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THE SALTON SEA
CALIFORNIA'S OVERLOOKED TREASURE

by Pat Laflin

Canoeing off Date Palm Beach, Salton Sea

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THE SALTON SEA
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PART I BEFORE THE PRESENT SEA

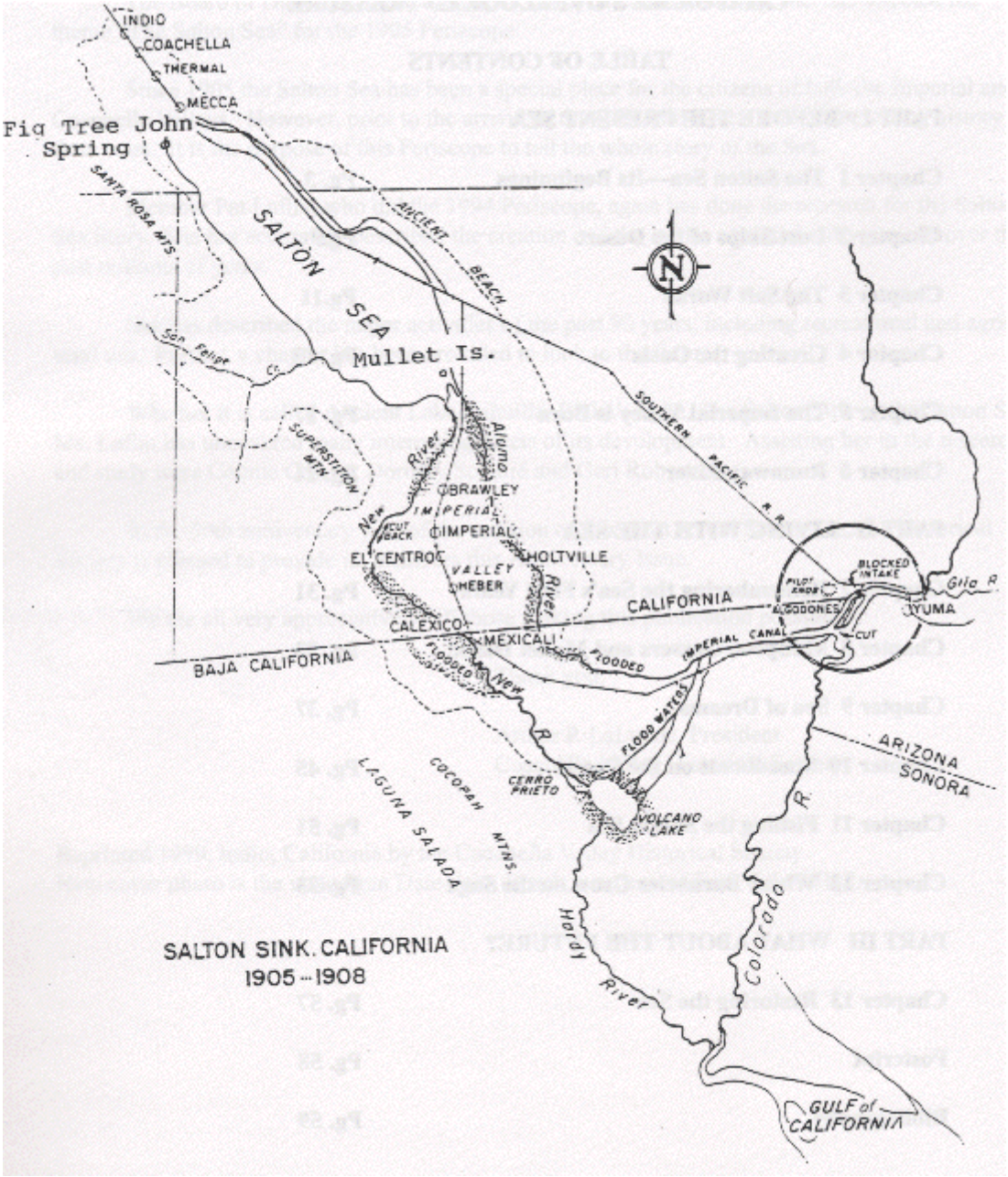
Chapter 1

THE SALTON SEA -- ITS BEGINNINGS

The story of the Salton begins with the formation of a great shallow depression, or basin which modem explorers have called the Salton Sink. Several million years ago a long arm of the Pacific Ocean extended from the Gulf of California though the present Imperial and Coachella valleys, then northwesterly through the Sacramento and San Joaquin valleys. Mountain ranges rose on either side of this great inland sea, and the whole area came up out of the water. Oyster beds in the San Felipe Mountains, on the west side of Imperial Valley are located many hundreds of feet above present sea level. Slowly the land in the central portion settled, and the area south of San Gorgonio Pass sloped gradually down to the Gulf.

If it had not been affected by external forces, it would probably have kept its original contours, but it just so happened that on its eastern side there emptied one of the mightiest rivers of the North American continent the Colorado. The river built a delta across the upper part of the Gulf, turning that area into a great salt water lake. It covered almost 2100 square miles.

How could a river cut a gulf in two? The watershed of the Colorado River covers 260,000 square miles, from the southern edge of Yellowstone Park to the Gulf of California. It held in suspension and carried down to the sea millions of tons of solid matter as it scoured out such natural wonders as the Grand Canyon. It deposited this vast quantity of silt into the Gulf opposite its mouth and the deposits eventually reached clear to the opposite side, from Yuma to the rampart of the Cocopah Mountains. The delta was ten miles wide by thirty in length. The river then chose for itself a route on the southeastern slide of the delta plain, discharging its waters into the Gulf of California. Under the blazing sun, water in the upper Gulf evaporated, leaving an and basin incrusted with salt in its deeper parts. The depression was about one hundred miles in length by thirty-five in width. It had a maximum depth of 1,000 feet.



The Salton Sink, California 1905-1908

Emptying and Refilling the Basin

How long this ancient sea-bottom remained dry cannot be determined, but many thousands of years ago, probably in Middle Tertiary times, the Colorado River proceeded to refill the dry basin. The river, running over the raised delta plain which sloped both ways, could easily be diverted to either side. In one of its prehistoric floods it changed its course, leaving the Gulf and pouring its waters into the dry basin of the Salton Sink. When it had refilled the basin, and transformed it into a great

fresh-water lake, it broke through its silt dam on the Cocopah Mountain side and found a new outlet the Gulf through what was later known as Hardy's Colorado. Probably for centuries, the Colorado made the Salton Sink a great fresh-water lake, depositing in the process 150,000,000 tons or more of silt every year. Artesian borings at Holtville in 1913 showed sedimentary deposits in that part of the Imperial Valley are more than 1,000 feet in depth. Then the river again changed course, cutting a channel to the Gulf through the eastern part of the delta plain. The lake in the Salton Sink dried up again, leaving a two hundred mile ellipse of fresh water shells to mark its former level. No one knows for sure, but in all probability the Colorado alternately flowed into the Salton Sink every four or five hundred years, swinging back and forth across its delta plain.

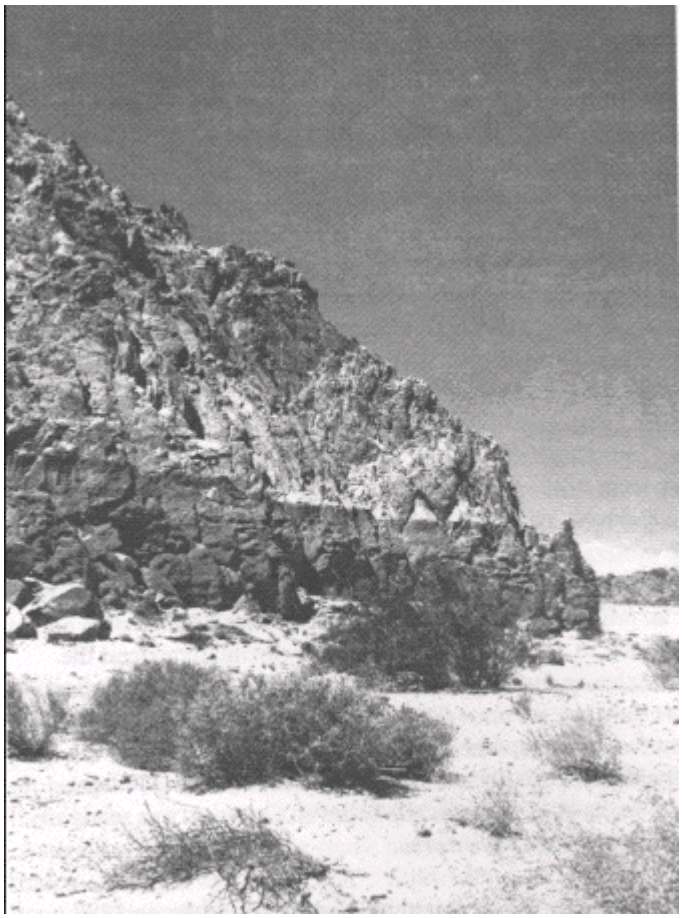
Explorers, Pathfinders and Surveyors Discover the Sink

For three centuries or more, from 1540 to 1902, the Salton Sink was a hot, and arid desert. Neither Melchior Diaz, a Spanish explorer in the service of Cortes who visited it in 1540, nor Juan Bautista de Anza, who crossed it in 1774, saw anything like a body of water. The only evidence that the Colorado River ran into the Sink within that fame span was a so called Roque map, now in the British Museum, which was compiled from all sources of information which were in existence in 1762. This map shows a considerable body of water in the Salton Sink, with the Colorado River flowing into it, but no written account accompanies the map. It could have just been overflow water at flood time, but the main flow of the current continued to flow into the Gulf. In 1900, the slope was 15 inches to the mile on the way to the Gulf and 48 inches to the mile toward the Salton Sink. The difference became a real problem in the first years of the diversion of the river to irrigate the Salton Basin.

In the latter part of the 18th and beginning of the 19th century, many Spanish and American pathfinders crossed the Sink on their way from Yuma to the California Missions, but none found anything like a lake. Col. W.H. Emory, who traversed it with General Kearny in the fall of 1846, described it as a hot, and desert a "stretch of ninety miles from water to water." Captain A.R. Johnson, who accompanied the Kearney Expedition, was the first to notice that this stretch of waterless desert was the dried-up bottom of an ancient lake, but neither he nor Col. Emory noticed that it was below the level of the sea. Gold seekers crossed it in 1849, but no scientific studies were done.

In 1843, Jefferson Davis, who was then Secretary of War, prevailed upon Congress to authorize a series of explorations for the discovery of a practical railroad route to the Pacific Coast. Lt. K S. Williamson, of the US Topographic Engineers, was selected to lead the southern expedition. With him, as a geologist, went Professor William R. Blake of New York, a young graduate of the Yale Scientific School. He afterwards went on to distinguish himself as a geologist, explorer and mining engineer in Alaska, Arizona and Japan. Professor Blake was the first to explain the origin of the Salton Sink, to trace its ancient history, and to give a name to the great fresh-water lake it had once held. Moving from Mormon Mill in San Bernardino on Nov. 2,1883, the Williamson/Blake Party went down through the San Gorgonio Pass to the Coachella Valley. Along the base of the Santa Rosa Mountains, about where the present Lake Cahuilla is located, Blake noticed the mark of the ancient sea which once filled the basin. The ancient water-line mark, measured at 42 feet above sea level, is visible at many places in 1995, especially on the small mountain called Coral Reef near the present Lake Cahuilla. Today's Lake Cahuilla is a terminal reservoir of the All-American Canal.

What was deposited on the rocks is not coral, but tufa-solids left behind on the rocks as the water evaporated. Considering this, plus the thousands of shells of old sea organisms, plus the slope of the land toward what is now the Salton Sea, plus the reading of his barometer, led Blake to make the assertion that this was indeed an ancient sea bottom and that it was below sea level, actually 271 feet below at its lowest point.



There appears to be a discrepancy concerning the level reached by ancient Lake Cahuilla. Although the marks at Coral Reef and Travertine Point have been measured at 42 feet above sea level, the low point on the delta near Cerro Prieto, south of the international border has been found by survey to be only slightly more than 20 feet above sea level. This could be explained by earth movement since the entire Salton Basin and the Gulf of California is in an active fault zone. Blake was aided in his findings by the Cahuilla Indians who told him that their ancestors had once lived in the canyons above the sea and came to the sea to catch fish, ducks and other small animals. The sea had receded "poco a poco" (little by little). Once, they said, it came back in a rush, suggesting that they had experienced an overflow of the Colorado River through the New River or other channels, overflows that were still taking place in years when the river was high.

Ideas of Reclamation

Professor Blake noticed that the Cahuilla Indians raised crops of corn, barley and vegetables, using ditch irrigation to bring water from springs around the valley. He suggested in his report the possibility of irrigating this "Death Valley" possibly with water brought in channels from the Colorado River. He said, "With water, it is probable that the greater part of the desert could be made to yield crops of almost any kind." Reclamation of a desert was a bold and original idea in 1857. His accurate scientific mind could see that the sedimentary deposits needed only water to make them fertile. Blake's engineer, Ebenezer Hadley, recommended a canal location practically identical with that which was adopted 40 years later. It is estimated that between 1849 and 1860 eight thousand emigrants crossed the Colorado Desert on their way to California, avoiding the

snow and high mountains of the northern routes.

The Wozencraft Plan

Of all these travelers, Dr. Oliver M. Wozencraft, a prominent San Francisco physician, seemed most impressed with the agricultural possibilities of the Salton Sink. In 1957 he moved to San Bernardino and launched a campaign to irrigate the desert. he had seen evidence, when he crossed the Sink in 1849, that the Colorado River occasionally over-flowed into the basin and even formed a series of temporary lakes along what is now the New River. Wozencraft secured the complete cooperation of the California Legislature. On April 12, 1859, by joint resolution, it asked Congress to give the state approximately six million acres, including the entire Salton Basin and more. Three days later, the Legislature conveyed to Wozencraft all rights that it had, or might later acquire to that vast tract, conditional on his developing an irrigation system to water it. Wozencraft had explained that his title to all that land was necessary to secure financing for the project.

In Congress, the House Public Lands Committee took a least a conditionally favorable view of the project, although it ruled out almost half of the requested land, pointing out that land in the San Bernardino, Orocopia, Chocolate and other mountains were far too high to be irrigated by Colorado River water and might have mineral value. As for the remaining 3,000,000 acres, the committee asked advice from knowledgeable witnesses. Most agreed that the land was not only worthless without irrigation, but was an impediment to travel. A commissioner form the US Land Office felt that such a huge land grant to a single individual would essentially extend the system of land grants inherited from Mexico and was not in accordance with the general policy of the country. Newspapers wrote that they saw no obstacle to the success of the plan except for porous nature of the sand. "By removing the sand from the desert, success would be insured," they wrote. But many saw the Wozencraft plan as a means of accomplishing what neither state nor nation was likely to do on its own. Wozencraft believed Congress was ready to make the grant when the Civil War turned attention elsewhere.

Wozencraft continued to advocate his proposal in the West and in Washington, where in 1887, confident that he was on the verge of success, he died unexpectedly, and the proposal was again shelved. He was buried in San Bernardino's Pioneer Cemetery. Only in 1891, twenty-nine years after his bill failed in Congress, was a serious attempt made to realize the "dream" of turning water into the Salton Sink and creating a fertile oasis in the heard of the Colorado Desert.

The Widney Sea

In 1873 a proposal was made to turn the Colorado River deliberately into the Salton Basin and re-create Lake Cahuilla. Dr. Joseph Pomeroy Widney wrote an article in the January issue of the Overland Monthly, presenting tentatively perhaps, a plan for creating a great fresh water lake.

Dr. Widney was an Army doctor who had spent two years in Arizona and had observed the canals of the vanished Indian civilization there. He had crossed the Salton Basin several time and had noted the chain of dry lakes and connecting channels leading clear to Death Valley, reasoning that they too, might have once been filled by the Colorado River before it had dug itself to greater depth through the Grand and other canyons. From this he concluded that when the desert had large bodies

of water, the rainfall was greater, and the weather was cooler because of evaporation and the effect of prevailing winds. If the basin were filled again, he reasoned, the evaporation would be comparable to that of the Bay of Bengal which had been computed at 16 feet annually. It would be enough, he thought, "to supply 12 inches of rain to the 86,400 square miles," and would change a vase amount of head from an active to a latent condition and this would lower the temperature of all the adjacent territory.

