

## Car Ferries.

BY JOHN C. HODSON.

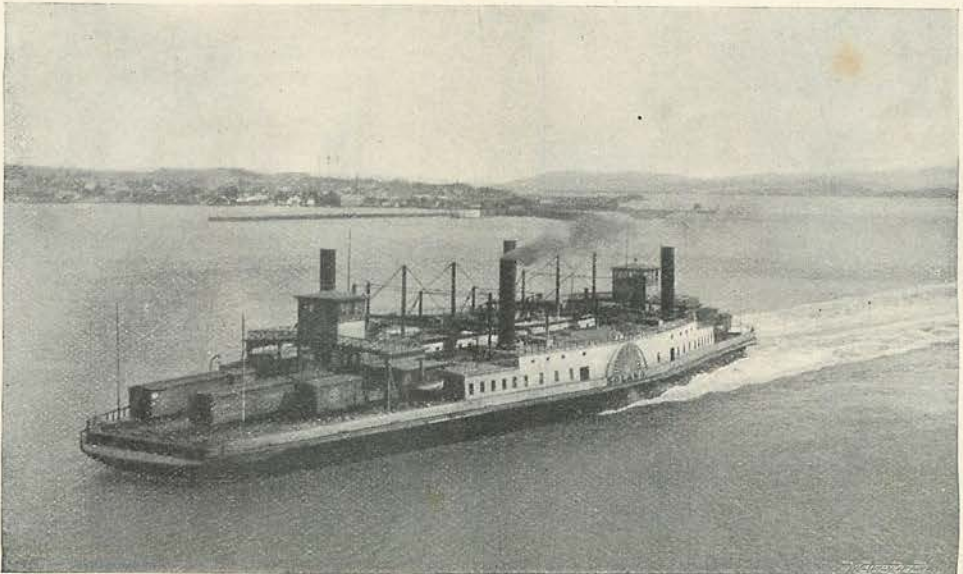


It is no unusual sight in American harbours—in fact, in many of the Continental and English ports—to see huge freight and passenger trains being carried on scows and ferry-boats from shore to shore, yet it is not so familiar a sight that it has lost its attraction for the ordinary on-looker. Often have I seen a crowd of people on a passing boat stand for some minutes looking at one of these car ferries, and asking themselves dozens of questions about it. What are the car ferries for, when did they spring into being, how do the cars get on board, and how do they get off? These are but a few of the queries, but they are all to the point, and this short article, with its interesting illustrations, will doubtless go far towards making the puzzle plain.

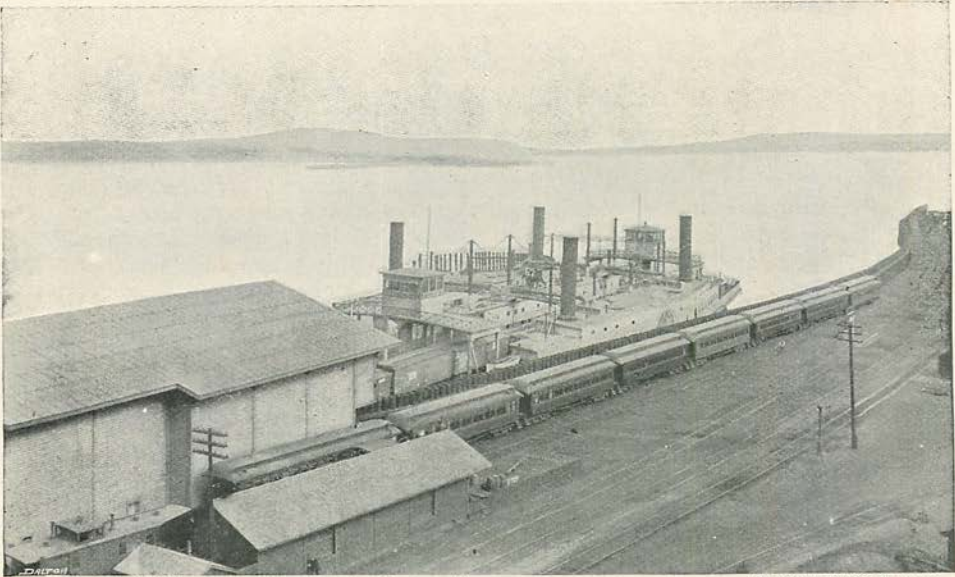
People who travel on the Southern Pacific Railroad from Sacramento to San Francisco have it explained to them in a most effective way by means of the largest ferry-boat in the world. This is the *Solano*, which is shown on this page on its way across the Straits of Carquinez from Port Costa to Benicia, a distance of one mile. She is 424ft. long,

