

described under what form of organisation the force for the building of the Canal worked prior to the promulgation of President Roosevelt's one-man the plan was very materially assisted control of the Canal, concentrating by a change in the personnel of the authority in his hands and helding him Commission which was made in 1908. sione responsible for the work. Under the power conferred on him by this executive order, Colonel Goethals, in mus on May 6, 1908, and informed me today's instalment, tells how ne reor- that one purpose of his visit was to ganized the force; and it was with this relieve Jackson Smith, who had been reorganized force that he built the made a member of the Commission in

(Editorial Note .- In last week's instalment of his story of the building .

of the Panama Canal, General Goethals

There were too many heads, with the tenances were not keeping pace with uted a published attack on the new

1908, I divorced the lock-gate design- sure of his loyalty. These views I exing force from the authorities on the pressed to Mr. Taft, who catechised Isthmus and placed it under Colonel H. separately each member of the Com-F. Hodges the had received his promo-tion to Lieutenant-Colonel Corps of parently two members straddled the Engineers on August 27, 1907), for I fence-had no opinion or views, pro or found that the distance from the Isth- con, though there seemed to be little mus prevented proper supervision of doubt in the minds of the others about the work and also was causing delays. his disloyalty. Furthermore, Colonel Hodges was pe- One, if not the chief, cause of Mr. culiafly fitted for the work through his Taft's visit was the receipt at Washprevious experience and training.

vision, suggested putting all the exca- of foodstuffs, hotels, messes proposition of Mr. Rourke seemed fea- labor, quarters and subsistence. tive order (giving Colonel Goethals and food supplies, and I suggested that stance with much credit to bimself, ing the transaction of business; secur- previously existed, and the division en. tion to the expenses of sanitation, full one-man authority over all Canal he take them up with Mr. Smith, which so far as the vacancy on the Com- ing co-operation and co-ordination of gineers reported directly to the chief which had brought forth considerable matters) would enable me to do it, and he did, reporting conditions as he found mission was concerned, I urged the ap- the various parts of the force; fixing engineer, who consequently was more criticism from members of the Commit-

A Change in the Commission.

General

Photographic

Likeness of the

George W. Goethals, Probably the Best

Canal Builder

Secretary Taft arrived on the 1sth-

There was no question of Mr. Smith's HE organization for the construct any other one man was due the system of the Canal at the times of his in- General MacKenzie would be retired tion of the Canal, adopted in 1907, of collecting both skilled and unskilled spection. While a reading of a state- from service as chief of engineers by did not work satisfactorily. laborers and of housing and feeding the ment or report that he prepared tended the time Mr. Smith's leave of absence There was an overlapping of work force. I doubt if anyone could have to create a rather unfavorable impressexpired, and the reasons which interbetween the departments which result- secured better results in a tropical sion, this in great measure was palli- fered with Colonel Hodges' selection in ed not only in friction but in placing country, which produced nothing and ated, if not removed, by the closing 1907 no longer obtained. subordinate officials under two heads, was so far removed from the United paragraphs, in which he complimented making it difficult at times to fix re- States, our only reliable market. He Mr. Smith on what he had accomplished up the designing work and push it. sponsibility. 'The departments which had begun his task under great disad- with the means at his disposal. formed part of the department of con- vantages, for not until the Summer of struction and engineering were under- 1967 had an adequate cold-storage a cable message from Washington, folvious knowledge, and the latter was Company's ships for transporting Mr. Smith and the creation of a new

I did not believe that there was any nations, of unnecessary expense. The but I did not feel that I had his confidesigns for the locks and their appur- dence and support. To him was attribwork, for it was difficult to get third Commission in the Spring of 1907. anything definitely decided or adopted, which predicted failure, and because of

ington of numerous complaints about When, in 1907, the Chagres River general conditions on the Isthmus, esdivision was created to excavate the pecially in regard to quarters, food hannel between Gatun and Cujebra supplies and hours of labor. An offi-Cut. Mr. L. K. Rourke, at that time cial from the Civic Federation had been assistant division engineer. Culebra di- down, and had made an investigation The New Member of the Commission. Colonel Hodges was to report for vation work between the Atlantic and kitchens, quarters and their furnish- taken up. Mr. Tait decided to appoint his appointment on the Commission; Pacific locks under one head. From ings, amusements for the men, and gen- Major C. A. Devol. of the Quartermas- and in the meantime, with the assistthis suggestion came the thought of eral treatment of employes, and had ter's Department of the Army. This ance of Benjamin L. Jacobson, the de-

sible, by dividing the work along the This investigation instigated another, ably impressed with him. He had gradually, thus avoiding onfusion and and secure better results both in time solidation could be made which would food supplies and their preparation for har to that required on the isthmus, jects sought by the reorganization, dams. The three resulting construceliminate several of the existing divi- consumption. He made various critisions of the work. The recent execu- cisms concerning the quarters, hotels, Francisco after the fire, in each in- were: Concentrating authority; expedit- solidation of nine divisions that had

How the Calebra Cut Looked in August.
1913, Showing the Lower Part of the
Famous Cucaracha Slide on the Right:

Canal in less than the time that had 1907 in recognition of the work that he been estimated necessary to complete had done previously.

ability. To him probably more than to them at various places along the line pointment of Colonel H. F. Hodges.

