SEEN and HEARD around the National Capital

By CARTER FIELD

Washington. — Holding back a threatened epidemic of strikes until union labor leaders can get what they want in Washington in the way of legislation is proving a difficult task for William Green, president of the American Federation of Labor, and his lieutenants. In Akron the rubber company employees are chafing at the bit. So it is in a hundred other lines.

John L. Lewis, president of the United Mine Workers, has less difficulty with his union. He wants, as Green does, to hold back the strikes, but he set the obvious goal of June 16, which is the date the law creating NRA expires.

Green, Lewis and all their friends here have the same object. If the administration proves too lukewarm on the things they want, they can lay the pending strike situation on the White House doorstep. President Roosevelt will then be faced with the apparent alternative of giving in, or of precipitating so many strikes that a terrific blow will be dealt returning prosperity.

The importance of this to the President can be realized only by examining the political prospects. Next year the President, all of the house, and a third of the senate come up for re-election. In short, the New Deal goes on trial before the country. Already there is the serious threat of a third party, growing out of the doctrines being preached over the radio by Huey Long, Father Coughlin, etc. The President is perfectly familiar with this, but relies on attracting enough conservatives to his own support to win, and win easily.

But attracting these conservatives is a precarious undertaking. The old line Republicans do not think he can do it. That is why they have been sprucing up lately. The only question to date has been: will the radicals scare the conservatives enough to turn them to Roosevelt for safety?

One answer to this question is: not unless Roosevelt shows the country that he is really leading it back to prosperity. Otherwise the conservatives would not put their trust in him, but would rely on voting for some Republican. Which would mean that the radicals, withdrawing so much of Roosevelt's support, would seriously jeopardize Roosevelt's chances.

Economic Menace

So that the threat of a strike epidemic is more than an economic menace. It is a political bugaboo of darkest shade. And no one better than F. D. R. appreciates it.

Which explains why shrewd observers in Washington are not writing off the Wagner labor relations bill as sure to die—why they are not certain the 30-hour week bill will not be compromised (say at 36 or 38 hours), and why there is so much uncertainty about NRA.

Union labor officials would rather have the Wagner bill than a continuance of NRA. Down in their hearts, but most confidentially, they would far rather have the Wagner bill than the 30-hour week—even without compromise.

The answer to both is simple, but you cannot confirm the second in public. As to preferring the Wagner bill to NRA, the Wagner bill would be permanent legislation. As to preferring it to the 30-hour week, the Wagner measure leaves more to be done by union officials, whereas the 30-hour week leaves less appeal to unorganized workers to join labor unions and begin paying dues.

NRA and the 30-hour week together move directly toward an ultimate goal which would sharply curtail the power, influence, need for perquisites of union labor leaders. The government would step in and perform most of their functions. It would gain for the workers what the unions now have to fight with private industry to attain. And union labor leaders are very human. They like their jobs and their power and want to keep them.

Hits Export Trade

Great Britain's highly successful drive to compel Poland and other European countries to buy more British goods, if Britain is going to continue buying theirs, has played hob with prospects for American export trade. So has Italy's setting up of an "Amtorg"—called the National Institute for Foreign Trade—which is to handle all imports and exports for that country.

This government will beyond doubt denounce its commercial treaties with Italy, Portugal, Denmark and Poland in the near future. Secretary of State Cordell Hull, father of reciprocal trade agreements as a means of lowering economic barriers, has been reluctantly forced to this position. The action would have been taken already had it not been for the delicate situation in Europe caused by the war talk. There is no real hope that any negotiations short of the strong arm methods of treaty denunciation will lead to results.

One of the effects of discriminations against American goods in Europe has been to boost the stock of George N. Peek, who stands for barter as the only effective way of hurdling artificial national barriers, as against Secretary Hull's reciprocal plan. For example, the Chrysler automobile people, enthusiastic about the Hull plan until Poland imposed a quota system, have reluctantly come to the conclusion that only the forthright Peek methods can accomplish anything.

