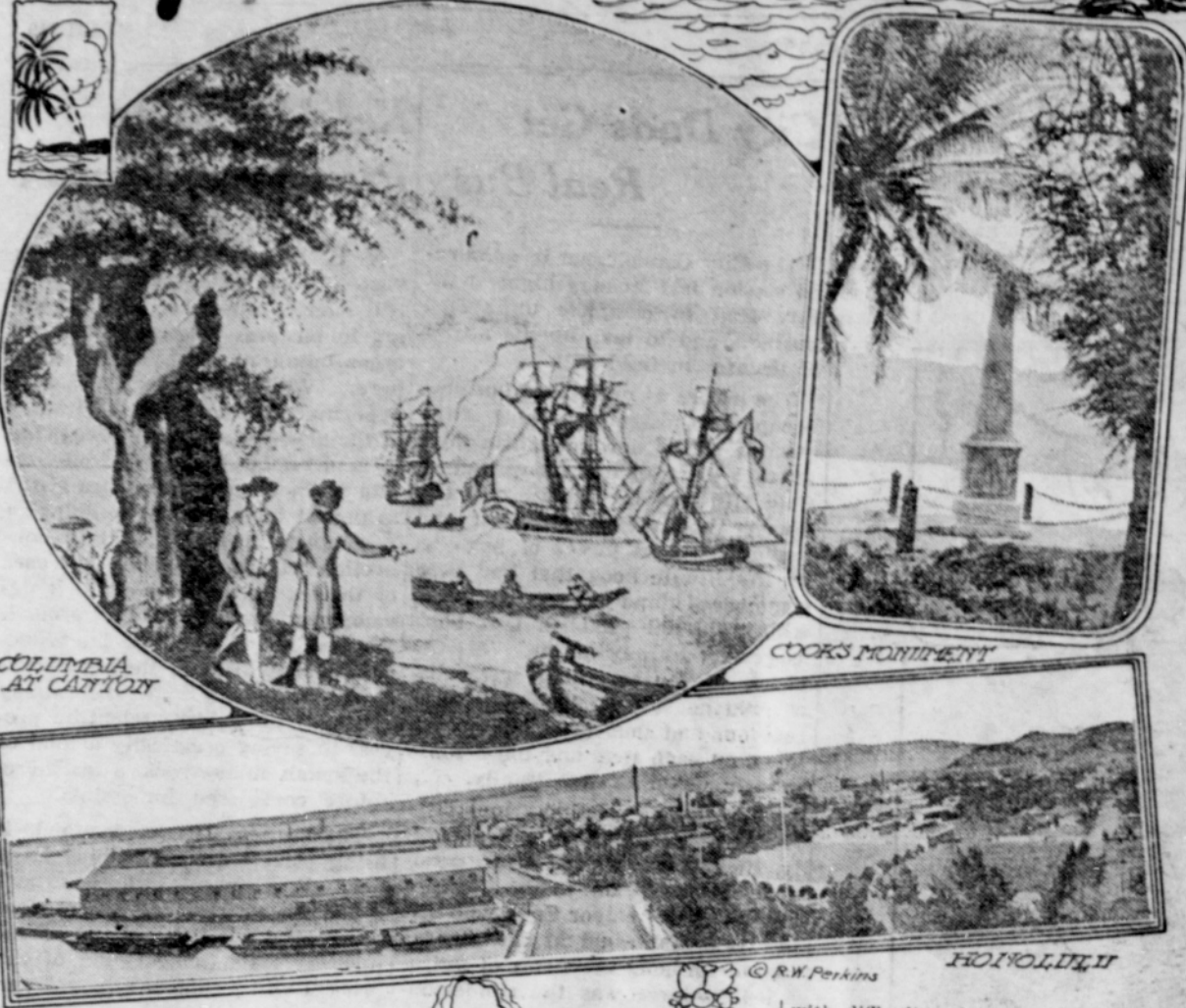


Hawaii To Honor Capt. James Cook



How His Voyages Influenced American History

By JOHN DICKINSON SHERMAN

HAWAII is making tentative plans for an elaborate celebration in 1928 of the one hundred and fiftieth anniversary of the discovery of the islands by Capt. James Cook. It is to be hoped that such an observance of this discovery is made—and on a scale befitting the importance to the United States of the voyaging in the Pacific of this famous English navigator. For this importance is large. Captain Cook set in motion forces which had a much greater influence on the early development of America than a casual reading of our history reveals.