and can accommodate a train of twenty-four passenger coaches, her average daily work, year in and year out, being from three to four hundred freight cars. The maximum traffic on this boat in the busy season runs up to five or six hundred freight cars a day, which she carries back and forth across the narrow strait without accident and with great speed. When the express trains reach Port Costa they are run on board the *Solano* without delay, ropes are cast off, and in nine minutes they are across the water, with a locomotive in readiness to haul them off the boat to their destination.

The necessity for saving unloading and shifting of cargo, as well as the greater necessity for appeasing the ire of passengers, who were compelled in the old days to change from train to ferry-boat, and then to train again, is the real reason for the existence of the car ferry. No one can estimate the amount of time that used to be lost in unloading the cars when they came to the water-side, and in reloading them when the goods had been taken across on lighters and scows. And no one would dare to estimate the amount of objurgations which have been registered in another place owing to the loss of time by the passionate traveller. The



THE SOUTHERN PACIFIC "SOLANO," LOADED WITH CARS, ON HER WAY ACROSS THE STRAITS OF CARQUINEZ—FROM PORT COSTA TO BENICIA.  
From Photo. lent by the] [Southern Pacific Company.



From Photo. lent by the]

STEAMER "SOLANO" IN SLIP AT PORT COSTA.

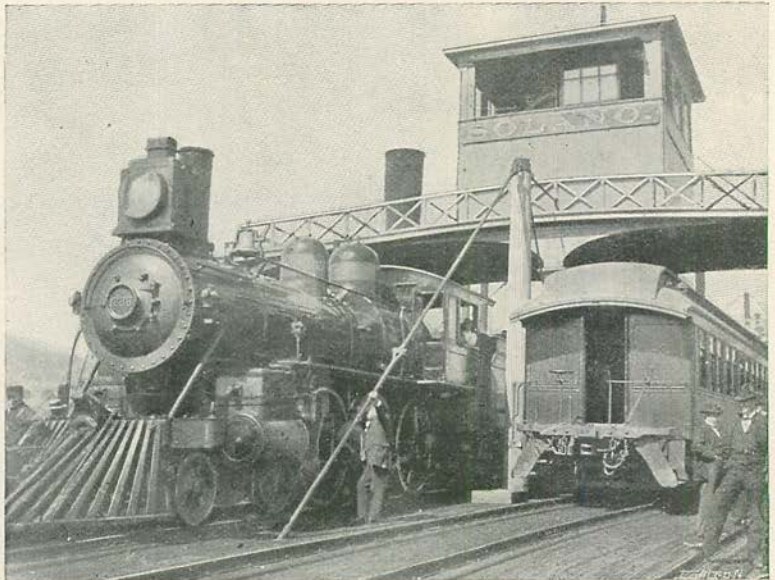
[Southern Pacific Company.

car ferry is, therefore, a double blessing, and the good it has done humanity is wonderful.

But let us look again at the *Solano*, as she lies at her slip at Port Costa waiting for the locomotives to relieve her of her burden. This is shown in our illustration above. A better view of the actual state of affairs is, however, shown by the next illustration, with the locomotive in readiness to haul the train from the boat. The *Solano*, of course, is powerfully built, or it could not support the weight of this one locomotive, to say nothing of the train. Four wooden trusses, one under the centre of each track, stiffen the boat longitudinally, and they are fully able to bear the forty-eight freight cars which are intended to rest upon them.

