MODELING A PLANTATION RAILROAD: OAHU SUGAR COMPANY

Presented by Nicholas "Nick" Kalis Potomac Division, MER, NMRA Mini Convention Saint Matthew's United Methodist Church Annandale, Virginia 22003 March 4th 2017

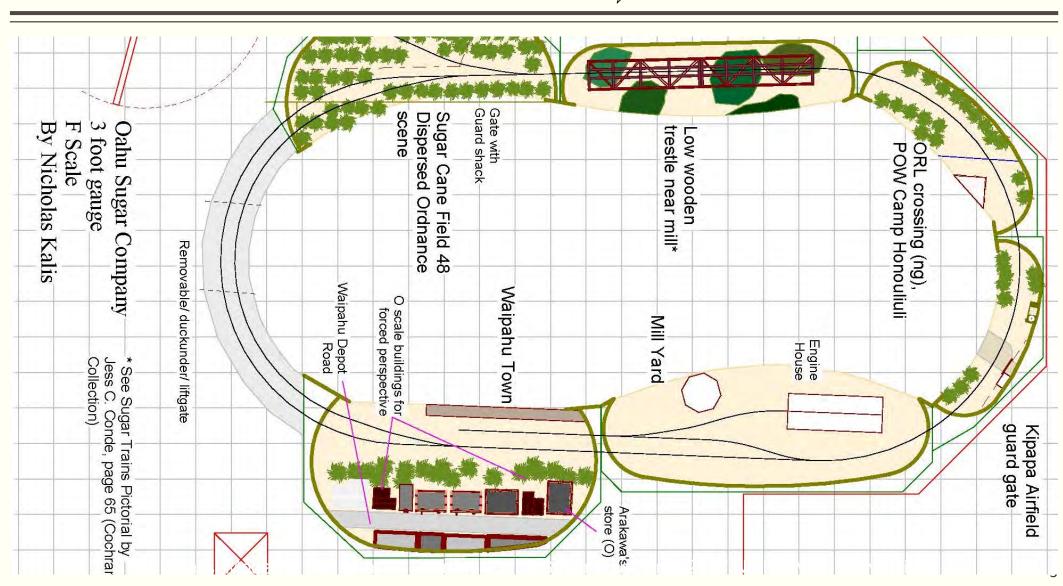


INTRODUCTION

Railroad map of Oahu



Fn3 (1:20.3) Oahu Sugar Company November 2017 Open House



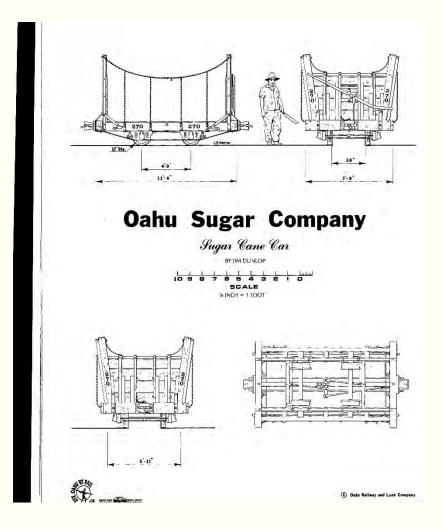
Published Plans for Sugar Cane Car

Drawings by Jim Dunlop

Drawings appeared in Bob Brown's Narrow Gauge and Shortline Gazette

I am having these 3D printed by Shapeways in 1:20.3 scale

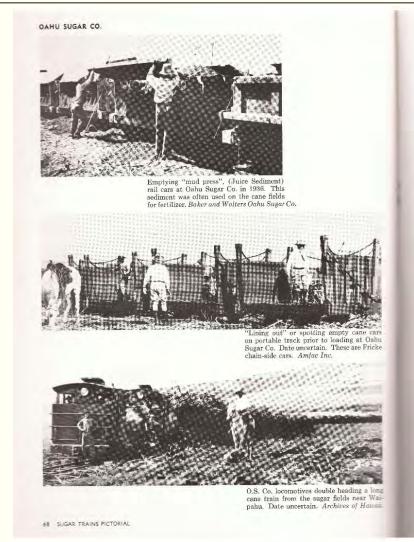
Notice how a sugar cane car compares to a human



Working on the railroad

Oahu Sugar Company

Juice sediment was hauled to the fields by mud press rail cars to serve as fertilizer



A Postcard from Paradise

Nice colorized postcard

This is why I chose to model Hawaii – it does not get any more cheerful than this



Why Fn3?

