large waves. Guns must also be fast enough to outrun a big wave once it has been caught, and care is given to reduce drag between the board and the water. Additional layers of fiberglass strengthen big-wave guns and make

them heavier than other boards of the same size. The heavier weight of these boards keeps them planted firmly in place on large waves.

Discussion question #11

Why is it important for a big-wave gun to be fast in the water?

- Big-wave guns must paddle quickly enough to catch large waves. They must also be fast enough to outrun a big wave once it has been caught.



Wipeout, Pipeline, O'ahu, Hawai'i 1973
Jeff Divine (b. 1950)
Courtesy of the artist
R2018.2815.003



Pipeline Gun c. 2013
Gerry Lopez (b. 1948)
wine-tank redwood, fiberglass, resin
Courtesy of Joseph Filippi
L2018.2807.005

Riding Giants: Tow Surfing

Tow surfers use specially designed boards and motorized equipment to ride some of the largest and most powerful waves on earth. By towing into takeoff position behind jet skis, tow surfers achieve the high speeds that are needed to catch waves that exceed thirty feet in height. Due to the power of the water and wind generated by these big waves, foot straps are used to keep riders in place. Jet skis pick up tow surfers after each ride and put them back into the lineup before the next large wave rolls through. In 1992, Laird Hamilton (b. 1964), Darrick Doerner (b. 1957), and Buzzy Kerbox (b. 1956)

experimented with tow surfing at Pe'ahi, a reef break known as Jaws on the North Shore of Maui that was not considered rideable in extremely large surf.