As showing the wheels within wheels, this Chrysler situation is most interesting. Chrysler has enjoyed a very profitable market in Poland, selling many American cars there. Now Poland, under pressure from Great Britain, has instituted a quota system, which will cut auto imports from America to the bone.

But this does not hurt General Motors, or Ford, anything like as much. Both have factories in European countries, which are not hurt by the quota.

American Labor Loses

But every General Motors car sold in most European countries, instead of a Chrysler, deprives American workmen of just so much labor. For example, in its factory in Belgium, General Motors, building the Opel car, uses European made motors and European made tires. Whereas the Chrysler plant in Antwerp is really more a warehouse than a factory. All American parts are used.

Moreover, the purchase of European made parts is not all. The reciprocal treaty with Belgium provides for a much greater reduction in the tariff on parts than the tariff on cars.

But the Italian situation is even more serious. Within a few weeks her new restrictions will bar all American wheat and tobacco, and will limit to 25 per cent of 1934 figures imports of American autos. The restriction to one-fourth of last year's imports applies to 200 different products!

On Italy's part this is at once an attempt to adjust her long enduring unfavorable balance of trade, and an attempt to stimulate domestic production. But even 1934 exports from America to Italy were not big. They represented a very lean year for most American exporters. The restriction on cotton is expected to have repercussions all through the South. Meanwhile Italy hopes either to increase the output of her Fiat and other auto factories, or to encourage all American manufacturers of cars to establish branch factories in Italy. Either of which would provide work for Italians.

Wheat is in a different category. Formerly the United States shipped about 80,000,000 bushels of wheat a year to Italy. With the boosting of the tariff on wheat to protect American farmers from hard Canadian wheat, Canada simply took over this market.

Annoys White House

White House irritation against the radio companies, for permitting Huey Long to get so much free time, is growing pretty hot. But it is not easy to make the case. To put it clearly and simply would lay the White House open to a charge of attempted censorship, and give Senator Schall of Minnesota more to talk about. That was irritating enough at the time.

But the fact is that Huey's attacks have been annoying the administration, from the President down, more than any other one thing. It is not really the immediate political prospect of a third party, at all. It is just plain annoyance.

The political situation, from the administration standpoint, is fine. If Huey succeeds in stirring up a radical third party, the President, moving slightly to the right, will simply annex what is left of the old Republican party's conservative wing. Roosevelt's re-election would be as sure as was Hoover's defeat last time, or more accurately, as Taft's defeat was in 1912.

Moreover, the Republicans have played the Huey Long-Father Coughlin game. They have been hoping these malcontents would get somewhere. They have thought that only in a split of the President's following could any Republican have a chance. But a radical Democrat, garnering Democratic votes here and there, would or at least might elect a Republican.

This phase of it was all right with the White House.

Too Much Free Time

Now what burns up the administration is that Long has been getting most of his time over the radio for nothing. The radio companies do not like this. They are very uneasy about it. They know that both Long and Father Coughlin are tremendous drawing cards over the radio. But they do not like the idea of giving away time to some one who will produce irritation at the White House. It may spell trouble for them in other ways. They would much prefer to cut them off altogether.

But they had agreed, some time back, to give a certain amount of time to discussions of public questions, on the theory that such use of radio time was educational, in the best interest of the country, and a generous contribution by a prosperous business to general welfare.

They did not originate this attitude. It was virtually forced on them. Partly by the radio commission and partly by senators and members of the house.

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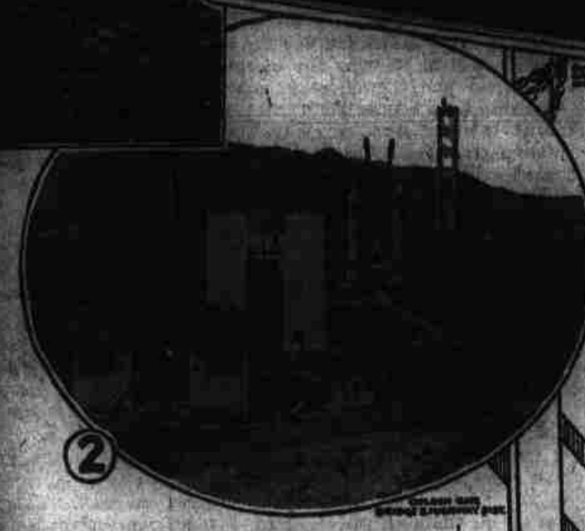
The World's Greatest Bridges



1. Aerial photograph of San Francisco bay with an architect's drawing of the San Francisco-Oakland Bay bridge drawn to scale upon it. San Francisco is in the foreground, Yerba Buena island in the center to the left and Oakland in the background.