Here is a brief chronology of the Hawaiian islands useful in connection with this story:

The islands were probably known to Europeans as early as 1527, but were put on the map by Cook in 1778. He was killed there by natives the next year. The natives were a semi-civilized people of Malayo-Polynesian stock under a feudal system of government, with a king on each of the eight habitable islands. In 1790 King Kamehameha of Hawaii subdued his rivals and founded a kingdom that lasted until 1894. Christianity was introduced from America in 1820 by missionaries. In 1840 Kamehameha III promulgated a constitution establishing civil rights. In 1852 came suffrage and a legislature. In 1894 there was a successful revolution against Queen Liliuokalani and a republic was proclaimed. August 12, 1898, Hawaii was annexed to the United States. June 14, 1900, it became a territory.

Cook's Several Voyages.

Capt. James Cook (1728-79) was the son of a Yorkshire farm laborer. He volunteered in the Royal navy in 1755 and four years later was in command of the Mercury at Halifax. The Royal society selected him to command an expedition to the Pacific to observe the transit of Venus.

This first voyage to the Pacific was in 1768-71. On his second, 1772-75, he sailed 60,000 miles and encircled the Antarctic region from New Zealand to Cape Horn.

On Cook's first voyage he had a mortality of 46 per cent. On his second he had made such excellent and radical arrangements for health that he lost only one man out of 118. For this service he was made captain and the Royal society gave him the Copely medal "for service to humanity and the maritime world."

Upon the offer of a reward of \$100,000 for the discovery of a northwest passage from the Pacific Cook volunteered to take command and sailed with the Resolution and Discovery in 1776 by way of Africa. In 1778 he dis-

covered an island of the Hawaiian group. Then he surveyed the American coast until stopped by ice in Bering strait. The winter of 1779 found him back in the islands, where he discovered Hawaii and Maui. He named the archipelago Sandwich islands, after the Earl of Sandwich.

Cook was killed in a small affair with natives on Hawaii over the theft of a boat. Cook landed February 13 in Kealahou bay with a lieutenant and nine marines to seize the king, take him aboard and hold him hostage for the return of the stolen boat. The obelisk which marks the spot of his death was erected in 1874.

Now we jump from Captain Cook, the officer of the English navy, to John Ledyard an American soldier of fortune.

Soldier of Fortune.

John Ledyard (1751-88) was born in Groton, Conn., studied law, went to Dartmouth for missionary training, passed several months with the Iroquois and in 1773 went to Gibraltar as a common sailor, enlisted in a British regiment, was discharged and as a corporal of marines accompanied Cook on his last voyage. In 1782 he deserted from a man of war at Long Island. Thereupon he published from memory his journal of the Cook expedition, the British having confiscated the original. He tried in vain to interest American officials and merchants in a trading expedition to the northwest coast of North America. They did not believe in his journal—or in him. In 1784 Ledyard was in England and France, vainly endeavoring to organize a similar trading expedition. In 1786, with the assistance of Sir Joseph Banks, he set out on foot from Stockholm, ostensibly for Arctic exploration. He arrived in St. Petersburg early in 1787, but at Irkutsk was arrested and deported, reaching London with difficulty. He died under mysterious circumstances about 1790 at the head of an exploring expedition of the African association.

The truth was that Ledyard had a big thing; triangular trade—New England to the Pacific Northwest with furs and notions; to China with furs; back home with silk and tea.

For Cook's last expedition had this experience: The sailors bought furs to keep them warm from the natives of the northwest coast. They traded truffles for seal skins and sea otter skins. Touching at China, the furs commanded extraordinary prices, the Chinese having no heating in their homes and no woolen cloth. A vermin-infested sea otter skin was worth a hundred dollars. The sailors were

with difficulty restrained from seizing vessels for another trip to the American coast for a full cargo of furs, instead of returning to England.

In 1784 Cook's own journals were made public. And then the New England merchants who had set Ledyard down for a liar sat up and took notice. Boston, Salem and New York merchants put in \$50,000 and September 30, 1787, two vessels sailed from Boston: the ship Columbia, Capt. John Kendrick; the sloop Lady Washington, Capt. Robert Gray. In August of 1790 the Columbia sailed back into Boston. She was under Captain Gray. Captain Kendrick had chosen to trade ships, was making Canton trips and was trying to buy up all the Northwest from the natives.