Incidentally, in suggesting how and where the river might be diverted to forma new Lake Cahuilla, Widney added considerably to the evidence that the river was, without help from man, approaching a condition where it might soon turn itself back into the basis. Widney observed an overflow in 1868, reporting that, "At first it has no definite channel, but after a few miles follows a well-marked river bet...If left to itself, probably a large portion of the flood of the Colorado would hardly refill the old basin; yet even now at flood season, a shallow lake is formed many miles in extent, but quickly dries up." So, reasoned Widney, the restoration of water to Lake Cahuilla would involve only a little assistance to nature. Of course, the refilling of old Lake Cahuilla would flood most of the basin lands now being irrigated, but Widney believed that his proposal would aid irrigated agriculture. Increased rainfall in Southern California would enhance streams already used for irrigation and some land south of the of the desert could be irrigated by the diverted stream.

Supporters and detractors of the plan surfaced almost at once. congress took an interest and through its Public Lands committee engaged a civil engineer to evaluate it. He mis-read the plan and thought it sought to let sea water into the basin, which he said was possible and would probably affect the weather. His report was not very helpful -- Mr. Widney had proposed letting the river in, not the ocean. the second consultant, Richard Stretch reported that the weather change issue needed further study, but he felt it was "evidently wiser policy to retain the land than to destroy it by submersion." Stretch's report, dated February 8 1874, struck Congress as good thinking. So far as Congress was concerned, that was the last formal action on the Widney Sea proposal, although the press continued to argue its merits. Widney had really just asked that his idea of changing the weather be investigated and investigation showed that it wasn't likely. The eventual procedure, irrigation, didn't change the weather to any large extent either.

Chapter 2

LOST SHIPS OF THE DESERT

Is there an ancient sailing craft lying half-concealed in the sands of the Colorado Desert? Such a ship has been reported by emigrants, prospectors and other travelers who claim that she lies with her bow buried deep and her richly carved stem raised high above the sands. The usual theory is that it is a mirage-like most of the exciting tales that come out of the desert-always a few miles away, but when a mirage really gets down to business, the results can be startling!

Tales of a Spanish galleon lost in the sands of the Colorado Desert keep recurring, from an amazing variety of sources. One of the most persistent made the pages of the Los Angeles Star in 1870. It seems that hundreds of years ago, when the waters of the Gulf of California came up into the

desert, a pirate ship sailed up the Gulf. It was caught in some cross currents and went aground on a sand bar. The crew died, and the ship was left stranded there with almost a million doubloons and pieces of eight in her hulk. It's only when the wind blows and the sand clears that you can get a good look at her, and then the same wind comes along and covers her up again. The Star locates the wreck about ten miles from Dos Palmas. The newspaper gives a graphic description of the time when the Gulf occupied the entire valley, and, in fact, connected up with the Pacific Ocean through San Gorgonio Pass and Los Angeles. The Star did a series of articles speculating that the ship might have been one of the units of King Solomon's navy, or the craft that carried the ten lost tribes of Israel to America; and for the latter offered proof that the tribes never reached America but died of diptheria in the Sandwich Islands! Another idea advanced was that a war-like people from the Indian Sea took a tempestuous voyage to the Gulf of California. Here their ship, Bully Boy, sank in treacherous quicksands. Her hull was made of teakwood and did not rot. The Digger Indians of California are descendants of this Shoo-fly tribe.

The Los Angeles Star continued to keep its readers buying papers by reporting a search for the ship in its edition of November 12, 1870. It wrote, "Charley Clusker and a party started out again this morning to find the mythical ship upon the desert this side of Dos Palmas . Charley made the trip three or four weeks ago, but made the wrong chute and mired his wagon fifteen miles from Dos Palmas. He is satisfied from information he has received from the Indians that the ship is no myth. He is prepared with a good wagon, pack saddles, and planks to cross the sandy ground." On December 1 the Star printed this story from the San Bernardino Guardian, "Charley Clusker and party returned from the desert yesterday, just as we were going to press. They had a hard time of it, but they have succeeded in their effort. The ship has been found! Charley returns to the desert today, to reap the fruition of his labors. He was without food or water, under a hot broiling sun for over twenty-four hours, and came near perishing." Charley had found a great Spanish galleon, with ornate carvings, crosses and broken masts, sunk in the desert sands several miles from any water. The Star readers waited in vain for further news of the galleon. Historical novelist, Antonio de Fierro Blanco, in his book The Journey of the Flame, tells of a party that left Mazatlan in 1615 on a pearl-hunting and trading expedition into the northern end of the Vermilion Sea - the Gulf of California. After they passed Point San Felipe, homeward bound, they began to look for the Straits of Anian that would carry them from the Pacific to the Atlantic. Instead they found a narrow entrance leading to an inland sea (presumably the area now occupied by the Salton Sea). While they were exploring the shores of this body of water, a great cloud burst occurred in the adjacent mountains**,** sending quantities of debris into the sea. This landslide choked the narrow inlet through which they had come. They spent weeks trying to find another outlet, until the water began to recede as if by enchantment, and their ship was finally grounded. They were obliged to leave it in the desert with its vast treasure of pearls aboard.

Subsequently, a boy named Manquerna, from Sinaloa, said dig in 1774 he was taken by Captain Juan Bautista de Anza as a mule-driver on the exploring trip from Sonora to the California coast. When they started crossing the desert westward from the Colorado River, he was sent out to the right of the course traveled by the main body of explorers, to seek a different route. While he was traveling at night to avoid the heat, he stumbled upon an ancient ship, and in its hold were so many pearls that they were beyond imagination. He took what he could carry, deserted de Anza, and finally reached the Mission of San Luis Rey. Later, he spent many years trying to find the ship

again.

The desert actually has had several ships sailing its sands. Before the present Salton Sea was formed, the Liverpool Salt Works, operating in the bottom of the dry sink, built a three wheeled sand yacht similar to an ice boat, and used it on the packed bottom of the old salt bed. In the late 1890s an inventor came to the desert with a wagonload of lumber and the necessary ironwork for building a ship. He pitched his tent in the vicinity of Kane Springs and proceeded to build a contraption in the general shape of a boat, with mast and sail and four broad-tired wheels. But the wheels were not big enough and the craft made only about a hundred feet before it wobbled into an eroded cut, shook the one-man crew overboard, and staggered unguided across the sand. it finally bumped into a weed hill and toppled over, breaking the mast off about four feet above the one-piece cross-board deck.

In 1862, according to the Desert Magazine of El Centro, California, when the gold rush to La Paz, Arizona was in full swing, a boat twenty-one feet long was built by the Los Angeles firm of Perry and Woodworth for a band of gold-seekers. They expected to use it crossing the Colorado River. The boat had a mast and sail and four wheels. They loaded the amphibian with provisions, hitched two teams to it, and started out on the two hundred fifty mile journey. Somewhere between Whitewater and Dos Palmas the teams gave out and the craft was abandoned.

But back to those legendary ships. The very real navigational hazard of the Colorado River's immense tidal bore might well have caught an unsuspecting sailing ship, carried it inland and dumped it there. Persistence of such legends in both Indian and frontiersmen lore make it hard to completely discount them. The sands tell no tale.

Chapter 3

THE SALT WORKS

Indian legends persisted of a lake forming every 50 to 100 years in the bottom of the Salton Sink. The source was a fickle river that in other floods flowed into the Gulf of California. The Indians knew about, and used the salt deposits, too. A pre-Columbian trail, used by Indians making the trek for salt, leads from the Colorado River to the now Salton Sea. The northern Diegueno Indians from the coast called the deposits "esily" meaning salt, and they, too made the journey for this precious commodity. As early as the spring of 1815, ox-drawn carretas from Los Angeles made yearly month-long expeditions for salt. The trip was called, "jornada para sal"...journey for salt. The Indians were right about the source of the recurring lake, too.

George Durbrow, a San Francisco businessman, didn't quite believe the recurring part. He found through analyses that the salt at the bottom of the sink was of remarkable purity. It was so pure that his projected salt industry would require none of the equipment of ordinary salt works. The mill he planned needed only machinery for grinding and bagging the salt for shipment from Salton Station, twelve miles below Mecca, utilizing the nearby Southern Pacific Railway.

Durbrow was granted Articles of Incorporation for the New Liverpool Salt Company on January 15, 1885. He actually had begun work on the salt beds in 1884, when he shipped over 1,500 tons of this "white gold" to San Francisco. The vast salt deposits, comprising over 1,000 acres of unusually pure rock salt, were considered one of the largest in the country. During the company's active years, Cahuilla Indians provided the labor force. Historian George Wharton James described the operation in these words: "They moved across the brilliant, glaring white fields, tilling the deposits. The salt was plowed by means of plows attached to bands that traveled across the salt bed from one engine to another. The furrows cut were eight feet wide and six inches deep and each plow was capable of harvesting over 700 tons per day."

After the salt was smashed by the plows, it was piled in conical mounds and then conveyed by tram railway to the salt works. There Japanese and Indian workers ground the salt and sacked it and shipped it to various markets. The crop was priced at from $6 to $34 per ton. Low grade salt was sold for hide salt and the finer crystals were sold as bath salts. The richness of the field was such that it is doubtful whether the company ever worked more than one hundredth of the area. Interestingly, the salt beds were seemingly inexhaustible. As fast as one crop was worked, a new deposit flowed in from nearby saline springs, and, as evaporation was rapid, a layer of pure salt, from 10 to 20 inches thick would be formed. Near the salt fields there existed a hot salt springs in the midst of bubbling quicksand and mud. It hissed and roared so as to be heard for a long distance. Historian James said, "The steam rushed out in large volume ... Connected with the bowl was a small lake or pond of greenish looking water. On tasting it I found it so salty that it surprised me into swallowing a mouthful, to my intense disgust."

The New Liverpool Salt Company operated its works for almost 20 years, without competition. In 1901 a rival concern, the Standard Salt Company, discovered that title to the land was vested in the US government, and the New Liverpool Company had no rights to harvest the salt . A hastily passed congressional bill required companies to file claims on saline lands. Both Liverpool and Standard had representatives m Washington DC ready to telegraph the news that President McKinley had signed the bill and the land was up for grabs. Word arrived at the Mecca telegraph station and the Liverpool men took off down their railroad tracks in a pumphand car, intending to race to the most choice locations to file their claims. The Standard men took off in a horse and buggy in a great cloud of dust, "knowing smiles" on their faces. When the perspiring Liverpool boys got to the salty area, they found that the Standard men had rigged up a series of mirrors to flash the message, and, in fact, the word had arrived at their camp before the racers were out of Mecca! Ultimately the two companies worked together, but salt mining was doomed to a very short future. When the full flow of the Colorado River moved north through Imperial Valley and into the Salton Sink in 1905, it soon covered the plant. By 1907 nothing remained above the surface of the newly formed Salton Sea.

As a boy, in 1906, Otho Moore and his young friend, Dean Redfield, hopped a local freight and rode to Salton, from where they could see the big red buildings and smoke stacks of the New Liverpool Salt Company sticking out of the rising water. Said Moore in a newspaper clipping of May 7, 1955, "At Salton were the houses of the housing project for the salt company's employees, all of them surrounded by four feet of water." The article goes on to say that the boys found a little boat, paddled out into the rising sea, were caught in a swift current and found themselves carried

about three miles west. It took until evening to paddle back to Salton, sunburned, thirsty and tired.

In 1908, on a trip to Niland by passenger train, with his mother, Otho remembers that the train tracks were inundated and that swift waters were flowing over the tracks. When he looked out to where the buildings and smoke stacks had been, there was nothing to see but the rising waters of the future Salton Sea.

Mr. Durbrow suffered mightily in those years. Not only did he lose his salt mine and all of its buildings and equipment, but his home and holdings in San Francisco were destroyed in the earthquake and fire of 1906. A subdivision he planned for the town of Arabia, located on the present Hwy 111 between Avenue 60 and Avenue 61 (now a part of Oasis Date Gardens) still shows on Riverside County tax bills as lot such and such of Durbrow. Imperial Irrigation Company ultimately paid a damage claim for loss of the salt works, although it was said that the mining operation had not been very profitable m its last years. According to Harry Lawton, in later years sportsmen skimming the sea in motorboats, on a clear day, could look down on the submerged buildings and machinery of one of Riverside County's earliest industries.

Chapter 4

CREATING THE OASIS

So why is there a Salton Sea in 1995? In a few words, the Salton Sea was a man-made accident, brought about by a strange set of seemingly unrelated natural disasters, and economic and political events in the late 1890s and early 1900s which combined to create the Salton Sea. It's a fascinating real-life story!

Charles R. Rockwood and the California Development Company

In 1891, John C. Beatty of California, another man of imagination and foresight, became interested in the agricultural possibilities of the Colorado Desert and formed a corporation under the name of "The California Irrigation Company", for the purpose of carrying water into the Salton Sink from the Colorado River. He engaged as his technical advisor Mr. C. R. Rockwood who had been employed by the U.S. Reclamation Service, and who was regarded as a "shrewd and clever man and engineer," words used to describe him by Mr. H. T. Cory, Chief Engineer of the California Development Company.

Charles R. Rockwood, born in 1860, studied engineering at the University of Michigan and worked for several major railroad and irrigation projects. In 1892, he was hired to study the feasibility of the irrigation of the Sonora Mesa, below the Mexican border . He found it to be non-feasible, but he became interested in the Salton Basin and Mr. Wozencraft's lost cause. He noted that there was a natural obstacle in the shape of a range of sand hills, which extended southward to the Mexican border and that all natural overflows of the Colorado River, in prehistoric times, had been south of this barrier. Mr. Rockwood thought that it would be easier and more economical to follow the

river's ancient track than to put a conduit through these hills on the American side of the boundary.

Rockwood proposed to take water from the Colorado at Potholes, 12 miles above Yuma, carry it southward into Mexico, thence westward around the promontory of sand hills, and finally northward, across the line again, into Southern California. This plan would involve the digging of a curving canal forty or fifty miles in length, through Mexican territory, but it would remove the necessity of cutting through the sand hills and would perhaps enable the diggers to utilize, on the Mexican side, one of the ancient overflow channels through which the Colorado had discharged into the Salton Sink in the past.

Owing to a lack of public confidence in reclamation experiments, Mr. Beatty and his associates were unable to secure enough capital for the proposal and in the monetary panic of 1893, they were forced into bankruptcy. The company's maps, records and engineering data were turned over to Mr. Rockwood in satisfaction of a judgment he obtained in a suit for his unpaid salary of $3,500.

This seemed likely to put an end to the Salton Sink project, but Mr. Rockwood, whose observations and work in the Colorado delta had given him faith in the ultimate success of the scheme, decided to promote it himself. After several years he formed another organization which was incorporated in New Jersey on April 21, 1896, under the name of 'The California Development Company." The maps, records and engineering data and Rockwood's claim for $3,500 appear to have been his total personal monetary investment, but he became indefatigably busy as a promoter. For two years or more, the corporation tried to get permission from the Mexican government to hold land, acquire rights, and dig an irrigation canal south of the boundary line, but the Mexican authorities refused to make any concessions and it was finally necessary to organize a subsidiary Mexican company. This corporation, which had a nominal capital of $62,000, was wholly owned and controlled by the California Development Company, but it operated under a Mexican charter.

The financial resources of both companies were largely on paper so it was necessary to secure real capital to do the work, and Mr. Rockwood found this extremely difficult. The proposed reclamation of an and desert, where the thermometer went to 120 degrees in the shade in the summer, and where only two or three inches of rain fell in the course of the whole year, did not strike Eastern capitalists as a very promising venture, and few were inclined to go along with it. At last, however, in 1898, Mr. Rockwood secured a promise from certain capitalists in New

Charles R. Rockwood

York that they would advance the necessary funds, but two days before the papers were to have been signed, the American battleship "Maine" was blown up in the harbor of Havana, and this catastrophe, together with the war that followed it, put an end to negotiations. Rockwood had been able to secure options on the Mexican land needed for the canal, and on an intake site, the so-called Hanlon Heading, near Pilot Knob, west of Yuma, but the options had expired and the state of New Jersey had started proceedings to revoke the company's charter for non-payment of its fees.

George Chaffey Jr

William B. Chaffey

George Chaffey Enters the Picture

But, the plan for the irrigation of the Salton Sink was not destined to fail. Among the men with whom Dr. Wozencraft had discussed it in the early eighties was George Chaffey, a civil engineer and irrigation expert, of Los Angeles. He had already successfully established irrigation systems in other parts of California and throughout the world. The successful projects of the Chaffey brothers at Ontario and Etiwanda were well known. George had gone to Australia with his brother, William,

to develop irrigation and colonization along the Murray River. After considerable conflict with the Australian government, George came back to the United States and was looking for another big project. He remembered Dr. Wozencraft's solicitation, which he had declined not because he was afraid of the engineering difficulties involved, but because he thought that the torrid climate of the Sink would prevent colonization of it, even if the colonists were promised plenty of water. Most men, he reasoned, would be frightened by the prospect of having to do hard agricultural labor in shade temperatures of 110 to 120 degrees, and sun temperatures of perhaps 140 to 150 degrees. They simply would not go to a place where they would be subjected to such heat.