2. Construction work on the Golden Gate bridge. Looking from Toll Plaza north (San Francisco side) this picture shows: construction of pylons S-1 and S-2; south pier and fender wall completed 1,125 feet from the shore at Fort point; San Francisco tower construction, now 290 feet above the water with about 8,000 tons of steel in position and 36 per cent completed. Across the waters of the Golden Gate can be seen the completed Marin tower standing 750 feet above the water. The hills in the background belong to Marin county. This tower is located at Lime point.

3. The Golden Gate bridge as it will look when completed in 1937. San Francisco and the metropolitan area in the background.

4. The last leg on the Marin tower, looking up to its great height of 750 feet. The steel supports at its side are for sidewalks which will be 250 feet above the water.

By ELMO SCOTT WATSON

OUT in California American enterprise, American daring and American engineering and construction skill are moving forward toward a new triumph which will reach its culmination in January, 1937, when the greatest bridge in the whole world will be thrown open to traffic. To be strictly accurate, one should say "the two greatest bridges in the world," for there are two projects under way at the same time in the San Francisco bay region and each has certain characteristics which make them pre-eminent among such man-made structures. It all depends upon what one means by "greatest."

If by "greatest" you mean "largest" and "longest," then it's the San Francisco-Oakland Bay bridge you'll be talking about. It will be eight and one-fourth miles long, almost three times as long as the present world's largest and longest bridge, that over the Firth of Forth in Scotland. If by "greatest" you mean the "longest suspension bridge" and the "highest bridge," then you'll be talking about the Golden Gate bridge, the 4,200-foot length of whose main span makes it the world's outstanding suspension bridge and whose 750-foot towers make them the highest and largest bridge towers ever erected, 150 feet higher than those of the George Washington bridge across the Hudson river.

In either case it is impossible to talk about these bridges without dealing in superlatives, for each has in one way or another exceeded all previous records as to size and, taken together, the two projects establish a record which probably will not be exceeded for centuries. They are man-made marvels on a scale so colossal as almost to defy description. The statistics alone are imposing enough but to make them understandable to anyone who is not an engineer it is necessary to give some such comparisons as these:

In building the San Francisco-Oakland Bay bridge they are using 30,000,000 board feet of lumber. Do you know how much that is? Well, it's enough to build 3,600 five-room houses, or all the houses in a town of 15,000 people.

Have you ever seen the city hall in Los Angeles, or the Russ building in San Francisco or the L. C. Smith building in Seattle? The concrete and steel in this bridge would make 85 such buildings as any of those three.

It would probably be difficult for you to visualize 18,500 tons of cable wires. But if you're told that the cable wire used in the bridge is long enough, if laid end to end, to encircle the earth nearly three times you'll get some idea of how much wire is going into that bridge. And the cable wire is only a small part of the metal that's being used. The structural steel, reinforcing steel and cable wire necessary for the bridge will take 6.7 per cent of the entire steel output of the United States in the year 1933.

You've seen 60-story skyscrapers? Well, each individual tower of the bridge, standing more than 700 feet high from the base of its pier on the floor of the bay to its tip, represents a construction job the equivalent of such a skyscraper.

So much for the San Francisco-Oakland Bay bridge. Now for some comparative figures on the colossus which will span the famous Golden Gate through which rushed the gold-mad argonauts of 1849.

It's not nearly so long as the other one but because it's the world's largest suspension bridge, they had to do a lot of digging and building to support the tremendous weight of its 4,200-foot (that's more than three-quarters of a mile, you know!) span.