I had modeled HO and found operation not that reliable (see my front page article in September 2007 Railroad Model Craftsman

I want trains that can entertain children that come to observe and operate – Fn3 fit the bill

I visited Granddad's Hobby Shop and inspected Bachmann On30 and found that they appeared to have the same size and heft of HO – so no go there

While Fn3 could be too large, in the case of small plantation locomotives and rolling stock, Fn3 works perfectly for me

Palm Trees

A must have for any tropical model railroad.

Military modelers have been making palm trees for years for their Pacific Theater dioramas



Modeling Palm Trees



Chronology

- 1849 German ship captain Heinrich Hackfeld docked his boat in Hawaii
- 1894 Benjamin F. Dillingham founds Oahu Sugar Company on 20 acres of lands leased from James Campbell in the vicinity of Waipahu; elevation 10 feet Waipio Peninsula to 700 feet at Waiahole Ditch;
- 94% of land used for cane was leased. H. Hackfeld & Co. served as factors since its inception
- 1897 Oahu Sugar Company incorporated; its Board of Directors named the sugar mill site to be at Waipahu

Chronology – 1897 - 1917

- 1897 First locomotive Waipahu arrived
- **1897** A. Ahrens becomes first manager
- 1899 First sugar cane of OSC harvested
- 1900 Sugar mill appears in photograph with 170-foot high smokestack (originally 225 feet tall); one of two, one was demolished in 1970
- 1900 Portable Track cars acquired
- 1900 Second and third locomotives Waikele and Waiawa respectively arrive
- 1908 Fourth locomotive Waikane arrives in January Fifth Waikakalaua arrives in June
- 1910 Field 19 Water Tower Acquired
- 1912 First plantation to install a 12 roller mill
- 1913 Construction started on water tunnels
- 1916 Tunnel brings millions of gallons of water from Windward Coast
- 1917 US Navy requisitioned Ford Island (Seen in the film *Tora!Tora!Tora!*)
- 1917 Rearrangement and enlargement of mill yard to provide sufficient track space for increased number of can cars required when operating two mills simultaneously.
- 1917 Sixth locomotive, Koalipea (0-6-0T) arrives

Chronology – 1920s

- **1920s** New cane cars being added to keep up with increasing sugar production
- **1920** 45-lb rails imported to replace lighter rails
- **1920** Japanese strike in Oahu
- **1921** Oil Tank Car acquired (retired 1951)
- 1921 New shop building constructed "with facilities to overhaul locomotives and steam plows"
- 1922 Waiawa cut-off built
- **1924** Seventh and final locomotive *Hoaeae* (No. 8) arrives
- 1924 Field Superintendent Hans L'Orange convinced the company to give up several acres of cane field to create the Oahu Sugar Co. Field as a recreation area for Oahu Sugar Co. workers.
- **1925** Railroad signal acquired
- **1925** Population of plantation ranged between 9,500 10,000 people with 2,850 on payroll

Chronology – 1920s and 1930s

- 1926 Mud Press Cars [Mud Press is juice sediment often used on the cane fields for fertilizer] and Gregg Flat Cars acquired
- 1927 Grade crossing eliminated at Government Road by which railroad crossed below the road; concrete bridge went over the cut
- 1930s OSC provided garbage collection, street cleaning and sewage disposal
- 1931 984 cars total and one mile of permanent flume; mules and tractors haul cars over the portable tracks
- 1936 Grab loading method of filling rail car appears in photograph dated that year
- **1937** Hans L'Orange becomes manager
- 1938 Weed Burn car acquired
- 1939 Railway reaches 60 miles of three-foot gauge track plus unspecified amount of portable track on which operated 939 plantation cars (860 four-ton cane cars, fifty flat cars, and 29 other cars