After his experience in the interior of Australia, however, where the temperature in the shade often reached a maximum of 125 degrees, but where men worked without danger or serious inconvenience, he changed his view of irrigation in the Colorado Desert. He sent word to Rockwood that he was interested in the project and he offered to finance it. On April 3, 1900, Chaffey signed a contract that made him president and, chief engineer of the California Development Company. The contract bound him to construct canals, at a cost of not more than $150,000, which would carry to the Imperial Valley 400,000 acre-feet of water per annum.

Mr. Chaffey and his associates modified the plan of Mr. Rockwood by taking water from the Colorado at Pilot Knob, nearly opposite Yuma, instead of at Potholes, twelve miles above. Putting in a head gate there, they carried their main canal southward across the Mexican boundary, in a course nearly parallel with the river, until they reached the dry overflow channel known as the Alamo. As this ancient watercourse meandered westward in the direction of the Salton Sink, they were able to clear it out, enlarge it, and utilize most of it as a part of their irrigation system. Then, at a point about forty miles west of the Colorado, they carried their canal northward, across the boundary line again, into California. The work throughout was pushed with great energy, and on the 14th of May, 1901, a little more than a year after Mr. Chaffey assumed direction of affairs, water was turned into the Pilot Knob head gate, and the irrigation of the Salton Sink became a certainty, if not a fully accomplished fact.

A SEA IN THE MAKING IN THE SOUTHLAND. When the Colorado River broke through its levees during the great floods of 1905, the Salton Sink became the Salton Sea and the town of Salton here shown, had to move. Note the sign which reads "265 feet

below sea level." The old salt works, a larger view of which is shown below, is inundated in the background in this 1906 view.

Chapter 5

THE IMPERIAL VALLEY IS BORN

The California Development Company was a water-selling company only, and had no proprietary interest in the lands to be irrigated. It was thought best to form another organization for the promotion of settlement --an activity Mr. Chaffey, had successfully pursued in the area east of Los Angeles and in Australia. In March 1901, the Imperial Land Company was incorporated for the purpose of attracting colonists, laying out town sites and bringing lands into cultivation. When Mr. Chaffey and the Land Company began an advertising campaign for the purpose of interesting the general public in the area, and in order not to scare off settlers and small investors by using the ominous words "desert" and "Sink", they changed the name of the basin that they proposed to irrigate, calling it "The Imperial Valley."

The name was evidently alluring because it attracted small investors from all over the East, and particularly in New England. The California Development Company's stock was bought, for example in Boston, Concord, Hopedale and Waverly, Massachusetts; in Barre and Montpelier, Vt.; in Portsmouth, N.H.; Elgin, Ill; Portland, Oregon and Toronto, Canada. Settlers soon began to come in, mutual water companies were organized, and before the 3rd of April 1902, four hundred miles of irrigation ditches had been dug, and water was available for 100,000 acres or more of irrigable land.

Chaffey had investigated the basin project with care, but not the financial and legal position of the California Development Company. Tension developed almost immediately between Chaffey and the original heads of the company, especially Rockwood. Chaffey had drawn up the contract

himself, without legal advice. He had asked to see the company's books, but was told that they were at corporate headquarters in New Jersey. He accepted statements that the company owned the Mexican land required for the canal and had an option on the intake site. The company had only options, which had expired. There were major financial difficulties and after numerous disputes, seeing that he would lose control of the company with a further sale of stock, Chaffey sold out on April 3, 1902. What might have happened if Chaffey had stayed at the head of the company can only be conjectured. There might still have been trouble with that part of the engineering that Chaffey substantially took over from Rockwood and didn't basically change.

The Problem of Silt

Silt is the toughest thing for engineers to deal with when irrigating from a turbid strewn. How do you get rid of silt? The Colorado River, until after it passes through the Grand Canyon is a swift, turbulent stream, with great eroding capability. It carries millions of tons of solid matter, or sediment, which, when finally dropped, not only creates bars at its mouth, but gradually fills up irrigation ditches and thus lessens their carrying capacity. Before the construction of Hoover Dam, a single day's supply of water for the Imperial Valley contained silt enough to make a levee twenty feet high, twenty feet wide and one mile long. (Imperial Valley Press, July 25, 1916). If this silt is not dredged out, or collected in settling basins, it eventually raises the beds of the canals, fills the ditches and chokes the whole irrigation system. The managers of the California Development Company had difficulty, almost from the first, in keeping their waterways open.

From the intake near Pilot Knob, the canal ran alongside the river for a little more than four miles, at the same gentle grade as the river itself--15 inches to the mile. There the old Alamo channel became the canal, at a gradient of 48 inches to the mile. The intake wasn't deep enough to take the intended canal capacity at the low stage of the river. Worse yet, the four miles alongside the river became impeded with silt. The clamoring settlers failed to get full water delivery. Mass meetings were held. The company was roundly denounced. Lawsuits were filed against it.

The Bureau of Soils Report

Meanwhile, the future of the Valley was seriously imperiled by unfavorable reports concerning its soil. In the early part of 1902, the Bureau of Soils of the US Agricultural Department published the results of a survey of the irrigable lands in the Colorado Desert. They reported that the lands were so impregnated with alkali that very few things could be successfully grown on them. The report said in part,

> "One hundred and twenty-five thousand acres of land have already been taken up by prospective settlers, many of whom talk of planting crops which it will be absolutely impossible to grow. They must early find that it will be useless to attempt their growth .... No doubt the best thing to do is to raise such crops as sugar beet, sorghum and the date palm (if the climate will permit), that are suited to such alkali conditions, and abandon as worthless the lands which contain too much alkali to grow those crops."

This report was widely quoted and commented upon and was a real deterent to further colonization.

If it had been issued two or three years earlier, it might have been fatal to the whole irrigation project. Fortunately, though, the crops raised by a few farmers who had already been cultivating this "alkali impregnated" land proved conclusively that the report of the analysis of the soil made by the Government experts was unduly pessimistic, if not wholly erroneous.

Great Prospects

Almost everything that was tried did grow, m spite of those expert predictions, and the practical experience of the farmers gradually revived public confidence and interest m the irrigated lands. The colonization and development of the valley proceeded rapidly There were two thousand settlers on the ground at the end of 1902. There were seven thousand in 1903 and ten thousand in 1904.

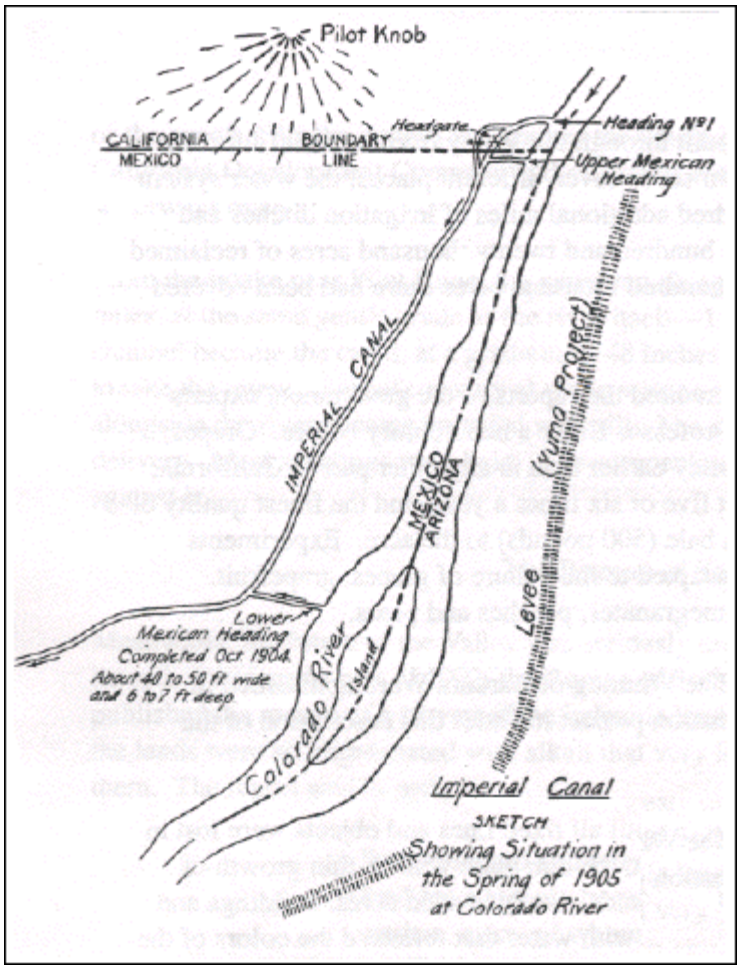
A branch of the Southern Pacific Railroad was built through the Valley from Imperial Junction to Calexico and Mexicali; town sites were laid out in six or seven different places; the water system was extended by the digging of nearly four hundred additional miles of irrigation ditches and canals, and before the first of January 1905, one hundred and twenty thousand acres of reclaimed land were actually under cultivation, while two hundred thousand acres more had been covered by water stock.

The observed fertility of the soil completely discredited the reports of the government experts and more than justified the prediction made by Professor Blake a half century before. Grapes, melons and garden vegetables matured in the Valley earlier than in any other part of California; barley was a profitable crop; alfalfa could be cut five or six times a year; and the finest quality of long-staple Egyptian cotton yielded more than a bale (500 pounds) to the acre. Experiments proved also that the climate and soil were well-adapted to the culture of grapes, grapefruit, oranges, lemons, olives, figs, dates, apricots, pomegranates, peaches and pears.

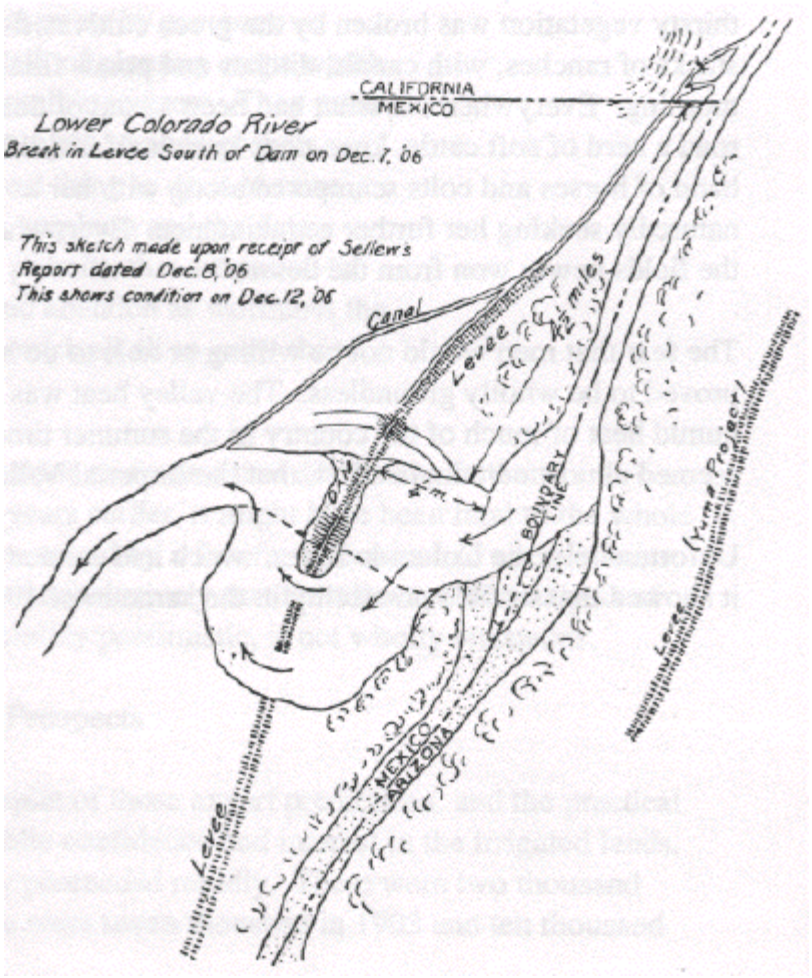
In a very famous novel by Harold Bell Wright, The Winning of Barbara Worth, published in 1911, a romanticized version of this great reclamation project includes this description of the countryside: "On either hand as she rode, stretching away until all fixed lines and objects were lost in the shifting mirage and man-colored lights of the desert, the dun plain with its thin growth of thirsty vegetation was broken by the green cultivated fields, newly leveled acres, buildings and stacks of ranches, with canals, ditches and ponds filled with water that reflected the colors of the mornng. Everywhere, in what had been a land of death, life was stirring. In one field beside the road a herd of soft cattle, knee-deep in rich alfalfa, lifted their heads to greet her. In another a band of horses and colts scampered along with her as far as their fence would permit, as if good naturedly seeking her further acquaintance. Everywhere men with their team were at work in the fields newly won from the desert."

The fear that men would not be willing or able to do hard work in the hot climate of the valley proved to be wholly groundless. The valley heat was dry heat, much easier to bear than the very humid heat of much of the country in the summer time. Under these favorable conditions, it seemed almost certain, in 1904, that the Imperial Valley had a great and prosperous future.

Unfortunately, the Colorado River, which had created the Salton Sink, could also destroy it, and it showed that terrible possibility in the summer of 1904.



The Three Headings (or Intakes), in Spring of 1905



Last Break in Defences, December 1906

Chapter 6

A RUNAWAY RIVER

The managers of the California Development Company had difficulty almost immediately keeping their waterways open. An attempt was made to relieve the silt problem by putting in a waste gate eight miles below the intake, for the purpose of sluicing out the channel in time of high water. According to Engineer Cory, "The idea was to divert a large quantity of water during the flood season, waste it through the Best waste gate, and in this way scour out the upper portion of the canal. At first, the action was as. expected, and some two feet of the bottom were carried away. When, however, the river reached its maximum height, and carried an excessive silt content, especially of the heavier and sandy type, this scouring action was entirely overcome, and the

bottom of this stretch was raised approximately one foot higher than during the previous year."

A New Cut is Made

In the late summer of 1904, it was obvious that something drastic had to be done. Hundreds of farmers in the Imperial Valley had put in claims for damage caused by the lack of adequate water. The financially strapped company did not have the resources to buy the dredges needed to quickly clean out the clogged canal, so they decided to cut a new intake from the river at a point four miles south of the international border. This would eliminate the clogged portion. Little did President Heber and Chief Engineer Rockwood know that the Colorado River was about to make one of its semi-millennial changes in course, with powerful floodwaters about to turn the valley into a great freshwater lake. Had they known, they would have fortified the west bank of the river, not cut through it!

In Engineer Rockwoods words, "We hesitated about making this cut, not so much because we believed we were incurring danger of the river's breaking through, as from the fact that we had been unable to obtain the consent of the Government of Mexico to make it, and we believed that we were jeopardizing our Mexican rights should the cut be made without the consent of the Government."

Continuing his explanation in the Calexico Chronicle of May 1909, Rockwood said that cutting from the river to the main canal at this point meant dredging only 3300 feet, through easy material, while an attempt to dredge out the main canal above would have meant going through four miles of very difficult material. The cut was completed in three weeks, by the middle of October, 1904, and elaborate plans for a controlling gate were immediately forwarded to the City of Mexico for approval without which they had no right or authority to construct such a gate. Approval finally came in December 1905-more than a year later. Meanwhile serious trouble had begun. Because rod readings kept at Yuma for a period of twenty seven years showed only three winter floods during that time, and never two winter floods in the same year, Rockwood felt there would be plenty of time to close the cut before the approach of a summer flood, using the same means they had used for three successive years around the Chaffey gate at the canal.

Unbelievable Floods

"During this winter of 1905, however, we had more than one winter flood. The first two, arriving in February, did not enlarge the lower intake. In fact, it was necessary to dredge out the channel to allow sufficient water to come into the valley for the use of the people. Rockwood was not alarmed by these floods because it was still very early in the season. However, a third flood came in March, and it was obvious that they were up against a very unusual season, unknown in the history of the river as far back as they were able to reach. Realizing that the river's elevation was now high enough to deliver needed water to the farmers through the upper intake, they decided to close the lower intake.

So much for good intentions! At the time the first attempt to close the lower intake was made, the cut was about 60 feet wide. A dam of pilings, brush and sandbags was thrown across it in March, but it had scarcely been completed when another flood came down the Colorado and swept it away.

