GOETHALS SAYS HE CAN CLEAR PANAMA CANAL

Removal of About Ten Million Cubic Yards of Dirt Will End Slides.

CAN'T SET FINAL OPENING

Nothing to Do Now but Carry Away Earth as It Appears—Underlying Strata Not Strong Enough to Withstand Pressure of Banks.

Washington.—General Goethals has sent a long report from Panama on the recent slides in the big ditch. He estimates that from seven to thirteen million cubic yards of earth will have to be removed from the cut before the slides are entirely stopped. He believes that the amount will really prove to be about ten million cubic yards. It should not be inferred, however, that the canal must be closed for ten months, or until this large amount is taken out, for it is the intention to pass ships as soon as a navigable channel is opened with a fair prospect of maintaining it. He does not know just when this will be accomplished.

Canal Means Much Loss to Shipping.

While no figures are available at the Washington office of the Panama canal or at the war department, showing the actual losses sustained by commerce by reason of having large numbers of ships tied up at the Atlantic and Pacific entrances to the canal, officials concede that the losses have been enormous. There is a feeling, however, that some shippers are inclined to exaggerate their losses. Only the shippers can give actual figures of their losses or even approximate them.

The loss to commerce would not have been as great had the Panama railroad been in position to move a larger volume of traffic across the isthmus. The inadequacy of the old rail system to meet the situation can be realized when it is known that at the height of its activity before the opening of the canal it hauled a total of 643,178 tons across the isthmus in 12 months. There were about 375,000 tons of cargo in vessels awaiting passage through the canal after the slides blockaded it and before any of them left to take the longer routes. Even if the Panama railroad had preserved all of its rolling stock much of which went out of business when the canal was thrown open to traffic a year ago, it would have required months to move the freight tied up at the Atlantic and Pacific ports about October 1, to say nothing of what has arrived since.

Governor Goethals and the Panama railroad authorities are doing everything possible to facilitate traffic across the isthmus by rail, giving preference to "rush" and perishable commodities. Between October 1 and October 18 the railroad moved upward of forty-six thousand tons of through freight transshipped from the Atlantic and Pacific sides, in addition to the usual volume of 10,000 tons of local freight.

Minimum Flat Rate by Rail.

Including coal shipments, the Panama railroad is now handling between four and five thousand tons of transisthmian freight per day. Two extra freight crews have been put on. The run across the isthmus is about 2½ hours. At the time the great slides occurred the traffic through the canal was averaging upward of sixteen thousand tons daily and gradually increasing. While the railroad's facilities are wholly inadequate to handle the entire traffic, it is taking care of considerable of it.

To make the financial loss as light as possible on shippers Secretary of War Garrison issued an order establishing temporarily a flat rate rate by rail of $3 per ton. The regular rates range from $2 per ton on Class 5 commodities to $15 on Classes D2 and T1. While only a small volume of traffic moves under the higher classes, the flat rate of $3 per ton is exceptionally low. Shippers can elect to pay the regular schedule of rates, including wharfage, craneage and stevedoring. The flat rate of $3 covers all of these charges and just meets the actual cost of the operation.

Discusses Earlier Slides.

General Goethals in the first part of his exhaustive report discusses the causes of the earlier slides, the theories offered in explanation of them, and the steps taken to check the movement of the banks and bottom of the ditch. Then he comes to the slides of October of last year and their treatment. He says in part:

"Ships were passed through the canal when a channel of sufficient width and depth was dredged through Cucaracha slide, and when there was every reasonable hope of maintaining it. In this respect there was no subsequent disappointment, and the dredges were completing their work in this locality when, on October 14, 1914, without any warning, a section of the east bank north of Gold hill settled vertically 20 feet. This section measured 2,000 feet along the prism face and extended back about 1,000 feet from the axis of the canal, generally along an irregular curved line.

The top of the bank was from 300 to 350 feet above sea level, and the extension of the ground eastward was relatively flat country. In the settlement the upper portion that broke away remained practically parallel to its original position and the benches which formed the upper part of the slide had not changed their relative positions, though they were badly broken up while the lower strata were squeezed out across the canal.

"Subsequently the broken mass moved into the cut, reducing the depth of water from 45 feet to nine inches at one point. Until August, 1915, the dredges were able for the most part to keep up with the movement as it came down, and probably would have been able to maintain this condition had not a movement occurred on the west bank, necessitating work on this side to the detriment of the east side.

Where Obstruction Lies.