Chronology – From WWII to the end

- World War II around Waipahu alone over 2,800 acres commandeered from Oahu Sugar for POW Camp for German prisoners, airport assembly and staging areas for barges, pontoons, and landing craft and Bombs and munitions were stored in cane fields and tunnels.
- 1944 (April) Kipapa Airport operational
- **1944** Ammunition trains run
- 1946 Low trestle on Oahu Sugar Company tracks appears in photograph of that year
- **1946** Oahu Sugar began using large cane trucks
- 1947 OR&L abandoned its main line at the end of this year
- **1947** Oahu Sugar Company absorbed Honolulu Plantation Company
- Late 1950 Railway system eliminated
- 1970 Oahu Sugar acquired much of the land of closed Ewa Plantation
- **1994** Operations ended in anticipation of end in 1996 of agricultural leases

Two Factors Hindering the Hawaiian Sugar Cane Industry

Two factors handicap the sugar cane industry in the Hawaiian Islands. The peculiar isolation of the islands, with the resulting scarcity of labor, works a hardship on all the plantations of the territory. The climate, with its cool winters and its scant annual rainfall in large areas, delays growth and necessitates costly irrigation for a large number of the plantation companies.

Tropical vegetation near the pail lookout, Oahu island



What does sugar cane look like?

Here is a fellow in pith helmet – this photograph gives us an excellent idea about the size of sugar cane

The soil of the sugar cane land, like that of all the land in Hawaii, is derived from decomposed, basaltic lava, the product of very recent vulcanism.

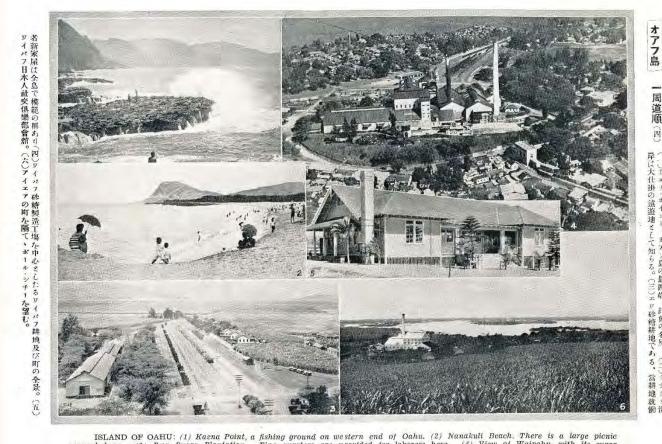
Several methods of modeling sugar cane can be found on the website of the CaneSIG



Oahu Photographs

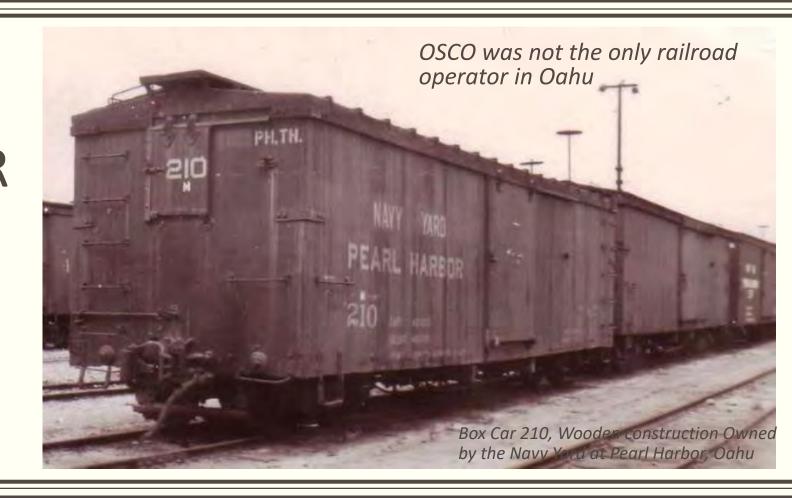
Overhead view of Waipahu is included

Oahu sugar cane plantation is located on the leeward side of the island of Oahu, about fifteen miles from the city of Honolulu.