Imagine a tunnel 10 feet high, 10 feet wide and 26 miles long. That was the total excavation for the Golden Gate bridge.

If all the cement that will be used in it were to be delivered in barrels in the old-fashioned way and these barrels were stacked one on top of another, they would make a pile 110 miles high. Or, to put it another way, if all this concrete were used to lay a sidewalk you and two of your friends could walk abreast on that sidewalk all the way from San Francisco to New York, for it would be five feet wide and 3,186 miles long.

You've been on top of a 22-story building? Remember how small the people looked on the street down below? If you drive your automobile across the Golden Gate bridge in 1937 and look down at the people in the boat passing under the bridge, they'll look just as small.

And speaking of automobiles—over the six-lane roadway of the bridge there could pass a string of automobiles reaching from the Oregon line to the Mexican border and moving at the rate of 22 miles an hour. (Sounds like a good place for a Sunday afternoon drive if you want to avoid traffic congestion, doesn't it?)

And no matter how many automobiles were on the bridge at one time, there's not much danger of the two cables which support it breaking and letting you drop down into the water below. You see, each one is 36½ inches in diameter and weighs 11,500 tons. There are 27,572 separate wires in each one and if all the wires were laid end to end they would reach 80,000 miles—well over three times around the world.

Yes, the Golden Gate bridge is LARGE and so is the San Francisco-Oakland Bay bridge. In fact, the latter is composed of two enormous structures each longer than New York city's pride, the George Washington bridge across the Hudson. It is a combination suspension bridge between Rincon hill in San Francisco and Yerba Buena island out in the middle of the bay and a cantilever bridge between the island and Oakland. Yerba Buena island will be crossed through the largest vehicular tunnel in the world, the bore being 76 feet wide and 58 feet high.

The Bay bridge proper, including the island crossing, will be approximately four and one-half miles long but its total length from the end of the western approach to the end of the eastern approach will be eight and one-fourth miles long. The bridge will be a double-deck structure with six lanes of automobile traffic on the upper deck and three lanes of trucks, plus two interurban tracks on the lower deck.

The building of this bridge involved some of the most difficult engineering problems ever attempted by man. Never before has a bridge been reared above piers which were sunk by the caisson method from the surface of the water down through both mud and water to rock bottom, sight unseen. Never before have suspension towers reared themselves ("lifted by their own boot-straps," one might say) until their hollow steel frames rose 505 feet above the water and their concrete bases sank in some cases 235 feet below water level.

No other bridge yet built has called for so many piers, 51 in number. In fact, it was the belief for more than half a century that lack of adequate foundations in the bay for piers, as well as the impossibility of stretching a span from Yerba Buena to San Francisco, would prevent the bay from being bridged. But in 1929 a survey of the bottom of the bay, directed by state engineers, revealed a high ridge of bedrock extending between San Francisco and the island which would provide a foundation at higher levels than surrounding bedrock and make a practicable route. The water along this route is from 50 to 105 feet deep and bedrock lies from 100 to 200 feet below the mud on the bottom of the bay.

So the most serious problem was the work below the water level and the building of the five major piers between the island and San Francisco. Because of the depth of the water and the mud, "sand-hogs" as underwater laborers are called who work in pressure chambers to clear away the mud to the rock bottom, could not be used. The solution of the problem was in a compressed air-flotation caisson method which enabled the bridge builders for the first time to construct their piers from the surface of the water down, using the jaws of huge clamshell buckets instead of men to do the excavating.

Each caisson consists of a cluster of huge steel tubes 15 feet in diameter, held together by an outer casing. Compressed air made the caisson buoyant as it was towed into place and anchored. In the space between the tubes, concrete was poured, forming an enormous box something like an egg carton, except that the openings were round. Each tube was sealed with an airtight cap. The concrete poured around the tubes caused the caisson to sink slowly and as it sank additional lengths were added to the tubes and more concrete poured around them.

When the bottom of the caisson sank to the mud in the bottom of the bay, a steel cutting edge pushed down through the mud. The caps were cut off the tubes and dredge buckets were dropped down through them to scoop out the mud below the caisson. Gradually each caisson was worked down through the mud to rock bottom, in one case 235 feet below the surface of the water. Thus the piers were built.