"Hail to the Chief!"

Gray was received like a conqueror. He was marched up State street in a procession, side by side with Prince Attol in helmet and cloak of scarlet and yellow feathers—the first Hawaiian ever seen in the United States. Gov. John Hancock gave a dinner to sixty, to whom Gray related his adventures. Yes, things were as Ledyard had said. And the Columbia had been the first American ship at the Hawaiian islands and the first American ship to sail around the world. And, quite as important to the New England merchants, the voyage had paid!

So, as John Ledyard lay dying in Africa, his Pacific Northwest dream had come true. For the Columbia was sent right back. And thus began this triangular trade that was to enrich the seaboard of the new nation.

Consider now some of the results of Captain Cook's last voyage and let your imagination run free.

On the second voyage of the Columbia Captain Gray discovered the Columbia river. Figure the effect of that on the "Oregon" question of half a century later.

The Americans had a practical monopoly of this triangular traffic. The Russians were barred by Chinese law. The English were kept out by the conflicting privileges of two great monopolies: The East India company held the exclusive right to trade with China but could not send its ships to the American Northwest for furs and would not allow the South Sea company to do any trade with China. So the Americans combined with the Russians and the Russians worked south along the coast until the Monroe doctrine of 1823 was necessary to stop them.

John Jacob Astor, a financial and commercial genius, attempted to found a city at Astoria in 1810 to cut out of this triangular trade the long and dangerous voyage around the Horn. Figure the influence of this advance guard on the march of the American people across the continent; on the Mexican war and the occupation of California; on the building of the transcontinental railroad; on the digging of the Panama canal.

And, finally, figure what the possession of Capt. James Cook's "Sandwich Islands" means to the United States in the Pacific, as a naval base and protection to the coast of the mainland. With it—and a fleet—we are safe.

dome-shaped and as much as two feet in height. Lest their beautiful homes be destroyed by enemies, the ants take stringent precautions when retiring for the night. Sentinels are posted all around the dome, ready to give the alarm at the approach of an enemy. The entrances are blocked with great pipes of twigs, so that the occupants cannot be surprised. The job of cleaning away the twigs in the morning is a strenuous one, but the ants do not mind it, as they believe in safety first.

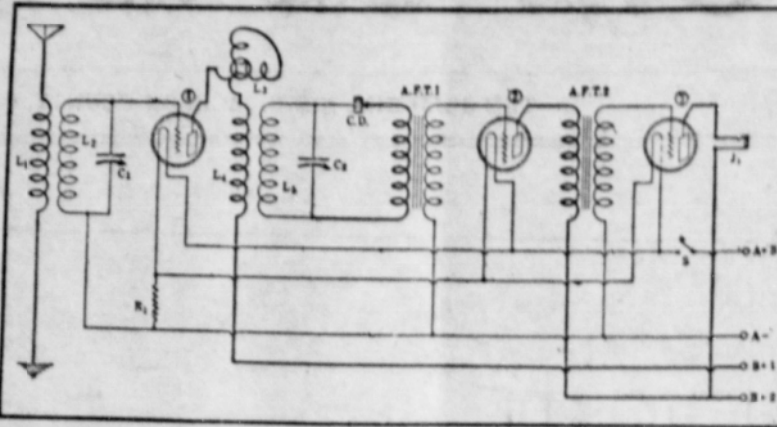
Wood Ants Active

The British wood ants build such large houses that their homes seem to be almost as big as some apartments in American cities. The dwelling is

Moisture in Space

The weather bureau says that the amount of water vapor that can exist as an invisible gas in a given space increases with temperature up to the boiling point. Hence warm air can contain more moisture than can cold air. As a rule, therefore, there is more moisture in the air in the summer time than during any other season. During the winter, however, the air though having less moisture

RADIO



The Electrical Schematic Diagram of Toroid RF Simple Three-Tube Set, Using Crystal Detector.

By LEWIS WINNER, in Radio World.

A very simple three-tube set using a crystal as a detector is shown in the illustration. The receiver employs one step of tuned RF with regeneration, a crystal detector and two steps of transformer coupled audio-frequency amplification.