Consequently I was not prepared for features with the commissary departnot carry out until I was in a posimade to the President and the Secre- any other that could be devised. tary of War, but it was serious enough

dal might result. effect at the expiration of his annual Hodges was selected for a place on leave of absence, September 15, 1908. the Commission, vice Jackson Smith.

He was pre-eminently fitted to take had more confidence in Colonel Hodges' ability to act in my place during absences or in case I should be retaking work and issuing instructions plant been established and ample re- lowed by a lefter from the President, leved than in that of either of the of a division engineer, and to him was of which the chief engineer had no pre- frigeration on the Panama Railroad in which were suggested the relief of two Army members of the Commisnot in as close touch with the work as meat, fruit and vegetables been in- department combining the subsistence I regarded Mr. Rosseau as the one, of those available, best fitted temperausual accompaniment, under such, sit- dishonesty in Mr. Smith's management, was one of the details of the reor- chairman and chief engineer, there was ment of the Panama Railroad. This mentally and professionally to be the ganization that I had in mind, but could no possibility of his advancement to the post if the existing policy of havtion to divorce the subsistence from ing an Army engineer in charge was the department of labor, quarters, and to continue. I therefore urged the se-While in Washington in January, this and other indications I was not in 1907, from charge of the commissary grounds. He ranked the two Army subsistence, having relieved Mr. Smith lection of Colonel Hodges on these field work of the division, the other because he said he could not carry on engineer members, and his appoint- designing the business except by a method of ment would permit the reorganization vision. accounting which I could not approve of the work along the lines I had laid I never learned just what report was down in a way more satisfactory than divided and placed in charge of resi-

Mr. Taft would have preferred to remake them both fear that unless a lieve one of the Army engineers and change was made, and at once, a scan- appoint Major Devol in his place, but such a course would have discredited After making a thorough inquiry in the officer suggested for relief by the regard to Mr. Smith, the Secretary of Secretary, and this I wished to avoid. War decided to allow him to resign. A cable message along these lines was which he did, his resignation taking sent to the President, and Colonel

The question of a successor was then duty on July 15, 1908, in advance of

more definitely the responsibility in any particular case; enforcing a more and hold him responsible, thus securuniform wage scale, the lack of which ing the best that was in him. As a was a source of much complaint; and consequence, each individual took a reducing the cost of administration.

Dividing the Zone.

The plan was to divide the Zone into three construction divisions, one extending from deep water in Limon Bay Tabernilla, but later reduced so that it did not extend beyond Gatun locks and dam, called the Atlantic Division; one extending from Gatun to Pedro Miguel, called the Central Division; and the third extending from Pedro Miguel to deep water in the

Pacific, called the Pacific Division. assigned all work of construction withthe territorial limits, including building construction and municipal engineering work, to which was added at a later date sanitary engineering work. To each division was also assigned an assistant division engineer, who shared the work with the division engineer in such a way that one of these officials was in charge of the in charge of the office work and such designing as was assigned to the di-

The work in the divisions was subway that responsibility cou'd be defthe Central Division, Mayor Sibert to the Atlantic Division and S. B. Williamn to the Pacific Division.

The publication of steam-shovel records in the Canal Record had stirred up a rivalry in Culebra Cut to the advantage of the work; and by placing the Army engineers in charge of the work in the Atlantic division and civilian engineers in charge of the work in the Pacific division, the construction in reorganizing the department of con- made a report severely criticising the was agreeable to me. I had served talls of the reorganization were worked both divisions being similar in charstruction and engineering, for, is the management of the department of with Major Devol on the general staff out, to be made effective in such a way acter, I hoped to arouse a wholesome for a short time and was very favor- that the changes could be accomplished rivalry between these two divisions lines of territorial subdivision a con- which was made by a reputed expert in handled work in many respects sim- consequent delay to the work. The ob- and money in building the locks and both in the Philippines and at San and which were accomplished by it, tion divisions were formed by the conthat when Major Devol came down it might be possible for him to take over the work in much the same way as post quartermasters perform the work for hospital authorities at military posts. He expressed the belief that economies might be effected, and if so, a change should be made. Reorganizing Sanitation Methods.