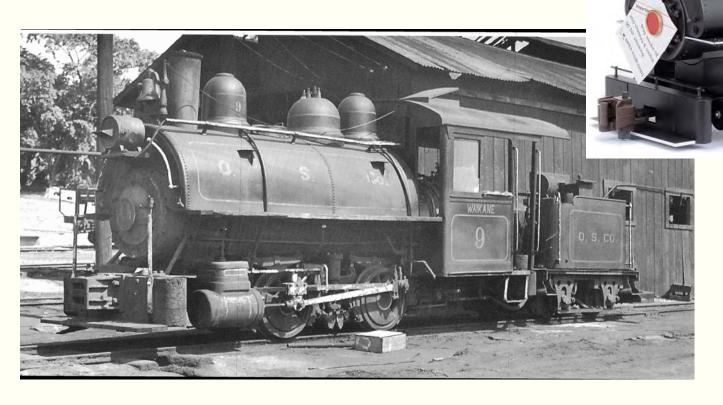


ISLAND OF OAHU: (1) Kaena Point, a fishing ground on western end of Oahu. (2) Nanakuli Beach. There is a large picnic ground here. (3) Ewa Sugar Plantation. Fine quarters are provided for laborers here. (4) View of Waipahu, with its sugar mill, streets and sugar cane fields. (5) Japanese Social clubhouse at Waipahu, erected for laborers of the plantation. (6) View of Pearl City across Aiea.

MOTIVE POWER AND ROLLING STOCK



Waikane No. 9 Oahu Sugar Company



Sugar Cane Cars Waiting to be loaded

Note harvesting equipment in background

I do not know the year of this photograph

The total output of Waipahu plantation in 1928 was 76,313 tons, about eight per cent of the sugar produced on the Hawaiian Islands.



RAILROAD STRUCTURES

Photo: Weigh Station, have modeled this in 1:20.3



Flat roof water tank in Oahu

While this photo is NOT of the *Oahu Sugar Company*, it might give us a clue that OSCO water tanks had flat roofs



MODELING THE WAIPAHU SUGAR MILL

Photographs of prototypes to model can be found in the darndest places. Advertisement congratulates Waipahu High School Class of 1952 upon the occasion of their graduation



Waipahu Sugar Mill

Note all the roof lines

Near the mill is a chemical laboratory, a one-story building, the diminutive size of which is in contrast to the tall structure towering above it.

In the vicinity of the mill are sheds for agricultural implements and tools, for plow-engines, for all the various kinds of machinery used in a large-scale agricultural enterprise. Several plow-engines and tractors stand in the open air in spaces reserved for them



More recent photographs of Waipahu Mill

Note that the smoke stack is belching soot



MODELING AN OAHU PUMP HOUSE

Not sure whether in Oahu but it is surely in Hawaii.

Pump stations were required to bring up water that was required in massive quantities to irrigate sugar cane plantations in Oahu



Two Views of Abandoned Pump House

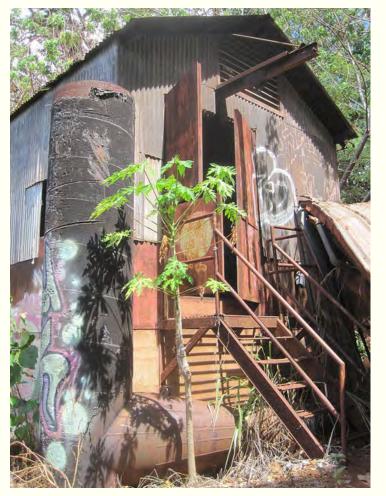
This would be a great subject for modeling

Base appears to be poured concrete

with main structure built of corrugated sheet iron

Note the large vent under the eave





MODELING A HARVESTER



Harvesting Claw

The claw has been abandoned somewhere in Hawaii.

This prototype can easily be modeled in styrene to approximate the claws that were in use in Oahu.

I purchased a 1:50 scale crane that was produced for a vehicle convention; I will attach the claw to it. While I model 1:20.3, a 1:50 model can serve to create forced perspective if it is placed at the rear of the scene and is separated by an area that evidences little in the way of scale





TRUCK NUMBER 2. THE NAME OF THE SUGAR COMPANY IS UNFORTUNATELY QUITE BLURRY CAN ANYONE IDENTIFY THE MANUFACTURER OF THIS TRUCK?