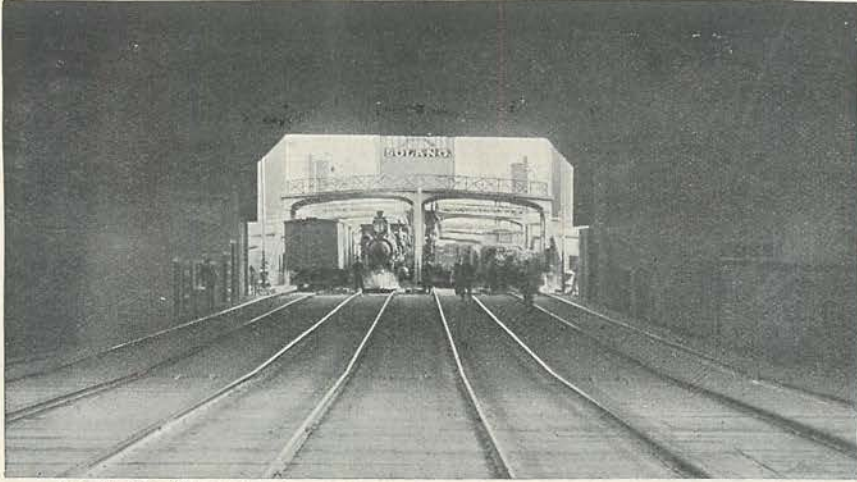
The method of building these slips, at which the boats are to lie, varies, of course, with the current and the tide. In the Straits of Carquinez the current sometimes

runs at eight miles an hour, and the range of the tide is 9ft.; the axis of the slip on each side therefore coincides nearly with the direction of the current, and the variations of the tide renders necessary the use of a hinged "apron," so-called, supported in part by a wholly submerged pontoon. An idea of what an apron is may best be gained by referring to our illustrations on the last two pages.



VIEW OF THE "SOLANO," WITH THE LOCOMOTIVE IN READINESS TO HAUL TRAIN FROM BOAT.

From a Photograph.



THE "SOLANO," AS SEEN FROM THE WHARF, SHOWING THE RAILS RUNNING ON TO THE BOAT.  
From Photo. lent by the Southern Pacific Company.

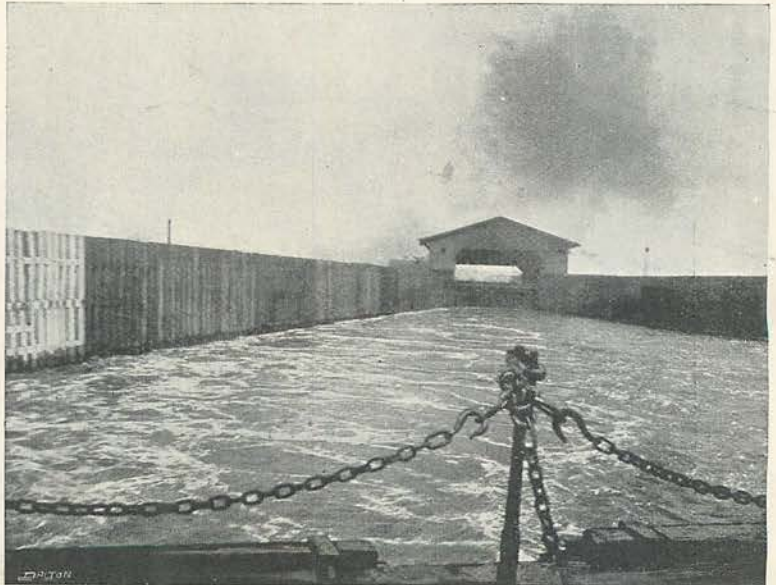
On this page we may see how the tracks run from the wharf directly on to the boat, but no idea is given of the movable apron which goes up and down with the tide. The apron—it is sometimes called by the more suggestive name of "drop"—carries a number of tracks corresponding with those on the boat, and when in use, it rests upon the end of the boat in a recess, into which it fits with a little play.

When the boat has entered the slip, and is in position to receive or discharge a train, the pontoon is made to sink, and the end of the apron reaches its place on the boat. It is then securely latched down, and the apron and boat are free to rise and fall with the tide. The boat is held up to the apron by means of "mooring-rods."