"A crack was found on the slope of Zion hill in June, 1914, but observations made upon it showed no movement and the solidity of the hill was never doubted. Subsequent to the break on the east side a gradual but general breaking up of the west bank followed, and the crack on the slope increased in size and new ones developed farther up the hill, until finally one extended to elevation 480, the limit of the present break. The movement into the cut from the west bank occurred early in August, 1915, when a section of Zion hill broke away and settled down. The edge of the break on this side is also a curve.

"The movements from the two sides are toward the central portion of the inclosed area, and at this central portion is the obstruction to the channel. It first appeared as an island forced up from the bottom, then as a peninsula projecting from the east bank, and, finally, was pushed entirely across the channel, completely closing it.

"The dredges in attacking the closure have made little headway thus far, for any gain was offset by a movement in the vicinity or in the rear of the dredges, forcing them to withdraw and begin again their approaches on it. These successive movements are due in large measure to the rains, which were above the average through October. The amount of material blocking the canal at this locality could be easily removed in ten days but for the recurring movements. When a cut is secured through this mass and it can be held, some idea can be formed of when the passage of ships can be resumed, but until this is accomplished it is impossible to make any predictions.

Sluicing Produces Results.

"Sluicing the obstruction is producing some results, and the nozzles are being increased and streams with greater pressure are to be put at work to force the material to the dredges and to draw down the material which is the cause of obstruction. This sluicing, however, will not decrease the amount of material to be handled by the dredges. In the meantime, the dredges not employed on the obstruction are working to the north of it digging the channel to full depth and as much wider than the prism as is necessary to remove those portions of the slide.

"In moving toward the cut the material on the east side is forming into a succession of waves, which move gradually into the prism. The one that occupied part of the channel in October is being dug away, except at the obstruction, another has formed in its rear, and still another is forming up the slope of the hill. This material in moving down has at the same time taken away the support of the overlying rock on the north side of Gold hill, which, being seamed, becomes overbalanced and breaks away, producing the same results as occurred on the south face of Gold hill during the removal of Cucaracha slide.

"On the west bank the wave effect is also evident. Here the bank was pushed forward horizontally into the channel, followed by a settlement of the mass. The benches in some portions still maintain their relative position with respect to each other, but the ground in their rear settled, forming sink holes on the side away from the prism. There is some movement northward along the axis of these depressions into the prism. The southern portion of this west bank has come to rest, but projects into the channel.

"The breaks in the vicinity of Culebra cut were handled by excavations in the prism and by steam shovels lightening the banks above; at Cucaracha a great deal of material was diverted from the prism by sluicing. When the break of October 19, 1914, occurred an examination was made to ascertain if relief could be afforded by either of these methods, but neither was practicable for the east bank.

Some of the Difficulties.

"The configuration of the ground made it impossible to sluice any material away from the prism. Steam shovels and trains could not operate on any portion of the broken mass, which was incapable of giving them necessary support, and so far as concerned the stretch of ground between the break and the limiting crack, it was in such condition that before preparations could be completed for beginning work it would be broken up so that steam shovels could effect nothing; subsequent developments have verified this. No further cracks or indications of a further extension eastward have occurred, and judging from past experience the existing limits are definitely marked, the farthest section being 1,300 feet from the east water line of the canal.

"Similar investigations were made with regard to the use of steam shovels and sluicing operations on the west bank. The configuration of the ground is such that all the material in the present movement will be taken away long before the area involved could be reached. Like the east side, sluicing away from the direction of the prism is impracticable.

"The conclusion reached, therefore, was that the only method of handling the slides on the two banks is to remove the material from the prism by dredges as it comes in. The breaks on the two banks are clearly defined, and judging from experience with other slides and breaks, the limits of the movement have been reached.

Confirmed by Geologists.

"Mr. MacDonald, the geologist formerly employed, passed through here on his way to Costa Rica three weeks ago, and, after going thoroughly over the slides, reached the same conclusions as to the limits to which the sliding would take place, and the methods employed for handling the material. His profession, his intimate knowledge of the formation of the locality and his experience with the various slides and breaks make his opinions on the subject of value. He also expressed the belief that the troubles due to slides would end with the removal of the material from those in progress.

"When the break occurred in October, 1914, and the subsequent breaking up of the west bank became evident, it was decided to augment the dredging fleet by another 15-yard dipper dredge and three 1,000-cubic-yard barges, all of which are now in service, and the dredges are handling at the slide nearly a million cubic yards per month at a cost less than 30 cents per cubic yard.

"As to the amounts involved, it is difficult to make any reliable estimate. As already stated, when the break occurred at Cucaracha in 1913, it was estimated that 2,000,000 cubic yards were involved, but before the movement ceased 4,679,238 cubic yards were taken out by steam shovels and dredges, in addition to upward of a million cubic yards of material which would have entered the prism had it not been removed by sluicing.