Hawaiian License Plates of 1941 and 1942

Affixing this to model autos would give a layout a sense of place and time

License plates such as these can be easily found on the internet



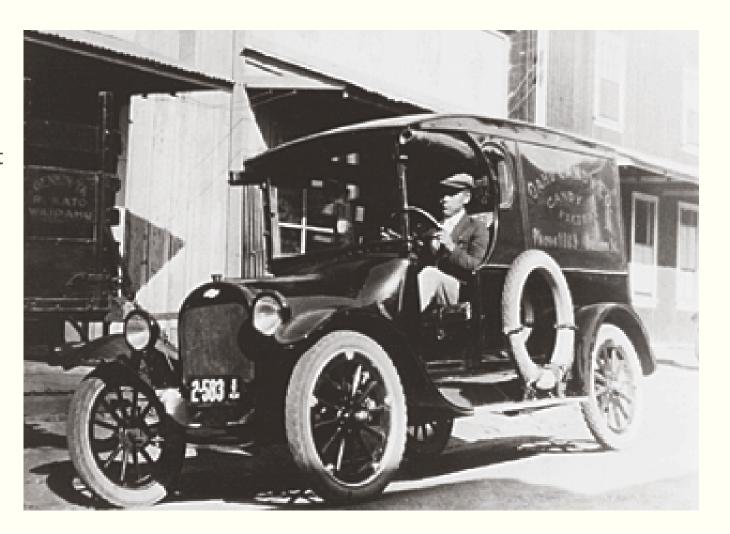


Waipahu Traveling Salesman

Seems to read "Oahu Candy Co."

Note the spoked wheels and skinny rubber tires

Manufacturer is obviously Chevrolet



Schofield Barracks Truck

REO

Schofield Barracks were located in Oahu



MODELING WAIPAHU STREET SCENES

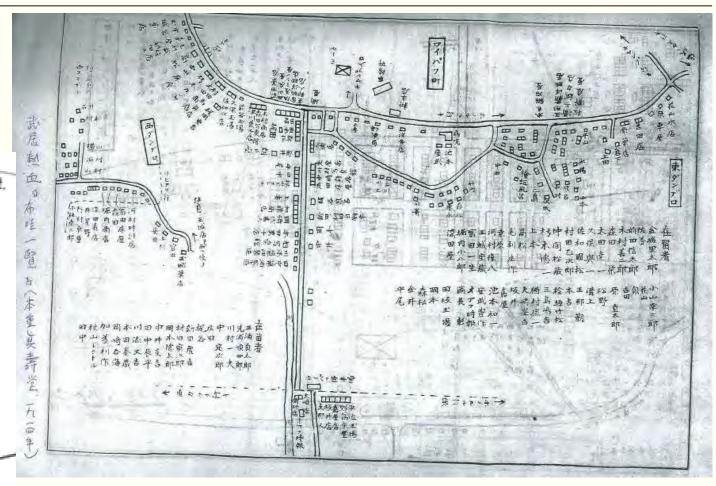
PHOTO: Waipahu Movie Theater, still standing but converted into a church



Old and New Maps of Waipahu

Written in Japanese





Waipahu Depot Road

Early view

Modelers could easily use model structures intended for Wild West towns to model a scene such as this



Waipahu, Depot Road

Sugar Mill at top of hill (circa 1910) (right photo)

A *Star-Advertiser* photo from November 1960 (bottom)



Waipahu Depot Road, Waipahu

Appears photo taken while Depot Road was being paved with asphalt.

Waipahu Sugar Mill is in the background.

Note the two smokestacks



Oahu Fire Station

Located in Waipahu

Built in 1931 by the Hawaiian Fire Department

Fire Station number 12

This would be a great building to model as it would give a layout a sense of place.



Waipahu Business District

Aftermath of flood

This photo would assist any modeler in reproducing the store sign and the corrugated panels that give shade to sidewalk strollers



Waipahu, Oahu

This was the business district for the Oahu Sugar Company employees. A new structure appears under construction at the Sugar Mill (below)

Autos parked on street suggest that this photo was taken in the 1960s





Early view of Waipahu

Note the spoke wheels of the vehicles parked along the road

The name of one of the businesses can be discerned from the signage on the side of one of the delivery vehicles



Waipahu in Color

Rare color photograph from this time period.