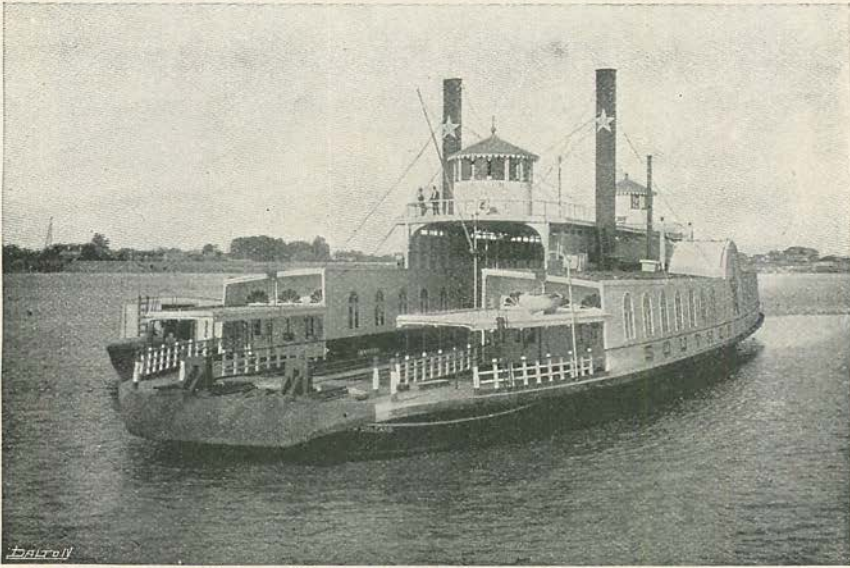
This rather technical description will partly answer the question of how the cars get on and off the boats. The illustrations show the rest. The general appearance of the wharf, and the V-shaped rows of piles, by which the boat is guided

towards the wharf, are admirably shown by the illustration at the bottom of this page, representing the slip and apron at Benicia from the stern of the *Solano*. The smart and active boat has just left the slip with a heavy load of cars, and is now on her way across the Straits, leaving a creamy wake behind.

The *Solano* is but one of the many car ferries in the United States. The Southern Pacific Company possesses another on its New Orleans—San Francisco line, operating between Algiers and New Orleans on the



THE WAKE OF THE "SOLANO" AFTER LEAVING THE SLIP.  
From Photo. lent by the Southern Pacific Company.

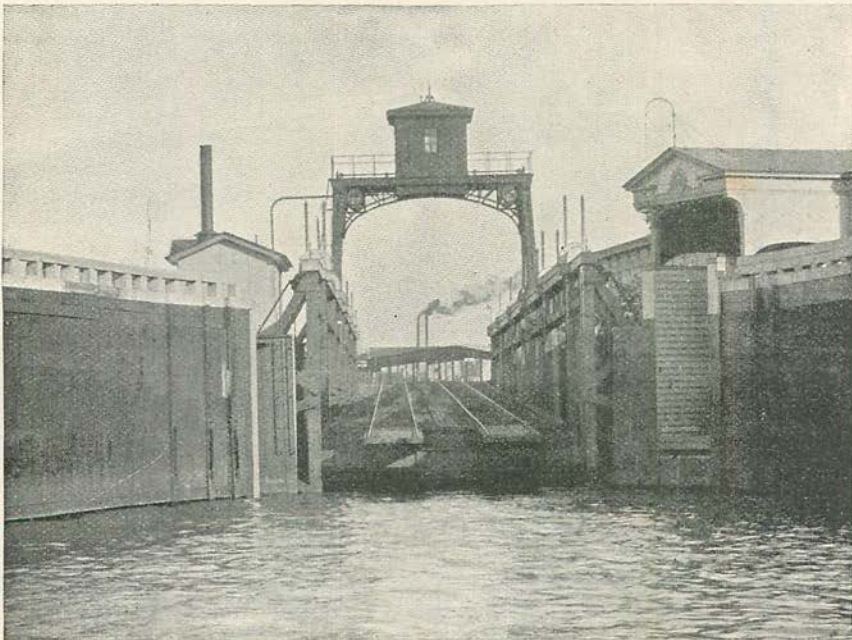


THE SOUTHERN PACIFIC "CARRIER" ON THE LOWER MISSISSIPPI, SHOWING RAILS ON WHICH CARS REST.  
From Photo. lent by the Southern Pacific Company.