Panama Railroad was placed under the secured his consent to have the scheme chief engineer of the Panama Railroad tried; he was to prescribe the areas Company, Mr. Ralph Budd, acting where grass and brush were to be cut; through the general manager, Mr. and, as he held that, as a rule, engi-Hiram J. Slifer, until the latter re- neers were not competent to drain signed, when the head of the work re. lands for sanitary purposes, I agreed ported directly to the chief engineer of to have his engineer prepare such the commission. Lieutenant Frederick plans and to carry them out if they

pleted the road. of the construction forces that resulted from the changes made in 1908, and finally eliminated, which was continued, with minor changes to suit new conditions na they for some months, but, finding that the arose, until the water was admitted into percentage of sick continued to drop, Culebra Cut on October 10, 1913. In addition to definitely fixing the work in charge of each subordinate, an effort was made to give him full authority personal interest and pride in the work. feeling that the particular work on which he was engaged was the important piece; it therefore became our canal and we were doing it.

Too Small for Separate Organizations. When, in 1910, it was decided to ward. fortify the canal, involving the construction of gun and mortar batteries department was top-heavy, and this for its defense against naval attack, was overcome by abolishing some of I took the position that the Isthmus the existing positions. The general was too small for two separate and in- policy of concentration was made apdependent construction organizations plicable to the hospitals. In 1997 the and that all work of this character on health branch of the department conthe Isthmus should be under one head. sisted of seven hospitals, located one This policy was adopted so that the each at various settlements along the canal forces and plant were utilized for line of the Canal, in addition to the the purpose. In the same way the con- main hospitals at Ancon and Colon, struction of quarters for the army is while in 1909 the line hospitals had now in charge of the canal authorities been eliminated, with the exception of with resulting economy in both in- the penitentiary located at Culebra; stances. The additional work was the nick were carried to the taken care of by the creation of units hospitals on hospital cars attached to reporting to the chief engineer.

The department of labor, quarters and subsistence was subdivided into the quartermaster's department, under Major C. A. Devol, and the subsistence crty was not satisfactory, and steps department, under Major Eugene T, were taken to change the existing Wilson. The former had charge of the system, resulting in a corresponding recruiting of labor, skilled and un- change in the organization. The skilled, care and assignment of quar- method in use was modeled, it is bedent engineers, superintendents, gen- ters, together with furnishing them, lieved, after that in common use by the eral foremen and foremen in such a distributing fuel, commissiary supplies railroads, the records being prepared and distilled water. On September 1, from the monthly abstracts of receipts initely fixed. Major Gaillard was as- 1908, the division of material and sup- and issued by the division of material signed to duty as division engineer of plies was merged with the quarter- and supplies. master's department. To the subsis- duplicates of the record kept by the tance department was assigned the chief of that division, yet the latter operation and care of the hotels, was the responsible officer. messes and kitchens, and to secure The system proposed for substitution the proper and economical manage- was to have the chief quartermaster ment of the commissaries the com- take up on returns all property as it missary department of the Panama arrived or was purchased on the railroad was transferred from the con- Isthmus. The property would then be trol of the general manager and placed transferred to the various divisions or under Major Wilson as commissary of departments for which ordered, or the railroad. Thus he had charge of turned over to the main storehouse, the purchasing of food supplies and which was to be in charge of an actheir inspection and care after receipt countable officer. All officials having on the Isthmus.

War, during his visit in 1908, the against the records. changes in the organization that were A change in the personnel of the acunder consideration, he called atten- counting branch of the work brought tion to the expenses of sanitation, to the Isthmus Mr. W. W. Warwick as which had brought forth considerable examiner of accounts, whose thorough

ce on Appropriations which visited the Istimus in the Fall of 1907, and asked me to look into the matter suggesting

I had paid little attention to sanihave grass cut by scythes and mowing machines instead of machetes, for the estimates that had been submitted for constructing the canal were exclusive of sanitation and civil administration. After examining the work being done, the methods of its doing, and discuss ing the matter with Major Devol, I felt that a reduction in the expenditures

over to the construction divisions.

By this arrangement the sanitary favorable change in statistics might

I discussed the matter with Colonel Mears succeeded Mr. Budd and com- conformed to future construction work. The change was put into effect Sep-This, in brief, was the organization tember 1, 1908. There was considerable friction for some time, but this was

I watched the statistics carefully I felt that the new method of doing the work was producing the results expected and the cost was less, notwithand brush were cut. In 1910 Colonel Gorgas stated that the work was not being done so well as formerly and rebut, as economies had been effected and the statistics contined to show a constantly decreasing percentage in the sick rate, I declined to comply. laid the facts before President Taft, who visited the Isthmus shortly after-

The organization of the sanitary passenger trains,

Changes in Administrations.

The method of accounting for propwhich therefore were

property were to render returns for After explaining to the Secretary of that in their possession to be checked