A second dam of the same kind, built a few weeks later was also destroyed by the river. By the middle of June, the river was discharging 90,000 cubic feet of water per second; the width of the lower intake had widened from sixty feet to one hundred and sixty; water was overflowing the banks of the main canal, rolling across the rich Imperial Valley farmland and accumulating in the deepest part of the Sink. A new Salton Sea was forming.

During the next two years a gigantic battle was waged between man and nature, with man desperately trying to return the river to its original channel, and the river stubbornly refusing to do so. Five attempts were made to close the break in 1905, and all of them failed. Settlers and investors in Imperial Valley watched with increasing alarm as the flood waters continued to wash away valuable farm land. In 1906 another flood widened the gap and sent a wall of water 10 miles wide into Imperial Valley, threatening the cities of Calexico and Mexicali and carrying away a part of the Inter-California Railroad, a branch line extending down into the Imperial Valley. When its mainline from Los Angeles to Yuma and the east coast was threatened, the Southern Pacific Railroad entered the fight. Tons of brush, rock and dirt were dumped into the break, but the swirling waters washed the materials away. Tune and again the SP was forced to move its mainline tracks to higher ground.

E. H. Harriman's Fight with the River

The story of the commitment of Mr. E. H. Harriman, president of the Southern Pacific Railroad Company, to saving the Imperial Valley is told in a book entitled, The Salton Sea, An Account of Harriman's Fight with the Colorado River, by George Keenan, and published by The Machlfflan Company in 1917. The California Development Co. did not have the funds to fight the river, and they applied to the Southern Pacific for a loan, on the grounds that the Imperial Valley was furnishing a great deal of traffic to the railroad. Mr. Harriman was a man of imagination and vision, according to Mr. Keenan, and he was in sympathy with the bold attempt to irrigate and reclaim the and lands of the Colorado Desert. Against the advice of SP counselors, he authorized a loan of $200,000, with the stipulation that the Southern Pacific should have the right to select three directors of the California Development Company, one of whom should be president, and that fifty-one per cent of its stock should be placed in the hands of a trustee as collateral security for the loan. Mr. Harriman appointed Mr. Epes Randolph of Tucson as its president.

Mr. Randolph was regarded as one of the ablest civil engineers in the United States and he had already had much experience m dealing with river-control problems the South. He found the situation far more serious than the Development Company had represented it to be. He told Harriman that the cost "might easily run into three quarters of a million dollars." Harriman could have backed out then, but he telegraphed President Randolph, "Are you certain you can put the river back into the old channel ?"W. Randolph replied, "I am certain that it can be done." Then Mr. Harriman wired, "Go ahead and do it."

The difficulty of dealing with this menacing situation was greatly increased by the necessity of furnishing an uninterrupted supply of water to the farmers of Imperial Valley while the engineering operations were in progress. The Colorado must be controlled but not wholly excluded. A plan to install a new steel and concrete head-gate near Pilot Knob, and to re excavate and enlarge the silted channel with a specially built dredge moved ahead The earthquake and fire in San Francisco on

April 18, 1906 meant that the 850 ton floating dredge, the "Delta," was not ready until the following November. With the ruins of San Francisco still smoldering around the temporary Southern Pacific office, and with no clear knowledge of the losses his railroad had sustained, Mr. Harriman still was deeply concerned with the desperate situation in the Imperial Valley, and he consented to another loan of $250,000.

On April 19, 1906, the day after the earthquake and fire, Mr. Rockwood resigned, and all subsequent defensive work was planned and executed by SP engineers. Their task was daunting. Thousands of acres of land, covered with growing crops was underwater. Thousands more were so eroded and furrowed by the torrential streams that they would never be cultivated again. The works of the New Liverpool Salt Company were buried under 60 feet of water. Mr Keenan describes the problem in these words:

"The most dangerous and alarming feature of the situation was the "cutting back" of the torrents as they rushed down the delta slope toward the Salton Sea. The fine silt of which the soil was composed washed out like powdered sugar, and wherever there happened to be a strong current, the flow soon produced a rapid. The rapid then became a cascade, the cascade grew into a fall, and the fall finally developed into a roaring cataract, which 'cut back', upstream, at the rate sometimes of four thousand feet a day, widening as it receded, and leaving below it a deep gorge with almost perpendicular walls. Some of the gorges were fifty to eighty feet deep and more than a thousand feet across. It was estimated that the channels thus formed during the floods of 1906 had an aggregate length of more than forty miles, and that the solid matter scoured out of them and came down into the Salton Sea was nearly four times as great as the whole amount excavated in the digging of the Panama Canal. The total of 400,000,000 to 450,000,000 cubic yards were moved. Mr Cory stated, 'Very rarely, if ever before, has it been possible to see a geological agency effect in a few months a change which usually requires centuries.' "

Finally, in November of 1906, the breach was closed when the SP dumped tons of earth and rock into it. But the relief was short-lived. On December 5, 1906, a severe flood rushed down the Gila River into the Colorado near Yuma, and new breaks occurred in the levee. Within a matter of hours, the river was once again flowing entirely into the Salton Sea.

This last flood was a heartbreaker. The Southern Pacific had already spent more than one million dollars trying to turn the river, and the farmers and citizens of Imperial Valley had lost millions. In order to provide lasting protection to the Imperial Valley, it would be necessary to build a stronger, higher and more massive levee along the west bank of the river for a distance of at least twenty miles. The interests chiefly at risk were those of the national government. It owned all of the irrigable land along the lower Colorado. It was constructing the Laguna Dam above Yuma, upon which it had already expended about $ 1,000,000. The water it impounded, was expected to irrigate and reclaim about 90,000 fertile acres in Arizona and California. Left unchecked, the river might eventually cut back upstream and take out the Laguna Dam and irrigation works, rendering valueless more than two thousand square miles of potentially fertile land.

Imperial Valley settlers would have been willing to help the SP in the fight accorcding to Maxwell Evarts, but because the original survey of this part of California had been found inaccurate, the government could not issue patents to the farmers who had made homestead entries on the land and

were actually in possession of it. The settlers could not raise money by mortgaging their farms because legal title still rested with the government.

The Southern Pacific was already moving its mainline well out of the flooded area of the Salton Sink in 1906. President Randolph informed Mr. Harriman that the additional work needed to close the breach and reinforce the west bank of the river below the border might well cost the SP at least $1,500.000 more, over and above the $2,000,000. it had already spent. It was time to ask for government help, and Mr. Harriman turned first to the governor of California. He was told that the state had no funds to do this, but the governor did contact President Theodore Roosevelt to ask for federal intervention. Then Harriman himself sent word to the President on December 13, 1906 that he did not doubt that the Colorado could ultimately be controlled, but he did not feel that the SP, which was not responsible for the current disaster, was morally bound to do the work alone. Interesting telegraphic correspondence ensued. President Roosevelt's first telegram to E.H. Harriman, on December 15, simply said that he assumed Harriman was planning to immediately continue work to close the break. "Keep me informed," he said. The following telegrams were exchanged:

> "New York, December 19,1906 THE PRESIDENT, Washington Further referring to your telegram of the 15th inst. our engineers advise that closing the break and restoring the levees can be most quickly and cheaply done, if *the work* is undertaken immediately, at a cost of $300,000. to $350,000. The Southern Pacific Company, having been at an expense of about $2,000,000. already does not feel warranted in assuming this responsibility and the additional expenditure which is likely to follow to make the work permanent, besides the expenditure which the company is already undergoing to put its tracks above danger line. We are willing to cooperate with the Government, contributing train service, use of tracks and switches, use of rock quarries, train crews etc., and the California Development Company will contribute its engineers and organization, the whole work to be done under the Reclamation Service. Can you bring this about?
>
> Washington, December 20, 1906 E.H. HARRIMAN, New York Replying to yours of the 19th, Reclamation Service cannot enter upon work without authorization of Congress and suitable convention with Mexico. Congress adjourns today for holidays. Impossible to secure action at present. It is incumbent upon you to close break again. Question of future permanent maintenance can be taken up. Reclamation engineers available for consultation. That is all the aid that there is in power of Government to render, and it seems to me clear that it is the imperative duty of the California Development Company to close the break at once. The danger is ultimately due only to the action of that company in the past in making heading completed in October 1904, in Mexican territory. The present crisis can at this moment only be met by the action of the company which is ultimately responsible for it, and that action should be taken without an hour's delay. Through the Department of State I am endeavoring to secure such action by the Mexican Government as will enable Congress in its turn to act. But at present Congress can do nothing without such action by the Mexican Government. This is a matter of such vital importance that I wish to repeat that there is not the slightest excuse for the

> California Development Company waiting an hour for the action of the Government. It is its duty to meet the present danger immediately, and then this Government will take up with it, as it has already taken up with Mexico, the question of providing in permanent shape against the recurrence of the danger.
>
> THEODORE ROOSEVELT

One man, E. H. Harriman, held the key to the survival of the Imperial Valley, the Laguna Dam and 1,600,000 acres of government land. If he chose to order a continuance of the work, he would put at risk a million and a half dollars of his own money, or the money of the Southern Pacific stockholders, in addition to the almost two million already spent. He would be doing this without any assurance of reimbursement or compensation and without any certainty of success. Mr. Harriman was being prosecuted by the Interstate Commerce Commission , presumably as a malefactor, and President Roosevelt, only a few weeks before, had called him an "undesirable citizen", but he showed courage and public spiritness, above personal feelings. On December 20, 1906, the same day he received the President's telegram, he replied in the following words:

> "You seem to be under the impression that the California Development Company is a Southern Pacific enterprise. This is erroneous. It had nothing to do with its work, or the opening of the canal. We are not interested in its stock and in no way control i. t We have loaned it some money to assist in dealing with the situation. What the Southern Pacific has done was for the protection of the settlers as well as of its own tracks, but we have determined to move the tracks onto high ground anyway. However, in view of your message, I am giving authority to the Southern Pacific officers in the West to proceed at once with efforts to repair the break, trusting that the Government, as soon as you can procure the necessary Congressional action, will assist us with the burden.
>
> E.H. HARRIMAN

When President Roosevelt received Mr. Harriman's telegram of December 20, saying that orders had been given to proceed with the work, he replied as follows:

> "Am delighted to receive your telegram. Have at once directed the Reclamation Service to get into touch with you, so that as soon as Congress reassembles I can recommend legislation which will provide against a repetition of the chsaster and make provision for the equitable distribution of the burden.
>
> THEODORE ROOSEVELT

Not until 1923 was any kind of a settlement made, and then only for a portion of the real cost. Congress would argue that payment to a large company like the Southern Pacific would constitute a gift of taxpayers' money .
Ole Nordland, Editor of the Indio Daily News for many years, described the effort of the Southern Pacific in these words: "The gargantuan effort of stemming the flood tied up a network of 1,200 miles of main lines for three weeks while the SP fought to bring the river under control. The work

started the very day of the exchange of telegrams, December 20, 1906. Dispatchers sidetracked crack passenger trains to let rock trains through while amazed passengers looked on. Surplus engines stood by to aid in the massive haul of rock and gravel. The rock trains came from as far away as 480 miles to hurtle 2,057 carloads of rock, 221 carloads of gravel, and 203 carloads of clay into the break in 15 days. The loads were dumped from two trestles built across the river break and were literally dumped faster than the water could wash them away. The Colorado River put up a stubborn fight. Three times it ripped away the trestle piles. Finally, on January 27, 1907, the breach was closed and the valley's farms and cities were saved. The Colorado River was returned to its former path but it left in its wake today's Salton Sea."

Among the papers in the Nordland Collection at the Coachella Valley Museum is a letter from Wiley Magruder to Ole Nordland. Written in the 1960s, he says, in part: "I wish as a matter of accuracy, the newspapers would quit printing that the Salton Sea was formed because the Colorado River broke its banks. The Salton Sea lies there a shining shimmering monument to man's carelessness. In my day in the Imperial Valley, to divulge this information would have been heretic. Mark Rose, dreamer and diinker-upper of the Hoover Dam and the All-American Canal, stood daily in front of Clements Drug Store, one thumb, in the armhole of his vest, the other hand gesticulating with a cigar, regaling a crowd of farmers wearing faded and patched overalls. Mark knew how to sway his crowds, and he had my respect and my sympathy... I remember the anxious days after each of the June risings of the river, when the water flow had dropped and the bottom of the channel had been scoured so deep that water could not have leaped into the headgates if it had wings ... All of us kept our mouths shut about man's big mistake in letting the whole river in, when we listened to Mark Rose and his big vision of a dam that would hold back the floods and let them pass into the canals as needed. 'If we ever get the money for that dam we've got to make 'em think that the river broke in', we said to each other....

"Those were desperate days for Imperial Valley and the Water Problem had the attention of everyone ... Scotty Russell, Ira Aten, Otis Tout, Edgar Howe, Charley Collins, Mobley Meadows, and Mark Rose, who figgered out a way. He wanted the dam built first in one canyon and then another, finally settling on Boulder. It was a fantastic dream. It was such a costly proposition that few beheved it would ever come about .... Phil Swing got himself elected to Congress just by promising he would try to do something. With the aid of his fatherly friend, Hiram Johnson, he did influence into both the Congress and the Senate the Swing-Johnson Bin. ...It passed both houses and it appropriated money for surveys that would look toward control of the meandering Colorado River, with clauses committing the government to do something about it if possible. Amidst all the confusion, lots of people got to blaming The River ... Traveling many, many miles, it did then and does yet bring the water we need. Insofar as I know it never did intentionally do us any harm. Unless you count the accidental Salton Sea, and by goilies, I believe that was a pocketfull of money. The sea has been there smiling at us for nearly five decades."

A smiling sea it was, but it disrupted the life of Figtree John, one of the most famous and colorful of the Cahuilla Indians, whose home was flooded when the sea came in. For years his wattled "jacal", a home made of arrow weed and mud, and surrounded by Black Mission fig trees, stood beside a spring in the northwest corner of the old lakebed, near the present Riverside/Imperial County line. The spot was identified on the US Geological Survey of 1904, Indio Special Map, as surveyed in 1901. The spring was called "Paltukwic Kaikaiawit', meaning "blue water," by the Cahullas, but it was Figtree John Spring on US maps. When the sea flooded his home he moved two and a half miles north to Agua Dulce Spring, planted more fig trees, and soon Agua Dulce Spring's name was changed to Fig Tree John Spring. The tale of this early day resident of the

shores of Salton Sea is part of the folklore of the Coachella Valley.
At the height of the filling in 1907 the Salton Sea reached the level of 195 feet below sea level, 76 feet above the pre-flood level of the Salton Sink. The deepened Alamo and New River channels acquired a beneficial function as drainage channels for the irrigated Imperial Valley on both sides of the border. Drainage waters kept the Salton Sea alive.
By 1925 it had subsided to 250 feet below sea level. Increased irrigation plus industrial and sanitation wastes from the region south of the border had brought the water level up to 228 feet below sea level as of July 1987.
The Imperial Irrigation District, with power to tax, was formed in 1911. In 1912, it bought the California Development Company from receivership and took over the responsibility of diversion and distribution of water within the Imperial Valley. Not until Hoover Dam was built were the problems of levee maintenance and silting overcome.
George Keenan, in his book, The Salton Sea, reminds us of the lack of suitable thanks given to E. H. Harriman for the courageous role he played in this saga. Keenan speculates: "Perhaps Mr. Harriman was not entitled to credit, for the reason that the work in the field was done by the Southern Pacific Company and its engineers. this was not the view taken by the company and the engineers themselves. If Mr. Harriman, personally, had been asked who finally controlled the Colorado River and saved the Imperial Valley, he undoubtedly would have replied: 'Epes Randolph, H.T. Cory, Thomas J. Hind, C.K. Clarke and their associates.' But these gentlemen have publicly said that the driving power behind their work &emdash; the one thing that made it successful, was the invincible determination of their chief...C.K. Clarke said, 'The writer desires to put on record the fact that the accomplishment of the work was due primarily and exclusively to the independent judgment and courage of Mr. Harriman, who persisted in his belief that the breaks could be closed, and his determination to close them, in the face of opposition and regardless of the positive assertions of a host of eminent engineers that the closure was a physical impossibility.'"

Cutback in the New River Near Calexico. Drop, 23 feet. June, 1906.