Another problem was the two-mile suspension between San Francisco and Yerba Buena which had been deemed impossible. So the engineers decided upon two suspension spans in tandem, anchored in the middle of the bay to a gigantic pier. It is 197 feet long (nearly 66 yards) by 92 feet wide and rises 508 feet from the rock bottom of the bay, nearly twice as large as the biggest skyscraper in San Francisco. Since the two spans are anchored to this, they actually pull against each other. The San Francisco anchorage is a huge mass of concrete containing 68,000 cubic yards of cement.

In spinning the cables the entire 70,000 miles of cable are pulled in place by shuttle wheels which run over the towers all the way from San Francisco to the concrete center anchorage on the west suspension bridge and from the center anchorage to Yerba Buena on the east suspension bridge. Spinning the cables is by far the most protracted job on the bridge and will require a year. Each piece of wire in the cable is approximately two miles long. A total of 34,968 strands must be drawn over the suspension towers. Each cable will exert a pull of 38,000,000 pounds against its anchorage in San Francisco and Yerba Buena island.

Just as the building of the Bay bridge presents knotty problems to be solved, so does the building of the Golden Gate bridge bring up difficulties never before encountered in such work. Outstanding among these were the great length of the suspension span, more than twice that of any previously attempted and the difficulty of erecting a foundation for the tower to support the south span because of the depth of the water and the swirling of the tide in the open ocean waters at the Golden Gate.

But 1,200 feet offshore at a depth of 100 feet an adequate foundation formation was discovered although the water here is constantly turbulent because of the seven-mile-an-hour tide which constantly sweeps in and out through the Golden Gate. At times breakers 20 feet high crash over this point. First it was necessary to level off the site for this pier by blasting rock over an area of approximately an acre under water, after which the rock was dredged up, carried out and dumped in the sea.

Construction of the pier, the first ever attempted in the open ocean swept by the tides, was made possible only by the erection of a giant concrete fender, 750 feet in circumference, around the pier site, an original idea never before tried. This fender is being built in sections. First a huge steel box is lowered into place on the bottom, after which it is bolted to adjoining boxes by deep-sea divers, working in complete darkness. Then concrete is poured into the boxes. Gradually the structure is built up until its top rim is fifteen feet above high water. The east wall of the fender is omitted above elevation until the enormous caisson, to be sunk and filled with concrete for the pier itself, is floated into place inside the fender. Then the fender will be completed, and the builders will have quiet water unaffected by tides inside the fender in which to complete the pier. The fender will serve as a permanent protection to the pier when the bridge is completed.

Meantime, the Marin tower, built on solid rock above the water line, was completed ahead of program. Its slender steel columns rise above a foundation of concrete, embedded in the rock. The tower is of cellular steel construction, the inside being a veritable labyrinth of chambers in which even the designer could be lost without his charts. Steel ladders connect the hundreds of chambers from the foundation to the top of the tower, 746 feet high.

The twin anchorage blocks which support the weight of the world's longest suspension span are enormous solid concrete masses, weighing 64,000 tons each, so constructed that they push against solid rock when supporting the cables. The cable pull at each anchorage is 63,000,000 pounds, but the anchorage block has a resistance sufficient to support two Golden Gate bridges. Between the piers and the anchorage blocks are supporting pylons for the cables and the bridge.

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FUTURE AIRSHIPS

Airplanes of the future will resemble winged rockets, according to M. Louis Breguet, the French airplane constructor. The fast commercial planes, he says, will have a heavy wing, loading 29 to 37 pounds per square foot, means for increasing the lift considerably, air and ground brakes, and powerful and light engines moderately supercharged. There will be a frequent use of altitudes of flights not exceeding 13,000 feet. The machine also will have comfortable cabins heated, and when necessary, supplied with oxygen.

Agriculture Displaced

Agriculture, long the leading employer in Florida, now ranks in second place because of the expansion of manufacturing and mechanical industries, reports the University of Florida.