On most receivers, no matter how many stages of tuned RF you add, the signals of the local stations do not increase much. This was found to be true on many tests with such receivers. The RF steps were so arranged that they could be snapped in and out of the circuit. A station was tuned in. The RF tubes were put in and then out of the circuit. The difference was so small that only with millimeter in the output circuit could the effect be noticed.

There are only about a dozen leads to make. No soldering is necessary. The Orbit toroid coils were used in the set; also air-gap sockets.

List of Parts.

Two tuned radio-frequency transformers (toroids) L1L2, L4L5.

One variometer, L3.

One crystal detector, CD (carborundum).

Two audio-frequency transformers, AFT1, AFT2 (Acme).

One 3-ampere ballast resistors, R1.

Three sockets (air-gap).

Two .0005 mfd. vernier variable condensers, with dials, C1C2 (U. S. Tool).

One single circuit jack or two phone tips, J1.

One 3 1/2-inch dial (for variometer).

One A battery switch.

One 7 by 21-inch panel.

One cable cord.

One baseboard, 6 by 19 by 1/4.

Accessories: Bus bar, mounting for crystal detector, batteries, phones, antenna, ground and lead-in wire, etc.

The shaft of the variable condenser, C1, that shuts the secondary of the antenna coupler, L2, passes through a hole 3-16 inch in diameter, which is 5/4 inches from the left-hand edge of the panel, and 3 1/2 inches from the top and the bottom. Lay the template over this hole and then drill the holding holes according to those laid out upon the template. The same policy is followed with the other variable condenser. The hole through which the shaft of the variometer L3 passes is 10 1/4 inches from both the right and the left-hand edges. It is also 3 1/2 inches from the top and the bottom of the panel. The hole for the filament control switch, S, is 10 1/4 inches from the right and the left-hand edges of the panel. It is 3/4 inch from the bottom of the panel. This necessitates cutting away a small bit of the baseboard. The holes for the screws, which hold the baseboard, are best located by the builder, as these depend upon the thickness of the baseboard, etc. I used a comparatively thin board and therefore had to place the screws very near the bottom of the panel.

We have now automatically placed the variable condensers, variometer, board and switch. Angle irons are used to mount the coils onto the condensers. These condensers have special provisions for mounting the coils, which are placed at right angles to each other. The set of plates of one variable condenser runs in the opposite direction to the other set of plates. That is, one condenser is mounted upside down. This was done so that the coils could conveniently be mounted. If the condensers are mounted in the regular fashion it will be difficult to mount the coils.

The transformers are mounted at right angles to each other. The crystal detector, which is of the fixed type, has a special type of mounting. You cannot fit it into a grid leak holder, as it is too small. Therefore take a pair of mountings and bolt them together, seeing when doing so, that the crystal fits into the holders. You then have a perfect holder. This is then screwed down to the baseboard and the crystal is fitted into the clips. There was no jack used when this set was constructed, although one is shown in the diagram. A pair of phone clips, mounted at the extreme right of the set, were used. No large binding post strip is used. A battery cable was used instead and attached to the proper points.

Simple Tube Repair

A tube with a loose base can be repaired by wrapping a strip of adhesive tape around the joint three or four times, carefully stretching the tape at each turn so as to fit tightly over the top of the metal base and the glass. After wrapping hold the tube in the closed hand, pressing tightly on the tape for a few moments, to heat the tape, and make the support solid. This will save the tube for future use.

Simple to Operate.

This receiver is very simple to operate. The only trouble that you may come up against is the difficult controlling of the oscillatory flow of the RF tube. This is due to the fact that many variometers will not oscillate over the complete broadcast band. A small 20-turn coil placed in series with the plate circuit of this same tube will cure this ill. The two condenser dials should tune in step. Don't forget to reverse the leads of the crystal detector, in case the signals are not loud enough. Also reverse the A battery leads. A 100-foot antenna should be used. The ground should be made to the old faithful water pipe. If you find that the RF tube is difficult to control, the insertion of a 10-ohm rheostat may help. I say may, because, with some tubes it helps and with others it is of no use. That is, you bring the filament temperature up to a certain point and the tube starts to oscillate in the same manner. If you turn it down, it stops all together, turn it up, it howls too much. The variometer in this set should do all the controlling of the regeneration. By increasing and decreasing the voltage, better or worse results will be obtained. Try changing the tubes around for louder signals. This receiver is selective, and if one finds the results vice versa, they should reverse the secondaries of the radio-frequency transformers.

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