The Southern Railroad Tressle

Sailing the Salton Sea

Photo labeled "The 1906 Rise of the Salton Sea - Mrs. E.C. Moore"
From the Archives of the Coachella Valley Historical Society

PART II LIVING WITH THE SEA

Chapter 7

REMEMBERING THE SALTON SEA'S FIRST YEARS
From a manuscript by George Ames

A. 0. Hayward was shingling the roof of his new home. It was to be a nice home. He would be proud of it for many years. --Or would he

Far off, across the open desert, some ten miles to the southeast was a body of water.

Water that shouldn't be there. Water that hadn't been there a year before!

It was the Spring of '07. The Colorado River, during its annual spring rampage the year before had broken its banks and was transforming the Salton Sink into the Salton Sea. All the king's horses and all the king's men--the Southern Pacific Railroad and the United States Government had failed, for nearly a year, to stem the flood. A catastrophe was in the making!

The railroad had already re-routed forty miles of its tracks, from Mecca to Niland to higher ground to the two hundred feet below sea level where the railroad runs today, incidentally. Twenty miles of its old alignment was already under water and another flood season would raise the level of the sea to where it would be lapping at the embankments of the new alignment. To say that the railroad was worried would be putting it mildly. They had already started grading a new routing, starting just above thermal and following the line one hundred feet below sea level and connecting with the existing line several miles toward Yuma, below Niland. And they were running a survey along the sea level line. This line presented real problems, for it ran into the edge of the Mecca Hills, east of Mecca, and, if the water could not be stopped even that line would be under several feet of water eventually! The Southern Pacific Railroad had big problems ... When the water came in 1906, history was simply repeating itself... Left unchecked, the water would, in a very few years time, engulf the entire valley to a point near Bermuda Dunes. Indian Wells might have become a beach town! Hayward's home would have been under sixty feet of water! The Southern Pacific Railroad might have been ruined. With water lapping at the hills on both sides of the valley ... they may have had no place to go.

So they made a deal, with Teddy Roosevelt and pulled out all the stops to save their bacon (oops, I mean their railroad.) As a last resort they built a trestle across the strewn at the break and gathered enormous quantities of fill material and rock at the site. Then came the big try. Thousands of tons of rock were dumped, most of it disappearing into the soft material of the streambed. Then the finale. The last trainloads of rock were dumped, cars and all and the flood was stopped! A. 0. Hayward's house was saved.

At its greatest height the water came within a quarter mile of Mecca. It touched the railroad embankment just below Mecca and at several other spots. The Salt Creek trestle, near the southern limits of the present state park was less than five feet above the water, and the water was several feet deep under the trestle. Hence, one of the wildest stories remaining about the episode is that dining car stewards took to throwing garbage in that water as the trains passed over the trestle and that fish came for the garbage. It is claimed that the fish learned to recognize the vibrations of approaching trains and came to meet them for the feast! That much I can believe. But it is also said that the f`sh learned to recognize the different vibrations given off by the freight trains and didn't bother to meet them! Don't blame me, old timers swear this is true.

Snakes also became a problem. Although the area has never been too badly beset with snakes, the slowly rising waters pushed the snakes ahead of them. We used to hear some wild stories of the "hundreds" of snakes that were thus concentrated. Some of these stories were undoubtedly exaggerations but perhaps not too much so at that!

The waters subsided, about seven feet the first year, five feet the second year, and slightly less each

year thereafter. Low ridges of sand marking each year's regrowth of desert brush in the area southeast of Mecca told this story until development obliterated them. The water, fresh water from the river, rapidly became salty. The lower portions of the Salton Sink contained great quantities of salt. The waters absorbed the salt from the lands it overran. By summer of 1914 the waters were so salty that fish that had come with the river waters were dying. The shores south of Mecca (the water was about three miles away by that time) were bestrewn with dying carp and bass, many of them up to three and four pounds in weight. The stench was real, but no one lived nearby to care.

Ducks were to be had with reasonable effort in flight over much of the lower portion of the valley, but not without effort on the water. The land was so flat, and the soils so soggy that one had to wade through deep mud for a quarter of a mile or more to get to the water. Along the railroad east of the sea, and in the more sandy areas on the west side, where several developments are now, swimming was good, for the few who were there to swim. On the west side one could wade out quite a distance to find deep water, but along the east side, the slopes were steeper and one could dive in from the shore. In this area, in the late teens, telegraph poles still stood along the old submerged railroad alignment, their cross-arms just above the water, providing a diving platform for any who wished to swim out, not over a hundred yards, to them. This was in the portion now in the State Park where the slopes are steepest, near old Salton Station. We seldom enjoyed this, however, because roads were almost nonexistant, and cars of that day needed at least two pushers. You could go by horse-drawn vehicle. A picnic to Salton was an all day affair.

The old A. 0. Hayward house still stands, about two hundred yards west of State Highway 86 at Avenue 57, a silent monument to those few hundred settlers who could watch the Sea creeping toward them, and go right on "shingling the roof".

Chapter 8

MUDPOTS, GEYSERS AND MULLET ISLAND

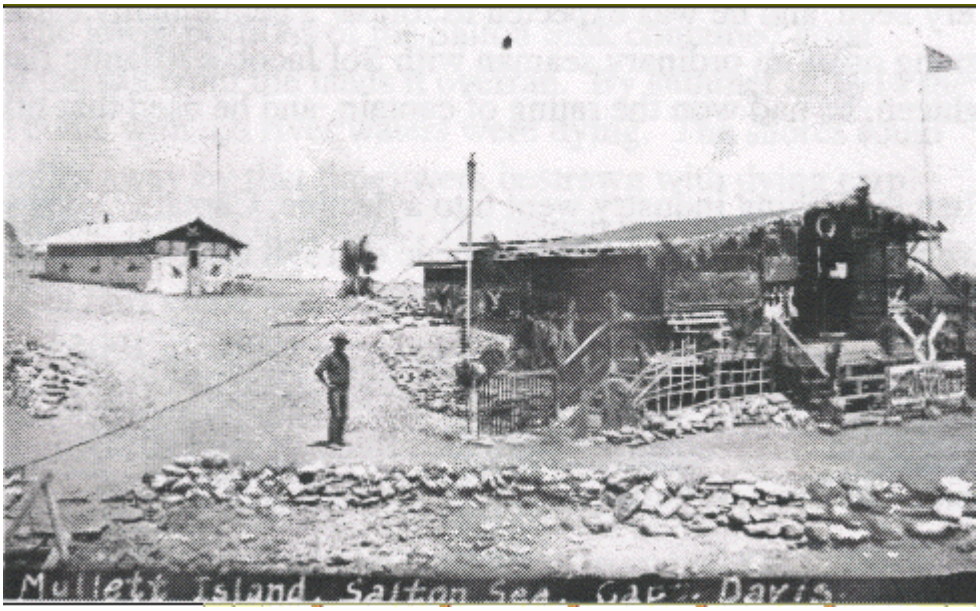
The five buttes around the Salton Sea's southeast shoreline are thought to be extinct volcanoes. It was 1898 when Captain Charles E. Davis, so-called Monarch of Mullet Island, made camp on one of those dead volcanic buttes. To the north stretched a dry, barren, white waste known as the Salton Sink; to the south lay an inferno of hissing geysers and boiling mud pots. There was scarcely another white man in all the region which would ultimately be known as Imperial Valley. Not until seven years later would the Salton Sea transform that rocky knoll into Mullet Island.

Charles Davis was born in Massachusetts, the son of wealthy parents. Servants took care of his every need, and he was expected to follow a gentlemanly career. He shocked his family by signing on as an ordinary seaman with Sol Jacob's Atlantic fishing fleet. By the time he was eighteen, he had won the rating of captain, and he used that title for the rest of his life.

When the fishing industry went into a decline, Captain Davis wandered west in search of adventure. The Alaska gold stampede of 1898 took him to the Klondike. Evidently he was not particularly lucky, for he returned to the states, going first to Texas, and losing everything except

his life in a disastrous flood at Galveston in 1900. In 1905 he was back at his old campsite on the volcanic butte. His nephew, Walter Davis, said, "Uncle Charles had just gotten nicely located and was recovering from the effects of the Galveston flood when the Colorado River decided to leave its banks and flood the Salton Sink."

Captain Charles E. Davis and his Hell's Kichen Cafe, Dance Hall and Boat Landing



Mullet Island Scene

Captain Davis was intrigued with the idea of living on a dead volcano 200 feet below sea level, and even before the wild water had been brought under control he had acquired the butte, now become an island, and had begun construction of his cabin. A hand-painted sign propped against the building proclaimed that this was Hell's Kitchen.

In 1908 he built the boat landing, cafe and dance hall, which were to flourish for nearly a quarter century under his management. During those years, Captain Davis seined and sold his "alfalfa-fed mullet", battled for the conservation of natural resources, released his imported sea lions, launched a stillborn showboat, made a scientific study of the mud pots, acted as game warden, prepared and served shore dinners, took part in county politics, emceed his dances, rented boats to duck hunters and vacationists and roared sea chanties to the delight of friends and visiting celebrities. Clearly several of these activities require explanation!

Imperial Valley residents, interviewed in 1952 for an article by Nell Murbarger which was published in the Palm Springs Villager, remembered Davis as a perfect host. He had a marvelous baritone voice and would sit at the piano for hours, roaring out those old sea chanties and mining camp ballads. He operated Hell's Kitchen as a cafe, dance hall and boat landing, and drove an old white truck completely covered with pictures of game birds that he had painted himself, using the natural pigments of the Indian paint pots dissolved in fish oil. He painted all his buildings with the same mixture. He used to buy alfalfa hay by the ton and feed it to the fish from his boat dock. Folks came from all over the valley to buy his "alfalfa-fed mullet". Sometimes he'd smoke cure it and take a big load to Los Angeles where he would stand at the comer of Eighth and Broadway and hand out samples. He believed that pelicans planted mullet in the inland Salton Sea when they flew in for safety in stormy weather with a pouch full of emergency rations!

One time he purchased a big fishing barge from a drydock in San Pedro and trucked it all the way to his landing. He was going to convert it into sort of a Mississippi River showboat with moonlight excursions and music and dancing. It sank as soon as he put it in the water, and that was that. Another time he got the idea of planting sea lions in the Salton Sea. The climate didn't agree with them and they disappeared one by one. One newspaper clipping reported that farmers suspected that the sea lions were coming out of the sea at night and stealing their pigs!

It would seem that these various projects would keep a man from boredom, but in 1927 Captain Davis became intensely interested in the story of the ill-fated Donner party, who suffered unspeakable hardships on the overland trail to California in 1845 and who perished in the snows of the Sierras that winter. The captain was a painter, and the tragedies of the Donner party were portrayed in large oil paintings displayed on easels around the interior of his establishment. They were extremely realistic, if somewhat primitive, and were certainly an incongruity in that setting of gurgling mud pots, geysers and old volcanoes. Davis actually retraced the entire 2,000 mile trip from Independence, Missouri to Fort Sutter, and the thousands of artifacts, newspaper clippings, photographs, maps and records, even animal skeletons he collected are on display at Sutter's Fort Museum. The overflow he brought back to Hell's Kitchen, to add to the decor there.

Marcia Rittenhouse Winn, writing for Westways in February 1975, tells of going to live on Mullet

Island in the mid-1920s. It wasn't really an island then but was connected to the mainland by a rough dirt road. In 1925 her stepfather, Harry Siegfried, acquainted with the owners of the Southern Sierras Power Company, was made president of the newly-organized Frontier Development Company, which, though actually a subsidiary of the power company, was not publicly associated with it in any way. It was all very hush-hush. At that stage the company was not certain that steam power could be developed on a commercial basis, but the initial reports were encouraging.

"The hissing of steam and the gurgling that came up from some mysterious subterranean discontent were to be an ever present reminder that we were sitting on top of volcanic ground, whose steam vents man could not turn off," said Ms. Winn. The geysers kept a thin layer of moisture on top of the surrounding silt in all seasons. Occasionally there were visits from geologists, scientists, Boy Scout groups and others who came to marvel at the paint (mud) pots and the steaming mud geysers. Ms. Winn quite accurately described her one-room cement walled home as "next to Hell's Kitchen". Duck hunting and fishing supplemented their canned food diet. Only on the days immediately after a trip into Calipatria, thirteen miles away, did they enjoy ice, fresh vegetables and meat.

Drilling operations began March 18, 1927. It was a small-bore test well. On reaching a depth of a little over 700 feet they ran into very hot strata of steam and water, and it was decided that further progress with so small a hole was impossible. The well continued to blow steam and water for eighteen months. Well No. 2 came in on December 1, after a depth of 1,000 feet was reached. It blew in with such violence that for a time it looked like the top of the crater would blow off. It blew uncontrollably for three hours, then plugged. During this volcanic disgorgement it was estimated that over 300 tons of hot mud, exploded shale, pebbles and rock dust were thrown out over the derrick and the top of the island. The force of the explosion and the pressure caused the eight-inch steel casing to bend and twist off, resulting in the plug. During the following weeks, after the well plugged, attempts were made to drill deeper, bypassing the twisted steel and putting down a new smaller casing. Although they drilled to a total depth of 1,263 feet, the well was never satisfactorily brought in. A third well was drilled to a depth of 1,473 feet, but the company decided at this point to go no deeper, and the effort to produce high pressure natural dry steam was abandoned. There was an air of mystery surrounding the whole drilling operation.

The first commercial geothermal well was brought in January 1, 1964, near Niland and a few miles north of Calipatria. This 8100-foot well sent brine and steam rushing to the surface just two and a half months after operations began. The prime objective was to explore the potential of these steam geysers to provide and generate electricity. According to scientists who have studied the area, the Imperial Valley has one of the largest geo-thermal potentials in the world. In times past, a great oozing mass of magma rose in a dome-like structure close to the surface of the now imperial Valley. What vents there were became plugged with hardening obsidian. These plugged vents have kept a great deal of heat close to the surface. In the Imperial Valley there are perhaps 25 square miles of high temperature porous rock associated with an underground sea of very hot brine which must have a source of heat deep in the earth. Evidence indicates that the brine is a combination of water released as the magma cools and an active ore solution containing untold tonnages of mineral salts and metals, including copper, manganese, lithium and silver. These impurities in the steam can cause problems for the turbines, but if a successful way can be found to separate these minerals, they will represent another source of wealth. A drive west from highway 111, between Niland and Calipatria reveals massive structures already utilizing this remarkable natural resource from below

the Salton Sea.

Mullet Island can now be reached by boat from Red Hill Marina. Occasional bubbles rise to the surface from the mud pots which once bubbled merrily for the visitors to Hell's Kitchen. No doubt Captain Davis would be pleased to know that the Salton Sea Wildlife Refuge has been established almost at his backdoor, where magnificent geese and many other waterfowl feed on fields of alfalfa planted just for them. It is a fitting salute to a man who so painstakingly covered the old trails west to help preserve the record of the Donner Party.

Chapter 9

SEA OF DREAMS

A recent movie gave us the unforgettable line, "If we build it, the people will come," referring to the dream to build a baseball field. It was true of the inspiration provided by the Salton Sea, which moved men and women to build the places described in this chapter.

Date Palm Beach

In 1926 a man with a dream came to the Salton Sea. Seeing beyond the barren stretches of sand, he fell in love with the blue water and the tan and purple mountains, and he envisioned fun loving, sun-loving people finding health, relaxation and entertainment on its shores. The man was Gus Eilers and with John Goldthwaite, a Bay area promoter, he secured land from the Southern Pacific Railroad on the North Shore, down toward the sea from the old train stop at Mortmar. It was 250 feet below sea level.

They called their location Date Palm Beach, and planned to develop it using an Egyptian motif. Stationery and folders spoke of a place "mysteriously enchanting, teeming with adventure." Streets were laid out and named. A main building, as imposing as a Near East palace, was pictured.

Eilers described his early years at the beach when his only companion was a pelican named "Pete". He said, "I chugged and boiled down to the beach in an old Model-T from Mecca. It was just a trail and you never knew when you were going to get stuck out there in the middle of nowhere. I hauled all my water from Mecca. I guess in the first few months I was there I didn't see more than four or five people at the beach. I lived in a tent for a good while and didn't even start the first building until 1930. My family stayed in Los Angeles until my two children, Henry and June (Eilers) Hall, were through high school."

Eilers built a small building and a pier out into the water, and began coaxing outboard motor boat racers to the sea. They came, they raced, and they loved it! But, Gus Eiler's oriental paradise was not to be. In 1929 the stock market crashed, and with it the partnership of Eilers and Goldthwaite. Eilers was not to be discouraged. He simply changed the plans for his dream community. He brought in two of the Olympic Village cottages from Los Angeles in 1932, the first of his guest houses, and he built a 200 ft. pier where motor boats were tied up and kept year round. Date Palm

Beach was the place where the official electric timing clock for boat racing was first used.