Note the vehicles



MODELING COMPANY STORE





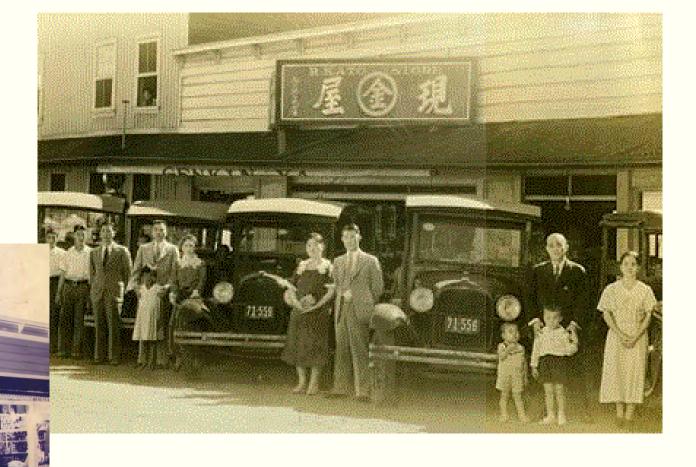


The Kato Store in Waipahu – Past and Present

Several generations are pictured here

Delivery trucks seem to be on display too

Note the oversized (by today's standards) license plate – an interesting modeling detail



MODELING AGRICULTURAL STRUCTURES

PHOTO: CANNOT BE SURE THAT THIS IS ON THE OSCO PLANTATION, BUT OSCO WATER TANKS MAY APPEAR SIMILAR



Fertilizer Shed, Oahu

Oahu Sugar Company

Used as a fertilizer storage and mixing facility (right)





MODELING AGRICULTURAL DITCHES

THE WAIPAHU SUGAR MILL IS IN THE DISTANCE. AT ONE TIME THERE WERE TWO SMOKE STACKS; HERE ONLY ONE SMOKE STACK IS IN EVIDENCE



Oahu Waihole Ditch

Nice color photo, too many photos are only in black and white

This water was intended for irrigating the sugar cane fields.

Our chronology explained that this land only became fit for sugar cane agriculture after tunnels were blasted through the mountains (there too a railroad served its tunneling enterprise well)

To make up the deficiency in moisture, the Oahu Sugar Company spent almost six million dollars to build an irrigation system, which requires an annual outlay of \$365,000 for power for pumping alone (in 1932 dollars).

The plantation is situated on the lower slopes of the Waianae mountains, a location where irrigation is more difficult than on level ground.



MODELING COMPANY HOUSING



Close up of housing



This structure is likely located in a museum village

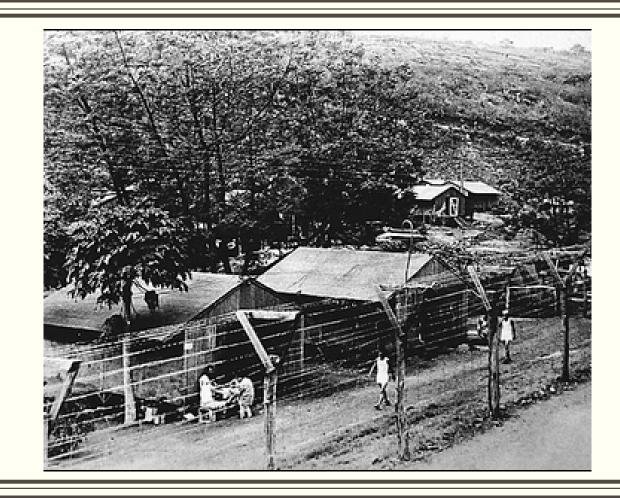
Oahu Sugar Company Hospital

The Oahu Sugar Company provided many services for its employees



OAHU AT WAR

PHOTO
INTERNMENT CAMP ON OAHU
NOTE THE BARBED WIRE FENCE



Internment Camp to be among new US Monuments

Former internment camp to be among new U.S. monuments

BY JULIET EILPERIN

Expanding on his recent push for public lands protection, President Obama will designate both Colorado's Browns Canyon and the Honouliuli Internment Camp in Hawaii as protected areas under the Antiquities Act on Thursday in addition to Chicago's Pullman Park district, according to White House

Aslan American and conservation activists have lobbled for years to give the sites in Colorado and Hawaii federal recognition.

The Browns Canyon designation will include 21,000 acres around the Arkansas River, a stretch of water that runs through the canyon that boasts a wild trout fishery and whitewater rafting.

The Honoulluli Internment Camp, which is on the island of Oahu, incarcerated more than 4,000 people as Hawaii's largest and longest operating prison camp during World War II.