"The length of the slides, which are directly opposite each other, is approximately 2,200 feet (the channel through which is navigable with the exception of 600 feet); the banks are 300 to 350 feet above sea level on the east and extend up to 480 feet above sea level on the west. The area of the territory affected on the east side covers 81 acres and on the west side 78.5 acres.

Must Reach Angle of Repose.

"Assuming that all material, lying above planes extending from the outside limits of the bottom of the prism, referred to, up to the limits of the breaks, will move into the cut, 7,000,000 cubic yards will have to be removed before the slides are entirely stopped. Mr. Comber, resident engineer of the dredging division, assumed a surface parallel to the surface, existing on October 14, the date of the last complete survey, and 45 feet below it, on which basis 13,000,000 cubic yards would be the quantity to be handled. He thinks, however, that a mean between the two amounts may be more nearly correct, which was the method of arriving at the 10,000,000 cubic yard figure which has appeared in the press. It is at best only a guess.

"It must not be inferred from this that the canal will be closed until this amount is dredged, for such is not the case; on the contrary, it is the intention to pass ships as soon as a channel is secured through the remaining 600 feet, and there are reasonable grounds for assuming that a channel through the obstructed area can be maintained.

"It is certain that the troubles are due to the failure of underlying strata because these were unable to bear the weight that the banks brought upon them. Under the circumstances it is difficult to understand the impression that has gained credence in some quarters that a sea-level canal would have avoided the difficulties encountered, since the cutting would have been through the same material, but at least eighty feet deeper.

"It is also certain that nothing can stop the movement now in progress until the angle of repose is reached for the materials under the conditions that exist, and that this can be reached only by removing the excess amount of material. If experience counts for aught, then that gained in the handling of the slides and the breaks that have occurred along the line of the canal leaves no doubt that the means adopted and now in use will effect a cure in the slides that now close the canal; furthermore, that when cured no further troubles need be anticipated from slides in this locality."

BOUND TO GET A HUBBY

Woman Yells "Stop Thief" When Mar Bolts at License Clerk's Desk.

Chicago.—A cry of "stop thief" prevented the escape of a bashful bridegroom here a few days ago. After two years' courtship Stephen McBett and Mrs. Marie Alphonso went to the city hall to get a marriage license. Then McBett weakened. As he started toward the street at top speed Mrs. Alphonso screamed:

"Stop thief! He has got my pocketbook."

McBett was captured by a patrolman and taken to Central station, where the woman broke down. "He's not a thief," she confessed. "But I knew if he got away now he'd never get this close again." Later the couple got the license and started for the church.

POULTRY

PREPARE HOUSE FOR WINTER

First Move Should Be in Direction of Cleanliness—Disinfect Before Furnishing New Litter.

Before the cold weather comes on, put the hen house in winter shape, says a raiser of chickens in an exchange. The first move should be in the direction of cleanliness. Remove every movable object, boxes, barrels, etc., sweep thoroughly overhead and underfoot, after scraping out all droppings. Then disinfect before refilling scratch-litter. Whitewash with unslacked lime to which kerosene has been added, if other insecticides seem too expensive, and lay it on generously. Paris green in the wash is excellent as a germ killer, but fill all cracks everywhere.

Next, if water is prone to freeze in the coldest weather, make the hennery warm with a dead air space between the walls and a sheathing of building paper. I recommend a cheap grade of paper because it will need to be torn off in the spring when the periodical drive against insects is inaugurated. Then put on a storm door, however rude, to overlap the cracks around the ordinary entrance, disinfect drinking dishes, look to ventilation without drafts, and make sure that the floor is warm, even if a banking of earth or sawdust has to be applied. Put in a big supply of road dust for baths and plenty of gravel and sharp grit.

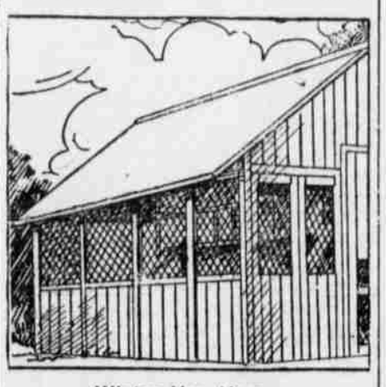
Now cull the flock and get the rest adapted to the changed appearance of things early, so the laying which is revived after molting, will not receive a setback, as is usually the case after any abrupt alteration.

CHICKENS IN LIMITED SPACE

House Shown in Illustration Is Particularly Constructed to Give Ample Protection.