June and Henry moved down in 1934 to help with the family business. Mrs. Eilers served meals in the rustic community building and loyally used Coachella Valley products-grapefruit juice squeezed to order, date bread with salads and date torte for dessert. The largest crowds came when Camp Young was in operation, during World War U. Eilers said, "We announced that all soldiers could have free swims and we had as many as 500 men a day, with a total of about 150,000 taking advantage of our offer. Patton himself often visited the resort. Incidentally, I got a son-in-law out of the deal, Sgt. Cameron Hall of the Signal Corps in Gen. Patton's Army. He married my daughter, June."

National attention had focused on Date Palm Beach many times. Several movies were filmed there--"Five Graves to Cairo" and parts of "They Were Expendable" and at least two Abbot and Costello pictures. Film stars entertained by the Eilers included Al Jolson, Brian Ahern, and Ronald Coleman. In 1946, Eilers sold his resort to C. Roy Hunter, and moved to his ranch near Mecca. Hunter renamed the location Desert Beach, and a new dream was given substance!

Desert Beach

In a Desert Barnacle article of June 13, 1946, Hunter said, "We (his sons Robert and Kenneth Hunter, and J.S. Stein) are just a bunch of ex-sailors who can't stay away from salt water, so we're going to 'go to sea' on Salton Sea at Eilers' Beach." Hunter himself was in the Navy when Teddy Roosevelt sent the United States Fleet around the world in 1907-08-09. His son, Robert Hunter, for years a cameraman with Fox Studios, was just out of the Navy, having served as a Chief Photographer's Mate. J. B. Stein, another associate in the beach project, was a Merchant Marine Captain. Hunter's other son, Kenneth, was a technician with Technicolor. Hunter, himself, who owned the Royal Date Garden in Indio, was one of the nation's most celebrated cinematographers. He served 20 years as chief cameraman for Universal and then 10 years in the same capacity with Paramount pictures.

On a shopping trip to San Francisco, Hunter was in a ship chandler's office. Asked if he would like to buy a beautiful old wheel off a US battleship, he replied, "I would if you had the wheel off the battleship 'Nebraska', because I sailed around the world on her."

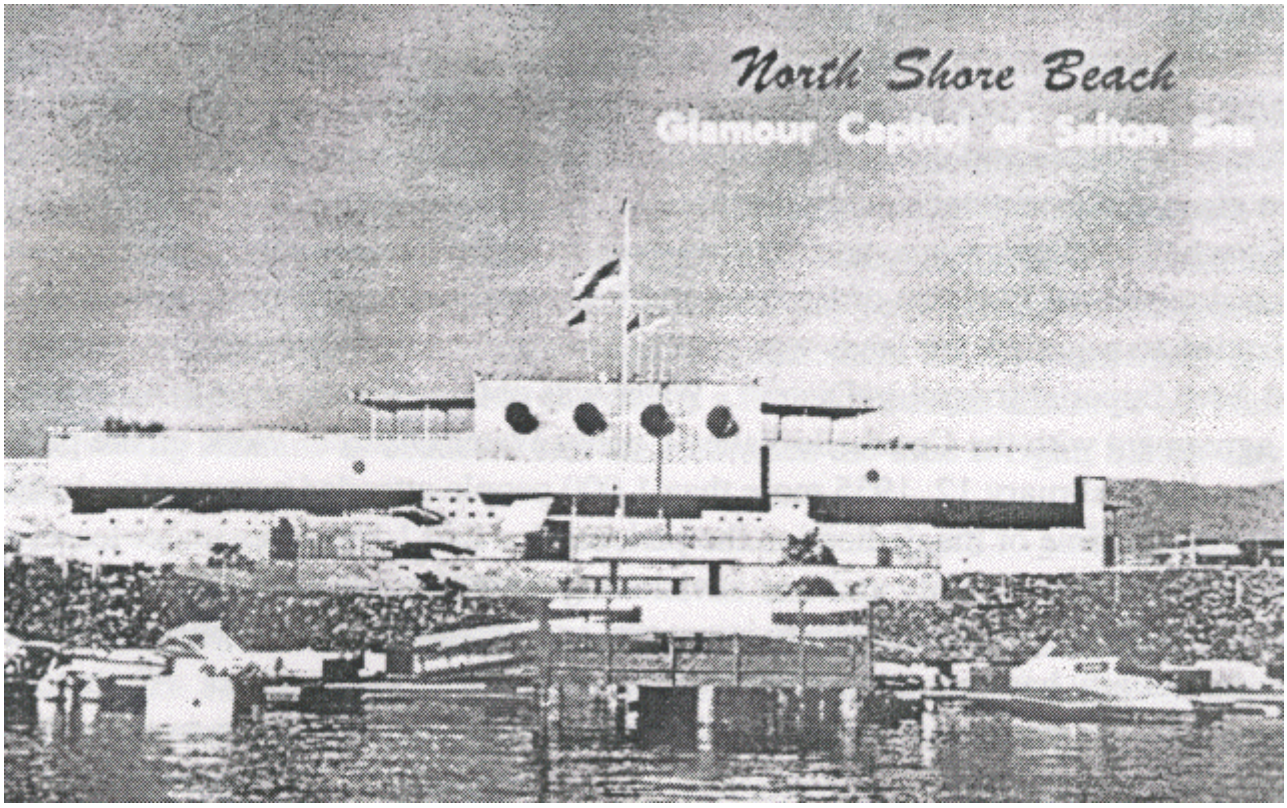
"I've got it," exclaimed the ship chandler. It was a beautiful mahogany and maple wheel with the nameplate " Nebraska" set in it. Hunter bought it and installed it in the clubhouse, renamed "The Wheelhouse." Hunter told the reporter covering his new purchase, "We are very enthusiastic about prospects for the beach down here. Salton Sea is destined to become one of the nation's greatest play spots." He certainly did his best to make it that. The Desert Beach Yacht Club had reciprocal privileges with other clubs up and down the coast. A card from the Portland Yacht Club is in the Historical Society files, attesting to the welcome of Desert Beach Yacht Club members at its Club House and Moorings.

But success eluded the Hunter enterprise. Fed by run-off agricultural waste water, and floodwaters from a series of unusually heavy rain storms, the sea began to rise in 1948, and by 1953 the improvements at Desert Beach were awash. When Hunter had begun improving Desert Beach, the

fear was that the sea would recede, so he built his clubhouse as close to the sea as possible and dredged out a small harbor. Buildings were mostly of cement block construction, on cement slab floors, and not movable. Title to the land included a guarantee by the Imperial Irrigation District, given in 1915, that the sea would not rise above 238 feet below sea level. In May of 1950, the sea was more than a foot above that mark.

C. Roy Hunter died before a lawsuit brought against the Coachella Valley County Water District and the Imperial Irrigation District was decided. Superior Court Judge Bertram Janes awarded $188,000 to the Desert Beach owners in 1960. Judge Janes held that the flooding from 1951 to 1955 was 39% the fault of the CV district and 61% the fault of the Imperial Irrigation District. Salton Sea was referred to in the national press as "The Cruel Sea."

Eiler's Date Palm Beach Resort, established in 1927 was the forerunner of Salton Sea resorts. It flourished until the rising sea took its toll.



North Shore Beach and Yacht Club, opened in 1962, was the show piece of what was to be a 2 million dollar marine paradise - the largest marina in Southern California

North Shore Beach and Yacht Club

It was 1958 when developer Ray Ryan and Trav Rogers bought the land that is now the town of North Shore. They began selling plots of land for homes and in 1960 began building the North Shore Motel and the North Shore Beach and Yacht Club, which opened in 1962. It was described as a $2 million marine paradise with one of the largest marinas in Southern California. Gladys Fei, publisher of North Shore News, says that for the next decade, North Shore was a "swinging" place. Ray Ryan's oil millions backed a very unique Yacht Club in the middle of the desert. Mrs. Fei says, "This was a very, very popular place. The Beach Boys would come out. And Jerry Lewis had a boat here, and so did the Marx Brothers. There were big boat races, and parties and dances. Clubs and organizations from all over the Coachella Valley came for meetings and parties."

Like most of the other locations around the Salton Sea, fluctuating water levels and flooding created problems. In 1981, North Shore suffered from a severe flood which wiped out the jetty at the yacht club, making it impossible for boats to dock there. The main clubhouse was closed and has yet to reopen. Homes dot the hills above the water, their residents either retired or commuted to valley cities for work. The views are spectacular and it remains to be seen whether or not a solution to the high salinity problem will bring back this once glamorous resort.

Salton Sea State Park

Continuing down the eastern side of the sea, just south of North Shore, Salton Sea State Park comes into view. At its dedication on February 12, 1955, it was noted that it was the second largest in the state, and would probably be the greatest single spur to the development of the Salton Sea as a great inland recreational area.

Curiously enough, comments made at a 1947 Coachella Valley Union High School faculty picnic at the approximate site of the present park headquarters on Hwy 111, led to action by the Coachella Valley Sports League that culminated in the establishment of this new state park. Forty years before, in 1907, a commission formed to study the sea concluded gravely that the sea would gradually evaporate and cease to exist in 18 years. Scientists are willing to admit that there was an error in the original calculations! Efforts by Coachella Valley groups, and the Riverside Board of Supervisors to interest the State Park Commission and the Division of Beaches and Parks succeeded. It was in November 1949 that authorization to negotiate for lands was given. The original development consisted of 510 acres leased from Imperial Irrigation District. Water was obtained from the All-American Canal, through an agreement with the Coachella Valley County Water District. Work on the park started in July 1952 and on February 12, 1955 more than 1,000 people attended ceremonies dedicating the new park. At the time of the dedication the park service had 1,880 acres under lease, plans for extension into Imperial County and was envisioning a sea shore frontage of 17 miles. Since that time, facilities have been continuously improved and expanded, and a truly wonderful recreational opportunity has been placed at the disposal of visitors year-round. Almost 50 years later, this dream for the sea continues to give pleasure to thousands of visitors every year.

Bombay Beach

Typical of several private developments along both the east and west sides of the sea is Bombay Beach, about fourteen miles south of the state park. A permanent community of small beach homes

and mobile homes is swelled in the winter by retirees in motor homes seeking the sun and good fishing. Their dreams are fulfilled here.

Salton City

Probably the most ambitious of the Salton Sea developments is Salton City, founded in the late 1950s by A Penn Phillips, fresh from successfully developing the high desert community of Hesperia. Busloads of prospective residents were brought in to see and buy in this state-of-the art planned community. It was described as a "wondrous playground of swimming pools, beaches, harbors and golf courses." An article in the Indio Daily News of September 29, 1964 states that $20,000,000 had already been spent establishing a vast network of roads, sewer lines, power lines and water mains. Some 15,000 persons already owned property in this new city according to the Holly Corporation, which took over the project in 1961. The first nine holes of a championship golf course were opened in 1963, and construction of the second nine holes was begun. A brochure pictured professional golfer, Tommy Bolt, on the course as one of the professional tournaments was underway there. Golfers Desi Arnaz, Harry James, Johnny Weissmuller, Johnny Dawson and Ellsworth Vines all praised the golf course. Showpiece of the development was the $500,000 Salton Bay Yacht Club. A 3,500 foot landing strip was built immediately as part of a proposed complete airpark. Commercial buildings including a large motel, restaurant, service stations and stores were built. District News, published by the Imperial Irrigation District, in their June 1959 issue, concluded in their article entitled "Miracle Salton City by the Desert Sea", that every factor indicated that Salton City's growth should continue to accelerate, resulting in the most popular sea resort in all of Southern California.

It was not to be. Although many lots were sold, few homes were built. The fluctuating sea, and the condition of the water made it less attractive to water-skiers, swimmers and fishermen. In the 1970s, Linda Dresser, widow of developer Arthur Dresser, took over the former Holly House restaurant and turned it into a casino, catering to the 10,000 plus motorists passing Salton City daily on Highway 86. A newspaper article of March 21, 1976 called the casino a shot in the arm for Salton City, but the stimulus was only temporary. The casino sits abandoned and the yacht club is in ruins, partly underwater. Salton City's present day residents love their relatively small community, where a Par 3 Golf Course is a popular replacement for the tournament courses envisioned by the original developer, but the city is a far cry from the dream of M. Penn Phillips. The setting remains as beautiful as ever, and when the time is right, Salton City may become all it was intended to be.

Salton Sea Beach-Helen's Beach House

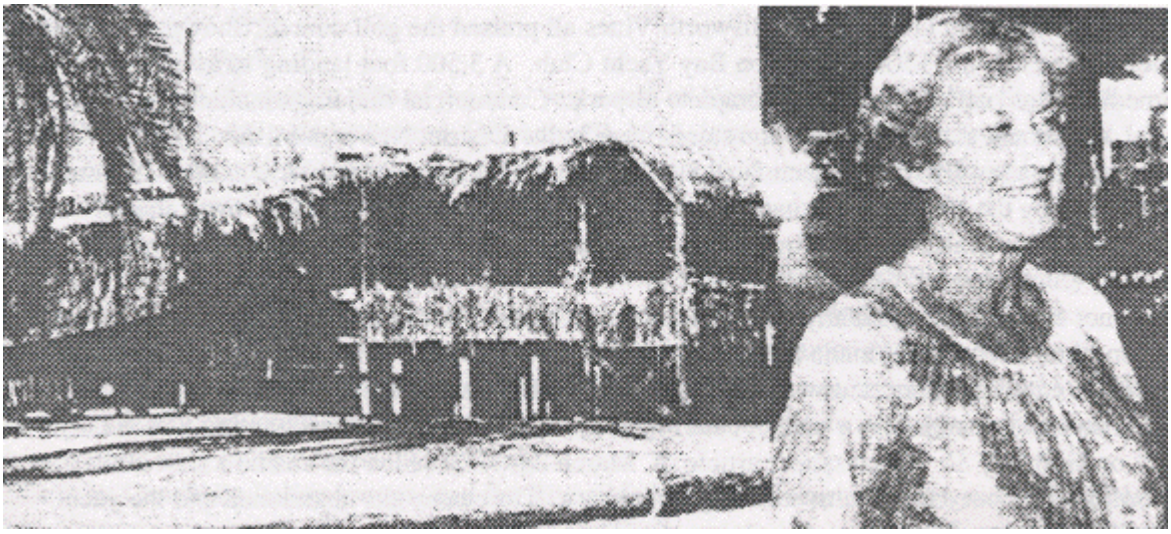
Helen Burns first came to the Salton Sea as a child. Her father had purchased property on the western shore in the 1920s and in a 1985 interview she told a reporter, "I never saw anything so beautiful. The sun was shining, the sand was white, and I knew this was the place I wanted to live." After graduating from San Diego State and living several years in Hawaii, she returned in 1947 to her father's land by the sea. There was no electricity and water had to be hauled from two miles away, but she and her two daughters, aged 4 and 6 months old, made it home. Helen's Beach House grew from a small snack and souvenir stand she planted at the edge of the sea. She told of driving a beat-up Chevrolet truck to Indio for ice-a 28 mile run. She said, "I used to throw wet towels and

sheets over the lids to keep them cool." Back at the beach, it took hours to chisel the huge ice blocks into small chunks that cooled the soft drinks at her snack shack.

Many of Helen's first customers were undocumented workers from Mexico, making their way into the valley to find work. In the 1950s tourists and real estate speculators began coming to the sea, and Helen's Beach House was the place to go. There was a steady stream of cars pulling boats and trailers to Helen's on Friday night. It had grown into a restaurant, nightclub and boat marina. Helen threw parties for the crowds. There were luaus, jam sessions, beauty contests, long-distance swimming events and speedboat races. People came in their RVs. Water skiers flocked to Helen's place to participate in the competitions she arranged, with as many as 150 contestants taking part. In 1958 she began to publish a small newspaper, the Salton Seafarer, designed to bring the communities around the sea closer together and to keep the image of the sea before the public. Anything that had to do with fighting for the Salton Sea, she did.

Three times the Beach House moved inland because the sea lapped over its foundations. When it burned on June 28, 1979, her daughter, Donna, a staff writer for the Press-Enterprise, described the first hours after the fire in these words, "In the first hours after the fire, Helen did consider giving up. When she returned to the rubble of her restaurant, she saw her usual beach crowd sitting on burned benches drinking beer. Friends and neighbors, among them retired builders and electricians, had dumped loads of sand in the flooded areas of her beach front, built an awning of palm fronds onto a small temporary building, hooked up electricity and water and brought in a sound system. Old-timers, dancing in the sand under the stars the night after the fire said it was just like Helen's place in the '40s."