Throughout Obama's time in office, the administration has sought to protect a combination of places that are ecologically valuable and historic areas that resonate with Americans of color.

A White House official, who spoke on the condition of anonymity because the president had not yet made the designations, wrote in an e-mail that taken together, the three "monu-



The Honouliuii Internment Camp on Oahu opened March 1, 1943. More than 1,400 U.S. citizens of Japanese, Italian and German descent were held in five camps across Hawaii during World War II.

ments help tell the story of signifand protect unique natural resources for the benefit of all

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Carole Hayashino, president icant events in American history and executive director of the Japanese Cultural Center of Hawaii, said in a statement: "As a new national monument, Honouliuli will be a great gift to our state and nation.

"On behalf of the Japanese American internees and their families, I want to thank President Obama for vindicating the honor of those who were incarcerated and for recognizing the historic site as a lesson in injustice and forgiveness for all Americans and for future generations."

Ryan Bidwell, campaign director with the Conservation Lands Foundation, said in a statement that the two "are places among America's public lands that rep-

resent vital parts of our country's history, and places that provide opportunities for our kids and grandkids to explore and experience the outdoors."

Obama will travel Thursday to Chicago to make the Pullman declaration in person, while remotely designating the other monuments

The National Park Service will manage the monuments in Chicago and on Oahu, while the Bureau of Land Management and National Forest Service will joint ly manage the Colorado monu-

Juliet.eliperin@washpost.com

More at washingtenpost.com/ blogs/energy-environment

Appeared in the Washington Post February 19 2015 Page A2

Kipapa Army Airfield

View of Gate

This appears on my backdrop

In 1940, the entire Island of Oahu was carefully surveyed for sites on which landing fields could be constructed. With the exception of the Kipapa Gulch area, all level ground that might be available for airfields was either so occupied, projects were underway for preparation of airfields; or the turbulence in the air created by the close proximity of mountain ranges precluded such development. Kipapa Gulch, the only site where an airfield could be constructed, was selected because it could accommodate two 5,000 foot runways free from obstructions. Initially two reasons precluded use of the area. First, it was located about 2/3 of the distance between Pearl Harbor & Wheeler Field which would further increase air congestion over that part of the island. Secondly, it would remove from cultivation a highly productive tract of land.

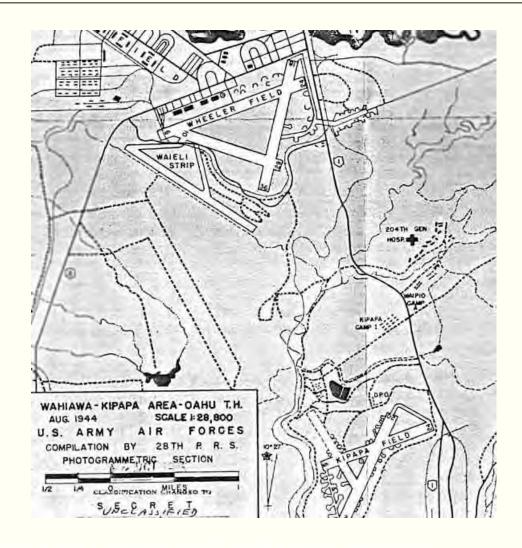


Kipapa Army Airfield - Continued

During the war Kipapa saw little Navy use as carrier aircraft constantly deployed during the war. The Army Air Corps became the principal user of the airfield by default. Kipapa Field was a major transiting point for units going overseas. Aircraft from this airfield searched and patrolled over the surrounding Pacific area, maintaining a 24-hour vigil to avert any attack. A large number and variety of squadrons are documented to have been stationed at Kipapa Airfield during World War II. The 5th Bombardment Group, 31st Bombardment Squadron, transferred from Hickam Field to Kipapa Field with B-17s & B-18s on May 23, 1942 until September 9, 1942 when they moved to Kualoa Airfield. The HQ 90th Bombardment Group, 321st Bombardment Squadron arrived at Kipapa Airfield on September 12, 1942 from the mainland United States with B-24s and began flying their first missions by November 1942.