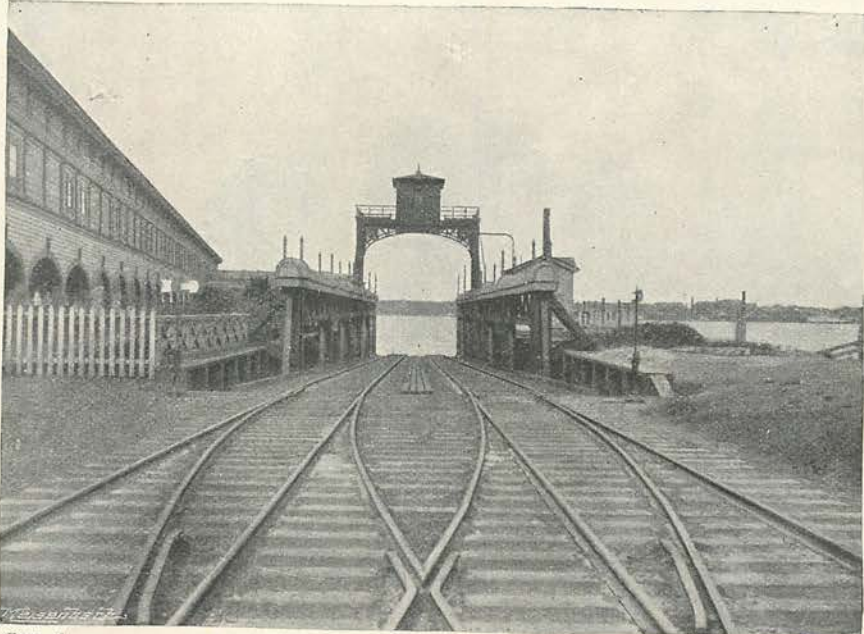
Mississippi. The boat, which we show at the top of this page, is named the *Carrier*, and her capacity is eighteen freight cars. The New York, Philadelphia, and Norfolk Railroad possesses an admirable car ferry in a barge, which can carry twenty-one large box-cars from Norfolk to Cape Charles across the Chesapeake Bay. This ferry is slightly different from the other,

because the cars are carried on barges which are towed across. The New York, New Haven, and Hartford Railroad has two transfer steamers, the *Maryland* and the *Express*, which have been known to the New Yorkers for years.

In many cases, the cars are transported for unusual distances. One car ferry runs across Lake Michigan, between Frankfort, Michigan,



From a) A LANDING PLACE, SHOWING THE TRACKS ON THE MOVABLE "DROP." [Photograph.]



From a)

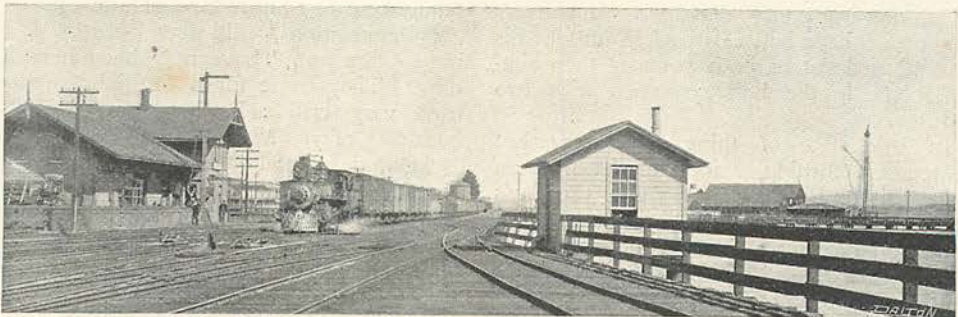
A VIEW OF THE SAME, LOOKING TOWARDS THE WATER.

[Photograph.]

and Kewanee, Wisconsin, a distance of sixty-two miles. In winter time, these boats in the Northern States are besieged by the ice-fiend, but they find no great difficulty in cutting their way through, as they are strongly and specially built. The *Transfer*, a boat which belongs to the Michigan Central, once broke her way through fifty miles of ice. The Grand Rapids and Indiana Railroad has a car ferry across the Straits of Mackinaw, a distance of seven miles,

and the service is carried on regularly summer and winter.

Our last illustration shows a train of cars on the Southern Pacific ready to go on the *Solano*. In a very few minutes it will be at the wharf. It will find the boat waiting for it there, and in nine minutes after leaving the slip, will be on the other side of the Strait, speeding to Sacramento. The very quickness with which the thing is done shows the value of the car ferry to the railways of the world.



A TRAIN OF LOADED CARS ON THE SOUTHERN PACIFIC READY TO GO ON THE "SOLANO."

From Photo. lent by the Southern Pacific Company.