Helen Burns died of a heart attack on May 31, 1994, delaying a trip to the hospital until she completed work on the June edition of her newspaper. "The last thought on her mind was to get the paper out in time for the election", said her daughter, Donna. More than 300 friends and family gathered for a memorial service at the water's edge at Salton Sea Beach, on the sands Helen loved, to bid goodbye to this energetic, dedicated lady.



Palm frond-covered building is Helen's Beach House as it appeared in the 1950s and 1960s

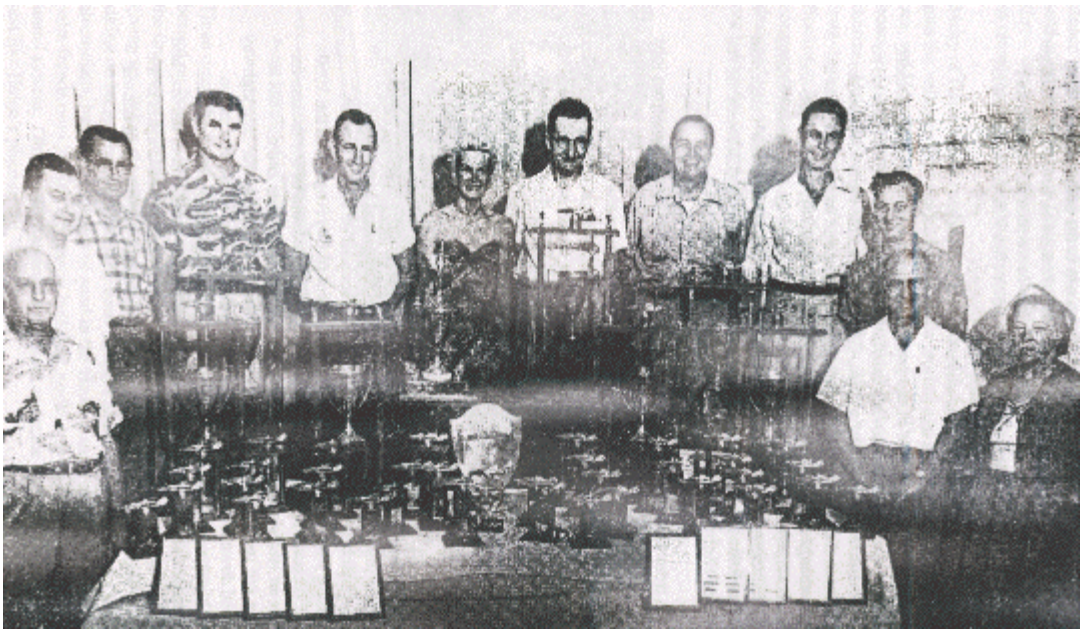
Desert Shores

Just north of Salton Sea Beach on the west side of the sea, is the community now called Desert Shores. If you happen to look for this spot on an old map, what you will see is Fish Springs, so named for the small fish that surfaced in the wells there. Developers in the early '50s, before good fishing was established in the sea, thought the appeal of boating and water-skiing was a better drawing card. They changed the name and promoted the area as an attractive week-end get-away location. When corvina and other game fish were established in the sea, Desert Shores became very popular as a fishing spot. A five-fingered marina was built at the water's edge, and mobile homes lined its waterfront lots. A residential community was developed between the sea and Highway 99 (now called Highway 86).

The property up the slope from the sea has continued to be a safe home to commuters from jobs in the upper Coachella Valley, as well as retirees and weekenders. Unfortunately, the waterfront property has suffered from the rising of the sea. Wind-whipped waves, crashing over the concrete block embankments built by residents to protect themselves, became an all too familiar sight. Desert Shores participates in the Community Services District which includes Salton City and Salton Sea Beach, and its residents, too, look forward to the day when fluctuations of the water level and the high salinity problems of the sea will be things of the past, and this beautiful area will enjoy well-deserved popularity.

And the dream go on--

While the communities mentioned here represent concrete expressions of the dreams people have dreamed for this unique inland sea, many, many others have expressed ideas for its preservation and use. The Coachella Valley Historical Society received in 1994 a box of clippings and correspondence from Miss Mary Taberoff, a resident of Los Angeles in the 1960s and 70s, and the owner of property near the sea. It was a fascinating account of her dreams for the sea and her persistence in seeking help from everyone from local residents and officials to President Lyndon Johnson and members of his government. She envisioned a four-lane highway around the sea, sand moved down from the upper valley to create beaches, planted to native palm trees, and elaborate hotels with helicopter service to Palm Springs. She was greatly concerned with the environmental impact of energy development at the south end of the sea, and with the deteriorating quality of the water. Fortunately, in 1994, Saving the Sea is again in the public eye, and hopefully action will be taken to turn dreams into reality for this great natural resource.



READY FOR REGATTA--Sponsors of events in the 14th annual national championship Salton Sea Regatta, which will be held October 16, 17, and 18, are shown here with the trophies which they will award to winners. They are (from left) Roy C. Ruby of the Pen-Go-Inn Motel; Joseph Zaboy, Valley Motors; Morris Garth, Morris Lincoln-Mercury; Charles Gillett, Plaza Hotel; Kenny strickland, Union Oil Station; Helen Burns, Salton Sea Beach Resorts; J. Garwood, Garwood's Oasis Station; Kay Olesen, Imperial Motors; Frank Cavanaugh, Cavanaugh Electric; Charles J. Wameling, Desert Bank; Howard Carr, president of the Indio Lions Club, and Mrs. Roy C. Ruby. Two other donors, Hilma Lawrence and Maurice W. Johnson of the Sans Souci Restaurant, are not shown. --Gillman Photo

Chapter 10

SPEEDBOATS IN THE DESERT

"Low barometric pressure and greater water density make the Salton Sea the fastest body of water in the world for speedboat racing," proclaimed an article in National Motorist for January-February, 1950. The article goes on to say that during October a Speedboat Regatta, sponsored by the American Power Boat Association, is held at Desert Beach, the Sea's principal resort. That's 20 years after a Salton Sea Race Program made the front page of the Coachella Submarine of December 13, 1929. Much of the credit goes to a small group of local enthusiasts. These "dry land sailors" started racing on the sea, then took their boats to Elsinore and elsewhere, and sailors from those places started coming to the sea. There were no graded roads down to the sea, and just getting to the water was an adventure. Mecca was the "jumping off point', and Mecca farmers were called upon with regularity to pull out stalled cars. Locals also laid out the racing courses. Ted Gordon rigged up a raft with his own version of a pile driver and with two transit men on the beach to

center them, the volunteer workers drove two inch pipes in water ten to fifteen feet deep to make two of the best courses in the country. The Salton Sea Boat Race of December 14, 1929 was particularly exciting because rough waters at regattas at Lake Elsinore and Long Beach that year had kept down speed and there was great expectation that records would fall at Salton Sea. Prizes included the $450 Mackay Circuit Trophy, the $400 trophies awarded by Richfield Oil Co., and the $500 Warren S. Ripple prize, offered for the first Johnson motor to make 50 miles per hour. Both days promised to be busy ones. A loud speaker truck from one of the large oil companies was to be there to announce results as soon as the boats crossed the finish line. Boy Scouts would serve refreshments. This was to be the first race in which Eastern boats and pilots had entered competition with the West, and rivalry was expected to be keen. A follow-up newspaper article of December 16 reported that about 2,000 people attended the event, "mostly outside people with not as many locals as expected. There were five new world records set at this Salton Sea event.

Local racers were active in competition outside the valley. In the same newspaper which reported the upcoming regatta on December 14 and 15, 1929, there was a front page article entitled, "Covington Wins Famous Trophy." Mr. Covington was reported to have the coveted O.K. Hunsaker Trophy, valued at $300 on display in the window of the C.O. Murphy sporting goods store in Coachella, so that the public may look it over, and see that local yachtsmen are on the job in the outboard racing game.

Don Pearson recalls personally the early days of boat racing on the Salton Sea in these words: "It was in the late 1920s that hydroplane racing was innovated on the Salton Sea. The low altitude was thought to be ideal for carburetion and there was talk that this was the 'fastest body of water in the world.'

"Three local men became involved in hydroplane racing and the Salton Sea Yacht Club was organized to sponsor these races. My dad, A.L. Pearson, had his grocery store, C.L. Covington had the meat market and C.E. Murphy had a feed store. My dad named his boat the "Desert Kid", C.L. Covington was the "Diamond C" and Murphy was the "Shamrock". They raced at Lake Elsinore as well as Salton Sea.

"There were some "monied" people traveling this circuit and it soon became apparent in 1929 that small business-men did not belong. Loretta Tumbull, whose father was a judge in Monrovia, was perhaps the first girl to receive recognition as a hydroplane racer. Rodney Pantages used to show up with his wife, driving their "Cord". Bobrich, of Bobrich's Ammonia also sponsored boats. Perhaps the most amusing race was one in which my brother, in our relatively slow boat, nearly won from two of the most noted racers. They became so intent on each other that they missed the course, but they recovered in time to correct their mistake and just beat my brother by a few yards.

"In an attempt to break the mile straightaway record, my dad built a Sea Sled. It was rectangular in shape and very small, light and tapered in a manner that when it began planing, only the very back of the boat would be in the water. He constructed the bottom of fibre-board, which was easily shaped. The day of the testing arrived and we were on the Hwy 99 side of the Salton Sea. The only steering mechanism was the shifting of one's weight from side to side. A couple of trial runs were satisfactory, so, with stop watch in hand, he tried it for fun. It was at the half mile post, nearly in front of us, that part of the bottom came off. A geyser erupted probably 30 feet in the air. The boat

began sinking almost immediately, but fortunately in shallow water. Dad jumped in and held the motor up out of the water. When we waded out to help him, his stop watch was in his mouth!

"I recall two occasions of near tragedy on the Salton Sea. One Sunday two or three members of the Covington and Pearson families boarded the launch of Eddie Ruoff for a trip to Pelican Islands at the lower end of the sea. It was necessary to anchor the larger boat some distance from shore and commute in a small boat which was then towed behind. After visiting the sandy islands and observing the waterfowl, we started the return trip just about dark. Ray Covington and I had been riding on the prow of the boat when the wind suddenly came up. The sea became very rough and we joined the rest of the group underneath the canvas. Before we made it back, waves over 8 feet were crashing on us. It was a frightening experience.

"On another occasion, three hydroplanes left from the south side and were going to the salt works, which could be identified by poles and other landmarks. I was riding with my dad in his boat. On the return trip, again after dark, we had no lights but Curly Murphy had a spotlight on his boat. We were ahead of Murphy and about half way back when he increased his speed to take the lead. With his spotlight on us he ran over the back of Dad's boat, on an angle, and knocked the motor loose from the transom. Dad grabbed it and when Murphy circled back with the spotlight, we were able to reconnect the motor and it still ran. Our only guess was that he was holding elsewhere when he ran us down."

The temporary motor boat club which had been sponsoring Salton Sea events formed a permanent organization in 1929. The organizational meeting followed a dinner served at the Desert Tavern. Officers elected were C.O. Murphy, Commodore; A.L. Pearson, Vice Commodore; A.T. Sclater, Rear-Commodore; R.K. Widdecomb, Sec. Treas.; Board of Directors, C.L. Covington, L.J. Yost, T.H. Rosenberger, H.P. Shumway and H.W. Postlethwaite. Initiation fee was fixed at $5 and dues at $6 per year.

At first the boating fraternity from elsewhere tried to get the Salton Sea disqualified as being unfair. To this, George Ames replied, "It's water, isn't it?" By the mid-thirties Kent Hitchcock from Balboa and others popularized it sufficiently to attract national attention and backing by the National Power Boat Association. Then the best boats and drivers in the country were lining up to participate.

The 1948 Regatta was sponsored by the newly organized Desert Beach Yacht Club. It was a massive undertaking for a small club, and the files turned over to the CV Historical Society tell a remarkable story of a club with dues of $10, per year and fifty members putting on an event of national importance. M-G-M newsreel and Life Magazine and scores of other magazines and papers sent reporters. The files reveal letters to Paramount Pictures and Warner Brothers requesting the presence of their film crews, starlets, or whatever assistance they could render to lend glamour to the events. Instead of money, the prizes were trophies, and local businesses and organizations provided them. The Official Program for the 1948 Regatta, October 15-18, 1948 noted that Event 30, scheduled for 3:30 PM on October 17th, was "The Gold Cup Class." It went on to say, "Gold Cup Record: Guy Lombardo. Speed: 118.229 mph for one mile on the Salton Sea. These boats are among the fastest in the world. They are up to forty feet in length, weigh up to 2 1/2 tons, and are powered by motors developing as high as 1500 horsepower. They are temperamental, dangerous

and spectacular. It is not uncommon for boats of this class to clear the water for distances of sixty to eighty feet. On these occasions, only the perfect balance and ballast of the craft, together with the driver's skill will keep them from capsizing ... Trophies by Glenn Gurley Buick, Indio."

The trophies were called "cheap" by some of the winners. "Neither the businesses, nor the yacht club members were to blame", stated letters of apology to winners, written by Kay Olesen. He went on to explain that this was the first year the Desert Beach Yacht Club had been in charge, and they simply didn't know what was expected. A telegram saved in the yacht club files, dated October 4, 1949 reads,

"K OLESON=IMPERIAL MOTORS=INDIO CALIF= SENDING LARGE CUP EXPRESS TOO LARGE FOR GREYHOUND ... ED BATHKE"

Apparently the 1949 trophies were of adequate size!

A local newspaper reported just before the highly successful 1949 Speed Boat Regatta, "The unlimited world speedboat record tottered precariously today with the disclosure that a flock of the nation's 'hottest' Gold Cuppers were committed to the ninth annual Salton Sea Regatta October 7,8,9, and 10 at Desert Beach. Heading the announcement made at a meeting of the Desert Beach Yacht Club last night at the Indio Hotel was the news that Henry J. Kaiser, Jr. had given his assurance that his famed industrialist father would enter two great boats--'Hot Metal' and 'Aluminum I'.

"Both of the craft are radical in design. Powered by Allison airplane engines, skilled engineers have made corrections that they hope will blast away the present world standards on the course 33 miles away from the Kaiser iron mine at Eagle Mountain. 'Aluminum' is now in Detroit, while the other craft is up at Oakland.

"The American Power Boat Association has assured the club that automobile magnate Horace Dodge of Detroit will also have a topnotch entry in the regatta. The Dodge colors will be flown by either 'My Sweetie' or 'Delphine X'. These boats each pack two 710 horsepower Allison engines. 'My Sweetie' won both the Gold Cup and National Sweepstakes this year at Detroit and carries its propeller midships.

"'Skip-a-long', already entered by Stanley Dollar of the Dollar Steamship Lines of San Francisco, will not appear at the regatta. The club was informed that the boat, winner of the Hamsworth trophy at Detroit, is now at the bottom of Lake Tahoe.

"Another Lake Tahoe casualty was 'Hurricane IV,' prospective entry of Morlan Visel, multimillionaire Los Angeles attorney. It had broken many Gold Cup records. However, Visel flew down to Desert Beach in his private airplane Tuesday and said he would bring three of the new 48 cubic inch class which will run the first national championships here in competition with twelve other boats from Texas.

"'Such Crust I' entered by Jack Schafer of Detroit holds the All-American class record of 126 MPH set at Gull Lake, Florida. Its drivers will be two brothers --Gene and Dan Arena. The Schafer entry

was edged out by "Skip-a-long" for the Hamsworth Trophy this year. The American Power Boat Association has warned the Yacht Club that it must be prepared to handle 300 entries for the four-day regatta."

Coachella Valley's own Dr. Louis Novotny was always a popular competitor and in the 1950 regatta he drove hisPacific One Design hydroplane "Cherub II" to a new five-mile competitive mark, 54.545 mph.

The 1950 Salton Sea Regatta was sponsored by the Southern California Speedboat Club, The Los Angeles Speedboat Association, and Roy Hunter, of Desert Beach. The program states "the Regatta this year is being conducted on an emergency basis. When it appeared that cancellation of this year was certain, last minute arrangements were made to get the races on the water. The courses at Desert Beach are famed ... More records have been established here than at any other course in the world in the history of boat racing."