The 13th Air Force, 307th Bombardment Group, 370th Bombardment Squadron arrived at Kipapa Field on November 2, 1942 from the mainland United States with B-24s & flew seasearch missions between November-December 1942. The 18th Fighter Group, 6th Fighter Squadron, moved from Kahuku Airfield to Kipapa Airfield with P-70s on November 17, 1942. The 28th Photographic Reconnaissance Squadron, 7th Air Force (attached to VII Fighter Command), flying F-5s was based at Kipapa Airfield in July 1944. The 38th Bomb Group, 70th Bombardment Squadron, equipped with Martin B-26 Marauders was kept on alert with 500-pound bombs at Kipapa Field during the time that the Battle of Midway was in progress.

Unfortunately Kipapa Field's central location and level area made it ideal for redevelopment, and the property became a Mililani Town housing development. The airfield site is located south the Mililani Golf Course between Meheula Parkway & Hokuala Streets.



Kipapa Army Airfield - Continued

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Bombs being transported by steam during WWII

Bombs were dispersed throughout the Oahu Sugar Company fields

Some of the bombs which fell on Tokyo were once hidden in Waipahu's gulches

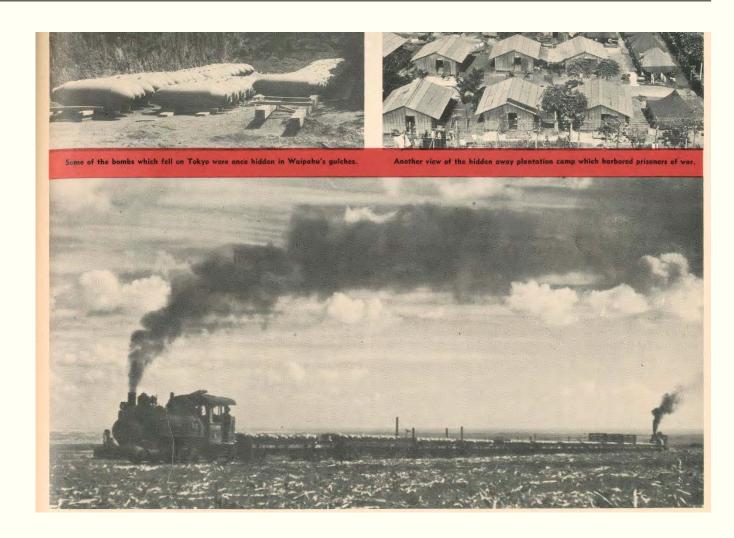




PHOTO: UNKNOWN MODELER



To learn more about modeling cane railroads visit ...

- CaneSIG is a free resource for modelers of the world's sugar cane railways.
- Please contact the Coordinator if you have resources you would like to share.
- Materials have been provided by modelers and enthusiasts for the personal use of other modelers only.
- Please do not abuse this privilege; contact the copyright holders for any other use.
- A C Lynn Zelmer is the CaneSIG coordinator

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What is the CaneSIG? Continued....

- The purpose of this on-line special interest group is to preserve, develop and exchange information for the modelling of sugar cane railways worldwide.
- CaneSIG affiliates with other organizations (e.g. <u>NMRA</u> and <u>Australasian Region</u>) with broader modelling or historical purposes as appropriate, but membership in the SIG itself remains open to any individual who supports the objectives of assisting cane railway modelers.
- The SIG publishes the results of its work on a non-commercial web site (<u>www.zelmeroz.com/canesig</u>) and in other publications as appropriate. The SIG also exchanges prototype and modelling information to build an international community of interest.

Who provides CaneSIG materials?

CaneSIG materials have been provided by cane tramway modelers and enthusiasts. You are encouraged to contact the CaneSIG coordinator (lynn@zelmeroz.com) to contribute materials which you believe complement the materials on the site.

How do I "join" CaneSIG?

- CaneSIG is a virtual special interest group with two faces. The first face is this web site, managed by the CaneSIG coordinator in Australia. You don't need to join anything to participate in the public face of the SIG.
- CaneSIG's second face is the group of modelers and enthusiasts who provide resources and other support to the SIG. There aren't any financial costs to participating in this face of the SIG, but only individuals who make a significant contribution to the SIG are considered to be 'members'. Likewise, there aren't any practical benefits to being 'members' beyond the knowledge that you are assisting fellow modelers and that you may be called on for advice on your particular specialty.
- This material has been adapted from the CaneSIG website

Bibliography