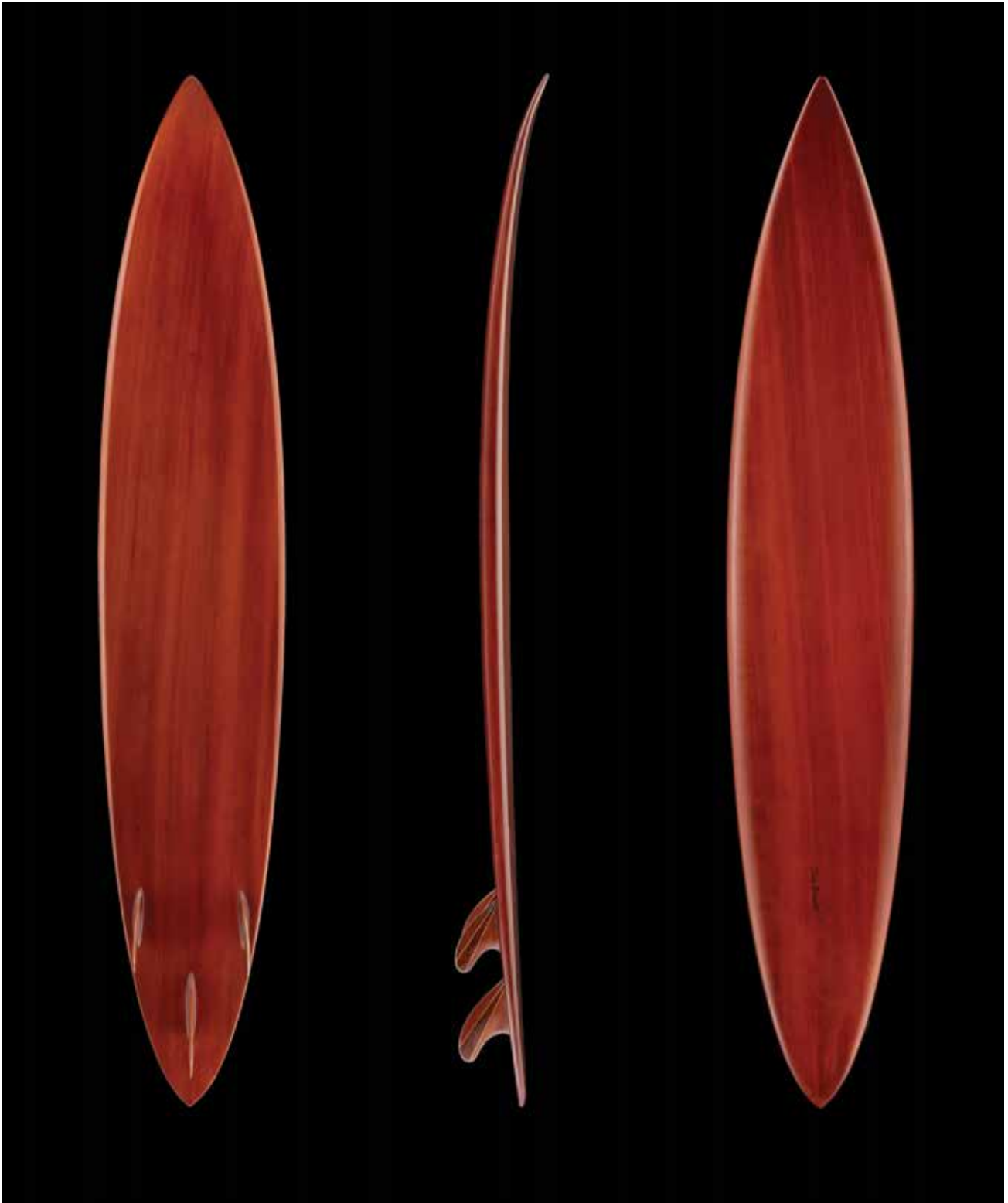
Discussion question #12

Why do tow surfers use foot straps?

- Due to the power of the water and wind generated by extremely large waves, foot straps are used to keep riders in place.



Laird Hamilton tow surfing at Pe'ahi [Jaws] c. 2000
Tom Servais (b. 1953)
Courtesy of the artist
R2018.2816.001



"Betsy" Tow Board c. 2010
Dick "RB" Brewer (b. 1936)
sequoia redwood, fiberglass, resin
Courtesy of Jan Petersen
L2018.2806.004

Competition Surfing

Competition surfing dates back to ancient Hawaiian times, when chiefs and chiefesses challenged each other to surfing contests. During these ancient competitive events, surfers raced side-by-side to buoys or against *hōlua* sled riders who sped down hillside tracks located near the beach.

The first modern surfing contests were held in the early 1900s at Waikīkī. By the 1950s, contests took place at Mākaha on O‘ahu and in Peru. In 1959, the first West Coast Surfing Championship was held at Huntington Beach, California, and competition surfing became more organized. During the 1970s, the International Professional Surfers (IPS) association started a world tour of surfing contests, followed by the Association of Surfing Professionals (ASP) in the 1980s and the World Surf League (WSL) in 2015.

Throughout the history of surfing contests, competitors have ridden the most advanced surfboards available. The competition semi-gun surfboard by Pat Rawson (b. 1954) on display is the same shape used by Tom Carroll (b. 1961) to win the 1991 Pipeline Masters.

Discussion question #13

Surfing contests started in Hawai‘i. When did they become popular in other parts of the world?

- The 1960s and 70s: in 1959, the first West Coast Surfing Championship was held at Huntington Beach, California. During the 1970s, the International Professional Surfers (IPS) association started a world tour of surfing contests.



Tom Carroll, Pipeline Masters, O‘ahu, Hawai‘i 1991
Jeff Divine (b. 1950)
Courtesy of the artist
R2018.2815.004

Suggested Reading

Finney, Ben R. and James D. Houston. *Surfing: The Sport of Hawaiian Kings*. Rutland, Vermont and Tokyo: Charles E. Tuttle, Co., 1971.

Kampion, Drew. *Stoked!: A History of Surf Culture*. Layton, Utah: Gibbs Smith, 2003.

Warshaw, Matt. *The History of Surfing*. San Francisco: Chronicle Books, 2010.

Your visit to SFO Museum

SFO is a great destination for your class

- Museum and library admission, educational programs, and tours are all free.
- Educational programs and tours can be customized for higher grades, mixed ages, and special needs students.

You can extend your visit

- Bring your lunch and sit in the public dining areas adjacent to the aviation museum, or select from the many restaurants at SFO.
- Take a tour of the airport and ride the AirTrain (by prior arrangement and availability).
- Meet the trained service dogs of the SFPD Airport K-9 Unit and see them in action (by prior arrangement and availability).
- Visit other museum exhibitions at SFO. (Schedules are subject to change, please check www.flysfo.com/museum/exhibitions for updated information).

Transportation

- Take Public Transportation:

Take BART directly into SFO International Terminal.

Take SamTrans Routes KX and 292 directly to SFO.

Take Caltrain to BART for service to SFO.

- By School Bus/Charter Bus:

Parking for buses is available at no charge by prior arrangement only.

- By Car:

Groups booked for educational programs can park in Airport garages and Airport parking tickets can be validated at the aviation museum at no charge.

For more information on transportation to SFO go to: www.flysfo.com