The poultry house shown in the accompanying illustration will appeal particularly to those who wish to keep the largest possible number of egg-producing birds in a limited space, and is particularly constructed to give protection against cold, damp and wind. It really consists of an outer shed with a gabled roof covering the entire floor space, and an inner construction with a non-conducting roof to neutralize changes of temperature. The whole floor, with the exception of a passage at the back, is scratching space.

The perches are hung from the inner roof by iron hooks, thus being vermin proof, and beneath are the nesting boxes. Food and water are supplied on the raised platform outside the roosting place, the hens getting additional exercise from going



Winter Hen House.

up and down ladder ways to their meals. The ventilation both day and night is perfect, the air coming in through an open wire front, circulating between the roofs and under the floor of the roosts, etc., and through the nesting compartment. At night, when the birds are roosting, the scratching space can be left open except for wire doors, and the litter turned and thoroughly sweetened ready for next day. The entire floor space is 323 feet, but the house can be extended indefinitely and economically.

PREPARE FOR COLD WEATHER

Broods of Chickens Scattered Here and There Must Be Gathered In—Idle Hens Don't Lay.

When the cold winds of autumn begin to blow new cares and responsibilities confront the poultryman and woman. Broods of chickens which have been scattered here and there in order to keep them separated must be gathered in and housed, for the severe weather of the winter is at hand.

Supplies of vegetables must be stored, gravel for the hens and sand for the ducks must be boxed or stored away in the dry, while still finer sand or fine earth must be procured for the much needed dust bath. Straw or some kind of clean litter must be forthcoming for scratching material to keep the biddies busy through the long dark days of winter. Idle hens are not laying hens. Even the forest and fruit tree leaves may be utilized for this purpose.

Shelter Ducks in Winter.

Ducks prefer staying out in their runs all night, and this is best for them during the summer season, but they are better protected in well-ventilated sheds or houses during the winter season.

COULD MAKE HUBBY USEFUL

Mrs. Torkins Has a Bright Idea for Use in Event Her Cause Was Defeated.

"Charley, dear," said young Mrs. Torkins, "I don't want you to worry about our votes for women campaign."

"I'm not going to."

"But I want you to be prepared to lift your voice in case it is needed. I realize that there are incidents of political responsibility which woman with her refined sensibilities is unable to meet."

"Is that so?"

"Yes. You remember how disappointed I was at the result in New Jersey. When I mentioned it to you you dismissed the matter with a profane expletive."

"I apologize."

"Don't. I've invited our club to be here on Wednesday morning to hear how well you can talk about it in case we're defeated on Tuesday."—Washington Star.

Make Visit With Sick Short.

The sick room, above all else, is the place for cheerfulness. A peaceful state of mind and bright, cheerful surroundings are essential to the regaining of health, and physicians say that sick persons are often kept in bed longer than is necessary by discouraging or disquieting remarks made by visitors to the sick room.

Another thing to remember is not to stay too long when visiting a sick person. The invalid tires easily and long visits are likely to have a harmful effect. Run in two or three times a week, take a flower or a bright potted plant, some dainty dish, magazines or books, and you will find that your visits will be looked forward to and will be a real benefit to the sufferer.—Iowa Homestead.

Will Get the Oyster.

Lawyer—I think I shall spent next summer here.

"Why not this year?"

"Because there is a lawsuit this year between two parties about this property, and I shall probably own it next summer." — Humoristicke Listy (Prague).

Gossip is always short lived, except when properly ventilated.

Don't ridicule other people's ideas. Try to have them adopt yours.

Rebuilt Love Letters.

"Hear about Smith? He found a big package of love letters he sent to his wife years ago. He has a great idea. You can't guess what it is."

"Going to burn them?"

"Does he expect to publish them?"

"Use 'em to heat his house?"

"You are all wrong. He is going to change the dates and send them to her while she is in the country this summer."

Scratch.

Tommy and Freddie were arguing hotly. "I tell you," vociferated Tommy, "he is my pa, he is!"

Freddie laughed scornfully. "He ain't either your paw."

"Hhe is—he is! My ma says he is, too."

"And my maw says he's a cat's-paw!"—Judge.

Fixing the Blame.

"Do you believe in hoodoos?" asked the superstitious person.

"Well," replied the man who had failed to make good in a dozen different enterprises, "I've got to preserve my self-respect, you know."

Taken at His Word.

He (passionately)—I would go to the end of the earth for you.

She (calmly)—Good-by.

Precarious Position.

"Why did you tell that man you were sorry to hear he had a family?"

"Because he's a Maine guide."

There is no love so incurably blind as self-love.