The 1951 Regatta, again held at Desert Beach, called "The South Seas of the Desert" on their letterhead, resulted in 21 World Records Subsequent boat races were held at other beaches, and ultimately on the west side of sea at places like Helen Bums' Salton Sea Beach. It was not all serious, either. The Daily Enterprise of January 5, 1970 had headlines proclaiming, "Salton Sea's bathtub race turns out to be a runaway." A bathtub race it was-and according to Bill Bryan of the sponsoring Indio Jaycees, "we want to keep it loose so people can have fun." The exact number of official entries could not be determined, but the obvious winner, Danny Wegar skimmed the 25 miles to the east shore and back in one hour and four minutes. For his pains, he received a gold-plated plumber's friend and one-fourth of all entry fees. The second and third place finishers didn't come in until nearly two and one half hours later. Thirty entrants had been expected, but only nine tubs actually started. Technical difficulties plus second thoughts about actually taking a bathtub out on Salton Sea apparently took their pre-race toll!

"Hurricane IV" was always a popular entrant.

Swimming and boating attracted crowds from all over Southern California and was popular with locals as well. Pictured is Coachella Valley High School coed Peggy Rue Julian with the ship's wheel which became a focal point in "The Wheel House".

Chapter 11

FISHING THE SALTON SEA

The fishermen who first used the earlier manifestations of the Salton Sea were the Indians. Each time the Colorado River turned the Salton Sink into a freshwater lake, the fish swept along with the flood waters prospered for a time and were a food source for the native people of the area.

Indian legends and oral history tell of fishing on the shores of a great body of water that "little by little" went away.

At the west end of Avenue 66, near the Valerie Jean corner, there are unusual circular formations of rocks 50 to 100 feet up the rocky slopes below the travertine covered rocks that mark the old beachline. There are actually several levels of these so-called "fish traps", indicating that there may have been tides which regularly raised and lowered the level of the sea and made the traps effective fishing nets. This theory is disputed by those who believe that the circles are simply the foundations of homes. The tide theory causes one to have to believe that the rock circles were built at a much earlier time, when the sea was really the upper end of the Gulf of California, subject to ocean tides. Current wisdom holds that they are definitely man-made structures and probably were fish traps, flooded in an unknown manner.

The fish the Indians caught were probably those carried in by the Colorado River. Even today, salty as the sea is, there are a few carp, blue gill and catfish found in Salton Sea around the freshwater inlets such as the Whitewater drain and the Alamo and New Rivers.

Mullet from the Gulf of California used to migrate up the Colorado River. When Imperial Dam was constructed the mullet's path was blocked and most mullet died out. The commercial mullet fishery petered out in 1953.

The State Department of Fish and Game recognized the recreational opportunity offered by this vast inland sea and as early as 1929 introduced striped bass from the San Joaquin River and in 1930, from San Francisco Bay. None were ever recovered. Pile worms and mudsuckers from San Diego Bay were introduced to provide food for the bass. Even though the bass didn't make it, the pile worms and mudsuckers did and they proved in-valuable as the effort continued to find a game fish for the sea. It has been suggested that the pile worm is the basis on which the whole food chain is built and without it, the chain would collapse.

In 1934, 15,000 silver salmon fingerlings were stocked in Salton Sea, and they all disappeared.

A major effort to establish a sport fishery began in 1948. Freshwater Fisheries Biologists Willis Evans and Phil Douglas and Marine Biologist John Fitch led the program. In 1950 they decided that introducing one species at a time was too time-consuming. They moved to plant every popular species that they could net out of the Gulf of California. The fish were transported by tank truck to the Salton Sea.

Gulf croaker, orange-mouth corvina and gulf-fin corvina were successfully transplanted and they proceeded to multiply. The small gulf croaker became an excellent food for the corvina. Less successful were halibut, perch, smelt, anchovies, sardines, tortuava, squid, clams, mussels and two kinds of oysters.

By the end of 1951, 34,000 fish of 35 different saltwater species, had been transported from the Gulf of California and planted in the Salton Sea. This was the year that sargo were first successfully transplanted into the sea, and sargo became the second saltwater game fish to thrive in the sea.

A UCLA research group came into the picture in 1954. The Department of Fish and Game could only determine that corvina and gulf croaker had survived and they needed help. Dr. Boyd Walker, Dr. Lars Carpalon, and Dr. Richard Whitney, and Biologist Richard Linsley went to work on the

project. A total of 2,289 corvina were transplanted into the sea. By March of 1957, the researchers were netting 2 inch and 3 inch baby corvina, obviously hatched in the Salton Sea. A baby sargo was netted in a beach seine in the fall of 1957 and the biologists were greatly encouraged. By October, large numbers of corvina, weighing 1 1/2 pounds each were showing up in research nets and the Salton Sea population was estimated at 1,000,000 fish.

Now the problem was how to catch them. Enthusiastic anglers found that a wobbling spoon tossed into the shallow waters around Bombay Beach and the mouth of Salt Creek produced catches averaging about 10 pounds per fish. Live mudsuckers worked well in deeper waters in midsummer.

In September 1958 an employee at the US Salton Sea Base took the first known catch of sargo with fish up to 12 inches in length.

A recurring problem at Salton Sea is the summer phenomenon of decaying organic material at the bottom of the sea creating a "green tide" situation. Resulting oxygen depletion kills the gulf croaker and other fish as well, and their bodies line the beaches.

An on-going fisheries management program has made Salton Sea one of the best and liveliest fishing areas on the West Coast. The largest corvina caught by 1972 was 32.6 pounds. Many 20 pound fish are caught. There is no closed season so corvina are caught every day of the year. The best fishing is from boats, but a wind warning is given. Winds come up quickly and unexpectedly on this vast but shallow inland sea. Even experienced locals have lost their lives in a sudden storm.

Chapter 12

WHERE BARNACLES GROW ON THE SAGE

John Hilton, writing for The Desert Magazine in the early 1940s, remarks on the paradoxes that are the Salton Sea. It is a sea below sea-level. On its shores you can collect wood that sinks and rocks that float. At its southern end are geysers of hot mud near gas wells that are used to produce one of the coldest substances on earth--dry ice. Now add barnacles on the sage and salt bush that line its shores. Where in the world did barnacles come from?

Hilton recounts some of the strange sights which World War II brought to the Coachella Valley, not the least of which was the appearance of a large boat making its way slowly down what was then called Highway 99, at the Valerie Jean corner. His own art studio and shop were directly across the street. The boat was being drawn by a giant truck, which was heating up and the driver stopped in the parking lot to let it cool off. Hilton asked the driver why in the world he was pulling a boat across the desert in the middle of summer, and the answer was, "I'm taking it to the Navy base."

That still puzzled Hilton, thinking he meant the base in San Diego. In complete disgust the driver explained, "Ain't you heard of a naval base right here on the desert? And don't go asking me why. I'm a peacable man but I've answered more fool questions since daylight than I've heard in 12 years

in the heavy trucking business."

There had been vague rumors that the navy was using the Salton Sea for certain training and there were even occasional flying boats circling the valley, but most residents thought the mention of a naval base on the Salton Sea was a gag to be classed along with the report of a German sub in Lake Mead, back of Boulder Dam.

It soon became apparent that the Navy was definitely moving in. Other boats trundled past Mr. Hilton's studio and more and more Navy planes flew over the valley. The Eilers family at Date Palm Beach were surprised one day to have a big P.B.Y. circle, land and taxi to the end of their pier. In a short time, this was also considered a "Navy Base." When a plane seemed to be heading their way, Mrs. Eilers and her daughter, June, would put a coffee cake in the oven and brew a pot of coffee and by the time the flying boat was anchored, the refreshments were ready for the crew. Flying boats came and went, and small craft towing targets could be seen out to sea. Navy officers lounged in the small dining room. One valley rancher who came down for a swim remarked, "Anything can happen now. It wouldn't surprise me if barnacles started growing on the sagebrush." And that is just what happened! Actually, pieces of brush, washed out to sea became home to the tiny barnacles, and shrubs at the water-line offered a place for the barnacles to attach themselves and go through a sort of metamorphosis. Once attached, they stay there for life.

There were two theories as to how the barnacles got there. Some held that they came in on the boats or bouys that were hauled over from the coast. Others blamed the seaplanes. One young flyer told Mr. Hilton that it was not uncommon for the R.B.Y. boats to pump their bilges in the Salton Sea. The water might have come from any point in the ocean from San Diego Bay to the South Seas. The barnacle larvae might have survived between the fibers of a wet coil of heavy rope hastily brought from San Diego. However they came-they stayed and they thrived. Today barnacles line the beaches, cover rocks and pilings and generally make recreational use of the sea more difficult.

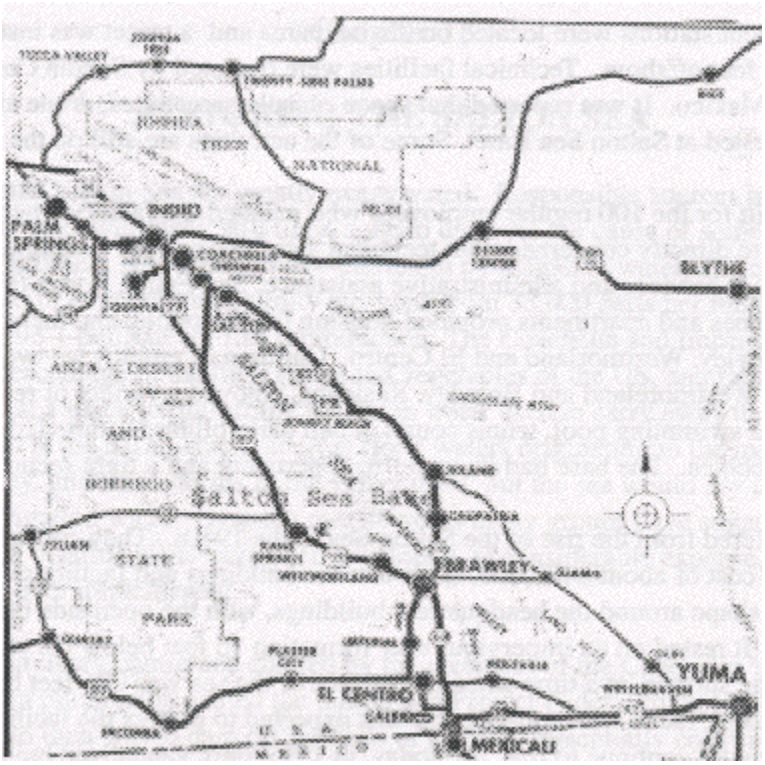
Where was this not-to-be-believed naval base in the desert? Little was written about it in World War II era newspapers, probably for security reasons. The naval base itself was located on the southwest shore of Salton Sea, four miles east of the present Highway 86. It was in the Salton Sea Wildlife Refuge at a point previously designated as Sandy Beach. It covered an area of 81 square miles, two-thirds of which was over water. The nearest town was Westmoreland, 27 miles away. Indio was 47 miles to the north.

An area just east of the headquarters buildings is reported to be the location where the movie "Wake Island" was filmed. Buildings and a landing strip constructed for the film were used for several years afterward. The base was headquarters for a torpedo and skip bombing range. Local residents remember finding scrap lumber washed up on beaches on the east side of the sea, probably from targets and other construction projects at the base.

In September, 1946, the base was taken over by the Sandia Corporation, and operated for the Atomic Energy Commission. The Salton Sea Base, as it was called, was used primarily as a bombing range for non-explosive ballistic tests. Ground instrumentation determined time of fall of the bomb, its trajectory, and its impact point. It also provided for telemetering of bomb performance, filming of impact and in-flight motion pictures, and the collection of meteorological

data needed to analyze and interpret test results.

When World War II came to a close in August of 1945, development and production of rockets was a massive enterprise in the US and Great Britain, but the Allies had nothing even approaching the technology already in use in Germany. Recognition of the potential of rocket power by the Allied powers came too late in the war to catch up with German developments. Technical intelligence teams followed close behind front line troops as they moved across Germany. One of the prime target of the Allies was Peenemunde, on the Baltic Sea. There the top planning and technical staff was headed by Major General Walter Dornberger and Wernher von Braun, who fled south in the last few days of the war in order to surrender to US troops. Thus the priceless experience of the German rocket effort became available to the Allies. According to Mr. Stuart Ward, a valley resident who lived and worked at Salton Sea Base, the optical equipment used at Salton Sea Base was some of that captured from the Germans-- extremely accurate Askania cameras--and also high speed 35 mm Mitchells. These and other special purpose cameras enabled the ground observers to record events of a very fast action and short time duration, too fast for the human eye. Planes from the Air Force Special Weapons Center and the Naval Air Special Weapons Facility performed the drops. A variety of instruments were used to receive coded information transmitted by automatic electronic devices installed within a falling device. When this data was decoded and coordinated, it was possible to develop a complete report on behavior of equipment within the bomb as well as certain physical phenomena. Instrument stations were located on the land area and a target was installed approximately 7000 feet offshore. Technical facilities were operated by Sandia Corporation of Albuquerque, New Mexico. It was reported that space capsule parachutes, drone airplanes, and Nike missles were tested at Salton Sea Base. Some of the activities are still on the classified list.



Location Map of the Salton Sea

Filming at the Salton Sea

A small city was built for the 100 regular employees who manned the facility when it opened in 1946. One-third were directly concerned with technical activities and the remaining two-thirds provided the necessary services and administrative assistance. San Felipe Lodge and small homes and apartments provided housing for personnel, and there was bus service to Indio, Brawley, Westmorland and El Centro. Children of employees were transported by bus to schools in Westmoreland and Brawley. Residents enjoyed a variety of recreational facilities including a swimming pool, tennis courts, a ball park, billiard room, fishing and various crafts and hobbies. The base had its own fire department and a tight security system.

Salton Sea Base suffered from the rise of the Salton Sea in the 1950s. They constructed a dike 3,400 feet long, at a cost of about $400,000, to protect the buildings and facilities. The dike was built in a horseshoe shape around the headquarters buildings, with the open side being the higher ground to the West. It rested on an impervious clay formation 16 feet below the water level, and rose 12 feet above the surface, at a time when the surface of the sea was 236 feet below sea level. The embankment, faced with soil-cement, was expected to protect the facility for at least 10 years. But the sea did continue to rise, and today, in 1995, only vandalized buildings remain to remind us of the Salton Sea's part in developing the rocket technology which made our space program possible, and many of the spin-off benefits we enjoy in everyday life.

Test Base at the Salton Sea

PART III WHAT ABOUT THE FUTURE?

Chapter 13

RESTORING THE SALTON SEA

Stories of a polluted Salton Sea are greatly exaggerated. Responsible sources have verified the fact that the sea is safe, with work still to be done to discover the cause of some unexplained bird deaths. The real problem is too much salt-carried in by irrigation water, and concentrated by the natural process of evaporation. Salinity has gone from 38,000 parts per million in 1965 to 45,000 ppm in 1993-perilous for fish reproduction. The Coachella and Imperial Valleys produce a large percentage of the fresh fruits and vegetables of the US, and farming would not be possible without a place to run-off the irrigation water used to carry away the excessive salts in the soils. It also is the basin which receives flood waters originating in the mountains that surround the valley, and from storms in the valley itself, but the sea would dry up if it were not replenished by irrigation water. Over the past 40 years many groups have suggested possible solutions. Several feasible plans have been developed, at considerable expense, but for lack of funds, none were ever implemented.

In the 1960s, an advisory committee chaired by the president of the Coachella Valley Water District produced a publication named the Salton Sea Project Federal-State Feasibility Report. The plan suggested then was to drain off portions of the sea--essentially construct in-sea impoundments of salt water, and make changes in the local drain water distribution to dilute and preserve as much of the remainder of the sea as possible. Had it been implemented in 1960, the cost would have been $58 million. Another possibility was to construct a navigable canal from the Gulf of California to the sea. This plan would necessitate the approval of the Mexican government.

In the early 1980s a plan was proposed which would modify the in-sea impoundment to use the ponds of condensed brine to entrap solar heat which would be released to drive turbines to produce

electricity. In 1986 a Salton Sea Task Force, composed of 16 representatives from federal, state, county and local agencies, and appointed by the California Resources Agency, came up with similar solutions, but no funding, and the Task Force was disbanded in 1993.

In 1993 a Salton Sea Joint Powers Authority--with the ability to tax and to spend funds--was established. The board includes two directors each from the Coachella Valley Water District, the Imperial Irrigation District, and the counties of Riverside and Imperial. This is a very necessary first step. Most money must come from federal and state governments since the local tax bases cannot support such a massive project. It is thought likely that one of the previously identified solutions will probably be adopted. They range in cost now from less than 100 million to more than a billion dollars.

The Salton Sea has a fascinating history--and its best years can be those ahead. The good news is that restoring the sea is possible--it just takes money--and the will of the people to reclaim a beautiful natural resource for present and future generations to enjoy.